

# Electronic Control Units

**SW version 8.12.0**

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## 2 Document information

### 2.1 Clarification of Notation

**Note:** This type of paragraph calls the reader's attention to a notice or related theme.

**IMPORTANT:** This type of paragraph highlights a procedure, adjustment etc., which can cause a damage or improper function of the equipment if not performed correctly and may not be clear at first sight.

**Example:** This type of paragraph contains information that is used to illustrate how a specific function works.

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## 2.3 Document history

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21	8.12.0	17.12.2025	Jakub Vávra
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# 3 Scope

The document's intent is to cover relevant information for interfacing Electronic Control Units (ECU) to ComAp Control Units (CU). Such interfacing consists of physical interconnection as well as configuration of ComAp Control Unit via the matching configuration tool.

For first time readers it is advised to start with reading chapter [Principle of ECU support \(page 48\)](#) where the details of the configuration tools and the context of ECU support is discussed in detail.

Returning users on the other hand will find the overview of all supported devices located directly in the chapter to follow.


**Note:** *It is important to highlight that, while in the past the focus of ECU support was primarily on electronically controlled Internal Combustion Engines (ICE), it has now widened to cover other areas like Photovoltaic inverters or Battery Energy Storage systems (i.e. renewable energy sources – RES). As the two have evolved in isolation two distinct protocols have established themselves as industry standard. For ICE it is CAN based J1939 and for RES it is Modbus. Therefore the document assumes has to be read with the above in mind. When other alternatives of communication are used this is specifically mentioned.*

# 4 Compatibility Table

This table describes the supported ECUs sorted by the engine manufacturers by particular controller's family and its configuration.

- > [Engine Control Units \(page 12\)](#)
- > [Alternator Control Units \(page 29\)](#)
- > [Auxiliary Engine Control Units \(page 30\)](#)
- > [Battery Chargers \(page 32\)](#)
- > [Battery Management System \(page 33\)](#)
- > [Communication Bridges \(page 34\)](#)
- > [Genset Controller \(page 35\)](#)
- > [Ignition Systems \(page 36\)](#)
- > [Instrumentation \(page 37\)](#)
- > [Inverters - Photovoltaic \(page 38\)](#)
- > [Inverters - Battery \(page 41\)](#)
- > [Power Inverters \(page 44\)](#)
- > [Stepper Control Units \(page 45\)](#)
- > [Motor Control \(page 46\)](#)
- > [User device \(page 47\)](#)

**Note:** List of controllers contains only standard branches of controllers. Customized branches usually follow the implementation of relevant standard branch. For more info about customized branches please see <http://www.comap.cz/products/> or contact your local distributor.

Legend	
	No ECU support
	ECU support – no Aftertreatment support (even if ECU supported in ECU list)

①	Support of aftertreatment (up to Tier4 interim level, no Stage V support)
②	Support of aftertreatment based on engine/ECU documentation (Stage V level/ Tier 4 Final level)
③	Aftertreatment solution tested on engine (Stage V level/ Tier 4 Final level)

## 4.1 Engine Control Units

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
AGCO Power																				
EEM4	●	●	②	①	①	②	②	②	②	②	②	②	●	②	②			116.0	<a href="#">EEM4 (page 1)</a>	AGCO Power EEM4
BMC Power																				
ECEMTAG Allspeed																		543.0	<a href="#">ECEMTAG Allspeed (page 1)</a>	BMC ECEMTAG Allspeed
ECEMTAG Singlespeed																		542.0	<a href="#">ECEMTAG Singlespeed (page 1)</a>	BMC ECEMTAG Singlespeed
Baudouin																				
WISE10B/E	●		●			●	●		●	●	●	●	●	●	●			266.0	<a href="#">WISE10B/E (page 1)</a>	Baudouin WISE10B/E
WISE15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			179.0	<a href="#">WISE15 (page 1)</a>	Baudouin WISE15
LECM E6	●	●	●			●	●		●	●	●	●	●	●	●			225.0	<a href="#">LECM E6 (page 1)</a>	Baudouin LECM E6
SECM70	●		●			●	●		●	●	●	●	●	●	●			288.0	<a href="#">SECM70 (page 1)</a>	Baudouin SECM70
LECM E6 20V	●		●			●	●		●	●	●	●	●	●	●			318.0	<a href="#">LECM E6 20V (page 1)</a>	Baudouin LECM E6 20V
WISE13G			●				●		●	●	●	●						505.0	<a href="#">WISE13G (page 1)</a>	Baudouin WISE13G
Caterpillar																				
ADEM & EMCP	②	●	②	①	①	②	②	②	②	②	②	②	①	②	②			17.0	<a href="#">ADEM &amp; EMCP (page 1)</a>	Caterpillar ADEM & EMCP



Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
ADEM A6	②		③			②	②		②	②	②	②		③	②			192.0	<a href="#">ADEM A6 (page 1)</a>	Caterpillar ADEM A6
ADEM	②	●	②	①	①	②	②	②	②	②	②	②	①	②	②	●		10.0	<a href="#">ADEM (page 1)</a>	Caterpillar J1939
ADEM A6 Master	②		③			②	②		②	②	②	②		③	②			373.0	<a href="#">ADEM A6 Master (page 1)</a>	Caterpillar ADEM A6 Master
ADEM A6 Att	②		③			②	②		②	②	②	②		③	②			374.0	<a href="#">ADEM A6 Att (page 1)</a>	Caterpillar ADEM A6 Att
EMCP3	●		●			●	●		●	●	●	●		●	●			375.0	<a href="#">EMCP3 (page 1)</a>	Caterpillar EMCP3 Module
ADEM Alternator	●		●			●	●		●	●	●	●		●	●			376.0	<a href="#">ADEM Alternator (page 1)</a>	Caterpillar ADEM Alternator
ADEM Gas Sensor	●		●			●	●		●	●	●	●		●	●			377.0	<a href="#">ADEM Gas Sensor (page 1)</a>	Caterpillar ADEM Gas Sensor
ADEM Master	●		●			●	●		●	●	●	●		●	●			503.0	<a href="#">ADEM Master (page 1)</a>	Caterpillar ADEM Master
CCM module			●				●	●		●	●			●	●				<a href="#">CCM module (page 1)</a>	I-CB Unit
PL1000 module			●				●	●		●	●			●	●				<a href="#">PL1000 module (page 1)</a>	I-CB Unit
CAT ADEM Main	②		②				②			②	②	②		②	②			534.0	<a href="#">CAT ADEM Main (page 1)</a>	Caterpillar J1939 Main
CAT Exhaust	②		②				②			②	②	②		②	②			537.0	CAT Exhaust (page 1)	Caterpillar J1939 Exhaust Temp.

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
CAT CEM	②		②				②			②	②	②		②	②			535.0	<a href="#">CAT CEM (page 1)</a>	Caterpillar J1939 CEM
Cummins																				
CM2150	③	●	③	●	①	③	③	②	③	③	③	③	①	③	③	●		134.0	<a href="#">CM2150 (page 1)</a>	Cummins CM2150
CM2250 Industrial	③	●	③	●	●	●	③	●	③	③	③	③	①	③	③			59.0	<a href="#">CM2250 Industrial (page 1)</a>	Cummins CM2250
CM2350 G-Drive	③	●	②	●	③	③	③	②	③	③	③	③	①	③	③	●		101.0	<a href="#">CM2350 G-Drive (page 1)</a>	Cummins CM2350
CM2350 Industrial	②	●	②	●	●	●	②	●	②	②	②	②	②	②	②			222.0	<a href="#">CM2350 Industrial (page 1)</a>	Cummins CM2350 Industrial
CM2880 Industrial	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		154.0	<a href="#">CM2880 Industrial (page 1)</a>	Cummins CM2880 Industrial
CM500	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			57.0	<a href="#">CM500 (page 1)</a>	Cummins CM500
CM558	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			33.0	<a href="#">CM558 (page 1)</a>	Cummins CM558
CM570	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			4.0	<a href="#">CM570 (page 1)</a>	Cummins CM570
CM700	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			199.0	<a href="#">CM700 (page 1)</a>	Cummins CM700
CM800	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			67.0	<a href="#">CM800 (page 1)</a>	Cummins CM800
CM850 / CM2880 G-Drive	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			26.0	<a href="#">CM850 / CM2880 G-Drive (page 1)</a>	Cummins CM850
GCS		●	●	●	●			●					●	●				5.0	<a href="#">GCS (page 1)</a>	Cummins GCS
PGI (Obsolete)	②	●	●	●	①	②	②	●	②	②	②	②	①	②	②			43.0	<a href="#">PGI (Obsolete) (page 1)</a>	Cummins PGI (Obsolete)

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
CM2150 Dongfeng	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			218.0	<a href="#">CM2150 Dongfeng (page 1)</a>	Cummins CM2150 Dongfeng
GCS							●			●	●				●			315.0	<a href="#">GCS (page 1)</a>	Cummins GCS
PGI G-Drive	②		●			②	②		②	②	②	②		②	②			333.0	<a href="#">PGI G-Drive (page 1)</a>	Cummins PGI G-Drive
CM2150 Main	●		●			●	●		●	●	●	●		●	●			367.0	<a href="#">CM2150 Main (page 1)</a>	Cummins CM2150 Main
Gas Sensor 1	●		●			●	●		●	●	●	●		●	●			368.0	<a href="#">Gas Sensor 1 (page 1)</a>	Cummins Gas Sensor 1
Gas Sensor 2	●		●			●	●		●	●	●	●		●	●			369.0	<a href="#">Gas Sensor 2 (page 1)</a>	Cummins Gas Sensor 2
CM2350 Main	●		●			●	●		●	●	●	●		●	●			370.0	<a href="#">CM2350 Main (page 1)</a>	Cummins CM2350 Main
CM2358							●	●	●	●	●	●		●	●			232.0	<a href="#">CM2358 (page 1)</a>	Cummins CM2358
CM2358 Parent							●	●	●	●	●	●		●	●			395.0	<a href="#">CM2358 Parent (page 1)</a>	Cummins CM2358 Parent
CM2358 Child 0x00							●	●	●	●	●	●		●	●			396.0	<a href="#">CM2358 Child 0x00 (page 1)</a>	Cummins CM2358 Child 0x00
CM2358 Child 0x01							●	●	●	●	●	●		●	●			397.0	<a href="#">CM2358 Child 0x01 (page 1)</a>	Cummins CM2358 Child 0x01
Daimler Chrysler																				
ADM2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		24.0	<a href="#">ADM2 (page 1)</a>	Daimler Chrysler

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
CPC4	②		②			②	②		②	②	②	②	①	②	②			209.0	<a href="#">CPC4 (page 1)</a>	ADM2 Daimler CPC4
ADM3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			42.0	<a href="#">ADM3 (page 1)</a>	DaimlerChrysler ADM3
Detroit Diesel																				
DDEC IV/V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		9.0	<a href="#">DDEC IV/V (page 1)</a>	DDC DDEC IV/V
Deutz																				
EMR2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		8.0	<a href="#">EMR2 (page 1)</a>	Deutz EMR2
EMR3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		25.0	<a href="#">EMR3 (page 1)</a>	Deutz EMR3
EMR4	③	●	②	●	①	②	③	①	③	③	③	③	①	①	③			70.0	<a href="#">EMR4 (page 1)</a>	Deutz EMR4
EMR5	③		③			③	③		③	③	③	③	①	③	③			194.0	<a href="#">EMR5 (page 1)</a>	Deutz EMR5
Doosan																				
EDC17	③		②			②	③		②	③	③	③	①	②	③			193.0	<a href="#">EDC17 (page 1)</a>	Doosan G2 EDC17
MD1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			206.0	<a href="#">MD1 (page 1)</a>	Doosan MD1
G40 EDC17	③		②				③		②	③	③	③	①	②	③			306.0	<a href="#">G40 EDC17 (page 1)</a>	Doosan G40 EDC17
E-controls																				
EICS	●		●			●	●		●	●	●	●	●	●	●			291.0	<a href="#">EICS (page 1)</a>	Econtrols EICS
EICS Parent	●		●			●	●		●	●	●	●		●	●			358.0	<a href="#">EICS Parent (page 1)</a>	Econtrols EICS Parent

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
EICS Child	●		●			●	●		●	●	●	●		●	●			359.0	<a href="#">EICS Child (page 1)</a>	Econtrols EICS Child
ETECS	●					●	●		●	●	●	●	●	●	●			386.0	<a href="#">ETECS (page 1)</a>	E-controls ETECS
Eicher																				
DCM 7.1	●		②				②		②	②	②	②			②			322.0	<a href="#">DCM 7.1 (page 1)</a>	Eicher DCM 7.1
Enmar Engines																				
Nira i7	●		●			●	●		●	●	●	●		●	●			309.0	<a href="#">Nira i7 (page 1)</a>	Enmar i7
Ford																				
e-control	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			95.0	<a href="#">e-control (page 1)</a>	FORD e-control
General Motors																				
e-control	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		44.0	<a href="#">e-control (page 1)</a>	GM e-control
e-control LCI	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			58.0	<a href="#">e-control LCI (page 1)</a>	GM e-control LCI
MEFI4/MEFI5B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			34.0	<a href="#">MEFI4/MEFI5B (page 1)</a>	GM MEFI4/MEFI5B
MEFI6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		71.0	<a href="#">MEFI6 (page 1)</a>	GM MEFI6
SECM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		35.0	<a href="#">SECM (page 1)</a>	GM SECM
Guascor Energy																				
LECM E6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			147.0	<a href="#">LECM E6 (page 1)</a>	Guascor LECM E6
Hatz																				
EDC17	③	●	②	●	①	③	③	①	③	③	③	③	①	②	③			165.0	<a href="#">EDC17 (page 1)</a>	Hatz EDC17

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
Heinzmann																				
Helenos													●		●			273.0	<a href="#">Helenos (page 1)</a>	Heinzmann Helenos
Pandaros		●											●		●			105.0	<a href="#">Pandaros (page 1)</a>	Heinzmann Pandaros
Huegli Tech																				
SG50 & SG100													●		●			267.0	<a href="#">SG50 &amp; SG100 (page 1)</a>	Huegli Tech SG50 & SG100
Hyundai																				
MD1CC							●			●	●							516.0	<a href="#">MD1CC (page 1)</a>	Hyundai MD1CC
Isuzu																				
ECM	②	●	②	●	①	②	②	②	②	②	②	②	①	②	②	●		36.0	<a href="#">ECM (page 1)</a>	Isuzu ECM
Iveco (FPT)																				
MD1	③		③			③	③		③	③	③	③	①	③	③			187.0	<a href="#">MD1 (page 1)</a>	Iveco MD1
MD1 IPU			③				③		③	③	③	③		②	③			269.0	<a href="#">MD1 IPU (page 1)</a>	Iveco MD1 IPU
EDC / EDC Tier3	②	●	②	●	①	②	②	②	②	②	②	②	①	②	②			14.0	<a href="#">EDC / EDC Tier3 (page 1)</a>	Iveco EDC
Adem III	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			28.0	<a href="#">Adem III (page 1)</a>	Iveco Adem III
EDC17	②		②				②		②	②	②	②		②	②			310.0	<a href="#">EDC17 (page 1)</a>	Iveco EDC17
MD1 Marine	●		●				●		●	●	●	●		●	●			332.0	<a href="#">MD1 Marine (page 1)</a>	Iveco MD1 Marine
EDC Main	②		②				②		②	②	②	②		②	②			351.0	<a href="#">EDC Main (page 1)</a>	Iveco EDC Main

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
SCR Module	●		●				●		●	●	●	●		●	●			352.0	<a href="#">SCR Module (page 1)</a>	Iveco SCR Module
JCB																				
Delphi DCM	③	●	②			③	③		②	③	③	③	●	②	③			23.0	<a href="#">Delphi DCM (page 1)</a>	JCB Delphi DCM
DCM Main	③	●	②			③	③		②	③	③	③		②	③			353.0	<a href="#">DCM Main (page 1)</a>	JCB Delphi DCM Main
DCM Att	●	●	●			●	●		●	●	●	●		●	●			354.0	<a href="#">DCM Att (page 1)</a>	JCB Delphi DCM Att
Jenbacher																				
DIA.NE		●	●					●					●	●				22.0	<a href="#">DIA.NE (page 1)</a>	Jenbacher Diane
DIA.NE.										●	●				●			317.0	<a href="#">DIA.NE. (page 1)</a>	Jenbacher Diane
Jichai																				
EU3A	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			227.0	<a href="#">EU3A (page 1)</a>	Jichai EU3A
John Deere																				
JDEC	③	●	③	●	①	③	③	②	③	③	③	③	①	③	③			7.0	<a href="#">JDEC (page 1)</a>	John Deere JDEC
Kingband																				
GAS										●	●				●			530.0	<a href="#">GAS (page 1)</a>	Kingband-GAS
Kohler																				
KDI	③	●	②	●	①	③	③	②	③	③	③	③	①	②	③			178.0	<a href="#">KDI (page 1)</a>	Kohler KDI
KDI Main	③		②				③		③	③	③	③		②	③			349.0	<a href="#">KDI Main (page 1)</a>	Kohler KDI Main
KDI Att	●		●				●		●	●	●	●		●	●			350.0	<a href="#">KDI Att (page 1)</a>	Kohler KDI Att

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
Kubota																				
ECM	②	●	②	●	①	②	②	②	②	②	②	②	①	②	②	●		122.0	<a href="#">ECM (page 1)</a>	Kubota ECM
EDC17	②	●	②	●	①	②	②	②	②	②	②	②	①	②	②			224.0	<a href="#">EDC17 (page 1)</a>	Kubota EDC17
Liebherr																				
LIDEC1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		135.0	<a href="#">LIDEC1 (page 1)</a>	Liebherr LIDEC1
LIDEC2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			215.0	<a href="#">LIDEC2 (page 1)</a>	Liebherr LIDEC2
LIDEC2 Main	●		●			●	●		●	●	●	●		●	●			347.0	<a href="#">LIDEC2 Main (page 1)</a>	Liebherr LIDEC2 Main
LIDEC2 Knock Level	●		●			●	●		●	●	●	●		●	●			348.0	<a href="#">LIDEC2 Knock Level (page 1)</a>	Liebherr LIDEC2 Knock Level
MAN																				
EDC17	①	●	①	●	①	①	①	①	①	①	①	①	①	①	①			174.0	<a href="#">EDC17 (page 1)</a>	MAN EDC17
EDC/MFR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			29.0	<a href="#">EDC/MFR (page 1)</a>	MAN MFR
EDC17 Master	①	●	①	●	①	①	①	①	①	①	①	①	①	①	①			312.0	<a href="#">EDC17 Master (page 1)</a>	MAN EDC17 Master
EDC17 Slave	●		●			●	●		●	●	●	●	●	●	●			313.0	<a href="#">EDC17 Slave (page 1)</a>	MAN EDC17 Slave
MFR Master	●		●			●	●		●	●	●	●		●	●			362.0	<a href="#">MFR Master (page 1)</a>	MAN MFR Master
MFR Slave	●		●			●	●		●	●	●	●		●	●			363.0	<a href="#">MFR Slave (page 1)</a>	MAN MFR Slave



Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
MFR Att	●		●			●	●		●	●	●	●		●	●			364.0	<a href="#">MFR Att (page 1)</a>	MAN MFR Statistics
MESA Solutions																				
SECM70							●		●	●	●	●	●		●			331.0	<a href="#">SECM70 (page 1)</a>	MESA SECM70
MTU																				
ADEC ECU7 & SAM	②	●	②	●	①	②	②	①	②	②	②	②	①	①	②	●		20.0	<a href="#">ADEC ECU7 &amp; SAM (page 1)</a>	MTU ADEC J1939
ADEC ECU7 & SAM		●	●				●		●	●	●	●			●			37.0	<a href="#">ADEC ECU7 &amp; SAM (page 1)</a>	MTU ADEC J1939 P-engines
DDEC10	②	●	②	●	①	②	②	②	②	②	②	②	①	②	②			117.0	<a href="#">DDEC10 (page 1)</a>	MTU DDEC10
ADEC ECU7		●						●			●		●	●	●			130.0	<a href="#">ADEC ECU7 (page 1)</a>	MTU ECU7
ADEC ECU8 / ECU9	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		125.0	<a href="#">ADEC ECU8 / ECU9 (page 1)</a>	MTU ECU9
MIP4000		●	●					●					●	●				166.0	<a href="#">MIP4000 (page 1)</a>	MTU MIP4000
MIP4000 J1939 v.3 & IEI		●	●					●			●	●	●	●	●		●	212.0	<a href="#">MIP4000 J1939 v.3 &amp; IEI (page 1)</a>	MTU MIP4000 v.3 CAN
ADEC ECU8 & SMART Connect	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		60.0	<a href="#">ADEC ECU8 &amp; SMART Connect (page 1)</a>	MTU SMART Connect
ECU9 Main	●		●			●	●		●	●	●	●		●	●			378.0	<a href="#">ECU9 Main (page 1)</a>	MTU ECU9 Main
Axcres	●		●			●	●		●	●	●	●		●	●			379.0	<a href="#">Axcres (page 1)</a>	MTU Axcres
MDEC			●				●	●		●	●		●	●	●				<a href="#">MDEC (page 1)</a>	I-CB Unit

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
ADEC ECU7			●				●	●		●	●		●	●	●				<a href="#">ADEC ECU7 (page 1)</a>	I-CB Unit
MIP4000 J1939 v.4 & IEI		●	●					●			●	●	●	●	●		●	233.0	<a href="#">MIP4000 J1939 v.4 &amp; IEI (page 1)</a>	MTU MIP4000 v.4 CAN
P-engines Main		●	●				●		●	●	●	●			●			540.0	<a href="#">P-engines Main (page 1)</a>	MTU ADEC J1939 P-engines Main
P-engines EMU		●	●				●		●	●	●	●			●			541.0	<a href="#">P-engines EMU (page 1)</a>	MTU ADEC J1939 P-engines EMU
MWM																				
SECM70	●		●			●	●		●	●	●	●	●	●	●			287.0	<a href="#">SECM70 (page 1)</a>	MWM SECM70
ADEM 4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			201.0	<a href="#">ADEM 4 (page 1)</a>	MWM ADEM 4
Mahindra																				
AFS Diesel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		180.0	<a href="#">AFS Diesel (page 1)</a>	Mahindra AFS
PSI																				
E-control	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			214.0	<a href="#">E-control (page 1)</a>	PSI e-control
Perkins																				
A4E2m or ECM	●			●	●	●	●		●	●	●	●	●	●	●	●		54.0	<a href="#">A4E2m or ECM (page 1)</a>	Perkins 1300
ADEM A6E2/A6E11	②		●			②	②		②	②	②	②	①	②	②			265.0	<a href="#">ADEM A6E2/A6E11 (page 1)</a>	Perkins ADEM A6E11
ECM or ADEM A3/A4/A5	③	●	③	●	①	③	③	①	③	③	③	③	①	③	③	●		12.0	<a href="#">ECM or ADEM A3/A4/A5 (page 1)</a>	Perkins ECM

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
Powerlink																				
Powerlink		●					●		●	●	●	●	●		●			198.0	<a href="#">Powerlink (page 1)</a>	Powerlink
SDEC																				
Bosch EDC17	●		●			●	●		●	●	●	●	●	●	●			301.0	<a href="#">Bosch EDC17 (page 1)</a>	SDEC Bosch EDC17
Denso	●		●			●	●		●	●	●	●	●	●	●			303.0	<a href="#">Denso (page 1)</a>	SDEC Denso
ECTEK F20/F45	●		●			●	●		●	●	●	●	●	●	●			304.0	<a href="#">ECTEK F20/F45 (page 1)</a>	SDEC ECTEK F20/F45
ECTEK F36	●		●			●	●		●	●	●	●	●	●	●			305.0	<a href="#">ECTEK F36 (page 1)</a>	SDEC ECTEK F36
SISU Auto																				
EEM2/EEM3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		18.0	<a href="#">EEM2/EEM3 (page 1)</a>	SISU EEM3 Gen-set
EEM2/EEM3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			19.0	<a href="#">EEM2/EEM3 (page 1)</a>	SISU EEM3 Propulsion
Scania																				
S6 Allspeed	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			11.0	<a href="#">S6 Allspeed (page 1)</a>	Scania S6 Allspeed
S6/OCE1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		16.0	<a href="#">S6/OCE1 (page 1)</a>	Scania S6 Singlespeed
S8 Allspeed	②	●	②	●	●	②	②	②	②	②	②	②	②	②	②			69.0	<a href="#">S8 Allspeed (page 1)</a>	Scania S8 Allspeed
S8 Singlespeed	②	●	②	●	●	②	②	②	②	②	②	②	②	②	②	●		68.0	<a href="#">S8 Singlespeed (page 1)</a>	Scania S8 Singlespeed
PCU	●		●				●		●	●	●	●	●	●	●			299.0	<a href="#">PCU (page 1)</a>	Scania PCU

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
S8 Allspeed main	②		②				②		②	②	②	②			②			326.0	<a href="#">S8 Allspeed main (page 1)</a>	Scania S8 Allspeed Main
ACU	●	●	●	●	●	●	●	●	●	●	●	●		●	●			327.0	<a href="#">ACU (page 1)</a>	Scania S8 ACU
S10 Allspeed			②				②		②	②	②	②			②			334.0	<a href="#">S10 Allspeed (page 1)</a>	Scania S10 Allspeed
S8 Singlespeed main	②		②				②		②	②	②	②			②			360.0	<a href="#">S8 Singlespeed main (page 1)</a>	Scania S8 Singlespeed Main
S6 Allspeed main	●	●	●	●	●	●	●	●	●	●	●	●		●	●			324.0	<a href="#">S6 Allspeed main (page 1)</a>	Scania S6 Allspeed Main
Siemens																				
GCS-E	●		●			●	●		●	●	●	●	●	●	●			284.0	<a href="#">GCS-E (page 1)</a>	Siemens GCS-E
Sinotruk																				
BBM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			223.0	<a href="#">BBM (page 1)</a>	Sinotruk BBM
BBM Main	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			344.0	<a href="#">BBM Main (page 1)</a>	Sinotruk BBM Main
BBM Alarms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			345.0	<a href="#">BBM Alarms (page 1)</a>	Sinotruk BBM Alarms
BBM TankFuel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			346.0	<a href="#">BBM TankFuel (page 1)</a>	Sinotruk BBM TankFuel
Steyr Motors																				
EDC17	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		185.0	<a href="#">EDC17 (page 1)</a>	Steyr EDC17
M1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			66.0	<a href="#">M1 (page 1)</a>	Steyr M1

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
TPEM																				
TPEM		●											●	●				217.0	<a href="#">TPEM (page 1)</a>	TPEM
TPEM											●				●			1033.0	<a href="#">TPEM (page 1)</a>	TPEM
Trijekt Gas																				
Trijekt Gas		●									●		●		●			169.0	<a href="#">Trijekt Gas (page 1)</a>	Trijekt Gas
VM Motori																				
EDC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		32.0	<a href="#">EDC (page 1)</a>	VM Industrial
EDC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		31.0	<a href="#">EDC (page 1)</a>	VM Marine
Volvo Penta																				
EDC7		●	●												●			114.0	<a href="#">EDC7 (page 1)</a>	Volvo EDC7 Allspeed KWP2000
EMS J1587		●	●															163.0	<a href="#">EMS J1587 (page 1)</a>	Volvo EMS J1587
EDC3/EMS1/EMS2/ EMS2.1/EMS2.2/ EMS2.3	②	●	②	●	①	②	②	①	②	②	②	②	①	②	②	●		1.0	<a href="#">EDC3/EMS1/EMS2/ EMS2.1/EMS2.2/ EMS2.3 (page 1)</a>	Volvo Industrial
EMS 2.4	②		②			②	②		②	②	②	②	②	②	②			264.0	<a href="#">EMS 2.4 (page 1)</a>	Volvo Industrial EMS2.4
EDC3/EMS1/EMS2/ EMS2.1/EMS2.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			2.0	<a href="#">EDC3/EMS1/EMS2/ EMS2.1/EMS2.2 (page 1)</a>	Volvo Marine Prop
EDC2	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●			<a href="#">EDC2 (page 1)</a>	Deutz EMR2

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
Marine EMS 2.3/2.4	①		①				①			①	①	①	①	①	①			500.0	<a href="#">Marine EMS 2.3/2.4 (page 1)</a>	Volvo Marine EMS 2.3/2.4
ACM	●		●				●			●	●	●	●	●	●			501.0	<a href="#">ACM (page 1)</a>	Volvo ACM
EMS 2.4	②		②			②	②		②	②	②	②	②	②	②			342.0	<a href="#">EMS 2.4 (page 1)</a>	Volvo Industrial EMS2.4 Main
Waukesha																				
ESM		●	●					●			●		●	●				15.0	<a href="#">ESM (page 1)</a>	Waukesha ESM
ESM2								●					●	●				203.0	<a href="#">ESM2 (page 1)</a>	Waukesha ESM2
ESM2							●			●	●	●				●		1027.0	<a href="#">ESM2 (page 1)</a>	Waukesha ESM2
ESM										●	●					●		316.0	<a href="#">ESM (page 1)</a>	Waukesha ESM
Weichai																				
Wise10B V1	●		●			●	●		●	●	●	●			●			196.0	<a href="#">Wise10B V1 (page 1)</a>	Weichai Wise10B V1
Wise12B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			195.0	<a href="#">Wise12B (page 1)</a>	Weichai Wise12B
Wise13A	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			200.0	<a href="#">Wise13A (page 1)</a>	Weichai Wise13A
Wise15A	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			170.0	<a href="#">Wise15A (page 1)</a>	Weichai Wise15A
Wise18B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			220.0	<a href="#">Wise18B (page 1)</a>	Weichai Wise18B
Wise18B Duel	●		●			●	●		●	●	●	●	●	●	●			294.0	<a href="#">Wise18B Duel (page 1)</a>	Weichai

Manufacturer / ECU type	IntelNano AMF 5	IntelDrive Mobile IntelBifuel IntelDrive Lite	IntelDrive DCU IntelDrive BB	IntelCompact NT	IntelLite NT	IntelLite	IntelLite 4	IntelGen NT IntelSys NT IntelGenGC NT	IntelGen 200 IntelGen 500	IntelGen4 200 IntelGen 500 G2	IntelGen 1000	IntelGen 1000 Marine	IntelSys Gas	IntelSys GSC IntelGen GSC	IntelSys 2000	IntelNano NT	IntelGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
																				Wise18B Duel
Wise10B V2	●		●			●	●		●	●	●	●		●	●			328.0	<a href="#">Wise10B V2 (page 1)</a>	Weichai Wise10B V2
Woodward																				
ProAct ISC			●						●	●	●	●	●	●	●			298.0	<a href="#">ProAct ISC (page 1)</a>	Woodward ProAct ISC
YAMZ																				
EDC7	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			175.0	<a href="#">EDC7 (page 1)</a>	YaMZ EDC7
Yanmar																				
EDC17	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			213.0	<a href="#">EDC17 (page 1)</a>	Yanmar EDC17
TNV	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			89.0	<a href="#">TNV (page 1)</a>	Yanmar TNV
TNV EGC10-30	●					●	●		●	●	●	●			●			388.0	<a href="#">TNV EGC10-30 (page 1)</a>	Yanmar TNV EGC10-30
GY							●		●	●	●	●			●			504.0	<a href="#">GY (page 1)</a>	Yanmar GY
Yuchai																				
YC-BCR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			159.0	<a href="#">YC-BCR (page 1)</a>	Yuchai YC-BCR
YECU	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			156.0	<a href="#">YECU (page 1)</a>	Yuchai YC-ECU
ECU2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			168.0	<a href="#">ECU2 (page 1)</a>	Yuchai YC-LH
ECU2 Main	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			340.0	<a href="#">ECU2 Main (page 1)</a>	Yuchai YC-LH Main
ECU2 Att	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			341.0	<a href="#">ECU2 Att (page 1)</a>	Yuchai YC-LH Att

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliCompact NT	InteliLite NT	InteliLite	InteliLite 4	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano NT	InteliGen 1000SC	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	2.2.0	1.0.1			
Generic Unit																				
n/a	2	●	2	●	●	2	2	2	2	2	2	2	1	2	2	●		255.0	<a href="#">Standard J1939 (page 1)</a>	Standard J1939 engine
n/a	1	●	1	●	●	1	1	1	1	1	1	1	1	1	1	●	●	118.0	<a href="#">Standard J1939 (page 1)</a>	Standard J1939 monitor



## 4.2 Alternator Control Units

Manufacturer / ECU type	InteliNano AMF 5	InteliDrive DCU InteliDrive BB	InteliLite	InteliLite 4	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliGen 1000SC	InteliSys GSC InteliGen GSC	InteliSys 2000	ID	Links in manual	Selection in PC Software
version	1.1.0	1.0.0	1.15.0	1.7.2	1.7.0	2.3.0	3.3.0	1.2.2	1.0.1	1.2.1	1.7.0			
Deep Sea														
DSEA109	●	●	●	●	●	●	●	●	●	●	●	268.0	<a href="#">DSEA109 (page 1)</a>	Deep Sea DSEA109
Generac														
Power Zone ECM-PZ-LSI	●	●	●	●	●	●	●	●	●	●	●	307.0	<a href="#">Power Zone ECM-PZ-LSI (page 1)</a>	Generac Power Zone ECM-PZ- LSI
Leroy Somer														
AVR D500/510/550 Monitor	●	●	●	●	●	●	●	●	●	●	●	191.0	<a href="#">AVR D500/510/550 Monitor (page 1)</a>	Leroy Somer AVR D500/510/550
AVR D500/D510C proprietary control						●	●		●		●	296.0	<a href="#">AVR D500/D510C proprietary control (page 1)</a>	Leroy Somer AVR D500 control
D550 Control					●	●	●				●	400.0	<a href="#">D550 Control (page 1)</a>	Leroy Somer D550 Control
Marathon														
DVR2000EC	●	●	●	●	●	●	●	●	●	●	●	272.0	<a href="#">DVR2000EC (page 1)</a>	Marathon DVR2000EC
Generic Unit														
n/a	●	●		●		●	●	●		●	●	392.0	<a href="#">Standard J1939 (page 1)</a>	Standard J1939 generator

## 4.3 Auxiliary Engine Controllers



















Manufacturer / ECU type	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 1000	InteliGen 1000 Marine	InteliGen 1000SC	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano AMF 5	InteliLite 4	InteliGen4 200 InteliGen 500 G2	InteliGen 200 InteliGen 500	ID	Links in manual	Selection in PC Software
version	2.5.0	1.0.0	4.4.1	3.3.0	1.2.2	1.0.1	1.7.0	1.2.1	1.7.0	1.1.0	1.7.2	2.3.0	1.7.0			
ComAp																
RPU G2 to Master														398.0	<a href="#">RPU G2 to Master (page 1)</a>	RPU G2 to Master
Master to RPU G2														399.0	<a href="#">Master to RPU G2 (page 1)</a>	Master to RPU G2
Continental																
Uninox		●		●			●	●	●	●	●	●		276.0	<a href="#">Uninox (page 1)</a>	Continental Uninox
Heinzmann																
Ariadne						●	●	●	●					274.0	<a href="#">Ariadne (page 1)</a>	Heinzmann Ariadne
GMA / GMF	●						●	●	●					172.0	<a href="#">GMA / GMF (page 1)</a>	Heinzmann GMA / GMF
Kronos							●	●	●					275.0	<a href="#">Kronos (page 1)</a>	Heinzmann Kronos
Huegli Tech																
AF-1500				●	●		●		●					320.0	<a href="#">AF-1500 (page 1)</a>	Huegli Tech AF-1500
MAN																
Data Logger	●	●	●	●	●	●	●	●	●					56.0	<a href="#">Data Logger (page 1)</a>	MAN data logger
Data logger Master		●		●	●	●		●	●					365.0	<a href="#">Data logger Master (page 1)</a>	MAN data logger Master
Data logger Slave		●		●	●	●		●	●					366.0	<a href="#">Data</a>	MAN data logger Slave

Manufacturer / ECU type	InteliDrive Mobile InteliBifuel InteliDrive Lite	InteliDrive DCU InteliDrive BB	InteliGen NT InteliSys NT InteliGenGC NT	InteliGen 1000	InteliGen 1000 Marine	InteliGen 1000SC	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNano AMF 5	InteliLite 4	InteliGen4 200 InteliGen 500 G2	InteliGen 200 InteliGen 500	ID	Links in manual	Selection in PC Software
version	2.5.0	1.0.0	4.4.1	3.3.0	1.2.2	1.0.1	1.7.0	1.2.1	1.7.0	1.1.0	1.7.2	2.3.0	1.7.0			
															<a href="#">logger Slave (page 1)</a>	
THQtronic																
LSU49							●	●	●					295.0	<a href="#">LSU49 (page 1)</a>	THQtronic LSU49
Technoton																
DFM				●	●		●	●	●		●	●	●	321.0	<a href="#">DFM (page 1)</a>	Technoton DFM

## 4.4 Battery Chargers

Manufacturer / ECU type	InteliNano AMIF 5	InteliDrive DCU InteliDrive BB	InteliLite	InteliLite 4		InteliMains 1010 InteliMains 1010 Marii	InteliMains 1000 SC	InteliGen 200 InteliGen 500	InteliGen4 200 InteliGen 500 G2	InteliGen 1000	InteliGen 1000 Marine	InteliGen 1000SC	InteliSys Gas	InteliSys GSC InteliGen GSC	InteliSys 2000	InteliNeo 6000 InteliNeo 5500	InteliNeo 530 BESS	ID	Links in manual	Selection in PC Software
version	1.1.0	1.0.0	1.15.0	1.7.2	2.1.0	1.2.3	1.0.1	1.7.0	2.3.0	3.3.0	1.2.2	1.0.1	1.7.0	1.2.1	1.7.0	2.0.0	1.2.0			
ComAp																				
InteliCharger 120 CAN	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	279.0	<a href="#">InteliCharger 120 CAN (page 1)</a>	ComAp InteliCharger 120 CAN
SENS																				
MicroGenius S2S4 (1)					●	●	●								●		●	390.0	<a href="#">MicroGenius S2S4 (1) (page 1)</a>	SENS MicroGenius S2S4 (1)
MicroGenius S2S4 (2)					●	●	●								●		●	391.0	<a href="#">MicroGenius S2S4 (2) (page 1)</a>	SENS MicroGenius S2S4 (2)







## 4.5 Battery Management System

Manufacturer / ECU type	IntelNeo 6000 IntelNeo 5500	IntelNeo 530 BESS	IntelMains 1010 IntelMains 1010 Marii	IntelGen 1000 Marine	ID	Links in manual	Selection in PC Software
version	2.0.0	1.2.0	1.2.3	1.2.2			
BorgWarner							
MSM					544.0	<a href="#">MSM (page 1)</a>	BorgWarner MSM
CATL							
BMS					1069.0	<a href="#">BMS (page 1)</a>	CATL Battery Management Unit
Guoxuan							
High-Tech BMS					1089.0	<a href="#">High-Tech BMS (page 1)</a>	Guoxuan High-Tech BMS
Moment Energy							
Pack Controller					523.0	<a href="#">Pack Controller (page 1)</a>	Moment Energy Pack Controller
OLiPower							
BMS					1096.0	<a href="#">BMS (page 1)</a>	OLiPower BMS
Orion							
BMS2					508.0	<a href="#">BMS2 (page 1)</a>	Orion BMS2
TOPBAND							
BMS					1106.0	<a href="#">BMS (page 1)</a>	TOPBAND BMS
Volvo Penta							
BMS					389.0	<a href="#">BMS (page 1)</a>	Volvo EMS4 BMS



















## 4.6 Communication Bridges

Manufacturer / ECU type	IntelNano AMF 5	IntelDrive Mobile IntelBifuel IntelDrive Lite	IntelDrive DCU IntelDrive BB	IntelCompact NT	IntelLite NT	IntelLite	IntelLite 4	IntelGen NT IntelSys NT IntelGenGC NT	IntelGen 200 IntelGen 500	IntelGen4 200 IntelGen 500 G2	IntelGen 1000	IntelGen 1000 Marine	IntelSys Gas	IntelSys GSC IntelGen GSC	IntelSys 2000	IntelNeo 530 BESS	IntelGen 1000SC	IntelNeo 6000 IntelNeo 5500	ID	Links in manual	Selection in PC Software
version	1.1.0	2.5.0	1.0.0	2.5.1	2.6.0	1.15.0	1.7.2	4.4.1	1.7.0	2.3.0	3.3.0	1.2.2	1.7.0	1.2.1	1.7.0	1.2.0	1.0.1	2.0.0			
Delta																					
Site Controller																			1083.0	<a href="#">Site Controller (page 1)</a>	Delta Site Controller
MTU																					
Engine Interface Module																			120.0	<a href="#">Engine Interface Module (page 1)</a>	MTU Engine Interface Module
Victron																					
CCGX Gateway																			1052.0	<a href="#">CCGX Gateway (page 1)</a>	Victron CCGX Gateway
Vitobloc																					
Gateway																			1087.0	<a href="#">Gateway (page 1)</a>	Vitobloc Gateway

## 4.7 Genset Controller








Manufacturer / ECU type	InteliGen 1000	InteliSys 2000	InteliNeo 6000 InteliNeo 5500	ID	Links in manual	Selection in PC Software
version	3.3.0	1.7.0	2.0.0			
Cummins						
PCC 3.3				330.0	<a href="#">PCC 3.3 (page 1)</a>	Cummins PCC 3.3
Deep Sea						
8610 MKII				1078.0	<a href="#">8610 MKII (page 1)</a>	Deep Sea 8610 MKII

## 4.8 Ignition Systems

Manufacturer / ECU type	IntelDrive Mobile IntelBifuel IntelDrive Lite	IntelSys Gas	IntelSys 2000	ID	Links in manual	Selection in PC Software
version	2.5.0	1.7.0	1.7.0			
Altronic						
CD200				176.0	<a href="#">CD200 (page 1)</a>	Altronic CD200
NGI 1000RC				221.0	<a href="#">NGI 1000RC (page 1)</a>	Altronic NGI 1000RC
CD200				1031.0	<a href="#">CD200 (page 1)</a>	Altronic CD200
NGI 1000RC				1032.0	<a href="#">NGI 1000RC (page 1)</a>	Altronic NGI 1000RC
Heinzmann						
Phlox				83.0	<a href="#">Phlox (page 1)</a>	Heinzmann Phlox
Huegli Tech						
LEF200				292.0	<a href="#">LEF200 (page 1)</a>	Huegli Tech LEF200
LEF200 Module 1				355.0	<a href="#">LEF200 Module 1 (page 1)</a>	Huegli Tech LEF200 Module 1
LEF200 Module 2				356.0	<a href="#">LEF200 Module 2 (page 1)</a>	Huegli Tech LEF200 Module 2
LEF200 Module 3				357.0	<a href="#">LEF200 Module 3 (page 1)</a>	Huegli Tech LEF200 Module 3
Motortech						
MIC				256.0	<a href="#">MIC (page 1)</a>	Motortech MIC
Woodward						
IC920				293.0	<a href="#">IC920 (page 1)</a>	Woodward IC920




















































## 4.9 Instrumentation

Manufacturer / ECU type	InteliDrive DCU InteliDrive BB	InteliGen 1000	InteliGen 1000 Marine	InteliSys 2000	InteliNeo 6000 InteliNeo 5500	InteliNeo 530 BESS	ID	Links in manual	Selection in PC Software
version	1.0.0	3.3.0	1.2.2	1.7.0	2.0.0	1.2.0			
BENDER									
ISOMETER							513.0	<a href="#">ISOMETER (page 1)</a>	BENDER ISOMETER
Sonceboz									
WasteGate Actuator							522.0	<a href="#">WasteGate Actuator (page 1)</a>	Sonceboz WasteGate Actuator

## 4.10 Inverters - Photovoltaic

Manufacturer / ECU type	IntelliMains 1010 IntelliMains 1010 Marii	IntelliMains 1000 SC	IntelliGen4 200 IntelliGen 500 G2	IntelliGen 1000	IntelliGen 1000 Marine	IntelliGen 1000SC	IntelliNeo 6000 IntelliNeo 5500	IntelliSys 2000	IntelliNeo 530 BESS	ID	Links in manual	Selection in PC Software
version	1.2.3	1.0.1	2.3.0	3.3.0	1.2.2	1.0.1	2.0.0	1.7.0	1.2.0			
ABB												
Trio	●	●	●	●	●	●	●	●		1034.0	<a href="#">Trio (page 1)</a>	ABB Trio
PVS 100	●	●	●	●	●	●	●	●		1037.0	<a href="#">PVS 100 (page 1)</a>	ABB PVS 100
PV110.0	●	●	●	●	●	●	●	●		1038.0	<a href="#">PV110.0 (page 1)</a>	ABB PV110.0
Canadian Solar												
PV Inverter							●			1093.0	<a href="#">PV Inverter (page 1)</a>	CSI PV Inverter
Chint												
PV Inverters							●	●		1076.0	<a href="#">PV Inverters (page 1)</a>	Chint PV Inverters
DEYE												
PV Inverter							●			1103.0	<a href="#">PV Inverter (page 1)</a>	DEYE PV Inverter
Delta												
M	●	●	●	●	●	●	●	●		1040.0	<a href="#">M (page 1)</a>	Delta M
Fronius												
Symo/Primo/Tauro							●	●			<a href="#">Sunspec PV</a>	Sunspec PV
Goodwe												
Inverters SDT, DT, MT	●	●	●	●	●	●	●	●		1055.0	<a href="#">Inverters SDT, DT, MT (page 1)</a>	Goodwe Inverters SDT, DT, MT
Inverters ET, BT	●	●	●	●	●	●	●	●		1056.0	<a href="#">Inverters ET, BT (page 1)</a>	Goodwe Inverters ET, BT
Growatt												
PV Inverter v3.10	●	●	●	●	●	●	●	●		1036.0	<a href="#">PV Inverter v3.10 (page 1)</a>	Growatt PV Inverter v3.10

Manufacturer / ECU type	IntelliMains 1010 IntelliMains 1010 Marii	IntelliMains 1000 SC	IntelliGen4 200 IntelliGen 500 G2	IntelliGen 1000	IntelliGen 1000 Marine	IntelliGen 1000SC	IntelliNeo 6000 IntelliNeo 5500	IntelliSys 2000	IntelliNeo 530 BESS	ID	Links in manual	Selection in PC Software
version	1.2.3	1.0.1	2.3.0	3.3.0	1.2.2	1.0.1	2.0.0	1.7.0	1.2.0			
PV Inverter v1.20	●	●	●	●	●	●	●	●		1057.0	<a href="#">PV Inverter v1.20 (page 1)</a>	Growatt PV Inverter v1.20
Huawei												
SUN2000	●	●	●	●	●	●	●	●		1030.0	<a href="#">SUN2000 (page 1)</a>	Huawei SUN2000
Smart Logger 2000	●	●	●	●	●	●	●	●	●	1051.0	<a href="#">Smart Logger 2000 (page 1)</a>	Huawei Smart Logger 2000
Smart Logger 3000	●	●	●	●	●	●	●	●	●	1054.0	<a href="#">Smart Logger 3000 (page 1)</a>	Huawei Smart Logger 3000
Smart Logger 3000 PV	●	●	●	●	●	●	●	●		1080.0	<a href="#">Smart Logger 3000 PV (page 1)</a>	Huawei Smart Logger 3000 PV
Smart Logger 3000 EMI	●	●	●	●	●	●	●	●	●	1085.0	<a href="#">Smart Logger 3000 EMI (page 1)</a>	Huawei Smart Logger 3000 EMI
Smart Logger 3000 PM	●	●	●	●	●	●	●	●	●	1086.0	<a href="#">Smart Logger 3000 PM (page 1)</a>	Huawei Smart Logger 3000 PM
INVT												
XG50-70KTR	●	●	●	●	●	●	●	●		1088.0	<a href="#">XG50-70KTR (page 1)</a>	INVT XG50-70KTR
Kaco												
Blueplanet TL3							●	●			<a href="#">Sunspec PV</a>	Sunspec PV
SMA												
Sunny Tripower / Sunny Boy	●	●	●	●	●	●	●	●		1028.0	<a href="#">Sunny Tripower / Sunny Boy (page 1)</a>	SMA Sunny Tripower / Sunny Boy
SolidQ	●	●	●	●	●	●	●	●		1043.0	<a href="#">SolidQ (page 1)</a>	SMA SolidQ
DataManager M	●	●	●	●	●	●	●	●		1060.0	<a href="#">DataManager M (page 1)</a>	SMA DataManager M
Schneider												
Conext CL 60E, CL60A	●	●	●	●	●	●	●	●		1029.0	<a href="#">Conext CL 60E, CL60A (page 1)</a>	Schneider Conext CL 60E, CL60A

Manufacturer / ECU type	IntelMains 1010 IntelMains 1010 Marii	IntelMains 1000 SC	IntelGen4 200 IntelGen 500 G2	IntelGen 1000	IntelGen 1000 Marine	IntelGen 1000SC	IntelNeo 6000 IntelNeo 5500	IntelSys 2000	IntelNeo 530 BESS	ID	Links in manual	Selection in PC Software
version	1.2.3	1.0.1	2.3.0	3.3.0	1.2.2	1.0.1	2.0.0	1.7.0	1.2.0			
Conext XW										1064.0	<a href="#">Conext XW (page 1)</a>	Schneider Conext XW
SolarEdge												
SE12.5K - SE120x										1035.0	<a href="#">SE12.5K - SE120x (page 1)</a>	SolarEdge SE12.5K - SE120x
Solis												
PV Inverter										1070.0	<a href="#">PV Inverter (page 1)</a>	Solis PV Inverter
Sungrow												
string Inverters										1039.0	<a href="#">string Inverters (page 1)</a>	Sungrow string Inverters
Data Logger										1058.0	<a href="#">Data Logger (page 1)</a>	Sungrow Data Logger
Generic Unit												
n/a										1041.0	<a href="#">Sunspec PV</a>	Sunspec PV
n/a										1066.0	<a href="#">Sunspec PV 700</a>	Sunspec PV 700


























## 4.11 Inverters - Battery

Manufacturer / ECU type	IntelliGen 1000 Marine	IntelliGen 1000SC	IntelliSys 2000	IntelliNeo 6000 IntelliNeo 5500	IntelliNeo 530 BESS	IntelliMains 1010 IntelliMains 1010 Marii	IntelliMains 1000 SC	IntelliGen4 200 IntelliGen 500 G2	IntelliGen 1000	ID	Links in manual	Selection in PC Software
version	1.2.2	1.0.1	1.7.0	2.0.0	1.2.0	1.2.3	1.0.1	2.3.0	3.3.0			
ABB												
PCS-100	●	●	●	●	●					1045.0	<a href="#">PCS-100 (page 1)</a>	ABB/Fimer PCS-100
Alfen												
TheBattery				●	●					1074.0	<a href="#">TheBattery (page 1)</a>	Alfen TheBattery
Chint												
BESS Inverter	●	●	●	●	●					1071.0	<a href="#">BESS Inverter (page 1)</a>	Chint BESS Inverter
ComAp												
IntelliNeo 530 BESS				●						525.0	<a href="#">IntelliNeo 530 BESS (page 1)</a>	IntelliNeo 530 BESS
IntelliNeo 6000 MultiBESS					●					524.0	<a href="#">IntelliNeo 6000 MultiBESS (page 1)</a>	IntelliNeo 6000 MultiBESS
Delta												
PCS100HV	●	●	●	●	●					1047.0	<a href="#">PCS100HV (page 1)</a>	Delta PCS100HV
DynaPower												
BESS V1	●	●		●	●					1062.0	<a href="#">BESS V1 (page 1)</a>	DynaPower BESS Inverter V1
BTM BESS	●	●	●	●	●					1084.0	<a href="#">BTM BESS (page 1)</a>	DynaPower BTM BESS
BESS V2	●	●		●	●					1046.0	<a href="#">BESS V2 (page 1)</a>	DynaPower BESS Inverter V2
EPC Power												
BESS Inverter	●	●		●	●					1061.0	<a href="#">BESS Inverter (page 1)</a>	EPC Power BESS Inverter
HITACHI												
PQstorl R3			●	●	●					1095.0	<a href="#">PQstorl R3 (page 1)</a>	HITACHI PQstorl R3

Manufacturer / ECU type	IntelGen 1000 Marine	IntelGen 1000SC	IntelSys 2000	IntelNeo 6000 IntelNeo 5500	IntelNeo 530 BESS	IntelMains 1010 IntelMains 1010 Marii	IntelMains 1000 SC	IntelGen4 200 IntelGen 500 G2	IntelGen 1000	ID	Links in manual	Selection in PC Software
version	1.2.2	1.0.1	1.7.0	2.0.0	1.2.0	1.2.3	1.0.1	2.3.0	3.3.0			
Huawei												
Smart Logger 3000 ESS	●	●	●	●	●	●	●	●	●	1081.0	<a href="#">Smart Logger 3000 ESS (page 1)</a>	Huawei Smart Logger 3000 ESS
Jinko Solar												
Sungiga BESS				●	●					1105.0	<a href="#">Sungiga BESS (page 1)</a>	Jinko Sungiga BESS
DC Cabinet	●		●	●	●				●	1107.0	<a href="#">DC Cabinet (page 1)</a>	Jinko DC Cabinet
SunTera G2 DC box				●	●					1108.0	<a href="#">SunTera G2 DC box (page 1)</a>	Jinko SunTera G2 DC box
KORE Power												
BESS Inverter	●	●		●	●					1063.0	<a href="#">BESS Inverter (page 1)</a>	KORE Power BESS Inverter
KSTAR												
GSE			●	●	●					1075.0	<a href="#">GSE (page 1)</a>	KSTAR GSE
Oztek												
BESS V1				●	●					1065.0	<a href="#">BESS V1 (page 1)</a>	Oztek BESS V1
BESS V2				●	●					1077.0	<a href="#">BESS V2 (page 1)</a>	Oztek BESS V2
Pixii												
BESS Gateway	●		●	●	●				●	1102.0	<a href="#">BESS Gateway (page 1)</a>	Pixii BESS Gateway
Pylontech												
BMS				●	●					1079.0	<a href="#">BMS (page 1)</a>	Pylontech BMS
SMA												
Sunny Island	●	●	●	●	●					1044.0	<a href="#">Sunny Island (page 1)</a>	SMA Sunny Island
Sunny Island X	●	●	●	●	●				●	1098.0	<a href="#">Sunny Island X (page 1)</a>	SMA Sunny Island X









Manufacturer / ECU type	IntelGen 1000 Marine	IntelGen 1000SC	IntelSys 2000	IntelNeo 6000 IntelNeo 5500	IntelNeo 530 BESS	IntelMains 1010 IntelMains 1010 Marii	IntelMains 1000 SC	IntelGen4 200 IntelGen 500 G2	IntelGen 1000	ID	Links in manual	Selection in PC Software
version	1.2.2	1.0.1	1.7.0	2.0.0	1.2.0	1.2.3	1.0.1	2.3.0	3.3.0			
Shanghai Electric												
SCU	●	●	●	●	●					1073.0	<a href="#">SCU (page 1)</a>	Elite SCU
Sinexcel												
PW2 / PWS1	●	●	●	●	●					1048.0	<a href="#">PW2 / PWS1 (page 1)</a>	Sinexcel PW2 / PWS1
PW1-135M	●		●	●	●				●	1104.0	<a href="#">PW1-135M (page 1)</a>	Sinexcel PWS1-135M BESS
Tesla												
Megapack	●	●	●	●	●					1049.0	<a href="#">Megapack (page 1)</a>	Tesla Megapack
System Controller v2	●	●	●	●	●					1097.0	<a href="#">System Controller v2 (page 1)</a>	Tesla System Controller v2
Generic Unit												
n/a	●	●		●	●					1042.0	<a href="#">Sunspec BESS</a>	Sunspec BESS
n/a	●	●		●	●					1067.0	<a href="#">Sunspec BESS 700</a>	Sunspec BESS 700

## 4.12 Power Inverters










Manufacturer / ECU type	IntelliNeo 6000 IntelliNeo 5500	IntelliNeo 530 BESS	IntelliMains 1010 IntelliMains 1010 Marii	IntelliGen 1000	IntelliGen 1000 Marine	IntelliSys 2000	ID	Links in manual	Selection in PC Software
version	2.0.0	1.2.0	1.2.3	3.3.0	1.2.2	1.7.0			
Danfoss									
Microgrid Converter							509.0	<a href="#">Microgrid Converter (page 1)</a>	Danfoss Microgrid Converter
Motor Inverter							510.0	<a href="#">Motor Inverter (page 1)</a>	Danfoss Motor Inverter
Line Converter							511.0	<a href="#">Line Converter (page 1)</a>	Danfoss Line Converter
Switch Control Converter							512.0	<a href="#">Switch Control Converter (page 1)</a>	Danfoss Switch Converter
SINOSOAR									
ESS Inverter							1094.0	<a href="#">ESS Inverter (page 1)</a>	SINOSOAR ESS Inverter
TRUMPF									
AC 3025							1090.0	<a href="#">AC 3025 (page 1)</a>	TRUMPF TruConvert AC 3025



## 4.13 Stepper Control Units

Manufacturer / ECU type	IntelMains 1000 SC	IntelGen 1000SC	IntelSys Gas	IntelSys 2000	ID	Links in manual	Selection in PC Software
version	1.0.1	1.0.1	1.7.0	1.7.0			
Motortech							
Varistep3 (1)					257.0	<a href="#">Varistep3 (1) (page 1)</a>	Motortech Varistep3 (1)
Varistep3 (2)					258.0	<a href="#">Varistep3 (2) (page 1)</a>	Motortech Varistep3 (2)

## 4.14 Motor Control

Manufacturer / ECU type	IntelliGen 1000	IntelliSys 2000	IntelliNeo 6000 IntelliNeo 5500	ID	Links in manual	Selection in PC Software
version	3.3.0	1.7.0	2.0.0			
Danfoss						
VLT AQUA Drive				1099.0	<a href="#">VLT AQUA Drive (page 1)</a>	Danfoss VLT AQUA Drive
SEL						
SEL 700				1101.0	<a href="#">SEL 700 (page 1)</a>	SEL 700
Schneider						
ASCO 7000				1100.0	<a href="#">ASCO 7000 (page 1)</a>	Schneider ASCO 7000

## 4.15 User device

Manufacturer / ECU type	IntelliLite 4		IntelliMains 1010 IntelliMains 1010 Marii	IntelliMains 1000 SC	IntelliGen4 200 IntelliGen 500 G2	IntelliGen 1000	IntelliGen 1000 Marine	IntelliGen 1000SC	IntelliSys 2000	IntelliNeo 6000 IntelliNeo 5500	IntelliNeo 530 BESS	IntelliNano AMF 5	IntelliGen 200 IntelliGen 500	ID	Links in manual	Selection in PC Software
version	1.7.2	2.1.0	1.2.3	1.0.1	2.3.0	3.3.0	1.2.2	1.0.1	1.7.0	2.0.0	1.2.0	1.1.0	1.7.0			
Canbus																
n/a	●	●	●	●	●	●	●	●	●	●	●	●	●	323.0	J1939 User Device	J1939 User Device
Modbus																
n/a	●	●	●	●	●	●	●	●	●	●	●			1024.0	Modbus User Device	Modbus User Device
n/a			●	●	●	●	●	●		●	●			1072.0	Sunspec User Device	Sunspec User Device

# 5 Principle of ECU support

Electronic Control Units (ECU) support is the ability of the ComAp controller to interface with a multitude of ECUs irrespective of their design function.

The two most common interfaces are CAN (with J1939 protocol) and Modbus but other possibilities also exist and are supported by ComAp controllers.

In order for a controller to support an ECU it is key that the detailed ECU communication specification is made available to ComAp.

Every ECU that has been analyzed by ComAp engineers is then described as a unique ECU Module and added into our ECU Library.

The Library is then distributed as a package and can be imported into the respective ComAp configuration tool by the end user.

Different tools support different package formats. PSI package files are used by IntelliConfig and IXC package files are used by all other tools.

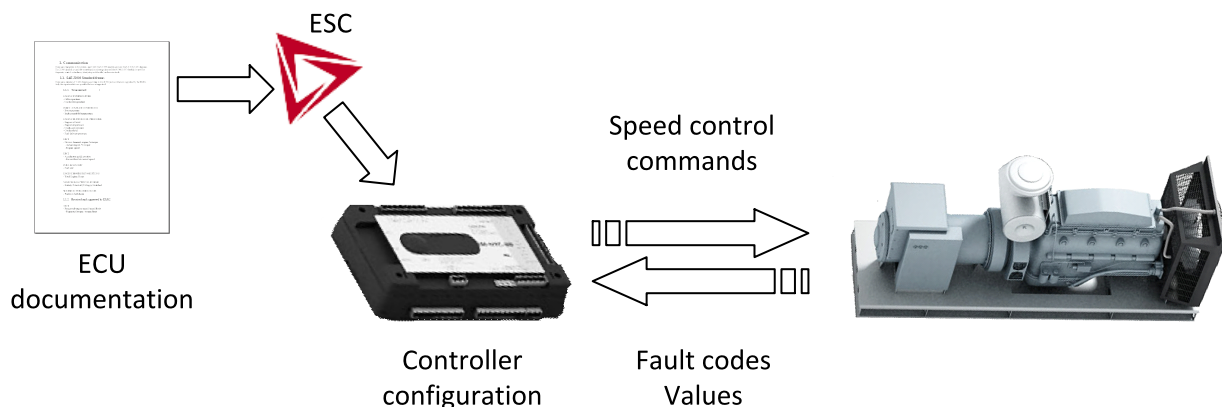
Due to quick development in this area it is strongly recommended to check up ComAp web pages ([www.comap-control.com](http://www.comap-control.com)) for software and documentation updates ahead of carrying on with projects comprising electronic engines.

## 5.1 What must be done to support a new ECU?

Let's say about units communicating over CAN bus and using J1939 protocol (we will leave out specific units - using RS232/RS485 or their own CAN bus lines, Modbus). We cannot rely on ECU brief specification which states that the unit supports J1939 protocol but we have to study a comprehensive specification describing all details of data communicated by the unit. Only then it is possible to create an ECU module and test it with the engine. So the necessary steps are in brief:

Study ECU documentation

- If the ECU is fully compatible with SAE J1939-71, an ESC for "Standard J1939 engine" can be used
- If the ECU is sufficiently but not fully consistent with SAE J1939-71, a new ECU module has to be created in ComAp
- If the ECU communicates over Modbus, we need detailed documentation of Modbus registers.
- The controller with new ECU module has to be tested with the actual device (without testing the functionality is only theoretical – operating conditions of ECUs can vary a lot (for example sequence of activating/deactivating of ECU inputs during starting/stopping of the engine))



## 5.2 What data can be transmitted to / from ECU?

There are generally four types of data communicated between the controller and ECU:

- Values read from the ECU (e.g. Engine coolant temperature, Lube oil pressure)
- Values/parameters written to ECU (e.g. Speed control, Frequency select)
- Commands written to ECU (e.g. Start/Stop, Fault reset)
- Fault codes generated by the ECU

## 5.3 Installing new package

The "ECU Library-x.y" package can be downloaded from ComAp website ([www.comap-control.com](http://www.comap-control.com)) and imported into a PC software in the same way as a standard controller firmware package.

It can also be a part of an installation package, in this case it is not necessary to import it separately.

## 5.4 Configuration

### 5.4.1 InteliNano<sup>NT</sup>

- Open NanoEdit PC software
- Open controller configuration
- Go to ECU configuration window (Miscellaneous > Engine control unit)
- Choose the ECU from the list
- Write the configuration to the controller

**Note:** InteliNano<sup>NT</sup> controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>1</sup>	BINOUT to the ECU <sup>2</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Coolant Temperature	Red Lamp	APP	Stop command
3	Oil Pressure			Frequency selection
4	Fuel Level			Idle / Nominal command
5	Total Engine Hours			
6	Empty			
7	Percent Load			

### 5.4.2 InteliDrive Nano

- Open DriveEdit PC software
- Open controller configuration
- Go to ECU configuration window (Miscellaneous > Engine control unit)
- Choose the ECU from the list
- Write the configuration to the controller

---

<sup>1</sup>Depends on the ECU capability

<sup>2</sup>Depends on the ECU capability

**Note:** IntelliDrive Nano controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>1</sup>	BINOUT to the ECU <sup>2</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Coolant Temperature	Red Lamp	APP	Stop command
3	Oil Pressure			Frequency selection
4	Fuel Level			Idle / Nominal command
5	Total Engine Hours			
6	Empty			
7	Percent Load			

### 5.4.3 IntelliLite<sup>NT</sup>, IntelliCompact<sup>NT</sup>

**Note:** Controllers IntelliLite<sup>NT</sup> MRS3, IntelliLite<sup>NT</sup> MRS10, IntelliLite<sup>NT</sup> MRS11, IntelliLite<sup>NT</sup> AMF8, IntelliLite<sup>NT</sup> AMF20 don't support electronic engines (engines equipped with ECU).

- > Open LiteEdit PC software
- > Open controller configuration
- > Enter controller password (controller > enter password)
- > Open the modify window (controller > configuration > modify...)
- > Click on ECU icon Check the "electronic engine is connected" check button
- > Choose the ECU from the list below
- > Confirm OK
- > Write the configuration to the controller

**Note:** IntelliLite<sup>NT</sup> and IntelliCompact<sup>NT</sup> controllers do not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>3</sup>	BINOUT to the ECU <sup>4</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Fuel Rate	Red Lamp	APP	Stop command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Flash Yellow Lamp (AWL)		Idle / Nominal command
5	Oil Pressure	Fast Flash Yellow Lamp (AWL)		SdOverride
6	Intake Pressure	Flash Red Lamp (RSL)		Auxiliary Shutdown
7	Percent Load	Fast Flash Red Lamp (RSL)		Regen. Inhibit Switch
8	DPF Tank Level	DPF Inhibit Lamp		Regen. Force Switch
9	DPF Soot Load	SCR Inhibit Lamp		
10	DPF Lamp			
11	HEST Lamp			

<sup>1</sup>Depends on the ECU capability

<sup>2</sup>Depends on the ECU capability

<sup>3</sup>Depends on the ECU capability

<sup>4</sup>Depends on the ECU capability

12	Empty			
13	DEF Low Level Lamp			
14	Total Engine Hours			
15	Total Fuel Used			

## 5.4.4 InteliLite ,InteliLite 4

- > Open InteliConfig PC software
- > Open controller connection
- > Enter controller password (controller > enter password)
- > Open the controller configuration window (controller > controller configuration)
- > Select modules folder
- > Click on + add new module in ECU section
- > Choose the ECU from the list on right hand side
- > Click on Add module
- > Confirm by OK and Restart

**Note:** InteliLite controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.

**Note:** InteliLite 4 controller provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O Configuration card of InteliConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.

**Note:** It may happen that some commands such as Nominal Speed Switch or Force Regeneration have "Reserved" selected as source. This source is working, but its not currently visible to users in selected firmware.

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>1</sup>	BINOUT to the ECU <sup>2</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Fuel Rate	Red Lamp	APP	Stop command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Flash Yellow Lamp (AWL)		Idle / Nominal command
5	Oil Pressure	Fast Flash Yellow Lamp (AWL)		SdOverride
6	Intake Pressure	Flash Red Lamp (RSL)		Auxiliary Shutdown
7	Percent Load	Fast Flash Red Lamp (RSL)		Regen. Inhibit Switch
8	DPF Tank Level	DPF Inhibit Lamp		Regen. Force Switch
9	DPF Soot Load	SCR Inhibit Lamp		ATT Interlock
10	DPF Lamp			
11	HEST Lamp			
12	SCR Severity Lamp			
13	DEF Low Level Lamp			
14	SCR Lamp			

<sup>1</sup>Depends on the ECU capability

<sup>2</sup>Depends on the ECU capability

15	DPF Status			
16	DPF Regen Active			
17	Total Engine Hours			
18	Total Fuel Used			

### 5.4.5 IntelliGen200, IntelliGen500

- > Open IntelliConfig PC software
- > Open controller connection
- > Enter controller password (controller > enter password)
- > Open the controller configuration window (controller > controller configuration)
- > Select modules folder
- > Click on + add new module in ECU section
- > Choose the ECU from the list on right hand side
- > Click on Add module
- > Confirm by OK and Restart

**Note:** IntelliGen200, IntelliGen500 controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>1</sup>	BINOUT to the ECU <sup>2</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Fuel Rate	Red Lamp	APP	Stop command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Flash Yellow Lamp (AWL)		Idle / Nominal command
5	Oil Pressure	Fast Flash Yellow Lamp (AWL)		SdOverride
6	Intake Pressure	Flash Red Lamp (RSL)		Auxiliary Shutdown
7	Percent Load	Fast Flash Red Lamp (RSL)		Regen. Inhibit Switch
8	DPF Tank Level	DPF Inhibit Lamp		Regen. Force Switch
9	DPF Soot Load	SCR Inhibit Lamp		ATT Interlock
10	DPF Lamp			
11	HEST Lamp			
12	SCR Severity Lamp			
13	DEF Low Level Lamp			
14	SCR Lamp			
15	DPF Status			
16	DPF Regen Active			
17	Total Engine Hours			
18	Total Fuel Used			

### 5.4.6 IntelliDrive Lite

- > Open LiteEdit PC software
- > Open controller configuration

<sup>1</sup>Depends on the ECU capability

<sup>2</sup>Depends on the ECU capability



- Enter controller password (controller > enter password)
- Open the modify window (controller > configuration > modify...)
- Click on ECU icon Check the "electronic engine is connected" check button
- Choose the ECU from the list below
- Confirm OK
- Write the configuration to the controller

**Note:** *InteliDrive Lite controller does not provide configurable inputs/outputs for engine parameters or commands. The parameters are fixed and cannot be changed.*

Default parameters for ECU (J1939 only)				
NO.	ANAIN from the ECU	BININ from the ECU	ANAOUT to the ECU <sup>1</sup>	BINOUT to the ECU <sup>2</sup>
1	Engine speed	Yellow Lamp	Speed control	Start command
2	Fuel Rate	Red Lamp	APP	Stop command
3	Coolant Temperature	Wait to Start Lamp		Frequency selection
4	Intake Temperature	Flash Yellow Lamp (AWL)		Idle / Nominal command
5	Oil Pressure	Fast Flash Yellow Lamp (AWL)		SdOverride
6	Intake Pressure	Flash Red Lamp (RSL)		Auxiliary Shutdown
7	Percent Load	Fast Flash Red Lamp (RSL)		Regen. Inhibit Switch
8	DPF Tank Level	DPF Inhibit Lamp		Regen. Force Switch
9	DPF Soot Load	SCR Inhibit Lamp		
10	DPF Lamp			
11	HEST Lamp			
12	Empty			
13	DEF Low Level Lamp			
14	Total Engine Hours			
15	Total Fuel Used			

### 5.4.7 InteliDrive DCU , InteliDrive Mobile

- Open DriveConfig PC software
- Open controller configuration
- Add ECU to the configuration (modules card > ECU, check the ECU-1 Used check box)
- Choose the ECU from the list
- Write the configuration to the controller

**Note:** *InteliDrive DCU and InteliDrive Mobile controllers provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O card of DriveConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.*

**Note:** *It may happen that some commands as Start request, Stop request have a red background. It means that these ECU commands do not have assigned a source value from the controller e.g. Starter, Stop pulse.*

**Note:** *The default configuration of ECU I/O is different for each particular ECU.*

<sup>1</sup>Depends on the ECU capability

<sup>2</sup>Depends on the ECU capability

## 5.4.8 IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup>, IntelliSys Gas, IntelliSys GSC, IntelliDrive BaseBox

- Open GenConfig PC software
- Open controller configuration
- Choose the ECU from the list (modules card > ECU)
- Click on Insert
- Write the configuration to the controller

**Note:** IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup>, IntelliSys Gas, IntelliSys GSC and IntelliDrive BaseBox controllers provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O card of GenConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.

**Note:** It may happen that some commands as Start request, Stop request have a red background. It means that these ECU commands do not have assigned a source value from the controller e.g. Starter, Stop pulse.

**Note:** The default configuration of ECU I/O is different for each particular ECU.

## 5.4.9 IntelliGen 1000 , IntelliNeo, IntelliGen 500 G2, IntelliGen4 200 and IntelliSys 2000

- Open IntelliConfig PC software
- Open controller connection
- Enter controller password (controller > enter password)
- Open the controller configuration window (controller > controller configuration)
- Select Modules tab
- Click on + Add New Module in ECU section
- Choose the ECU from the list on right hand side
- Click on Add module
- Confirm by OK and Restart

**Note:** IntelliGen 1000 , IntelliNeo, IntelliGen 500 G2, IntelliGen4 200 and IntelliSys 2000 controllers provide configurable inputs/outputs for engine parameters or commands. These lists of supported parameters are available in I/O Configuration card of IntelliConfig. For list of supported parameters or commands refer to particulate ECU type in this manual.

**Note:** It may happen that some commands such as Nominal Speed Switch or Force Regeneration have "Reserved" selected as source. This source is working, but its not currently visible to users in selected firmware.

**Note:** The default configuration of ECU I/O is different for each particular ECU.

## 5.5 Proprietary ECU/protocols

Some ECUs use different kind of communication other than CAN or use proprietary protocol. These ECUs have specific solutions dedicated to each unit and we can divide them to two main groups:

>

ECU with proprietary communication protocol that is supported by a controller (e.g. Cummins GCS or Leroy Somer AVR). It is possible to connect such ECU directly (without I-CB unit).

>

ECU with proprietary communication protocol that is not supported in a controller (e.g. MTU/MDEC CAN bus). These units are supported with the use of an I-CB unit or IntelliGateway 330(e.g. **MIP 4000 J1939 v3.x** (page 483)).

## 5.6 How to create a constant for ECU control

There are at least two ways in **GenConfig** software:

1. By math function ADD in PLC where first input is a required analog value (constant) and the second input is value 0. The output of the function is a constant which can be used as a source for ECU control. In this example is created constant = 2.

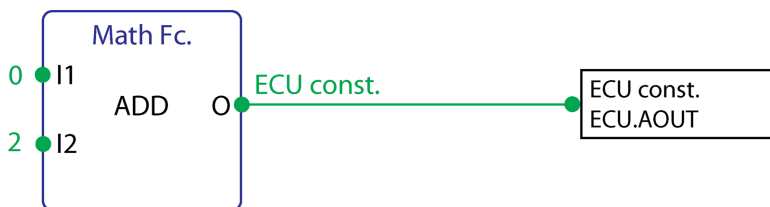


Image 4.1 PLC constant for ECU control

2. By any of not used ExtValue1deflt - ExtValue4deflt setpoint. The value of an ExtValueXdeflt setpoint can be used as a source for ECU control. It is recommended to use a source Logical 1 for a particular ExtValueXreset (in LBI card).

There is a recommended way in **DriveConfig** software:

3. By math function ADD in PLC where first input is a required analog value (constant) and the second input is value 0. The output of the function is a constant which can be used as a source for ECU control. In this example is created constant = 2.

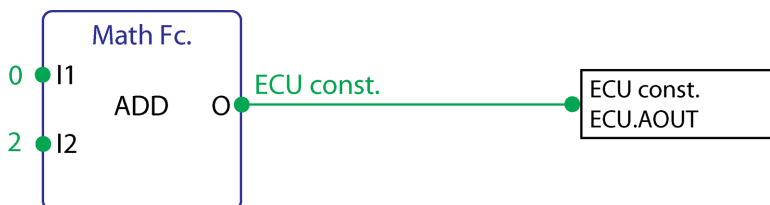


Image 4.2 PLC constant for ECU control

## 5.7 ECU Value Editor

For controllers that are using IntelliMonitor the ECU Value Editor (EVE) is used to add user defined ECU signals. EVE is specialized PC tool that can be used to insert parameters into a ECU module, which then could be accessed and configured inside GenConfig or DriveConfig. The maximum number of parameters is 4/4/4/4 of BI/BO/AI/AO value types.

For IntelliConfig based controllers this can be done within the PC tool itself. User can either define parameters in a blank ECU named "J1939 User Device" or add extra parameters to an existing ECU using the "J1939 Parameters" tab in the ECU configuration window. After the parameters definition in the "J1939 Parameters" tab, they will be available as normal signals in the I/O configuration tab. Maximum number of parameters depends on the controller. See table below:

CU Family	BIN	BOUT	AIN	AOUT	Max # User J1939 ECUs
Nano	10	10	10	10	2
IL	10	10	10	10	2 / 3 (AMF8-9 / AMF25)
IG200	10	10	10	10	4
IG500	10	10	10	10	4 / 8 / 10 (STD / Extended_Features / PV_support)
IB/H500	24	24	16	16	9
IG/M 1000	16	16	12	12	16
Marine, IS, Hybrid	32	32	24	24	32

Only supported communication protocol is J1939, other protocols aren't supported (eg. Modbus).

For more information about installation and use of EVE please refer to ECU Value Editor Guide.

This tool exist also as part as "J1939 Parameters" tab in IntelliConfig. For more information about this function please refer to IntelliConfig's Global Guide.

## 5.8 Combustion Engines specific support

Following table describes default speed mapping for Acceleration pedal position (APP) or Requested Speed control. Depending on controller, selected frequency or selected ECU configuration one of the options is selected.

### 5.8.1 Speed control

ANAOUT to the ECU (Frequency selection set to 50Hz)		
Speed Request	Requested Speed	Accelerator Pedal Position
0%	1350 RPM	0%
50%	1500 RPM	50%
100%	1650 RPM	100%
ANAOUT to the ECU (Frequency selection set to 60Hz)		
Speed Request	Requested Speed	Accelerator Pedal Position
0%	1620 RPM	0%
50%	1800 RPM	50%
100%	1980 RPM	100%

**Note:** The speed control over the CAN bus (J1939 protocol) has to be supported by the engine ECU. Without it supporting ComAp controllers cannot adjust the engine speed.

### 5.8.2 SAE - J1939 diagnostic connector

A Description of Off-Board diagnostic connector supposed to be used on engine to get the access to the engine communication links.

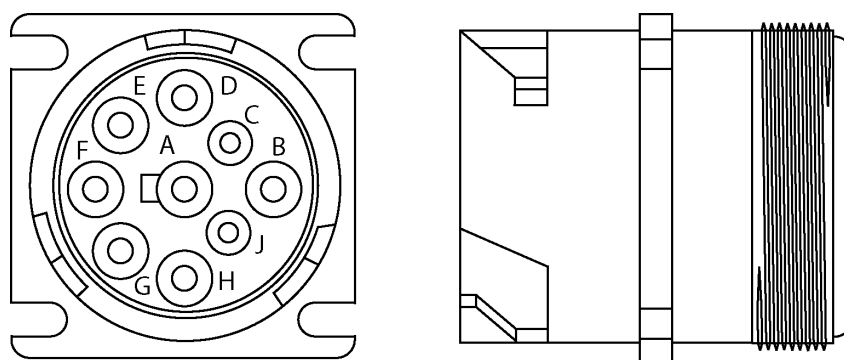


Image 4.3 SAE - J1939 diagnostic connector

Pin label	Meaning
<b>A</b>	Battery negative
<b>B</b>	Battery positive - unswitched
<b>C</b>	CAN H
<b>D</b>	CAN L
<b>E</b>	CAN SHLD
<b>F</b>	SAE J1708 +
<b>G</b>	SAE J1708 -
<b>H</b>	Proprietary OEM use
<b>J</b>	Proprietary OEM use

### 5.8.3 Fault codes – FMI table

To inform a service about engine failure sends the ECU a fault code to the controller (e.g. SAE J1939-73 protocol). The Fault codes are shown as a code and/or as a text. The code consists of:

- SPN number (suspect parameter number) – is a particular code for each fault,
- FMI number (failure mode) – is a particular code for each cause of fault,
- OC number (occurrence count) – is an ECU internal counter for each combination of SPN and FMI.

The table describes the cause of fault base on the FMI code:

FMI	Meaning	FMI	Meaning
0	Data valid but above normal operational range – most severe level	16	Data valid but above normal operating range – moderately severe level
1	Data valid but below normal operational range – most severe level	17	Data valid but below normal operating range – least severe level
2	Data erratic, intermittent or incorrect	18	Data valid but below normal operating range – moderately severe level
3	Voltage above normal or shorted to high source	19	Received network data in error
4	Voltage below normal or shorted to low source	20	Data drifted high
5	Current below normal or open circuit	21	Data drifted low
6	Current above normal or grounded circuit	22	Reserved for SAE assignment
7	Mechanical system not responding or out of adjustment	23	Reserved for SAE assignment
8	Above frequency or pulse width or period	24	Reserved for SAE assignment
9	Abnormal update rate	25	Reserved for SAE assignment

10	Abnormal rate of change	26	Reserved for SAE assignment
11	Root cause not known	27	Reserved for SAE assignment
12	Bad intelligent device or component	28	Reserved for SAE assignment
13	Out of calibration	29	Reserved for SAE assignment
14	Special instructions	30	Reserved for SAE assignment
15	Data valid but above normal operating range – least severe level	31	Condition exists

## 5.8.4 After-treatment support

Emission standards are requirements that set specific limits to the amount of pollutants that can be released into the environment. Many emissions standards focus on regulating pollutants released by power plants, small equipment such as lawn mowers and diesel generators.

The U.S. Environmental Protection Agency (EPA) and the European Parliament and the Council (EU) began to enforce limits on diesel exhaust emissions from non-road mobile machinery engines in a series of steps called "Tier" levels or "Stage" levels respectively. These regulations have introduced successively more strict limitations on carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM) and non-methane hydrocarbons (NMHC). In response to these regulations, engine manufacturers began introducing innovative design changes and sophisticated engine control systems that have successfully reduced the major pollutants in diesel exhaust to comply with each successive "Tier" or "Stage" level. Emission standards to be applied nowadays (2019) for machinery placed to the market are mainly Tier 4 Final /Stage V standards.

The aftertreatment technologies include e.g. selective catalytic reduction (SCR) to control NOx and diesel particulate filters (DPF) to capture the remaining carbon particles. While most diesel engines will require SCR to meet the NOx limits for both Tier 4 Final / Stage V, some engine models will be able to meet the emission regulations for PM without a DPF. In addition, exhaust gas recirculation (EGR) combined with a DPF may be used in some engine platforms to reduce NOx in place of SCR to meet Tier 4 Final / StageV.






ComAp is continuously following this new emission trends. The investigation brings to ComAp controllers the ability to read the parameters related to the both emission standards as well as to control the engine aftertreatment subsystem directly by the controller or by service if needed. (In general, the aftertreatment system is primarily driven by the engine itself and does not require any external control.) The build-in displays as well as external displays offer in context with Tier 4 Final /Stage V icons to display the state of the engine and aftertreatment system. It is even more intuitive for the service or maintenance of the engine. Particular products provide different level of aftertreatment support. See the table below for details.

**Note:** *Aftertreatment has to be supported by the engine ECU. Without its support ComAp controllers cannot read related data, show the icon on displays nor control the after-treatment.*

For complete support of aftertreatment functions there are three parts with Tier4 support needed: controller firmware, display firmware and ECU Library.

Please refer to **Compatibility Table (page 10)** for more details. Follow the particular New Features List for most recent information.

Following table shows list of available icons (symbols) related to after-treatment support. There are often more inputs for control the icons than stated in SPN column, this table serves just as overview.

SPN	Icon name	Displayed Icon	Note
3697 6915	Diesel Particulate Filter Lamp Command SCR System Cleaning Lamp		Indicates Regeneration / Cleaning of Aftertreatment subsystems is needed, is ongoing or will be initiated soon.
3703 6918	DPF Active Regeneration Inhibited Due to Inhibit Switch SCR System Cleaning Inhibited Due to Inhibit Switch		Indicates Regeneration / Cleaning of Aftertreatment subsystems is inhibited by user intervention.
3698	Exhaust System High Temperature Lamp		Indicates High exhaust system temperature. Usually due to active DPF regeneration.
5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Lamp		Indicates low amount of DEF in the tank.
5246	Aftertreatment SCR Operator Inducement Severity		Indicates issues with SCR system user should be aware of. (DEF Level, DEF Quality, SCR tampering or other SCR technical failures).  This lamp might not work on IGS-NT platform.

624	Amber Warning Lamp		
623	Red Stop Lamp		
1081	Engine Wait to start Lamp (Glow Lamp)		

Beside icons there are few other signal that are crucial for aftertreatment support. These are summarized in following table.

SPN	Name	Description
3719	DPF1 Soot Load	Indicates the soot load percent of diesel particulate filter in per cent. Read by ComAp controller.
1761	DEF Level	Indicates Aftertreatment 1 Diesel Exhaust Fluid Tank Level in per cent. Read by ComAp controller.
3695	Aftertreatment Regeneration Inhibit Switch	Signal used to control the aftertreatment. This switch inhibits aftertreatment regeneration. Transmitted by ComAp controller.
3696	Aftertreatment Regeneration Force Switch	Signal used to control the aftertreatment. This switch force aftertreatment regeneration. Transmitted by ComAp controller.
N/A	Interlock	Singal used to enable/disable aftertreatment regeneration. Transmitted by ComAp controller.

### General manual regeneration procedure:

Regeneration start:

State: DPF lamp blinks

1. User action: open GCB (if controled), prepare genset for regeneration (go to manual mode, turn on LBI GCB Disable (if controled), LBI Force Protections Override (optional), set Overspeed Limit SP (optional)

CU action: turn off protections and change limit for overspeed

2. User action: close interlock (if interlock is available)

CU action: sends ATT interlock on CAN bus

State: Engine running at nominal speed

3. User action: activate force regeneration

Regeneration active:

State: HEST lamp is on (usually)

Regeneration end:



State: DPF lamp stops blinking, HEST lamp is off, regeneration ended (engine now runs in Idle or Nominal speed)

1. User action: turn of force regeneration (if its not pulse) and interlock open (if its available)
2. User action: Turn off LBI GCB disable (if controled), LBI Force Protection Override, SP Speed Override Limit
3. User action: stop engine or switch to AUTO



# 6 List of ECU

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## 6.1 Combustion Engines

### 6.1.1 Agco Power engines support

ECU Type	Engine type
<a href="#">EEM4 (page 63)</a>	All Offroad, marine, land generating engines

#### EEM4

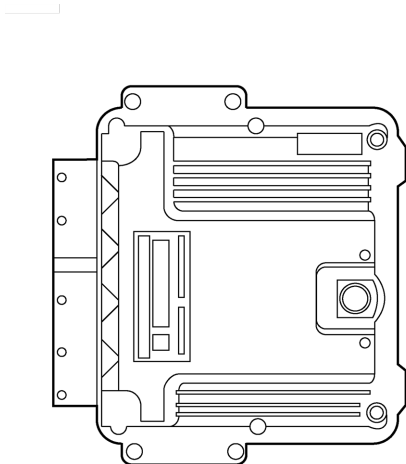


Image 5.1 EEM4

#### Controllers that support the EEM4:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Start Request
Stop <sub>4,5,6,7</sub>		Stop Request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active

		Regeneration
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
SCR <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
DPFSootThr <sub>1,2,3,4,5,6,7</sub>	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
LowIdle		Engine Low Idle Switch
Droop		Droop Percentage Request
HighIdle		Engine High Idle Switch
AltLowIdle		Alternative Low Idle Selection
AltHighIdle		Alternative High Idle Selection
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU "K" connector	Tyco 62pin connector (837074045)	Controller
CAN H	54	45	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM








<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

<b>CAN L</b>	76	44	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,3,5	57,58,59	N/A
<b>Battery - (negative)</b>	2,4,6	60,61,62	N/A
<b>Key Switch</b>	88	55	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see AGCO Power EEM4 Fault Codes on page 1093**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

AGCO Power EEM4 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

## 6.1.2 Baudouin engines support

ECU Type	Engine type
<a href="#">WISE 10B/E (page 75)</a>	Baudouin diesel engines 12M26, 12M33, 16M55
<a href="#">WISE 15A (page 79)</a>	Diesel engines type 4M06G45/6, 4M06G50/5, 6M21G400/6, 6M21G500/5, 6M33G660/6, 6M33G825/5
<a href="#">LECM E6 (page 67)</a>	Gas engines 12M33, 12M55, 16M33, 12M55NG and 16M33NG
<a href="#">SECM70 (page 73)</a>	Gas engines 6M33NG, 6M21NG, 6M16NG, 6M11NG, 4M11NG and 12M33NG
<a href="#">LECM E6 20V (page 82)</a>	Gas Engines
<a href="#">WISE 13G (page 86)</a>	Genset engines 6M33EU V

### LECM E6

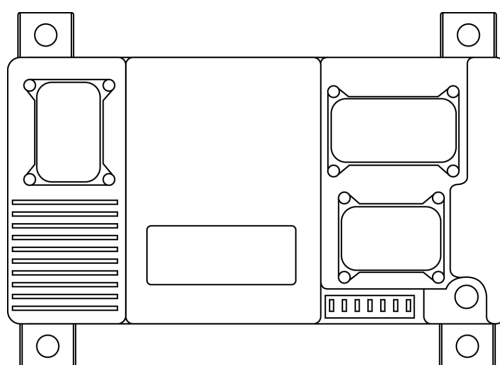


Image 5.2 LECM E6

### Controllers that support the LECM E6

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
Oil Pump Ind. <sub>1,2,3,4,5,6,7</sub>	8001	Propulsion Motor Oil Pump Service Indicator
Oil Pump Stat <sub>1,2,3,4,5,6,7</sub>	8002	Propulsion Motor Oil Pump Operating Status
Fan1Enable <sub>1,2,3,4,5,6,7</sub>	8003	Power Electronics Coolant Fan 1 Enable Command
Fan1PwrHold <sub>1,2,3,4,5,6,7</sub>	8004	Power Electronics Coolant Fan 1 Power Hold
Fan1EnableStat <sub>1,2,3,4,5,6,7</sub>	8007	Power Electronics Coolant Fan 1 Enable Status
Coolant Fan 1 <sub>1,2,3,4,5,6,7</sub>	8014	Power Electronics Coolant Fan 1 Operating Status
Coolant Fan 2 <sub>1,2,3,4,5,6,7</sub>	8016	Power Electronics Coolant Fan 2 Power Hold

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SparkPlgCyl1		Spark Plug Life Indicator Cylinder 1
SparkPlgCyl2		Spark Plug Life Indicator Cylinder 2
SparkPlgCyl3		Spark Plug Life Indicator Cylinder 3
SparkPlgCyl4		Spark Plug Life Indicator Cylinder 4
SparkPlgCyl5		Spark Plug Life Indicator Cylinder 5
SparkPlgCyl6		Spark Plug Life Indicator Cylinder 6
SparkPlgCyl7		Spark Plug Life Indicator Cylinder 7
SparkPlgCyl8		Spark Plug Life Indicator Cylinder 8
SparkPlgCyl9		Spark Plug Life Indicator Cylinder 9
SparkPlgCyl10		Spark Plug Life Indicator Cylinder 10
SparkPlgCyl11		Spark Plug Life Indicator Cylinder 11
SparkPlgCyl12		Spark Plug Life Indicator Cylinder 12
SparkPlgCyl13		Spark Plug Life Indicator Cylinder 13
SparkPlgCyl14		Spark Plug Life Indicator Cylinder 14
SparkPlgCyl15		Spark Plug Life Indicator Cylinder 15
SparkPlgCyl16		Spark Plug Life Indicator Cylinder 16
SparkPlgCyl17		Spark Plug Life Indicator Cylinder 17
SparkPlgCyl18		Spark Plug Life Indicator Cylinder 18
SparkPlgCyl19		Spark Plug Life Indicator Cylinder 19
SparkPlgCyl20		Spark Plug Life Indicator Cylinder 20
Throttle1TPS		Throttle 1 TPS
Throttle2TPS		Throttle 2 TPS
BpassVlv1Pos		Bypass Valve 1 Position
Altronic RPM*		Altronic RPM
AltronicVtag		Altronic Supply Voltage
CH4Concentrat		CH4 Concentration
H2SConcentrat		H2S Concentration
APP <sub>2,1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1



T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
RelHumidity <sub>1,2,3,4,5,6,7</sub>	354	Relative Humidity
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost <sub>1,2,3,4,5,6,7*</sub>	1128	Engine Turbocharger 2 Boost Pressure
P-Turbo3Boost <sub>1,2,3,4,5,6,7*</sub>	1129	Engine Turbocharger 3 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out <sub>1,2,3,4,5,6,7</sub>	1184	Engine Turbocharger 1 Turbine Outlet Temperature
T-Turbo2Out <sub>1,2,3,4,5,6,7</sub>	1185	Engine Turbocharger 2 Turbine Outlet Temperature
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level

Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
FuelFlowRate <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos <sub>2,1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
ExhO2SensFuelC <sub>1,2,3,4,5,6,7</sub>	1695	Engine Exhaust O2 Sensor Fueling Correction
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
TurboBpssCmd <sub>1,2,3,4,5,6,7</sub>	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
P-IntakeMan <sub>2,1,2,3,4,5,6,7</sub>	3562	Engine Intake Manifold #2 Pressure
ThrottleVlv <sub>2,1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
T-Coolant <sub>2,1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
T-AT1GasCatInt <sub>1,2,3,4,5,6,7</sub>	4753	Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature
T-AT1GasCatOut <sub>1,2,3,4,5,6,7</sub>	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
TurboBypass <sub>1,1,2,3,4,5,6,7</sub>	5366	Engine Turbocharger Compressor Bypass Actuator 1 Desired Position
TurboBypass <sub>1,1,2,3,4,5,6,7</sub>	5367	Engine Turbocharger Compressor Bypass Actuator 1 Preliminary FMI
TurboBypass <sub>1,1,2,3,4,5,6,7</sub>	5368	Engine Turbocharger Compressor Bypass Actuator 1 Temperature Status
P-Fuel Prech. <sub>1,2,3,4,5,6,7</sub>	6573	Engine Prechamber Fuel Absolute Pressure
Cyl 1IgnOffset <sub>1,2,3,4,5,6,7</sub>	7356	Engine Cylinder 1 Ignition Timing Offset
Cyl 2IgnOffset <sub>1,2,3,4,5,6,7</sub>	7357	Engine Cylinder 2 Ignition Timing Offset
Cyl 3IgnOffset <sub>1,2,3,4,5,6,7</sub>	7358	Engine Cylinder 3 Ignition Timing Offset
Cyl 4IgnOffset <sub>1,2,3,4,5,6,7</sub>	7359	Engine Cylinder 4 Ignition Timing Offset
Cyl 5IgnOffset <sub>1,2,3,4,5,6,7</sub>	7360	Engine Cylinder 5 Ignition Timing Offset
Cyl 6IgnOffset <sub>1,2,3,4,5,6,7</sub>	7361	Engine Cylinder 6 Ignition Timing Offset
Cyl 7IgnOffset <sub>1,2,3,4,5,6,7</sub>	7362	Engine Cylinder 7 Ignition Timing Offset
Cyl 8IgnOffset <sub>1,2,3,4,5,6,7</sub>	7363	Engine Cylinder 8 Ignition Timing Offset
Cyl 9IgnOffset <sub>1,2,3,4,5,6,7</sub>	7364	Engine Cylinder 9 Ignition Timing Offset
Cyl10IgnOffset <sub>1,2,3,4,5,6,7</sub>	7365	Engine Cylinder 10 Ignition Timing Offset
Cyl11IgnOffset <sub>1,2,3,4,5,6,7</sub>	7366	Engine Cylinder 11 Ignition Timing Offset
Cyl12IgnOffset <sub>1,2,3,4,5,6,7</sub>	7367	Engine Cylinder 12 Ignition Timing Offset

Cyl13IgnOffset <sub>1,2,3,4,5,6,7</sub>	7368	Engine Cylinder 13 Ignition Timing Offset
Cyl14IgnOffset <sub>1,2,3,4,5,6,7</sub>	7369	Engine Cylinder 14 Ignition Timing Offset
Cyl15IgnOffset <sub>1,2,3,4,5,6,7</sub>	7370	Engine Cylinder 15 Ignition Timing Offset
Cyl16IgnOffset <sub>1,2,3,4,5,6,7</sub>	7371	Engine Cylinder 16 Ignition Timing Offset
Cyl17IgnOffset <sub>1,2,3,4,5,6,7</sub>	7372	Engine Cylinder 17 Ignition Timing Offset
Cyl18IgnOffset <sub>1,2,3,4,5,6,7</sub>	7373	Engine Cylinder 18 Ignition Timing Offset
Cyl19IgnOffset <sub>1,2,3,4,5,6,7</sub>	7374	Engine Cylinder 19 Ignition Timing Offset
Cyl20IgnOffset <sub>1,2,3,4,5,6,7</sub>	7375	Engine Cylinder 20 Ignition Timing Offset
Fan1Speed <sub>1,2,3,4,5,6,7</sub>	8005	Power Electronics Coolant Fan 1 Speed Command
Fan1StatusCode <sub>1,2,3,4,5,6,7</sub>	8008	Power Electronics Coolant Fan 1 Controller Status Reason Code
HumSensAirTemp <sub>1,2,3,4,5,6,7</sub>	8011	Humidity Sensor Air Temperature
P-Oil 2 <sub>1,2,3,4,5,6,7</sub>	9653	Engine Oil Pressure 2

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
DesiredPower*		Desired Power From Generator
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power
DroopAccelItr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	DB9 Pin	Service 3 Pin Connector	Controller
<b>CAN H</b>	J2-7	7	A	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	J2-015	5	C	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	J2-8	2	B	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	J1-121	N/A	N/A	N/A
<b>Battery - (negative)</b>	J1-122,123	N/A	N/A	N/A
<b>Key Switch</b>	J1-012	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see Baudouin LECM E6 Fault Codes on page 1097**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin LECM E6 aftertreatment lamps							
	Not Supported		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## SECM70

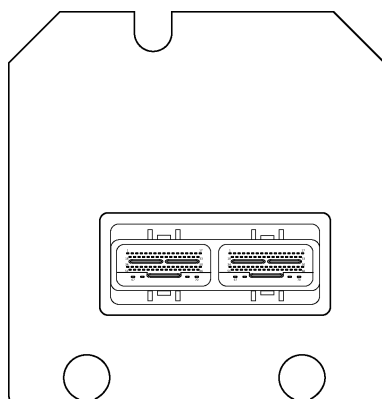


Image 5.3 SECM70

### Controllers that support the SECM70

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
FuelVlvPosCmd <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
Pwr-Real <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 70-pin connector	Controller
CAN H	37	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	54	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	68	N/A
Battery - (negative)	69, 70	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.









Available list of texts of fault codes see **Baudouin SECM70 Fault Codes on page 1105**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin SECM70 aftertreatment lamps							
	Not Supported		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 10B/E

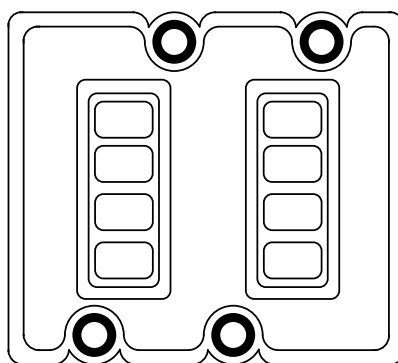


Image 5.4 WISE 10B/E

## Controllers that support the WISE 10B/E

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OCTempStat10B		Over coolant temperature status 10B
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status

AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T50Switch		T50 Switch
MultiState		Multi-state Switch
AirHeating		Air Heating Status
Start <sub>4,5,6,7</sub>		Engine Compartment Start Button
Stop <sub>4,5,6,7</sub>		Engine Compartment Stop Button
PedalAccSpeed		Remote Pedal Access Enable Switch For Speed Demand
PedalAccIdle		Remote Pedal Access Idle Increase Switch For Speed Governor
Brake		Engine Brake Switch
Diagnostic		Diagnostic Request Switch
A/C		A/C Switch
Neutral		Neutral Gear Position
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SCRCatTnkLv1 <sub>1,2,3,4,5,6,7</sub>		Aftertreatment SCR Catalyst Tank Level 1 (Prop)
SCRCatTnkTemp1 <sub>1,2,3,4,5,6,7</sub>		Aftertreatment SCR Catalyst Tank Temperature 1 (Prop)
SCRCatTnkLv2 <sub>1,2,3,4,5,6,7</sub>		Aftertreatment SCR Catalyst Tank Level 2 (Prop)
SCRCatTnkTemp2 <sub>1,2,3,4,5,6,7</sub>		Aftertreatment SCR Catalyst Tank Temperature 2 (Prop)
AT1OutNOx_0x00 <sub>1,2,3,4,5,6,7</sub>		Aftertreatment 1 Outlet NOx 1 0x00
OCTempStat10E <sub>1,2,3,4,5,6,7</sub>		Overcoolant temperature status 10E
P-ExtCrankcase <sub>1,2,3,4,5,6,7</sub>	22	Engine Extended Crankcase Blow-by Pressure
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLv1 <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment



TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TotalFuelUsed <sub>2,1,2,3,4,5,6,7</sub>	1040	Total Fuel Used (Gaseous)
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand <sub>2,1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
Pumping <sub>1,2,3,4,5,6,7</sub>	5398	Estimated Pumping - Percent Torque
DriverWarning <sub>1,2,3,4,5,6,7</sub>	5825	Driver Warning System Indicator Status
Emission <sub>1,2,3,4,5,6,7</sub>	5826	Emission Control System Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
PedalDEC1		Accelerator Pedal Signal Of DEC1
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-TachoShaft <sub>1,2,3,4,5,6,7*</sub>	1623	Tachograph output shaft speed

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

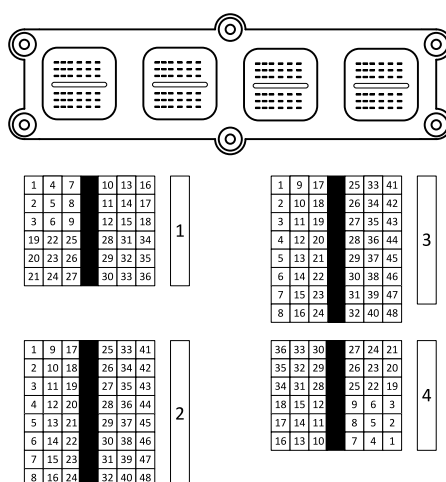


Image 5.5 ECU connector

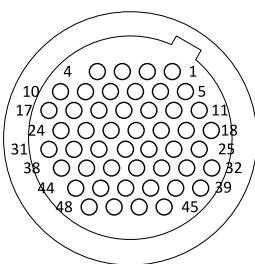


Image 5.6 48-Pin connector

Function	Master ECU connectors	16-Pin connector	Controller
<b>CAN H</b>	4.22	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	4.14	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4.23	14	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.01,4.04,4.05,4.07,4.08	16	N/A
<b>Battery - (negative)</b>	4.06,4.09,4.10,4.11,4.12,4.13,4.16	4	N/A
<b>Key Switch</b>	4.36		Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	3.09		SG OUT
<b>Analog Speed Control</b>	3.01		SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

Available list of texts of fault codes see **Baudouin WISE10B/E Fault Codes** on page 1105

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin WISE10B/E aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Solid On Blink slow		Not Supported		Not Supported

## WISE 15A

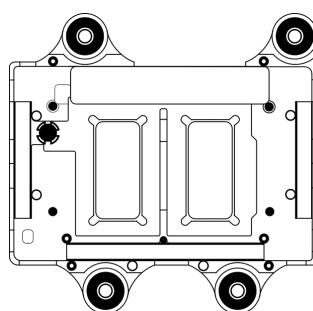


Image 5.7 WISE 15A

## Controllers that support the WISE 15A

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
T50Switch		T50 Switch
MultiState		Multi-state Switch
AirHeating		Air Heating Status
Start <sub>4,5,6,7</sub>		Engine Compartment Start Button
Stop <sub>4,5,6,7</sub>		Engine Compartment Stop Button
PedalAccSpeed		Remote Pedal Access Enable Switch For Speed Demand
PedalAccIdle		Remote Pedal Access Idle Increase Switch For Speed Governor
Brake		Engine Brake Switch
Diagnostic		Diagnostic Request Switch
A/C		A/C Switch
Neutral		Neutral Gear Position
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-RoadSurface <sub>1,2,3,4,5,6,7</sub>	79	Road Surface Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
PedalDEC1		Accelerator Pedal Signal Of DEC1
DisPedalDEC1		Distance Accelerator Pedal Signal Of DEC1
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU Powerkit plug	Controller
CAN H	X1-42	CAN1 (extension modules/J1939) – CAN H
CAN COM	X1-44	CAN1 (extension modules/J1939) – CAN COM
CAN L	X1-43	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X1-01,03,05	N/A
Battery - (negative)	X1-02,04,06	N/A
Key Switch	X1-59	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Baudouin WISE15 Fault Codes on page 1109**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin WISE15 aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Not Supported		Not Supported		Not Supported

## LECM E6 20V

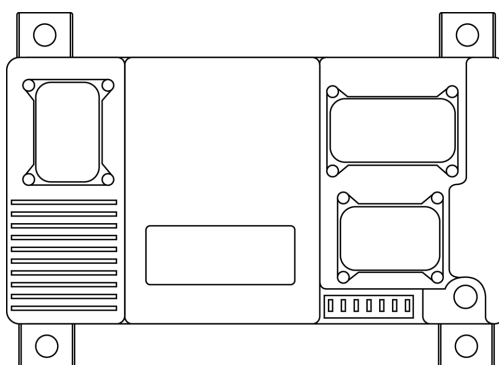


Image 5.8 LECM E6 20V

## Controllers that support the LECM E6 20V

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Altronic RPM <sub>3</sub> *		Altronic RPM
AltronicVoltag <sub>3</sub>		Altronic Supply Voltage
CH4Concentrat <sub>3</sub>		CH4 Concentration
H2SConcentrat <sub>3</sub>		H2S Concentration
T-MaxExh <sub>1,2,3,4,5,6,7</sub>		Highest Exhaust Temp
MaxExhCyl <sub>1,2,3,4,5,6,7</sub>		Highest Exhaust Cylinder

T-MinExh <sub>1,2,3,4,5,6,7</sub>		Lowest Exhaust Temp
MinExhCyl <sub>1,2,3,4,5,6,7</sub>		Lowest Exhaust Cylinder
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
RelHumidity <sub>1,2,3,4,5,6,7</sub>	354	Relative Humidity
P-Turbo3Boost <sub>1,2,3,4,5,6,7*</sub>	1129	Engine Turbocharger 3 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level

Cyl9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
FuelFlowRate <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
P-IntakeMan <sub>2,1,2,3,4,5,6,7</sub>	3562	Engine Intake Manifold #2 Pressure
ThrottleVlv <sub>2,1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
T-Coolant <sub>2,1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
P-Fuel Prech. <sub>1,2,3,4,5,6,7</sub>	6573	Engine Prechamber Fuel Absolute Pressure
HumSensInletP <sub>1,2,3,4,5,6,7</sub>	8008	Humidity Sensor Inlet Pressure
HumSensAirTemp <sub>1,2,3,4,5,6,7</sub>	8011	Humidity Sensor Air Temperature
P-Oil <sub>2,1,2,3,4,5,6,7</sub>	9653	Engine Oil Pressure 2
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	DB9 Pin	Service 3 Pin Connector	Controller
CAN H	J2-7	7	A	CAN1 (extension modules/J1939) – CAN H
CAN COM	J2-015	5	C	CAN1 (extension modules/J1939) – CAN COM
CAN L	J2-8	2	B	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	J1-121	N/A	N/A	N/A
Battery - (negative)	J1-122,123	N/A	N/A	N/A
Key Switch	J1-012	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see Baudouin LECM E6 Fault Codes on page 1097**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin LECM E6 aftertreatment lamps							
	Not Supported		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 13G

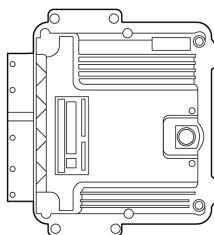


Image 5.9 WISE 13G

### Controllers that support the WISE 13G

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OCTempStat		Overcoolant temperature status
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DriverWarning <sub>1,2,3,4,5,6,7</sub>	5825	Driver Warning System Indicator Status
Emission <sub>1,2,3,4,5,6,7</sub>	5826	Emission Control System Operator Inducement Severity
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X1 Connector	Harness	Controller
CAN H	75	47P-38	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	53	47P-39	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,5	ECU +	N/A
Battery - (negative)	2,4,6	ECU -	N/A
Key Switch	88	31P-7	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Baudouin WISE13G Fault Codes on page 1112**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Baudouin WISE13G aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Solid On Blink slow		Not Supported		Not Supported

## 6.1.3 Caterpillar engines support

ECU Type	Engine type
<a href="#">CCM with ADEM or EMCP2 (page 115)</a>	3500 series
<a href="#">PL1000 with ADEM or EMCP2 (page 116)</a>	3500 series
<a href="#">ADEM A4 with EMCP3.x or EMCP4.x (page 96)</a>	C series, 3400 series
<a href="#">ADEM A4 Master with EMCP (page 118)</a>	C series, 3400 series
<a href="#">EMCP3.x or EMCP4.x (page 116)</a>	EMCP3.x, EMCP4.x
<a href="#">ADEM Gas Sensor (page 123)</a>	
<a href="#">ADEM Alternator (page 124)</a>	
<a href="#">ADEM A3, ADEM A4, ADEM A5 (page 89)</a>	C series
<a href="#">ADEM Main (page 1)</a>	C series
<a href="#">ADEM CEM (page 1)</a>	Aftertreatment module
<a href="#">ADEM Exhaust Temp. (page 1)</a>	Exhaust Temperature sensors
<a href="#">ADEM A6 (page 102)</a>	C4.4, C9.3B, C13B and C7.1 Tier4Final / Stage V
ADEM II is not supported!	

### ADEM A3, ADEM A4, ADEM A5

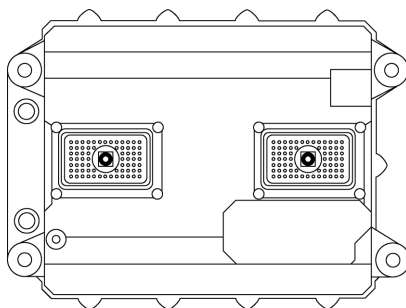


Image 5.10 ADEM A3

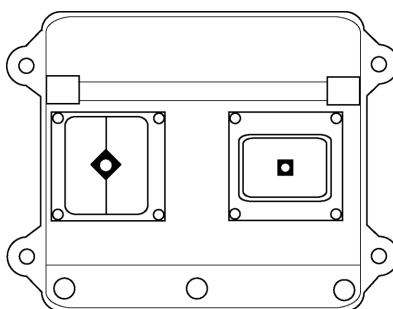


Image 5.11 ADEM A4

## Controllers that support the ADEM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff1	632	Engine Fuel Shutoff 1 Control
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
FuelLeakage1	1239	Engine Fuel Leakage 1
FuelLeakage2	1240	Engine Fuel Leakage 2
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
OilPrimPmp	3550	Engine Oil Priming Pump Switch
OilPrim	3551	Engine Oil Priming State
ESDRequest	3607	Engine Emergency (Immediate) Shutdown Indication
AirShutoff	3667	Engine Air Shutoff Status
DPFIInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ATTEnableStat	7851	Aftertreatment System Enable Status
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
TranDefuel	786	Transmission Defuel Actuator
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ATTSysEnab	8148	Aftertreatment System Enable Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-FuelFitDiff	95	Engine Fuel Filter Differential Pressure
FuelLevel1	96	Fuel Level 1

P-OilFiltDiff	99	Engine Oil Filter Differential Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
P-GasFuelSppl	159	Engine Gaseous Fuel Supply Pressure 1
SysCharging	167	Charging System Potential (Voltage)
Battery	168	Battery Potential / Power Input 1
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TransOil	177	Transmission Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft*	191	Transmission Output Shaft Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1	441	Auxiliary Temperature 1
Spd-Desired*	515	Engine's Desired Operating Speed
TranGear	523	Transmission Current Gear
TranGearSelec	524	Transmission Selected Gear
GasFuelCrrFct	1116	Gaseous Fuel Correction Factor
T-AltBearing1	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3	1126	Engine Alternator Winding 3 Temperature
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature

T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2	1169	Engine Turbocharger 2 Speed
T-Turbo1CInt	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Turbo2Intake	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate	1241	Engine Fuel System 1 Gas Mass Flow Rate
Cyl 1KnockLvl	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl	1371	Engine Cylinder 20 Knock Level
P-Auxiliary1	1387	Auxiliary Pressure #1
FuelGravity	1389	Engine Fuel Specific Gravity
P-Fuel1VlvInt	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff	1391	Engine Fuel Valve 1 Differential Pressure



Cyl 1IgnOutput	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput	1396	Engine Cylinder 4 Ignition Transformer Secondary Output
Cyl 5IgnOutput	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput	1402	Engine Cylinder 10 Ignition Transformer Secondary Output
Cyl11IgnOutput	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput	1405	Engine Cylinder 13 Ignition Transformer Secondary Output
Cyl14IgnOutput	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime1	1433	Engine Desired Ignition Timing 1
IgnitionTime	1436	Engine Actual Ignition Timing
FuelVlvPos1	1442	Engine Fuel Valve 1 Position
StarterMode	1675	Engine Starter Mode
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio	1767	Specific Heat Ratio
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1

T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut	2435	Sea Water Pump Outlet Pressure
P-AirFilt2Diff	2809	Engine Air Filter 2 Differential Pressure
ThrottleCmd	3464	Engine Throttle Actuator 1 Control Command
T-1Fuel2	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Operating	3543	Engine Operating State
RemainingTime	3544	Time Remaining in Engine Operating State
DerateRequest	3644	Engine Derate Request
ChrgAirCoolLvl	3668	Engine Charge Air Cooler Coolant Level
TurboBpssPos	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
AftcoolCoolLvl	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-ExhAverage	4151	Engine Exhaust Temperature Average
T-ExhBank2	4152	Engine Exhaust Bank 2 Temperature Average
T-ExhBank1	4153	Engine Exhaust Bank 1 Temperature Average
SCR1	4332	Aftertreatment 1 SCR System 1 State
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
DEFQTTank	4367	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Tank Volume
T-DEFQT	4368	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Temperature
DEFPumpDrive	4375	Aftertreatment 1 Diesel Exhaust Fluid Pump Drive Percentage
P-IntManAbs	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
DEFLowLevel <sub>5,6</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
P-FuelFiltInt	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
DEFTnkFillVlv	5434	Aftertreatment 1 Diesel Exhaust Fluid Tank Fill Valve Command
P-FilFuelDeliv	5579	Engine Filtered Fuel Delivery Pressure
P-ThrottleDiff	5631	Engine Throttle Valve 1 Differential Pressure
P-OilFiltDiffEx	6321	Engine Oil Filter Differential Pressure (Extended Range)
P-SCRIntake1	6586	Aftertreatment 1 SCR Intake Pressure
P-DEFDoser	6875	Aftertreatment 1 Diesel Exhaust Fluid Doser Pressure
ATTSCRDosStat	9176	Aftertreatment SCR Dosing Mode Status
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ATTSCRDosing	9175	Aftertreatment SCR Dosing Mode Command

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

### Recommended wiring ADEM A4

Function	ECU 70pin AMP connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,55	N/A
Battery - (negative)	61,63,65,69	N/A
Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	66 (38-S-SPD <sup>2</sup> )	SG OUT
Analog Speed Control	68 (39-D-SPD <sup>1</sup> )	SG COM

### Recommended wiring ADEM A5

Function	ECU 86pin J1 connector	Controller
CAN H	25	CAN1 (extension modules/J1939) – CAN H
CAN COM	27	CAN1 (extension modules/J1939) – CAN COM
CAN L	26	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	84, 85, 86	N/A
Battery - (negative)	81, 82, 83	N/A
Key Switch	69	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








<sup>2</sup>Caterpillar PWM speed control terminal

**Note:** In case of Marine application the settings of the ECU has to be set to "Starboard". It changes the ECU address to 0 which is expected by the ComAp controller. Settings "Port" uses an address 1 and is not allowed.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 1**. Available list of texts of fault codes see **Caterpillar ADEM Fault Codes**.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar J1939 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Not Supported		Solid On Blink slow
					Solid On

## ADEM A4 with EMCP3.x or EMCP4.x

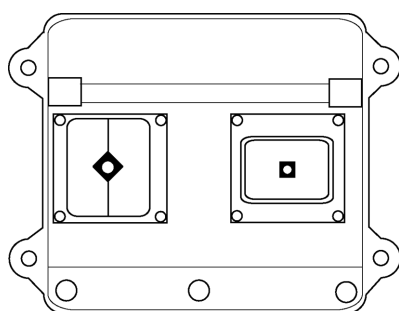


Image 5.12 ADEM A4 with EMCP3.x or ADEM A4 with EMCP4.x

**Note:** The configuration and connection is the same on the gen-set equipped with ADEM A4 (ECU) and EMCP 3.x or EMCP 4.x (generator set controller). The ADEM 4.x is the successor of the ADEM 3.x.

## Controllers that support the ADEM with EMCP

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
StopLamp	623	EMCP Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WarningLamp	624	EMCP Amber Warning Lamp

FuelShutoff <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
ProtectLamp	987	EMCP Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
MalfuncLamp	1213	EMCP Malfunction Indicator Lamp
FuelLeakage <sub>1,2,3,4,5,6,7</sub>	1239	Engine Fuel Leakage 1
FuelLeakage <sub>2,1,2,3,4,5,6,7</sub>	1240	Engine Fuel Leakage 2
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
OilPrimPmp <sub>1,2,3,4,5,6,7</sub>	3550	Engine Oil Priming Pump Switch
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
DPFIInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FuelLevel		EMCP Fuel Level
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelDelivery	94	EMCP Engine Fuel Delivery Pressure
P-FuelFiltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
P-OilFiltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-OilFiltDiff	99	EMCP Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Oil	100	EMCP Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature

T-Coolant	110	EMCP Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
KeySwitch	158	EMCP Key Switch Battery Potential
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure 1
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
Battery	168	EMCP Battery Potential / Power Input 1
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Fuel	174	EMCP Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineSpeed	190	EMCP Engine Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub> *	191	Transmission Output Shaft Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
GasFuelCrrFct <sub>1,2,3,4,5,6,7</sub>	1116	Gaseous Fuel Correction Factor
T-AltBearing1 <sub>1,2,3,4,5,6,7</sub>	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2 <sub>1,2,3,4,5,6,7</sub>	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1 <sub>1,2,3,4,5,6,7</sub>	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2 <sub>1,2,3,4,5,6,7</sub>	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3 <sub>1,2,3,4,5,6,7</sub>	1126	Engine Alternator Winding 3 Temperature
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature

T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Turbo2Intake <sub>1,2,3,4,5,6,7</sub>	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out <sub>1,2,3,4,5,6,7</sub>	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt <sub>1,2,3,4,5,6,7</sub>	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate <sub>1,2,3,4,5,6,7</sub>	1241	Engine Fuel System 1 Gas Mass Flow Rate
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
FuelGravity <sub>1,2,3,4,5,6,7</sub>	1389	Engine Fuel Specific Gravity
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
Cyl 1IgnOutput <sub>1,2,3,4,5,6,7</sub>	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput <sub>1,2,3,4,5,6,7</sub>	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput <sub>1,2,3,4,5,6,7</sub>	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput <sub>1,2,3,4,5,6,7</sub>	1396	Engine Cylinder 4 Ignition Transformer Secondary Output
Cyl 5IgnOutput <sub>1,2,3,4,5,6,7</sub>	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput <sub>1,2,3,4,5,6,7</sub>	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput <sub>1,2,3,4,5,6,7</sub>	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput <sub>1,2,3,4,5,6,7</sub>	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput <sub>1,2,3,4,5,6,7</sub>	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput <sub>1,2,3,4,5,6,7</sub>	1402	Engine Cylinder 10 Ignition Transformer Secondary Output

Cyl11IgnOutput <sub>1,2,3,4,5,6,7</sub>	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput <sub>1,2,3,4,5,6,7</sub>	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput <sub>1,2,3,4,5,6,7</sub>	1405	Engine Cylinder 13 Ignition Transformer Secondary Output
Cyl14IgnOutput <sub>1,2,3,4,5,6,7</sub>	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput <sub>1,2,3,4,5,6,7</sub>	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput <sub>1,2,3,4,5,6,7</sub>	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput <sub>1,2,3,4,5,6,7</sub>	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput <sub>1,2,3,4,5,6,7</sub>	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput <sub>1,2,3,4,5,6,7</sub>	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput <sub>1,2,3,4,5,6,7</sub>	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming <sub>1,2,3,4,5,6,7</sub>	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming <sub>1,2,3,4,5,6,7</sub>	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming <sub>1,2,3,4,5,6,7</sub>	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming <sub>1,2,3,4,5,6,7</sub>	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio <sub>1,2,3,4,5,6,7</sub>	1767	Specific Heat Ratio
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
P-AirFilt2Diff <sub>1,2,3,4,5,6,7</sub>	2809	Engine Air Filter 2 Differential Pressure
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
T-1Fuel2 <sub>1,2,3,4,5,6,7</sub>	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd <sub>1,2,3,4,5,6,7</sub>	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
RemainingTime <sub>1,2,3,4,5,6,7</sub>	3544	Time Remaining in Engine Operating State
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position



AftcoolCoolLvl <sub>1,2,3,4,5,6,7</sub>	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
T-ExhBank2 <sub>1,2,3,4,5,6,7</sub>	4152	Engine Exhaust Bank 2 Temperature Average
T-ExhBank1 <sub>1,2,3,4,5,6,7</sub>	4153	Engine Exhaust Bank 1 Temperature Average
P-IntManAbs <sub>1,2,3,4,5,6,7</sub>	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
P-FuelFltInt <sub>1,2,3,4,5,6,7</sub>	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
P-OilFltDiffEx <sub>1,2,3,4,5,6,7</sub>	6321	Engine Oil Filter Differential Pressure (Extended Range)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

**IMPORTANT: Speed control can be done by using PWM from the controller (SG interface) to the ADEM. PWM rate for the controller has to be set to 500Hz. See the SpdGovPWM rate setpoint in the Sync/Load ctrl group of setpoints. This feature has to be enabled in the ECU. Please contact your local distributor to check it.**

**Start/Stop command can be configured as Remote Start/Stop EMCP input. Use ECU PwrRelay controller output for this purpose.**

## Recommended wiring











Function	ECU 70pin AMP connector	Controller
<b>CAN H</b>	50	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	42	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	34	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	48,52,53,55	N/A
<b>Battery - (negative)</b>	61,63,65,69	N/A
<b>Key Switch</b>	70	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	66 (38-S-SPD <sup>1</sup> )	SG OUT
<b>Analog Speed Control</b>	68 (39-D-SPD <sup>1</sup> )	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Caterpillar ADEM & EMCP Fault Codes on page 1133**.

<sup>1</sup>Caterpillar PWM speed control terminal

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar ADEM & EMCP aftertreatment lamps									
	Solid On		Solid On		Solid On		Solid On		Blink slow
	Blink slow		Blink slow						
	Blink fast		Blink fast						
	Solid On		Not Supported		Solid On		Solid On		Solid On
					Blink slow				

## ADEM A6

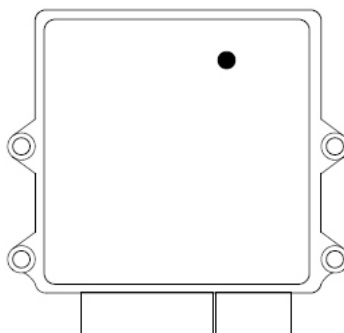


Image 5.13 ADEM A6E11

## Controllers that support the ADEM

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
StartEnbl <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTOResume <sub>1,2,3,4,5,6,7</sub>	982	Engine PTO Governor Resume Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
PTOSet <sub>1,2,3,4,5,6,7</sub>	984	Engine PTO Governor Set Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp

EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
OverspeedTest <sub>1,2,3,4,5,6,7</sub>	2812	Engine Overspeed Test
ShutoffCommand <sub>1,2,3,4,5,6,7</sub>	2813	Engine Air Shutoff Command Status
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2891	Engine Alternate Low Idle Select State
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
FuellPrimPmp <sub>1,2,3,4,5,6,7</sub>	4083	Fuel Pump Primer Status
DEFHeater1 <sub>1,2,3,4,5,6,7</sub>	4340	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 State
DEFHeater2 <sub>1,2,3,4,5,6,7</sub>	4342	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 State
DEFHeater3 <sub>1,2,3,4,5,6,7</sub>	4344	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 3 State
AirFitLamp <sub>1,2,3,4,5,6,7</sub>	5086	Engine Air Filter Restriction Lamp Command
P-LowOilLampD <sub>1,2,3,4,5,6,7</sub>	5099	Engine Oil Pressure Low Lamp Data
CoolLvLampD <sub>1,2,3,4,5,6,7</sub>	5101	Engine Coolant Level Low Lamp Data
SCR TmpMngm <sub>1,2,3,4,5,6,7</sub>	5400	SCR Thermal Management Active
FdbFueling <sub>1,2,3,4,5,6,7</sub>	5794	Feedback Engine Fueling State
FuelingInhAlw <sub>1,2,3,4,5,6,7</sub>	5795	Engine Fueling Inhibit Allowed
EngineSpeedRQ <sub>1,2,3,4,5,6,7</sub>	7502	Aftertreatment Engine Speed Increase request
EngLoadReq <sub>1,2,3,4,5,6,7</sub>	7503	Aftertreatment Engine Load Request
ATTEnableStat <sub>1,2,3,4,5,6,7</sub>	7851	Aftertreatment System Enable Status
DEFDoserReady <sub>1,2,3,4,5,6,7</sub>	8149	Aftertreatment Diesel Exhaust Fluid Doser Ready Status
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2883	Engine Alternate Low Idle Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
DesFueling <sub>1,2,3,4,5,6,7</sub>	5793	Desired Engine Fueling State
ElevSpAllowed <sub>1,2,3,4,5,6,7</sub>	7579	Elevated Engine Speed Allowed Switch
RegenAllowSp <sub>1,2,3,4,5,6,7</sub>	7580	Aftertreatment Regeneration Engine Speed Allowed Switch

StartRequest <sub>1,2,3,4,5,6,7</sub>	7745	Engine Start Request
StartAbort <sub>1,2,3,4,5,6,7</sub>	7747	Engine Start Abort Request
ATTSysEnab <sub>1,2,3,4,5,6,7</sub>	8148	Aftertreatment System Enable Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backwards FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
V-BatteryInp2 <sub>1,2,3,4,5,6,7</sub>	444	Battery Potential / Power Input 2
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
Spd-Speed2 <sub>1,2,3,4,5,6,7</sub>	723	Engine Speed 2
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-IntManDesAbs <sub>1,2,3,4,5,6,7</sub>	1692	Engine Intake Manifold Desired Absolute Pressure
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature

StartEnbl1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DEFProperty <sub>1,2,3,4,5,6,7</sub>	3521	Aftertreatment 1 Diesel Exhaust Fluid Property
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Spd-Engine <sub>1,2,3,4,5,6,7</sub>	4201	Engine Speed 1
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
T-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4337	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Temperature
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
SCR1IntTempFMI <sub>1,2,3,4,5,6,7</sub>	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI <sub>1,2,3,4,5,6,7</sub>	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
DEFPumpDrive <sub>1,2,3,4,5,6,7</sub>	4375	Aftertreatment 1 Diesel Exhaust Fluid Pump Drive Percentage
DEFDosing1 <sub>1,2,3,4,5,6,7</sub>	4376	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit 1 Diverter Valve
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	5137	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater Command
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb <sub>1,2,3,4,5,6,7</sub>	5580	Engine Filtered Fuel Delivery Absolute Pressure
FuelFiltrDgrade <sub>1,2,3,4,5,6,7</sub>	5584	Engine Fuel Filter Degradation
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	6875	Aftertreatment 1 Diesel Exhaust Fluid Doser Pressure
SCRsulfation <sub>1,2,3,4,5,6,7</sub>	7504	Aftertreatment 1 SCR System Sulfation Level
DEFReqQuality <sub>1,2,3,4,5,6,7</sub>	7783	Aftertreatment 1 Diesel Exhaust Fluid Requested Quantity of Integrator (High Resolution)
OperatingMode <sub>1,2,3,4,5,6,7</sub>	8664	Engine Operating Mode Selection
ATTSCRDosStat	9176	Aftertreatment SCR Dosing Mode Status
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed
Starter1Fdb <sub>1,2,3,4,5,6,7</sub>	7748	Engine Starter 1 Feedback
OperatingMode <sub>1,2,3,4,5,6,7</sub>	8608	Engine Operating Mode Command
ATTSCRDosing	9175	Aftertreatment SCR Dosing Mode Command

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring A6E2

Function	ECU Connector J1 (86Pin)	9 Pin connector	Controller
CAN H	13	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	22	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	21	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	84, 85, 86	A	N/A
Battery - (negative)	81, 82, 83	B	N/A
Key Switch	69	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	55	N/A	SG OUT
Analog Speed Control	63	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring A6E4

Function	ECU Connector (70Pin)	9 Pin connector	Controller
CAN H	50	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	34	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	33, 39, 48, 52, 53, 55, 57, 69	A	N/A
Battery - (negative)	32, 36, 42, 61, 63, 65, 67	B	N/A
Key Switch	70	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT









## Recommended wiring A6E11

Function	ECU Connector J1	Controller
CAN H	48	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	59	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	13,37,61	N/A
Battery - (negative)	12,36,60	N/A
Key Switch	5,6	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Caterpillar ADEM A6 Fault Codes on page 1112**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar ADEM A6 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

## ADEM A6 Master

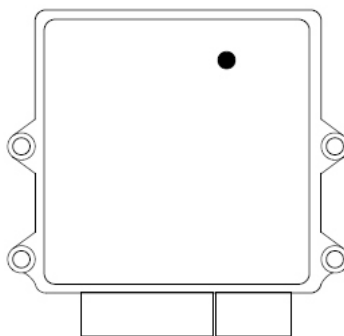


Image 5.14 ADEM A6E11

### Controllers that support the ADEM A6 Master

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
StartEnbl1 <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTOResume <sub>1,2,3,4,5,6,7</sub>	982	Engine PTO Governor Resume Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
PTOSet <sub>1,2,3,4,5,6,7</sub>	984	Engine PTO Governor Set Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
OverspeedTest <sub>1,2,3,4,5,6,7</sub>	2812	Engine Overspeed Test
ShutoffCommand <sub>1,2,3,4,5,6,7</sub>	2813	Engine Air Shutoff Command Status
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2891	Engine Alternate Low Idle Select State
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature



AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
FuellPrimPmp <sub>1,2,3,4,5,6,7</sub>	4083	Fuel Pump Primer Status
DEFHeater1 <sub>1,2,3,4,5,6,7</sub>	4340	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 State
DEFHeater2 <sub>1,2,3,4,5,6,7</sub>	4342	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 State
DEFHeater3 <sub>1,2,3,4,5,6,7</sub>	4344	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 3 State
AirFitLamp <sub>1,2,3,4,5,6,7</sub>	5086	Engine Air Filter Restriction Lamp Command
P-LowOilLampD <sub>1,2,3,4,5,6,7</sub>	5099	Engine Oil Pressure Low Lamp Data
CoolLvlLampD <sub>1,2,3,4,5,6,7</sub>	5101	Engine Coolant Level Low Lamp Data
SCR TmpMngm <sub>1,2,3,4,5,6,7</sub>	5400	SCR Thermal Management Active
FdbFueling <sub>1,2,3,4,5,6,7</sub>	5794	Feedback Engine Fueling State
FuelingInhAlw <sub>1,2,3,4,5,6,7</sub>	5795	Engine Fueling Inhibit Allowed
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2883	Engine Alternate Low Idle Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
DesFueling <sub>1,2,3,4,5,6,7</sub>	5793	Desired Engine Fueling State
ElevSpAllowed <sub>1,2,3,4,5,6,7</sub>	7579	Elevated Engine Speed Allowed Switch
RegenAllowSp <sub>1,2,3,4,5,6,7</sub>	7580	Aftertreatment Regeneration Engine Speed Allowed Switch
StartRequest <sub>1,2,3,4,5,6,7</sub>	7745	Engine Start Request
StartAbort <sub>1,2,3,4,5,6,7</sub>	7747	Engine Start Abort Request
ATTSysEnab <sub>1,2,3,4,5,6,7</sub>	8148	Aftertreatment System Enable Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure

P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backwards FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
V-BatteryInp2 <sub>1,2,3,4,5,6,7</sub>	444	Battery Potential / Power Input 2
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-Speed2 <sub>1,2,3,4,5,6,7</sub>	723	Engine Speed 2
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-IntManDesAbs <sub>1,2,3,4,5,6,7</sub>	1692	Engine Intake Manifold Desired Absolute Pressure
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
StartEnbl1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DEFProperty <sub>1,2,3,4,5,6,7</sub>	3521	Aftertreatment 1 Diesel Exhaust Fluid Property
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent

Spd-Engine <sub>1,2,3,4,5,6,7</sub>	4201	Engine Speed 1
T-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4337	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Temperature
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
SCR1IntTempFMI <sub>1,2,3,4,5,6,7</sub>	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI <sub>1,2,3,4,5,6,7</sub>	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
DEFPumpDrive <sub>1,2,3,4,5,6,7</sub>	4375	Aftertreatment 1 Diesel Exhaust Fluid Pump Drive Percentage
DEFDosing <sub>1,2,3,4,5,6,7</sub>	4376	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit 1 Diverter Valve
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	5137	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater Command
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb <sub>1,2,3,4,5,6,7</sub>	5580	Engine Filtered Fuel Delivery Absolute Pressure
FuelFiltrDgrade <sub>1,2,3,4,5,6,7</sub>	5584	Engine Fuel Filter Degradation
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	6875	Aftertreatment 1 Diesel Exhaust Fluid Doser Pressure
SCR Sulfation <sub>1,2,3,4,5,6,7</sub>	7504	Aftertreatment 1 SCR System Sulfation Level
DEFReqQuality <sub>1,2,3,4,5,6,7</sub>	7783	Aftertreatment 1 Diesel Exhaust Fluid Requested Quantity of Integrator (High Resolution)
OperatingMode <sub>1,2,3,4,5,6,7</sub>	8664	Engine Operating Mode Selection
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed
Starter1Fdb <sub>1,2,3,4,5,6,7</sub>	7748	Engine Starter 1 Feedback
OperatingMode <sub>1,2,3,4,5,6,7</sub>	8608	Engine Operating Mode Command
ATTSCR Dosing	9175	Aftertreatment SCR Dosing Mode Command

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

### Recommended wiring A6E2

Function	ECU Connector J1 (86Pin)	9 Pin connector	Controller
CAN H	13	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	22	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	21	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	84, 85, 86	A	N/A
Battery - (negative)	81, 82, 83	B	N/A
Key Switch	69	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	55	N/A	SG OUT
Analog Speed Control	63	N/A	SG COM

### Recommended wiring A6E4

Function	ECU Connector (70Pin)	9 Pin connector	Controller
CAN H	50	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	34	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	33, 39, 48, 52, 53, 55, 57, 69	A	N/A
Battery - (negative)	32, 36, 42, 61, 63, 65, 67	B	N/A
Key Switch	70	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT









### Recommended wiring A6E11

Function	ECU Connector J1	Controller
CAN H	48	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	59	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	13,37,61	N/A
Battery - (negative)	12,36,60	N/A
Key Switch	5,6	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Caterpillar ADEM A6 Master Fault Codes on page 1137**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar ADEM A6 Master aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

## ADEM A6 Att

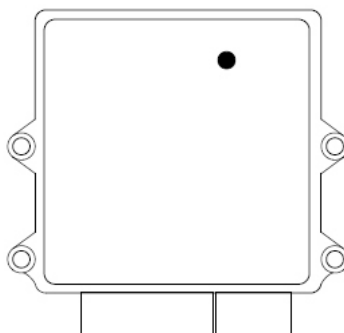


Image 5.15 ADEM A6E11

## Controllers that support the ADEM A6 Att

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
EngineSpeedRQ <sub>1,2,3,4,5,6,7</sub>	7502	Aftertreatment Engine Speed Increase request
EngLoadReq <sub>1,2,3,4,5,6,7</sub>	7503	Aftertreatment Engine Load Request
ATTEnableStat <sub>1,2,3,4,5,6,7</sub>	7851	Aftertreatment System Enable Status
DEFDoserReady <sub>1,2,3,4,5,6,7</sub>	8149	Aftertreatment Diesel Exhaust Fluid Doser Ready Status
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
ATTSCRDosStat	9176	Aftertreatment SCR Dosing Mode Status

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring A6E2

Function	ECU Connector J1 (86Pin)	9 Pin connector	Controller
CAN H	13	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	22	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	21	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	84, 85, 86	A	N/A
Battery - (negative)	81, 82, 83	B	N/A
Key Switch	69	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	55	N/A	SG OUT
Analog Speed Control	63	N/A	SG COM

## Recommended wiring A6E4

Function	ECU Connector (70Pin)	9 Pin connector	Controller
CAN H	50	G	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	34	F	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	33, 39, 48, 52, 53, 55, 57, 69	A	N/A
Battery - (negative)	32, 36, 42, 61, 63, 65, 67	B	N/A
Key Switch	70	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT









## Recommended wiring A6E11

Function	ECU Connector J1	Controller
CAN H	48	CAN1 (extension modules/J1939) - CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) - CAN COM
CAN L	59	CAN1 (extension modules/J1939) - CAN L
Battery + (positive)	13,37,61	N/A
Battery - (negative)	12,36,60	N/A
Key Switch	5,6	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Caterpillar ADEM A6 Att Fault Codes on page 1**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar ADEM A6 Att aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CCM with ADEM or EMCP2



Image 5.16 EMCP2 + CCM

## Configuration

**Note:** For connection to CAT CCM module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.

## Controllers that support the CCM

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

For more information about available values and signals, please refer to I-CB [manual](#) or ICBEdit PC software.

## Recommended wiring of CCM module

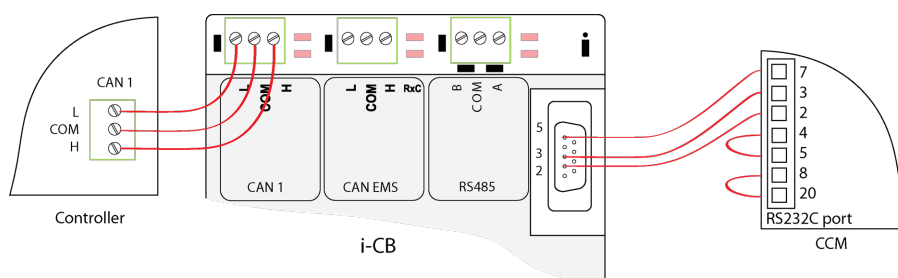


Image 5.17 EMCP2 + CCM recommended wiring

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

## PL1000 with ADEM or EMCP2



Image 5.18 EMCP2 + PL1000

### Configuration

**Note:** For connection to CAT PL1000 module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.

### Controllers that support the PL1000

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

For more information about available values and signals, please refer to I-CB [manual](#) or ICBEdit PC software.

### Recommended wiring of PL1000E or PL1000T

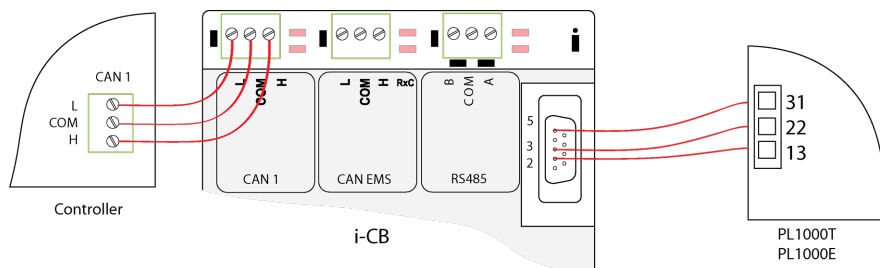


Image 5.19 Recommended wiring of PL1000E or PL1000T

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

## EMCP3.x or EMCP4.x

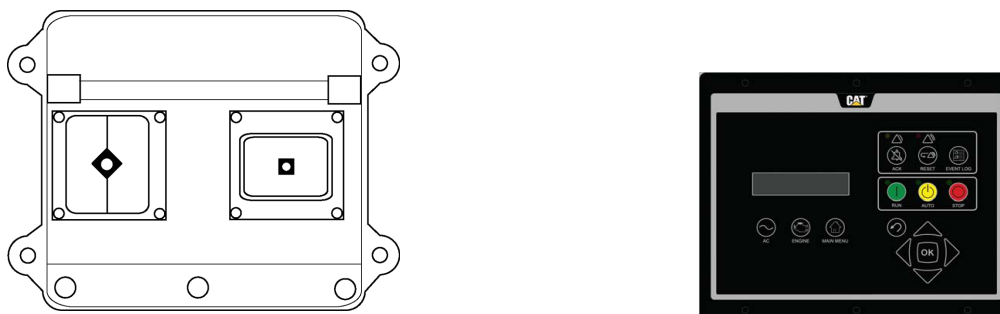


Image 5.20 ADEM A4 with EMCP3.x or ADEM A4 with EMCP4.x



**Note:** The configuration and connection is the same on the gen-set equipped with ADEM A4 (ECU) and EMCP 3.x or EMCP 4.x (generator set controller). The ADEM 4.x is the successor of the ADEM 3.x.

## Controllers that support the ADEM with EMCP

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp	623	EMCP Red Stop Lamp
WarningLamp	624	EMCP Amber Warning Lamp
ProtectLamp	987	EMCP Protect Lamp
MalfunctLamp	1213	EMCP Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelLevel		EMCP Fuel Level
P-FuelDelivery	94	EMCP Engine Fuel Delivery Pressure
P-OilFitDiff	99	EMCP Engine Oil Filter Differential Pressure
P-Oil	100	EMCP Engine Oil Pressure
T-Coolant	110	EMCP Engine Coolant Temperature
KeySwitch	158	EMCP Key Switch Battery Potential
Battery	168	EMCP Battery Potential / Power Input 1
T-Fuel	174	EMCP Engine Fuel 1 Temperature 1
EngineSpeed	190	EMCP Engine Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

**IMPORTANT:** Speed control can be done by using PWM from the controller (SG interface) to the ADEM. PWM rate for the controller has to be set to 500Hz. See the SpdGovPWM rate setpoint in the Sync/Load ctrl group of setpoints. This feature has to be enabled in the ECU. Please contact your local distributor to check it.

Start/Stop command can be configured as Remote Start/Stop EMCP input. Use ECU PwrRelay controller output for this purpose.

Available list of texts of fault codes **see Caterpillar EMCP3 Module Fault Codes on page 1125.**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Caterpillar EMCP3 Module aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ADEM A4 Master with EMCP

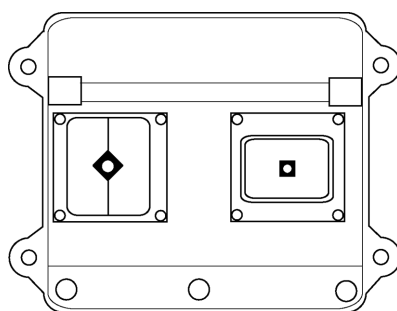


Image 5.21 ADEM A4

**Note:** The configuration and connection is the same on the gen-set equipped with ADEM A4 (ECU) and EMCP 3.x or EMCP 4.x (generator set controller). The ADEM 4.x is the successor of the ADEM 3.x.

## Controllers that support the ADEM with EMCP

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

This configuration does not include parameters from Caterpillar EMCP 3 Module, Caterpillar ADEM Alternator and Caterpillar ADEM Gas Sensor modules.

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FuelLeakage <sub>1,2,3,4,5,6,7</sub>	1239	Engine Fuel Leakage 1
FuelLeakage <sub>2,1,2,3,4,5,6,7</sub>	1240	Engine Fuel Leakage 2
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp

ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
OilPrimPmp <sub>1,2,3,4,5,6,7</sub>	3550	Engine Oil Priming Pump Switch
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
DPFIInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFlt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure 1
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub> *	191	Transmission Output Shaft Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSeleC <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
GasFuelCrrFct <sub>1,2,3,4,5,6,7</sub>	1116	Gaseous Fuel Correction Factor

P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Turbo2Intake <sub>1,2,3,4,5,6,7</sub>	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out <sub>1,2,3,4,5,6,7</sub>	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt <sub>1,2,3,4,5,6,7</sub>	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate <sub>1,2,3,4,5,6,7</sub>	1241	Engine Fuel System 1 Gas Mass Flow Rate
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
P-Auxiliary <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
FuelGravity <sub>1,2,3,4,5,6,7</sub>	1389	Engine Fuel Specific Gravity
P-Fuel1VlVInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
Cyl 1IgnOutput <sub>1,2,3,4,5,6,7</sub>	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput <sub>1,2,3,4,5,6,7</sub>	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput <sub>1,2,3,4,5,6,7</sub>	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput <sub>1,2,3,4,5,6,7</sub>	1396	Engine Cylinder 4 Ignition Transformer Secondary Output
Cyl 5IgnOutput <sub>1,2,3,4,5,6,7</sub>	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput <sub>1,2,3,4,5,6,7</sub>	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput <sub>1,2,3,4,5,6,7</sub>	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput <sub>1,2,3,4,5,6,7</sub>	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput <sub>1,2,3,4,5,6,7</sub>	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput <sub>1,2,3,4,5,6,7</sub>	1402	Engine Cylinder 10 Ignition Transformer Secondary Output
Cyl11IgnOutput <sub>1,2,3,4,5,6,7</sub>	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput <sub>1,2,3,4,5,6,7</sub>	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput <sub>1,2,3,4,5,6,7</sub>	1405	Engine Cylinder 13 Ignition Transformer Secondary Output

Cyl14IgnOutput <sub>1,2,3,4,5,6,7</sub>	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput <sub>1,2,3,4,5,6,7</sub>	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput <sub>1,2,3,4,5,6,7</sub>	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput <sub>1,2,3,4,5,6,7</sub>	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput <sub>1,2,3,4,5,6,7</sub>	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput <sub>1,2,3,4,5,6,7</sub>	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput <sub>1,2,3,4,5,6,7</sub>	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming <sub>1,2,3,4,5,6,7</sub>	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming <sub>1,2,3,4,5,6,7</sub>	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming <sub>1,2,3,4,5,6,7</sub>	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming <sub>1,2,3,4,5,6,7</sub>	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio <sub>1,2,3,4,5,6,7</sub>	1767	Specific Heat Ratio
T-Exh2Manf <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
P-AirFilt2Diff <sub>1,2,3,4,5,6,7</sub>	2809	Engine Air Filter 2 Differential Pressure
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
T-1Fuel <sub>1,2,3,4,5,6,7</sub>	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd <sub>1,2,3,4,5,6,7</sub>	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
RemainingTime <sub>1,2,3,4,5,6,7</sub>	3544	Time Remaining in Engine Operating State
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
AftcoolCoolLvl <sub>1,2,3,4,5,6,7</sub>	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command

DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
T-ExhBank2 <sub>1,2,3,4,5,6,7</sub>	4152	Engine Exhaust Bank 2 Temperature Average
T-ExhBank1 <sub>1,2,3,4,5,6,7</sub>	4153	Engine Exhaust Bank 1 Temperature Average
P-IntManAbs <sub>1,2,3,4,5,6,7</sub>	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
P-FuelFitInt <sub>1,2,3,4,5,6,7</sub>	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
P-OilFitDiffEx <sub>1,2,3,4,5,6,7</sub>	6321	Engine Oil Filter Differential Pressure (Extended Range)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

**IMPORTANT: Speed control can be done by using PWM from the controller (SG interface) to the ADEM. PWM rate for the controller has to be set to 500Hz. See the SpdGovPWM rate setpoint in the Sync/Load ctrl group of setpoints. This feature has to be enabled in the ECU. Please contact your local distributor to check it.**

**Start/Stop command can be configured as Remote Start/Stop EMCP input. Use ECU PwrRelay controller output for this purpose.**

## Recommended wiring








Function	ECU 70pin AMP connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,55	N/A
Battery - (negative)	61,63,65,69	N/A
Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	66 (38-S-SPD <sup>1</sup> )	SG OUT
Analog Speed Control	68 (39-D-SPD <sup>1</sup> )	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Caterpillar ADEM Master Fault Codes on page 1129**.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

<sup>1</sup>Caterpillar PWM speed control terminal

Caterpillar ADEM Master aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Not Supported		Solid On Blink slow
					Solid On

## ADEM Gas Sensor

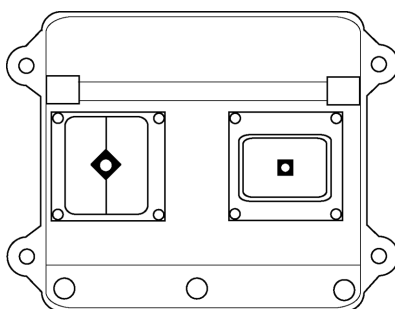


Image 5.22 ADEM A4

## Controllers that support the ADEM Gas Sensor

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature

T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

#### Caterpillar ADEM Gas Sensor aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ADEM Alternator

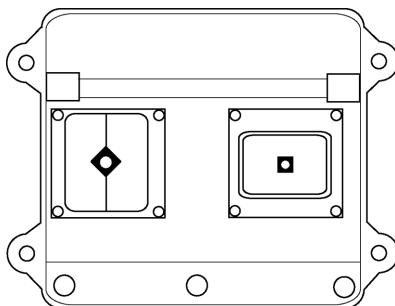


Image 5.23 ADEM A4

## Controllers that support the ADEM Alternator

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name











ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-AltBearing1 <sub>1,2,3,4,5,6,7</sub>	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2 <sub>1,2,3,4,5,6,7</sub>	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1 <sub>1,2,3,4,5,6,7</sub>	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2 <sub>1,2,3,4,5,6,7</sub>	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3 <sub>1,2,3,4,5,6,7</sub>	1126	Engine Alternator Winding 3 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.


1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Caterpillar ADEM Alternator aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.4 Cummins engines support

ECU Type	Engine type
<a href="#">CM500 (page 127)</a>	Industrial engines QSK19, QSK23, QSK45, QSK60, QSK78
<a href="#">CM558 (page 129)</a>	Gas engines, QST30 (slave ECU)
<a href="#">CM570 (page 132)</a>	Tier2/Tier3 QSM11, QSX15, ISM 400, ISM 435
<a href="#">CM700 (page 135)</a>	QSK19G, QSK60G, QSV91G
<a href="#">CM800 (page 140)</a>	ISB, ISBe
<a href="#">PGI calibration (page 195)</a> (CM850,CM2150,CM2250)	Tier4i QSB7 and QSL9 Tier 2 QSK50/60, QSK19, QSK38 MCRS Tier 3 QSB5, QSB7, QSL9, QSM11
<a href="#">CM2150 (page 147)</a>	ISDe, ISLe, ISZ (ISX 13)
<a href="#">CM2150 Main (page 151)</a>	ISDe, ISLe, ISZ (ISX 13)
<a href="#">CM2150 Gas Sensor 1 (page 154)</a>	
<a href="#">CM2150 Gas Sensor 2 (page 156)</a>	
<a href="#">CM2150 Dongfeng (page 157)</a>	ISDe, ISCe, ISLe, ISZ (ISX13) NS3 and NS4 series
<a href="#">CM2250 (Industrial calibration) (page 162)</a>	Industrial engines (ISX, ISB series)
<a href="#">CM2350 (page 164)</a>	Tier4 QSB6.7, QSL9, QSX15, QSF3.8, QSB4.5, QSG12
<a href="#">CM2350 Main (page 169)</a>	Tier4 QSB6.7, QSL9, QSX15, QSF3.8, QSB4.5, QSG12
<a href="#">CM2350 (industrial calibration) (page 175)</a>	Industrial engines (QSB4.5, QSB6.7, QSL9, QSX15, and QSG12)
<a href="#">CM2880 (industrial calibration) (page 192)</a>	ISDe NS3, ISLe NS3, ISBe NS4, ISC3 NS4, ISDe NS4, ILSe NS4, ISZ NS4 series
<a href="#">Cummins GCS (page 202)</a>	Tier2 QSK23, QSK45/60/78, QST30
<a href="#">Cummins PCC (page 864)</a>	PCC version 3.3
<a href="#">CM2358 (page 182)</a>	K19 series
<a href="#">CM2358 Parent (page 185)</a>	K19 series
	
<a href="#">CM2358 Child 1 (page 190)</a>	

## CM500

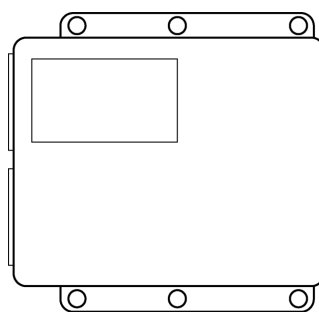


Image 5.24 CM500

### Controllers that support the CM500

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-ExtCrankcase <sub>1,2,3,4,5,6,7</sub>	22	Engine Extended Crankcase Blow-by Pressure
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature

P-Fuel1Inj1 <sub>1,2,3,4,5,6,7*</sub>	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1 <sub>1,2,3,4,5,6,7</sub>	156	Engine Fuel 1 Injector Timing Rail 1 Pressure (backward FW's compatible)
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU A2 connector	Controller
<b>CAN H</b>	32	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	33	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	3,4,5	N/A
<b>Battery - (negative)</b>	7,8	N/A
<b>Key Switch</b>	10	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM500 Fault Codes on page 1141**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM500 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM558

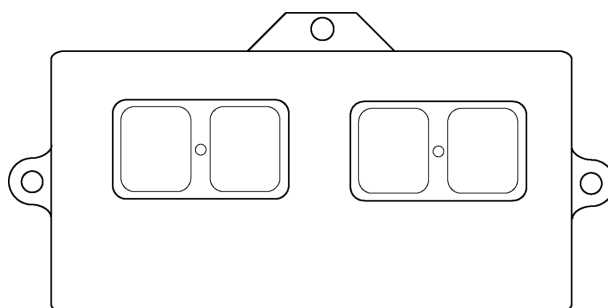


Image 5.25 CM558

## Controllers that support the CM558

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
FuelActCmd <sub>1,2,3,4,5,6,7</sub>	633	Engine Fuel Actuator 1 Control Command
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-AT1Exh <sub>2,1,2,3,4,5,6,7</sub>	3249	Aftertreatment 1 Exhaust Temperature 2
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









### Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM558 Fault Codes on page 1142**

### Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM558 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## CM570

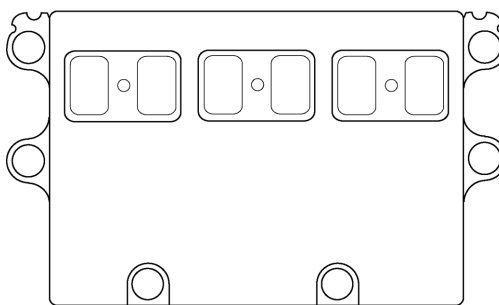


Image 5.26 CM570

### Controllers that support the CM570

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
RemPTOVarSpd <sub>1,2,3,4,5,6,7</sub>	978	Engine Remote PTO Governor Variable Speed Control Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ESD Fix <sub>4,5,6,7</sub>		Emergency Stop Indication Fix
Utility/Iso <sub>4,5,6,7</sub>		Utility/Isochronous Gain Select
Run <sub>4,5,6,7</sub>		Run/Stop
Idle <sub>4,5,6,7</sub>		Idle/Rated
Starter <sub>4,5,6,7</sub>		Starter Selection
SdOverride <sub>4,5,6,7</sub>		Shutdown Override
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch



ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
SpeedBias <sub>1,2,4,5,7</sub>		Speed Bias Reference
Frequency		Frequency Selection
Spd-DroopAdj		Speed Droop Adjustment
GovGainAdj*		Governor Gain Adjustment
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Frequency Selection	Proprietary parameter 0 - 50Hz 1 - 60Hz 2-5 - Reserved 6 - Error 7 - Do not care

## Controller's analog output for speed control configuration

Speed Bias Reference settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Speed Bias Reference settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

## Recommended wiring

Function	ECU C-01 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	37	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,17,18,28	N/A
Battery - (negative)	29,30,39,40,50	N/A
Key Switch	38	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM









For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM570 Fault Codes on page 1143**

## Table of tested ECU calibrations

Engine type	ECU calibration
QSX15-G4	N 11959.01
QSX15-G6	N 11960.01
QSX15-G7	N 11961.01
QSX15-G8	N 11962.01 N 11962.05 N12013.00
QSX15-G9	N 11963.01
ISM	L 21103.10

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM570 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM700

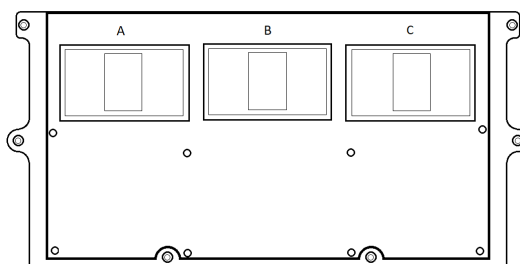


Image 5.27 CM700

### Controllers that support the CM700

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red stop Lamp - Master
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp 0
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp 1
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp - Master
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp 0
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp 1
FuelShtoff <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp - Master
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp - Master
FuelShtoff <sub>2,1,2,3,4,5,6,7</sub>	2807	Engine Fuel Shutoff 2 Control
OilPrimPmp <sub>1,2,3,4,5,6,7</sub>	3550	Engine Oil Priming Pump Switch
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
OilPreHeated <sub>1,2,3,4,5,6,7</sub>	3552	Engine Oil Pre-Heated State
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
FuelShtoffLeak <sub>1,2,3,4,5,6,7</sub>	3601	Engine Fuel Shutoff Valve Leak Test Control
SDRequest <sub>1,2,3,4,5,6,7</sub>	3606	Engine Controlled Shutdown Request
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
FuelShtoffVent <sub>1,2,3,4,5,6,7</sub>	3608	Engine Fuel Shutoff Vent Control
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1

Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure 1
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
V-BatteryInp2 <sub>1,2,3,4,5,6,7</sub>	444	Battery Potential / Power Input 2
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
FuelActCmd <sub>1,2,3,4,5,6,7</sub>	633	Engine Fuel Actuator 1 Control Command
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt <sub>1,2,3,4,5,6,7</sub>	1208	Engine Oil Filter Intake Pressure
FuelGasFlwRate <sub>1,2,3,4,5,6,7</sub>	1241	Engine Fuel System 1 Gas Mass Flow Rate
Pwr-Brake <sub>1,2,3,4,5,6,7</sub>	1242	Instantaneous Estimated Brake Power
FuelActCmd2 <sub>1,2,3,4,5,6,7</sub>	1244	Engine Fuel Actuator 2 Control Command
SparkPlug 1 <sub>1,2,3,4,5,6,7*</sub>	1294	Engine Spark Plug 1
SparkPlug 2 <sub>1,2,3,4,5,6,7*</sub>	1295	Engine Spark Plug 2

SparkPlug 3 <sub>1,2,3,4,5,6,7*</sub>	1296	Engine Spark Plug 3
SparkPlug 4 <sub>1,2,3,4,5,6,7*</sub>	1297	Engine Spark Plug 4
SparkPlug 5 <sub>1,2,3,4,5,6,7*</sub>	1298	Engine Spark Plug 5
SparkPlug 6 <sub>1,2,3,4,5,6,7*</sub>	1299	Engine Spark Plug 6
SparkPlug 7 <sub>1,2,3,4,5,6,7*</sub>	1300	Engine Spark Plug 7
SparkPlug 8 <sub>1,2,3,4,5,6,7*</sub>	1301	Engine Spark Plug 8
SparkPlug 9 <sub>1,2,3,4,5,6,7*</sub>	1302	Engine Spark Plug 9
SparkPlug10 <sub>1,2,3,4,5,6,7*</sub>	1303	Engine Spark Plug 10
SparkPlug11 <sub>1,2,3,4,5,6,7*</sub>	1304	Engine Spark Plug 11
SparkPlug12 <sub>1,2,3,4,5,6,7*</sub>	1305	Engine Spark Plug 12
SparkPlug13 <sub>1,2,3,4,5,6,7*</sub>	1306	Engine Spark Plug 13
SparkPlug14 <sub>1,2,3,4,5,6,7*</sub>	1307	Engine Spark Plug 14
SparkPlug15 <sub>1,2,3,4,5,6,7*</sub>	1308	Engine Spark Plug 15
SparkPlug16 <sub>1,2,3,4,5,6,7*</sub>	1309	Engine Spark Plug 16
SparkPlug17 <sub>1,2,3,4,5,6,7*</sub>	1310	Engine Spark Plug 17
SparkPlug18 <sub>1,2,3,4,5,6,7*</sub>	1311	Engine Spark Plug 18
P-ExSDAir <sub>1,2,3,4,5,6,7</sub>	1320	Engine External Shutdown Air Supply Pressure
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
P-Fuel1VlVInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing

Cyl13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming <sub>1,2,3,4,5,6,7</sub>	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming <sub>1,2,3,4,5,6,7</sub>	1430	Engine Cylinder 18 Ignition Timing
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
T-Coolant3 <sub>1,2,3,4,5,6,7</sub>	1637	Engine Coolant Temperature (High Resolution)
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
P-FuelOut <sub>1,2,3,4,5,6,7</sub>	2980	Engine Fuel Valve 1 Outlet Absolute Pressure
ThrottleCmd1 <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
ThrottleCmd2 <sub>1,2,3,4,5,6,7</sub>	3465	Engine Throttle Actuator 2 Control Command
P-Fuel2VlvInt <sub>1,2,3,4,5,6,7</sub>	3466	Engine Fuel Valve 2 Intake Absolute Pressure
FuelSys2Flow <sub>1,2,3,4,5,6,7</sub>	3467	Engine Fuel System 2 Gas Mass Flow Rate
T-1Fuel2 <sub>1,2,3,4,5,6,7</sub>	3468	Engine Fuel 1 Temperature 2
P-FuelVlv2Out <sub>1,2,3,4,5,6,7</sub>	3469	Engine Fuel Valve 2 Outlet Absolute Pressure
TurboBpssCmd1 <sub>1,2,3,4,5,6,7</sub>	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
SensorSupply03 <sub>1,2,3,4,5,6,7</sub>	3511	Sensor supply voltage 3
SensorSupply04 <sub>1,2,3,4,5,6,7</sub>	3512	Sensor supply voltage 4
SensorSupply05 <sub>1,2,3,4,5,6,7</sub>	3513	Sensor supply voltage 5
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-OilFltOut <sub>1,2,3,4,5,6,7</sub>	3549	Engine Oil Filter Outlet Pressure
Ventilation <sub>1,2,3,4,5,6,7</sub>	3554	Engine Ventilation Status
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
ThrottleVlv2 <sub>1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
T-Coolant2 <sub>1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
TurboWstgAct1 <sub>1,2,3,4,5,6,7</sub>	5386	Engine Turbocharger Wastegate Actuator 1 Command
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ElectricalLoad <sub>1,2,3,4,5,6,7</sub>	1204	Electrical Load
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias
AlternatorEffc <sub>1,2,3,4,5,6,7</sub>	4078	Generator Alternator Efficiency

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 40pin top connector DC-1	9pin Service connector	Controller
<b>CAN H</b>	21	C	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	23	E	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	22	D	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	2,5,6,17	B	N/A
<b>Battery - (negative)</b>	3,4,40,45	A	N/A
<b>Key Switch</b>	16	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM700 Fault Codes on page 1144**

## Table of tested ECU calibrations





Engine type	ECU calibration
6ISBe	90132.05

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Cummins CM700 aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM800

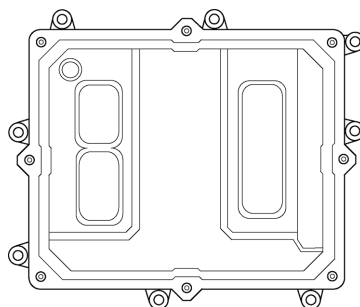


Image 5.28 CM800

## Controllers that support the CM800

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
RemPTOVarSpd <sub>1,2,3,4,5,6,7</sub>	978	Engine Remote PTO Governor Variable Speed Control Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Run/Stop <sub>4,5,6,7</sub>		Run/Stop Command
SDOverrideFix <sub>4,5,6,7</sub>		Shutdown Override



ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

Function	ECU 40pin top connector	3pin diagnostic connector	Controller
<b>CAN H</b>	53	2	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	51	3	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	52	1	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,7,12,13	N/A	N/A
<b>Battery - (negative)</b>	3,9,14,15	N/A	N/A
<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM









For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM800 Fault Codes on page 1144**

## Table of tested ECU calibrations

Engine type	ECU calibration
6ISBe	90132.05

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM800 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM850 - CM2880 G-Drive

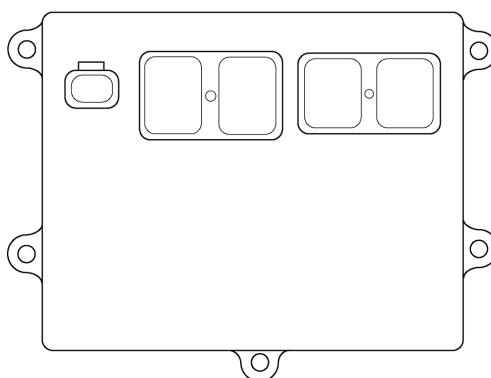


Image 5.29 CM850

## Controllers that support the CM850

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
RemPTOVarSpd <sub>1,2,3,4,5,6,7</sub>	978	Engine Remote PTO Governor Variable Speed Control Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ESD <sub>4,5,6,7</sub>		Emergency Stop Indication
Utility/Iso <sub>4,5,6,7</sub>		Utility/Isochronous Gain Select
Run <sub>4,5,6,7</sub>		Run/Stop
Idle <sub>4,5,6,7</sub>		Idle/Rated
Starter <sub>4,5,6,7</sub>		Starter Selection
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
CoolLvISDOvrrd <sub>1,2,3,4,5,6,7</sub>	5565	Coolant Level Engine Protection Shutdown Override Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IntVersionInf		Interface Version Informational
IntVersion1		Interface Version 1
IntVersion2		Interface Version 2
EngineType		Engine Type
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure

P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj <sub>1,2,3,4,5,6,7*</sub>	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7*</sub>	191	Transmission Output Shaft Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost <sub>1,2,3,4,5,6,7*</sub>	1128	Engine Turbocharger 2 Boost Pressure
P-Turbo3Boost <sub>1,2,3,4,5,6,7*</sub>	1129	Engine Turbocharger 3 Boost Pressure
P-Turbo4Boost <sub>1,2,3,4,5,6,7*</sub>	1130	Engine Turbocharger 4 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3 <sub>1,2,3,4,5,6,7</sub>	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4 <sub>1,2,3,4,5,6,7</sub>	1133	Engine Intake Manifold 4 Temperature
ChAirThermost <sub>1,2,3,4,5,6,7</sub>	1134	Engine Charge Air Cooler Thermostat Opening
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature

T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-OilFiltInt <sub>1,2,3,4,5,6,7</sub>	1208	Engine Oil Filter Intake Pressure
P-Auxiliary <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
T-IntManifold5 <sub>1,2,3,4,5,6,7</sub>	1802	Engine Intake Manifold 5 Temperature
T-IntManifold6 <sub>1,2,3,4,5,6,7</sub>	1803	Engine Intake Manifold 6 Temperature
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SpeedBias <sub>1,2,4,5,7</sub>		Speed Bias Reference
SdOverride		Shutdown Override
Frequency		Frequency Selection
Spd-DroopAdj		Speed Droop Adjustment
GovGainAdj*		Governor Gain Adjustment
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Speed Bias Reference	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.
Frequency Selection	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Governor Gain Adjustment	Proprietary parameter. For service purpose only! Default value is 5.

## Controller's analog output for speed control configuration

**Note:** If you have the engine as a part of gen-set package (with PCC panel) the ECU might be delivered with different communication interface (not PGI) which means that speed control doesn't work with ComAp controller. It is necessary to use/order ECU with calibration for G-drive engines (with PGI). Recommended wiring

Speed Bias Reference settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Speed Bias Reference settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

## Recommended wiring

Function	ECU J2 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	37	CAN1 (extension modules/J1939) – CAN COM
CAN L	47	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	39	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins CM850 Fault Codes on page 1145**

## Table of tested ECU calibrations

**Note:** Following are calibrations which were tested with ComAp CM850 configuration, they aren't mandatory to use. Other configurations may work as well but they are unknown to us.









Engine type	ECU calibration (G-Drive)
Engine QSB7-G	AZ 90084.02
Engine QSL9	AZ90059.15
	AZ 90105.04
	AZ 90056.02
	AZ 90041.05 (analog speed control)
	AZ90011 (12V DC configuration)

Engine type	ECU calibration (Industrial)
Engine QSK38	AQ 60186.98
	AQ 60176.01

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Cummins CM850 aftertreatment lamps

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2150

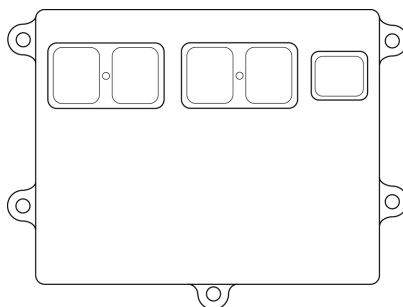


Image 5.30 CM2150

### Controllers that support the CM2150

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFIhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFIinhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RemAccelEnable <sub>1,2,3,4,5,6,7</sub>	969	Remote Accelerator Enable Switch

AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
DerateSw <sub>1,2,3,4,5,6,7</sub>	971	Engine Derate Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost <sub>1,2,3,4,5,6,7*</sub>	1128	Engine Turbocharger 2 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3 <sub>1,2,3,4,5,6,7</sub>	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4 <sub>1,2,3,4,5,6,7</sub>	1133	Engine Intake Manifold 4 Temperature



T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
CAN H	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A
Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM2150 Fault Codes on page 1147**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Cummins CM850 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2150 Main

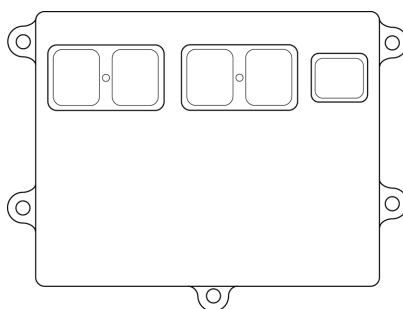


Image 5.31 CM2150

### Controllers that support the CM2150 Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RemAccelEnable <sub>1,2,3,4,5,6,7</sub>	969	Remote Accelerator Enable Switch

AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
DerateSw <sub>1,2,3,4,5,6,7</sub>	971	Engine Derate Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost <sub>1,2,3,4,5,6,7</sub> *	1128	Engine Turbocharger 2 Boost Pressure
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3 <sub>1,2,3,4,5,6,7</sub>	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4 <sub>1,2,3,4,5,6,7</sub>	1133	Engine Intake Manifold 4 Temperature

P-Auxiliary <sup>1,2,3,4,5,6,7</sup>	1387	Auxiliary Pressure #1
DEFTnkLevel <sup>1,2,3,4,5,6,7</sup>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sup>1,2,3,4,5,6,7</sup>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFLamp <sup>1,2,3,4,5,6,7</sup>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sup>1,2,3,4,5,6,7</sup>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sup>1,2,3,4,5,6,7</sup>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sup>1,2,3,4,5,6,7</sup>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sup>1,2,3,4,5,6,7</sup>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFLOWLevel <sup>1,2,3,4,5,6,7</sup>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sup>1,2,3,4,5,6,7</sup>	5246	Aftertreatment SCR Operator Inducement Severity
SCR Lamp <sup>1,2,3,4,5,6,7</sup>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sup>1,2,3,4,5,6,7</sup>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
<b>CAN H</b>	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	E	N/A	N/A	CAN1 (extension modules/J1939) –









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

				CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A
Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM2150 Main Fault Codes on page 1149**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2150 Main aftertreatment lamps									
	Solid On		Solid On		Solid On		Solid On		
	Blink slow		Blink slow				Blink slow		
	Blink fast		Blink fast				Blink fast		
	Solid On		Solid On		Solid On		Not Supported		
	Blink slow		Blink slow				Blink slow		
	Blink fast		Blink fast				Blink fast		

## CM2150 Gas Sensor 1

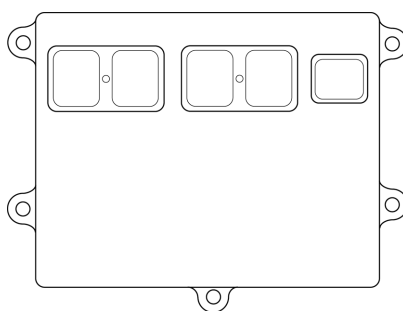


Image 5.32 CM2150

## Controllers that support the CM2150 Gas Sensor 1

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort 12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort 14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort 16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort 18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort 20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
CAN H	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A
Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Cummins CM2150 Gas Sensor 1 aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2150 Gas Sensor 2

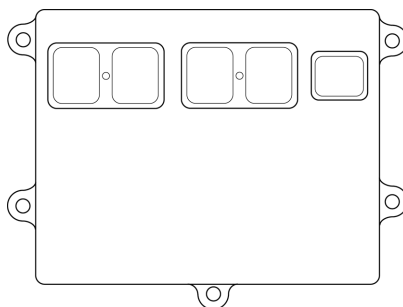


Image 5.33 CM2150

### Controllers that support the CM2150 Gas Sensor 2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort 11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort 13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort 15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort 17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort 19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500











## Recommended wiring

Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
CAN H	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A
Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2150 Gas Sensor 2 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2150 Dongfeng

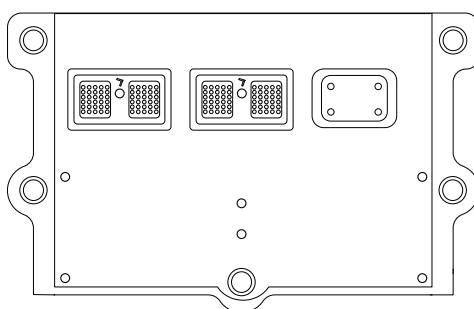


Image 5.34 CM2150 Dongfeng

## Controllers that support the CM2150 Dongfeng

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
TranDriveline <sub>1,2,3,4,5,6,7</sub>	560	Transmission Driveline Engaged
TranTrqCnvEng <sub>1,2,3,4,5,6,7</sub>	573	Transmission Torque Converter Lockup Engaged
TranShifting <sub>1,2,3,4,5,6,7</sub>	574	Transmission Shift In Process
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
MomentaryOvrr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable
ProgSftDisable <sub>1,2,3,4,5,6,7</sub>	607	Progressive Shift Disable
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
RemPROPreprg <sub>1,2,3,4,5,6,7</sub>	979	Engine Remote PTO Governor Preprogrammed Speed Control Switch
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOResume <sub>1,2,3,4,5,6,7</sub>	982	Engine PTO Governor Resume Switch
PTOSet <sub>1,2,3,4,5,6,7</sub>	984	Engine PTO Governor Set Switch
A/CHiPressFan <sub>1,2,3,4,5,6,7</sub>	985	A/C High Pressure Fan Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS TimerState <sub>1,2,3,4,5,6,7</sub>	1107	Engine Protection System Timer State
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
EPS Config <sub>1,2,3,4,5,6,7</sub>	1111	Engine Protection System Configuration
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
AccelRateLimit <sub>1,2,3,4,5,6,7</sub>	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RemAccelEnable <sub>1,2,3,4,5,6,7</sub>	969	Remote Accelerator Enable Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
DerateSw <sub>1,2,3,4,5,6,7</sub>	971	Engine Derate Switch
AccelInterlock <sub>1,2,3,4,5,6,7</sub>	972	Accelerator Interlock Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-RoadSurface <sub>1,2,3,4,5,6,7</sub>	79	Road Surface Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-PTOSet <sub>1,2,3,4,5,6,7</sub> *	187	Power Takeoff Set Speed
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub> *	191	Transmission Output Shaft Speed
TripDistance <sub>1,2,3,4,5,6,7</sub>	244	Trip Distance
TtlVehicleDist <sub>1,2,3,4,5,6,7</sub>	245	Total Vehicle Distance
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
TranGearRatio <sub>1,2,3,4,5,6,7</sub>	526	Transmission Actual Gear Ratio
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
PTOFuelUsed <sub>1,2,3,4,5,6,7</sub>	1028	Total Engine PTO Governor Fuel Used
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	1085	Intended Retarder Percent Torque
P-Turbo2Boost <sub>1,2,3,4,5,6,7</sub> *	1128	Engine Turbocharger 2 Boost Pressure

SourceAddress <sub>1,2,3,4,5,6,7</sub>	1480	Source Address of Controlling Device for Retarder Control
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
AdaptiveCC <sub>1,2,3,4,5,6,7</sub>	1590	Adaptive Cruise Control Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
RetarderSelect <sub>1,2,3,4,5,6,7</sub>	973	Engine Retarder Selection
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring



Image 5.35 ECU OEM Connector

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

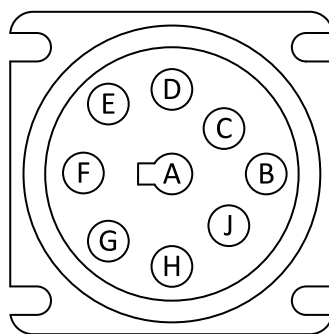


Image 5.36 ECU Round Connector

Function	9pin diagnostic connector	OEM connector	4pin OEM connector	Controller
CAN H	C	01	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	21	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	43,47,53	01,02	N/A
Battery - (negative)	A	N/A	03,04	N/A
Key Switch	N/A	45	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins CM2150 Fault Codes on page 1147**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Dongfeng Cummins aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2250 (Industrial calibration)

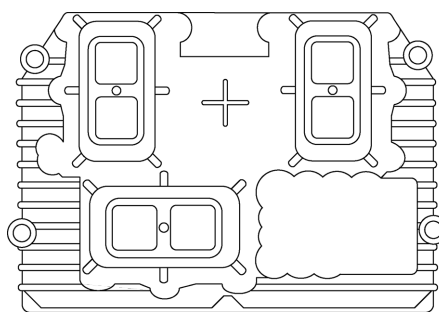


Image 5.37 CM2250

### Controllers that support the CM2250

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure

T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








## Recommended wiring

Function	9pin diagnostic connector	Controller
<b>CAN H</b>	C	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	E	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	N/A
<b>Battery - (negative)</b>	A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM2250 Fault Codes on page 1152**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2250 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Not Supported		Solid On Blink slow
					Solid On

## CM2350

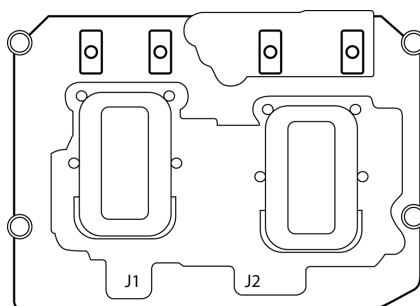


Image 5.38 CM2350

## Controllers that support the CM2350

Refer to [Compatibility Table \(page 10\)](#)



## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
WarningLamp <sub>1,2,3,4,5,6,7</sub>	5078	Engine Amber Warning Lamp Command
StopLamp <sub>1,2,3,4,5,6,7</sub>	5079	Engine Red Stop Lamp Command
SCR Status <sub>1,2,3,4,5,6,7</sub>	6916	SCR System Cleaning Status
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Idle <sub>4,5,6,7</sub>		Idle/Rated
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IntVersionInf		Interface Version Informational
IntVersion1		Interface Version 1
IntVersion2		Interface Version 2
EngineType		Engine Type
FuelLevel2 <sub>1,2,3,4,5,6,7</sub>	38	Fuel Level 2
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature

P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-OilTransm <sub>1,2,3,4,5,6,7</sub>	127	Transmission Oil Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
T-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	442	Auxiliary Temperature 2
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	1388	Auxiliary Pressure #2
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command

DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
AT1OutNH3 <sub>1,2,3,4,5,6,7</sub>	4377	Aftertreatment 1 Outlet NH3
T-DEF2Tnk <sub>1,2,3,4,5,6,7</sub>	4427	Aftertreatment 2 Diesel Exhaust Fluid Tank Temperature 1
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Frequency		Frequency Selection
SpeedBias <sub>1,2,4,5,6,7</sub>		Speed Bias Reference
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Frequency Selection	<p>Proprietary parameter.</p> <p>This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function.</p> <p>0 = 50Hz  1 = 60Hz  2-5 = Reserved  6 = Error  7 = Do not care</p>
Speed Bias Reference	<p>Proprietary parameter.</p> <p>Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.</p>

## Controller's analog output for speed control configuration

Speed Bias Reference settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%

Speed Bias References for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU.








## Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Cummins CM2350 Fault Codes** on page 1153

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2350 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported

## CM2350 Main

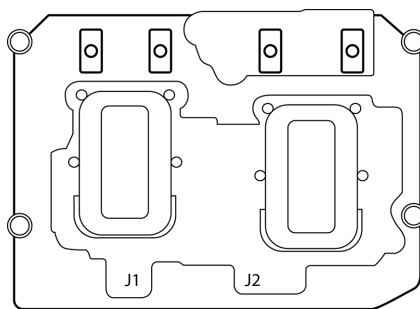


Image 5.39 CM2350

### Controllers that support the CM2350 Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInh <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
WarningLamp <sub>1,2,3,4,5,6,7</sub>	5078	Engine Amber Warning Lamp Command
StopLamp <sub>1,2,3,4,5,6,7</sub>	5079	Engine Red Stop Lamp Command
SCR Status <sub>1,2,3,4,5,6,7</sub>	6916	SCR System Cleaning Status
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Idle <sub>4,5,6,7</sub>		Idle/Rated
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IntVersionInf		Interface Version Informational
IntVersion1		Interface Version 1
IntVersion2		Interface Version 2
EngineType		Engine Type
FuelLevel2 <sub>1,2,3,4,5,6,7</sub>	38	Fuel Level 2
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-OilTransm <sub>1,2,3,4,5,6,7</sub>	127	Transmission Oil Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
T-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	442	Auxiliary Temperature 2
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	1388	Auxiliary Pressure #2
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature

T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
AT1OutNH3 <sub>1,2,3,4,5,6,7</sub>	4377	Aftertreatment 1 Outlet NH3
T-DEF2Tnk <sub>1,2,3,4,5,6,7</sub>	4427	Aftertreatment 2 Diesel Exhaust Fluid Tank Temperature 1
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Frequency		Frequency Selection
SpeedBias <sub>1,2,4,5,6,7</sub>		Speed Bias Reference
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Speed Bias Reference settings for IntelliGen<sup>NT</sup> or IntelliSys<sup>NT</sup></b>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
<b>Speed Bias References for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

<b>Requested speed settings for IntelliGen<sup>NT</sup> or IntelliSys<sup>NT</sup></b>		
Source	SpdRegOut	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
<b>Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU.








## Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
<b>CAN H</b>	C	22	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	E	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D	46	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	01,25,26,27,28	N/A
<b>Battery - (negative)</b>	A	49,50,51,52	N/A
<b>Key Switch</b>	N/A	05	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins CM2350 Main Fault Codes on page 1158**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2350 Main aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported

## CM2350 Gas Sensor 1

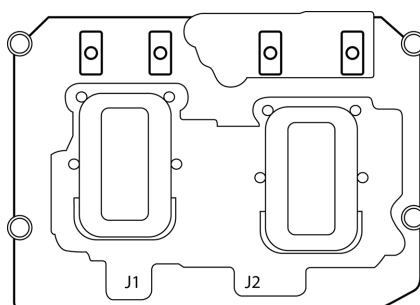


Image 5.40 CM2350

## Controllers that support the CM2350 Gas Sensor 1

Refer to [Compatibility Table \(page 10\)](#)



## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort 11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort 13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort 15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort 17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort 19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite, 3 - IntelDrive Lite, 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano, 7 - IntelGen200, IntelGen500

## Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Cummins CM2350 Gas Sensor 1 aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2350 Gas Sensor 2

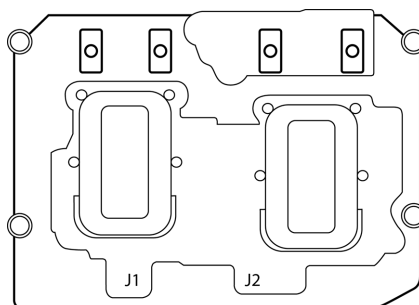


Image 5.41 CM2350

### Controllers that support the CM2350 Gas Sensor 2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500









## Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2350 Gas Sensor 2 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2350 (industrial calibration)

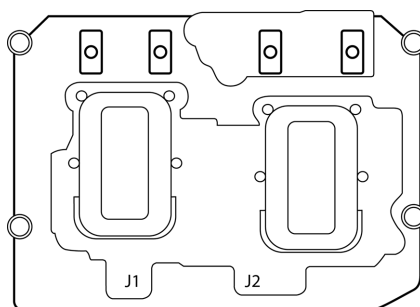


Image 5.42 CM2350

## Controllers that support the CM2350 (industrial)

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
StartEnbl1 <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
RemAccelEnable <sub>1,2,3,4,5,6,7</sub>	969	Remote Accelerator Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
A/CHiPressFan <sub>1,2,3,4,5,6,7</sub>	985	A/C High Pressure Fan Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS TimerState <sub>1,2,3,4,5,6,7</sub>	1107	Engine Protection System Timer State
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
EPS Config <sub>1,2,3,4,5,6,7</sub>	1111	Engine Protection System Configuration
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
TurboOilLvl <sub>1,2,3,4,5,6,7</sub>	1665	Engine Turbocharger Oil Level Switch
StartEnbl2 <sub>1,2,3,4,5,6,7</sub>	1804	Engine Start Enable Device 2
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
Alternator1 <sub>1,2,3,4,5,6,7</sub>	3353	Alternator 1 Status
Alternator2 <sub>1,2,3,4,5,6,7</sub>	3354	Alternator 2 Status
Alternator3 <sub>1,2,3,4,5,6,7</sub>	3355	Alternator 3 Status
Alternator4 <sub>1,2,3,4,5,6,7</sub>	3356	Alternator 4 Status
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed

		Above Allowed Speed
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd <sub>1,2,3,4,5,6,7</sub>	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhConfig <sub>1,2,3,4,5,6,7</sub>	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
CmpBrakeLamp <sub>1,2,3,4,5,6,7</sub>	3987	Compression Brake Enable Switch Indicator Lamp Command
WarningLamp <sub>1,2,3,4,5,6,7</sub>	5078	Engine Amber Warning Lamp Command
StopLamp <sub>1,2,3,4,5,6,7</sub>	5079	Engine Red Stop Lamp Command
MalfuncCmd <sub>1,2,3,4,5,6,7</sub>	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp <sub>1,2,3,4,5,6,7</sub>	5081	Engine Brake Active Lamp Command
P-LowOilLamp <sub>1,2,3,4,5,6,7</sub>	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp <sub>1,2,3,4,5,6,7</sub>	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp <sub>1,2,3,4,5,6,7</sub>	5084	Engine Coolant Level Low Lamp Command
EngFuelCtrlMd <sub>1,2,3,4,5,6,7</sub>	5323	Engine Fuel Control Mode
VGT1CtrlMode <sub>1,2,3,4,5,6,7</sub>	5457	Engine Variable Geometry Turbocharger 1 Control Mode
SRcindEnab <sub>1,2,3,4,5,6,7</sub>	6877	SCR Operator Inducement Override Enable
SCROverride <sub>1,2,3,4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
SCR Status <sub>1,2,3,4,5,6,7</sub>	6916	SCR System Cleaning Status
SCR InhStatus <sub>1,2,3,4,5,6,7</sub>	6917	SCR System Cleaning Inhibited Status
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
SCR InhClutch <sub>1,2,3,4,5,6,7</sub>	6919	SCR System Cleaning Inhibited Due to Clutch Disengaged
SCR InhBrake <sub>1,2,3,4,5,6,7</sub>	6920	SCR System Cleaning Inhibited Due to Service Brake Active
SCR InhPTO <sub>1,2,3,4,5,6,7</sub>	6921	SCR System Cleaning Inhibited Due to PTO Active
SCR InhAP <sub>1,2,3,4,5,6,7</sub>	6922	SCR System Cleaning Inhibited Due to Accelerator Pedal Off Idle
SCR InhNeutral <sub>1,2,3,4,5,6,7</sub>	6923	SCR System Cleaning Inhibited Due to Out of Neutral
SCR InhSpd <sub>1,2,3,4,5,6,7</sub>	6924	SCR System Cleaning Inhibited Due to Vehicle Speed Above Allowed Speed
SCR InhBrake <sub>1,2,3,4,5,6,7</sub>	6925	SCR System Cleaning Inhibited Due to Parking Brake Not Set
SCR InhLowExh <sub>1,2,3,4,5,6,7</sub>	6926	SCR System Cleaning Inhibited Due to Low Exhaust Temperature
SCR InhFault <sub>1,2,3,4,5,6,7</sub>	6927	SCR System Cleaning Inhibited Due to System Fault Active
SCR InhNotWarm <sub>1,2,3,4,5,6,7</sub>	6931	SCR System Cleaning Inhibited Due to Engine Not Warmed Up
SCR InhSpd <sub>1,2,3,4,5,6,7</sub>	6932	SCR System Cleaning Inhibited Due to Vehicle Speed Below Allowed Speed
SCR InitCnfg <sub>1,2,3,4,5,6,7</sub>	6933	SCR System Cleaning Automatic Initiation Configuration
HEDebPurgInh <sub>1,2,3,4,5,6,7</sub>	7033	Heat Exchanger Debris Purge Inhibit Switch

HEDebPurgForce <sub>1,2,3,4,5,6,7</sub>	7034	Heat Exchanger Debris Purge Force Switch
HEDebPurgStat <sub>1,2,3,4,5,6,7</sub>	7035	Heat Exchanger Debris Purge Status
HEDebPurgAp <sub>1,2,3,4,5,6,7</sub>	7036	Heat Exchanger Debris Purge Approaching
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TwoSpeedAxle <sub>1,2,3,4,5,6,7</sub>	69	Two Speed Axle Switch
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
MomentaryOverr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable
ProgSftDisable <sub>1,2,3,4,5,6,7</sub>	607	Progressive Shift Disable
AuxiliaryIO 01 <sub>1,2,3,4,5,6,7</sub>	701	Auxiliary I/O #01
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
SynchroSwitch <sub>1,2,3,4,5,6,7</sub>	1377	Engine Synchronization Switch
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2883	Engine Alternate Low Idle Switch
AuxGovernor <sub>1,2,3,4,5,6,7</sub>	2884	Engine Auxiliary Governor Switch
AccelRateLimit <sub>1,2,3,4,5,6,7</sub>	2979	Vehicle Acceleration Rate Limit Status
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
DPF TmpMngm <sub>1,2,3,4,5,6,7</sub>	5399	DPF Thermal Management Active
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
P-TurboLubeOil <sub>1,2,3,4,5,6,7</sub>	104	Engine Turbocharger Lube Oil Pressure 1
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1 <sub>1,2,3,4,5,6,7</sub> *	156	Engine Fuel 1 Injector Timing Rail 1 Pressure

P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-PTOSet <sub>1,2,3,4,5,6,7*</sub>	187	Power Takeoff Set Speed
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
T-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	442	Auxiliary Temperature 2
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
RetarderSelect <sub>1,2,3,4,5,6,7</sub>	973	Engine Retarder Selection
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Fuel1Inj2 <sub>1,2,3,4,5,6,7*</sub>	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
Fan2EstSpeed <sub>1,2,3,4,5,6,7</sub>	1550	Estimated Percent Fan 2 Speed
Fan2DriveState <sub>1,2,3,4,5,6,7</sub>	1557	Fan 2 Drive State
Fan2 Speed <sub>1,2,3,4,5,6,7*</sub>	1598	Fan 2 Speed
Spd-Fan <sub>1,2,3,4,5,6,7*</sub>	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
P-Fan2Hydr <sub>1,2,3,4,5,6,7</sub>	1707	Hydraulic Fan 2 Motor Pressure
Fan2 CmdStatus <sub>1,2,3,4,5,6,7</sub>	1708	Fan 2 Drive Bypass Command Status
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
EGR1MassFR <sub>1,2,3,4,5,6,7</sub>	2659	Engine Exhaust Gas Recirculation 1 Mass Flow Rate
EGR1Vlv1 <sub>1,2,3,4,5,6,7</sub>	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
VGTActuator <sub>1,2,3,4,5,6,7</sub>	2795	Engine Variable Geometry Turbocharger (VGT) 1 Actuator Position
OperatorPrSpd <sub>1,2,3,4,5,6,7</sub>	2880	Engine Operator Primary Intermediate Speed Select
StartEnbl2Cfg <sub>1,2,3,4,5,6,7</sub>	2898	Engine Start Enable Device 2 Configuration
StartEnbl1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1

T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	3517	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEFProperty <sub>1,2,3,4,5,6,7</sub>	3521	Aftertreatment 1 Diesel Exhaust Fluid Property
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	5137	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater Command
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
DriverWarning <sub>1,2,3,4,5,6,7</sub>	5825	Driver Warning System Indicator Status
Emission <sub>1,2,3,4,5,6,7</sub>	5826	Emission Control System Operator Inducement Severity
EGR1Vlv1Err <sub>1,2,3,4,5,6,7</sub>	5829	Engine Exhaust Gas Recirculation 1 Valve 1 Position Error
T-ATTSCRInter <sub>1,2,3,4,5,6,7</sub>	5862	Aftertreatment 1 SCR Intermediate Temperature
SCRIndOvrrRem <sub>1,2,3,4,5,6,7</sub>	6878	SCR Operator Inducement Override Time Remaining
NoOfSCRIndEvtnt <sub>1,2,3,4,5,6,7</sub>	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvrr <sub>1,2,3,4,5,6,7</sub>	6880	Total Number of SCR Operator Inducement Override Events
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
SCR Forced <sub>1,2,3,4,5,6,7</sub>	6934	SCR System Cleaning Forced Status
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub> *	191	Transmission Output Shaft Speed
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	1691	Cab Interior Temperature Command
DroopAcceltr2 <sub>1,2,3,4,5,6,7</sub>	2879	Engine Droop Accelerator 2 Select
DroopAcceltr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
AltRatingSel <sub>1,2,3,4,5,6,7</sub>	2882	Engine Alternate Rating Select
DroopAuxInput <sub>1,2,3,4,5,6,7</sub>	2885	Engine Droop Auxiliary Input Select



DroopRemAcc <sub>1,2,3,4,5,6,7</sub>	2886	Engine Droop Remote Accelerator Select
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
Pumping <sub>1,2,3,4,5,6,7</sub>	5398	Estimated Pumping - Percent Torque

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Speed Bias Reference settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Speed Bias References for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU.









## Recommended wiring

Function	9pin diagnostic connector	96pin OEM connector	Controller
CAN H	C	22	CAN1 (extension modules/J1939) – CAN H
CAN COM	E	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	D	46	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	B	01,25,26,27,28	N/A
Battery - (negative)	A	49,50,51,52	N/A
Key Switch	N/A	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins CM2350 Fault Codes on page 1153**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2350 Industrial aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

## CM2358

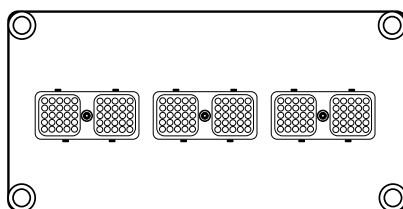


Image 5.43 CM2358

## Controllers that support the CM2358

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
OilPreHeated <sub>1,2,3,4,5,6,7</sub>	3552	Engine Oil Pre-Heated State
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
SDRequest <sub>1,2,3,4,5,6,7</sub>	3606	Engine Controlled Shutdown Request
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
FuelGasFlwRate <sub>1,2,3,4,5,6,7</sub>	1241	Engine Fuel System 1 Gas Mass Flow Rate
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing

Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl 10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl 11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl 12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl 13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl 14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl 15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl 16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos <sub>2,1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
FuelSys2Flow <sub>1,2,3,4,5,6,7</sub>	3467	Engine Fuel System 2 Gas Mass Flow Rate
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
Ventilation <sub>1,2,3,4,5,6,7</sub>	3554	Engine Ventilation Status
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure-0
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure-1
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
ThrottleVlv <sub>2,1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position-1

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
MethanePct		Methane Percent
ElectricalLoad <sub>1,2,3,4,5,6,7</sub>	1204	Electrical Load
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,5</sub>	3938	Generator Governing Bias

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU









## Recommended wiring

Function	ECU Connector	Controller
CAN H	03	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	38,39,40,49,50	N/A
Battery - (negative)	20,28,29,30	N/A
Key Switch	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

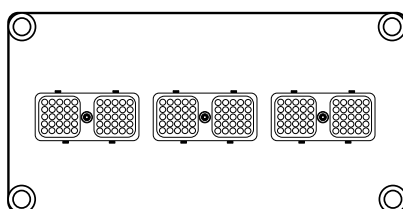
For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Cummins CM2358 Fault Codes** on page 1168

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2358 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2358 Parent



## Controllers that support the CM2358

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
OilPreHeated <sub>1,2,3,4,5,6,7</sub>	3552	Engine Oil Pre-Heated State
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
SDRequest <sub>1,2,3,4,5,6,7</sub>	3606	Engine Controlled Shutdown Request
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
FuelGasFlwRate <sub>1,2,3,4,5,6,7</sub>	1241	Engine Fuel System 1 Gas Mass Flow Rate

Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
Ventilation <sub>1,2,3,4,5,6,7</sub>	3554	Engine Ventilation Status
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
MethanePct		Methane Percent
ElectricalLoad <sub>1,2,3,4,5,6,7</sub>	1204	Electrical Load
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,5</sub>	3938	Generator Governing Bias

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU

## Recommended wiring









Function	ECU Connector	Controller
<b>CAN H</b>	03	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	38,39,40,49,50	N/A
<b>Battery - (negative)</b>	20,28,29,30	N/A
<b>Key Switch</b>	05	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins CM2358 Parent Fault Codes on page 1169**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2358 Parent aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2358 Child 0

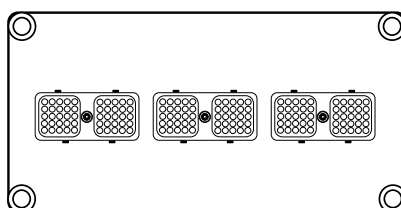


Image 5.45 CM2358

## Controllers that support the CM2358

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl 11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level



Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure-0

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU

## Recommended wiring

Function	ECU Connector	Controller
CAN H	03	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	38,39,40,49,50	N/A









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery - (negative)	20,28,29,30	N/A
Key Switch	05	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2358 Child 0x00 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2358 Child 1

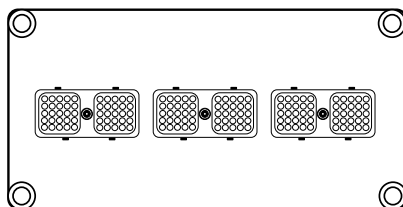


Image 5.46 CM2358

## Controllers that support the CM2358

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-IntManifold2 <sub>1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level

Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
FuelSys2Flow <sub>1,2,3,4,5,6,7</sub>	3467	Engine Fuel System 2 Gas Mass Flow Rate
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure-1
ThrottleVlv2 <sub>1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position-1
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU Connector	Controller
<b>CAN H</b>	03	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	38,39,40,49,50	N/A
<b>Battery - (negative)</b>	20,28,29,30	N/A
<b>Key Switch</b>	05	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2358 Child 0x01 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CM2880 (industrial calibration)

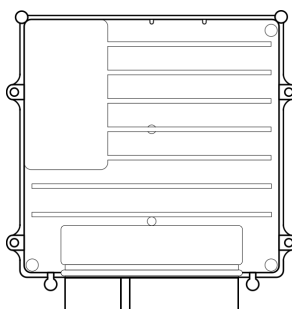


Image 5.47 CM2880

## Controllers that support the CM2880

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level

TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen1 <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1 <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**Note:** In case of Multiplexing error SPN 639, most probable fault usually is wrong configuration of the ECU

## Recommended wiring


Function	9pin diagnostic connector	96pin OEM connector	Controller
<b>CAN H</b>	C	22	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	E	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D	46	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	01,25,26,27,28	N/A
<b>Battery - (negative)</b>	A	49,50,51,52	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

<b>Key Switch</b>	N/A	05	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM2880 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Solid On

## PGI calibration

### Controllers that support the Cummins PGI

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFIhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFIinhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFIinhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ESD <sub>4,5,6,7</sub>		Emergency Stop Indication

Utility/Iso <sub>4,5,6,7</sub>		Utility/Isochronous Gain Select
Run <sub>4,5,6,7</sub>		Run/Stop
Idle <sub>4,5,6,7</sub>		Idle/Rated
Starter <sub>4,5,6,7</sub>		Starter Selection
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
CoolLvISDOvrrd <sub>1,2,3,4,5,6,7</sub>	5565	Coolant Level Engine Protection Shutdown Override Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
IntVersionInf		Interface Version Informational
IntVersion1		Interface Version 1
IntVersion2		Interface Version 2
EngineType		Engine Type
FuelRate <sub>1,2,3</sub>		Fuel Rate
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command



ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Bias <sub>1,2,5</sub>		Speed Bias Reference
SdOverride		Shutdown Override
Frequency		Frequency Selection
Spd-DroopAdj		Speed Droop Adjustment
GovGainAdj*		Governor Gain Adjustment
Pwr-Reactive <sub>1,2,3,4,5,6,7</sub> *	2456	Generator Total Reactive Power
PF-GenOverall <sub>1,2,3,4,5,6,7</sub> *	2464	Generator Overall Power Factor
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias
AlternatorEffc <sub>1,2,3,4,5,6,7</sub>	4078	Generator Alternator Efficiency
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovGainAdj <sub>1,2,3,4,5,6,7</sub>	5567	Engine Speed Governor Gain Adjust
SpdGovDroop <sub>1,2,3,4,5,6,7</sub>	5568	Engine Speed Governor Droop

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Speed Bias Reference	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.
Frequency Selection	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Generator Governing Bias	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.

## Controller's analog output for speed control configuration

Generator Governing Bias settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>	
Source	SpdRegOut
Convert	YES

Limits	-10.000V	-10%
	+10.000V	+10%
<b>Generator Governing Bias for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

**Note:** If you have the engine as a part of gen-set package (with PCC panel) the ECU might be delivered with different communication interface (not PGI) which means that speed control doesn't work with ComAp controller. It is necessary to use/order ECU with calibration for G-drive engines (with PGI). Recommended wiring

Function	ECU J2 50pin connector	Controller
<b>CAN H</b>	46	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	37	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	47	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	39	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins PGI (Obsolete) Fault Codes on page 1179**

## PGI G-Drive callibration

### Controllers that support the Cummins PGI G-Drive

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
RemPTOVarSpd	978	Engine Remote PTO Governor Variable Speed Control Switch
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ESD <sub>4,5,6,7</sub>		Emergency Stop Indication
Utility/Iso <sub>4,5,6,7</sub>		Utility/Isochronous Gain Select
Run <sub>4,5,6,7</sub>		Run/Stop
Idle <sub>4,5,6,7</sub>		Idle/Rated
Starter <sub>4,5,6,7</sub>		Starter Selection
DiagTestMode	966	Engine Diagnostic Test Mode Switch
IdleDecrement	967	Engine Idle Decrement Switch
IdleIncrement	968	Engine Idle Increment Switch
AuxShutdown <sub>4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
CoolLvISDOvrrd <sub>4,5,6,7</sub>	5565	Coolant Level Engine Protection Shutdown Override Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IntVersionInf		Interface Version Informational
IntVersion1		Interface Version 1
IntVersion2		Interface Version 2
EngineType		Engine Type
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1*	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
T-TransOil	177	Transmission Oil Temperature 1
TripFuel	182	Engine Trip Fuel
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft*	191	Transmission Output Shaft Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1	441	Auxiliary Temperature 1

Spd-Desired*	515	Engine's Desired Operating Speed
TranGear	523	Transmission Current Gear
TranGearSelec	524	Transmission Selected Gear
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost*	1128	Engine Turbocharger 2 Boost Pressure
P-Turbo3Boost*	1129	Engine Turbocharger 3 Boost Pressure
P-Turbo4Boost*	1130	Engine Turbocharger 4 Boost Pressure
T-IntManifold2	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4	1133	Engine Intake Manifold 4 Temperature
ChAirThermost	1134	Engine Charge Air Cooler Thermostat Opening
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
P-OilFiltInt	1208	Engine Oil Filter Intake Pressure
P-Auxiliary1	1387	Auxiliary Pressure #1
T-IntManifold5	1802	Engine Intake Manifold 5 Temperature
T-IntManifold6	1803	Engine Intake Manifold 6 Temperature
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SpeedBias <sub>1,2,4,5,7</sub>		Speed Bias Reference
SdOverride		Shutdown Override
Frequency		Frequency Selection
Spd-DroopAdj		Speed Droop Adjustment
GovGainAdj*		Governor Gain Adjustment
Spd-Requested	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Speed Bias Reference	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.
Frequency Selection	Proprietary parameter. This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. This feature will only be enabled and functional on engines that have been rated for dual speed operations. The engine has two speed set points that define the base operating speed of the engine. The system will only react to a state transition while the Engine speed is 0. If datalink is lost during operation the alternate frequency will not be effected until engine reaches 0 RPM. The recommended source value is a constant following the requested function. 0 = 50Hz 1 = 60Hz 2-5 = Reserved 6 = Error 7 = Do not care
Generator Governing Bias	Proprietary parameter. Speed bias provides the means to adjust the engine speed set point while the engine is running. It is used for synchronization with the power grid. Once synchronized and paralleled with other power sources the speed bias is used to make the gen-set and engine pick up or shed load. In the case of using speed bias to pick up and shed load the commanded engine speed does change, but the actual engine speed does not change.

## Controller's analog output for speed control configuration

Generator Governing Bias settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpdRegOut	
Convert	YES	
Limits	-10.000V	-10%
	+10.000V	+10%
Generator Governing Bias for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	-10%
	100.0 %	+10%

**Note:** If you have the engine as a part of gen-set package (with PCC panel) the ECU might be delivered with different communication interface (not PGI) which means that speed control doesn't work with ComAp controller. It is necessary to use/order ECU with calibration for G-drive engines (with PGI). Recommended wiring









Function	ECU J2 50pin connector	Controller
CAN H	46	CAN1 (extension modules/J1939) – CAN H
CAN COM	37	CAN1 (extension modules/J1939) – CAN COM
CAN L	47	CAN1 (extension modules/J1939) – CAN L

Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	39	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Cummins PGI G-Drive Fault Codes on page 1183**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Cummins CM700 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## Cummins GCS

### Controllers that support the GCS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Fuel Shut-Off Valve Driver State	-	Is reporting a fuel Shut-Off Valve output.
Red Shutdown Lamp	-	It warrants stopping the engine.
Run/Stop Switch State	-	The command used for engine running. On the occasion of loss of datalink, the engine will not shut down as it is looking for the initial 'run' command and will only shutdown if it was sent 'stop' or if it experienced a shutdown fault. The recommended source value for this command is Fuel solenoid.
Yellow Warning Lamp	-	Is reporting a problem with the engine system but the engine need not be immediately stopped.
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Fault Acknowledge	-	Switch signal which indicates the position of the fault acknowledge switch. This switch function allows the operator to acknowledge faults of the engine. The recommended source value for this command is Logical 0.
Shutdown Override	-	Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending

		engine shutdown. The recommended source value for this command is Logical 0.
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Engine Speed	-	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
Coolant Temp	-	Temperature of liquid found in engine cooling system.
Oil Pressure QSK23/45/60/78	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Oil Pressure QST30, QSX15	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Frequency Adjust Pot	-	A signal output is provided to read the generator set frequency. The frequency is adjustable within $\pm 3$ Hz of the rated operating frequency.
Running Time	-	Accumulated time of operation of engine.
Final Speed Reference	-	Please contact Cummins representative for further information about this value.
+/- 2,5V Speed Bias	-	This speed bias signal is provided as feedback from compatible speed governing and load share controller.
Fuel Rate (UK)	-	Amount of fuel consumed by engine per unit of time.
Fuel Rate (US)	-	Amount of fuel consumed by engine per unit of time.
Intake Manif. Press (QSX15)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSX15)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Oil Temperature (QSX15)	-	Temperature of the engine lubricant.
Intake Manif. Press (QSKxx)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSKxx)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Fuel Pump Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Fuel Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Fuel Inlet Temperature (QSKxx)	-	Temperature of fuel entering injectors.
Timing Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Intake Manif. Press L (QST30)	-	Gage pressure of air measured downstream on the left compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Press R (QST30)	-	Gage pressure of air measured downstream on the right compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp L (QST30)	-	Temperature of pre-combustion air found in intake manifold of engine left air supply system.
Intake Manif. Temp R (QST30)	-	Temperature of pre-combustion air found in intake manifold of engine right air supply system.
Oil Temperature (QST30)	-	Temperature of the engine lubricant.
Battery Potential (Voltage)	-	Battery potential measured at the input of the electronic control unit.

Coolant Pressure	-	Pressure of liquid found in engine cooling system.
Fuel Delivery Pressure	-	Pressure of fuel in system from supply pump to the injection pump.
Fuel Temperature	-	Temperature of the engine fuel.
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

## Recommended wiring

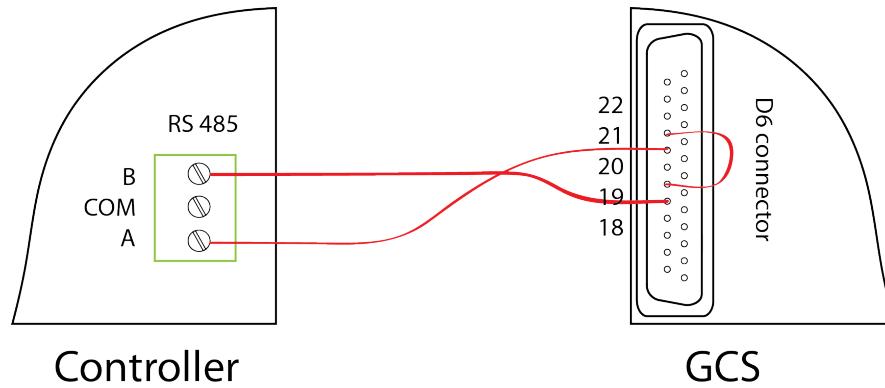


Image 5.48 Recommended wiring of GCS

Function	ECU 25pin D6 connector	ECU 25pin D3 connector	Controller
RS485 A	21	N/A	RS485 – RS485 A
RS485 COM	N/A	N/A	RS485 – RS485 COM
RS485 B	18	N/A	RS485 – RS485 B
Battery + (positive)	N/A	N/A	N/A
Battery - (negative)	N/A	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Service Mode Enable	loop 19 & 22	N/A	N/A
Analog Speed Control	N/A	11	SG OUT Analog Speed Control range 2.5VDC – 7.5VDC
Analog Speed Control	N/A	12	SG COM
Analog Speed Control Shield	N/A	20	N/A

**Note:** In case that the GCS doesn't communicate try to activate input Diagnostic mode (pin 07 on connector D6).



## Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS232(2) mode		
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>
IntelliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1) <sup>3</sup> , RS 232(2) <sup>4</sup>
IntelliLite <sup>NT</sup>	COM2 Mode	ECU LINK	RS 485 <sup>5</sup>
IntelliCompact <sup>NT</sup>	COM2 Mode	ECU LINK	RS 485 <sup>6</sup>
IntelliDrive DCU	RS485 Mode	ECU LINK	RS 485 <sup>7</sup>
IntelliDrive Mobile	RS485 Mode	ECU LINK	RS 485 (pin 85(A),pin 87(B),pin 86(COM))
IntelliDrive Lite	COM2 Mode	ECU LINK	RS 485 <sup>8</sup>

## Communication settings

Function	Settings
Baud rate	9600
Start bit	2
Data bits	8
Parity	None

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins GCS**

## Cummins GCS

### Controllers that support the GCS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	Description
Fuel Shut-Off Valve Driver State	-	Is reporting a fuel Shut-Off Valve output.

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

<sup>3</sup>external RS232-485 converter is required

<sup>4</sup>external RS232-485 converter is required

<sup>5</sup>IL-NT RS232-485 communication module is required

<sup>6</sup>IL-NT RS232-485 communication module is required

<sup>7</sup>IL-NT RS232-485 communication module is required

<sup>8</sup>IL-NT RS232-485 communication module is required

Red Shutdown Lamp	-	It warrants stopping the engine.
Run/Stop Switch State	-	The command used for engine running. On the occasion of loss of datalink, the engine will not shut down as it is looking for the initial 'run' command and will only shutdown if it was sent 'stop' or if it experienced a shutdown fault. The recommended source value for this command is Fuel solenoid.
Yellow Warning Lamp	-	Is reporting a problem with the engine system but the engine need not be immediately stopped.
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>Description</b>
Fault Acknowledge	-	Switch signal which indicates the position of the fault acknowledge switch. This switch function allows the operator to acknowledge faults of the engine. The recommended source value for this command is Logical 0.
Shutdown Override	-	Switch signal which indicates the position of the engine shutdown override switch. This switch function allows the operator to override an impending engine shutdown. The recommended source value for this command is Logical 0.
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>Description</b>
Engine Speed	-	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
Coolant Temp	-	Temperature of liquid found in engine cooling system.
Oil Pressure QSK23/45/60/78	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Oil Pressure QST30, QSX15	-	Gage pressure of oil in engine lubrication system as provided by oil pump.
Frequency Adjust Pot	-	A signal output is provided to read the generator set frequency. The frequency is adjustable within $\pm 3$ Hz of the rated operating frequency.
Running Time	-	Accumulated time of operation of engine.
Final Speed Reference	-	Please contact Cummins representative for further information about this value.
+/- 2.5V Speed Bias	-	This speed bias signal is provided as feedback from compatible speed governing and load share controller.
Fuel Rate (UK)	-	Amount of fuel consumed by engine per unit of time.
Fuel Rate (US)	-	Amount of fuel consumed by engine per unit of time.
Intake Manif. Press (QSX15)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSX15)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Oil Temperature (QSX15)	-	Temperature of the engine lubricant.
Intake Manif. Press (QSKxx)	-	Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp (QSKxx)	-	Temperature of pre-combustion air found in intake manifold of engine air supply system.
Fuel Pump Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Fuel Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.

Fuel Inlet Temperature (QSKxx)	-	Temperature of fuel entering injectors.
Timing Rail Pressure (QSKxx)	-	Please contact Cummins representative for further information about this value.
Intake Manif. Press L (QST30)	-	Gage pressure of air measured downstream on the left compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Press R (QST30)	-	Gage pressure of air measured downstream on the right compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Intake Manif. Temp L (QST30)	-	Temperature of pre-combustion air found in intake manifold of engine left air supply system.
Intake Manif. Temp R (QST30)	-	Temperature of pre-combustion air found in intake manifold of engine right air supply system.
Oil Temperature (QST30)	-	Temperature of the engine lubricant.
Battery Potential (Voltage)	-	Battery potential measured at the input of the electronic control unit.
Coolant Pressure	-	Pressure of liquid found in engine cooling system.
Fuel Delivery Pressure	-	Pressure of fuel in system from supply pump to the injection pump.
Fuel Temperature	-	Temperature of the engine fuel.
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>Description</b>

## Recommended wiring

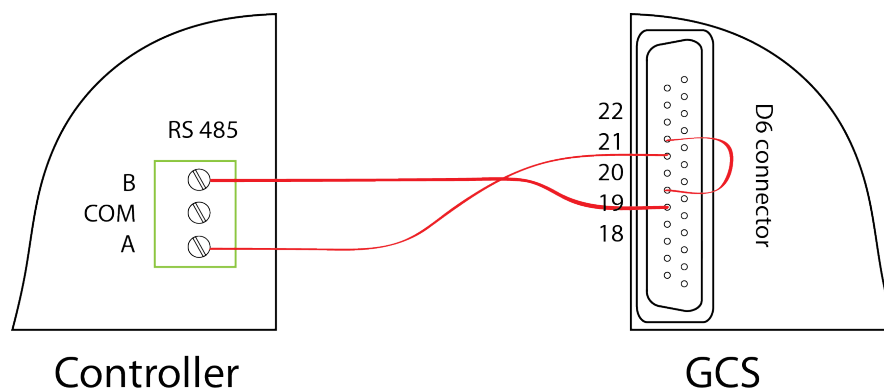


Image 5.49 Recommended wiring of GCS

Function	ECU 25pin D6 connector	ECU 25pin D3 connector	Controller
<b>RS485 A</b>	21	N/A	RS485 – RS485 A
<b>RS485 COM</b>	N/A	N/A	RS485 – RS485 COM
<b>RS485 B</b>	18	N/A	RS485 – RS485 B
<b>Battery + (positive)</b>	N/A	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A	N/A
<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Service Mode Enable</b>	loop 19 & 22	N/A	N/A

Analog Speed Control	N/A	11	SG OUT Analog Speed Control range 2.5VDC – 7.5VDC
Analog Speed Control	N/A	12	SG COM
Analog Speed Control Shield	N/A	20	N/A

**Note:** In case that the GCS doesn't communicate try to activate input Diagnostic mode (pin 07 on connector D6).

## Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS232(2) mode		
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>
IntelliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1) <sup>3</sup> , RS 232(2) <sup>4</sup>
IntelliLite <sup>NT</sup>	COM2 Mode	ECU LINK	RS 485 <sup>5</sup>
IntelliCompact <sup>NT</sup>	COM2 Mode	ECU LINK	RS 485 <sup>6</sup>
IntelliDrive DCU	RS485 Mode	ECU LINK	RS 485 <sup>7</sup>
IntelliDrive Mobile	RS485 Mode	ECU LINK	RS 485 (pin 85(A),pin 87(B),pin 86(COM))
IntelliDrive Lite	COM2 Mode	ECU LINK	RS 485 <sup>8</sup>

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Cummins GCS**

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

<sup>3</sup>external RS232-485 converter is required

<sup>4</sup>external RS232-485 converter is required

<sup>5</sup>IL-NT RS232-485 communication module is required

<sup>6</sup>IL-NT RS232-485 communication module is required

<sup>7</sup>IL-NT RS232-485 communication module is required

<sup>8</sup>IL-NT RS232-485 communication module is required

## 6.1.5 Daimler Chrysler engines support

ECU Type	Engine type
<a href="#">ADM2 (page 209)</a>	series 500, 900, 450
<a href="#">ADM3 (page 211)</a>	series 500, 900, 450
<a href="#">CPC4 (page 214)</a>	series OM47x

### ADM2

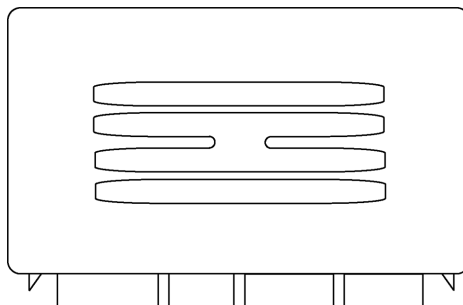


Image 5.50 ADM2

### Controllers that support the ADM2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
StartInhibit		Inhibit Engine Start
StartInhibit <sub>4,5,6,7</sub>		Engine Start
FuelInhibit <sub>4,5,6,7</sub>		Inhibit Fuel Injection
TranTrqCnvEng <sub>1,2,3,4,5,6,7</sub>	573	Transmission Torque Converter Lockup Engaged
MomentaryOvrr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub>	191	Transmission Output Shaft Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Inhibit fuel injection	Proprietary parameter. The command used for engine fuel injection inhibits. The recommended source value for this command is Logical 0.
Inhibit engine start	Proprietary parameter. The command used for engine start. The recommended source value for this command is Fuel solenoid.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	ECU 21pin connector	Controller
<b>CAN H</b>	19	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	20	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	21	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1	N/A
<b>Battery - (negative)</b>	3	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Daimler Chrysler ADM2 Fault Codes on page 1187**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Daimler Chrysler ADM2 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Not Supported		Not Supported		Not Supported

## ADM3

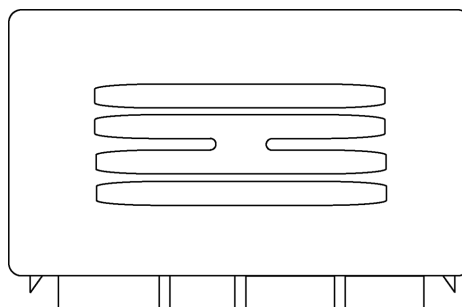


Image 5.51 ADM3

## Controllers that support the ADM3

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
StartInhibit		Inhibit Engine Start
Start <sub>4,5,6,7</sub>		Engine Start
FuelInhibit <sub>4,5,6,7</sub>		Inhibit Fuel Injection
TranTrqCnvEng <sub>1,2,3,4,5,6,7</sub>	573	Transmission Torque Converter Lockup Engaged
MomentaryOverr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub>	191	Transmission Output Shaft Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500



## Proprietary parameters

Parameter name	Function
Inhibit fuel injection	Proprietary parameter. The command used for engine fuel injection inhibits. The recommended source value for this command is Logical 0.
Inhibit engine start	Proprietary parameter. The command used for engine start. The recommended source value for this command is Fuel solenoid.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 21pin connector	Controller
<b>CAN H</b>	19	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	20	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	21	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1	N/A
<b>Battery - (negative)</b>	3	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **DaimlerChrysler ADM3 Fault Codes on page 1188**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Daimler Chrysler ADM2 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## CPC4

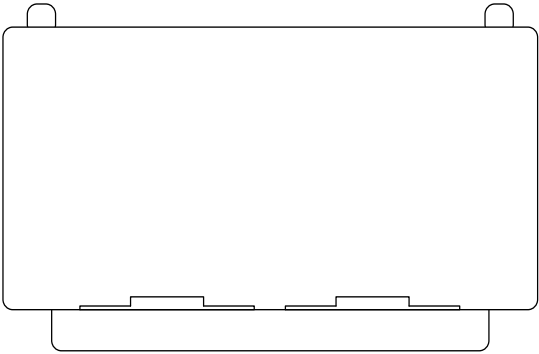


Image 5.52 CPC4

### Controllers that support the CPC4

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ACtrlDmntStat		ACC_CtrlDmnt_Stat
ACCEnblRq		ACC_Enbl_Rq
CCOvrD		CC_OvrD_Stat
CCBrkAccAlw		CC_BrkAccAllow_Stat
CCBrkAccSp		CC_BrkAccSp_Stat
AccKickDnSw3Rq		AccelPdlKickDnSw3_Rq
DrvDirec2CPC		DrvDirec2_Stat_CPC
ConfDrvDir_CPC		ConfDrvDirec_Stat_CPC
OverSpeedLamp		EngOverSpeedLampReq
CCLimLampReq		CCLimLampReq
TwoSpeedAxle <sub>1,2,3,4,5,6,7</sub>	69	Two Speed Axle Switch
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch

ABS <sub>1,2,3,4,5,6,7</sub>	563	Anti-Lock Braking (ABS) Active
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff1 <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
RemAccelEnable <sub>1,2,3,4,5,6,7</sub>	969	Remote Accelerator Enable Switch
A/CHiPressFan <sub>1,2,3,4,5,6,7</sub>	985	A/C High Pressure Fan Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS TimerState <sub>1,2,3,4,5,6,7</sub>	1107	Engine Protection System Timer State
EPS TimerOvr <sub>1,2,3,4,5,6,7</sub>	1108	Engine Protection System Timer Override
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
EPS Config <sub>1,2,3,4,5,6,7</sub>	1111	Engine Protection System Configuration
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
SdOverride	1237	Engine Shutdown Override Switch
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
OverspeedTest <sub>1,2,3,4,5,6,7</sub>	2812	Engine Overspeed Test
ShutoffCommand <sub>1,2,3,4,5,6,7</sub>	2813	Engine Air Shutoff Command Status
AlarmCommand <sub>1,2,3,4,5,6,7</sub>	2814	Engine Alarm Output Command Status
AlarmAckn <sub>1,2,3,4,5,6,7</sub>	2815	Engine Alarm Acknowledge
AccelRateLimit <sub>1,2,3,4,5,6,7</sub>	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
Alternator1 <sub>1,2,3,4,5,6,7</sub>	3353	Alternator 1 Status
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake

		Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
CmpBrakeLamp <sub>1,2,3,4,5,6,7</sub>	3987	Compression Brake Enable Switch Indicator Lamp Command
MalfuncCmd <sub>1,2,3,4,5,6,7</sub>	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp <sub>1,2,3,4,5,6,7</sub>	5081	Engine Brake Active Lamp Command
P-LowOilLamp <sub>1,2,3,4,5,6,7</sub>	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp <sub>1,2,3,4,5,6,7</sub>	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp <sub>1,2,3,4,5,6,7</sub>	5084	Engine Coolant Level Low Lamp Command
IdleLamp <sub>1,2,3,4,5,6,7</sub>	5085	Engine Idle Management Active Lamp Command
AirFitLamp <sub>1,2,3,4,5,6,7</sub>	5086	Engine Air Filter Restriction Lamp Command
FuelFitLamp <sub>1,2,3,4,5,6,7</sub>	5469	Engine Fuel Filter Restricted Lamp Command
Spd-HiLamp <sub>1,2,3,4,5,6,7</sub>	6709	Engine Speed High Lamp Command
Spd-HiHiLamp <sub>1,2,3,4,5,6,7</sub>	6710	Engine Speed Very High Lamp Command
AccelerateLamp <sub>1,2,3,4,5,6,7</sub>	6899	Vehicle Acceleration Rate Limit Lamp Command
OilPressureSw <sub>1,2,3,4,5,6,7</sub>	8159	Engine Oil Pressure Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop <sub>5</sub>		EssEngStopFlag
Start <sub>5</sub>		ESSEngStartFlag
TwoSpeedAxle <sub>1,2,3,4,5,6,7</sub>	69	Two Speed Axle Switch Tx
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch Tx
TranDriveline <sub>1,2,3,4,5,6,7</sub>	560	Transmission Driveline Engaged
TranTrqCnvEng <sub>1,2,3,4,5,6,7</sub>	573	Transmission Torque Converter Lockup Engaged
TranShifting <sub>1,2,3,4,5,6,7</sub>	574	Transmission Shift In Process
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch Tx
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch Tx
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch Tx
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch Tx
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch Tx
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch Tx
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch Tx
MomentaryOvrr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable
ProgSftDisable <sub>1,2,3,4,5,6,7</sub>	607	Progressive Shift Disable
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch Tx
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch Tx
AltLowIdle <sub>1,2,3,4,5,6,7</sub>	2883	Engine Alternate Low Idle Switch
AuxGovernor <sub>1,2,3,4,5,6,7</sub>	2884	Engine Auxiliary Governor Switch

CrankEnable <sub>1,2,3,4,5,6,7</sub>	2900	Transmission Engine Crank Enable
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AccPosn3_Cval		AccelPdlPosn3_Cval
MCE3_Cval_CPC		MC_E3_Cval_CPC
CRCE3_Cval_CPC		CRC_E3_Cval_CPC
EngOilRepQt		EngOilReplenishmentQuant
BuzLampReq		BuzLampReq
Tier4DefLamp		Tier4DefLampReq
LimLampReq		LimLampReq
InduceLamp		Eu6InduceLampReq
DpfZoneState		DpfZoneState
HildlePRemTm		HildleProcRemTime
PostRunTime		PostRunTime
BstPwRemTime		BstPowerRemainTime
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Spd-MaxVehicle <sub>1,2,3,4,5,6,7</sub>	74	Maximum Vehicle Speed Limit
CruiseCSetHigh <sub>1,2,3,4,5,6,7</sub>	87	Cruise Control High Set Limit Speed
CruiseCSetLow <sub>1,2,3,4,5,6,7</sub>	88	Cruise Control Low Set Limit Speed
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed

EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
P-EGR1Diff <sub>1,2,3,4,5,6,7</sub>	411	Engine Exhaust Gas Recirculation 1 Differential Pressure
T-EGR1 <sub>1,2,3,4,5,6,7</sub>	412	Engine Exhaust Gas Recirculation 1 Temperature
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
Spd-Alternator <sub>1,2,3,4,5,6,7</sub>	589	Alternator Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
RetarderSelect <sub>1,2,3,4,5,6,7</sub>	973	Engine Retarder Selection
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
AdaptiveCC <sub>1,2,3,4,5,6,7</sub>	1590	Adaptive Cruise Control Mode
Spd-TachoShaft <sub>1,2,3,4,5,6,7</sub> *	1623	Tachograph output shaft speed
Spd-Fan <sub>1,2,3,4,5,6,7</sub> *	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-Turbo1Outlet <sub>1,2,3,4,5,6,7</sub>	2629	Engine Turbocharger 1 Compressor Outlet Temperature
AltRating <sub>1,2,3,4,5,6,7</sub>	2888	Engine Alternate Rating Select State
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
AT1ExhFMI <sub>1,2,3,4,5,6,7</sub>	3243	Aftertreatment 1 Exhaust Temperature 1 Preliminary FMI
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
SCRInducement <sub>1,2,3,4,5,6,7</sub>	5463	Aftertreatment SCR Operator Inducement Active Traveled Distance
T-CalcAmbAir <sub>1,2,3,4,5,6,7</sub>	5581	Calculated Ambient Air Temperature
TotalDEFUsed <sub>1,2,3,4,5,6,7</sub>	5963	Aftertreatment 1 Total Diesel Exhaust Fluid Used

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-TranShaft <sub>1,2,3,4,5,6,7*</sub>	161	Transmission Input Shaft Speed
Spd-OutShaft <sub>1,2,3,4,5,6,7*</sub>	191	Transmission Output Shaft Speed
ClutchSlip <sub>1,2,3,4,5,6,7</sub>	522	Percent Clutch Slip
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed
MaxSpdLimit <sub>1,2,3,4,5,6,7</sub>	2596	Selected Maximum Vehicle Speed Limit
DroopAccelItr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
AltRatingSel <sub>1,2,3,4,5,6,7</sub>	2882	Engine Alternate Rating Select
DroopAuxInput <sub>1,2,3,4,5,6,7</sub>	2885	Engine Droop Auxiliary Input Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Inhibit fuel injection	Proprietary parameter. The command used for engine fuel injection inhibits. The recommended source value for this command is Logical 0.
Inhibit engine start	Proprietary parameter. The command used for engine start. The recommended source value for this command is Fuel solenoid.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








## Recommended wiring

Function	connector	Controller
CAN H	2/18	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	2/16	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	2/01	N/A
Battery - (negative)	2/02	N/A
Key Switch	2/03	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see DaimlerChrysler ADM3 Fault Codes on page 1188**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Daimler CPC4 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported



## 6.1.6 Detroit Diesel engines support

ECU Type	Engine type
<a href="#">DDEC IV (page 221)</a>	Series 50, 60
<a href="#">DDEC V (page 223)</a>	Series 60
<a href="#">DDEC 10 (page 474)</a>	Series DD13, DD15, DD16

### DDEC IV

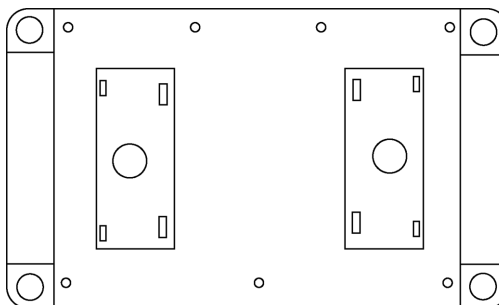


Image 5.53 DDEC IV

### Controllers that support the DDEC IV

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctionLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunction <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunction <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure

OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	6pin communication connector	Controller
<b>CAN H</b>	F	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	D	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	E	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see DDC DDEC IV/V Fault Codes on page 1189**.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

DDC DDEC IV/V aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## DDEC V

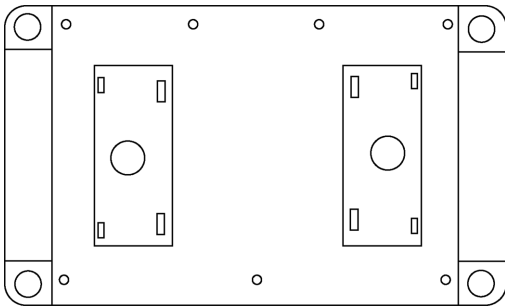


Image 5.54 DDEC IV

## Controllers that support the DDEC V

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	6pin communication connector	Controller
<b>CAN H</b>	F	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	D	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	E	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see DDC DDEC IV/V Fault Codes on page 1189**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## DDEC 10

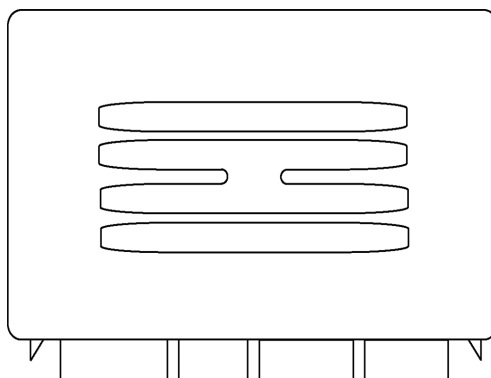


Image 5.55 DDEC 10

### Controllers that support the DDEC 10

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
BattSwHold <sub>1,2,3,4,5,6,7</sub>	1681	Battery Main Switch Hold State
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInh <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed

DPFInhBrake <sub>2,1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start Request <sub>4,5,6,7</sub>		Start request
Stop Request <sub>4,5,6,7</sub>		Stop request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1InjMR1 <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position

T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
TurboWastgate <sub>1,2,3,4,5,6,7</sub>	1693	Engine Turbocharger Wastegate Valve Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
T-DEFTnk2 <sub>1,2,3,4,5,6,7</sub>	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring








Function	Unit connectors ST2(B) or ST3(C)	Controller
<b>CAN H</b>	ST2-18	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	ST2-17	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	ST2-16	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	ST2-01	N/A
<b>Battery - (negative)</b>	ST2-02	N/A
<b>Key Switch</b>	ST2-03	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	ST2-04	SG OUT
<b>Analog Speed Control</b>	ST3-02	SG COM

**Note:** To enable the function of Remote throttle sensor on pin ST3-02, the parameter 13/63 has to be set to 1.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **MTU DDEC10 Fault Codes on page 1328**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU DDEC10 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported

## 6.1.7 Deutz engines support

ECU Type	Engine type
<a href="#">EMR2 (page 231)</a>	10xx series
<a href="#">EMR3-E (page 234)</a>	TCD 2012 4V TCD 2013 4V TCD 2015
<a href="#">EMR3-S (page 236)</a>	TCD 2012 2V TCD 2013 2V TCD 2013 4V
<a href="#">EMR4 (page 239)</a>	TCD 3.6 L4 TCD 4.1 L4 TCD 6.1 L6 TCD 7.8 L6 TCD 12 V6 TCD 16 V8
<a href="#">EMR5 (page 242)</a>	TCD 2.2 TCD 2.9 TCD 3.6

Previous engine designation	New engine designation
TCD 20xx L04	TCD 2.9 L4
TCD 2010 L04	TCD 3.6 L4
TCD 2012 L04	TCD 4.1 L4
TCD 2012 L06	TCD 6.1 L6
TCD 2013 L06	TCD 7.8 L6
TCD 2015 V06	TCD 12 V6
TCD 2015 V08	TCD 16 V8

### Engine type explanation

Engine Code	Meaning
Txxxxxx	Turbocharged
xCxxxxx	Charge air cooled
xxDxxxx	Diesel engine
xxx12xx	Displacement in liters
xxxxxLx	L – in line engine, V – V-engine
xxxxxx6	Number of cylinders

## EMR2

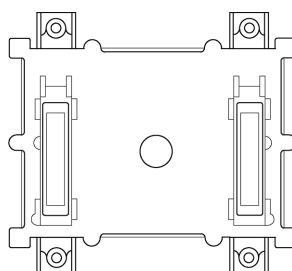


Image 5.56 EMR2

### Controllers that support the EMR2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
LockStatus		Lock Status
Stop <sub>4,5,6,7</sub>		Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		Preheat information
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1

KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**IMPORTANT: Deutz does not recommend switching off the engine by removing the power supply (battery). It causes fault code SPN=536.**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended setting of EMR2 using Serdia PC tool

### Note:

Page 30: 4400 = 1 ... CAN activation

Page 31: 4412 = 1 ... Activate TSC1a receive telegram

Page 31: 4470 = 1 ... Activate CAN set point by TSC1a

Page 12: 4829 = 8... Enable stop request telegram

Page 10: 4900 = 8 ... Selection of input channel type for nominal speed value sensor

829 = FunctEngineStop – Switch assignment for "Engine stop" function

4424 = TelStopRequestOn – SAEJ1939: Active Engine Stop Request receives telegram









## Recommended wiring

Function	ECU 25pin F connector	Controller
CAN H	12	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	14	N/A
Battery - (negative)	1	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Deutz EMR2 Fault Codes on page 1191**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deutz EMR2 aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Not Supported		Not Supported		Not Supported

## EMR3-E

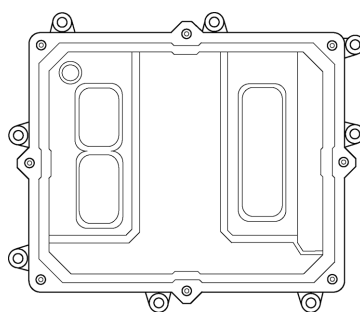


Image 5.57 EMR3-E

### Controllers that support the EMR3-E

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
LockStatus		Lock Status
Stop <sub>4,5,6,7</sub>		Stop Request
StartLock <sub>5,7</sub>		Start Lock
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		Preheat information
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1

KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TorqueMap		Torque Map
Spd-Droop		Engine Speed Droop
HighIdleDroop		High Idle Droop
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Torque Map	Proprietary parameter. 0 = no modification of torque map 1 = switch to torque map 1 2 = switch to torque map 2
Engine speed droop	Proprietary parameter. 0 = no modification of droop 1 = selects droop 1 2 = selects droop 2
High Idle Droop	Proprietary parameter. 0 = no modification of high idle droop 1 = selects high idle droop 1 2 = selects high idle droop 2

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**IMPORTANT: It is not allowed by Deutz to control speed over CAN bus on gen-set engines! Use pedal position input on ECU instead. The SG OUT signal MUST NOT exceed the limits otherwise EMR3 blocks speed control via this input. Therefore it is recommended to keep the controller powered on always while the EMR3 is powered on (by Klemme 30). Or it is necessary to switch off this protection in EMR3.**

**Note:** EMR3-E has internal relay providing power supply to EMR3. As soon as the ignition key is turned off (Klemme 15) the main relay switches off the EMR3 within cca. 10 seconds. The main relay separates the EMR3 from the battery + (Klemme 30).

## Recommended wiring

Function	ECU D2 connector	Controller
CAN H	35	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	2,3,8,9 (loop 30)	N/A
Battery - (negative)	5,6,10,11 (loop31)	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	79	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	78	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Deutz EMR3 Fault Codes on page 1191**

## EMR3-S

### Controllers that support the EMR3-S

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)



FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
LockStatus		Lock Status
Stop <sub>4,5,6,7</sub>		Stop Request
StartLock <sub>5,7</sub>		Start Lock
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Preheat		Preheat information
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TorqueMap		Torque Map
Spd-Droop		Engine Speed Droop
HighIdleDroop		High Idle Droop
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Torque Map	Proprietary parameter. 0 = no modification of torque map 1 = switch to torque map 1 2 = switch to torque map 2
Engine speed droop	Proprietary parameter. 0 = no modification of droop 1 = selects droop 1

	2 = selects droop 2
High Idle Droop	Proprietary parameter. 0 = no modification of high idle droop 1 = selects high idle droop 1 2 = selects high idle droop 2

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**IMPORTANT:** It is not allowed by Deutz to control speed over CAN bus on gen-set engines! Use pedal position input on ECU instead. The SG OUT signal MUST NOT exceed the limits otherwise EMR3 blocks speed control via this input. Therefore it is recommended to keep the controller powered on always while the EMR3 is powered on. Or it is necessary to switch off this protection in EMR3.

**Note:** EMR3-S has internal relay providing power supply to EMR3. As soon as the ignition key is turned off the main relay switches off the EMR3 within cca. 10 seconds. The main relay separates the EMR3 from the battery +.

## Recommended wiring

Function	ECU D2 connector	Controller
CAN H	62	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	61	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,5	N/A
Battery - (negative)	2,4,6	N/A









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

<b>Key Switch</b>	28	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	9	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
<b>Analog Speed Control</b>	30	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Deutz EMR3 Fault Codes** on page 1191

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deutz EMR3 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EMR4

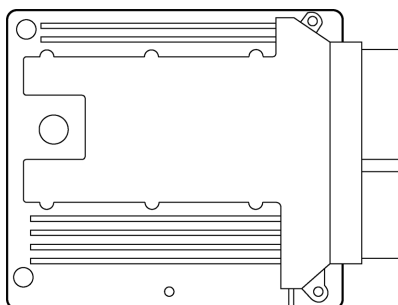


Image 5.58 EMR4

## Controllers that support the EMR4

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		Preheat Active
ReadyToStart		Ready For Start / Preheat Is Done
ColdStart		Preheat / ColdStart Lamp
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp

ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
StartLock EP		Start Lock EP
Stop <sub>4,5,6,7</sub>		Engine Stop Demand Normal
StartLock		Start Lock
RegenReq		DPF Regeneration Request
InhibitReq		DPF Inhibit Command
StationarySw <sub>5</sub>		Stationary/Neutral Switch
Droop		Droop Selector
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DEFLowLevel		SCR Warning Lamp / EAT Inducement Lamp
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLVl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1

FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
ReductionPwr		Power Reduction
TorqueMap		Engine Torque Map Selector
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function
Power reduction	Proprietary parameter. Reduces the max. engine torque. The base for the percentage value is the max. torque curve 1. If there is more than one source for power reduction active, i.e. internal power protection by temperature and this message, the lowest value (= the highest reduction) will be used. If there is a timeout of a message the last valid data will be used furthermore for the calculation. 0% causes the EMR4 to switch off the engine. 100% means no power reduction.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for InteliGen <sup>NT</sup> , InteliSys <sup>NT</sup> InteliSys Gas, InteliLite 4, InteliGen 1000, InteliGen 500 G2, InteliGen4 200 or InteliSys 2000	
Source	SpeedReq RPM <sup>1</sup>
Convert	NO

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.








## Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Deutz EMR4 Fault Codes on page 1194**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deutz EMR4 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
	Solid On		Not Supported		Solid On Blink slow Blink fast
					Solid On

## EMR5

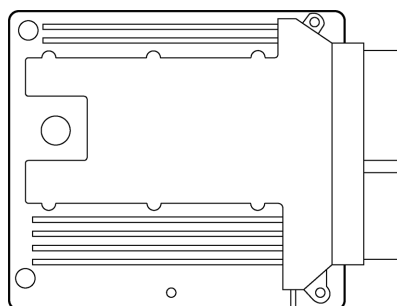


Image 5.59 EMR5

## Controllers that support the EMR5

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat <sub>3</sub>		Preheat Active
ReadyToStart <sub>3</sub>		Ready For Start / Preheat Is Done
ColdStart <sub>3</sub>		Preheat / ColdStart Lamp
WaterInFuel <sub>3</sub>		Water in Fuel Indication
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFIhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFIInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
StartLock EP <sub>3</sub>		Start Lock EP
Stop <sub>3,4,5,6,7</sub>		Engine Stop Demand Normal
StartLock <sub>3</sub>		Start Lock
StationarySw <sub>3,5</sub>		Stationary/Neutral Switch
RegenStop <sub>3</sub>		Standstill Regeneration Stop
RegenRelease <sub>3</sub>		Standstill Regeneration Release
InhibitHeatMd <sub>3</sub>		Inhibit Heat Mode
EAT Override <sub>3</sub>		EAT Override Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DEFLowLevel <sub>3</sub>		SCR Warning Lamp / EAT Inducement Lamp
RemStandRegTim <sub>3</sub>		Remaining Standstill Regeneration Time
StdRegState <sub>3</sub>		Standstill Regeneration State
StdReqReason <sub>3</sub>		Standstill Request Reason

APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration



DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
SCR <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ReductionPwr <sub>3</sub>		Power Reduction
TorqueMap <sub>3</sub>		Engine Torque Map Selector
Droop <sub>3</sub>		Droop Selector
Start EOL <sub>3</sub>		Start EOL Routine
EOL Routine <sub>3</sub>		EOL Routine
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU K connector	12 pin service connector	Controller
<b>CAN H</b>	54	M	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	76	F	CAN1 (extension modules/J1939) – CAN







<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

			L
Battery + (positive)	1,3,5	A	N/A
Battery - (negative)	2,4,6	B	N/A
Key Switch	35	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Deutz EMR5 Fault Codes on page 1196**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deutz EMR5 aftertreatment lamps					
	Solid On		Solid On		Solid On
	Solid On		Not Supported		Solid On
					Blink slow
					Blink fast
					Solid On
					Blink slow
					Blink fast
					Solid On

## TEM Evolution

**Note:** For connection to MWM TEM module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB [manual](#).

## Controllers that support the I-CB

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

For more information about available values and signals, please refer to I-CB [manual](#) or ICBEdit PC software.

## Recommended wiring of TEME module

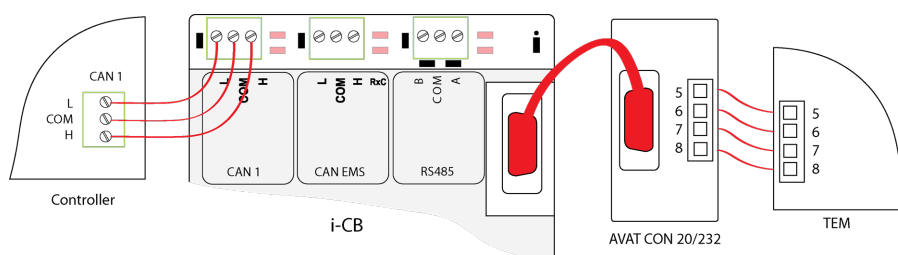


Image 5.60 MWM TEME recommended wiring

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

## 6.1.8 Doosan engines support

ECU Type	Engine type
<a href="#">EDC17 (page 248)</a>	Diesel G2 stage V engines D18 D24 D34
<a href="#">MD1 (page 252)</a>	DX22
<a href="#">G40 EDC17 (page 256)</a>	G40, G50

### EDC17

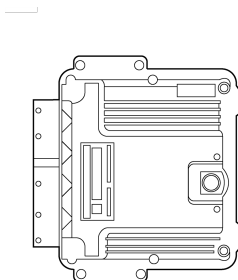


Image 5.61 EDC17

### Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OverspState		State of Overspeed
EngMaxSpeedS		State of reduced maximum engine speed after engine start
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3</sub>	3040	Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
FFlashProtect <sub>4,5,6,7</sub>	3041	Fast Flash Protect Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point

AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AirCondSwitch		Air Conditioning Switch State
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
StarterMotor <sub>1,2,3,4,5,6,7</sub>	6385	Engine Starter Motor Relay Control
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CurrentLLim		The current lowest limitation
DPF RegDone		DPF Regeneration success
TimeAftStart		Time after start based on coolant and oil temperature
AshStatus		Ash load status
AshLoadLamp		Ash load lamp status
UreaLvlBuzzer		Urea level buzzer status
EGR Lamp <sub>5</sub>		Impeded EGR & Tampering
SCR2Info		SCR2 Regulation Information
DEFLwLvl <sub>5</sub>		DEF Level Lamp
OBDLampFail		Emission OBD lamp failure reason
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature

T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
P-FuelFiltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
Spd-Fan <sub>1,2,3,4,5,6,7</sub> *	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
DEFLowLevel <sub>1,2,3,4,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
AuxTempContrl		Auxiliary Temperature Control
Multi Torque		Multi Torque
StartControl 1		Start Control 1
StartControl 2		Start Control 2
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.




## Recommended wiring

Function	ECU connector K	Controller
<b>CAN H</b>	30	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	31	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,3,5	N/A
<b>Battery - (negative)</b>	2,4,6	N/A
<b>Key Switch</b>	75	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	25	SG OUT
<b>Analog Speed Control</b>	24	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Doosan G2 EDC17 Fault Codes on page 1199**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Doosan G2 EDC17 aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		Blink slow
	Blink fast		Blink fast		Blink fast

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported
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## MD1

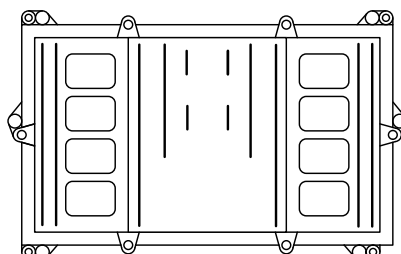


Image 5.62 MD1

### Controllers that support the MD1

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OverspState		State of Overspeed
EngMaxSpeedS		State of reduced maximum engine speed after engine start
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3</sub>	3040	Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
FFlashProtect <sub>4,5,6,7</sub>	3041	Fast Flash Protect Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration



ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AirCondSwitch		Air Conditioning Switch State
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
StarterMotor <sub>1,2,3,4,5,6,7</sub>	6385	Engine Starter Motor Relay Control
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CurrentLLim		The current lowest limitation
DPF RegDone		DPF Regeneration success
TimeAftStart		Time after start based on coolant and oil temperature
AshStatus		Ash load status
AshLoadLamp		Ash load lamp status
UreaLvlBuzzer		Urea level buzzer status
EGR Lamp <sub>5</sub>		Impeded EGR & Tampering
SCR2Info		SCR2 Regulation Information
DEFLwLvl <sub>5</sub>		DEF Level Lamp
OBDLampFail		Emission OBD lamp failure reason
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel

FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
P-FuelFiltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
Spd-Fan <sub>1,2,3,4,5,6,7</sub> *	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
DEFLOWLevel <sub>1,2,3,4,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
AuxTempContrl		Auxiliary Temperature Control
Multi Torque		Multi Torque
StartControl 1		Start Control 1
StartControl 2		Start Control 2
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	31 Pin round connector	Controller
<b>CAN H</b>	25	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	26	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	7,8,9,10,11	N/A
<b>Battery - (negative)</b>	1,2,3,4,5	N/A
<b>Key Switch</b>	12,19	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Doosan G2 EDC17 Fault Codes on page 1199**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Doosan MD1 aftertreatment lamps			
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
			Solid On
			Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## G40 EDC17

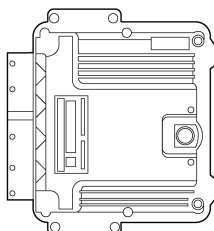


Image 5.63 G40 EDC17

### Controllers that support the G40 EDC17

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OverspState		State of Overspeed
EngMaxSpeedS		State of reduced maximum engine speed after engine start
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp
StartEnbl <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
VGTAirCtrlVlv <sub>1,2,3,4,5,6,7</sub>	2792	Engine Variable Geometry Turbocharger (VGT) Air Control Shutoff Valve
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3</sub>	3040	Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
FFlashProtect <sub>4,5,6,7</sub>	3041	Fast Flash Protect Lamp
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point

DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop <sub>4,5,6,7</sub>		Engine Stop Request
AirCondSwitch		Air Conditioning Switch State
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
TranDriveline <sub>1,2,3,4,5,6,7</sub>	560	Transmission Driveline Engaged
TranShifting <sub>1,2,3,4,5,6,7</sub>	574	Transmission Shift In Process
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CurrentLLim		The current lowest limitation
DPF RegDone		DPF Regeneration success
TimeAftStart		Time after start based on coolant and oil temperature
AshStatus		Ash load status
AshLoadLamp		Ash load lamp status
TorqueDemand		Driver's Demand Engine - Percent Torque (Prop)
TorqueActual		Actual Engine - Percent Torque (Prop)
TorqueRefer		Engine Reference Torque (Prop)
UreaLvlBuzzer		Urea level buzzer status
EGR Lamp <sub>5</sub>		Impeded EGR & Tampering
SCR2Info		SCR2 Regulation Information
DEFLwLvl <sub>5</sub>		DEF Level Lamp
OBDLampFail		Emission OBD lamp failure reason
EGR1 <sub>1,2,3,4,5,6,7</sub>	27	Engine Exhaust Gas Recirculation 1 Valve Position
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)

APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtlIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtlIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-EGR <sub>1,2,3,4,5,6,7</sub>	412	Engine Exhaust Gas Recirculation 1 Temperature
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
PTOFuelUsed <sub>1,2,3,4,5,6,7</sub>	1028	Total Engine PTO Governor Fuel Used
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-ExhaustPres <sub>1,2,3,4,5,6,7</sub>	1209	Engine Exhaust Pressure 1
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TtlAvgFuelUsed <sub>1,2,3,4,5,6,7</sub>	1834	Engine Total Average Fuel Rate
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque

T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
EGR1MassFR <sub>1,2,3,4,5,6,7</sub>	2659	Engine Exhaust Gas Recirculation 1 Mass Flow Rate
VGTActuator <sub>1,2,3,4,5,6,7</sub>	2795	Engine Variable Geometry Turbocharger (VGT) 1 Actuator Position
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
ThrottleVlv <sub>2,1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
EGR1Vlv <sub>2,1,2,3,4,5,6,7</sub>	3822	Engine Exhaust Gas Recirculation 1 Valve 2 Position
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
WashedFluidLvl <sub>1,2,3,4,5,6,7</sub>	80	Washer Fluid Level
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
Spd-OutShaft <sub>1,2,3,4,5,6,7</sub> *	191	Transmission Output Shaft Speed
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
TranGearRatio <sub>1,2,3,4,5,6,7</sub>	526	Transmission Actual Gear Ratio
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.








## Recommended wiring

Function	ECU connector K	Controller
<b>CAN H</b>	30	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	31	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,3,5	N/A
<b>Battery - (negative)</b>	2,4,6	N/A
<b>Key Switch</b>	75	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	25	SG OUT
<b>Analog Speed Control</b>	24	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Doosan G40 EDC17 Fault Codes on page 1206**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Doosan G40 EDC17 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
					Not Supported

## 6.1.9 E-Controls engines support

ECU Type	Engine type
<a href="#">EICS (page 261)</a>	
<a href="#">EICS Parent (page 265)</a>	
<a href="#">EICS Child (page 265)</a>	



269)	
ET ECS (page 271)	

## EICS

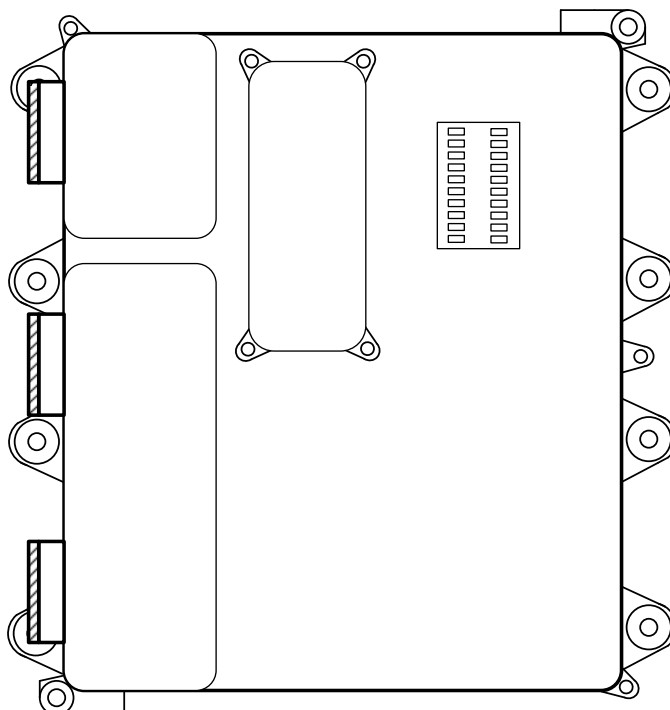


Image 5.64 EICS

### Controllers that support the EICS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3220	Aftertreatment 1 SCR Intake NOx 1 Reading Stable
AT1IntWROxygen <sub>1,2,3,4,5,6,7</sub>	3221	Aftertreatment 1 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
AT1OutNOxRead <sub>1,2,3,4,5,6,7</sub>	3230	Aftertreatment 1 Outlet NOx 1 Reading Stable
AT1OutWROxygen <sub>1,2,3,4,5,6,7</sub>	3231	Aftertreatment 1 Outlet Wide-Range Percent Oxygen 1 Reading Stable
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3233	Aftertreatment 1 Outlet Gas Sensor 1 Heater Control
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Crank <sub>4,5,6,7</sub>		Engine Crank Command

Stop <sub>4,5,6,7</sub>		Engine Shutdown/Crank Stop Command
WarmUp		Engine Warm-up Override
CoolDown		Engine Cool Down then Shutdown Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Coolant_1		Engine Coolant Temperature_1
T-Oil_1		Engine Oil Temperature 1_1
P-Oil_1		Engine Oil Pressure_1
T-Exh2Manf1_1		Engine Exhaust Manifold Bank 2 Temperature 1_1
T-Exh1Manif1_1		Engine Exhaust Manifold Bank 1 Temperature 1_1
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TripFuel <sub>1,2,3,4,5,6,7</sub>	1039	Trip Fuel (Gaseous)
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
IgnitionTime1 <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelFlowRate1 <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelFlowRate2 <sub>1,2,3,4,5,6,7</sub>	1441	Engine Fuel Flow Rate 2
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
FuelVlvPosCmd1 <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
FuelVlvPosCmd2 <sub>1,2,3,4,5,6,7</sub>	1766	Engine Fuel Valve 2 Commanded Position
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1

SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3222	Aftertreatment 1 Intake Gas Sensor 1 Heater Preliminary FMI
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3224	Aftertreatment 1 SCR Intake NOx Sensor 1 Preliminary FMI
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3225	Aftertreatment 1 Intake Oxygen Sensor 1 Preliminary FMI
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3232	Aftertreatment 1 Outlet Gas Sensor 1 Heater Preliminary FMI
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1OutOSFMI <sub>1,2,3,4,5,6,7</sub>	3235	Aftertreatment 1 Outlet Oxygen Sensor 1 Preliminary FMI
AT2IntOxygen <sub>1,2,3,4,5,6,7</sub>	3256	Aftertreatment 2 Intake Percent Oxygen 1
AT2OutOxygen <sub>1,2,3,4,5,6,7</sub>	3266	Aftertreatment 2 Outlet Percent Oxygen 1
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
ShortTFuelTrm <sub>1,2,3,4,5,6,7</sub> *	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim <sub>1,2,3,4,5,6,7</sub> *	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm <sub>2,1,2,3,4,5,6,7</sub> *	4238	Short-term Fuel Trim - Bank 2
LongTFuelTrim <sub>2,1,2,3,4,5,6,7</sub> *	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2 <sub>1,2,3,4,5,6,7</sub>	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2 <sub>1,2,3,4,5,6,7</sub>	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
Knk_retard_0	61968	Knock Retard_0
Knk_retard_1	61968	Knock Retard_1
Spark_Cyl1_0	61969	Spark Cylinder 1_0
Spark_Cyl1_1	61969	Spark Cylinder 1_1
Spark_Cyl2_0	61970	Spark Cylinder 2_0
Spark_Cyl2_1	61970	Spark Cylinder 2_1
Spark_Cyl3_0	61971	Spark Cylinder 3_0
Spark_Cyl3_1	61971	Spark Cylinder 3_1
Spark_Cyl4_0	61972	Spark Cylinder 4_0
Spark_Cyl4_1	61972	Spark Cylinder 4_1
Spark_Cyl5_0	61973	Spark Cylinder 5_0
Spark_Cyl5_1	61973	Spark Cylinder 5_1
Spark_Cyl6_0	61974	Spark Cylinder 6_0
Spark_Cyl6_1	61974	Spark Cylinder 6_1
Spark_Cyl7_0	61975	Spark Cylinder 7_0
Spark_Cyl7_1	61975	Spark Cylinder 7_1
Spark_Cyl8_0	61976	Spark Cylinder 8_0
Spark_Cyl8_1	61976	Spark Cylinder 8_1
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

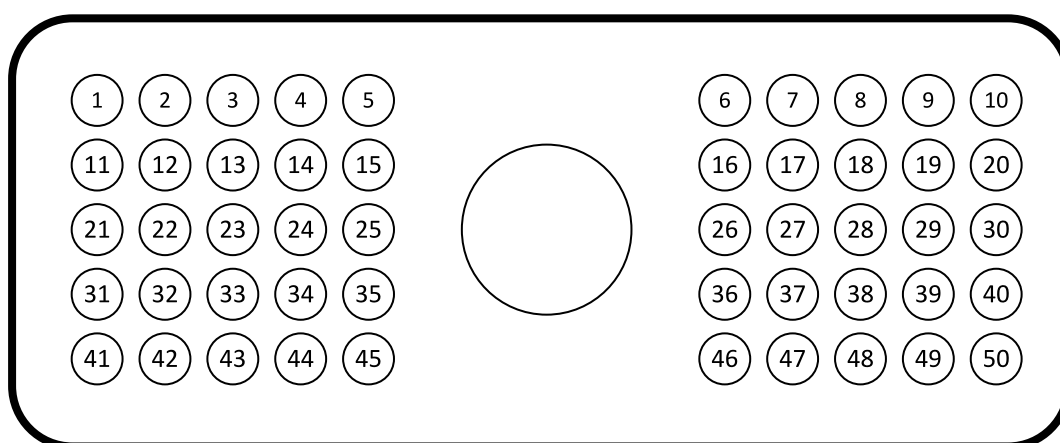


Image 5.65 ECU 50-pin connector









Function	ECU J1 connector	ECU J2 connector	Controller
<b>CAN H</b>	N/A	4	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	5	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	9,10,19,20	N/A	N/A
<b>Battery - (negative)</b>	2,11,12	N/A	N/A
<b>Key Switch</b>	41	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Econtrols EICS Fault Codes on page 1210**

Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Econtrols EICS aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

EICS Parent

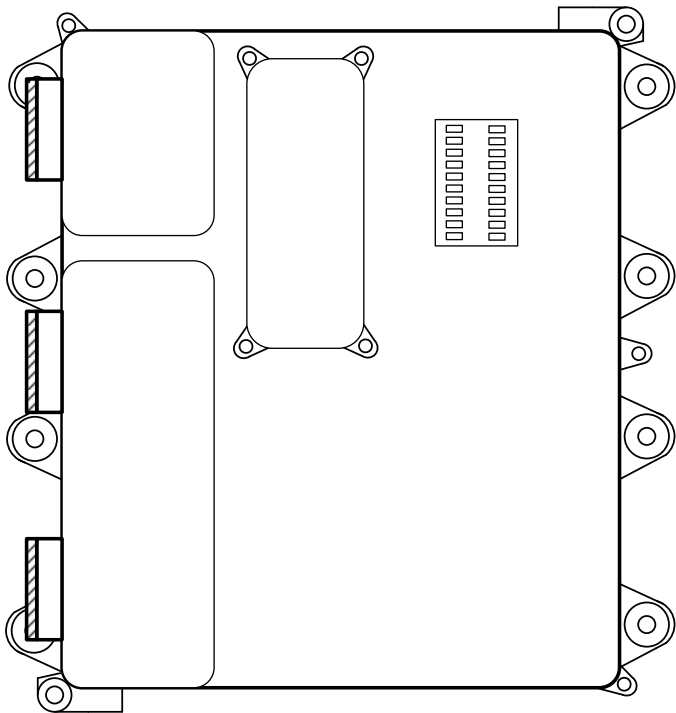


Image 5.66 EICS

Controllers that support the EICS Parent

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch

EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3220	Aftertreatment 1 SCR Intake NOx 1 Reading Stable
AT1IntWROxygen <sub>1,2,3,4,5,6,7</sub>	3221	Aftertreatment 1 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
AT1OutNOxRead <sub>1,2,3,4,5,6,7</sub>	3230	Aftertreatment 1 Outlet NOx 1 Reading Stable
AT1OutWROxygen <sub>1,2,3,4,5,6,7</sub>	3231	Aftertreatment 1 Outlet Wide-Range Percent Oxygen 1 Reading Stable
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3233	Aftertreatment 1 Outlet Gas Sensor 1 Heater Control
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Crank <sub>4,5,6,7</sub>		Engine Crank Command
Stop <sub>4,5,6,7</sub>		Engine Shutdown/Crank Stop Command
WarmUp		Engine Warm-up Override
CoolDown		Engine Cool Down then Shutdown Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TripFuel <sub>1,2,3,4,5,6,7</sub>	1039	Trip Fuel (Gaseous)
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1

IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelFlowRate1 <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelFlowRate2 <sub>1,2,3,4,5,6,7</sub>	1441	Engine Fuel Flow Rate 2
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
FuelVlvPosCmd1 <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
FuelVlvPosCmd2 <sub>1,2,3,4,5,6,7</sub>	1766	Engine Fuel Valve 2 Commanded Position
T-Exh2Manif1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen1 <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3222	Aftertreatment 1 Intake Gas Sensor 1 Heater Preliminary FMI
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3224	Aftertreatment 1 SCR Intake NOx Sensor 1 Preliminary FMI
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3225	Aftertreatment 1 Intake Oxygen Sensor 1 Preliminary FMI
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1 <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3232	Aftertreatment 1 Outlet Gas Sensor 1 Heater Preliminary FMI
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1OutOSFMI <sub>1,2,3,4,5,6,7</sub>	3235	Aftertreatment 1 Outlet Oxygen Sensor 1 Preliminary FMI
AT2IntOxygen <sub>1,2,3,4,5,6,7</sub>	3256	Aftertreatment 2 Intake Percent Oxygen 1
AT2OutOxygen1 <sub>1,2,3,4,5,6,7</sub>	3266	Aftertreatment 2 Outlet Percent Oxygen 1
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
ShortTFuelTrm1 <sub>1,2,3,4,5,6,7*</sub>	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim1 <sub>1,2,3,4,5,6,7*</sub>	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm2 <sub>1,2,3,4,5,6,7*</sub>	4238	Short-term Fuel Trim - Bank 2
LongTFuelTrim2 <sub>1,2,3,4,5,6,7*</sub>	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2 <sub>1,2,3,4,5,6,7</sub>	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2 <sub>1,2,3,4,5,6,7</sub>	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
Knk_retard_0	61968	Knock Retard_0
Spark_Cyl1_0	61969	Spark Cylinder 1_0
Spark_Cyl2_0	61970	Spark Cylinder 2_0
Spark_Cyl3_0	61971	Spark Cylinder 3_0
Spark_Cyl4_0	61972	Spark Cylinder 4_0
Spark_Cyl5_0	61973	Spark Cylinder 5_0
Spark_Cyl6_0	61974	Spark Cylinder 6_0
Spark_Cyl7_0	61975	Spark Cylinder 7_0
Spark_Cyl8_0	61976	Spark Cylinder 8_0
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

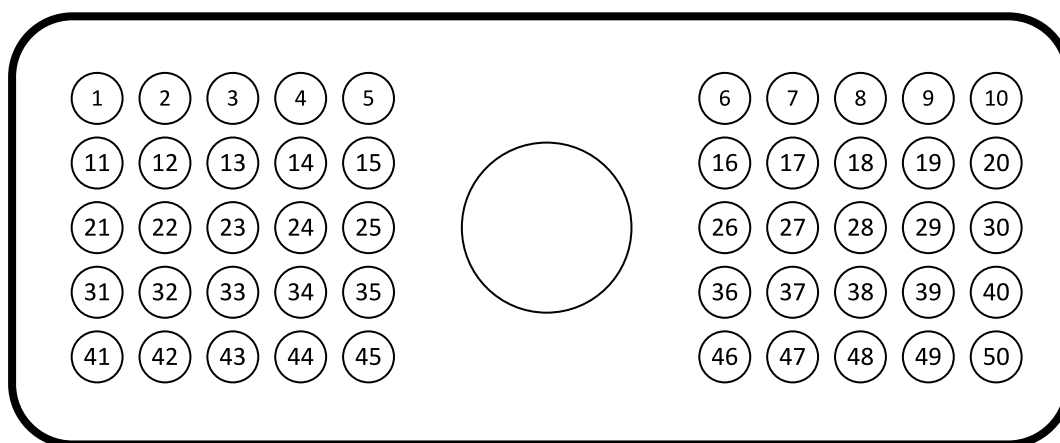


Image 5.67 ECU 50-pin connector

Function	ECU J1 connector	ECU J2 connector	Controller
<b>CAN H</b>	N/A	4	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	5	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	9,10,19,20	N/A	N/A
<b>Battery - (negative)</b>	2,11,12	N/A	N/A
<b>Key Switch</b>	41	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Econtrols EICS Parent Fault Codes on page 1213**

Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blinkg fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Econtrols EICS Parent aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

EICS Child

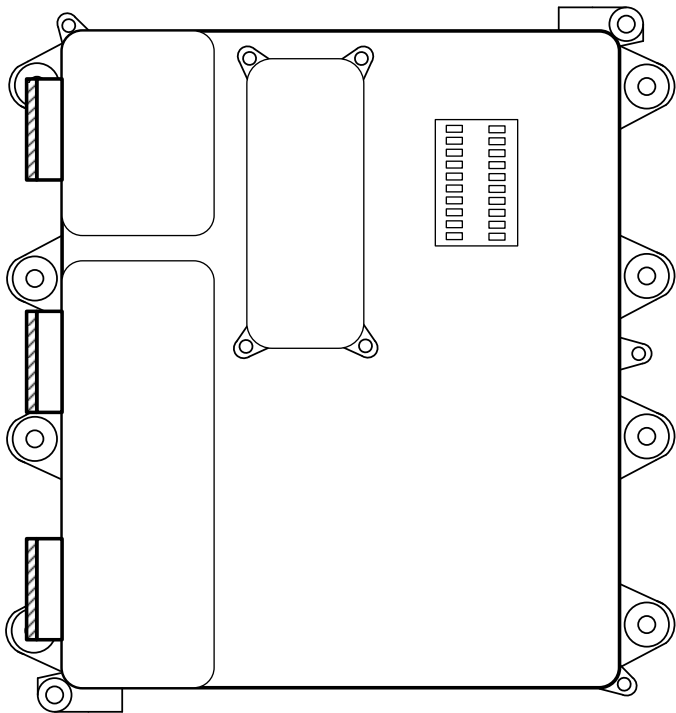


Image 5.68 EICS

Controllers that support the EICS Child

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Coolant_1		Engine Coolant Temperature_1
T-Oil_1		Engine Oil Temperature 1_1
P-Oil_1		Engine Oil Pressure_1
T-Exh2Manf1_1		Engine Exhaust Manifold Bank 2 Temperature 1_1
T-Exh1Manif_1		Engine Exhaust Manifold Bank 1 Temperature 1_1
Knk_retard_1	61968	Knock Retard_1
Spark_Cyl1_1	61969	Spark Cylinder 1_1
Spark_Cyl2_1	61970	Spark Cylinder 2_1
Spark_Cyl3_1	61971	Spark Cylinder 3_1
Spark_Cyl4_1	61972	Spark Cylinder 4_1
Spark_Cyl5_1	61973	Spark Cylinder 5_1
Spark_Cyl6_1	61974	Spark Cylinder 6_1
Spark_Cyl7_1	61975	Spark Cylinder 7_1
Spark_Cyl8_1	61976	Spark Cylinder 8_1
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

### Recommended wiring

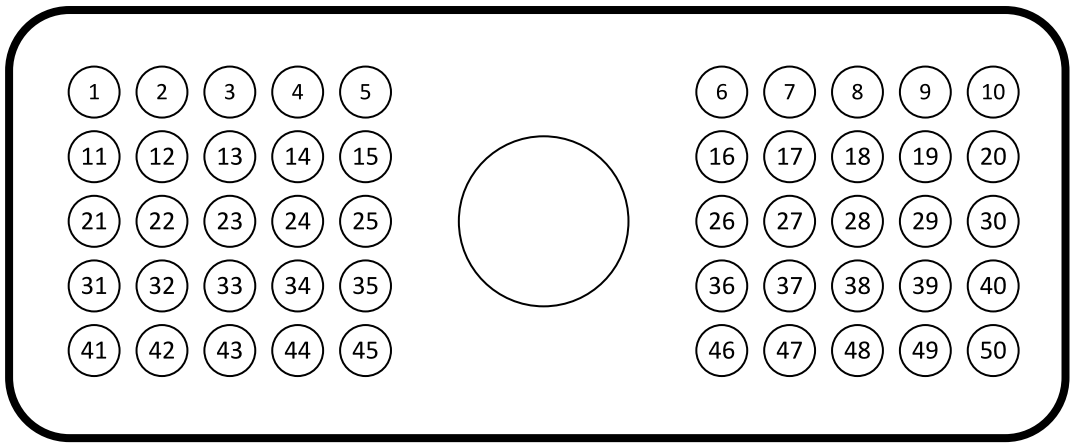










Image 5.69 ECU 50-pin connector

Function	ECU J1 connector	ECU J2 connector	Controller
<b>CAN H</b>	N/A	4	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	5	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	9,10,19,20	N/A	N/A
<b>Battery - (negative)</b>	2,11,12	N/A	N/A
<b>Key Switch</b>	41	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Econtrols EICS Child Fault Codes** on page 1216

### Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Econtrols EICS Child aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ETECS

### Controllers that support the ETECS

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
TimerState	590	Engine Idle Shutdown Timer State
TimerFunction	591	Engine Idle Shutdown Timer Function
TimerOverride	592	Engine Idle Shutdown Timer Override
ShutdownEngine	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert	594	Engine Idle Shutdown Driver Alert Mode
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
ProtectLamp	987	Protect Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfuncLamp	1213	Malfunction Indicator Lamp
RoadSpdLimit	1437	Road Speed Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT1IntGSPwr	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
SCR IntakeNOx	3220	Aftertreatment 1 SCR Intake NOx 1 Reading Stable
AT1IntWROxygen1	3221	Aftertreatment 1 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT1IntGSHeater	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
AT1OutNOxRead	3230	Aftertreatment 1 Outlet NOx 1 Reading Stable
AT1OutWROxygen	3231	Aftertreatment 1 Outlet Wide-Range Percent Oxygen 1 Reading Stable
AT1OutGS1Heat	3233	Aftertreatment 1 Outlet Gas Sensor 1 Heater Control
AT1IntDewPoint	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint	3240	Aftertreatment 2 Exhaust Dew Point
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Crank <sub>4,5,6,7</sub>		Engine Crank Command
Stop <sub>4,5,6,7</sub>		Engine Shutdown/Crank Stop Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-Oil_2		Engine Oil Pressure 2
T-Oil_2		Engine Oil Temperature Bank 2
T-CoolInlet		Engine Coolant Inlet Temperature
APP2	29	Accelerator Pedal Position 2

ThrottleVlv1	51	Throttle Valve Position
T-Intcooler	52	Intake Air Temperature
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Load %
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Pre-Throttle Inlet Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Manifold Absolute Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Outlet Temperature
CoolantLvl	111	Engine Coolant Level 1
KeySwitch	158	Key Switch Battery Potential
Pwr-Rated	166	Engine Rated Power
SysCharging	167	Charging System Potential (Voltage)
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated*	189	Engine Rated Speed
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
TorqMode	899	Engine Torque Mode
TripFuel <sub>4,5,6,7</sub>	1039	Trip Fuel (Gaseous)
P-Fuel1VlvInt	1390	MFG Intake Pressure
IgnitionTime1	1433	Engine Desired Ignition Timing 1
IgnitionTime	1436	Engine Actual Ignition Timing
FuelFlowRate1	1440	Engine Fuel Flow Rate 1
FuelFlowRate2	1441	Engine Fuel Flow Rate 2
FuelVlvPos1	1442	Engine Fuel Valve 1 Position
FuelVlvPos2	1443	Engine Fuel Valve 2 Position
SourceAddress	1483	Source Address of Controlling Device for Engine Control
StarterMode	1675	Engine Starter Mode
FuelVlvPosCmd1	1765	Engine Fuel Valve 1 Commanded Position
FuelVlvPosCmd2	1766	Engine Fuel Valve 2 Commanded Position
TorqueDemand2	2432	Engine Demand - Percent Torque
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1

TorqueEstLoss	2978	Estimated Engine Parasitic Losses - Percent Torque
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen1	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1IntGSHeater	3222	Aftertreatment 1 Intake Gas Sensor 1 Heater Preliminary FMI
SCR IntakeNOx	3224	Aftertreatment 1 SCR Intake NOx Sensor 1 Preliminary FMI
AT1IntOxygen	3225	Aftertreatment 1 Intake Oxygen Sensor 1 Preliminary FMI
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1OutGS1Heat	3232	Aftertreatment 1 Outlet Gas Sensor 1 Heater Preliminary FMI
AT1OutNOxFMI	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1OutOSFMI	3235	Aftertreatment 1 Outlet Oxygen Sensor 1 Preliminary FMI
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
AT2IntOxygen	3256	Aftertreatment 2 Intake Percent Oxygen 1
AT2OutOxygen1	3266	Aftertreatment 2 Outlet Percent Oxygen 1
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
ThrottleCmd	3464	Engine Throttle Actuator 1 Control Command
Operating	3543	Engine Operating State
ShortTFuelTrm1*	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim1*	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm2*	4238	Short-term Fuel Trim - Bank 2
LongTFuelTrim2*	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
T-AT13wCatInt	4289	EGT1
T-AT13wCatOut	4290	EGT2
Knk_retard	61968	Knock Retard Commanded
V-CoilCyl1	61969	Coil Voltage Cyl 1
V-CoilCyl9	61969	Coil Voltage Cyl 9
V-CoilCyl2	61970	Coil Voltage Cyl 2
V-CoilCyl10	61970	Coil Voltage Cyl 10
V-CoilCyl3	61971	Coil Voltage Cyl 3
V-CoilCyl11	61971	Coil Voltage Cyl 11
V-CoilCyl4	61972	Coil Voltage Cyl 4
V-CoilCyl12	61972	Coil Voltage Cyl 12
V-CoilCyl5	61973	Coil Voltage Cyl 5
V-CoilCyl6	61974	Coil Voltage Cyl 6
V-CoilCyl7	61975	Coil Voltage Cyl 7
V-CoilCyl8	61976	Coil Voltage Cyl 8
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit 0x27

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.





## Recommended wiring

Function	6-pin connector C178	Controller
<b>CAN H</b>	2	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	3	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	1	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM
<b>E-Stop (N/C)</b>	4, 5	N/A

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see E-controls ETECS Fault Codes on page 1220**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

E-controls ETECS aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Not Supported		Not Supported		Not Supported		Not Supported
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## 6.1.10 Eicher engines support

ECU Type	Device type supported
<a href="#">DCM (page 276)</a>	Eicher E483 and E694

### DCM

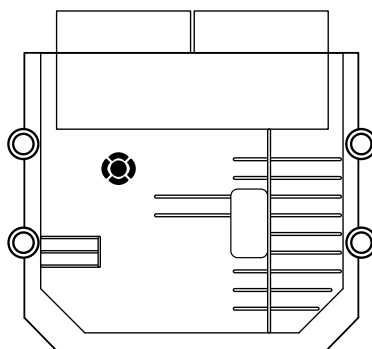


Image 5.70 DCM

### Controllers that support the DCM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
AuxiliaryIO 04	704	Auxiliary I/O #04
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashProtect	3041	Flash Protect Lamp
OilPrimingPmp	3589	Engine Oil Priming Pump Control
PreHeater	3604	Engine Pre-Heater Control
FuelPump	4082	Fuel Pump Primer Control
ProtectLamp	5077	Engine Protect Lamp Command
WarningLamp	5078	Engine Amber Warning Lamp Command
StopLamp	5079	Engine Red Stop Lamp Command
MalfuncCmd	5080	OBD Malfunction Indicator Lamp Command
StarterMotor	6385	Engine Starter Motor Relay Control



ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode	3542	Requested Engine Control Mode
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP	91	Accelerator Pedal Position 1
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
T-AmbientAir	171	Ambient Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand	512	Driver's Demand Engine - Percent Torque
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Operating	3543	Engine Operating State
ThrottleVlv2	3673	Engine Throttle Valve 2 Position
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAuxInput	2885	Engine Droop Auxiliary Input Select
SpdGovDroop	5568	Engine Speed Governor Droop

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring









**Note:** Following info in the table is not confirmed.

Function	ECU 20 pin connector	Controller
CAN H	13	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	14	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1	N/A
Battery - (negative)	20	N/A
Key Switch	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Econtrols EICS Fault Codes on page 1210**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Econtrols EICS aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.11 Enmar devices support

ECU Type	Device type supported
<a href="#">Nira i7 (page 279)</a>	MD97 engines

## Nira i7

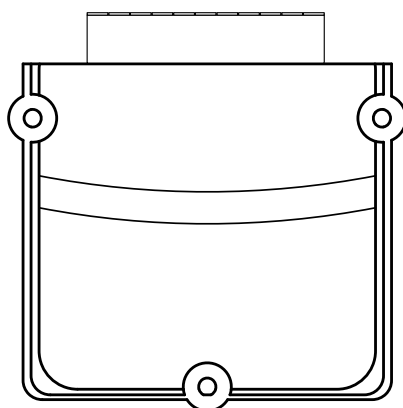


Image 5.71 Nira i7

### Controllers that support the i7

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
AuxiliaryIO 04	704	Auxiliary I/O #04
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashProtect	3041	Flash Protect Lamp
OilPrimingPmp	3589	Engine Oil Priming Pump Control
PreHeater	3604	Engine Pre-Heater Control
FuelPump	4082	Fuel Pump Primer Control
ProtectLamp	5077	Engine Protect Lamp Command
WarningLamp	5078	Engine Amber Warning Lamp Command
StopLamp	5079	Engine Red Stop Lamp Command
MalfuncCmd	5080	OBD Malfunction Indicator Lamp Command
StarterMotor	6385	Engine Starter Motor Relay Control
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode	3542	Requested Engine Control Mode
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP	91	Accelerator Pedal Position 1
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature

P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
T-AmbientAir	171	Ambient Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand	512	Driver's Demand Engine - Percent Torque
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Operating	3543	Engine Operating State
ThrottleVlv2	3673	Engine Throttle Valve 2 Position
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAuxInput	2885	Engine Droop Auxiliary Input Select
SpdGovDroop	5568	Engine Speed Governor Droop

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

**Note:** Following info in the table is not confirmed.

Function	91-pinConnector 2	Controller
<b>CAN H</b>	76	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	77	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,3,5	N/A
<b>Battery - (negative)</b>	2,4,6	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

Available list of texts of fault codes **see Enmar i7 Fault Codes on page 1223**

## 6.1.12 Ford engines support

ECU Type	Engine type
<a href="#">E-control (page 281)</a>	DSG-423, WSG-1068

### E-control

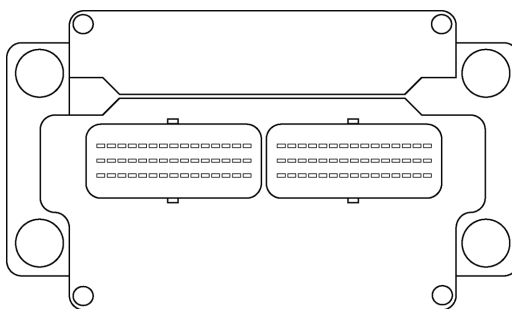


Image 5.72 E-control

### Controllers that support the E-control

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature

APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU B connector	customer 42pin connector	Controller
<b>CAN H</b>	14	28	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	15	29	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	60,79	N/A	N/A
<b>Battery - (negative)</b>	4,69,81	N/A	N/A
<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see FORD e-control Fault Codes on page 1224**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

FORD e-control aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.13 GM engines support

ECU Type	Engine type
<a href="#">E-control (page 284)</a> <a href="#">E-control LCI (page 286)</a>	Natural gas or propane engines: GM 3.0 liter GM 4.3 liter GM 5.0 liter GM 5.7 liter GM 8.1 naturally aspirated GM 8.1 turbo GM 11.1 liter GM 21.9 liter
<a href="#">SECM (page 294)</a>	Gas engines
<a href="#">MEFI4B or MEFI5B (page 289)</a> <a href="#">MEFI 6 (page 291)</a>	Diesel engines

### E-control

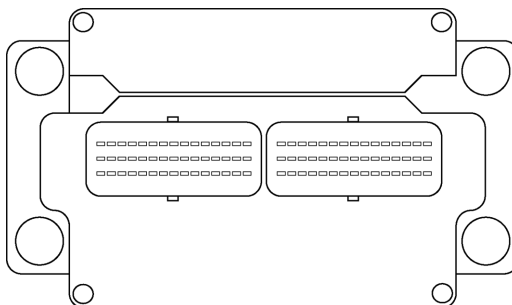


Image 5.73 E-control

### Controllers that support the E-control

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)



FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
ShortTFuelTrm1 <sub>1,2,3,4,5,6,7</sub> *	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim1 <sub>1,2,3,4,5,6,7</sub> *	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm2 <sub>1,2,3,4,5,6,7</sub> *	4238	Short-term Fuel Trim - Bank 2
LongTFuelTrim2 <sub>1,2,3,4,5,6,7</sub> *	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2 <sub>1,2,3,4,5,6,7</sub>	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2 <sub>1,2,3,4,5,6,7</sub>	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - Intelilite<sup>NT</sup>, 2 - Intelilite, 3 - Intelidrive Lite, 4 - Intelicompact<sup>NT</sup>, 5 - Intelinano<sup>NT</sup>, 6 - Intelidrive Nano, 7 - Inteligen200, Inteligen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU B connector	Controller
<b>CAN H</b>	14 (N)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	(S)	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	15 (P)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see GM e-control Fault Codes on page 1228**.

## E-control LCI

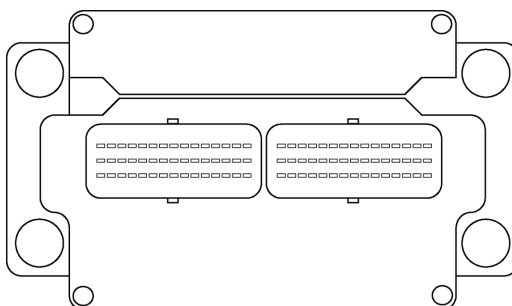


Image 5.74 E-control LCI

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Controllers that support the E-control LCI

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
ShortTFuelTrm1 <sub>1,2,3,4,5,6,7</sub> *	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim1 <sub>1,2,3,4,5,6,7</sub> *	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm2 <sub>1,2,3,4,5,6,7</sub> *	4238	Short-term Fuel Trim - Bank 2

LongTFuelTrim2 <sub>1,2,3,4,5,6,7*</sub>	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2 <sub>1,2,3,4,5,6,7</sub>	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2 <sub>1,2,3,4,5,6,7</sub>	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU B connector	Controller
<b>CAN H</b>	A	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	B	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see GM e-control LCI Fault Codes on page 1231**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## MEFI4B or MEFI5B

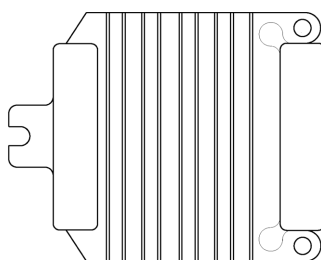


Image 5.75 MEFI4B

### Controllers that support the MEFI4B or MEFI5B

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
GMProtectLamp		GM Protect Lamp
GMWarningLamp		GM Amber Warning Lamp
GMStopLamp		GM Red Stop Lamp
GMMalfunctLamp		GM Malfunction Lamp
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure

T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Request <sub>4,5,6,7</sub>		Requested speed

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU J1 and J2connector	Controller
<b>CAN H</b>	24 (J2)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	9 (J2)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1 (J2)	N/A
<b>Battery - (negative)</b>	13,28,29 (J1)	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
<b>Analog Speed Control</b>	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **GM MEFI4/MEFI5B Fault Codes** on page 1235

Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

GM MEFI4/MEFI5B aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

MEFI 6

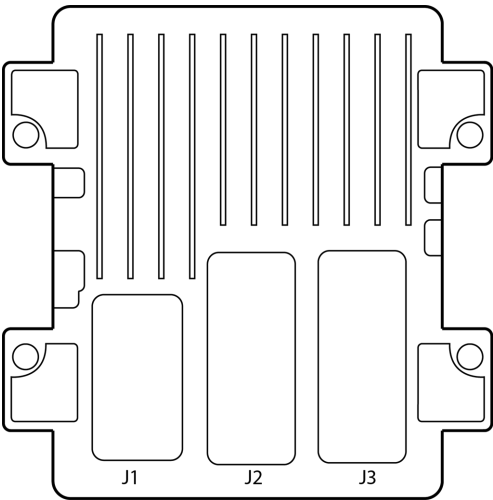


Image 5.76 MEFI 6

Controllers that support the MEFI 6

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
GMProtectLamp		GM Protect Lamp
GMWarningLamp		GM Amber Warning Lamp
GMStopLamp		GM Red Stop Lamp
GMMalfunctLamp		GM Malfunction Lamp
BankAFuelCtrl		Bank A Close Loop Fuel Control

BankBFuelCtrl		Bank B Close Loop Fuel Control
StopLamp <sup>1,2,3,4,5,6,7</sup>	623	Red Stop Lamp
WarningLamp <sup>1,2,3,4,5,6,7</sup>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sup>1,2,3,4,7</sup>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sup>1,2,3,4,7</sup>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sup>1,2,3,4,7</sup>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sup>1,2,3,4,7</sup>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sup>1,2,3,4,7</sup>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ECMInfo		ECM Information1
Displacement		Engine Displacement
ID		OEM Engine ID
ECMHW		ECM Hardware
V-O2SensA1Raw		O2 Sensor A1 Raw Voltage
O2SensA1Cnt		O2 Sensor A1 Rich/Lean Cross Counts
BLMACell		Bank A BLM Cell
BLMACellValue		Bank A BLM[Cell] Value
BankAFuelMult		Bank A Fuel Mult
V-O2SensB1Raw		O2 Sensor B1 Raw Voltage
O2SensB1Cnt		O2 Sensor B1 Rich/Lean Cross Counts
BLMBCell		Bank B BLM Cell
BLMBCellValue		Bank B BLM[Cell] Value
BankBFuelMult		Bank B Fuel Mult
V-O2SensA2Raw		O2 Sensor A2 Raw Voltage
V-O2SensB2Raw		O2 Sensor B2 Raw Voltage
RatedTorque		Current Speed Rated Torque
CamWAngle		Cam-W Angle
CamWAngleRef		Reference Cam-W Angle
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
APP	91	Accelerator Pedal Position 1
P-FuelDelivery	94	Engine Fuel Delivery Pressure
FuelLevel1	96	Fuel Level 1
P-Oil <sup>1,2,3,4,5,6,7</sup>	100	Engine Oil Pressure
P-Intake <sup>1,2,3,4,7</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7</sup>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sup>1,2,3,4,5,6,7</sup>	110	Engine Coolant Temperature
Battery	168	Battery Potential / Power Input 1



T-Oil	175	Engine Oil Temperature 1
FuelRate <sup>1,2,3,4,7</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7</sup>	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
IgnitionTime	1436	Engine Actual Ignition Timing
StarterMode	1675	Engine Starter Mode
AT1IntOxygen	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT2IntOxygen	3256	Aftertreatment 2 Intake Percent Oxygen 1
AT2OutOxygen1	3266	Aftertreatment 2 Outlet Percent Oxygen 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Request <sup>1,2,3,4,5,6,7</sup>		Requested speed
Spd-Requested <sup>1,2,3,4,5,6,7</sup>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









No documentation available so far!

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

GM MEFI6 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## SECM

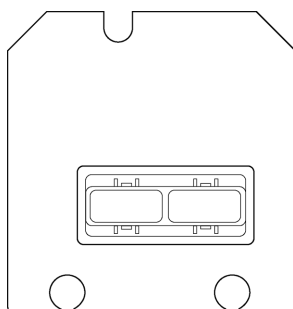


Image 5.77 SECM

## Controllers that support the SECM

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS TimerState <sub>1,2,3,4,5,6,7</sub>	1107	Engine Protection System Timer State
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
EPS Config <sub>1,2,3,4,5,6,7</sub>	1111	Engine Protection System Configuration
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp

FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.



## Recommended wiring

Function	ECU B connector	Controller
<b>CAN H</b>	20	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	21	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	22	N/A
<b>Battery - (negative)</b>	17	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **GM SECM Fault Codes on page 1244**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

GM SECM aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.14 Guascor engines support

ECU Type	Engine type
<a href="#">LECM E6 (page 297)</a>	SFGLD 480, SFGLD 560, HGM 560

### LECM E6

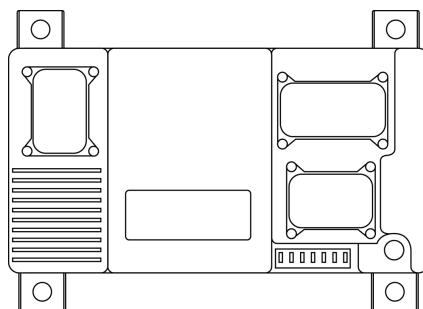


Image 5.78 LECM E6

### Controllers that support the LECM E6

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff1 <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FuelShutoff2 <sub>1,2,3,4,5,6,7</sub>	2807	Engine Fuel Shutoff 2 Control
OilPrimingPmp <sub>1,2,3,4,5,6,7</sub>	3589	Engine Oil Priming Pump Control
EleSystem <sub>1,2,3,4,5,6,7</sub>	3603	Engine Electrical System Power Conservation Control
SDRequest <sub>1,2,3,4,5,6,7</sub>	3606	Engine Controlled Shutdown Request
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
StarterMotor <sub>1,2,3,4,5,6,7</sub>	6385	Engine Starter Motor Relay Control
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SprkPlugLife1		Spark Plug Life Indicator cylinder 1
SprkPlugLife2		Spark Plug Life Indicator cylinder 2
SprkPlugLife3		Spark Plug Life Indicator cylinder 3
SprkPlugLife4		Spark Plug Life Indicator cylinder 4
SprkPlugLife5		Spark Plug Life Indicator cylinder 5
SprkPlugLife6		Spark Plug Life Indicator cylinder 6

SprkPlugLife7		Spark Plug Life Indicator cylinder 7
SprkPlugLife8		Spark Plug Life Indicator cylinder 8
SprkPlugLife9		Spark Plug Life Indicator cylinder 9
SprkPlugLife10		Spark Plug Life Indicator cylinder 10
SprkPlugLife11		Spark Plug Life Indicator cylinder 11
SprkPlugLife12		Spark Plug Life Indicator cylinder 12
SprkPlugLife13		Spark Plug Life Indicator cylinder 13
SprkPlugLife14		Spark Plug Life Indicator cylinder 14
SprkPlugLife15		Spark Plug Life Indicator cylinder 15
SprkPlugLife16		Spark Plug Life Indicator cylinder 16
SprkPlugLife17		Spark Plug Life Indicator cylinder 17
SprkPlugLife18		Spark Plug Life Indicator cylinder 18
SprkPlugLife19		Spark Plug Life Indicator cylinder 19
SprkPlugLife20		Spark Plug Life Indicator cylinder 20
MisFLvICyl 1		Misfire level cylinder 1
MisFLvICyl 2		Misfire level cylinder 2
MisFLvICyl 3		Misfire level cylinder 3
MisFLvICyl 4		Misfire level cylinder 4
MisFLvICyl 5		Misfire level cylinder 5
MisFLvICyl 6		Misfire level cylinder 6
MisFLvICyl 7		Misfire level cylinder 7
MisFLvICyl 8		Misfire level cylinder 8
MisFLvICyl 9		Misfire level cylinder 9
MisFLvICyl 10		Misfire level cylinder 10
MisFLvICyl 11		Misfire level cylinder 11
MisFLvICyl 12		Misfire level cylinder 12
MisFLvICyl 13		Misfire level cylinder 13
MisFLvICyl 14		Misfire level cylinder 14
MisFLvICyl 15		Misfire level cylinder 15
MisFLvICyl 16		Misfire level cylinder 16
MisFLvICyl 17		Misfire level cylinder 17
MisFLvICyl 18		Misfire level cylinder 18
MisFLvICyl 19		Misfire level cylinder 19
MisFLvICyl 20		Misfire level cylinder 20
APP <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature

T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost <sub>1,2,3,4,5,6,7*</sub>	1128	Engine Turbocharger 2 Boost Pressure
T-IntManifold <sub>2,1,2,3,4,5,6,7</sub>	1131	Engine Intake Manifold 2 Temperature
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out <sub>1,2,3,4,5,6,7</sub>	1184	Engine Turbocharger 1 Turbine Outlet Temperature
T-Turbo2Out <sub>1,2,3,4,5,6,7</sub>	1185	Engine Turbocharger 2 Turbine Outlet Temperature
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
FuelFlowRate1 <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelFlowRate2 <sub>1,2,3,4,5,6,7</sub>	1441	Engine Fuel Flow Rate 2
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
ExhO2SensFuelC <sub>1,2,3,4,5,6,7</sub>	1695	Engine Exhaust O2 Sensor Fueling Correction
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
Pwr-Real <sub>1,2,3,4,5,6,7*</sub>	2452	Generator Total Real Power
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1

TurboBpssCmd <sub>1,2,3,4,5,6,7</sub>	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
RemainingTime <sub>1,2,3,4,5,6,7</sub>	3544	Time Remaining in Engine Operating State
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
ThrottleVlv2 <sub>1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
T-Coolant2 <sub>1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
T-AT1GasCatInt <sub>1,2,3,4,5,6,7</sub>	4753	Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature
T-AT1GasCatOut <sub>1,2,3,4,5,6,7</sub>	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
TurboBypass1 <sub>1,2,3,4,5,6,7</sub>	5366	Engine Turbocharger Compressor Bypass Actuator 1 Desired Position
TurboBypass1 <sub>1,2,3,4,5,6,7</sub>	5367	Engine Turbocharger Compressor Bypass Actuator 1 Preliminary FMI
TurboBypass1 <sub>1,2,3,4,5,6,7</sub>	5368	Engine Turbocharger Compressor Bypass Actuator 1 Temperature Status
Cyl 1IgnOffset <sub>1,2,3,4,5,6,7</sub>	7356	Engine Cylinder 1 Ignition Timing Offset
Cyl 2IgnOffset <sub>1,2,3,4,5,6,7</sub>	7357	Engine Cylinder 2 Ignition Timing Offset
Cyl 3IgnOffset <sub>1,2,3,4,5,6,7</sub>	7358	Engine Cylinder 3 Ignition Timing Offset
Cyl 4IgnOffset <sub>1,2,3,4,5,6,7</sub>	7359	Engine Cylinder 4 Ignition Timing Offset
Cyl 5IgnOffset <sub>1,2,3,4,5,6,7</sub>	7360	Engine Cylinder 5 Ignition Timing Offset
Cyl 6IgnOffset <sub>1,2,3,4,5,6,7</sub>	7361	Engine Cylinder 6 Ignition Timing Offset
Cyl 7IgnOffset <sub>1,2,3,4,5,6,7</sub>	7362	Engine Cylinder 7 Ignition Timing Offset
Cyl 8IgnOffset <sub>1,2,3,4,5,6,7</sub>	7363	Engine Cylinder 8 Ignition Timing Offset
Cyl 9IgnOffset <sub>1,2,3,4,5,6,7</sub>	7364	Engine Cylinder 9 Ignition Timing Offset
Cyl10IgnOffset <sub>1,2,3,4,5,6,7</sub>	7365	Engine Cylinder 10 Ignition Timing Offset
Cyl11IgnOffset <sub>1,2,3,4,5,6,7</sub>	7366	Engine Cylinder 11 Ignition Timing Offset
Cyl12IgnOffset <sub>1,2,3,4,5,6,7</sub>	7367	Engine Cylinder 12 Ignition Timing Offset
Cyl13IgnOffset <sub>1,2,3,4,5,6,7</sub>	7368	Engine Cylinder 13 Ignition Timing Offset
Cyl14IgnOffset <sub>1,2,3,4,5,6,7</sub>	7369	Engine Cylinder 14 Ignition Timing Offset
Cyl15IgnOffset <sub>1,2,3,4,5,6,7</sub>	7370	Engine Cylinder 15 Ignition Timing Offset
Cyl16IgnOffset <sub>1,2,3,4,5,6,7</sub>	7371	Engine Cylinder 16 Ignition Timing Offset
Cyl17IgnOffset <sub>1,2,3,4,5,6,7</sub>	7372	Engine Cylinder 17 Ignition Timing Offset
Cyl18IgnOffset <sub>1,2,3,4,5,6,7</sub>	7373	Engine Cylinder 18 Ignition Timing Offset
Cyl19IgnOffset <sub>1,2,3,4,5,6,7</sub>	7374	Engine Cylinder 19 Ignition Timing Offset
Cyl20IgnOffset <sub>1,2,3,4,5,6,7</sub>	7375	Engine Cylinder 20 Ignition Timing Offset
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Pwr-Desired*		Desired Power from Generator
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real_out <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power_out
DroopAccelItr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - Intelilite<sup>NT</sup>, 2 - Intelilite, 3 - Intelidrive Lite, 4 - Intelicompact<sup>NT</sup>, 5 - Intelinano<sup>NT</sup>, 6 - Intelidrive Nano, 7 - Inteligen200, Inteligen500



## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	DB9 Pin	Service 3 Pin Connector	Controller
<b>CAN H</b>	J2-007	7	A	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	J2-015	5	C	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	J2-008	2	B	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	J1-121	N/A	N/A	N/A
<b>Battery - (negative)</b>	J1-122,123	N/A	N/A	N/A
<b>Key Switch</b>	J1-012	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Guascor LECM E6 Fault Codes on page 1244**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Guascor LECM E6 aftertreatment lamps



Solid On



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## 6.1.15 Hatz engines support

ECU Type	Engine type
<a href="#">EDC17 (page 303)</a>	

### EDC17

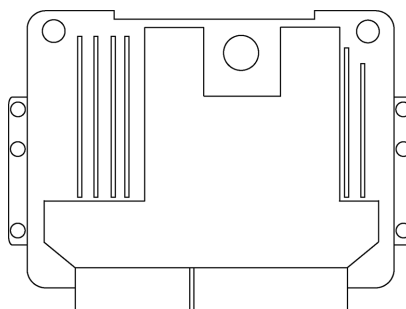


Image 5.79 EDC17C81

### Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Running		Engine Running
ServiceDelay		Service Delay
Pre-glow		Pre-glow Active
P-OilMissing		Oil Pressure Missing
DiagLamp		Engine Diagnostic Lamp
T-Over		Engine Overtemperature
AirFilterSw		Air Filter Switch
WaterInFuel	97	Water In Fuel Indicator 1
Alternator1	3353	Alternator 1 Status
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFInhSwitch <sup>1,2,3,4,5,6,7</sup>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhBrake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ParkingBrake	70	Parking Brake Switch
Brake	597	Brake Switch
TranNeutral	604	Transmission Neutral Switch
AutoStartStop <sup>1,2,3,4,5,6,7</sup>	1656	Engine Automatic Start Enable Switch
RegenInhibit <sup>1,2,3,4,7</sup>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sup>1,2,3,4,7</sup>	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
InjectionQty		Phys. Injection Quantity
Phys Torque		Phys. Torque
APP	91	Accelerator Pedal Position 1
Load <sup>1,2,3,4,5,6,7</sup>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sup>1,2,3,4,5,6,7</sup>	100	Engine Oil Pressure
P-Intake <sup>1,2,3,4,7</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7</sup>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sup>1,2,3,4,5,6,7</sup>	110	Engine Coolant Temperature
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate <sup>1,2,3,4,7</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7</sup>	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
TorqueDemand	2432	Engine Demand - Percent Torque
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
DPFIntake	3244	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Preliminary FMI
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
HEST Lamp <sup>1,2,3,4,5,6,7</sup>	3698	Exhaust System High Temperature Lamp Command
DPFStatus <sup>1,2,3,4,5,6,7</sup>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sup>1,2,3,4,7</sup>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sup>1,2,3,4,5,6,7</sup>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	Hatz terminal	Controller
<b>CAN H</b>	K66	aa	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A		CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	K87	bb	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	K01,K03,K05, (K47)		N/A
<b>Battery - (negative)</b>	K02,K04,K06		N/A
<b>Key Switch</b>	K46		Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	K81 (K60)		SG OUT
<b>Analog Speed Control</b>	K67 (K58)		SG COM
<b>Engine Start Switch</b>	K50		
<b>Engine Stop switch</b>	K59		
<b>Starter Request Input</b>	K74		








For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Hatz EDC17 Fault Codes on page 1251**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Hatz EDC17 aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On		Not Supported		Solid On
	Blink slow		Blink slow				Blink slow
	Blink fast		Blink fast				Blink fast
	Solid On		Not Supported		Not Supported		Solid On
	Blink slow						

### 6.1.16 Heinzmann devices support

ECU Type	Device type supported
<a href="#">Ariadne (page 792)</a>	ARIADNE KC-01
<a href="#">Helenos (page 306)</a>	HELENOS DC 2
<a href="#">Kronos (page 794)</a>	KRONOS 20
<a href="#">Pandaros (page 308)</a>	PANDAROS DC 6
<a href="#">Phlox (page 874)</a>	PHLOX II
<a href="#">GMF (page 790)</a>	GMA, GMF

### Helenos

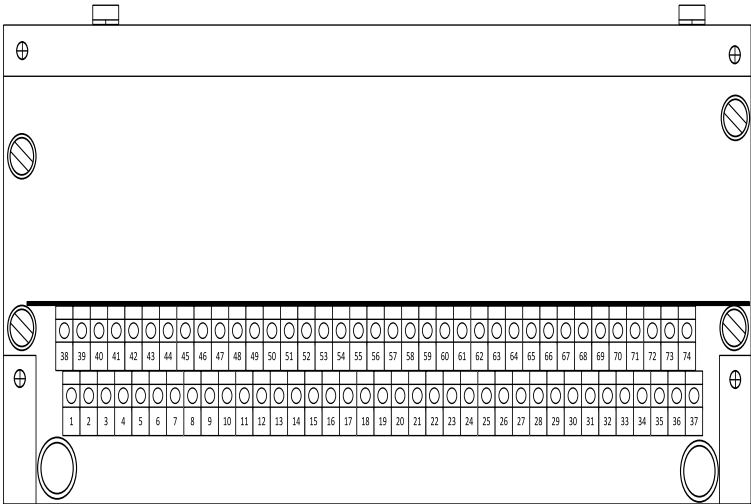


Image 5.80 Helenos

### Controllers that support the Helenos:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.






## Recommended wiring

Function	Terminals	Controller
<b>CAN H</b>	P3 - E	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	P3 - G	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	P2 - N	N/A
<b>Battery - (negative)</b>	P2 - U	N/A

Available list of texts of fault codes **see Heinzmann Helenos Fault Codes on page 1252**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Heinzmann Helenos aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## Pandaros

### Controllers that support the Pandaros:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
FuelRack <sub>1,2,3,4,5,6,7</sub>	1210	Engine Fuel Rack Position
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.











## Recommended wiring

Function	Terminal	Controller
<b>CAN H</b>	H	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	L	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	21	N/A
<b>Battery - (negative)</b>	20	N/A

Available list of texts of fault codes **see Heinzmann Pandaros Fault Codes on page 1254**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Heinzmann Pandaros aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.17 HuegliTech devices support

ECU Type	Device type supported
<a href="#">SG50&amp;SG100 (page 310)</a>	HT-SG-50, HT-SG-100
<a href="#">LEF200 (page 878)</a>	HT-LEF100/200
<a href="#">LEF200 Module 1 (page 884)</a>	HT-LEF100/200
<a href="#">LEF200 Module 2 (page 887)</a>	HT-LEF100/200
<a href="#">LEF200 Module 3 (page 891)</a>	HT-LEF100/200
<a href="#">AF-1500 (page 796)</a>	AF-1500

# SG50&SG100

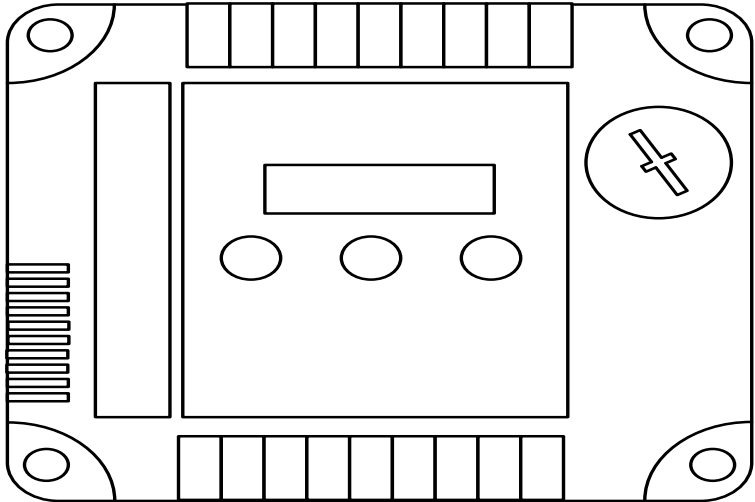


Image 5.81 SG50&SG100

## Controllers that support the SG50&SG100:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3</sub>	91	Accelerator Pedal Position 1
EngineSpeed <sub>1,2,3</sub>	190	Engine Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	Terminal	Controller
<b>CAN H</b>	Q	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	P	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	M	N/A
<b>Battery - (negative)</b>	L	N/A

Available list of texts of fault codes **see Huegli Tech SG50 & SG100 Fault Codes on page 1251**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Huegli Tech SG50 & SG100 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## 6.1.18 Hyundai engines support

ECU Type	Engine type
<a href="#">MD1CC (page 312)</a>	DX08, DX05

### MD1CC

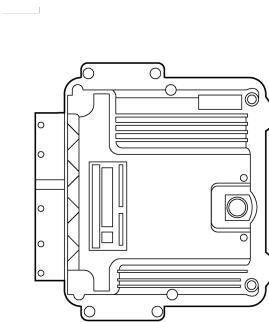


Image 5.82 MD1CC

### Controllers that support the MD1CC

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
ShiftSwitch <sub>1,2,3,4,5,6,7</sub>	572	Retarder Enable - Shift Assist Switch
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
TranMode <sub>1,2,3,4,5,6,7</sub>	1852	Transmission Mode 1
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)

FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1OutNOxRead <sub>1,2,3,4,5,6,7</sub>	3230	Aftertreatment 1 Outlet NOx 1 Reading Stable
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	5077	Engine Protect Lamp Command
WarningLamp <sub>1,2,3,4,5,6,7</sub>	5078	Engine Amber Warning Lamp Command
MalfuncCmd <sub>1,2,3,4,5,6,7</sub>	5080	OBD Malfunction Indicator Lamp Command
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
ASR Engine <sub>1,2,3,4,5,6,7</sub>	561	ASR Engine Control Active
ASR Brake <sub>1,2,3,4,5,6,7</sub>	562	ASR Brake Control Active
ABS <sub>1,2,3,4,5,6,7</sub>	563	Anti-Lock Braking (ABS) Active
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
EBS BrakeSw <sub>1,2,3,4,5,6,7</sub>	1121	EBS Brake Switch
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
ATC/ASR <sub>1,2,3,4,5,6,7</sub>	1793	ATC/ASR Information Signal
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ACCusgDemd <sub>1,2,3,4,5,6,7</sub>	5023	ACC usage demand
SCROverride <sub>1,2,3,4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure

T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	1085	Intended Retarder Percent Torque
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1480	Source Address of Controlling Device for Retarder Control
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
Spd-Fan <sub>1,2,3,4,5,6,7*</sub>	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDriver <sub>1,2,3,4,5,6,7</sub>	1715	Drivers Demand Retarder - Percent Torque
TorqueActMax <sub>1,2,3,4,5,6,7</sub>	1717	Actual Maximum Available Retarder - Percent Torque
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
EGR1Vlv <sub>1,2,3,4,5,6,7</sub>	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-AT1Exh3 <sub>1,2,3,4,5,6,7</sub>	3245	Aftertreatment 1 Exhaust Temperature 3
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command

HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
TripFuel <sub>1,2,3,4,5,6,7</sub>	5053	Engine Trip Fuel (High Resolution)
TotalFuelUsed <sub>3,1,2,3,4,5,6,7</sub>	5054	Engine Total Fuel Used (High Resolution)
TimeToDerateL <sub>1,2,3,4,5,6,7</sub>	7426	Operator Inducement Time to Torque Derate Level 1
TimeFinal <sub>1,2,3,4,5,6,7</sub>	7719	Operator Inducement Time to Final Inducement Action
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ReqTorque <sub>1,2,3,4,5,6,7</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State
AdaptiveCC <sub>1,2,3,4,5,6,7</sub>	1590	Adaptive Cruise Control Mode
Spd-TachoShaft <sub>1,2,3,4,5,6,7</sub> *	1623	Tachograph output shaft speed
AT1IntNOxHeat <sub>1,2,3,4,5,6,7</sub>	5024	Aftertreatment 1 Intake NOx Sensor Heater Ratio
AT1IntNOx <sub>1,2,3,4,5,6,7</sub>	5025	Aftertreatment 1 Intake NOx Sensor New part deviation NOx Gain
AT1IntNOx <sub>1,2,3,4,5,6,7</sub>	5026	Aftertreatment 1 Intake NOx Sensor New part deviation NOx Offset
AT1IntNOxO2 <sub>1,2,3,4,5,6,7</sub>	5027	Aftertreatment 1 Intake NOx Sensor O2 Pressure Correction
AT1IntNOxNOx <sub>1,2,3,4,5,6,7</sub>	5028	Aftertreatment 1 Intake NOx Sensor NOx Pressure Correction
AT1IntNOxNOx <sub>1,2,3,4,5,6,7</sub>	5029	Aftertreatment 1 Intake NOx Sensor NO2 Correction
AT1IntNOxNH3 <sub>1,2,3,4,5,6,7</sub>	5030	Aftertreatment 1 Intake NOx Sensor NH3 Correction
AT1OutNOxHeat <sub>1,2,3,4,5,6,7</sub>	5031	Aftertreatment 1 Outlet NOx Sensor Heater Ratio
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	5032	Aftertreatment 1 Outlet NOx Sensor New part deviation NOx Gain
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	5033	Aftertreatment 1 Outlet NOx Sensor New part deviation NOx Offset
AT1OutNOxO2 <sub>1,2,3,4,5,6,7</sub>	5034	Aftertreatment 1 Outlet NOx Sensor O2 Pressure Correction
AT1OutNOxNOx <sub>1,2,3,4,5,6,7</sub>	5035	Aftertreatment 1 Outlet NOx Sensor NOx Pressure Correction
AT1OutNOxNOx <sub>1,2,3,4,5,6,7</sub>	5036	Aftertreatment 1 Outlet NOx Sensor NO2 Correction
AT1OutNOxNH3 <sub>1,2,3,4,5,6,7</sub>	5037	Aftertreatment 1 Outlet NOx Sensor NH3 Correction

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000	
Source	SpeedReq RPM <sup>1</sup>
Convert	NO

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	ECU connector	Diagnostic connector	Controller
<b>CAN H</b>	K76B	2	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	
<b>CAN L</b>	K75B	1	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	K01, K01A, K01B, K03, K05	4	N/A
<b>Battery - (negative)</b>	K02, K02A, K02B, K04, K06	3	N/A
<b>Key Switch</b>	K88B	6	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Hyundai MD1CC Fault Codes on page 1252**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Hyundai MD1CC aftertreatment lamps							
Solid On		Solid On		Solid On		Solid On	
	Blink slow		Blink slow		Solid On		Solid On Blink slow
	Blink fast		Blink fast				
	Solid On		Solid On		Not Supported		Not Supported



## 6.1.19 Isuzu engines support

ECU Type	Engine type
<a href="#">ECM (page 317)</a>	4HK series 5.2L (140kW-190kW) 4J series 3.0L (46kW-140kW) 4L series 2.2L (30kW - 49kW) 6HK series 7.8L (up to 300kW) 6U series 9.8L (up to 400kW) 6W series 15.7L (up to 400kW)

### ECM

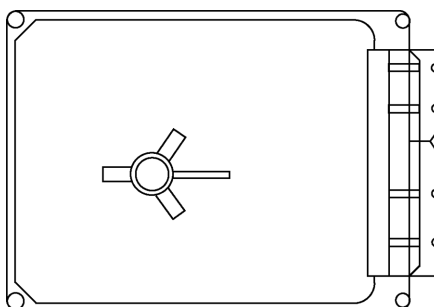


Image 5.83 ECM

### Controllers that support the ECM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IgnitionSwitch <sub>3</sub>		Ignition Key Switch
RegenAssist1 <sub>3</sub>		Regeneration Assist Signal 1
RegenAssist2 <sub>3</sub>		Regeneration Assist Signal 2
StarterRelay <sub>3</sub>		Starter Cut Relay Signal
T-EGR <sub>3</sub>		EGR Gas Temperature Warning
T-AirBoostDiff <sub>3</sub>		Intake Air and Boost Temperature Difference Warning
T-ExhGas <sub>3</sub>		Exhaust Gas Temperature Warning
T-IntakeGas <sub>3</sub>		Intake Gas Temperature Warning
FuelFilterClog <sub>3</sub>		Fuel Filter Clogging Warning
P-Oil <sub>3</sub>		Engine Oil Pressure Drop Warning
T-Boost <sub>3</sub>		Boost Temperature Rise Warning
T-Fuel <sub>3</sub>		Fuel Temperature Rise Warning
T-Coolant <sub>3</sub>		Coolant Temperature Rise Warning
WrnOverrun <sub>3</sub>		Overrun Warning
ESD <sub>3</sub>		Emergency Shutdown Operation Signal
Glow <sub>3</sub>		Glow Signal
DPFGreenLmp <sub>3</sub>		Diesel Particulate Filter Green Lamp Mode

DPFBuzzer <sub>3</sub>		Diesel Particulate Filter Buzzer Mode
AirCleanClogg <sub>3</sub>		Air Cleaner Clogging Signal
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
Starter <sub>1,2,3,4,5,6,7</sub>	704	Starter Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop <sub>3,4,5,6,7</sub>		Proprietary Engine Stop Request
ProtectionHold <sub>3</sub>		Engine Protection System Holding Signal
Preheat <sub>3</sub>		Preheating Start Signal
RegenEnable <sub>3,4,5,6,7</sub>		Regeneration Enabling Signal
ManualPurge <sub>3,4,5,6,7</sub>		Manual Purge request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DEFLevelLamp <sub>3,5</sub>		Diesel Exhaust Fluid Tank Low Level Lamp
SCR Inducement <sub>3</sub>		Inducement level
DEFLevel <sub>3,4,5,6,7</sub>		Diesel Exhaust Fluid Tank Level
T-Intake <sub>3,4,5,6,7</sub>		Intake Manifold Temperature
T-DPFInlet <sub>3</sub>		Diesel Particulate Filter Inlet Gas Temperature
T-DPFInletCat <sub>3</sub>		Diesel Particulate Filter Catalyst Inlet Gas Temperature
T-EGR <sub>3</sub>		EGR Gas Temperature
Spd-Target <sub>3</sub>		Target Engine Speed
FuelQualityLvl <sub>3</sub>		Fuel Injection Quantity Level
ActualTrq <sub>3</sub>		Engine Percent Torque
Boost Press <sub>3</sub>		Boost Pressure
Spd-Engine <sub>3</sub>		Indication Engine Speed
P-CRDiff <sub>3</sub>		Common Rail Pressure Difference
DPFAmberLmp <sub>3</sub>		Diesel Particulate Filter Amber Lamp Mode
DPFStatus <sub>3</sub>		Diesel Particulate Filter Indicator Status
DPFRegen <sub>3,4,5,6,7</sub>		Diesel Particulate Filter Regeneration Flag
OpenTurbo <sub>3</sub>		Turbo Actual Opening
Torque <sub>3</sub>		Engine Torque
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure

OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
P-Fuel1InjCtr <sub>1,2,3,4,5,6,7*</sub>	164	Engine Fuel Injection Control Pressure
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
AcceleratorReq <sub>3</sub>		Request Accelerator Position
Purge ID <sub>3,4,5,6,7</sub>		Byte 1
rest <sub>3,4,5,6,7</sub>		byte 3-4
rest <sub>3,4,5,6,7</sub>		byte 4-6
rest <sub>3,4,5,6,7</sub>		byte 7-8
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Proprietary parameters

Parameter name	Function
Stop Request	Proprietary parameter. The command for normal stopping of the engine. The recommended source value for this command is Stop solenoid.
EngProtHoldSig	Proprietary parameter. Engine Protection System Holding Signal. For more information about this signal contact local Isuzu representative
PreheatStartSg	Proprietary parameter.

Preheating Start Signal. For more information about this signal contact local Isuzu representative

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 121pin connector	Controller
<b>CAN H</b>	18	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	37	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	2,5	N/A
<b>Battery - (negative)</b>	1,3,4	N/A
<b>Key Switch</b>	24	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
<b>Analog Speed Control</b>	N/A	SG COM









For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Isuzu ECM Fault Codes on page 1256**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Isuzu ECM aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow Blink fast
	Not Supported		Solid On Blink slow Blink fast		Solid On Blink slow		Solid On

## 6.1.20 Iveco engines support

ECU Type	Engine type
<a href="#">EDC (page 323)</a> EDC62 or EDC7C1 or EDC7UC31 <a href="#">EDC Tier3 (EDC7) (page 334)</a> EDC7UC31 MS 6.2	NEF and Cursor (9, 10, 13) NEF marine NEF tier2 NEF tier3 NEF 560 marine Cursor 8,10,13 tier2 Cursor 9 marine Cursor 9 industrial tier2 Cursor 9 industrial tier3
<a href="#">EDC Main (page 327)</a>	NEF and Cursor (9, 10, 13) NEF marine NEF tier2 NEF tier3 NEF 560 marine Cursor 8,10,13 tier2 Cursor 9 marine Cursor 9 industrial tier2 Cursor 9 industrial tier3
<a href="#">EDC SCR (page 331)</a>	NEF and Cursor (9, 10, 13) NEF marine NEF tier2 NEF tier3 NEF 560 marine Cursor 8,10,13 tier2 Cursor 9 marine Cursor 9 industrial tier2 Cursor 9 industrial tier3
<a href="#">MD1 (page 337)</a>	NEF & Cursor Engines Stage V F5 (F34/F36) NEF (N45/N67) Cursor (C87,C13)
<a href="#">MD1 IPU (page 341)</a>	F5 series variable speed stage V engines
<a href="#">ADEM III (page 344)</a>	Vector
<a href="#">EDC17 (page 351)</a>	NEF & Cursor Engines Stage V
<a href="#">MD1/EDC7 Marine (page 355)</a> EDC7	Cursor 16

EDC

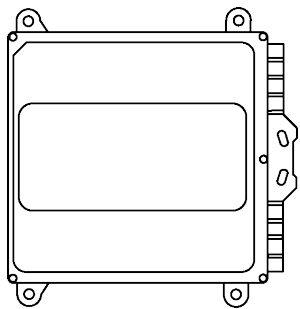


Image 5.84 EDC7 - Cursor

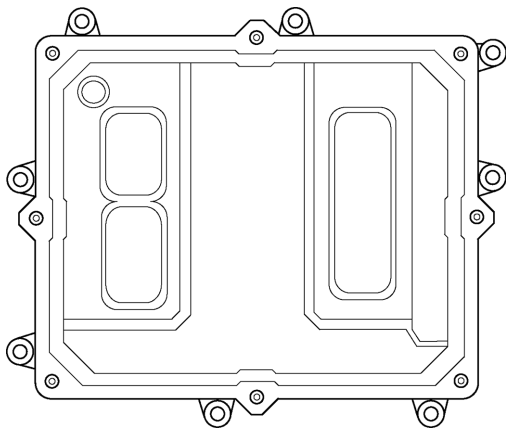


Image 5.85 EDC7 - NEF

Controllers that support the EDC

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Immobilizer		Immobilizer Fuel Block
DiagLamp		Diagnostic Lamp Status
Overspeed		Engine Overspeed
StopButton		Status Of Stop Button
StartButton		Status Of Start Button
P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel
FuelFltHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
ShiftSwitch <sub>1,2,3,4,5,6,7</sub>	572	Retarder Enable - Shift Assist Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active

Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
NoSCIModule <sub>4,5,6,7</sub>		Mode Without SCI
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ColdStartHeat		Cold Start Heater Status
T-Over		Engine Over Temp Status
OilQuality		Oil Quality
OilLife		Oil Life Monitoring Status
Regeneration		Regeneration Status Lamp
DegradationLvl		Engine Degradation Level
Operational		ECM Operational Status
T-CatalUp <sub>6</sub>		Catalyst Upstream Temp
T-CatalDown <sub>6</sub>		Catalyst Downstream Temp
P-Urea <sub>6</sub>		Urea Pressure
UreaTankLvl <sub>6</sub>		Urea Tank Level
T-Urea <sub>6</sub>		Urea Tank Temp
UreaQuality <sub>6</sub>		Urea Quantity
DEFLvl <sub>5,6</sub>		DEF Level
DEFQuality <sub>5</sub>		DEF Quality
DEFFailure <sub>5</sub>		DEF Technical Failure
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1



T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-CoolFtrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
SCIModule		Mode With SCI
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
VE-Spd-Req <sub>1,2,3,4,5,6,7</sub>	898	TSC1-VE Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function
Requested speed	The speed request is sent from address 3.
Mode without SCI	This output is recommended to be used when there is <b>no SCI module connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.
Mode with SCI	This output must be used when a <b>SCI module is connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for NEF

Function	ECU A2 89pin connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	53	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A
Battery - (negative)	3,9,14,15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

## Recommended wiring for Cursor

Function	ECU A2 89pin connector	Controller
CAN H	11	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	12	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Iveco EDC Fault Codes on page 1257**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco EDC aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
					Not Supported

EDC Main

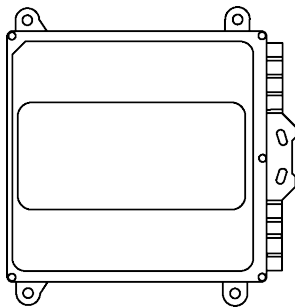


Image 5.86 EDC7 - Cursor

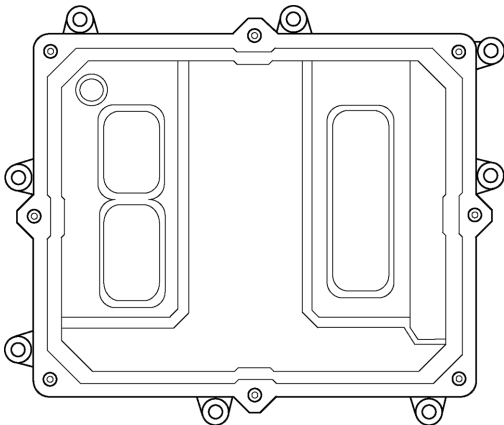


Image 5.87 EDC7 - NEF

Controllers that support the EDC Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Immobilizer		Immobilizer Fuel Block
DiagLamp		Diagnostic Lamp Status
Overspeed		Engine Overspeed
StopButton		Status Of Stop Button
StartButton		Status Of Start Button
P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel
FuelFiltHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
ShiftSwitch <sub>1,2,3,4,5,6,7</sub>	572	Retarder Enable - Shift Assist Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
NoSCIModule <sub>4,5,6,7</sub>		Mode Without SCI
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ColdStartHeat		Cold Start Heater Status
T-Over		Engine Over Temp Status
OilQuality		Oil Quality
OilLife		Oil Life Monitoring Status
Regeneration		Regeneration Status Lamp
DegradationLvl		Engine Degradation Level
Operational		ECM Operational Status
DEFLvl <sub>5,6</sub>		DEF Level
DEFQuality <sub>5</sub>		DEF Quality

DEFFailure <sub>5</sub>		DEF Technical Failure
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SCIModule		Mode With SCI
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
VE-Spd-Req <sub>1,2,3,4,5,6,7</sub>	898	TSC1-VE Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Requested speed	The speed request is sent from address 3.
Mode without SCI	This output is recommended to be used when there is <b>no SCI module connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.
Mode with SCI	This output must be used when a <b>SCI module is connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for NEF

Function	ECU A2 89pin connector	Controller
<b>CAN H</b>	52	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	53	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,7,12,13	N/A
<b>Battery - (negative)</b>	3,9,14,15	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## Recommended wiring for Cursor

Function	ECU A2 89pin connector	Controller
<b>CAN H</b>	11	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	12	CAN1 (extension modules/J1939) – CAN L









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Iveco EDC Main Fault Codes on page 1260**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco EDC Main aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported

## EDC SCR

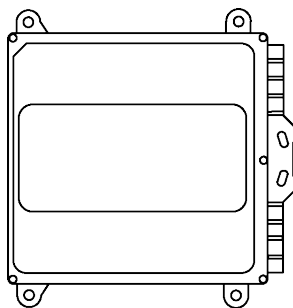


Image 5.88 EDC7 - Cursor

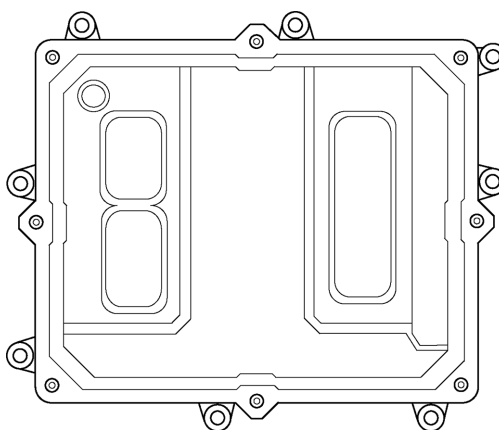


Image 5.89 EDC7 - NEF

## Controllers that support the EDC Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-CatalUp <sub>6</sub>		Catalyst Upstream Temp
T-CatalDown <sub>6</sub>		Catalyst Downstream Temp
P-Urea <sub>6</sub>		Urea Pressure
UreaTankLvl <sub>6</sub>		Urea Tank Level
T-Urea <sub>6</sub>		Urea Tank Temp
UreaQuality <sub>6</sub>		Urea Quantity
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Heaters <sub>1,2,3,4,5,6,7</sub>		Grid and fuel heater

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500



## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for NEF

Function	ECU A2 89pin connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	53	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A
Battery - (negative)	3,9,14,15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

## Recommended wiring for Cursor









Function	ECU A2 89pin connector	Controller
CAN H	11	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	12	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco SCR Module aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EDC Tier3 (EDC7)

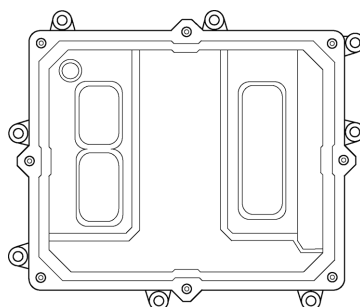


Image 5.90 EDC7

## Controllers that support the EDC7

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Wait To Start Lamp	1081	Engine Wait to Start Lamp
Fuel Block Status By Immobilizer	-	Proprietary parameter.
Diagnostic Lamp Status	-	Proprietary parameter.
Engine Overspeed	-	Proprietary parameter.
OBD MIL Status	-	Proprietary parameter.
ECM Fuelling	-	Proprietary parameter.
Status Of Stop Button	-	Proprietary parameter.
Status Of Start Button	-	Proprietary parameter.
Engine Oil Pressure Low	-	Proprietary parameter.
Water In Fuel	-	Proprietary parameter.
Fuel Filter Heater Status	-	Proprietary parameter.
Engine Oil Temperature High	-	Proprietary parameter.

Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Engine Torque Mode	899	Engine Torque Mode
Demand Torque	512	Driver's Demand Engine - Percent Torque
Actual Torque	513	Actual Engine - Percent Torque
Engine speed	190	Engine Speed
Controlling Device Address	1483	Source Address of Controlling Device for Engine Control
Engine Starter Mode	1675	Engine Starter Mode
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Remote Accelerator	974	Remote Accelerator Pedal Position
Nominal Friction - % Torque	514	Nominal Friction - Percent Torque
Desired Operating Speed	515	Engine's Desired Operating Speed
Operating Speed Asymetry	519	Engine's Desired Operating Speed Asymmetry Adjustment
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
EngineOil Temp	175	Engine Oil Temperature 1
Turbo Oil Temperature	176	Engine Turbocharger Oil Temperature
Intercooler Temperature	52	Engine Intercooler Temperature
Barometric Pressure	108	Barometric Pressure
Cab Interior Temperature	170	Cab Interior Temperature
Ambient Air Temperature	171	Ambient Air Temperature
Air Inlet Temperature	172	Engine Intake Air Temperature
Trap Inlet Pressure	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Air Intake Pressure	106	Engine Intake Air Pressure
Air Filter Diff. Pressure	107	Engine Air Filter 1 Differential Pressure
Exhaust Gas Temp	173	Engine Exhaust Temperature
Coolant Filter Diff. Pressure	112	Engine Coolant Filter Differential Pressure
Fuel Delivery Pressure	94	Engine Fuel Delivery Pressure
Extended Crankcase Blow-by Pressure	22	Engine Extended Crankcase Blow-by Pressure
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure
Ctankcase Pressure	101	Engine Crankcase Pressure 1

Coolant Pressure	109	Engine Coolant Pressure 1
Engine Coolant Level	111	Engine Coolant Level 1
Fuel Rate	183	Engine Fuel Rate
Battery Potential (Voltage)	158	Keyswitch Battery Potential
Cold Start Status	-	Proprietary parameter.
Engine Overtemperature	-	Proprietary parameter.
Engine Degradation Level	-	Proprietary parameter.
ECM Operational Status	-	Proprietary parameter.
Humidity	-	Proprietary parameter.
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Requested speed <sup>1,2,3,4,5,6</sup>	898	Engine Requested Speed/Speed Limit

Supported parameter by the controllers configured by NanoEdit, DriveEdit or LiteEdit PC software:

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano

## Controller's analog output for speed control configuration

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)









## Recommended wiring

Function	ECU A2 89pin connector	Controller
<b>CAN H</b>	52	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	53	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1, 7, 12, 13	N/A
<b>Battery - (negative)</b>	3, 9, 14, 15	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Iveco EDC aftertreatment lamps

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported

## MD1

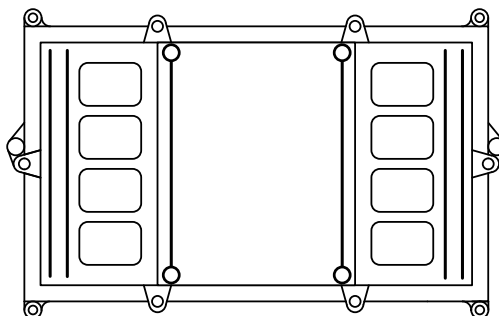


Image 5.91 MD1 EDC17 ECU

## Controllers that support the MD1

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Overspeed		Engine Overspeed
FuelFitHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
Over-T Protec		Fuel Over Temperature Protection
Smoke Limit		Smoke Limiter Protection
OverSpeedProt		Engine Over Speed Protection
MechProt		Engine Mechanical Protection
OverheatProt		Engine Overheat Protection
ECUWatInFuel <sub>1,2,3,4,5,6,7</sub>	97	ECU Water In Fuel
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ACM inhibited <sub>1,2,3,4,5,6,7</sub>	3703	ACM inhibited
MCM inhibited <sub>1,2,3,4,5,6,7</sub>	3712	MCM inhibited
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Shutdown <sub>4,5,6,7</sub>		Engine Auxiliary Shutdown Request

ATTCounterRst		Forced Thermal Treatment Counter Reset
RegenInterlock <sub>5</sub>		Generator is Safe for Engine Speed Increase
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ColdStartHeat		Cold Start Heater Status
T-Over		ECU Hi Cool Temp
P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel
DegradationLvl		Engine Degradation Level
Operational		ECM Operational Status
FuelFilterSt		Clogged Fuel Filter Status
FuelPreFiltSt		Clogged Fuel Pre-Filter Status
AirFilterSt		Clogged Air Filter Status
DEFLvl <sub>5,6</sub>		DEF Level
DEFQuality <sub>5</sub>		DEF Quality
DEFFailure <sub>5</sub>		DEF Technical Failure
SCRCatayst		ECU SCR Catalyst Full
EGRDPFInduc		EGR/DPF Inducement
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-FuelFiltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
T-DEFTnk2 <sub>1,2,3,4,5,6,7</sub>	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2

DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DEFProperty <sub>1,2,3,4,5,6,7</sub>	3521	Aftertreatment 1 Diesel Exhaust Fluid Property
ACM ongoing <sub>1,2,3,4,5,6,7</sub>	3697	ACM ongoing
HEST Lamp <sub>1,2,3,4,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
MCM ongoing <sub>1,2,3,4,5,6,7</sub>	3700	MCM ongoing
MCM required <sub>1,2,3,4,5,6,7</sub>	3701	MCM required
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSoot <sub>1,2,3,4,5,6,7</sub>	4781	Aftertreatment 1 Diesel Particulate Filter Soot Mass
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Iveco requirements

**CAUTION: Some Iveco engines may explicitly require an engine safety shut-down procedure to be executed by the controller based on signals transmitted by the Iveco ECU. It is the users**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

responsibility to configure these (as protections in the controller) manually based on the exact requirements for the specific engine model.

For example:

High engine coolant temperature

Low oil engine pressure

Water in fuel









## Recommended wiring

Function	ECU connector 4	Controller
CAN H	28	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	29	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,2,4,5,7,8	N/A
Battery - (negative)	3,6,10,11,13,16	N/A
Key Switch	36	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Iveco MD1 Fault Codes on page 1265**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco MD1 aftertreatment lamps							
	Solid On		Solid On		Solid On		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported



## MD1 IPU

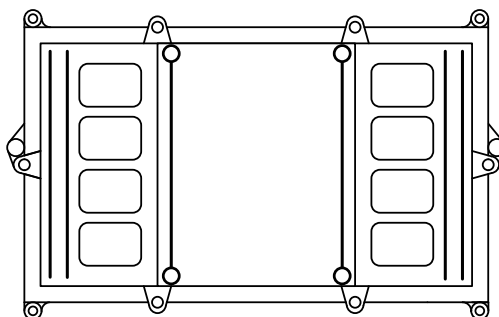


Image 5.92 MD1 EDC17 ECU

### Controllers that support the MD1 IPU

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Overspeed		Engine Overspeed
FuelFitHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
Over-T Protec		Fuel Over Temperature Protection
Smoke Limit		Smoke Limiter Protection
OverSpeedProt		Engine Over Speed Protection
MechProt		Engine Mechanical Protection
OverheatProt		Engine Overheat Protection
ECUWatInFuel <sub>1,2,3,4,5,6,7</sub>	97	ECU Water In Fuel
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ACM inhibited <sub>1,2,3,4,5,6,7</sub>	3703	ACM inhibited
MCM inhibited <sub>1,2,3,4,5,6,7</sub>	3712	MCM inhibited
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Shutdown <sub>4,5,6,7</sub>		Engine Auxiliary Shutdown Request
ATTCounterRst		Forced Thermal Treatment Counter Reset
RegenInterlock <sub>5</sub>		Generator is Safe for Engine Speed Increase
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ColdStartHeat		Cold Start Heater Status
T-Over		ECU Hi Cool Temp
P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel

DegradationLvl		Engine Degradation Level
Operational		ECM Operational Status
FuelFilterSt		Clogged Fuel Filter Status
FuelPreFiltSt		Clogged Fuel Pre-Filter Status
AirFilterSt		Clogged Air Filter Status
DEFLvl <sub>5,6</sub>		DEF Level
DEFQuality <sub>5</sub>		DEF Quality
DEFFailure <sub>5</sub>		DEF Technical Failure
SCRCatayst		ECU SCR Catalyst Full
EGRDPFInduc		EGR/DPF Inducement
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-FuelFitDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
T-DEFTnk2 <sub>1,2,3,4,5,6,7</sub>	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DEFProperty <sub>1,2,3,4,5,6,7</sub>	3521	Aftertreatment 1 Diesel Exhaust Fluid Property
ACM ongoing <sub>1,2,3,4,5,6,7</sub>	3697	ACM ongoing
HES Lamp <sub>1,2,3,4,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
MCM ongoing <sub>1,2,3,4,5,6,7</sub>	3700	MCM ongoing
MCM required <sub>1,2,3,4,5,6,7</sub>	3701	MCM required
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature

T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSoot <sub>1,2,3,4,5,6,7</sub>	4781	Aftertreatment 1 Diesel Particulate Filter Soot Mass
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Iveco requirements

**CAUTION:** Some Iveco engines may explicitly require an engine safety shut-down procedure to be executed by the controller based on signals transmitted by the Iveco ECU. It is the users responsibility to configure these (as protections in the controller) manually based on the exact requirements for the specific engine model.

For example:

High engine coolant temperature

Low oil engine pressure

Water in fuel

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU connector 4	Controller
<b>CAN H</b>	28	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	29	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,2,4,5,7,8	N/A
<b>Battery - (negative)</b>	3,6,10,11,13,16	N/A
<b>Key Switch</b>	36	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Iveco MD1 Fault Codes on page 1265**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco MD1 IPU aftertreatment lamps							
	Solid On		Solid On		Solid On		Solid On Blink slow Blink fast
	Not Supported		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On

## ADEM III

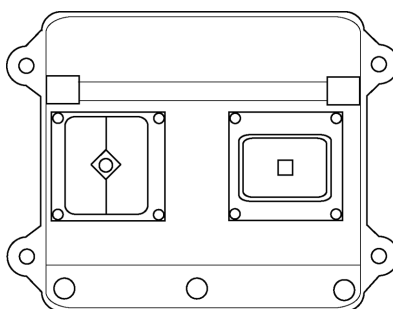


Image 5.93 ADEM III

## Controllers that support the ADEM III

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
FuelShutoff1	632	Engine Fuel Shutoff 1 Control
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FuelLeakage1	1239	Engine Fuel Leakage 1
FuelLeakage2	1240	Engine Fuel Leakage 2
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
OilPrimPmp	3550	Engine Oil Priming Pump Switch
OilPrim	3551	Engine Oil Priming State
ESDRequest	3607	Engine Emergency (Immediate) Shutdown Indication
AirShutoff	3667	Engine Air Shutoff Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ATTEnableStat	7851	Aftertreatment System Enable Status
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
TranDefuel	786	Transmission Defuel Actuator
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ATTSysEnab	8148	Aftertreatment System Enable Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-FuelFltDiff	95	Engine Fuel Filter Differential Pressure
FuelLevel1	96	Fuel Level 1
P-OilFltDiff	99	Engine Oil Filter Differential Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure

Spd-Turbo	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
P-GasFuelSppl	159	Engine Gaseous Fuel Supply Pressure 1
SysCharging	167	Charging System Potential (Voltage)
Battery	168	Battery Potential / Power Input 1
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TransOil	177	Transmission Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft*	191	Transmission Output Shaft Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1	441	Auxiliary Temperature 1
Spd-Desired*	515	Engine's Desired Operating Speed
TranGear	523	Transmission Current Gear
TranGearSelec	524	Transmission Selected Gear
GasFuelCrrFct	1116	Gaseous Fuel Correction Factor
T-AltBearing1	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3	1126	Engine Alternator Winding 3 Temperature
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature

T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2	1169	Engine Turbocharger 2 Speed
T-Turbo1CInt	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Turbo2Intake	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo1Out	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate	1241	Engine Fuel System 1 Gas Mass Flow Rate
Cyl 1KnockLvl	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl	1371	Engine Cylinder 20 Knock Level
P-Auxiliary1	1387	Auxiliary Pressure #1
FuelGravity	1389	Engine Fuel Specific Gravity
P-Fuel1VlvInt	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff	1391	Engine Fuel Valve 1 Differential Pressure
Cyl 1IgnOutput	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput	1396	Engine Cylinder 4 Ignition Transformer Secondary Output

Cyl 5IgnOutput	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput	1402	Engine Cylinder 10 Ignition Transformer Secondary Output
Cyl11IgnOutput	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput	1405	Engine Cylinder 13 Ignition Transformer Secondary Output
Cyl14IgnOutput	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime1	1433	Engine Desired Ignition Timing 1
IgnitionTime	1436	Engine Actual Ignition Timing
FuelVlvPos1	1442	Engine Fuel Valve 1 Position
StarterMode	1675	Engine Starter Mode
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio	1767	Specific Heat Ratio
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut	2435	Sea Water Pump Outlet Pressure
P-AirFilt2Diff	2809	Engine Air Filter 2 Differential Pressure
ThrottleCmd	3464	Engine Throttle Actuator 1 Control Command



T-1Fuel2	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
Operating	3543	Engine Operating State
RemainingTime	3544	Time Remaining in Engine Operating State
DerateRequest	3644	Engine Derate Request
ChrgAirCoolLvl	3668	Engine Charge Air Cooler Coolant Level
TurboBpssPos	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
AftcoolCoolLvl	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-ExhAverage	4151	Engine Exhaust Temperature Average
T-ExhBank2	4152	Engine Exhaust Bank 2 Temperature Average
T-ExhBank1	4153	Engine Exhaust Bank 1 Temperature Average
SCR1	4332	Aftertreatment 1 SCR System 1 State
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
DEFQTTank	4367	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Tank Volume
T-DEFQT	4368	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Temperature
DEFPumpDrive	4375	Aftertreatment 1 Diesel Exhaust Fluid Pump Drive Percentage
P-IntManAbs	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
DEFLowLevel <sub>5,6</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
P-FuelFiltInt	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
DEFTnkFillVlv	5434	Aftertreatment 1 Diesel Exhaust Fluid Tank Fill Valve Command
P-FilFuelDeliv	5579	Engine Filtered Fuel Delivery Pressure
P-ThrottleDiff	5631	Engine Throttle Valve 1 Differential Pressure
P-OilFiltDiffEx	6321	Engine Oil Filter Differential Pressure (Extended Range)
P-SCRIntake1	6586	Aftertreatment 1 SCR Intake Pressure
P-DEFDoser	6875	Aftertreatment 1 Diesel Exhaust Fluid Doser Pressure
ATTSCRDosStat	9176	Aftertreatment SCR Dosing Mode Status
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ATTSCRDosing	9175	Aftertreatment SCR Dosing Mode Command

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Interface card	Controller
<b>CAN H</b>	J2 - 1	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	J2 - 2	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	116	N/A
<b>Battery - (negative)</b>	117	N/A
<b>Key Switch</b>	J7 - 18,19 <sup>2</sup>	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Caterpillar J1939 Fault Codes on page 1116**.


## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Iveco Adem III aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

<sup>2</sup>Emergency stop must open this contact. After power on it has to wait for 10 seconds before start the engine - if ECU PwrRelay output is used to close this contact Prestart time has to be set to at least 10 seconds.

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EDC17

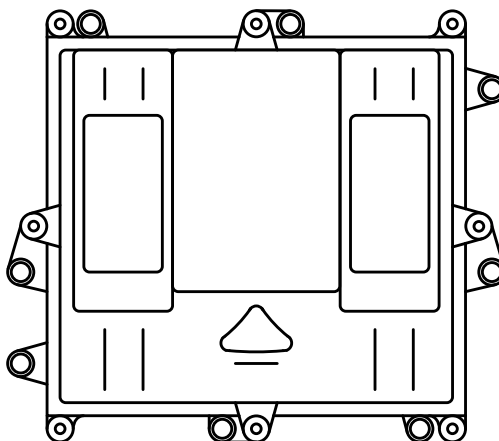


Image 5.94 EDC17 CV41 - NEF & Cursor

## Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
UreaBurnOff		Burn-Off for Urea Deposit
DiagLamp		Diagnostic Lamp Status
Overspeed		Engine Overspeed
P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel
FuelFiltHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
FuelFilterSt		Clogged Fuel Filter Status
FuelPreFiltSt		Clogged Fuel Pre-Filter Status
FuelInOilFiltSt		Clogged Fuel In Oil Filter (Blow-By) Status
Fuel in Oil		Fuel In Oil Detection
Water in Oil		Water In Fuel Detection
EngProtect		Engine Protection
TurboProtect		Turbo Charger Protection
SCRInjOverheat		SCR Injector Overheat Protection
UreaWhawinMd		Urea Whawing Mode Active

OvrSpdWarn		Engine Over Speed Warning
ExhOvrHeatCond		Exhaust Over Heat Condition
SPN Based 1		Available For SPN Based Status 1
SPN Based 2		Available For SPN Based Status 2
Smoke Limit		Smoke Limitation
T-Oil Over		Engine Oil Over Temperatue
NH3 Slip		NH3 Slip Detection
BadUreaQual		Bad Urea Quality
CatEfficiency		Low Catalyst Efficiency
Stcurrlim1		Available For Stcurrlimactive Based Status 1
Stcurrlim2		Available For Stcurrlimactive Based Status 2
Stcurrlim3		Available For Stcurrlimactive Based Status 3
Stcurrlim4		Available For Stcurrlimactive Based Status 4
SmokeLim Stc		Smoke Limiter Proection (From Stcurrlimactive)
OvrSpdProt Stc		Engine Over Speed Proection (From Stcurrlimactive)
MechProt Stc		Engine Mechanical Proection (From Stcurrlimactive)
OvrheatProtStc		Engine Overheat Proection (From Stcurrlimactive)
Validation		Validation Status
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
DriverAlert <sub>1,2,3,4,5,6,7</sub>	594	Engine Idle Shutdown Driver Alert Mode
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
<b>ECU analog outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
ColdStartHeat		Cold Start Heater Status
T-Over		Engine Over Temp Status
OilLife		Oil Life Monitoring Status
DegradationLvl		Engine Degradation Level
Operational		ECM Operation Status
ComplMdInduce		Compliant Mode - Strong Inducement
E-Restart		Emergency Restart
RestartCount		Validation Restart Counter
CountDown		Validation Count Down
DEFFailure <sub>5</sub>		DEF Technical Failure
DEFQuality <sub>5</sub>		DEF Quality
DEFLvl <sub>5,6</sub>		DEF Level
E-RestartCD		Emergency Restart Count Down
InduceLevel		Inducement Strategy Level
DEF Property		DEF Property
EflapActuator		Eflap Actuator Position
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engne Oil Pressure

P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
RelHumidity <sub>1,2,3,4,5,6,7</sub>	354	Relative Humidity
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-FuelFitDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RegenForceStop		Forced Regeneration Stop Request
ShutdownEngine		Engine Shutdown Request
ResetOilInteg		Oil Integrators Reset
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit PE
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Requested speed	The speed request is sent from address 3.
Mode without SCI	This output is recommended to be used when there is <b>no SCI module connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.
Mode with SCI	This output must be used when a <b>SCI module is connected</b> to the CAN bus. This output is available only in GenConfig or DriveConfig PC software.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for NEF & Cursor

Function	ECU connector	Controller
<b>CAN H</b>	1.46	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.47	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1.01, 1.25, 1.26, 1.49, 1.73	N/A
<b>Battery - (negative)</b>	1.03, 1.05, 1.28, 1.52, 1.75	N/A
<b>Key Switch</b>	1.69	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM



For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Iveco EDC17 Fault Codes on page 1275**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco EDC17 aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Blink slow Blink fast		Blink slow Blink fast		Not Supported

## MD1/EDC7 Marine

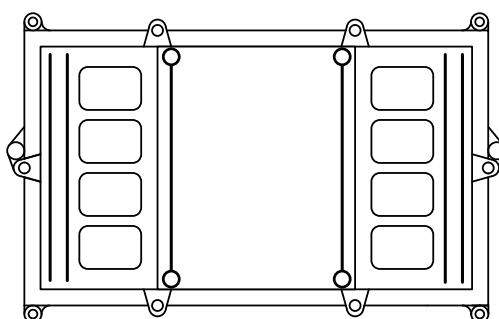


Image 5.95 MD1

## Controllers that support the MD1 Marine

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Overspeed		Engine Overspeed
FuelFiltHeater		Fuel Filter Heater Status
T-OilHi		Engine Oil Temperature High
LowCoolantLvl <sub>1,2,3,4,5,6,7</sub>		Low Coolant Level Status
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ColdStartHeat		Cold Start Heater Status
T-Over		ECU Hi Cool Temp

P-OilLow		Engine Oil Pressure Low
WaterInFuel		Water In Fuel
DegradationLvl		Engine Degradation Level
Operational		ECM Operational Status
TransOilPres <sub>1,2,3,4,5,6,7</sub>		Transmission Oil Pressure
TransOilPres1 <sub>1,2,3,4,5,6,7</sub>		Transmission Oil Pressure 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-FuelFiltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit AE

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500



## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

### Iveco requirements

**CAUTION:** Some Iveco engines may explicitly require an engine safety shut-down procedure to be executed by the controller based on signals transmitted by the Iveco ECU. It is the users responsibility to configure these (as protections in the controller) manually based on the exact requirements for the specific engine model.

For example:

High engine coolant temperature

Low oil engine pressure

Water in fuel

### Recommended wiring

Function	ECU connector 4	Controller
CAN H	28	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	29	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,2,4,5,7,8	N/A
Battery - (negative)	3,6,10,11,13,16	N/A
Key Switch	36	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Iveco MD1 Marine Fault Codes on page 1272**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Iveco MD1 Marine aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.21 JCB engines support

ECU Type	Engine type
<a href="#">Delphi DCM (page 359)</a>	Dieselmax or ecoMAX
<a href="#">Delphi DCM Main (page 363)</a>	Dieselmax or ecoMAX
<a href="#">Delphi DCM Main (page 366)</a>	Dieselmax or ecoMAX

### Delphi DCM

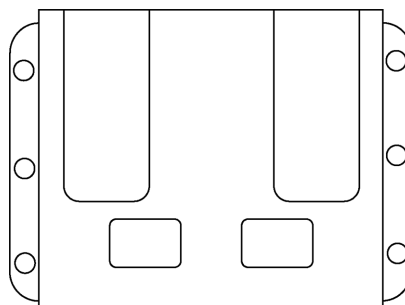


Image 5.96 DCM

### Controllers that support the DCM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point

AT2IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3240	Aftertreatment 2 Exhaust Dew Point
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop request <sub>4,5,6,7</sub>		Engine Stop Request
OverrideMode <sub>1,2,3,14,5,16,17</sub>	695	Engine Override Control Mode regen controlled
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque

Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
ATLamp <sub>5</sub>	517640	Aftertreatment Lamp Status
InducementLvl <sub>5</sub>	517641	Inducement Level
RefreshStatus	517649	Refresh Status Byte
SCR	517650	SCR Monitor
RefreshmentRun	517651	Successful Running Refreshes
RefreshmentSt	517652	Successful Stationary Refreshes
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
TSC1Purpose <sub>1,2,3,4,5,6,7</sub>	3350	TSC1 Control Purpose

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 62pin connector	Controller
<b>CAN H</b>	27	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	19	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	23	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	57,60,53,49	N/A
<b>Battery - (negative)</b>	58,59,61,62	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see JCB Delphi DCM Fault Codes on page 1278**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

JCB Delphi DCM aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		Blink slow
	Blink fast		Blink fast		Blink fast

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On Blink slow Blink fast		Not Supported		Solid On
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## Delphi DCM Main

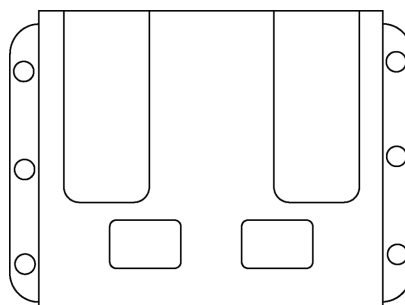


Image 5.97 DCM

### Controllers that support the DCM Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctionLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral

DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop request <sub>4,5,6,7</sub>		Engine Stop Request
OverrideMode <sub>1,2,3,4,5,6,7</sub>	695	Engine Override Control Mode regen controlled
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1



DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
ATLamp <sub>5</sub>	517640	Aftertreatment Lamp Status
InducementLvl <sub>5</sub>	517641	Inducement Level
RefreshStatus	517649	Refresh Status Byte
SCR	517650	SCR Monitor
RefreshmentRun	517651	Successful Running Refreshes
RefreshmentSt	517652	Successful Stationary Refreshes

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
TSC1Purpose <sub>1,2,3,4,5,6,7</sub>	3350	TSC1 Control Purpose

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








## Recommended wiring

Function	ECU X2 62pin connector	Controller
<b>CAN H</b>	27	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	19	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	23	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	57,60,53,49	N/A
<b>Battery - (negative)</b>	58,59,61,62	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see JCB Delphi DCM Fault Codes on page 1278**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

JCB Delphi DCM Main aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		Blink slow
	Blink fast		Blink fast		Blink fast
	Solid On		Solid On		Not Supported
			Blink slow		
			Blink fast		
					Solid On

## Delphi DCM Main

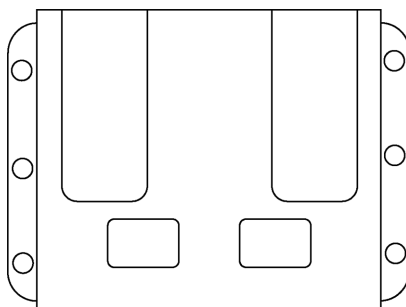


Image 5.98 DCM

## Controllers that support the DCM Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
TimerState <sub>1,2,3,4,5,6,7</sub>	590	Engine Idle Shutdown Timer State
TimerFunction <sub>1,2,3,4,5,6,7</sub>	591	Engine Idle Shutdown Timer Function
TimerOverride <sub>1,2,3,4,5,6,7</sub>	592	Engine Idle Shutdown Timer Override
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Stop request <sub>4,5,6,7</sub>		Engine Stop Request
OverrideMode <sub>1,2,3,14,5,16,17</sub>	695	Engine Override Control Mode regen controlled
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed

OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
ATLamp <sub>5</sub>	517640	Aftertreatment Lamp Status
InducementLvl <sub>5</sub>	517641	Inducement Level
RefreshStatus	517649	Refresh Status Byte
SCR	517650	SCR Monitor
RefreshmentRun	517651	Successful Running Refreshes
RefreshmentSt	517652	Successful Stationary Refreshes
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions

CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
TSC1Purpose <sub>1,2,3,4,5,6,7</sub>	3350	TSC1 Control Purpose

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 62pin connector	Controller
<b>CAN H</b>	27	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	19	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	23	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	57,60,53,49	N/A
<b>Battery - (negative)</b>	58,59,61,62	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM









For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see JCB Delphi DCM Att Fault Codes on page 1281**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

JCB Delphi DCM Main aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Not Supported		Solid On

## 6.1.22 GE Jenbacher engines support

ECU Type	Engine type
<a href="#">DIA.NE (page 371)</a>	Gas engines
<a href="#">DIA.NE (page 374)</a>	Gas engines

### DIA.NE

**Note:** To enable direct controller communication with Jenbacher DIA.NE, order the engine with Modbus interface!

### Controllers that support the DIA.NE

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ServSwitch OFF		Service Selector Switch OFF
ServSwitch MAN		Service Selector Switch MAN
ServSwitch AUT		Service Selector Switch AUT
GCB Closed		GCB Closed
GCB Open		GCB Open
Operation ON		Operation ON
Operation OFF		Operation OFF
ReadyAutDem ON		Ready for Aut. Demand ON
ReadyAutDemOFF		Ready for Aut. Demand OFF
MCB Closed		MCB Closed
MCB Open		MCB Open
SynchrGenActiv		Synchronizing Gen. Activated
ReSynchrActiv		Re-synchronizing Activated
ReadyAutDemand		Ready for Aut. Demand
DemandForAux		Demand for Auxiliaries
GCB Closed 2		GCB Closed 2
MCB Closed 2		MCB Closed 2
ModuleDemanded		Module is Demanded
Engine Running		Operation - Engine is Running
ServSwitchMAN2		Service Select. Switch MAN 2
ServSwitchAUT2		Service Select. Switch AUT 2
General Trip		General Trip
GeneralWarning		General Warning
OperHoursPulse		Pulse for OperHours Counter
StartCntPulse		Pulse for Start Counter
ReservedBIN1		Reserved R002 BIN1
ReservedBIN2		Reserved R002 BIN2
ReservedBIN3		Reserved R002 BIN3
ReservedBIN4		Reserved R002 BIN4

ReservedBIN5		Reserved R002 BIN5
ReservedBIN6		Reserved R002 BIN6
ReservedBIN7		Reserved R002 BIN7
ReservedBIN8		Reserved R002 BIN8
ReservedBIN9		Reserved R002 BIN9
ReservedBIN10		Reserved R002 BIN10
ReservedBIN11		Reserved R002 BIN11
ReservedBIN12		Reserved R002 BIN12
ReservedBIN13		Reserved R002 BIN13
ReservedBIN14		Reserved R002 BIN14
ReservedBIN15		Reserved R002 BIN15
ReservedBIN16		Reserved R002 BIN16
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
JcktWaterT		Jacket Water Temperature
JcktWaterP		Jacket Water Pressure
Oil Temp		Engine Oil Temperature
Oil Press		Engine Oil Pressure
EGasTempTC		ExhstGasTemp-Turbocharger
EGasTempHE		ExhstGasTemp-HeatExchanger
PlateTemp		PlateTempExhstGasHeatExch.
CylEGasTem		Cylinder Exhaust Gas Temp
HeatWtrTem		Heating Water Return Temp
Gen PF		Generator Power Factor
Gen Freq		Generator Frequency
GenCurrAvr		Gener. Current Average
GenV PhPh		Gener. Voltage Aver. Ph-Ph
TotActiv		Total Active Output
TotReact		Total Reactive Output
SetPwrCtrl		Setpoint Power Control
OperHours		Operation Hours Counter
StartC		Start Counter
T-Gas Cyl 1		Exhaust Gas Temperature Cyl1
T-Gas Cyl 2		Exhaust Gas Temperature Cyl2
T-Gas Cyl 3		Exhaust Gas Temperature Cyl3
T-Gas Cyl 4		Exhaust Gas Temperature Cyl4
T-Gas Cyl 5		Exhaust Gas Temperature Cyl5
T-Gas Cyl 6		Exhaust Gas Temperature Cyl6
T-Gas Cyl 7		Exhaust Gas Temperature Cyl7
T-Gas Cyl 8		Exhaust Gas Temperature Cyl8
T-Gas Cyl 9		Exhaust Gas Temperature Cyl9
T-Gas Cyl 10		Exhaust Gas Temperature Cyl10
T-Gas Cyl 11		Exhaust Gas Temperature Cyl11
T-Gas Cyl 12		Exhaust Gas Temperature Cyl12
T-Gas Cyl 13		Exhaust Gas Temperature Cyl13



T-Gas Cyl 14		Exhaust Gas Temperature Cyl14
T-Gas Cyl 15		Exhaust Gas Temperature Cyl15
T-Gas Cyl 16		Exhaust Gas Temperature Cyl16
T-Gas Cyl 17		Exhaust Gas Temperature Cyl17
T-Gas Cyl 18		Exhaust Gas Temperature Cyl18
T-Gas Cyl 19		Exhaust Gas Temperature Cyl19
T-Gas Cyl 20		Exhaust Gas Temperature Cyl20
FuelMixTemp		Charge Temperature (fuel mixture Temperature)
ExcitationVolt		Excitation Voltage
T-Gen L1		Generator Winding Temperature L1
T-Gen L2		Generator Winding Temperature L2
T-Gen L3		Generator Winding Temperature L3
GenBearing DE		Generator Bearing Drive End
GenBearing NDE		Generator Bearing Non-Drive End
Speed		Speed
V-Gen L1-N		Generator Voltage L1-N
V-Gen L2-N		Generator Voltage L2-N
V-Gen L3-N		Generator Voltage L3-N
V-Gen L1-L2		Generator Voltage L1-L2
V-Gen L2-L3		Generator Voltage L2-L3
V-Gen L1-L3		Generator Voltage L1-L3
Gen Power		Generator Power
GenReact P		Generator Reactive Power
GenAppar P		Generator Apparent Power
A-Gen L1		Generator Current L1
A-Gen L2		Generator Current L2
A-Gen L3		Generator Current L3
GenNeutCurrent		Generator Neutral Current
BoostPressAct		Boost Pressure Actual Value
ThrtVlvPos		Throttle Valve Position
TCBypasPos		Turbocharg Bypass Position
Lambda-TECJET		Lambda-TECJET
Reserved R170		Reserved R170
Reserved R174		Reserved R174
Reserved R175		Reserved R175
Reserved R176		Reserved R176
Reserved R177		Reserved R177
Reserved R178		Reserved R178
T-HeatWater		Heating Water Supply Temperature
T-Room		Room Temperature
T-Gas		Gas Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

**Note:** The address of the DIA.NE has to be set to 11 (0x0B).

## Controller's analog output for speed control configuration

There is no speed control over the data bus available for this particular ECU.

### Recommended wiring

Function	Siemens connector	Controller
RS485 A	A	RS485 – RS485 A
RS485 COM	COM	RS485 – RS485 COM
RS485 B	B	RS485 – RS485 B
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay

### Recommended controller setting

Controller	Setpoint	Value	Interface
InteliGen <sup>NT</sup>	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>
InteliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1) <sup>3</sup> , RS 232(2) <sup>4</sup>

## DIA.NE

**Note:** To enable direct controller communication with Jenbacher DIA.NE, order the engine with Modbus interface!

### Controllers that support the DIA.NE

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Demand for Auxiliaries	DemandForAux	500	
GCB Closed	GCB Closed	500	
GCB Closed 2	GCB Closed 2	500	
GCB Open	GCB Open	500	
General Trip	General Trip	500	
General Warning	GeneralWarning	500	
MCB Closed	MCB Closed	500	
MCB Closed 2	MCB Closed 2	500	

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

<sup>3</sup>external RS232-485 converter is required

<sup>4</sup>external RS232-485 converter is required

MCB Open	MCB Open	500	
Module is Demanded	ModuleDemanded	500	
Operation - Engine is Running	Engine Running	500	
Operation OFF	Operation OFF	500	
Operation ON	Operation ON	500	
Pulse for OperHours Counter	OperHoursPulse	500	
Pulse for Start Counter	StartCntPulse	500	
Re-synchronizing Activated	ReSynchrActiv	500	
Ready for Aut. Demand	ReadyAutDemand	500	
Ready for Aut. Demand OFF	ReadyAutDemOFF	500	
Ready for Aut. Demand ON	ReadyAutDem ON	500	
Reserved R002 BIN1	ReservedBIN1	500	
Reserved R002 BIN10	ReservedBIN10	500	
Reserved R002 BIN11	ReservedBIN11	500	
Reserved R002 BIN12	ReservedBIN12	500	
Reserved R002 BIN13	ReservedBIN13	500	
Reserved R002 BIN14	ReservedBIN14	500	
Reserved R002 BIN15	ReservedBIN15	500	
Reserved R002 BIN16	ReservedBIN16	500	
Reserved R002 BIN2	ReservedBIN2	500	
Reserved R002 BIN3	ReservedBIN3	500	
Reserved R002 BIN4	ReservedBIN4	500	
Reserved R002 BIN5	ReservedBIN5	500	
Reserved R002 BIN6	ReservedBIN6	500	
Reserved R002 BIN7	ReservedBIN7	500	
Reserved R002 BIN8	ReservedBIN8	500	
Reserved R002 BIN9	ReservedBIN9	500	
Service Select. Switch AUT 2	ServSwitchAUT2	500	
Service Select. Switch MAN 2	ServSwitchMAN2	500	
Service Selector Switch AUT	ServSwitch AUT	500	
Service Selector Switch MAN	ServSwitch MAN	500	
Service Selector Switch OFF	ServSwitch OFF	500	
Synchronizing Gen. Activated	SynchrGenActiv	500	
<b>ECU binary inputs (controller's outputs - commands)</b>			
Configuration Name	Name	Polling period	Register
<b>ECU analog outputs (controller's inputs)</b>			
Configuration Name	Name	Polling period	Register
Boost Pressure Actual Value	BoostPressAct	500	
Charge Temperature (fuel mixture Temperature)	FuelMixTemp	500	
Cylinder Exhaust Gas Temp	CylEGasTem	500	
Engine Oil Pressure	Oil Press	500	
Engine Oil Temperature	Oil Temp	500	
Excitation Voltage	ExcitationVolt	500	
Exhaust Gas Temperature Cyl1	T-Gas Cyl 1	500	
Exhaust Gas Temperature Cyl10	T-Gas Cyl 10	500	
Exhaust Gas Temperature Cyl11	T-Gas Cyl 11	500	
Exhaust Gas Temperature Cyl12	T-Gas Cyl 12	500	

Exhaust Gas Temperature Cyl13	T-Gas Cyl 13	500	
Exhaust Gas Temperature Cyl14	T-Gas Cyl 14	500	
Exhaust Gas Temperature Cyl15	T-Gas Cyl 15	500	
Exhaust Gas Temperature Cyl16	T-Gas Cyl 16	500	
Exhaust Gas Temperature Cyl17	T-Gas Cyl 17	500	
Exhaust Gas Temperature Cyl18	T-Gas Cyl 18	500	
Exhaust Gas Temperature Cyl19	T-Gas Cyl 19	500	
Exhaust Gas Temperature Cyl2	T-Gas Cyl 2	500	
Exhaust Gas Temperature Cyl20	T-Gas Cyl 20	500	
Exhaust Gas Temperature Cyl3	T-Gas Cyl 3	500	
Exhaust Gas Temperature Cyl4	T-Gas Cyl 4	500	
Exhaust Gas Temperature Cyl5	T-Gas Cyl 5	500	
Exhaust Gas Temperature Cyl6	T-Gas Cyl 6	500	
Exhaust Gas Temperature Cyl7	T-Gas Cyl 7	500	
Exhaust Gas Temperature Cyl8	T-Gas Cyl 8	500	
Exhaust Gas Temperature Cyl9	T-Gas Cyl 9	500	
ExhstGasTemp-HeatExchanger	EGasTempHE	500	
ExhstGasTemp-Turbocharger	EGasTempTC	500	
Gas Temperature	T-Gas	500	
Gener. Current Average	GenCurrAvr	500	
Gener. Voltage Aver. Ph-Ph	GenV PhPh	500	
Generator Apparent Power	GenAppar P	500	
Generator Bearing Drive End	GenBearing DE	500	
Generator Bearing Non-Drive End	GenBearing NDE	500	
Generator Current L1	A-Gen L1	500	
Generator Current L2	A-Gen L2	500	
Generator Current L3	A-Gen L3	500	
Generator Frequency	Gen Freq	500	
Generator Neutral Current	GenNeutCurrent	500	
Generator Power	Gen Power	500	
Generator Power Factor	Gen PF	500	
Generator Reactive Power	GenReact P	500	
Generator Voltage L1-L2	V-Gen L1-L2	500	
Generator Voltage L1-L3	V-Gen L1-L3	500	
Generator Voltage L1-N	V-Gen L1-N	500	
Generator Voltage L2-L3	V-Gen L2-L3	500	
Generator Voltage L2-N	V-Gen L2-N	500	
Generator Voltage L3-N	V-Gen L3-N	500	
Generator Winding Temperature L1	T-Gen L1	500	
Generator Winding Temperature L2	T-Gen L2	500	
Generator Winding Temperature L3	T-Gen L3	500	
Heating Water Return Temp	HeatWtrTem	500	
Heating Water Supply Temperature	T-HeatWater	500	
Jacket Water Pressure	JcktWaterP	500	
Jacket Water Temperature	JcktWaterT	500	
Lambda-TECJET	Lambda-TECJET	500	
Operation Hours Counter	OperHours	500	

PlateTempExhstGasHeatExch.	PlateTemp	500	
Reserved R170	Reserved R170	500	
Reserved R174	Reserved R174	500	
Reserved R175	Reserved R175	500	
Reserved R176	Reserved R176	500	
Reserved R177	Reserved R177	500	
Reserved R178	Reserved R178	500	
Room Temperature	T-Room	500	
Setpoint Power Control	SetPwrCtrl	500	
Speed	Speed	500	
Start Counter	StartC	500	
Throttle Valve Position	ThrtVlvPos	500	
Total Active Output	TotActiv	500	
Total Reactive Output	TotReact	500	
Turbocharg Bypass Position	TCBypasPos	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

**Note:** The address of the DIA.NE has to be set to 11 (0x0B).

## Controller's analog output for speed control configuration

There is no speed control over the data bus available for this particular ECU.

## Recommended wiring

Function	Siemens connector	Controller
RS485 A	A	RS485 – RS485 A
RS485 COM	COM	RS485 – RS485 COM
RS485 B	B	RS485 – RS485 B
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay

## Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

IntelliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>

### Communication settings

Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	None

## 6.1.23 Jichai engines support

ECU Type	Engine type
<a href="#">EU3A (page 378)</a>	JC15D

### EU3A

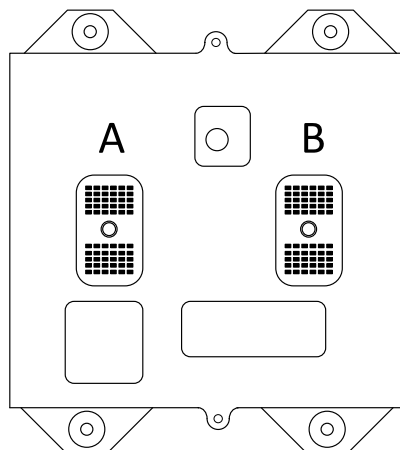


Image 5.99 EU3A

### Controllers that support the EU3A

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ClearDTC		Clear Trouble Codes
EngineToIdle		Engine to Idle

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-DEFHeater2 <sub>1,2,3,4,5,6,7</sub>	7471	Engine Oil Filter Differential Pressure (Extended Range)
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

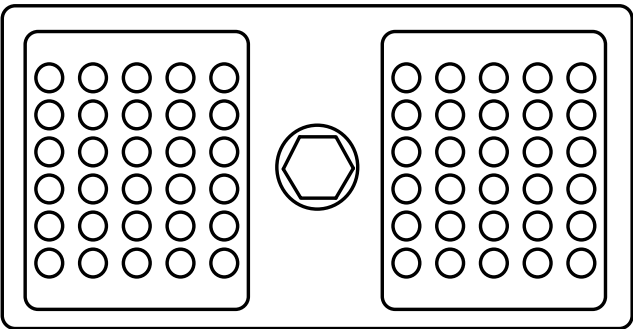


Image 5.100 ECU Connector

Function	ECU 60Pin connector	Controller
CAN H	A11	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	A12	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	A38,A39,A40,A28,A29,A30	N/A
Battery - (negative)	A8,A9,A10,A18,A19,A20	N/A
Key Switch	A14	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Jichai EU3A Fault Codes**

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Jichai EU3A aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported



## 6.1.24 John Deere engines support

ECU Type	Engine type
JDEC (page 381)	Diesel engines

### Engine type explanation

Engine Code	Meaning
4xxxxxxx	Number of cylinders
x045xxxx	Displacement in liters YY.Z
xxxHxxx	T - turbocharger w/o aftercooler H - turbocharger w aftercooler
xxxxFxx	F - OEM engine
xxxxx4xx	Valves/cylinder
xxxxxxx8x	Emissions: 7 - Tier II 8 - Tier III
xxxxxxx5	0 - no ECU 5 - J1939 ECU 9 - J1939 ECU, Tier II electronic

### PowerTech engine type explanation

Engine Code	Meaning
Pxxxx	Technology : P - Powertech plus E - Powertech E
xSxxxx	Turbocharger : V – Variable geometry turbocharger (VGT) S – Series turbochargers W – wastegate turbocharger
xxSxxx	Aftertreatment : S – Exhaust filter and SCR X – Exhaust filter
xxx6.8L	Displacement

### JDEC

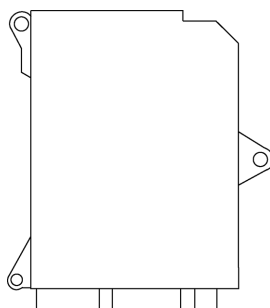


Image 5.101 JDEC

### Controllers that support the JDEC

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
TwoSpeedAxle <sub>1,2,3,4,5,6,7</sub>	69	Two Speed Axle Switch

ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS TimerOvr <sub>1,2,3,4,5,6,7</sub>	1108	Engine Protection System Timer Override
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
EPS Config <sub>1,2,3,4,5,6,7</sub>	1111	Engine Protection System Configuration
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
OverspeedTest <sub>1,2,3,4,5,6,7</sub>	2812	Engine Overspeed Test
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System

		Timeout
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd <sub>1,2,3,4,5,6,7</sub>	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhConfig <sub>1,2,3,4,5,6,7</sub>	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
HydrocarbPurg <sub>1,2,3,4,5,6,7</sub>	5504	Hydrocarbon Doser Purging Enable
DPFInhExhPres <sub>1,2,3,4,5,6,7</sub>	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CleaningLock <sub>3,5</sub>		Engine DPF Regeneration Control Request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-FuelRail <sub>3</sub>		Fuel Rail Pressure
P-AirManifold <sub>3</sub>		Manifold Air Pressure
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-OilTransm <sub>1,2,3,4,5,6,7</sub>	127	Transmission Oil Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
T-TransOil <sub>1,2,3,4,5,6,7</sub>	177	Transmission Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed

Spd-OutShaft <sub>1,2,3,4,5,6,7*</sub>	191	Transmission Output Shaft Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DroopAuxInput <sub>1,2,3,4,5,6,7</sub>	2895	Engine Droop Auxiliary Input Select State
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 21pin connector	Controller
<b>CAN H</b>	V	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	F	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	U	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	N/A
<b>Battery - (negative)</b>	E	N/A
<b>Key Switch</b>	G	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see John Deere JDEC Fault Codes on page 1283**

### Note:

*Important JDEC settings for speed control via CAN are:*









*Torque speed control - Enable TSC1 Source 1; Source Address 1 set to 3*

*Governor droop – Set RPM of droop to e.g. 36 (it will enable controller to vary engine speed its nominal speed)*

*Throttle – Disable all throttles*

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

John Deere JDEC aftertreatment lamps									
	Solid On		Solid On		Solid On		Solid On		
	Blink slow		Blink slow				Blink slow		
	Blink fast		Blink fast						
	Solid On		Solid On		Solid On		Solid On		
			Blink slow				Blink slow		
			Blink fast						Not Supported

## 6.1.25 Kingsband Engines support

ECU Type	Engine type
<a href="#">GAS (page 386)</a>	4H, 7H, 9D, 12ET, 13ET, 15GT, Dongfeng Cummins: 6B, 6C engines

## GAS

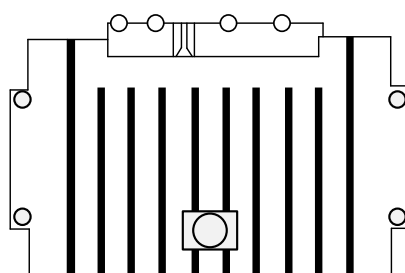


Image 5.102 Kingbad GAS

### Controllers that support the GAS:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
TranSyncClutch <sub>1,2,3,4,5,6,7</sub>	53	Engine Throttle Position 2
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Air Inlet Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
IgnitionTime1 <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
AT2IntOxygen <sub>1,2,3,4,5,6,7</sub>	3256	Aftertreatment 2 Intake Percent Oxygen 1
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

### Recommended wiring

#### RS485

Function	RS485 connector	Controller
RS485 A		RS485 A
RS485 COM	N/A	RS485 COM
RS485 B		RS485 B

## 6.1.26 Kohler engines support

ECU Type	Engine type
<a href="#">KDI (page 387)</a>	diesel engines
<a href="#">KDI Main (page 390)</a>	diesel engines
<a href="#">KDI Att (page 393)</a>	diesel engines

### KDI

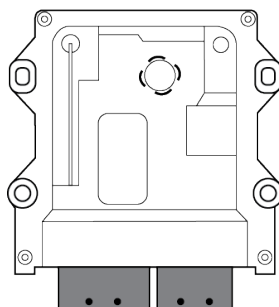


Image 5.103 KDI

### Controllers that support the KDI

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
StartEnbl1 <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2

ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Idle <sub>1,2,3,4,5,6,7*</sub>	188	Engine Speed At Idle, Point 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
P-Hydraulic <sub>1,2,3,4,5,6,7</sub>	1762	Hydraulic Pressure
StartEnb1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-EngChrgOAir <sub>1,2,3,4,5,6,7</sub>	5281	Engine Charge Air Cooler 1 Precooler Outlet Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.



While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	9pin diagnostic connector	Controller
<b>CAN H</b>	B8	C (D1)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	B7	D (D2)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B1,B2,B47	B	N/A
<b>Battery - (negative)</b>	B3,B4,B5,B6	A	N/A
<b>Key Switch</b>	B9	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	B28	N/A	SG OUT
<b>Analog Speed Control</b>	B32	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Kohler KDI Fault Codes on page 1285**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Kohler KDI aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On		Not Supported		Solid On Blink slow
	Solid On		Not Supported		Not Supported		Solid On

## KDI Main

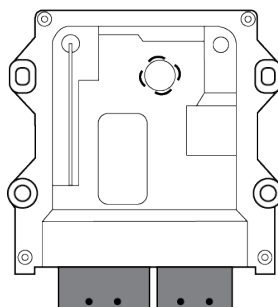


Image 5.104 KDI

## Controllers that support the KDI Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
StartEnbl <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFNoMetRegen <sub>1,2,3,4,5,6,7</sub>	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2

ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Idle <sub>1,2,3,4,5,6,7</sub> *	188	Engine Speed At Idle, Point 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
P-Hydraulic <sub>1,2,3,4,5,6,7</sub>	1762	Hydraulic Pressure
StartEnb1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-EngChrgOAir <sub>1,2,3,4,5,6,7</sub>	5281	Engine Charge Air Cooler 1 Precooler Outlet Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	9pin diagnostic connector	Controller
<b>CAN H</b>	B8	C (D1)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	B7	D (D2)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B1,B2,B47	B	N/A
<b>Battery - (negative)</b>	B3,B4,B5,B6	A	N/A
<b>Key Switch</b>	B9	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	B28	N/A	SG OUT
<b>Analog Speed Control</b>	B32	N/A	SG COM


For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Kohler KDI Main Fault Codes on page 1286**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Kohler KDI Main aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On		Solid On		Not Supported		Solid On Blink slow
	Solid On		Not Supported		Not Supported		Solid On

## KDI Att

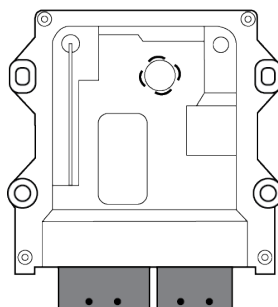


Image 5.105 KDI

## Controllers that support the KDI Att

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DEFTnkLevel<sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	9pin diagnostic connector	Controller
<b>CAN H</b>	B8	C (D1)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	B7	D (D2)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B1,B2,B47	B	N/A
<b>Battery - (negative)</b>	B3,B4,B5,B6	A	N/A
<b>Key Switch</b>	B9	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	B28	N/A	SG OUT
<b>Analog Speed Control</b>	B32	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Kohler KDI Att aftertreatment lamps				
	Not Supported		Not Supported	
			Not Supported	
				Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## 6.1.27 Kubota engines support

ECU Type	Engine type
<a href="#">ECM (page 396)</a>	diesel engines and petrol engines WG1605, WG3800
<a href="#">EDC17 (page 399)</a>	diesel engines V2403, V3800, V5009

### ECM

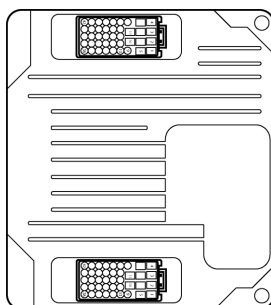


Image 5.106 ECM

### Controllers that support the ECM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sup>1,2,3,4,5,6,7,8</sup>	623	Red Stop Lamp
WarningLamp <sup>1,2,3,4,5,6,7,8</sup>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sup>1,2,3,4,7,8</sup>	1081	Engine Wait to Start Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfunctLamp	1213	Malfunction Indicator Lamp
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sup>1,2,3,4,7,8</sup>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sup>1,2,3,4,7,8</sup>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sup>1,2,3,4,7,8</sup>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sup>1,2,3,4,7,8</sup>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ESDRRequest	3607	Engine Emergency (Immediate) Shutdown Indication
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sup>1,2,3,4,5,6,7,8</sup>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhBrake	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set



DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFit	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake	70	Parking Brake Switch
TranNeutral	604	Transmission Neutral Switch
RegenInhibit <sup>1,2,3,4,7,8</sup>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sup>1,2,3,4,7,8</sup>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
APP	91	Accelerator Pedal Position 1
Load <sup>1,2,3,4,5,6,7,8</sup>	92	Engine Percent Load At Current Speed
P-Oil <sup>1,2,3,4,5,6,7,8</sup>	100	Engine Oil Pressure
P-Intake <sup>1,2,3,4,7,8</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7,8</sup>	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
T-Coolant <sup>1,2,3,4,5,6,7,8</sup>	110	Engine Coolant Temperature
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (Backward FW's compatible)
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
FuelRate <sup>1,2,3,4,7,8</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7,8</sup>	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque
StarterMode	1675	Engine Starter Mode
T-DPFIntake	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPFLamp <sup>1,2,3,4,5,6,7,8</sup>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sup>1,2,3,4,5,6,7,8</sup>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sup>1,2,3,4,5,6,7,8</sup>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sup>1,2,3,4,7,8</sup>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DPFSoot	4781	Aftertreatment 1 Diesel Particulate Filter Soot Mass

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sup>1,2,3,4,5,6,7,8</sup>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

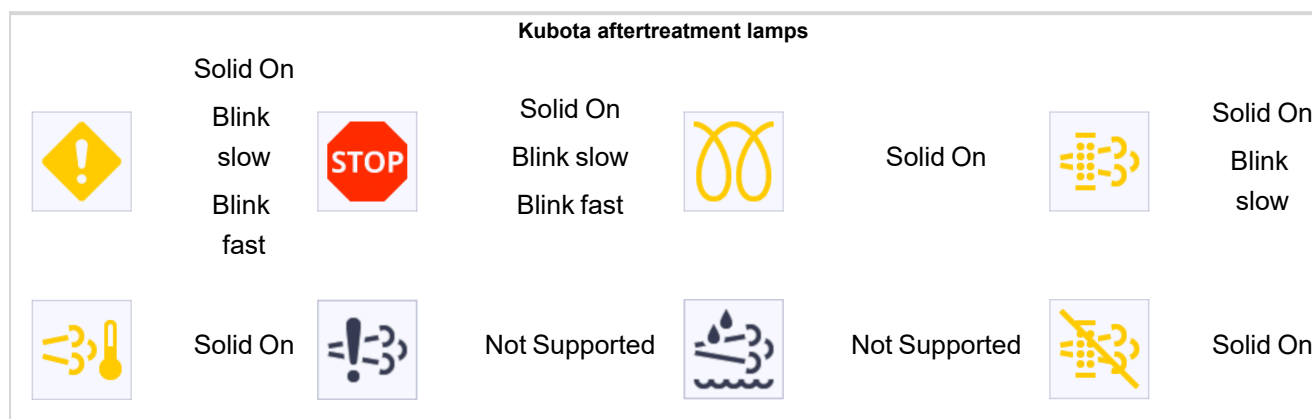
Function	ECU connector	Controller
CAN H	V37	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	V17	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	V18,58,38,78,1,21,13,33	N/A
Battery - (negative)	V39,79,80,59,20,40,60	N/A
Key Switch	V12	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Kubota Fault Codes on page 1287**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blinkg fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).



## EDC17

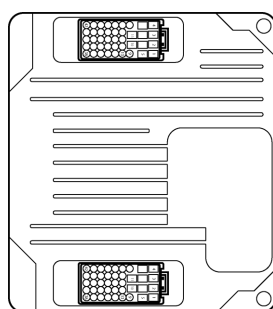


Image 5.107 EDC17

## Controllers that support the EDC17

Refer to **Compatibility Table (page 10)**

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ForcedWarmUp		Forced Warming Up
DiagnosisLamp		Diagnosis Lamp
PCDErrorFlag		PCD Error Status Lamp
EGRTamperFlag		EGR System Tampering Flag
PCD 1		PCD 1
PCD 2		PCD 2
PCD 3		PCD 3
NCD 1		NCD 1
NCD 2		NCD 2
WaterInFuel 2		Water In Fuel Indication 2
Glow Relay		Glow Relay Flag

Glow Lamp		Glow Lamp Flag
OverheatLamp		Overheat Lamp
RegenStatus		Regeneration Status
RegenExternal		Regeneration External Require
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Governor		Governor Characteristic Information
Stop <sub>4,5,6,7</sub>		Engine Stop
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
TranNeutral <sub>1,2,3,4,5,6,7</sub>	604	Transmission Neutral Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AccPedalPos		Accelerator Pedal Position 2
EngineSpeed2		Engine Speed 2
EngineLoadRate		Engine Load Rate
FuelInjectQty		Fuel Injection Quantity
ErrorInfo		Utility Unit Error Information
T-EngineCool2		Engine Coolant Temp 2
T12KeepTime		T12KeepTime
RegenLevels		Regeneration Levels
TimeToReductL1		Time Left To Reduction Level 1
TimeToReductL2		Time Left To Reduction Level 2
InducReason		Operator Inducement Reason
InducSeverity		Operator Inducement Severity
EGR1 <sub>1,2,3,4,5,6,7</sub>	27	Engine Exhaust Gas Recirculation 1 Valve Position
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
LastService <sub>1,2,3,4,5,6,7</sub>	1350	Time Since Last Service
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
EGR1Vlv1 <sub>1,2,3,4,5,6,7</sub>	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command

DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DPFSoot <sub>1,2,3,4,5,6,7</sub>	4781	Aftertreatment 1 Diesel Particulate Filter Soot Mass
T-AT1DOCOut <sub>1,2,3,4,5,6,7</sub>	4810	Aftertreatment 1 Warm Up Diesel Oxidation Catalyst Outlet Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TargetSpeed <sub>4,5,6,7</sub>		Target Engine Speed
DroopMap		Droop Map Information
APP		Accelerator pedal position
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








## Recommended wiring

Function	ECU conenctor	Intermediate connector A	CAN Service port (4pin)	Controller
<b>CAN H</b>	231	100	300	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	243	101	302	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	256,255,253	360,350	N/A	N/A
<b>Battery - (negative)</b>	251,252,254	102	303	N/A
<b>Key Switch</b>	226	N/A	301	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Kubota EDC17 Fault Codes on page 1289**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Kubota EDC17 aftertreatment lamps							
Solid On		Solid On		Solid On		Solid On	
	Blink slow		Blink slow		Solid On		Blink slow
	Blink fast		Blink fast				
	Solid On		Not Supported		Not Supported		Solid On

## 6.1.28 Liebherr engines support

ECU Type	Engine type
<a href="#">LIDEC 1 (page 404)</a>	Diesel engines series Dxxx
<a href="#">LIDEC 2 (page 406)</a>	Diesel engines series Dxxx
<a href="#">LIDEC 2 Main (page 410)</a>	Diesel engines series Dxxx
<a href="#">LIDEC 2 Knock Level (page 414)</a>	Diesel engines series Dxxx

### LIDEC 1

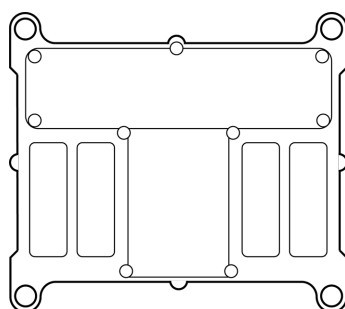


Image 5.108 LIDEC 1

### Controllers that support the LIDEC 1

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed



P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
P-Fuel1Inj2 <sub>1,2,3,4,5,6,7*</sub>	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

Function	9pin diagnostic connector	Controller
<b>CAN H</b>	C	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	E	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	N/A
<b>Battery - (negative)</b>	A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Liebherr LIDEC1 Fault Codes on page 1291**

## LIDEC 2

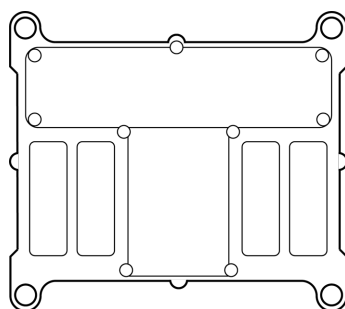


Image 5.109 LIDEC 2

## Controllers that support the LIDEC 2

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Ready to start		Engine Ready to Start
ReadyToSync		Engine Ready to Grid Sync
ExtLoadAdjust		Engine External Load Adjustment
Power-Idle		Engine Power-Idle
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start		Engine Start Request
StartInvert		Engine Start Request Inverted
Stop		Engine Stop Request
StopInvert		Engine Stop Request Inverted
Idle		Idle Request
Droop		Droop Request
Starter1 <sub>4,5,6,7</sub>		Start Request Starter 1 Master
Starter2		Start Request Starter 2 Master
Stop <sub>4,5,6,7</sub>		Stop Request Master
Reset		Reset Request Master
Pre-heat		Pre-heat Request Master
Idle <sub>4,5,6,7</sub>		Idle Request Master
NominalSpeed		Nominal Speed Request Master
Droop		Droop Request Master
ShutdnOverride <sub>4,5,6,7</sub>		Engine Shutdonw Override Request Master
FuelDisable		Fuel Disable Request Master
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
NotInAuto <sub>1,2,3,4,5,6,7</sub>	3567	Generator Control Not In Automatic Start State
NotParellelRd <sub>1,2,3,4,5,6,7</sub>	3568	Generator Not Ready to Automatically Parallel State
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
GasmixPosSP		Gasmixer Position Setpoint
GasmixPosAct		Gasmixer Position Actual
ThrttVlv1Pos		Engine Throttle Valve 1 Position
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature

T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort 10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort 11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort 12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort 13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort 14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort 15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort 16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort 17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort 18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort 19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort 20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl 10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl 11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl 12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl 13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl 14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl 15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl 16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl 17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl 18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl 19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl 20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
P-ChrgAirCOut <sub>1,2,3,4,5,6,7</sub>	2631	Engine Charge Air Cooler Outlet Pressure
T-Coolant2 <sub>1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
TurboWstgAct1 <sub>1,2,3,4,5,6,7</sub>	5370	Engine Turbocharger Wastegate Actuator 1 Desired Position
DesThrttVlv1P <sub>1,2,3,4,5,6,7</sub>	5374	Engine Desired Throttle Valve 1 Position
P-Coolant2 <sub>1,2,3,4,5,6,7</sub>	5708	Engine Coolant Pressure 2
T-Coolant3 <sub>1,2,3,4,5,6,7</sub>	6209	Engine Coolant Temperature 3

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
SpeedAdjust		Engine Speed Adjustment Master
Pwr-Real*		Power Setpoint Demand
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power
AlternatorEffc <sub>1,2,3,4,5,6,7</sub>	4078	Generator Alternator Efficiency
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	9pin diagnostic connector	Controller
CAN H	??	CAN1 (extension modules/J1939) – CAN H
CAN COM	??	CAN1 (extension modules/J1939) – CAN COM
CAN L	??	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	??	N/A
Battery - (negative)	??	N/A
Key Switch	??	Any binary output configured as ECU PwrRelay
Analog Speed Control	??	SG OUT
Analog Speed Control	??	SG COM









Information about wiring is currently unavailable.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Liebherr LIDEC1 Fault Codes on page 1291**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Liebherr LIDEC2 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## LIDEC 2 Main

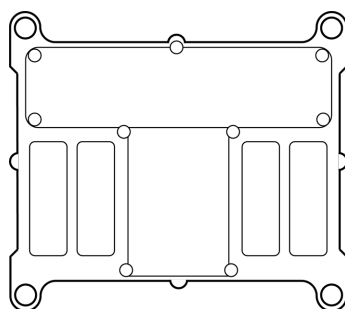


Image 5.110 LIDEC 2

## Controllers that support the LIDEC 2 Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Ready to start		Engine Ready to Start
ReadyToSync		Engine Ready to Grid Sync
ExtLoadAdjust		Engine External Load Adjustment
Power-Idle		Engine Power-Idle
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)

FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start		Engine Start Request
StartInvert		Engine Start Request Inverted
Stop		Engine Stop Request
StopInvert		Engine Stop Request Inverted
Idle		Idle Request
Droop		Droop Request
Starter <sub>1,4,5,6,7</sub>		Start Request Starter 1 Master
Starter <sub>2</sub>		Start Request Starter 2 Master
Stop <sub>4,5,6,7</sub>		Stop Request Master
Reset		Reset Request Master
Pre-heat		Pre-heat Request Master
Idle <sub>4,5,6,7</sub>		Idle Request Master
NominalSpeed		Nominal Speed Request Master
Droop		Droop Request Master
ShutdnOverride <sub>4,5,6,7</sub>		Engine Shutdonw Override Request Master
FuelDisable		Fuel Disable Request Master
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
NotInAuto <sub>1,2,3,4,5,6,7</sub>	3567	Generator Control Not In Automatic Start State
NotParellelRd <sub>1,2,3,4,5,6,7</sub>	3568	Generator Not Ready to Automatically Parallel State
GovSpdCmd <sub>1,2,3,4,5,6,7</sub>	4079	Generator Governing Speed Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
GasmixPosSP		Gasmixer Position Setpoint
GasmixPosAct		Gasmixer Position Actual
ThrttVlv1Pos		Engine Throttle Valve 1 Position
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate

EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
P-ChrgAirCOut <sub>1,2,3,4,5,6,7</sub>	2631	Engine Charge Air Cooler Outlet Pressure
T-Coolant2 <sub>1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
TurboWstgAct1 <sub>1,2,3,4,5,6,7</sub>	5370	Engine Turbocharger Wastegate Actuator 1 Desired Position
DesThrttVlv1P <sub>1,2,3,4,5,6,7</sub>	5374	Engine Desired Throttle Valve 1 Position
P-Coolant2 <sub>1,2,3,4,5,6,7</sub>	5708	Engine Coolant Pressure 2
T-Coolant3 <sub>1,2,3,4,5,6,7</sub>	6209	Engine Coolant Temperature 3
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SpeedAdjust		Engine Speed Adjustment Master
Pwr-Real*		Power Setpoint Demand
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power
AlternatorEffc <sub>1,2,3,4,5,6,7</sub>	4078	Generator Alternator Efficiency
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection



\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	9pin diagnostic connector	Controller
CAN H	??	CAN1 (extension modules/J1939) – CAN H
CAN COM	??	CAN1 (extension modules/J1939) – CAN COM
CAN L	??	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	??	N/A
Battery - (negative)	??	N/A
Key Switch	??	Any binary output configured as ECU PwrRelay
Analog Speed Control	??	SG OUT
Analog Speed Control	??	SG COM









*Information about wiring is currently unavailable.*

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Liebherr LIDEC1 Fault Codes on page 1291**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Liebherr LIDEC2 Main aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## LIDEC 2 Knock Level

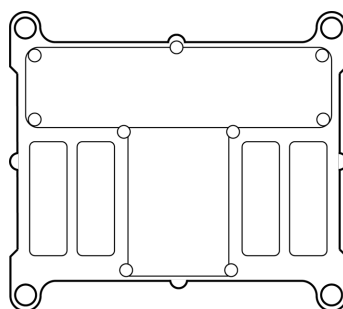


Image 5.111 LIDEC 2

## Controllers that support the LIDEC 2 Knock Level

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	9pin diagnostic connector	Controller
CAN H	??	CAN1 (extension modules/J1939) – CAN H
CAN COM	??	CAN1 (extension modules/J1939) – CAN COM
CAN L	??	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	??	N/A
Battery - (negative)	??	N/A
Key Switch	??	Any binary output configured as ECU PwrRelay
Analog Speed Control	??	SG OUT
Analog Speed Control	??	SG COM

*Information about wiring is currently unavailable.*




For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

**Liebherr LIDEC2 Knock Level aftertreatment lamps**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.29 MAN engines support

ECU Type	Engine type
<a href="#">EDC17 Master, EDC17 Slave (page 429)</a>	6 R
<a href="#">EDC17 Master (page 432)</a>	6 R
<a href="#">EDC17 Slave (page 435)</a>	6 R
<a href="#">EDC7 Master, EDC7 Slave and MFR interface system (page 417)</a>	8 V, 12 V
<a href="#">EDC7 Master and MFR interface system (page 421)</a>	8 V, 12 V
<a href="#">EDC7 Slave and MFR interface system (page 423)</a>	8 V, 12 V
<a href="#">EDC7 Statistics and MFR interface system (page 426)</a>	8 V, 12 V
<a href="#">Data Logger (page 804)</a>	Diesel engines equipped with a data logger
<a href="#">Data Logger Master (page 806)</a>	Diesel engines equipped with a data logger
<a href="#">Data Logger Slave (page 808)</a>	Diesel engines equipped with a data logger

### Engine type explanation

Engine Code	Meaning
D 0836 LE 201/203	D - Water-cooled four stroke Diesel engine with direct fuel injection
	E - Water-cooled 4 stroke Otto-gas-engines with spark ignition
	E - naturally aspirated engine
	TE - turbocharged engine
6 R	LE - turbocharged and intercooled engine
	R - vertically arranged in-line
	V - cylinders in 90° V arrangement

### EDC7 Master, EDC7 Slave and MFR interface system

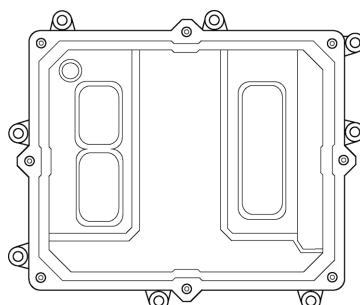


Image 5.112 EDC

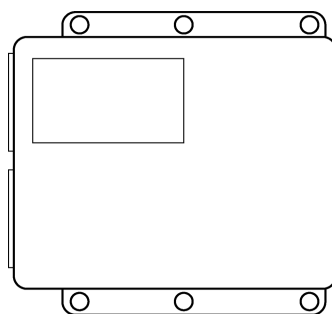


Image 5.113 Interface to the controller

## Controllers that support the EDC

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Master Red Stop Lamp
StopLamp <sub>1,2,3</sub>	623	Red Stop Lamp 1
StopLamp <sub>1,2,3</sub>	623	Red Stop Lamp 2
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Master Amber Warning Lamp
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp 1
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp 2
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Master Protect Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp 1
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp 2
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Master Malfunction Indicator Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp 1
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp 2
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
SCR InhSwitch <sub>1,2,3,4,5,6,7</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
StarterMode <sub>4,5,6,7</sub>		Start Request
StopLamp <sub>4,5,6,7</sub>		Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load		Load
Trq-Quantity		Conversion factor CAN torque -> quantity
WaterInFuel		Water in fuel

CoolantLvl		Coolant level
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Master Engine Fuel Delivery Pressure
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Slave Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Master Engine Oil Pressure
P-Oil <sub>1,2,3</sub>	100	Slave Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Master Engine Coolant Pressure 1
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Slave Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Master Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Slave Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Master Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Slave Engine Turbocharger 2 Turbine Intake Temperature
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SpeedRequest <sub>4,5,6,7</sub>		Requested speed
P-Grad		P-Grad
ZDR		Selection ZDR

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 connector (MFR)	diagnostic connector	Controller
<b>CAN H</b>	C6	2	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	C5	10	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	16	N/A
<b>Battery - (negative)</b>	N/A	4	N/A
<b>Key Switch</b>	N/A	(8)	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

### Note:

Controller ECU PwrRelay output can be used to activate Ignition (KI.15).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see MAN MFR Fault Codes on page 1296**

## Diagnostic

The controller shows in the alarm list for each fault: Text message or fault code number SPN number on the bottom row OC number on the bottom row which says from where comes this fault:

- > 0 - EDC Master
- > 1 - EDC Slave
- > 39 - MFR FMI number in the right bottom corner









Fault details are displayed in the bottom row when fault is selected with > mark in the list of faults by Up/Down arrows.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### MAN MFR aftertreatment lamps



	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Solid On

### EDC7 Master and MFR interface system

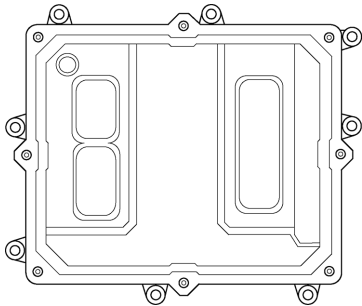


Image 5.114 EDC

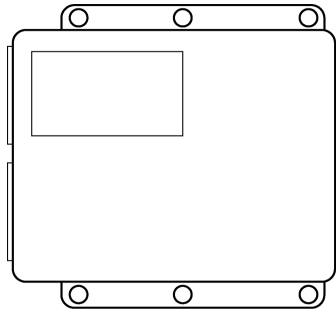


Image 5.115 Interface to the controller

### Controllers that support the EDC7 Master

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CoolWater <sub>4,5,6,7</sub>		Cooling Water
Oil Press A <sub>4,5,6,7</sub>		Oil Pressure A
P-Intake <sub>1,2,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature

T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 connector (MFR)	diagnostic connector	Controller
CAN H	C6	2	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	C5	10	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	16	N/A
Battery - (negative)	N/A	4	N/A
Key Switch	N/A	(8)	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

#### Note:

Controller ECU PwrRelay output can be used to activate Ignition (KI.15).

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see MAN MFR Master Fault Codes on page 1303**

**Diagnostic**









The controller shows in the alarm list for each fault: Text message or fault code number SPN number on the bottom row OC number on the bottom row which says from where comes this fault:

- > 0 - EDC Master
- > 1 - EDC Slave
- > 39 - MFR FMI number in the right bottom corner

Fault details are displayed in the bottom row when fault is selected with > mark in the list of faults by Up/Down arrows.

**Aftertreatment lamp**

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN data logger Master aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

**EDC7 Slave and MFR interface system**

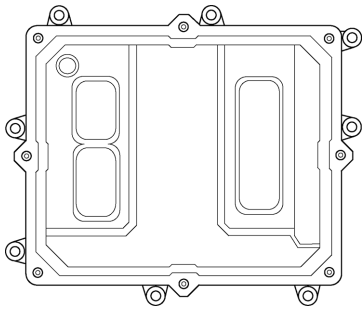


Image 5.116 EDC

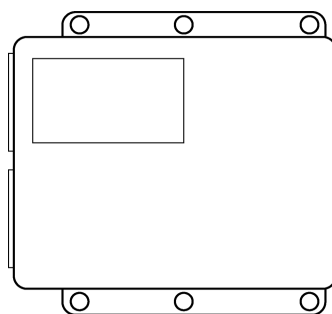


Image 5.117 Interface to the controller

## Controllers that support the EDC

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Slave Water In Fuel Indicator 1
StopLamp	623	Slave Red Stop Lamp
WarningLamp	624	Slave Amber Warning Lamp
ProtectLamp	987	Slave Protect Lamp
MalfuncLamp	1213	Slave Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DPFIntake	81	Slave Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-Oil	100	Slave Engine Oil Pressure
P-Intake	102	Slave Engine Intake Manifold #1 Pressure
T-IntManifold	105	Slave Engine Intake Manifold 1 Temperature
P-DEFDoser1	4334	Slave Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Slave Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Slave Aftertreatment 1 SCR Outlet Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
ReqSpeedCC	696	TSC1-VE Engine Requested Speed Control Conditions
Spd-Requested <sub>4,5,6,7</sub>	898	TSC1-VE Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 connector (MFR)	diagnostic connector	Controller
CAN H	C6	2	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	C5	10	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	16	N/A
Battery - (negative)	N/A	4	N/A
Key Switch	N/A	(8)	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

### Note:

Controller ECU PwrRelay output can be used to activate Ignition (Kl.15).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see MAN MFR Slave Fault Codes on page 1308**

## Diagnostic

The controller shows in the alarm list for each fault: Text message or fault code number SPN number on the bottom row OC number on the bottom row which says from where comes this fault:









<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

- > 0 - EDC Master
- > 1 - EDC Slave
- > 39 - MFR FMI number in the right bottom corner

Fault details are displayed in the bottom row when fault is selected with > mark in the list of faults by Up/Down arrows.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN EDC17 Slave aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EDC7 Statistics and MFR interface system

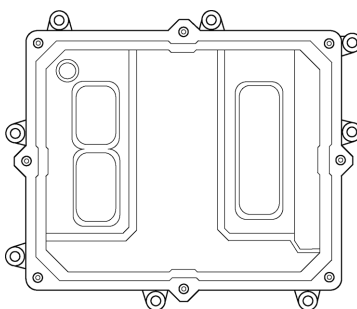


Image 5.118 EDC

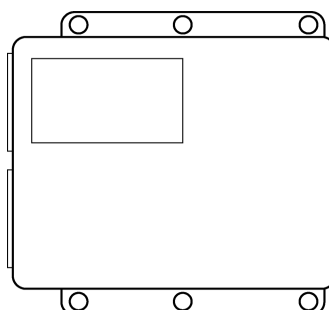


Image 5.119 Interface to the controller

## Controllers that support the EDC

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3</sub>	623	Red Stop Lamp 2
WarningLamp <sub>1,2,3</sub>	624	Amber Warning Lamp 2
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp 2
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp 2
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X2 connector (MFR)	diagnostic connector	Controller
CAN H	C6	2	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

<b>CAN L</b>	C5	10	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	16	N/A
<b>Battery - (negative)</b>	N/A	4	N/A
<b>Key Switch</b>	N/A	(8)	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

**Note:**

*Controller ECU PwrRelay output can be used to activate Ignition (KI.15).*

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MAN MFR Statistics Fault Codes on page 1312**

## Diagnostic









The controller shows in the alarm list for each fault: Text message or fault code number SPN number on the bottom row OC number on the bottom row which says from where comes this fault:

- > 0 - EDC Master
- > 1 - EDC Slave
- > 39 - MFR FMI number in the right bottom corner

Fault details are displayed in the bottom row when fault is selected with > mark in the list of faults by Up/Down arrows.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN MFR Statistics aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported



## EDC17 Master, EDC17 Slave

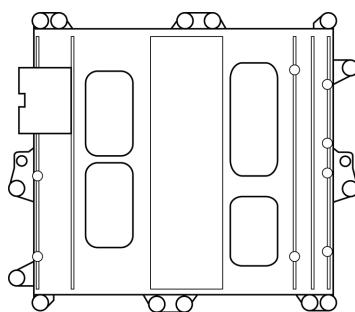


Image 5.120 EDC17CV42

### Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Master Water In Fuel Indicator 1
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Slave Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Master Red Stop Lamp
StopLamp <sub>1,2,3</sub>	623	Slave Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Master Amber Warning Lamp
WarningLamp <sub>1,2,3</sub>	624	Slave Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Master Protect Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Slave Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Master Malfunction Indicator Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Slave Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
StopStatus		Vehicle Stop Status
Start <sub>4,5,6,7</sub>		Engine Start Request
Stop <sub>4,5,6,7</sub>		Engine Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
UreaLevel		Status of Urea Tank Level

UreaQuality		Status of Urea Quality
Monnitor		Status of Monitoring System
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Master Aftertreatment 1 Diesel Particulate Filter Intake Pressure
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Slave Aftertreatment 1 Diesel Particulate Filter Intake Pressure
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Master Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Master Engine Oil Pressure
P-Oil <sub>1,2,3</sub>	100	Slave Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Master Engine Intake Manifold #1 Pressure
P-Intake <sub>1,2,3</sub>	102	Slave Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Master Engine Intake Manifold 1 Temperature
T-IntManifold <sub>1,2,3</sub>	105	Slave Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Master Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Master Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
P-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4334	Master Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
P-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4334	Slave Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Master Aftertreatment 1 SCR Intake Temperature
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Slave Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Master Aftertreatment 1 SCR Outlet Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Slave Aftertreatment 1 SCR Outlet Temperature
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-GovFdb		Speed Governor Feedback Factor Proportional Term
ReqSpeedCC	696	TSC1-TE Engine Requested Speed Control Conditions

ReqSpeedCC	696	TSC1-VE Engine Requested Speed Control Conditions
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	TSC1-TE Engine Requested Speed/Speed Limit
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	TSC1-VE Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU	Controller
CAN H	A48	CAN1 (extension modules/J1939) – CAN H
CAN COM	A35	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	A01, A03, A05	N/A
Battery - (negative)	A02, A04, A06	N/A
Key Switch	A17	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **MAN EDC17 Fault Codes on page 1302**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN EDC17 aftertreatment lamps										
		Solid On				Solid On				
	Solid On			Blink slow			Solid On			Not Supported
	Blink fast			Blink fast						
		Solid On				Solid On				
	Not Supported			Blink slow			Blink slow			Not Supported
				Blink fast			Blink fast			

## EDC17 Master

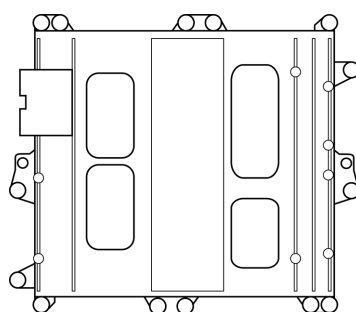


Image 5.121 EDC17CV42

## Controllers that support the EDC17 Master

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Master Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Master Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Master Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Master Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Master Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)

FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
StopStatus		Vehicle Stop Status
Start <sub>4,5,6,7</sub>		Engine Start Request
Stop <sub>4,5,6,7</sub>		Engine Stop Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
UreaLevel		Status of Urea Tank Level
UreaQuality		Status of Urea Quality
Monnitor		Status of Monitoring System
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Master Aftertreatment 1 Diesel Particulate Filter Intake Pressure
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Master Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Master Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Master Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Master Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Master Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Master Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
P-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4334	Master Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Master Aftertreatment 1 SCR Intake Temperature

T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Master Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-GovFdb		Speed Governor Feedback Factor Proportional Term
ReqSpeedCC	696	TSC1-TE Engine Requested Speed Control Conditions
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	TSC1-TE Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU	Controller
<b>CAN H</b>	A48	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	A35	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	A01, A03, A05	N/A
<b>Battery - (negative)</b>	A02, A04, A06	N/A
<b>Key Switch</b>	A17	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see MAN EDC17 Master Fault Codes on page 1301**

**Aftertreatment lamp**

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN EDC17 Master aftertreatment lamps							
Solid On							
	Solid On Blink slow Blink fast		Blink slow Blink fast		Solid On		Not Supported
Solid On							
	Not Supported		Blink slow Blink fast		Solid On		Not Supported
Blink slow Blink fast							

**EDC17 Slave**

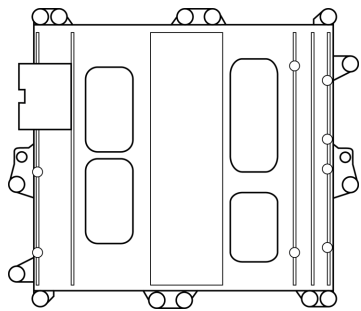


Image 5.122 EDC17CV42

**Controllers that support the EDC17 Slave**

Refer to [Compatibility Table \(page 10\)](#)

**Available parameters**

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Slave Water In Fuel Indicator 1
StopLamp	623	Slave Red Stop Lamp
WarningLamp	624	Slave Amber Warning Lamp
ProtectLamp	987	Slave Protect Lamp
MalfuncntLamp	1213	Slave Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DPFIntake	81	Slave Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-Oil	100	Slave Engine Oil Pressure
P-Intake	102	Slave Engine Intake Manifold #1 Pressure
T-IntManifold	105	Slave Engine Intake Manifold 1 Temperature
P-DEFDoser1	4334	Slave Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Slave Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Slave Aftertreatment 1 SCR Outlet Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
ReqSpeedCC	696	TSC1-VE Engine Requested Speed Control Conditions
Spd-Requested <sub>4,5,6,7</sub>	898	TSC1-VE Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU	Controller
CAN H	A48	CAN1 (extension modules/J1939) – CAN H
CAN COM	A35	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	A01, A03, A05	N/A
Battery - (negative)	A02, A04, A06	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).











Key Switch	A17	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see MAN EDC17 Slave Fault Codes on page 1302**

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN EDC17 Slave aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.30 Mesa engines support

ECU Type	Engine type
<a href="#">ECM (page 396)</a>	GV22PU, GX22, GX12, GX15

### SECM70

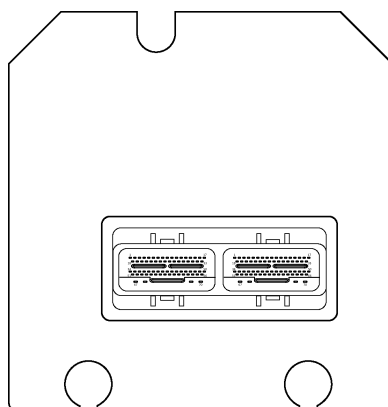


Image 5.123 SECM70

### Controllers that support the ECM

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelShtoff1 <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
FuelShtoff2 <sub>1,2,3,4,5,6,7</sub>	2807	Engine Fuel Shutoff 2 Control
SDRequest <sub>1,2,3,4,5,6,7</sub>	3606	Engine Controlled Shutdown Request
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
ClosedLoopActv	520530	Closed loop active
ClosedLoopAcB2	520530	Closed loop active Bank 2
AdaptLearnActv	520531	Adaptive learn active
AdaptLearnAcB2	520531	Adaptive learn active Bank 2
MasterPowRly	520532	Master power relay
MasterPowRlyB2	520532	Master power relay Bank 2
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Vol_AFR_Stoich		Vol_AFR_Stoich
UEGO_INRC_mV		UEGO_INRC_mV
PostCat_HEGO_V		PostCat_HEGO_Voltage
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
FuelActCmd <sub>1,2,3,4,5,6,7</sub>	633	Engine Fuel Actuator 1 Control Command
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
IgnitionTime1 <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
RemainingTime <sub>1,2,3,4,5,6,7</sub>	3544	Time Remaining in Engine Operating State
ThrottleVlv2 <sub>1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position

T-AT1GasCatInt <sub>1,2,3,4,5,6,7</sub>	4753	Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature
T-AT1GasCatOut <sub>1,2,3,4,5,6,7</sub>	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
DesiredPhi	520528	Desired phi
DesiredPhiB2	520528	Desired phi Bank 2
ActualPhi	520529	Actual phi
ActualPhiB2	520529	Actual phi Bank 2
SparkDwellTime	520533	Spark dwell time
SparkDwellTB2	520533	Spark dwell time Bank 2
CLMultiplier	520534	CL Multiplier
CLMultiplierB2	520534	CL Multiplier Bank 2
ALMultiplier	520535	AL Multiplier
ALMultiplierB2	520535	AL Multiplier Bank 2
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real <sub>1,2,3,4,5,6,7</sub> *	2452	Generator Total Real Power
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
FuelType <sub>1,2,3,4,5,6,7</sub>	5837	Fuel Type

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring









Function	ECU connector	Controller
<b>CAN H</b>	36	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	53	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	68	N/A
<b>Battery - (negative)</b>	69, 70	N/A
<b>Key Switch</b>	38	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MESA SECM70 Fault Codes on page 1317**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MESA SECM70 aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.31 MTU engines support

ECU Type	Engine type
<a href="#">ECU4 (MDEC) (page 441)</a> <a href="#">ECU7 (ADEC) (page 442)</a> <a href="#">ECU7 (ADEC) &amp; SAM module (page 446)</a>	Series 2000, 4000
<a href="#">ECU7 (ADEC) &amp; SAM module - main InteliGateway 330(page 1)</a>	Series 2000, 4000
<a href="#">ECU7 (ADEC) &amp; SAM module - EMU (page 1)</a>	MTU EMU - Safety monitoring module
<a href="#">ECU7 (ADEC) (page 442)</a> <a href="#">ECU7 (ADEC) &amp; SAM module (page 446)</a> <a href="#">ECU8 (ADEC) &amp; Smart connect (page 458)</a>	Series 1600
<a href="#">ECU9 (ADEC) (page 464)</a>	Series 4000
<a href="#">ECU9 (ADEC) Main (page 468)</a>	Series 4000
<a href="#">Axces (SCR) (page 472)</a>	Axces (SCR) module
<a href="#">DDEC 10 (page 474)</a>	Series 4R1000, 6R1000, 6R1100, 6R1300, 6R1500
<a href="#">MIP 4000 (page 479)</a>	Series 4000 - gas engines
<a href="#">MIP 4000 J1939 v3.x (page 483)</a>	Series 4000 - gas engines
<a href="#">MIP 4000 J1939 v4.x (page 489)</a>	Series 4000 - gas engines

### ECU4 (MDEC)

**Note:** For connection to MTU MDEC module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB [manual](#).

### Controllers that support the ECU4

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

For more information about available values and signals, please refer to I-CB [manual](#) or ICBEdit PC software.

### Recommended wiring of ECU4 module

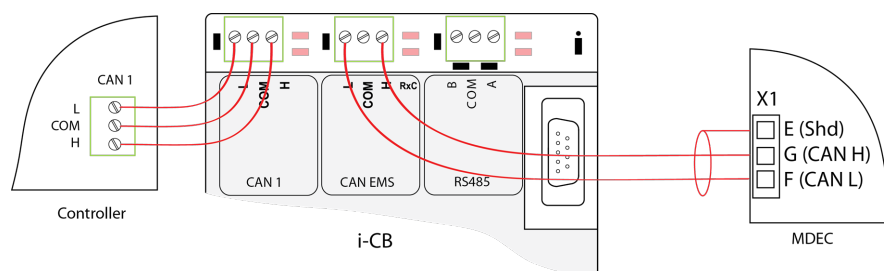


Image 5.124 Recommended wiring MDEC

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

## ECU7 (ADEC)

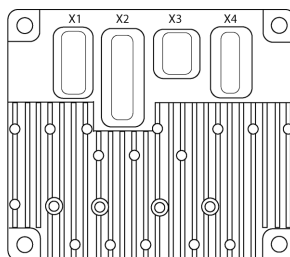


Image 5.125 ECU7

**Note:** For connection to MTU ADEC module it is necessary to use an I-CB module. Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.

**Note:** As an exception to the above the MTU ADEC ECU7 can be connected directly ONLY IF the CAN Module version is 501. Following limitations apply: In order to connection to the MTU ECU7 directly (without I-CB module), some extension modules may not be supported due to different baud rate of the ECU7. (CAN1 message 0x722) is in conflict with MTU protocol, therefore any module on BOUT1 has not to be used!

**Note:** MTU Engine Control units configuration that are supported via I-CB are MDEC and ADEC where ADEC is the more recent version of the MTU ECU.

**Note:** Depending on SW configuration of the CAN interface in MTU ECU the interface behaves differently. MTU names the configurations "CAN Modul" suffixed with a 3 digit number. The 3 digit number is therefore reused in I-CB as indication of which configuration this is supporting. The CAN Modules supported by I-CB for ADEC units are CAN Modul 401, CAN Modul 501 and CAN Modul 502. Also ADEC and ADEC-1600P are I-CB modules derived from the CAN Modul 501 available in I-CBEdit (configuration tool of I-CB) I-CB also support MDEC configurations (these are CAN Modul 201, CAN Modul 302, CAN Modul 303 and CAN Modul 304)

**Note:** As MTU has released different versions of identical Modul with different functionality it is difficult to indicate whether all signals from a particular CAN Modul will work with a given ECU which is why I-CB configuration tool offers the user the ability to add signals if he has the definition of these for his particular ECU (this definition can be obtained from MTU directly)

## Controllers that support the ECU7

Refer to [Compatibility Table \(page 10\)](#).

### Available parameters for MTU ADEC (non J1939)

Parameter	Description
CANSpdSwitch (E-CAN Speed Demand Switch)	0 = CAN analog 256 = ECU up/down 512 = CAN up/down 768 = ECU analog absolute 1024 = ECU analog relative 3840 = ECU parameter settings

For more information about available values and signals, please refer to I-CB [manual](#) or ICBEdit PC software.

### Recommended wiring

Function	ECU connector	Controller
CAN H	X1-19	CAN1 (extension modules/J1939) – CAN H
CAN COM	X1-20	CAN1 (extension modules/J1939) – CAN COM
CAN L	X1-35	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X3-3,6,9,12	N/A
Battery - (negative)	X3-1,4,7,10	N/A
Key Switch	X3-13	Any binary output configured as ECU PwrRelay
Analog Speed Control	X1-31	SG OUT
Analog Speed Control	X1-30	SG COM

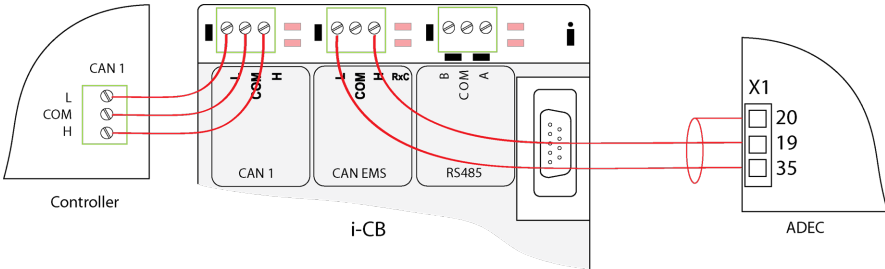


Image 5.126 Recommended wiring of ADEC

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

# ECU7 (ADEC)

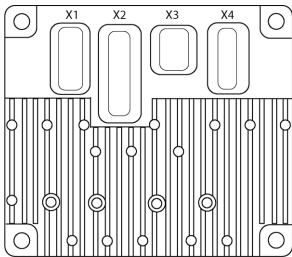


Image 5.127 ECU7

**IMPORTANT: Only the MTU modul 501 is supported!**

***Note:** In order to connection to the MTU ECU7 directly (without I-CB module), some extension modules may not be supported due to different baud rate of the ECU7.*

## Controllers that support the ECU7

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters for MTU ADEC (non J1939)

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopActivated		StopActivated
AlarmYellow		AlarmYellow
AlarmRed		AlarmRed
SS-Overspeed		SS-Overspeed
LO P-Lube Oil		LO P-Lube Oil
SS P-Lube Oil		SS P-Lube Oil
LO P-Fuel		LO P-Fuel
SS P-Fuel		SS P-Fuel
LO Coolant Lvl		LO Coolant Lvl
LO P-Fuel(CR)		LO P-Fuel(CR)
HI P-Fuel(CR)		HI P-Fuel(CR)
SS Override		SS Override
T-PreheatLow		Preheat Temperature Low
SS CoolLChAir		SS CoolantLvIChAir
AL ECU Defect		AL ECU Defect
AL SpdDdDefect		AL SpdDdDefect
LO PwrSupply		LO PwrSupply
HI PwrSupply		HI PwrSupply
HI T-Coolant		HI T-Coolant
SS T-Coolant		SS T-Coolant
HI T-ChargeAir		HI T-ChargeAir
HI T-Intercool		HI T-Intercool
HI T-LubeOil		HI T-LubeOil
SS T-LubeOil		SS T-LubeOil



SS T-ChargeAir		SS T-ChargeAir
HI T-ECU		HI T-ECU
SS EngSpdLow		SS EngSpdLow
AL CR Leakage		AL CR Leakage
AL AutoStop		AL AutoStop
StartSpd fail		StartSpd fail
RunUpSpd fail		RunUpSpd fail
IdleSpd fail		IdleSpd fail
LOLO ECU Pwr		LOLO ECU Pwr
HIHI ECU Pwr		HIHI ECU Pwr
P-FuelFltDiff		P-Fuel Flt Diff
SD Coolant Lvl		SD Coolant Lvl
SD CoolLvlChrA		SD Cool Lvl ChrA
HI T-Fuel		HI T-Fuel
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
Override		Override
Speed Inc		Speed Increase
Speed Dec		Speed Decrease
TestOverspd		Request Test Override
EngineStop		Engine Stop
AlarmReset		Alarm Reset
ResetTrpFuel		Reset Trip Fuel Consumption
Start		Start
50/60Switch		50/60Hz Switch
QuickStart		Quick Start Active
CylCutOut1		Disable Cylinder Cut Out 1
CylCutOut2		Disable Cylinder Cut Out 2
<b>ECU analog outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Engine		Engine Speed
P-LubeOil		P-LubeOil
P-LubeOil LO		P-LubeOil LO
P-LubeOil LOLO		P-LubeOil LOLO
P-Fuel		P-Fuel
P-ChargeAir		P-ChargeAir
FailureCodes		Failure Codes
PwrSupply		Power Supply
Spd-Camshaft		Camshaft Speed
T-Coolant		T-Coolant
T-Coolant HI		T-Coolant HI
T-Coolant HIHI		T-Coolant HIHI
T-ChargeAir		T-ChargeAir
T-Intercool		T-Intercool
T-LubeOil		T-LubeOil
T-LubeOil HI		T-LubeOil HI
T-LubeOil HIHI		T-LubeOil HIHI

T-Fuel		T-Fuel
T-ECU		T-ECU
Spd-Crankshaft		Crankshaft Speed
MTripFuelCons		Mean Trip Fuel Consumption
NominalPower		Nominal Power
TripOperTime		Trip Operating Time
ESCM Reduction		ESCM Reduction
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SpeedDemand		SpeedDemand
CANSpdSwitch		CANSpdSwitch

## Recommended wiring

Function	ECU connector	Controller
<b>CAN H</b>	X1-19	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	X1-20	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	X1-35	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	X3-3,6,9,12	N/A
<b>Battery - (negative)</b>	X3-1,4,7,10	N/A
<b>Key Switch</b>	X3-13	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	X1-31	SG OUT
<b>Analog Speed Control</b>	X1-30	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## ECU7 (ADEC) & SAM module

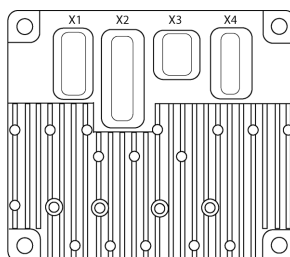


Image 5.128 ECU7

**Note:** For communication with the ComAp controller the CCB2 card may be required in the SAM module. Please check this demand with local MTU representative.

**IMPORTANT:** Please check the version of SAM module firmware as the ver. 40014\_A8 –V5 is not compatible with ComAp controllers. The compatible SAM module firmwares are ver. 40014\_A8 – V4 or older or 40014\_A8 –V6.

**IMPORTANT:** No fault codes in DM1 frame are provided by MTU ADEC system. Fault codes are only available as analog input "Failure Codes". ECU binary inputs may be used as fault code representative. Therefore you can use only 16 fault codes – binary inputs (standard ECU size) or 32 (large ECU size)!

## Controllers that support the ECU7

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters for MTU ADEC J1939

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-OilLubeLO		LO P-Lube Oil
P-OilLubeLOLO		LOLO P-Lube Oil
CoolantLevelLO		LO Coolant Level
ECUDefect		AL ECU Defect
Spd-DmdDefect		AL Speed Demand Failure RCS
Pwr-SupplyLO		LO Power Supply
Pwr-SupplyHI		HI Power Supply
T-CoolantHI		HI T-Coolant
T-CoolantHIHI		HIHI T-Coolant
T-ChrgAirHI		HI T-Charge Air
T-OilLubeHI		HI T-Lube Oil
T-OilLubeHIHI		HIHI T-Lube Oil
T-ExhaustA		HI T-Exhaust A
T-ExhaustB		HI T-Exhaust B
T-ChrgAirHIHI		HIHI T-Charge Air
T-ECU HI		HI T-ECU
Spd-SpeedLowSS		SS Engine Speed Low
Pwr-SupplyLOLO		LOLO ECU Power Supp Voltage
Pwr-SupplyHIHI		HIHI ECU Power Supp Voltage
OverspeedSS		SS Overspeed
OverrideFdb		Override Feedback for ECU
T-FuelHI		HI T-Fuel
ExternalStop		External Stop Activated
Spd-DmdFail		Speed Demand Fail Mode
Fdb-speed-Inc		Feedback Increase Speed
Fdb-speed-Dec		Feedback Decrease Speed
EngineRunning		Engine Running
CylinderCutout		Cylinder Cutout
LoadGenON		Alternator Switch ON
NotPreheatYet		Preaheat Temperature Not Reached
CANMode		Feedback CAN Mode Switch
PrimingPumpON		Oil Priming Pump ON
LO IntCoolLvl		LO Charge-Air Coolant Level
T-CoolantIntLO		HI T-Coolant Intercooler
PrimingFault		AL Priming Fault
Spd-Start		AL Start Speed Not Reached

Spd-Runup		AL Runup Speed Not Reached
Spd-Idle		AL Idle Speed Not Reached
P-Input1HI		HI Pressure Input 1 (HI Temp. Geno DE)
P-Input2HI		HI Pressure Input 2 (HI Temp. Geno NDE)
DayTankLvlHI		HI Level Day Tank
DayTankLvlLO		LO Level Day Tank
HoldingLvlHI		HI Level Holding Tank
HoldingLvlLO		LO Level Holding Tank
T-Winding1HI		HI T-Winding 1
T-Winding2HI		HI T-Winding 2
T-Winding3HI		HI T-Winding 3
T-AmbientHI		HI T-Ambient
T-Generator		T-Generator Warning
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FuelLeakage1 <sub>1,2,3,4,5,6,7</sub>	1239	Engine Fuel Leakage 1
FuelLeakage2 <sub>1,2,3,4,5,6,7</sub>	1240	Engine Fuel Leakage 2
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CylCutout2		Disable Cylinder Cut Out 2
Spd-Increase		Speed Increase
Spd-Decrease		Speed Decrease
TestOverspeed		Request Test Overspeed
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Spd-LimActive		Speed Setting Limit Active
ModeSwitch		Mode Switch
GovernorParam		Governor Parameter Set Select
OilPriming		Intermittent Oil Priming
Start <sub>4,5,6,7</sub>		Engine Start
50/60hz		50/60Hz
StarterReset		Starter Reset
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-DmdSelect		Selected Speed Demand

Spd-DmdEffect		Effective Speed Demand
Spd-DmdCAN		Fdb Spd Demand Analog CAN
Spd-DmdAnalog		Fdb Spd Demand Analog
Spd-DmdSource		Speed Demand Source
ECUHours		ECU Operating Hours
Trq-Requested		Specified Torque
EngOptimized		Engine Optimized
Spd-Droop		Current Speed Droop
HoldingTankLvl		Level Holding Tank
DayTankLvl		Level Day Tank
FailureCodes		Failure Codes
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-AltBearing1 <sub>1,2,3,4,5,6,7</sub>	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2 <sub>1,2,3,4,5,6,7</sub>	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1 <sub>1,2,3,4,5,6,7</sub>	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2 <sub>1,2,3,4,5,6,7</sub>	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3 <sub>1,2,3,4,5,6,7</sub>	1126	Engine Alternator Winding 3 Temperature
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	1388	Auxiliary Pressure #2
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
T-Turbo1Outlet <sub>1,2,3,4,5,6,7</sub>	2629	Engine Turbocharger 1 Compressor Outlet Temperature
StartProcedure	520241	Engine Status of Start Procedure
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-DmdSwitch		Speed Demand Switches

Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Alarm Reset	The command for Reset ECU Alarms. The recommended source value for this command is FltResButnEcho.
Speed Setting Limit Active	For more information about this signal contact local MTU representative.
Engine Start	The command used for engine running. The recommended source value for this command is Starter.
50/60Hz	This feature gives the operator ability to switch the rated speed between 50Hz and 60Hz. The system will only react to a state transition while the Engine speed is 0. The recommended source value for this command is Logical 0 for 50Hz and Logical 1 for 60Hz.
Engine Stop	The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.

## Available parameters for MTU ADEC J1939 P-engines

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-LubeOil LO		LO P-Lube Oil
P-LubeOil LOLO		LOLO P-Lube Oil
P-ChargAirLO		LO P-Charge Air A-Site
P-OilFDiffHI		HI P-Oil Filter Difference
Spd-ETC HI		HI ETC Speed (Turbo Charger 1)
P-FuelLO		LO P-Fuel (Common Rail)
P-FuelHI		HI P-Fuel (Common Rail)
ETC SS		SS ETC (Turbo Charger 1)
ECUDefectAL		AL ECU Defect
Pwr-SupplyLO		LO Power Supply
Pwr-SupplyHI		HI Power Supply
T-CoolantHI		HI T-Coolant
T-CoolantHIHI		HIHI T-Coolant
T-ChargeAirHI		HI T-Charge Air
T-LubeOilHI		HI T-Lube Oil
T-LubeOilHIHI		HIHI T-Lube Oil
T-ExhaustAHI		HI T-Exhaust A
T-ExhaustBHI		HI T-Exhaust B
T-ChrgAirHIHI		HIHI T-Charge Air
T-ECU HI		HI T-ECU
Spd-Low SS		SS Engine Speed Low
T-Fuel SS		SS T-Fuel
Pwr-ECU LOLO		LOLO ECU Power Supp Volt
Pwr-ECU HIHI		HIHI ECU Power Supp Volt

Overspeed SS		SS Overspeed
ECUFdbOverride		Override Feedback for ECU
CombinedAlarm		Combined Alarm
T-FuelHI		HI T-Fuel
Engine Running		Engine Running
P-CrankcaseHI		HI P-Crankcase
P-CoolantAP LO		LO P-Coolant After Pump
P-CoolantAP SS		SS P-Coolant After Pump
T-CoolInterHI		HI T-Coolant Intercooler
SDAF Closed		AL SDAF Closed
BarringGear		AL Barring Gear Engaged
T-ExhCombA SS		SS T-Exhaust Combined A
T-ExhCombB SS		SS T-Exhaust Combined B
T-CoolantTD		TD T-Coolant
P-LubeOilTD		TD P-Lube Oil
P-DiffFuelECU		P-DiffFuel ECU
T-CoolantIntSS		SS T-Coolant Intercooler
Lvl-CoolantHT		Coolant Level Switch HT
Lvl-CoolantAir		Coolant Level Charge Air NT
P-DiffFuelHI		BO HI P-Diff. Fuel Prefilter
Crankshaft		Crankshaft (EMU)
T-CoolInt SS		SS T-Coolant water (EMU)
P-LubOilRed SS		SS P-Lube Oil Red (EMU)
CylA01 HI		HI Single cylinder A1
CylA02 HI		HI Single cylinder A2
CylA03 HI		HI Single cylinder A3
CylA04 HI		HI Single cylinder A4
CylA05 HI		HI Single cylinder A5
CylA06 HI		HI Single cylinder A6
CylA07 HI		HI Single cylinder A7
CylA08 HI		HI Single cylinder A8
CylA09 HI		HI Single cylinder A9
CylA10 HI		HI Single cylinder A10
CylB01 HI		HI Single cylinder B1
CylB02 HI		HI Single cylinder B2
CylB03 HI		HI Single cylinder B3
CylB04 HI		HI Single cylinder B4
CylB05 HI		HI Single cylinder B5
CylB06 HI		HI Single cylinder B6
CylB07 HI		HI Single cylinder B7
CylB08 HI		HI Single cylinder B8
CylB09 HI		HI Single cylinder B9
CylB10 HI		HI Single cylinder B10
AirFlap A WB		Air Flap A wire break
AirFlap B WB		Air Flap B wire break
ASO LoVolt		ASO Voltage to Lo on Relay
ASO Watchdog		ASO Watchdog Relay

Pwr-Reduction		Power Reduction Active
P-Fuel LO		LO P-Fuel
P-Fuel LOLO		LOLO P-Fuel
CheckErrorCode		AL Check ECU Error Code
CRLeakageAL		AL Common Rail Leakage
TorqueLimit		Torque Limitation Active
LocalFdb		Feedback Local
StartReady		Ready for Start
PreheatHT		Preheating HT ON
PreheatNT		Preheating NT ON
PreheatAUX		Aux. Preheating ON
SysFaultSAM		Alarm SAM SysFault
Shutter1		Shutter 1 ON
Shutter2		Shutter 2 ON
Fan1		Fan Control Fan 1 ON
Fan2		Fan Control Fan 2 ON
SubsExcitation		Subs. Excitation ON
V-GenOut		Generator Voltage Output
FuelPump		Fuel Pump On
SD SAM		Alarm SAM SD
Spd-Window1		Speed Window 1
Spd-Window2		Speed Window 2
P-CrankcaseSS		SS P-Crankcase
T-Gen Warning		T-Generator Warning
T-AmbientHI		HI T-Ambient
T-Winding 3HI		HI T-Winding 3
T-Winding 2HI		HI T-Winding 2
T-Winding 1HI		HI T-Winding 1
Lvl-HoldTankLO		LO Level Holding-Tank
Lvl-DayTankLO		LO Level Day-Tank
Lvl-HoldTankHI		HI Level Holding-Tank
Lvl-DayTankHI		HI Level Day-Tank
Pressure2HI		HI Pressure 2
Pressure1HI		HI Pressure 1
Spd-Runup		AL Runup Speed Not Reached
Spd-Idle		AL Idle Speed Not Reached
Spd-NoStarter		AL Start Speed Not Reached
PrelubricFault		AL Prelubrication Fault
Lvl-IntCoolLO		LO Intercooler Coolant Level
PrimingPumpOn		Priming Pump On
Fdb CAN Switch		Feedback CAN Mode Switch
Preheat T NotR		Preheat Temp. Not Reached
LoadGen ON		Load Generator ON
CylinderCutout		Cylinder Cutout
FdbDecrSpeed		Feedback Decrease Speed
FdbIncrSpeed		Feedback Increase Speed
SpeedDemndFail		Speed Demand Fail Mode



ExtStopActiv		External Stop Activated
Spd-DefectAL		AL Speed Demand Defect
Lvl-CoolantLO		LO Coolant Level
MLStartRdy		ML Ready For Start
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
FuelLeakage <sub>1,2,3,4,5,6,7</sub>	1239	Engine Fuel Leakage 1
FuelLeakage <sub>2,1,2,3,4,5,6,7</sub>	1240	Engine Fuel Leakage 2
AlarmAckn <sub>1,2,3,4,5,6,7</sub>	2815	Engine Alarm Acknowledge
OilPrimPmp <sub>1,2,3,4,5,6,7</sub>	3550	Engine Oil Priming Pump Switch
OverrideState	520202	Engine Safety and Protection Override Status
SftPrtOvrrSt	520202	Engine Safety and Prot Ovr Stat
ESD Input1	520585	Emergency Stop Input 1
ESD Input2	520586	Emergency Stop Input 2
ESD Input3	520587	Emergency Stop Input 3
ESD Input4	520588	Emergency Stop Input 4
ASO Flap A FC	520589	ASO Flap A Feedback Contact
ASO Flap B FC	520590	ASO Flap B Feedback Contact
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DisCylCut2		Disable Cylinder Cut Out 2
SpeedInc		Speed Increase
SpeedDec		Speed Decrease
ReqTstOverspd		Request Test Overspeed
EngineStart		Engine Start
AlarmReset <sub>5</sub>		Alarm Reset
LampTest		LampTest
SpeedLimAct		Speed Setting Limit Active
ModeSwitch		Mode Switch
GovParamSel		Governor ParameterSet Select
IntOilPrim		Intermittent Oil Priming
PrimEngStart		Priming Engine Start
50/60Hz		50/60Hz
TestStart		Test Start
EmeStart		Emergency Start
ResetTaster		Reset Taster
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
StarterReset	520192	Starter Reset
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-FuelAfterFlt		P-Fuel After Filter
Start1		Start Process 1
Start2		Start Process 2

Spd-Crankshaft <sub>4,5,6,7</sub>		Engine Speed Crankshaft EMU
Spd-ChargerU2L <sub>4,5,6,7</sub>		U2L Charger Speed ETC1
Spd-ChargerU1L <sub>4,5,6,7</sub>		U1L Charger speed ETC1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-OilTransm <sub>1,2,3,4,5,6,7</sub>	127	Transmission Oil Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
T-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	442	Auxiliary Temperature 2
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-BearingDE <sub>1,2,3,4,5,6,7</sub>	1122	Engine Alternator Bearing 1 Temperature
T-BearingNDE <sub>1,2,3,4,5,6,7</sub>	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1 <sub>1,2,3,4,5,6,7</sub>	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2 <sub>1,2,3,4,5,6,7</sub>	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3 <sub>1,2,3,4,5,6,7</sub>	1126	Engine Alternator Winding 3 Temperature
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature

T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
T-Bearing 1 <sub>1,2,3,4,5,6,7</sub>	1157	Engine Main Bearing 1 Temperature
T-Bearing 2 <sub>1,2,3,4,5,6,7</sub>	1158	Engine Main Bearing 2 Temperature
T-Bearing 3 <sub>1,2,3,4,5,6,7</sub>	1159	Engine Main Bearing 3 Temperature
T-Bearing 4 <sub>1,2,3,4,5,6,7</sub>	1160	Engine Main Bearing 4 Temperature
T-Bearing 5 <sub>1,2,3,4,5,6,7</sub>	1161	Engine Main Bearing 5 Temperature
T-Bearing 6 <sub>1,2,3,4,5,6,7</sub>	1162	Engine Main Bearing 6 Temperature
T-Bearing 7 <sub>1,2,3,4,5,6,7</sub>	1163	Engine Main Bearing 7 Temperature
T-Bearing 8 <sub>1,2,3,4,5,6,7</sub>	1164	Engine Main Bearing 8 Temperature
T-Bearing 9 <sub>1,2,3,4,5,6,7</sub>	1165	Engine Main Bearing 9 Temperature
T-Bearing10 <sub>1,2,3,4,5,6,7</sub>	1166	Engine Main Bearing 10 Temperature
T-Bearing11 <sub>1,2,3,4,5,6,7</sub>	1167	Engine Main Bearing 11 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
P-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt <sub>1,2,3,4,5,6,7</sub>	1208	Engine Oil Filter Intake Pressure
P-Auxiliary1 <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
P-Auxiliary2 <sub>1,2,3,4,5,6,7</sub>	1388	Auxiliary Pressure #2
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
T-Turbo1Outlet <sub>1,2,3,4,5,6,7</sub>	2629	Engine Turbocharger 1 Compressor Outlet Temperature
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
FailCodes	520256	Failure Codes
RPM Camshft	520257	Engine Speed Camshaft
RPM Cranksh	520258	Engine Speed Crankshaft
P-DelBehFil	520286	Engine Fuel Del Press beh Fil
P-PreFiltDiff	520287	Engine Fuel PreFilt Diff Pres
P-OilRed	520292	Engine Oil Pressure Redundant
T-CoolantRed	520302	Engine Coolant Temperature Redundant
Spd-Redundant	520382	Engine Speed Redundant
T-SplashOil11	520395	Splash Oil Temperature 11
T-SplashOil12	520396	Splash Oil Temperature 12
T-SplashOil13	520397	Splash Oil Temperature 13
T-SplashOil14	520398	Splash Oil Temperature 14
T-SplashOil15	520399	Splash Oil Temperature 15
T-SplashOil16	520400	Splash Oil Temperature 16
T-SplashOil17	520401	Splash Oil Temperature 17
T-SplashOil18	520402	Splash Oil Temperature 18
T-SplashOil19	520403	Splash Oil Temperature 19
T-SplashOil20	520404	Splash Oil Temperature 20
T-MainBearing	520407	Engine Main Bearing Temperature Average
P-OilRefPmp	520542	MPL3 / L1L P-Oil Refill Pump
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Load Signal		Load Signal

Spd-Dmd		Speed Demand Switches
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
AltRatingSel <sub>1,2,3,4,5,6,7</sub>	2882	Engine Alternate Rating Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function
Rating Switch 1	0 – indicates maximum power fueling 1 – indicates alternate power fueling 1 2 - 253 - indicates alternate power fueling 2 thru 253 254 – Error condition 255 – Not available

## Abbreviation explanation

Abbreviation	Meaning
AL	Alarm - Warning or alarm due to a binary signal
LO	Low - Warning or alarm threshold due to a shortfall
HI	High - Warning or alarm limits are exceeded
TD	Transmitter Deviation - Warning or alarm due to a large deviation between the analog values of two redundant sensors
SD	Sensor Defective - Warning or alarm because of a defective sensor
SF	Switch Fault - Warning or alarm condition due to an improper combination two complementary switch
SS	Security Shutdown - Alarm, which led to engine emergency stop
MG	Message - Message from external system
SE	System Error - Warning, a system error
DL	Default Lost - Warning due to a node failure in the default field bus
RL	Redundancy Lost - Warning due to a node failure in the redundant fieldbus
PB	Push Button - Indicator due to the activation of certain control keys

**Note:** If you have some problems with frame EBC1 (PGN=61441d, F001h) e.g. binary output engine stop, please contact your MTU service to upgrade firmware in your ECU / SAM module.

**Note:** ECU is automatically configured to isochronous (Droop2 = 0% corresponds to Engine alternate droop accelerator 1 select = 1). If you want to use droop (Droop1 = 4%) then set Source to 0.

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring between ADEC and SAM module

Function	ADEC X1 connector	SAM X6 connector
CAN H	19	3
CAN COM	20	1
CAN L	35	2

## Recommended wiring of power supply

Function	ADEC X3 connector	SAM X13 connector
Battery + (positive)	3,6,9,12,13	1,2
Battery - (negative)	1,4,7,10	3,4

## Recommended wiring (SAM with CCB2 card)

Function	SAM module	9pin diagnostic connector	Controller
CAN H	X23 – 2	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	X23 – 3	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	X23 – 1	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X13 – 1,2	N/A	N/A
Battery - (negative)	X13 – 3,4	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring (SAM without CCB2 card – marine version)

Function	SAM module	Controller
<b>CAN H</b>	X8 – 3	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	X8 – 1	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	X8 – 2	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	X13 – 1,2	N/A
<b>Battery - (negative)</b>	X13 – 3,4	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MTU ECU7 direct Fault Codes on page 1331**

### Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU ECU7 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ECU8 (ADEC) & Smart connect

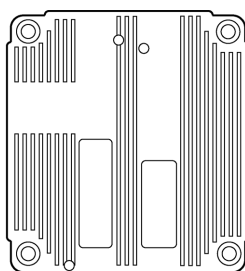


Image 5.129 ECU8

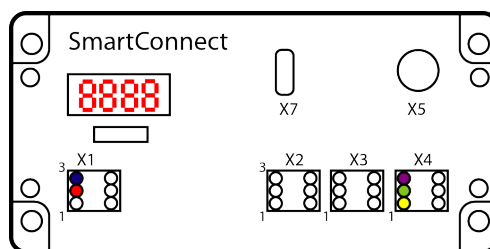


Image 5.130 Smart connect

## Controllers that support the ECU8 & Smart connect

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
ProtOverride	520202	Safety and Protection Override State
Spd-Up	520205	Operational Speed Up Switch Fdb
Spd-Dn	520206	Operational Speed Down Switch Fdb
CylCutoff	520252	Engine Cylinder Cutoff
LoadGenState	520253	Load Generator Status
RunState	520255	MTU Engine Running State
Spd-Fail	520830	Speed Demand Fail Mode
ExternalStop	520833	External Stop State
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
TripGrpRst	988	Trip Group 1
EngStartCmd <sub>4,5,6,7</sub>	520192	Engine Start Command
EngStopCmd <sub>4,5,6,7</sub>	520193	Engine Stop Command
ProtOverride <sub>4,5,6,7</sub>	520194	Engine Safety and Protection Override Command
Overspeed	520197	Engine Overspeed Test Command
Spd-Up	520207	Operating Speed Up Switch
Spd-Down	520208	Oper. Speed Down Switch

CylCutoff2	520834	Disable Engine Cylinder Cutoff Command 2
InOilPriming	520835	Intermittent Oil Priming Command
PowerMode	520839	Engine Power Mode Command
Spd-GovPrmtr	520841	Engine Speed Governor Parameter Switch
Spd-Limit	520842	MTU Req Speed Limit Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature



P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
MTUErrCodes	520256	MTU Error Codes
Spd-Source	520263	Current Speed Demand Source
P-Lube Oil R	520292	P-Lube Oil Redundant
T-Coolant R	520302	T-Coolant Redundant
Spd-Demand	520707	Demanded Operating Speed
Spd-CAN	520828	Speed Demand CAN Feedback
Spd-AnalogIn	520829	Speed Demand Analog In Feedback
ActualDroop	520831	Actual Droop
AbsTorqueRq	520843	MTU Requested Absolute Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection
Spd-Demand	520269	Speed Demand Switches

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Speed Demand Switches	<p>CAN Demand Switches contains at:</p> <p>Bit 0 - 3 the source for Local normal switch position</p> <p>Bit 4 - 7 the source for Local Emergency switch position</p> <p>Bit 8 - 11 the source for Remote normal switch position</p> <p>Bit 12 - 15 the source for Remote Emergency switch position</p> <p>With the following assignment per bit group:</p> <p>0 = Analog CAN</p> <p>1 = Up/Down ECU</p> <p>2 = Up/Down CAN</p> <p>3 = Analog ECU</p> <p>4 = Analog ECU relative</p> <p>5 = Frequency</p> <p>6 = Notch Position (not used)</p>
Frequency Selection	<p>This feature gives the operator ability to switch the rated speed. The system will only react to a state transition while the Engine speed is 0. The recommended source values is an constant following the requested function.</p> <p>0 = 50Hz</p> <p>1 = 60Hz</p> <p>2 - 5 = Reserved</p> <p>6 = Error</p> <p>7 = Do not care</p>

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Smart module DIP switches adjustment

DIP	1	2	3	4	5	6	7	8
Function	Speed Demand			Droop (0%/4%)	Frequency (50Hz/60Hz)	Protocol (J1939/CanOpen)	N/A	N/A
State	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

**Note:** Please, notice that the DIP switch configuration is checking up after SMART connects powering up. Any change of DIP switches requires power off and on again of SMART connect.

## Speed demand DIP swichs codes

Code DEC	Code BIN	Designation	Description
0	000	ECU default	ECU default settings of the 4 internal speed demand switches – default speed up/down
1	001	ECU direct up / down	The speed demand (up / down) controlled over binary inputs directly at the ECU. Settings can be done via DiaSys at the ECU
2	010	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can be done via DiaSys at the ECU 0VDC = -100RPM 5VDC = +100RPM
3	011	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can be done via DiaSys at the ECU 0VDC = -100RPM 10VDC = +100RPM
4	100	ECU analogue relative	The analogue speed demand controlled over analogue input directly at the ECU. Settings can by done via DiaSys at the ECU 4mADC = -100RPM 20mADC = +100RPM
5	101	CAN analogue	The speed demand value (unit, RPM) will be transferred via

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

			CAN bus from SAM/SMART to the ECU. The speed demand information must be received from an external CAN bus (CANopen,SEA J1939)
6	110	CAN up / down	The speed demand (up / down) will be transferred via CAN bus from SAM/SMART to the ECU. The speed demand information must be received from an external CAN bus (CANopen,SEA J1939)
7	111	External speed demand source	The speed demand is flexible. The speed demand source can be transmitted from an external controller

## Recommended wiring between ADEC and SMART module

Function	ADEC X1 connector	SMART X3 connector	SMART X4 connector
CAN1 H	1	1	
CAN1 COM	5	3	
CAN1 L	2	2	
CAN2 H	3		1
CAN2 COM	8		3
CAN2 L	4		2

## Recommended wiring between a controller and SMART module

Function	SMART connector	Controller
CAN H	X4 – 1	CAN1 (extension modules/J1939) – CAN H
CAN COM	X4 – 3	CAN1 (extension modules/J1939) – CAN COM
CAN L	X4 – 2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	X1 – 2	N/A
Battery - (negative)	X1 – 3	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM


## Ignition (switched by K1)

Function	Connector
Ignition +24VDC	X1 – 32
Ignition IN	X1 – 31

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MTU SMART Connect Fault Codes on page 1419**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU SMART Connect aftertreatment lamps						
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On	 Not Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## ECU9 (ADEC)

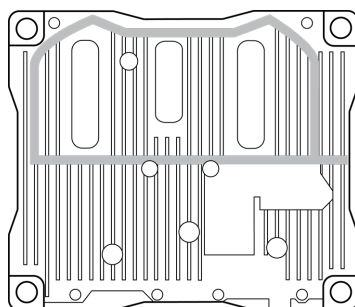


Image 5.131 ECU9

### Controllers that support the ECU9

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1Regen <sub>1,2,3,4,5,6,7</sub>	3483	Aftertreatment 1 Regeneration Status
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ProtectionOvr	520202	Engine Safety and Protection Override Status
Spd-UpFdb	520205	Feedback of Operating Speed Up Switch
Spd-DwnFdb	520206	Feedback of Operating Speed Down Switch
CylCutoff	520252	Engine Cylinder Cutoff
LoadGenerator	520253	Load Generator Status

Running	520255	MTU Engine Running State
Spd-Source	520263	Source of Current Speed Demand
Spd-Fail	520830	Speed Demand Fail Mode
ExternalStop	520833	External Stop State
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TripGroup1	988	Trip Group 1
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
StarterMode <sub>4,5,6,7</sub>	520192	Engine Start Command
StopLamp <sub>4,5,6,7</sub>	520193	Engine Stop Command
ProtectionOvr <sub>4,5,6,7</sub>	520194	Engine Safety and Protection Override Command
TestOverSpd	520197	Engine Overspeed Test Command
Spd-Up	520207	Operating Speed Up Switch
Spd-Down	520208	Operating Speed Down Switch
SpdDemand	520269	Speed Demand Switches
CylCutoff2Dsb	520834	Disable Engine Cylinder Cutoff 2 Command
IntOilPriming	520835	Intermittent Oil Priming Command
SpdGovernor	520841	Engine Speed Governor Parameter Switch
Spd-LimitReq	520842	MTU Requested Speed Limit Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation

TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
Spd-Turbo3 <sub>1,2,3,4,5,6,7</sub>	1170	Engine Turbocharger 3 Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
T-Turbo1Outlet <sub>1,2,3,4,5,6,7</sub>	2629	Engine Turbocharger 1 Compressor Outlet Temperature
P-ChrgAirCOut <sub>1,2,3,4,5,6,7</sub>	2631	Engine Charge Air Cooler Outlet Pressure
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1 src 0x3D
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1 src 0x3D
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
P-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
P-SCRDosAir <sub>1,2,3,4,5,6,7</sub>	4335	Aftertreatment 1 SCR Dosing Air Assist Absolute Pressure
SCRDosAirVlv <sub>1,2,3,4,5,6,7</sub>	4336	Aftertreatment 1 SCR Dosing Air Assist Valve
T-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4337	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Temperature
P-SCRDiff <sub>1,2,3,4,5,6,7</sub>	4358	Aftertreatment 1 SCR Differential Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature

DEFQTTank <sub>1,2,3,4,5,6,7</sub>	4367	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Tank Volume
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	6595	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity (High Range)
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
MTUErrCode	520256	MTU Error Codes
Spd-Operating	520707	Engine Demanded Operating Speed
Spd-CANFdb	520828	Feedback of Speed Demand CAN
Spd-AnalogFdb	520829	Feedback of Speed Demand Analog Input
Droop	520831	Actual Droop
AbsTorqReq	520843	MTU Requested Absolute Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
FreqSelect <sub>1,2</sub>	4080	Generator Frequency Selection

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU X1 connector	Controller
<b>CAN H</b>	3	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	6	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4	CAN1 (extension modules/J1939) – CAN L


<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery + (positive)	58, 59, 62	N/A
Battery - (negative)	57, 60, 61	N/A
Key Switch	31	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MTU ECU9 Fault Codes on page 1331**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU ECU9 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Not Supported		Solid On Blink slow
					Solid On

## ECU9 (ADEC) Main

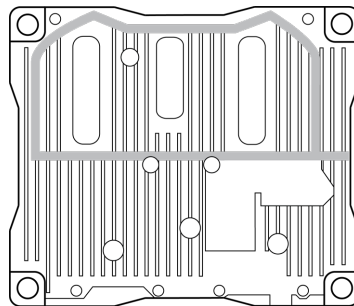


Image 5.132 ECU9

## Controllers that support the ECU9 Main

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp



WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1Regen <sub>1,2,3,4,5,6,7</sub>	3483	Aftertreatment 1 Regeneration Status
CoolPreHeated <sub>1,2,3,4,5,6,7</sub>	3553	Engine Coolant Pre-heated State
DPFIhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFIhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
ProtectionOvr	520202	Engine Safety and Protection Override Status
Spd-UpFdb	520205	Feedback of Operating Speed Up Switch
Spd-DwnFdb	520206	Feedback of Operating Speed Down Switch
CylCutoff	520252	Engine Cylinder Cutoff
LoadGenerator	520253	Load Generator Status
Running	520255	MTU Engine Running State
Spd-Source	520263	Source of Current Speed Demand
Spd-Fail	520830	Speed Demand Fail Mode
ExternalStop	520833	External Stop State
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
TripGroup1	988	Trip Group 1
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
StarterMode <sub>4,5,6,7</sub>	520192	Engine Start Command
StopLamp <sub>4,5,6,7</sub>	520193	Engine Stop Command
ProtectionOvr <sub>4,5,6,7</sub>	520194	Engine Safety and Protection Override Command
TestOverSpd	520197	Engine Overspeed Test Command
Spd-Up	520207	Operating Speed Up Switch
Spd-Down	520208	Operating Speed Down Switch
SpdDemand	520269	Speed Demand Switches
CylCutoff2Dsb	520834	Disable Engine Cylinder Cutoff 2 Command
IntOilPriming	520835	Intermittent Oil Priming Command
SpdGovernor	520841	Engine Speed Governor Parameter Switch
Spd-LimitReq	520842	MTU Requested Speed Limit Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure

OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TripAFuelRate <sub>1,2,3,4,5,6,7</sub>	1029	Trip Average Fuel Rate
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
Spd-Turbo2 <sub>1,2,3,4,5,6,7</sub>	1169	Engine Turbocharger 2 Speed
Spd-Turbo3 <sub>1,2,3,4,5,6,7</sub>	1170	Engine Turbocharger 3 Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
T-Turbo1Outlet <sub>1,2,3,4,5,6,7</sub>	2629	Engine Turbocharger 1 Compressor Outlet Temperature
P-ChrgAirCOut <sub>1,2,3,4,5,6,7</sub>	2631	Engine Charge Air Cooler Outlet Pressure
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1

SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Lamp <sub>1,2,3,4,5,6,7</sub>	6915	SCR System Cleaning Lamp Command
MTUErrCode	520256	MTU Error Codes
Spd-Operating	520707	Engine Demanded Operating Speed
Spd-CANFdb	520828	Feedback of Speed Demand CAN
Spd-AnalogFdb	520829	Feedback of Speed Demand Analog Input
Droop	520831	Actual Droop
AbsTorqReq	520843	MTU Requested Absolute Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
FreqSelect <sub>1,2,3</sub>	4080	Generator Frequency Selection

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).








## Recommended wiring

Function	ECU X1 connector	Controller
<b>CAN H</b>	3	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	6	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	58, 59, 62	N/A
<b>Battery - (negative)</b>	57, 60, 61	N/A
<b>Key Switch</b>	31	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see MTU ECU9 Main Fault Codes on page 1335**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU ECU9 Main aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Not Supported		Solid On Blink slow
					Solid On

## Axces (SCR)

### Controllers that support the Axces (SCR)

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure

P-SCRDosAir <sub>1,2,3,4,5,6,7</sub>	4335	Aftertreatment 1 SCR Dosing Air Assist Absolute Pressure
SCRDosAirVlv <sub>1,2,3,4,5,6,7</sub>	4336	Aftertreatment 1 SCR Dosing Air Assist Valve
T-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4337	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Temperature
P-SCRDiff <sub>1,2,3,4,5,6,7</sub>	4358	Aftertreatment 1 SCR Differential Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFQTTank <sub>1,2,3,4,5,6,7</sub>	4367	Aftertreatment 1 Diesel Exhaust Fluid Quick Thaw Tank Volume
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	6595	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity (High Range)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU X1 connector	Controller
<b>CAN H</b>	3	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	6	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	58, 59, 62	N/A
<b>Battery - (negative)</b>	57, 60, 61	N/A
<b>Key Switch</b>	31	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **MTU ECU9 SCR Fault Codes** on page 1338

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU ECU9 SCR aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## DDEC 10

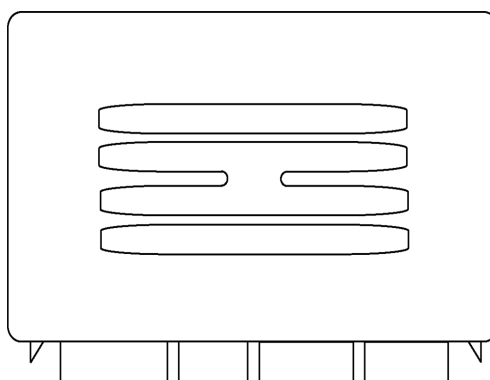


Image 5.133 DDEC 10

## Controllers that support the DDEC 10

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
BattSwHold <sub>1,2,3,4,5,6,7</sub>	1681	Battery Main Switch Hold State
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp

FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInh <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start Request <sub>4,5,6,7</sub>		Start request
Stop Request <sub>4,5,6,7</sub>		Stop request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo <sub>1,2,3,4,5,6,7</sub>	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1InjMR1 <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power

Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
TurboWastgate <sub>1,2,3,4,5,6,7</sub>	1693	Engine Turbocharger Wastegate Valve Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
T-AT1Exh <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
T-DEFTnk2 <sub>1,2,3,4,5,6,7</sub>	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500



## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Unit connectors ST2(B) or ST3(C)	Controller
<b>CAN H</b>	ST2-18	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	ST2-17	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	ST2-16	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	ST2-01	N/A
<b>Battery - (negative)</b>	ST2-02	N/A
<b>Key Switch</b>	ST2-03	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	ST2-04	SG OUT
<b>Analog Speed Control</b>	ST3-02	SG COM

**Note:** To enable the function of Remote throttle sensor on pin ST3-02, the parameter 13/63 has to be set to 1.









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **MTU DDEC10 Fault Codes on page 1328**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### MTU DDEC10 aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

## MIP 4000

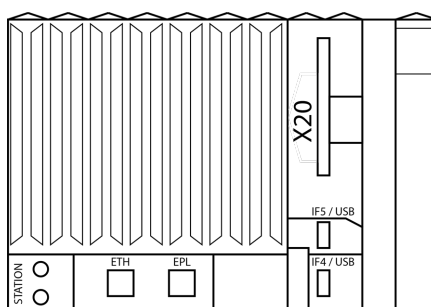


Image 5.134 MIP 4000

**Note:** In order to connection to the MTU MIP 4000 gen-set controller it is necessary to use an I-CB module and UC-7112-LX Plus module.

Configuration of the controller and I-CB has to be done separately using GenConfig or DriveConfig and ICBEdit software. For further information see I-CB manual.

UC-7112-LX Plus configuration file - MTU\_MIP4000\_ver.: 1.0.0 . For further information see UC-7112-LX Plus manual.

### Controllers that support the MIP 4000

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

**IMPORTANT:** The response time of the UC-7112-LX Plus (modbus server) is about 200ms. It has to be taken into account when configure the number and refresh time of read/written parameters. Incorrect configuration of I-CB module may cause instability of read /written parameters.

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Run		Engine run
Reset		Reset
ReleaseGCB		Release GCB
SpeedUp		Speed higher
SpeedDown		Speed lower
Releaseland		Release island operation
BlackstartGCB		Blackstart GCB
CoolingWater		Cooling water deficiency
Release MCB		Release MCB
Blackstart MCB		Blackstart MCB
CoolWPreheat		Deactivate cooling water preheating
PrelubeOilPump		Activate Waste/Prelube oil pump
LubeOil		Activate lube oil solenoid valves

WasteOil		Activate waste oil solenoid valve
VoltageUp		Voltage Higher
VoltageDown		Voltage Lower
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
WrnFaultCode1		Wrn Fault Code # 1
WrnFaultCode2		Wrn Fault Code # 2
WrnFaultCode3		Wrn Fault Code # 3
WrnFaultCode4		Wrn Fault Code # 4
WrnFaultCode5		Wrn Fault Code # 5
WrnFaultCode6		Wrn Fault Code # 6
WrnFaultCode7		Wrn Fault Code # 7
WrnFaultCode8		Wrn Fault Code # 8
WrnFaultCode9		Wrn Fault Code # 9
WrnFaultCode10		Wrn Fault Code #10
WrnFaultCode11		Wrn Fault Code #11
WrnFaultCode12		Wrn Fault Code #12
WrnFaultCode13		Wrn Fault Code #13
WrnFaultCode14		Wrn Fault Code #14
WrnFaultCode15		Wrn Fault Code #15
WrnFaultCode16		Wrn Fault Code #16
SDFaulrCode1		Sd Fault Code # 1
SDFaulrCode2		Sd Fault Code # 2
SDFaulrCode3		Sd Fault Code # 3
SDFaulrCode4		Sd Fault Code # 4
SDFaulrCode5		Sd Fault Code # 5
SDFaulrCode6		Sd Fault Code # 6
SDFaulrCode7		Sd Fault Code # 7
SDFaulrCode8		Sd Fault Code # 8
SDFaulrCode9		Sd Fault Code # 9
SDFaulrCode10		Sd Fault Code #10
SDFaulrCode11		Sd Fault Code #11
SDFaulrCode12		Sd Fault Code #12
SDFaulrCode13		Sd Fault Code #13
SDFaulrCode14		Sd Fault Code #14
SDFaulrCode15		Sd Fault Code #15
SDFaulrCode16		Sd Fault Code #16
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Modbus Settings

<b>Configuration Name</b>	<b>Register</b>
Communication Port	P1
Modbus Address	1

Baud Rate	19200kbps
Data Bits	8
Parity	None
Stop Bits	One
Interface	RS232

It is allowed to read up to 85 sequential registers at one request.

Recommended wiring

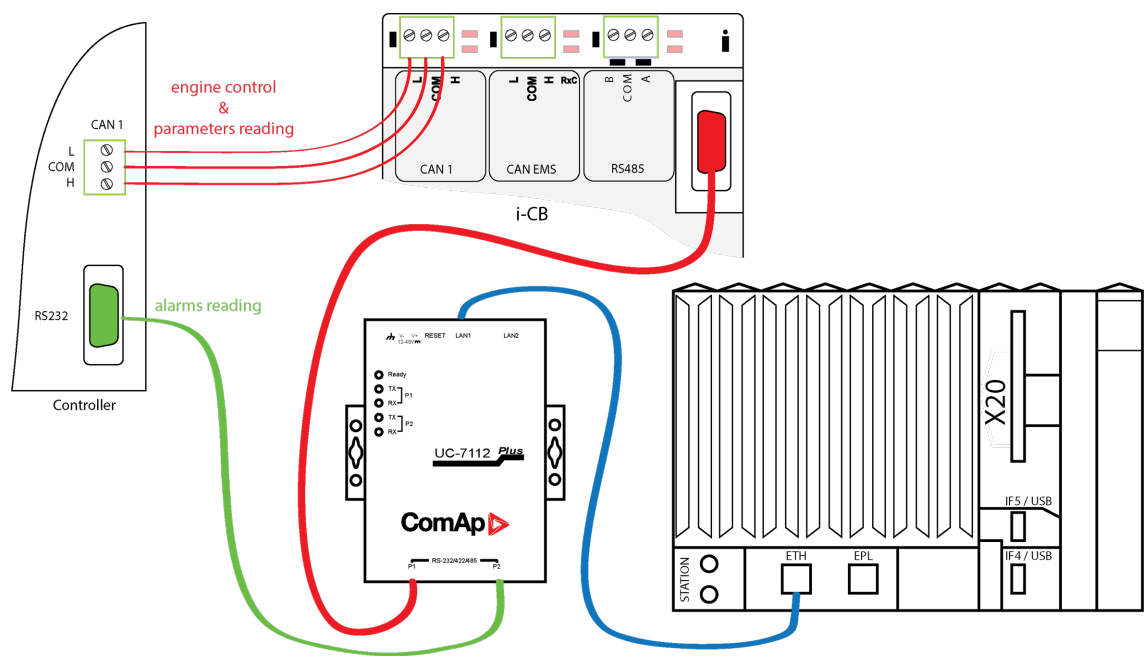


Image 5.135 Recommended wiring of MTU MIP 4000

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

**IMPORTANT:** Direct connection of the Ethernet between MTU MIP 4000 and UC-7112-LX Plus is strongly recommended.

**Note:** IP addresses of the MTU MIP 4000 (192.168.23.101) and the UC-7112-LX Plus (192.168.23.201) are fixed without possibility to change.

The network mask (255.255.254.0) is fixed for both devices without possibility to change it.







The communication UDP port is the same (21101) for both devices.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **MTU MIP4000 Fault Codes on page 1344**

Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU MIP4000 aftertreatment lamps
----------------------------------

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## MIP 4000 J1939 v3.x

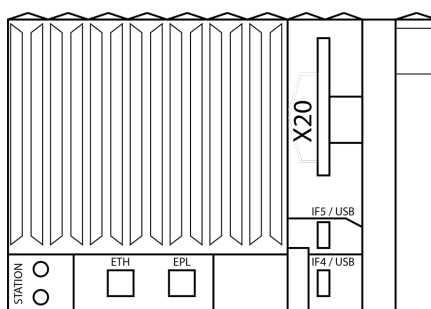


Image 5.136 MIP 4000

**Note:** In order to connection to the MTU MIP 4000 gen-set controller it is necessary to use an IntelliGateway 330 module.

### Controllers that support the MIP 4000 J1939 v3.x

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OpenBckupSw		Demand Open Backup Switch
AuxDrives		Demand Auxiliary Drives
FreshOilPump		Demand Fresh Oil Pump
EngPreheating		Demand Engine Preheating
InterfaceCtrl		Control Via Interface
GenAvailable		Machine Available
GenStopped		Engine Stopped
GasTypeA		Gastype A Active
StartDemand		Start Demand Active
Start		Start Active
Stop		Stop Active
GasLeakAAct		Leakage Test Gas Line A Active
GeaLeakA		Leakage Test Gas Line A OK
AuxDrives		Auxiliary Drives Active
WasteOilPmp		Waste/Prelube Oil Pump Active
GasVlv1Open		Gasvalve 1 For Gas Type A Open
MainsOK		Mains OK
GCBSync		Synchronisation GCB
MCBSync		Synchronisation MCB
GCB negFdb		GCB is OFF
GCB		GCB is ON
MCB negFdb		MCB is OFF
MCB		MCB is ON
MainsParallel		Mains Parallel Operation Active
Island		Island Operation Active

CoolPrhtBlck		Cooling Water Preheating Blocked
GenHeater		Generator Heater ON
ReqGCU		Hardware Signal "Request GCU check" From Engine
ReqGasVlv1		Hardware Signal "Request gas solenoid valve 1" From Engine
ReqGasVlv2		Hardware Signal "Request gas solenoid valve 2" From Engine
ReqSync		Signal "Request synchronisation" From Engine
OilRefill		Lube Oil Refill Active
CollPreheat		Cooling Water Preheating Active
GasVlv2Open		Gasvalve 2 For Gas Type A Open
OperatorStop		Stop Command From Operator
TestPlan		Protocol - Testing Plant Active
RelIsland		Release Island Operation From Control Technology
ShortInterrupt		Short Interruption
PreLubrication		Request Pre Lubrication Active
GCBRel		GCB Release Missing From Control Technology
GCBSyncRel		Release Synchronisation GCB
Biogas		Biogas Active
FaultReset		Fault Reset
IslandWarmUp		Warm Up Phase In Insel Parallel Operation Active
IslandGCBBk		GCB Black Start Interlock In Island Parallel Operation
BackupProt		Backup Protection Active
TestPlantAct		Control - Testing Plant Active
Deexcitation		Generator De-excitation Active
GenProtRel		Release Generator Protection
Lvl-LubeOilMin		Level Lube Oil Min
Lvl-LubeOilMM		Level Lube Oil MinMax
Lvl-LubeOilMax		Level Lube Oil Max
Stop		Stop Activated
EngRunning		Engine Running
GenActive		Generator active
Vlv-WasteOil		Waste Oil Solenoid Valve Is ON
Starter		Starter ON
MixPosMax		Mixture Throttle Position Maximum
Limitation		Limitation Active
FreqRegDectvtd		Frequency Regulation In Island Operation Deactivated From External
MCBBackSync		Back Synchronization MCB From MCS/External Control Technology OR Other Module Active
WarmupRamp		Warm-up Ramp Active
ExhTurboALube		Exhaust Turbocharger After Lubrication Active
GridCodeExtAct		Gridcode Fast Ramp From External Active
PrelubOilPmp		Prelube Oil Pump Active
CBEActive		Close Before Excitation Active
CBEGenProtDeac		CBE Generator protection f/U deactivated
CBEDeExcitDeac		CBE Generator de-excitation deactivated
CBEVoltRegAct		CBE Voltage Regulator Active
MainsIsolatFdb		Mains disconnection via MCB Fdb
PrimEnergyCtrl		Primary Control Energy Active



FastGasRelExt		Fast Gas Mode Released From External
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
StartRequest		Engine start
Reset		Reset
ReleaseGCB		Release GCB
Spd-Up		Speed higher
Spd-Down		Speed lower
ReleasIsland		Release island Operation
BlackstartGCB		Blackstart GCB
CoolWater		Cooling Water Deficiency
ReleaseMCB		Release MCB
BlackstartMCB		Blackstart MCB
NoCoolPreheat		Deactivate Cooling Water Preheating
PrelubeOilPump		Activate Waste/Prelube Oil Pump
LubeOilVlv		Activate Lube Oil Solenoid Valves
WasteOilVlv		Activate Waste Oil Solenoid Valve
PrelubOilPmp24		Activate Prelube Oil Pump 24VDC
V-Gen-Up		Voltage Higher
V-Gen-Down		Voltage Lower
RelFastGas		Release Fast Gas
RelGridCodeFR		Release Grid Code Fast Ramp
MainsIsolation		Mains Disconnection Via MCB
DectvtdFreqReg		Deactivate Frequency Regulation In Island Operation
ReleaseCBE		Release CBE
Gastype A/B		Gastype A/B
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Pwr-External		Power Setpoint From External
Pwr-ActualRel		Actual Value Power (relative)
Pwr-ActualAbs		Actual Value Power (absolute)
V-Supply		Power Supply Voltage 24VDC
Spd-Engine		Engine speed
T-CoolantIn		T-Coolant engine inlet
T-CoolantOut		T-Coolant engine outlet
T-Oil		T-Lube oil
T-IntakeAirA		T-Intake Air A
P-CoolantIn		P-Coolant engine inlet
P-CoolantOut		P-Coolant engine outlet
P-Oil		P-Lube oil
P-Crankcase		P-Crankcase
P-OilBeforeFlt		P-Lube oil before filter
P-OilFltDiff		P-Lube oil filter diff

P-CoolantDiff		P-Coolant diff.
T-MixtureB		T-Mixture B
T-IntakeAirB		T-Intake Air B
P-MixBThrttle		P-Mixture before throttle
T-Board		Board temperature MIP panel
T-WindingU1		Generator winding temperature U1
T-WindingV1		Generator winding temperature V1
T-Winding W1		Generator winding temperature W1
P-MixA		P-Mixture A
P-MixB		P-Mixture B
P-IntakeAirA		P-Intake Air A
P-IntakeAirB		P-Intake Air B
MixAPos		Mixture throttle position A
MixBPos		Mixture throttle position B
MixPosBypass		Mixture throttle position bypass
T-BearingDE		Bearing temperature drive end
T-BearingNDE		Bearing temperature non-drive end
T-ExhAftTurbA		T-Exhaust gas after turbine A
T-ExhAftTurbB		T-Exhaust gas after turbine B
Pwr-Reactive		Actual value reactive power
Pwr-Apparent		Actual value apperent power
StartCounter		Start counter
F-Generator		Generator frequency
V-GeneratorL12		Generator voltage L12
V-GeneratorL23		Generator voltage L23
V-GeneratorL31		Generator voltage L31
I-GeneratorL1		Generator current L1
I-GeneratorL2		Generator current L2
I-GeneratorL3		Generator current L3
PF-Generator		Generator power factor
ActiveEnergy		Generator Active Energy
V-MainsL12		Mains voltage L12
V-MainsL23		Mains voltage L23
V-MainsL31		Mains voltage L31
F-Mains		Mains frequency
V-BusL12		Bus bar voltage L12
V-BusL23		Bus bar voltage L23
V-BusL31		Bus bar voltage L31
F-Bus		Bus bar frequency
T-ExhaustA1		T-Exhaust A1
T-ExhaustA2		T-Exhaust A2
T-ExhaustA3		T-Exhaust A3
T-ExhaustA4		T-Exhaust A4
T-ExhaustA5		T-Exhaust A5
T-ExhaustA6		T-Exhaust A6
T-ExhaustA7		T-Exhaust A7
T-ExhaustA8		T-Exhaust A8

T-ExhaustA9		T-Exhaust A9
T-ExhaustA10		T-Exhaust A10
T-ExhaustB1		T-Exhaust B1
T-ExhaustB2		T-Exhaust B2
T-ExhaustB3		T-Exhaust B3
T-ExhaustB4		T-Exhaust B4
T-ExhaustB5		T-Exhaust B5
T-ExhaustB6		T-Exhaust B6
T-ExhaustB7		T-Exhaust B7
T-ExhaustB8		T-Exhaust B8
T-ExhaustB9		T-Exhaust B9
T-ExhaustB10		T-Exhaust B10
IngnitionTimDs		Desired ignition timing
KnockIntA1		Knock Integrator A1
KnockIntB1		Knock Integrator B1
KnockIntA2		Knock Integrator A2
KnockIntB2		Knock Integrator B2
KnockIntA3		Knock Integrator A3
KnockIntB3		Knock Integrator B3
KnockIntA4		Knock Integrator A4
KnockIntB4		Knock Integrator B4
KnockIntA5		Knock Integrator A5
KnockIntB5		Knock Integrator B5
KnockIntA6		Knock Integrator A6
KnockIntB6		Knock Integrator B6
KnockIntA7		Knock Integrator A7
KnockIntB7		Knock Integrator B7
KnockIntA8		Knock Integrator A8
KnockIntB8		Knock Integrator B8
KnockIntA9		Knock Integrator A9
KnockIntB9		Knock Integrator B9
KnockIntA10		Knock Integrator A10
KnockIntB10		Knock Integrator B10
T-Gas		Gas temperature
P-GasTecjet		Gas Pressure Inlet - Tecjet
Tecjet		Actual Position - Tecjet
ATT-OutletNOxA		A - Aftertreatment 1 outlet - NOx
ATT-OutletNOxB		B - Aftertreatment 1 outlet - NOx
PhytronA		Relative Position - Phytron A
PhytronB		Relative Position - Phytron B
T-MixWater		Mixture Water Temperature Inlet (dew point monitoring)
ActiveLS		Option Activated For Island Parallel Operation: Active Load Share Controller
ReactiveLS		Option Activated For Island Parallel Operation: Reactive Load Share Controller
VersionInt		Version Number Interface Protocol
GtwVersion1		Gateway FW Version 1
GtwVersion2		Gateway FW Version 2

GtwVersion3		Gateway FW Version 3
GtwVersion4		Gateway FW Version 4
GtwCfgVersion		Gateway Configuration Version
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Pwr-Effective		Setpoint Effective Power
PF*		Setpoint Generator Power Factor
CH4		Setpoint CH4 Content
CH4Offset		Setpoint Offset CH4 Content
Spd-OffsetAdj		Setpoint Offset Speed Adjustment
V-Generator		Setpoint Generator Voltage

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

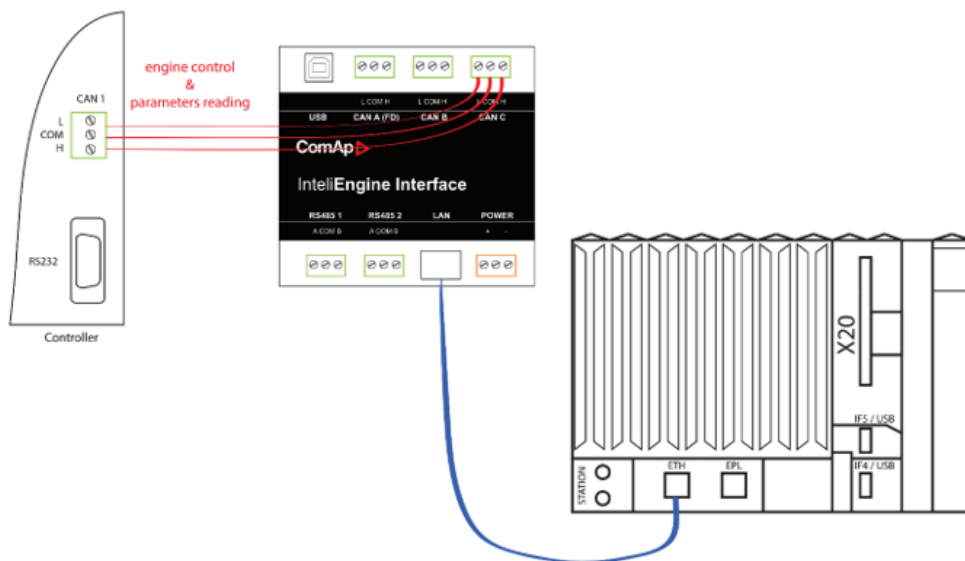


Image 5.137 Recommended wiring of MTU MIP 4000

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

**IMPORTANT:** Direct connection of the Ethernet between MTU MIP 4000 and IntelliGateway 330 module is strongly recommended.

**Note:** IP address of the MTU MIP 4000 has to be 192.168.23.101 for the communication with IntelliGateway 330 to work.









The network mask (255.255.254.0) is fixed for both devices without possibility to change it.

The communication UDP port is 21101.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **MTU MIP4000 CAN Fault Codes on page 1361**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU MIP4000 CAN aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## MIP 4000 J1939 v4.x

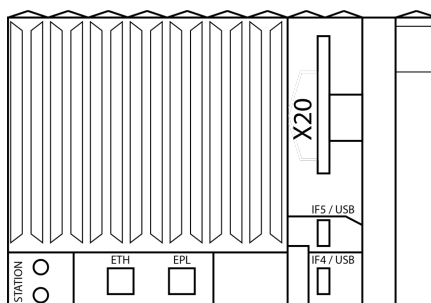


Image 5.138 MIP 4000

**Note:** In order to connection to the MTU MIP 4000 gen-set controller it is necessary to use an IntelliGateway 330 module.

## Controllers that support the MIP 4000 J1939 v4.x

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ActiveLS		Option Activated For Island Parallel Operation: Active Load Share Controller
ReactiveLS		Option Activated For Island Parallel Operation: Reactive Load Share Controller

OpenBackupSw <sub>1,2,3,4,5,6,7</sub>		Demand Open Backup Switch
AuxDrives <sub>1,2,3,4,5,6,7</sub>		Demand Auxiliary Drives
FreshOilPump <sub>1,2,3,4,5,6,7</sub>		Demand Fresh Oil Pump
EngPreheating <sub>1,2,3,4,5,6,7</sub>		Demand Engine Preheating
InterfaceCtrl		Control Via Interface
GenAvailable		Engine Ready
GenStopped		Engine Stopped
GasTypeA		Gastype A Active
GasTypeB		Gastype B Active
StartDemand		Start Demand Active
Start		Start Active
Stop		Stop Active
GasLeakAAct		Leakage Test Gas Line A Active
GeaLeakA		Leakage Test Gas Line A OK
GasLeakBAct		Leakage Test Gas Line B Active
GeaLeakB		Leakage Test Gas Line B OK
AuxDrives		Auxiliary Drives Active
WasteOilPmp		Waste/Prelube Oil Pump Active
GasVlv1AOpen		Gasvalve 1 For Gas Type A Open
GasVlv1BOpen		Gasvalve 1 For Gas Type B Open
MainsOK		Mains OK
GCBSync		Synchronisation GCB
MCBSync		Synchronisation MCB
GCB negFdb		GCB is OFF
GCB		GCB is ON
MCB negFdb		MCB is OFF
MCB		MCB is ON
MainsParallel		Mains Parallel Operation Active
Island		Island Operation Active
CoolPrhtBck		Cooling Water Preheating Blocked
GenHeater		Generator Heater ON
ReqSync		Signal "Request synchronisation" From Engine
OilRefill		Lube Oil Refill Active
CollPreheat		Cooling Water Preheating Active
OperatorStop		Stop Command From Operator
TestPlan		Protocol - Testing Plant Active
RelIsland		Release Island Operation From Control Technology
ShortInterrupt		Short Interruption
PreLubrication		Request Pre Lubrication Active
GCBRel		GCB Release Missing From Control Technology
GCBSyncRel		Release Synchronisation GCB
Biogas		Biogas Active
FaultReset		Fault Reset
IslandWarmUp		Warm Up Phase In Insel Parallel Operation Active
IslandGCBBlck		GCB Black Start Interlock In Island Parallel Operation
BackupProt		Backup Protection Active
Emergency Stop		Emergency Stop Engine Active

TestPlantAct		Control - Testing Plant Active
Deexcitation		Generator De-excitation Active
GenProtRel		Release Generator Protection
Lvl-LubeOilMin		Level Lube Oil Min
Lvl-LubeOilMM		Level Lube Oil MinMax
Lvl-LubeOilMax		Level Lube Oil Max
Stop		Stop Activated
EngRunning		Engine Running
GenActive		Generator active
Vlv-WasteOil		Waste Oil Solenoid Valve Is ON
Starter		Starter ON
MixPosMax		Mixture Throttle Position Maximum
Limitation		Limitation Active
FreqRegDectvtd		Frequency Regulation In Island Operation Deactivated From External
MCBBackSync		Back Synchronization MCB From MCS/External Control Technology OR Other Module Active
WarmupRamp		Warm-up Ramp Active
ExhTurboALube		Exhaust Turbocharger After Lubrication Active
FastRampExt		Grid Fast Ramp From External Active
Pre-OilPump		Prelube Oil Pump Active
DisconnectMCB		Mains Disconnection Via MCB
PrimEnergyCtrl		Primary Control Energy Active
FastGasRelExt		Fast Gas Mode Released From External
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
StartRequest		Engine start
Reset		Reset
ReleaseGCB		Release GCB
Spd-Up		Speed higher
Spd-Down		Speed lower
ReleasIsland		Release island Operation
BlackstartGCB		Blackstart GCB
CoolWater		Cooling Water Deficiency
ReleaseMCB		Release MCB
BlackstartMCB		Blackstart MCB
NoCoolPreheat		Deactivate Cooling Water Preheating
Wa-PreOilPump		Activate Waste/Prelube Oil Pump
LubeOilVlv		Activate Lube Oil Solenoid Valves
WasteOilVlv		Activate Waste Oil Solenoid Valve
PrelubeOilPump		Active Prelube Oil Pump
V-Gen-Up		Voltage Higher
V-Gen-Down		Voltage Lower
RelFastGas		Release Fast Gas

RelGridCodeFR		Release Grid Code Fast Ramp
MainsIsolation		Mains Disconnection Via MCB
DectvtdFreqReg		Deactivate Frequency Regulation In Island Operation
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Pwr-External		Power Setpoint From External
Pwr-ActualRel		Actual Value Power (relative)
Pwr-ActualAbs		Actual Value Power (absolute)
V-Supply		Power Supply Voltage 24VDC
Spd-Engine		Engine speed
T-CoolantIn		T-Coolant engine inlet
T-CoolantOut		T-Coolant engine outlet
T-Oil		T-Lube oil
T-IntakeAirA		T-Intake Air A
P-CoolantIn		P-Coolant engine inlet
P-CoolantOut		P-Coolant engine outlet
P-Oil		P-Lube oil
P-Crankcase		P-Crankcase
P-OilBeforeFlt		P-Lube oil before filter
P-OilFltDiff		P-Lube oil filter diff
P-CoolantDiff		P-Coolant diff.
T-MixtureB		T-Mixture B
T-IntakeAirB		T-Intake Air B
P-MixBThrottle		P-Mixture before throttle
T-Board		Board temperature MIP panel
T-WindingU1		Generator winding temperature U1
T-WindingV1		Generator winding temperature V1
T-Winding W1		Generator winding temperature W1
P-MixA		P-Mixture A
P-MixB		P-Mixture B
P-IntakeAirA		P-Intake Air A
P-IntakeAirB		P-Intake Air B
MixAPos		Mixture throttle position A
MixBPos		Mixture throttle position B
MixPosBypass		Mixture throttle position bypass
T-BearingDE		Bearing temperature drive end
T-BearingNDE		Bearing temperature non-drive end
T-ExhAftTurbA		T-Exhaust gas after turbine A
T-ExhAftTurbB		T-Exhaust gas after turbine B
Pwr-Reactive		Actual value reactive power
Pwr-Apparent		Actual value apperent power
StartCounter		Start counter
F-Generator		Generator frequency
V-GeneratorL12		Generator voltage L12
V-GeneratorL23		Generator voltage L23
V-GeneratorL31		Generator voltage L31
I-GeneratorL1		Generator current L1



I-GeneratorL2		Generator current L2
I-GeneratorL3		Generator current L3
PF-Generator		Generator power factor
ActiveEnergy		Generator Active Energy
V-MainsL12		Mains voltage L12
V-MainsL23		Mains voltage L23
V-MainsL32		Mains voltage L31
F-Mains		Mains frequency
V-BusL12		Bus bar voltage L12
V-BusL23		Bus bar voltage L23
V-BusL31		Bus bar voltage L31
F-Bus		Bus bar frequency
T-ExhaustA1		T-Exhaust A1
T-ExhaustA2		T-Exhaust A2
T-ExhaustA3		T-Exhaust A3
T-ExhaustA4		T-Exhaust A4
T-ExhaustA5		T-Exhaust A5
T-ExhaustA6		T-Exhaust A6
T-ExhaustA7		T-Exhaust A7
T-ExhaustA8		T-Exhaust A8
T-ExhaustA9		T-Exhaust A9
T-ExhaustA10		T-Exhaust A10
T-ExhaustB1		T-Exhaust B1
T-ExhaustB2		T-Exhaust B2
T-ExhaustB3		T-Exhaust B3
T-ExhaustB4		T-Exhaust B4
T-ExhaustB5		T-Exhaust B5
T-ExhaustB6		T-Exhaust B6
T-ExhaustB7		T-Exhaust B7
T-ExhaustB8		T-Exhaust B8
T-ExhaustB9		T-Exhaust B9
T-ExhaustB10		T-Exhaust B10
KnockIntA1		Knock Integrator A1
KnockIntB1		Knock Integrator B1
KnockIntA2		Knock Integrator A2
KnockIntB2		Knock Integrator B2
KnockIntA3		Knock Integrator A3
KnockIntB3		Knock Integrator B3
KnockIntA4		Knock Integrator A4
KnockIntB4		Knock Integrator B4
KnockIntA5		Knock Integrator A5
KnockIntB5		Knock Integrator B5
KnockIntA6		Knock Integrator A6
KnockIntB6		Knock Integrator B6
KnockIntA7		Knock Integrator A7
KnockIntB7		Knock Integrator B7
KnockIntA8		Knock Integrator A8

KnockIntB8		Knock Integrator B8
KnockIntA9		Knock Integrator A9
KnockIntB9		Knock Integrator B9
KnockIntA10		Knock Integrator A10
KnockIntB10		Knock Integrator B10
T-Gas		Gas temperature
P-GasTecjet		Gas Pressure Inlet - Tecjet
Tecjet		Actual Position - Tecjet
ATT-OutletNOxA		A - Aftertreatment 1 outlet - NOx
ATT-OutletNOxB		B - Aftertreatment 1 outlet - NOx
PhytronA		Relative Position - Phytron A
PhytronB		Relative Position - Phytron B
T-MixWater		Mixture Water Temperature Inlet (dew point monitoring)
T-Mixture A		T-Mixture A
T-Tecjet B		Gas Temperature Tecjet B
P-InletTecjetB		Gas Pressure Inlet (abs) - Tecjet B
TecjetB-Pos		Actual Position - Tecjet B
P-ExhaustA		P-Exhaust A Calculated
P-ExhaustB		P-Exhaust B Calculated
T-Exhaust Mean		T-Exhaust Mean
T-ExhaustMeanA		T-Exhaust Mean A
T-ExhaustMeanB		T-Exhaust Mean B
P-DiffTecjetA		Absolute Out To In Gas Press. Diff Tecjet A
P-DiffTecjetB		Absolute Out To In Gas Press. Diff Tecjet B
P-Ambient Air		P-Ambient Air
Current N		Generator Current N
Current Asym		Asymetry Current
Current L1		Generator Current L1 (2th EMM)
Current L2		Generator Current L2 (2th EMM)
Current L3		Generator Current L3 (2th EMM)
Ative Power		Generator Active Power (2th EMM)
Reactive Power		Generator Reactive Power (2th EMM)
Apparent Power		Generator Apparent Power (2th EMM)
PowerFactor		Generator Power Factor (2th EMM)
Voltage-L12		Generator Voltage L12 (EMM)
Voltage-23		Generator Voltage L23 (EMM)
Voltage-L31		Generator Voltage L31 (EMM)
Frequency		Generator Frequency (2th EMM)
VersionInt <sub>1,2,3,4,5,6,7</sub>		Version Number Interface Protocol
GtwVersion1		Gateway FW Version 1
GtwVersion2		Gateway FW Version 2
GtwVersion3		Gateway FW Version 3
GtwVersion4		Gateway FW Version 4
GtwCfgVersion		Gateway Configuration Version
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Pwr-Effective		Setpoint Effective Power
PF*		Setpoint Generator Power Factor
CH4		Setpoint CH4 Content
CH4Offset		Setpoint Offset CH4 Content
Spd-OffsetAdj		Setpoint Offset Speed Adjustment
V-Generator		Setpoint Generator Voltage

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

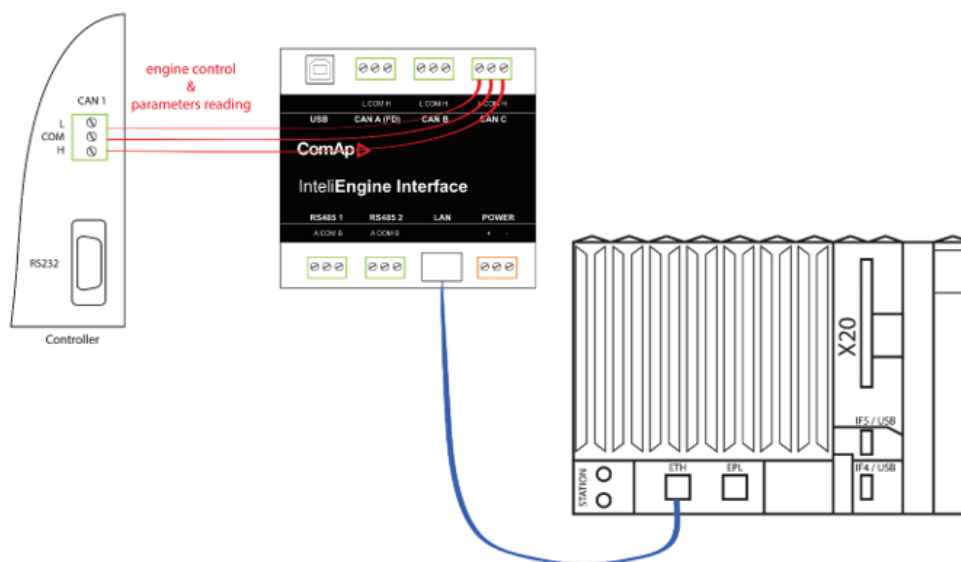


Image 5.139 Recommended wiring of MTU MIP 4000

**IMPORTANT:** Check that CAN bus terminating resistors or appropriate jumpers are connected.

**IMPORTANT:** Direct connection of the Ethernet between MTU MIP 4000 and InteliGateway 330 module is strongly recommended.

**Note:** IP address of the MTU MIP 4000 has to be 192.168.23.101 for the communication with InteliGateway 330 to work.









The network mask (255.255.254.0) is fixed for both devices without possibility to change it.

The communication UDP port is 21101.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **MTU MIP4000 v.4 CAN Fault Codes** on page 1378

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU MIP4000 v.4 CAN aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.32 MWM engines support

ECU Type	Engine type
<a href="#">SECM (page 496)</a>	OC13-G, MAN V12, MWM 229-3, 4.12, 6.12
<a href="#">ADEM A4 (page 500)</a>	TCG 3016 V12 or V16
<a href="#">TEM Evolution (page 246)</a>	TBG 616/620/632 TCG 2016/2020/2032

### SECM

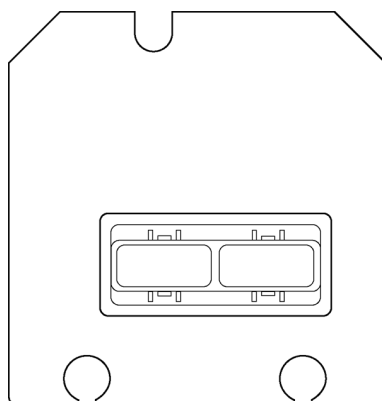


Image 5.140 SECM

### Controllers that support the SECM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
ExhO2SensClsLp <sub>1,2,3,4,5,6,7</sub>	1696	Engine Exhaust O2 Sensor Closed Loop Operation
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point

AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
ClosedLoopAct	520530	Closed Loop Active
AdaptLearnAct	520531	Adaptive Learn Active
MasterPwrRel	520532	Master Power Relay
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3220	Aftertreatment 1 SCR Intake NOx 1 Reading Stable
AT1IntWROxygn <sub>1,2,3,4,5,6,7</sub>	3221	Aftertreatment 1 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure 1
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
FuelActCmd <sub>1,2,3,4,5,6,7</sub>	633	Engine Fuel Actuator 1 Control Command
ExhOxygenDesR <sub>1,2,3,4,5,6,7</sub>	1117	Engine Desired Rated Exhaust Oxygen
ExhOxygenDes <sub>1,2,3,4,5,6,7</sub>	1118	Engine Desired Exhaust Oxygen
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
TurboWstAct <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing

Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelFlowRate <sub>1,2,3,4,5,6,7</sub>	1440	Engine Fuel Flow Rate 1
FuelFlowRate <sub>2,1,2,3,4,5,6,7</sub>	1441	Engine Fuel Flow Rate 2
FuelVlvPos <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
ExhO2SensFuelC <sub>1,2,3,4,5,6,7</sub>	1695	Engine Exhaust O2 Sensor Fueling Correction
FuelVlvPosCmd <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
Desired Phi	520528	Desired Phi
Actual Phi	520529	Actual Phi
SparkDwellTime	520533	Spark Dwell Time
CL Multiplier	520534	CL Multiplier
AL Multiplier	520535	AL Multiplier
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Spd-Rated <sub>1,2,3,4,5,6,7*</sub>	189	Engine Rated Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Pwr-Real <sub>1,2,3,4,5,6,7*</sub>	2452	Generator Total Real Power
DroopAccelItr <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
AltRatingSel <sub>1,2,3,4,5,6,7</sub>	2882	Engine Alternate Rating Select
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3222	Aftertreatment 1 Intake Gas Sensor 1 Heater Preliminary FMI
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3224	Aftertreatment 1 SCR Intake NOx Sensor 1 Preliminary FMI
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3225	Aftertreatment 1 Intake Oxygen Sensor 1 Preliminary FMI
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
GenGovernBias <sub>1,2,3,4,5,6,7</sub>	3938	Generator Governing Bias

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

Controller’s analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

Recommended wiring

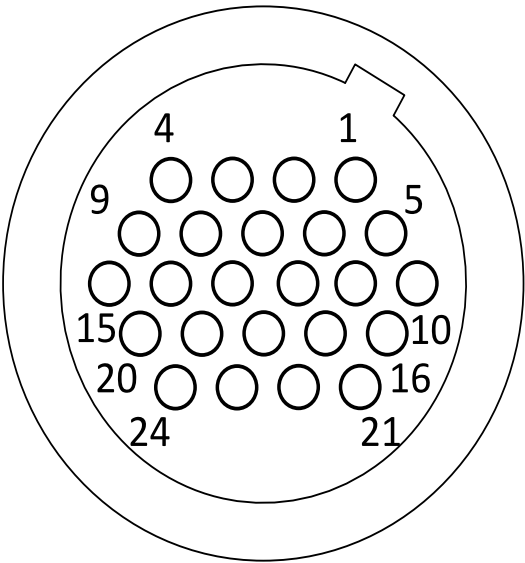


Image 5.141 ECU connector

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









Function	ECU 21-pin connector	Controller
CAN H	16	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	17	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	3	N/A
Battery - (negative)	1,2	N/A
Key Switch	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see MWM SECM70 Fault Codes on page 1421**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MWM SECM70 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ADEM A4

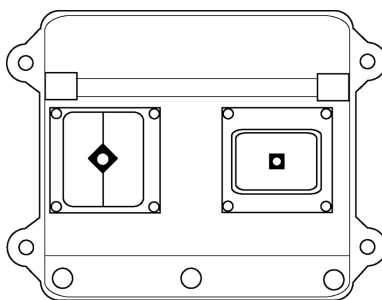


Image 5.142 ADEM A4

## Controllers that support the ADEM A4

Refer to [Compatibility Table \(page 10\)](#)



## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelShutoff1 <sub>1,2,3,4,5,6,7</sub>	632	Engine Fuel Shutoff 1 Control
FuelShutoff2 <sub>1,2,3,4,5,6,7</sub>	2807	Engine Fuel Shutoff 2 Control
PTO Enabled <sub>1,2,3,4,5,6,7</sub>	3452	Enable Switch - Transmission input shaft PTO 1
ESDRequest <sub>1,2,3,4,5,6,7</sub>	3607	Engine Emergency (Immediate) Shutdown Indication
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
TurboWstAct1 <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State

P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
DerateRequest <sub>1,2,3,4,5,6,7</sub>	3644	Engine Derate Request
T-Coolant <sub>2,1,2,3,4,5,6,7</sub>	4076	Engine Coolant Temperature 2
P-IntManAbs <sub>1,2,3,4,5,6,7</sub>	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
TurboWstgAct <sub>1,1,2,3,4,5,6,7</sub>	5386	Engine Turbocharger Wastegate Actuator 1 Command
P-ThrottleDiff <sub>1,2,3,4,5,6,7</sub>	5631	Engine Throttle Valve 1 Differential Pressure
SpplGasMethane <sub>1,2,3,4,5,6,7</sub>	5867	Supply Gas Methane Percentage
CYL temp A1	10739	Cylinder Temperature A1
CYL temp A2	10740	Cylinder Temperature A2
CYL temp A3	10741	Cylinder Temperature A3
CYL temp A4	10742	Cylinder Temperature A4
CYL temp A5	10743	Cylinder Temperature A5
CYL temp A6	10744	Cylinder Temperature A6
CYL temp A7	10745	Cylinder Temperature A7
CYL temp A8	10746	Cylinder Temperature A8
CYL temp B1	10747	Cylinder Temperature B1
CYL temp B2	10748	Cylinder Temperature B2
CYL temp B3	10749	Cylinder Temperature B3
CYL temp B4	10750	Cylinder Temperature B4
CYL temp B5	10751	Cylinder Temperature B5
CYL temp B6	10752	Cylinder Temperature B6
CYL temp B7	10753	Cylinder Temperature B7
CYL temp B8	10754	Cylinder Temperature B8
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU 70pin AMP connector	Controller
<b>CAN H</b>	50	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	42	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	34	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	48,52,53,55	N/A
<b>Battery - (negative)</b>	61,63,65,69	N/A
<b>Key Switch</b>	70	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	66 (38-S-SPD <sup>1</sup> )	SG OUT
<b>Analog Speed Control</b>	68 (39-D-SPD <sup>1</sup> )	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

Available list of texts of fault codes see **MWM ADEM 4 Fault Codes on page 1422**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MWM ADEM 4 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>Caterpillar PWM speed control terminal

## 6.1.33 Mahindra engines support

ECU Type	Engine type
<a href="#">AFS (page 504)</a> (A34C, A34B)	Mahindra diesel engines 7.2L, 4.8L - Mahindra Powertrain (MHEL)

### AFS

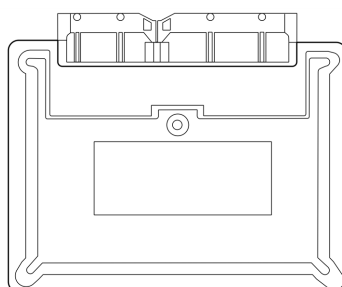


Image 5.143 AFS

### Controllers that support the AFS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
DerateSw <sub>1,2,3,4,5,6,7</sub>	971	Engine Derate Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
FuelLevel1 <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1

KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
P-GasFuelSppl <sub>1,2,3,4,5,6,7</sub>	159	Engine Gaseous Fuel Supply Pressure 1
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
TurboWstAct <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU 52pin connector	Controller
CAN H	33	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	44	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1	N/A
Battery - (negative)	27,28	N/A
Key Switch	18	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM


For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Mahindra AFS Fault Codes on page 1296**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Mahindra AFS aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Not Supported		Not Supported		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.34 PSI engines support

ECU Type	Engine type
<a href="#">E-control (page 507)</a>	DSG-423, WSG-1068

### E-control

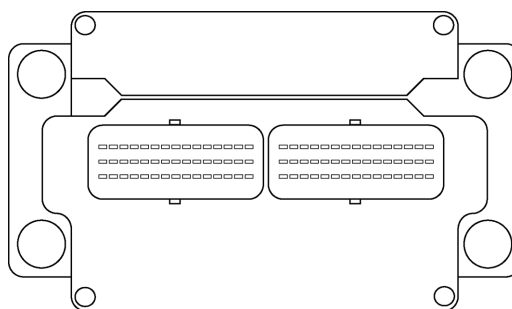


Image 5.144 E-control

### Controllers that support the E-control

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Knock Retard*		Knock Retard
KnockRetard_SI*		Knock Retard_SI
APP2	29	Accelerator Pedal Position 2
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
P-Intake_SI <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure_SI
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AmbAirSI	171	Ambient Air Temperature_SI
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-AirIntake1SI	172	Engine Intake 1 Air Temperature_SI
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual	513	Actual Engine - Percent Torque
IgnitionTime	1436	Engine Actual Ignition Timing
ShortTFuelTrm1*	4236	Short-term Fuel Trim - Bank 1
LongTFuelTrim1*	4237	Long-term Fuel Trim - Bank 1
ShortTFuelTrm2*	4238	Short-term Fuel Trim - Bank 2
LongTFuelTrim2*	4239	Long-term Fuel Trim - Bank 2
ExhBank1O2	4240	Engine Exhaust Bank 1 O2 Sensor Closed Loop Operation
ExhBank2O2	4241	Engine Exhaust Bank 2 O2 Sensor Closed Loop Operation
T-AT13wCatInt	4289	Aftertreatment 1 Three Way Catalyst Intake Temperature
T-AT13wC_In_SI	4289	Aftertreatment 1 Three Way Catalyst Intake Temperature_SI
T-AT13wCatOut	4290	Aftertreatment 1 Three Way Catalyst Outlet Temperature
T-AT13wC_O_SI	4290	Aftertreatment 1 Three Way Catalyst Outlet Temperature_SI
Humidity	4490	Specific Humidity
Humidity_SI	4490	Specific Humidity_SI
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit



\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU B connector	customer 42pin connector	Controller
CAN H	14	28	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	15	29	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	60,79	N/A	N/A
Battery - (negative)	4,69,81	N/A	N/A
Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### PSI e-control aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.35 Perkins engines support

ECU Type	Engine type
<a href="#">ECM (1100 series) (page 511)</a>	1100 series
<a href="#">ECM 1300 (1300 series) (page 515)</a>	1300 series
<a href="#">ADEM A6E11(1200, 1700 series) (page 518)</a>	1700 series
<a href="#">ADEM (1200, 2300, 2500, 2800, 4000 series) (page 523)</a> or CAT ADEM3, ADEM4, ADEM5	1200 series 2300 series 2500 series 2800 series 4000 series

### ECM (1100 series)

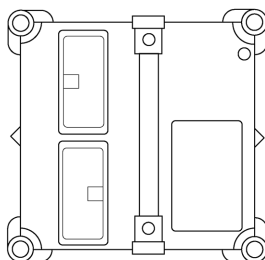


Image 5.145 ECM A4E2

### Controllers that support the ECM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ShutoffCommand <sub>1,2,3,4,5,6,7</sub>	2813	Engine Air Shutoff Command Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp

AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
Spd-Sens1Timg <sub>1,2,3,4,5,6,7</sub>	4203	Engine Speed Sensor 1 Timing Pattern Status
Spd-Sens2Timg <sub>1,2,3,4,5,6,7</sub>	4204	Engine Speed Sensor 2 Timing Pattern Status
P-LowOilLampD <sub>1,2,3,4,5,6,7</sub>	5099	Engine Oil Pressure Low Lamp Data
T-CoolHiLampD <sub>1,2,3,4,5,6,7</sub>	5100	Engine Coolant Temperature High Lamp Data
SpeedLamp <sub>1,2,3,4,5,6,7</sub>	6711	Engine Speed High Lamp Data
SpdGovernor <sub>1,2,3,4,5,6,7</sub>	7840	Engine Speed Governor Mode
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed

TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-Speed2 <sub>1,2,3,4,5,6,7</sub>	723	Engine Speed 2
ServDelay <sub>1,2,3,4,5,6,7</sub>	916	Service Delay/Operational Time Based
ExhOxygenDesR <sub>1,2,3,4,5,6,7</sub>	1117	Engine Desired Rated Exhaust Oxygen
ExhOxygenDes <sub>1,2,3,4,5,6,7</sub>	1118	Engine Desired Exhaust Oxygen
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
P-AirFuelDiff <sub>1,2,3,4,5,6,7</sub>	1392	Engine Air to Fuel Differential Pressure
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
FuelVlvPosCmd1 <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
FuelVlvPosCmd2 <sub>1,2,3,4,5,6,7</sub>	1766	Engine Fuel Valve 2 Commanded Position
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Spd-Engine1 <sub>1,2,3,4,5,6,7</sub>	4201	Engine Speed 1
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb <sub>1,2,3,4,5,6,7</sub>	5580	Engine Filtered Fuel Delivery Absolute Pressure
FuelFitrDgrade <sub>1,2,3,4,5,6,7</sub>	5584	Engine Fuel Filter Degradation
P-Coolant2 <sub>1,2,3,4,5,6,7</sub>	5708	Engine Coolant Pressure 2

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Rated <sub>1,2,3,4,5,6,7</sub>	189	Engine Rated Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovDroop <sub>1,2,3,4,5,6,7</sub>	5568	Engine Speed Governor Droop

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for A4E1

Function	ECU connector	Controller
CAN H	52	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	61	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	56,57	N/A
Battery - (negative)	68,69	N/A
Key Switch	70	Any binary output configured as ECU PwrRelay
Analog Speed Control	25	SG OUT
Analog Speed Control	44	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring for A4E2











Function	ECU connector	Controller
CAN H	20	CAN1 (extension modules/J1939) – CAN H
CAN COM	22	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,15,16	N/A
Battery - (negative)	1,2,3,9,10	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	3	SG OUT
Analog Speed Control	17	SG COM

**Note:** To enable speed control over CAN bus set Desired Speed Input Arrangement to "CAN Input" and Digital Speed Control Installed to "Not Installed" in Perkins EST program.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Perkins ECM Fault Codes** on page 1424

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Perkins ECM aftertreatment lamps									
	Solid On		Solid On		Solid On		Solid On		Blink slow
	Blink slow		Blink slow						
	Blink fast		Blink fast						
	Solid On		Solid On		Solid On		Solid On		Not Supported
			Blink slow		Blink slow				
			Blink fast		Blink fast				

## ECM 1300 (1300 series)

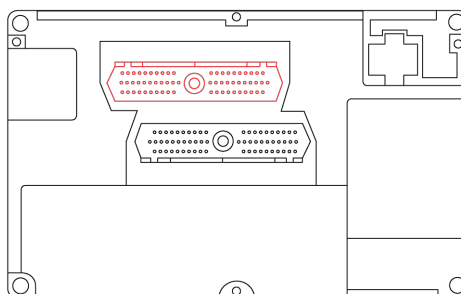


Image 5.146 ECM 1300

## Controllers that support the ECM 1300

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters for ECM 1300

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated <sub>1,2,3,4,5,6,7</sub> *	189	Engine Rated Speed
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500



## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for ECM 1300

Function	ECU connector	Controller
CAN H	19	CAN1 (extension modules/J1939) – CAN H
CAN COM	18	CAN1 (extension modules/J1939) – CAN COM
CAN L	20	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	25,21,22,41	N/A
Battery - (negative)	23,42,1,2	N/A
Key Switch	24	Any binary output configured as ECU PwrRelay
Analog Speed Control	30	SG OUT
Analog Speed Control	11	SG COM

## Recommended wiring for CAT unit

Function	ECU J1 21pin connector	Controller
CAN H	20	CAN1 (extension modules/J1939) – CAN H
CAN COM	22	CAN1 (extension modules/J1939) – CAN COM
CAN L	21	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	7,8,15,16	N/A
Battery - (negative)	1,2,3,9,10	N/A
Key Switch	40	Any binary output configured as ECU PwrRelay
Analog Speed Control	3	SG OUT
Analog Speed Control	17	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Perkins 1300 Fault Codes on page 1422**

Available list of texts of fault codes see **Perkins ECM Fault Codes on page 1424**.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

**Note:** To enable speed control over CAN bus if possible - set parameter 89001 - Vehicle Speed Signal Mode to "2" in Perkins 1306/1606 Engine Diagnostic Software

**IMPORTANT:** No value for speed control being sent to the ECU when Perkins 1300 is configured!

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Perkins 1300 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## ADEM A6E11(1200, 1700 series)

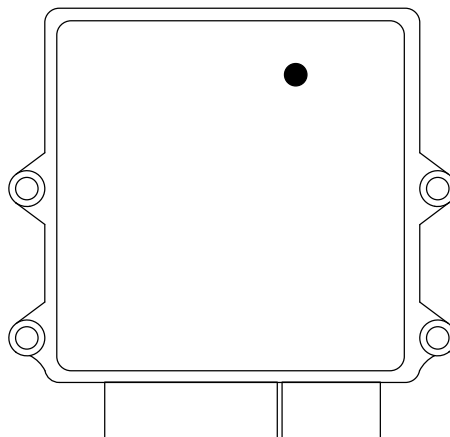


Image 5.147 ADEM A6E11

## Controllers that support the ADEM A611

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp

StartEnbl1 <sub>1,2,3,4,5,6,7</sub>	626	Engine Start Enable Device 1
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
StartEnbl2 <sub>1,2,3,4,5,6,7</sub>	1804	Engine Start Enable Device 2
OverspeedTest <sub>1,2,3,4,5,6,7</sub>	2812	Engine Overspeed Test
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
Spd-Sens1Timg <sub>1,2,3,4,5,6,7</sub>	4203	Engine Speed Sensor 1 Timing Pattern Status
Spd-Sens2Timg <sub>1,2,3,4,5,6,7</sub>	4204	Engine Speed Sensor 2 Timing Pattern Status
P-LowOilLamp <sub>1,2,3,4,5,6,7</sub>	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLampD <sub>1,2,3,4,5,6,7</sub>	5100	Engine Coolant Temperature High Lamp Data
SCR TmpMngm <sub>1,2,3,4,5,6,7</sub>	5400	SCR Thermal Management Active
SpeedLamp <sub>1,2,3,4,5,6,7</sub>	6711	Engine Speed High Lamp Data
ATTMngmtStat <sub>1,2,3,4,5,6,7</sub>	7332	Aftertreatment Thermal Management Status
ATTSpdIncReq <sub>1,2,3,4,5,6,7</sub>	7502	Aftertreatment Engine Speed Increase request
ATTLoadReq <sub>1,2,3,4,5,6,7</sub>	7503	Aftertreatment Engine Load Request
SpdGovernor <sub>1,2,3,4,5,6,7</sub>	7840	Engine Speed Governor Mode
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
ElvSpdAllowSw <sub>1,2,3,4,5,6,7</sub>	7579	Elevated Engine Speed Allowed Switch
StartRequest <sub>1,2,3,4,5,6,7</sub>	7745	Engine Start Request
StartAbort <sub>1,2,3,4,5,6,7</sub>	7747	Engine Start Abort Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure

P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary <sub>1,2,3,4,5,6,7</sub>	441	Auxiliary Temperature 1
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
Spd-Speed2 <sub>1,2,3,4,5,6,7</sub>	723	Engine Speed 2
TurboWstAct <sub>1,2,3,4,5,6,7</sub>	1188	Engine Turbocharger Wastegate Actuator 1 Position
P-Auxiliary <sub>1,2,3,4,5,6,7</sub>	1387	Auxiliary Pressure #1
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
EGR1Vlv <sub>1,2,3,4,5,6,7</sub>	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
DroopAcceltr2 <sub>1,2,3,4,5,6,7</sub>	2879	Engine Droop Accelerator 2 Select
DroopAcceltr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
AltRatingSel <sub>1,2,3,4,5,6,7</sub>	2882	Engine Alternate Rating Select
DroopRemAcc <sub>1,2,3,4,5,6,7</sub>	2886	Engine Droop Remote Accelerator Select
OperPrimeSpd <sub>1,2,3,4,5,6,7</sub>	2892	Engine Operator Primary Intermediate Speed Select State
StartEnbl2Cfg <sub>1,2,3,4,5,6,7</sub>	2898	Engine Start Enable Device 2 Configuration
StartEnbl1Cfg <sub>1,2,3,4,5,6,7</sub>	2899	Engine Start Enable Device 1 Configuration
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Spd-Engine <sub>1,2,3,4,5,6,7</sub>	4201	Engine Speed 1
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature

T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
ReqFan1Spd <sub>1,2,3,4,5,6,7</sub>	986	Engine Fan 1 Requested Percent Speed
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovDroop <sub>1,2,3,4,5,6,7</sub>	5568	Engine Speed Governor Droop
StartConsent <sub>1,2,3</sub>	7746	Engine Start Consent
Starter1Fdb <sub>1,2,3,4,5,6,7</sub>	7748	Engine Starter 1 Feedback

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring for ADEM A6E11 (1700 series)

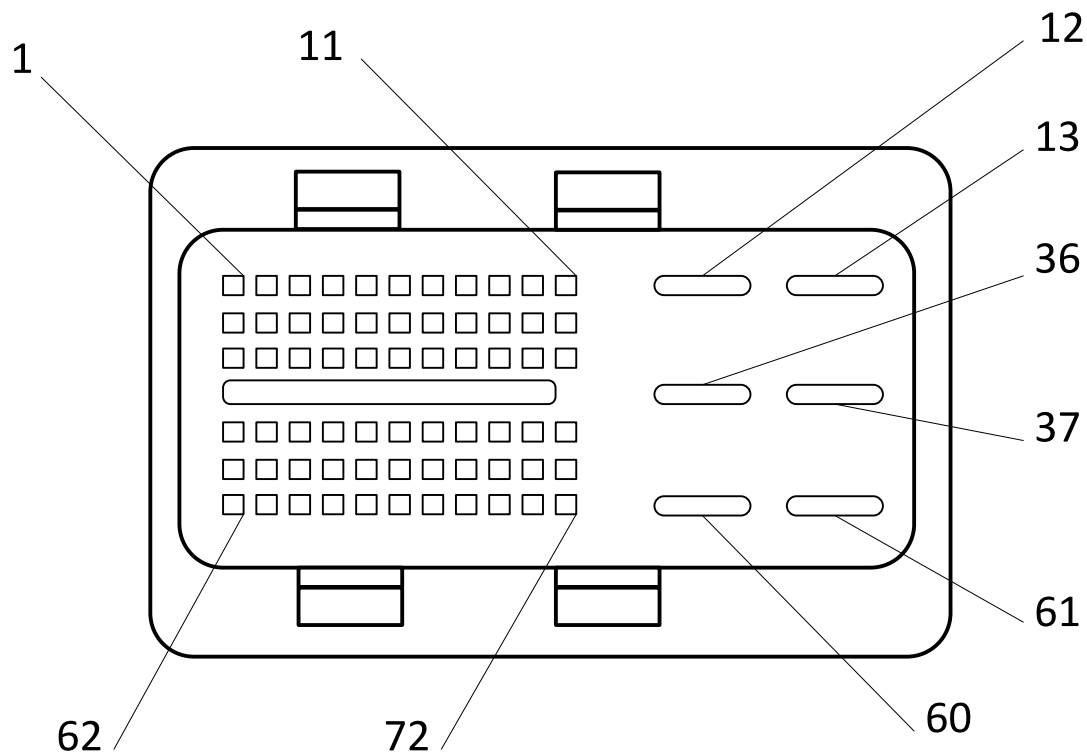





Image 5.148 J1 ECU connector





Function	ECU J1 connector	Controller
CAN H	48	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/a	CAN1 (extension modules/J1939) – CAN COM
CAN L	59	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	13,37,61	N/A
Battery - (negative)	12,36,60	N/A
Key Switch	5,6	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Perkins ADEM A6E11 Fault Codes on page 1422**.

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blinkg fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Perkins ADEM A6E11 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast

	Not Supported		Solid On		Solid On Blink slow		Solid On
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## ADEM (1200, 2300, 2500, 2800, 4000 series)

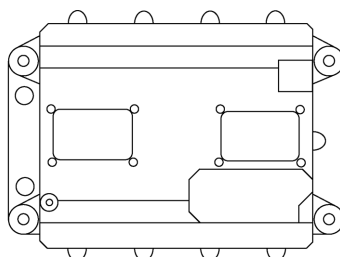


Image 5.149 ADEM3

### Controllers that support the ADEM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ShutdownEngine <sub>1,2,3,4,5,6,7</sub>	593	Engine Idle Shutdown has Shutdown Engine
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ShutoffCommand <sub>1,2,3,4,5,6,7</sub>	2813	Engine Air Shutoff Command Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
OilPrim <sub>1,2,3,4,5,6,7</sub>	3551	Engine Oil Priming State
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
Spd-Sens1Timg <sub>1,2,3,4,5,6,7</sub>	4203	Engine Speed Sensor 1 Timing Pattern Status
Spd-Sens2Timg <sub>1,2,3,4,5,6,7</sub>	4204	Engine Speed Sensor 2 Timing Pattern Status
P-LowOilLampD <sub>1,2,3,4,5,6,7</sub>	5099	Engine Oil Pressure Low Lamp Data

T-CoolHiLampD <sub>1,2,3,4,5,6,7</sub>	5100	Engine Coolant Temperature High Lamp Data
SpeedLamp <sub>1,2,3,4,5,6,7</sub>	6711	Engine Speed High Lamp Data
SpdGovernor <sub>1,2,3,4,5,6,7</sub>	7840	Engine Speed Governor Mode
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AlarmReset <sub>4,5,6,7</sub>		Alarm Reset
Start <sub>4,5,6,7</sub>		Engine Start
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Pwr-Rated <sub>1,2,3,4,5,6,7</sub>	166	Engine Rated Power
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
Spd-Speed2 <sub>1,2,3,4,5,6,7</sub>	723	Engine Speed 2
ServDelay <sub>1,2,3,4,5,6,7</sub>	916	Service Delay/Operational Time Based



ExhOxygenDesR <sub>1,2,3,4,5,6,7</sub>	1117	Engine Desired Rated Exhaust Oxygen
ExhOxygenDes <sub>1,2,3,4,5,6,7</sub>	1118	Engine Desired Exhaust Oxygen
ExhOxygen <sub>1,2,3,4,5,6,7</sub>	1119	Engine Actual Exhaust Oxygen
P-Turbo1Boost <sub>1,2,3,4,5,6,7*</sub>	1127	Engine Turbocharger 1 Boost Pressure
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff <sub>1,2,3,4,5,6,7</sub>	1391	Engine Fuel Valve 1 Differential Pressure
P-AirFuelDiff <sub>1,2,3,4,5,6,7</sub>	1392	Engine Air to Fuel Differential Pressure
FuelVlvPos1 <sub>1,2,3,4,5,6,7</sub>	1442	Engine Fuel Valve 1 Position
FuelVlvPos2 <sub>1,2,3,4,5,6,7</sub>	1443	Engine Fuel Valve 2 Position
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
FuelVlvPosCmd1 <sub>1,2,3,4,5,6,7</sub>	1765	Engine Fuel Valve 1 Commanded Position
FuelVlvPosCmd2 <sub>1,2,3,4,5,6,7</sub>	1766	Engine Fuel Valve 2 Commanded Position
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
SensorSupply01 <sub>1,2,3,4,5,6,7</sub>	3509	Sensor supply voltage 1
SensorSupply02 <sub>1,2,3,4,5,6,7</sub>	3510	Sensor supply voltage 2
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
TurboBpssPos <sub>1,2,3,4,5,6,7</sub>	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
Spd-Engine1 <sub>1,2,3,4,5,6,7</sub>	4201	Engine Speed 1
SCR1 <sub>1,2,3,4,5,6,7</sub>	4332	Aftertreatment 1 SCR System 1 State
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FilFuelDeliv <sub>1,2,3,4,5,6,7</sub>	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb <sub>1,2,3,4,5,6,7</sub>	5580	Engine Filtered Fuel Delivery Absolute Pressure
FuelFitrDgrade <sub>1,2,3,4,5,6,7</sub>	5584	Engine Fuel Filter Degradation
P-Coolant2 <sub>1,2,3,4,5,6,7</sub>	5708	Engine Coolant Pressure 2
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Rated <sub>1,2,3,4,5,6,7</sub>	189	Engine Rated Speed
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
DroopAcceltr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select
FreqSelect <sub>1,2,3,4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovDroop <sub>1,2,3,4,5,6,7</sub>	5568	Engine Speed Governor Droop

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring for ADEM5 (1200, 4000 series)

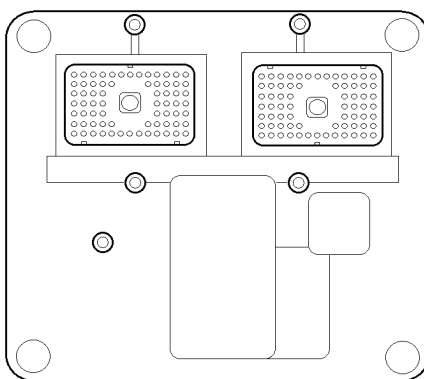


Image 5.150 ADEM 5

Function	ECU J1 connector	9-pin diagnostic connector	Controller
CAN H	25	G	CAN1 (extension modules/J1939) – CAN H
CAN COM	27	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	26	F	CAN1 (extension modules/J1939) – CAN

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

			L
Battery + (positive)	84,85,86	A	N/A
Battery - (negative)	81,82,83	B	N/A
Key Switch	69	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	80	N/A	SG OUT
Analog Speed Control	30	N/A	SG COM

### Recommended wiring for ADEM4 (2200, 2500 series)

Function	ECU J1 connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,70	N/A
Battery - (negative)	61,63,65	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

### Recommended wiring for ADEM3 (2300, 2800 series)





Function	ECU J1 connector	Controller
CAN H	50	CAN1 (extension modules/J1939) – CAN H
CAN COM	42	CAN1 (extension modules/J1939) – CAN COM
CAN L	34	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	48,52,53,70	N/A
Battery - (negative)	61,63,65	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	17	SG OUT
Analog Speed Control	3	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Perkins ECM Fault Codes** on page 1424.

**Note:** To enable speed control over CAN bus set Desired Speed Input Arrangement to "CAN Input" and Digital Speed Control Installed to "Not Installed" in Perkins EST program. Or make a loop on J1 connector pins 49 and 18.

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Perkins ECM aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		Blink slow
	Blink fast		Blink fast		

	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported
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## 6.1.36 Powerlink devices support

ECU Type	Device type supported
<a href="#">Powerlink (page 528)</a>	

### Powerlink

#### Controllers that support the Powerlink

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature

T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
P-Fuel1VlvInt <sub>1,2,3,4,5,6,7</sub>	1390	Engine Fuel Valve 1 Intake Absolute Pressure
IgnitionTime1 <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
CAN H	CAN1 (extension modules/J1939) – CAN H
CAN COM	CAN1 (extension modules/J1939) – CAN COM
CAN L	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A
Battery - (negative)	N/A
Key Switch	Any binary output configured as ECU PwrRelay
Analog Speed Control	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Available list of texts of fault codes **see Powerlink Fault Codes on page 1**

## 6.1.37 SDEC devices support

ECU Type	Device type
<a href="#">Bosch (page 530)</a>	6ERAA11.8-G3
	6ERAA12.8-G3
	4RTAA2.8-G3
<a href="#">Denso (page 533)</a>	4HTAA4.3-G3
	6HTAA6.5-G3
	6DTAA8.9-G3
<a href="#">ECTEK F20/F45 (page 536)</a>	6KTAA25-G3
	6WTAA35-G3
	12KTA58-G3
<a href="#">ECTEK F36 (page 538)</a>	4HTAA4.5-G3
	6HTAA7.2-G3

### Bosch

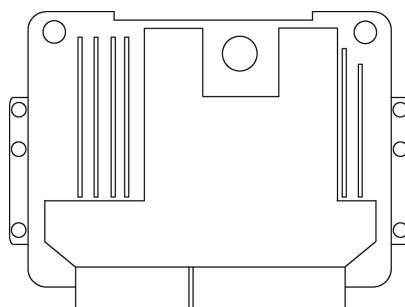


Image 5.151 Bosch EDC17

### Controllers that support the Bosch:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ParkingBrake	70	Parking Brake Switch
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
CCActive	595	Cruise Control Active
Brake	597	Brake Switch
Clutch	598	Clutch Switch
CCSet	599	Cruise Control Set Switch
CCCoast	600	Cruise Control Coast (Decelerate) Switch
CCResume	601	Cruise Control Resume Switch

CCAccelerate	602	Cruise Control Accelerate Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
RoadSpdLimit	1437	Road Speed Limit Status
CCPause	1633	Cruise Control Pause Switch
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT1IntDewPoint	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint	3238	Aftertreatment 1 Exhaust Dew Point
AT2IntDewPoint	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint	3240	Aftertreatment 2 Exhaust Dew Point
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake	70	Parking Brake Switch out
CCActive	595	Cruise Control Active out
Brake	597	Brake Switch out
Clutch	598	Clutch Switch out
CCSet	599	Cruise Control Set Switch out
CCCoast	600	Cruise Control Coast (Decelerate) Switch out
CCResume	601	Cruise Control Resume Switch out
CCAccelerate	602	Cruise Control Accelerate Switch out
CCPause	1633	Cruise Control Pause Switch out
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-ExtCrankcase	22	Engine Extended Crankcase Blow-by Pressure
T-Intcooler	52	Engine Intercooler Temperature
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure

P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-CoolFiltrDiff	112	Engine Coolant Filter Differential Pressure
T-AmbientAir	171	Ambient Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions	249	Engine Total Revolutions
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
Spd-DesAsym	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque	520	Actual Retarder - Percent Torque
TorqMode	899	Engine Torque Mode
TorqueMode	900	Retarder Torque Mode
PTO	976	PTO Governor State
RetarderTorque	1085	Intended Retarder Percent Torque
ChAirThermost	1134	Engine Charge Air Cooler Thermostat Opening
SourceAddress	1480	Source Address of Controlling Device for Retarder Control
SourceAddress	1483	Source Address of Controlling Device for Engine Control
StarterMode	1675	Engine Starter Mode
TorqueDriver	1715	Drivers Demand Retarder - Percent Torque
TorqueActMax	1717	Actual Maximum Available Retarder - Percent Torque
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2	2432	Engine Demand - Percent Torque
TorqueEstLoss	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit 0x03

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500



## Recommended wiring EDC17CV44

Function	Vehicle Plug K	Controller
CAN H	K76	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	K54	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	K01, K03, K05	N/A
Battery - (negative)	K02, K04, K06	N/A
Key Switch	K88	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

## Recommended wiring EDC17CV81

Function	Vehicle Plug K	Controller
CAN H	K86	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	K64	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	K01, K03, K05	N/A
Battery - (negative)	K02, K04, K06	N/A
Key Switch	K46	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

Available list of texts of fault codes see **SDEC Bosch EDC17 Fault Codes** on page 543

## Denso

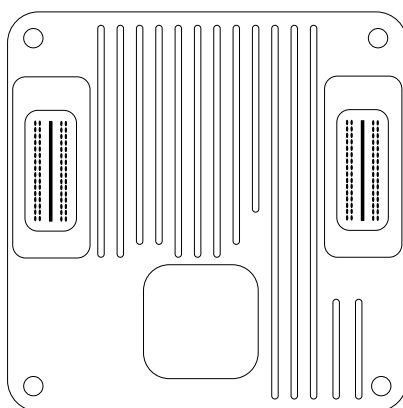


Image 5.152 Denso

### Controllers that support the Denso:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MIL_Status		MIL Status
VNTMode		VNT Control Mode
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
AutoStart <sub>1,2,3,4,5,6,7</sub>	1656	Engine Automatic Start Enable Switch
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
TorqueLamp		Multiple Torque Lamp Status 1
BaseTiming		Base Injection Timing
InjectTiming		Injection Timing
TorqueFinal <sub>3</sub>		Final Request Torque
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
Spd-MaxVehicle <sub>1,2,3,4,5,6,7</sub>	74	Maximum Vehicle Speed Limit
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
CruiseCSetHigh <sub>1,2,3,4,5,6,7</sub>	87	Cruise Control High Set Limit Speed
CruiseCSetLow <sub>1,2,3,4,5,6,7</sub>	88	Cruise Control Low Set Limit Speed
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1

Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
P-Turbo1Boost <sub>1,2,3,4,5,6,7</sub> *	1127	Engine Turbocharger 1 Boost Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit 0x03

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	80 pin Vehicle Connector	Controller
<b>CAN H</b>	V37	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	V17	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	V29, V63, V41, V61	N/A
<b>Battery - (negative)</b>	V39, V59, V79, V80, V40, V60, V20	N/A

Key Switch	V13, V33	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

Available list of texts of fault codes see **SDEC Denso Fault Codes** on page 546

### ECTEK F20/F45

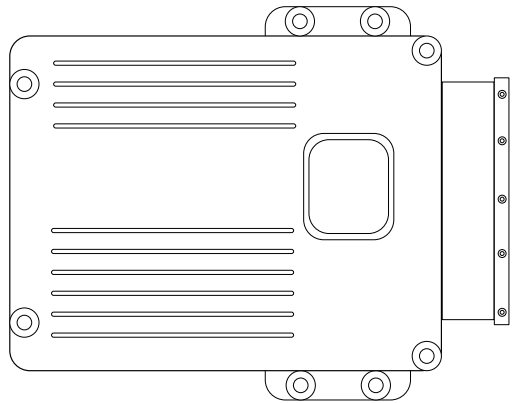


Image 5.153 ECTEK F20

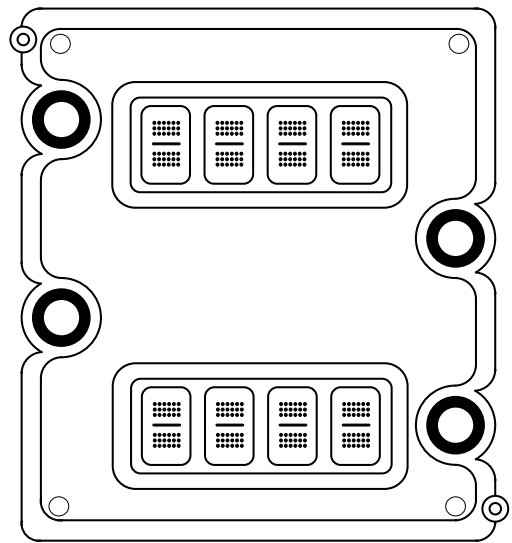


Image 5.154 ECTEK F45

#### Controllers that support the ECTEK F20/F45:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch

StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring ECTEK F20

Function	Vehicle Plug K	Controller
<b>CAN H</b>	K54	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	K76	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	K01, K03, K05	N/A
<b>Battery - (negative)</b>	K02, K04, K06	N/A
<b>Key Switch</b>	K88	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## Recommended wiring ECTEK F45

Function	Vehicle Plug	Controller
<b>CAN H</b>	1-19	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1-20	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4-06, 4-10, 4-13, 4-11, 4-16, 4-09, 4-12	N/A
<b>Battery - (negative)</b>	4-01, 4-04, 4-07, 4-05, 4-08	N/A
<b>Key Switch</b>	4-36	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see SDEC ECTEK F20/F45 Fault Codes on page 548**

## ECTEK F36

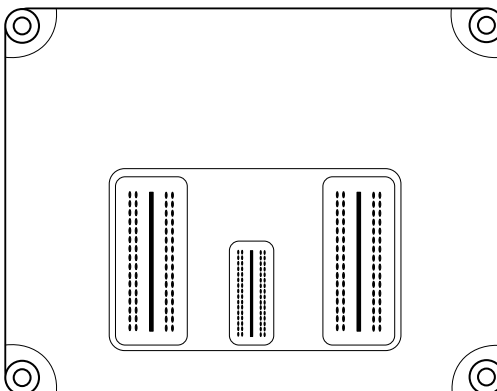


Image 5.155 ECTEK F36

### Controllers that support the ECTEK F36:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PositionContrl		Position Control
EGREndStop		End Stop Calibration
EGR Wipe		Wipe
EngBrakeLmp		Engine Brake Lamp
T-CoolLamo		High Coolant Tmperature Lamp
MIL		MIL Lamp
CheckEngine		Check Engine Lamp
PTO/RSGLmp		Cruise/PTO/RSG Lamp
AirHeaterLmp		AIR Heater Lamp
TorqueSelect		Torque Select Lamp

GearChange		Gear Change Signal for TM ACC
DPFRegActive		Diesel Particulate Filter Active Regeneration Status
DPFAutReg		DPF Automatic Reg Lamp
DPFManReg		DPF Manual Reg Lamp
DPFVoice		DPF Voice Guidance
VarSpeedLmp		Variable Speed Set Lamp
OilLamp		Oil Level/Temp Lamp
EcorollStatus		Ecoroll Status Lamp
SmartPowr		Dual Power and Smart Power Status Lamp
GlowLamp		Pre Heating (Glow) Lamp
CC Status		Cruise Control Status Lamp
PTO status		Engine PTO Status Lamp
CheckEngine2		Check Engine Lamp 2
SCR2		SCR Lamp2
MIL2		MIL 2
ParkingBrake	70	Parking Brake Switch
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
BrakeSwitch	571	Retarder Enable - Brake Assist Switch
CCActive	595	Cruise Control Active
CCEnable	596	Cruise Control Enable Switch
Brake	597	Brake Switch
Clutch	598	Clutch Switch
CCSet	599	Cruise Control Set Switch
CCCoast	600	Cruise Control Coast (Decelerate) Switch
CCResume	601	Cruise Control Resume Switch
CCAccelerate	602	Cruise Control Accelerate Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
DiagTestMode	966	Engine Diagnostic Test Mode Switch
IdleDecrement	967	Engine Idle Decrement Switch
IdleIncrement	968	Engine Idle Increment Switch
RemPTOVarSpd	978	Engine Remote PTO Governor Variable Speed Control Switch
RemPROPreprg	979	Engine Remote PTO Governor Preprogrammed Speed Control Switch
PTOEnable	980	Engine PTO Governor Enable Switch
PTOAccelerate	981	Engine PTO Governor Accelerate Switch
PTOResume	982	Engine PTO Governor Resume Switch
PTODecelerate	983	Engine PTO Governor Coast/Decelerate Switch
PTOSet	984	Engine PTO Governor Set Switch
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
RoadSpdLimit	1437	Road Speed Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)

FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT2IntDewPoint	3239	Aftertreatment 2 Intake Dew Point
AT2ExhDewPoint	3240	Aftertreatment 2 Exhaust Dew Point
AT1Regen	3483	Aftertreatment 1 Regeneration Status
DPFIInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFIInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
CmpBrakeLamp	3987	Compression Brake Enable Switch Indicator Lamp Command
AT1FuelDrain	4097	Aftertreatment 1 Fuel Drain Actuator
ProtectLamp	5077	Engine Protect Lamp Command
WarningLamp	5078	Engine Amber Warning Lamp Command
StopLamp	5079	Engine Red Stop Lamp Command
MalfuncCmd	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp	5081	Engine Brake Active Lamp Command
P-LowOilLamp	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp	5084	Engine Coolant Level Low Lamp Command
IdleLamp	5085	Engine Idle Management Active Lamp Command
AirFitLamp	5086	Engine Air Filter Restriction Lamp Command
FuelCtrlMode	5323	Engine Fuel Control Mode
HydrocarbPurg	5504	Hydrocarbon Doser Purging Enable
CCReadnsStat	5606	Adaptive Cruise Control Readiness Status
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CC Off Sw		Cruise Control Off Switch 2
CC Acc Sw		Cruise Control Accelerate Switch 2
CC Coast Sw		Cruise Control Coast Switch 2
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
EGRDesPos		EGR Desire Position
SpdTolerance		Confirmed Tolerance Speed
EGR Ratio		EGR Ratio
AirMasInlet		Engine Target Inlet Air Mass
FuelInjQnt		Torque Generating Engine Fuel Injection Quantity
SCRCatActHC		Actual HC Emission of Engine Upstream of SCR Catalys
DPFSootLoad		Diesel Particulate Filter 1 Soot Load
DPFStatus		Diesel Particulate Filter Status
OperMode		Engine Operation Mode
EXGMFforPM		Aftertreatment 1 Exhaust Gas MasS Flow For PM Sensor
ErrorThrtlVlv		Error Between Actual and Command Throttle Valve
P-Fuel		Fuel Pressure
RawSpeed		Raw Engine Speed
T-ManifoldSens		Sensed Manifold Temperature
P-ManifoldAbs		Sensed Manifold Absolute Pressure



V-Battery		Battery Voltage
DPF Msg		DPF Message Display
PM Level		PM Level
FuelConsump		Fuel Consumption
APP2	29	Accelerator Pedal Position 2
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
Spd-MaxVehicle	74	Maximum Vehicle Speed Limit
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
CruiseCSetSpd	86	Cruise Control Set Speed
CruiseCSetHigh	87	Cruise Control High Set Limit Speed
CruiseCSetLow	88	Cruise Control Low Set Limit Speed
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
SLI	114	SLI Battery 1 Net Current
I-Alternator	115	Alternator Current
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
P-Fuel1InjCtr*	164	Engine Fuel Injection Control Pressure
SysCharging	167	Charging System Potential (Voltage)
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
TripFuel	182	Engine Trip Fuel
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
Spd-PTO*	186	Power Takeoff Speed
Spd-PTOSet*	187	Power Takeoff Set Speed
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
TripDistance	244	Trip Distance
TtlVehicleDist	245	Total Vehicle Distance
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlRevolutions	249	Engine Total Revolutions
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
Spd-DesAsym	519	Engine's Desired Operating Speed Asymmetry Adjustment

RetarderTorque	520	Actual Retarder - Percent Torque
CruseControl	527	Cruise Control States
TorqMode	899	Engine Torque Mode
TorqueMode	900	Retarder Torque Mode
PTO	976	PTO Governor State
PTOFuelUsed	1028	Total Engine PTO Governor Fuel Used
TripAFuelRate	1029	Trip Average Fuel Rate
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
P-ExhaustPres1	1209	Engine Exhaust Pressure 1
P-IntManDesAbs	1692	Engine Intake Manifold Desired Absolute Pressure
TorqueActMax	1717	Actual Maximum Available Retarder - Percent Torque
TorqueDemand2	2432	Engine Demand - Percent Torque
EGR1MassFR	2659	Engine Exhaust Gas Recirculation 1 Mass Flow Rate
EGR1Vlv1	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
AltRating	2888	Engine Alternate Rating Select State
TorqueEstLoss	2978	Estimated Engine Parasitic Losses - Percent Torque
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
AT1ExhFMI	3243	Aftertreatment 1 Exhaust Temperature 1 Preliminary FMI
DPFIntake	3244	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Preliminary FMI
T-DPFOutlet	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
P-DPFIntake	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-DPFOutlet	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSootDeviat*	5313	Commanded Engine Fuel Rail Pressure
DPFSootDCO*	5314	Commanded Engine Fuel Injection Control Pressure
AT1FuelMass	5503	Aftertreatment 1 Fuel Mass Rate
P-Turbo1Outlet	5541	Engine Turbocharger 1 Turbine Outlet Pressure
DriverWarning	5825	Driver Warning System Indicator Status
Emission	5826	Emission Control System Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ExhBleed1Brk		Exhaust and Bleeder 1 Brake Switch or Exhaust Brake Pre-selection
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit 0x03

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	80 pin Vehicle Connector	Controller
<b>CAN H</b>	V10	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	V30	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	V58, V60, V78, V80	N/A
<b>Battery - (negative)</b>	V18, V40, V20, V38, V56, V76, V61	N/A
<b>Key Switch</b>	V46, V66	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

Available list of texts of fault codes see **SDEC ECTEK F20/F45 Fault Codes** on page 548

## SDEC Bosch EDC17 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
51	ThrottleVlv1
59	TranShiftFGear
81	DPFIntake
84	Spd-WheelBased
91	APP
96	FuelLevel1
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
444	V-BatteryInp2
558	AP1LowIdleSw
571	BrakeSwitch
596	CCEnable

597	Brake
598	Clutch
626	StartEnbl1
976	PTO
985	A/CHiPressFan
1108	EPS TimerOvr
1109	EPS SDApproach
1127	P-Turbo1Boost
1136	T-ECU
1188	TurboWstAct1
1241	FuelGasFlwRate
1351	AirCompressor
1387	P-Auxiliary1
1413	Cyl 1IgnTiming
1414	Cyl 2IgnTiming
1415	Cyl 3IgnTiming
1416	Cyl 4IgnTiming
1417	Cyl 5IgnTiming
1418	Cyl 6IgnTiming
1442	FuelVlvPos1
1623	Spd-TachoShaft
1624	Spd-Tachograph
1636	T-Intake
1639	Spd-Fan
1675	StarterMode
1694	FuelGasMassFR
1761	DEFTnkLevel
1769	HiLimMinConRPM
2802	DataMemoryUsg
2898	StartEnbl2Cfg
2978	TorqueEstLoss
3031	T-DEFTnk
3216	SCR IntakeNOx
3217	AT1IntOxygen1
3220	SCR IntakeNOx
3226	AT1OutNOx
3361	DEFDosing1
3363	DEFTnkHeater
3508	Pwr-TECU
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3516	DEFConcentrat
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2

3599	Pwr-OutSupply3
4201	Spd-Engine1
4203	Spd-Sens1Timg
4340	DEFHeater1
4342	DEFHeater2
4344	DEFHeater3
4346	DEFHeater4
4354	DEFHeater1
4355	DEFHeater2
4356	DEFHeater3
4357	DEFHeater4
4360	T-SCR1Intake
4363	T-SCR1Outlet
4375	DEFPumpDrive
4376	DEFDosing1
4815	TorqueCoverter
7815	P-Dischrg FP
7816	P-Intake FP
200116	DFC_ErlyRlyOpn
397809	EDCAI1 Timeout
520195	T-AirSens1Err
520197	WrokLimitInfo
520198	PerfLimitAct
520201	Cy320-SPI Err
520203	SignalChckErr
520205	TMWF-ResShOff
520208	ExhFlapErr
520210	NumInjLimit
520211	InjUnStrtTst
520212	InjVlvPresMin
520214	InjB1ShrtCirc
520215	IVDiaChp_0
520219	MILOL
520220	ECU IntErr
520221	MoCComErrCnt
520222	MoCComSPI
520223	MoCROMErrXPg
520224	MoFAPP
520225	MoFESpd
520226	MoFInjDatET
520227	MoFInjDatPhi
520228	MoFInjQnt
520229	MoFMode
520230	MoFMode3
520231	MoFQntCor
520232	MoFRailP
520233	MoFTrqCmp

520234	MonLimit
520235	MonUSupply1
520237	OBDGenFault
520238	OCWDACom
520240	MAP error
520241	P-ReliefVlvErr
520242	R2S2_MscComm1
520243	RailMeUn
520248	StopCntTmr
520250	SVSOL
520251	SWReset
520252	SyncAPP
520253	T50Err
520254	AirTMonPlaus_1
520255	AirTMonPlaus_2
520256	AirTMonPlaus_3
520257	AirTMonPlaus_4
520258	AirTMon1-4
520261	FIFltHeating
520264	FIFWLvlSRC
520265	RailPRV
520266	FadcClib
520268	FBCMon
520269	TorqueLimit
520270	TorqueLimit
520271	TorqueLimit
520272	TorqueLimit
520273	TorqueLimit
520274	TorqueLimit
520275	TorqueLimit
520276	MoFRmtAPP
520277	SRCHighRmtAPP1
520278	SRCHighRmtAPP2
520279	StopLmpOL
520280	SyncRmtAPP
520281	WrmLmp
520287	IVDiaBnkShCir
520289	FIFCDetSRCMax
520290	MoCSOPErrNoChk
524287*	HiddenCode

\*Hidden fault code by default

## SDEC Denso Fault Codes

Fault Code (SPN)	Text
114	T-IntaSignLow
115	T-IntaSignHi

136	P-C/R Hi
274	T-AirSigLow
275	T-AirSigHi
278	T-CoolPefmInv
279	T-CoolSigLow
280	T-CoolSigHi
288	APP1NotOpen
289	APP1NotClose
290	APP1SigLow
291	APP1SigHi
386	T-PumpSigLow
387	T-PumpSigHi
401	P-RailRailMid
402	P-RailSigLow
403	P-RailSigHi
512	CapChrgErr
513	C1InjectOpen
514	C2InjectOpen
515	C3InjectOpen
516	C4InjectOpen
517	C5InjectOpen
518	C6InjectOpen
535	T-CoolHi
537	EngineOverrun
544	APP2NotOpen
545	APP2NotClose
546	APP2SigLow
547	APP2SigHigh
566	P-BoostPerfInv
567	P-Boost SigLow
568	P-BoostSigHi
822	CKP A Perform
823	Crank No Pulse
833	CMP B1 Perform
834	Cam No Pulse
901	CrnkCamNoPulse
1314	BAASensorHi
1315	BAASensorHi
1316	P-Oil Down
1345	BAAShortToGND
1346	GlowRelOutOpen
1378	V-SystemLow
1379	V-SystemHi
1537	Checksum
1538	QRDataError
1542	CPU Fault
1543	CPU Fault

1553	CapChrgErr
1557	StartRelOpen
1558	BAAShortToGND
1559	StartSwShort
1575	SCVOpen
1577	SCVShortBatt
1602	5VRef1CircLow
1603	5VRef1CircHi
1618	5VRef2CircLow
1619	5VRef2CircHi
1670	MainRlyDiag
4233	P-C/Rl Hi
4496	PumpVlvStuck
4631	PumpExchange
4632	PumpError
4633	P/L Active
4641	P-C/R Low
5634	QRDataNotWr
7447	SCRFail1
7448	SCRFail2
8480	BAASigInvalid
8518	COM1OpenLoad
8519	COM1ShortGND
8520	COM1ShortBatt
8521	COM2OpenLoad
8528	COM2ShortGND
8529	COM2ShortBatt
8743	P-BaromErr
8744	P-AtomSigLow
8745	P-AtomSigHi
8809	WaterInFuel
8851	PumpProt
49267	CAN1 NN1NodeE
49409	CANBusOpenAT
49493	CANBusOpenTCO1
49811	CANBusOpenHCU
53249	CAN2 NN2NodeE
53589	CANBusOpenDCU
524287*	HiddenCode

\*Hidden fault code by default

## SDEC ECTEK F20/F45 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
100	P-Oil



102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
533	MaxOvrSpeed
624	WarningLamp
630	CalibratMemory
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
1192	TurboWstAct
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
524287*	HiddenCode

\*Hidden fault code by default

## SDEC ECTEK F36 Fault Codes

Fault Code (SPN)	Text
94	P-FuelDelivery
100	P-Oil
102	P-Intake
108	P-Barometric
110	T-Coolant
129	P-Fuel1Inj2
157	P-Fuel1Inj1Met
158	KeySwitch
172	T-AirIntake1
174	T-Fuel
190	EngineSpeed
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3

654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
723	Spd-Speed2
1079	Supply1
1080	Supply2
1231	CAN2NodeErr
1268	IgnitionCoil01
1349	P-Fuel1Inj2
1637	T-Coolant3
524287*	HiddenCode

\*Hidden fault code by default

## 6.1.38 SISU engines support

ECU Type	Engine type
	xxDxx
	xxCxx

### Engine type explanation

Engine Code	Meaning
74xxx	Cylinder volume in 0.1 liters
xxCxx	C - Common rail D - Bosch VP 44/30 solenoid controlled injection pumps
xxTx	Turbocharged
xxxxA	Air-to-air intercooler

### EEM2 or EEM3

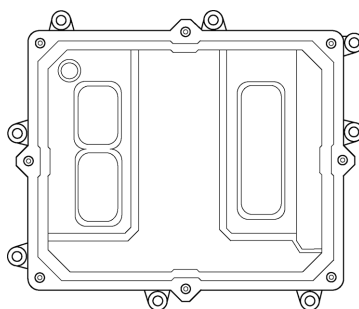


Image 5.156 EEM3

### Controllers that support the EEM2 or EEM3

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters for "Gen-set"

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sup>1,2,3,4,5,6,7,8</sup>	623	Red Stop Lamp
WarningLamp <sup>1,2,3,4,5,6,7,8</sup>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sup>1,2,3,4,7,8</sup>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sup>1,2,3,4,7,8</sup>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sup>1,2,3,4,7,8</sup>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sup>1,2,3,4,7,8</sup>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sup>1,2,3,4,7,8</sup>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start Request <sup>1,2,3,4,5,6,7,8</sup>		Start Request
Stop Request <sup>1,2,3,4,5,6,7,8</sup>		Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Load <sup>1,2,3,4,5,6,7,8</sup>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sup>1,2,3,4,5,6,7,8</sup>	100	Engine Oil Pressure
P-Intake <sup>1,2,3,4,7,8</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7,8</sup>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sup>1,2,3,4,5,6,7,8</sup>	110	Engine Coolant Temperature
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
FuelRate <sup>1,2,3,4,7,8</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7,8</sup>	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sup>1,2,3,4,5,6,7,8</sup>	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1	2881	Engine Droop Accelerator 1 Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Available parameters for "Propulsion"

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sup>1,2,3,4,5,6,7,8</sup>	623	Red Stop Lamp
WarningLamp <sup>1,2,3,4,5,6,7,8</sup>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sup>1,2,3,4,7,8</sup>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sup>1,2,3,4,7,8</sup>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sup>1,2,3,4,7,8</sup>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sup>1,2,3,4,7,8</sup>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start Request <sup>1,2,3,4,5,6,7,8</sup>		Start Request

Stop Request <sup>1,2,3,4,5,6,7,8</sup>		Stop Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Load <sup>1,2,3,4,5,6,7,8</sup>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-Oil <sup>1,2,3,4,5,6,7,8</sup>	100	Engine Oil Pressure
P-Intake <sup>1,2,3,4,7,8</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7,8</sup>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sup>1,2,3,4,5,6,7,8</sup>	110	Engine Coolant Temperature
P-Fuel1Inj1*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch	158	Key Switch Battery Potential
T-Fuel	174	Engine Fuel 1 Temperature 1
FuelRate <sup>1,2,3,4,7,8</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7,8</sup>	190	Engine Speed
TorqueActual	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sup>1,2,3,4,5,6,7,8</sup>	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1	2881	Engine Droop Accelerator 1 Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring for EEM2

Function	ECU 31pin connector	Controller
CAN H	30	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	31	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,8,13	N/A
Battery - (negative)	2,4,7,9	N/A
Key Switch	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM









## Recommended wiring for EEM3

Function	ECU A2 89pin connector	Controller
CAN H	53	CAN1 (extension modules/J1939) – CAN H
CAN COM	51	CAN1 (extension modules/J1939) – CAN COM
CAN L	52	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,7,12,13	N/A
Battery - (negative)	3,9,14,15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see SISU EEM3 Gen-set Fault Codes on page 1466** or see **SISU EEM3 Propulsion Fault Codes on page 1469**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

SISU EEM3 Propulsion aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.39 Scania engines support

ECU Type	Engine type
<a href="#">S6 Singlespeed (page 562)</a> <a href="#">S6 Allspeed (page 566)</a>	DC9 DI12 DC12 DC16 D9M DI12M DI16M
<a href="#">S8 Singlespeed (page 573)</a> <a href="#">S8 Allspeed (page 585)</a>	DC9 DC13 DC16
<a href="#">S8 Singlespeed Main (page 579)</a> <a href="#">S8 Allspeed Main (page 591)</a> <a href="#">S8 SCR (page 597)</a>	DC9 DC13 DC16
<a href="#">S10 Allspeed (page 598)</a>	DW series

### Engine type explanation

Engine Code	Meaning
Dxxx	Diesel fuel
xCxx	Intercooler: C - Air/Air I - Water/Air
xx12	Displacement
xxxxM	Marine

### PCU

#### Controllers that support the PCU

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Eng.Shutdown		Engine Shutting Down
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
TurbSdOverride		Turbine Temp do not Shutdown Engine
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due To High Temp
EngStopLimit		Engine Stop Limit Exceeded
Charge61		Charge 61

TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
IncorrectDrv		Incorrect Driver Initiated Engine Shutdown
AirFitClogged		Engine Air Filter Clogged
AfterrunStat		Afterrun Status
CoordStayAlive		Coordinator Stay Alive Request
OBDreact mode		Emission-OBD reactivation mode
AFTClogged		Aftertreatment Clogged Status
AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
BrakeLight <sub>1,2,3,4,5,6,7</sub>	1667	Retarder Requesting Brake Light
AccelRateLimit <sub>1,2,3,4,5,6,7</sub>	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active



DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd <sub>1,2,3,4,5,6,7</sub>	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhExhPres <sub>1,2,3,4,5,6,7</sub>	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab <sub>1,2,3,4,5,6,7</sub>	6877	SCR Operator Inducement Override Enable
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start <sub>4,5,6,7</sub>		Engine Start
Stop <sub>4,5,6,7</sub>		Engine Stop
E-Stop		Engine Emergency Stop Demand
TorqueLim <sub>1,4,5,6,7</sub>		Torque Limit 1
TorqueLim <sub>2,4,5,6,7</sub>		Torque Limit 2
CCOff		Cruise Control Off
Idle <sub>4,5,6,7</sub>		Idle Command
ExhBrakeFloor		Exhaust Brake Floor Switch
IdleSpdSw1 <sub>4,5,6,7</sub>		Increased Idle speed switch 1
IdleSpdSw2 <sub>4,5,6,7</sub>		Increased Idle speed switch 2
SpdGovernor		Road Speed Governor
BatIdleSpdIncr		Battery Idle Speed Increase Request
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status
L1 Eng		L1 Eng
L1 Dis		L1 Dis
L2 Eng		L2 Eng
L2 Dis		L2 Dis
Accu		Accu
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch out
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
CCPause <sub>1,2,3,4,5,6,7</sub>	1633	Cruise Control Pause Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>1,2,3,4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
HSPPropCool <sub>1,2,3,4,5,6,7</sub>	7549	Hybrid System Propulsion Coolant Level Switch
HSPwrElCool <sub>1,2,3,4,5,6,7</sub>	7550	Hybrid System Power Electronics Coolant Level Switch

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DLNVersion <sub>4,5,6,7</sub>		Version DLN2 Message
DPFRegenState <sub>5</sub>		DPF Regeneration State
UreaLevelLow		Low Urea Level
ControlMode		Engine Control Mode
RunningState		Engine Running State
ExpectVersion		Expected DLN1 Version
UreaLevelLow <sub>4,5,6,7</sub>		Urea Level
Maulfunction		Malfunction Indication
OilLevelMeas		Engine Oil Level Measure Status
OilLevelCDTime		Engine Oil Level Countdown Timer
MaxSpdLimit		Maximum Vehicle Speed Limit
TimeTorqueLim		Time To Torque Limiting
TorqueLim		Torque Limit
PerformSelect		Performance Selection
TorqueLimInfo		Torque Limit Information
CoolWaterFlow		Coolant Water Flow
CoolingFanSpd		Cooling Fan Speed
SpeedLimit*		Applied Vehicle Speed Limit
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
OBDInducement <sub>5</sub>		Emission-OBD inducement state
Spd-LimitTime		Time To Speed Limiting
UreaLevel <sub>5</sub>		Urea Level Inducement State
OBDFailReason		Emission-OBD inducement failure reason
PCD Time		PCD Time
PCD Count		PCD Count
L1 Pos		L1 Pos
L2 Pos		L2 Pos
AccuOil		Accumulator Oil
GeaOil Level		Gearbox Oil Level
T-GearOil		Gearbox Oil Temp
Output Shaft		Output Shaft
ActualECA		Actual ECA Mode
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature

T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Idle <sub>1,2,3,4,5,6,7*</sub>	188	Engine Speed At Idle, Point 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
CruiseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
Spd-Point2 <sub>1,2,3,4,5,6,7*</sub>	528	Engine Speed At Point 2
Spd-Point3 <sub>1,2,3,4,5,6,7*</sub>	529	Engine Speed At Point 3
Torque-Idle1 <sub>1,2,3,4,5,6,7</sub>	539	Engine Percent Torque At Idle, Point 1
Torque-Point2 <sub>1,2,3,4,5,6,7</sub>	540	Engine Percent Torque At Point 2
Spd-Retarder1 <sub>1,2,3,4,5,6,7*</sub>	546	Retarder Speed At Idle, Point 1
Spd-MaxRetard2 <sub>1,2,3,4,5,6,7*</sub>	548	Maximum Retarder Speed, Point 2
Torque-Idle1 <sub>1,2,3,4,5,6,7</sub>	551	Retarder Percent Torque At Idle, Point 1
Torque-MaxSpd2 <sub>1,2,3,4,5,6,7</sub>	552	Retarder Percent Torque At Maximum Speed, Point 2
Torque-Refer <sub>1,2,3,4,5,6,7</sub>	557	Retarder Control Method
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
RetarderType <sub>1,2,3,4,5,6,7</sub>	901	Retarder Type
RetarderLoc <sub>1,2,3,4,5,6,7</sub>	902	Retarder Location
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1480	Source Address of Controlling Device for Retarder Control
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature

T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
HVES1AvlblDisC <sub>1,2,3,4,5,6,7</sub>	5917	HVES1 Available Discharge Power
HVES1AvlblChrg <sub>1,2,3,4,5,6,7</sub>	5918	HVES1 Available Charge Power
V-HVES1 <sub>1,2,3,4,5,6,7</sub>	5919	HVES1 Voltage Level
I-HVES1 <sub>1,2,3,4,5,6,7</sub>	5920	HVES1 Current
TotalDEFUsed <sub>1,2,3,4,5,6,7</sub>	5963	Aftertreatment 1 Total Diesel Exhaust Fluid Used
TripDEF <sub>1,2,3,4,5,6,7</sub>	6563	Aftertreatment Trip Diesel Exhaust Fluid
SCRIndOvrTime <sub>1,2,3,4,5,6,7</sub>	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem <sub>1,2,3,4,5,6,7</sub>	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr <sub>1,2,3,4,5,6,7</sub>	6880	Total Number of SCR Operator Inducement Override Events
StrdEnrgSrcLvl <sub>1,2,3,4,5,6,7</sub>	7895	Stored Energy Source Level
HPModeStatus <sub>1,2,3,4,5,6,7</sub>	7896	Hybrid Propulsion Mode Status
HPModeTrans <sub>1,2,3,4,5,6,7</sub>	7897	Hybrid Propulsion Mode Transition Status
HVES1 OpStatus <sub>1,2,3,4,5,6,7</sub>	8414	HVES1 Operational Status

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
APLowIdle <sub>4,5,6,7</sub>		AP Low Idle Switch Released
APKickdown <sub>4,5,6,7</sub>		AP Kickdown Switch
P-Barom. HR		High Resolution Barometric Pressure
Perform.Select		Performance Selection
ReqGenPWM		Requested Generator PWM
EacsSpdReqCOO		EACS Speed Request COO
EcsSpdReqCOO		ECS Speed Request COO
EacsSpdReqPCU		EACS Speed Request PCU
EcsSpdReqPCU		ECS Speed Request PCU
CoolFanReq		Cooling Control Proprietary
VehicleMode		Operator Vehicle Mode Request
HybPropMode		Hybrid Propulsion Mode Request
Chrg/Dischrg		Stored Energy Source Charge/Discharge Rate
EnrgySourceSP		Stored Energy Source Setpoint Request
CruiseCtrlOut <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States out
Spd-RequestBC <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit BCSE
Spd-RequestKE <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit KE
Spd-TachoShaft <sub>1,2,3,4,5,6,7</sub> *	1623	Tachograph output shaft speed
DroopAccelItr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Nominal speed switch	Choose nominal engine speed with these switches.
	NSSW1                      NSSW2                      Nominal speed
	0                                      0                                      Use changeable calibration parameter
	1                                      0                                      1500 RPM
	0                                      1                                      1800 RPM
	1                                      1                                      Low idle command
Torque Limit	Choosing between 4 different torque limit curves (if available)
	TLSW1                                      TLSW2                                      Torque limit
	0    0                                      Highest torque limit curve. (Curve 0)
	1    0                                      Low torque limit curve. (Curve 1)
	0    1                                      User defined curve. (Curve 2)
	1    1                                      User defined curve. (Curve 3)
APP - Nominal Speed Offset	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

## Recommended wiring TBA

Function	Controller
CAN H	CAN1 (extension modules/J1939) – CAN H
CAN COM	CAN1 (extension modules/J1939) – CAN COM
CAN L	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A
Battery - (negative)	N/A










Key Switch	Any binary output configured as ECU PwrRelay
Analog Speed Control	SG OUT
Analog Speed Control	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

Available list of texts of fault codes see **Scania S8 Singlespeed Fault Codes on page 1437**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania PCU aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast

## S6 Singlespeed

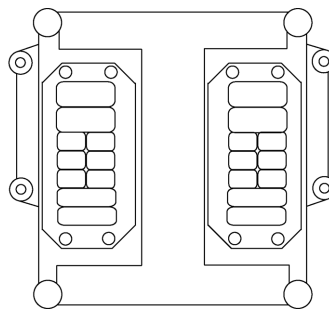


Image 5.157 S6

## Controllers that support the S6

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters for singlespeed

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
LowOilLvl		Low Engine Oil Level
HiOilLvl		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHi		High Engine Coolant Temp

PowerLostHiTmp		Power Lost Due to High Temp
StopLimExceed		Engine stop limit exceed
LowUreaLvl		Low Urea Level
Charge		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
Spd-SngleDroop		Single Speed Droop Value
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Droop <sub>4,5,6,7</sub>		Droop Enable
Torque		Torque Enable
Start <sub>4,5,6,7</sub>		Engine Start
Stop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
NSS1 <sub>4,5,6,7</sub>		Nominal Speed Switch 1
NSS2 <sub>4,5,6,7</sub>		Nominal Speed Switch 2
TorqLimit1		Torque Limit 1
TorqLimit2		Torque Limit 2
ExhBrakeFSw		Exhaust Brake Floor Switch
ExhBrakeASw		Exhaust Brake Brake Assist Switch
IdleCommand		Idle Command
WhiteSmokeLim		White Smoke Limit Request
Droop		Droop Adjust Enable
DroopInc		Droop Adjust Increase
DroopDec		Droop Adjust Decrease
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch

CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DLN2Version		Version of DLN-messages Configuration
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>4,5,6,7</sub>		Nominal Speed Offset
Retarder		Retarder Selection
Droop		Requested Droop
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Droop enable	Enable or disable droop function. The droop value is changeable with calibration parameter or with TSC-proprietary. The recommended source value for this command is Logical 0.
Torque enable	The calculated output torque of the engine. The data is transmitted in indicated torque as a percent of reference engine torque. The engine percent torque value will not be less than zero and it includes the torque developed in the cylinders required to overcome friction. The recommended source value for this command is Logical 0.
Engine Start	The command used for engine running. The recommended source value for this command is



	Starter.		
Emergency Engine Stop	Normally used for engine emergency stop. When used it will set an error- / information code. The recommended source value for this command is Logical 0.		
Engine Stop	Normally used for engine emergency stop. Engine Stop (without error code).		
Nominal Speed	Choose nominal engine speed with these switches.		
	NSSW1	NSSW2	Nominal speed
	0	0	Use changeable calibration parameter
	1	0	1500 RPM
	0	1	1800 RPM
Torque Limit	1	1	Low idle command
	Choosing between 4 different torque limit curves (if available)		
	TLSW1	TLSW2	Torque limit
	0	0	Highest torque limit curve. (Curve 0)
	1	0	Low torque limit curve. (Curve 1)
	0	1	User defined curve. (Curve 2)
	1	1	User defined curve. (Curve 3)

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelGen <sup>NT</sup> or IntelSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelDrive DCU, IntelDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

## Recommended wiring









Function	ECU B1 connector	8pin diagnostic connector	Controller
CAN H	9	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	10	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,6	1,3,4	N/A
Battery - (negative)	2,7	2,5	N/A
Key Switch	3	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Scania S6 Singlespeed Fault Codes on page 1431**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S6 Singlespeed aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## S6 Allspeed

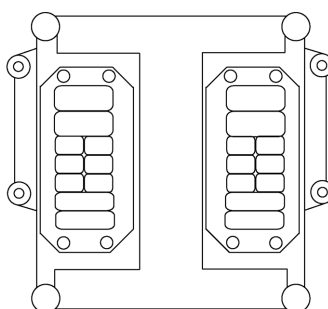


Image 5.158 S6

### Controllers that support the S6

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters for allspeed

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
LowOilLvl		Low Engine Oil Level
HiOilLvl		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHi		High Engine Coolant Temp
PowerLostHiTmp		Power Lost Due to High Temp
StopLimExceed		Engine stop limit exceed
LowUreaLvl		Low Urea Level
Charge		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
Spd-SngleDroop		Single Speed Droop Value
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp

WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start <sub>4,5,6,7</sub>		Engine Start
SDStop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
RetarderOff		Retarder Speed Control Offswitch
RetarderSet		Retarder Speed Control Setswitch
LampTest		Lamp Test
CCOff		Cruise Control Off
IdleSw1 <sub>4,5,6,7</sub>		Increased Idle Speed switch 1
IdleSw2 <sub>4,5,6,7</sub>		Increased Idle Speed switch 2
TorqLimit1		Torque Limit 1
TorqLimit2		Torque Limit 2
ExhBrakeFSw		Exhaust Brake Floor Switch
ExhBrakeASw		Exhaust Brake Brake Assist Switch
IdleCommand <sub>4,5,6,7</sub>		Idle Command
WhiteSmokeLim		White Smoke Limit Request
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DLN2Version		Version of DLN-messages Configuration
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1

T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFSootThr <sub>1,2,3,4,5,6,7</sub>	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
LowIdleSw <sub>4,5,6,7</sub>		AP Low Idle Switch Released
KickdownSw <sub>4,5,6,7</sub>		AP kickdown switch
Retarder		Retarder Selection
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Increased Speed Sw	Choose between 4 different PTO (power take off) modes.
	ISSW1                      ISSW2                      PTO-mode
	0                              0                              Normal hand throttle
	1                              0                              Limited hand throttle
	0                              1                              Temporary changed low idle
Torque Limit	1                              1                              Locked engine speed
	Choosing between 4 different torque limit curves (if available)
	TLSW1                      TLSW2                      Torque limit
	0                              0                              Highest torque limit curve. (Curve 0)
	1                              0                              Low torque limit curve. (Curve 1)
Accelerator Pedal Position	0                              1                              User defined curve. (Curve 2)
	1                              1                              User defined curve. (Curve 3)
	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm).

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A









## Recommended wiring

Function	ECU B1 connector	8pin diagnostic connector	Controller
<b>CAN H</b>	9	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	10	7	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,6	1,3,4	N/A
<b>Battery - (negative)</b>	2,7	2,5	N/A
<b>Key Switch</b>	3	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Scania S6 Allspeed Fault Codes on page 1432**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S6 Allspeed aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## S6 Allspeed Main

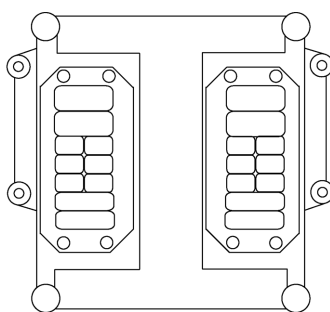


Image 5.159 S6

### Controllers that support the S6 Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters for allspeed

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
LowOilLvl		Low Engine Oil Level
HiOilLvl		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHi		High Engine Coolant Temp
PowerLostHiTmp		Power Lost Due to High Temp
StopLimExceed		Engine stop limit exceed
LowUreaLvl		Low Urea Level
Charge		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
Spd-SngleDroop		Single Speed Droop Value
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Engine Start
SDStop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
RetarderOff		Retarder Speed Control Offswitch
RetarderSet		Retarder Speed Control Setswitch
LampTest		Lamp Test
CCOff		Cruise Control Off
IdleSw1 <sub>4,5,6,7</sub>		Increased Idle Speed switch 1
IdleSw2 <sub>4,5,6,7</sub>		Increased Idle Speed switch 2
TorqLimit1		Torque Limit 1
TorqLimit2		Torque Limit 2
ExhBrakeFSw		Exhaust Brake Floor Switch
ExhBrakeASw		Exhaust Brake Brake Assist Switch
IdleCommand <sub>4,5,6,7</sub>		Idle Command
WhiteSmokeLim		White Smoke Limit Request
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
DiagTestMode <sub>1,2,3,4,5,6,7</sub>	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DLN2Version		Version of DLN-messages Configuration
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear

DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFSootThr <sub>1,2,3,4,5,6,7</sub>	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
LowIdleSw <sub>4,5,6,7</sub>		AP Low Idle Switch Released
KickdownSw <sub>4,5,6,7</sub>		AP kickdown switch
Retarder		Retarder Selection
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function		
Increased Speed Sw	Choose between 4 different PTO (power take off) modes.		
	ISSW1	ISSW2	PTO-mode
	0	0	Normal hand throttle
	1	0	Limited hand throttle
	0	1	Temporary changed low idle
Torque Limit	1	1	Locked engine speed
	Choosing between 4 different torque limit curves (if available)		
	TLSW1	TLSW2	Torque limit
	0	0	Highest torque limit curve. (Curve 0)
	1	0	Low torque limit curve. (Curve 1)
Accelerator Pedal Position	0	1	User defined curve. (Curve 2)
	1	1	User defined curve. (Curve 3)
Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm).			

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for InteliGen <sup>NT</sup> or InteliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for InteliDrive DCU, InteliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A











### Recommended wiring

Function	ECU B1 connector	8pin diagnostic connector	Controller
CAN H	9	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	10	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,6	1,3,4	N/A
Battery - (negative)	2,7	2,5	N/A
Key Switch	3	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Scania S6 Allspeed Main Fault Codes on page 1**

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S6 Allspeed Main aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

### S8 Singlespeed

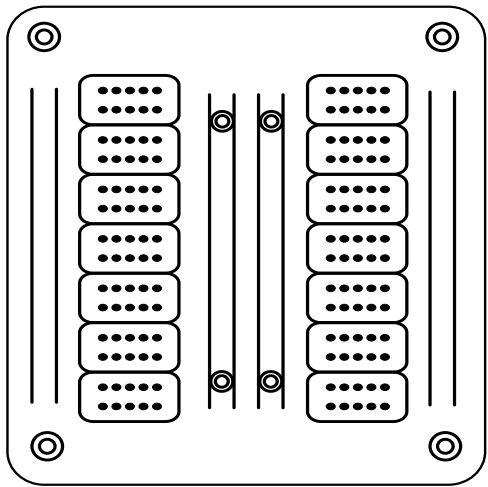


Image 5.160 The S8 ECU

## Controllers that support the S8

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due to High Temp
EngStopLimit		Engine stop limit exceed
Charge61		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
IncorrectDrv		Incorrect Driver Initiated Engine Shut Down
GasLeakage		Gas Leakage
AirFiltClogged		Engine Air Filter Clogged
OBDreact mode		Emission-OBD reactivation mode
Afterrun		Afterrun Status
AFTClogged		Aftertreatment Clogged Status
AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
CoordinatAlive		Coordinator Stay Alive Request
deSOx Heatup		deSOx heatup request
TrubDontShudn		Turbine Temperature Do Not Shutdown Engine
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status

DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFit	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab	6877	SCR Operator Inducement Override Enable
SCRInducRenew	7343	SCR Operator Inducement Override Renewal Required
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Droop <sub>4,5,6,7</sub>		Droop enable
Torque		Torque enable
Start <sub>4,5,6,7</sub>		Engine Start
Stop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop (without error code)
NSSW1 <sub>4,5,6,7</sub>		Nominal speed switch 1 (NSSW1)
NSSW2 <sub>4,5,6,7</sub>		Nominal speed switch 2 (NSSW2)
TorqueLimit1 <sub>4,5,6,7</sub>		Torque Limit 1
TorqueLimit2 <sub>4,5,6,7</sub>		Torque Limit 2
ExhBrakeFloor		Exhaust brake floor switch
ExhBrakeAssist		Exhaust brake - Brake Assist Switch
Idle		Idle Command
WhiteSmokeRed		White smoke limit request
DPFActivation		DPF Manual Activation
DPFInhibit		DPF Manual Inhibit
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status

RoadSpeedGov		Road Speed Governor (Speed Limiter)
BmIdleSpdIncRq		Battery Management Idle Speed Increase Request
EngSpdLimit		Static Engine Speed Limit Request
ParkingBrake	70	Parking Brake Switch
CCEnable	596	Cruise Control Enable Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>5,6,7</sub>	6881	SCR Operator Inducement Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
UreaLevelLow		Low Urea Level
SSDroop		Single Speed Droop Value
Malfunction		Malfunction Indicator
OilLevelMeas		Engine Oil Level Measuring Status
StarterTemp		Starter Motor Temp Status
DPFRegenState <sub>5</sub>		DPF Regeneration State
OBDFailReason		Emission-OBD inducement failure reason
Spd-LimitTime		Time to speed limiting
FuelLevel		Fuel Level
Trq-LimitTime		Time to Torque Limiting
TorqueLimit		Torque Limit
ActualECA		Actual ECA Mode
DLNVersion		Version Of DLN Messages Configuration
UreaLevel <sub>4,5,6,7</sub>		Urea Level
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
OBDDucement <sub>5</sub>		Emission-OBD inducement state
HCEvapStatus		HC Evaporation Status
HCEvapAction		HC Evaporation Required Action
HCEvapPrgsTime		HC Evaporation Progress Countdown Timer
HCEvapStTime		HC Evaporation Action Start Countdown Timer
SulphurRegReq		Sulphur Regeneration request
UreaLevelState <sub>5</sub>		Urea level inducement state
CoolFanSpd		Cooling Fan Speed
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
KeySwitch	158	Key Switch Battery Potential
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed

EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TranGear	523	Transmission Current Gear
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkLevel	3517	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEFTnkVolume	3532	Aftertreatment 1 Diesel Exhaust Fluid Tank Level/Volume Preliminary FMI
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
SCR1IntTempFMI	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSootThr	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
SCRIndOvrTime	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr	6880	Total Number of SCR Operator Inducement Override Events
SCRInducEmeO	7341	SCR Operator Inducement Emergency Override Total Reset Occurrences
SCRInducMode	7342	SCR Operator Inducement Override Mode
SCRInducTime	7344	SCR Operator Inducement Override Time Remaining (Extended Range)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
SpeedOffset <sub>4,5,6,7</sub>		Nominal speed offset/Requested Torque
Retarder		Retarder Selection
EmissionArea		Requested Emission Controlled Area Mode
ReqGenPWM		Requested Generator PWM
ReqTorque	518	Engine Requested Torque/Torque Limit
OverrideMode	695	Engine Override Control Mode
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested	898	Engine Requested Speed/Speed Limit
DroopAccelrtr1	2881	Engine Droop Accelerator 1 Select

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function		
Nominal speed switch	Choose nominal engine speed with these switches.		
	NSSW1	NSSW2	Nominal speed
	0	0	Use changeable calibration parameter
	1	0	1500 RPM
	0	1	1800 RPM
	1	1	Low idle command
Torque Limit	Choosing between 4 different torque limit curves (if available)		
	TLSW1	TLSW2	Torque limit
	0	0	Highest torque limit curve. (Curve 0)
	1	0	Low torque limit curve. (Curve 1)
	0	1	User defined curve. (Curve 2)
	1	1	User defined curve. (Curve 3)
APP - Nominal Speed Offset	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally ± 120 rpm, 0% = -120 rpm and 100% = +120 rpm)		
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care		

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	7	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	1,4	N/A
Battery - (negative)	N/A	2,5	N/A
Key Switch	N/A	3	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Scania S8 Singlespeed Fault Codes on page 1437**

**Aftertreatment lamp**

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S8 Singlespeed aftertreatment lamps									
	Solid On		Solid On		Not Supported		Solid On		
	Blink slow		Blink slow				Blink slow		
	Blink fast		Blink fast				Blink fast		
			Solid On		Solid On				
	Solid On		Blink slow		Blink slow		Solid On		
			Blink fast		Blink fast				

**S8 Singlespeed Main**

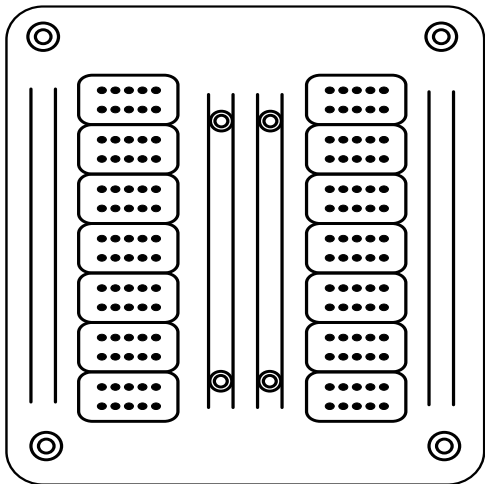


Image 5.161 The S8 ECU

**Controllers that support the S8 Main**

Refer to [Compatibility Table \(page 10\)](#)

**Available parameters**

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due to High Temp
EngStopLimit		Engine stop limit exceed

Charge61		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
IncorrectDrv		Incorrect Driver Initiated Engine Shut Down
GasLeakage		Gas Leakage
AirFiltClogged		Engine Air Filter Clogged
OBDreact mode		Emission-OBD reactivation mode
Afterrun		Afterrun Status
AFTClogged		Aftertreatment Clogged Status
AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
CoordinatAlive		Coordinator Stay Alive Request
deSOx Heatup		deSOx heatup request
TrubDontShudn		Turbine Temperature Do Not Shutdown Engine
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust



		Temperature
DPFInhSysFit	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab	6877	SCR Operator Inducement Override Enable
SCRInducRenew	7343	SCR Operator Inducement Override Renewal Required
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Droop <sub>4,5,6,7</sub>		Droop enable
Torque		Torque enable
Start <sub>4,5,6,7</sub>		Engine Start
Stop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop (without error code)
NSSW1 <sub>4,5,6,7</sub>		Nominal speed switch 1 (NSSW1)
NSSW2 <sub>4,5,6,7</sub>		Nominal speed switch 2 (NSSW2)
TorqueLimit1 <sub>4,5,6,7</sub>		Torque Limit 1
TorqueLimit2 <sub>4,5,6,7</sub>		Torque Limit 2
ExhBrakeFloor		Exhaust brake floor switch
ExhBrakeAssist		Exhaust brake - Brake Assist Switch
Idle		Idle Command
WhiteSmokeRed		White smoke limit request
DPFActivation		DPF Manual Activation
DPFInhibit		DPF Manual Inhibit
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status
RoadSpeedGov		Road Speed Governor (Speed Limiter)
BmIdleSpdIncRq		Battery Management Idle Speed Increase Request
EngSpdLimit		Static Engine Speed Limit Request
ParkingBrake	70	Parking Brake Switch
CCEnable	596	Cruise Control Enable Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>5,6,7</sub>	6881	SCR Operator Inducement Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
UreaLevelLow		Low Urea Level
SSDroop		Single Speed Droop Value
Malfunction		Malfunction Indicator

OilLevelMeas		Engine Oil Level Measuring Status
StarterTemp		Starter Motor Temp Status
DPFRegenState <sub>5</sub>		DPF Regeneration State
OBDFailReason		Emission-OBD inducement failure reason
Spd-LimitTime		Time to speed limiting
FuelLevel		Fuel Level
Trq-LimitTime		Time to Torque Limiting
TorqueLimit		Torque Limit
ActualECA		Actual ECA Mode
DLNVersion		Version Of DLN Messages Configuration
UreaLevel <sub>4,5,6,7</sub>		Urea Level
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
OBDInducement <sub>5</sub>		Emission-OBD inducement state
HCEvapStatus		HC Evaporation Status
HCEvapAction		HC Evaporation Required Action
HCEvapPrgsTime		HC Evaporation Progress Countdown Timer
HCEvapStTime		HC Evaporation Action Start Countdown Timer
SulphurRegReq		Sulphur Regeneration request
UreaLevelState <sub>5</sub>		Urea level inducement state
CoolFanSpd		Cooling Fan Speed
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
KeySwitch	158	Key Switch Battery Potential
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TranGear	523	Transmission Current Gear
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkLevel	3517	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEFTnkVolume	3532	Aftertreatment 1 Diesel Exhaust Fluid Tank Level/Volume Preliminary FMI
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command

DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
SCR1IntTempFMI	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSootThr	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
SCRIndOvrTime	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr	6880	Total Number of SCR Operator Inducement Override Events
SCRInducEmeO	7341	SCR Operator Inducement Emergency Override Total Reset Occurrences
SCRInducMode	7342	SCR Operator Inducement Override Mode
SCRInducTime	7344	SCR Operator Inducement Override Time Remaining (Extended Range)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
SpeedOffset <sub>4,5,6,7</sub>		Nominal speed offset/Requested Torque
Retarder		Retarder Selection
EmissionArea		Requested Emission Controlled Area Mode
ReqGenPWM		Requested Generator PWM
ReqTorque	518	Engine Requested Torque/Torque Limit
OverrideMode	695	Engine Override Control Mode
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested	898	Engine Requested Speed/Speed Limit
DroopAccelTr1	2881	Engine Droop Accelerator 1 Select

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function		
Nominal speed switch	Choose nominal engine speed with these switches.		
	NSSW1	NSSW2	Nominal speed
	0	0	Use changeable calibration parameter
	1	0	1500 RPM
	0	1	1800 RPM
Torque Limit	1	1	Low idle command
	Choosing between 4 different torque limit curves (if available)		
	TLSW1	TLSW2	Torque limit
	0	0	Highest torque limit curve. (Curve 0)
	1	0	Low torque limit curve. (Curve 1)
	0	1	User defined curve. (Curve 2)

	1	1	User defined curve. (Curve 3)
APP - Nominal Speed Offset	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm)		
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care		

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelGen <sup>NT</sup> or IntelSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelDrive DCU, IntelDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	7	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	1,4	N/A
<b>Battery - (negative)</b>	N/A	2,5	N/A
<b>Key Switch</b>	N/A	3	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Scania S8 Singlespeed Main Fault Codes on page 1444**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Scania S8 Singlespeed Main aftertreatment lamps

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On

## S8 Allspeed

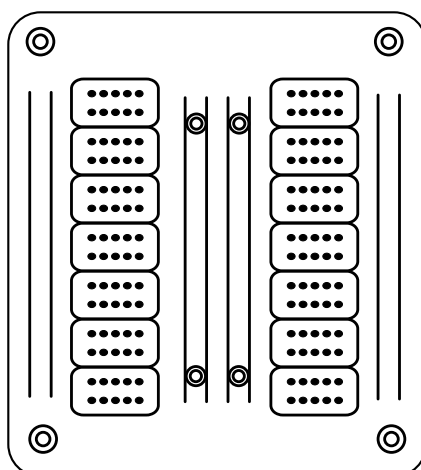


Image 5.162 The S8 ECU

## Controllers that support the S8

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due to High Temp
EngStopLimit		Engine stop limit exceed
Charge61		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
IncorrectDrv		Incorrect Driver Initiated Engine Shut Down
GasLeakage		Gas Leakage
AirFitClogged		Engine Air Filter Clogged
OBDreact mode		Emission-OBD reactivation mode
AfterRun		AfterRun Status
AFTClogged		Aftertreatment Clogged Status

AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
CoordinatAlive		Coordinator Stay Alive Request
deSOx Heatup		deSOx heatup request
TrubDontShudn		Turbine Temperature Do Not Shutdown Engine
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfuncLamp	1213	Malfunction Indicator Lamp
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed

		Below Allowed Speed
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab	6877	SCR Operator Inducement Override Enable
SCRInducRenew	7343	SCR Operator Inducement Override Renewal Required
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APLowIdle <sub>4,5,6,7</sub>		AP Low Idle Switch Released
APKickdown <sub>4,5,6,7</sub>		AP kickdown switch
Start <sub>4,5,6,7</sub>		Engine Start
SDStop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
LampTest		Lamp Test
CCOff		Cruise Control Off
IdleSpdSw1 <sub>4,5,6,7</sub>		Increased Idle speed switch 1
IdleSpdSw2 <sub>4,5,6,7</sub>		Increased Idle speed switch 2
TorqueLim1 <sub>4,5,6,7</sub>		Torque Limit 1
TorqueLim2 <sub>4,5,6,7</sub>		Torque Limit 2
ExhBrakeFloor		Exhaust brake floor switch
ExhBrakeFloor		Exhaust brake Brake Assist Switch
Idle <sub>4,5,6,7</sub>		Idle Command
WhtSmokeLim		White smoke limit request
DPFActivation		DPF Manual Activation
DPFInhibit		DPF Manual Inhibit
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status
RoadSpeedGov		Road Speed Governor (Speed Limiter)
BmIdleSpdIncRq		Battery Management Idle Speed Increase Request
EngSpdLimit		Static Engine Speed Limit Request
ParkingBrake	70	Parking Brake Switch
CCEnable	596	Cruise Control Enable Switch
Brake	597	Brake Switch
Clutch	598	Clutch Switch
CCCoast	600	Cruise Control Coast (Decelerate) Switch
CCResume	601	Cruise Control Resume Switch
CCAccelerate	602	Cruise Control Accelerate Switch
DiagTestMode	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DLNVersion		Version Of DLN Messages Configuration
DPFRegenState <sub>5</sub>		DPF Regeneration State
UreaLevelLow		Low Urea Level
SSDroop		Single Speed Droop Value
UreaLevel <sub>4,5,6,7</sub>		Urea Level

Malfunction		Malfunction Indicator
OilLevelMeas		Engine Oil Level Measuring Status
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
StarterTemp		Starter Motor Temp Status
OBDInducement <sub>5</sub>		Emission-OBD inducement state
Spd-LimitTime		Time to speed limiting
UreaLevel <sub>5</sub>		Urea level inducement state
OBDFailReason		Emission-OBD inducement failure reason
Trq-LimitTime		Time to Torque Limiting
TorqueLimit		Torque Limit
FuelLevel		Fuel Level
ActualECA		Actual ECA Mode
HCEvapStatus		HC Evaporation Status
HCEvapAction		HC Evaporation Required Action
HCEvapPrgsTime		HC Evaporation Progress Countdown Timer
HCEvapStTime		HC Evaporation Action Start Countdown Timer
SulphurRegReq		Sulphur Regeneration request
CoolFanSpd		Cooling Fan Speed
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
KeySwitch	158	Key Switch Battery Potential
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TranGear	523	Transmission Current Gear
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkLevel	3517	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEFTnkVolume	3532	Aftertreatment 1 Diesel Exhaust Fluid Tank Level/Volume Preliminary FMI
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status



DPFSootLoad <sub>6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>4,5</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
SCR1IntTempFMI	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSootThr	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
SCRIndOvrTime	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr	6880	Total Number of SCR Operator Inducement Override Events
SCRInducEmeO	7341	SCR Operator Inducement Emergency Override Total Reset Occurrences
SCRInducMode	7342	SCR Operator Inducement Override Mode
SCRInducTime	7344	SCR Operator Inducement Override Time Remaining (Extended Range)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
RetardedOff <sub>4,5,6,7</sub>		Retarder Speed Control OffSwitch
RetarderSet <sub>4,5,6,7</sub>		Retarder Speed Control SetSwitch
Retarder		Retarder Selection
EmissionArea		Requested Emission Controlled Area Mode
ReqGenPWM		Requested Generator PWM
ReqTorque	518	Engine Requested Torque/Torque Limit
OverrideMode	695	Engine Override Control Mode
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested	898	Engine Requested Speed/Speed Limit
DroopAccelItr1	2881	Engine Droop Accelerator 1 Select

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function
Accelerator Pedal Position	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A







## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	7	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	1,4	N/A
<b>Battery - (negative)</b>	N/A	2,5	N/A
<b>Key Switch</b>	N/A	3	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Scania S8 Allspeed Fault Codes on page 1434**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S8 Allspeed aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast
					Solid On

## S8 Allspeed Main

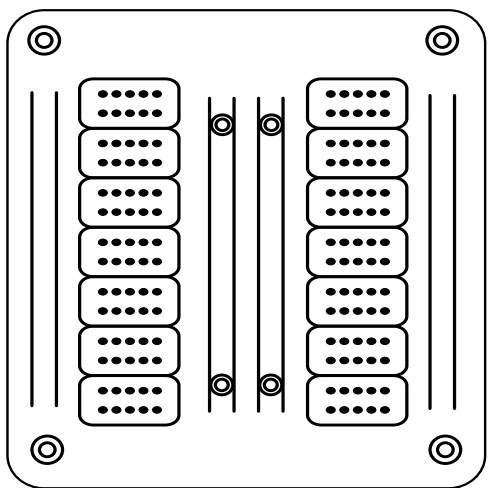


Image 5.163 The S8 ECU

### Controllers that support the S8 Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due to High Temp
EngStopLimit		Engine stop limit exceed
Charge61		Charge 61
TestLamp		Test Engine Lamp
Diagnostic		Diagnostic Status
NewDTC		New DTC
IncorrectDrv		Incorrect Driver Initiated Engine Shut Down
GasLeakage		Gas Leakage
AirFitClogged		Engine Air Filter Clogged
OBDreact mode		Emission-OBD reactivation mode
AfterRun		AfterRun Status
AFTClogged		Aftertreatment Clogged Status
AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
CoordinatAlive		Coordinator Stay Alive Request
deSOx Heatup		deSOx heatup request

TrubDontShudn		Turbine Temperature Do Not Shutdown Engine
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab	6877	SCR Operator Inducement Override Enable
SCRInducRenew	7343	SCR Operator Inducement Override Renewal Required

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
APLowIdle <sub>4,5,6,7</sub>		AP Low Idle Switch Released
APKickdown <sub>4,5,6,7</sub>		AP kickdown switch
Start <sub>4,5,6,7</sub>		Engine Start
SDStop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
LampTest		Lamp Test
CCOff		Cruise Control Off
IdleSpdSw1 <sub>4,5,6,7</sub>		Increased Idle speed switch 1
IdleSpdSw2 <sub>4,5,6,7</sub>		Increased Idle speed switch 2
TorqueLim1 <sub>4,5,6,7</sub>		Torque Limit 1
TorqueLim2 <sub>4,5,6,7</sub>		Torque Limit 2
ExhBrakeFloor		Exhaust brake floor switch
ExhBrakeFloor		Exhaust brake Brake Assist Switch
Idle <sub>4,5,6,7</sub>		Idle Command
WhtSmokeLim		White smoke limit request
DPFActivation		DPF Manual Activation
DPFInhibit		DPF Manual Inhibit
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status
RoadSpeedGov		Road Speed Governor (Speed Limiter)
BmIdleSpdIncRq		Battery Management Idle Speed Increase Request
EngSpdLimit		Static Engine Speed Limit Request
ParkingBrake	70	Parking Brake Switch
CCEnable	596	Cruise Control Enable Switch
Brake	597	Brake Switch
Clutch	598	Clutch Switch
CCCoast	600	Cruise Control Coast (Decelerate) Switch
CCResume	601	Cruise Control Resume Switch
CCAccelerate	602	Cruise Control Accelerate Switch
DiagTestMode	966	Engine Diagnostic Test Mode Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DLNVersion		Version Of DLN Messages Configuration
DPFRegenState <sub>5</sub>		DPF Regeneration State
UreaLevelLow		Low Urea Level
SSDroop		Single Speed Droop Value
UreaLevel <sub>4,5,6,7</sub>		Urea Level
Malfunction		Malfunction Indicator
OilLevelMeas		Engine Oil Level Measuring Status
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
StarterTemp		Starter Motor Temp Status
OBDInducement <sub>5</sub>		Emission-OBD inducement state

Spd-LimitTime		Time to speed limiting
UreaLevel <sub>5</sub>		Urea level inducement state
OBDFailReason		Emission-OBD inducement failure reason
Trq-LimitTime		Time to Torque Limiting
TorqueLimit		Torque Limit
FuelLevel		Fuel Level
ActualECA		Actual ECA Mode
HCEvapStatus		HC Evaporation Status
HCEvapAction		HC Evaporation Required Action
HCEvapPrgsTime		HC Evaporation Progress Countdown Timer
HCEvapStTime		HC Evaporation Action Start Countdown Timer
SulphurRegReq		Sulphur Regeneration request
CoolFanSpd		Cooling Fan Speed
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel	98	Engine Oil Level
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
KeySwitch	158	Key Switch Battery Potential
T-Oil	175	Engine Oil Temperature 1
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
TranGear	523	Transmission Current Gear
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
DEFTnkLevel	3517	Aftertreatment 1 Diesel Exhaust Fluid Tank Level
DEFTnkVolume	3532	Aftertreatment 1 Diesel Exhaust Fluid Tank Level/Volume Preliminary FMI
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>4,5</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature

SCR1IntTempFMI	4361	Aftertreatment 1 SCR Intake Temperature Preliminary FMI
SCR1OutTempFMI	4362	Aftertreatment 1 SCR Outlet Temperature Preliminary FMI
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DPFSootThr	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
SCRIndOvrTime	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr	6880	Total Number of SCR Operator Inducement Override Events
SCRInducEmeO	7341	SCR Operator Inducement Emergency Override Total Reset Occurrences
SCRInducMode	7342	SCR Operator Inducement Override Mode
SCRInducTime	7344	SCR Operator Inducement Override Time Remaining (Extended Range)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
RetardedOff <sub>4,5,6,7</sub>		Retarder Speed Control OffSwitch
RetarderSet <sub>4,5,6,7</sub>		Retarder Speed Control SetSwitch
Retarder		Retarder Selection
EmissionArea		Requested Emission Controlled Area Mode
ReqGenPWM		Requested Generator PWM
ReqTorque	518	Engine Requested Torque/Torque Limit
OverrideMode	695	Engine Override Control Mode
ReqSpeedCC	696	Engine Requested Speed Control Conditions
CtrlMdPriority	897	Override Control Mode Priority
Spd-Requested	898	Engine Requested Speed/Speed Limit
DroopAccelItr1	2881	Engine Droop Accelerator 1 Select

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function		
Nominal speed switch	Choose nominal engine speed with these switches.		
	NSSW1	NSSW2	Nominal speed
	0	0	Use changeable calibration parameter
	1	0	1500 RPM
	0	1	1800 RPM
Torque Limit	1	1	Low idle command
	Choosing between 4 different torque limit curves (if available)		
	TLSW1	TLSW2	Torque limit
	0	0	Highest torque limit curve. (Curve 0)
	1	0	Low torque limit curve. (Curve 1)
	0	1	User defined curve. (Curve 2)
	1	1	User defined curve. (Curve 3)

APP - Nominal Speed Offset	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A





## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	7	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	1,4	N/A
<b>Battery - (negative)</b>	N/A	2,5	N/A
<b>Key Switch</b>	N/A	3	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Scania S8 Allspeed Main Fault Codes on page 1440**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S8 Allspeed Main aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported
					Solid On Blink slow Blink fast



	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On
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## S8 SCR

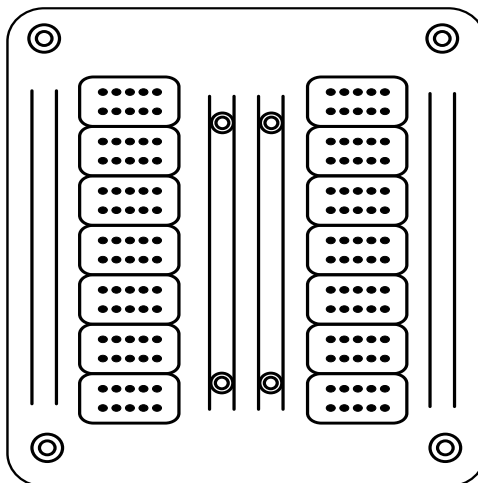


Image 5.164 The S8 ECU

### Controllers that support the S8 SCR

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

There are not available parameters. This ECU module only allows to read diagnostic messages.

### Recommended wiring









Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	7	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	1,4	N/A
<b>Battery - (negative)</b>	N/A	2,5	N/A
<b>Key Switch</b>	N/A	3	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Scania S8 Allspeed Att Fault Codes on page 1447**

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S8 Allspeed Att aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## S10 Allspeed

### Controllers that support the S10

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
OilLevelLow		Low Engine Oil Level
OilLevelHigh		High Engine Oil Level
P-OilLow		Low Engine Oil Pressure
T-CoolantHigh		High Engine Coolant Temp
T-HightPwrLost		Power Lost Due to High Temp
EngStopLimit		Engine stop limit exceed
Charge61		Charge 61
T-TNoSdEng		Turbine Temperature Do Not Shutdown Engine
IncorrectDrv		Incorrect Driver Initiated Engine Shut Down
AirFitClogged		Engine Air Filter Clogged
Afterrun		Afterrun Status
AFTClogged		Aftertreatment Clogged Status
AFTManBypass		Aftertreatment Manual Bypass Request
AFTPortVlv		Aftertreatment Port Valve Status
AFTBypassVlv		Aftertreatment Bypass Valve Status
AFTExotherm		Aftertreatment Exotherm Status
AFTManBypass		Aftertreatment Manual Bypass Status
CoordinatAlive		Coordinator Stay Alive Request
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp 0x3D
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp 0x3D
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp

MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
AccelRateLimit <sub>1,2,3,4,5,6,7</sub>	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInh <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd <sub>1,2,3,4,5,6,7</sub>	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhExhPres <sub>1,2,3,4,5,6,7</sub>	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCRIndOvrEnab <sub>1,2,3,4,5,6,7</sub>	6877	SCR Operator Inducement Override Enable
SCRInducRenew <sub>1,2,3,4,5,6,7</sub>	7343	SCR Operator Inducement Override Renewal Required
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APLowIdle <sub>4,5,6,7</sub>		AP Low Idle Switch Released
APKickdown <sub>4,5,6,7</sub>		AP kickdown switch
Start <sub>4,5,6,7</sub>		Engine Start
SDStop		Engine Stop (with error code)
Stop <sub>4,5,6,7</sub>		Engine Stop
CCOff		Cruise Control Off
IdleSpdSw1 <sub>4,5,6,7</sub>		Increased Idle speed switch 1

IdleSpdSw2 <sub>4,5,6,7</sub>		Increased Idle speed switch 2
TorqueLim1 <sub>4,5,6,7</sub>		Torque Limit 1
TorqueLim2 <sub>4,5,6,7</sub>		Torque Limit 2
ExhBrakeFloor		Exhaust brake floor switch
ExhBrakeFloor		Exhaust brake Brake Assist Switch
Idle <sub>4,5,6,7</sub>		Idle Command
DesorbStatus <sub>4,5,6,7</sub>		Desorbition Granted Status
RoadSpeedGov		Road Speed Governor (Speed Limiter)
BattSpeedReq		Battery Management Idle Speed Increase Request
StatEngSpeed		Static Engine Speed Limit Request
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
SdOverride <sub>1,2,3,4,5,6,7</sub>	1237	Engine Shutdown Override Switch
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
SCROverride <sub>1,2,3,4,5,6,7</sub>	6881	SCR Operator Inducement Override Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
UreaLevelLow		Low Urea Level
EngCtrlMode		Engine Control Mode
EngRunState		Engine Running State
ExpDLN1		ExpectedDLN1Version
OilLevelMeas		Engine Oil Level Measuring Status
EngOilCntdwn		Engine Oil Level Countdown Timer
CoolWatFlow		Coolant Water Flow
DPFRegenState <sub>5</sub>		DPF Regeneration State
CoolFanSpeed		Cooling Fan Speed
ApVehSpLimPr		Applied Vehicle Speed Limit Proprietary
MaxVehSpeedLim		Max Vehicle Speed Limit
Trq-LimitTime		Time to Torque Limiting
TorqueLimit		Torque Limit
ActualECA		Actual ECA Mode
PerfSelect7		Performance Selection DLN7
TorqueLimInfo		Torque Limit Information
DLNVersion		Version Of DLN Messages Configuration
UreaLevel <sub>4,5,6,7</sub>		Urea Level
DPFRegenTimer <sub>5</sub>		DPF Regeneration Countdown Timer
HCEvapStatus		HC Evaporation Status
HCEvapAction		HC Evaporation Required Action
HCEvapPrgsTime		HC Evaporation Progress Countdown Timer
HCEvapStTime		HC Evaporation Action Start Countdown Timer
UreaLevelState <sub>5</sub>		Urea level inducement state

EPCSDTime		Exhaust Particulate Control System Diagnostic Time
EPCSDCount		Exhaust Particulate Control System Diagnostic Count
TotECURunTime <sub>1,2,3,4,5,6,7</sub>		Total ECU Run Time
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
IntAirMassFlow <sub>1,2,3,4,5,6,7</sub>	132	Engine Intake Air Mass Flow Rate
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DEFConcentrat <sub>1,2,3,4,5,6,7</sub>	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFDosingQ <sub>1,2,3,4,5,6,7</sub>	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity

T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1CatalInt <sub>1,2,3,4,5,6,7</sub>	4765	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature
T-AT1CatalOut <sub>1,2,3,4,5,6,7</sub>	4766	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
DPFSootThr <sub>1,2,3,4,5,6,7</sub>	5466	Aftertreatment 1 Diesel Particulate Filter Soot Load Regeneration Threshold
Emission <sub>1,2,3,4,5,6,7</sub>	5826	Emission Control System Operator Inducement Severity
TotalDEFUsed <sub>1,2,3,4,5,6,7</sub>	5963	Aftertreatment 1 Total Diesel Exhaust Fluid Used
TripDEF <sub>1,2,3,4,5,6,7</sub>	6563	Aftertreatment Trip Diesel Exhaust Fluid
SCRIndOvrTime <sub>1,2,3,4,5,6,7</sub>	6878	SCR Operator Inducement Override Time Remaining
NrOvrEventRem <sub>1,2,3,4,5,6,7</sub>	6879	Number of SCR Operator Inducement Override Events Remaining
SCRInducOvr <sub>1,2,3,4,5,6,7</sub>	6880	Total Number of SCR Operator Inducement Override Events
SCRInducEmeO <sub>1,2,3,4,5,6,7</sub>	7341	SCR Operator Inducement Emergency Override Total Reset Occurrences
SCRInducMode <sub>1,2,3,4,5,6,7</sub>	7342	SCR Operator Inducement Override Mode
SCRInducTime <sub>1,2,3,4,5,6,7</sub>	7344	SCR Operator Inducement Override Time Remaining (Extended Range)
TorqueDerateL1 <sub>1,2,3,4,5,6,7</sub>	7425	Operator Inducement Torque Derate Level 1
TimeToDerateL1 <sub>1,2,3,4,5,6,7</sub>	7426	Operator Inducement Time to Torque Derate Level 1
TimeFinal <sub>1,2,3,4,5,6,7</sub>	7719	Operator Inducement Time to Final Inducement Action
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>4,5,6,7</sub>		Accelerator Pedal Position
Retarder		Retarder Selection
EmissionArea		Requested Emission Controlled Area Mode
ReqCooling		Request Cooling Fan Speed
P-HighRes		High Resolution Barometric Pressure
PerfSelect		Performance Selection
ReqGenPWM		Requested Generator PWM
ReqVehSpeedLim		Requested Vehicle Speed Limit
EnFlywhTorqL		EngineFlywheelTorquelimit
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit
DroopAcceltr1 <sub>1,2,3,4,5,6,7</sub>	2881	Engine Droop Accelerator 1 Select

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Accelerator Pedal Position	Nominal speed offset (if Torque enable is "Engine speed control"). Increase or decrease the reference speed (with or without droop) in relation to nominal speed. The offset range is changeable with calibration parameters. (normally $\pm 120$ rpm, 0% = -120 rpm and 100% = +120 rpm)
DPF Manual Activation	0 – No request 1 – Invalidated manual regeneration request 2 - Manual regeneration request 3 – 13 – Reserved 14 – Error 15 – Don't care

## Controller's analog output for speed control configuration

APP - Nominal Speed Offset settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
APP - Nominal Speed Offset settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A









## Recommended wiring

Function	10-pin EMS connector	Controller
<b>CAN H</b>	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	7	CAN1 (extension modules/J1939) – CAN L
<b>Engine Running</b>	8	N/A

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Scania S10 Allspeed Fault Codes on page 1451**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Scania S8 Allspeed aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Solid On Blink slow Blink fast
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On

## 6.1.40 Siemens engines support

ECU Type	Engine type
<a href="#">GCS-E (page 604)</a>	SGE-HM

### GCS-E

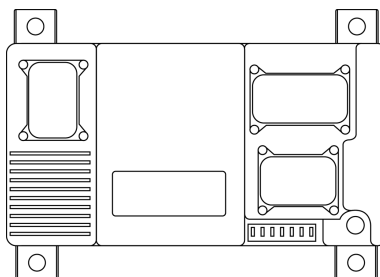


Image 5.165 GCS-E

### Controllers that support the GCS-E

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Alarm		Alarm
Autocarb fin		Autocarburetion Finished
Autocarb Runn		Autocarburetion Running
Engine ready		Engine is ready to load
Engine Running		Engine Running
FuelBlendingON		Fuel Blending On (FB)
Gas Request		Gas Request
Idle		Idle = 1
GasRequest		Natural Gas request (FB)
NOx1 sens err		NOx_1 sensor error
NOx2 sens err		Nox_2 sensor error
Post-cool ON		Post-cooling On
PowerDerate		Power Derate
PowerDerateHGT		Power derate due to high Gas Throttle #1 opening (FB)
PowerDerateLGP		Power derate due to Low
PowerDerateLB		Power derate due to low biogas pressure (FB)
PrechamValve		Prechamber Valve
Pre-lube fin		Pre-lubrication finished
Pre-lube ON		Pre-lubrication On
Ramp Stop		Ramp Stop
RatioDerateHGT		Ratio derate due to high Gas Throttle #1 opening (FB)
RatioDerateLB		Ratio derate due to low biogas pressure (FB)
RatioDerateLGP		Ratio derate due to Low Generated Power (FB)



Shutdown		Shutdown
Vent Valve Fb		Vent Valve Feedback
Vent Valve Sp		Vent Valve Setpoint
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ActiStarterCra		ActStarterCranking
CH4onCrank		CH4 on cranks
Cooling Type		Cooling type selector
RatioPowerDera		Derate type selector
Drain Oil		Drain oil
Droop		Droop Activation
EmergencyStop		Emergency Stop (cut post lube)
CH4 EstControl		Enable CH4 estimation control
PowCtrlIsland		Enable load control on island
EnaPreheatings		Enable Oil/Water Preheatings
EnSpeedSP		Enable Speed Set point
FastStop <sub>4,6,7</sub>		Fast Stop (Fuel On)
ForceTiming		Force timing
GasSel		Gas Selector On (Gas 1/Gas 2)
GasTypeOnCrank		Gas Type on cranks
GCB		Generator Breaker
Idle/Rated		Idle - Rated
Lower		Lower
ResetPartHours		Partial hours reset
PreLubrication		Pre-Lubrication
Raise		Raise
Ramp Stop out		Ramp Stop out
Start		Start
Start Autocarb		Start Autocarburetion
MCB		Utility Breaker
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AppFBlendRatio		Applied Fuel Blending ratio (FB)
AutocarbPow Sp		Autocarburetion Power Sp
AuxWaterTemp		Aux Water Circuit Temp. Setpoint Natural Gas Pressure (FB)
T-AuxWater*		Auxiliary Water Circuit Temperature
Bypass2PosFb		Bypass 2 Position Feedback
Bypass2PosSp		Bypass 2 Position Set point
CoolRemTime		Cooling remaining time
Serial		Engine serial number (1)
Engine State		Engine State
EngineTiming		Engine Timing
P-ExhaustLeft		Exhaust Pressure Left Bank
P-ExhaustRight		Exhaust Pressure Right Bank
First Alarm		First Alarm
GasQ-CL corr		Gas Qual Close Loop Correction
GasValveSP		Gas Valve Setpoint

GeneratedEnrg		Generated Energy
HrsMaintStop		Hours to maintenance stop
KnockIntensC1		Knocking Intensity C1
KnockIntensC10		Knocking Intensity C10
KnockIntensC11		Knocking Intensity C11
KnockIntensC12		Knocking Intensity C12
KnockIntensC13		Knocking Intensity C13
KnockIntensC14		Knocking Intensity C14
KnockIntensC15		Knocking Intensity C15
KnockIntensC16		Knocking Intensity C16
KnockIntensC2		Knocking Intensity C2
KnockIntensC3		Knocking Intensity C3
KnockIntensC4		Knocking Intensity C4
KnockIntensC5		Knocking Intensity C5
KnockIntensC6		Knocking Intensity C6
KnockIntensC7		Knocking Intensity C7
KnockIntensC8		Knocking Intensity C8
KnockIntensC9		Knocking Intensity C9
Knocking Level		Knocking Level
LambdaDesired		Lambda Desired
MWtrCircTemp*		Main Water Circuit Temperature 2
MAP 2		MAP 2
Misfire Level		Misfire Level
NatGasFlow		Natural Gas Flow (FB)
NatGasValveSP		Natural Gas Valve Setpoint (FB)
NOX1 emmissions		NOX 1 emissions
NOx2 emmissions		Nox_2 emissions
P-OilChrg RB		Oil Charger Pressure Right Bank
P-OilFilterIn		Oil Pressure Filter Input
PartialHours		Partial hours
PostCoolRmTime		Post-cooling remaining time
P-PrechamGas		Prechamber Gas Pressure
PrechamP-Reg		Prechamber Pressure Regulator Sp
PreLubeRmTime		Pre-lubrication remaining time
ProgValve1 Fb		Progressive valve 1 feedback (FB)
ProgValve1 Sp		Progressive valve 1 setpoint (FB)
ProgValve2 Fb		Progressive valve 2 feedback (FB)
ProgValve2 Sp		Progressive valve 2 setpoint (FB)
PTP 2		PTP 2
P-RailInGas		Rail Input Gas Pressure
TimeNextCrank		Time to next crank attempt
Timing Cyl 1		Timing Cylinder 1
Timing Cyl 10		Timing Cylinder 10
Timing Cyl 11		Timing Cylinder 11
Timing Cyl 12		Timing Cylinder 12
Timing Cyl 13		Timing Cylinder 13
Timing Cyl 14		Timing Cylinder 14

Timing Cyl 15		Timing Cylinder 15
Timing Cyl 16		Timing Cylinder 16
Timing Cyl 2		Timing Cylinder 2
Timing Cyl 3		Timing Cylinder 3
Timing Cyl 4		Timing Cylinder 4
Timing Cyl 5		Timing Cylinder 5
Timing Cyl 6		Timing Cylinder 6
Timing Cyl 7		Timing Cylinder 7
Timing Cyl 8		Timing Cylinder 8
Timing Cyl 9		Timing Cylinder 9
TotalEffCorr		Total Efficiency Correction
StartAttempts		Total start attempts
T-TurboOilOUT		Turbo Oil Outlet Temperature
T-WaterPreheat		Water Preheating Temperature
ThrottlePos1	51	Mixture Throttle Position
BypassPosFeedb	72	Bypass Position Feedback
Load <sub>4,5,6,7</sub>	92	Calculated Load Percentage
P-Oil <sub>4,5,6,7</sub>	100	Lube Oil Pressure
PTP <sub>14,5,6,7</sub>	102	PTP 1
P-TurboLubeOil	104	Engine Turbocharger Lube Oil Pressure 1
MAT <sub>4,5,6,7</sub>	105	MAT
MAP 1	106	MAP 1
P-Atmospheric	108	Atmospheric Pressure
P-JW	109	Main Water Circuit Pressure
T-JW <sub>4,5,6,7</sub>	110	Main Water Circuit Temperature
BattVoltage	158	Battery Voltage
Pwr-Measured	166	Engine Measured Power
T-AmbientAir	171	Air Ambient Temperature
T-AirIntake1	172	Inlet Temperature
T-Gas	174	Gas Temperature Biogas Temperature
T-Oil	175	Lube Oil Temperature
T-TurboOilIn	176	Engine Turbocharger Oil Inlet Temperature
Gas Flow <sub>4,5,6,7</sub>	183	Desired Fuel Flow Desired Biogas Flow (FB)
Spd-Reference*	189	Engine Speed Reference
EngineSpeed <sub>4,5,6,7</sub>	190	Filtered Speed
TotalRuntime <sub>4,5,6,7</sub>	247	Total Runtime
T-ExhCyl 1	1137	Exhaust Temperature Cylinder 1
T-ExhCyl 2	1138	Exhaust Temperature Cylinder 2
T-ExhCyl 3	1139	Exhaust Temperature Cylinder 3
T-ExhCyl 4	1140	Exhaust Temperature Cylinder 4
T-ExhCyl 5	1141	Exhaust Temperature Cylinder 5
T-ExhCyl 6	1142	Exhaust Temperature Cylinder 6
T-ExhCyl 7	1143	Exhaust Temperature Cylinder 7
T-ExhCyl 8	1144	Exhaust Temperature Cylinder 8
T-ExhCyl 9	1145	Exhaust Temperature Cylinder 9
T-ExhCyl 10	1146	Exhaust Temperature Cylinder 10
T-ExhCyl 11	1147	Exhaust Temperature Cylinder 11

T-ExhCyl 12	1148	Exhaust Temperature Cylinder 12
T-ExhCyl 13	1149	Exhaust Temperature Cylinder 13
T-ExhCyl 14	1150	Exhaust Temperature Cylinder 14
T-ExhCyl 15	1151	Exhaust Temperature Cylinder 15
T-ExhCyl 16	1152	Exhaust Temperature Cylinder 16
P-AuxCoolant	1203	Auxiliary Water Circuit Pressure
T-AuxCoolant	1212	Auxiliary Water Temperature
Calc Power	1242	Calculated Power
SparkVoltage1*	1294	Engine Spark Voltage 1
SparkVoltage2*	1295	Engine Spark Voltage 2
SparkVoltage3*	1296	Engine Spark Voltage 3
SparkVoltage4*	1297	Engine Spark Voltage 4
SparkVoltage5*	1298	Engine Spark Voltage 5
SparkVoltage6*	1299	Engine Spark Voltage 6
SparkVoltage7*	1300	Engine Spark Voltage 7
SparkVoltage8*	1301	Engine Spark Voltage 8
SparkVoltage9*	1302	Engine Spark Voltage 9
SparkVoltage10*	1303	Engine Spark Voltage 10
SparkVoltage11*	1304	Engine Spark Voltage 11
SparkVoltage12*	1305	Engine Spark Voltage 12
SparkVoltage13*	1306	Engine Spark Voltage 13
SparkVoltage14*	1307	Engine Spark Voltage 14
SparkVoltage15*	1308	Engine Spark Voltage 15
SparkVoltage16*	1309	Engine Spark Voltage 16
P-AbsInGas	1390	Absolute Inlet Gas Pressure Absolute Inlet Biogas Pressure (FB)
P-FuelDiff	1391	Outlet to Inlet Fuel Valve Differential Pressure Outlet to Inlet Biogas Valve Differential Pressure (FB)
Gas Flow	1440	Gas Flow Gas Flow Biogas (FB)
Mixture Flow	1441	Mixture Flow
ActGasVlvPos	1442	Actual Gas Valve Position Actual Biogas Valve Position (FB)
ActNGasVlvPos	1443	Actual Natural Gas Valve Position (FB)
WasteGatePos	1693	Waste Gate Position
MixThrottlePos	1765	Mixture Throttle Position Set point
Bypass Pos	1766	Bypass Position Set point
T-ExhPostTurR	2433	Exhaust Temperature After Turbo Right Bank
T-ExhPostTurL	2434	Exhaust Temperature After Turbo Left Bank
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AFRtrim		AFR Trim
CoolingSpeed		Cooling speed
CoolingTime		Cooling Time
CrankMaxNum		Crank MaxNum
CrankTime1		Crank time
DelayCrank		Delay Cranks
PDesWr <sub>4,7</sub>		Desired Power
Droop Value		Droop Value
Emissions		Emissions level selector

Timing		Forced timing
FuelBlendMaxRt		Fuel Blending maximum ratio
FuelBlend Mode		Fuel Blending mode
FuelBlendRatio		Fuel Blending ratio
CH4Wr		Gas Quality (%CH4)
GasType		Gas type selector(natural, landfill sewage) Biogas type selector (natural, landfill, sewage) (FB)
PMeasWr <sub>4,7</sub>		Measured Power
MinPowPcent		Minimum Power Percent
NOx SP		NOx (ppm) set point
PowerDownRamp		Power down ramp
PowerUpRamp		Power up ramp
Process Value		Process Value
PurgeTime		Purge time
RatedSpeed		Rated speed
Reset Pin		Reset pin
SpeedBiasWR <sub>4,7</sub>		Speed Bias Set point
SpeedDownRamp		Speed down ramp
SpeedUpRamp		Speed up ramp
Starting RPM		Starting RPM
TeffCorr		Teff Correction
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU connector	Controller
<b>CAN H</b>	J2-007	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	J2-015	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	J2-008	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	J1-121	N/A
<b>Battery - (negative)</b>	J1-122,123	N/A
<b>Key Switch</b>	J1-012	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see Siemens GCS-E Fault Codes on page 1454**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Siemens GCS-E aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.41 Sinotruck engines support

ECU Type	Engine type
<b>BBM (page 611)</b>	MC11 series
<b>BBM Main (page 613)</b>	MC11 series
<b>BBM Alarms (page 617)</b>	MC11 series
<b>BBM Tank Fuel (page 615)</b>	MC11 series

## BBM

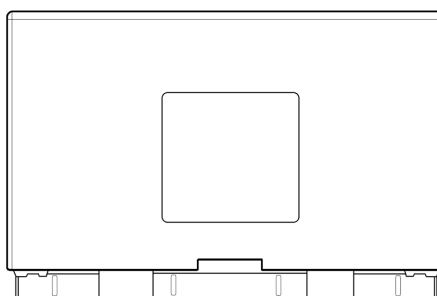


Image 5.166 BBM

### Controllers that support the BBM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Coolant AL		Water Temperature Alarm
P-Oil AL		Oil Pressure Alarm
Voltage AL		Voltage Alarm
P-Air AL		Air Pressure Alarm
TranPowNotPlce		Transmission Power take-off is not in place
BroknShftDrivn		Broken Shaft (first shaft) power take-off driven
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Engine Start
Stop <sub>4,5,6,7</sub>		Engine Stop
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU ST connector	Controller
<b>CAN H</b>	1.14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.16	N/A
<b>Battery - (negative)</b>	4.15,4.18	N/A
<b>Key Switch</b>	4.17	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Sinotruk BBM Fault Codes on page 1454**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Sinotruk BBM aftertreatment lamps			
	Not Supported		Not Supported
			Not Supported
			
			Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



	Not Supported		Not Supported		Not Supported		Not Supported
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## BBM Main

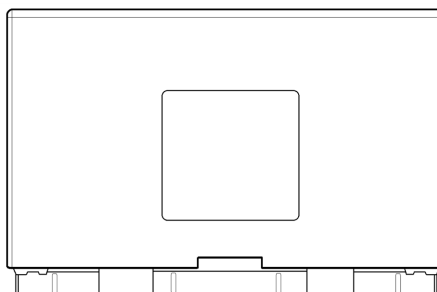


Image 5.167 BBM

### Controllers that support the BBM Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Engine Start
Stop <sub>4,5,6,7</sub>		Engine Stop
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.





## Recommended wiring

Function	ECU ST connector	Controller
<b>CAN H</b>	1.14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.16	N/A
<b>Battery - (negative)</b>	4.15,4.18	N/A
<b>Key Switch</b>	4.17	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Sinotruk BBM Main Fault Codes on page 1454**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Sinotruk BBM Main aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Not Supported		Not Supported		Not Supported		Not Supported
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## BBM Tank Fuel

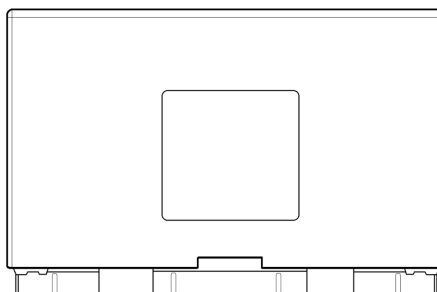


Image 5.168 BBM

### Controllers that support the BBM Tank Fuel

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelLevel1<sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	ECU ST connector	Controller
<b>CAN H</b>	1.14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.16	N/A
<b>Battery - (negative)</b>	4.15,4.18	N/A
<b>Key Switch</b>	4.17	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Sinotruk BBM TankFuel aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## BBM Alarms

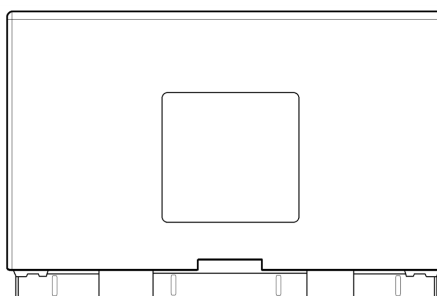


Image 5.169 BBM

### Controllers that support the BBM Alarms

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Coolant AL		Water Temperature Alarm
P-Oil AL		Oil Pressure Alarm
Voltage AL		Voltage Alarm
P-Air AL		Air Pressure Alarm
TranPowNotPice		Transmission Power take-off is not in place
BroknShftDrivn		Broken Shaft (first shaft) power take-off driven
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	ECU ST connector	Controller
<b>CAN H</b>	1.14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.16	N/A
<b>Battery - (negative)</b>	4.15,4.18	N/A
<b>Key Switch</b>	4.17	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Sinotruk BBM Alarms aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.42 Standard J1939 engines support

ECU Type	Engine type
<a href="#">Standard J1939 engine (page 619)</a>	supports only J1939-71 parameters
<a href="#">Standard J1939 monitor (page 629)</a>	supports only J1939-71 parameters without control functionality
<a href="#">Standard J1939 generator (page 783)</a>	supports only J1939-75 parameters

## Standard J1939 engine

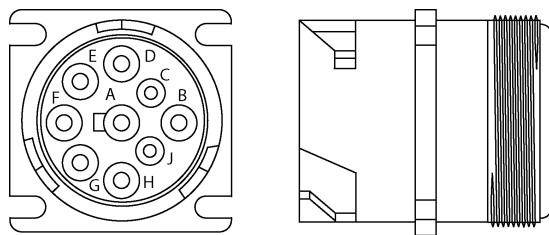


Image 5.170 Standard J1939 engine

### Controllers that support the Standard J1939 engine

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
FuelShtoff1	632	Engine Fuel Shutoff 1 Control
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach	1109	Engine Protection System Approaching Shutdown
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfuncLamp	1213	Malfunction Indicator Lamp
FuelLeakage1	1239	Engine Fuel Leakage 1
FuelLeakage2	1240	Engine Fuel Leakage 2
TranShiftInhib	1851	Transmission Shift Inhibit Indicator
TranMode1Ind	2536	Transmission Mode 1 Indicator
TranMode2Ind	2537	Transmission Mode 2 Indicator
TranMode3Ind	2538	Transmission Mode 3 Indicator
TranMode4Ind	2539	Transmission Mode 4 Indicator
FuelShtoff2	2807	Engine Fuel Shutoff 2 Control
TranCrnkEnable	2900	Transmission Engine Crank Enable
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT1IntDewPoint	3237	Aftertreatment 1 Intake Dew Point

AT1ExhDewPoint	3238	Aftertreatment 1 Exhaust Dew Point
AT1Regen	3483	Aftertreatment 1 Regeneration Status
OilPrimPmp	3550	Engine Oil Priming Pump Switch
CoolPreHeated	3553	Engine Coolant Pre-heated State
SDRequest	3606	Engine Controlled Shutdown Request
ESDRequest	3607	Engine Emergency (Immediate) Shutdown Indication
DPFPassive	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFit	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhConfig	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
DPFNoMetRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
TranMode7Ind	4252	Transmission Mode 7 Indicator
TranMode8Ind	4253	Transmission Mode 8 Indicator
MalfuncCmd	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp	5081	Engine Brake Active Lamp Command
P-LowOilLamp	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp	5084	Engine Coolant Level Low Lamp Command
IdleLamp	5085	Engine Idle Management Active Lamp Command
AirFitLamp	5086	Engine Air Filter Restriction Lamp Command
HydrocarbPurg	5504	Hydrocarbon Doser Purging Enable



ColdStrRelayF	5550	Engine Cold Start Fuel Igniter Relay Feedback
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCR InhSwitch <sub>5</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake	70	Parking Brake Switch
CCEnable	596	Cruise Control Enable Switch
Brake	597	Brake Switch
Clutch	598	Clutch Switch
CCCoast	600	Cruise Control Coast (Decelerate) Switch
CCResume	601	Cruise Control Resume Switch
CCAccelerate	602	Cruise Control Accelerate Switch
TranDefuel	786	Transmission Defuel Actuator
DiagTestMode	966	Engine Diagnostic Test Mode Switch
IdleDecrement	967	Engine Idle Decrement Switch
IdleIncrement	968	Engine Idle Increment Switch
RemAccelEnable	969	Remote Accelerator Enable Switch
AuxShutdown <sub>4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
DerateSw	971	Engine Derate Switch
PTOEnable	980	Engine PTO Governor Enable Switch
PTOAccelerate	981	Engine PTO Governor Accelerate Switch
PTOResume	982	Engine PTO Governor Resume Switch
PTODecelerate	983	Engine PTO Governor Coast/Decelerate Switch
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
ControlMode <sub>4,5,6,7</sub>	3542	Requested Engine Control Mode
NotInAuto	3567	Generator Control Not In Automatic Start State
NotParellelRd	3568	Generator Not Ready to Automatically Parallel State
RegenInhibit <sub>4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
GovSpdCmd	4079	Generator Governing Speed Command
StartRequest <sub>4,5,6,7</sub>	7745	Engine Start Request
StartAbort <sub>4,5,6,7</sub>	7747	Engine Start Abort Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-ExtCrankcase	22	Engine Extended Crankcase Blow-by Pressure
APP2	29	Accelerator Pedal Position 2
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-FuelFltDiff	95	Engine Fuel Filter Differential Pressure
OilLevel	98	Engine Oil Level
P-OilFltDiff	99	Engine Oil Filter Differential Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure

P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-CoolFiltrDiff	112	Engine Coolant Filter Differential Pressure
P-HydroRtrdr	119	Hydraulic Retarder Pressure
P-OilTransm	127	Transmission Oil Pressure
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1*	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1InjMR1	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
P-GasFuelSppl	159	Engine Gaseous Fuel Supply Pressure 1
Spd-TranShaft*	161	Transmission Input Shaft Speed
Pwr-Rated	166	Engine Rated Power
SysCharging	167	Charging System Potential (Voltage)
Battery	168	Battery Potential / Power Input 1
T-CabInterior	170	Cab Interior Temperature
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
T-TransOil	177	Transmission Oil Temperature 1
TripFuel	182	Engine Trip Fuel
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated*	189	Engine Rated Speed
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft*	191	Transmission Output Shaft Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1	441	Auxiliary Temperature 1
T-Auxiliary2	442	Auxiliary Temperature 2
V-BatteryInp2	444	Battery Potential / Power Input 2
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
Spd-DesAsym	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque	520	Actual Retarder - Percent Torque

TranGear	523	Transmission Current Gear
TranGearSelec	524	Transmission Selected Gear
TranReqGear	525	Transmission Requested Gear
FuelActCmd	633	Engine Fuel Actuator 1 Control Command
TorqMode	899	Engine Torque Mode
APPRemote	974	Remote Accelerator Pedal Position
Fan1EstSpd	975	Engine Fan 1 Estimated Percent Speed
TripAFuelRate	1029	Trip Average Fuel Rate
GasFuelCrrFct	1116	Gaseous Fuel Correction Factor
T-AltBearing1	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3	1126	Engine Alternator Winding 3 Temperature
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost*	1128	Engine Turbocharger 2 Boost Pressure
P-Turbo3Boost*	1129	Engine Turbocharger 3 Boost Pressure
P-Turbo4Boost*	1130	Engine Turbocharger 4 Boost Pressure
T-IntManifold2	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4	1133	Engine Intake Manifold 4 Temperature
ChAirThermost	1134	Engine Charge Air Cooler Thermostat Opening
T-ECU	1136	Engine ECU Temperature
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2	1169	Engine Turbocharger 2 Speed
Spd-Turbo3	1170	Engine Turbocharger 3 Speed
T-Turbo1CInt	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake	1176	Engine Turbocharger 1 Compressor Intake Pressure

P-Turbo2Intake	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo3Int	1182	Engine Turbocharger 3 Turbine Intake Temperature
T-Turbo4Int	1183	Engine Turbocharger 4 Turbine Intake Temperature
T-Turbo1Out	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate	1241	Engine Fuel System 1 Gas Mass Flow Rate
Pwr-Brake	1242	Instantaneous Estimated Brake Power
P-Fuel1Inj2*	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
Cyl 1KnockLvl	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl	1361	Engine Cylinder 10 Knock Level
Cyl11KnockLvl	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl	1371	Engine Cylinder 20 Knock Level
P-Auxiliary1	1387	Auxiliary Pressure #1
FuelGravity	1389	Engine Fuel Specific Gravity
P-Fuel1VlvInt	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff	1391	Engine Fuel Valve 1 Differential Pressure
P-AirFuelDiff	1392	Engine Air to Fuel Differential Pressure
Cyl 1IgnOutput	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput	1396	Engine Cylinder 4 Ignition Transformer Secondary Output
Cyl 5IgnOutput	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput	1402	Engine Cylinder 10 Ignition Transformer Secondary Output

Cyl11IgnOutput	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput	1405	Engine Cylinder 13 Ignition Transformer Secondary Output
Cyl14IgnOutput	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime1	1433	Engine Desired Ignition Timing 1
IgnitionTime	1436	Engine Actual Ignition Timing
FuelVlvPos1	1442	Engine Fuel Valve 1 Position
SourceAddress	1483	Source Address of Controlling Device for Engine Control
T-Intake	1636	Engine Intake Manifold 1 Temperature (High Resolution)
T-Coolant3	1637	Engine Coolant Temperature (High Resolution)
StarterMode	1675	Engine Starter Mode
TurboWastgate	1693	Engine Turbocharger Wastegate Valve Position
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio	1767	Specific Heat Ratio
T-IntManifold5	1802	Engine Intake Manifold 5 Temperature
T-IntManifold6	1803	Engine Intake Manifold 6 Temperature
TorqueDemand2	2432	Engine Demand - Percent Torque
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut	2435	Sea Water Pump Outlet Pressure
T-Turbo1Outlet	2629	Engine Turbocharger 1 Compressor Outlet Temperature

T-AirCoolerOut	2630	Engine Charge Air Cooler 1 Outlet Temperature
P-ChrgAirCOut	2631	Engine Charge Air Cooler Outlet Pressure
P-AirFilt2Diff	2809	Engine Air Filter 2 Differential Pressure
TorqueEstLoss	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen1	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TranReqFdbk	3289	Transmission Requested Gear Feedback
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
DEFTnkHeater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
ThrottleCmd	3464	Engine Throttle Actuator 1 Control Command
T-1Fuel2	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
T-DEFTnk2	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
DEFConcentrat	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Operating	3543	Engine Operating State
RemainingTime	3544	Time Remaining in Engine Operating State
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
ATS	3547	Automatic Transfer Switch Status
P-IntakeMan2	3562	Engine Intake Manifold #2 Pressure
P-IntakeManAbs	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-DPFOutlet	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DerateRequest	3644	Engine Derate Request
ChrgAirCoolLvl	3668	Engine Charge Air Cooler Coolant Level
ThrottleVlv2	3673	Engine Throttle Valve 2 Position
TurboBpssPos	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
AftcoolCoolLvl	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFAvgConsumpt	3826	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption
T-ExhAverage	4151	Engine Exhaust Temperature Average
T-ExhBank1	4153	Engine Exhaust Bank 1 Temperature Average
DPFRegenForce	4175	Diesel Particulate Filter Active Regeneration Forced Status
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity

SCR1	4332	Aftertreatment 1 SCR System 1 State
P-DEFDoser1	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1GasCatInt	4753	Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature
T-AT1GasCatOut	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
P-IntManAbs	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
TotalFuelUsed3	5054	Engine Total Fuel Used (High Resolution)
DEFLowLevel <sub>5,6</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>5</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FuelFiltInt	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
P-FuelDelivAbs	5578	Engine Fuel Delivery Absolute Pressure
P-FilFuelDeliv	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb	5580	Engine Filtered Fuel Delivery Absolute Pressure
P-ThrottleDiff	5631	Engine Throttle Valve 1 Differential Pressure
P-OilFiltDiffEx	6321	Engine Oil Filter Differential Pressure (Extended Range)
SCR Lamp <sub>5</sub>	6915	SCR System Cleaning Lamp Command
TorqueDerateL1	7425	Operator Inducement Torque Derate Level 1
TimeToDerateL1	7426	Operator Inducement Time to Torque Derate Level 1
TorqueDerateL2	7427	Operator Inducement Torque Derate Level 2
TimeToDerateL2	7428	Operator Inducement Time to Torque Derate Level 2
TimeFinal	7719	Operator Inducement Time to Final Inducement Action
T-AirIntake2	7850	Engine Intake 2 Air Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO	976	PTO Governor State
Pwr-Real*	2452	Generator Total Real Power
AlternatorEffc	4078	Generator Alternator Efficiency
FreqSelect <sub>4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovGainAdj	5567	Engine Speed Governor Gain Adjust
SpdGovDroop	5568	Engine Speed Governor Droop
FuelType	5837	Fuel Type
StartConsent	7746	Engine Start Consent

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.





## Recommended wiring

	9pin diagnostic connector	Controller
<b>CAN H</b>	G	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	C	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	F	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Standard J1939 engine Fault Codes on page 1455**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Standard J1939 engine aftertreatment lamps						
	Solid On		Solid On		Solid On	
	Blink slow		Blink slow			
	Blink fast		Blink fast			
						Solid On
						Blink slow

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported
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## Standard J1939 monitor

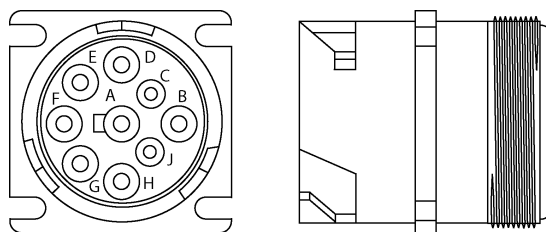


Image 5.171 Standard J1939 engine

## Controllers that support the Standard J1939 monitor

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
AP1LowIdleSw	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
FuelShtoff1	632	Engine Fuel Shutoff 1 Control
IdleDecrement	967	Engine Idle Decrement Switch
IdleIncrement	968	Engine Idle Increment Switch
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach	1109	Engine Protection System Approaching Shutdown
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfuncLamp	1213	Malfunction Indicator Lamp
FuelLeakage1	1239	Engine Fuel Leakage 1
FuelLeakage2	1240	Engine Fuel Leakage 2
TranShiftInhib	1851	Transmission Shift Inhibit Indicator
TranMode1Ind	2536	Transmission Mode 1 Indicator
TranMode2Ind	2537	Transmission Mode 2 Indicator
TranMode3Ind	2538	Transmission Mode 3 Indicator
TranMode4Ind	2539	Transmission Mode 4 Indicator
FuelShtoff2	2807	Engine Fuel Shutoff 2 Control
TranCrnkEnable	2900	Transmission Engine Crank Enable
AccelRateLimit	2979	Vehicle Acceleration Rate Limit Status
FlashMalfunc	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc	3038	Fast Flash Malfunction Indicator Lamp

FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
AT1IntDewPoint	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint	3238	Aftertreatment 1 Exhaust Dew Point
AT1Regen	3483	Aftertreatment 1 Regeneration Status
OilPrimPmp	3550	Engine Oil Priming Pump Switch
CoolPreHeated	3553	Engine Coolant Pre-heated State
SDRequest	3606	Engine Controlled Shutdown Request
ESDRequest	3607	Engine Emergency (Immediate) Shutdown Indication
DPFPassive	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set
DPFInhExhTmp	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhConfig	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
DPFNoMetRegen	3750	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration
TranMode7Ind	4252	Transmission Mode 7 Indicator
TranMode8Ind	4253	Transmission Mode 8 Indicator
MalfunctCmd	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp	5081	Engine Brake Active Lamp Command
P-LowOilLamp	5082	Engine Oil Pressure Low Lamp Command

T-CoolHiLamp	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp	5084	Engine Coolant Level Low Lamp Command
IdleLamp	5085	Engine Idle Management Active Lamp Command
AirFitLamp	5086	Engine Air Filter Restriction Lamp Command
HydrocarbPurg	5504	Hydrocarbon Doser Purging Enable
ColdStrRelayF	5550	Engine Cold Start Fuel Igniter Relay Feedback
DPFInhExhPres	5629	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Pressure
SCR InhSwitch <sub>5</sub>	6918	SCR System Cleaning Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-ExtCrankcase	22	Engine Extended Crankcase Blow-by Pressure
APP2	29	Accelerator Pedal Position 2
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
DPFIntake	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP	91	Accelerator Pedal Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
P-FuelFitDiff	95	Engine Fuel Filter Differential Pressure
OilLevel	98	Engine Oil Level
P-OilFitDiff	99	Engine Oil Filter Differential Pressure
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sub>4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
Spd-Turbo	103	Engine Turbocharger 1 Speed
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-AirFilt1Diff	107	Engine Air Filter 1 Differential Pressure
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-CoolFiltrDiff	112	Engine Coolant Filter Differential Pressure
P-HydroRtrdr	119	Hydraulic Retarder Pressure
P-OilTransm	127	Transmission Oil Pressure
IntAirMassFlow	132	Engine Intake Air Mass Flow Rate
P-Fuel1Inj1*	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1Met*	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-FuelInjMetBk	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch	158	Key Switch Battery Potential
P-GasFuelSppl	159	Engine Gaseous Fuel Supply Pressure 1
Spd-TranShaft*	161	Transmission Input Shaft Speed
Pwr-Rated	166	Engine Rated Power
SysCharging	167	Charging System Potential (Voltage)

Battery	168	Battery Potential / Power Input 1
T-CabInterior	170	Cab Interior Temperature
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake1	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
T-TransOil	177	Transmission Oil Temperature 1
TripFuel	182	Engine Trip Fuel
FuelRate <sub>4,5,6,7</sub>	183	Engine Fuel Rate
Spd-Rated*	189	Engine Rated Speed
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
Spd-OutShaft*	191	Transmission Output Shaft Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>4,5,6,7</sub>	250	Engine Total Fuel Used
T-Auxiliary1	441	Auxiliary Temperature 1
T-Auxiliary2	442	Auxiliary Temperature 2
V-BatteryInp2	444	Battery Potential / Power Input 2
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
Spd-DesAsym	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque	520	Actual Retarder - Percent Torque
TranGear	523	Transmission Current Gear
TranGearSelec	524	Transmission Selected Gear
TranReqGear	525	Transmission Requested Gear
FuelActCmd	633	Engine Fuel Actuator 1 Control Command
TorqMode	899	Engine Torque Mode
APPRemote	974	Remote Accelerator Pedal Position
Fan1EstSpd	975	Engine Fan 1 Estimated Percent Speed
TripAFuelRate	1029	Trip Average Fuel Rate
GasFuelCrrFct	1116	Gaseous Fuel Correction Factor
T-AltBearing1	1122	Engine Alternator Bearing 1 Temperature
T-AltBearing2	1123	Engine Alternator Bearing 2 Temperature
T-AltWinding1	1124	Engine Alternator Winding 1 Temperature
T-AltWinding2	1125	Engine Alternator Winding 2 Temperature
T-AltWinding3	1126	Engine Alternator Winding 3 Temperature
P-Turbo1Boost*	1127	Engine Turbocharger 1 Boost Pressure
P-Turbo2Boost*	1128	Engine Turbocharger 2 Boost Pressure
P-Turbo3Boost*	1129	Engine Turbocharger 3 Boost Pressure
P-Turbo4Boost*	1130	Engine Turbocharger 4 Boost Pressure
T-IntManifold2	1131	Engine Intake Manifold 2 Temperature
T-IntManifold3	1132	Engine Intake Manifold 3 Temperature
T-IntManifold4	1133	Engine Intake Manifold 4 Temperature
ChAirThermost	1134	Engine Charge Air Cooler Thermostat Opening

T-ECU	1136	Engine ECU Temperature
T-ExhPort 1	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20	1156	Engine Exhaust Gas Port 20 Temperature
Spd-Turbo2	1169	Engine Turbocharger 2 Speed
Spd-Turbo3	1170	Engine Turbocharger 3 Speed
T-Turbo1CInt	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake	1176	Engine Turbocharger 1 Compressor Intake Pressure
P-Turbo2Intake	1177	Engine Turbocharger 2 Compressor Intake Pressure
T-Turbo1Int	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo3Int	1182	Engine Turbocharger 3 Turbine Intake Temperature
T-Turbo4Int	1183	Engine Turbocharger 4 Turbine Intake Temperature
T-Turbo1Out	1184	Engine Turbocharger 1 Turbine Outlet Temperature
P-AuxCoolant	1203	Engine Auxiliary Coolant Pressure
P-OilFiltInt	1208	Engine Oil Filter Intake Pressure
T-AuxCoolant	1212	Engine Auxiliary Coolant Temperature
FuelGasFlwRate	1241	Engine Fuel System 1 Gas Mass Flow Rate
Pwr-Brake	1242	Instantaneous Estimated Brake Power
P-Fuel1Inj2*	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
Cyl 1KnockLvl	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl	1360	Engine Cylinder 9 Knock Level
Cyl10KnockLvl	1361	Engine Cylinder 10 Knock Level

Cyl11KnockLvl	1362	Engine Cylinder 11 Knock Level
Cyl12KnockLvl	1363	Engine Cylinder 12 Knock Level
Cyl13KnockLvl	1364	Engine Cylinder 13 Knock Level
Cyl14KnockLvl	1365	Engine Cylinder 14 Knock Level
Cyl15KnockLvl	1366	Engine Cylinder 15 Knock Level
Cyl16KnockLvl	1367	Engine Cylinder 16 Knock Level
Cyl17KnockLvl	1368	Engine Cylinder 17 Knock Level
Cyl18KnockLvl	1369	Engine Cylinder 18 Knock Level
Cyl19KnockLvl	1370	Engine Cylinder 19 Knock Level
Cyl20KnockLvl	1371	Engine Cylinder 20 Knock Level
P-Auxiliary1	1387	Auxiliary Pressure #1
FuelGravity	1389	Engine Fuel Specific Gravity
P-Fuel1VlvInt	1390	Engine Fuel Valve 1 Intake Absolute Pressure
P-FuelDiff	1391	Engine Fuel Valve 1 Differential Pressure
P-AirFuelDiff	1392	Engine Air to Fuel Differential Pressure
Cyl 1IgnOutput	1393	Engine Cylinder 1 Ignition Transformer Secondary Output
Cyl 2IgnOutput	1394	Engine Cylinder 2 Ignition Transformer Secondary Output
Cyl 3IgnOutput	1395	Engine Cylinder 3 Ignition Transformer Secondary Output
Cyl 4IgnOutput	1396	Engine Cylinder 4 Ignition Transformer Secondary Output
Cyl 5IgnOutput	1397	Engine Cylinder 5 Ignition Transformer Secondary Output
Cyl 6IgnOutput	1398	Engine Cylinder 6 Ignition Transformer Secondary Output
Cyl 7IgnOutput	1399	Engine Cylinder 7 Ignition Transformer Secondary Output
Cyl 8IgnOutput	1400	Engine Cylinder 8 Ignition Transformer Secondary Output
Cyl 9IgnOutput	1401	Engine Cylinder 9 Ignition Transformer Secondary Output
Cyl10IgnOutput	1402	Engine Cylinder 10 Ignition Transformer Secondary Output
Cyl11IgnOutput	1403	Engine Cylinder 11 Ignition Transformer Secondary Output
Cyl12IgnOutput	1404	Engine Cylinder 12 Ignition Transformer Secondary Output
Cyl13IgnOutput	1405	Engine Cylinder 13 Ignition Transformer Secondary Output
Cyl14IgnOutput	1406	Engine Cylinder 14 Ignition Transformer Secondary Output
Cyl15IgnOutput	1407	Engine Cylinder 15 Ignition Transformer Secondary Output
Cyl16IgnOutput	1408	Engine Cylinder 16 Ignition Transformer Secondary Output
Cyl17IgnOutput	1409	Engine Cylinder 17 Ignition Transformer Secondary Output
Cyl18IgnOutput	1410	Engine Cylinder 18 Ignition Transformer Secondary Output
Cyl19IgnOutput	1411	Engine Cylinder 19 Ignition Transformer Secondary Output
Cyl20IgnOutput	1412	Engine Cylinder 20 Ignition Transformer Secondary Output
Cyl 1IgnTiming	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming	1424	Engine Cylinder 12 Ignition Timing

Cyl13IgnTiming	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime1	1433	Engine Desired Ignition Timing 1
IgnitionTime	1436	Engine Actual Ignition Timing
FuelVlvPos1	1442	Engine Fuel Valve 1 Position
SourceAddress	1483	Source Address of Controlling Device for Engine Control
T-Intake	1636	Engine Intake Manifold 1 Temperature (High Resolution)
T-Coolant3	1637	Engine Coolant Temperature (High Resolution)
StarterMode	1675	Engine Starter Mode
TurboWastgate	1693	Engine Turbocharger Wastegate Valve Position
DEFTnkLevel <sub>4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
HeatRatio	1767	Specific Heat Ratio
T-IntManifold5	1802	Engine Intake Manifold 5 Temperature
T-IntManifold6	1803	Engine Intake Manifold 6 Temperature
TorqueDemand2	2432	Engine Demand - Percent Torque
T-Exh2Manf1	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-SeaWtrPmpOut	2435	Sea Water Pump Outlet Pressure
Pwr-Real*	2452	Generator Total Real Power
T-Turbo1Outlet	2629	Engine Turbocharger 1 Compressor Outlet Temperature
T-AirCoolerOut	2630	Engine Charge Air Cooler 1 Outlet Temperature
P-ChrgAirCOut	2631	Engine Charge Air Cooler Outlet Pressure
P-AirFilt2Diff	2809	Engine Air Filter 2 Differential Pressure
TorqueEstLoss	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen1	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1ExhFlowRate	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
T-AT1Exh1	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
P-DPFDiff	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TranReqFdbk	3289	Transmission Requested Gear Feedback
TrqMax	3357	Actual Maximum Available Engine - Percent Torque
DEFTnkHeater	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
ThrottleCmd	3464	Engine Throttle Actuator 1 Control Command
T-1Fuel2	3468	Engine Fuel 1 Temperature 2
TurboBpssCmd	3470	Engine Turbocharger Compressor Bypass Actuator 1 Command
T-DEFTnk2	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2

DEFConcentrat	3516	Aftertreatment 1 Diesel Exhaust Fluid Concentration
Operating	3543	Engine Operating State
RemainingTime	3544	Time Remaining in Engine Operating State
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
ATS	3547	Automatic Transfer Switch Status
P-IntakeMan2	3562	Engine Intake Manifold #2 Pressure
P-IntakeManAbs	3563	Engine Intake Manifold #1 Absolute Pressure
P-DPFIntake	3609	Aftertreatment 1 Diesel Particulate Filter Intake Pressure
P-DPFOutlet	3610	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure
DerateRequest	3644	Engine Derate Request
ChrgAirCoolLvl	3668	Engine Charge Air Cooler Coolant Level
ThrottleVlv2	3673	Engine Throttle Valve 2 Position
TurboBpssPos	3675	Engine Turbocharger Compressor Bypass Actuator 1 Position
AftcoolCoolLvl	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HEST Lamp <sub>4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFAvgConsmpt	3826	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption
T-ExhAverage	4151	Engine Exhaust Temperature Average
T-ExhBank1	4153	Engine Exhaust Bank 1 Temperature Average
DPFRegenForce	4175	Diesel Particulate Filter Active Regeneration Forced Status
DEFDosingQ	4331	Aftertreatment 1 Diesel Exhaust Fluid Actual Dosing Quantity
SCR1	4332	Aftertreatment 1 SCR System 1 State
P-DEFDoser1	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet	4363	Aftertreatment 1 SCR Outlet Temperature
T-AT1GasCatInt	4753	Aftertreatment 1 Gas Oxidation Catalyst Intake Temperature
T-AT1GasCatOut	4754	Aftertreatment 1 Gas Oxidation Catalyst Outlet Temperature
P-IntManAbs	4817	Engine Intake Manifold 1 Absolute Pressure (High Resolution)
TotalFuelUsed3	5054	Engine Total Fuel Used (High Resolution)
DEFLowLevel <sub>5,6</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>5</sub>	5246	Aftertreatment SCR Operator Inducement Severity
P-FuelFltInt	5417	Engine Fuel Filter (Suction Side) Intake Absolute Pressure
P-FuelDelivAbs	5578	Engine Fuel Delivery Absolute Pressure
P-FilFuelDeliv	5579	Engine Filtered Fuel Delivery Pressure
P-FilFuelDelAb	5580	Engine Filtered Fuel Delivery Absolute Pressure
P-ThrottleDiff	5631	Engine Throttle Valve 1 Differential Pressure
FuelType	5837	Fuel Type
P-OilFltDiffEx	6321	Engine Oil Filter Differential Pressure (Extended Range)
SCR Lamp <sub>5</sub>	6915	SCR System Cleaning Lamp Command
TorqueDerateL1	7425	Operator Inducement Torque Derate Level 1
TimeToDerateL1	7426	Operator Inducement Time to Torque Derate Level 1
TorqueDerateL2	7427	Operator Inducement Torque Derate Level 2



TimeToDerateL2	7428	Operator Inducement Time to Torque Derate Level 2
TimeFinal	7719	Operator Inducement Time to Final Inducement Action
T-AirIntake2	7850	Engine Intake 2 Air Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500








## Recommended wiring

	9pin diagnostic connector	Controller
<b>CAN H</b>	G	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	C	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	F	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Standard J1939 monitor Fault Codes on page 1476**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Standard J1939 monitor aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported

## 6.1.43 Steyr engines support

ECU Type	Engine type
<a href="#">M1 (page 638)</a>	Marine engines
<a href="#">EDC17 (page 639)</a>	Diesel engines

### M1

#### Controllers that support the M1

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Warning		Engine Warning Light
Preheating		Preheating Control Light
OilPressure		Engine Oil Pressure Light
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Steyr M1 Fault Codes on page 1483**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Steyr M1 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EDC17

### Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch Rx
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
ShiftSwitch <sub>1,2,3,4,5,6,7</sub>	572	Retarder Enable - Shift Assist Switch
CCActive <sub>1,2,3,4,5,6,7</sub>	595	Cruise Control Active Rx
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch Rx
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch Rx
CCSet <sub>1,2,3,4,5,6,7</sub>	599	Cruise Control Set Switch Rx
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
CoolantLoadInc <sub>1,2,3,4,5,6,7</sub>	1082	Engine Coolant Load Increase

EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-ExtCrankcase <sub>1,2,3,4,5,6,7</sub>	22	Engine Extended Crankcase Blow-by Pressure
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
CruiseCSetSpd <sub>1,2,3,4,5,6,7</sub>	86	Cruise Control Set Speed Rx
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
CruseControl <sub>1,2,3,4,5,6,7</sub>	527	Cruise Control States Rx
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode

TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State Rx
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	1085	Intended Retarder Percent Torque
Spd-Fan <sub>1,2,3,4,5,6,7*</sub>	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDriver <sub>1,2,3,4,5,6,7</sub>	1715	Drivers Demand Retarder - Percent Torque
RetSelection <sub>1,2,3,4,5,6,7</sub>	1716	Retarder Selection, non-engine
TorqueActMax <sub>1,2,3,4,5,6,7</sub>	1717	Actual Maximum Available Retarder - Percent Torque
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
ThrottleVlv2 <sub>1,2,3,4,5,6,7</sub>	3673	Engine Throttle Valve 2 Position
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500


## Recommended wiring

No documentation available so far!

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Steyr EDC17 Fault Codes on page 1483**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Steyr EDC17 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.44 TPEM devices support

ECU Type	Device type supported
<a href="#">TPEM (page 641)</a>	

## TPEM

## Controllers that support the TPEM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T604 CV		T604 CV exhaust air sensor error
T404 CV		T404 CV supply air 10 K too high
G987 CV		G987 CV inlet flap limit stop opened
G988 CV		G988 CV inlet flap limit stop closed
G350 CV		G350 CV outlet flap limit stop opened
G351 CV		G351 CV outlet flap limit stop closed
G555 CV		G555 CV circulation flap limit stop opened
G354 CV		G354 CV circulation flap limit stop closed
G885 MCC Warm		G885 MCC control valve limit stop warm
G886 MCC Cold		G886 MCC control valve limit stop cold
MCC340		340 MCC Rec FC demanded
G880 HC		G880 HC valve limit stop cold
G881 HC		G881 HC valve limit stop warm
631 ECC Pump		631 ECC pump demanded
HC Pump		HC pump demanded
G890 EmCC Cold		G890 EmCC valve limit stop cold
G891 EmCC Warm		G891 EmCC valve limit stop warm
938 EmCC Pump		938 EmCC pump demanded
CPH demanded		CPH demanded
Power Lim Op 1		Power limitation by mains operator level 1
Power Lim Op 2		Power limitation by mains operator level 2
Power Lim Op 3		Power limitation by mains operator level 3
Power Lim Op 4		Power limitation by mains operator level 4
Aut Power Dem		Automatic power demand active
GCB Closed		GCB closed
MCB Closed		MCB closed
GCB Release		GCB release
Automatic		Automatic
RP OverF		Mains-dependent RP active in the event of overfrequency
CV Control		CV control at standstill active
BlackStartRun		Black start running
BlackStartPos		Black start possible
StarterDem		Starter demanded in
PrelubPumpIn		Prelubrication pump demanded in
GCL A 1		GCL A gas shut-off valve 1 demanded
GCL A 2		GCL A gas shut-off valve 2 demanded
GCL B 1		GCL B gas shut-off valve 1 demanded
GCL B 2		GCL B gas shut-off valve 2 demanded
CrankVentAct		Crankcase ventilation activated
Turning gear		Turning gear
GCL A Leak		GCL A leakage check demanded

FreshOilDem		Fresh oil refill demanded
T207 ECC High		T207 ECC engine inlet too high
T206 ECC Low		T206 ECC engine outlet too low
T208 Lube Low		T208 lube oil engine inlet too low (warm-up failed)
S200 Engine		S200 engine speed gradient too high
996 GCB UnexO		996 GCB opened unexpectedly
GAM A Failed		GAM A mobility test failed
T203 Comm Err		T203 intake air row A communication error (irregular data transfer)
T203 A High		T203 intake air row A too high
P232ErrBatt		P232 receiver A sensor error (short-circuit to battery)
P232ErrGnd		P232 receiver A sensor error (short-circuit to ground)
S200 Implaus		S200 engine speed gradient implausible
G197 Dev Err		G197 TV A device error (value incorrect)
G273 Sens Err		G273 WG sensor error (value incorrect)
T201 A High		T201 receiver A too high
G867 ECC Cold		G867 ECC valve limit stop cold
G868 ECC Warm		G868 ECC valve limit stop warm
CounterOF-C		Counter overflow (start with closed GCB)
CounterOF-N		Counter overflow (normal start)
CounterOF-B		Counter overflow (black start)
EmCC Rec 1		EmCC Rec stage 1 active
EmCC Rec 2		EmCC Rec stage 2 active
EmCC Rec 3		EmCC Rec stage 3 active
EmCC Rec 4		EmCC Rec stage 4 active
EmCC Rec 5		EmCC Rec stage 5 active
EmCC Rec 6		EmCC Rec stage 6 active
EmCC Rec 7		EmCC Rec stage 7 active
EmCC Rec 8		EmCC Rec stage 8 active
MCC Rec 1		MCC Rec stage 1 active
MCC Rec 2		MCC Rec stage 2 active
MCC Rec 3		MCC Rec stage 3 active
MCC Rec 4		MCC Rec stage 4 active
MCC Rec 5		MCC Rec stage 5 active
MCC Rec 6		MCC Rec stage 6 active
MCC Rec 7		MCC Rec stage 7 active
MCC Rec 8		MCC Rec stage 8 active
P127 GCL B Low		P127 GCL B too low
GCL B Leak		GCL B leakage check demanded
P124 GCL Low		P124 GCL A gas too low - 1099
P-SetErr-CB		P set prechamber gas pressure controller (cable break)
P-SetErr-SC		P set prechamber gas pressure controller (short-circuit)
GC Angle High		Grid code: ignition angle correction too high (adjusts late)
Engine Warmed		Engine warmed up, knock detection fully active
CPHflexModule		CPH flex module demanded
BlackStartAct		Alarm suppression for black start active
EHE Bypass Act		EHE bypass control activated
EHEBypassClos		EHE bypass limit stop closed

EHEBypassOpen		EHE bypass flap limit stop opened
MCCPumpDem		MCC pump demanded
IAP pump		IAP pump active
IAP Valve AB-B		IAP Valve limit stop closed (AB-B)
IAP valve AB-B		IAP valve limit stop open (AB-A)
Active ILS act		Active load share active
React LS act		Reactive load share active
NOx error		NOx sensor error in voltage supply 1
TM load run		Test mode load run active
MCB open dm		MCB opening demanded
Change - Set 2		The change has been made to Set 2 (emission monitoring)
TM idle active		Test mode idle active
TM active		Test mode active
Pdec-grid code		Power decrease due to grid code req. leads to gen shutdown
QuickStopPerf		Quick stop has been performed
Con Dev change		Control device change detected
ThValveDfPres		Throttle valve differential pressure ignition angle correction too high
MFR warn 1		Specific MFR warning 1
MFR warn 2		Specific MFR warning 2
MFR warn 3		Specific MFR warning 3
MFR warn 4		Specific MFR warning 4
MFR warn 5		Specific MFR warning 5
MFR warn 6		Specific MFR warning 6
MFR warn 7		Specific MFR warning 7
MFR warn 8		Specific MFR warning 8
MFR warn 9		Specific MFR warning 9
MFR warn 10		Specific MFR warning 10
MFR warn 11		Specific MFR warning 11
MFR warn 12		Specific MFR warning 12
Err		T404 CV supply air sensor error
T404CVHigh15K		T404 CV supply air 15 K too high
T404CVHigh20K		T404 CV supply air 20 K too high
335 MCC pump F		335 MCC pump failed
336 ECC pump F		336 ECC pump failed
P157		P157 exhaust back pressure too high
P124		P124 GCL A gas too low - 3600
P309		P309 diff MC too low
L308		SaC MCC liquid too low
L123		SaC ECC liquid too low
L458		SaC EmCC liquid too low
P281		P281 P diff HC too low
P126		P126 diff ECC too low
450 NOxdailyH		450 NOx daily mean value too high
450 O2 daily H		450 O2 daily mean value too high
StarterDemOut		Starter demanded out
PrelubPumpD		Prelubrication pump demanded out
Gas valve A1		Gas shut-off valve A1



Gas valve A2		Gas shut-off valve A2
Gas valve B1		Gas shut-off valve B1
Gas valve B2		Gas shut-off valve B2
GCB Feedback		GCB position feedback
MCB Feedback		MCB position feedback
Gen Running FB		Genset running feedback
Col Alarm		Collective alarm
Col Wrn		Collective warning
OilRefillDem		Fresh oil refill demanded out
FSM active		FSM active
LFSM-O active		LFSM-O active
LFSM-U active		LFSM-U active
Sec f con act		Secondary frequency control active
MFRMaxNrStarts		MFR max number of starts
P302.9		P302.9 diff lube oil via filter row A too low
P145		P145 crankcase system protection (piston seizure)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
OperationMode		Operation mode
P302		Filter A outlet lube oil - P302
T208		Engine inlet lube oil - T208
L234		Oil tray - L234
L327		Oil reservoir - L327
P145		Crankcase - P145
T203		Intake air row A - T203
T201		Receiver A - T201
E149		TPEM CU supply voltage - E149
G197.1		TV A - G197.1
S200		Engine - S200
E198.5		Set power - E198.5
E198.2		Power - E198.2
S200.4		Set engine before adjustment - S200.4
E198.6		Permissible power - E198.6
T206		ECC engine outlet - T206
T207		ECC engine inlet - T207
T434		T MCC LT high pressure - T434
T202		MC inlet - T202
T459		Generator bearing A - T459
T460		Generator bearing B - T460
T209		Generator winding U - T209
T210		Generator winding V - T210
T211		Generator winding W - T211
T487		Generator inlet air - T487
T488		Generator outlet air - T488
Plant status		Plant status

Gen control		Generator control not in automatic start
SC Al RemT Sd		Remaining time until the genset shuts down in the event of Alarm SC
OperHours		Genset total operating hours
NOx value		NOx value
O2 value		O2 value
NOx current		NOx current daily mean value
CH4 value		CH4 value
T461		Combustion chamber A1 - T461
T462		Combustion chamber A2 - T462
T463		Combustion chamber A3 - T463
T464		Combustion chamber A4 - T464
T465		Combustion chamber A5 - T465
T466		Combustion chamber A6 - T466
T467		Combustion chamber A7 - T467
T468		Combustion chamber A8 - T468
T469		Combustion chamber A9 - T469
T470		Combustion chamber A10 - T470
T471		Combustion chamber B1 - T471
T472		Combustion chamber B2 - T472
T473		Combustion chamber B3 - T473
T474		Combustion chamber B4 - T474
T475		Combustion chamber B5 - T475
T476		Combustion chamber B6 - T476
T477		Combustion chamber B7 - T477
T478		Combustion chamber B8 - T478
T479		Combustion chamber B9 - T479
T480		Combustion chamber B10 - T480
CombCh Tmean		T mean combustion chamber
CombCh Tset		T set combustion chamber
CombCh Tred		Reduction T set combustion chamber (knocking)
G159.9		GAM - G159.9
G163.1		GAM A start position - G163.1
G197.3		Set TV A - G197.3
P320		Diff TV A - P320
RP-T207		RP by percent (T207 ECC too high)
RP-T201		RP by percent (T201 receiver too high)
RP-S-ETC		RP by percent (S ETC too high)
RP-knocking		RP by percent (knocking)
RP-G-TV		RP by percent (G TV)
RP-sensor-err		RP by percent (sensor error T combustion chamber)
RP-warning		RP by percent (warning RP)
RP-warning T		RP by percent (intake air temperature)
Mains f		Mains frequency
Gen PF act		Generator PF actual value
Bus f		Busbar frequency
PowerDemanded		Power demanded
Reactive power		Reactive power

Gen. rated f		Generator rated frequency
Gen apparent P		Generator total apparent power
Gen Power		Generator power (kW)
Gen f		Generator frequency
Gen V L1-2		Generator voltage L1-2
Gen V L2-3		Generator voltage L2-3
Gen V L3-1		Generator voltage L3-1
Gen V L1-N		Generator voltage L1-N
Gen V L2-N		Generator voltage L2-N
Gen V L3-N		Generator voltage L3-N
Gen curr L1		Generator current L1
Gen curr L2		Generator current L2
Gen curr L3		Generator current L3
Mains V L1-2		Mains voltage L1-2
Mains V L2-3		Mains voltage L2-3
Mains V L3-1		Mains voltage L3-1
Mains V L1-N		Mains voltage L1-N
Mains V L2-N		Mains voltage L2-N
Mains V L3-N		Mains voltage L3-N
Bus V		Busbar voltage
Mains f HiRes		Mains frequency high resolution
IgnitAngleadj		Ignition angle adjustment
IgnitAmaxadj		Ignition angle max adjustment
IgnitionAngle		Ignition angle
Ign A A1		Ignition angle A1
Ign A A2		Ignition angle A2
Ign A A3		Ignition angle A3
Ign A A4		Ignition angle A4
Ign A A5		Ignition angle A5
Ign A A6		Ignition angle A6
Ign A A7		Ignition angle A7
Ign A A8		Ignition angle A8
Ign A A9		Ignition angle A9
Ign A A10		Ignition angle A10
Ign A B1		Ignition angle B1
Ign A B2		Ignition angle B2
Ign A B3		Ignition angle B3
Ign A B4		Ignition angle B4
Ign A B5		Ignition angle B5
Ign A B6		Ignition angle B6
Ign A B7		Ignition angle B7
Ign A B8		Ignition angle B8
Ign A B9		Ignition angle B9
Ign A B10		Ignition angle B10
P497		ECC engine outlet - P497
T496		Exhaust gas CAT B outlet - T496
T286		Exhaust gas engine outlet - T286

T287		Exhaust gas CAT A outlet - T287
T288		Exhaust gas EHE outlet - T288
T404		CV supply air - T404
T604		CV exhaust air - T604
T291		HC supply flow - T291
T289		HC return flow - T289
T412		ECC EHE outlet - T412
T384		EmCC inlet - T384
T290		HC CWHE inlet - T290
T386		HC LHE inlet - T386
T385		HC EHE inlet - T385
T419		EmCC Rec outlet - T419
T405		MCC Rec outlet - T405
G273.1		Actual WG - G273.1
G273.3		Set WG - G273.3
P232		Receiver A - P232
Normal starts		Number of normal starts
Black starts		Number of black starts
GCB c starts		Number of starts with closed GCB
EnergyAmount		Amount of energy generated to date
Gen PF disc		Generator discrete PF
FSM act P ramp		FSM active power ramp
FSM act P inc		FSM active power range power increase
FSM dead band		FSM dead band
Cur. FSM of.		Current FSM offset
FSM droop		FSM droop
LFSM A P inc		LFSM A active power ramp at power increase
LFSM thr P dec		LFSM threshold power decrease
LFSM-O Droop		LFSM-O Droop
LFSM target P		LFSM target power
LFSM thr P inc		LFSM threshold power increase
LFSM-U droop		LFSM-U droop
Sec Freq Cntrl		Secondary frequency control: Active power ramp
Up lim reserve		Upper limit reserve
Low lim res.		Lower limit reserve
f-con Offset		Current secondary frequency control offset
LFSM A P dec		LFSM A active power ramp at power decrease
FSM P dec		FSM active power range power decrease
Res. PF demand		Resulting input value for PF demand
Res. Q demand		Resulting input value for Q demand
Res. U demand		Resulting input value for U demand
Res. grid op P		Resulting input value for grid operator power demand
Resulting Qref		Resulting input value for Qref
Resulting Uref		Resulting input value for Uref
Res. mains f		Resulting input value for mains frequency offset
GC:perm P		Grid code: permissible power
LFSM B act P		LFSM B active power ramp

ILF act P		ILF active power ramp
Option FSM		Option FSM
Current FSM 2		Current FSM offset 2
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
PowerDem(prot)		Power demanded (protocol)
Gas mix type B		Gas mixing share gas type B
Gas type		Switch over operation preselection gas type
PF		PF setpoint value per Modbus
Q		Reactive power value (Q) given via Modbus
T com cham 2		T set combustion chamber Set 2 (Modbus)
Sec Freq Con		Secondary frequency control: setpoint specified via Modbus
Discrete PF		Discrete PF setpoint value per Modbus
Offset f(M)		Offset to current mains frequency Modbus
U demand		U demand Modbus
Group acknow		Group acknowledgement via superior control (Modbus)
Conf grp ackn		Confirmation of the group acknowledgement via superior control (Modbus)
Oper. mode		Operation mode via superior control (Modbus)
Act P ramp inc		Normal active power ramp at power increase
Act P ramp dec		Normal active power ramp at power decrease
DS act P ramp		Direct sales active power ramp
GOactPrampInc		Grid operator active power ramp at power increase
GOactPrampDec		Grid operator active power ramp at power decrease
GOactPrampLim		Grid operator active power ramp at power limitation
ActPrampM-Coup		Active power ramp after mains coupling
ActPrampM-dec		Active power ramp after mains recoupling
Max act P ramp		Maximum active power ramp P(U)
Max act P ramp		Maximum active power ramp
Min act P ramp		Minimum active power ramp
FSMactPran.Inc		FSM active power range power increase
FSMactPran.dec		FSM active power range power decrease
FSM P gradient		FSM Power gradient
FSM dead band		FSM dead band
Option LFSM		Option LFSM
GO P dem. Mod.		Grid operator power demand Modbus
GO lim Modbus		Grid operator limitation Modbus
PMV 1 Ext Setp		PMV 1 External setpoint
ParaCon1SetSel		Para controller 1 Setpoint selection
PMV 2 Ext Setp		PMV 2 External setpoint
ParaCon2SetSel		Para controller 2 Setpoint selection
PMV 3 Ext Setp		PMV 3 External setpoint
ParaCon3SetSel		Para controller 3 Setpoint selection
PMV 4 Ext Setp		PMV 4 External setpoint
ParaCon4SetSel		Para controller 4 Setpoint selection

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
CAN H	CAN1 (extension modules/J1939) – CAN H
CAN COM	CAN1 (extension modules/J1939) – CAN COM
CAN L	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A
Battery - (negative)	N/A
Key Switch	Any binary output configured as ECU PwrRelay
Analog Speed Control	SG OUT Range 0VDC to 5VDC, 100kOhm pull-down resistance
Analog Speed Control	SG COM

## Communication settings

Function	Settings
Baud rate	9600
Start bit	2
Data bits	8
Parity	None









For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see TPEM Fault Codes on page 1**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

TPEM aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

6.1.45 Trijekt Gas devices support

ECU Type	Device type supported
<a href="#">Trijekt (page 651)</a>	Trijekt gas

Trijekt

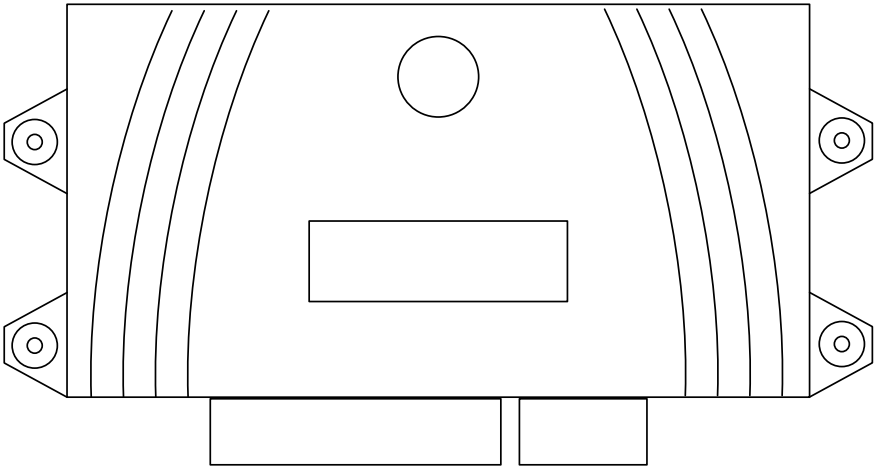


Image 5.172 Trijekt

Controllers that support the Trijekt

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ReadyStart		Ready to Start
DInEngEn		Dig. Input Engine Enable
DInTypOp		Dig. Input Type of Operation
DInOpPhase		Dig. Input Operation Phase

DInPlus		Dig. Input Plus
DInMinus		Dig. Input Minus
DInF1		Dig. Input Function 1
DInF2		Dig. Input Function 2
DInF3		Dig. Input Function 3
DInF4		Dig. Input Function 4
DInF5		Dig. Input Function 5
DInF6		Dig. Input Function 6
DInF7		Dig. Input Function 7
DInF8		Dig. Input Function 8
DOutIgnLoA		Dig. Output Ign. Low A
DOutIgnLoB		Dig. Output Ign. Low B
DOutIgnLoC		Dig. Output Ign. Low C
DOutIgnLoD		Dig. Output Ign. Low D
DOutIgnLoE		Dig. Output Ign. Low E
DOutIgnLoF		Dig. Output Ign. Low F
DOutIgnLoG		Dig. Output Ign. Low G
DOutIgnLoH		Dig. Output Ign. Low H
DOutIgnHiA		Dig. Output Ign. High A
DOutIgnHiB		Dig. Output Ign. High B
DOutIgnHiC		Dig. Output Ign. High C
DOutIgnHiD		Dig. Output Ign. High D
DOutIgnHiE		Dig. Output Ign. High E
DOutIgnHiF		Dig. Output Ign. High F
DOutIgnHiG		Dig. Output Ign. High G
DOutIgnHiH		Dig. Output Ign. High H
DOutSw1		Dig. Output Switch 1
DOutSw2		Dig. Output Switch 2
DOutSw3		Dig. Output Switch 3
DOutSw4		Dig. Output Switch 4
DOutSw5		Dig. Output Switch 5
DOutSw6		Dig. Output Switch 6
DOutSw7		Dig. Output Switch 7
DOutSw8		Dig. Output Switch 8
DOutSw9		Dig. Output Switch 9
DOutSw10		Dig. Output Switch 10
Flag1		Flag1
Flag2		Flag2
Flag3		Flag3
Flag4		Flag4
Flag5		Flag5
Flag6		Flag6
Flag7		Flag7
Flag8		Flag8
Flag9		Flag9
Flag10		Flag10
Flag11		Flag11



Flag12		Flag12
Flag13		Flag 13
Flag14		Flag 14
Flag15		Flag 15
Flag16		Flag 16
Flag17		Flag 17
Flag18		Flag 18
Flag19		Flag 19
Flag20		Flag 20
Flag21		Flag 21
Flag22		Flag 22
Flag23		Flag 23
Flag24		Flag 24
Flag25		Flag 25
Flag26		Flag 26
Flag27		Flag 27
Flag28		Flag 28
Flag29		Knock Control On(Flag 29)
Flag30		Gas valve Off (Flag 30)
Flag31		Load Control Pos. Bit1(Flag 31)
Flag32		Load Control Pos. Bit1(Flag 32)
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECM1Lamp <sub>1,2,3,4,5,6,7</sub>	6205	Engine Control Module 1 Ready for Use Lamp Command
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Flag 1		Flag 1
Flag 2		Flag 2
Flag 3		Flag 3
Flag 4		Flag 4
Flag 5		Flag 5
Flag 6		Flag 6
Flag 7		Flag 7
Flag 8		Flag 8
Flag 9		Flag 9
Flag 10		Flag 10
Flag 11		Flag 11
Flag 12		Flag 12
Flag 13		Flag 13
Flag 14		Flag 14
Flag 15		Flag 15
Flag 16		Flag 16
Flag 17		Flag 17
Flag 18		Flag 18
Flag 19		Flag 19

Flag 20		Flag 20
Flag 21		Flag 21
Flag 22		Flag 22
Flag 23		Flag 23
Flag 24		Flag 24
Flag 25		Flag 25
Flag 26		Flag 26
Flag 27		Flag 27
Flag 28		Flag 28
Flag 29		Knock Control On(Flag 29)
Flag 30		Gas valve Off (Flag 30)
Flag 31		Load Control Pos. Bit1(Flag 31)
Flag 32		Load Control Pos. Bit1(Flag 32)
DOutIgnLoA 1,2,3,4,5,6,7	5984	Dig. Output Ign. Low A
DOutIgnLoB 1,2,3,4,5,6,7	5985	Dig. Output Ign. Low B
DOutIgnLoC 1,2,3,4,5,6,7	5986	Dig. Output Ign. Low C
DOutIgnLoD 1,2,3,4,5,6,7	5987	Dig. Output Ign. Low D
DOutIgnLoE 1,2,3,4,5,6,7	5988	Dig. Output Ign. Low E
DOutIgnLoF 1,2,3,4,5,6,7	5989	Dig. Output Ign. Low F
DOutIgnLoG 1,2,3,4,5,6,7	5990	Dig. Output Ign. Low G
DOutIgnLoH 1,2,3,4,5,6,7	5991	Dig. Output Ign. Low H
DOutIgnHiA 1,2,3,4,5,6,7	5992	Dig. Output Ign. High A
DOutIgnHiB 1,2,3,4,5,6,7	5993	Dig. Output Ign. High B
DOutIgnHiC 1,2,3,4,5,6,7	5994	Dig. Output Ign. High C
DOutIgnHiD 1,2,3,4,5,6,7	5995	Dig. Output Ign. High D
DOutIgnHiE 1,2,3,4,5,6,7	5996	Dig. Output Ign. High E
DOutIgnHiF 1,2,3,4,5,6,7	5997	Dig. Output Ign. High F
DOutIgnHiG 1,2,3,4,5,6,7	5998	Dig. Output Ign. High G
DOutIgnHiH 1,2,3,4,5,6,7	5999	Dig. Output Ign. High H
DOutSw1 1,2,3,4,5,6,7	6000	Dig. Output Switch 1
DOutSw2 1,2,3,4,5,6,7	6001	Dig. Output Switch 2
DOutSw3 1,2,3,4,5,6,7	6002	Dig. Output Switch 3
DOutSw4 1,2,3,4,5,6,7	6003	Dig. Output Switch 4
DOutSw5 1,2,3,4,5,6,7	6004	Dig. Output Switch 5
DOutSw6 1,2,3,4,5,6,7	6005	Dig. Output Switch 6
DOutSw7 1,2,3,4,5,6,7	6006	Dig. Output Switch 7
DOutSw8 1,2,3,4,5,6,7	6007	Dig. Output Switch 8
DOutSw9 1,2,3,4,5,6,7	6008	Dig. Output Switch 9
DOutSw10 1,2,3,4,5,6,7	6009	Dig. Output Switch 10
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AUXTEMP1		Aux. Temp 1
AUXTEMP2		Aux. Temp 2
AUXTEMP3		Aux. Temp 3
AUXTEMP4		Aux. Temp 4
AUXTEMP5		Aux. Temp 5
AUXTEMP6		Aux. Temp 6

Eng Speed1		Engine Speed 1
Eng Speed2		Engine Speed 2
LAMBDA1		Lambda 1
LAMBDA2		Lambda 2
EGTMax		EGT max.
LoadContrPos		Load Control Pos.
LoadCtrlIPos		Load Controller Pos.
LambdaCorr		Lambda Correxction
TorqMeas		Torque measured
TorqCalc		Power measured
PowerMeas		Torque calc.
PowerCalc		Power calc.
InpAna1		Input Analog 1
InpAna2		Input Analog 2
InpAna3		Input Analog 3
InpAna4		Input Analog 4
InpAna5		Input Analog 5
InpAna6		Input Analog 6
InpAna7		Input Analog 7
InpAna8		Input Analog 8
InpAna9		Input Analog 9
InpAna10		Input Analog 10
InpAna11		Input Analog 11
InpAna12		Input Analog 12
InpAna13		Input Analog 13
InpAna14		Input Analog 14
InpAna15		Input Analog 15
InpAna16		Input Analog 16
InpAna17		Input Analog 17
InpAna18		Input Analog 18
InpAna19		Input Analog 19
InpAna20		Input Analog 20
InpAna21		Input Analog 21
InpAna22		Input Analog 22
InpAna23		Input Analog 23
InpAna24		Input Analog 24
SetSpeed		Setpoint Speed
SpeedErr		Speed Error
TrError		Transient Error
AttStart		No. of Attempts to Start
SetBPress		Setpoint Boost Pressure
NoErr		No. of Error
SetLoad		Setpoint Load
ThrOut		Throttle Output
MixPos		Mixer Position
NoKnockA		No. Of Knockings Cyl. A
NoKnockB		No. Of Knockings Cyl. B

NoKnockC		No. Of Knockings Cyl. C
NoKnockD		No. Of Knockings Cyl. D
NoKnockE		No. Of Knockings Cyl. E
NoKnockF		No. Of Knockings Cyl. F
NoKnockG		No. Of Knockings Cyl. G
NoKnockH		No. Of Knockings Cyl. H
KnockDelA		Knocking Ign. Delay Cyl.A
KnockDelB		Knocking Ign. Delay Cyl.B
KnockDelC		Knocking Ign. Delay Cyl.C
KnockDelD		Knocking Ign. Delay Cyl.D
KnockDelE		Knocking Ign. Delay Cyl.E
KnockDelF		Knocking Ign. Delay Cyl.F
KnockDelG		Knocking Ign. Delay Cyl.G
KnockDelH		Knocking Ign. Delay Cyl.H
NoMisFirA		No. Of Misfiring Cyl A
NoMisFirB		No. Of Misfiring Cyl B
NoMisFirC		No. Of Misfiring Cyl C
NoMisFirD		No. Of Misfiring Cyl D
NoMisFirE		No. Of Misfiring Cyl E
NoMisFirF		No. Of Misfiring Cyl F
NoMisFirG		No. Of Misfiring Cyl G
NoMisFirH		No. Of Misfiring Cyl H
TorqueA		Torque Cyl. A
TorqueB		Torque Cyl. B
TorqueC		Torque Cyl. C
TorqueD		Torque Cyl. D
TorqueE		Torque Cyl. E
TorqueF		Torque Cyl. F
TorqueG		Torque Cyl. G
TorqueH		Torque Cyl. H
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing

Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
T-Exh2Manf1 <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif1 <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
SCR2IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3255	Aftertreatment 2 SCR Intake NOx 1
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
PowerReq		Power Request
POWER		Actual Power
MixerSetAbs		Mixer Setpoint abs.
LambdaSetAbs *		Lambda Setpoint abs.
LambdaSetAbs		Ignition Angle abs.
LambdaSetAbs *		Mixer Setpoint rel.
LambdaSetAbs *		Lambda Setpoint rel.
LambdaSetAbs		Ignition Angle rel.
SetTorque <sub>1,2,3,4,5,6,7</sub> *		Setpoint Torque
SetPower <sub>1,2,3,4,5,6,7</sub> *		Setpoint Power
SetLoad <sub>1,2,3,4,5,6,7</sub> *		Setpoint Load (throttle position)
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring









Function	ECU connector	Controller
<b>CAN H</b>	60	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	58	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive 12V)</b>	3,21	N/A
<b>Battery - (negative)</b>	1,2	N/A

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see Trijekt Gas Fault Codes on page 1483**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Trijekt Gas aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.46 VM engines support

ECU Type	Engine type
EDC (page 659)	Industrial and marine

### EDC

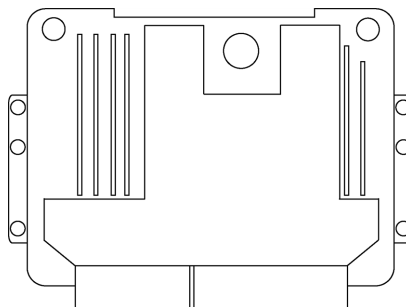


Image 5.173 EDC

### Controllers that support the EDC

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters for "industrial"

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTOResume <sub>1,2,3,4,5,6,7</sub>	982	Engine PTO Governor Resume Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch

CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Available parameters for "marine"

<b>ECU binary outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
PTOEnable <sub>1,2,3,4,5,6,7</sub>	980	Engine PTO Governor Enable Switch
PTOAccelerate <sub>1,2,3,4,5,6,7</sub>	981	Engine PTO Governor Accelerate Switch
PTOResume <sub>1,2,3,4,5,6,7</sub>	982	Engine PTO Governor Resume Switch
PTODecelerate <sub>1,2,3,4,5,6,7</sub>	983	Engine PTO Governor Coast/Decelerate Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp



MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
CCCoast <sub>1,2,3,4,5,6,7</sub>	600	Cruise Control Coast (Decelerate) Switch
CCResume <sub>1,2,3,4,5,6,7</sub>	601	Cruise Control Resume Switch
CCAccelerate <sub>1,2,3,4,5,6,7</sub>	602	Cruise Control Accelerate Switch
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
PTO <sub>1,2,3,4,5,6,7</sub>	976	PTO Governor State

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	Controller
<b>CAN H</b>	62	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	83	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,5	N/A
<b>Battery - (negative)</b>	2,4,6	N/A
<b>Key Switch</b>	28	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **VM Industrial Fault Codes on page 1484** or see **VM Marine Fault Codes on page 1486**

## Aftertreatment lamp









Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### VM Industrial aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

**VM Marine aftertreatment lamps**

	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.47 Volvo engines support

ECU Type	Engine type
Volvo Singlespeed EDC3 / EMS1 / EMS2 (page 664), Volvo Allspeed EDC3 / EMS1 / EMS2 (page 669)	D12, D9, D16, D724
EDC4 (EMR2) (page 673)	D5, D7
EDC7 (with KWP2000) (page 673)	D4, D6 engines
EMS J1587 (page 687)	
Volvo Industrial EMS2.4 (page 675)	D9, D12, D13, D16
Industrial EMS2.4 - Main (page 1)	D9, D12, D13, D16
BMS (page 848)	Volvo battery management system
Volvo Marine EMS2.3 / 2.4 (page 680)	
Volvo ACM (page 684)	Volvo Aftertreatment Control Unit

### Engine type explanation

Engine Code	Meaning
Txxxxxxx	Turbocharged
xAxxxxxx	Air to air intercooled
xxDxxxxx	Diesel fuel
xxx16xxxx	Displacement indication
xxxxx3xxx	Generation
xxxxxx0xx	Version
xxxxxxxGx	Generator drive
xxxxxxxEx	Emission controlled

**Note:** Standalone connection (hardwired speed potentiometer). On D12 industrial gen-set engines it's possible to connect standalone connection. If there is a ComAp panel connected via CAN bus during power up the engine will detect this and will be controlled via CAN bus. But if the ComAp panel is dead during power up the engine and if there is connected a potentiometer on standalone connector the engine will detect this and will run in stand alone mode.

### Volvo Singlespeed EDC3 / EMS1 / EMS2

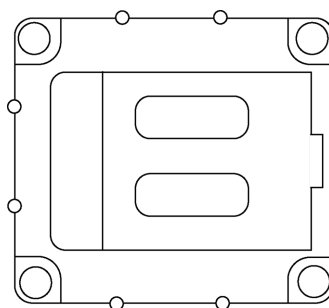


Image 5.174 EMS2

## Controllers that support the EMS2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		VP71 Preheat Indication
Running		VP71 Running Indication
Overspeed		VP71 Overspeed Alarm
OilPress		VP71 Oil Pressure Alarm
OilTemp		VP71 Oil Temperature Alarm
CoolantTemp		VP71 Coolant Temperature
Coolant Level		VP71 Coolant Level Alarm
Charge Alarm		VP71 Charge Alarm
Buzzer		VP71 Buzzer
OilDiffPress		VP71 EngineOil Filter Diff.Press
Fuel Press		VP71 Fuel Pressure Alarm
OverrideInd		VP71 Override Indication
GeneralLamp		VP71 General LampTest
Buzzer/Lamp		VP71 Buzzer/LampTest
EMS YellowLamp		VP71 EMS Diagnose Yellow Lamp
EMS RedLamp		VP71 EMS Diagnose Red Lamp
PrimBattery		VP71 Primary Battery Status
SecBattery		VP71 Secondary Battery Status
15 FuseState		VP71 15 Fuse Status
30 FuseState		VP71 30 Fuse Status
EMS FuseState		VP71 EMS Fuse Status
ExtraFuseState		VP71 Extra Fuse Status
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1Regen <sub>1,2,3,4,5,6,7</sub>	3483	Aftertreatment 1 Regeneration Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start Request <sub>4,5,6,7</sub>		VP70 Start Request
Stop Request <sub>4,5,6,7</sub>		VP70 Stop Request
GovernorMode		VP70 Governor Mode
IdleSpeed <sub>4,5,6,7</sub>		VP70 Idle Speed Select
FreqSelect		VP70 Frequency Select
DiagRequest		VP70 Diagnosis request
PreheatRequest <sub>4,5,6,7</sub>		VP70 Preheat request
ProtOverrideF <sub>4,5,6,7</sub>		VP70 Protection Override
FuelDisable		Fuel disable request
DEFDisableReq		Disable DEF Dosing Request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IdleSpeed		Idle engine speed
Max Speed		Max engine speed
MaxShiftSpeed		Max Shift Engine Speed
TrgShiftSpeed		Target Shift Engine Speed
MaxTrollingSpd		Max Trolling Engine Speed
ConfigCode		Engine Configuration Code
TimeToTrqRed		Time Left To Torque Reduction OBD
SCR Severity		SCR Operator Inducement Severity
SCR Reason		SCR Operator Inducement Reason
TimeToSpdReduc		Time Left To Vehicle Speed Reduction_OBD
EIOActivations <sub>5</sub>		Number Of EIO Activations
EIOaccTime <sub>5</sub>		Accumulated EIO time
EIO Time left <sub>5</sub>		Time left Of EIO Operation
P-SeaWater		Sea water pressure
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelFitDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1

FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		VP70 Accelerator Pedal Position
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Start Request	The command used for engine running. The recommended source value for this command is Starter.
Stop Request	The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Idle Speed Select	The idle/rated switch allows commanding the engine between idle speed and rated speed. The recommended source value for this command is Idle/Nominal.
Preheat Request	Status of the Preheat request. The recommended source value for this command is Logical 0.

## Controller's analog output for speed control configuration

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	1	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	2	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	4	N/A
<b>Battery - (negative)</b>	N/A	3	N/A
<b>Key Switch</b>	N/A	5	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM
<b>Stop request</b>	N/A	6	Any binary output configured as <b>inverted</b> ECUCommError

**Note:** If the engine doesn't crank, check the state of engine mounted auxiliary stop device.

**IMPORTANT:** It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6. If there is a constant active stop signal a number of problems will occur:  
It is impossible to change parameters.  
It is impossible to reprogram the control unit.  
The ECU could be damaged when power is removed.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Volvo Industrial Fault Codes on page 1487**

## Frequency change procedure

Customers, who are using ComAp control unit that are configured using DriveConfig, GenConfig, LiteEdit, or NanoEdit must transmit certain messages to the D9 / D16 in the same way as Volvo Penta's CIU in order to change from 1500 to 1800 RPM (or opposite).

Procedure if not energized:

1. Power up the ECU.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

The whole procedure (step 1 to 3) must not exceed 10 seconds.

Procedure with power on:

1. Send a stop request – press the Stop button.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

The whole procedure (step 1 to 3) must not exceed 10 seconds.

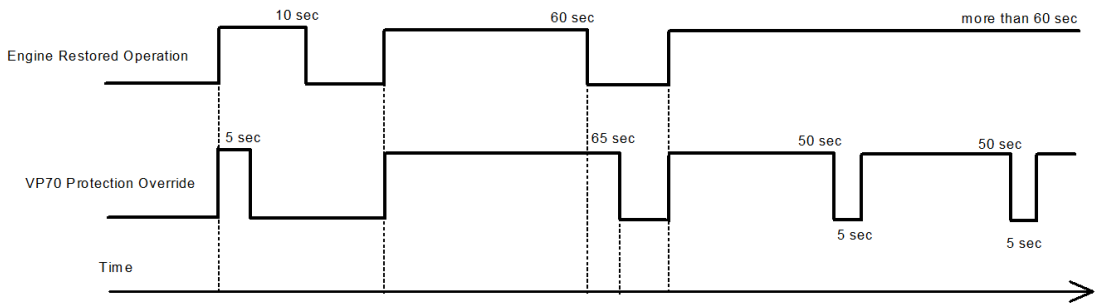


Control units that are configured using IntelliConfig have this procedure automated, more information can be found in respected controller's Global Guide.

**Protection override (EDC2.3)**

Parameter VP70 protection override (called Restored operation override by Volvo) is a signal that can be used to return engine to "normal" operation in case the engine started derating, went to idle speed or shutdown for various reasons.

This parameter has minimum ON time of 10 seconds and maximum 60 seconds. If the signal is held closed for more than 60 seconds, engine will return to whatever procedure it was doing before the signal was closed. If longer period of restored operation than 60 seconds is required, the signal has to be cycled regularly. See time diagram bellow.

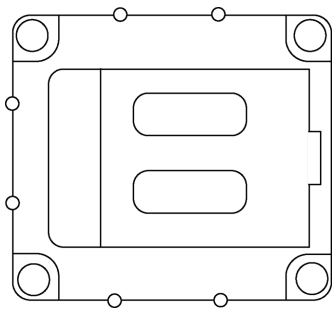


**Aftertreatment lamp**

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Volvo Industrial aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Not Supported		Solid On Blink slow Blink fast		Solid On Blink slow		Solid On

**Volvo Allspeed EDC3 / EMS1 / EMS2**



## Controllers that support the EMS2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Running		VP72 Running indication
P-Oil		VP72 Oil pressure alarm
T-Oil		VP72 Oil temperature alarm
OilLvl		VP72 Oil level alarm
Charge		VP72 Charge alarm
T-Coolant		VP72 Coolant temperature alarm
CoolantLvl		VP72 Coolant level alarm
P-Fuel		VP72 Fuel pressure alarm
WaterInFuel		VP72 Water in fuel alarm
P-SeaWater		VP72 Sea water pressure alarm
P-FreshWater		VP72 Fresh water pressure alarm
P-Crankcase		VP72 Crankcase pressure alarm
P-PistonCool		VP72 Piston cooling pressure alarm
P-Boost		VP72 Boost pressure alarm
T-Boost		VP72 Boost temperature alarm
T-Exhaust		VP72 Exhaust temperature alarm
P-DiffOilFlt		VP72 Engine oil filter differential pressure alarm
Overspeed		VP72 Overspeed alarm
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
CrankRequest <sub>4,5,6,7</sub>		VP73 Crank request
StopRequest <sub>4,5,6,7</sub>		VP73 Stop request

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
IdleSpeed		Idle Engine Speed
MaxSpeed		Maximum Engine Speed
P-SeaWater		Sea water pressure
MaxShiftSpeed		Max Shift Engine Speed
TrgShiftSpeed		Target Shift Engine Speed
MaxTrollingSpd		Max Trolling Engine Speed
ConfigCode		Engine Configuration Code
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-OilFltDiff <sub>1,2,3,4,5,6,7</sub>	99	Engine Oil Filter Differential Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
ThrottlePos <sub>4,5,6,7</sub>		VP73 Throttle Position
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
TranGearRatio <sub>1,2,3,4,5,6,7</sub>	526	Transmission Actual Gear Ratio
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

## Proprietary parameters

Parameter name	Function
Stop Request	The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Crank Request	The command used for engine running. The recommended source value for this command is Starter.
Stop Request	The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.

## Controller's analog output for speed control configuration

Accelerator Pedal Position settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	Speed request	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Accelerator Pedal Position settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	1	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	2	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	4	N/A
<b>Battery - (negative)</b>	N/A	3	N/A
<b>Key Switch</b>	N/A	5	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM
<b>Stop request</b>	N/A	6	Any binary output configured as <b>inverted</b> ECUCommError

**Note:** If the engine doesn't crank, check the state of engine mounted auxiliary stop device.

**IMPORTANT:** It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6. If there is a constant active stop signal a number of problems will occur:

It is impossible to change parameters.




It is impossible to reprogram the control unit.

The ECU could be damaged when power is removed.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Volvo Marine Prop Fault Codes** on page 1490

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Volvo Marine Prop aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Solid On		Solid On		Not Supported
			Blink slow		Blink slow		
			Blink fast				

### EDC4 (EMR2)

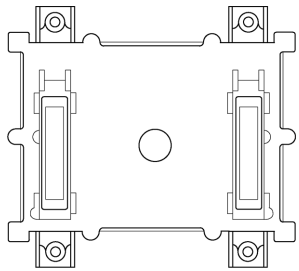


Image 5.176 EMR2

For more information **see EMR2 on page 231**.

### EDC7 (with KWP2000)

#### Controllers that support the EDC7

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AP low idle switch	558	Accelerator Pedal 1 Low Idle Switch
AP kick down switch	559	Accelerator Pedal Kickdown Switch
Parking Brake Switch	70	Parking Brake Switch
Cruise Control Active	595	Cruise Control Active
Cruise Control Enable Switch	596	Cruise Control Enable Switch

Brake Switch	597	Brake Switch
Clutch Switch	598	Clutch Switch
Protect Lamp	987	Protect Lamp
Amber Warning Lamp	624	Amber Warning Lamp
Red Stop Lamp	623	Red Stop Lamp
Malfunction Lamp	1213	Malfunction Indicator Lamp
Flash Protect Indicator Lamp	3041	Flash Protect Lamp
Flash Amber Warning Lamp	3040	Flash Amber Warning Lamp (AWL)
Fast Flash Amber Warning Lamp		
Flash Red Stop Lamp	3039	Flash Red Stop Lamp (RSL)
Fast Flash Red Stop Lamp		
Running Indication	-	Proprietary parameter.
Diagnostic state	-	Proprietary parameter.
Oil Pressure Alarm	-	Proprietary parameter.
Oil Temperature Alarm	-	Proprietary parameter.
Oil Level Alarm	-	Proprietary parameter.
Charge Alarm	-	Proprietary parameter.
Coolant Temperature	-	Proprietary parameter.
Coolant Level Alarm	-	Proprietary parameter.
Water in Fuel Alarm	-	Proprietary parameter.
Shift In Process	574	Transmission Shift In Process
Converter Lockup	573	Transmission Torque Converter Lockup Engaged
Momentary engine overspeed enable	161	Transmission Input Shaft Speed
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Crank Request	-	Proprietary parameter.
Stop Request	-	Proprietary parameter.
Current Gear	523	Transmission Current Gear
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Engine Torque Mode	899	Engine Torque Mode
Engine speed	190	Engine Speed
Actual Torque	513	Actual Engine - Percent Torque
Demand Torque	512	Driver's Demand Engine - Percent Torque
Accelerator Pedal Position	91	Accelerator Pedal Position 1
Percent Load	92	Engine Percent Load At Current Speed
Nominal Friction Torque	514	Nominal Friction - Percent Torque
Cruise control set speed	86	Cruise Control Set Speed
Coolant Temp	110	Engine Coolant Temperature
Fuel Temp	174	Engine Fuel Temperature 1
Barometric Pressure	108	Barometric Pressure
Boost Pressure	102	Engine Intake Manifold #1 Pressure
Intake Manifold Temp	105	Engine Intake Manifold 1 Temperature
Engine Oil Level	98	Engine Oil Level
Engine Oil Pressure	100	Engine Oil Pressure

Crankcase Pressure	101	Engine Crankcase Pressure 1
Fuel Rate	183	Engine Fuel Rate
Battery Potential	158	Keyswitch Battery Potential
Common Rail Pressure	-	Proprietary parameter.
Out Shaft Speed	191	Transmission Output Shaft Speed
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Throttle Position	-	Proprietary parameter.
Requested speed	898	Engine Requested Speed/Speed Limit
Torque Limit	518	Engine Requested Torque/Torque Limit

## Controller's analog output for speed control configuration

Requested speed settings for IntelGen <sup>NT</sup> or IntelISys <sup>NT</sup>			
Source	SpeedReq RPM		
Convert	NO		
Limits	N/A		N/A
	N/A		N/A
Requested speed settings for IntelIDrive DCU, IntelIDrive Mobile			
Source	Speed Request		
Convert	YES		
Limits	0.0 %		Min eng. speed (800RPM)
	100.0 %		Max eng. speed (2100RPM)

## Volvo Industrial EMS2.4

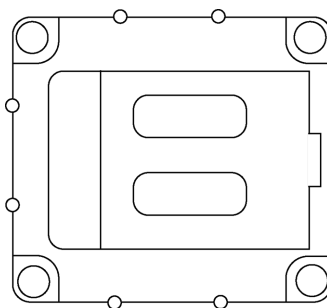


Image 5.177 EMS2.4

## Controllers that support the EMS2.4

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Preheat		VP71 Preheat Indication
Running		VP71 Running Indication
Overspeed		VP71 Overspeed Alarm
OilPress		VP71 Oil Pressure Alarm
OilTemp		VP71 Oil Temperature Alarm

CoolantTemp		VP71 Coolant Temperature
Coolant Level		VP71 Coolant Level Alarm
Charge Alarm		VP71 Charge Alarm
Buzzer		VP71 Buzzer
OilDiffPress		VP71 EngineOil Filter Diff.Press
Fuel Press		VP71 Fuel Pressure Alarm
OverrideInd		VP71 Override Indication
GeneralLamp		VP71 General LampTest
Buzzer/Lamp		VP71 Buzzer/LampTest
EMS YellowLamp		VP71 EMS Diagnose Yellow Lamp
EMS RedLamp		VP71 EMS Diagnose Red Lamp
PrimBattery		VP71 Primary Battery Status
SecBattery		VP71 Secondary Battery Status
15 FuseState		VP71 15 Fuse Status
30 FuseState		VP71 30 Fuse Status
EMS FuseState		VP71 EMS Fuse Status
ExtraFuseState		VP71 Extra Fuse Status
SysPwrDownAck		ACM System power down ack
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
AT1Regen <sub>1,2,3,4,5,6,7</sub>	3483	Aftertreatment 1 Regeneration Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
Start Request <sub>4,5,6,7</sub>		VP70 Start Request
Stop Request <sub>4,5,6,7</sub>		VP70 Stop Request
GovernorMode		VP70 Governor Mode
IdleSpeed <sub>4,5,6,7</sub>		VP70 Idle Speed Select
FreqSelect		VP70 Frequency Select
DiagRequest		VP70 Diagnosis request
PreheatRequest <sub>4,5,6,7</sub>		VP70 Preheat request
ProtOverride <sub>4,5,6,7</sub>		VP70 Protection Override



FuelDisable		Fuel disable request
DEFDisableReq		Disable DEF Dosing Request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
IdleSpeed		Idle engine speed
Max Speed		Max engine speed
MaxShiftSpeed		Max Shift Engine Speed
TrgShiftSpeed		Target Shift Engine Speed
MaxTrollingSpd		Max Trolling Engine Speed
ConfigCode		Engine Configuration Code
TimeToTrqRed		Time Left To Torque Reduction OBD
SCR Severity <sub>5</sub>		SCR Operator Inducement Severity
SCR Reason		SCR Operator Inducement Reason
TimeToSpdReduc		Time Left To Vehicle Speed Reduction_OBD
EIOActivations <sub>5</sub>		Number Of EIO Activations
EIOaccTime <sub>5</sub>		Accumulated EIO time
EIO Time left		Time left Of EIO Operation
P-SeaWater		Sea water pressure
PCDAActivations		Number OF EPCD Activations
PCDAccTime		Accumulated PCD Time
PCDSeverity		PCD Inducement Severity
PCDReason		PCD Inducement Reason
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	95	Engine Fuel Filter Differential Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque

DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		VP70 Accelerator Pedal Position
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Proprietary parameters

Parameter name	Function
Start Request	The command used for engine running. The recommended source value for this command is Starter.
Stop Request	The command for normal stopping of the engine. The recommended source value for this command is Stop pulse.
Idle Speed Select	The idle/rated switch allows commanding the engine between idle speed and rated speed. The recommended source value for this command is Idle/Nominal.
Preheat Request	Status of the Preheat request. The recommended source value for this command is Logical 0.

## Controller's analog output for speed control configuration

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
<b>CAN H</b>	N/A	1	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	N/A	2	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	4	N/A
<b>Battery - (negative)</b>	N/A	3	N/A
<b>Key Switch</b>	N/A	5	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM
<b>Stop request</b>	N/A	6	Any binary output configured as <b>inverted</b> ECUCommError

**Note:** If the engine doesn't crank, check the state of engine mounted auxiliary stop device.

**IMPORTANT:** It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6. If there is a constant active stop signal a number of problems will occur:  
It is impossible to change parameters.  
It is impossible to reprogram the control unit.  
The ECU could be damaged when power is removed.

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Volvo Industrial Fault Codes on page 1487**

## Frequency change procedure

Customers, who are using ComAp control unit that are configured using DriveConfig, GenConfig, LiteEdit, or NanoEdit must transmit certain messages to the D9 / D16 in the same way as Volvo Penta's CIU in order to change from 1500 to 1800 RPM (or opposite).

Procedure if not energized:

1. Power up the ECU.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

The whole procedure (step 1 to 3) must not exceed 10 seconds.

Procedure with power on:

1. Send a stop request – press the Stop button.
2. Change the Frequency select setpoint of transmitted value.
3. Send a stop request – press the Stop button.

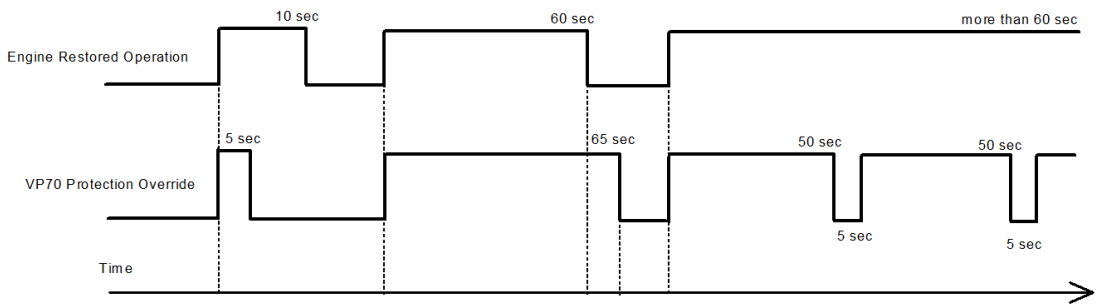
The whole procedure (step 1 to 3) must not exceed 10 seconds.

Control units that are configured using IntelliConfig have this procedure automated, more information can be found in respected controller's Global Guide.

Protection Override

Parameter VP70 protection override (called Restored operation override by Volvo) is a signal that can be used to return engine to "normal" operation in case the engine started derating, went to idle speed or shutdown for various reasons.

This parameter has minimum ON time of 10 seconds and maximum 60 seconds. If the signal is held closed for more than 60 seconds, engine will return to whatever procedure it was doing before the signal was closed. If longer period of restored operation than 60 seconds is required, the signal has to be cycled regularly. See time diagram below.



Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Volvo Industrial EMS2.4 aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Not Supported		Solid On Blink slow Blink fast		Solid On Blink slow

Volvo Marine EMS2.3 / 2.4

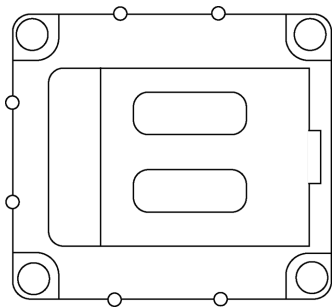


Image 5.178 EMS2.3/2.4

## Controllers that support the EMS2.3 / 2.4

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Running		VP71 Running Indication
OverrideInd		VP71 Override Indication
PowerDownAck		VP71 Engine power Down Ack
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
EPS SDApproach <sub>1,2,3,4,5,6,7</sub>	1109	Engine Protection System Approaching Shutdown
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start Request <sub>4,5,6,7</sub>		VP70 Start Request
Stop Request <sub>4,5,6,7</sub>		VP70 Stop Request
GovernorModeF <sub>4,5,6,7</sub>		VP70 Governor Mode
IdleSpeed <sub>4,5,6,7</sub>		VP70 Idle Speed Select
FreqSelect		VP70 Frequency Select
DiagRequest		VP70 Idle Calibration State
ProtOverrideF <sub>4,5,6,7</sub>		VP70 Protection Override
FuelDisable		VP70 Fuel Disable Request
DEFDisableReq		VP70 Disable DEF Dosing Request
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
TimeToNCDLow		VP191 Time Left To NCD Low Level Warning
NCD Severity <sub>5</sub>		VP191 NDC Inducement Severity
NCD Reason <sub>5</sub>		VP191 NDC Inducement Reason
TimeToSpdReduc		VP191 Time Left To NCD Severe Level Warning
PCDAActivations		VP300 Number OF NCD Events with severity 1 or higher
PCDAccTime		VP300 Number of NCD Events with severity 5 or Higher
PCDSeverity		VP300 Accumulated NCD time with severity 5 or Higher
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure

P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
Spd-Fan <sub>1,2,3,4,5,6,7*</sub>	1639	Fan Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
P-SeaWtrPmpOut <sub>1,2,3,4,5,6,7</sub>	2435	Sea Water Pump Outlet Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DEFAvgConsmpt <sub>1,2,3,4,5,6,7</sub>	3826	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
APP <sub>4,5,6,7</sub>		VP70 Accelerator Pedal Position
ReqTorque <sub>1,2,3</sub>	518	Engine Requested Torque/Torque Limit
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
ReqSpeedCC <sub>1,2,3</sub>	696	Engine Requested Speed Control Conditions
CtrlMdPriority <sub>1,2,3</sub>	897	Override Control Mode Priority
Spd-Requested <sub>1,2,3</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed settings for IntelliGen <sup>NT</sup> or IntelliSys <sup>NT</sup>		
Source	SpeedReq RPM	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A
Requested speed settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	

Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

## Recommended wiring

Function	ECU connector	8pin diagnostic connector	Controller
CAN H	N/A	1	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	2	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	4	N/A
Battery - (negative)	N/A	3	N/A
Key Switch	N/A	5	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM
Stop request	N/A	6	Any binary output configured as <b>inverted</b> ECUCommError

**Note:** If the engine doesn't crank, check the state of engine mounted auxiliary stop device.

**IMPORTANT:** It is important that there is no continuous active stop signal on pin 6. The active stop signal depends on the configuration and represents either +24VDC or GND is present on the pin 6. If there is a constant active stop signal a number of problems will occur:

It is impossible to change parameters.









It is impossible to reprogram the control unit.

The ECU could be damaged when power is removed.

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **Volvo Marine EMS2.3-2.4 Fault Codes** on page 1496

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Volvo Marine EMS2.3-2.4 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Solid On Blink slow Blink fast		Not Supported

## Volvo ACM

### Controllers that support the ACM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SysPwrDownAck		ACM System power down ack
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
T-SCR1Outlet <sub>1,2,3,4,5,6,7</sub>	4363	Aftertreatment 1 SCR Outlet Temperature
DEFLOWLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Recommended wiring

Function	ECU connector	Controller
CAN H	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM
Stop request	N/A	Any binary output configured as <b>inverted</b> ECUCommError

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Volvo ACM Fault Codes on page 1500**

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

#### Volvo ACM aftertreatment lamps



	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EDC/EMR 2

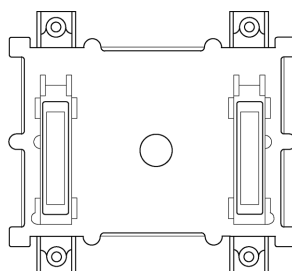


Image 5.179 Deutz EMR2

### Controllers that support the EDC/EMR2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
LockStatus		Lock Status
Stop <sub>4,5,6,7</sub>		Stop Request
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		Preheat information

APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

**IMPORTANT: Deutz does not recommend switching off the engine by removing the power supply (battery). It causes fault code SPN=536.**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended setting of EMR2 using Serdia PC tool

### Note:

Page 30: 4400 = 1 ... CAN activation

Page 31: 4412 = 1 ... Activate TSC1a receive telegram

Page 31: 4470 = 1 ... Activate CAN set point by TSC1a

Page 12: 4829 = 8... Enable stop request telegram

Page 10: 4900 = 8 ... Selection of input channel type for nominal speed value sensor

829 = FunctEngineStop – Switch assignment for "Engine stop" function

4424 = TelStopRequestOn – SAEJ1939: Active Engine Stop Request receives telegram









## Recommended wiring

Function	ECU 25pin F connector	Controller
CAN H	12	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	14	N/A
Battery - (negative)	1	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Deutz EMR2 Fault Codes on page 1191**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deutz EMR2 aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## EMS J1587

### Controllers that support the EDC7

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

No parameters available for this ECU.

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Volvo EMS J1587 Fault Codes on page 1500**

## 6.1.48 Waukesha engines support

ECU Type	Engine type
<a href="#">Waukesha ESM (page 689)</a> <a href="#">Waukesha ESM (page 697)</a>	VHP & APG engine family
<a href="#">Waukesha ESM2 (page 692)</a> <a href="#">Waukesha ESM2 (page 700)</a>	VHP & APG engine family

### Waukesha ESM

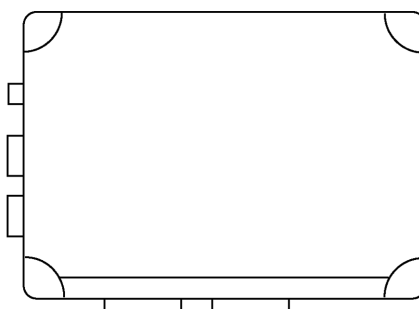


Image 5.180 ESM

### Controllers that support the ESM

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Main Fuel Valve	-	Proprietary parameter. Status of the main fuel valve.
Pre-chamber Fuel Valve	-	Proprietary parameter. Status of the pre-chamber fuel valve (if applicable).
Engine Running	-	Proprietary parameter. Whether the engine is running or not running.
Starter Motor	-	Proprietary parameter. Whether the starter motor is engaged or not.
Pre/Post Lube	-	Proprietary parameter. Whether the pre/post lube pump is running.
Yellow Warning Lamp	-	Proprietary parameter. This lamp is used to relay trouble code information that is reporting a problem with the engine system but the engine need not be immediately stopped.
Red Shutdown Lamp	-	Proprietary parameter. This lamp is used to relay trouble code information that is of a severe enough condition that it warrants stopping the engine.
Engine Knocking	-	Proprietary parameter. Whether the engine is in uncontrollable knock.
Start Engine Signal	-	Proprietary parameter. Whether the start engine signal is active.
Normal Shutdown	-	Proprietary parameter.

		Whether the normal shutdown signal is active.
Emergency Shutdown	-	Proprietary parameter. Whether the emergency shutdown signal is active.
Remote rpm Select	-	Proprietary parameter. Whether the remote rpm analog input is active or inactive.
Run High Idle	-	Proprietary parameter. Whether the run high idle digital input is active.
Alter Dynamics/Synchr Mode	-	Proprietary parameter. Whether the alternate governor dynamics is active.
Lockout Button/Ignit Module	-	Proprietary parameter. Whether either the lockout button has been depressed or the IPM-D has failed, or is not powered.
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Engine Speed	-	Proprietary parameter. Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
Oil Pressure	-	Proprietary parameter. Gage pressure of oil in engine lubrication system as provided by oil pump.
Intake Manifold Press	-	Proprietary parameter. Gage pressure of air measured downstream on the compressor discharge side of the turbocharger. If there is one boost pressure to report and this range and resolution is adequate, this parameter should be used.
Throttle Position	-	Proprietary parameter. The ratio of actual position of the analog engine speed/torque request input device to the maximum position of the input device. This parameter is intended for the primary accelerator control in an application.
Coolant Temp	-	Proprietary parameter. Temperature of liquid found in engine cooling system.
Battery Voltage	-	Proprietary parameter. Electrical potential measured at the input of the electronic control unit supplied through a switching device.
Intake Manifold Temp	-	Proprietary parameter. Temperature of pre-combustion air found in intake manifold of engine air supply system.
Engine Oil Temp	-	Proprietary parameter. Temperature of the engine lubricant.
First exhaust temperature	-	Proprietary parameter. For more information about this commands, please contact local Waukesha representative.
Second exhaust temperature	-	Proprietary parameter. For more information about this commands, please contact local Waukesha representative.
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

## Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

Recommended wiring

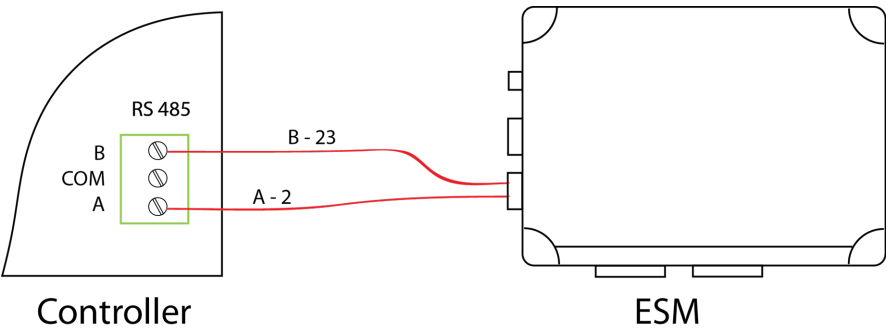


Image 5.181 Recommended wiring of ESM

Function	ECU 47pin connector	Controller
RS485 A	2	RS485 – RS485 A
RS485 COM	N/A	RS485 – RS485 COM
RS485 B	23	RS485 – RS485 B
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	28	SG OUT Analog Speed Control range -2.5VDC – +2.5VDC
Analog Speed Control	29	SG COM
Analog Speed Control Shield	N/A	N/A

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

Available list of texts of fault codes **see Waukesha ESM Fault Codes on page 1510.**

Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS232(2) mode	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>
IntelliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1) RS 232(1) <sup>3</sup> , RS 232(2) <sup>4</sup>

Available list of texts of fault codes **see Waukesha ESM Fault Codes on page 1510**

<sup>1</sup>external RS232-485 converter is required  
<sup>2</sup>external RS232-485 converter is required  
<sup>3</sup>external RS232-485 converter is required  
<sup>4</sup>external RS232-485 converter is required

## Waukesha wiring recommendations

Two modbus wires are available at the end of the Customer Interface Harness (loose wires). The two wires are grey and labeled RS 485A- and RS 485B+.

RS-485 networking needs termination resistors if long wire runs are used. Termination resistors of 120 are placed across the RS-485 A- and B+ wires at each device and at the MODBUS master (InteliGen<sup>NT</sup>, InteliSys<sup>NT</sup> controllers has jumper connecting this resistor closed as default). For short distances of 10 m or less and with slower baud rates (ComAp uses 9600 bps), termination resistors are not needed.

Typically, short distances of 32 ft. (10 m) would not require termination resistors; however, if you experience communication errors, first check the programmed baud rate. ComAp uses 9600 bps which is Waukesha default setting. If communication errors persist, termination resistors may be necessary even for short distances.

## Diagnostic lamps

It is possible to configure Yellow Warning Lamp and Red Shutdown Lamp as binary inputs. Displaying of fault codes in the alarm list is conditioned by configuration of these inputs. Once they are not configured the alarms are blocked and not displayed.

## Waukesha ESM2

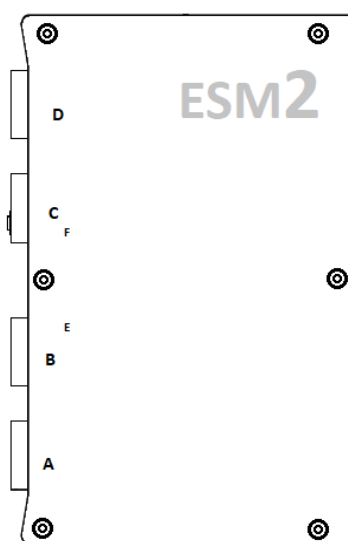


Image 5.182 ESM2

## Controllers that support the ESM2

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MainFuelValve		Main Fuel Valve
PreChamFuelVal		Pre-chamber Fuel Valve
EngineRunning		Engine Running
StarterMotor		Starter Motor



Pre/PostLube		Pre/Post Lube
EngineAlarm		Engine Alarm
EngineShutdown		Engine Shutdown
EngineKnocking		EngineKnocking
MisFire		Misfire
IgnitEnabled		IgnitionEnabled
MalfnIndicLight		Malfunction Indicator Light for EPA Cert engines
DriverCircuit1		PDB Driver circuit 1
DriverCircuit2		PDB Driver circuit 2
DriverCircuit3		PDB Driver circuit 3
DriverCircuit4		PDB Driver circuit 4
DriverCircuit5		PDB Driver circuit 5
DriverCircuit6		PDB Driver circuit 6
DistrCircuit1		PDB Distribution Circuit 1
DistrCircuit2		PDB Distribution Circuit 2
DistrCircuit3		PDB Distribution Circuit 3
DistrCircuit4		PDB Distribution Circuit 4
DistrCircuit5		PDB Distribution Circuit 5
DistrCircuit6		PDB Distribution Circuit 6
DistrCircuit7		PDB Distribution Circuit 7
DistrCircuit8		PDB Distribution Circuit 8
IgnitHighPower		Ignition High Power
StartSignal		Start engine signal
NormalShutdown		Normal shutdown
EShutdown		Emergency shutdown
RemoteRPM		Remote RPM select
RunHighIdle		Run high idle
LoadComing		Load coming
AltrDyn/SynMod		Alternate dynamics / synchronizer mode
LockoutButton		Lockout button
UserDigInput1		User digital input 1
UserDigInput2		User digital input 2
PreLubegFlag		7 Customer pre-lube flag
ServiceToolFlg		Service Tool flag
FuelValvManFlg		Fuel Control Valves Manual Flag
V-OverTrip		PDB Overvoltage Trip
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AvailEngLoad		Available Engine Load
EngineHours		Current engine operating hours
Countdown		Countdown until engine starts
Spd-Avg		Average RPM
P-Oil		Oil Pressure
P-IntAbsolute		Intake Manifold Absolute Pressure
P-BoostAbs		Boost Absolute Pressure

IMAPleft Bank		IMAP left bank (rear)
IMAPrightBank		IMAP right bank (front)
P-Crankcase		Crankcase Pressure
P-Res1left		Reserve Pressure (1 / left)
P-Res2right		Reserve Pressure (2 / right)
P-Barometric		Barometric pressure (TRICAN)
P-PreCatalyst		Pre Catalyst Pressure
P-PostCatalyst		Post Catalyst Pressure
P-DeltaCAT		Delta CAT Pressure
P-BoostLeft		Boost pressure Left
P-BoostRight		Boost pressure Right
OperMode		Engine Operating mode
T-CoolantOut		Coolant outlet temperature
T-IntakeAir		Intake Manifold Air Temperature
T-Oil		Oil Temperature
T-1stExhaust		1st Exhaust Temperature
T-2stExhaust		2nd Exhaust Temperature
T-1stCatalyst		1st Catalyst Temperature
T-2stCatalyst		2nd Catalyst Temperature
T-AmbTRICAN		Ambient temperature (TRICAN)
T-CatDelta		Catalyst Temperature Delta
T-ExhCyl 1		Exhaust temperature, cylinder 1
T-ExhCyl 2		Exhaust temperature, cylinder 2
T-ExhCyl 3		Exhaust temperature, cylinder 3
T-ExhCyl 4		Exhaust temperature, cylinder 4
T-ExhCyl 5		Exhaust temperature, cylinder 5
T-ExhCyl 6		Exhaust temperature, cylinder 6
T-ExhCyl 7		Exhaust temperature, cylinder 7
T-ExhCyl 8		Exhaust temperature, cylinder 8
T-ExhCyl 9		Exhaust temperature, cylinder 9
T-ExhCyl10		Exhaust temperature, cylinder 10
T-ExhCyl11		Exhaust temperature, cylinder 11
T-ExhCyl12		Exhaust temperature, cylinder 12
T-ExhCyl13		Exhaust temperature, cylinder 13
T-ExhCyl14		Exhaust temperature, cylinder 14
T-ExhCyl15		Exhaust temperature, cylinder 15
T-ExhCyl16		Exhaust temperature, cylinder 16
T-MainBear1		Main bearing temperature 1
T-MainBear2		Main bearing temperature 2
T-MainBear3		Main bearing temperature 3
T-MainBear4		Main bearing temperature 4
T-MainBear5		Main bearing temperature 5
T-MainBear6		Main bearing temperature 6
T-MainBear7		Main bearing temperature 7
T-MainBear8		Main bearing temperature 8
T-MainBear9		Main bearing temperature 9
SparkTimeCyl 1		Displayed spark timing cylinder 1

SparkTimeCyl 2		Displayed spark timing cylinder 2
SparkTimeCyl 3		Displayed spark timing cylinder 3
SparkTimeCyl 4		Displayed spark timing cylinder 4
SparkTimeCyl 5		Displayed spark timing cylinder 5
SparkTimeCyl 6		Displayed spark timing cylinder 6
SparkTimeCyl 7		Displayed spark timing cylinder 7
SparkTimeCyl 8		Displayed spark timing cylinder 8
SparkTimeCyl 9		Displayed spark timing cylinder 9
SparkTimeCyl10		Displayed spark timing cylinder 10
SparkTimeCyl11		Displayed spark timing cylinder 11
SparkTimeCyl12		Displayed spark timing cylinder 12
SparkTimeCyl13		Displayed spark timing cylinder 13
SparkTimeCyl14		Displayed spark timing cylinder 14
SparkTimeCyl15		Displayed spark timing cylinder 15
SparkTimeCyl16		Displayed spark timing cylinder 16
BaseSparkTime		Desired base spark timing
RPMSetPoint		RPM Set Point
AmbRelHumidity		Ambient relative humidity as reported from TRICAN sensor
WKIInput		WKI input
ExhaustNoxLvl		Exhaust Nox Level
AFRLeftBank		AFR Mode Left Bank
AFRRightBank		AFR Mode Right Bank
FuelCtrlLeft		Fuel Control Valve Left Position In percent
FuelCtrlRight		Fuel Control Valve Right Position In percent
FuelValMaxPos		Fuel Valve Max position
FuelValMinPos		Fuel Valve Min Position
FuelValStrtPos		Fuel Valve Start Position
PurgeTime		Purge Time
InputDrvnEqpt		TO Input from driven equipment
SparkRefCyl 1		Spark Reference Cylinder 1
SparkRefCyl 2		Spark Reference Cylinder 2
SparkRefCyl 3		Spark Reference Cylinder 3
SparkRefCyl 4		Spark Reference Cylinder 4
SparkRefCyl 5		Spark Reference Cylinder 5
SparkRefCyl 6		Spark Reference Cylinder 6
SparkRefCyl 7		Spark Reference Cylinder 7
SparkRefCyl 8		Spark Reference Cylinder 8
SparkRefCyl 9		Spark Reference Cylinder 9
SparkRefCyl10		Spark Reference Cylinder 10
SparkRefCyl11		Spark Reference Cylinder 11
SparkRefCyl12		Spark Reference Cylinder 12
SparkRefCyl13		Spark Reference Cylinder 13
SparkRefCyl14		Spark Reference Cylinder 14
SparkRefCyl15		Spark Reference Cylinder 15
SparkRefCyl16		Spark Reference Cylinder 16
RPMmodif		The RPM modification value from a Generator control
Torque		Engine torque

NbrMisfireCyl		Number of misfiring cylinders
PwrOutput		Engine Power Output
ThrottlePos		Throttle Position
P-PreFilter		Gauge pre-filter oil pressure
P-OilFiltrDiff		Oil filter differential pressure
T-ExhaustAvg		Average exhaust temperature
V-System		System Voltage
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

## Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

## Recommended wiring

Function	CI Harness ECU 47pin connector	Controller
<b>RS485 A</b>	2	RS485 – RS485 A
<b>RS485 COM</b>	N/A	RS485 – RS485 COM
<b>RS485 B</b>	23	RS485 – RS485 B
<b>Emergency Shutdown (+24V)</b>	15	N/A
<b>Run/Stop</b>	25	Any binary output configured as Fuel Solenoid
<b>Key Switch</b>	24	Any binary output configured as ECU Starter
<b>Analog Speed Control</b>	N/A	SG OUT Analog Speed Control range -2.5VDC – +2.5VDC
<b>Analog Speed Control</b>	N/A	SG COM
<b>Analog Speed Control Shield</b>	N/A	N/A

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

## Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS485(1)conv.	ENABLED	RS 485(1) RS 232(1) <sup>1</sup> ,
IntelliSys <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS485(1)conv.	ENABLED	RS 485(1) RS 232(1) <sup>2</sup> ,

## Waukesha wiring recommendations

Two modbus wires are available at the end of the Customer Interface Harness (loose wires). The two wires are grey and labeled RS 485A- and RS 485B+.

RS-485 networking needs termination resistors if long wire runs are used. Termination resistors of 120 are placed across the RS-485 A- and B+ wires at each device and at the MODBUS master ( IntelliGen<sup>NT</sup>,

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

InteliSys<sup>NT</sup> controllers has jumper connecting this resistor closed as default). For short distances of 10 m or less and with slower baud rates (ComAp uses 9600 bps), termination resistors are not needed.









Typically, short distances of 32 ft. (10 m) would not require termination resistors; however, if you experience communication errors, first check the programmed baud rate. ComAp uses 9600 bps which is Waukesha default setting. If communication errors persist, termination resistors may be necessary even for short distances.

Diagnostic lamps

It is possible to configure Yellow Warning Lamp and Red Shutdown Lamp as binary inputs. Displaying of fault codes in the alarm list is conditioned by configuration of these inputs. Once they are not configured the alarms are blocked and not displayed.

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blinkg fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Waukesha ESM2 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

Waukesha ESM

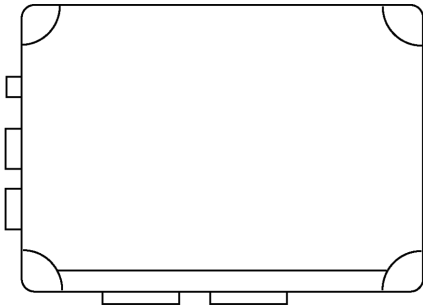


Image 5.183 ESM

Controllers that support the ESM

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Alter Dynamics/Synchr Mode	AltDynSyncMode	500	

Emergency Shutdown	EmergShutdown	500	
Engine Knocking	EngKnocking	500	
Engine Running	EngineRunning	500	
Load Coming	Load Coming	500	
Lockout Button/Ignit Module	LockButt/Ignit	500	
Normal Shutdown	NormalShutdown	500	
Pre-chamber Fuel Valve	PreFuelValve	500	
Pre/Post Lube	Pre/PostLube	500	
Remote RPM Select	RemoteRpmSelct	500	
Run High Idle	Run High Idle	500	
Start Engine Signal	StartEngSignal	500	
Starter Motor	StarterMotor	500	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Battery Voltage	BatteryVolt	500	
Coolant Temp	CoolantTemp	500	
Desired Spark Timing	DesSparkTim	500	
Engine Oil Temp	OilTemp	500	
Engine Speed	EngineSpeed	500	
Engine operating hours	EngineHours	10000	
First exhaust temperature	1.ExhstTemp	500	
Intake Manifold Press	IntakePress	500	
Intake Manifold Temp	IntakeTemp	500	
Main Fuel Valve	MainFuelValve	500	
Oil Pressure	OilPress	500	
Second exhaust temperature	2.ExhstTemp	500	
Spark Timing 1	SparkTiming1	500	
Spark Timing 10	SparkTiming10	500	
Spark Timing 11	SparkTiming11	500	
Spark Timing 12	SparkTiming12	500	
Spark Timing 13	SparkTiming13	500	
Spark Timing 14	SparkTiming14	500	
Spark Timing 15	SparkTiming15	500	
Spark Timing 16	SparkTiming16	500	
Spark Timing 2	SparkTiming2	500	
Spark Timing 3	SparkTiming3	500	
Spark Timing 4	SparkTiming4	500	
Spark Timing 5	SparkTiming5	500	
Spark Timing 6	SparkTiming6	500	
Spark Timing 7	SparkTiming7	500	
Spark Timing 8	SparkTiming8	500	
Spark Timing 9	SparkTiming9	500	
Throttle Position	Throttle	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>

### Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

### Recommended wiring

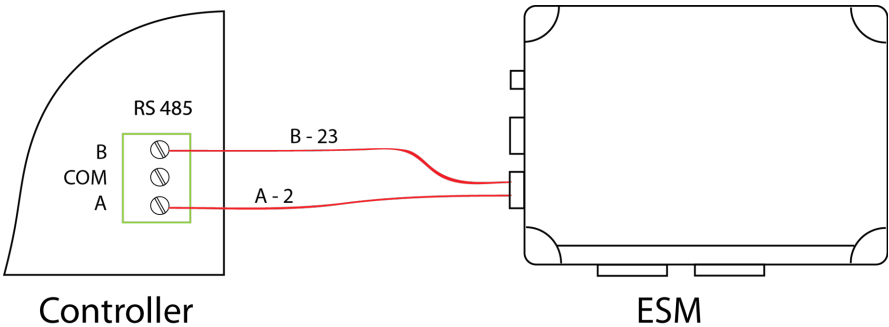


Image 5.184 Recommended wiring of ESM

Function	ECU 47pin connector	Controller
RS485 A	2	RS485 – RS485 A
RS485 COM	N/A	RS485 – RS485 COM
RS485 B	23	RS485 – RS485 B
Battery + (positive)	N/A	N/A
Battery - (negative)	N/A	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	28	SG OUT Analog Speed Control range -2.5VDC – +2.5VDC
Analog Speed Control	29	SG COM
Analog Speed Control Shield	N/A	N/A

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

Available list of texts of fault codes **see Waukesha ESM Fault Codes on page 1510.**

### Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1), RS 485(2) RS 232(1) <sup>1</sup> , RS 232(2) <sup>2</sup>
IntelliSys <sup>NT</sup>	RS232(2) mode	ECU LINK	
	RS485(X)conv.	ENABLED DISABLED	RS 485(1) RS 232(1) <sup>3</sup> , RS 232(2) <sup>4</sup>

<sup>1</sup>external RS232-485 converter is required

<sup>2</sup>external RS232-485 converter is required

<sup>3</sup>external RS232-485 converter is required

<sup>4</sup>external RS232-485 converter is required

## Communication settings

Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	None

Available list of texts of fault codes **see Waukesha ESM Fault Codes on page 1510**

## Waukesha wiring recommendations

Two modbus wires are available at the end of the Customer Interface Harness (loose wires). The two wires are grey and labeled RS 485A- and RS 485B+.

RS-485 networking needs termination resistors if long wire runs are used. Termination resistors of 120 are placed across the RS-485 A- and B+ wires at each device and at the MODBUS master (InteliGen<sup>NT</sup>, InteliSys<sup>NT</sup> controllers has jumper connecting this resistor closed as default). For short distances of 10 m or less and with slower baud rates (ComAp uses 9600 bps), termination resistors are not needed.

Typically, short distances of 32 ft. (10 m) would not require termination resistors; however, if you experience communication errors, first check the programmed baud rate. ComAp uses 9600 bps which is Waukesha default setting. If communication errors persist, termination resistors may be necessary even for short distances.

## Diagnostic lamps

It is possible to configure Yellow Warning Lamp and Red Shutdown Lamp as binary inputs. Displaying of fault codes in the alarm list is conditioned by configuration of these inputs. Once they are not configured the alarms are blocked and not displayed.

## Waukesha ESM2

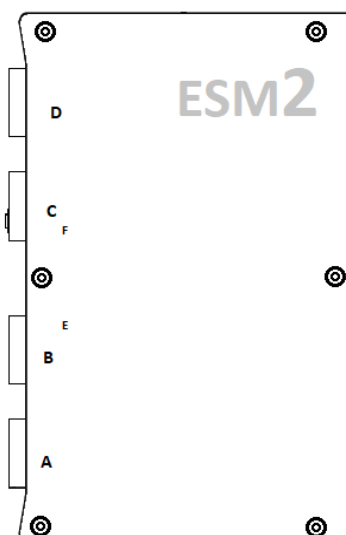


Image 5.185 ESM2

## Controllers that support the ESM2

Refer to [Compatibility Table \(page 10\)](#)



## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MainFuelValve		Main Fuel Valve
PreChamFuelVal		Pre-chamber Fuel Valve
EngineRunning		Engine Running
StarterMotor		Starter Motor
Pre/PostLube		Pre/Post Lube
EngineAlarm		Engine Alarm
EngineShutdown		Engine Shutdown
EngineKnocking		EngineKnocking
MisFire		Misfire
IgnitEnabled		IgnitionEnabled
MalfIndicLight		Malfunction Indicator Light for EPA Cert engines
DriverCircuit1		PDB Driver circuit 1
DriverCircuit2		PDB Driver circuit 2
DriverCircuit3		PDB Driver circuit 3
DriverCircuit4		PDB Driver circuit 4
DriverCircuit5		PDB Driver circuit 5
DriverCircuit6		PDB Driver circuit 6
DistrCircuit1		PDB Distribution Circuit 1
DistrCircuit2		PDB Distribution Circuit 2
DistrCircuit3		PDB Distribution Circuit 3
DistrCircuit4		PDB Distribution Circuit 4
DistrCircuit5		PDB Distribution Circuit 5
DistrCircuit6		PDB Distribution Circuit 6
DistrCircuit7		PDB Distribution Circuit 7
DistrCircuit8		PDB Distribution Circuit 8
IgnitHighPower		Ignition High Power
StartSignal		Start engine signal
NormalShutdown		Normal shutdown
EShutdown		Emergency shutdown
RemoteRPM		Remote RPM select
RunHighIdle		Run high idle
LoadComing		Load coming
AltrDyn/SynMod		Alternate dynamics / synchronizer mode
LockoutButton		Lockout button
UserDigInput1		User digital input 1
UserDigInput2		User digital input 2
PreLubegFlag		7 Customer pre-lube flag
ServiceToolFlg		Service Tool flag
FuelValvManFlg		Fuel Control Valves Manual Flag
V-OverTrip		PDB Overvoltage Trip
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AvailEngLoad		Available Engine Load
EngineHours		Current engine operating hours
Countdown		Countdown until engine starts
Spd-Avg		Average RPM
P-Oil		Oil Pressure
P-IntAbsolute		Intake Manifold Absolute Pressure
P-BoostAbs		Boost Absolute Pressure
IMAPleft Bank		IMAP left bank (rear)
IMAPrightBank		IMAP right bank (front)
P-Crankcase		Crankcase Pressure
P-Res1left		Reserve Pressure (1 / left)
P-Res2right		Reserve Pressure (2 / right)
P-Barometric		Barometric pressure (TRICAN)
P-PreCatalyst		Pre Catalyst Pressure
P-PostCatalyst		Post Catalyst Pressure
P-DeltaCAT		Delta CAT Pressure
P-BoostLeft		Boost pressure Left
P-BoostRight		Boost pressure Right
OperMode		Engine Operating mode
T-CoolantOut		Coolant outlet temperature
T-IntakeAir		Intake Manifold Air Temperature
T-Oil		Oil Temperature
T-1stExhaust		1st Exhaust Temperature
T-2stExhaust		2nd Exhaust Temperature
T-1stCatalyst		1st Catalyst Temperature
T-2stCatalyst		2nd Catalyst Temperature
T-AmbTRICAN		Ambient temperature (TRICAN)
T-CatDelta		Catalyst Temperature Delta
T-ExhCyl 1		Exhaust temperature, cylinder 1
T-ExhCyl 2		Exhaust temperature, cylinder 2
T-ExhCyl 3		Exhaust temperature, cylinder 3
T-ExhCyl 4		Exhaust temperature, cylinder 4
T-ExhCyl 5		Exhaust temperature, cylinder 5
T-ExhCyl 6		Exhaust temperature, cylinder 6
T-ExhCyl 7		Exhaust temperature, cylinder 7
T-ExhCyl 8		Exhaust temperature, cylinder 8
T-ExhCyl 9		Exhaust temperature, cylinder 9
T-ExhCyl10		Exhaust temperature, cylinder 10
T-ExhCyl11		Exhaust temperature, cylinder 11
T-ExhCyl12		Exhaust temperature, cylinder 12
T-ExhCyl13		Exhaust temperature, cylinder 13
T-ExhCyl14		Exhaust temperature, cylinder 14
T-ExhCyl15		Exhaust temperature, cylinder 15
T-ExhCyl16		Exhaust temperature, cylinder 16
T-MainBear1		Main bearing temperature 1

T-MainBear2		Main bearing temperature 2
T-MainBear3		Main bearing temperature 3
T-MainBear4		Main bearing temperature 4
T-MainBear5		Main bearing temperature 5
T-MainBear6		Main bearing temperature 6
T-MainBear7		Main bearing temperature 7
T-MainBear8		Main bearing temperature 8
T-MainBear9		Main bearing temperature 9
SparkTimeCyl 1		Displayed spark timing cylinder 1
SparkTimeCyl 2		Displayed spark timing cylinder 2
SparkTimeCyl 3		Displayed spark timing cylinder 3
SparkTimeCyl 4		Displayed spark timing cylinder 4
SparkTimeCyl 5		Displayed spark timing cylinder 5
SparkTimeCyl 6		Displayed spark timing cylinder 6
SparkTimeCyl 7		Displayed spark timing cylinder 7
SparkTimeCyl 8		Displayed spark timing cylinder 8
SparkTimeCyl 9		Displayed spark timing cylinder 9
SparkTimeCyl10		Displayed spark timing cylinder 10
SparkTimeCyl11		Displayed spark timing cylinder 11
SparkTimeCyl12		Displayed spark timing cylinder 12
SparkTimeCyl13		Displayed spark timing cylinder 13
SparkTimeCyl14		Displayed spark timing cylinder 14
SparkTimeCyl15		Displayed spark timing cylinder 15
SparkTimeCyl16		Displayed spark timing cylinder 16
BaseSparkTime		Desired base spark timing
RPMSetPoint		RPM Set Point
AmbRelHumidity		Ambient relative humidity as reported from TRICAN sensor
WKIInput		WKI input
ExhaustNoxLvl		Exhaust Nox Level
AFRLeftBank		AFR Mode Left Bank
AFRRightBank		AFR Mode Right Bank
FuelCtrlLeft		Fuel Control Valve Left Position In percent
FuelCtrlRight		Fuel Control Valve Right Position In percent
FuelValMaxPos		Fuel Valve Max position
FuelValMinPos		Fuel Valve Min Position
FuelValStrtPos		Fuel Valve Start Position
PurgeTime		Purge Time
InputDrvnEqpt		TO Input from driven equipment
SparkRefCyl 1		Spark Reference Cylinder 1
SparkRefCyl 2		Spark Reference Cylinder 2
SparkRefCyl 3		Spark Reference Cylinder 3
SparkRefCyl 4		Spark Reference Cylinder 4
SparkRefCyl 5		Spark Reference Cylinder 5
SparkRefCyl 6		Spark Reference Cylinder 6
SparkRefCyl 7		Spark Reference Cylinder 7
SparkRefCyl 8		Spark Reference Cylinder 8
SparkRefCyl 9		Spark Reference Cylinder 9

SparkRefCyl10		Spark Reference Cylinder 10
SparkRefCyl11		Spark Reference Cylinder 11
SparkRefCyl12		Spark Reference Cylinder 12
SparkRefCyl13		Spark Reference Cylinder 13
SparkRefCyl14		Spark Reference Cylinder 14
SparkRefCyl15		Spark Reference Cylinder 15
SparkRefCyl16		Spark Reference Cylinder 16
RPMmodif		The RPM modification value from a Generator control
Torque		Engine torque
NbrMisfireCyl		Number of misfiring cylinders
PwrOutput		Engine Power Output
ThrottlePos		Throttle Position
P-PreFilter		Gauge pre-filter oil pressure
P-OilFiltrDiff		Oil filter differential pressure
T-ExhaustAvg		Average exhaust temperature
V-System		System Voltage
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

## Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

## Recommended wiring

Function	CI Harness ECU 47pin connector	Controller
<b>RS485 A</b>	2	RS485 – RS485 A
<b>RS485 COM</b>	N/A	RS485 – RS485 COM
<b>RS485 B</b>	23	RS485 – RS485 B
<b>Emergency Shutdown (+24V)</b>	15	N/A
<b>Run/Stop</b>	25	Any binary output configured as Fuel Solenoid
<b>Key Switch</b>	24	Any binary output configured as ECU Starter
<b>Analog Speed Control</b>	N/A	SG OUT Analog Speed Control range -2.5VDC – +2.5VDC
<b>Analog Speed Control</b>	N/A	SG COM
<b>Analog Speed Control Shield</b>	N/A	N/A

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

## Recommended controller setting

Controller	Setpoint	Value	Interface
IntelliGen <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS485(1)conv.	ENABLED	RS 485(1) RS 232(1) <sup>1</sup> ,

<sup>1</sup>external RS232-485 converter is required

IntelliSys <sup>NT</sup>	RS232(1) mode	ECU LINK	
	RS485(1)conv.	ENABLED	RS 485(1) RS 232(1) <sup>1</sup> ,

## Communication settings

Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	Even

## Waukesha wiring recommendations

Two modbus wires are available at the end of the Customer Interface Harness (loose wires). The two wires are grey and labeled RS 485A- and RS 485B+.

RS-485 networking needs termination resistors if long wire runs are used. Termination resistors of 120 are placed across the RS-485 A- and B+ wires at each device and at the MODBUS master (IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> controllers has jumper connecting this resistor closed as default). For short distances of 10 m or less and with slower baud rates (ComAp uses 9600 bps), termination resistors are not needed.









Typically, short distances of 32 ft. (10 m) would not require termination resistors; however, if you experience communication errors, first check the programmed baud rate. ComAp uses 9600 bps which is Waukesha default setting. If communication errors persist, termination resistors may be necessary even for short distances.

## Diagnostic lamps

It is possible to configure Yellow Warning Lamp and Red Shutdown Lamp as binary inputs. Displaying of fault codes in the alarm list is conditioned by configuration of these inputs. Once they are not configured the alarms are blocked and not displayed.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Waukesha ESM2 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

<sup>1</sup>external RS232-485 converter is required

## 6.1.49 Weichai engines support

ECU Type	Engine type
<a href="#">WISE 10B V1 (page 706)</a>	Baudouin diesel engines 12M26, 12M33, 16M55
<a href="#">WISE 10B V2 (page 729)</a>	Weichai engines 6WH17-M, 8WH17-M, 12WH17-M, 16WH17-M
<a href="#">WISE 12B (page 710)</a>	Engines P3.2
<a href="#">WISE 13A (page 713)</a>	Engines P2.3N and P4.1
<a href="#">WISE 15A (page 716)</a>	Series WP12 and Baudouin diesel engines 4M06G45/6, 4M06G50/5, 4M06G55/5, 6M21G400/6, 6M21G500/5, 6M33G660/6, 6M33G825/5
<a href="#">WISE 15C (page 719)</a>	Series WP13, WP12, WP10, WP7, WP6 and P6 engines
<a href="#">WISE 18B (page 722)</a>	12M26, 12M33
<a href="#">WISE 18B Duel (page 725)</a>	16M55

### WISE 10B V1

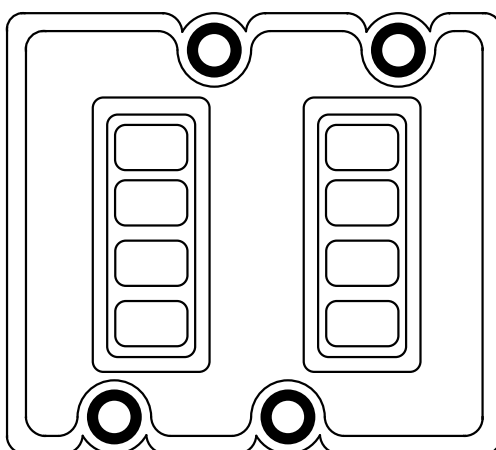


Image 5.186 WISE 10B

### Controllers that support the WISE 10B

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Lvl-OilLow		Lube Oil Level Low
Lvl-CoolantLow		Coolant Water Level Low
T-ExhaustL		Left Exhaust Temperature Fault Condition
T-ExhaustR		Right Exhaust Temperature Fault Condition
P-Rail		Rail Fault Condition
T-LubeOilL		Left Lube Oil Temperature Fault Condition

T-LubeOilR		Right Lube Oil Temperature Fault Condition
P-LubeOilL		Left Lube Oil Pressure Fault Condition
P-LubeOilR		Right Lube Oil Pressure Fault Condition
P-CoolantL		Left Coolant Water Pressure Fault Condition
P-CoolantR		Right Coolant Water Pressure Fault Condition
T-CoolantL		Left Coolant Water Temperature Fault Condition
T-CoolantR		Right Coolant Water Temperature Fault Condition
P-LubeOilDiffL		Left Lube Oil Filter Differential Pressure Fault Condition
P-LubeOilDiffR		Right Lube Oil Filter Differential Pressure Fault Condition
P-FuelDiff		Fuel Oil Filter Differential Pressure Fault Condition
T-AirInletL		Left Air Inlet Temperature Fault Condition
T-AirInletR		Right Air Inlet Temperature Fault Condition
P-AirInletL		Left Air Inlet Pressure Fault Condition
P-AirInletR		Right Air Inlet Pressure Fault Condition
T-Fuel		Fuel Oil Temperature (After Coarse Filter) Fault Condition
P-Fuel		Fuel Oil Pressure (After Coarse Filter) Fault Condition
LightOn <sub>4,5,6,7</sub>		Light On Alarm Fault Condition
RuduceLoad		Reduce Load Fault Condition
StopFault <sub>4,5,6,7</sub>		Stop Fault Condition
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Common Start Signal
Stop <sub>4,5,6,7</sub>		Common Stop Signal
Override <sub>4,5,6,7</sub>		Override Switch Signal
StartEmerg		Emergency Start Signal
StopEmerg		Emergency Stop Signal
<b>ECU analog outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
T-ExhaustL <sub>5</sub> *		Left Exhaust Temperature
T-ExhaustR <sub>5</sub> *		Right Exhaust Temperature
P-RailL		Left Rail Pressure
T-LubeOilL*		Left Lube Oil Temperature
P-RailR		Right Rail Pressure
P-LubeOilR <sub>5</sub> *		Right Lube Oil Pressure
P-LubeOilL <sub>5</sub> *		Left Lube Oil Pressure
T-LubeOilR*		Right Lube Oil Temperature
P-CoolantL*		Left Coolant Water Pressure
P-CoolantR*		Right Coolant Water Pressure
T-CoolantL <sub>5</sub> *		Left Coolant Water Temperature
T-CoolantR <sub>5</sub> *		Right Coolant Water Temperature
Spd-Engine <sub>4,5,6,7</sub>		Engine Speed
P-LubeOilDiffL*		Left LubeOil Filter Differential Pressure
P-LubeOilDiffR*		Right LubeOil Filter Differential Pressure
P-FuelFilter*		Fuel Oil Filter Differential Pressure
V-Battery		Battery Voltage
T-AirInletL*		Left Air Inlet Temperature
T-AirInletR*		Right Air Inlet Temperature

P-AirInletL*		Left Air Inlet Pressure
P-AirInletR*		Right air inlet Pressure
T-Fuel		Fuel Oil Temperature (After Coarse Filter)
P-Fuel*		Fuel Oil Pressure (After Coarse Filter)
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Barometric	108	Barometric Pressure
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
OverrideMode	695	Engine Override Control Mode
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Recommended wiring

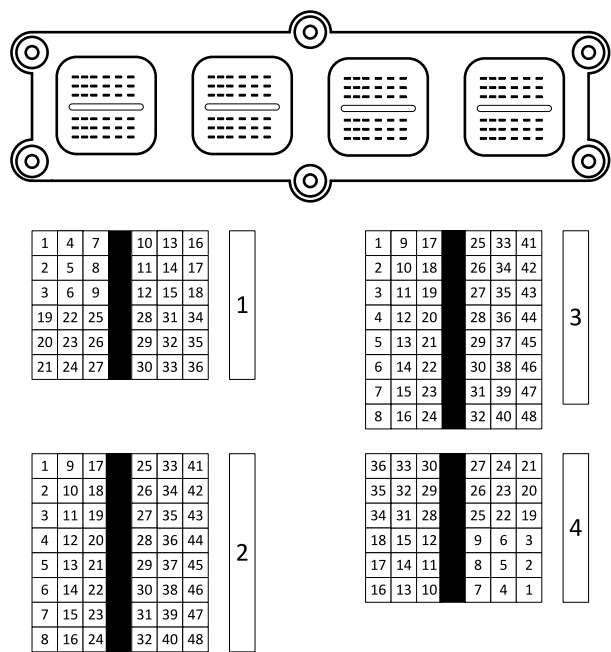


Image 5.187 ECU Connector

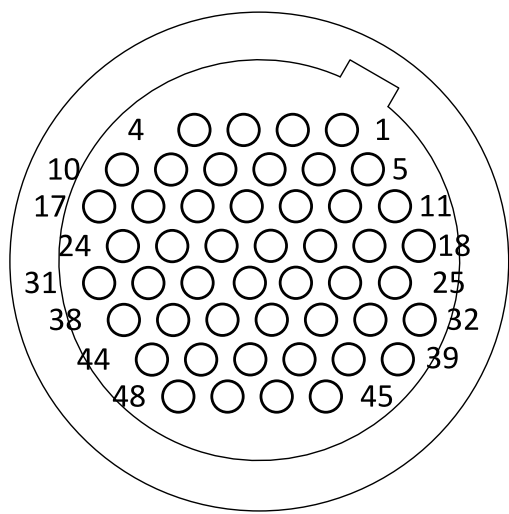


Image 5.188 16-pin connector



Function	ECU connectors	16-Pin connector	Controller
CAN H	4.22	6	CAN1 (extension modules/J1939) – CAN H
CAN COM	4.14	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	4.23	14	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	4.01,4.04,4.05,4.07,4.08	16	N/A
Battery - (negative)	4.06,4.09,4.10,4.11,4.12,4.13,4.16	4	N/A

Key Switch	4.36		Any binary output configured as ECU PwrRelay
Analog Speed Control	3.09		SG OUT
Analog Speed Control	3.01		SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Weichai Wise10B V1 Fault Codes on page 1511**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise10B V1 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 12B

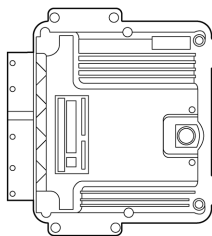


Image 5.189 WISE 12B

## Controllers that support the WISE 12B

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-ExtCrankcase <sub>1,2,3,4,5,6,7</sub>	22	Engine Extended Crankcase Blow-by Pressure
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TranGear <sub>1,2,3,4,5,6,7</sub>	523	Transmission Current Gear
TranGearSelec <sub>1,2,3,4,5,6,7</sub>	524	Transmission Selected Gear
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring








Function	ECU K connector	Controller
CAN H	80	CAN1 (extension modules/J1939) – CAN H
CAN COM	76	CAN1 (extension modules/J1939) – CAN COM
CAN L	81	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	44, 45, 63, 64	N/A
Battery - (negative)	46, 47, 65, 66	N/A
Key Switch	30	Any binary output configured as ECU PwrRelay
Analog Speed Control	51	SG OUT
Analog Speed Control	69	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Weichai Wise12B Fault Codes on page 1513**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise12B aftertreatment lamps							
	Not Supported		Not Supported		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 13A

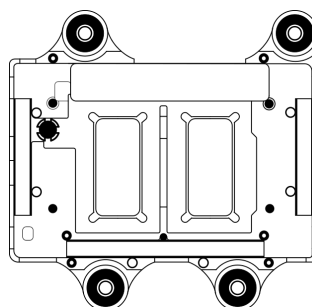


Image 5.190 WISE 13A

## Controllers that support the WISE 13A

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FuelEconomy		Fuel Economy Status
EmeUnlckFnc		Emergency Unlock Function Status
StarterModule		Status Of Starter Module
EngineT15		Status Of Engine While T15
ParkingBrake <sub>1,2,3,4,5,6,7</sub>	70	Parking Brake Switch
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
Brake <sub>1,2,3,4,5,6,7</sub>	597	Brake Switch
Clutch <sub>1,2,3,4,5,6,7</sub>	598	Clutch Switch
IdleDecrement <sub>1,2,3,4,5,6,7</sub>	967	Engine Idle Decrement Switch
IdleIncrement <sub>1,2,3,4,5,6,7</sub>	968	Engine Idle Increment Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp

VGTAirCtrlVlv <sub>1,2,3,4,5,6,7</sub>	2792	Engine Variable Geometry Turbocharger (VGT) Air Control Shutoff Valve
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-OilRelative		Relative Engine Oil Pressure
P-Oil		Engine Oil Pressure Status
T-Over		Over Coolant Temperature Status
ColdStartHtr		Cold Start Heater Status
SVSLamp		SVS Lamp Status
OBDLamp		OBD Lamp Status
ExhFlapOut		Exhaust Flap Valve Output
P-ExtCrankcase <sub>1,2,3,4,5,6,7</sub>	22	Engine Extended Crankcase Blow-by Pressure
APP2 <sub>1,2,3,4,5,6,7</sub>	29	Accelerator Pedal Position 2
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
I-Alternator <sub>1,2,3,4,5,6,7</sub>	115	Alternator Current
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed

TtlVehicleHour <sub>1,2,3,4,5,6,7</sub>	246	Total Vehicle Hours
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
ChAirThermost <sub>1,2,3,4,5,6,7</sub>	1134	Engine Charge Air Cooler Thermostat Opening
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	2789	Engine Turbocharger 1 Calculated Turbine Intake Temperature
T-Turbo1Out <sub>1,2,3,4,5,6,7</sub>	2790	Engine Turbocharger 1 Calculated Turbine Outlet Temperature
EGR1Vlv1 <sub>1,2,3,4,5,6,7</sub>	2791	Engine Exhaust Gas Recirculation 1 Valve 1 Control 1
VGTActuator <sub>1,2,3,4,5,6,7</sub>	2795	Engine Variable Geometry Turbocharger (VGT) 1 Actuator Position
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-AT1Exh2 <sub>1,2,3,4,5,6,7</sub>	3249	Aftertreatment 1 Exhaust Temperature 2
T-DPFIntermed <sub>1,2,3,4,5,6,7</sub>	3250	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
T-DEFTnk2 <sub>1,2,3,4,5,6,7</sub>	3515	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
TotalFuelUsed3 <sub>1,2,3,4,5,6,7</sub>	5054	Engine Total Fuel Used (High Resolution)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile	
Source	Speed Request
Convert	YES

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU "X2" connector	Controller
<b>CAN H</b>	54	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	76	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	01, 03, 05	N/A
<b>Battery - (negative)</b>	02, 04, 06	N/A
<b>Key Switch</b>	88	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	61, 83	SG OUT
<b>Analog Speed Control</b>	62, 84	SG COM

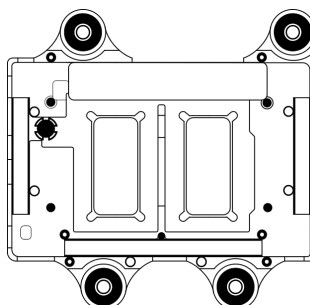
For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Weichai Wise13A Fault Codes on page 1513**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise13A aftertreatment lamps							
	Not Supported		Not Supported		Solid On		Solid On
							Blink slow
	Not Supported		Not Supported		Not Supported		Solid On

## WISE 15A





## Controllers that support the WISE 15A

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
CCEnable <sub>1,2,3,4,5,6,7</sub>	596	Cruise Control Enable Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used

TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



## Recommended wiring

Function	ECU "X1" connector	Controller
<b>CAN H</b>	42	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	44	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	43	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	01, 03, 05	N/A
<b>Battery - (negative)</b>	02, 04, 06	N/A
<b>Key Switch</b>	59	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	9	SG OUT
<b>Analog Speed Control</b>	25	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Weichai Wise15A Fault Codes on page 1528**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise15A aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 15C

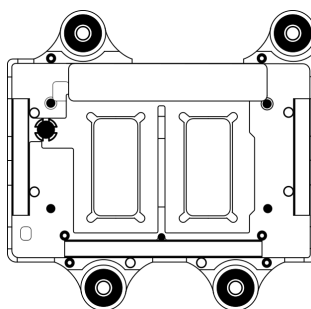


Image 5.192 WISE 15C

## Controllers that support the WISE 15C

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel	97	Water In Fuel Indicator 1
CCEnable	596	Cruise Control Enable Switch
StopLamp <sup>1,2,3,4,5,6,7</sup>	623	Red Stop Lamp
WarningLamp <sup>1,2,3,4,5,6,7</sup>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
WaitStartLamp <sup>1,2,3,4,7</sup>	1081	Engine Wait to Start Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfuncLamp	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
T-Intcooler	52	Engine Intercooler Temperature
APP	91	Accelerator Pedal Position 1
Load <sup>1,2,3,4,5,6,7</sup>	92	Engine Percent Load At Current Speed
P-FuelDelivery	94	Engine Fuel Delivery Pressure
OilLevel	98	Engine Oil Level
P-Oil <sup>1,2,3,4,5,6,7</sup>	100	Engine Oil Pressure
P-Crankcase	101	Engine Crankcase Pressure 1
P-Intake <sup>1,2,3,4,7</sup>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sup>1,2,3,4,7</sup>	105	Engine Intake Manifold 1 Temperature
P-Barometric	108	Barometric Pressure
P-Coolant1	109	Engine Coolant Pressure 1
T-Coolant <sup>1,2,3,4,5,6,7</sup>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
P-CoolFiltrDiff	112	Engine Coolant Filter Differential Pressure
KeySwitch	158	Key Switch Battery Potential
Battery	168	Battery Potential / Power Input 1
T-AmbientAir	171	Ambient Air Temperature
T-AirIntake	172	Engine Intake 1 Air Temperature
T-Exhaust	173	Engine Exhaust Temperature
T-Fuel	174	Engine Fuel 1 Temperature 1
T-Oil	175	Engine Oil Temperature 1
T-TurboOil	176	Engine Turbocharger Oil Temperature
FuelRate <sup>1,2,3,4,7</sup>	183	Engine Fuel Rate
EngineSpeed <sup>1,2,3,4,5,6,7</sup>	190	Engine Speed
TorqueDemand	512	Driver's Demand Engine - Percent Torque
TorqueActual	513	Actual Engine - Percent Torque
Torque	514	Nominal Friction - Percent Torque
Spd-Desired*	515	Engine's Desired Operating Speed
SourceAddress	1483	Source Address of Controlling Device for Engine Control
StarterMode	1675	Engine Starter Mode
DEFTnkLevel <sup>1,2,3,4,5,6,7</sup>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank Volume

TorqueDemand	2432	Engine Demand - Percent Torque
T-DEFTnk	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1
SCR IntakeNOx	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1OutNOx	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen1	3227	Aftertreatment 1 Outlet Percent Oxygen 1
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sup>1,2,3,4,5,6,7</sup>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU "X1" connector	Controller
<b>CAN H</b>	42	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	44	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	43	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	01, 03, 05	N/A
<b>Battery - (negative)</b>	02, 04, 06	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Key Switch	59	Any binary output configured as ECU PwrRelay
Analog Speed Control	9	SG OUT
Analog Speed Control	25	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise15A aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 18B

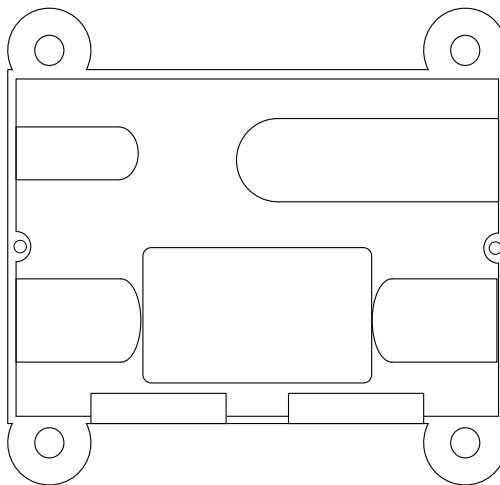


Image 5.193 Wise18B

## Controllers that support the WISE 18B

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ExpTankLow		Expansion Tank Level Low
FuelLeak		Fuel Leakage Alarm

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Start Signal
StopLamp <sub>4,5,6,7</sub>		Stop Signal
OverControl		OverControl Switch Signal
StartEmergency		Emergency Start Signal
StopEmergency		Emergency Stop Signal
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
T-Exhaust2*		Exhaust Temperature 2
T-Exhaust1*		Exhaust Temperature 1
P-Crankcase		Crankcase Pressure
P-Coolant		Coolant Pressure
P-OilBefFilt		Lub. Oil. Pressure Before Filter
P-FuelNeg		Fuel Negative Pressure
P-AirFilter1		Air Filter Pressure 1
P-OilAftFilt		Fuel Oil Pressure After Filter
P-OilAuxDuct1		Lub. Oil Pressure at Auxiliary Duct 1
T-AirIntake		Intake Air Temperature
T-Exhaust3		Exhaust Temperature 3
P-OilAuxDuct2		Lub. Oil Pressure at Auxiliary Duct 2
T-Coolant2		Coolant Temp 2
P-OilAfterFilt		Lub. Oil Pressure after filter
T-IntManifold2		Intake Manifold Temperature 2
P-AirIntake2		Intake Air Pressure 2
P-AirFilter2		Air Filter Pressure 2
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir	106	Engine Intake Air Pressure
P-Barometric	108	Barometric Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
Battery	168	Battery Potential / Power Input 1
T-Oil	175	Engine Oil Temperature 1
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual	513	Actual Engine - Percent Torque
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
OverrideMode	695	Engine Override Control Mode
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

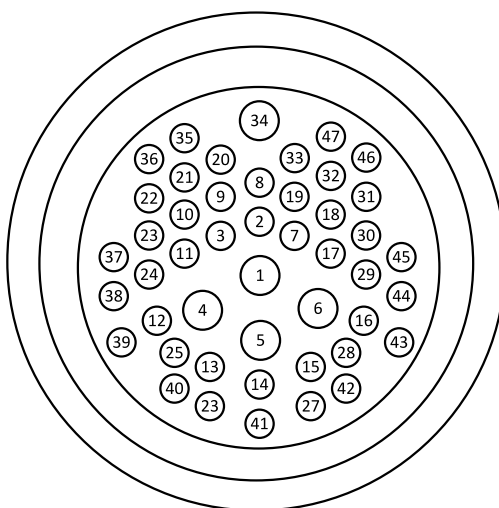


Image 5.194 47 pin ECU connector

Function	ECU 47Pin Conector	ECU 31Pin connector	Controller
<b>CAN H</b>	38	N/A	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	39	N/A	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	1,2,3,4	N/A
<b>Battery - (negative)</b>	N/A	9,10,11,12	N/A
<b>Key Switch</b>	25	8	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).











For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

Available list of texts of fault codes see **Weichai Wise18B Fault Codes** on page 1517

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise18B aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 18B Duel

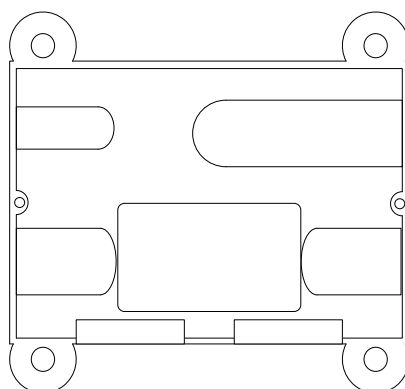


Image 5.195 Wise18B

## Controllers that support the WISE 18B Duel

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterLevelLow		Cooling Fresh Water Level Low
OilLevelLow		Lub. Oil Level Low
FuelLeak_M		Fuel Leakage Alarm (Master)
FuelLeak_S		Fuel Leakage Alarm (Slave)
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Start <sub>4,5,6,7</sub>		Common Start Signal
Stop <sub>4,5,6,7</sub>		Common Stop Signal

Override <sub>4,5,6,7</sub>		Override Switch Signal
StartEmerg		Emergency Start Signal
StopEmerg		Emergency Stop Signal
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Exhaust_M*		Exhaust Temperature Before Turbine (Master)
T-Exhaust_S*		Exhaust Temperature Before Turbine (Slave)
T-Exhaust2_M*		Exhaust Temperature 2 Before Turbine (Master)
T-Exhaust2_S*		Exhaust Temperature 2 Before Turbine (Slave)
T-Oil Sump <sub>5</sub> *		Lub. Oil Temperature At Sump
P-Oil Main <sub>5</sub>		Lub. Oil Pressure At Main Duct
T-Oil Main*		Lub. Oil Temperature At Main Duct
P-HighCoolant		High Temperature Coolant Water Pressure
P-Intercoolant		Intercoolant Pressure
T-HighCoolant <sub>5</sub> *		High Temperature Coolant Temperature
T-Intercoolant <sub>5</sub> *		Intercooler Temperature
EngineSpeed <sub>4,5,6,7</sub>		Engine Speed
T-SeaCoolantO*		Cooling Sea Water Temperature Outlet
P-SeaCoolantO		Cooling Sea Water Pressure Outlet
P-OilPreFilter		Lub. Oil Pressure Before Filter
BatteryVoltage		Battery Voltage
T-LeftAirIn*		Left Air Temperature Inlet
T-RightAirIn*		Right Air Temperature Inlet
P-LeftAirIn		Left Air Pressure Inlet
P-RightAirIn		Right Air Pressure Inlet
T-Fuel_M		Fuel Oil Temperature (Master)
T-Fuel_S		Fuel Oil Temperature (Slave)
P-AirFilter_M		Air Filter Pressure (Master)
P-AirFilter_S		Air Filter Pressure (Slave)
P-FuelOut		Fuel Oil Pressure Outlet
P-FuelIn		Fuel Oil Pressure Inlet
P-FuelBFilt_M		Fuel Oil Pressure Before Coarse Filter (Master)
P-FuelBFilt_S		Fuel Oil Pressure Before Coarse Filter (Slave)
P-FuelAFilt_M		Fuel Oil Pressure After Coarse Filter (Master)
P-FuelAFilt_S		Fuel Oil Pressure After Coarse Filter (Slave)
P-Rail_M		Rail Pressure (Master)
P-Rail_S		Rail Pressure (Slave)
T-TcK 1		TcK Temperature 1
T-TcK 2		TcK Temperature 2
T-TcK 3		TcK Temperature 3
T-TcK 4		TcK Temperature 4
T-TcK 5		TcK Temperature 5
T-TcK 6		TcK Temperature 6
T-TcK 7		TcK Temperature 7
T-TcK 8		TcK Temperature 8
T-TcK 9		TcK Temperature 9
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed

P-Barometric	108	Barometric Pressure
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueActual	513	Actual Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
OverrideMode	695	Engine Override Control Mode
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

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<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

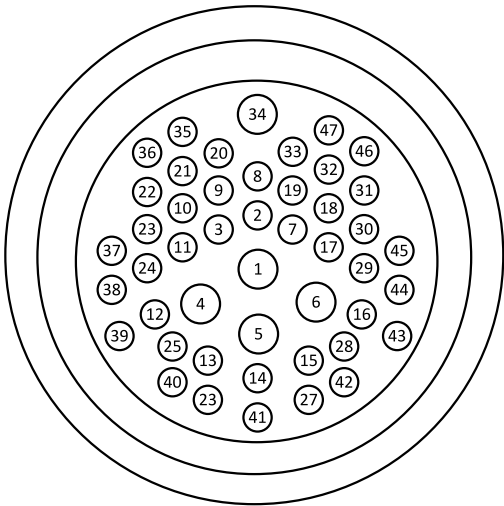


Image 5.196 47 pin ECU connector

Function	ECU 47Pin Conector	ECU 31Pin connector	Controller
CAN H	38	N/A	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	39	N/A	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A	1,2,3,4	N/A
Battery - (negative)	N/A	9,10,11,12	N/A
Key Switch	25	8	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56.**

Available list of texts of fault codes **see Weichai Wise18B Duel Fault Codes on page 1524**

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blinkg fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Weichai Wise18B Duel aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## WISE 10B V2

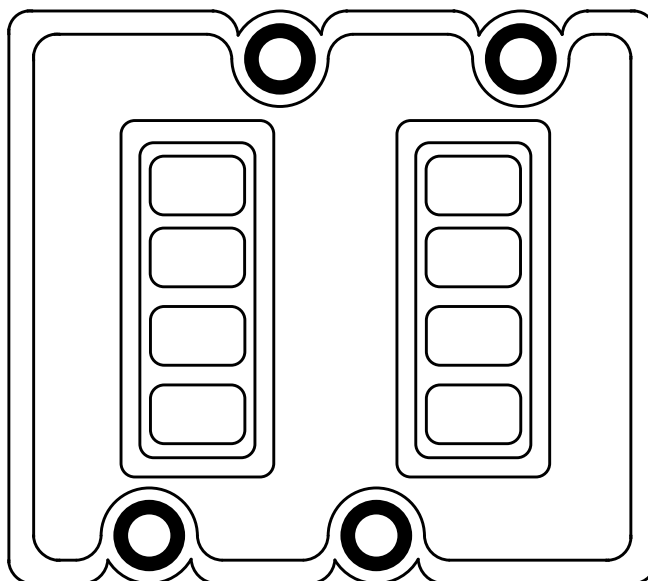


Image 5.197 WISE 10B V2

### Controllers that support the WISE 10B

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Lvl-OilLow		Lube Oil Level Low
Lvl-CoolantLow		Coolant Water Level Low
T-ExhaustL		Left Exhaust Temperature Fault Condition
T-ExhaustR		Right Exhaust Temperature Fault Condition
P-Rail		Rail Fault Condition
T-LubeOilL		Left Lube Oil Temperature Fault Condition
T-LubeOilR		Right Lube Oil Temperature Fault Condition
P-LubeOilL		Left Lube Oil Pressure Fault Condition
P-LubeOilR		Right Lube Oil Pressure Fault Condition
P-CoolantL		Left Coolant Water Pressure Fault Condition
P-CoolantR		Right Coolant Water Pressure Fault Condition
T-CoolantL		Left Coolant Water Temperature Fault Condition
T-CoolantR		Right Coolant Water Temperature Fault Condition
P-LubeOilDiffL		Left Lube Oil Filter Differential Pressure Fault Condition
P-LubeOilDiffR		Right Lube Oil Filter Differential Pressure Fault Condition
P-FuelDiff		Fuel Oil Filter Differential Pressure Fault Condition
T-AirInletL		Left Air Inlet Temperature Fault Condition
T-AirInletR		Right Air Inlet Temperature Fault Condition
P-AirInletL		Left Air Inlet Pressure Fault Condition
P-AirInletR		Right Air Inlet Pressure Fault Condition
T-Fuel		Fuel Oil Temperature (After Coarse Filter) Fault Condition
P-Fuel		Fuel Oil Pressure (After Coarse Filter) Fault Condition

LightOn <sub>4,5,6,7</sub>		Light On Alarm Fault Condition
RuduceLoad		Reduce Load Fault Condition
StopFault <sub>4,5,6,7</sub>		Stop Fault Condition
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Start <sub>4,5,6,7</sub>		Common Start Signal
Stop <sub>4,5,6,7</sub>		Common Stop Signal
Override <sub>4,5,6,7</sub>		Override Switch Signal
StartEmerg		Emergency Start Signal
StopEmerg		Emergency Stop Signal
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-ExhaustL <sub>5</sub> *		Left Exhaust Temperature
T-ExhaustR <sub>5</sub> *		Right Exhaust Temperature
P-RailL		Left Rail Pressure
T-LubeOilL*		Left Lube Oil Temperature
P-RailR		Right Rail Pressure
P-LubeOilR <sub>5</sub> *		Right Lube Oil Pressure
P-LubeOilL <sub>5</sub> *		Left Lube Oil Pressure
T-LubeOilR*		Right Lube Oil Temperature
P-CoolantL*		Left Coolant Water Pressure
P-CoolantR*		Right Coolant Water Pressure
T-CoolantL <sub>5</sub> *		Left Coolant Water Temperature
T-CoolantR <sub>5</sub> *		Right Coolant Water Temperature
Spd-Engine <sub>4,5,6,7</sub>		Engine Speed
P-LubeOilDiffL*		Left LubeOil Filter Differential Pressure
P-LubeOilDiffR*		Right LubeOil Filter Differential Pressure
P-FuelFilter*		Fuel Oil Filter Differential Pressure
V-Battery		Battery Voltage
T-AirInletL*		Left Air Inlet Temperature
T-AirInletR*		Right Air Inlet Temperature
P-AirInletL*		Left Air Inlet Pressure
P-AirInletR*		Right air inlet Pressure
T-Fuel		Fuel Oil Temperature (After Coarse Filter)
P-Fuel*		Fuel Oil Pressure (After Coarse Filter)
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Barometric	108	Barometric Pressure
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
OverrideMode	695	Engine Override Control Mode
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

# Controller’s analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

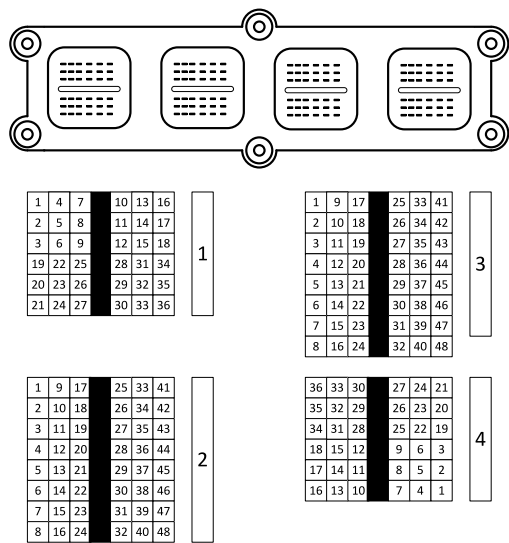


Image 5.198 ECU Connector

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

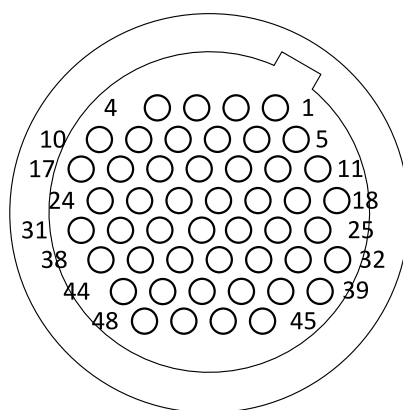


Image 5.199 16-pin connector



Function	ECU connectors	16-Pin connector	Controller
<b>CAN H</b>	4.22	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	4.14	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4.23	14	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	4.01,4.04,4.05,4.07,4.08	16	N/A
<b>Battery - (negative)</b>	4.06,4.09,4.10,4.11,4.12,4.13,4.16	4	N/A
<b>Key Switch</b>	4.36		Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	3.09		SG OUT
<b>Analog Speed Control</b>	3.01		SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Weichai Wise10B V1 Fault Codes on page 1511**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Weichai Wise10B V1 aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported



## 6.1.50 Woodward devices support

ECU Type	Device type
<a href="#">IC920 (page 898)</a>	IC920 ignition controller
<a href="#">ProAct ISC (page 733)</a>	ProAct ISC speed control module

### ProAct ISC

#### Controllers that support the ProAct ISC

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
RunEnShutdn		Run Enable Shutdown
CANPosFail		CAN Position Deman Failure
InterFail		Internal Failure
InterFault		Internal Fault (Not Used)
PrimDemFault		Primary Demand Fault (Not Used)
BackDemFault		Backup Demand Fault (Not Used)
GeneralAlarm		General Alarm
GeneralShutdn		General Shutdown
PosError		Position Error
T-High		High Temp Alert
T-LimitingAct		Temp Limiting Active (Not Used)
V-24 supp High		24 Volt Supply High
V-24 supp Low		24 Volt Supply Low
T-Low Alert		Low Temp Alert
PowerupReset		Powerup Reset
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ValvePosAct		Actual Valve Position
ValvePosDes		Desired Valve Position
Hearthbeat		Heart Beat Counter
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

#### Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

## Recommended wiring

Function	Controller
CAN H	CAN H
CAN COM	CAN COM
CAN L	CAN L
Battery + (positive)	N/A
Battery - (negative)	N/A

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Woodward ProAct ISC aftertreatment lamps



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## 6.1.51 GAZ (YMZ) engines support

ECU Type	Engine type
<a href="#">EDC7 (page 735)</a> (EDC7UC31)	Series YMZ-530

### EDC7

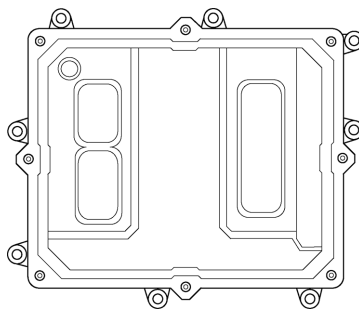


Image 5.200 EDC7UC31

### Controllers that support the EDC7

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
BrakeSwitch <sub>1,2,3,4,5,6,7</sub>	571	Retarder Enable - Brake Assist Switch
ShiftSwitch <sub>1,2,3,4,5,6,7</sub>	572	Retarder Enable - Shift Assist Switch
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown <sub>1,2,3,4,5,6,7</sub>	1110	Engine Protection System has Shutdown Engine
AP2LowIdleSw <sub>1,2,3,4,5,6,7</sub>	2970	Accelerator Pedal 2 Low Idle Switch
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
TranTrqCnvEng <sub>1,2,3,4,5,6,7</sub>	573	Transmission Torque Converter Lockup Engaged
TranShifting <sub>1,2,3,4,5,6,7</sub>	574	Transmission Shift In Process
MomentaryOverr <sub>1,2,3,4,5,6,7</sub>	606	Engine Momentary Overspeed Enable
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
FuelLevel <sub>1,2,3,4,5,6,7</sub>	96	Fuel Level 1
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure

T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
TorqueMode <sub>1,2,3,4,5,6,7</sub>	900	Retarder Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
Fan1EstSpd <sub>1,2,3,4,5,6,7</sub>	975	Engine Fan 1 Estimated Percent Speed
FanDrive <sub>1,2,3,4,5,6,7</sub>	977	Fan Drive State
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	1085	Intended Retarder Percent Torque
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1480	Source Address of Controlling Device for Retarder Control
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
TorqueActMax <sub>1,2,3,4,5,6,7</sub>	1717	Actual Maximum Available Retarder - Percent Torque
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.









## Recommended wiring

Function	ECU vehicle connector	Diagnostic connector	Controller
<b>CAN H</b>	1.35	6	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	1.34	14	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1.08,1.09,1.02,1.03	16	N/A
<b>Battery - (negative)</b>	1.10,1.11,1.05,1.06	5	N/A
<b>Key Switch</b>	1.40	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see YaMZ EDC7 Fault Codes on page 1531**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

YaMZ EDC7 aftertreatment lamps							
	Not Supported		Not Supported		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.52 Yanmar engines support

ECU Type	Engine type
<a href="#">TNV (page 738)</a>	All TNV Common Rail Series
<a href="#">EDC17 (page 743)</a>	3TNV88C, 3TNV86CT, 4TNV88C, 4TNV86CT, 4TNV98C, 4TNV98CT
<a href="#">TNV EGC (page 747)</a>	4TNV98T-Z, 4TNV98-Z, 4TNV88-Z, 4TNV84T-Z, 3TNV88-Z, 3TNV88F-E, 3TNV80FT-Z

### TNV

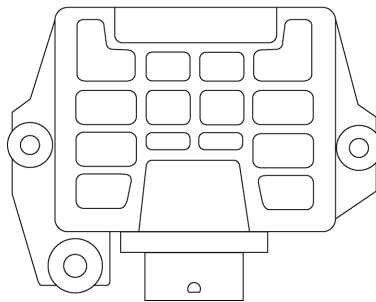


Image 5.201 TNV

### Controllers that support the TNV

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat		Preheat Function Acknowledge
Shutdown		Shutdown Acknowledge
GlowPlug		Glow Plug Function Acknowledge
STARTSW Port		STARTSW Port status
SHUDNSW Port		SHUDNSW Port status
IGNSW Port		IGNSW Port status
APP-IP1		Droop selection SW status
APP-IP2		Starter permission2 SW status
APP-IP3		Speed1 SW status
APP-IP4		Speed2 SW status
APP-IP5		High idling limitation SW status
APP-IP6		Speed selection enable SW status
APP-IP7		Engine Stop2 SW status
MAIN-RLY		MAIN-RLY Port status
SAID-RLY		SAID-RLY Port status
FAIL-LMP <sub>5</sub>		FAIL-LMP Port status
PREHT-LMP		PREHT-LMP Port status

SpeedSel		APP-OP1 status
CHGSW Port		Charge failure SW status
ACLSW Port		Air cleaner SW status
WSSW Port		Oily water separator SW status
LOPSW Port		Oil pressure SW status
PDLSW		Accelerator pedal SW status
APP-IP8		High idling selection SW status
APP-IP9		Starter permission1 SW status
REGSW		DPF regeneration request SW status
REGMSW		DPF regeneration inhibit SW status
WDSBSW		Regeneration interlock SW status
DPF-M1 Port		DPF regeneration Req lamp status
DPF-M2 Port		DPF regeneration inhibit lamp status
DPF-M4 Port <sub>5</sub>		DPF regeneration acknowledge lamp status
REOP2		Buzzer status
STR-RLY Port		Starter relay status
OVHT-LMP Port		Coolant temperature warning lamp status
REOP3		Amber warning lamp status
REOP4		Red engine stop lamp status
CANTO Port		CAN time out status
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFPassive <sub>1,2,3,4,5,6,7</sub>	3699	Aftertreatment Diesel Particulate Filter Passive Regeneration Status
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
DPFInhClutch <sub>1,2,3,4,5,6,7</sub>	3704	Diesel Particulate Filter Active Regeneration Inhibited Due to Clutch Disengaged
DPFInhBrake <sub>1,2,3,4,5,6,7</sub>	3705	Diesel Particulate Filter Active Regeneration Inhibited Due to Service Brake Active
DPFInhPTO <sub>1,2,3,4,5,6,7</sub>	3706	Diesel Particulate Filter Active Regeneration Inhibited Due to PTO Active
DPFInhIdle <sub>1,2,3,4,5,6,7</sub>	3707	Diesel Particulate Filter Active Regeneration Inhibited Due to Accelerator Pedal Off Idle
DPFInhNeutral <sub>1,2,3,4,5,6,7</sub>	3708	Diesel Particulate Filter Active Regeneration Inhibited Due to Out of Neutral
DPFInhSpeed <sub>1,2,3,4,5,6,7</sub>	3709	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Above Allowed Speed
DPFInhBrake2 <sub>1,2,3,4,5,6,7</sub>	3710	Diesel Particulate Filter Active Regeneration Inhibited Due to Parking Brake Not Set

DPFInhExhTmp <sub>1,2,3,4,5,6,7</sub>	3711	Diesel Particulate Filter Active Regeneration Inhibited Due to Low Exhaust Temperature
DPFInhSysFlt <sub>1,2,3,4,5,6,7</sub>	3712	Diesel Particulate Filter Active Regeneration Inhibited Due to System Fault Active
DPFInhTimeout <sub>1,2,3,4,5,6,7</sub>	3713	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout
DPFInhSysLock <sub>1,2,3,4,5,6,7</sub>	3714	Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout
DPFInhLockout <sub>1,2,3,4,5,6,7</sub>	3715	Diesel Particulate Filter Active Regeneration Inhibited Due to Permanent System Lockout
DPFInhWarmed <sub>1,2,3,4,5,6,7</sub>	3716	Diesel Particulate Filter Active Regeneration Inhibited Due to Engine Not Warmed Up
DPFInhLowSpd <sub>1,2,3,4,5,6,7</sub>	3717	Diesel Particulate Filter Active Regeneration Inhibited Due to Vehicle Speed Below Allowed Speed
DPFInhConfig <sub>1,2,3,4,5,6,7</sub>	3718	Diesel Particulate Filter Automatic Active Regeneration Initiation Configuration
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CrankRequest <sub>4,5,6,7</sub>		Crank Request
Shutdown <sub>4,5,6,7</sub>		Shutdown Request
Interlock <sub>5</sub>		Regeneration Interlock Switch
DPFProhibit <sub>4,5,6,7</sub>		DPF Regeneration Prohibition Switch
DPFRequest <sub>4,5,6,7</sub>		DPF Regeneration Request Switch
Droop <sub>4,5,6,7</sub>		Droop Mode status
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DPFMode		DPF Regeneration Control Mode Information
DPFProcess		DPF Regeneration Control Process Information
Emergency		Emergency Mode Information
StatRegen		Stationary Regeneration Request
AshCleaning		Ash Cleaning Request
DPFProcess		DPF Regeneration Process Status
NCD lamp <sub>5</sub>		APP-OP2 status
DPF-M3 Port <sub>4,5</sub>		Exhaust temperature lamp status
ThrottleVlv1 <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
T-RoadSurface <sub>1,2,3,4,5,6,7</sub>	79	Road Surface Temperature
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-AirFilt1Diff <sub>1,2,3,4,5,6,7</sub>	107	Engine Air Filter 1 Differential Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-CoolFiltrDiff <sub>1,2,3,4,5,6,7</sub>	112	Engine Coolant Filter Differential Pressure
SLI <sub>1,2,3,4,5,6,7</sub>	114	SLI Battery 1 Net Current



P-Fuel1Inj1 <sub>1,2,3,4,5,6,7*</sub>	156	Engine Fuel 1 Injector Timing Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
P-Fuel1InjCtr <sub>1,2,3,4,5,6,7*</sub>	164	Engine Fuel Injection Control Pressure
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-CabInterior <sub>1,2,3,4,5,6,7</sub>	170	Cab Interior Temperature
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
P-EGR1Diff <sub>1,2,3,4,5,6,7</sub>	411	Engine Exhaust Gas Recirculation 1 Differential Pressure
T-EGR1 <sub>1,2,3,4,5,6,7</sub>	412	Engine Exhaust Gas Recirculation 1 Temperature
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
FuelActCmd <sub>1,2,3,4,5,6,7</sub>	633	Engine Fuel Actuator 1 Control Command
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
FuelActCmd2 <sub>1,2,3,4,5,6,7</sub>	1244	Engine Fuel Actuator 2 Control Command
P-Fuel1Inj2 <sub>1,2,3,4,5,6,7*</sub>	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
AT1ExhFMI <sub>1,2,3,4,5,6,7</sub>	3243	Aftertreatment 1 Exhaust Temperature 1 Preliminary FMI
DPFIntake <sub>1,2,3,4,5,6,7</sub>	3244	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Preliminary FMI
T-AT1Exh3 <sub>1,2,3,4,5,6,7</sub>	3245	Aftertreatment 1 Exhaust Temperature 3
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
AT1Exh3FMI <sub>1,2,3,4,5,6,7</sub>	3247	Aftertreatment 1 Exhaust Temperature 3 Preliminary FMI
DPFExhOutlet <sub>1,2,3,4,5,6,7</sub>	3248	Aftertreatment 1 Diesel Particulate Filter Outlet Exhaust Temperature Preliminary FMI
T-AT1Exh2 <sub>1,2,3,4,5,6,7</sub>	3249	Aftertreatment 1 Exhaust Temperature 2
T-DPFIntermed <sub>1,2,3,4,5,6,7</sub>	3250	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
AT1Exh2FMI <sub>1,2,3,4,5,6,7</sub>	3252	Aftertreatment 1 Exhaust Temperature 2 Preliminary FMI
DPFDiffFMI <sub>1,2,3,4,5,6,7</sub>	3253	Aftertreatment 1 Diesel Particulate Filter Differential Pressure Preliminary FMI
DPFIntermed <sub>1,2,3,4,5,6,7</sub>	3254	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature Preliminary FMI
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
ThrottleCmd2 <sub>1,2,3,4,5,6,7</sub>	3465	Engine Throttle Actuator 2 Control Command

DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
APP		Accelerator Pedal Position
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	Controller
CAN H	40	CAN1 (extension modules/J1939) – CAN H
CAN COM	30	CAN1 (extension modules/J1939) – CAN COM
CAN L	39	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	34	N/A







<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Battery - (negative)	33,45	N/A
Key Switch	7	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Yanmar TNV Fault Codes on page 1531**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yanmar TNV aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		Solid On
	Blink fast		Blink fast		Solid On
	Solid On		Solid On		Not Supported
					Solid On

## EDC17

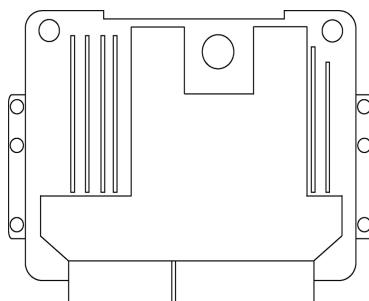


Image 5.202 TNV

## Controllers that support the EDC17

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FAIL-LMP <sub>5</sub>		FAIL-LMP Port status
DPF-M4 Port <sub>5</sub>		DPF Regeneration Acknowledge Lamp Status
REOP2		Buzzer
STR-RLY Port		Starter Relay Status
OVHT-LMP-Port		Coolant temperature warning Lamp
REOP3		Amber Warning Lamp staus

REOP4		Red Engine stop Lamp status
Preheat		Preheat Function Acknowledge
Shutdown		Shutdown Acknowledge
GlowPlug		Glow Plug Function Acknowledge
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
DPFInhibited <sub>1,2,3,4,5,6,7</sub>	3702	Diesel Particulate Filter Active Regeneration Inhibited Status
DPFInhSwitch <sub>1,2,3,4,5,6,7</sub>	3703	Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Stop <sub>4,5,6,7</sub>		Shutdown Request
Crank <sub>4,5,6,7</sub>		Crank Request
Interlock <sub>5</sub>		Regeneration Interlock Switch
DPF Inhibit <sub>4,5,6,7</sub>		DPF Regeneration Prohibition Switch
DPF Force <sub>4,5,6,7</sub>		DPF Regeneration Request Switch
Droop <sub>4,5,6,7</sub>		Droop Mode status
AuxShutdown <sub>1,2,3,4,5,6,7</sub>	970	Engine Auxiliary Shutdown Switch
AccelInterlock <sub>1,2,3,4,5,6,7</sub>	972	Accelerator Interlock Switch
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
DPFModelInf		DPF Regeneration Control Mode Information
DPFProcessInf		DPF Regeneration Control Process Information
Emergency		Emergency Mode Information
StatRegen		Stationary Regeneration Request
AshCleaning		Ash Cleaning Request
DPFProcess		DPF Regeneration Process Status"
NCD lamp <sub>5</sub>		APP-OP2 status
DPF-M1 Port		DPF Regeneration Req Lamp
DPF-M2 Port		DPF Regeneration Inhibit Lamp
DPF-M3 Port <sub>5</sub>		Exhaust Temperature Lamp Status
InduceTimeRem		Time remaining at Present Inducement
PendInducSever		Pending EGR Inducement Severity
InducementAct		Operator Inducement Active for EGR System Fault
InduceSeverity		EGR Operator Inducement Severity
ThrottleVlv <sub>1,2,3,4,5,6,7</sub>	51	Engine Throttle Valve 1 Position 1
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1

Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7*</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
P-EGR1Diff <sub>1,2,3,4,5,6,7</sub>	411	Engine Exhaust Gas Recirculation 1 Differential Pressure
T-EGR1 <sub>1,2,3,4,5,6,7</sub>	412	Engine Exhaust Gas Recirculation 1 Temperature
Spd-Desired <sub>1,2,3,4,5,6,7*</sub>	515	Engine's Desired Operating Speed
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
T-AT1Exh1 <sub>1,2,3,4,5,6,7</sub>	3241	Aftertreatment 1 Exhaust Temperature 1
T-DPFIntake <sub>1,2,3,4,5,6,7</sub>	3242	Aftertreatment 1 Diesel Particulate Filter Intake Temperature
T-DPFOutlet <sub>1,2,3,4,5,6,7</sub>	3246	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature
T-DPFIntermed <sub>1,2,3,4,5,6,7</sub>	3250	Aftertreatment 1 Diesel Particulate Filter Intermediate Temperature
P-DPFDiff <sub>1,2,3,4,5,6,7</sub>	3251	Aftertreatment 1 Diesel Particulate Filter Differential Pressure
ThrottleCmd <sub>1,2,3,4,5,6,7</sub>	3464	Engine Throttle Actuator 1 Control Command
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
DPFSootLoad <sub>1,2,3,4,5,6,7</sub>	3719	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent
DPFAshLoad <sub>1,2,3,4,5,6,7</sub>	3720	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent
DPFLastRegen <sub>1,2,3,4,5,6,7</sub>	3721	Aftertreatment 1 Diesel Particulate Filter Time Since Last Active Regeneration
DPFRegenForce <sub>1,2,3,4,5,6,7</sub>	4175	Diesel Particulate Filter Active Regeneration Forced Status
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
APP		Accelerator Pedal Position
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

### Recommended wiring

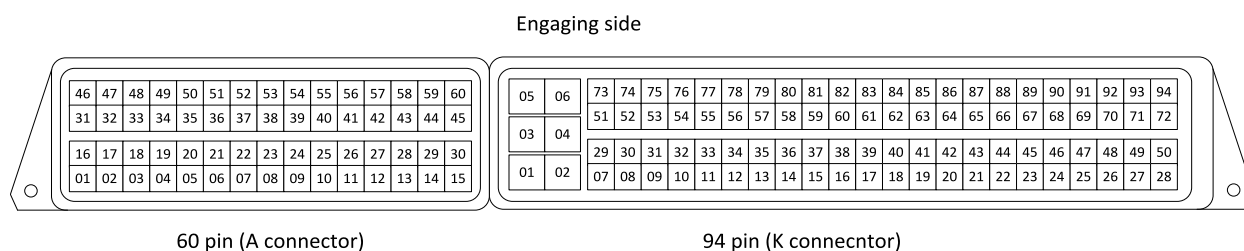


Image 5.203 EDC17 Connector









Function	ECU connector	Controller
<b>CAN H</b>	K54	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	K76	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	K01,K03,K05	N/A
<b>Battery - (negative)</b>	K02,K04,K06	N/A
<b>Key Switch</b>	K88	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM
<b>ECU Start Switch</b>	K35	
<b>ECU Stop Switch</b>	K32	
<b>Starter Permission</b>	K14, K38	

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Yanmar TNV Fault Codes on page 1531**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yanmar EDC17 aftertreatment lamps					
	Solid On		Solid On		Solid On
	Blink slow		Blink slow		
	Blink fast		Blink fast		
	Solid On		Solid On		Not Supported
					Solid On
					Solid On

## TNV EGC

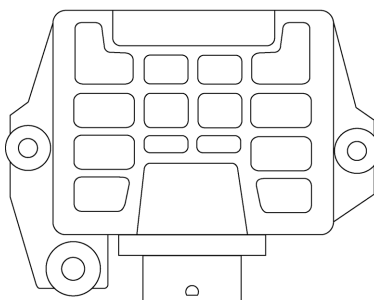


Image 5.204 TNV

## Controllers that support the TNV EGC

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Preheat <sub>3</sub>		Preheat Function Acknowledge
Shutdown <sub>3</sub>		Shutdown Acknowledge
STARTSW Port <sub>3</sub>		STARTSW Port status
SHUDNSW Port <sub>3</sub>		SHUDNSW Port status
IGNSW Port <sub>3</sub>		IGNSW Port status
APP-IP1 <sub>3</sub>		Droop selection SW status
APP-IP2 <sub>3</sub>		Starter permission2 SW status
APP-IP3 <sub>3</sub>		Speed1 SW status
APP-IP4 <sub>3</sub>		Speed2 SW status
APP-IP5 <sub>3</sub>		High idling limitation SW status
APP-IP6 <sub>3</sub>		Speed selection enable SW status
APP-IP7 <sub>3</sub>		Engine Stop2 SW status
MAIN-RLY <sub>3</sub>		MAIN-RLY Port status

RACK-RLY <sub>3</sub>		RACK-RLY Port Status
AIRHT-RLY <sub>3</sub>		AIRHT-RLY Port Status
CSD-CL <sub>3</sub>		CSD-CL Port Status
FAIL-LMP <sub>3,5</sub>		FAIL-LMP Port status
PREHT-LMP <sub>3</sub>		PREHT-LMP Port status
SpeedSel <sub>3</sub>		APP-OP1 status
SafetyRelay <sub>3</sub>		Safety relay operation
UnderEECU <sub>3</sub>		Under E-ECU initial operation
ExternSwitch <sub>3</sub>		External switch
Immobilizer <sub>3</sub>		Immobilizer
StarterOvrTime <sub>3</sub>		Starter over time (more than 30s)
CANYEC <sub>3</sub>		CAN Y_EC status
EngStopOper <sub>3</sub>		Engine stop operation
KeySwitchOFF <sub>3</sub>		Key switch OFF
InitRackErr <sub>3</sub>		Initial rack cheek error
ECUErr <sub>3</sub>		ECU error
EngOvrSpeedErr <sub>3</sub>		Engine over speed error
DiagToolOpr <sub>3</sub>		Diagnostics tool operation
EngineStall <sub>3</sub>		Engine stall
KeySwitchOFF <sub>3</sub>		Key switch OFF (Engine stop factor)
EngineStop1 <sub>3</sub>		Engine stop 1 SW
EngineStop2 <sub>3</sub>		Engine Stop 2 SW
SpeedSensErr <sub>3</sub>		Speed sensor error
RackActuator <sub>3</sub>		Rack actuator or Rack actuator relay error
ECUErrFls <sub>3</sub>		ECU error (FLASHROM)
EngOvrSpeedErr <sub>3</sub>		Engine over speed error (Engine stop factor)
ECUErrMap <sub>3</sub>		ECU error (Map)
OtherEngStop <sub>3</sub>		Other engine stop operation
ECUErrEEPROM <sub>3</sub>		ECU error (EEPROM)
ImmBlocked <sub>3</sub>		Immobilizer status Blocked
ImmLoUnl <sub>3</sub>		Immobilizer status Lock or Unlock
ImmUnlocked <sub>3</sub>		Immobilizer status Unlocked
ImmLocked <sub>3</sub>		Immobilizer status Locked
ImmNA <sub>3</sub>		Immobilizer status NA Immobilizer
ECOLampHigh <sub>3</sub>		ECO-Mode Lamp High-speed ON
ECOLampLow <sub>3</sub>		ECO-Mode Lamp Low-speed ON
RmaxDerat <sub>3</sub>		Rmax derating
SpeedDerat <sub>3</sub>		Speed derating
HighAltLim <sub>3</sub>		High-altitude output limit
IdlingSpdUp <sub>3</sub>		Idling speed up function
SmokeSuppres <sub>3</sub>		Bluish/white smoke suppression control function
SpdIncrease <sub>3</sub>		Speed increase control
TurbochProt <sub>3</sub>		Turbocharger protection high idle speed limit
GovMdlsochro <sub>3</sub>		Governor mode Isochroous
GovMdDroop <sub>3</sub>		Governor mode Droop
GovMdRevDroop <sub>3</sub>		Governor mode Reverse Droop
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch



StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
RoadSpdLimit <sub>1,2,3,4,5,6,7</sub>	1437	Road Speed Limit Status
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ShutdownReq <sub>3</sub>		Shutdown Request
StarterProhib <sub>3</sub>		Starter Prohibition
Rmax1 <sub>3</sub>		Rmax1
Rmax2 <sub>3</sub>		Rmax2
Droop <sub>3,4,5,6,7</sub>		Droop Mode status
ReverseDroop <sub>3</sub>		Reverse droop mode
Hi-idleLimit <sub>3</sub>		Hi-idle limit
HiidleLimSpeed <sub>3</sub>		Hi-idle limit speed
EngStopCmd <sub>3</sub>		Engine Stop command
Speed1 <sub>3</sub>		Speed1
Speed2 <sub>3</sub>		Speed2
ImplmntUp <sub>3</sub>		Implement (up)
ImplmntDown <sub>3</sub>		Implement (down)
SpeedSelect <sub>3</sub>		Speed selection enable
OverrideMode <sub>1,2,3</sub>	695	Engine Override Control Mode
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
NCD lamp <sub>3,5</sub>		APP-OP2 status
ActRackPos <sub>3</sub>		Actual Rack Position
ReqRackPos <sub>3</sub>		Request Rack Position
IsetRaw <sub>3</sub>		Iset raw
EGRSTEP <sub>3</sub>		EGR STEP
ComID <sub>3</sub>		Command ID Code
FuncID <sub>3</sub>		Function ID Code
ECUID <sub>3</sub>		ECU ID Code
PortSelect <sub>3</sub>		Port Select Data
PortOutput <sub>3</sub>		Port Output Data
Feedback <sub>3</sub>		Feed Back Data
ProcRes <sub>3</sub>		Process Result
EngGrossLoad <sub>3</sub>		Engine gross load ratio
EngineNetLoad <sub>3</sub>		Engine net load ratio
LoadUFO <sub>3</sub>		Load ration for UFO control
LoadDetec <sub>3</sub>		Load ratio for load detection
EngineNetLoad <sub>3</sub>		Engine net load ratio (Hold at acceleration)
OverloadAlarm <sub>3</sub>		Overload alarm
LowIdleSpeed <sub>3</sub>		Low-idle speed
HiidleDroop <sub>3</sub>		Hi-idle speed (Under droop mode)
HiidleIsochro <sub>3</sub>		Hi-idle speed (Under isochroous mode)
AvMaxSpeed <sub>3</sub>		Available maximum speed
EngContrState <sub>3</sub>		Engine control state

T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
T-RoadSurface <sub>1,2,3,4,5,6,7</sub>	79	Road Surface Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
SLI <sub>1,2,3,4,5,6,7</sub>	114	SLI Battery 1 Net Current
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
Battery <sub>1,2,3,4,5,6,7</sub>	168	Battery Potential / Power Input 1
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-TurboOil <sub>1,2,3,4,5,6,7</sub>	176	Engine Turbocharger Oil Temperature
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
TtlVehicleHour <sub>1,2,3,4,5,6,7</sub>	246	Total Vehicle Hours
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TtlPTOHours <sub>1,2,3,4,5,6,7</sub>	248	Total Power Takeoff Hours
TtlRevolutions <sub>1,2,3,4,5,6,7</sub>	249	Engine Total Revolutions
P-EGR1Diff <sub>1,2,3,4,5,6,7</sub>	411	Engine Exhaust Gas Recirculation 1 Differential Pressure
T-EGR1 <sub>1,2,3,4,5,6,7</sub>	412	Engine Exhaust Gas Recirculation 1 Temperature
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
ChAirThermost <sub>1,2,3,4,5,6,7</sub>	1134	Engine Charge Air Cooler Thermostat Opening
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
KeyPosition <sub>3</sub>		Power Supply / Key Position
APP <sub>3</sub>		Accelerator Pedal Position
ComID <sub>3</sub>		Command ID Code
FuncID <sub>3</sub>		Function ID Code
PortSelect <sub>3</sub>		Port Select Data
PortOutput <sub>3</sub>		Port Output Data
SpeedDownDet <sub>3</sub>		Amount of speed down at overload detection
SpeedDownAbs <sub>3</sub>		Amount of speed down at overload absolution
LoatRtoDet <sub>3</sub>		Load ratio at overload detection
LoatRtoAbs <sub>3</sub>		Load ratio at overload absolution

OverloadRPM <sub>3</sub>		Over load RPM down ratio (for Tractor)
SpeedUp <sub>3</sub>		Speed up function
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	ECU connector	Controller
CAN H	40	CAN1 (extension modules/J1939) – CAN H
CAN COM	30	CAN1 (extension modules/J1939) – CAN COM
CAN L	39	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	34	N/A
Battery - (negative)	33,45	N/A
Key Switch	7	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM









For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Yanmar TNV EGC1030 Fault Codes on page 1533**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yanmar TNV EGC1030 aftertreatment lamps							
	Solid On		Solid On		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.1.53 Yuchai engines support

ECU Type	Engine type
<a href="#">LH (ECU2) (page 753)</a>	Engines series 6TD, 6C
<a href="#">LH Main (ECU2) (page 763)</a>	Engines series 6TD, 6C
<a href="#">LH Att (ECU2) (page 767)</a>	Engines series 6TD, 6C
<a href="#">BCR (page 758)</a> (EDC17CV43,EDC17CV53,EDC17CV44)	Engines series 4FA, 4D, 4A, 6A, 6L, 6MK, 4D, 6K
<a href="#">YCECU (page 760)</a>	Engines series 6TD, 6C, 12VC, 16VC

### LH (ECU2)

#### Controllers that support the LH

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
StopLamp <sub>1,2,3,4,5,6,7</sub>	5079	Engine Red Stop Lamp Command
MalfuncCmd <sub>1,2,3,4,5,6,7</sub>	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp <sub>1,2,3,4,5,6,7</sub>	5081	Engine Brake Active Lamp Command
P-LowOilLamp <sub>1,2,3,4,5,6,7</sub>	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp <sub>1,2,3,4,5,6,7</sub>	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp <sub>1,2,3,4,5,6,7</sub>	5084	Engine Coolant Level Low Lamp Command
AirFitLamp <sub>1,2,3,4,5,6,7</sub>	5086	Engine Air Filter Restriction Lamp Command
ColdStrRelayF <sub>1,2,3,4,5,6,7</sub>	5550	Engine Cold Start Fuel Igniter Relay Feedback
SDOverride	517009	Shutdown Override Status
Spd-Nominal	517010	Nominal Speed Status
Override	517540	Override active
Overload	517541	Overload mode active

Clamp15	518000	State of clamp 15
Starter	518001	Engine starter state
Running	518002	Engine Running
FuelMassDeact	518003	Engine fuel mass deactivation
StarterLock	518004	Engine starter lock
IdleSpeed	518005	Engine idle speed flag
Start	518006	Engine start request
Combustion	518009	Engine combustion state
RXReady	518010	ECU RX Ready Bit
CCLimiter	518044	CC Limiter Activation
ReadyStart	523000	Engine ready to start
ReadyGridSync	523001	Engine ready to grid sync
ExtLoadAdj	523002	Enable external load adjustment
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
Override	519202	Overriding Request (FRM disable)
Overload	519203	Overload Mode Request (Boost)
Stop <sub>4,5,6,7</sub>	519204	Engine Stop Request
Start <sub>4,5,6,7</sub>	519205	Engine Start Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant1 <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed

EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo3Int <sub>1,2,3,4,5,6,7</sub>	1182	Engine Turbocharger 3 Turbine Intake Temperature
T-Turbo4Int <sub>1,2,3,4,5,6,7</sub>	1183	Engine Turbocharger 4 Turbine Intake Temperature
T-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1212	Engine Auxiliary Coolant Temperature
P-Fuel1Inj2 <sub>1,2,3,4,5,6,7</sub> *	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
T-Intake <sub>1,2,3,4,5,6,7</sub>	1636	Engine Intake Manifold 1 Temperature (High Resolution)
T-Coolant3 <sub>1,2,3,4,5,6,7</sub>	1637	Engine Coolant Temperature (High Resolution)
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1

AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeMan2 <sub>1,2,3,4,5,6,7</sub>	3562	Engine Intake Manifold #2 Pressure
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
AftcoolCoolLvl <sub>1,2,3,4,5,6,7</sub>	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HES Lamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status
P-DEFDoser1 <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
TotalFuelUsed3 <sub>1,2,3,4,5,6,7</sub>	5054	Engine Total Fuel Used (High Resolution)
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
T-TurboOil2	516015	Engine Turbocharger Oil Temperature 2
AvlbTorque	517005	Available Static Torque At Actual Speed
AirPreHeater	517006	Air Pre-Heater Remaining Delay
AirPostHeater	517007	Air Post-Heater Remaining Delay
SDEmergency	518008	Engine emergency stop
DPFRegRem	518011	Diesel Particulate Filter - Remaining Regeneration Time
ProtectLamp	518041	Engine Protect Lamp Command
CCMode	518043	CC Mode
PowerIdle	523003	Engine power-idle
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
ATS <sub>1,2,3,4,5,6,7</sub>	3547	Automatic Transfer Switch Status

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.








## Recommended wiring

Function	ECU "X2" connector	Controller
<b>CAN H</b>	21	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	19	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	20	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,2,3	N/A
<b>Battery - (negative)</b>	4,5	N/A
<b>Key Switch</b>	16	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	34, 46	SG OUT
<b>Analog Speed Control</b>	11, 23	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Yuchai YC-LH Fault Codes on page 1535**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yuchai YC-LH aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On Blink slow
	Solid On		Solid On Blink slow Blink fast		Solid On Blink slow
					Not Supported

## BCR

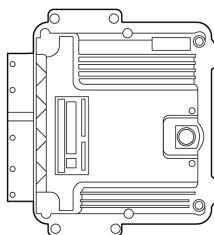


Image 5.205 BCR

### Controllers that support the BCR

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MultiModalSw		Multimodal Switch Status
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure

T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU K connector	Controller
CAN H	54	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	76	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,3,5	N/A
Battery - (negative)	2,4,6	N/A
Key Switch	35	Any binary output configured as ECU PwrRelay
Analog Speed Control	61	SG OUT
Analog Speed Control	62	SG COM

For more information about diagnostic connector layout **see SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes **see Yuchai YC-BCR Fault Codes on page 1534**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yuchai YC-BCR aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## YCECU

### Controllers that support the YCECU

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp

FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
P-OilFilter		Pressure After Oil Filtration
T-ExhaustFront		Front Exhaust Temperature
T-ExhaustRear		Rear Exhaust Temperature
DPFIntake <sub>1,2,3,4,5,6,7</sub>	81	Aftertreatment 1 Diesel Particulate Filter Intake Pressure (use SPN 3609)
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AirIntake1 <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
P-FuelPmpInt <sub>1,2,3,4,5,6,7</sub>	1381	Engine Fuel Supply Pump Intake Absolute Pressure
P-FuelFltDiff <sub>1,2,3,4,5,6,7</sub>	1382	Engine Fuel Filter (suction side) Differential Pressure
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.





## Recommended wiring

Function	ECU 94pin connector	Controller
<b>CAN H</b>	K28	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	K50	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	B	N/A
<b>Battery - (negative)</b>	A	N/A
<b>Key Switch</b>	K12	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Yuchai YC-ECU Fault Codes on page 1535**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yuchai YC-ECU aftertreatment lamps					
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On
					Not Supported

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## LH Main (ECU2)

### Controllers that support the LH Main

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WaterInFuel <sub>1,2,3,4,5,6,7</sub>	97	Water In Fuel Indicator 1
AP1LowIdleSw <sub>1,2,3,4,5,6,7</sub>	558	Accelerator Pedal 1 Low Idle Switch
AP KickDownSw <sub>1,2,3,4,5,6,7</sub>	559	Accelerator Pedal Kickdown Switch
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
WaitStartLamp <sub>1,2,3,4,5,6,7</sub>	1081	Engine Wait to Start Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
StopLamp <sub>1,2,3,4,5,6,7</sub>	5079	Engine Red Stop Lamp Command
MalfuncCmd <sub>1,2,3,4,5,6,7</sub>	5080	OBD Malfunction Indicator Lamp Command
BrakeLamp <sub>1,2,3,4,5,6,7</sub>	5081	Engine Brake Active Lamp Command
P-LowOilLamp <sub>1,2,3,4,5,6,7</sub>	5082	Engine Oil Pressure Low Lamp Command
T-CoolHiLamp <sub>1,2,3,4,5,6,7</sub>	5083	Engine Coolant Temperature High Lamp Command
CoolLvLamp <sub>1,2,3,4,5,6,7</sub>	5084	Engine Coolant Level Low Lamp Command
AirFitLamp <sub>1,2,3,4,5,6,7</sub>	5086	Engine Air Filter Restriction Lamp Command
ColdStrRelayF <sub>1,2,3,4,5,6,7</sub>	5550	Engine Cold Start Fuel Igniter Relay Feedback
SDOverride	517009	Shutdown Override Status
Spd-Nominal	517010	Nominal Speed Status
Override	517540	Override active
Overload	517541	Overload mode active
Clamp15	518000	State of clamp 15
Starter	518001	Engine starter state
Running	518002	Engine Running
FuelMassDeact	518003	Engine fuel mass deactivation
StarterLock	518004	Engine starter lock
IdleSpeed	518005	Engine idle speed flag
Start	518006	Engine start request
Combustion	518009	Engine combustion state

RXReady	518010	ECU RX Ready Bit
CCLimiter	518044	CC Limiter Activation
ReadyStart	523000	Engine ready to start
ReadyGridSync	523001	Engine ready to grid sync
ExtLoadAdj	523002	Enable external load adjustment
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ControlMode <sub>1,2,3,4,5,6,7</sub>	3542	Requested Engine Control Mode
RegenInhibit <sub>1,2,3,4,5,6,7</sub>	3695	Aftertreatment Regeneration Inhibit Switch
RegenForce <sub>1,2,3,4,5,6,7</sub>	3696	Aftertreatment Regeneration Force Switch
Override	519202	Overriding Request (FRM disable)
Overload	519203	Overload Mode Request (Boost)
Stop <sub>4,5,6,7</sub>	519204	Engine Stop Request
Start <sub>4,5,6,7</sub>	519205	Engine Start Request
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
T-Intcooler <sub>1,2,3,4,5,6,7</sub>	52	Engine Intercooler Temperature
APP <sub>1,2,3,4,5,6,7</sub>	91	Accelerator Pedal Position 1
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
OilLevel <sub>1,2,3,4,5,6,7</sub>	98	Engine Oil Level
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
P-Crankcase <sub>1,2,3,4,5,6,7</sub>	101	Engine Crankcase Pressure 1
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-IntakeAir <sub>1,2,3,4,5,6,7</sub>	106	Engine Intake Air Pressure
P-Barometric <sub>1,2,3,4,5,6,7</sub>	108	Barometric Pressure
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl <sub>1,2,3,4,5,6,7</sub>	111	Engine Coolant Level 1
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub> *	157	Engine Fuel 1 Injector Metering Rail 1 Pressure
P-Fuel1Inj1Met <sub>1,2,3,4,5,6,7</sub>	157	Engine Fuel 1 Injector Metering Rail 1 Pressure (backward FW's compatible)
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
T-AmbientAir <sub>1,2,3,4,5,6,7</sub>	171	Ambient Air Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
TorqueDemand <sub>1,2,3,4,5,6,7</sub>	512	Driver's Demand Engine - Percent Torque
TorqueActual <sub>1,2,3,4,5,6,7</sub>	513	Actual Engine - Percent Torque
Torque <sub>1,2,3,4,5,6,7</sub>	514	Nominal Friction - Percent Torque
Spd-Desired <sub>1,2,3,4,5,6,7</sub> *	515	Engine's Desired Operating Speed
Spd-DesAsym <sub>1,2,3,4,5,6,7</sub>	519	Engine's Desired Operating Speed Asymmetry Adjustment
RetarderTorque <sub>1,2,3,4,5,6,7</sub>	520	Actual Retarder - Percent Torque



TorqMode <sub>1,2,3,4,5,6,7</sub>	899	Engine Torque Mode
APPRemote <sub>1,2,3,4,5,6,7</sub>	974	Remote Accelerator Pedal Position
T-ECU <sub>1,2,3,4,5,6,7</sub>	1136	Engine ECU Temperature
T-ExhPort 1 <sub>1,2,3,4,5,6,7</sub>	1137	Engine Exhaust Gas Port 1 Temperature
T-ExhPort 2 <sub>1,2,3,4,5,6,7</sub>	1138	Engine Exhaust Gas Port 2 Temperature
T-ExhPort 3 <sub>1,2,3,4,5,6,7</sub>	1139	Engine Exhaust Gas Port 3 Temperature
T-ExhPort 4 <sub>1,2,3,4,5,6,7</sub>	1140	Engine Exhaust Gas Port 4 Temperature
T-ExhPort 5 <sub>1,2,3,4,5,6,7</sub>	1141	Engine Exhaust Gas Port 5 Temperature
T-ExhPort 6 <sub>1,2,3,4,5,6,7</sub>	1142	Engine Exhaust Gas Port 6 Temperature
T-ExhPort 7 <sub>1,2,3,4,5,6,7</sub>	1143	Engine Exhaust Gas Port 7 Temperature
T-ExhPort 8 <sub>1,2,3,4,5,6,7</sub>	1144	Engine Exhaust Gas Port 8 Temperature
T-ExhPort 9 <sub>1,2,3,4,5,6,7</sub>	1145	Engine Exhaust Gas Port 9 Temperature
T-ExhPort10 <sub>1,2,3,4,5,6,7</sub>	1146	Engine Exhaust Gas Port 10 Temperature
T-ExhPort11 <sub>1,2,3,4,5,6,7</sub>	1147	Engine Exhaust Gas Port 11 Temperature
T-ExhPort12 <sub>1,2,3,4,5,6,7</sub>	1148	Engine Exhaust Gas Port 12 Temperature
T-ExhPort13 <sub>1,2,3,4,5,6,7</sub>	1149	Engine Exhaust Gas Port 13 Temperature
T-ExhPort14 <sub>1,2,3,4,5,6,7</sub>	1150	Engine Exhaust Gas Port 14 Temperature
T-ExhPort15 <sub>1,2,3,4,5,6,7</sub>	1151	Engine Exhaust Gas Port 15 Temperature
T-ExhPort16 <sub>1,2,3,4,5,6,7</sub>	1152	Engine Exhaust Gas Port 16 Temperature
T-ExhPort17 <sub>1,2,3,4,5,6,7</sub>	1153	Engine Exhaust Gas Port 17 Temperature
T-ExhPort18 <sub>1,2,3,4,5,6,7</sub>	1154	Engine Exhaust Gas Port 18 Temperature
T-ExhPort19 <sub>1,2,3,4,5,6,7</sub>	1155	Engine Exhaust Gas Port 19 Temperature
T-ExhPort20 <sub>1,2,3,4,5,6,7</sub>	1156	Engine Exhaust Gas Port 20 Temperature
T-Turbo1CInt <sub>1,2,3,4,5,6,7</sub>	1172	Engine Turbocharger 1 Compressor Intake Temperature
P-Turbo1Intake <sub>1,2,3,4,5,6,7</sub>	1176	Engine Turbocharger 1 Compressor Intake Pressure
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
T-Turbo3Int <sub>1,2,3,4,5,6,7</sub>	1182	Engine Turbocharger 3 Turbine Intake Temperature
T-Turbo4Int <sub>1,2,3,4,5,6,7</sub>	1183	Engine Turbocharger 4 Turbine Intake Temperature
T-AuxCoolant <sub>1,2,3,4,5,6,7</sub>	1212	Engine Auxiliary Coolant Temperature
P-Fuel1Inj2 <sub>1,2,3,4,5,6,7</sub> *	1349	Engine Fuel 1 Injector Metering Rail 2 Pressure
SourceAddress <sub>1,2,3,4,5,6,7</sub>	1483	Source Address of Controlling Device for Engine Control
T-Intake <sub>1,2,3,4,5,6,7</sub>	1636	Engine Intake Manifold 1 Temperature (High Resolution)
T-Coolant3 <sub>1,2,3,4,5,6,7</sub>	1637	Engine Coolant Temperature (High Resolution)
StarterMode <sub>1,2,3,4,5,6,7</sub>	1675	Engine Starter Mode
TorqueDemand2 <sub>1,2,3,4,5,6,7</sub>	2432	Engine Demand - Percent Torque
T-AirCoolerOut <sub>1,2,3,4,5,6,7</sub>	2630	Engine Charge Air Cooler 1 Outlet Temperature
TorqueEstLoss <sub>1,2,3,4,5,6,7</sub>	2978	Estimated Engine Parasitic Losses - Percent Torque
AT1ExhFlowRate <sub>1,2,3,4,5,6,7</sub>	3236	Aftertreatment 1 Exhaust Gas Mass Flow Rate
TrqMax <sub>1,2,3,4,5,6,7</sub>	3357	Actual Maximum Available Engine - Percent Torque
Operating <sub>1,2,3,4,5,6,7</sub>	3543	Engine Operating State
P-IntakeMan2 <sub>1,2,3,4,5,6,7</sub>	3562	Engine Intake Manifold #2 Pressure
ChrgAirCoolLvl <sub>1,2,3,4,5,6,7</sub>	3668	Engine Charge Air Cooler Coolant Level
AftcoolCoolLvl <sub>1,2,3,4,5,6,7</sub>	3676	Engine Aftercooler Coolant Level
DPFLamp <sub>1,2,3,4,5,6,7</sub>	3697	Diesel Particulate Filter Lamp Command
HESLamp <sub>1,2,3,4,5,6,7</sub>	3698	Exhaust System High Temperature Lamp Command
DPFRegenAct <sub>1,2,3,4,5,6,7</sub>	3700	Aftertreatment Diesel Particulate Filter Active Regeneration Status
DPFStatus <sub>1,2,3,4,5,6,7</sub>	3701	Aftertreatment Diesel Particulate Filter Status

P-DEFDoser <sub>1,2,3,4,5,6,7</sub>	4334	Aftertreatment 1 Diesel Exhaust Fluid Doser 1 Absolute Pressure
T-SCR1Intake <sub>1,2,3,4,5,6,7</sub>	4360	Aftertreatment 1 SCR Intake Temperature
TotalFuelUsed <sub>3,1,2,3,4,5,6,7</sub>	5054	Engine Total Fuel Used (High Resolution)
T-TurboOil2	516015	Engine Turbocharger Oil Temperature 2
AvlbTorque	517005	Available Static Torque At Actual Speed
AirPreHeater	517006	Air Pre-Heater Remaining Delay
AirPostHeater	517007	Air Post-Heater Remaining Delay
SDEmergency	518008	Engine emergency stop
DPFRegRem	518011	Diesel Particulate Filter - Remaining Regeneration Time
ProtectLamp	518041	Engine Protect Lamp Command
CCMode	518043	CC Mode
PowerIdle	523003	Engine power-idle

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
Spd-Requested <sub>1,2,3,4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
GCB <sub>1,2,3,4,5,6,7</sub>	3545	Generator Circuit Breaker Status
MCB <sub>1,2,3,4,5,6,7</sub>	3546	Utility Circuit Breaker Status
ATS <sub>1,2,3,4,5,6,7</sub>	3547	Automatic Transfer Switch Status

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).









## Recommended wiring

Function	ECU "X2" connector	Controller
CAN H	21	CAN1 (extension modules/J1939) – CAN H
CAN COM	19	CAN1 (extension modules/J1939) – CAN COM
CAN L	20	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	1,2,3	N/A
Battery - (negative)	4,5	N/A
Key Switch	16	Any binary output configured as ECU PwrRelay
Analog Speed Control	34, 46	SG OUT
Analog Speed Control	11, 23	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **see Yuchai YC-LH Main Fault Codes on page 1534**

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yuchai YC-LH Main aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Solid On		Solid On Blink slow
	Solid On		Not Supported		Not Supported		Not Supported

## LH Att (ECU2)

### Controllers that support the LH Att

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DEFTnkLevel <sub>1,2,3,4,5,6,7</sub>	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level
T-DEFTnk <sub>1,2,3,4,5,6,7</sub>	3031	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature 1

DEFTnkHeater <sub>1,2,3,4,5,6,7</sub>	3363	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater
DEFLowLevel <sub>1,2,3,4,5,6,7</sub>	5245	Aftertreatment Diesel Exhaust Fluid Tank Low Level Indicator
SCR Severity <sub>1,2,3,4,5,6,7</sub>	5246	Aftertreatment SCR Operator Inducement Severity
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring









Function	ECU "X2" connector	Controller
<b>CAN H</b>	21	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	19	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	20	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1,2,3	N/A
<b>Battery - (negative)</b>	4,5	N/A
<b>Key Switch</b>	16	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	34, 46	SG OUT
<b>Analog Speed Control</b>	11, 23	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Yuchai YC-LH Att Fault Codes on page 1**

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Yuchai YC-LH Att aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Solid On Blink slow Blink fast		Solid On Blink slow		Not Supported

6.2 Alternator Control Units

## 6.2.1 DeepSea generators support

AVR Type	-
<a href="#">DSEA109 (page 770)</a>	
<a href="#">8610MKII (page 866)</a>	

### DSEA109

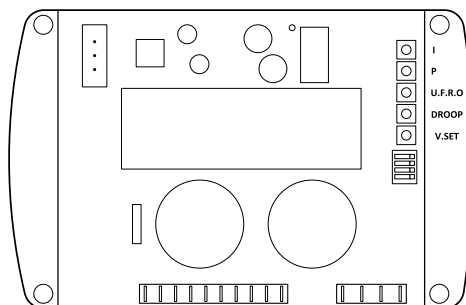


Image 5.206 DSEA109

### Controllers that support the DSEA109

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
FlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
VRFreqUnComp <sub>1,2,3,4,5,6,7</sub>	3377	Voltage Regulator Underfrequency Compensation enabled
VRSoftStart <sub>1,2,3,4,5,6,7</sub>	3378	Voltage Regulator Soft Start State
VREnabled <sub>1,2,3,4,5,6,7</sub>	3379	Voltage Regulator Enabled
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PropGain		Proportional Gain Setting
InterGain		Integral Gain Setting

DerivGain		Derivative Gain Setting
Droop		Droop Setting
ExtPotBias		External Potentiometer Bias
ExtVotInBias		External Voltage Input Bias
J1939 ReqBias		J1939 Requested Bias
VoltSetPont		Voltage Set Point
FreqGenAvgLN <sub>1,2,3,4,5,6,7*</sub>	2436	Generator Average AC Frequency
FreqGenL1N <sub>1,2,3,4,5,6,7*</sub>	2437	Generator Phase A AC Frequency
FreqGenL2N <sub>1,2,3,4,5,6,7*</sub>	2438	Generator Phase B AC Frequency
FreqGenL3N <sub>1,2,3,4,5,6,7*</sub>	2439	Generator Phase C AC Frequency
V-GenAvgLL <sub>1,2,3,4,5,6,7*</sub>	2440	Generator Average Line-Line AC RMS Voltage
V-GenAB-LL <sub>1,2,3,4,5,6,7*</sub>	2441	Generator Phase AB Line-Line AC RMS Voltage
V-GenBC-LL <sub>1,2,3,4,5,6,7*</sub>	2442	Generator Phase BC Line-Line AC RMS Voltage
V-GenCA-LL <sub>1,2,3,4,5,6,7*</sub>	2443	Generator Phase CA Line-Line AC RMS Voltage
V-GenL1N <sub>1,2,3,4,5,6,7*</sub>	2445	Generator Phase A Line-Neutral AC RMS Voltage
V-GenL2N <sub>1,2,3,4,5,6,7*</sub>	2446	Generator Phase B Line-Neutral AC RMS Voltage
V-GenL3N <sub>1,2,3,4,5,6,7*</sub>	2447	Generator Phase C Line-Neutral AC RMS Voltage
I-GenL1N <sub>1,2,3,4,5,6,7*</sub>	2449	Generator Phase A AC RMS Current
I-GenL2N <sub>1,2,3,4,5,6,7*</sub>	2450	Generator Phase B AC RMS Current
I-GenL3N <sub>1,2,3,4,5,6,7*</sub>	2451	Generator Phase C AC RMS Current
V-Excitation <sub>1,2,3,4,5,6,7*</sub>	3380	Generator Excitation Field Voltage
V-OutputBias <sub>1,2,3,4,5,6,7*</sub>	3382	Generator Output Voltage Bias Percentage
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
VoltageBias*		Voltage Bias

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.









1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	AVR connector	Controller
<b>CAN H</b>	CAN terminal - H	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	CAN terminal - L	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Deep Sea DSEA109 aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Blink slow		Blink slow				
	Blink fast		Blink fast				
	Not Supported		Not Supported		Not Supported		Not Supported

# 6.2.2 Generac generators support

AVR Type	Generator type
<a href="#">Power Zone (page 772)</a>	

## Power Zone

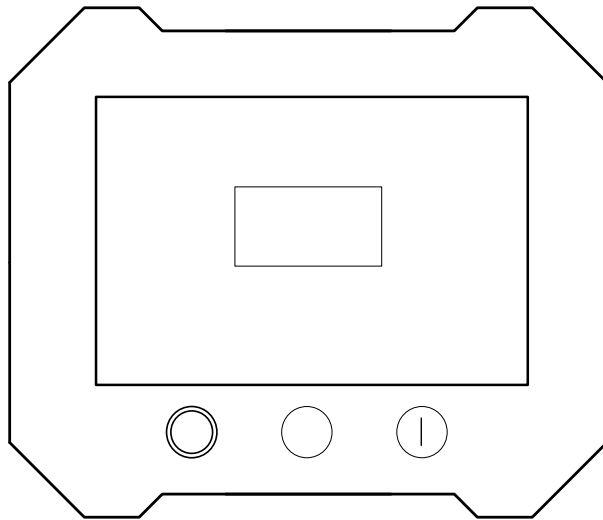


Image 5.207 Power Zone

## Controllers that support the Power Zone

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
FuelShtoff1	632	Engine Fuel Shutoff 1 Control
ProtectLamp	987	Protect Lamp
WaitStartLamp <sub>4,5,6,7</sub>	1081	Engine Wait to Start Lamp
EPS Shutdown	1110	Engine Protection System has Shutdown Engine
MalfunctLamp	1213	Malfunction Indicator Lamp



FuelShutoff2	2807	Engine Fuel Shutoff 2 Control
AlarmCommand	2814	Engine Alarm Output Command Status
ESDRequest	3607	Engine Emergency (Immediate) Shutdown Indication
BatPowLine	4991	Battery Charger 1 Power Line State
StarterMotor	6385	Engine Starter Motor Relay Control
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SdOverride <sub>4,5,6,7</sub>	1237	Engine Shutdown Override Switch
VRFreqUnComp	3377	Voltage Regulator Underfrequency Compensation enabled
VRSoftStart	3378	Voltage Regulator Soft Start State
VREnabled	3379	Voltage Regulator Enabled
PF-ReqLagging	3385	Requested Generator Overall Power Factor Lagging
ControlMode	3542	Requested Engine Control Mode
NotInAuto	3567	Generator Control Not In Automatic Start State
NotParallelRd	3568	Generator Not Ready to Automatically Parallel State
GovSpdCmd	4079	Generator Governing Speed Command
SpdGovernor	7840	Engine Speed Governor Mode
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
ThrottleVlv1	51	Engine Throttle Valve 1 Position 1
Load <sub>4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-Oil <sub>4,5,6,7</sub>	100	Engine Oil Pressure
T-Coolant <sub>4,5,6,7</sub>	110	Engine Coolant Temperature
CoolantLvl	111	Engine Coolant Level 1
Battery	168	Battery Potential / Power Input 1
T-Oil	175	Engine Oil Temperature 1
EngineSpeed <sub>4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>4,5,6,7</sub>	247	Engine Total Hours of Operation
Spd-Desired*	515	Engine's Desired Operating Speed
StarterMode	1675	Engine Starter Mode
Operating	3543	Engine Operating State
V-BattOutput	4992	Battery Charger 1 Output Voltage
I-BatOutput	4993	Battery Charger 1 Output Current
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Spd-Requested <sub>4,5,6,7</sub>	898	Engine Requested Speed/Speed Limit
FreqGenAvgLN*	2436	Generator Average AC Frequency
V-GenAvgLL*	2440	Generator Average Line-Line AC RMS Voltage
I-GenAvgLN*	2448	Generator Average AC RMS Current
Pwr-Real*	2452	Generator Total Real Power
VRLoadCmp	3375	Voltage Regulator Load Compensation Mode
VRVar/PF Mode	3376	Voltage Regulator VAr/Power Factor operating mode
V-OutputBias*	3382	Generator Output Voltage Bias Percentage
Pwr-RegQ*	3383	Requested Generator Total AC Reactive Power
PF-Req*	3384	Requested Generator Overall Power Factor
V-ReqLineLine*	3386	Requested Generator Average Line-Line AC RMS Voltage

GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
ATS	3547	Automatic Transfer Switch Status
FreqSelect <sub>4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovDroop	5568	Engine Speed Governor Droop
BTB1	7841	Bus Tie Breaker 1
BTB2	7842	Bus Tie Breaker 2
LoadGroup	7843	Engine Load Group
LoadSetpoint	8430	Engine Load Setpoint Request
PCB Status	9792	Package Circuit Breaker Status

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	Backside connectors	Controller
<b>CAN H</b>	CAN terminal - H	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	CAN terminal - L	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	+ VDC	N/A
<b>Battery - (negative)</b>	- VDC	N/A

## 6.2.3 Leroy-Somer generators support

AVR Type	Generator type
<a href="#">D500 (page 775)</a>	D500 and D510C digital AVR using J1939 Standard
<a href="#">D500 control (page 777)</a>	D500 and D510C digital AVR using proprietary Leroy Somer protocol
<a href="#">D550 control (page 778)</a>	D550 digital AVR using proprietary Leroy Somer protocol

### D500

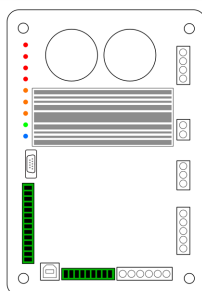


Image 5.208 D500

### Controllers that support the D500

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PF-GenLagging <sub>1,2,3,4,5,6,7</sub>	2518	Generator Overall Power Factor Lagging
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FreqGenAvgLN <sub>1,2,3,4,5,6,7</sub> *	2436	Generator Average AC Frequency
FreqGenL1N <sub>1,2,3,4,5,6,7</sub> *	2437	Generator Phase A AC Frequency
FreqGenL2N <sub>1,2,3,4,5,6,7</sub> *	2438	Generator Phase B AC Frequency
FreqGenL3N <sub>1,2,3,4,5,6,7</sub> *	2439	Generator Phase C AC Frequency
V-GenAvgLL <sub>1,2,3,4,5,6,7</sub> *	2440	Generator Average Line-Line AC RMS Voltage
V-GenAB-LL <sub>1,2,3,4,5,6,7</sub> *	2441	Generator Phase AB Line-Line AC RMS Voltage
V-GenBC-LL <sub>1,2,3,4,5,6,7</sub> *	2442	Generator Phase BC Line-Line AC RMS Voltage
V-GenCA-LL <sub>1,2,3,4,5,6,7</sub> *	2443	Generator Phase CA Line-Line AC RMS Voltage
V-GenAvgLN <sub>1,2,3,4,5,6,7</sub> *	2444	Generator Average Line-Neutral AC RMS Voltage
V-GenL1N <sub>1,2,3,4,5,6,7</sub> *	2445	Generator Phase A Line-Neutral AC RMS Voltage
V-GenL2N <sub>1,2,3,4,5,6,7</sub> *	2446	Generator Phase B Line-Neutral AC RMS Voltage
V-GenL3N <sub>1,2,3,4,5,6,7</sub> *	2447	Generator Phase C Line-Neutral AC RMS Voltage

I-GenAvgLN <sub>1,2,3,4,5,6,7*</sub>	2448	Generator Average AC RMS Current
I-GenL1N <sub>1,2,3,4,5,6,7*</sub>	2449	Generator Phase A AC RMS Current
I-GenL2N <sub>1,2,3,4,5,6,7*</sub>	2450	Generator Phase B AC RMS Current
I-GenL3N <sub>1,2,3,4,5,6,7*</sub>	2451	Generator Phase C AC RMS Current
Pwr-Real <sub>1,2,3,4,5,6,7*</sub>	2452	Generator Total Real Power
Pwr-Reactive <sub>1,2,3,4,5,6,7*</sub>	2456	Generator Total Reactive Power
Pwr-Apparent <sub>1,2,3,4,5,6,7*</sub>	2460	Generator Total Apparent Power
PF-GenOverall <sub>1,2,3,4,5,6,7*</sub>	2464	Generator Overall Power Factor
V-Excitation <sub>1,2,3,4,5,6,7*</sub>	3380	Generator Excitation Field Voltage
I-ExitField <sub>1,2,3,4,5,6,7</sub>	3381	Generator Excitation Field Current
V-OutputBias <sub>1,2,3,4,5,6,7*</sub>	3382	Generator Output Voltage Bias Percentage
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

Description for output parameters	
Parameter	Description
SPN 3376 VRVar/PF Mode	000 - Var / Power Factor regulation disabled 001 - Powr Factor regulation enabled 010 - Var regulation enabled
SPN 3385 PF-ReqLagging	00- leading 01- lagging 10- reserved 11- don't care
SPN 3384 PF-Req	data range: -1.000 to 2.291

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	AVR connector	Controller
<b>CAN H</b>	D9 serial	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D9 serial	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	3pin port	N/A
<b>Battery - (negative)</b>	D9 serial	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## D500 control

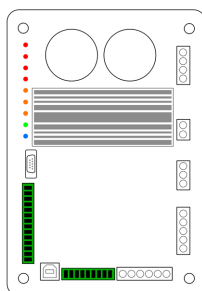


Image 5.209 D500

### Controllers that support the D500 control

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ShortCircuitAL		Short Circuit Alarm
LossOfVoltAL		Loss of Voltage Alarm
UnderExcitAL		Under Excitation Alarm
OverExcitLvIAL		Over Excitation on Level Alarm
OverExcitCrvAL		Over Excitation on Curve Alarm
StatOvercurLim		Stator Overcurrent Limit
PidRmsEnable		PID RMS Enable BIN
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
PidRmsEnable		PID RMS Enable BOUT
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Alt-Voltage		Voltage set point AIN
Trip State		Trip State
PF or Voltage		PF/KVAR or Voltage select AIN
PowerFactorSP		Power Factor set point AIN
Knee LAM		Knee LAM AIN
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
VoltageSP		Voltage set point AOUT
AdjustVoltage*		Adjustable Voltage
PIDScaleFactor		PID Scale Factor
ReactDropComp		Reactive drop compensation
PowerFactorSP		Power Factor set point AOUT
PF or Voltage		PF/KVAR or Voltage select AOUT
Knee LAM		Knee LAM AOUT
AdjustableLAM		Adjustable LAM

SoftStartAcc		Soft Start Acceleration
SoftVoltRecc		Soft Voltage Recovery
ReactPowRef*		Reactive Power Reference
I-NominalAlt		I Nominal Alternator
V-NominalAlt		V Nominal Alternator

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	AVR connector	Controller
<b>CAN H</b>	D9 serial	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D9 serial	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	3pin port	N/A
<b>Battery - (negative)</b>	D9 serial	N/A

## D550 control

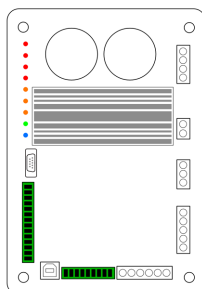


Image 5.210 D550

## Controllers that support the D550 control

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PF-GenLagging <sub>1,2,3,4,5,6,7</sub>	2518	Generator Overall Power Factor Lagging
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FreqGenAvgLN <sub>1,2,3,4,5,6,7</sub> *	2436	Generator Average AC Frequency
FreqGenL1N <sub>1,2,3,4,5,6,7</sub> *	2437	Generator Phase A AC Frequency
FreqGenL2N <sub>1,2,3,4,5,6,7</sub> *	2438	Generator Phase B AC Frequency

FreqGenL3N <sub>1,2,3,4,5,6,7*</sub>	2439	Generator Phase C AC Frequency
V-GenAvgLL <sub>1,2,3,4,5,6,7*</sub>	2440	Generator Average Line-Line AC RMS Voltage
V-GenAB-LL <sub>1,2,3,4,5,6,7*</sub>	2441	Generator Phase AB Line-Line AC RMS Voltage
V-GenBC-LL <sub>1,2,3,4,5,6,7*</sub>	2442	Generator Phase BC Line-Line AC RMS Voltage
V-GenCA-LL <sub>1,2,3,4,5,6,7*</sub>	2443	Generator Phase CA Line-Line AC RMS Voltage
V-GenAvgLN <sub>1,2,3,4,5,6,7*</sub>	2444	Generator Average Line-Neutral AC RMS Voltage
V-GenL1N <sub>1,2,3,4,5,6,7*</sub>	2445	Generator Phase A Line-Neutral AC RMS Voltage
V-GenL2N <sub>1,2,3,4,5,6,7*</sub>	2446	Generator Phase B Line-Neutral AC RMS Voltage
V-GenL3N <sub>1,2,3,4,5,6,7*</sub>	2447	Generator Phase C Line-Neutral AC RMS Voltage
I-GenAvgLN <sub>1,2,3,4,5,6,7*</sub>	2448	Generator Average AC RMS Current
I-GenL1N <sub>1,2,3,4,5,6,7*</sub>	2449	Generator Phase A AC RMS Current
I-GenL2N <sub>1,2,3,4,5,6,7*</sub>	2450	Generator Phase B AC RMS Current
I-GenL3N <sub>1,2,3,4,5,6,7*</sub>	2451	Generator Phase C AC RMS Current
Pwr-Real <sub>1,2,3,4,5,6,7*</sub>	2452	Generator Total Real Power
Pwr-Reactive <sub>1,2,3,4,5,6,7*</sub>	2456	Generator Total Reactive Power
Pwr-Apparent <sub>1,2,3,4,5,6,7*</sub>	2460	Generator Total Apparent Power
PF-GenOverall <sub>1,2,3,4,5,6,7*</sub>	2464	Generator Overall Power Factor
V-Excitation <sub>1,2,3,4,5,6,7*</sub>	3380	Generator Excitation Field Voltage
I-ExitField <sub>1,2,3,4,5,6,7</sub>	3381	Generator Excitation Field Current
V-OutputBias <sub>1,2,3,4,5,6,7*</sub>	3382	Generator Output Voltage Bias Percentage
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	AVR connector	Controller
<b>CAN H</b>	D9 serial	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	D9 serial	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	3pin port	N/A
<b>Battery - (negative)</b>	D9 serial	N/A

# 6.2.4 Marathon engines support

ECU Type	Engine type
<a href="#">DVR2000EC (page 780)</a>	Marathon digital AVR DVR2000EC

## DVR2000EC

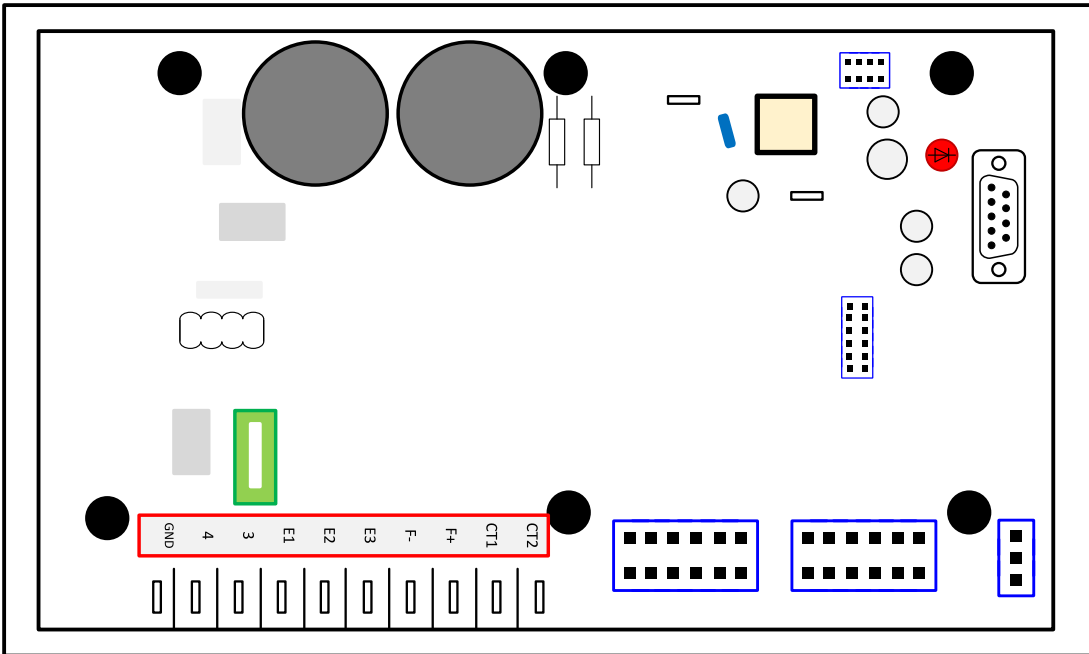


Image 5.211 DVR2000EC

## Controllers that support the DVR2000EC

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Excitation		Excitation Mode
SourceIn		Input Source
SensePhases		Current Sense Phases
AL-OvrVolt		Generator Over Voltage Alarm
AL-RevPowFlow		Generator Reverse Power Flow Alarm
AL-UnderFreq		Generator Under Frequency Alarm
AL-Imbalance		Generator Imbalance Alarm
AL-FldOvrCurr		Generator Instantaneous Field Over Current Alarm
AL-FldCurrLim		Generator Field Current Limiting Alarm
AL-SensLoss		Generator Loss of Sensing Alarm
AL-UnderVolt		Generator Under Voltage Alarm
AL-CommLoss		Generator Loss of CAN communication Alarm
AL-RegOvrTemp		Generator Regulator Over Temperature Alarm
AL-FldOvrExct		Generator Field Over Excitation Alarm



HAL-OvrVolt		Generator Over Voltage Historic Alarm
HAL-RevPowFlow		Generator Reverse Power Flow Historic Alarm
HAL-UnderFreq		Generator Under Frequency Historic Alarm
HAL-Imbalance		Generator Imbalance Historic Alarm
HAL-FldOvrCurr		Generator Instantaneous Field Over Current Historic Alarm
HAL-FldCurrLim		Generator Field Current Limiting Historic Alarm
HAL-SensLoss		Generator Loss of Sensing Historic Alarm
HAL-UnderVolt		Generator Under Voltage Historic Alarm
HAL-CommLoss		Generator Loss of CAN communication Historic Alarm
HAL-RegOvrTemp		Generator Regulator Over Temperature Historic Alarm
HAL-FldOvrExct		Generator Field Over Excitation Historic Alarm
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Reset		Reset
ExctDiasble		Excitation Disable
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
I-AvgRMS		Average RMS Current (Gen out)
V-AvgLtLRMS		Average Line-to-Line RMS Voltage t (Gen out)
I-AvgRMS*		Averate RMS Current (Reg)
V-AvgLtLRMS*		Average Line-to-Line RMS Voltage t (Reg)
I-PhA-RMS		Average Phase-A AC RMS Current (Gen out)
I-PhB-RMS		Average Phase-B AC RMS Current (Gen out)
I-PhC-RMS		Average Phase-C AC RMS Current (Gen out)
I-PhA-RMS*		Average Phase-A AC RMS Current (Reg)
I-PhB-RMS*		Average Phase-B AC RMS Current (Reg)
I-PhC-RMS*		Average Phase-C AC RMS Current (Reg)
V-AvgLtLRMSVab		Average Line-to-Line AC RMS Voltage Vab (Gen out)
V-AvgLtLRMSVac		Average Line-to-Line AC RMS Voltage Vac (Gen out)
V-AvgLtLRMSVbc		Average Line-to-Line AC RMS Voltage Vbc (Gen out)
VoltageUnits		Voltage Units FF1B
V-AvgLtLRMSVab		Average Line-to-Line AC RMS Voltage Vab (Reg)
V-AvgLtLRMSVac		Average Line-to-Line AC RMS Voltage Vbc (Reg)
V-AvgLtLRMSVbc		Average Line-to-Line AC RMS Voltage Vca (Reg)
V-AvgLtNRMSVa		Average Line-to-Neutral AC RMS Voltage Va (Gen out)
V-AvgLtNRMSVb		Average Line-to-Neutral AC RMS Voltage Vb (Gen out)
V-AvgLtNRMSVc		Average Line-to-Neutral AC RMS Voltage Vc (Gen out)
VoltageUnits2		Voltage Units FF1C
V-AvgLtNRMSVa		Average Line-to-Neutral AC RMS Voltage Va (Reg)
V-AvgLtNRMSVb		Average Line-to-Neutral AC RMS Voltage Vb (Reg)
V-AvgLtNRMSVc		Average Line-to-Neutral AC RMS Voltage Vc (Reg)
AuxInMode		Auxilliary Input Mode
GenPowFact*		Generator Power Factor (Gen out)
3Ph-realPower		Generator Real 3-phase Power (Gen out)
3Ph-appPower		Generator Apparent 3-phase Power (Gen out)
3Ph-reactPower		Generator Reactive 3-phase Power (Gen out)
PwFactSense		Generator Power Factor Sense

3Ph-realPower		Generator Real 3-phase Power (Reg)
3Ph-appPower		Generator Apparent 3-phase Power (Reg)
3Ph-reactPower		Generator Reactive 3-phase Power (Reg)
I-Field		Field Current
Speed		Engine Speed
V-Field		Field Voltage
T-Regulator		Regulator Temperature
PrimRev		Primary Revision
SecRev		Secondary Revision
TertRev		Tertiary Revision
FrameSize		Frame Size
VR Status		VR Status
RegMode		Regulation Mode
DeviceMode		Device Mode
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FieldCurrSP		Field Current Set Point
RegVoltSP		Regulator Voltage Set Point
VoltageAdjust		Voltage Adjust

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	ECU 52pin connector	Controller
<b>CAN H</b>	33	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	44	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1	N/A
<b>Battery - (negative)</b>	27,28	N/A
<b>Key Switch</b>	18	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Marathon DVR2000EC Fault Codes on page 1317**.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Marathon DVR2000EC aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.2.5 Standard J1939 engines support

ECU Type	Engine type
<a href="#">Standard J1939 engine (page 619)</a>	supports only J1939-71 parameters
<a href="#">Standard J1939 monitor (page 629)</a>	supports only J1939-71 parameters without control functionality
<a href="#">Standard J1939 generator (page 783)</a>	supports only J1939-75 parameters

### Standard J1939 generator

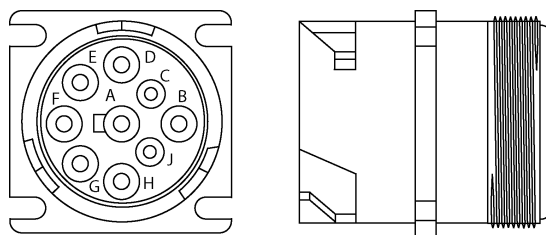


Image 5.212 Standard J1939 generator

### Controllers that support the Standard J1939 generator

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp	987	Protect Lamp
MalfunctLamp	1213	Malfunction Indicator Lamp
PF-GenALagging	2519	Generator Phase A Power Factor Lagging
PF-GenBLagging	2520	Generator Phase B Power Factor Lagging
PF-GenCLagging	2521	Generator Phase C Power Factor Lagging
PF-UtlOverall	2522	Utility Overall Power Factor Lagging
PF-UtlALagging	2523	Utility Phase A Power Factor Lagging
FlashMalfunct	3038	Flash Malfunction Indicator Lamp
FFlashMalfunct	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)

FlashWarning <sub>4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect	3041	Flash Protect Lamp
ControlMode	3542	Requested Engine Control Mode
NotInAuto	3567	Generator Control Not In Automatic Start State
NotParallelRd	3568	Generator Not Ready to Automatically Parallel State
GovSpdCmd	4079	Generator Governing Speed Command
SpdGovernor	7840	Engine Speed Governor Mode
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
PF-GenALagging	2519	Generator Phase A Power Factor Lagging_tx
PF-GenBLagging	2520	Generator Phase B Power Factor Lagging_tx
PF-GenCLagging	2521	Generator Phase C Power Factor Lagging_tx
PF-UtlOverall	2522	Utility Overall Power Factor Lagging_tx
PF-UtlALagging	2523	Utility Phase A Power Factor Lagging_tx
ControlMode	3542	Requested Engine Control Mode_tx
NotInAuto	3567	Generator Control Not In Automatic Start State_tx
NotParallelRd	3568	Generator Not Ready to Automatically Parallel State_tx
GovSpdCmd	4079	Generator Governing Speed Command_tx
SpdGovernor	7840	Engine Speed Governor Mode_tx
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FreqGenAvgLN*	2436	Generator Average AC Frequency
FreqGenL1N*	2437	Generator Phase A AC Frequency
FreqGenL2N*	2438	Generator Phase B AC Frequency
FreqGenL3N*	2439	Generator Phase C AC Frequency
V-GenAvgLL*	2440	Generator Average Line-Line AC RMS Voltage
V-GenAB-LL*	2441	Generator Phase AB Line-Line AC RMS Voltage
V-GenBC-LL*	2442	Generator Phase BC Line-Line AC RMS Voltage
V-GenCA-LL*	2443	Generator Phase CA Line-Line AC RMS Voltage
V-GenAvgLN*	2444	Generator Average Line-Neutral AC RMS Voltage
V-GenL1N*	2445	Generator Phase A Line-Neutral AC RMS Voltage
V-GenL2N*	2446	Generator Phase B Line-Neutral AC RMS Voltage
V-GenL3N*	2447	Generator Phase C Line-Neutral AC RMS Voltage
I-GenAvgLN*	2448	Generator Average AC RMS Current
I-GenL1N*	2449	Generator Phase A AC RMS Current
I-GenL2N*	2450	Generator Phase B AC RMS Current
I-GenL3N*	2451	Generator Phase C AC RMS Current
Pwr-Real*	2452	Generator Total Real Power
Pwr-RealA*	2453	Generator Phase A Real Power
Pwr-RealB*	2454	Generator Phase B Real Power
Pwr-RealC*	2455	Generator Phase C Real Power
Pwr-Reactive*	2456	Generator Total Reactive Power
Pwr-ReactiveA*	2457	Generator Phase A Reactive Power
Pwr-ReactiveB*	2458	Generator Phase B Reactive Power
Pwr-ReactiveC*	2459	Generator Phase C Reactive Power
Pwr-Apparent*	2460	Generator Total Apparent Power

Pwr-ApparentA*	2461	Generator Phase A Apparent Power
Pwr-ApparentB*	2462	Generator Phase B Apparent Power
Pwr-ApparentC*	2463	Generator Phase C Apparent Power
PF-GenOverall*	2464	Generator Overall Power Factor
PF-GenA*	2465	Generator Phase A Power Factor
PF-GenB*	2466	Generator Phase B Power Factor
PF-GenC*	2467	Generator Phase C Power Factor
GenkWhE*	2468	Generator Total kW Hours Export
GenkWhI*	2469	Generator Total kW Hours Import
FreqUtil*	2470	Utility Average AC Frequency
FreqUtilA*	2471	Utility Phase A AC Frequency
FreqUtilB*	2472	Utility Phase B AC Frequency
FreqUtilC*	2473	Utility Phase C AC Frequency
V-UtilAvgLL*	2474	Utility Average Line-Line AC RMS Voltage
V-UtilAB-LL*	2475	Utility Phase AB Line-Line AC RMS Voltage
V-UtilBC-LL*	2476	Utility Phase BC Line-Line AC RMS Voltage
V-UtilCA-LL*	2477	Utility Phase CA Line-Line AC RMS Voltage
V-UtilAvgLN*	2478	Utility Average Line-Neutral AC RMS Voltage
V-UtilL1N*	2479	Utility Phase A Line-Neutral AC RMS Voltage
V-UtilL2N*	2480	Utility Phase B Line-Neutral AC RMS Voltage
V-UtilL3N*	2481	Utility Phase C Line-Neutral AC RMS Voltage
I-UtilAvg*	2482	Utility Average AC RMS Current
I-UtilA*	2483	Utility Phase A AC RMS Current
I-UtilB*	2484	Utility Phase B AC RMS Current
I-UtilC*	2485	Utility Phase C AC RMS Current
Pwr-URReal*	2486	Utility Total Real Power
Pwr-URRealA*	2487	Utility Phase A Real Power
Pwr-URReactive*	2490	Utility Total Reactive Power
Pwr-URReactiveA*	2491	Utility Phase A Reactive Power
Pwr-UAApparent*	2494	Utility Total Apparent Power
Pwr-UAApparentA*	2495	Utility Phase A Apparent Power
PF-UtilOverall*	2498	Utility Overall Power Factor
PF-UtilA*	2499	Utility Phase A Power Factor
V-Excitation*	3380	Generator Excitation Field Voltage
I-ExitField	3381	Generator Excitation Field Current
V-OutputBias*	3382	Generator Output Voltage Bias Percentage
GCB	3545	Generator Circuit Breaker Status
MCB	3546	Utility Circuit Breaker Status
ATS	3547	Automatic Transfer Switch Status
GenkW*	3590	Generator Total Percent kW
GenkVA*	3591	Generator Total Percent kVA
GenkVAr*	3592	Generator Total Percent kVAr
GenkVArhE	3593	Generator Total kVAr Hours Export
GenkVArhI	3594	Generator Total kVAr Hours Import
AlternatorEffc	4078	Generator Alternator Efficiency
FreqSelect <sub>4,5,6,7</sub>	4080	Generator Frequency Selection
SpdGovGainAdj	5567	Engine Speed Governor Gain Adjust

SpdGovDroop	5568	Engine Speed Governor Droop
BTB1	7841	Bus Tie Breaker 1
BTB2	7842	Bus Tie Breaker 2
LoadGroup	7843	Engine Load Group
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
FreqGenAvgLN*	2436	Generator Average AC Frequency_tx
FreqGenL1N*	2437	Generator Phase A AC Frequency_tx
FreqGenL2N*	2438	Generator Phase B AC Frequency_tx
FreqGenL3N*	2439	Generator Phase C AC Frequency_tx
V-GenAvgLL*	2440	Generator Average Line-Line AC RMS Voltage_tx
V-GenAB-LL*	2441	Generator Phase AB Line-Line AC RMS Voltage_tx
V-GenBC-LL*	2442	Generator Phase BC Line-Line AC RMS Voltage_tx
V-GenCA-LL*	2443	Generator Phase CA Line-Line AC RMS Voltage_tx
V-GenAvgLN*	2444	Generator Average Line-Neutral AC RMS Voltage_tx
V-GenL1N*	2445	Generator Phase A Line-Neutral AC RMS Voltage_tx
V-GenL2N*	2446	Generator Phase B Line-Neutral AC RMS Voltage_tx
V-GenL3N*	2447	Generator Phase C Line-Neutral AC RMS Voltage_tx
I-GenAvgLN*	2448	Generator Average AC RMS Current_tx
I-GenL1N*	2449	Generator Phase A AC RMS Current_tx
I-GenL2N*	2450	Generator Phase B AC RMS Current_tx
I-GenL3N*	2451	Generator Phase C AC RMS Current_tx
Pwr-Real*	2452	Generator Total Real Power_tx
Pwr-RealA*	2453	Generator Phase A Real Power_tx
Pwr-RealB*	2454	Generator Phase B Real Power_tx
Pwr-RealC*	2455	Generator Phase C Real Power_tx
Pwr-Reactive*	2456	Generator Total Reactive Power_tx
Pwr-ReactiveA*	2457	Generator Phase A Reactive Power_tx
Pwr-ReactiveB*	2458	Generator Phase B Reactive Power_tx
Pwr-ReactiveC*	2459	Generator Phase C Reactive Power_tx
Pwr-Apparent*	2460	Generator Total Apparent Power_tx
Pwr-ApparentA*	2461	Generator Phase A Apparent Power_tx
Pwr-ApparentB*	2462	Generator Phase B Apparent Power_tx
Pwr-ApparentC*	2463	Generator Phase C Apparent Power_tx
PF-GenOverall*	2464	Generator Overall Power Factor_tx
PF-GenA*	2465	Generator Phase A Power Factor_tx
PF-GenB*	2466	Generator Phase B Power Factor_tx
PF-GenC*	2467	Generator Phase C Power Factor_tx
GenkWhE*	2468	Generator Total kW Hours Export_tx
GenkWhI*	2469	Generator Total kW Hours Import_tx
FreqUtil*	2470	Utility Average AC Frequency_tx
FreqUtilA*	2471	Utility Phase A AC Frequency_tx
FreqUtilB*	2472	Utility Phase B AC Frequency_tx
FreqUtilC*	2473	Utility Phase C AC Frequency_tx
V-UtilAvgLL*	2474	Utility Average Line-Line AC RMS Voltage_tx
V-UtilAB-LL*	2475	Utility Phase AB Line-Line AC RMS Voltage_tx
V-UtilBC-LL*	2476	Utility Phase BC Line-Line AC RMS Voltage_tx

V-UtlCA-LL*	2477	Utility Phase CA Line-Line AC RMS Voltage_tx
V-UtlAvgLN*	2478	Utility Average Line-Neutral AC RMS Voltage_tx
V-UtlL1N*	2479	Utility Phase A Line-Neutral AC RMS Voltage_tx
V-UtlL2N*	2480	Utility Phase B Line-Neutral AC RMS Voltage_tx
V-UtlL3N*	2481	Utility Phase C Line-Neutral AC RMS Voltage_tx
I-UtlAvg*	2482	Utility Average AC RMS Current_tx
I-UtlA*	2483	Utility Phase A AC RMS Current_tx
I-UtlB*	2484	Utility Phase B AC RMS Current_tx
I-UtlC*	2485	Utility Phase C AC RMS Current_tx
Pwr-UReal*	2486	Utility Total Real Power_tx
Pwr-URealA*	2487	Utility Phase A Real Power_tx
Pwr-UReactive*	2490	Utility Total Reactive Power_tx
Pwr-UReactiveA*	2491	Utility Phase A Reactive Power_tx
Pwr-UApparent*	2494	Utility Total Apparent Power_tx
Pwr-UApparentA*	2495	Utility Phase A Apparent Power_tx
PF-UtlOverall*	2498	Utility Overall Power Factor_tx
PF-UtlA*	2499	Utility Phase A Power Factor_tx
V-Excitation*	3380	Generator Excitation Field Voltage_tx
I-ExitField	3381	Generator Excitation Field Current_tx
V-OutputBias*	3382	Generator Output Voltage Bias Percentage_tx
GCB	3545	Generator Circuit Breaker Status_tx
MCB	3546	Utility Circuit Breaker Status_tx
ATS	3547	Automatic Transfer Switch Status_tx
GenkW*	3590	Generator Total Percent kW_tx
GenkVA*	3591	Generator Total Percent kVA_tx
GenkVAr*	3592	Generator Total Percent kVAr_tx
GenkVArhE	3593	Generator Total kVAr Hours Export_tx
GenkVArhI	3594	Generator Total kVAr Hours Import_tx
AlternatorEffic	4078	Generator Alternator Efficiency_tx
FreqSelect <sup>4,5,6,7</sup>	4080	Generator Frequency Selection_tx
SpdGovGainAdj	5567	Engine Speed Governor Gain Adjust_tx
SpdGovDroop	5568	Engine Speed Governor Droop_tx
BTB1	7841	Bus Tie Breaker 1_tx
BTB2	7842	Bus Tie Breaker 2_tx
LoadGroup	7843	Engine Load Group_tx

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring









	9pin diagnostic connector	Controller
<b>CAN H</b>	G	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	C	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	F	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A

Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **StandardJ 1939 generator Fault Codes on page 1480**

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

StandardJ 1939 generator aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.3 Auxiliary Engine Controllers

### 6.3.1 Continental devices support

ECU Type	Device type supported
<a href="#">Uninox (page 788)</a>	Uninox24

#### Uninox

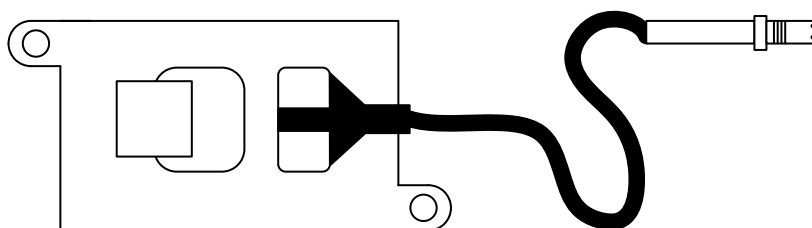


Image 5.213 Uninox

#### Controllers that support the Uninox

Refer to [Compatibility Table \(page 10\)](#)



## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
AT1IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3218	Aftertreatment 1 Intake Gas Sensor 1 Power In Range
AT1IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3219	Aftertreatment 1 Intake Gas Sensor 1 at Temperature
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3220	Aftertreatment 1 SCR Intake NOx 1 Reading Stable
AT1IntWROxygen <sub>1,2,3,4,5,6,7</sub>	3221	Aftertreatment 1 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3223	Aftertreatment 1 Intake Gas Sensor 1 Heater Control
AT1OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3228	Aftertreatment 1 Outlet Gas Sensor 1 Power In Range
AT1OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3229	Aftertreatment 1 Outlet Gas Sensor 1 at Temperature
AT1OutNOxRead <sub>1,2,3,4,5,6,7</sub>	3230	Aftertreatment 1 Outlet NOx 1 Reading Stable
AT1OutWROxygen <sub>1,2,3,4,5,6,7</sub>	3231	Aftertreatment 1 Outlet Wide-Range Percent Oxygen 1 Reading Stable
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3233	Aftertreatment 1 Outlet Gas Sensor 1 Heater Control
AT2IntGSPwr <sub>1,2,3,4,5,6,7</sub>	3257	Aftertreatment 2 Intake Gas Sensor 1 Power In Range
AT2IntGSTmp <sub>1,2,3,4,5,6,7</sub>	3258	Aftertreatment 2 Intake Gas Sensor 1 at Temperature
SCR2IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3259	Aftertreatment 2 SCR Intake NOx 1 Reading Stable
AT2IntWROxygen <sub>1,2,3,4,5,6,7</sub>	3260	Aftertreatment 2 Intake Wide-Range Percent Oxygen 1 Reading Stable
AT2IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3262	Aftertreatment 2 Intake Gas Sensor 1 Heater Control
AT2OutGS1Pwr <sub>1,2,3,4,5,6,7</sub>	3267	Aftertreatment 2 Outlet Gas Sensor 1 Power In Range
AT2OutGS1Tmp <sub>1,2,3,4,5,6,7</sub>	3268	Aftertreatment 2 Outlet Gas Sensor 1 at Temperature
AT2OutNOxRead <sub>1,2,3,4,5,6,7</sub>	3269	Aftertreatment 2 Outlet NOx 1 Reading Stable
AT2OutWROxy <sub>1,2,3,4,5,6,7</sub>	3270	Aftertreatment 2 Outlet Wide-Range Percent Oxygen 1 Reading Stable
AT2OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3272	Aftertreatment 2 Outlet Gas Sensor 1 Heater Control
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
AT1IntDewPoint <sub>1,2,3,4,5,6,7</sub>	3237	Aftertreatment 1 Intake Dew Point
AT1ExhDewPoint <sub>1,2,3,4,5,6,7</sub>	3238	Aftertreatment 1 Exhaust Dew Point
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3216	Aftertreatment 1 SCR Intake NOx 1
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3217	Aftertreatment 1 Intake Percent Oxygen 1
AT1IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3222	Aftertreatment 1 Intake Gas Sensor 1 Heater Preliminary FMI
SCR IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3224	Aftertreatment 1 SCR Intake NOx Sensor 1 Preliminary FMI
AT1IntOxygen <sub>1,2,3,4,5,6,7</sub>	3225	Aftertreatment 1 Intake Oxygen Sensor 1 Preliminary FMI
AT1OutNOx <sub>1,2,3,4,5,6,7</sub>	3226	Aftertreatment 1 Outlet NOx 1
AT1OutOxygen <sub>1,2,3,4,5,6,7</sub>	3227	Aftertreatment 1 Outlet Percent Oxygen 1
AT1OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3232	Aftertreatment 1 Outlet Gas Sensor 1 Heater Preliminary FMI
AT1OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3234	Aftertreatment 1 Outlet NOx Sensor 1 Preliminary FMI
AT1OutOSFMI <sub>1,2,3,4,5,6,7</sub>	3235	Aftertreatment 1 Outlet Oxygen Sensor 1 Preliminary FMI
SCR2IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3255	Aftertreatment 2 SCR Intake NOx 1
AT2IntOxygen <sub>1,2,3,4,5,6,7</sub>	3256	Aftertreatment 2 Intake Percent Oxygen 1
AT2IntGSHeater <sub>1,2,3,4,5,6,7</sub>	3261	Aftertreatment 2 Intake Gas Sensor 1 Heater Preliminary FMI
SCR2IntakeNOx <sub>1,2,3,4,5,6,7</sub>	3263	Aftertreatment 2 SCR Intake NOx Sensor 1 Preliminary FMI
AT2IntOxygen <sub>1,2,3,4,5,6,7</sub>	3264	Aftertreatment 2 Intake Oxygen Sensor 1 Preliminary FMI
AT2OutNOx <sub>1,2,3,4,5,6,7</sub>	3265	Aftertreatment 2 Outlet NOx 1
AT2OutOxygen <sub>1,2,3,4,5,6,7</sub>	3266	Aftertreatment 2 Outlet Percent Oxygen 1
AT2OutGS1Heat <sub>1,2,3,4,5,6,7</sub>	3271	Aftertreatment 2 Outlet Gas Sensor 1 Heater Preliminary FMI

AT2OutNOxFMI <sub>1,2,3,4,5,6,7</sub>	3273	Aftertreatment 2 Outlet NOx Sensor 1 Preliminary FMI
AT1OutNOxHours <sub>1,2,3,4,5,6,7</sub>	5721	Aftertreatment 1 Outlet NOx Sensor Operation Hours
AT1IntNOxHours <sub>1,2,3,4,5,6,7</sub>	5722	Aftertreatment 1 Intake NOx Sensor Operation Hours
AT2OutNOxHours <sub>1,2,3,4,5,6,7</sub>	5723	Aftertreatment 2 Outlet NOx Sensor Operation Hours
AT2IntNOxHours <sub>1,2,3,4,5,6,7</sub>	5724	Aftertreatment 2 Intake NOx Sensor Operation Hours
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	connector	Controller
<b>CAN H</b>	pin 4	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	pin 3	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	pin 1	N/A
<b>Battery - (negative)</b>	pin 2	N/A
<b>Address change</b>	pin 5	N/A

Available list of texts of fault codes **see Continental Uninox Fault Codes on page 1**

## 6.3.2 Heinzmann devices support

ECU Type	Device type supported
<a href="#">Ariadne (page 792)</a>	ARIADNE KC-01
<a href="#">Helenos (page 306)</a>	HELENOS DC 2
<a href="#">Kronos (page 794)</a>	KRONOS 20
<a href="#">Pandaros (page 308)</a>	PANDAROS DC 6
<a href="#">Phlox (page 874)</a>	PHLOX II
<a href="#">GMF (page 790)</a>	GMA, GMF

## GMF

### Controllers that support the GMF

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
StatusOK <sub>3</sub>		Overall Status OK
P-Zero <sub>3</sub>		Zero Pressure Detection
FlowZero <sub>3</sub>		Zero Flow Detection
NoFlow <sub>3</sub>		Flow Not Reached
VlvPositionFlt <sub>3</sub>		Valve Position Error
T-ActuatorHi <sub>3</sub>		High Actuator Temperature
T-ActuatorFlt <sub>3</sub>		Actuator Temperature Fail

FGTFlt <sub>3</sub>		FGT Fail
P-DiffFlt <sub>3</sub>		Differential Pressure Fail
HiCurrCoilFlt <sub>3</sub>		Coil Current Fail (High)
HiPositionFlt <sub>3</sub>		Position Fail (High)
LowCurrCoilFlt <sub>3</sub>		Coil Current Fail (Low)
FlowNotPlsb <sub>3</sub>		Flow Not Plausible
LowPositionFlt <sub>3</sub>		Position Fail (Low)
V-BatteryLow <sub>3</sub>		Battery Voltage Error (Low)
FGTLowLimit <sub>3</sub>		FGT Low Limit
P-DiffErrorLow <sub>3</sub>		Differential Pressure Error (Low)
V-BatteryHi <sub>3</sub>		Battery Voltage Error (High)
FGTHighLimit <sub>3</sub>		FGT High Limit
P-DiffErrorHi <sub>3</sub>		Differential Pressure Error (High)
FGPHighLimit <sub>3</sub>		FGP High Limit
Watchdog <sub>3</sub>		Watchdog
CanFlowDemFlt <sub>3</sub>		Can Flow Demand Fail
TecjetSd <sub>3</sub>		Tecjet Shutdown
GMFInternalFlt <sub>3</sub>		GMF Internal Fault
Keyswitch <sub>3</sub>		Keyswitch State

#### ECU binary inputs (controller's outputs - commands)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

#### ECU analog outputs (controller's inputs)

Configuration Name	SPN	J1939 Name
ActFuelValve <sub>3</sub>		Actual Fuel Valve Position
DesFuelValve <sub>3</sub>		Desired Fuel Valve Position
P-DiffGas <sub>3</sub>		Outlet to Inlet Gas Differencial Pressure
FuelFlowRate <sub>3</sub>		Fuel Flow Rate
FuelFlowRate2 <sub>3</sub>		Fuel Flow Rate Low Bytes 2
FuelFlowRate2 <sub>3</sub>		Fuel Flow Rate High Bytes 2

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
FuelGravity <sub>3</sub>		Fuel Specific Gravity
HeatsRatio <sub>3</sub>		Ratio of Specific Heats
FuelFlowRate <sub>3</sub>		Fuel Flow Rate Low Bytes
FuelFlowRate <sub>3</sub>		Fuel Flow Rate High Bytes
FCVCommand		Fuel Actuator 1 Command

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.

## Recommended wiring

Function	ECU B connector	customer 42pin connector	Controller
<b>CAN H</b>	14	28	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	15	29	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	60,79	N/A	N/A
<b>Battery - (negative)</b>	4,69,81	N/A	N/A
<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

Available list of texts of fault codes **see Gas Engine Technology GMF Fault Codes on page 1**

## Ariadne

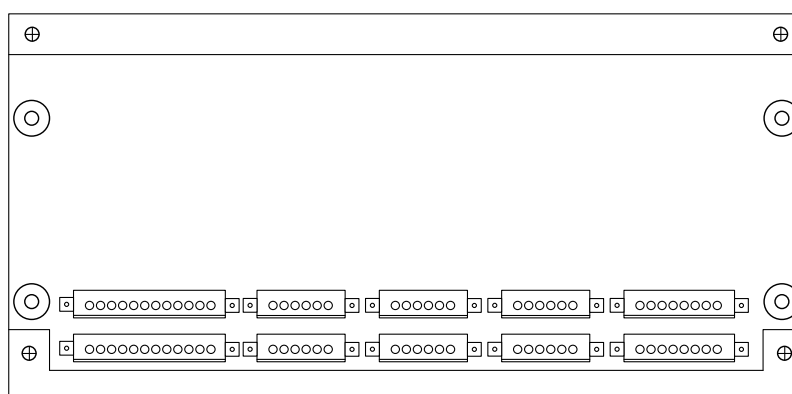


Image 5.214 Ariadne

## Controllers that support the Ariadne:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
KnockControl1		Knock Control State 1
KnockControl2		Knock Control State 2
KnockLevel		Engine Knock Level
ComRetardSpark		Common Spark Retard
KnockValue		Engine Knock Value
SparkRetard1		Cylinder No 1 Spark Retard

SparkRetard2		Cylinder No 2 Spark Retard
SparkRetard3		Cylinder No 3 Spark Retard
SparkRetard4		Cylinder No 4 Spark Retard
SparkRetard5		Cylinder No 5 Spark Retard
SparkRetard6		Cylinder No 6 Spark Retard
SparkRetard7		Cylinder No 7 Spark Retard
SparkRetard8		Cylinder No 8 Spark Retard
SparkRetard9		Cylinder No 9 Spark Retard
SparkRetard10		Cylinder No 10 Spark Retard
SparkRetard11		Cylinder No 11 Spark Retard
SparkRetard12		Cylinder No 12 Spark Retard
SparkRetard13		Cylinder No 13 Spark Retard
SparkRetard14		Cylinder No 14 Spark Retard
SparkRetard15		Cylinder No 15 Spark Retard
SparkRetard16		Cylinder No 16 Spark Retard
SparkRetard17		Cylinder No 17 Spark Retard
SparkRetard18		Cylinder No 18 Spark Retard
SparkRetard19		Cylinder No 19 Spark Retard
SparkRetard20		Cylinder No 20 Spark Retard
SparkRetard21		Cylinder No 21 Spark Retard
SparkRetard22		Cylinder No 22 Spark Retard
SparkRetard23		Cylinder No 23 Spark Retard
SparkRetard24		Cylinder No 24 Spark Retard
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
Cyl 1KnockLvl <sub>1,2,3,4,5,6,7</sub>	1352	Engine Cylinder 1 Knock Level
Cyl 2KnockLvl <sub>1,2,3,4,5,6,7</sub>	1353	Engine Cylinder 2 Knock Level
Cyl 3KnockLvl <sub>1,2,3,4,5,6,7</sub>	1354	Engine Cylinder 3 Knock Level
Cyl 4KnockLvl <sub>1,2,3,4,5,6,7</sub>	1355	Engine Cylinder 4 Knock Level
Cyl 5KnockLvl <sub>1,2,3,4,5,6,7</sub>	1356	Engine Cylinder 5 Knock Level
Cyl 6KnockLvl <sub>1,2,3,4,5,6,7</sub>	1357	Engine Cylinder 6 Knock Level
Cyl 7KnockLvl <sub>1,2,3,4,5,6,7</sub>	1358	Engine Cylinder 7 Knock Level
Cyl 8KnockLvl <sub>1,2,3,4,5,6,7</sub>	1359	Engine Cylinder 8 Knock Level
Cyl 9KnockLvl <sub>1,2,3,4,5,6,7</sub>	1360	Engine Cylinder 9 Knock Level
Cyl 10KnockLvl <sub>1,2,3,4,5,6,7</sub>	1361	Engine Cylinder 10 Knock Level
Cyl 11KnockLvl <sub>1,2,3,4,5,6,7</sub>	1362	Engine Cylinder 11 Knock Level
Cyl 12KnockLvl <sub>1,2,3,4,5,6,7</sub>	1363	Engine Cylinder 12 Knock Level
Cyl 13KnockLvl <sub>1,2,3,4,5,6,7</sub>	1364	Engine Cylinder 13 Knock Level
Cyl 14KnockLvl <sub>1,2,3,4,5,6,7</sub>	1365	Engine Cylinder 14 Knock Level
Cyl 15KnockLvl <sub>1,2,3,4,5,6,7</sub>	1366	Engine Cylinder 15 Knock Level
Cyl 16KnockLvl <sub>1,2,3,4,5,6,7</sub>	1367	Engine Cylinder 16 Knock Level
Cyl 17KnockLvl <sub>1,2,3,4,5,6,7</sub>	1368	Engine Cylinder 17 Knock Level
Cyl 18KnockLvl <sub>1,2,3,4,5,6,7</sub>	1369	Engine Cylinder 18 Knock Level
Cyl 19KnockLvl <sub>1,2,3,4,5,6,7</sub>	1370	Engine Cylinder 19 Knock Level
Cyl 20KnockLvl <sub>1,2,3,4,5,6,7</sub>	1371	Engine Cylinder 20 Knock Level
Cyl 21KnockLvl <sub>1,2,3,4,5,6,7</sub>	1372	Engine Cylinder 21 Knock Level
Cyl 22KnockLvl <sub>1,2,3,4,5,6,7</sub>	1373	Engine Cylinder 22 Knock Level
Cyl 23KnockLvl <sub>1,2,3,4,5,6,7</sub>	1374	Engine Cylinder 23 Knock Level
Cyl 24KnockLvl <sub>1,2,3,4,5,6,7</sub>	1375	Engine Cylinder 24 Knock Level

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.

## Recommended wiring

Function	Terminal	Controller
CAN H	29	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	27	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	2	N/A
Battery - (negative)	1	N/A

Available list of texts of fault codes **see Heinzmann Ariadne Fault Codes on page 1251**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Heinzmann Ariadne aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## Kronos

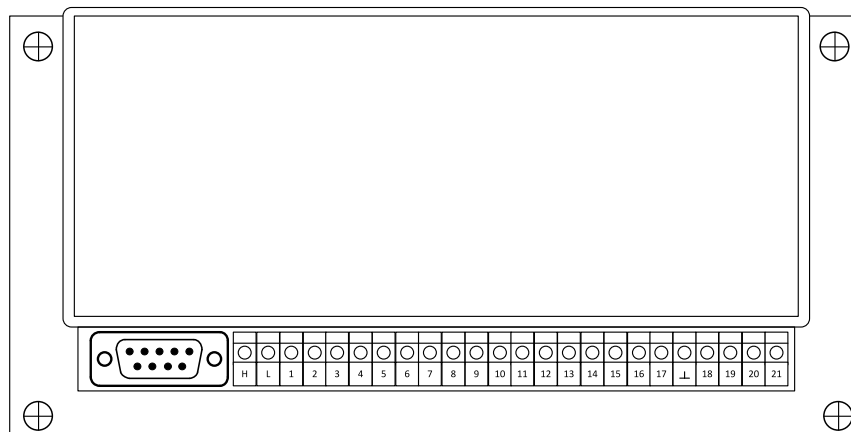


Image 5.215 Kronos

## Controllers that support the Kronos:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfunctLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Exhaust <sub>1,2,3,4,5,6,7</sub>	173	Engine Exhaust Temperature
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.

## Recommended wiring

Function	Terminal	Controller
CAN H	H	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	L	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	21	N/A
Battery - (negative)	20	N/A

Available list of texts of fault codes **see Heinzmann Kronos Fault Codes on page 1253**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Heinzmann Kronos aftertreatment lamps					
	Solid On		Solid On		Not Supported
					Not Supported



Not  
Supported



Not  
Supported



Not  
Supported



Not  
Supported

## 6.3.3 HuegliTech devices support

ECU Type	Device type supported
<a href="#">SG50&amp;SG100 (page 310)</a>	HT-SG-50, HT-SG-100
<a href="#">LEF200 (page 878)</a>	HT-LEF100/200
<a href="#">LEF200 Module 1 (page 884)</a>	HT-LEF100/200
<a href="#">LEF200 Module 2 (page 887)</a>	HT-LEF100/200
<a href="#">LEF200 Module 3 (page 891)</a>	HT-LEF100/200
<a href="#">AF-1500 (page 796)</a>	AF-1500

### AF-1500

Controllers that support the AF-1500:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MisFirCh1_1		Misfiring Flags Channel 1 (1)
MisFirCh2_1		Misfiring Flags Channel 2 (1)
MisFirCh3_1		Misfiring Flags Channel 3 (1)
MisFirCh4_1		Misfiring Flags Channel 4 (1)
MisFirCh5_1		Misfiring Flags Channel 5 (1)
MisFirCh6_1		Misfiring Flags Channel 6 (1)
MisFirCh7_1		Misfiring Flags Channel 7 (1)
MisFirCh8_1		Misfiring Flags Channel 8 (1)
MisFirCh9_1		Misfiring Flags Channel 9 (1)
MisFirCh10_1		Misfiring Flags Channel 10 (1)
CurrDevCh1_1		Current Dev Flags Channel 1 (1)
CurrDevCh2_1		Current Dev Flags Channel 2 (1)
CurrDevCh3_1		Current Dev Flags Channel 3 (1)
CurrDevCh4_1		Current Dev Flags Channel 4 (1)
CurrDevCh5_1		Current Dev Flags Channel 5 (1)
CurrDevCh6_1		Current Dev Flags Channel 6 (1)
CurrDevCh7_1		Current Dev Flags Channel 7 (1)
CurrDevCh8_1		Current Dev Flags Channel 8 (1)
CurrDevCh9_1		Current Dev Flags Channel 9 (1)



CurrDevCh10_1		Current Dev Flags Channel 10 (1)
CurrLimCh1_1		Current Lim Flags Channel 1 (1)
CurrLimCh2_1		Current Lim Flags Channel 2 (1)
CurrLimCh3_1		Current Lim Flags Channel 3 (1)
CurrLimCh4_1		Current Lim Flags Channel 4 (1)
CurrLimCh5_1		Current Lim Flags Channel 5 (1)
CurrLimCh6_1		Current Lim Flags Channel 6 (1)
CurrLimCh7_1		Current Lim Flags Channel 7 (1)
CurrLimCh8_1		Current Lim Flags Channel 8 (1)
CurrLimCh9_1		Current Lim Flags Channel 9 (1)
CurrLimCh10_1		Current Lim Flags Channel 10 (1)
MisFirCh1_2		Misfiring Flags Channel 1 (2)
MisFirCh2_2		Misfiring Flags Channel 2 (2)
MisFirCh3_2		Misfiring Flags Channel 3 (2)
MisFirCh4_2		Misfiring Flags Channel 4 (2)
MisFirCh5_2		Misfiring Flags Channel 5 (2)
MisFirCh6_2		Misfiring Flags Channel 6 (2)
MisFirCh7_2		Misfiring Flags Channel 7 (2)
MisFirCh8_2		Misfiring Flags Channel 8 (2)
MisFirCh9_2		Misfiring Flags Channel 9 (2)
MisFirCh10_2		Misfiring Flags Channel 10 (2)
CurrDevCh1_2		Current Dev Flags Channel 1 (2)
CurrDevCh2_2		Current Dev Flags Channel 2 (2)
CurrDevCh3_2		Current Dev Flags Channel 3 (2)
CurrDevCh4_2		Current Dev Flags Channel 4 (2)
CurrDevCh5_2		Current Dev Flags Channel 5 (2)
CurrDevCh6_2		Current Dev Flags Channel 6 (2)
CurrDevCh7_2		Current Dev Flags Channel 7 (2)
CurrDevCh8_2		Current Dev Flags Channel 8 (2)
CurrDevCh9_2		Current Dev Flags Channel 9 (2)
CurrDevCh10_2		Current Dev Flags Channel 10 (2)
CurrLimCh1_2		Current Lim Flags Channel 1 (2)
CurrLimCh2_2		Current Lim Flags Channel 2 (2)
CurrLimCh3_2		Current Lim Flags Channel 3 (2)
CurrLimCh4_2		Current Lim Flags Channel 4 (2)
CurrLimCh5_2		Current Lim Flags Channel 5 (2)
CurrLimCh6_2		Current Lim Flags Channel 6 (2)
CurrLimCh7_2		Current Lim Flags Channel 7 (2)
CurrLimCh8_2		Current Lim Flags Channel 8 (2)
CurrLimCh9_2		Current Lim Flags Channel 9 (2)
CurrLimCh10_2		Current Lim Flags Channel 10 (2)
MisFirCh1_3		Misfiring Flags Channel 1 (3)
MisFirCh2_3		Misfiring Flags Channel 2 (3)
MisFirCh3_3		Misfiring Flags Channel 3 (3)
MisFirCh4_3		Misfiring Flags Channel 4 (3)
MisFirCh5_3		Misfiring Flags Channel 5 (3)
MisFirCh6_3		Misfiring Flags Channel 6 (3)

MisFirCh7_3		Misfiring Flags Channel 7 (3)
MisFirCh8_3		Misfiring Flags Channel 8 (3)
MisFirCh9_3		Misfiring Flags Channel 9 (3)
MisFirCh10_3		Misfiring Flags Channel 10 (3)
CurrDevCh1_3		Current Dev Flags Channel 1 (3)
CurrDevCh2_3		Current Dev Flags Channel 2 (3)
CurrDevCh3_3		Current Dev Flags Channel 3 (3)
CurrDevCh4_3		Current Dev Flags Channel 4 (3)
CurrDevCh5_3		Current Dev Flags Channel 5 (3)
CurrDevCh6_3		Current Dev Flags Channel 6 (3)
CurrDevCh7_3		Current Dev Flags Channel 7 (3)
CurrDevCh8_3		Current Dev Flags Channel 8 (3)
CurrDevCh9_3		Current Dev Flags Channel 9 (3)
CurrDevCh10_3		Current Dev Flags Channel 10 (3)
CurrLimCh1_3		Current Lim Flags Channel 1 (3)
CurrLimCh2_3		Current Lim Flags Channel 2 (3)
CurrLimCh3_3		Current Lim Flags Channel 3 (3)
CurrLimCh4_3		Current Lim Flags Channel 4 (3)
CurrLimCh5_3		Current Lim Flags Channel 5 (3)
CurrLimCh6_3		Current Lim Flags Channel 6 (3)
CurrLimCh7_3		Current Lim Flags Channel 7 (3)
CurrLimCh8_3		Current Lim Flags Channel 8 (3)
CurrLimCh9_3		Current Lim Flags Channel 9 (3)
CurrLimCh10_3		Current Lim Flags Channel 10 (3)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RPM_1		Engine Speed (1)
FiringAngle1_1		Interpolated Firing Angle (1)
FiringFlagsH_1		Firing on Hold Flags (1)
FiringMaskH_1		Firing on Hold Mask (1)
ChargCurrCh1_1		Charging Current CH1 (1)
ChargCurrCh2_1		Charging Current CH2 (1)
ChargCurrCh3_1		Charging Current CH3 (1)
ChargCurrCh4_1		Charging Current CH4 (1)
ChargCurrCh5_1		Charging Current CH5 (1)
ChargCurrCh6_1		Charging Current CH6 (1)
ChargCurrCh7_1		Charging Current CH7 (1)
ChargCurrCh8_1		Charging Current CH8 (1)
DwellTimeCh1_1		Dwell Time CH1 (1)
DwellTimeCh2_1		Dwell Time CH2 (1)
DwellTimeCh3_1		Dwell Time CH3 (1)
DwellTimeCh4_1		Dwell Time CH4 (1)
DwellTimeCh5_1		Dwell Time CH5 (1)
DwellTimeCh6_1		Dwell Time CH6 (1)
DwellTimeCh7_1		Dwell Time CH7 (1)

DwellTimeCh8_1		Dwell Time CH8 (1)
FiringSeq1_1		Firing Sequence 1 (1)
FiringSeq2_1		Firing Sequence 2 (1)
FiringSeq3_1		Firing Sequence 3 (1)
FiringSeq4_1		Firing Sequence 4 (1)
FiringSeq5_1		Firing Sequence 5 (1)
FiringSeq6_1		Firing Sequence 6 (1)
FiringSeq7_1		Firing Sequence 7 (1)
FiringSeq8_1		Firing Sequence 8 (1)
Adjustment1_1		Individual Adjustment 1 (1)
Adjustment2_1		Individual Adjustment 2 (1)
Adjustment3_1		Individual Adjustment 3 (1)
Adjustment4_1		Individual Adjustment 4 (1)
Adjustment5_1		Individual Adjustment 5 (1)
Adjustment6_1		Individual Adjustment 6 (1)
Adjustment7_1		Individual Adjustment 7 (1)
Adjustment8_1		Individual Adjustment 8 (1)
V-Angle_1		V-Angle (1)
OffsetAngle_1		Offset Angle (1)
ComDwellTime_1		Common Dwell Time (1)
No.Cyl_1		Number of Cylinders (1)
OverSpeedLIM_1		Over-Speed Limit (1)
ChargCurrMax_1		Charging Current Maximum (1)
ComblndxThr_1		Combustion Index Threshold (1)
CurrDeviaThr_1		Current Deviation Threshold (1)
HW_ID_1		Hardware ID (1)
FW_Version_1		Firmware Version (1)
TDC_1_1		TDC 1 (1)
TDC_2_1		TDC 2 (1)
TDC_3_1		TDC 3 (1)
TDC_4_1		TDC 4 (1)
TDC_5_1		TDC 5 (1)
TDC_6_1		TDC 6 (1)
TDC_7_1		TDC 7 (1)
TDC_8_1		TDC 8 (1)
WorkMode_1		WorkMode (1)
PickUp_1		PickUp (1)
RstToothLag_1		Reset Tooth Lag Flag (1)
RPM_2		Engine Speed (2)
FiringAngle_2		Interpolated Firing Angle (2)
FiringFlagsH_2		Firing on Hold Flags (2)
FiringMaskH_2		Firing on Hold Mask (2)
ChargCurrCh1_2		Charging Current CH1 (2)
ChargCurrCh2_2		Charging Current CH2 (2)
ChargCurrCh3_2		Charging Current CH3 (2)
ChargCurrCh4_2		Charging Current CH4 (2)
ChargCurrCh5_2		Charging Current CH5 (2)

ChargCurrCh6_2		Charging Current CH6 (2)
ChargCurrCh7_2		Charging Current CH7 (2)
ChargCurrCh8_2		Charging Current CH8 (2)
DwellTimeCh1_2		Dwell Time CH1 (2)
DwellTimeCh2_2		Dwell Time CH2 (2)
DwellTimeCh3_2		Dwell Time CH3 (2)
DwellTimeCh4_2		Dwell Time CH4 (2)
DwellTimeCh5_2		Dwell Time CH5 (2)
DwellTimeCh6_2		Dwell Time CH6 (2)
DwellTimeCh7_2		Dwell Time CH7 (2)
DwellTimeCh8_2		Dwell Time CH8 (2)
FiringSeq1_2		Firing Sequence 1 (2)
FiringSeq2_2		Firing Sequence 2 (2)
FiringSeq3_2		Firing Sequence 3 (2)
FiringSeq4_2		Firing Sequence 4 (2)
FiringSeq5_2		Firing Sequence 5 (2)
FiringSeq6_2		Firing Sequence 6 (2)
FiringSeq7_2		Firing Sequence 7 (2)
FiringSeq8_2		Firing Sequence 8 (2)
Adjustment1_2		Individual Timing Adjustment 1 (2)
Adjustment2_2		Individual Timing Adjustment 2 (2)
Adjustment3_2		Individual Timing Adjustment 3 (2)
Adjustment4_2		Individual Timing Adjustment 4 (2)
Adjustment5_2		Individual Timing Adjustment 5 (2)
Adjustment6_2		Individual Timing Adjustment 6 (2)
Adjustment7_2		Individual Timing Adjustment 7 (2)
Adjustment8_2		Individual Timing Adjustment 8 (2)
V-Angle_2		V-Angle (2)
OffsetAngle_2		Offset Angle (2)
ComDwellTime_2		Common Dwell Time (2)
No.Cyl_2		Number of Cylinders (2)
OverSpeedLIM_2		Over-Speed Limit (2)
ChargCurrMax_2		Charging Current Maximum (2)
CombIndxThr_2		Combustion Index Threshold (2)
CurrDeviaThr_2		Current Deviation Threshold (2)
TDC_1_2		TDC 1 (2)
TDC_2_2		TDC 2 (2)
TDC_3_2		TDC 3 (2)
TDC_4_2		TDC 4 (2)
TDC_5_2		TDC 5 (2)
TDC_6_2		TDC 6 (2)
TDC_7_2		TDC 7 (2)
TDC_8_2		TDC 8 (2)
WorkMode_2		WorkMode (2)
PickUp_2		PickUp (2)
RstToothLag_2		Reset Tooth Lag Flag (2)
TDC 1 Slave		TDC 1 Slave (2)

TDC 2 Slave		TDC 2 Slave (2)
TDC 3 Slave		TDC 3 Slave (2)
TDC 4 Slave		TDC 4 Slave (2)
TDC 5 Slave		TDC 5 Slave (2)
TDC 6 Slave		TDC 6 Slave (2)
TDC 7 Slave		TDC 7 Slave (2)
TDC 8 Slave		TDC 8 Slave (2)
SL_FiringSeq 1		Slave Firing Sequence 1 (2)
SL_FiringSeq 2		Slave Firing Sequence 2 (2)
SL_FiringSeq 3		Slave Firing Sequence 3 (2)
SL_FiringSeq 4		Slave Firing Sequence 4 (2)
SL_FiringSeq 5		Slave Firing Sequence 5 (2)
SL_FiringSeq 6		Slave Firing Sequence 6 (2)
SL_FiringSeq 7		Slave Firing Sequence 7 (2)
SL_FiringSeq 8		Slave Firing Sequence 8 (2)
SL TimingAdj 1		SL_Individual Timing Adjustment 1 (2)
SL TimingAdj 2		SL_Individual Timing Adjustment 2 (2)
SL TimingAdj 3		SL_Individual Timing Adjustment 3 (2)
SL TimingAdj 4		SL_Individual Timing Adjustment 4 (2)
SL TimingAdj 5		SL_Individual Timing Adjustment 5 (2)
SL TimingAdj 6		SL_Individual Timing Adjustment 6 (2)
SL TimingAdj 7		SL_Individual Timing Adjustment 7 (2)
SL TimingAdj 8		SL_Individual Timing Adjustment 8 (2)
RPM_3		Engine Speed (3)
FiringAngle_3		Interpolated Firing Angle (3)
FiringFlagsH_3		Firing on Hold Flags (3)
FiringMaskH_3		Firing on Hold Mask (3)
ChargCurrCh1_3		Charging Current CH1 (3)
ChargCurrCh2_3		Charging Current CH2 (3)
ChargCurrCh3_3		Charging Current CH3 (3)
ChargCurrCh4_3		Charging Current CH4 (3)
ChargCurrCh5_3		Charging Current CH5 (3)
ChargCurrCh6_3		Charging Current CH6 (3)
ChargCurrCh7_3		Charging Current CH7 (3)
ChargCurrCh8_3		Charging Current CH8 (3)
DwellTimeCh1_3		Dwell Time CH1 (3)
DwellTimeCh2_3		Dwell Time CH2 (3)
DwellTimeCh3_3		Dwell Time CH3 (3)
DwellTimeCh4_3		Dwell Time CH4 (3)
DwellTimeCh5_3		Dwell Time CH5 (3)
DwellTimeCh6_3		Dwell Time CH6 (3)
DwellTimeCh7_3		Dwell Time CH7 (3)
DwellTimeCh8_3		Dwell Time CH8 (3)
WorkMode_3		WorkMode (3)
PickUp_3		PickUp (3)
RstToothLag_3		Reset Tooth Lag Flag (3)
HW_ID_2		Hardware ID (2)

FW_Version_2		Firmware Version (2)
HW_ID_3		Hardware ID (3)
FW_Version_3		Firmware Version (3)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended DIP switch settings

We recommend these settings for various DIP switches for correct J1939 communications settings over CAN BUS.

## Operation Mode settings

Operation Mode	SW1:4	SW1:5
Stand Alone	OFF	OFF
Compact	ON	OFF
J1939	OFF	ON

## CAN BUS Termination

Termination resistor	SW1:8
None	OFF
120 Ohms	ON

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

Function	ECU connector	Controller
<b>CAN H</b>	3	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	4	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1	N/A
<b>Battery - (negative)</b>	2	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## 6.3.4 MAN engines support

ECU Type	Engine type
<a href="#">EDC17 Master, EDC17 Slave (page 429)</a>	6 R
<a href="#">EDC17 Master (page 432)</a>	6 R
<a href="#">EDC17 Slave (page 435)</a>	6 R
<a href="#">EDC7 Master, EDC7 Slave and MFR interface system (page 417)</a>	8 V, 12 V
<a href="#">EDC7 Master and MFR interface system (page 421)</a>	8 V, 12 V
<a href="#">EDC7 Slave and MFR interface system (page 423)</a>	8 V, 12 V
<a href="#">EDC7 Statistics and MFR interface system (page 426)</a>	8 V, 12 V
<a href="#">Data Logger (page 804)</a>	Diesel engines equipped with a data logger
<a href="#">Data Logger Master (page 806)</a>	Diesel engines equipped with a data logger
<a href="#">Data Logger Slave (page 808)</a>	Diesel engines equipped with a data logger

## Engine type explanation

Engine Code	Meaning
D 0836 LE 201/203	D - Water-cooled four stroke Diesel engine with direct fuel injection
	E - Water-cooled 4 stroke Otto-gas-engines with spark ignition
	E - naturally aspirated engine TE - turbocharged engine LE - turbocharged and intercooled engine
6 R	R - vertically arranged in-line V - cylinders in 90° V arrangement

## Data Logger

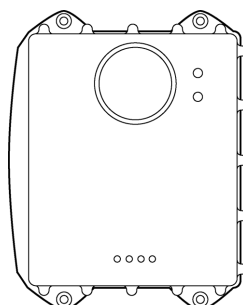


Image 5.216 Data Logger



**IMPORTANT:** Please check the configuration of MAN Data Logger. The only supported configuration is labeled as order number **51.27700-7002** and rear panel label **Config. version: 31.8.2015**

## Controllers that support the Data Logger

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CoolWater <sub>4,5,6,7</sub>		Cooling Water
CoolWater2 <sub>4,5,6,7</sub>		Cooling Water 2
Oil Press A <sub>4,5,6,7</sub>		Oil Pressure A
Oil Press B <sub>4,5,6,7</sub>		Oil Pressure B
P-Intake <sub>1,2,3,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Diagnostic

The ECU does not support any diagnostic protocol.









## Recommended wiring

Function	Left (L) or Right (R) 48pin connector	9pin diagnostic connector	Controller
CAN H	R88	N/A	CAN1 (extension modules/J1939) CAN H
CAN COM	R89	N/A	CAN1 (extension modules/J1939) CAN COM
CAN L	R91	N/A	CAN1 (extension modules/J1939) CAN L
Battery + (positive)	R95	N/A	N/A
Battery - (negative)	L12, L36, L48 R60, R72, R84, R96	N/A	N/A

Key Switch	N/A	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	N/A	SG OUT
Analog Speed Control	N/A	N/A	SG COM

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN data logger aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## Data Logger Master

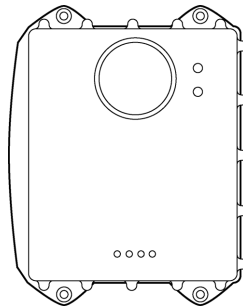


Image 5.217 Data Logger

**IMPORTANT:** Please check the configuration of MAN Data Logger. The only supported configuration is labeled as order number **51.27700-7002** and rear panel label **Config. version: 31.8.2015**

## Controllers that support the Data Logger

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CoolWater <sub>4,5,6,7</sub>		Cooling Water

Oil Press A <sub>4,5,6,7</sub>		Oil Pressure A
P-Intake <sub>1,2,4,5,6,7</sub>	102	Engine Intake Manifold #1 Pressure
T-IntManifold <sub>1,2,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
T-Oil2 <sub>1,2,3,4,5,6,7</sub>	1135	Engine Oil Temperature 2
T-Turbo1Int <sub>1,2,3,4,5,6,7</sub>	1180	Engine Turbocharger 1 Turbine Intake Temperature
T-Turbo2Int <sub>1,2,3,4,5,6,7</sub>	1181	Engine Turbocharger 2 Turbine Intake Temperature
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Diagnostic









The ECU does not support any diagnostic protocol.

## Recommended wiring

Function	Left (L) or Right (R) 48pin connector	9pin diagnostic connector	Controller
<b>CAN H</b>	R88	N/A	CAN1 (extension modules/J1939) CAN H
<b>CAN COM</b>	R89	N/A	CAN1 (extension modules/J1939) CAN COM
<b>CAN L</b>	R91	N/A	CAN1 (extension modules/J1939) CAN L
<b>Battery + (positive)</b>	R95	N/A	N/A
<b>Battery - (negative)</b>	L12, L36, L48 R60, R72, R84, R96	N/A	N/A
<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN data logger Master aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## Data Logger Slave

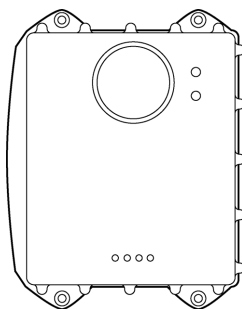


Image 5.218 Data Logger

**IMPORTANT:** Please check the configuration of MAN Data Logger. The only supported configuration is labeled as order number **51.27700-7002** and rear panel label **Config. version: 31.8.2015**

### Controllers that support the Data Logger Slave

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CoolWater2<sub>3,4,5,6,7</sub>		Cooling Water 2
Oil Press B<sub>3,4,5,6,7</sub>		Oil Pressure B
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Diagnostic

The ECU does not support any diagnostic protocol.









### Recommended wiring

Function	Left (L) or Right (R) 48pin connector	9pin diagnostic connector	Controller
CAN H	R88	N/A	CAN1 (extension modules/J1939) CAN H
CAN COM	R89	N/A	CAN1 (extension modules/J1939) CAN COM
CAN L	R91	N/A	CAN1 (extension modules/J1939) CAN L
Battery + (positive)	R95	N/A	N/A
Battery - (negative)	L12, L36, L48 R60, R72, R84, R96	N/A	N/A

<b>Key Switch</b>	N/A	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	N/A	SG COM

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MAN data logger Slave aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.3.5 THQtronic devices support

ECU Type	Device type supported
<a href="#">LSU49 (page 809)</a> <a href="#">LSU49 (page 809)</a>	LSU49

## LSU49

### Controllers that support the LSU49

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Diag Vs <sub>3</sub>		Diag: Vs out of range
Diag Vbat <sub>3</sub>		Diag: Vbat
Diag GND <sub>3</sub>		Diag: GND out of range
Diag Ip <sub>3</sub>		Diag: Ip not enabled
Diag Pcold <sub>3</sub>		Diag: Probe too cold
Diag Pshorted <sub>3</sub>		Diag: Probe short circuit
Diag Pdisc <sub>3</sub>		Diag: Probe disconnected
Diag Wrn <sub>3</sub>		Diag: Warning
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Vbat <sub>3</sub>		Battery Voltage

Vheat <sub>3</sub>		Heat Voltage
Iheat <sub>3</sub>		Heat Current
Tprobe <sub>3</sub>		Temperature probe
Vout <sub>3</sub>		Output Voltage
Lambda <sub>3</sub>		Lambda
O <sub>2</sub> <sub>3</sub>		O <sub>2</sub>

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	6 pin connector	Controller
<b>CAN H</b>	1 (White)	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	2 (blue)	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	3 (red)	N/A
<b>Battery - (negative)</b>	4 (black)	N/A
<b>Analog ground</b>	5 (brown)	analog input COM
<b>Analog output</b>	6 (yellow)	Any analog input AI

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## 6.3.6 Technoton devices support

ECU Type	Device type
<a href="#">DFM (page 810)</a>	DFM Fuel Meter

### DFM

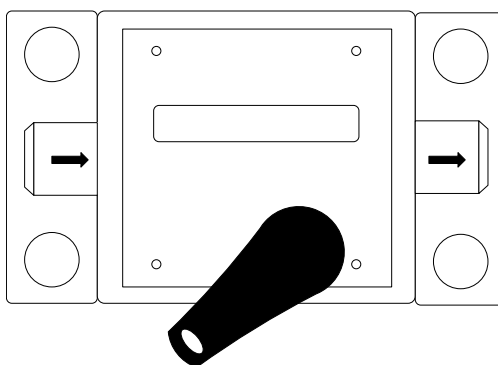


Image 5.219 DFM

### Controllers that support the DFM:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
DFM1 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 1
DFM2 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 2
DFM3 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 3
DFM4 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 4
DFM5 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 5
DFM6 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 6
DFM7 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 7
DFM8 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 8
DFM9 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 9
DFM10 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 10
DFM11 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 11
DFM12 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 12
DFM13 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 13
DFM14 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 14
DFM15 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 15
DFM16 <sub>1,2,3,4,5,6,7</sub>		DFM Summation Enable. DFM 16
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ModeFuelRate <sub>1,2,3,4,5,6,7</sub>		Engine mode by fuel rate
FeedFuelRate <sub>1,2,3,4,5,6,7</sub>		Chamber fuel rate. Feed chamber
ReversFuelRate <sub>1,2,3,4,5,6,7</sub>		Chamber fuel rate. Reverse chamber
FeedWorkMode <sub>1,2,3,4,5,6,7</sub>		Chamber working mode. Feed chamber
ReversWorkMode <sub>1,2,3,4,5,6,7</sub>		Chamber working mode. Reverse chamber
DFMRunHoursIdl <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Idle
DFMRunHoursOpt <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Optimal
DFMRunHoursOver <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Overload
DFMRunHoursCht <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Cheating
DFMRunHoursNeg <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Negative
DFMRunHoursInf <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Interference
InterferSensOC <sub>1,2,3,4,5,6,7</sub>		Interference sensor occurrence count
FeedChTimeCnt <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Feed Chamber
FeedTimeCntIdl <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Idle. Feed Chamber
FeedTimeCntOpt <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Optimal. Feed Chamber
FeedTimeCntOvr <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Overload. Feed Chamber
FeedTimeCntCht <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Cheating. Feed Chamber
RvrsChTimeCnt <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Reverse chamber
RvrsTimeCntIdl <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Idle. Reverse chamber
RvrsTimeCntOpt <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Optimal. Reverse chamber
RvrsTimeCntOvr <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Overload. Reverse chamber
RvrsTimeCntCht <sub>1,2,3,4,5,6,7</sub>		Flowmeter Chamber Time Counter. Cheating. Reverse chamber
DFMRunHours <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation
DFMRunHoursClr <sub>1,2,3,4,5,6,7</sub>		Flowmeter Hours Of Operation. Clearable
IgnitKeyState <sub>1,2,3,4,5,6,7</sub>		Ignition Key State

IgnitONTime <sub>1,2,3,4,5,6,7</sub>		Ignition ON Time
UnitRunHours <sub>1,2,3,4,5,6,7</sub>		Unit Hours Of Operation
UnitRunHoursBt <sub>1,2,3,4,5,6,7</sub>		Unit Hours Of Operation. Battery (F612)
AutoDaySaveTim <sub>1,2,3,4,5,6,7</sub>		Automatic Daylight Savings Time and Back
T-CorrEnable <sub>1,2,3,4,5,6,7</sub>		Temperature Correction Enable
ArrayElementCt <sub>1,2,3,4,5,6,7</sub>		Array Elements Count
V-BatteryMin <sub>1,2,3,4,5,6,7</sub>		Battery Voltage Mode Border. Min
V-BatteryMax <sub>1,2,3,4,5,6,7</sub>		Battery Voltage Mode Border. Max
UnitPowerStat <sub>1,2,3,4,5,6,7</sub>		Unit Power Status
UnitRunHoursBt <sub>1,2,3,4,5,6,7</sub>		Unit Hours Of Operation. Battery (F66E)
MasterMode <sub>1,2,3,4,5,6,7</sub>		Master Mode
CalcMode <sub>1,2,3,4,5,6,7</sub>		Calculation Mode
SumErrorMask <sub>1,2,3,4,5,6,7</sub>		Summation Error Mask
DFMSumModeEnab <sub>1,2,3,4,5,6,7</sub>		DFM Summation Mode Enable
KeySwitch <sub>1,2,3,4,5,6,7</sub>	158	Key Switch Battery Potential
SysCharging <sub>1,2,3,4,5,6,7</sub>	167	Charging System Potential (Voltage)
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
TripFuel <sub>1,2,3,4,5,6,7</sub>	182	Engine Trip Fuel
FuelRate <sub>3</sub>	183	Engine Fuel Rate (F605)
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate (FEF2)
FuelRate <sub>3</sub>	183	Engine Fuel Rate (F814)
TtlIdleHours <sub>1,2,3,4,5,6,7</sub>	235	Engine Total Idle Hours
TtlIdleFuel <sub>1,2,3,4,5,6,7</sub>	236	Engine Total Idle Fuel Used
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
MinuteOffset <sub>1,2,3</sub>	1601	Time Displacement In Minutes (F623)
HourOffset <sub>1,2,3</sub>	1602	Time Displacement In Hours (F623)
TtlAvgFuelUsed <sub>1,2,3,4,5,6,7</sub>	1834	Engine Total Average Fuel Rate
TripFuelHR <sub>1,2,3,4,5,6,7</sub>	5053	Engine Trip Fuel (High Resolution)
TotalFuelIdle <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Idle
TotalFuelOpt <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Optimal
TotalFuelOver <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Overload
TotalFuelCheat <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Cheating
TotalFuelNeg <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Negative
TotalFuelFeed <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Feed Chamber
TotFuelFeedIdle <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Idle. Feed Chamber
TotFuelFeedOpt <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Optimal. Feed Chamber
TotFuelFeedOvr <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Overload. Feed Chamber
TotFuelFeedCht <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Cheating. Feed Chamber
TotalFuelRvrs <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Reverse chamber
TotFuelRvrsIdle <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Idle. Reverse chamber
TotFuelRvrsOpt <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Optimal. Reverse chamber
TotFuelRvrsOvr <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Overload. Reverse chamber
TotFuelRvrsCht <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Cheating. Reverse chamber
TotFuelUsed <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used (F704)
TotFuelUsedClr <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Clearable
TotFuelUsed <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used (FD09)
TotFuelUsed <sub>1,2,3,4,5,6,7</sub>	5054	High Resolution Engine Total Fuel Used. Summary Value



ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

### Recommended wiring

Function	5-pin connector	Controller
RS485	4	RS485
Battery + (positive)	1	N/A
Battery - (negative)	2	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay

## 6.4 Battery Chargers

### 6.4.1 ComAp devices support

ECU Type	Device type supported
<a href="#">SmartBatteryCharger</a> (page 813)	ComAp AGM, Gel, Ni-Cd, Ni-Mh, Li-Ion battery chargers

### SmartBatteryCharger

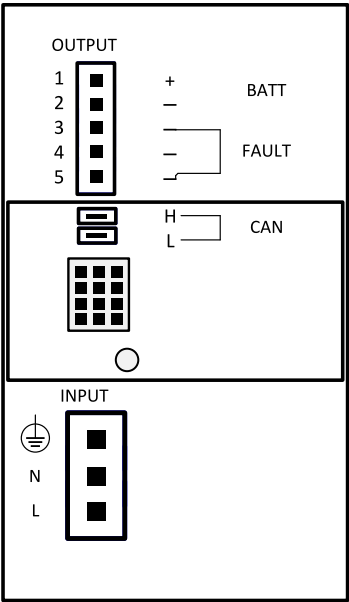


Image 5.220 Smart Battery Charger

### Controllers that support the SmartBatteryCharger

Refer to [Compatibility Table](#) (page 10)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WrongPolarity <sub>1,2,3,4,5,6,7</sub>		Reversed polarity
NoBattery <sub>1,2,3,4,5,6,7</sub>		Battery not connected
CellShorted <sub>1,2,3,4,5,6,7</sub>		Internal cell shorted
V-BatteryAlarm <sub>1,2,3,4,5,6,7</sub>	520368	Battery voltage alarm
T-BoardAlarm <sub>1,2,3,4,5,6,7</sub>	520371	On board temperature alarm
Load <sub>1,2,3,4,5,6,7</sub>	520374	Load alarm
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
FactoryReset <sub>1,2,3,4,5,6,7</sub>	520358	Factory settings
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
BatteryCharger <sub>1,2,3,4,5,6,7</sub>	4990	Battery Charger 1 State
BattChargOutC <sub>1,2,3,4,5,6,7</sub>	4993	Battery Charger 1 Output Current
V-Battery <sub>1,2,3,4,5,6,7</sub>	520300	Battery voltage
I-Charge <sub>1,2,3,4,5,6,7</sub>	520301	Battery charge current
I-Discharge <sub>1,2,3,4,5,6,7</sub>	520302	Battery discharge current
ChargeStatus <sub>1,2,3,4,5,6,7</sub>	520305	Charging status
PowerSupplyFn <sub>1,2,3,4,5,6,7</sub>	520306	Power supply function enabled at the battery terminals
BatteryType <sub>1,2,3,4,5,6,7</sub>	520307	Battery type currently selected
V-OutNominal <sub>1,2,3,4,5,6,7</sub>	520308	Nominal output voltage
HWConfig <sub>1,2,3,4,5,6,7</sub>	520309	Hardware configuration at powerup
T-Device <sub>1,2,3,4,5,6,7</sub>	520310	On-board temperature inside the device
FirmwareID <sub>1,2,3,4,5,6,7</sub>	520312	Firmware ID
ChargingCycles <sub>1,2,3,4,5,6,7</sub>	520318	Number of charge cycles completed
NotCmplCycles <sub>1,2,3,4,5,6,7</sub>	520319	Charge cycles not completed
Runtime <sub>1,2,3,4,5,6,7</sub>	520321	Total run time
V-LowEvents <sub>1,2,3,4,5,6,7</sub>	520322	Number of low battery voltage events
V-HiEvents <sub>1,2,3,4,5,6,7</sub>	520323	Number of high DC voltage events at battery output
V-Highest <sub>1,2,3,4,5,6,7</sub>	520324	Highest battery voltage
V-Lowest <sub>1,2,3,4,5,6,7</sub>	520325	Lowest battery voltage
T-OverEvents <sub>1,2,3,4,5,6,7</sub>	520327	Number of overtemperature inside events
V-Bulk <sub>1,2,3,4,5,6,7</sub>	520335	Bulk voltage
MaxBulkTimer <sub>1,2,3,4,5,6,7</sub>	520336	Max bulk timer
MinBulkTimer <sub>1,2,3,4,5,6,7</sub>	520337	Min bulk timer
TractionBulk <sub>1,2,3,4,5,6,7</sub>	520339	Traction bulk
V-Absorption <sub>1,2,3,4,5,6,7</sub>	520340	Absorption voltage
MaxAbsTimer <sub>1,2,3,4,5,6,7</sub>	520341	Max absorption timer
MinAbsTimer <sub>1,2,3,4,5,6,7</sub>	520342	Min absorption timer
ReturnAmpsThr <sub>1,2,3,4,5,6,7</sub>	520343	Threshold for return amps to float
ReturnAmpsTime <sub>1,2,3,4,5,6,7</sub>	520344	Return amps timer
V-Float <sub>1,2,3,4,5,6,7</sub>	520345	Float voltage
ForceBoostChrg <sub>1,2,3,4,5,6,7</sub>	520346	Force boost charge
V-ReturnBulk <sub>1,2,3,4,5,6,7</sub>	520347	Return to bulk voltage from float
ReturnBulkDel <sub>1,2,3,4,5,6,7</sub>	520348	Return to bulk delay

BattType <sub>1,2,3,4,5,6,7</sub>	520349	Lead/AGM/NiCd/Lilon
V-Turnoff <sub>1,2,3,4,5,6,7</sub>	520356	Switchoff voltage without mains
I-ChargeMax <sub>1,2,3,4,5,6,7</sub>	520357	Maximum charge current
SwitchoffDelay <sub>1,2,3,4,5,6,7</sub>	520363	Device switchoff delay
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AddrRequest <sub>1,2,3,4,5,6,7</sub>		Device Address Request

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	connector	Controller
<b>CAN H</b>	pin H	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	pin L	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	pin 1	N/A
<b>Battery - (negative)</b>	pin 2	N/A
<b>Address change</b>	pin 5	N/A

Available list of texts of fault codes **see SmartBatteryCharger Fault Codes on page 1**

## 6.4.2 SENS devices support

ECU Type	Device type
<a href="#">MicroGenius S2S4 1 (page 816)</a>	MicroGenius S2S4 address 1
<a href="#">MicroGenius S2S4 2 (page 817)</a>	MicroGenius S2S4 address 2

# MicroGenius S2S4 1

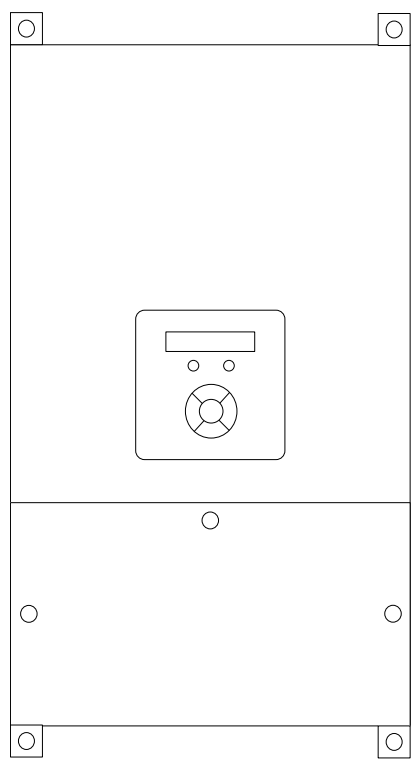


Image 5.221 MicroGenius S2S4

## Controllers that support the MicroGenius S2S4:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThermalLimit		Thermal Limit Alarm 1
HighDCAlarm		High DC Voltage Alarm 1
LowDCAlarm		Low DC Voltage Alarm 1
LowCrankAlarm		Low Cranking Voltage Alarm 1
InvalidSetting		Invalid Settings Alarm 1
ChargerState <sub>1,2,3,4,5,6,7</sub>	4990	Battery Charger 1 State
PowerLineState <sub>1,2,3,4,5,6,7</sub>	4991	Battery Charger 1 Power Line State
ChargerOutVolt <sub>1,2,3,4,5,6,7</sub>	4992	Battery Charger 1 Output Voltage
ChargerOutCurr <sub>1,2,3,4,5,6,7</sub>	4993	Battery Charger 1 Output Current
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

Recommended wiring

Function	RJ45 connector	Controller
CAN High	1	CAN 1 High
CAN COM	N/A	CAN1 COM
CAN Low	2	CAN1 Low

MicroGenius S2S4 2

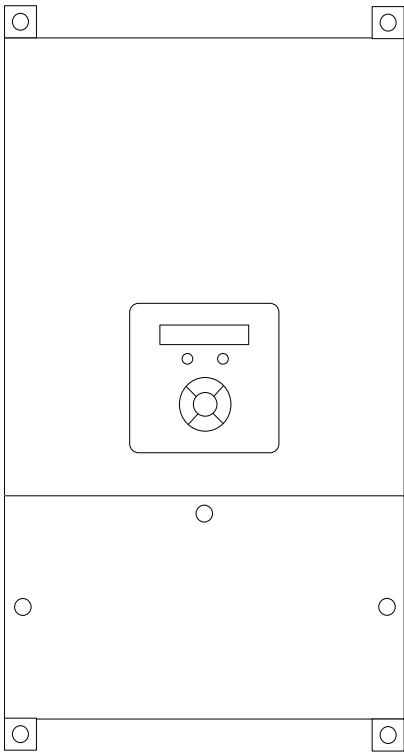


Image 5.222 MicroGenius S2S4

Controllers that support the MicroGenius S2S4:

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ThermalLimit		Thermal Limit Alarm 2
HighDCAlarm		High DC Voltage Alarm 2
LowDCAlarm		Low DC Voltage Alarm 2
LowCrankAlarm		Low Cranking Voltage Alarm 2
InvalidSetting		Invalid Settings Alarm 2

ChargerState <sub>1,2,3,4,5,6,7</sub>	4994	Battery Charger 2 State
PowerLineState <sub>1,2,3,4,5,6,7</sub>	4995	Battery Charger 2 Power Line State
ChargerOutVolt <sub>1,2,3,4,5,6,7</sub>	4996	Battery Charger 2 Output Voltage
ChargerOutCurr <sub>1,2,3,4,5,6,7</sub>	4997	Battery Charger 2 Output Current
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RJ45 connector	Controller
CAN High	1	CAN 1 High
CAN COM	N/A	CAN1 COM
CAN Low	2	CAN1 Low

# 6.5 Battery Management System (BMS)

## 6.5.1 CATL devices support

ECU Type	Device type	Source documentation version
<a href="#">BMS (page 818)</a>	mBMU, sBMU	v1.0.0

## BMS

### Controllers that support the BMS:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
Configuration Name	Name	Polling period	Register
On Off Statuses	OnOffStatuses	500	
Oper Mode	OperMode	500	
VSG Mode OFF	VSGModeOff	500	
<b>ECU binary inputs (controller's outputs - commands)</b>			
Configuration Name	Name	Polling period	Register
Fault Reset	FaultReset	1000	
On Off Grid	OnOffGrid	1000	
System Start	SystemStart	2000	
System Stop	SystemStop	2000	
VSG Mode	VSG Mode	1000	
<b>ECU analog outputs (controller's inputs)</b>			
Configuration Name	Name	Polling period	Register
Absorbed Energy	Absorbed Energy	2000	

Active Power	Active Power	500	
Active Power L1	Active Power L1	1000	
Active Power L2	Active Power L2	1000	
Active Power L3	Active Power L3	1000	
Alm Fault Stat	AlmFaultStat	500	
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
Grid Frequency	Grid Frequency	1000	
Grid Voltage L1L2	Grid Voltage L1L2	1000	
Grid Voltage L2L3	Grid Voltage L2L3	1000	
Grid Voltage L3L1	Grid Voltage L3L1	1000	
Reactive Power	Reactive Power	500	
Reactive Power L1	Reactive Power L1	1000	
Reactive Power L2	Reactive Power L2	1000	
Reactive Power L3	Reactive Power L3	1000	
Released Energy	Released Energy	2000	
Simulated SOC	Simulated SOC	1000	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	500	
Off-grid AC Freq regulation	Off-grid AC Freq reg	200	
Off-grid AC voltage regulation	Off-grid AC volt reg	200	
Reactive Power Setpoint	Reactive Power Setpoint	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

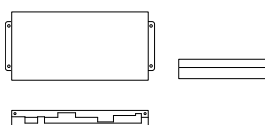
## Recommended wiring

Function	ECU connector	Controller
Communication	RJ45	RJ45 (modbus TCP)

## 6.5.2 Guoxuan devices support

ECU Type	Device type	Source documentation version
<a href="#">High-Tech BMS (page 819)</a>	High-Tech BMS	v1.4

## High-Tech BMS



## Controllers that support the High-Tech BMS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Accumulated Charging Power	Accumulated Charging Power	2000	
Accumulated Discharge Capacity	Accumulated Discharge Capacity	2000	
Air Conditioning Comm Status	Air Conditioning Comm Status	2000	
Air Conditioning Compressor	Air Conditioning Compressor	2000	
Air Conditioning El. Heating	Air Conditioning El. Heating	2000	
Air Conditioning Fault Status	Air Conditioning Fault Status	2000	
Air Conditioning Internal Fan	Air Conditioning Internal Fan	2000	
Air Conditioning Operation Mode	Air Conditioning Operation Mode	2000	
Air-Conditioner Switch Status	Air-Conditioner Switch Status	2000	
Average Temperature of Monomer	Average Temperature of Monomer	2000	
Average Voltage of Single Unit	Average Voltage of Single Unit	2000	
BMS Operation Status	BMS Operation Status	2000	
Battery Rack 1 Enable/Disable	Battery Rack 1 Enable/Disable	2000	
Battery Rack 2 Enable/Disable	Battery Rack 2 Enable/Disable	2000	
Battery Rack 3 Enable/Disable	Battery Rack 3 Enable/Disable	2000	
Battery Rack 4 Enable/Disable	Battery Rack 4 Enable/Disable	2000	
Battery Rack 5 Enable/Disable	Battery Rack 5 Enable/Disable	2000	
Battery Rack 6 Enable/Disable	Battery Rack 6 Enable/Disable	2000	
Battery SOC	Battery SOC	2000	
Battery Stack Operating Mode	Battery Stack Operating Mode	2000	



Battery Stack SOH	Battery Stack SOH	2000	
Comm Status of I/O Module	Comm Status of I/O Module	2000	
Comm Status of Liquid Cooler	Comm Status of Liquid Cooler	2000	
Communication Fault with BCMU	Communication Fault with BCMU	2000	
Communication Fault with BMU	Communication Fault with BMU	2000	
Communication Fault with EMS	Communication Fault with EMS	2000	
Communication Fault with PCS	Communication Fault with PCS	2000	
Communication Status of UPS	Communication Status of UPS	2000	
Control All Battery Rack Relays	Control All Battery Rack Relays	2000	
Current Acquisition Fault	Current Acquisition Fault	2000	
Current Chargeable Capacity	Current Chargeable Capacity	2000	
Current Charging Capacity	Current Charging Capacity	2000	
Current Discharge Capacity	Current Discharge Capacity	2000	
Current Max Allowable Charge	Current Max Allowable Charge	2000	
Current Max Allowable Discharge	Current Max Allowable Discharge	2000	
Discharge Capacity of the Day	Discharge Capacity of the Day	2000	
Disconnecting Closing Circ Switch	Disconnecting Closing Circ Switch	2000	
Disconnecting Opening Circ Switch	Disconnecting Opening Circ Switch	2000	
Fault Clearing	Fault Clearing	2000	
Fault Status of Liquid Cooler	Fault Status of Liquid Cooler	2000	
Fire Alarm	Fire Alarm	2000	
Fire Protection System Fault	Fire Protection System Fault	2000	
HW Emergency Stop Fault	HW Emergency Stop Fault	2000	
Hi Pressure Diff. Between Racks	Hi Pressure Diff. Between Racks	2000	
Insulation Resistance Value Neg	Insulation Resistance Value Neg	2000	
Insulation Resistance Value Pos	Insulation Resistance Value Pos	2000	
Liquid Cooled Heating	Liquid Cooled Heating	2000	
Liquid Cooler Circul. Water Pump	Liquid Cooler Circul. Water Pump	2000	

Liquid Cooler Compressor	Liquid Cooler Compressor	2000	
Liquid Cooler On/Off Status	Liquid Cooler On/Off Status	2000	
Liquid Temperature (effluent)	Liquid Temperature (effluent)	2000	
Max Temp Difference of Cells	Max Temp Difference of Cells	2000	
Max Volt Difference of Cells	Max Volt Difference of Cells	2000	
Maximum Monomer Temp Value	Maximum Monomer Temp Value	2000	
Maximum Unit Voltage Value	Maximum Unit Voltage Value	2000	
Minimum Monomer Temp Value	Minimum Monomer Temp Value	2000	
Minimum Unit Voltage Value	Minimum Unit Voltage Value	2000	
No. of Secondary Hi Monomer Temp	No. of Secondary Hi Monomer Temp	2000	
No. of Secondary High Unit Volt	No. of Secondary High Unit Volt	2000	
No. of Secondary Low Monom Temp	No. of Secondary Low Monom Temp	2000	
No. of Secondary Low Unit Volt	No. of Secondary Low Unit Volt	2000	
No. of the Highest Monomer Temp	No. of the Highest Monomer Temp	2000	
No. of the Highest Unit Voltage	No. of the Highest Unit Voltage	2000	
No. of the Lowest Monomer Temp	No. of the Lowest Monomer Temp	2000	
No. of the Lowest Unit Voltage	No. of the Lowest Unit Voltage	2000	
Nominal Capacitance	Nominal Capacitance	2000	
Number of Racks Installed	Number of Racks Installed	2000	
Number of Racks in Service	Number of Racks in Service	2000	
Operation & Maintenance Function	Operation & Maintenance Function	2000	
Operation Mode of Liquid Cooler	Operation Mode of Liquid Cooler	2000	
PCS Emergency Stop Control	PCS Emergency Stop Control	2000	
Primary Disconnecter Status	Primary Disconnecter Status	2000	
Relay Fault	Relay Fault	2000	
SW Control Emergency Stop	SW Control Emergency Stop	2000	
SW Emergency Stop Fault	SW Emergency Stop Fault	2000	
Single Temp Acquisition Fault	Single Temp Acquisition	2000	

	Fault		
Single Voltage Acquisition Fault	Single Voltage Acquisition Fault	2000	
Sub-High Monomer Temp value	Sub-High Monomer Temp value	2000	
Sub-High Unit Voltage Value	Sub-High Unit Voltage Value	2000	
Sub-Low Monomer Temp value	Sub-Low Monomer Temp value	2000	
Sub-Low Unit Voltage Value	Sub-Low Unit Voltage Value	2000	
System Charge/Discharge Sign	System Charge/Discharge Sign	2000	
System Fault Status	System Fault Status	2000	
System Operation Status	System Operation Status	2000	
Tank Leakage	Tank Leakage	2000	
Temp in Battery Compartment	Temp in Battery Compartment	2000	
Thermal Runaway Fault	Thermal Runaway Fault	2000	
Total Current of Battery Stack	Total Current of Battery Stack	2000	
Total Voltage of Battery Stack	Total Voltage of Battery Stack	2000	
UPS Battery Capacity	UPS Battery Capacity	2000	
UPS Operating Mode	UPS Operating Mode	2000	
<b>ECU analog inputs (controller's outputs)</b>			
Configuration Name	Name	Polling period	Register
Batt Rack 1 Enable/Disable Cmd	Batt Rack 1 Enable/Disable Cmd	2000	
Batt Rack 2 Enable/Disable Cmd	Batt Rack 2 Enable/Disable Cmd	2000	
Batt Rack 3 Enable/Disable Cmd	Batt Rack 3 Enable/Disable Cmd	2000	
Batt Rack 4 Enable/Disable Cmd	Batt Rack 4 Enable/Disable Cmd	2000	
Batt Rack 5 Enable/Disable Cmd	Batt Rack 5 Enable/Disable Cmd	2000	
Batt Rack 6 Enable/Disable Cmd	Batt Rack 6 Enable/Disable Cmd	2000	
Battery Stack Operating Mode Cmd	Battery Stack Operating Mode Cmd	2000	
Control All Batt Rack Relays Cmd	Control All Batt Rack Relays Cmd	2000	
Disconnecting Closing Switch Cmd	Disconnecting Closing Switch Cmd	2000	
Disconnecting Opening Switch Cmd	Disconnecting Opening Switch Cmd	2000	
Fault Clearing Cmd	Fault Clearing Cmd	2000	

Operation & Maintenance Func Cmd	Operation & Maintenance Func Cmd	2000	
PCS Emergency Stop Control Cmd	PCS Emergency Stop Control Cmd	2000	
SW Control Emergency Stop Cmd	SW Control Emergency Stop Cmd	2000	

## Recommended wiring

Function		Controller
Ethernet		Ethernet

## 6.5.3 Moment Energy devices support

ECU Type	Engine type
<a href="#">Pack controller (page 824)</a>	Pack Controller

## Pack controller

### Controllers that support the Pack controller

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CalibrationReq		PC Calibration Request
PC Heartbeat		PC Heartbeat
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PC CCL		PC CCL
PC DCL		PC DCL
PCMaxChargePwr		PC Max Charge Power
PCMaxDischPwr		PC Max Discharge Power
PC SOC		PC SOC
PC SOE		PC SOE
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite, 3 - IntelDrive Lite, 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano, 7 - IntelGen200, IntelGen500

## Recommended wiring

**Note:** Pack controller uses 500kb/s communication baudrate. If its needs to be used with other devices on CAN bus, make sure they are all working using same baudrate.

**Note:** Wiring is unknown to us.

## 6.5.4 OLiPower devices support

Device Type	Variants	Source documentation version
<a href="#">BMS (page 825)</a>	SP100HC, SP100HC-1, SP110HS, SP110HS-1	v0.3

## BMS

Image 5.224 BMS

### Controllers that support the BMS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Actual Capacity	Actual Capacity	500	
Air Con Unit Operation Status	Air Con Unit Operation Status	500	
Alarm Status Bits Reg 40	Alarm Status Bits Reg 40	500	
Alarm Status Bits Reg 41	Alarm Status Bits Reg 41	500	
Alarm Status Bits Reg 42	Alarm Status Bits Reg 42	500	
Alarm Status Bits Reg 43	Alarm Status Bits Reg 43	500	
Alarm Status Bits Reg 97	Alarm Status Bits Reg 97	500	
Alarm Status Bits Reg 98	Alarm Status Bits Reg 98	500	
Average Cell Temperature	Average Cell Temperature	500	
BMU Number of Max Cell Temp	BMU Number of Max Cell Temp	500	

BMU Number of Max Cell Voltage	BMU Number of Max Cell Voltage	500	
BMU Number of Min Cell Temp	BMU Number of Min Cell Temp	500	
BMU Number of Min Cell Voltage	BMU Number of Min Cell Voltage	500	
BSU Number of Max Cell Temp	BSU Number of Max Cell Temp	500	
BSU Number of Max Cell Voltage	BSU Number of Max Cell Voltage	500	
BSU Number of Min Cell Temp	BSU Number of Min Cell Temp	500	
BSU Number of Min Cell Voltage	BSU Number of Min Cell Voltage	500	
Battery Cycles	Battery Cycles	500	
Battery Type	Battery Type	500	
Charge Energy	Charge Energy	500	
Charge Time	Charge Time	500	
Current	Current	500	
Discharge Energy	Discharge Energy	500	
Discharge Time	Discharge Time	500	
Force Disconnect of MC	Force Disconnect of MC	500	
Max Allow Charging Power	Max Allow Charging Power	500	
Max Allow Discharging Power	Max Allow Discharging Power	500	
Maximum Cell Temperature	Maximum Cell Temperature	500	
Maximum Cell Voltage	Maximum Cell Voltage	500	
Minimum Cell Temperature	Minimum Cell Temperature	500	
Minimum Cell Voltage	Minimum Cell Voltage	500	
Number of Maximum Cell Temp	Number of Maximum Cell Temp	500	
Number of Maximum Cell Voltage	Number of Maximum Cell Voltage	500	
Number of Minimum Cell Temp	Number of Minimum Cell Temp	500	
Number of Minimum Cell Voltage	Number of Minimum Cell Voltage	500	
Power On Count	Power On Count	500	
Rated Capacity	Rated Capacity	500	
Real Time Power	Real Time Power	500	
Requested Charge Voltage	Requested Charge Voltage	500	
Requested Max Charge Current	Requested Max Charge Current	500	
Requested Max Discharge Current	Requested Max Discharge Current	500	
Standby Time	Standby Time	500	
State of Charge	State of Charge	500	

State of Health	State of Health	500	
Status Bits Reg 44	Status Bits Reg 44	500	
System Charge/Discharge Mode	System Charge/Discharge Mode	500	
System Operation Status	System Operation Status	500	
Temperature Difference	Temperature Difference	500	
Total Voltage	Total Voltage	500	
Voltage Detect by Insul Monitor	Voltage Detect by Insul Monitor	500	
Voltage Difference	Voltage Difference	500	
Watchdog Reset Count	Watchdog Reset Count	500	
Water-Cool Unit System Status	Water-Cool Unit System Status	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Force Disconnect of MC Cmd	Force Disconnect of MC Cmd	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	No info	Controller
RS485 A		RS485 A
RS485 COM		RS485 COM
RS485 B		RS485 B
Function		Controller
RS485 A		RS485 A

## 6.5.5 Orion devices support

Device Type	Variants
<a href="#">BMS2 (page 827)</a>	BMS2

## BMS2

### Controllers that support the BMS2

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name

ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Pack Voltage		Pack Voltage
Pack Current		Pack Current
CCL		CCL
DCL		DCL
Cell High Volt		Cell High Voltage
CellHighVoltID		Cell High Voltage ID
Cell Low Volt		Cell Low Voltage
CellLowVoltID		Cell Low Voltage ID
Cell High Temp		Cell High Temperature
CellHighTempID		Cell High Temperature ID
Cell Low Temp		Cell Low Temperature
CellLowTempID		Cell Low Temperature ID
Average Temp		Average Temperature
BMS Temp		BMS Temperature
SOC		SOC
Pack Health		Pack Health
DTC Flags 1		DTC Flags 1
DTC Flags 2		DTC Flags 2
Relay States		Relay States
TotPackCycles		Total Pack Cycles
Cell ID 1		Cell ID 1
Cell Voltage 1		Cell Voltage 1
Cell Resist 1		Cell Resistance 1
Cell ID 2		Cell ID 2
Cell Voltage 2		Cell Voltage 2
Cell Resist 2		Cell Resistance 2
ThermID1		Thermistor ID 1
Temperature 1		Temperature 1
ThermID2		Thermistor ID 2
Temperature 2		Temperature 2
ThermID3		Thermistor ID 3
Temperature 3		Temperature 3
ThermID4		Thermistor ID 4
Temperature 4		Temperature 4
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500



## Recommended wiring

Function	ECU 26p connector	Controller
<b>CAN H</b>	21	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	20	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	1	N/A
<b>Battery - (negative)</b>	12	N/A
<b>Power Ready</b>	2	Any binary output configured as ECU PwrRelay

## 6.5.6 TOPBAND devices support

ECU Type	Device type	Source documentation version
<a href="#">BMS (page 829)</a>	F0001_BCU60MA00-BCU60M.	

### BMS

#### Controllers that support the BMS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Air conditioner com. fault bit1	Air conditioner com. fault bit1	1000	
Air conditioner com. fault bit2	Air conditioner com. fault bit2	1000	
BCU EEPROM storage error bit1	BCU EEPROM storage error bit1	1000	
BCU FLASH storage error bit1	BCU FLASH storage error bit1	1000	
BCU FLASH storage error bit2	BCU FLASH storage error bit2	1000	
BCU communication fault bit1	BCU communication fault bit1	1000	
BCU communication fault bit2	BCU communication fault bit2	1000	
BMU parameter setting error bit1	BMU parameter setting error bit1	1000	
BMU parameter setting error bit2	BMU parameter setting error bit2	1000	
Cell mixing fault bit1	Cell mixing fault bit1	1000	
Cell mixing fault bit2	Cell mixing fault bit2	1000	
Chiller com. fault bit1	Chiller com. fault bit1	1000	
Chiller com. fault bit2	Chiller com. fault bit2	1000	
Circuit breaker not closed bit1	Circuit breaker not closed bit1	1000	
Circuit breaker not closed bit2	Circuit breaker not closed bit2	1000	

Current Detect. Mod. Fault bit1	Current Detect. Mod. Fault bit1	1000	
Current Detect. Mod. Fault bit2	Current Detect. Mod. Fault bit2	1000	
Ext. Tot. V Det. Mod. Fail bit1	Ext. Tot. V Det. Mod. Fail bit1	1000	
Ext. Tot. V Det. Mod. Fail bit2	Ext. Tot. V Det. Mod. Fail bit2	1000	
Firefighting sys. com. flt. bit1	Firefighting sys. com. flt. bit1	1000	
Firefighting sys. com. flt. bit2	Firefighting sys. com. flt. bit2	1000	
Fuse fault bit1	Fuse fault bit1	1000	
Fuse fault bit2	Fuse fault bit2	1000	
Heat. relay failed to close bit1	Heat. relay failed to close bit1	1000	
Heat. relay failed to close bit2	Heat. relay failed to close bit2	1000	
Heater relay stuck bit1	Heater relay stuck bit1	1000	
Heater relay stuck bit2	Heater relay stuck bit2	1000	
Ins. Detection Module Fault bit1	Ins. Detection Module Fault bit1	1000	
Ins. Detection Module Fault bit2	Ins. Detection Module Fault bit2	1000	
Int. Tot. V Det. Mod. Fault bit1	Int. Tot. V Det. Mod. Fault bit1	1000	
Int. Tot. V Det. Mod. Fault bit2	Int. Tot. V Det. Mod. Fault bit2	1000	
Neg. Con. Fail. to Engage bit1	Neg. Con. Fail. to Engage bit1	1000	
Neg. Con. Fail. to Engage bit2	Neg. Con. Fail. to Engage bit2	1000	
Neg. Con. Fail. to Engage bit3	Neg. Con. Fail. to Engage bit3	1000	
Negative Contactor Sticking bit1	Negative Contactor Sticking bit1	1000	
Negative Contactor Sticking bit2	Negative Contactor Sticking bit2	1000	
Negative Contactor Sticking bit3	Negative Contactor Sticking bit3	1000	
PCS communication fault bit1	PCS communication fault bit1	1000	
PCS communication fault bit2	PCS communication fault bit2	1000	
Pos. Cont. Fail. to Engage bit1	Pos. Cont. Fail. to Engage bit1	1000	
Pos. Cont. Fail. to Engage bit2	Pos. Cont. Fail. to Engage bit2	1000	
Pos. Cont. Fail. to Engage bit3	Pos. Cont. Fail. to Engage bit3	1000	
Positive Contactor Sticking bit1	Positive Contactor	1000	

	Sticking bit1		
Positive Contactor Sticking bit2	Positive Contactor Sticking bit2	1000	
Positive Contactor Sticking bit3	Positive Contactor Sticking bit3	1000	
Prech. Con. Fail. to Engage bit1	Prech. Con. Fail. to Engage bit1	1000	
Precharge Contactor Stick. bit1	Precharge Contactor Stick. bit1	1000	
Precharge Contactor Stick. bit2	Precharge Contactor Stick. bit2	1000	
Precharge Contactor Stick. bit3	Precharge Contactor Stick. bit3	1000	
Precharge Failure bit1	Precharge Failure bit1	1000	
Precharge Failure bit2	Precharge Failure bit2	1000	
Thermal runaway warning bit1	Thermal runaway warning bit1	1000	
Thermal runaway warning bit2	Thermal runaway warning bit2	1000	
Water immersion fault bit1	Water immersion fault bit1	1000	
Water immersion fault bit2	Water immersion fault bit2	1000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AFE model mismatch	AFE model mismatch	1000	
AFE model mismatch - BMU number	AFE model mismatch - BMU number	1000	
AFE samp. chip malf. - BMU num.	AFE samp. chip malf. - BMU num.	1000	
AFE sampling chip malfunction	AFE sampling chip malfunction	1000	
Average Cell Voltage	Average Cell Voltage	2000	
Average Single Cell Temperature	Average Single Cell Temperature	2000	
BCU Chip Ambient OverTemp. Fault	BCU Chip Ambient OverTemp. Fault	1000	
BCU Chip Ambient OverTemp. Thr.	BCU Chip Ambient OverTemp. Thr.	1000	
BCU Chip Ambient UnderTem. Fault	BCU Chip Ambient UnderTem. Fault	1000	
BCU Chip Ambient UnderTemp. Thr.	BCU Chip Ambient UnderTemp. Thr.	1000	
BCU Fault Status	BCU Fault Status	2000	
BCU Hardware Version Number	BCU Hardware Version Number	2000	
BCU Heartbeat	BCU Heartbeat	2000	

BCU High V Box Co. Ov-Temp. Th.	BCU High V Box Co. Ov-Temp. Th.	1000	
BCU High V Box Con. Ov-Temp. Fl.	BCU High V Box Con. Ov-Temp. Fl.	1000	
BCU High V Box Con. Un-Temp. Fl.	BCU High V Box Con. Un-Temp. Fl.	1000	
BCU High V Box Con. Un-Temp. Th.	BCU High V Box Con. Un-Temp. Th.	1000	
BCU MCU Onboard Temperature	BCU MCU Onboard Temperature	2000	
BCU PS Overvoltage Fault	BCU PS Overvoltage Fault	1000	
BCU PS Overvoltage Threshold	BCU PS Overvoltage Threshold	1000	
BCU PS Undervoltage Fault	BCU PS Undervoltage Fault	1000	
BCU PS Undervoltage Threshold	BCU PS Undervoltage Threshold	1000	
BCU Software Version Number	BCU Software Version Number	2000	
BMU EE storage error	BMU EE storage error	1000	
BMU EE storage error - BMU num.	BMU EE storage error - BMU num.	1000	
BMU FLASH stor. error-BMU num.	BMU FLASH stor. error-BMU num.	1000	
BMU FLASH storage error	BMU FLASH storage error	1000	
BMU Number-Max. Module Voltage	BMU Number-Max. Module Voltage	2000	
BMU Number-Min. Module Voltage	BMU Number-Min. Module Voltage	2000	
BMU PS V too high	BMU PS V too high	1000	
BMU PS V too high - BMU number	BMU PS V too high - BMU number	1000	
BMU PS V too low. BMU number	BMU PS V too low. BMU number	1000	
BMU chip am. t too hi BMU number	BMU chip am. t too hi BMU number	1000	
BMU chip am. t too lo BMU number	BMU chip am. t too lo BMU number	1000	
BMU chip ambient temp. too high	BMU chip ambient temp. too high	1000	
BMU chip ambient temp. too low	BMU chip ambient temp. too low	1000	
BMU com. fault - BMU number	BMU com. fault - BMU number	1000	
BMU communication fault	BMU communication fault	1000	
BMU power supply voltage too low	BMU power supply voltage too low	1000	
Balance Enable Status	Balance Enable	2000	

	Status		
Balancing abnormal	Balancing abnormal	1000	
Balancing abnormal BMU number	Balancing abnormal BMU number	1000	
Balancing abnormal CL in BMU	Balancing abnormal CL in BMU	1000	
Battery Cycle Count	Battery Cycle Count	2000	
Battery Pack Char/Disch Status	Battery Pack Char/Disch Status	2000	
Battery Pack Operating Status	Battery Pack Operating Status	2000	
Calibration Enable Status	Calibration Enable Status	2000	
Cell Number with Maximum Voltage	Cell Number with Maximum Voltage	2000	
Cell Number with Minimum Voltage	Cell Number with Minimum Voltage	2000	
Cell V samp. line contact BMU nu	Cell V samp. line contact BMU nu	1000	
Cell V samp. line contact CL BMU	Cell V samp. line contact CL BMU	1000	
Cell t samp. line con. CL BMU nu	Cell t samp. line con. CL BMU nu	1000	
Cell tem samp. line con. BMU nu.	Cell tem samp. line con. BMU nu.	1000	
Cell temp. samp. line poor con.	Cell temp. samp. line poor con.	1000	
Char. hi tem. proh. fault cell n	Char. hi tem. proh. fault cell n	1000	
Char. high tem. proh. fault val.	Char. high tem. proh. fault val.	1000	
Char. low temp. proh. fault val.	Char. low temp. proh. fault val.	1000	
Char. lw tem. proh. fault cell n	Char. lw tem. proh. fault cell n	1000	
Char/Disch Prohibition Status	Char/Disch Prohibition Status	2000	
Charge Current UL	Charge Current UL	1000	
Charge Current UL Fault Value	Charge Current UL Fault Value	1000	
Chargeable Ampere-Hours (AH)	Chargeable Ampere-Hours (AH)	2000	
Charging high temp. prohibition	Charging high temp. prohibition	1000	
Charging low temp. prohibition	Charging low temp. prohibition	1000	
Charging temp. LL	Charging temp. LL	1000	
Charging temp. LL fault cell num	Charging temp. LL fault cell num	1000	
Charging temp. LL fault value	Charging temp. LL fault value	1000	
Charging temp. UL	Charging temp. UL	1000	

Charging temp. UL fault cell num	Charging temp. UL fault cell num	1000	
Charging temp. UL fault value	Charging temp. UL fault value	1000	
Cl.+mod. in cl. tot. V too large	Cl.+mod. in cl. tot. V too large	1000	
Cl.+mod. tot. V df. too large va	Cl.+mod. tot. V df. too large va	1000	
Cluster PCS tot. V df. too large	Cluster PCS tot. V df. too large	1000	
Cluster SOC LL	Cluster SOC LL	1000	
Cluster SOC LL Fault Value	Cluster SOC LL Fault Value	1000	
Cluster SOC Recovery Delay	Cluster SOC Recovery Delay	2000	
Cluster SOC UL	Cluster SOC UL	1000	
Cluster SOC UL Fault Value	Cluster SOC UL Fault Value	1000	
Cluster V dif. UL fault cell n.1	Cluster V dif. UL fault cell n.1	1000	
Cluster V dif. UL fault cell n.2	Cluster V dif. UL fault cell n.2	1000	
Cluster Voltage LL	Cluster Voltage LL	1000	
Cluster Voltage LL Fault Value	Cluster Voltage LL Fault Value	1000	
Cluster Voltage UL	Cluster Voltage UL	1000	
Cluster Voltage UL Fault Value	Cluster Voltage UL Fault Value	1000	
Cluster Voltage dif. value UL	Cluster Voltage dif. value UL	1000	
Cluster temp dif. UL cell 1	Cluster temp dif. UL cell 1	1000	
Cluster temp dif. UL cell 2	Cluster temp dif. UL cell 2	1000	
Cluster temp dif. fault value	Cluster temp dif. fault value	1000	
Cluster temperature dif. UL	Cluster temperature dif. UL	1000	
Cluster tot. V df. too large val	Cluster tot. V df. too large val	1000	
Cluster total V dif. too large	Cluster total V dif. too large	1000	
Cluster total cm V dif. too larg	Cluster total cm V dif. too larg	1000	
Cluster voltage difference UL	Cluster voltage difference UL	1000	
Contacto Status	Contacto Status	2000	
Count of System Fault Protection	Count of System Fault Protection	2000	
Count-Cell Overtemp. Prot. Event	Count-Cell Overtemp. Prot. Event	2000	

Count-Cell Overvolt. Prot. Event	Count-Cell Overvolt. Prot. Event	2000	
Count-Cell T Dif. Ovrlim. Prot.	Count-Cell T Dif. Ovrlim. Prot.	2000	
Count-Cell Undrtemp. Prot. Event	Count-Cell Undrtemp. Prot. Event	2000	
Count-Cell Undrvolt. Prot. Event	Count-Cell Undrvolt. Prot. Event	2000	
Count-Cell V Dif. Ovrlim. Prot.	Count-Cell V Dif. Ovrlim. Prot.	2000	
Count-Char/Disch Overcur. Prot.	Count-Char/Disch Overcur. Prot.	2000	
Dlx Status (Digital Input)	Dlx Status (Digital Input)	2000	
DOx Status (Digital Output)	DOx Status (Digital Output)	2000	
Dis. hi tem. proh. fault cell nu	Dis. hi tem. proh. fault cell nu	1000	
Dis. lw temp. proh. fault cell n	Dis. lw temp. proh. fault cell n	1000	
Disch. high temp. proh. fault nu	Disch. high temp. proh. fault nu	1000	
Disch. low temp. proh. fault num	Disch. low temp. proh. fault num	1000	
Disch. temp. LL fault cell num.	Disch. temp. LL fault cell num.	1000	
Disch. temp. UL fault cell num.	Disch. temp. UL fault cell num.	1000	
Discharge Current UL	Discharge Current UL	1000	
Discharge Current UL Fault Value	Discharge Current UL Fault Value	1000	
Dischargeable Ampere-Hours (AH)	Dischargeable Ampere-Hours (AH)	2000	
Discharging high temp. proh.	Discharging high temp. proh.	1000	
Discharging low temp. proh.	Discharging low temp. proh.	1000	
Discharging temp. LL	Discharging temp. LL	1000	
Discharging temp. LL fault value	Discharging temp. LL fault value	1000	
Discharging temp. UL	Discharging temp. UL	1000	
Discharging temp. UL fault value	Discharging temp. UL fault value	1000	
Fan malf. in module - BMU number	Fan malf. in module - BMU number	1000	
Fan malfunction in module	Fan malfunction in module	1000	
Fire protection anomaly	Fire protection anomaly	1000	
Fire protection anomaly-BMU num.	Fire protection	1000	

	anomaly-BMU num.		
High Voltage Box Temperature 1	High Voltage Box Temperature 1	2000	
High Voltage Box Temperature 2	High Voltage Box Temperature 2	2000	
High Voltage Box Temperature 3	High Voltage Box Temperature 3	2000	
High Voltage Box Temperature 4	High Voltage Box Temperature 4	2000	
High Voltage Box Temperature 5	High Voltage Box Temperature 5	2000	
High Voltage Box Temperature 6	High Voltage Box Temperature 6	2000	
High Voltage Box Temperature 7	High Voltage Box Temperature 7	2000	
High Voltage Box Temperature 8	High Voltage Box Temperature 8	2000	
Insulation Enable Status	Insulation Enable Status	2000	
Int. V vs Mod. V Hysteresis	Int. V vs Mod. V Hysteresis	2000	
Int. V vs PCS V Trigger Delay	Int. V vs PCS V Trigger Delay	2000	
Inter-cluster Circ. Cur. Ovrlim.	Inter-cluster Circ. Cur. Ovrlim.	1000	
Inter-cluster Circ. Current Val.	Inter-cluster Circ. Current Val.	1000	
Inter-module V dif UL cell num 1	Inter-module V dif UL cell num 1	1000	
Inter-module V dif UL cell num 2	Inter-module V dif UL cell num 2	1000	
Inter-module V dif. UL val.	Inter-module V dif. UL val.	1000	
Inter-module volt. dif. UL	Inter-module volt. dif. UL	1000	
MCU Onboard Temp. Low Alarm Thr.	MCU Onboard Temp. Low Alarm Thr.	2000	
Maximum Module Voltage	Maximum Module Voltage	2000	
Maximum Single Cell Temperature	Maximum Single Cell Temperature	2000	
Maximum Single Cell Voltage	Maximum Single Cell Voltage	2000	
Minimum Module Voltage	Minimum Module Voltage	2000	
Minimum Single Cell Temperature	Minimum Single Cell Temperature	2000	
Minimum Single Cell Voltage	Minimum Single Cell Voltage	2000	
Mod. Ovr-volt Recovery Delay	Mod. Ovr-volt Recovery Delay	2000	
Mod. Terminal Ovr-temp Trg. Del.	Mod. Terminal Ovr-temp Trg. Del.	2000	



Mod. col. and sing. cell V dif v	Mod. col. and sing. cell V dif v	1000	
Mod. col. and single cell. V dif	Mod. col. and single cell. V dif	1000	
Mod. col. tot V in mod. too larg	Mod. col. tot V in mod. too larg	1000	
Mod. neg. Ter. temp. high BMU nu	Mod. neg. Ter. temp. high BMU nu	1000	
Mod. pos. Term. temp. high BMU n	Mod. pos. Term. temp. high BMU n	1000	
Mod. tot. V in cl. V too large	Mod. tot. V in cl. V too large	1000	
Module int. V dif. too large	Module int. V dif. too large	1000	
Module int. voltage dif. value	Module int. voltage dif. value	1000	
Module maximum voltage value	Module maximum voltage value	1000	
Module minimum voltage value	Module minimum voltage value	1000	
Module neg. Term. temp. high v	Module neg. Term. temp. high v	1000	
Module neg. terminal temp. high	Module neg. terminal temp. high	1000	
Module number adr. 17162	Module number adr. 17162	1000	
Module number adr. 17165	Module number adr. 17165	1000	
Module number adr. 17168	Module number adr. 17168	1000	
Module pos. term. temp. hi. val.	Module pos. term. temp. hi. val.	1000	
Module pos. terminal temp. high	Module pos. terminal temp. high	1000	
Module voltage high fault	Module voltage high fault	1000	
Module voltage low fault	Module voltage low fault	1000	
Neg. Ins. Res. Fault Value	Neg. Ins. Res. Fault Value	1000	
Neg. Insulation Resistance Thr.	Neg. Insulation Resistance Thr.	1000	
Number of BMUs in Battery Pack	Number of BMUs in Battery Pack	2000	
Number of Battery Cells in Pack	Number of Battery Cells in Pack	2000	
Number-Cell Temp Sensors in Pack	Number-Cell Temp Sensors in Pack	2000	
PCS side tot. V dif. too large	PCS side tot. V dif. too large	1000	
Pack Chargeable Capacity	Pack Chargeable Capacity	2000	
Pack Cumulative Charge AH	Pack Cumulative	2000	

	Charge AH		
Pack Cumulative Charge Capacity	Pack Cumulative Charge Capacity	2000	
Pack Cumulative Discharge AH	Pack Cumulative Discharge AH	2000	
Pack Cumulative Discharge Capaci	Pack Cumulative Discharge Capaci	2000	
Pack Current	Pack Current	2000	
Pack Dischargeable Capacity	Pack Dischargeable Capacity	2000	
Pack Neg. Electrode Insul. Res.	Pack Neg. Electrode Insul. Res.	2000	
Pack Pos. Electrode Insul. Res.	Pack Pos. Electrode Insul. Res.	2000	
Pack Single Charge Capacity	Pack Single Charge Capacity	2000	
Pack State of Charge (SOC)	Pack State of Charge (SOC)	2000	
Pack State of Health (SOH)	Pack State of Health (SOH)	2000	
Pack-Allow. Max. Char. Cur.	Pack-Allow. Max. Char. Cur.	2000	
Pack-Allow. Max. Disch. Cur.	Pack-Allow. Max. Disch. Cur.	2000	
Pack-Cur. Allow. Max. Char. P	Pack-Cur. Allow. Max. Char. P	2000	
Pack-Cur. Allow. Max. Disch. P	Pack-Cur. Allow. Max. Disch. P	2000	
Par. config. chip malf.-BMU num.	Par. config. chip malf.-BMU num.	1000	
Parameter configuration error	Parameter configuration error	1000	
Pos. Ins. Res. Fault Value	Pos. Ins. Res. Fault Value	1000	
Pos. Insulation Resistance Thr.	Pos. Insulation Resistance Thr.	1000	
Power Reduction Enable Status	Power Reduction Enable Status	2000	
Power-On Status	Power-On Status	2000	
Pre-charge Enable Status	Pre-charge Enable Status	2000	
Remote Param. Mod. Enab. Stat.	Remote Param. Mod. Enab. Stat.	2000	
SOC decrease FL after charging	SOC decrease FL after charging	1000	
SOC decrease FL before charging	SOC decrease FL before charging	1000	
SOC decrease fault during charg.	SOC decrease fault during charg.	1000	
SOC increase FL after discharg.	SOC increase FL after discharg.	1000	
SOC increase FL before discharg.	SOC increase FL before discharg.	1000	

SOC increase fault during disch.	SOC increase fault during disch.	1000	
SOC jump FL after resting	SOC jump FL after resting	1000	
SOC jump FL before resting	SOC jump FL before resting	1000	
SOC jump fault during resting	SOC jump fault during resting	1000	
Self-Recovery Enable Status	Self-Recovery Enable Status	2000	
Single Charge Capacity	Single Charge Capacity	2000	
Single Discharge Capacity	Single Discharge Capacity	2000	
Single cell V LL fault cell num.	Single cell V LL fault cell num.	1000	
Single cell V LL fault value	Single cell V LL fault value	1000	
Single cell V UL fault cell num.	Single cell V UL fault cell num.	1000	
Single cell V UL fault value	Single cell V UL fault value	1000	
Single cell V sam. line poor con	Single cell V sam. line poor con	1000	
Single cell failure	Single cell failure	1000	
Single cell failure BMU number	Single cell failure BMU number	1000	
Single cell failure CL in BMU	Single cell failure CL in BMU	1000	
Single cell in mod. V too large	Single cell in mod. V too large	1000	
Single cell voltage LL	Single cell voltage LL	1000	
Single cell voltage UL	Single cell voltage UL	1000	
Sum-Module V and Total Pack V	Sum-Module V and Total Pack V	2000	
System Fault Status	System Fault Status	2000	
Temp. rise abnormal	Temp. rise abnormal	1000	
Temp. rise abnormal BMU number	Temp. rise abnormal BMU number	1000	
Temp. rise abnormal CL in BMU	Temp. rise abnormal CL in BMU	1000	
Total Pack Voltage	Total Pack Voltage	2000	
Total Voltage Outside the Pack	Total Voltage Outside the Pack	2000	
Voltage Dif. Among Pack Modules	Voltage Dif. Among Pack Modules	2000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Actual Capacity	Actual Capacity	2000	
Actual Energy	Actual Energy	2000	
BCU Operating Mode	BCU Operating Mode	2000	

Balancing Maximum Cut-off Volt.	Balancing Maximum Cut-off Volt.	2000	
Balancing Minimum Cut-off Voltag	Balancing Minimum Cut-off Voltage	2000	
Calibration Enable Status Cmd	Calibration Enable Status Cmd	2000	
Cell Cycle Count	Cell Cycle Count	2000	
Char. Low Temp. Warn. Rec. Delay	Char. Low Temp. Warn. Rec. Delay	2000	
Char. Low Temp. Warn. Trg. Delay	Char. Low Temp. Warn. Trg. Delay	2000	
Char. Low. Temp. War. Rec. Enab.	Char. Low. Temp. War. Rec. Enab.	2000	
Char. Overtemp. Warn. Trg. Delay	Char. Overtemp. Warn. Trg. Delay	2000	
Charge Low Temp. Warn. Mask Flag	Charge Low Temp. Warn. Mask Flag	2000	
Charge Low Temp. Warning Hys.	Charge Low Temp. Warning Hys.	2000	
Charge Low Temp. Warning Thr.	Charge Low Temp. Warning Thr.	2000	
Charge Overcurrent Thr.	Charge Overcurrent Thr.	2000	
Charge Overcurrent Hys.	Charge Overcurrent Hys.	2000	
Charge Overcurrent Mask Flag	Charge Overcurrent Mask Flag	2000	
Charge Overcurrent Rec. Enable	Charge Overcurrent Rec. Enable	2000	
Charge Overcurrent Trg. Delay	Charge Overcurrent Trg. Delay	2000	
Charge Overtemp. Warn. Mask flag	Charge Overtemp. Warn. Mask flag	2000	
Charge Overtemp. Warning Hys.	Charge Overtemp. Warning Hys.	2000	
Charge Overtemp. Warning Thr.	Charge Overtemp. Warning Thr.	2000	
Charge Ovrtemp. Warn. Rec. Delay	Charge Ovrtemp. Warn. Rec. Delay	2000	
Charge Ovrtemp. Warn. Trg. Delay	Charge Ovrtemp. Warn. Trg. Delay	2000	
Cluster Dyn. Balanc. Volt. Dif.	Cluster Dyn. Balanc. Volt. Dif.	2000	
Cluster SOC Hysteresis	Cluster SOC Hysteresis	2000	
Cluster SOC Mask Fag	Cluster SOC Mask Fag	2000	
Cluster SOC Recovery Enable	Cluster SOC Recovery Enable	2000	
Cluster SOC Threshold	Cluster SOC Threshold	2000	
Cluster SOC Trigger Delay	Cluster SOC	2000	

	Trigger Delay		
Cluster Stat. Balanc. Volt. Dif.	Cluster Stat. Balanc. Volt. Dif.	2000	
Cluster Temp- Dif. Warn. Thr.	Cluster Temp- Dif. Warn. Thr.	2000	
Cluster Temp. Dif. Mask Flag	Cluster Temp. Dif. Mask Flag	2000	
Cluster Temp. Dif. Rec. Enable	Cluster Temp. Dif. Rec. Enable	2000	
Cluster Temp. Dif. Rec. Time	Cluster Temp. Dif. Rec. Time	2000	
Cluster Temp. Dif. Trg. Delay	Cluster Temp. Dif. Trg. Delay	2000	
Cluster Temp. Dif. Warn. Hys.	Cluster Temp. Dif. Warn. Hys.	2000	
Cluster Volt Dif. Warn Rec. Enab	Cluster Volt Dif. Warn Rec. Enab	2000	
Cluster Volt. Dif Warn Rec	Cluster Volt. Dif Warn Rec	2000	
Cluster Volt. Dif. Mask Flag	Cluster Volt. Dif. Mask Flag	2000	
Cluster Volt. Dif. Warn. Hys.	Cluster Volt. Dif. Warn. Hys.	2000	
Cluster Volt. Dif. Warn. Trg.	Cluster Volt. Dif. Warn. Trg.	2000	
Cluster volt. dif. warning thr	Cluster volt. dif. warning thr	2000	
Disch. Overcurrent Hys.	Disch. Overcurrent Hys.	2000	
Disch. Overcurrent Mask Flag	Disch. Overcurrent Mask Flag	2000	
Disch. Overcurrent Rec. Delay	Disch. Overcurrent Rec. Delay	2000	
Disch. Overcurrent Rec. Enable	Disch. Overcurrent Rec. Enable	2000	
Disch. Overcurrent Thr.	Disch. Overcurrent Thr.	2000	
Disch. Overcurrent Trg. Delay	Disch. Overcurrent Trg. Delay	2000	
Disch. Overtemp .Warn. Hyst.	Disch. Overtemp .Warn. Hyst.	2000	
Disch. Overtemp Warning Thr.	Disch. Overtemp Warning Thr.	2000	
Disch. Overtemp. Warn. Mask Flag	Disch. Overtemp. Warn. Mask Flag	2000	
Disch. Overtemp. Warn. Rec. Enab	Disch. Overtemp. Warn. Rec. Enab	2000	
Disch. Overtemp. Warning Rec. De	Disch. Overtemp. Warning Rec. De	2000	
Disch. Ovrtemp. Warn. Trg. Delay	Disch. Ovrtemp. Warn. Trg. Delay	2000	
Disch. Undertemp. Warn. Hys.	Disch. Undertemp. Warn. Hys.	2000	

Disch. Undertemp. Warn. Thr.	Disch. Undertemp. Warn. Thr.	2000	
Disch. Undrtemp. Warn. Mask Flag	Disch. Undrtemp. Warn. Mask Flag	2000	
Disch. Undrtm. Warn. Rec. Enable	Disch. Undrtm. Warn. Rec. Enable	2000	
Disch. Undrtmp. Warn. Rec. Delay	Disch. Undrtmp. Warn. Rec. Delay	2000	
Disch. Undrtmp. Warn. Trg. Delay	Disch. Undrtmp. Warn. Trg. Delay	2000	
Fan Stage 1 OFF Temperature	Fan Stage 1 OFF Temperature	2000	
Fan Stage 1 OFF Temperature Dif.	Fan Stage 1 OFF Temperature Dif.	2000	
Fan Stage 1 ON Temperature	Fan Stage 1 ON Temperature	2000	
Fan Stage 1 ON Temperature Dif.	Fan Stage 1 ON Temperature Dif.	2000	
Fan Stage 2 ON Temperature	Fan Stage 2 ON Temperature	2000	
Fan Stage 2 ON Temperature Dif.	Fan Stage 2 ON Temperature Dif.	2000	
Hi-V Box Con. Temp. Hysteresis	Hi-V Box Con. Temp. Hysteresis	2000	
Hi-V Box Con. Temp. Rec. Delay	Hi-V Box Con. Temp. Rec. Delay	2000	
Hi-V Box Con. Temp. Rec. Enable	Hi-V Box Con. Temp. Rec. Enable	2000	
Hi-V Box Con. Temp. Shield Flag	Hi-V Box Con. Temp. Shield Flag	2000	
Hi-V Box Con. Temp. Threshold	Hi-V Box Con. Temp. Threshold	2000	
Hi-V Box Con. Temp. Trg. Delay	Hi-V Box Con. Temp. Trg. Delay	2000	
Hi-V Box Con. U-temp. Delay Time	Hi-V Box Con. U-temp. Delay Time	2000	
Hi-V Box Con. U-temp. Hysteresis	Hi-V Box Con. U-temp. Hysteresis	2000	
Hi-V Box Con. U-temp. Rec. Delay	Hi-V Box Con. U-temp. Rec. Delay	2000	
Hi-V Box Con. U-temp. Rec. Enab.	Hi-V Box Con. U-temp. Rec. Enab.	2000	
Hi-V Box Con. U-temp. Sh. Flag	Hi-V Box Con. U-temp. Sh. Flag	2000	
Hi-V Box Con. U-temp. Threshold	Hi-V Box Con. U-temp. Threshold	2000	
Initial Total Char. Capacity	Initial Total Char. Capacity	2000	
Initial Total Charge	Initial Total Charge	2000	
Initial Total Disch. Capacity	Initial Total Disch. Capacity	2000	
Initial Total Discharge	Initial Total Discharge	2000	

Insulation Res. Mask Flag	Insulation Res. Mask Flag	2000	
Insulation Resistance Hysteresis	Insulation Resistance Hysteresis	2000	
Insulation Resistance Rec. Delay	Insulation Resistance Rec. Delay	2000	
Insulation Resistance Rec. Enab.	Insulation Resistance Rec. Enab.	2000	
Insulation Resistance Threshold	Insulation Resistance Threshold	2000	
Insulation Resistance Trg. Delay	Insulation Resistance Trg. Delay	2000	
Int-Clus Circ. Cur. Rec. Enable	Int-Clus Circ. Cur. Rec. Enable	2000	
Int-Clus. Circ. Cur. Hysteresis	Int-Clus. Circ. Cur. Hysteresis	2000	
Int-Clus. Circ. Cur. Mask Flag	Int-Clus. Circ. Cur. Mask Flag	2000	
Int-Clus. Circ. Cur. Rec. Delay	Int-Clus. Circ. Cur. Rec. Delay	2000	
Int-Clus. Circ. Cur. Threshold	Int-Clus. Circ. Cur. Threshold	2000	
Int-Clus. Circ. Cur. Trg. Delay	Int-Clus. Circ. Cur. Trg. Delay	2000	
Int-Mod. Volt. Dif. Hysteresis	Int-Mod. Volt. Dif. Hysteresis	2000	
Int-Mod. Volt. Dif. Threshold	Int-Mod. Volt. Dif. Threshold	2000	
Int. Mod. Volt. Dif. Mask Flag	Int. Mod. Volt. Dif. Mask Flag	2000	
Int. Mod. Volt. Dif. Rec. Delay	Int. Mod. Volt. Dif. Rec. Delay	2000	
Int. Mod. Volt. Dif. Rec. Enable	Int. Mod. Volt. Dif. Rec. Enable	2000	
Int. Mod. Volt. Dif. Trg. Delay	Int. Mod. Volt. Dif. Trg. Delay	2000	
Int. V vs Mod. V Rec. Enable	Int. V vs Mod. V Rec. Enable	2000	
Int. V vs Mod. V Shield Flag	Int. V vs Mod. V Shield Flag	2000	
Int. V vs Mod. V Threshold	Int. V vs Mod. V Threshold	2000	
Int. V vs Mod. V Trigger Delay	Int. V vs Mod. V Trigger Delay	2000	
Int. V vs PCS V Hysteresis	Int. V vs PCS V Hysteresis	2000	
Int. V vs PCS V Recovery Enable	Int. V vs PCS V Recovery Enable	2000	

Int. V vs PCS V Shield Flag	Int. V vs PCS V Shield Flag	2000	
Int. V vs PCS V Threshold	Int. V vs PCS V Threshold	2000	
MCU Onboard Temp. Hi. Alarm Thr.	MCU Onboard Temp. Hi. Alarm Thr.	2000	
Maximum Allowable Char. Current	Maximum Allowable Char. Current	2000	
Maximum Allowable Disch. Current	Maximum Allowable Disch. Current	2000	
Maximum Pre-charge Duration	Maximum Pre-charge Duration	2000	
Mod. Int V Dif. Ovr. Hysteresis	Mod. Int V Dif. Ovr. Hysteresis	2000	
Mod. Int. V Dif. Mask Flag	Mod. Int. V Dif. Mask Flag	2000	
Mod. Int. V Dif. Ovr. Delay Time	Mod. Int. V Dif. Ovr. Delay Time	2000	
Mod. Int. V Dif. Ovr. Mask Flag	Mod. Int. V Dif. Ovr. Mask Flag	2000	
Mod. Int. V Dif. Ovr. Rec. Enab.	Mod. Int. V Dif. Ovr. Rec. Enab.	2000	
Mod. Int. V Dif. Ovr. Threshold	Mod. Int. V Dif. Ovr. Threshold	2000	
Mod. Ovr-volt Hysteresis	Mod. Ovr-volt Hysteresis	2000	
Mod. Ovr-volt Recovery Enable	Mod. Ovr-volt Recovery Enable	2000	
Mod. Ovr-volt Shield Flag	Mod. Ovr-volt Shield Flag	2000	
Mod. Ovr-volt Threshold	Mod. Ovr-volt Threshold	2000	
Mod. Ovr-volt Trigger Delay	Mod. Ovr-volt Trigger Delay	2000	
Mod. Terminal Ovr-temp Hyst.	Mod. Terminal Ovr-temp Hyst.	2000	
Mod. Terminal Ovr-temp Rec. Del.	Mod. Terminal Ovr-temp Rec. Del.	2000	
Mod. Terminal Ovr-temp Rec. Ena.	Mod. Terminal Ovr-temp Rec. Ena.	2000	
Mod. Terminal Ovr-temp Sh. Flag	Mod. Terminal Ovr-temp Sh. Flag	2000	
Mod. Terminal Ovr-temp Threshold	Mod. Terminal Ovr-temp Threshold	2000	
Mod. Undervoltage Hysteresis	Mod. Undervoltage Hysteresis	2000	
Mod. Undervoltage Mask Flag	Mod. Undervoltage Mask Flag	2000	
Mod. Undervoltage Recovery Delay	Mod. Undervoltage Recovery Delay	2000	



Mod. Undervoltage Recovery Enab.	Mod. Undervoltage Recovery Enab.	2000	
Mod. Undervoltage Threshold	Mod. Undervoltage Threshold	2000	
Mod. Undervoltage Trigger Delay	Mod. Undervoltage Trigger Delay	2000	
Mod. V Dif. Anom. Hysteresis	Mod. V Dif. Anom. Hysteresis	2000	
Mod. V Dif. Anom. Recovery Delay	Mod. V Dif. Anom. Recovery Delay	2000	
Mod. V Dif. Anom. Threshold	Mod. V Dif. Anom. Threshold	2000	
Mod. V Dif. Anom. Trigger Delay	Mod. V Dif. Anom. Trigger Delay	2000	
Mod. V. Dif. Anom. Shield Flag	Mod. V. Dif. Anom. Shield Flag	2000	
Module Dyn. Balanc. Volt. Dif.	Module Dyn. Balanc. Volt. Dif.	2000	
Module Static Balanc. Volt. Dif.	Module Static Balanc. Volt. Dif.	2000	
Number of parallel units	Number of parallel units	2000	
Parallel Operation Status	Parallel Operation Status	2000	
Power On/Off Control	Power On/Off Control	2000	
Power Reduction Enab. Status Cmd	Power Reduction Enab. Status Cmd	2000	
Power Supplement Enable Switch	Power Supplement Enable Switch	2000	
Precharge Enable Status	Precharge Enable Status	2000	
Rated Capacity	Rated Capacity	2000	
Rated Energy	Rated Energy	2000	
Reset and Restart	Reset and Restart	2000	
Retry Attempts for Suc. Pre-char	Retry Attempts for Suc. Pre-char	2000	
SC Overvoltage Warning Hysteresi	SC Overvoltage Warning Hysteresi	2000	
SC Overvoltage Warning Mask Flag	SC Overvoltage Warning Mask Flag	2000	
SC Overvoltage Warning Threshold	SC Overvoltage Warning Threshold	10000	
SC Ovrvolt. Warn. Recov. Enable	SC Ovrvolt. Warn. Recov. Enable	2000	
SC Ovrvolt. Warn. Trigger Delay	SC Ovrvolt. Warn. Trigger Delay	2000	
SC Undervoltage Warn. Mask Flag	SC Undervoltage Warn. Mask Flag	2000	
SC Undervoltage Warning Hys.	SC Undervoltage Warning Hys.	2000	
SC Undervoltage Warning Thr.	SC Undervoltage Warning Thr.	10000	

SC Undrvolt. War. Recovery Delay	SC Undrvolt. War. Recovery Delay	2000	
SC Undrvolt. Warn. Recovery Enab	SC Undrvolt. Warn. Recovery Enab	2000	
SC Undrvolt. Warn. Trigger Delay	SC Undrvolt. Warn. Trigger Delay	2000	
SOC Calibration Value	SOC Calibration Value	2000	
SOE Calibration Value	SOE Calibration Value	2000	
SOH Calibration Value	SOH Calibration Value	2000	
Self-Recovery Enable Status Cmd	Self-Recovery Enable Status Cmd	2000	
Set Balancing Enable Status	Set Balancing Enable Status	2000	
Set Insulation Enable Status	Set Insulation Enable Status	2000	
Tot. Volt Ovrvolt Warn Mask Flag	Tot. Volt Ovrvolt Warn Mask Flag	2000	
Tot. Volt Ovrvolt Warn Rec Delay	Tot. Volt Ovrvolt Warn Rec Delay	2000	
Tot. Volt Ovrvolt Warn Trg Delay	Tot. Volt Ovrvolt Warn Trg Delay	2000	
Tot. Volt Undrvlt Warn Mask Flag	Tot. Volt Undrvlt Warn Mask Flag	2000	
Tot. Volt Undrvlt Warn Rec Delay	Tot. Volt Undrvlt Warn Rec Delay	2000	
Tot. Volt Undrvlt. Warn Trg Del.	Tot. Volt Undrvlt. Warn Trg Del.	2000	
Tot. Volt. Ovrvolt Warn Rec Enab	Tot. Volt. Ovrvolt Warn Rec Enab	2000	
Tot. Volt. Ovrvolt. Warn. Hyst.	Tot. Volt. Ovrvolt. Warn. Hyst.	2000	
Tot. Volt. Ovrvolt. Warn. Thr.	Tot. Volt. Ovrvolt. Warn. Thr.	2000	
Tot. Volt. Undervolt. Warn. Hys	Tot. Volt. Undervolt. Warn. Hys	2000	
Tot. Volt. Undrvlt Warn Rec Enab	Tot. Volt. Undrvlt Warn Rec Enab	2000	
Tot. Volt. Undrvolt. Warn. Thr	Tot. Volt. Undrvolt. Warn. Thr	2000	
Trip Control	Trip Control	2000	
V Dif. for Successful Pre-Charge	V Dif. for Successful Pre-Charge	2000	
Whole Cluster SOC Hysteresis	Whole Cluster SOC Hysteresis	2000	
Whole Cluster SOC Recovery Delay	Whole Cluster SOC Recovery Delay	2000	

Whole Cluster SOC Shield Flag	Whole Cluster SOC Shield Flag	2000	
Whole Cluster SOC Threshold	Whole Cluster SOC Threshold	2000	
Whole Cluster SOC Trigger Delay	Whole Cluster SOC Trigger Delay	2000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.5.7 Volvo engines support

ECU Type	Engine type
Volvo Singlespeed EDC3 / EMS1 / EMS2 (page 664), Volvo Allspeed EDC3 / EMS1 / EMS2 (page 669)	D12, D9, D16, D724
EDC4 (EMR2) (page 673)	D5, D7
EDC7 (with KWP2000) (page 673)	D4, D6 engines
EMS J1587 (page 687)	
Volvo Industrial EMS2.4 (page 675)	D9, D12, D13, D16
Industrial EMS2.4 - Main (page 1)	D9, D12, D13, D16
BMS (page 848)	Volvo battery management system
Volvo Marine EMS2.3 / 2.4 (page 680)	
Volvo ACM (page 684)	Volvo Aftertreatment Control Unit

### Engine type explanation

Engine Code	Meaning
Txxxxxxx	Turbocharged
xAxxxxxx	Air to air intercooled
xxDxxxxx	Diesel fuel
xxx16xxx	Displacement indication
xxxxx3xxx	Generation
xxxxxx0xx	Version
xxxxxxxGx	Generator drive
xxxxxxxEx	Emission controlled

**Note:** Standalone connection (hardwired speed potentiometer). On D12 industrial gen-set engines it's possible to connect standalone connection. If there is a ComAp panel connected via CAN bus during power up the engine will detect this and will be controlled via CAN bus. But if the ComAp panel is dead during power up the engine and if there is connected a potentiometer on standalone connector the engine will detect this and will run in stand alone mode.

### BMS

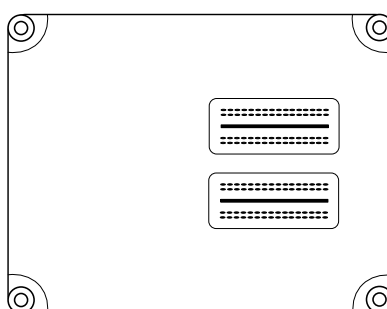


Image 5.225 BMS

## Controllers that support the BMS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ReqBESSAlive		Req BESS Alive
PowerAckn		Power Supply Ack
BESSReconfReq		BESS Reconfig Req
BattContBP8		Batt Contactor Sts BP 8
BattContBP7		Batt Contactor Sts BP 7
BattContBP6		Batt Contactor Sts BP 6
BattContBP5		Batt Contactor Sts BP 5
BattContBP4		Batt Contactor Sts BP 4
BattContBP3		Batt Contactor Sts BP 3
BattContBP2		Batt Contactor Sts BP 2
BattContBP1		Batt Contactor Sts BP 1
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
BESSEnable		Req BESS Enable
BESSRecStat		BESS Reconfig Status
PermissionStat		MaintenancePermissionStatus
InhibAfterrun		InhibitAfterrun
ReqIsoInhibit		Req Iso Inhibit
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StatusBESS		Status BESS
SOC		HV State Of Charge_OEM_NW
AllowChargePow		Allowed Charge Power
ThermRunaway		PS_BP Thermal Runaway War
AllowDischPow		Allowed Discharge Power
ActREemTimeM		Actual Remng Time Maintenance
T-BattMinBP8		HV Batt Min Temp BP 8
T-BatMaxBP8		HV Batt Max Temp BP 8
V-MinCellBP8		Min Cell Voltage BP 8
V-MaxCellBP8		Max Cell Voltage BP 8
T-BattMinBP7		HV Batt Min Temp BP 7
T-BatMaxBP7		HV Batt Max Temp BP 7
V-MinCellBP7		Min Cell Voltage BP 7
V-MaxCellBP7		Max Cell Voltage BP 7
T-BattMinBP6		HV Batt Max Temp BP 6
T-BatMaxBP6		HV Batt Min Temp BP 6
V-MinCellBP6		Min Cell Voltage BP 6
V-MaxCellBP6		Max Cell Voltage BP 6
T-BattMinBP5		HV Batt Min Temp BP 5
T-BatMaxBP5		HV Batt Max Temp BP 5

V-MinCellBP5		Min Cell Voltage BP 5
V-MaxCellBP5		Max Cell Voltage BP 5
T-BattMinBP4		HV Batt Min Temp BP 4
T-BatMaxBP4		HV Batt Max Temp BP 4
V-MinCellBP4		Min Cell Voltage BP 4
V-MaxCellBP4		Max Cell Voltage BP 4
T-BattMinBP3		HV Batt Min Temp BP 3
T-BatMaxBP3		HV Batt Max Temp BP 3
V-MinCellBP3		Min Cell Voltage BP 3
V-MaxCellBP3		Max Cell Voltage BP 3
T-BattMinBP2		HV Batt Min Temp BP 2
T-BatMaxBP2		HV Batt Max Temp BP 2
V-MinCellBP2		Min Cell Voltage BP 2
V-MaxCellBP2		Max Cell Voltage BP 2
T-BattMinBP1		HV Batt Min Temp BP 1
T-BatMaxBP1		HV Batt Max Temp BP 1
V-MinCellBP1		Min Cell Voltage BP 1
V-MaxCellBP1		Max Cell Voltage BP 1
ActSysCurr		Actual System Current
V-HVDCLink		HV DC Link Voltage
RemEnrgyIn		HV Remaining Energy In
AbilCurrDcDc		Abil Current Dc Dc
ActCurrentDcDc		Actual Current Dc Dc
ActVoltageDcDc		Actual Voltage Dc Dc
T-BattAvgBP8		HV Batt Avg Temp BP 8
Curr-PackBP8		Actual Pack Current BP 8
V-PackBP8		Actual Pack Voltage BP 8
SOC-PackBP8		Actual Pack State Of Charge BP 8
SOH-PackBP8		Actual Pack State Of Health BP 8
T-BattAvgBP7		HV Batt Avg Temp BP 7
Curr-PackBP7		Actual Pack Current BP 7
V-PackBP7		Actual Pack Voltage BP 7
SOC-PackBP7		Actual Pack State Of Charge BP 7
SOH-PackBP7		Actual Pack State Of Health BP 7
T-BattAvgBP6		HV Batt Avg Temp BP 6
Curr-PackBP6		Actual Pack Current BP 6
V-PackBP6		Actual Pack Voltage BP 6
SOC-PackBP6		Actual Pack State Of Charge BP 6
SOH-PackBP6		Actual Pack State Of Health BP 6
T-BattAvgBP5		HV Batt Avg Temp BP 5
Curr-PackBP5		Actual Pack Current BP 5
V-PackBP5		Actual Pack Voltage BP 5
SOC-PackBP5		Actual Pack State Of Charge BP 5
SOH-PackBP5		Actual Pack State Of Health BP 5
T-BattAvgBP4		HV Batt Avg Temp BP 4
Curr-PackBP4		Actual Pack Current BP 4
V-PackBP4		Actual Pack Voltage BP 4

SOC-PackBP4		Actual Pack State Of Charge BP 4
SOH-PackBP4		Actual Pack State Of Health BP 4
T-BattAvgBP3		HV Batt Avg Temp BP 3
Curr-PackBP3		Actual Pack Current BP 3
V-PackBP3		Actual Pack Voltage BP 3
SOC-PackBP3		Actual Pack State Of Charge BP 3
SOH-PackBP3		Actual Pack State Of Health BP 3
T-BattAvgBP2		HV Batt Avg Temp BP 2
Curr-PackBP2		Actual Pack Current BP 2
V-PackBP2		Actual Pack Voltage BP 2
SOC-PackBP2		Actual Pack State Of Charge BP 2
SOH-PackBP2		Actual Pack State Of Health BP 2
T-BattAvgBP1		HV Batt Avg Temp BP 1
Curr-PackBP1		Actual Pack Current BP 1
V-PackBP1		Actual Pack Voltage BP 1
SOC-PackBP1		Actual Pack State Of Charge BP 1
SOH-PackBP1		Actual Pack State Of Health BP 1
CoolantLvIRad		Coolant Level Rad Ckt
CoolantLvIESS		Coolant Level ESS Ckt
T-CoolantRad		Coolant Temperature Rad Outlet
T-CoolantESS		Coolant Temperature ESS Inlet
T-CoolantACU		Coolant Temperature ACU Outlet
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
UsageMode		Usage Mode
DC-DC Voltage		DC-DC Voltage
Heartbeat		Heartbeat Counter
System Time		System Time

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	ECU connector	Controller
<b>CAN H</b>	A79	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	A80	CAN1 (extension modules/J1939) – CAN L
<b>Key Switch</b>	A84	Any binary output configured as ECU PwrRelay
<b>Battery + (positive)</b>	A93	N/A
<b>Battery - (negative)</b>	B93	N/A

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**. Available list of texts of fault codes see **Volvo EMS4 BMS Fault Codes on page 1501**

# 6.6 Communication Bridges

## 6.6.1 Delta Electronics devices support

ECU Type	Device type	Source documentation version
<a href="#">M series (page 911)</a>	Delta inverters from the M series family (RPI-3 M6A/M8A/M10A/M15A/M20A/M30A/M50A/M66H/M88H)	v1.0
<a href="#">PCS100HV (page 979)</a>	Delta battery inverters PCS100HV BESS	v1.1.8
<a href="#">Site Controller (page 852)</a>	Smart Grid Communication Site-Controller	v.0.0.6

### Site Controller

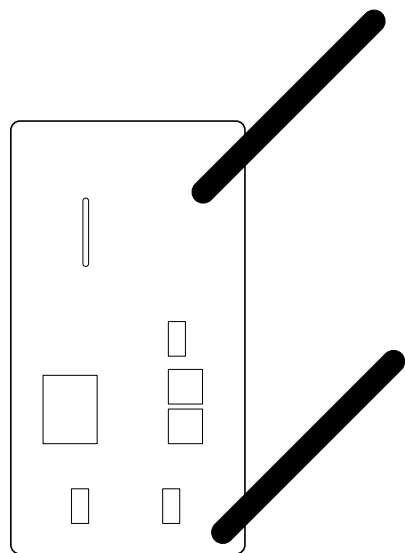


Image 5.226 Site Controller

### Controllers that support the Site Controller:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
BMS Over Temperature Warning	BMS Over Temperature Warning	1000	
BMS Over Voltage Warning	BMS Over Voltage Warning	1000	
BMS Rack EPO Trigger	BMS Rack EPO Trigger	1000	
BMS Rack Fire Alarm	BMS Rack Fire	1000	



	Alarm		
BMS SOC High Warning	BMS SOC High Warning	1000	
BMS SOC Low Warning	BMS SOC Low Warning	1000	
BMS Under Temperature Warning	BMS Under Temperature Warning	1000	
BMS Under Voltage Warning	BMS Under Voltage Warning	1000	
ESS Fault	ESS Fault	1000	
ESS Sys Rack Over Voltage	ESS Sys Rack Over Voltage	1000	
ESS Sys Rack Under Voltage	ESS Sys Rack Under Voltage	1000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
PCS Alarm Reset	PCS Alarm Reset	1000	
SC Acquisition of Control Cmd	SC Acquisition of Control Cmd	1000	
SC Stand Alone Mode Cmd	SC Stand Alone Mode Cmd	1000	
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
BMS Max Cell Temperature	BMS Max Cell Temperature	1000	
BMS Max Cell Voltage	BMS Max Cell Voltage	1000	
BMS Min Cell Temperature	BMS Min Cell Temperature	1000	
BMS Min Cell Voltage	BMS Min Cell Voltage	1000	
BMS State of Charge	BMS State of Charge	1000	
BMS State of Health	BMS State of Health	1000	
BMS Sys Charge Remain Energy	BMS Sys Charge Remain Energy	1000	
BMS Sys Discharge Remain Energy	BMS Sys Discharge Remain Energy	1000	
BMS Sys Rack Voltage	BMS Sys Rack Voltage	1000	
BMS System Current	BMS System Current	1000	
BMS System Power	BMS System Power	1000	
PCS Active Power	PCS Active Power	1000	
PCS Bus Voltage L1-L2	PCS Bus Voltage L1-L2	1000	
PCS Bus Voltage L2-L3	PCS Bus Voltage L2-L3	1000	

PCS Bus Voltage L3-L1	PCS Bus Voltage L3-L1	1000	
PCS Current L1	PCS Current L1	1000	
PCS Current L2	PCS Current L2	1000	
PCS Current L3	PCS Current L3	1000	
PCS Limit Power	PCS Limit Power	1000	
PCS Reactive Power	PCS Reactive Power	1000	
PCS System Status	PCS System Status	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
PCS Power On/Off Cmd	PCS Power On/Off Cmd	1000	
SC Active Power Setpoint Cmd	SC Active Power Setpoint Cmd	1000	
SC Current Operation Mode Cmd	SC Current Operation Mode Cmd	1000	
SC Reactive Power Setpoint Cmd	SC Reactive Power Setpoint Cmd	1000	

## Recommended wiring

Function	RS485	Controller
<b>RS485 A</b>	Data+	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	Data-	RS485 B
<b>+ (positive)</b>	VCC	N/A
<b>- (negative)</b>	GND	N/A

## 6.6.2 MTU engines support

ECU Type	Engine type
<a href="#">ECU4 (MDEC) (page 441)</a> <a href="#">ECU7 (ADEC) (page 442)</a> <a href="#">ECU7 (ADEC) &amp; SAM module (page 446)</a>	Series 2000, 4000
<a href="#">ECU7 (ADEC) &amp; SAM module - main InteliGateway 330(page 1)</a>	Series 2000, 4000
<a href="#">ECU7 (ADEC) &amp; SAM module - EMU (page 1)</a>	MTU EMU - Safety monitoring module
<a href="#">ECU7 (ADEC) (page 442)</a> <a href="#">ECU7 (ADEC) &amp; SAM module (page 446)</a> <a href="#">ECU8 (ADEC) &amp; Smart connect (page 458)</a>	Series 1600
<a href="#">ECU9 (ADEC) (page 464)</a>	Series 4000
<a href="#">ECU9 (ADEC) Main (page 468)</a>	Series 4000
<a href="#">Axces (SCR) (page 472)</a>	Axces (SCR) module
<a href="#">DDEC 10 (page 474)</a>	Series 4R1000, 6R1000, 6R1100, 6R1300, 6R1500
<a href="#">MIP 4000 (page 479)</a>	Series 4000 - gas engines
<a href="#">MIP 4000 J1939 v3.x (page 483)</a>	Series 4000 - gas engines
<a href="#">MIP 4000 J1939 v4.x (page 489)</a>	Series 4000 - gas engines

## EIM (Engine Interface Module)

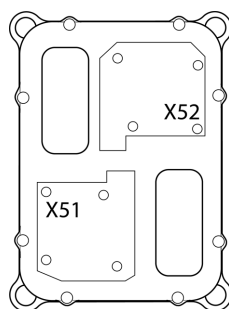


Image 5.227 EIM

## Controllers that support the EIM

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
MalfuncLamp <sub>1,2,3,4,5,6,7</sub>	1213	Malfunction Indicator Lamp

FlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Flash Malfunction Indicator Lamp
FFlashMalfunc <sub>1,2,3,4,5,6,7</sub>	3038	Fast Flash Malfunction Indicator Lamp
FlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Flash Red Stop Lamp (RSL)
FFlashRed <sub>1,2,3,4,5,6,7</sub>	3039	Fast Flash Red Stop Lamp (RSL)
FlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Flash Amber Warning Lamp (AWL)
FFlashWarning <sub>1,2,3,4,5,6,7</sub>	3040	Fast Flash Amber Warning Lamp (AWL)
FlashProtect <sub>1,2,3,4,5,6,7</sub>	3041	Flash Protect Lamp
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
AlarmReset <sub>5</sub>	520265	Alarm Reset
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Load <sub>1,2,3,4,5,6,7</sub>	92	Engine Percent Load At Current Speed
P-FuelDelivery <sub>1,2,3,4,5,6,7</sub>	94	Engine Fuel Delivery Pressure
P-Oil <sub>1,2,3,4,5,6,7</sub>	100	Engine Oil Pressure
T-IntManifold <sub>1,2,3,4,5,6,7</sub>	105	Engine Intake Manifold 1 Temperature
P-Coolant <sub>1,2,3,4,5,6,7</sub>	109	Engine Coolant Pressure 1
T-Coolant <sub>1,2,3,4,5,6,7</sub>	110	Engine Coolant Temperature
T-AirIntake <sub>1,2,3,4,5,6,7</sub>	172	Engine Intake 1 Air Temperature
T-Fuel <sub>1,2,3,4,5,6,7</sub>	174	Engine Fuel 1 Temperature 1
T-Oil <sub>1,2,3,4,5,6,7</sub>	175	Engine Oil Temperature 1
FuelRate <sub>1,2,3,4,5,6,7</sub>	183	Engine Fuel Rate
EngineSpeed <sub>1,2,3,4,5,6,7</sub>	190	Engine Speed
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation
TotalFuelUsed <sub>1,2,3,4,5,6,7</sub>	250	Engine Total Fuel Used
T-Exh2Manf <sub>1,2,3,4,5,6,7</sub>	2433	Engine Exhaust Manifold Bank 2 Temperature 1
T-Exh1Manif <sub>1,2,3,4,5,6,7</sub>	2434	Engine Exhaust Manifold Bank 1 Temperature 1
P-IntakeManAbs <sub>1,2,3,4,5,6,7</sub>	3563	Engine Intake Manifold #1 Absolute Pressure
T-ExhAverage <sub>1,2,3,4,5,6,7</sub>	4151	Engine Exhaust Temperature Average
P-OilRednt	520292	MTU Engine Oil Pressure Redundant
T-CoolantRednt	520302	MTU Engine Coolant Temp Redundant
Spd-Rednt	520382	MTU Engine Speed Redundant
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring









Function	X51 connector	Controller
<b>CAN H</b>	56	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	54	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	55	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A	N/A
<b>Battery - (negative)</b>	N/A	N/A

<b>Key Switch</b>	16	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56. Available list of texts of fault codes see **MTU Engine Interface Module Fault Codes** on page 1342

### Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

MTU Engine Interface Module aftertreatment lamps							
	Solid On Blink slow Blink fast		Solid On Blink slow Blink fast		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.6.3 Victron devices support

ECU Type	Device type	Source documentation version
<a href="#">CCGX (page 857)</a>	CCGX Gateway	v43

### CCGX

#### Controllers that support the CCGX:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Alarm	Alarm	400	
Fuse Blown Alarm	Fuse Blown Alarm	400	
High Fused-Voltage alarm	High Fused-Voltage alarm	400	
High Internal-Temperature Alarm	High Internal-Temperature Alarm	400	
High Starter-Voltage Alarm	High Starter-Voltage Alarm	400	
High Temperature Alarm	High Temperature Alarm	400	
High Voltage Alarm	High Voltage Alarm	400	
Low Coltage Alarm	Low Coltage Alarm	400	

Low Fused-Voltage Alarm	Low Fused-Voltage Alarm	400	
Low Starter-Voltage Alarm	Low Starter-Voltage Alarm	400	
Low State-Of-Charge Alarm	Low State-Of-Charge Alarm	400	
Low Temperature Alarm	Low Temperature Alarm	400	
Mid-Voltage Alarm	Mid-Voltage Alarm	400	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AC Consumption L1	AC Consumption L1	400	
AC Consumption L2	AC Consumption L2	400	
AC Consumption L3	AC Consumption L3	400	
Active Input Source	Active Input Source	400	
Battery Consumed Amphours (System)	Battery Consumed Amphours	400	
Battery Current (System)	Battery Current (System)	400	
Battery Power (System)	Battery Power (System)	400	
Battery State of Charge (System)	Battery State of Charge (System)	400	
Battery Temperature	Battery Temperature	400	
Battery Time to Go (System)	Battery Time to Go (System)	400	
Battery Voltage	Battery Voltage	400	
Battery Voltage (System)	Battery Voltage (System)	400	
Battery state (System)	Battery state (System)	400	
Charger Power	Charger Power	400	
Consumed Amphours	Consumed Amphours	400	
Current	Current	400	
DC System Power	DC System Power	400	
Genset L1	Genset L1	400	
Genset L2	Genset L2	400	
Genset L3	Genset L3	400	
Grid L1	Grid L1	400	
Grid L1 - Energy from net	Grid L1 - Energy from net	400	
Grid L1 - Energy to net	Grid L1 - Energy to net	400	

Grid L1 - Power	Grid L1 - Power	400	
Grid L1 – Current	Grid L1 – Current	400	
Grid L1 – Voltage	Grid L1 – Voltage	400	
Grid L2	Grid L2	400	
Grid L2 - Energy from net	Grid L2 - Energy from net	400	
Grid L2 - Energy to net	Grid L2 - Energy to net	400	
Grid L2 - Power	Grid L2 - Power	400	
Grid L2 – Current	Grid L2 – Current	400	
Grid L2 – Voltage	Grid L2 – Voltage	400	
Grid L3	Grid L3	400	
Grid L3 - Energy from net	Grid L3 - Energy from net	400	
Grid L3 - Energy to net	Grid L3 - Energy to net	400	
Grid L3 - Power	Grid L3 - Power	400	
Grid L3 – Current	Grid L3 – Current	400	
Grid L3 – Voltage	Grid L3 – Voltage	400	
L1 Current	L1 Current	400	
L1 Energy	L1 Energy	400	
L1 Power	L1 Power	400	
L1 Voltage	L1 Voltage	400	
L2 Current	L2 Current	400	
L2 Energy	L2 Energy	400	
L2 Power	L2 Power	400	
L2 Voltage	L2 Voltage	400	
L3 Current	L3 Current	400	
L3 Energy	L3 Energy	400	
L3 Power	L3 Power	400	
L3 Voltage	L3 Voltage	400	
Maximum Power Capacity	Maximum Power Capacity	400	
PV - AC-coupled on generator L1	PV - AC-coupled on generator L1	400	
PV - AC-coupled on generator L2	PV - AC-coupled on generator L2	400	
PV - AC-coupled on generator L3	PV - AC-coupled on generator L3	400	
PV - AC-coupled on input L1	PV - AC-coupled on input L1	400	
PV - AC-coupled on input L2	PV - AC-coupled on input L2	400	
PV - AC-coupled on input L3	PV - AC-coupled on input L3	400	
PV - AC-coupled on output L1	PV - AC-coupled on output L1	400	
PV - AC-coupled on output L2	PV - AC-coupled on output L2	400	
PV - AC-coupled on output L3	PV - AC-coupled on	400	

	output L3		
PV - DC-coupled current	PV - DC-coupled current	400	
PV - DC-coupled power	PV - DC-coupled power	400	
Position	Position	400	
State Of Charge	State Of Charge	400	
Total Energy from net	Total Energy from net	400	
Total Energy to net	Total Energy to net	400	
Total Power	Total Power	400	
VE.Bus Charge Current (System)	VE.Bus Charge Current (System)	400	
VE.Bus Charge Power (System)	VE.Bus Charge Power (System)	400	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	Active Power Limit	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## RS485

Function	RS485 connector	Controller
RS485 A	1	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	3	RS485 B

## Victron CCGX Gateway Fault Codes

Fault Code (SPN)	Text
------------------	------

## 6.6.4 Vitobloc devices support

ECU Type	Device type	Source documentation version
<a href="#">Gateway (page 860)</a>	Gateway	v2.0

## Gateway

### Controllers that support the Gateway:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>



ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Advance warning time	Advance warning time	500	
Battery voltage	Battery voltage	500	
CHP unit number	CHP unit number	500	
CosPhi	CosPhi	500	
Fault message bit 1	Fault message bit 1	500	
Fault message bit 2	Fault message bit 2	500	
Fault message bit 3	Fault message bit 3	500	
Fault message bit 4	Fault message bit 4	500	
Fault message bit 5	Fault message bit 5	500	
Fault message bit 6	Fault message bit 6	500	
Fault message bit 7	Fault message bit 7	500	
Fault message bit 8	Fault message bit 8	500	
Format ID	Format ID	500	
Generator current L1	Generator current L1	500	
Generator current L2	Generator current L2	500	
Generator current L3	Generator current L3	500	
Generator frequency	Generator frequency	500	
Generator voltage L1	Generator voltage L1	500	
Generator voltage L2	Generator voltage L2	500	
Generator voltage L3	Generator voltage L3	500	
Hours run	Hours run	500	
Lambda probe voltage	Lambda probe voltage	500	
Mains frequency	Mains frequency	500	
Mains voltage L1	Mains voltage L1	500	
Mains voltage L2	Mains voltage L2	500	
Mains voltage L3	Mains voltage L3	500	
Minutes run	Minutes run	500	
Module lockout	Module lockout	500	
Module mode	Module mode	500	
Module operating mode	Module operating mode	500	
Module status	Module status	500	
Next service	Next service	500	
NiCrNi / A*	NiCrNi / A*	500	
NiCrNi / B*	NiCrNi / B*	500	
NiCrNi / C*	NiCrNi / C*	500	
NiCrNi / D*	NiCrNi / D*	500	
Number of starts	Number of starts	500	

Oil pressure	Oil pressure	500	
Output	Output	500	
PT100 / 1*	PT100 / 1*	500	
PT100 / 2*	PT100 / 2*	500	
PT100 / 3*	PT100 / 3*	500	
PT100 / 4*	PT100 / 4*	500	
PT100 / 5*	PT100 / 5*	500	
PT100 / 6*	PT100 / 6*	500	
Service interval	Service interval	500	
Set value, modulating operation	Set value, modulating operation	500	
Speed	Speed	500	
Temperature controller	Temperature controller	500	
Temperature enabling	Temperature enabling	500	
Total generator current	Total generator current	500	
Total generator voltage	Total generator voltage	500	
Total mains voltage	Total mains voltage	500	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
--------------------	------	----------------	----------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

### RS485


Function	RS485 connector	Controller
RS485 A	1	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	6	RS485 B

### Ethernet

Function	Controller
RJ45	RJ45

## 6.7 Genset Controllers

## 6.7.1 Cummins engines support

ECU Type	Engine type
<a href="#">CM500 (page 127)</a>	Industrial engines QSK19, QSK23, QSK45, QSK60, QSK78
<a href="#">CM558 (page 129)</a>	Gas engines, QST30 (slave ECU)
<a href="#">CM570 (page 132)</a>	Tier2/Tier3 QSM11, QSX15, ISM 400, ISM 435
<a href="#">CM700 (page 135)</a>	QSK19G, QSK60G, QSV91G
<a href="#">CM800 (page 140)</a>	ISB, ISBe
<a href="#">PGI calibration (page 195)</a> (CM850,CM2150,CM2250)	Tier4i QSB7 and QSL9 Tier 2 QSK50/60, QSK19, QSK38 MCRC Tier 3 QSB5, QSB7, QSL9, QSM11
<a href="#">CM2150 (page 147)</a>	ISDe, ISLe, ISZ (ISX 13)
<a href="#">CM2150 Main (page 151)</a>	ISDe, ISLe, ISZ (ISX 13)
<a href="#">CM2150 Gas Sensor 1 (page 154)</a>	
<a href="#">CM2150 Gas Sensor 2 (page 156)</a>	
<a href="#">CM2150 Dongfeng (page 157)</a>	ISDe, ISCe, ISLe, ISZ (ISX13) NS3 and NS4 series
<a href="#">CM2250 (Industrial calibration) (page 162)</a>	Industrial engines (ISX, ISB series)
<a href="#">CM2350 (page 164)</a>	Tier4 QSB6.7, QSL9, QSX15, QSF3.8, QSB4.5, QSG12
<a href="#">CM2350 Main (page 169)</a>	Tier4 QSB6.7, QSL9, QSX15, QSF3.8, QSB4.5, QSG12
<a href="#">CM2350 (industrial calibration) (page 175)</a>	Industrial engines (QSB4.5, QSB6.7, QSL9, QSX15, and QSG12)
<a href="#">CM2880 (industrial calibration) (page 192)</a>	ISDe NS3, ISLe NS3, ISBe NS4, ISC3 NS4, ISDe NS4, ILSe NS4, ISZ NS4 series
<a href="#">Cummins GCS (page 202)</a>	Tier2 QSK23, QSK45/60/78, QST30
<a href="#">Cummins PCC (page 864)</a>	PCC version 3.3
<a href="#">CM2358 (page 182)</a>	K19 series
<a href="#">CM2358 Parent (page 185)</a>	K19 series
	
<a href="#">CM2358 Child 1 (page 190)</a>	

## Cummins PCC

### Controllers that support the PCC

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Common Shutdown	Common Shutdown	2500	
Common Warning	Common Warning	2500	
Generator CB Status	Generator CB Satus	2000	
Not in AUTO	Not in AUTO	2500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Isolated Bus Speed Control Method	Speed Control Method	2000	
Isolated Bus Voltage Control Method	Voltage Control Method	2000	
MCB Inhibit Switch	MCB Inhibit Switch	1000	
Speed Droop Enable Switch	Speed Droop Enable Switch	2000	
Start Stop	Start Stop	2500	
Voltage Droop Enable Switch	Voltage Droop Enable Switch	2000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Average Engine Speed	Engine Speed	2500	
Battery Voltage	Battery Voltage	2500	
Coolant Temperature	T-Coolant	2500	
Genet L1 Current	Genet L1 Current	2500	
Genet L2 Current	Genet L2 Current	2500	
Genet L3 Current	Genet L3 Current	2500	
Genset Actual Q	Genset Actual Q	2500	
Genset L1-L2 Voltage	Genset L1-L2 Voltage	2500	
Genset L2-L3 Voltage	Genset L2-L3 Voltage	2500	
Genset L3-L1 Voltage	Genset L3-L1 Voltage	2500	
Genset Nominal P	Genset Nominal P	2000	
Genset Total Positive kWh	Genset Total Positive kWh	2500	
Genset Total Power Factor	Genset Total Power Factor	2500	

Genset Total kVA	Genset Total kVA	2500	
Genset Total kW	Genset Total kW	2500	
Genset Unload Status	Genset Unload Status	2000	
Gensets Bus Frequency	Gensets Bus Frequency	2500	
Oil Pressure	P-Oil	2500	
Oil Temperature	T-Oil	2500	
Total Engine Hours	Total Engine Hours	2500	
Total Fuel Consumption	Total Fuel Consumption	2500	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
Frequency Adjust	Frequency Adjust	2000	
Load Demand Spare Capacity Request Value	Load Demand Spare	2000	
MCB Manual Control	MCB Manual Control	1000	
Requested P	Requested P	1000	
Requested Q	Requested Q	1000	
Voltage Adjust	Voltage Adjust	2000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.7.2 DeepSea generators support

<b>AVR Type</b>	-
<a href="#">DSEA109 (page 770)</a>	
<a href="#">8610MKII (page 866)</a>	

### 8610MKII

#### Controllers that support the 8610MKII

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Amber Warning	Amber Warning	2500	
GCB status	GCB status	500	
Red Stop Warning	Red Stop Warning	2500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Reactive Power control mode	Reactive Power control mode	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	2500	
Actual Fuel Consumption	Actual Fuel Consumption	2500	
Apparent Power VA	Apparent Power VA	2500	
Average Power Factor	Average Power Factor	2500	
Battery Voltage	Battery Voltage	2500	
Coolant Temperature	T-Coolant	2500	
Engine Operating State	Engine Operating State	1000	
Genet L1 Current	Genet L1 Current	2500	
Genet L2 Current	Genet L2 Current	2500	
Genet L3 Current	Genet L3 Current	2500	
Genset L1-L2 Voltage	Genset L1-L2 Voltage	2500	
Genset L1-N Voltage	Genset L1-N Voltage	2500	
Genset L2-L3 Voltage	Genset L2-L3 Voltage	2500	
Genset L2-N Voltage	Genset L2-N Voltage	2500	
Genset L3-L1 Voltage	Genset L3-L1	2500	

	Voltage		
Genset L3-N Voltage	Genset L3-N Voltage	2500	
Gensets Bus Frequency	Gensets Bus Frequency	2500	
Load Total Watts	Load Total Watts	2500	
Load at speed	Load	2500	
Oil Pressure (positive)	P-Oil	2500	
Oil Pressure (wide range)	Oil Pressure (wide range)	1000	
Oil Temperature	T-Oil	2500	
Reactive Power	Reactive Power	2500	
Reactive Power L1	Reactive Power L1	2500	
Reactive Power L2	Reactive Power L2	2500	
Reactive Power L3	Reactive Power L3	2500	
Total Engine Hours	Total Engine Hours	2500	
Total kVA hours	Total kVA hours	2500	
Total kVAr hours	Total kVAr hours	2500	
Total kW hours	Total kW hours	2500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Power Factor Set	Power Factor Set	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.8 Ignition Systems

### 6.8.1 Altronic devices support

ECU Type	Device type supported
<a href="#">CD200 (page 868)</a>	CD200, CD200EX, CD200EVS, CD200D, CD200DR, NGI-1000 and NGI-1000RC
<a href="#">NGI 1000RC (page 870)</a>	NGI-1000RC

## CD200

### Controllers that support the CD200:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Syncing		Syncing
InSync1		InSync1
InSync2		InSync2
Purging		Purging
Trying		Trying
Firing		Firing
LockOut		LockOut
Fired		Fired
Cranking		Cranking
Running		Running
Wrong Disk		Wrong Disk
GLeadSDGround		GLead SD Grounded
RemotePresent		Remote Present
GLeadSDLogged		GLead SD Logged
RemoteSDLogged		Remote SD Logged
Overspeed Sd		OverSpeed SD Logged
WDG1 Reset		WDG1 Reset
WDG2 Reset		WDG2 Reset
ChecksumError		ChecksumError
LowSuppVolt		Low Supply Voltage
NoCharge		NoCharge
OpenPrimary		OpenPrimary
ShortPrimary		ShortPrimary
OpenSecond		Open Secondary
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Engine Speed		Engine Speed
Timing		Timing
SwitchPosition		Switch Position
CurrentLoop		CurrentLoop
InsertRetard		InsertRetard
SwitchRetard		SwitchRetard
LoopRetard		LoopRetard
RPMRetard		RMPRetard
TotalRetard		TotalRetard
Supply Voltage		Supply Voltage



SparkRefOut A		SparkRefOut A
SparkRefOut B		SparkRefOut B
SparkRefOut C		SparkRefOut C
SparkRefOut D		SparkRefOut D
SparkRefOut E		SparkRefOut E
SparkRefOut F		SparkRefOut F
SparkRefOut K		SparkRefOut K
SparkRefOut L		SparkRefOut L
SparkRefOut M		SparkRefOut M
SparkRefOut N		SparkRefOut N
SparkRefOut P		SparkRefOut P
SparkRefOut R		SparkRefOut R
SparkRefOut S		SparkRefOut S
SparkRefOut T		SparkRefOut T
SparkRefOut U		SparkRefOut U
SparkRefOut V		SparkRefOut V

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
--------------------	-----	------------

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

Function	14 pin connector	Controller
RS485 A	C	RS485 – RS485 A
RS485 COM	N/A	RS485 - RS485 COM
RS485 B	H	RS485 – RS485 B
Battery + (positive)	K	N/A
Battery - (negative) and engine block	Device Chasis	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

## Communication settings









Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	None

Available list of texts of fault codes **see Altronic CD200 Fault Codes on page 1097**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Altronic CD200 aftertreatment lamps

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## NGI 1000RC

### Controllers that support the NGI 1000RC:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Syncing <sub>3</sub>		Syncing
InSync1 <sub>3</sub>		In Sync1
InSync2 <sub>3</sub>		In Sync2

Purging <sub>3</sub>		Purging
Trying <sub>3</sub>		Trying
Firing <sub>3</sub>		Firing
LockOut <sub>3</sub>		Lock Out
Fired <sub>3</sub>		Fired
Cranking <sub>3</sub>		Cranking
Running <sub>3</sub>		Running
Wrong Disk <sub>3</sub>		Wrong Disk
GLeadSDGround <sub>3</sub>		GLead SD Grounded
RemotePresent <sub>3</sub>		Remote Present
GLeadSDLogged <sub>3</sub>		GLead SD Logged
RemoteSDLogged <sub>3</sub>		Remote SD Logged
Overspeed Sd <sub>3</sub>		OverSpeed SD Logged
WDOG1 Reset <sub>3</sub>		WDOG1 Reset
WDOG2 Reset <sub>3</sub>		WDOG2 Reset
ChecksumError <sub>3</sub>		ChecksumError
LowSuppVolt <sub>3</sub>		Low Supply Voltage
NoCharge <sub>3</sub>		No Charge
OpenPrimary <sub>3</sub>		Open Primary
ShortPrimary <sub>3</sub>		Short Primary
OpenSecond <sub>3</sub>		Open Secondary
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
Disk ON <sub>3</sub>		Disk ON
TestForDisk <sub>3</sub>		Test For Proper Disk
EnSecondDiag <sub>3</sub>		Enable Secondary Diags
Slave <sub>3</sub>		Slave
FallingEdge <sub>3</sub>		Falling Edge
PowPickup <sub>3</sub>		Powered Pickup
<b>ECU analog outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
Engine Speed <sub>3</sub>		Engine Speed
Timing <sub>3</sub>		Timing
SwitchPosition <sub>3</sub>		Switch Position
CurrentLoop <sub>3</sub>		Current Loop
InsertRetard <sub>3</sub>		Insert Retard
SwitchRetard <sub>3</sub>		Switch Retard
LoopRetard <sub>3</sub>		Loop Retard
RPMRetard <sub>3</sub>		RMP Retard
TotalRetard <sub>3</sub>		Total Retard
Supply Voltage <sub>3</sub>		Supply Voltage
SparkRefOut A <sub>3</sub>		Spark Ref. Out A
SparkRefOut B <sub>3</sub>		Spark Ref. Out B
SparkRefOut C <sub>3</sub>		Spark Ref. Out C
SparkRefOut D <sub>3</sub>		Spark Ref. Out D
SparkRefOut E <sub>3</sub>		Spark Ref. Out E
SparkRefOut F <sub>3</sub>		Spark Ref. Out F

SparkRefOut K <sub>3</sub>		Spark Ref. Out K
SparkRefOut L <sub>3</sub>		Spark Ref. Out L
SparkRefOut M <sub>3</sub>		Spark Ref. Out M
SparkRefOut N <sub>3</sub>		Spark Ref. Out N
SparkRefOut P <sub>3</sub>		Spark Ref. Out P
SparkRefOut R <sub>3</sub>		Spark Ref. Out R
SparkRefOut S <sub>3</sub>		Spark Ref. Out S
SparkRefOut T <sub>3</sub>		Spark Ref. Out T
SparkRefOut U <sub>3</sub>		Spark Ref. Out U
SparkRefOut V <sub>3</sub>		Spark Ref. Out V
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
Disk <sub>3</sub>		Disk Type Setting
LineUpAngle <sub>3</sub>		LineUp Angle Setting
InsertRetard <sub>3</sub>		Insertion Retard Setting
PurgeDelay <sub>3</sub>		Purge Delay Setting
Overspeed <sub>3</sub>		Overspeed Setting
RunSpeed <sub>3</sub>		Run Speed Setting
LowVoltage <sub>3</sub>		Low Voltage Setting
SlaveFiring <sub>3</sub>		Slave Firing
Duration <sub>3</sub>		Default Duration
Spark <sub>3</sub>		Default Spark
Global <sub>3</sub>		Default Global
Indv <sub>3</sub>		Default Indv
Cranks Log <sub>3</sub>		Cranks Log
Starts Log <sub>3</sub>		Starts Log
ColdBootLog <sub>3</sub>		Cold Boot Log
WarmBootLog <sub>3</sub>		Warm Boot Log
RemSparkDur <sub>3</sub>		Remote Control Spark Duration
Remote Spark <sub>3</sub>		Remote Spark
RemCtrlGlobRet <sub>3</sub>		Remote Control Global Retard

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	14 pin connector	Controller
RS485 A	C	RS485 – RS485 A
RS485 COM	N/A	RS485 – RS485 COM
RS485 B	H	RS485 – RS485 B
Battery + (positive)	K	N/A
Battery - (negative)	N	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.









## Communication settings

Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	None

Available list of texts of fault codes **see Altronic NGI 1000RC Fault Codes on page 1097**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Altronic NGI 1000RC aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

# 6.8.2 Heinzmann devices support

ECU Type	Device type supported
<a href="#">Ariadne (page 792)</a>	ARIADNE KC-01
<a href="#">Helenos (page 306)</a>	HELENOS DC 2
<a href="#">Kronos (page 794)</a>	KRONOS 20
<a href="#">Pandaros (page 308)</a>	PANDAROS DC 6
<a href="#">Phlox (page 874)</a>	PHLOX II
<a href="#">GMF (page 790)</a>	GMA, GMF

## Phlox

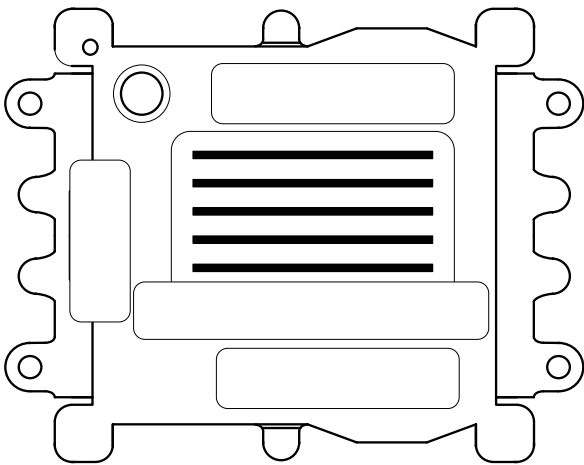


Image 5.228 Phlox

### Controllers that support the Phlox:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
StopLamp <sub>1,2,3,4,5,6,7</sub>	623	Red Stop Lamp
WarningLamp <sub>1,2,3,4,5,6,7</sub>	624	Amber Warning Lamp
ProtectLamp <sub>1,2,3,4,5,6,7</sub>	987	Protect Lamp
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
IgnitionStop		Ignition stop
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Cyl 1 Timing		Engine cylinder 1 ignition timing
Cyl 2 Timing		Engine cylinder 2 ignition timing
Cyl 3 Timing		Engine cylinder 3 ignition timing
Cyl 4 Timing		Engine cylinder 4 ignition timing
Cyl 5 Timing		Engine cylinder 5 ignition timing

Cyl 6 Timing		Engine cylinder 6 ignition timing
Cyl 7 Timing		Engine cylinder 7 ignition timing
Cyl 8 Timing		Engine cylinder 8 ignition timing
Cyl 9 Timing		Engine cylinder 9 ignition timing
Cyl 10 Timing		Engine cylinder 10 ignition timing
Cyl 11 Timing		Engine cylinder 11 ignition timing
Cyl 12 Timing		Engine cylinder 12 ignition timing
Cyl 13 Timing		Engine cylinder 13 ignition timing
Cyl 14 Timing		Engine cylinder 14 ignition timing
Cyl 15 Timing		Engine cylinder 15 ignition timing
Cyl 16 Timing		Engine cylinder 16 ignition timing
Cyl 17 Timing		Engine cylinder 17 ignition timing
Cyl 18 Timing		Engine cylinder 18 ignition timing
Cyl 19 Timing		Engine cylinder 19 ignition timing
Cyl 20 Timing		Engine cylinder 20 ignition timing
Cyl 21 Timing		Engine cylinder 21 ignition timing
Cyl 22 Timing		Engine cylinder 22 ignition timing
Cyl 23 Timing		Engine cylinder 23 ignition timing
Cyl 24 Timing		Engine cylinder 24 ignition timing
Cyl 1 Energy		Engine cylinder 1 ignition energy
Cyl 2 Energy		Engine cylinder 2 ignition energy
Cyl 3 Energy		Engine cylinder 3 ignition energy
Cyl 4 Energy		Engine cylinder 4 ignition energy
Cyl 5 Energy		Engine cylinder 5 ignition energy
Cyl 6 Energy		Engine cylinder 6 ignition energy
Cyl 7 Energy		Engine cylinder 7 ignition energy
Cyl 8 Energy		Engine cylinder 8 ignition energy
Cyl 9 Energy		Engine cylinder 9 ignition energy
Cyl 10 Energy		Engine cylinder 10 ignition energy
Cyl 11 Energy		Engine cylinder 11 ignition energy
Cyl 12 Energy		Engine cylinder 12 ignition energy
Cyl 13 Energy		Engine cylinder 13 ignition energy
Cyl 14 Energy		Engine cylinder 14 ignition energy
Cyl 15 Energy		Engine cylinder 15 ignition energy
Cyl 16 Energy		Engine cylinder 16 ignition energy
Cyl 17 Energy		Engine cylinder 17 ignition energy
Cyl 18 Energy		Engine cylinder 18 ignition energy
Cyl 19 Energy		Engine cylinder 19 ignition energy
Cyl 20 Energy		Engine cylinder 20 ignition energy
Cyl 21 Energy		Engine cylinder 21 ignition energy
Cyl 22 Energy		Engine cylinder 22 ignition energy
Cyl 23 Energy		Engine cylinder 23 ignition energy
Cyl 24 Energy		Engine cylinder 24 ignition energy
Cyl 1 Spark		Engine cylinder 1 spark duration
Cyl 2 Spark		Engine cylinder 2 spark duration
Cyl 3 Spark		Engine cylinder 3 spark duration
Cyl 4 Spark		Engine cylinder 4 spark duration

Cyl 5 Spark		Engine cylinder 5 spark duration
Cyl 6 Spark		Engine cylinder 6 spark duration
Cyl 7 Spark		Engine cylinder 7 spark duration
Cyl 8 Spark		Engine cylinder 8 spark duration
Cyl 9 Spark		Engine cylinder 9 spark duration
Cyl 10 Spark		Engine cylinder 10 spark duration
Cyl 11 Spark		Engine cylinder 11 spark duration
Cyl 12 Spark		Engine cylinder 12 spark duration
Cyl 13 Spark		Engine cylinder 13 spark duration
Cyl 14 Spark		Engine cylinder 14 spark duration
Cyl 15 Spark		Engine cylinder 15 spark duration
Cyl 16 Spark		Engine cylinder 16 spark duration
Cyl 17 Spark		Engine cylinder 17 spark duration
Cyl 18 Spark		Engine cylinder 18 spark duration
Cyl 19 Spark		Engine cylinder 19 spark duration
Cyl 20 Spark		Engine cylinder 20 spark duration
Cyl 21 Spark		Engine cylinder 21 spark duration
Cyl 22 Spark		Engine cylinder 22 spark duration
Cyl 23 Spark		Engine cylinder 23 spark duration
Cyl 24 Spark		Engine cylinder 24 spark duration
Cyl 1 Error		Engine cylinder 1 error state
Cyl 2 Error		Engine cylinder 2 error state
Cyl 3 Error		Engine cylinder 3 error state
Cyl 4 Error		Engine cylinder 4 error state
Cyl 5 Error		Engine cylinder 5 error state
Cyl 6 Error		Engine cylinder 6 error state
Cyl 7 Error		Engine cylinder 7 error state
Cyl 8 Error		Engine cylinder 8 error state
Cyl 9 Error		Engine cylinder 9 error state
Cyl 10 Error		Engine cylinder 10 error state
Cyl 11 Error		Engine cylinder 11 error state
Cyl 12 Error		Engine cylinder 12 error state
Cyl 13 Error		Engine cylinder 13 error state
Cyl 14 Error		Engine cylinder 14 error state
Cyl 15 Error		Engine cylinder 15 error state
Cyl 16 Error		Engine cylinder 16 error state
Cyl 17 Error		Engine cylinder 17 error state
Cyl 18 Error		Engine cylinder 18 error state
Cyl 19 Error		Engine cylinder 19 error state
Cyl 20 Error		Engine cylinder 20 error state
Cyl 21 Error		Engine cylinder 21 error state
Cyl 22 Error		Engine cylinder 22 error state
Cyl 23 Error		Engine cylinder 23 error state
Cyl 24 Error		Engine cylinder 24 error state
EngineRunHours <sub>1,2,3,4,5,6,7</sub>	247	Engine Total Hours of Operation



ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
IgnitionTiming		Common ignition timing
IgnitionEnergy		Common ignition energy

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

There is no speed control over CAN bus available for this particular ECU.









## Recommended wiring

Function	ECU connector	Controller
<b>CAN H</b>	9	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	8	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	2,15	N/A
<b>Battery - (negative)</b>	1,14	N/A

Available list of texts of fault codes **see Heinzmann Phlox Fault Codes on page 1254**

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

Heinzmann Phlox aftertreatment lamps							
	Solid On		Solid On		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.8.3 HuegliTech devices support

ECU Type	Device type supported
<a href="#">SG50&amp;SG100 (page 310)</a>	HT-SG-50, HT-SG-100
<a href="#">LEF200 (page 878)</a>	HT-LEF100/200
<a href="#">LEF200 Module 1 (page 884)</a>	HT-LEF100/200

<a href="#">LEF200 Module 2 (page 887)</a>	HT-LEF100/200
<a href="#">LEF200 Module 3 (page 891)</a>	HT-LEF100/200
<a href="#">AF-1500 (page 796)</a>	AF-1500

## LEF200

### Controllers that support the LEF200:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MisFirCh1_1		Misfiring Flags Channel 1 (1)
MisFirCh2_1		Misfiring Flags Channel 2 (1)
MisFirCh3_1		Misfiring Flags Channel 3 (1)
MisFirCh4_1		Misfiring Flags Channel 4 (1)
MisFirCh5_1		Misfiring Flags Channel 5 (1)
MisFirCh6_1		Misfiring Flags Channel 6 (1)
MisFirCh7_1		Misfiring Flags Channel 7 (1)
MisFirCh8_1		Misfiring Flags Channel 8 (1)
MisFirCh9_1		Misfiring Flags Channel 9 (1)
MisFirCh10_1		Misfiring Flags Channel 10 (1)
CurrDevCh1_1		Current Dev Flags Channel 1 (1)
CurrDevCh2_1		Current Dev Flags Channel 2 (1)
CurrDevCh3_1		Current Dev Flags Channel 3 (1)
CurrDevCh4_1		Current Dev Flags Channel 4 (1)
CurrDevCh5_1		Current Dev Flags Channel 5 (1)
CurrDevCh6_1		Current Dev Flags Channel 6 (1)
CurrDevCh7_1		Current Dev Flags Channel 7 (1)
CurrDevCh8_1		Current Dev Flags Channel 8 (1)
CurrDevCh9_1		Current Dev Flags Channel 9 (1)
CurrDevCh10_1		Current Dev Flags Channel 10 (1)
CurrLimCh1_1		Current Lim Flags Channel 1 (1)
CurrLimCh2_1		Current Lim Flags Channel 2 (1)
CurrLimCh3_1		Current Lim Flags Channel 3 (1)
CurrLimCh4_1		Current Lim Flags Channel 4 (1)
CurrLimCh5_1		Current Lim Flags Channel 5 (1)
CurrLimCh6_1		Current Lim Flags Channel 6 (1)
CurrLimCh7_1		Current Lim Flags Channel 7 (1)
CurrLimCh8_1		Current Lim Flags Channel 8 (1)
CurrLimCh9_1		Current Lim Flags Channel 9 (1)
CurrLimCh10_1		Current Lim Flags Channel 10 (1)
MisFirCh1_2		Misfiring Flags Channel 1 (2)
MisFirCh2_2		Misfiring Flags Channel 2 (2)

MisFirCh3_2		Misfiring Flags Channel 3 (2)
MisFirCh4_2		Misfiring Flags Channel 4 (2)
MisFirCh5_2		Misfiring Flags Channel 5 (2)
MisFirCh6_2		Misfiring Flags Channel 6 (2)
MisFirCh7_2		Misfiring Flags Channel 7 (2)
MisFirCh8_2		Misfiring Flags Channel 8 (2)
MisFirCh9_2		Misfiring Flags Channel 9 (2)
MisFirCh10_2		Misfiring Flags Channel 10 (2)
CurrDevCh1_2		Current Dev Flags Channel 1 (2)
CurrDevCh2_2		Current Dev Flags Channel 2 (2)
CurrDevCh3_2		Current Dev Flags Channel 3 (2)
CurrDevCh4_2		Current Dev Flags Channel 4 (2)
CurrDevCh5_2		Current Dev Flags Channel 5 (2)
CurrDevCh6_2		Current Dev Flags Channel 6 (2)
CurrDevCh7_2		Current Dev Flags Channel 7 (2)
CurrDevCh8_2		Current Dev Flags Channel 8 (2)
CurrDevCh9_2		Current Dev Flags Channel 9 (2)
CurrDevCh10_2		Current Dev Flags Channel 10 (2)
CurrLimCh1_2		Current Lim Flags Channel 1 (2)
CurrLimCh2_2		Current Lim Flags Channel 2 (2)
CurrLimCh3_2		Current Lim Flags Channel 3 (2)
CurrLimCh4_2		Current Lim Flags Channel 4 (2)
CurrLimCh5_2		Current Lim Flags Channel 5 (2)
CurrLimCh6_2		Current Lim Flags Channel 6 (2)
CurrLimCh7_2		Current Lim Flags Channel 7 (2)
CurrLimCh8_2		Current Lim Flags Channel 8 (2)
CurrLimCh9_2		Current Lim Flags Channel 9 (2)
CurrLimCh10_2		Current Lim Flags Channel 10 (2)
MisFirCh1_3		Misfiring Flags Channel 1 (3)
MisFirCh2_3		Misfiring Flags Channel 2 (3)
MisFirCh3_3		Misfiring Flags Channel 3 (3)
MisFirCh4_3		Misfiring Flags Channel 4 (3)
MisFirCh5_3		Misfiring Flags Channel 5 (3)
MisFirCh6_3		Misfiring Flags Channel 6 (3)
MisFirCh7_3		Misfiring Flags Channel 7 (3)
MisFirCh8_3		Misfiring Flags Channel 8 (3)
MisFirCh9_3		Misfiring Flags Channel 9 (3)
MisFirCh10_3		Misfiring Flags Channel 10 (3)
CurrDevCh1_3		Current Dev Flags Channel 1 (3)
CurrDevCh2_3		Current Dev Flags Channel 2 (3)
CurrDevCh3_3		Current Dev Flags Channel 3 (3)
CurrDevCh4_3		Current Dev Flags Channel 4 (3)
CurrDevCh5_3		Current Dev Flags Channel 5 (3)
CurrDevCh6_3		Current Dev Flags Channel 6 (3)
CurrDevCh7_3		Current Dev Flags Channel 7 (3)
CurrDevCh8_3		Current Dev Flags Channel 8 (3)
CurrDevCh9_3		Current Dev Flags Channel 9 (3)

CurrDevCh10_3		Current Dev Flags Channel 10 (3)
CurrLimCh1_3		Current Lim Flags Channel 1 (3)
CurrLimCh2_3		Current Lim Flags Channel 2 (3)
CurrLimCh3_3		Current Lim Flags Channel 3 (3)
CurrLimCh4_3		Current Lim Flags Channel 4 (3)
CurrLimCh5_3		Current Lim Flags Channel 5 (3)
CurrLimCh6_3		Current Lim Flags Channel 6 (3)
CurrLimCh7_3		Current Lim Flags Channel 7 (3)
CurrLimCh8_3		Current Lim Flags Channel 8 (3)
CurrLimCh9_3		Current Lim Flags Channel 9 (3)
CurrLimCh10_3		Current Lim Flags Channel 10 (3)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RPM_1		Engine Speed (1)
FiringAngle1_1		Interpolated Firing Angle (1)
FiringFlagsH_1		Firing on Hold Flags (1)
FiringMaskH_1		Firing on Hold Mask (1)
ChargCurrCh1_1		Charging Current CH1 (1)
ChargCurrCh2_1		Charging Current CH2 (1)
ChargCurrCh3_1		Charging Current CH3 (1)
ChargCurrCh4_1		Charging Current CH4 (1)
ChargCurrCh5_1		Charging Current CH5 (1)
ChargCurrCh6_1		Charging Current CH6 (1)
ChargCurrCh7_1		Charging Current CH7 (1)
ChargCurrCh8_1		Charging Current CH8 (1)
DwellTimeCh1_1		Dwell Time CH1 (1)
DwellTimeCh2_1		Dwell Time CH2 (1)
DwellTimeCh3_1		Dwell Time CH3 (1)
DwellTimeCh4_1		Dwell Time CH4 (1)
DwellTimeCh5_1		Dwell Time CH5 (1)
DwellTimeCh6_1		Dwell Time CH6 (1)
DwellTimeCh7_1		Dwell Time CH7 (1)
DwellTimeCh8_1		Dwell Time CH8 (1)
FiringSeq1_1		Firing Sequence 1 (1)
FiringSeq2_1		Firing Sequence 2 (1)
FiringSeq3_1		Firing Sequence 3 (1)
FiringSeq4_1		Firing Sequence 4 (1)
FiringSeq5_1		Firing Sequence 5 (1)
FiringSeq6_1		Firing Sequence 6 (1)
FiringSeq7_1		Firing Sequence 7 (1)
FiringSeq8_1		Firing Sequence 8 (1)
Adjustment1_1		Individual Adjustment 1 (1)
Adjustment2_1		Individual Adjustment 2 (1)
Adjustment3_1		Individual Adjustment 3 (1)
Adjustment4_1		Individual Adjustment 4 (1)

Adjustment5_1		Individual Adjustment 5 (1)
Adjustment6_1		Individual Adjustment 6 (1)
Adjustment7_1		Individual Adjustment 7 (1)
Adjustment8_1		Individual Adjustment 8 (1)
V-Angle_1		V-Angle (1)
OffsetAngle_1		Offset Angle (1)
ComDwellTime_1		Common Dwell Time (1)
No.Cyl_1		Number of Cylinders (1)
OverSpeedLIM_1		Over-Speed Limit (1)
ChargCurrMax_1		Charging Current Maximum (1)
CombIdxThr_1		Combustion Index Threshold (1)
CurrDeviaThr_1		Current Deviation Threshold (1)
HW_ID_1		Hardware ID (1)
FW_Version_1		Firmware Version (1)
TDC_1_1		TDC 1 (1)
TDC_2_1		TDC 2 (1)
TDC_3_1		TDC 3 (1)
TDC_4_1		TDC 4 (1)
TDC_5_1		TDC 5 (1)
TDC_6_1		TDC 6 (1)
TDC_7_1		TDC 7 (1)
TDC_8_1		TDC 8 (1)
WorkMode_1		WorkMode (1)
PickUp_1		PickUp (1)
RstToothLag_1		Reset Tooth Lag Flag (1)
RPM_2		Engine Speed (2)
FiringAngle_2		Interpolated Firing Angle (2)
FiringFlagsH_2		Firing on Hold Flags (2)
FiringMaskH_2		Firing on Hold Mask (2)
ChargCurrCh1_2		Charging Current CH1 (2)
ChargCurrCh2_2		Charging Current CH2 (2)
ChargCurrCh3_2		Charging Current CH3 (2)
ChargCurrCh4_2		Charging Current CH4 (2)
ChargCurrCh5_2		Charging Current CH5 (2)
ChargCurrCh6_2		Charging Current CH6 (2)
ChargCurrCh7_2		Charging Current CH7 (2)
ChargCurrCh8_2		Charging Current CH8 (2)
DwellTimeCh1_2		Dwell Time CH1 (2)
DwellTimeCh2_2		Dwell Time CH2 (2)
DwellTimeCh3_2		Dwell Time CH3 (2)
DwellTimeCh4_2		Dwell Time CH4 (2)
DwellTimeCh5_2		Dwell Time CH5 (2)
DwellTimeCh6_2		Dwell Time CH6 (2)
DwellTimeCh7_2		Dwell Time CH7 (2)
DwellTimeCh8_2		Dwell Time CH8 (2)
FiringSeq1_2		Firing Sequence 1 (2)
FiringSeq2_2		Firing Sequence 2 (2)

FiringSeq3_2		Firing Sequence 3 (2)
FiringSeq4_2		Firing Sequence 4 (2)
FiringSeq5_2		Firing Sequence 5 (2)
FiringSeq6_2		Firing Sequence 6 (2)
FiringSeq7_2		Firing Sequence 7 (2)
FiringSeq8_2		Firing Sequence 8 (2)
Adjustment1_2		Individual Timing Adjustment 1 (2)
Adjustment2_2		Individual Timing Adjustment 2 (2)
Adjustment3_2		Individual Timing Adjustment 3 (2)
Adjustment4_2		Individual Timing Adjustment 4 (2)
Adjustment5_2		Individual Timing Adjustment 5 (2)
Adjustment6_2		Individual Timing Adjustment 6 (2)
Adjustment7_2		Individual Timing Adjustment 7 (2)
Adjustment8_2		Individual Timing Adjustment 8 (2)
V-Angle_2		V-Angle (2)
OffsetAngle_2		Offset Angle (2)
ComDwellTime_2		Common Dwell Time (2)
No.Cyl_2		Number of Cylinders (2)
OverSpeedLIM_2		Over-Speed Limit (2)
ChargCurrMax_2		Charging Current Maximum (2)
CombIdxThr_2		Combustion Index Threshold (2)
CurrDeviaThr_2		Current Deviation Threshold (2)
TDC_1_2		TDC 1 (2)
TDC_2_2		TDC 2 (2)
TDC_3_2		TDC 3 (2)
TDC_4_2		TDC 4 (2)
TDC_5_2		TDC 5 (2)
TDC_6_2		TDC 6 (2)
TDC_7_2		TDC 7 (2)
TDC_8_2		TDC 8 (2)
WorkMode_2		WorkMode (2)
PickUp_2		PickUp (2)
RstToothLag_2		Reset Tooth Lag Flag (2)
TDC 1 Slave		TDC 1 Slave (2)
TDC 2 Slave		TDC 2 Slave (2)
TDC 3 Slave		TDC 3 Slave (2)
TDC 4 Slave		TDC 4 Slave (2)
TDC 5 Slave		TDC 5 Slave (2)
TDC 6 Slave		TDC 6 Slave (2)
TDC 7 Slave		TDC 7 Slave (2)
TDC 8 Slave		TDC 8 Slave (2)
SL_FiringSeq 1		Slave Firing Sequence 1 (2)
SL_FiringSeq 2		Slave Firing Sequence 2 (2)
SL_FiringSeq 3		Slave Firing Sequence 3 (2)
SL_FiringSeq 4		Slave Firing Sequence 4 (2)
SL_FiringSeq 5		Slave Firing Sequence 5 (2)
SL_FiringSeq 6		Slave Firing Sequence 6 (2)

SL_FiringSeq 7		Slave Firing Sequence 7 (2)
SL_FiringSeq 8		Slave Firing Sequence 8 (2)
SL TimingAdj 1		SL_Individual Timing Adjustment 1 (2)
SL TimingAdj 2		SL_Individual Timing Adjustment 2 (2)
SL TimingAdj 3		SL_Individual Timing Adjustment 3 (2)
SL TimingAdj 4		SL_Individual Timing Adjustment 4 (2)
SL TimingAdj 5		SL_Individual Timing Adjustment 5 (2)
SL TimingAdj 6		SL_Individual Timing Adjustment 6 (2)
SL TimingAdj 7		SL_Individual Timing Adjustment 7 (2)
SL TimingAdj 8		SL_Individual Timing Adjustment 8 (2)
RPM_3		Engine Speed (3)
FiringAngle_3		Interpolated Firing Angle (3)
FiringFlagsH_3		Firing on Hold Flags (3)
FiringMaskH_3		Firing on Hold Mask (3)
ChargCurrCh1_3		Charging Current CH1 (3)
ChargCurrCh2_3		Charging Current CH2 (3)
ChargCurrCh3_3		Charging Current CH3 (3)
ChargCurrCh4_3		Charging Current CH4 (3)
ChargCurrCh5_3		Charging Current CH5 (3)
ChargCurrCh6_3		Charging Current CH6 (3)
ChargCurrCh7_3		Charging Current CH7 (3)
ChargCurrCh8_3		Charging Current CH8 (3)
DwellTimeCh1_3		Dwell Time CH1 (3)
DwellTimeCh2_3		Dwell Time CH2 (3)
DwellTimeCh3_3		Dwell Time CH3 (3)
DwellTimeCh4_3		Dwell Time CH4 (3)
DwellTimeCh5_3		Dwell Time CH5 (3)
DwellTimeCh6_3		Dwell Time CH6 (3)
DwellTimeCh7_3		Dwell Time CH7 (3)
DwellTimeCh8_3		Dwell Time CH8 (3)
WorkMode_3		WorkMode (3)
PickUp_3		PickUp (3)
RstToothLag_3		Reset Tooth Lag Flag (3)
HW_ID_2		Hardware ID (2)
FW_Version_2		Firmware Version (2)
HW_ID_3		Hardware ID (3)
FW_Version_3		Firmware Version (3)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Black TYCO connector	Controller
CAN H	14	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	16	N/A
Battery - (negative)	15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

## LEF200 Module 1

### Controllers that support the LEF200 Module 1:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MisFirCh1_1		Misfiring Flags Channel 1 (1)
MisFirCh2_1		Misfiring Flags Channel 2 (1)
MisFirCh3_1		Misfiring Flags Channel 3 (1)
MisFirCh4_1		Misfiring Flags Channel 4 (1)
MisFirCh5_1		Misfiring Flags Channel 5 (1)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



MisFirCh6_1		Misfiring Flags Channel 6 (1)
MisFirCh7_1		Misfiring Flags Channel 7 (1)
MisFirCh8_1		Misfiring Flags Channel 8 (1)
MisFirCh9_1		Misfiring Flags Channel 9 (1)
MisFirCh10_1		Misfiring Flags Channel 10 (1)
CurrDevCh1_1		Current Dev Flags Channel 1 (1)
CurrDevCh2_1		Current Dev Flags Channel 2 (1)
CurrDevCh3_1		Current Dev Flags Channel 3 (1)
CurrDevCh4_1		Current Dev Flags Channel 4 (1)
CurrDevCh5_1		Current Dev Flags Channel 5 (1)
CurrDevCh6_1		Current Dev Flags Channel 6 (1)
CurrDevCh7_1		Current Dev Flags Channel 7 (1)
CurrDevCh8_1		Current Dev Flags Channel 8 (1)
CurrDevCh9_1		Current Dev Flags Channel 9 (1)
CurrDevCh10_1		Current Dev Flags Channel 10 (1)
CurrLimCh1_1		Current Lim Flags Channel 1 (1)
CurrLimCh2_1		Current Lim Flags Channel 2 (1)
CurrLimCh3_1		Current Lim Flags Channel 3 (1)
CurrLimCh4_1		Current Lim Flags Channel 4 (1)
CurrLimCh5_1		Current Lim Flags Channel 5 (1)
CurrLimCh6_1		Current Lim Flags Channel 6 (1)
CurrLimCh7_1		Current Lim Flags Channel 7 (1)
CurrLimCh8_1		Current Lim Flags Channel 8 (1)
CurrLimCh9_1		Current Lim Flags Channel 9 (1)
CurrLimCh10_1		Current Lim Flags Channel 10 (1)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RPM_1		Engine Speed (1)
FiringAngle1_1		Interpolated Firing Angle (1)
FiringFlagsH_1		Firing on Hold Flags (1)
FiringMaskH_1		Firing on Hold Mask (1)
ChargCurrCh1_1		Charging Current CH1 (1)
ChargCurrCh2_1		Charging Current CH2 (1)
ChargCurrCh3_1		Charging Current CH3 (1)
ChargCurrCh4_1		Charging Current CH4 (1)
ChargCurrCh5_1		Charging Current CH5 (1)
ChargCurrCh6_1		Charging Current CH6 (1)
ChargCurrCh7_1		Charging Current CH7 (1)
ChargCurrCh8_1		Charging Current CH8 (1)
DwellTimeCh1_1		Dwell Time CH1 (1)
DwellTimeCh2_1		Dwell Time CH2 (1)
DwellTimeCh3_1		Dwell Time CH3 (1)
DwellTimeCh4_1		Dwell Time CH4 (1)
DwellTimeCh5_1		Dwell Time CH5 (1)
DwellTimeCh6_1		Dwell Time CH6 (1)

DwellTimeCh7_1		Dwell Time CH7 (1)
DwellTimeCh8_1		Dwell Time CH8 (1)
FiringSeq1_1		Firing Sequence 1 (1)
FiringSeq2_1		Firing Sequence 2 (1)
FiringSeq3_1		Firing Sequence 3 (1)
FiringSeq4_1		Firing Sequence 4 (1)
FiringSeq5_1		Firing Sequence 5 (1)
FiringSeq6_1		Firing Sequence 6 (1)
FiringSeq7_1		Firing Sequence 7 (1)
FiringSeq8_1		Firing Sequence 8 (1)
Adjustment1_1		Individual Adjustment 1 (1)
Adjustment2_1		Individual Adjustment 2 (1)
Adjustment3_1		Individual Adjustment 3 (1)
Adjustment4_1		Individual Adjustment 4 (1)
Adjustment5_1		Individual Adjustment 5 (1)
Adjustment6_1		Individual Adjustment 6 (1)
Adjustment7_1		Individual Adjustment 7 (1)
Adjustment8_1		Individual Adjustment 8 (1)
V-Angle_1		V-Angle (1)
OffsetAngle_1		Offset Angle (1)
ComDwellTime_1		Common Dwell Time (1)
No.Cyl_1		Number of Cylinders (1)
OverSpeedLIM_1		Over-Speed Limit (1)
ChargCurrMax_1		Charging Current Maximum (1)
ComblndxThr_1		Combustion Index Threshold (1)
CurrDeviaThr_1		Current Deviation Threshold (1)
HW_ID_1		Hardware ID (1)
FW_Version_1		Firmware Version (1)
TDC_1_1		TDC 1 (1)
TDC_2_1		TDC 2 (1)
TDC_3_1		TDC 3 (1)
TDC_4_1		TDC 4 (1)
TDC_5_1		TDC 5 (1)
TDC_6_1		TDC 6 (1)
TDC_7_1		TDC 7 (1)
TDC_8_1		TDC 8 (1)
WorkMode_1		WorkMode (1)
PickUp_1		PickUp (1)
RstToothLag_1		Reset Tooth Lag Flag (1)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
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While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Black TYCO connector	Controller
CAN H	14	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	13	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	16	N/A
Battery - (negative)	15	N/A
Key Switch	N/A	Any binary output configured as ECU PwrRelay
Analog Speed Control	N/A	SG OUT
Analog Speed Control	N/A	SG COM

## LEF200 Module 2

### Controllers that support the LEF200 Module 2:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MisFirCh1_2		Misfiring Flags Channel 1 (2)
MisFirCh2_2		Misfiring Flags Channel 2 (2)
MisFirCh3_2		Misfiring Flags Channel 3 (2)
MisFirCh4_2		Misfiring Flags Channel 4 (2)
MisFirCh5_2		Misfiring Flags Channel 5 (2)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

MisFirCh6_2		Misfiring Flags Channel 6 (2)
MisFirCh7_2		Misfiring Flags Channel 7 (2)
MisFirCh8_2		Misfiring Flags Channel 8 (2)
MisFirCh9_2		Misfiring Flags Channel 9 (2)
MisFirCh10_2		Misfiring Flags Channel 10 (2)
CurrDevCh1_2		Current Dev Flags Channel 1 (2)
CurrDevCh2_2		Current Dev Flags Channel 2 (2)
CurrDevCh3_2		Current Dev Flags Channel 3 (2)
CurrDevCh4_2		Current Dev Flags Channel 4 (2)
CurrDevCh5_2		Current Dev Flags Channel 5 (2)
CurrDevCh6_2		Current Dev Flags Channel 6 (2)
CurrDevCh7_2		Current Dev Flags Channel 7 (2)
CurrDevCh8_2		Current Dev Flags Channel 8 (2)
CurrDevCh9_2		Current Dev Flags Channel 9 (2)
CurrDevCh10_2		Current Dev Flags Channel 10 (2)
CurrLimCh1_2		Current Lim Flags Channel 1 (2)
CurrLimCh2_2		Current Lim Flags Channel 2 (2)
CurrLimCh3_2		Current Lim Flags Channel 3 (2)
CurrLimCh4_2		Current Lim Flags Channel 4 (2)
CurrLimCh5_2		Current Lim Flags Channel 5 (2)
CurrLimCh6_2		Current Lim Flags Channel 6 (2)
CurrLimCh7_2		Current Lim Flags Channel 7 (2)
CurrLimCh8_2		Current Lim Flags Channel 8 (2)
CurrLimCh9_2		Current Lim Flags Channel 9 (2)
CurrLimCh10_2		Current Lim Flags Channel 10 (2)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RPM_2		Engine Speed (2)
FiringAngle_2		Interpolated Firing Angle (2)
FiringFlagsH_2		Firing on Hold Flags (2)
FiringMaskH_2		Firing on Hold Mask (2)
ChargCurrCh1_2		Charging Current CH1 (2)
ChargCurrCh2_2		Charging Current CH2 (2)
ChargCurrCh3_2		Charging Current CH3 (2)
ChargCurrCh4_2		Charging Current CH4 (2)
ChargCurrCh5_2		Charging Current CH5 (2)
ChargCurrCh6_2		Charging Current CH6 (2)
ChargCurrCh7_2		Charging Current CH7 (2)
ChargCurrCh8_2		Charging Current CH8 (2)
DwellTimeCh1_2		Dwell Time CH1 (2)
DwellTimeCh2_2		Dwell Time CH2 (2)
DwellTimeCh3_2		Dwell Time CH3 (2)
DwellTimeCh4_2		Dwell Time CH4 (2)
DwellTimeCh5_2		Dwell Time CH5 (2)
DwellTimeCh6_2		Dwell Time CH6 (2)

DwellTimeCh7_2		Dwell Time CH7 (2)
DwellTimeCh8_2		Dwell Time CH8 (2)
FiringSeq1_2		Firing Sequence 1 (2)
FiringSeq2_2		Firing Sequence 2 (2)
FiringSeq3_2		Firing Sequence 3 (2)
FiringSeq4_2		Firing Sequence 4 (2)
FiringSeq5_2		Firing Sequence 5 (2)
FiringSeq6_2		Firing Sequence 6 (2)
FiringSeq7_2		Firing Sequence 7 (2)
FiringSeq8_2		Firing Sequence 8 (2)
Adjustment1_2		Individual Timing Adjustment 1 (2)
Adjustment2_2		Individual Timing Adjustment 2 (2)
Adjustment3_2		Individual Timing Adjustment 3 (2)
Adjustment4_2		Individual Timing Adjustment 4 (2)
Adjustment5_2		Individual Timing Adjustment 5 (2)
Adjustment6_2		Individual Timing Adjustment 6 (2)
Adjustment7_2		Individual Timing Adjustment 7 (2)
Adjustment8_2		Individual Timing Adjustment 8 (2)
V-Angle_2		V-Angle (2)
OffsetAngle_2		Offset Angle (2)
ComDwellTime_2		Common Dwell Time (2)
No.Cyl_2		Number of Cylinders (2)
OverSpeedLIM_2		Over-Speed Limit (2)
ChargCurrMax_2		Charging Current Maximum (2)
CombIndxThr_2		Combustion Index Threshold (2)
CurrDeviaThr_2		Current Deviation Threshold (2)
TDC_1_2		TDC 1 (2)
TDC_2_2		TDC 2 (2)
TDC_3_2		TDC 3 (2)
TDC_4_2		TDC 4 (2)
TDC_5_2		TDC 5 (2)
TDC_6_2		TDC 6 (2)
TDC_7_2		TDC 7 (2)
TDC_8_2		TDC 8 (2)
WorkMode_2		WorkMode (2)
PickUp_2		PickUp (2)
RstToothLag_2		Reset Tooth Lag Flag (2)
TDC 1 Slave		TDC 1 Slave (2)
TDC 2 Slave		TDC 2 Slave (2)
TDC 3 Slave		TDC 3 Slave (2)
TDC 4 Slave		TDC 4 Slave (2)
TDC 5 Slave		TDC 5 Slave (2)
TDC 6 Slave		TDC 6 Slave (2)
TDC 7 Slave		TDC 7 Slave (2)
TDC 8 Slave		TDC 8 Slave (2)
SL_FiringSeq 1		Slave Firing Sequence 1 (2)
SL_FiringSeq 2		Slave Firing Sequence 2 (2)

SL_FiringSeq 3		Slave Firing Sequence 3 (2)
SL_FiringSeq 4		Slave Firing Sequence 4 (2)
SL_FiringSeq 5		Slave Firing Sequence 5 (2)
SL_FiringSeq 6		Slave Firing Sequence 6 (2)
SL_FiringSeq 7		Slave Firing Sequence 7 (2)
SL_FiringSeq 8		Slave Firing Sequence 8 (2)
SL TimingAdj 1		SL_Individual Timing Adjustment 1 (2)
SL TimingAdj 2		SL_Individual Timing Adjustment 2 (2)
SL TimingAdj 3		SL_Individual Timing Adjustment 3 (2)
SL TimingAdj 4		SL_Individual Timing Adjustment 4 (2)
SL TimingAdj 5		SL_Individual Timing Adjustment 5 (2)
SL TimingAdj 6		SL_Individual Timing Adjustment 6 (2)
SL TimingAdj 7		SL_Individual Timing Adjustment 7 (2)
SL TimingAdj 8		SL_Individual Timing Adjustment 8 (2)
HW_ID_2		Hardware ID (2)
FW_Version_2		Firmware Version (2)

#### ECU analog inputs (controller's outputs)

Configuration Name	SPN	J1939 Name
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While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## Recommended wiring

Function	Black TYCO connector	Controller
<b>CAN H</b>	14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	16	N/A
<b>Battery - (negative)</b>	15	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## LEF200 Module 3

### Controllers that support the LEF200 Module 3:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
MisFirCh1_3		Misfiring Flags Channel 1 (3)
MisFirCh2_3		Misfiring Flags Channel 2 (3)
MisFirCh3_3		Misfiring Flags Channel 3 (3)
MisFirCh4_3		Misfiring Flags Channel 4 (3)
MisFirCh5_3		Misfiring Flags Channel 5 (3)
MisFirCh6_3		Misfiring Flags Channel 6 (3)
MisFirCh7_3		Misfiring Flags Channel 7 (3)
MisFirCh8_3		Misfiring Flags Channel 8 (3)
MisFirCh9_3		Misfiring Flags Channel 9 (3)
MisFirCh10_3		Misfiring Flags Channel 10 (3)
CurrDevCh1_3		Current Dev Flags Channel 1 (3)
CurrDevCh2_3		Current Dev Flags Channel 2 (3)
CurrDevCh3_3		Current Dev Flags Channel 3 (3)
CurrDevCh4_3		Current Dev Flags Channel 4 (3)
CurrDevCh5_3		Current Dev Flags Channel 5 (3)
CurrDevCh6_3		Current Dev Flags Channel 6 (3)
CurrDevCh7_3		Current Dev Flags Channel 7 (3)
CurrDevCh8_3		Current Dev Flags Channel 8 (3)
CurrDevCh9_3		Current Dev Flags Channel 9 (3)
CurrDevCh10_3		Current Dev Flags Channel 10 (3)
CurrLimCh1_3		Current Lim Flags Channel 1 (3)
CurrLimCh2_3		Current Lim Flags Channel 2 (3)
CurrLimCh3_3		Current Lim Flags Channel 3 (3)
CurrLimCh4_3		Current Lim Flags Channel 4 (3)
CurrLimCh5_3		Current Lim Flags Channel 5 (3)
CurrLimCh6_3		Current Lim Flags Channel 6 (3)
CurrLimCh7_3		Current Lim Flags Channel 7 (3)

CurrLimCh8_3		Current Lim Flags Channel 8 (3)
CurrLimCh9_3		Current Lim Flags Channel 9 (3)
CurrLimCh10_3		Current Lim Flags Channel 10 (3)
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RPM_3		Engine Speed (3)
FiringAngle_3		Interpolated Firing Angle (3)
FiringFlagsH_3		Firing on Hold Flags (3)
FiringMaskH_3		Firing on Hold Mask (3)
ChargCurrCh1_3		Charging Current CH1 (3)
ChargCurrCh2_3		Charging Current CH2 (3)
ChargCurrCh3_3		Charging Current CH3 (3)
ChargCurrCh4_3		Charging Current CH4 (3)
ChargCurrCh5_3		Charging Current CH5 (3)
ChargCurrCh6_3		Charging Current CH6 (3)
ChargCurrCh7_3		Charging Current CH7 (3)
ChargCurrCh8_3		Charging Current CH8 (3)
DwellTimeCh1_3		Dwell Time CH1 (3)
DwellTimeCh2_3		Dwell Time CH2 (3)
DwellTimeCh3_3		Dwell Time CH3 (3)
DwellTimeCh4_3		Dwell Time CH4 (3)
DwellTimeCh5_3		Dwell Time CH5 (3)
DwellTimeCh6_3		Dwell Time CH6 (3)
DwellTimeCh7_3		Dwell Time CH7 (3)
DwellTimeCh8_3		Dwell Time CH8 (3)
WorkMode_3		WorkMode (3)
PickUp_3		PickUp (3)
RstToothLag_3		Reset Tooth Lag Flag (3)
HW_ID_3		Hardware ID (3)
FW_Version_3		Firmware Version (3)
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>	
Source	SpeedReq RPM <sup>1</sup>
Convert	NO

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

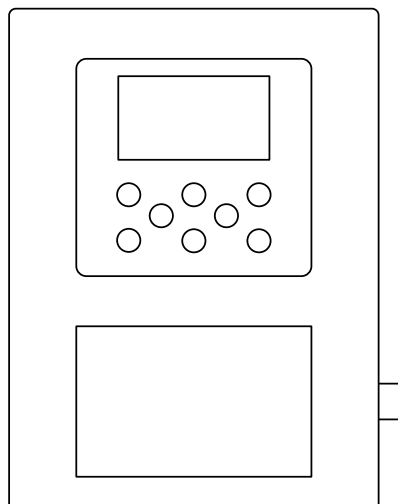
### Recommended wiring

Function	Black TYCO connector	Controller
<b>CAN H</b>	14	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	13	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	16	N/A
<b>Battery - (negative)</b>	15	N/A
<b>Key Switch</b>	N/A	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	N/A	SG OUT
<b>Analog Speed Control</b>	N/A	SG COM

## 6.8.4 Motortech devices support

ECU Type	Device type supported
<a href="#">MIC 850 (page 893)</a>	MIC 3, MIC4, MIC4+, MIC5, MIC5+, MIC6, MIC 850
<a href="#">Varistep 1 (page 1075)</a>	Varistep 1
<a href="#">Varistep 2 (page 1077)</a>	Varistep 2

### MIC 850



**Controllers that support the MIC 850:**Refer to [Compatibility Table \(page 10\)](#)**Available parameters**

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
FiringEnabled		Firing enabled
Ready		Ready
Firing		Firing
FiringLocked		Firing locked
WaitFor0RPM		Wait for 0 RPM
Self-test		Self-test
ScheduleA/B		Schedule A/B
GPO1		GPO1
Operation		Operation
Configuration		Configuration
Synchro		Synchronization
OperationError		Operational Error
SystemError		System Error
PrimaryConO		Condensed Primary Open
PrimaryConS		Condensed Primary Short
SecondaryConO		Condensed Secondary Open
SecondaryConS		Condensed Secondary Short
StartPhase		Start Phase
GPI1		GPI1
AnaCurrentFail		Analog Current Input Failure
AnaVoltageFail		Analog Voltage Input Failure
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
PrimEnrgyCyl1		Primary Energy Cyl. 1
PrimEnrgyCyl2		Primary Energy Cyl. 2
PrimEnrgyCyl3		Primary Energy Cyl. 3
PrimEnrgyCyl4		Primary Energy Cyl. 4
PrimEnrgyCyl5		Primary Energy Cyl. 5
PrimEnrgyCyl6		Primary Energy Cyl. 6
PrimEnrgyCyl7		Primary Energy Cyl. 7
PrimEnrgyCyl8		Primary Energy Cyl. 8
PrimEnrgyCyl9		Primary Energy Cyl. 9
PrimEnrgyCyl10		Primary Energy Cyl. 10
PrimEnrgyCyl11		Primary Energy Cyl. 11
PrimEnrgyCyl12		Primary Energy Cyl. 12
PrimEnrgyCyl13		Primary Energy Cyl. 13

PrimEngyCyl14		Primary Energy Cyl. 14
PrimEngyCyl15		Primary Energy Cyl. 15
PrimEngyCyl16		Primary Energy Cyl. 16
PrimEngyCyl17		Primary Energy Cyl. 17
PrimEngyCyl18		Primary Energy Cyl. 18
PrimEngyCyl19		Primary Energy Cyl. 19
PrimEngyCyl20		Primary Energy Cyl. 20
PrimEngyCyl21		Primary Energy Cyl. 21
PrimEngyCyl22		Primary Energy Cyl. 22
PrimEngyCyl23		Primary Energy Cyl. 23
PrimEngyCyl24		Primary Energy Cyl. 24
MisRateCyl1		Misfire Rate Cyl. 1
MisRateCyl2		Misfire Rate Cyl. 2
MisRateCyl3		Misfire Rate Cyl. 3
MisRateCyl4		Misfire Rate Cyl. 4
MisRateCyl5		Misfire Rate Cyl. 5
MisRateCyl6		Misfire Rate Cyl. 6
MisRateCyl7		Misfire Rate Cyl. 7
MisRateCyl8		Misfire Rate Cyl. 8
MisRateCyl9		Misfire Rate Cyl. 9
MisRateCyl10		Misfire Rate Cyl. 10
MisRateCyl11		Misfire Rate Cyl. 11
MisRateCyl12		Misfire Rate Cyl. 12
MisRateCyl13		Misfire Rate Cyl. 13
MisRateCyl14		Misfire Rate Cyl. 14
MisRateCyl15		Misfire Rate Cyl. 15
MisRateCyl16		Misfire Rate Cyl. 16
MisRateCyl17		Misfire Rate Cyl. 17
MisRateCyl18		Misfire Rate Cyl. 18
MisRateCyl19		Misfire Rate Cyl. 19
MisRateCyl20		Misfire Rate Cyl. 20
MisRateCyl21		Misfire Rate Cyl. 21
MisRateCyl22		Misfire Rate Cyl. 22
MisRateCyl23		Misfire Rate Cyl. 23
MisRateCyl24		Misfire Rate Cyl. 24
Cyl21IgnTiming <sub>1,2,3,4,5,6,7</sub>		Engine Cylinder 21 Ignition Timing
Cyl22IgnTiming <sub>1,2,3,4,5,6,7</sub>		Engine Cylinder 22 Ignition Timing
Cyl23IgnTiming <sub>1,2,3,4,5,6,7</sub>		Engine Cylinder 23 Ignition Timing
Cyl24IgnTiming <sub>1,2,3,4,5,6,7</sub>		Engine Cylinder 24 Ignition Timing
SecVoltCyl1 <sub>1,2,3,4,5,6,7</sub> *	1294	Secondary Voltage Cylinder 1
SecVoltCyl2 <sub>1,2,3,4,5,6,7</sub> *	1295	Secondary Voltage Cylinder 2
SecVoltCyl3 <sub>1,2,3,4,5,6,7</sub> *	1296	Secondary Voltage Cylinder 3
SecVoltCyl4 <sub>1,2,3,4,5,6,7</sub> *	1297	Secondary Voltage Cylinder 4
SecVoltCyl5 <sub>1,2,3,4,5,6,7</sub> *	1298	Secondary Voltage Cylinder 5
SecVoltCyl6 <sub>1,2,3,4,5,6,7</sub> *	1299	Secondary Voltage Cylinder 6
SecVoltCyl7 <sub>1,2,3,4,5,6,7</sub> *	1300	Secondary Voltage Cylinder 7
SecVoltCyl8 <sub>1,2,3,4,5,6,7</sub> *	1301	Secondary Voltage Cylinder 8
SecVoltCyl9 <sub>1,2,3,4,5,6,7</sub> *	1302	Secondary Voltage Cylinder 9

SecVoltCyl10 <sub>1,2,3,4,5,6,7*</sub>	1303	Secondary Voltage Cylinder 10
SecVoltCyl11 <sub>1,2,3,4,5,6,7*</sub>	1304	Secondary Voltage Cylinder 11
SecVoltCyl12 <sub>1,2,3,4,5,6,7*</sub>	1305	Secondary Voltage Cylinder 12
SecVoltCyl13 <sub>1,2,3,4,5,6,7*</sub>	1306	Secondary Voltage Cylinder 13
SecVoltCyl14 <sub>1,2,3,4,5,6,7*</sub>	1307	Secondary Voltage Cylinder 14
SecVoltCyl15 <sub>1,2,3,4,5,6,7*</sub>	1308	Secondary Voltage Cylinder 15
SecVoltCyl16 <sub>1,2,3,4,5,6,7*</sub>	1309	Secondary Voltage Cylinder 16
SecVoltCyl17 <sub>1,2,3,4,5,6,7*</sub>	1310	Secondary Voltage Cylinder 17
SecVoltCyl18 <sub>1,2,3,4,5,6,7*</sub>	1311	Secondary Voltage Cylinder 18
SecVoltCyl19 <sub>1,2,3,4,5,6,7*</sub>	1312	Secondary Voltage Cylinder 19
SecVoltCyl20 <sub>1,2,3,4,5,6,7*</sub>	1313	Secondary Voltage Cylinder 20
SecVoltCyl21 <sub>1,2,3,4,5,6,7*</sub>	1314	Secondary Voltage Cylinder 21
SecVoltCyl22 <sub>1,2,3,4,5,6,7*</sub>	1315	Secondary Voltage Cylinder 22
SecVoltCyl23 <sub>1,2,3,4,5,6,7*</sub>	1316	Secondary Voltage Cylinder 23
SecVoltCyl24 <sub>1,2,3,4,5,6,7*</sub>	1317	Secondary Voltage Cylinder 24
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
Cyl17IgnTiming <sub>1,2,3,4,5,6,7</sub>	1429	Engine Cylinder 17 Ignition Timing
Cyl18IgnTiming <sub>1,2,3,4,5,6,7</sub>	1430	Engine Cylinder 18 Ignition Timing
Cyl19IgnTiming <sub>1,2,3,4,5,6,7</sub>	1431	Engine Cylinder 19 Ignition Timing
Cyl20IgnTiming <sub>1,2,3,4,5,6,7</sub>	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1433	Engine Desired Ignition Timing 1
IgnitionTime <sub>1,2,3,4,5,6,7</sub>	1436	Engine Actual Ignition Timing
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	SPN	J1939 Name
ECUFaultReset		ECU Fault Reset
GlobTimingCorr		Global Timing Correction
SparkIntensA		Spark Intensity A
SparkIntensB		Spark Intensity B

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Required MICT tool configuration

**Note:** In the Miscellaneous->Communication settings of the MICT configuration tool the Communication has to be selected as CAN J1939 and source address has to be set to 52 and bitrate to 250kbps. Failing to do so will result in not being able to communicate with the MIC ECU.

## Recommended wiring

Function	Terminals	Controller
CAN H	CAN High	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	CAN Low	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	24V +	N/A
Battery - (negative)	24V -	N/A

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector** on page 56.

## 6.8.5 Woodward devices support

ECU Type	Device type
<a href="#">IC920 (page 898)</a>	IC920 ignition controller
<a href="#">ProAct ISC (page 733)</a>	ProAct ISC speed control module

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## IC920

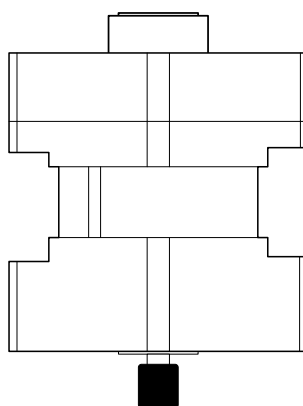


Image 5.230 IC920

### Controllers that support the IC920

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Go/No Go		Go/No Go
ErrMisGearSign		Error Missing Ring Gear Signal
ErrMisRstSign		Error Missing Reset Signal
ErrMisCmshSign		Error Missing Camshaft Signal
ErrNumGearTth		Error Number of Gear Teeth
UnkwnAplicatin		Unknown Engine Application Code
Over-speedShdn		Over-speed Shutdown
E2PROMChckErr		E2PROM Checksum Error
TimingOutOfRange		Global Timing out of Range
UnkwnTimingEnr		Unknown Global Timing or Energy Level
IndvTimeOutRng		Individual Timing out of Range
Self-Test Shdn		Self-Test Shutdown
OpnPrimRateExd		Open Primary Rate Exceeded
Wait for 0 RMP		Wait for 0 RPM
OpnPrim-Ch 1		Open Primary, Channel 1
OpnPrim-Ch 2		Open Primary, Channel 2
OpnPrim-Ch 3		Open Primary, Channel 3
OpnPrim-Ch 4		Open Primary, Channel 4
OpnPrim-Ch 5		Open Primary, Channel 5
OpnPrim-Ch 6		Open Primary, Channel 6
OpnPrim-Ch 7		Open Primary, Channel 7
OpnPrim-Ch 8		Open Primary, Channel 8
OpnPrim-Ch 9		Open Primary, Channel 9
OpnPrim-Ch 10		Open Primary, Channel 10
OpnPrim-Ch 11		Open Primary, Channel 11
OpnPrim-Ch 12		Open Primary, Channel 12

OpnPrim-Ch 13		Open Primary, Channel 13
OpnPrim-Ch 14		Open Primary, Channel 14
OpnPrim-Ch 15		Open Primary, Channel 15
OpnPrim-Ch 16		Open Primary, Channel 16
OpnPrim-Ch 17		Open Primary, Channel 17
OpnPrim-Ch 18		Open Primary, Channel 18
OpnPrim-Ch 19		Open Primary, Channel 19
OpnPrim-Ch 20		Open Primary, Channel 20
OpnPrim-Ch 21		Open Primary, Channel 21
OpnPrim-Ch 22		Open Primary, Channel 22
OpnPrim-Ch 23		Open Primary, Channel 23
OpnPrim-Ch 24		Open Primary, Channel 24
WrnMisGearSign		Warning Missing Ring Gear Signal
WrnMisRstSign		Warning Missing Reset Signal
WrnMisCmshSign		Warning Missing Camshaft Signal
SCR Fault Odd		SCR Fault Odd
SCR Fault Even		SCR Fault Even
Odd Ener Lvl		Odd Energy Level out of Range
Even Ener Lvl		Even Energy Level out of Range
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
Misfires /sec		Misfires /sec
ActIgnTime		Actual Ignition Timing
Cyl 1IgnTiming <sub>1,2,3,4,5,6,7</sub>	1413	Engine Cylinder 1 Ignition Timing
Cyl 2IgnTiming <sub>1,2,3,4,5,6,7</sub>	1414	Engine Cylinder 2 Ignition Timing
Cyl 3IgnTiming <sub>1,2,3,4,5,6,7</sub>	1415	Engine Cylinder 3 Ignition Timing
Cyl 4IgnTiming <sub>1,2,3,4,5,6,7</sub>	1416	Engine Cylinder 4 Ignition Timing
Cyl 5IgnTiming <sub>1,2,3,4,5,6,7</sub>	1417	Engine Cylinder 5 Ignition Timing
Cyl 6IgnTiming <sub>1,2,3,4,5,6,7</sub>	1418	Engine Cylinder 6 Ignition Timing
Cyl 7IgnTiming <sub>1,2,3,4,5,6,7</sub>	1419	Engine Cylinder 7 Ignition Timing
Cyl 8IgnTiming <sub>1,2,3,4,5,6,7</sub>	1420	Engine Cylinder 8 Ignition Timing
Cyl 9IgnTiming <sub>1,2,3,4,5,6,7</sub>	1421	Engine Cylinder 9 Ignition Timing
Cyl 10IgnTiming <sub>1,2,3,4,5,6,7</sub>	1422	Engine Cylinder 10 Ignition Timing
Cyl 11IgnTiming <sub>1,2,3,4,5,6,7</sub>	1423	Engine Cylinder 11 Ignition Timing
Cyl 12IgnTiming <sub>1,2,3,4,5,6,7</sub>	1424	Engine Cylinder 12 Ignition Timing
Cyl 13IgnTiming <sub>1,2,3,4,5,6,7</sub>	1425	Engine Cylinder 13 Ignition Timing
Cyl 14IgnTiming <sub>1,2,3,4,5,6,7</sub>	1426	Engine Cylinder 14 Ignition Timing
Cyl 15IgnTiming <sub>1,2,3,4,5,6,7</sub>	1427	Engine Cylinder 15 Ignition Timing
Cyl 16IgnTiming <sub>1,2,3,4,5,6,7</sub>	1428	Engine Cylinder 16 Ignition Timing
Cyl 17IgnTiming <sub>1,2,3,4,5,6,7</sub>	1429	Engine Cylinder 17 Ignition Timing
Cyl 18IgnTiming <sub>1,2,3,4,5,6,7</sub>	1430	Engine Cylinder 18 Ignition Timing
Cyl 19IgnTiming <sub>1,2,3,4,5,6,7</sub>	1431	Engine Cylinder 19 Ignition Timing
Cyl 20IgnTiming <sub>1,2,3,4,5,6,7</sub>	1432	Engine Cylinder 20 Ignition Timing
IgnitionTime3 <sub>1,2,4,5,6,7</sub>	1435	Engine Desired Ignition Timing 3

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
IndvTimeCyl 1		Individual Timing Cylinders 1
IndvTimeCyl 2		Individual Timing Cylinders 2
IndvTimeCyl 3		Individual Timing Cylinders 3
IndvTimeCyl 4		Individual Timing Cylinders 4
IndvTimeCyl 5		Individual Timing Cylinders 5
IndvTimeCyl 6		Individual Timing Cylinders 6
IndvTimeCyl 7		Individual Timing Cylinders 7
IndvTimeCyl 8		Individual Timing Cylinders 8
IndvTimeCyl 9		Individual Timing Cylinders 9
IndvTimeCyl 10		Individual Timing Cylinders 10
IndvTimeCyl 11		Individual Timing Cylinders 11
IndvTimeCyl 12		Individual Timing Cylinders 12
IndvTimeCyl 13		Individual Timing Cylinders 13
IndvTimeCyl 14		Individual Timing Cylinders 14
IndvTimeCyl 15		Individual Timing Cylinders 15
IndvTimeCyl 16		Individual Timing Cylinders 16
IndvTimeCyl 17		Individual Timing Cylinders 17
IndvTimeCyl 18		Individual Timing Cylinders 18
IndvTimeCyl 19		Individual Timing Cylinders 19
IndvTimeCyl 20		Individual Timing Cylinders 20
IndvTimeCyl 21		Individual Timing Cylinders 21
IndvTimeCyl 22		Individual Timing Cylinders 22
IndvTimeCyl 23		Individual Timing Cylinders 23
IndvTimeCyl 24		Individual Timing Cylinders 24
IC92xGlobTime		IC-92x Global Timing
OddEnergy		Odd Energy
EvenEnergy		Even Energy

## Controller's analog output for speed control configuration

There is no speed control over datalink available for this particular ECU.

## Recommended wiring








Function	Controller
<b>RS485 A</b>	RS485 – RS485 A
<b>RS485 COM</b>	RS485 – RS485 COM
<b>RS485 B</b>	RS485 – RS485 B
<b>Battery + (positive)</b>	N/A
<b>Battery - (negative)</b>	N/A

**Note:** Check that RS485 bus terminating resistors or appropriate jumpers are connected.

## Aftertreatment lamp

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).



Woodward IC920 aftertreatment lamps							
	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.9 Instrumentation

### 6.9.1 Bender devices support

Device Type	Variants
<a href="#">Isometer (page 901)</a>	Isometer iso175

#### Isometer

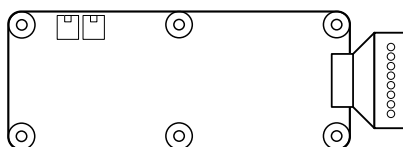


Image 5.231 Isometer

#### Controllers that support the Isometer

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
WarningsAlarms		Device error active
HV_pos Con.		HV_pos connection failure
HV_neg Con.		HV_neg connection failure
Earth con.		Earth connection failure
Iso Alarm		Iso Alarm
Iso Warning		Iso Warning
Iso Outdated		Iso Outdated
Unbalance		Unbalance Alarm
Undervoltage		Undervoltage Alarm
UnsafeToStart		Unsafe to Start
Earthlift open		Earthlift open
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name

ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
R_iso_correct		R_iso_corrected
R_iso_status		R_iso_status
StatMeasCount		Status: Measurement Counter
DeviceActivity		Device Activity
R_iso_neg		R_iso_neg
R_iso_pos		R_iso_pos
R_iso_original		R_iso_original
IsoMeasCount		Isolation: Measurement Counter
Isolat. Qual.		Isolation: Quality
HV System		HV System
HV_NegToEarth		HV_neg to earth
HV_PosToEarth		HV_pos to earth
VoltMeasCount		Voltage: Measurement counter
Capacity Meas		Capacity: Measured Value
CapMeasCount		Capacity: Measurement Counter
Unbalance		Unbalance: Measured Value
UnbMeasCount		Unbalance: Measurement Counter
Meas Freq		Voltage: Measured Frequency
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	Connector	Controller
<b>CAN H</b>	5	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	N/A	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	6	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	HV-1,2	N/A
<b>Battery - (negative)</b>	HV+1,2	N/A

## 6.9.2 Sonceboz devices support

ECU Type	Device type
<a href="#">Turbo Waste Gate Actuator (page 903)</a>	Turbo Waste Gate Actuator

## Turbo Waste Gate Actuator

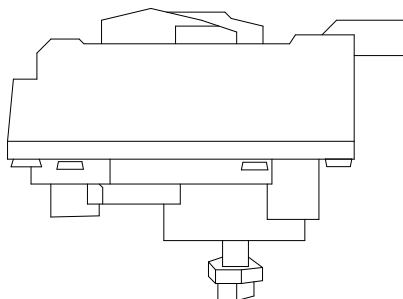


Image 5.232 Turbo Waste Gate Actuator

### Controllers that support the Conext XW:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ActState		Actuator State
ActShaftPos		Actuator Actual Shaft Position
ActIntTemp		Actuator Internal Temperature
ActFaultCode		Actuator Fault Code
ActStepShPos		Actuator Step Shaft Position
ActMotorEffort		Actuator Motor Effort
ActFaultCode1		Actuator Fault Code 1
ActFaultCode2		Actuator Fault Code 2
ActFaultCode3		Actuator Fault Code 3
ActFaultCode4		Actuator Fault Code 4
ActFaultCode5		Actuator Fault Code 5
ActFaultCode6		Actuator Fault Code 6
ActFaultCode7		Actuator Fault Code 7
ActFaultCode8		Actuator Fault Code 8
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
ActuatorPosReq		Actuator Position Request
ActuatorCmdSt		Actuator Commanded State

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

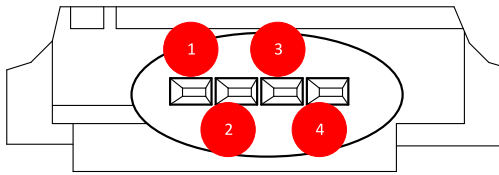


Image 5.233 Connector pins layout

Function	4 pin connector	Controller
CAN A	4	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN B	3	CAN1 (extension modules/J1939) – CAN L
Batery + (positive)	1	N/A
Battery - (negative)	2	N/A

## 6.10 Inverters - Photovoltaic

### 6.10.1 ABB devices support

ECU Type	Device type
<a href="#">Trio (page 904)</a>	ABB Solar inverter TRIO-20.0(27.6)-TL-OUTD
<a href="#">PVS100 (page 905)</a>	ABB PVS 100
<a href="#">PVI 10.0 (page 906)</a>	ABB PVI 10.0
<a href="#">PCS100 BESS (page 973)</a>	ABB PCS100 BESS

### Trio

#### Controllers that support the Trio:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Grid Current	Grid Current	1000	
Grid Frequency	Grid Frequency	2000	

Grid Voltage	Grid Voltage	1000	
Reactive Power	Reactive Power	1000	
kWh	kWh	5000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	Active Power Limit	5000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## PVS100

### Controllers that support the PVS100:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Limit Enable	Limit Enable	1000	
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power	Active Power	1000	
Nominal Active Power	Nominal Active Power	2000	
Reactive Power	Reactive Power	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	Active Power Limit	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM

RS485 B	B	RS485 B
---------	---	---------

## PVI 10.0

### Controllers that support the PVI10.0:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	2000	
Booster Temperature	Booster Temperature	2000	
Grid Cos	Grid Cos	2000	
Grid Current	Grid Current	2000	
Grid Frequency	Grid Frequency	2000	
Grid Voltage	Grid Voltage	2000	
Input 1 Current	Input 1 Current	2000	
Input 1 Power	Input 1 Power	2000	
Input 1 Voltage	Input 1 Voltage	2000	
Input 2 Current	Input 2 Current	2000	
Input 2 Power	Input 2 Power	2000	
Input 2 Voltage	Input 2 Voltage	2000	
Inverter Temperature	Inverter Temperature	2000	
Status 0	Status 0	2000	
Status 1	Status 1	2000	
Status 4	Status 4	2000	
kWh	kWh	2000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit Percentage	Active Power Limit Percentage	10000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

### Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.10.2 Canadian Solar devices support

Device Type	Variants	Source documentation version
<a href="#">PV Inverter (page 907)</a>	CSI 15-120K series	v20240514

### PV Inverter

#### Controllers that support the PV Inverter

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power Deload Pct Setting	Active Power Deload Pct Setting	1000	
Active Power Deloading Fixed	Active Power Deloading Fixed	1000	
Ascending Power Gradient	Ascending Power Gradient	1000	
BOOST Module Temperature	BOOST Module Temperature	1000	
Controller Parameter Group Sel	Controller Parameter Group Sel	1000	
Daily Power Generation	Daily Power Generation	1000	
Export Limit Flag	Export Limit Flag	1000	
Export Limit Mode Setting	Export Limit Mode Setting	1000	
Export Limit Power Setting	Export Limit Power Setting	1000	
Grid Code	Grid Code	1000	
Internal Alarm	Internal Alarm	1000	
Inverter Module Temperature	Inverter Module Temperature	1000	
Inverter Operation Status	Inverter Operation Status	1000	
Month Energy	Month Energy	1000	
On-Off Command Feedback	On-Off Command Feedback	1000	
Overfreq Drop Load Gradient	Overfreq Drop	1000	

	Load Gradient		
PV Connection Mode	PV Connection Mode	1000	
PV Total Input Power	PV Total Input Power	1000	
Phase L1 Current	Phase L1 Current	1000	
Phase L1 DC Current	Phase L1 DC Current	1000	
Phase L1 Voltage	Phase L1 Voltage	1000	
Phase L2 Current	Phase L2 Current	1000	
Phase L2 DC Current	Phase L2 DC Current	1000	
Phase L2 Voltage	Phase L2 Voltage	1000	
Phase L3 Current	Phase L3 Current	1000	
Phase L3 DC Current	Phase L3 DC Current	1000	
Phase L3 Voltage	Phase L3 Voltage	1000	
Pos and Neg Bus Voltage	Pos and Neg Bus Voltage	1000	
Power Drop Gradient	Power Drop Gradient	1000	
Power Factor	Power Factor	1000	
Rated Power	Rated Power	1000	
Reactive Power Deloading Fixed	Reactive Power Deloading Fixed	1000	
Reactive Power Pct Setting	Reactive Power Pct Setting	1000	
Remote Active Power Setting Fdb	Remote Active Power Setting Fdb	1000	
Remote PF Setting Feedback	Remote PF Setting Feedback	1000	
Remote Reactive Pwr Setting Fdb	Remote Reactive Pwr Setting Fdb	1000	
Total Active Power	Total Active Power	1000	
Total Power Generation	Total Power Generation	1000	
Total Reactive Power	Total Reactive Power	1000	
Underfreq Lift Load Gradient	Underfreq Lift Load Gradient	1000	
Week Energy	Week Energy	1000	
Year Energy	Year Energy	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Act Power Deload Pct Setting Cmd	Act Power Deload Pct Setting Cmd	1000	
Active Power Deloading Fixed Cmd	Active Power Deloading Fixed Cmd	1000	
Active Power Mode Setting	Active Power	1000	



	Mode Setting		
Export Limit Mode Setting Cmd	Export Limit Mode Setting Cmd	1000	
Export Limit Power Setting Cmd	Export Limit Power Setting Cmd	1000	
Island Protection Enable Setting	Island Protection Enable Setting	1000	
On-Off Command	On-Off Command	1000	
Power Factor Setting	Power Factor Setting	1000	
Reactive Power Deloadi Fixed Cmd	Reactive Power Deloadi Fixed Cmd	1000	
Reactive Power Mode Setting	Reactive Power Mode Setting	1000	
Reactive Power Pct Setting Cmd	Reactive Power Pct Setting Cmd	1000	
Remote Active Power Setting	Remote Active Power Setting	1000	
Remote PF Setting	Remote PF Setting	1000	
Remote Reactive Power Setting	Remote Reactive Power Setting	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.10.3 Chint devices support

ECU Type	Device type	Source documentation version
<a href="#">BEES (page 977)</a>	Series ECB200KTL	v1.9
<a href="#">PV (page 910)</a>	PV Inverters SCH100KTL, SCH125KTL, SCH275KTL	v9.03

## PV

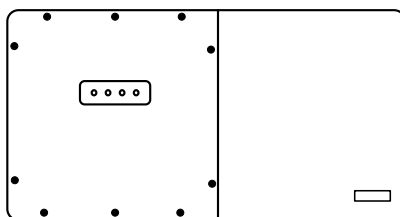


Image 5.234 PV 100/125kW Inverter

### Controllers that support the PV:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	3000	
Apparent power	Apparent power	3000	
Current L1	Current L1	3000	
Current L2	Current L2	3000	
Current L3	Current L3	3000	
DC Current	DC Current	3000	
DC Voltage	DC Voltage	3000	
Fault0	Fault0	3000	
Fault1	Fault1	3000	
Fault2	Fault2	3000	
Fault3	Fault3	3000	
Fault4	Fault4	3000	
Frequency	Frequency	3000	
Inverter efficiency	Inverter efficiency	3000	
Inverter type	Inverter type	3000	
Reactive power	Reactive power	3000	
Total DC input energy	Total DC input energy	3000	
Voltage L1/L2	Voltage L1/L2	3000	
Voltage L2/L3	Voltage L2/L3	3000	
Voltage L3/L1	Voltage L3/L1	3000	
kWh	kWh	3000	
kWh Today	kWh Today	3000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power	1000	

	Limit		
Reactive Power Limit	Reactive Power Limit	1000	
Set PF	Set PF	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RJ45 connector	Controller
Ethernet	A	RJ45 (Modbus TCP)

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

For correct function of RS485, terminal resistor might needed to be switched ON only on the last inverter in the BUS chain.

## 6.10.4 Delta Electronics devices support

ECU Type	Device type	Source documentation version
<a href="#">M series (page 911)</a>	Delta inverters from the M series family (RPI-3 M6A/M8A/M10A/M15A/M20A/M30A/M50A/M66H/M88H)	v1.0
<a href="#">PCS100HV (page 979)</a>	Delta battery inverters PCS100HV BESS	v1.1.8
<a href="#">Site Controller (page 852)</a>	Smart Grid Communication Site-Controller	v.0.0.6

### M series

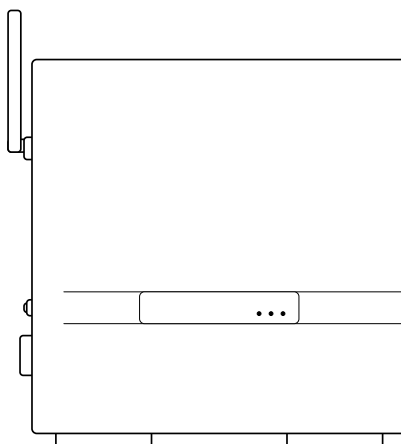


Image 5.235 M series

### Controllers that support the M series:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Reactive Power	Reactive Power	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485	Controller
RS485 A	3 -Data+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	4 -Data-	RS485 B
+ (positive)	1-VCC	N/A
- (negative)	2-GND	N/A

## 6.10.5 DEYE devices support

ECU Type	Device type	Source documentation version
<a href="#">PV Inverter (page 912)</a>	SUN-70..110K-G03 series, Modbus specs V100	v1.0.0

## PV Inverter

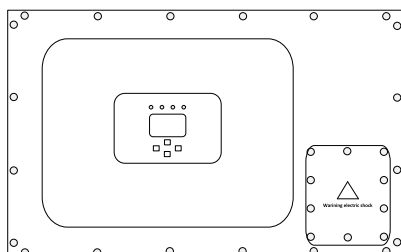


Image 5.236 Deye SUN PV Inverter

## Controllers that support the PV Inverter:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Lithium battery wake up sign	Lithium battery wake up sign	2000	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
GFDI Enable	GFDI Enable	1000	
Generator Connected to the Grid set	Gen Connected to the Grid set	1000	
Grid Frequency set	Grid Frequency set	1000	
Island Protection Enable	Island Protection Enable	1000	
MPPT Number	MPPT Number	1000	
RISO Enable	RISO Enable	1000	
Switch On And Off Enable	Switch On And Off Enable	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Batt Capacity	Batt Capacity	2000	
Battery Capacity	Battery Capacity	4000	
Battery Output Current	Battery Output Current	4000	
Battery Output Power	Battery Output Power	4000	
Battery Temperature	Battery Temperature	4000	
Battery Voltage	Battery Voltage	4000	
DC Current 1	DC Current 1	2000	
DC Current 2	DC Current 2	2000	
DC Current 3	DC Current 3	2000	
DC Current 4	DC Current 4	2000	
DC Voltage 1	DC Voltage 1	2000	
DC Voltage 2	DC Voltage 2	2000	
DC Voltage 3	DC Voltage 3	2000	
DC Voltage 4	DC Voltage 4	2000	
Energy Management Model	Energy Management Model	2000	
Grid Connected PF	Grid Connected PF	2000	
Grid Line Voltage AB	Grid Line Voltage AB	4000	
Grid Line Voltage BC	Grid Line Voltage BC	4000	
Grid Line Voltage CA	Grid Line Voltage CA	4000	
Grid Phase Voltage A	Grid Phase Voltage A	4000	

Grid Phase Voltage B	Grid Phase Voltage B	4000	
Grid Phase Voltage C	Grid Phase Voltage C	4000	
Grid Side - Inside Total Apprent Power	Grid - Inside Total Real Power	4000	
Grid Side Inner Current A	Grid Side Inner Current A	4000	
Grid Side Inner Current B	Grid Side Inner Current B	4000	
Grid Side Inner Current C	Grid Side Inner Current C	4000	
Grid Side Total Power	Grid Side Total Power	2000	
Grid Standard	Grid Standard	2000	
Inverter Frequency	Inverter Frequency	2000	
Inverter Output Current Ph A	Inverter Output Current Ph A	2000	
Inverter Output Current Ph B	Inverter Output Current Ph B	2000	
Inverter Output Current Ph C	Inverter Output Current Ph C	2000	
Inverter Output Power Ph A	Inverter Output Power Ph A	2000	
Inverter Output Power Ph B	Inverter Output Power Ph B	2000	
Inverter Output Power Ph C	Inverter Output Power Ph C	2000	
Inverter Output Total Apparent Power	Inverter Output Total Real Power	2000	
Inverter Output Total Power	Inverter Output Total Power	2000	
Inverter Output Voltage Ph A	Inverter Output Voltage Ph A	2000	
Inverter Output Voltage Ph B	Inverter Output Voltage Ph B	2000	
Inverter Output Voltage Ph C	Inverter Output Voltage Ph C	2000	
Max A Charge	Max A Charge	2000	
Max A Discharge	Max A Discharge	2000	
Output PF Value	Output PF Value	4000	
Output Voltage Level	Output Voltage Level	2000	
PV1 Input Power	PV1 Input Power	2000	
PV2 Input Power	PV2 Input Power	2000	
PV3 Input Power	PV3 Input Power	2000	
PV4 Input Power	PV4 Input Power	2000	
Run State	Run State	4000	
Total Load Power	Total Load Power	4000	
Total PV Power	Total PV Power	4000	

ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Regulation	Active Power Regulation	1000	
Apparent Power Regulation	Apparent Power Regulation	1000	
Grid Standard set	Grid Standard set	1000	
Output PF Value set	Output PF Value set	1000	
Output Voltage Level set	Output Voltage Level set	1000	
Reactive Power Regulation	Reactive Power Regulation	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

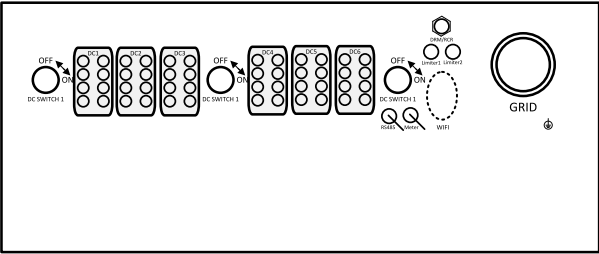


Image 5.237 Deye bottom panel

### Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.10.6 Fronius devices support

ECU Type	Device type
<a href="#">Simo/Primo/Tauro (page 916)</a>	Fronius Simo, Fronius Primo, Fronius Tauro

## Simo/Primo/Tauro

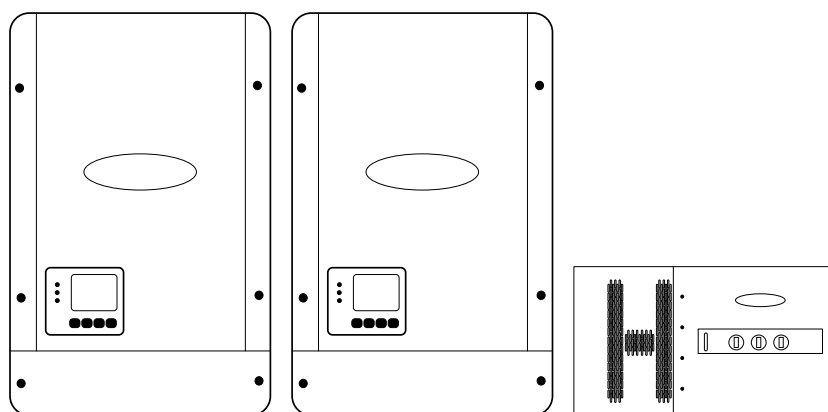


Image 5.238 Fronius Simo / Primo / Tauro

### Controllers that support the Simo/Primo/Tauro

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Active Power Limit Enable	Active Power Limit Enable	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
ARtg	ARtg	2000
Active Power	Active Power	1000
AhrRtg	AhrRtg	2000
Conn	Conn	5000
Conn_RvrtTms	Conn_RvrtTms	5000
Conn_WinTms	Conn_WinTms	5000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000



EvtVnd4	EvtVnd4	1000
Frequency	Frequency	1000
MaxChaRte	MaxChaRte	2000
MaxDisChaRte	MaxDisChaRte	2000
Nominal Active Power	Nominal Active Power	2000
OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
OutPFSet_RmpTms	OutPFSet_RmpTms	5000
OutPFSet_RvrtTms	OutPFSet_RvrtTms	5000
OutPFSet_WinTms	OutPFSet_WinTms	5000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
St	St	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
VARtg	VARtg	2000
VArAvalPct	VArAvalPct	5000
VArMaxPct	VArMaxPct	5000
VArPct_Ena	VArPct_Ena	5000
VArPct_Mod	VArPct_Mod	5000
VArPct_RmpTms	VArPct_RmpTms	5000
VArPct_RvrtTms	VArPct_RvrtTms	5000
VArPct_WinTms	VArPct_WinTms	5000
VArRtgQ1	VArRtgQ1	2000
VArRtgQ2	VArRtgQ2	2000
VArRtgQ3	VArRtgQ3	2000
VArRtgQ4	VArRtgQ4	2000
VArWMaxPct	VArWMaxPct	5000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WHRtg	WHRtg	2000
WMaxLimPct	WMaxLimPct	5000
WMaxLimPct_RmpTms	WMaxLimPct_RmpTms	5000

WMaxLimPct_RvrtTms	WMaxLimPct_RvrtTms	5000
WMaxLimPct_WinTms	WMaxLimPct_WinTms	5000
WMaxLim_Ena	WMaxLim_Ena	5000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit	Active Power Limit	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000

## Recommended wiring

<b>Function</b>		<b>Controller</b>
Ethernet		Ethernet

## 6.10.7 GoodWe devices support

ECU Type	Device type	Source documentation version
<a href="#">Inverters SDT, DT, MT (page 926)</a>	GoodWe PV Inverters SDT, DT, MT	v1.4
<a href="#">Inverters ET, BT (page 918)</a>	GoodWe PV Inverter ET, BT	v1.7

## Inverters ET, BT

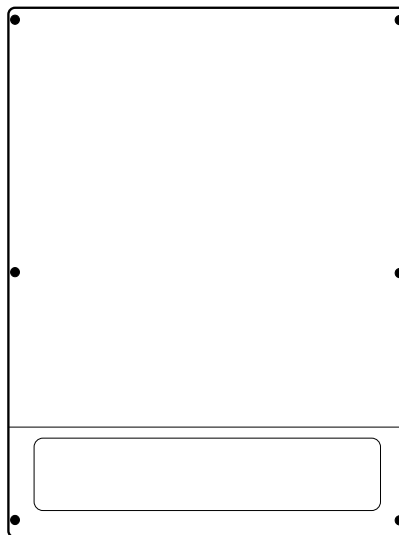


Image 5.239 Invertor ET

## Controllers that support the Inverters ET, BT:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>

ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
AC ActivePower	AC ActivePower	500	
AC ApparentPower	AC ApparentPower	500	
AC ReactivePower	AC ReactivePower	500	
AC output type	AC output type	10000	
Air Temperature	Air Temperature	500	
Alarm Cell Over Voltage ID	Alarm Cell Over Voltage ID	1000	
Alarm Cell Under Voltage ID	Alarm Cell Under Voltage ID	1000	
Alarm Cell Voltage Differ ID	Alarm Cell Voltage Differ ID	1000	
Alarm Charge Current ID	Alarm Charge Current ID	1000	
Alarm Differ temperature ID	Alarm Differ temperature ID	1000	
Alarm Discharge Current ID	Alarm Discharge Current ID	1000	
Alarm Over temperature ID	Alarm Over temperature ID	1000	
Alarm SOC Lower ID	Alarm SOC Lower ID	1000	
Alarm Under temperature ID	Alarm Under temperature ID	1000	
BMS Allow Charge Power	BMS Allow Charge Power	1000	
BMS Allow Discharge Power	BMS Allow Discharge Power	1000	
BMS Battery strings	BMS Battery strings	1000	
BMS Charge Imax	BMS Charge Imax	1000	
BMS Discharge Imax	BMS Discharge Imax	1000	
BMS Error Code H	BMS Error Code H	1000	
BMS Error Code L	BMS Error Code L	1000	
BMS Flag	BMS Flag	1000	
BMS Pack Temperature	BMS Pack Temperature	1000	
BMS Relay Status	BMS Relay Status	1000	
BMS Shutdown Fault Code	BMS Shutdown Fault Code	1000	
BMS Software Version	BMS Software Version	1000	
BMS State Of Charge (SOC)	BMS SOC	1000	
BMS State Of Health (SOH)	BMS SOH	1000	
BMS Status	BMS Status	1000	
BMS Warning Code H	BMS Warning Code H	1000	
BMS Warning Code L	BMS Warning Code L	1000	
BMS Work Mode	BMS Work Mode	1000	
BUS Voltage	BUS Voltage	500	
BattTypeIndex	BattTypeIndex	1000	
Battery AVG Charge Hours (rd)	Battery AVG Charge Hours	5000	
Battery AVG Charge Voltage (rd)	Battery AVG Charge Voltage	5000	
Battery BMS Current Limit Coeff (rd)	Battery BMS Current Limit Coeff	5000	

Battery Float Current (rd)	Battery Float Current	5000	
Battery Float Time (rd)	Battery Float Time	5000	
Battery Float Voltage (rd)	Battery Float Voltage	5000	
Battery Hardware Version	Battery Hardware Version	1000	
Battery Module Number	Battery Module Number	1000	
Battery Protocol Code (rd)	Battery Protocol Code	5000	
Battery Ready Enable	Battery Ready Enable	1000	
Battery SOC Protection (rd)	Battery SOC Protection	5000	
Battery Strings	Battery Strings	500	
Battery Type Index ARM (rd)	Battery Type Index ARM	5000	
Battery protocol	Battery protocol	1000	
Battery1 Current	Battery1 Current	1000	
Battery1 Mode	Battery1 Mode	500	
Battery1 SOC	Battery1 SOC	1000	
Battery2 Current	Battery2 Current	1000	
Battery2 SOC	Battery2 SOC	1000	
Battery3 Current	Battery3 Current	1000	
Battery3 SOC	Battery3 SOC	1000	
Battery4 Current	Battery4 Current	1000	
Battery4 SOC	Battery4 SOC	1000	
Battery5 Current	Battery5 Current	1000	
Battery5 SOC	Battery5 SOC	1000	
Battery6 Current	Battery6 Current	1000	
Battery6 SOC	Battery6 SOC	1000	
Battery7 Current	Battery7 Current	1000	
Battery7 SOC	Battery7 SOC	1000	
Battery8 Current	Battery8 Current	1000	
Battery8 SOC	Battery8 SOC	1000	
CPLD warning code	CPLD warning code	500	
Clear All Economic Mode (rd)	Clear All Economic Mode	5000	
DC Voltage Output (rd)	DC Voltage Output	5000	
DOD Holding (rd)	DOD Holding	5000	
DRM Status	DRM Status	1000	
Derate Flag	Derate Flag	500	
Derate frozen power	Derate frozen power	500	
DiagStatusH	DiagStatusH	500	
DiagStatusL	DiagStatusL	500	
Dispatch Mode	Dispatch Mode	5000	
Dispatch Power	Dispatch Power	5000	
Dispatch SOC	Dispatch SOC	5000	
Dispatch Switch	Dispatch Switch	5000	
E Today Charge	E Today Charge	500	
E Today Discharge	E Today Discharge	500	
E Today Exp	E Today Exp	500	
E Today Imp	E Today Imp	500	
E Today Load	E Today Load	500	
E Today PV	E Today PV	500	

E Total Charge	E Total Charge	500	
E Total Discharge	E Total Discharge	500	
E Total Exp	E Total Exp	500	
E Total Grid Charge	E Total Grid Charge	5000	
E Total Imp	E Total Imp	500	
E Total Load	E Total Load	500	
E Total PV	E Total PV	500	
EMS Power Mode (rd)	EMS Power Mode	5000	
EMS Power Settings (rd)	EMS Power Settings	5000	
Eco Mode 1 Battery Power Pct (rd)	Eco Mode 1 Battery Power Pct	5000	
Eco Mode 1 End Time (rd)	Eco Mode 1 End Time	5000	
Eco Mode 1 Start Time (rd)	Eco Mode 1 Start Time	5000	
Eco Mode 1 Week Day (rd)	Eco Mode 1 Week Day	5000	
Eco Mode 2 Battery Power Pct (rd)	Eco Mode 2 Battery Power Pct	5000	
Eco Mode 2 End Time (rd)	Eco Mode 2 End Time	5000	
Eco Mode 2 Start Time (rd)	Eco Mode 2 Start Time	5000	
Eco Mode 2 Week Day (rd)	Eco Mode 2 Week Day	5000	
Eco Mode 3 Battery Power Pct (rd)	Eco Mode 3 Battery Power Pct	5000	
Eco Mode 3 End Time (rd)	Eco Mode 3 End Time	5000	
Eco Mode 3 Start Time (rd)	Eco Mode 3 Start Time	5000	
Eco Mode 3 Week Day (rd)	Eco Mode 3 Week Day	5000	
Eco Mode 4 Battery Power Pct (rd)	Eco Mode 4 Battery Power Pct	5000	
Eco Mode 4 End Time (rd)	Eco Mode 4 End Time	5000	
Eco Mode 4 Start Time (rd)	Eco Mode 4 Start Time	5000	
Eco Mode 4 Week Day (rd)	Eco Mode 4 Week Day	5000	
Error Message	Error Message	500	
F Back-Up Load R	F Back-Up Load R	500	
F Back-Up Load S	F Back-Up Load S	500	
F Back-Up Load T	F Back-Up Load T	500	
F Grid R	F Grid R	500	
F Grid S	F Grid S	500	
F Grid T	F Grid T	500	
Fast Charging Enabled (rd)	Fast Charging Enabled	5000	
Fast Charging Power (rd)	Fast Charging Power	5000	
Fast Charging SOC (rd)	Fast Charging SOC	5000	
Feed Power Limit Coefficient	Feed Power Limit Coefficient	5000	
Function Bit Value	Function Bit Value	500	
Grid Export Enabled (rd)	Grid Export Enabled	5000	
Grid Export Limit (rd)	Grid Export Limit	5000	
Grid Mode	Grid Mode	500	
I Back-Up Load R	I Back-Up Load R	500	
I Back-Up Load S	I Back-Up Load S	500	
I Back-Up Load T	I Back-Up Load T	500	

I Battery	I Battery	500	
I Grid R	I Grid R	500	
I Grid S	I Grid S	500	
I Grid T	I Grid T	500	
I PV 1	I PV 1	500	
I PV 2	I PV 2	500	
I PV 3	I PV 3	500	
I PV 4	I PV 4	500	
Inverter Power Factor	Inverter Power Factor	5000	
Load Control Mode (rd)	Load Control Mode	5000	
Load Control SOC (rd)	Load Control SOC	5000	
Load Control Switch (rd)	Load Control Switch	5000	
Load Mode R	Load Mode R	500	
Load Mode S	Load Mode S	500	
Load Mode T	Load Mode T	500	
Manufacture Code (rd)	Manufacture Code	5000	
ManufacturerCode	ManufacturerCode	500	
Maximum Cell Temperature	Maximum Cell Temperature	1000	
Maximum Cell Temperature ID	Maximum Cell Temperature ID	1000	
Maximum Cell Voltage	Maximum Cell Voltage	1000	
Maximum Cell Voltage ID	Maximum Cell Voltage ID	1000	
Meter Active Power R	Meter Active Power R	500	
Meter Active Power R (32)	Meter Active Power R (32)	500	
Meter Active Power S	Meter Active Power S	500	
Meter Active Power S (32)	Meter Active Power S (32)	500	
Meter Active Power T	Meter Active Power T	500	
Meter Active Power T (32)	Meter Active Power T (32)	500	
Meter Apparent Power R (32)	Meter Apparent Power R (32)	500	
Meter Apparent Power S (32)	Meter Apparent Power S (32)	500	
Meter Apparent Power T (32)	Meter Apparent Power T (32)	500	
Meter Communicate Status	Meter Communicate Status	500	
Meter E Total Exp	Meter E Total Exp	500	
Meter E Total Imp	Meter E Total Imp	500	
Meter Frequency	Meter Frequency	500	
Meter PF R	Meter PF R	500	
Meter PF S	Meter PF S	500	
Meter PF T	Meter PF T	500	
Meter Power Factor	Meter Power Factor	500	
Meter Reactive Power R (32)	Meter Reactive Power R (32)	500	
Meter Reactive Power S (32)	Meter Reactive Power S (32)	500	
Meter Reactive Power T (32)	Meter Reactive Power T (32)	500	

Meter Total Active Power	Meter Total Active Power	500	
Meter Total Active Power (32)	Meter Total Active Power (32)	500	
Meter Total Apparent Power (32)	Meter Total Apparent Power (32)	500	
Meter Total Reactive Power	Meter Total Reactive Power	500	
Meter Total Reactive Power (32)	Meter Total Reactive Power (32)	500	
Minimum Cell Temperature	Minimum Cell Temperature	1000	
Minimum Cell Temperature ID	Minimum Cell Temperature ID	1000	
Minimum Cell Voltage	Minimum Cell Voltage	1000	
Minimum Cell Voltage ID	Minimum Cell Voltage ID	1000	
Modbus protocol version	Modbus protocol version	10000	
Module Temperature	Module Temperature	500	
NBUS Voltage	NBUS Voltage	500	
Operation Mode	Operation Mode	500	
P Back-Up Load R	P Back-Up Load R	500	
P Back-Up Load S	P Back-Up Load S	500	
P Back-Up Load T	P Back-Up Load T	500	
P Battery	P Battery	500	
P Grid R	P Grid R	500	
P Grid S	P Grid S	500	
P Grid T	P Grid T	500	
P Load R	P Load R	500	
P Load S	P Load S	500	
P Load T	P Load T	500	
P PV 1	P PV 1	500	
P PV 2	P PV 2	500	
P PV 3	P PV 3	500	
P PV 4	P PV 4	500	
PV Meter DC Power	PV Meter DC Power	5000	
PV Mode	PV Mode	500	
Phase R Power Limit	Phase R Power Limit	5000	
Phase S Power Limit	Phase S Power Limit	5000	
Phase T Power Limit	Phase T Power Limit	5000	
RTC DD-hh	RTC DD-hh	500	
RTC YY-MM	RTC YY-MM	500	
RTC mm-ss	RTC mm-ss	500	
Radiator Temperature	Radiator Temperature	500	
Rated power	Rated power	10000	
SOC Start To Force Charge (rd)	SOC Start To Force Charge	5000	
SOC Stop To Force Charge (rd)	SOC Stop To Force Charge	5000	
Safety Country	Safety Country	500	
Total Back-Up Load	Total Back-Up Load	500	
Total INV Power	Total INV Power	500	

Total Load Power	Total Load Power	500	
UPS Load Percent	UPS Load Percent	500	
V Back-Up Load R	V Back-Up Load R	500	
V Back-Up Load S	V Back-Up Load S	500	
V Back-Up Load T	V Back-Up Load T	500	
V Battery	V Battery	500	
V Grid R	V Grid R	500	
V Grid S	V Grid S	500	
V Grid T	V Grid T	500	
V PV 1	V PV 1	500	
V PV 2	V PV 2	500	
V PV 3	V PV 3	500	
V PV 4	V PV 4	500	
Warning Code	Warning Code	500	
Work Mode	Work Mode	500	
bMeterConnectStatus	bMeterConnectStatus	500	
h Total	h Total	500	
wChargerCtrlFlg	wChargerCtrlFlg	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Backup Supply	Backup Supply	500	
Battery AVG Charge Hours	Battery AVG Charge Hours	500	
Battery AVG Charge Voltage	Battery AVG Charge Voltage	500	
Battery BMS Current Limit Coeff	Battery BMS Current Limit Coeff	500	
Battery Capacity	Battery Capacity	500	
Battery Charge Current	Battery Charge Current	500	
Battery Charge Voltage	Battery Charge Voltage	500	
Battery Discharge Current	Battery Discharge Current	500	
Battery Discharge Depth	Battery Discharge Depth	500	
Battery Discharge Voltage	Battery Discharge Voltage	500	
Battery Dischge Depth off-line	Battery Dischge Depth off-line	500	
Battery Dischge Volt off-line	Battery Dischge Volt off-line	500	
Battery Float Current	Battery Float Current	500	
Battery Float Time	Battery Float Time	500	
Battery Float Voltage	Battery Float Voltage	500	
Battery Modules	Battery Modules	500	
Battery Protocol Code	Battery Protocol Code	500	
Battery SOC Protection	Battery SOC Protection	500	
Battery Type Index ARM	Battery Type Index	500	



	ARM		
Clear All Economic Mode	Clear All Economic Mode	500	
Cold Start	Cold Start	500	
Communication Address	Communication Address	500	
DC Voltage Output	DC Voltage Output	500	
DOD Holding	DOD Holding	500	
DRED/Remote Shutdown	DRED/Remote Shutdown	500	
EMS Power Mode	EMS Power Mode	500	
EMS Power Settings	EMS Power Settings	500	
Eco Mode 1 Battery Power Pct	Eco Mode 1 Battery Power Pct	500	
Eco Mode 1 End Time	Eco Mode 1 End Time	500	
Eco Mode 1 Start Time	Eco Mode 1 Start Time	500	
Eco Mode 1 Week Day	Eco Mode 1 Week Day	500	
Eco Mode 2 Battery Power Pct	Eco Mode 2 Battery Power Pct	500	
Eco Mode 2 End Time	Eco Mode 2 End Time	500	
Eco Mode 2 Start Time	Eco Mode 2 Start Time	500	
Eco Mode 2 Week Day	Eco Mode 2 Week Day	500	
Eco Mode 3 Battery Power Pct	Eco Mode 3 Battery Power Pct	500	
Eco Mode 3 End Time	Eco Mode 3 End Time	500	
Eco Mode 3 Start Time	Eco Mode 3 Start Time	500	
Eco Mode 3 Week Day	Eco Mode 3 Week Day	500	
Eco Mode 4 Battery Power Pct	Eco Mode 4 Battery Power Pct	500	
Eco Mode 4 End Time	Eco Mode 4 End Time	500	
Eco Mode 4 Start Time	Eco Mode 4 Start Time	500	
Eco Mode 4 Week Day	Eco Mode 4 Week Day	500	
Fast Charging Enabled	Fast Charging Enabled	500	
Fast Charging Power	Fast Charging Power	500	
Fast Charging SOC	Fast Charging SOC	500	
Grid Export Enabled	Grid Export Enabled	500	
Grid Export Limit	Grid Export Limit	500	
Load Control Mode	Load Control Mode	500	
Load Control SOC	Load Control SOC	500	
Load Control Switch	Load Control Switch	500	
Manufacture Code	Manufacture Code	500	

PE-N Relay	PE-N Relay	500	
Power Factor	Power Factor	500	
RTC DD-hh Set	RTC DD-hh Set	500	
RTC YY-MM Set	RTC YY-MM Set	500	
RTC mm-ss Set	RTC mm-ss Set	500	
SOC Start To Force Charge	SOC Start To Force Charge	500	
SOC Stop To Force Charge	SOC Stop To Force Charge	500	
Shadow Scan	Shadow Scan	500	
Unbalanced Output	Unbalanced Output	500	
Work Mode Setting	Work Mode Setting	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	EMS port	Controller
<b>RS485 A</b>	1	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	2	RS485 B

## Inverters SDT, DT, MT

### Controllers that support the Inverter SDT, DT, MT:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Active Power Limit Enable	Active Power Limit Enable	500	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit AIN	Active Power Limit AIN	600	
Active Power	Active Power	500	
BUS Voltage	BUS Voltage	500	
Current Day Energy	E-Today	500	
Current L1	Current L1	500	
Current L2	Current L2	500	
Current L3	Current L3	500	
DC Current PV1	DC Current PV1	500	
DC Current PV2	DC Current PV2	500	

DC Voltage PV1	DC Voltage PV1	500	
DC Voltage PV2	DC Voltage PV2	500	
Error Code	Error Code	500	
Error Message H	Error Message H	500	
Error Message L	Error Message L	500	
Feeding Power to Grid	Power to Grid	500	
Frequency L1	Frequency L1	500	
Frequency L2	Frequency L2	500	
Frequency L3	Frequency L3	500	
Functions Value	Functions Value	500	
Grid Current Phase 1	C-Grid Phase1	500	
Grid Current Phase 2	C-Grid Phase2	500	
Grid Current Phase 3	C-Grid Phase3	500	
Grid Frequency Phase 1	F-Grid Phase1	500	
Grid Frequency Phase 2	F-Grid Phase2	500	
Grid Frequency Phase 3	F-Grid Phase3	500	
Grid Voltage Phase 1	V-Grid Phase1	500	
Grid Voltage Phase 2	V-Grid Phase2	500	
Grid Voltage Phase 3	V-Grid Phase3	500	
Heatsink Temperature	T-Heatsink	500	
Internal Temperature	T-Internal	500	
NBUS Voltage	NBUS Voltage	500	
PV Current FT	PV Current FT	500	
PV Current ST	PV Current ST	500	
PV Current String 1	C-String 1	500	
PV Current String 10	C-String 10	500	
PV Current String 11	C-String 11	500	
PV Current String 12	C-String 12	500	
PV Current String 13	C-String 13	500	
PV Current String 14	C-String 14	500	
PV Current String 15	C-String 15	500	
PV Current String 16	C-String 16	500	
PV Current String 18	C-String 18	500	
PV Current String 19	C-String 19	500	
PV Current String 2	C-String 2	500	
PV Current String 20	C-String 20	500	
PV Current String 3	C-String 3	500	
PV Current String 4	C-String 4	500	
PV Current String 5	C-String 5	500	
PV Current String 6	C-String 6	500	
PV Current String 7	C-String 7	500	
PV Current String 8	C-String 8	500	
PV Current String 9	C-String 9	500	
PV Mode	PV Mode	500	
PV Voltage FT	PV Voltage FT	500	
PV Voltage ST	PV Voltage ST	500	
Running Status	Running Status	500	

Today Energy to Grid	E-Today	500	
Total Energy	E-Total	500	
Total Energy to Grid H	E-Total to Grid H	500	
Total Energy to Grid L	E-Total to Grid L	500	
Total Hours	H-Total	500	
Total Hours to Grid H	H-Total to Grid H	500	
Total Hours to Grid L	H-Total to Grid L	500	
Voltage Fault Value PV2	Voltage Fault PV2	500	
Voltage L1	Voltage L1	500	
Voltage L2	Voltage L2	500	
Voltage L3	Voltage L3	500	
Warning Code	Warning Code	500	
Work Mode	Work Mode	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	Active Power Limit	500	
Active Power limit (no Switch)	Active Power limit (no Switch)	500	
Range of Active Power Adjust	Range of Active Power Adjust	500	
Range of Reactive Power Adjust	Range of Reactive Power Adjust	500	
Reactive Power adjust	Reactive Power adjust	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
<b>RS485 A</b>	1	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	2	RS485 B

## 6.10.8 Growatt devices support

ECU Type	Device type	Source documentation version
<a href="#">PV Inverter v3.10 (page 929)</a>	Growatt PV Inverter RS485RTU v3.10	v3.10 (older)
<a href="#">PV Inverter v1.20 (page 929)</a>	Growatt PV Inverter RS485RTU v1.20	v1.27 (newer)

## PV Inverter v3.10

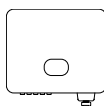


Image 5.240 PV Inverter

### Controllers that support the PV Inverter v3.10:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	5000	
DCact PWR1	DCact PWR1	10000	
DCact PWR2	DCact PWR2	10000	
Reactive Power	Reactive Power	5000	
kWh	kWh	20000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	5000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

### Recommended wiring

Function	6 pin connector	Controller
RS485 A+	3	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B-	4	RS485 B

## PV Inverter v1.20

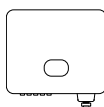


Image 5.241 PV Inverter

### Controllers that support the PV Inverter v1.20:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Fault BitCode	Fault BitCode	2000	
Grid Frequency	Grid Frequency	2000	
Inverter Status	Inverter Status	2000	
Inverter Temperature	Inverter Temperature	2000	
PV1 Input Current	PV1 Input Current	2000	
PV1 Input Power	PV1 Input Power	2000	
PV1 Voltage	PV1 Voltage	2000	
PV2 Input Current	PV2 Input Current	2000	
PV2 Input Power	PV2 Input Power	2000	
PV2 Voltage	PV2 Voltage	2000	
PV3 Input Current	PV3 Input Current	2000	
PV3 Input Power	PV3 Input Power	2000	
PV3 Voltage	PV3 Voltage	2000	
PV4 Input Current	PV4 Input Current	2000	
PV4 Input Power	PV4 Input Power	2000	
PV4 Voltage	PV4 Voltage	2000	
PV5 Input Current	PV5 Input Current	2000	
PV5 Input Power	PV5 Input Power	2000	
PV5 Voltage	PV5 Voltage	2000	
PV6 Input Current	PV6 Input Current	2000	
PV6 Input Power	PV6 Input Power	2000	
PV6 Voltage	PV6 Voltage	2000	
PV7 Input Current	PV7 Input Current	2000	
PV7 Input Power	PV7 Input Power	2000	
PV7 Voltage	PV7 Voltage	2000	
PV8 Input Current	PV8 Input Current	2000	
PV8 Input Power	PV8 Input Power	2000	
PV8 Voltage	PV8 Voltage	2000	
Reactive Power	Reactive Power	1000	
Today generate energy	Today generate energy	2000	
Total Running Hours	Total Running Hours	2000	
kWh	kWh	2000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	

Reactive Power Limit	Reactive Power Limit	1000	
Set PF	Set PF	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	6 pin connector	Controller
RS485 A+	3	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B-	4	RS485 B

## 6.10.9 Huawei devices support

ECU Type	Device type	Source documentation version
<a href="#">SUN2000 (page 933)</a>	Huawei SUN2000 (V200R002)	v2
<a href="#">Smart Logger 2000 (page 931)</a>	Huawei SmartLogger 2000	v1
<a href="#">Smart Logger 3000 EMI (page 936)</a>	Huawei SmartLogger 3000 Enviromental Monitor Instrument application	v3
<a href="#">Smart Logger 3000 ESS (page 1000)</a>	Huawei SmartLogger 3000 ESS application (e.g. LUNA2000)	v3
<a href="#">Smart Logger 3000 PM (page 937)</a>	Huawei SmartLogger 3000 Power Meter application	v3
<a href="#">Smart Logger 3000 PV (page 939)</a>	Huawei SmartLogger 3000 PV application	v3

## Smart Logger 2000

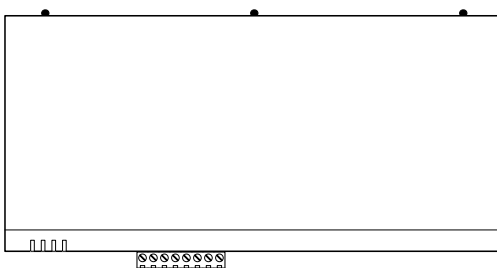


Image 5.242 Smart Logger 2000

## Controllers that support the Smart Logger 2000:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register

ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	500	
CO2 Reduction	CO2 Reduction	500	
Input Power	Input Power	500	
Inverter Efficiency	Inverter Efficiency	2000	
Nominal Active Power	Nominal Active Power	2000	
Reactive Power	Reactive Power	500	
kWh	kWh	2000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000			
Source	SpeedReq RPM <sup>1</sup>		
Convert	NO		
Limits	N/A	N/A	
	N/A	N/A	

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile			
Source	Speed Request		
Convert	YES		
Limits	0.0 %	Min eng. speed (800RPM)	
	100.0 %	Max eng. speed (2100RPM)	

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



Recommended wiring

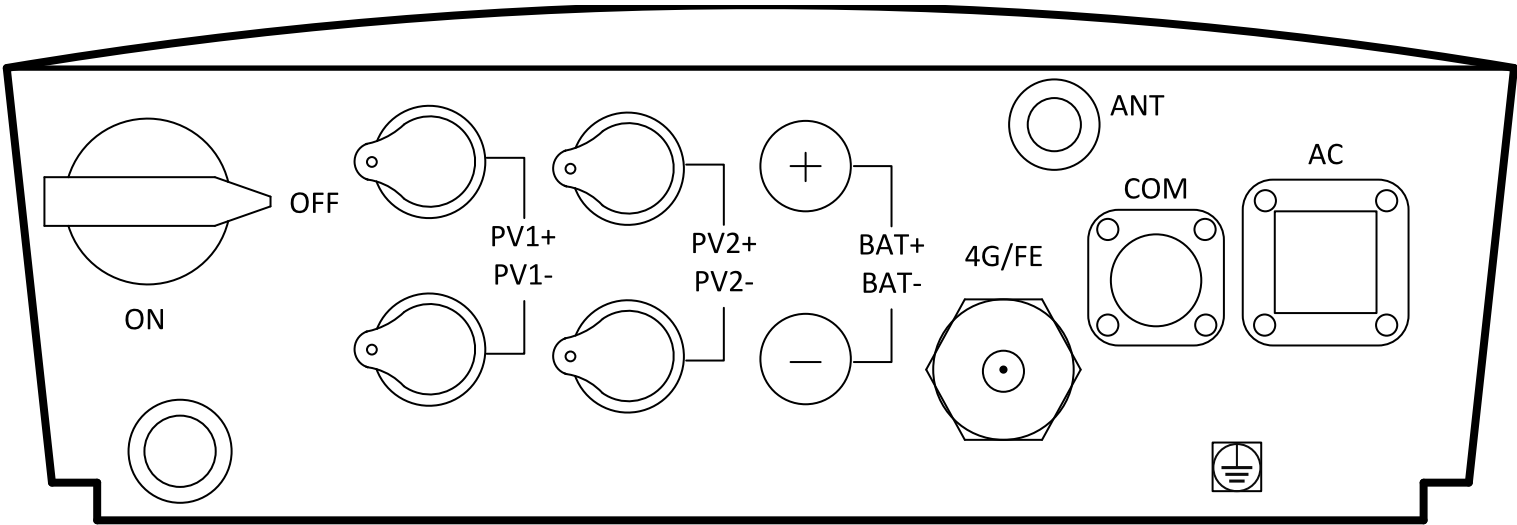


Image 5.243 Smart logger 2000 connectors

Function	COM port 1-6	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

SUN2000

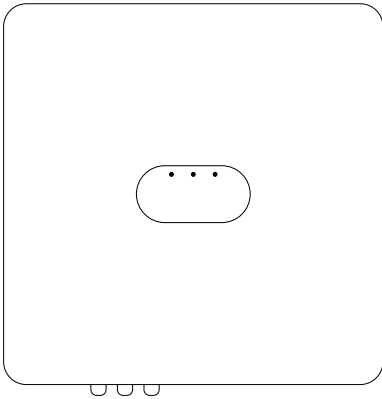


Image 5.244 SUN2000

Controllers that support the SUN2000:

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Grid Conn with derating (ext)	Grid Conn with derating (ext)	1000	
Grid Conn with derating (int)	Grid Conn with derating (int)	1000	

Grid Connection	Grid Connection	1000	
Locking status	Locking status	1000	
Normal Grid Connection	Normal Grid Connection	1000	
Normal Stop	Normal Stop	1000	
PV connection status	PV connection status	1000	
Shutdown	Shutdown	1000	
Spot check	Spot check	1000	
Standby	Standby	1000	
Stop due to faults	Stop due to faults	1000	
Stop due to power rationing	Stop due to power rationing	1000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power	ActivePower	500	
Current L1	Current L1	500	
Current L2	Current L2	500	
Current L3	Current L3	500	
Frequency	Frequency	500	
Input Power	Input Power	500	
Maximum Active Power	Maximum Active Power	2000	
Maximum Apparent Power	Maximum Apparent Power	2000	
Nominal Active Power	NominalActivePower	2000	
Reactive Power	ReactivePower	500	
Voltage L1	Voltage L1	500	
Voltage L1	Voltage L1	500	
Voltage L1	Voltage L1	500	
Voltage L1L2	Voltage L1L2	500	
Voltage L2L3	Voltage L2L3	500	
Voltage L3L1	Voltage L3L1	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	ActivePowerLimit	500	
Set PF	Set PF	500	

## Recommended wiring

Function	Round 8 pin com port	Controller
<b>RS458 A</b>	4	RS458 A
<b>RS458 COM</b>	N/A	RS458 COM
<b>RS458 B</b>	3	RS458 B
<b>Battery + (positive)</b>	6	N/A
<b>Battery - (negative)</b>	5	N/A

## Smart Logger 3000



Image 5.245 Smart Logger 3000

### Controllers that support the Smart Logger 3000:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Shutdown/Startup	Shutdown/Startup	500	
Startup/Shutdown	Startup/Shutdown	500	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Adjustment 1	Active Adjustment 1	1000	
Active Adjustment 2	Active Adjustment 2	1000	
Active Power	Active Power	1000	
Active power Adjustment	Active power Adjustment	1000	
Ambient Temperature	T-Ambient	1000	
Daily Irradiance Amount	Daily Irradiance Amount	1000	
Daily Irradiance Amount 2	Daily Irradiance Amount 2	1000	
Daily Irradiation Amout	Daily Irradiation Amout	1000	
Daily Irradiation Amout 2	Daily Irradiation Amout 2	1000	
Duration of Daily Power Gener.	Duration of Daily Power Gener.	1000	
E-Daily	E-Daily	1000	
E-Total	E-Total	1000	
Max. Active Adjustment	Max. Active Adjustment	1000	
Max. Reactive Adjustment	Max. Reactive Adjustment	1000	
Min. Reactive Adjustment	Min. Reactive Adjustment	1000	

PV Module Temperature	T-PV Module	1000	
Plant Status 1	Plant Status 1	500	
Plant Status 2	Plant Status 2	500	
Plant Status 3	Plant Status 3	500	
Plant Status 4	Plant Status 4	1000	
Plant Status 5	Plant Status 5	1000	
Power Factor	Power Factor	500	
Power Factor Adjustment	Power Factor Adjustment	1000	
Reactive Adjustment 1	Reactive Adjustment 1	1000	
Reactive Adjustment 2	Reactive Adjustment 2	1000	
Reactive Power	Reactive Power	1000	
Total Irradiance	Total Irradiance	1000	
Total Irradiance 2	Total Irradiance 2	1000	
Total Related Capacity of Grid Connected Inverters	Total Rel. Cap. of Grid Invert.	1000	
Wind DIRECTION	Wind DIRECTION	1000	
Wind Speed	Wind Speed	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>

**Note:** By default the device is prepared for separate PV or ESS applications. In case there is need to support older version of SmartLogger with aggregated PV and ESS function, user has to manually reconfigure writing registers: Active PV/ESS Power Adjustment Pct to Active Power Adjustment Pct , Reactive PV/ESS Power Adjustment Val to Reactive Power Adjustment

## Recommended wiring

Function	COM port 1-3	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

## Smart Logger 3000 EMI

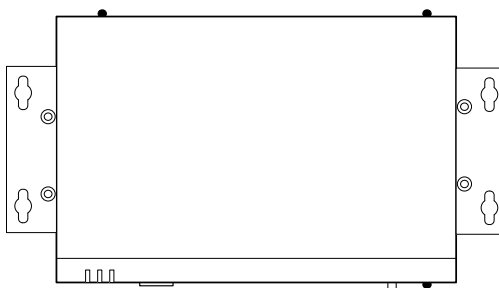


Image 5.246 Smart Logger 3000 EMI

## Controllers that support the Smart Logger 3000 EMI:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Ambient Temperature	T-Ambient	1000	
Daily Irradiance Amount	Daily Irradiance Amount	1000	
Daily Irradiance Amount 2	Daily Irradiance Amount 2	1000	
Daily Irradiation Amout	Daily Irradiation Amout	1000	
Daily Irradiation Amout 2	Daily Irradiation Amout 2	1000	
PV Module Temperature	T-PV Module	1000	
Total Irradiance	Total Irradiance	1000	
Total Irradiance 2	Total Irradiance 2	1000	
Wind Diretion	Wind Diretion	1000	
Wind Speed	Wind Speed	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	COM port 1-3	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

## Smart Logger 3000 PM



Image 5.247 Smart Logger 3000 PM

## Controllers that support the Smart Logger 3000 PM:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
A-B Line Voltage	A-B Line Voltage	1000	
Active Power	Active Power	1000	
Apparent Power	Apparent Power	1000	
B-C Line Voltage	B-C Line Voltage	1000	
C-A Line Voltage	C-A Line Voltage	1000	
Custom 1	Custom 1	1000	
Custom 2	Custom 2	1000	
Custom 3	Custom 3	1000	
Phase A Active Power	Phase A Active Power	1000	
Phase A Current	Phase A Current	1000	
Phase A Voltage	Phase A Voltage	1000	
Phase B Active Power	Phase B Active Power	1000	
Phase B Current	Phase B Current	1000	
Phase B Voltage	Phase B Voltage	1000	
Phase C Active Power	Phase C Active Power	1000	
Phase C Current	Phase C Current	1000	
Phase C Voltage	Phase C Voltage	1000	
Power Factor	Power Factor	1000	
Reactive Power	Reactive Power	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register

## Recommended wiring

Function	COM port 1-3	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

## Smart Logger 3000 PV



Image 5.248 Smart Logger 3000 PV

### Controllers that support the Smart Logger 3000 PV:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
PV Inverter Shutdown	PV Inverter Shutdown	500	
PV Inverter Startup	PV Inverter Startup	500	
Power on/off	Power on/off	500	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active PV Power	Active PV Power	1000	
Active PV Power Adjustment Pct	Active PV Power Adjustment Pct	1000	
Active PV Power Adjustment Value	Active PV Power Adjustment Value	1000	
Active power Adjustment	Active power Adjustment	1000	
Active power Adjustment Pct	Active power Adjustment Pct	1000	
Duration of Daily Power Gener.	Duration of Daily Power Gener.	1000	
E-Daily	E-Daily	1000	
E-Total	E-Total	1000	
Max. Active Adjustment	Max. Active Adjustment	1000	
Max. Reactive Adjustment	Max. Reactive Adjustment	1000	
Min. Active Adjustment	Min. Active Adjustment	1000	
Min. Reactive Adjustment	Min. Reactive Adjustment	1000	
PV Inverter Shutdown	PV Inverter Shutdown	1000	

PV Inverter in Operation	PV Inverter in Operation	1000	
Plant Status 1	Plant Status 1	1000	
Plant Status 2	Plant Status 2	1000	
Plant Status 3	Plant Status 3	1000	
Plant Status 4	Plant Status 4	1000	
Plant Status 5	Plant Status 5	1000	
Power Factor	Power Factor	500	
Power Factor Adjustment	Power Factor Adjustment	1000	
Quantity of Running PV Inverters	Quantity of Running PV Inverters	1000	
Rated PV Power	Rated PV Power	1000	
Reactive PV Power	Reactive PV Power	1000	
Reactive PV Power Adjustment Val	Reactive PV Power Adjustment Val	1000	
Reactive power Adjustment	Reactive power Adjustment	1000	
Total Related Capacity of Grid Connected Inverters	Total Rel. Cap. of Grid Invert.	1000	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
Active PV Power Adjustment Pct	Active PV Power Adjustment Pct	1000	
Active power Adjustment Pct	Active power Adjustment Pct	1000	
Power Factor Adjustment	Power Factor Adjustment	1000	
Reactive PV Power Adjustment Val	Reactive PV Power Adjustment Val	1000	
Reactive power Adjustment	Reactive power Adjustment	1000	

**Note:** By default the device is prepared for separate PV or ESS applications. In case there is need to support older version of SmartLogger with aggregated PV and ESS function, user has to manually reconfigure writing registers: Active PV/ESS Power Adjustment Pct to Active Power Adjustment Pct , Reactive PV/ESS Power Adjustment Val to Reactive Power Adjustment

### Recommended wiring

Function	COM port 1-3	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B



## 6.10.10 INVT devices support

ECU Type	Device type	Source documentation version
<a href="#">XG50 (page 941)</a>	XG50-70KTR	v1.36

### XG50

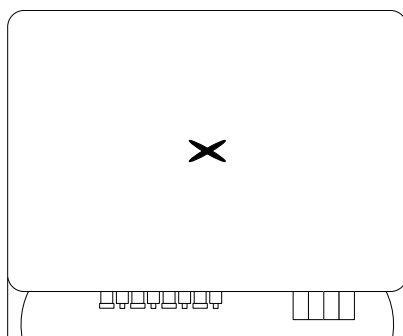


Image 5.249 XG50

### Controllers that support the XG50:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Alarm Status	Alarm Status	1000	
Battery Charge/Discharge	Battery Charge/Discharge	1000	
Battery Current	Battery Current	1000	
Battery Power	Battery Power	1000	
Battery Voltage	Battery Voltage	1000	
CHG Disable	CHG Disable	1000	
Daily Generation	Daily Generation	1000	
EPS Frequency	EPS Frequency	1000	
EPS Output Percent	EPS Output Percent	1000	
EPS R Phase Output Current	EPS R Phase Output Current	1000	
EPS R Phase Output Power	EPS R Phase Output Power	1000	
EPS R Phase Output Voltage	EPS R Phase Output Voltage	1000	
EPS S Phase Output Current	EPS S Phase Output Current	1000	

EPS S Phase Output Power	EPS S Phase Output Power	1000	
EPS S Phase Output Voltage	EPS S Phase Output Voltage	1000	
EPS T Phase Output Current	EPS T Phase Output Current	1000	
EPS T Phase Output Power	EPS T Phase Output Power	1000	
EPS T Phase Output Voltage	EPS T Phase Output Voltage	1000	
Fault Status 1	Fault Status 1	1000	
Fault Status 2	Fault Status 2	1000	
Inverter Efficiency	Inverter Efficiency	1000	
Nominal Active Power	Nominal Active Power	1000	
PF Value	PF Value	1000	
PV1 Input Current	PV1 Input Current	1000	
PV1 Input Voltage	PV1 Input Voltage	1000	
PV10 Input Current	PV10 Input Current	1000	
PV10 Input Voltage	PV10 Input Voltage	1000	
PV11 Input Current	PV11 Input Current	1000	
PV11 Input Voltage	PV11 Input Voltage	1000	
PV12 Input Current	PV12 Input Current	1000	
PV12 Input Voltage	PV12 Input Voltage	1000	
PV2 Input Current	PV2 Input Current	1000	
PV2 Input Voltage	PV2 Input Voltage	1000	
PV3 Input Current	PV3 Input Current	1000	
PV3 Input Voltage	PV3 Input Voltage	1000	
PV4 Input Current	PV4 Input Current	1000	
PV4 Input Voltage	PV4 Input Voltage	1000	
PV5 Input Current	PV5 Input Current	1000	
PV5 Input Voltage	PV5 Input Voltage	1000	
PV6 Input Current	PV6 Input Current	1000	
PV6 Input Voltage	PV6 Input Voltage	1000	
PV7 Input Current	PV7 Input Current	1000	
PV7 Input Voltage	PV7 Input Voltage	1000	
PV8 Input Current	PV8 Input Current	1000	
PV8 Input Voltage	PV8 Input Voltage	1000	
PV9 Input Current	PV9 Input Current	1000	
PV9 Input Voltage	PV9 Input Voltage	1000	
Power Factor	Power Factor	1000	
R Grid Phase Current	R Grid Phase Current	1000	
R Grid Phase Voltage	R Grid Phase Voltage	1000	
RS Grid Frequency	RS Grid Frequency	1000	
Reactive Power	Reactive Power	1000	
S Grid Phase Current	S Grid Phase Current	1000	
S Grid Phase Voltage	S Grid Phase Voltage	1000	
SOC	SOC	1000	
SOH	SOH	1000	
System Setting Enable bit	System Setting Enable	1000	

	bit		
T Grid Phase Current	T Grid Phase Current	1000	
T Grid Phase Voltage	T Grid Phase Voltage	1000	
Total EPS Power	Total EPS Power	1000	
Total Load Power	Total Load Power	1000	
Total Power to Grid	Total Power to Grid	1000	
Warning Status	Warning Status	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Limit	Active Power Limit	1000	
Function Selection	Function Selection	1000	
PF Set	PF Set	1000	
Power Control Mode	Power Control Mode	1000	
Reactive Power Limit	Reactive Power Limit	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
<b>RS485 A</b>	A	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	B	RS485 B

For correct function of RS485, terminal resistor might needed to be switched ON only on the last inverter in the BUS chain.

## 6.10.11 Jinko Solar devices support

ECU Type	Device type	Source documentation version
<a href="#">Sungiga BESS (page 1)</a>	JKS-215KLAA-100PLAA BESS	v1.8.1
<a href="#">DC Cabinet (page 1)</a>	Support for Jinko DC Cabinet according to LC	v1.8.1.2
<a href="#">SunTera G2 (page 1)</a>	Support for Suntera G2 DC box (SCU)	v1.3

## New Entry

### 6.10.12 Kaco devices support

ECU Type	Device type
<a href="#">Blueplanet (page 944)</a>	50.0 TL3, 60.0 TL3, 87.0 TL3, 92.0 TL3, 100 TL3, 105 TL3, 110 TL3, 125 TL3, 137 TL3, 150 TL3, 155 TL3, 165 TL3

## Blueplanet

### Controllers that support the Blueplanet

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Active Power Limit Enable	Active Power Limit Enable	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
ARtg	ARtg	2000
Active Power	Active Power	1000
AhrRtg	AhrRtg	2000
Conn	Conn	5000
Conn_RvrtTms	Conn_RvrtTms	5000
Conn_WinTms	Conn_WinTms	5000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
Frequency	Frequency	1000
MaxChaRte	MaxChaRte	2000
MaxDisChaRte	MaxDisChaRte	2000
Nominal Active Power	Nominal Active Power	2000

OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
OutPFSet_RmpTms	OutPFSet_RmpTms	5000
OutPFSet_RvrtTms	OutPFSet_RvrtTms	5000
OutPFSet_WinTms	OutPFSet_WinTms	5000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
St	St	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
VARtg	VARtg	2000
VArAvalPct	VArAvalPct	5000
VArMaxPct	VArMaxPct	5000
VArPct_Ena	VArPct_Ena	5000
VArPct_Mod	VArPct_Mod	5000
VArPct_RmpTms	VArPct_RmpTms	5000
VArPct_RvrtTms	VArPct_RvrtTms	5000
VArPct_WinTms	VArPct_WinTms	5000
VArRtgQ1	VArRtgQ1	2000
VArRtgQ2	VArRtgQ2	2000
VArRtgQ3	VArRtgQ3	2000
VArRtgQ4	VArRtgQ4	2000
VArWMaxPct	VArWMaxPct	5000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WHRtg	WHRtg	2000
WMaxLimPct	WMaxLimPct	5000
WMaxLimPct_RmpTms	WMaxLimPct_RmpTms	5000
WMaxLimPct_RvrtTms	WMaxLimPct_RvrtTms	5000
WMaxLimPct_WinTms	WMaxLimPct_WinTms	5000
WMaxLim_Ena	WMaxLim_Ena	5000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit	Active Power	1000

	Limit	
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RJ45 connector	Ethernet

## 6.10.13 SMA devices support

ECU Type	Device type	Source documentation version
<a href="#">SolidQ (page 949)</a>	SMA SOLID-Q 50 & SOLID-Q PRO 60 inverter	--
<a href="#">Sunny Tripower / Sunny Boy (page 947)</a>	Sunny Tripower and Sunny Boy	v1.4
<a href="#">Sunny Island BESS (page 1030)</a>	Sunny Island BESS	v1.0
<a href="#">DataManager M (page 951)</a>	DataManager M	v1.1
<a href="#">Sunny Island X (page 1032)</a>	SunnyIsland X	v2

## Sunny Tripower / Sunny Boy

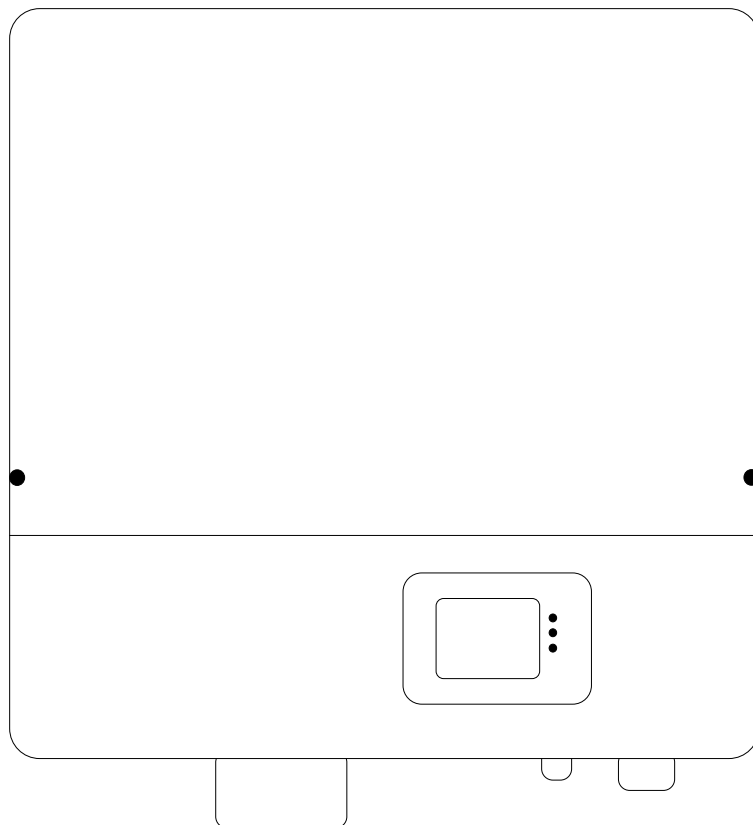


Image 5.250 Sunny Tripower / Sunny Boy

### Controllers that support the Sunny Tripower / Sunny Boy:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	30775
Active power limitation by PV system control	Active power limit by PV ctrl	1000	44493
Nominal Power	Nominal Power	5000	41203
Operating Status	Operating Status	5000	40029
Reactive Power	Reactive Power	1000	30805
kWh	kWh	10000	30531
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	40023

Set PF	Set PF	1000	41257
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While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000			
Source	SpeedReq RPM <sup>1</sup>		
Convert	NO		
Limits	N/A		N/A
	N/A		N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile			
Source	Speed Request		
Convert	YES		
Limits	0.0 %		Min eng. speed (800RPM)
	100.0 %		Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 B

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



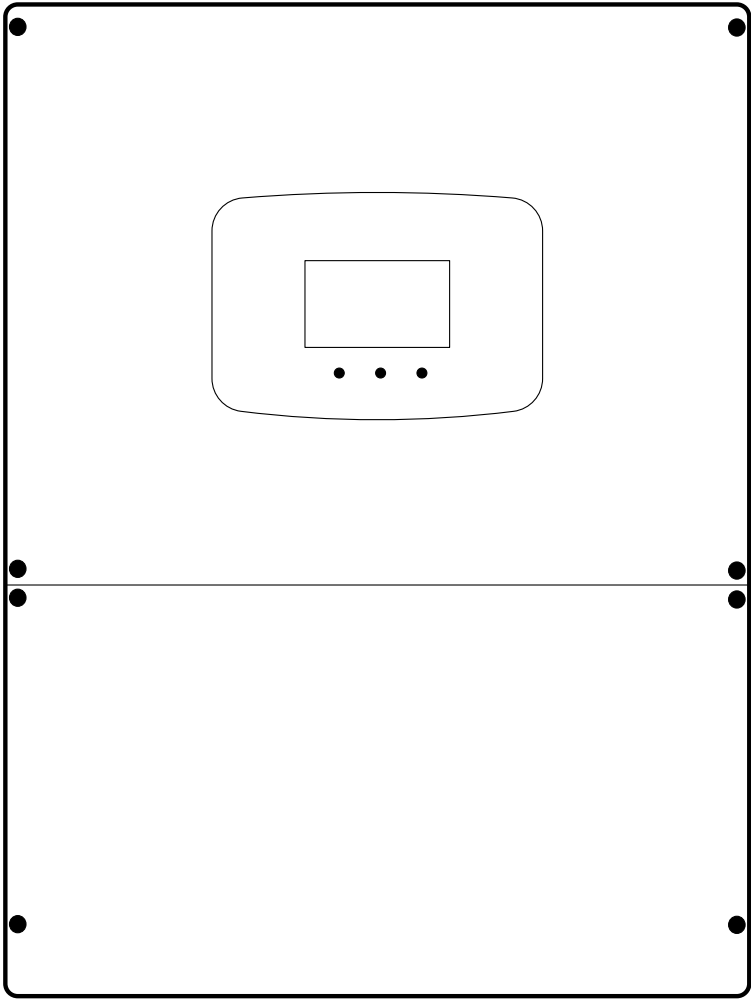


Image 5.251 SolidQ

Controllers that support the SolidQ:

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	30775
Active power limitation by PV system control	Active power limit by PV ctrl	1000	44493
Nominal Power	Nominal Power	5000	41203
Operating Status	Operating Status	5000	40029
Reactive Power	Reactive Power	1000	30805
kWh	kWh	10000	30531

ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	40023
Set PF	Set PF	1000	41257

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000			
Source	SpeedReq RPM <sup>1</sup>		
Convert	NO		
Limits	N/A		N/A
	N/A		N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile			
Source	Speed Request		
Convert	YES		
Limits	0.0 %		Min eng. speed (800RPM)
	100.0 %		Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 A

Available list of texts of fault codes **see SMA SolidQ Fault Codes on page 950**

## SMA SolidQ Fault Codes

Fault Code (SPN)	Text
------------------	------

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

## DataManager M

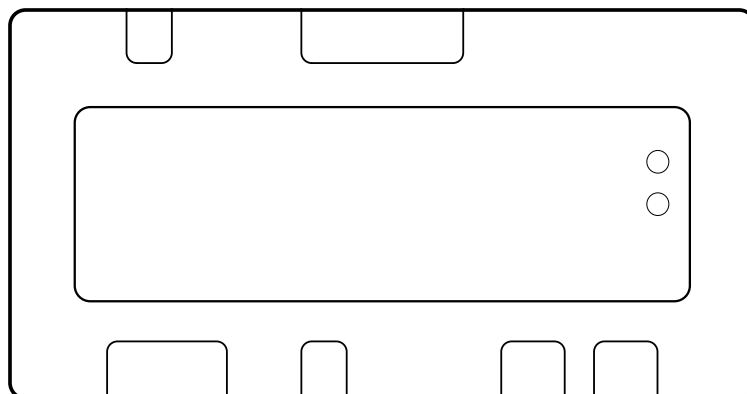


Image 5.252 DataManager M

### Controllers that support the DataManager M:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	500	30775
Active Power Limit Pct	Active Power Limit Pct	500	41167
Ambient Temperature	Ambient Temperature	500	34609
Available Inverter Power	Available Inverter Power	500	31547
Available Overexcited Power	Available Overexcited Power	500	32189
Available Overexcited Pwr Pct	Available Overexcited Pwr Pct	500	32199
Available Underexcited Power	Available Underexcited Power	500	32187
Available Underexcited Pwr Pct	Available Underexcited Pwr Pct	500	32197
Availability of Generating System	Availability of Generating System	500	32193
Battery Charge Power	Battery Charge Power	500	31393
Battery Discharge Power	Battery Discharge Power	500	31395
Current SOC of Battery	Current SOC of Battery	500	30845
Current SOH of Battery	Current SOH of Battery	500	30201

Digital Input Group 1	Digital Input Group 1	500	34653
External Active Power Limit	External Active Power Limit	500	32195
Global Wind Speed	Global Wind Speed	500	34615
Installed Power	Installed Power	500	30233
Installed System Power	Installed System Power	500	31545
Internal PV Power Limit	Internal PV Power Limit	500	31245
Internal Reactive Power Limit	Internal Reactive Power Limit	500	32185
Maximum Active Power Limit	Maximum Active Power Limit	500	31243
PCC Frequency	PCC Frequency	500	31527
PCC Active Power	PCC Active Power	500	31249
PCC Active Power L1	PCC Active Power L1	500	31503
PCC Active Power L2	PCC Active Power L2	500	31505
PCC Active Power L3	PCC Active Power L3	500	31507
PCC Current L1	PCC Current L1	500	31535
PCC Current L2	PCC Current L2	500	31537
PCC Current L3	PCC Current L3	500	31539
PCC Mean L-L Voltage	PCC Mean L-L Voltage	500	31523
PCC Mean L-N Voltage	PCC Mean L-N Voltage	500	31521
PCC Power Factor	PCC Power Factor	500	31525
PCC Reactive Power	PCC Reactive Power	500	31251
PCC Reactive Power L1	PCC Reactive Power L1	500	31509
PCC Reactive Power L2	PCC Reactive Power L2	500	31511
PCC Reactive Power L3	PCC Reactive Power L3	500	31513
PCC Voltage L1-L2	PCC Voltage L1-L2	500	31515
PCC Voltage L1-N	PCC Voltage L1-N	500	31529
PCC Voltage L2-L3	PCC Voltage L2-L3	500	31517
PCC Voltage L2-N	PCC Voltage L2-N	500	31531
PCC Voltage L3-L1	PCC Voltage L3-L1	500	31519
PCC Voltage L3-N	PCC Voltage L3-N	500	31533
PV Module temperature	PV Module temperature	500	34621
PV Limit by Direct Marketing	PV Limit by Direct Marketing	500	31241
PV Limit via Analog Input	PV Limit via Analog Input	500	31237
PV Limit via Communication	PV Limit via Communication	500	31239
PV Limit via Digital Input	PV Limit via Digital Input	500	31235

Reactive Power	Reactive Power	500	30805
Theoretical Power Output	Theoretical Power Output	500	32191
Total Irradiation	Total Irradiation	500	34623
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Demand	Active Power Demand	500	40016
Active Power Direct Marketer	Active Power Direct Marketer	500	40493
Active Power Setpoint Pct	Active Power Setpoint Pct	500	40023
Quick Shut-down	Quick Shut-down	500	40018
Reactive Power Demand	Reactive Power Demand	500	40015
Reactive Power Direct Marketer	Reactive Power Direct Marketer	500	40492
Reactive Power Setpoint Pct	Reactive Power Setpoint Pct	500	40022

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>			
Source	SpeedReq RPM <sup>1</sup>		
Convert	NO		
Limits	N/A	N/A	
	N/A	N/A	

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>			
Source	Speed Request		
Convert	YES		
Limits	0.0 %	Min eng. speed (800RPM)	
	100.0 %	Max eng. speed (2100RPM)	

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Recommended wiring

Function		Controller
RS485 A		RS485 A
RS485 COM		RS485 COM
RS485 B		RS485 A

6.10.14 Schneider devices support

ECU Type	Device type	Source documentation version
<a href="#">Conext (page 954)</a>	Three Phase PV Inverter 60 kW - 66 kVA (E) / 63.4 kVA (A) (Applicable to Both NA and IEC Model)	v3.0
<a href="#">Conext XW (page 956)</a>	Conext XW and XW+ series	A.3
<a href="#">ASCO 7000 (page 1085)</a>	ASCO 7000 Group 5 Controller (ATS)	2/2023

Conext

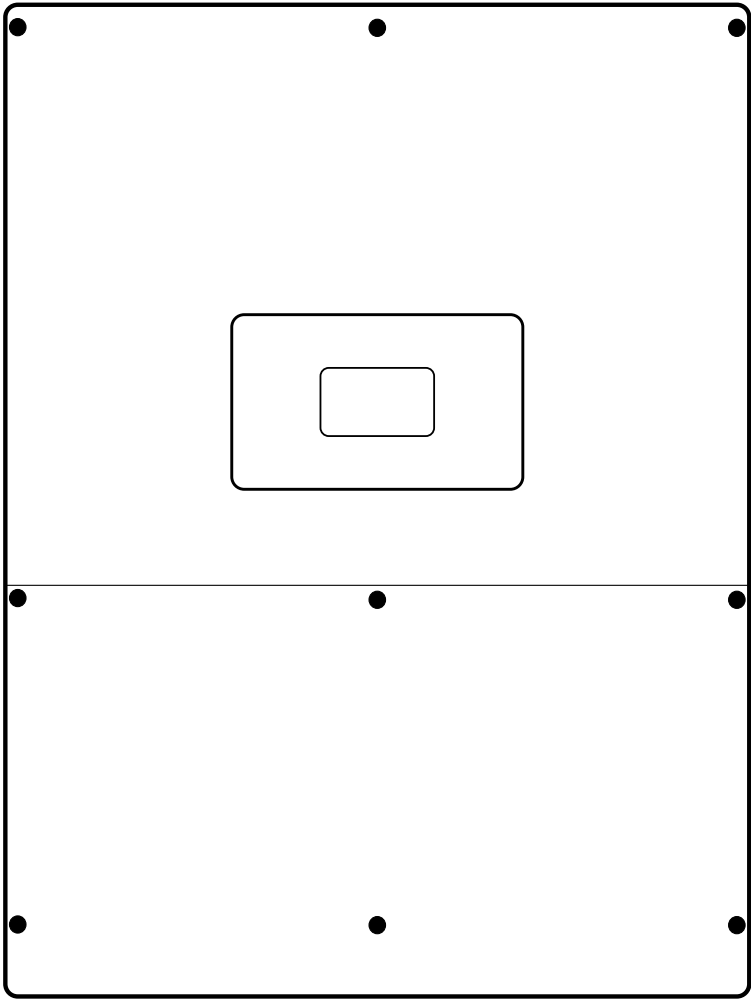


Image 5.253 Conext

## Controllers that support the Conext:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Active Power Limit Enable	Active Power Limit Enable	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
DC Current	DC Current	1000	
DC Power	DC Power	1000	
DC Voltage	DC Voltage	1000	
Grid Frequency	Grid Frequency	1000	
Internal Temperature	Internal Temperature	1000	
Nominal Active Power	Nominal Active Power	1000	
Operational State	Operational State	1000	
Reactive Power	Reactive Power	1000	
Today kWh	Today kWh	1000	
kWh	kWh	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RS485out	Ethernet

## Conext XW

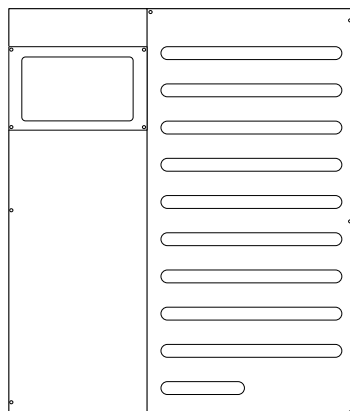


Image 5.254 Conext XW

### Controllers that support the Conext XW:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Faults Flag	Active Faults Flag	1000	
Active Warning Flag	Active Warning Flag	1000	
Charger Enabled Satus	Charger Enabled Satus	1000	
Forced Sell Status	Forced Sell Status	1000	
Inverter Enabled Status	Inverter Enabled Status	1000	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Charger Enable/Disable	Charger Enable/Disable	1000	
Equalize Now	Equalize Now	1000	
Generator Support Enable	Generator Support Enable	1000	
Grid Frequency Stabilization	Grid Frequency Stabilization	1000	
Grid Support	Grid Support	1000	
Inverter Enable/Disable	Inverter Enable/Disable	1000	
Load Shave	Load Shave	1000	
Power Save	Power Save	1000	
Remote Power Off	Remote Power Off	1000	
Search Mode	Search Mode	1000	
Sell Enable/Disable	Sell Enable/Disable	1000	



ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
4 Grid AC Current	4 Grid AC Current	1000	
Battery Charge Active Lifetime	Battery Charge Active Lifetime	1000	
Battery Charge Active Today	Battery Charge Active Today	1000	
Battery Currently	Battery Currently	1000	
Battery Discharge Act. Lifetime	Battery Discharge Act. Lifetime	1000	
Battery Discharge Active Today	Battery Discharge Active Today	1000	
Battery Power	Battery Power	1000	
Battery Temperature	Battery Temperature	1000	
Battery Voltage	Battery Voltage	1000	
Charge DC Current	Charge DC Current	1000	
Charge DC Power	Charge DC Power	1000	
Charge DC Power Percent	Charge DC Power Percent	1000	
Charge Mode Status	Charge Mode Status	1000	
Charger Status	Charger Status	1000	
Configuration Errors	Configuration Errors	1000	
Energy From Battery Lifetime	Energy From Battery Lifetime	1000	
Energy From Battery Today	Energy From Battery Today	1000	
Energy To Battery Lifetime	Energy To Battery Lifetime	1000	
Energy To Battery Today	Energy To Battery Today	1000	
Fault Bitmap 0	Fault Bitmap 0	1000	
Fault Bitmap 1	Fault Bitmap 1	1000	
Fault Bitmap 2	Fault Bitmap 2	1000	
Fault Bitmap 3	Fault Bitmap 3	1000	
Grid AC Frequency	Grid AC Frequency	1000	
Grid AC Input Current	Grid AC Input Current	1000	
Grid AC Input Power	Grid AC Input Power	1000	
Grid AC Input Power - Apparent	Grid AC Input Power - Apparent	1000	
Grid AC L1 Current	Grid AC L1 Current	1000	
Grid AC L1 Voltage	Grid AC L1 Voltage	1000	
Grid AC L2 Current	Grid AC L2 Current	1000	
Grid AC L2 Voltage	Grid AC L2 Voltage	1000	
Grid AC Power	Grid AC Power	1000	
Grid AC Voltage	Grid AC Voltage	1000	
Grid Input Active This Year	Grid Input Active	1000	

	This Year		
Grid Input Active Today	Grid Input Active Today	1000	
Grid Input Energy Lifetime	Grid Input Energy Lifetime	1000	
Grid Input Energy Today	Grid Input Energy Today	1000	
Grid Output Active Lifetime	Grid Output Active Lifetime	1000	
Grid Output Active Today	Grid Output Active Today	1000	
Grid Output Current	Grid Output Current	1000	
Grid Output Energy Lifetime	Grid Output Energy Lifetime	1000	
Grid Output Energy Today	Grid Output Energy Today	1000	
Grid Output Frequency	Grid Output Frequency	1000	
Grid Output Power	Grid Output Power	1000	
Grid Output Power - Apparent	Grid Output Power - Apparent	1000	
Grid Output Voltage	Grid Output Voltage	1000	
Inverter DC Current	Inverter DC Current	1000	
Inverter DC Power	Inverter DC Power	1000	
Inverter Status	Inverter Status	1000	
Load AC Current	Load AC Current	1000	
Load AC Frequency	Load AC Frequency	1000	
Load AC L1 Current	Load AC L1 Current	1000	
Load AC L1 Voltage	Load AC L1 Voltage	1000	
Load AC L2 Current	Load AC L2 Current	1000	
Load AC L2 Voltage	Load AC L2 Voltage	1000	
Load AC Power	Load AC Power	1000	
Load AC Power Apparent	Load AC Power Apparent	1000	
Load AC Voltage	Load AC Voltage	1000	
Nominal Battery Voltage	Nominal Battery Voltage	1000	
Warning Bitmap 0	Warning Bitmap 0	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Battery Bank Capacity	Battery Bank Capacity	1000	
Battery Type	Battery Type	1000	
Charge Cycle	Charge Cycle	1000	
Clear	Clear	1000	
Default Battery Temperature	Default Battery Temperature	1000	
Force Charger State	Force Charger State	1000	
Inverter Mode	Inverter Mode	1000	

Maximum Charge Rate	Maximum Charge Rate	1000	
Maximum React Power Grid Voltage	Maximum React Power Grid Voltage	1000	
Maximum Reactive Capacitive Power	Maximum Reactive Capacitive Power	1000	
Maximum Reactive Inductive Power	Maximum Reactive Inductive Power	1000	
Operating Mode	Operating Mode	1000	
Recharge Voltage	Recharge Voltage	1000	
Reset	Reset	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RS485out	Ethernet

## 6.10.15 SolarEdge devices support

ECU Type	Device type
<a href="#">PV SE (page 960)</a>	SolarEdge SE12.5K - SE120x photovoltaic inverters

PV SE

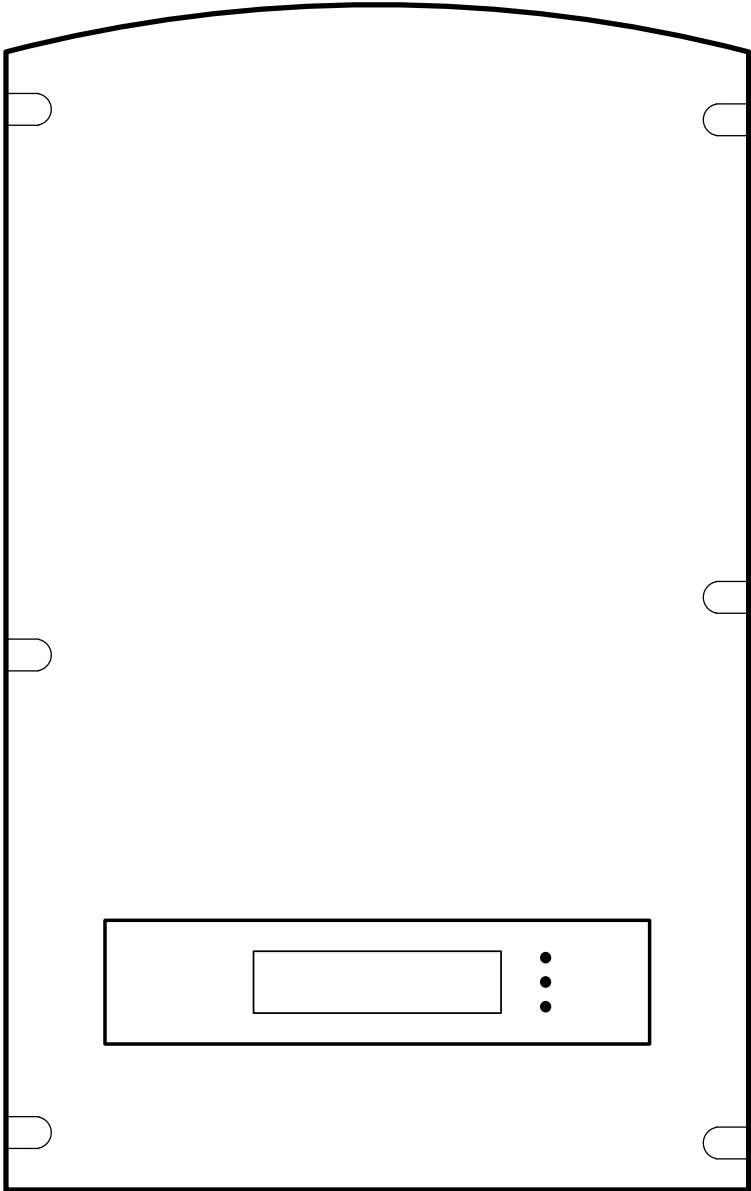


Image 5.255 PV SE

Controllers that support the PV SE:

Refer to [Compatibility Table \(page 10\)](#)

Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
Active Power	Active Power	1000
Current	Current	1000

Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
Frequency	Frequency	1000
PF	PF	1000
Reactive Power	Reactive Power	1000
St	St	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period
W_AdvancedPwrControlEn	W_AdvancedPwrControlEn	500
W_Enable Dynamic Power Control	W_Enable Dynamic Power Control	500
W_Commit Power Control Settings	W_Commit Power Control Settings	500
W_Dynamic Active Power Limit	W_Dynamic Active Power Limit	500
W_Dynamic CosPhi Limit	W_Dynamic CosPhi Limit	500
W_Dynamic Reactive Power Limit	W_Dynamic Reactive Power Limit	500
W_ReactivePwrConfig	W_ReactivePwrConfig	500

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite , 3 - IntelDrive Lite , 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano , 7 - IntelGen200, IntelGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Connector	Controller
RS485 A	RS485 Data + A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	RS485 Data - B	RS485 A
Ethernet	Gland 1 - RJ45	Ethernet

## 6.10.16 Solis devices support

ECU Type	Device type	Source documentation version
<a href="#">PV Inverter (page 962)</a>	All solis PV inverters	V001B000D032

## PV Inverter

### Controllers that support the PV Inverter:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
AC Output Type	AC output type	1000	
Active Power	Active Power	1000	
Active Power Limit	Active Power Limit	1000	
Alarm Code Data	Alarm Code Data	1000	
Apparent Power	Apparent Power	1000	
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
DC Current 1	DC Current 1	1000	
DC Current 2	DC Current 2	1000	
DC Current 3	DC Current 3	1000	
DC Current 4	DC Current 4	1000	
DC Input Type	DC input type	1000	
DC Voltage 1	DC Voltage 1	1000	
DC Voltage 2	DC Voltage 2	1000	
DC Voltage 3	DC Voltage 3	1000	
DC Voltage 4	DC Voltage 4	1000	
Energy This Month	EnergyMonth	1000	
Energy This Year	Energy this year	1000	
Energy Today	Energy today	1000	
Fault Code 01	FC1	1000	
Fault Code 02	FC2	1000	
Fault Code 03	FC3	1000	
Fault Code 04	FC4	1000	
Fault Code 05	FC5	1000	
Inverter Status	Status	1000	
Inverter Temp	T-Inverter	1000	
Inverter Type	Inverter Type	1000	
Limit Active Power Adjustment	Active Power Adjust	1000	
Limit Reactive Power Adjustment	Reactive Power Adjust	1000	
Reactive Power	Reactive Power	1000	
Total DC Output Power	Total DC Power	1000	
Total Energy	kWh	1000	
Voltage L1/L2	Voltage L1	1000	
Voltage L2/L3	Voltage L2	1000	
Voltage L3/L1	Voltage L3	1000	
Working Mode	Working Mode	1000	
Working status	Working Status	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Limit	Active Power Limit	1000	

Active Power limit Enable	Active Power limit Enable	1000	
Set PF	Set PF	1000	
Working Mode	Working Mode	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.10.17 Sungrow devices support

ECU Type	Device type	Source documentation version
<a href="#">SG PV (page 964)</a>	SG3.0RT, SG4.0RT, SG5.0RT, SG6.0RT, SG7.0RT, SG8.0RT, SG10RT, SG12RT, SG15RT, SG17RT, SG20RT SG30KTL-M, SG30KTL-M-V31, SG33KTL-M, SG36KTL-M, SG33K3J, SG49K5J, SG34KJ, LP_P34KSG, SG50KTL-M-20, SG60KTL, G80KTL, SG80KTL-20, SG60KU-M SG5KTL-MT, SG6KTL-MT, SG8KTL-M, SG10KTL-M, SG10KTL-MT, SG12KTL-M, SG15KTL-M, SG17KTL-M, SG20KTL-M, SG80KTL-M, SG85BF, SG80HV, SG80BF, SG110HV-M, SG111HV, SG125HV, SG125HV-20 SG25CX-SA, SG30CX, SG33CX, SG40CX, SG50CX, SG36CX-US, SG60CX-US, SG75CX, SG100CX SG100CX-JP, SG110CX, SG136TX, SG225HX, SG250HX SG250HX-IN, SG250HX-US	v1.1.37
<a href="#">Data Logger (page 967)</a>	Data Logger 1000 and Data Logger 3000	v1.0.2.7

## SG PV

### Controllers that support the SG PV:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Power Limitation Switch	Power Limitation Switch	1000	



ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
Grid Frequency	Grid Frequency	1000	
Internal Temperature	Internal Temperature	1000	
MPPT 1 Current	MPPT 1 Current	1000	
MPPT 1 Current	MPPT 1 Current	1000	
MPPT 1 Current	MPPT 1 Current	1000	
MPPT 1 Voltage	MPPT 1 Voltage	1000	
MPPT 1 Voltage	MPPT 1 Voltage	1000	
MPPT 1 Voltage	MPPT 1 Voltage	1000	
Nominal Active Power	Nominal Active Power	1000	
Power Factor	Power Factor	1000	
Total Active Power	Total Active Power	1000	
Total Apparent Power	Total Apparent Power	1000	
Total DC Power	Total DC Power	1000	
Total Reactive Power	Total Reactive Power	1000	
Total Running Time	Total Running Time	1000	
Voltage L1-L2	Voltage L1-L2	1000	
Voltage L2-L3	Voltage L2-L3	1000	
Voltage L3-L1	Voltage L3-L1	1000	
Work State	Work State	1000	
kWh Daily	kWh Daily	1000	
kWh Total	kWh Total	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Power Factor Settings	Power Factor Settings	1000	
Power Limitation Settings	Power Limitation Settings	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring SG15KTL-M, SG20KTL-M, SG10KTL-MT

### RS485

Function	RJ45 connector	Controller
RJ485 A	6	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	3	RJ485 B

## Ethernet

Function	RJ45 connector	Controller
Ethernet	RJ45 connector	Ethernet

### Recommended wiring SG250HX, SG125HV

## RS485

Function	RS485 connector	Controller
RJ485 A	A	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	B	RJ485 B

### Recommended wiring SG110CX, SG5KTL-MT, SG6KTL-MT, SG8KTL-M, SG10KTL-M, SG12KTL-M

### SG2K-S, SG2K5-S, SG3K-S, SG3K-D, SG3K6-D, SG4K-D, SG4K6-D, SG5K-D, SG6K-D

## RS485

Function	RJ45 connector	Controller
RJ485 A	6	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	3	RJ485 B

### Recommended wiring SG25CX-SA, SG30CX, SG33CX, SG50CX, SG50CX

## RS485

Function	RS485 connector	Controller
RJ485 A	1	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	3	RJ485 B

# Data Logger

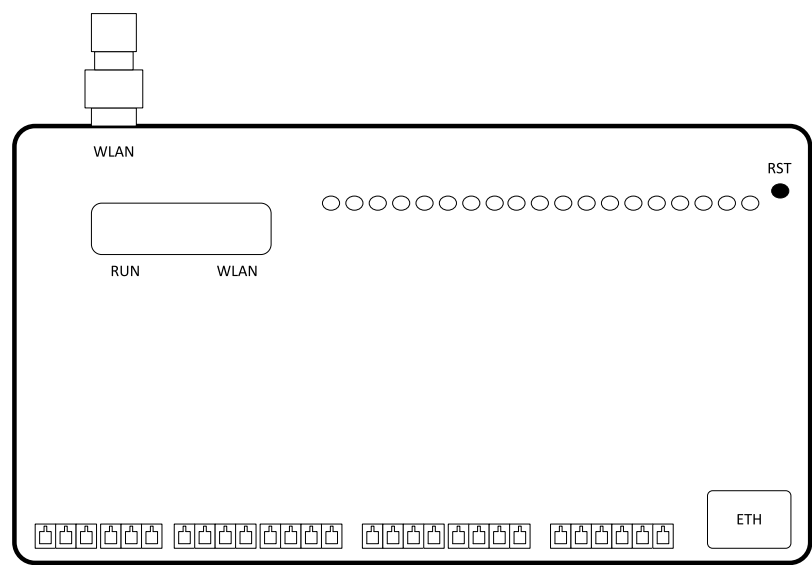


Image 5.256 Data Logger 1000

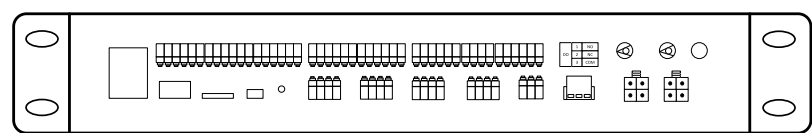


Image 5.257 Data Logger 3000

## Controllers that support the Data Logger:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Logger On-Off	Logger_On-Off	2500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Set On-Off	Set_On-Off	2500	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Annual Power Yield	AnnualPowerYield	2500	
DailyPowerYield	DailyPowerYield	2500	
Grid-connected devices	NrOnGrid	2500	
Max Nom Reactive Power	MaxNomReactPower	2500	
Max Nominal Active Power	MaxNomActPower	2500	
Min Nom Reactive Power	MinNomReactPower	2500	
Min Nominal Active Power	MinNomActPower	2500	
Month Power Yield	MonthPowerYield	2500	
Nominal Active Power	NomActPower	2500	
Nominal Reactive Power	NomReactPower	2500	

Off-grid devices	NrOffGrid	2500	
Total Active Power	TotalActivePower	2500	
Total Devices Connected	TotDevConnected	2500	
Total Faulty Devices	TotDevFault	2500	
Total Power Yield	TotalPowerYield	2500	
Total React Power	TotalReactPower	2500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Set Active Power	SetActPower	2500	
Set Active Power Ratio	SetActPowerRatio	2500	
Set Power Factor	SetPowerFactor	2500	
Set Reactive Power	SetReactPower	2500	
Set Reactive Power Ratio	SetReactPwrRatio	2500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring Logger 1000

### RS485

Function	RS485 connector	Controller
RJ485 A	A1	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	B1	RJ485 B

### Ethernet

Function	connector	Controller
Ethernet	RJ45	Ethernet

## Recommended wiring Logger 3000

### RS485

Function	RS485 connector	Controller
RJ485 A	A1	RJ485 A
RJ485 COM	N/A	RJ485 COM
RJ485 B	B1	RJ485 B

### Ethernet

Function	connector	Controller
Ethernet	ETH 2	Ethernet

## 6.10.18 Sunspec devices support

ECU Type	Engine type
<a href="#">Sunspec PV (page 969)</a>	Support of generic Sunspec photovoltaic inverter device
<a href="#">Sunspec BESS (page 1054)</a>	Support of generic Sunspec BESS device
<a href="#">Sunspec PV (page 969)</a>	Support of generic Sunspec photovoltaic inverter device using 700s models
<a href="#">Sunspec BESS (page 1054)</a>	Support of generic Sunspec BESS device using 700s models

### Sunspec PV

#### Controllers that support the Sunspec PV

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Active Power Limit Enable	Active Power Limit Enable	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
ARtg	ARtg	2000
Active Power	Active Power	1000
AhrRtg	AhrRtg	2000
Conn	Conn	5000
Conn_RvrtTms	Conn_RvrtTms	5000
Conn_WinTms	Conn_WinTms	5000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000

Frequency	Frequency	1000
MaxChaRte	MaxChaRte	2000
MaxDisChaRte	MaxDisChaRte	2000
Nominal Active Power	Nominal Active Power	2000
OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
OutPFSet_RmpTms	OutPFSet_RmpTms	5000
OutPFSet_RvrtTms	OutPFSet_RvrtTms	5000
OutPFSet_WinTms	OutPFSet_WinTms	5000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
St	St	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
VARtg	VARtg	2000
VArAvalPct	VArAvalPct	5000
VArMaxPct	VArMaxPct	5000
VArPct_Ena	VArPct_Ena	5000
VArPct_Mod	VArPct_Mod	5000
VArPct_RmpTms	VArPct_RmpTms	5000
VArPct_RvrtTms	VArPct_RvrtTms	5000
VArPct_WinTms	VArPct_WinTms	5000
VArRtgQ1	VArRtgQ1	2000
VArRtgQ2	VArRtgQ2	2000
VArRtgQ3	VArRtgQ3	2000
VArRtgQ4	VArRtgQ4	2000
VArWMaxPct	VArWMaxPct	5000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WHRtg	WHRtg	2000
WMaxLimPct	WMaxLimPct	5000
WMaxLimPct_RmpTms	WMaxLimPct_RmpTms	5000

WMaxLimPct_RvrtTms	WMaxLimPct_RvrtTms	5000
WMaxLimPct_WinTms	WMaxLimPct_WinTms	5000
WMaxLim_Ena	WMaxLim_Ena	5000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit	Active Power Limit	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Sunspec PV 700

### Controllers that support the Sunspec PV 700

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
WMaxLimPctEna	WMaxLimPctEna	1000
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
PFWAbsEna	PFWAbsEna	1000
PFWInjEna	PFWInjEna	1000
VarSetEna	VarSetEna	1000
WMaxLimPctEna	WMaxLimPctEna	1000
WSetEna	WSetEna	1000
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
A	A	1000
ACType	ACType	1000
AL1	AL1	1000
AL2	AL2	1000
AL3	AL3	1000
AMaxRtg	AMaxRtg	1000
Alrm	Alrm	1000
ConnSt	ConnSt	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERHb	DERHb	1000
DERMode	DERMode	1000
Hz	Hz	1000
InvSt	InvSt	1000
LocRemCtl	LocRemCtl	1000

OpCtl	OpCtl	1000
PF	PF	1000
St	St	1000
Tmp	Tmp	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
TotVarhAbs	TotVarhAbs	1000
TotVarhInj	TotVarhInj	1000
TotWhAbs	TotWhAbs	1000
TotWhInj	TotWhInj	1000
VA	VA	1000
VAMaxRtg	VAMaxRtg	1000
VL1	VL1	1000
VL1L2	VL1L2	1000
VL2	VL2	1000
VL2L3	VL2L3	1000
VL3	VL3	1000
VL3L1	VL3L1	1000
VNom	VNom	1000
Var	Var	1000
W	W	1000
WChaRteMaxRtg	WChaRteMaxRtg	1000
WDisChaRteMaxRtg	WDisChaRteMaxRtg	1000
WMax	WMax	1000
WMaxLimPct	WMaxLimPct	1000
WMaxRtg	WMaxRtg	1000

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period
AlarmReset	AlarmReset	1000
ControllerHb	ControllerHb	500
OpCtl	OpCtl	1000
PFAbs	PFAbs	1000
PFIInj	PFIInj	1000
VNom	VNom	1000
VarSetMod	VarSetMod	1000
VarSetPct	VarSetPct	1000
VarSetPri	VarSetPri	1000
WMax	WMax	1000
WMaxLimPct	WMaxLimPct	1000
WSetPct	WSetPct	1000

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500



## 6.11 Inverters - Battery

### 6.11.1 ABB devices support

ECU Type	Device type
<a href="#">Trio (page 904)</a>	ABB Solar inverter TRIO-20.0(27.6)-TL-OUTD
<a href="#">PVS100 (page 905)</a>	ABB PVS 100
<a href="#">PVI 10.0 (page 906)</a>	ABB PVI 10.0
<a href="#">PCS100 BESS (page 973)</a>	ABB PCS100 BESS

### PCS100 BESS

Controllers that support the PCS100 BESS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Alarm Reset Command	Alarm Reset Command	1000	
Auto Mode Command	Auto Mode Command	1000	
Operator Mode Command	Operator Mode Command	1000	
Start Command	Start Command	1000	
Stop Command	Stop Command	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	500	
Active Power Exported Total PM	Active Power Exported Total PM	500	
Active Power Imported Total PM	Active Power Imported Total PM	500	
Active Power PM	Active Power PM	500	
Apparent Power PM	Apparent Power PM	500	
Battery Current	Battery Current	500	
Battery State of Charge	Battery State of Charge	500	
Battery State of Health	Battery State of Health	500	
Battery Voltage DC	Battery Voltage DC	500	
Current AVG PM	Current AVG PM	500	

Current L1 PM	Current L1 PM	500	
Current L2 PM	Current L2 PM	500	
Current L3 PM	Current L3 PM	500	
Enclosure Humidity	Enclosure Humidity	500	
Enclosure Temperature	Enclosure Temperature	500	
Ext Active Power Setpoint FB	Ext Active Power Setpoint FB	500	
Ext Active Power Setpoint FB2	Ext Active Power Setpoint FB2	500	
Extl Reactive Power Setpoint FB	Extl Reactive Power Setpoint FB	500	
Extl Rective Power Setpoint FB	Extl Rective Power Setpoint FB	500	
Frequency	Frequency	500	
Frequency PM	Frequency PM	500	
Max BESS output SoC compensated	Max BESS output SoC compensated	500	
Min BESS output SoC compensated	Min BESS output SoC compensated	500	
Nominal Rating	Nominal Rating	500	
Power Factor PM	Power Factor PM	500	
Reactive Power	Reactive Power	500	
Reactive Power Exported Total PM	Reactive Power Exported Total PM	500	
Reactive Power Imported Total PM	Reactive Power Imported Total PM	500	
Reactive Power Max Export cap	Reactive Power Max Export cap	500	
Reactive Power Max Import cap	Reactive Power Max Import cap	500	
Reactive Power PM	Reactive Power PM	500	
Voltage	Voltage	500	
Voltage AVG Ph-Ph PM	Voltage AVG Ph-Ph PM	500	
Voltage L1L2 PM	Voltage L1L2 PM	500	
Voltage L2L3 PM	Voltage L2L3 PM	500	
Voltage L3L1 PM	Voltage L3L1 PM	500	
Voltage PM	Voltage PM	500	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	1000	
Reactive Power Setpoint	Reactive Power Setpoint	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.11.2 Alfen devices support

ECU Type	Device type	Source documentation version
<a href="#">TheBattery (page 975)</a>	TheBattery BESS	v9.1

### TheBattery

Controllers that support the TheBattery:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power Consumed	Active Power Consumed	2000	
Actual system mode	Actual system mode	2000	
Apparent Power Limiter Status	Apparent Power Limiter Status	2000	
Available Apparent Power	Available Apparent Power	2000	
BESS Count	BESS Count	2000	
Current L1	Current L1	2000	
Current L2	Current L2	2000	
Current L3	Current L3	2000	
Frequency	Frequency	2000	
Main control status	Main control status	2000	
Maximum Apparent Power	Maximum Apparent Power	2000	
Rated battery voltage	Rated battery voltage	2000	
Rated capacity	Rated capacity	2000	
Reactive Power Consumed	Reactive Power Consumed	2000	
Remote Control	Remote Control	2000	
State of Charge	State of Charge	2000	

State of Health	State of Health	2000	
System ID 1	System ID 1	2000	
System ID 2	System ID 2	2000	
System ID 3	System ID 3	2000	
System ID 4	System ID 4	2000	
System Status	System Status	2000	
System Warning	System Warning	2000	
Temperature Battery Room	Temperature Battery Room	2000	
Total Charged Energy AC	Total Charged Energy AC	2000	
Total Charged Energy DC	Total Charged Energy DC	2000	
Total Discharged Energy AC	Total Discharged Energy AC	2000	
Total Discharged Energy DC	Total Discharged Energy DC	2000	
Voltage L1-L2	Voltage L1-L2	2000	
Voltage L2-L3	Voltage L2-L3	2000	
Voltage L3-L1	Voltage L3-L1	2000	
Watchdog Output	Watchdog Output	2000	

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period	Register
Active Power Direction	Active Power Direction	2000	
Active Power Request	Active Power Request	2000	
Nominal Frequency request	Nominal Frequency request	2000	
Play Profile	Play Profile	2000	
Profile Number 1 to 20	Profile Number 1 to 20	2000	
Reactive Power Direction	Reactive Power Direction	2000	
Reactive Power Request	Reactive Power Request	2000	
System Mode Request	System Mode Request	2000	
System On/Off Request	System On/Off Request	2000	
System Reset Request	System Reset Request	2000	
Watchdog Input	Watchdog Input	2000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	ECU connector	Controller
Communication	RJ45	RJ45 (modbus TCP)

## 6.11.3 Chint devices support

ECU Type	Device type	Source documentation version
<a href="#">BESS (page 977)</a>	Series ECB200KTL	v1.9
<a href="#">PV (page 910)</a>	PV Inverters SCH100KTL, SCH125KTL, SCH275KTL	v9.03

### BESS

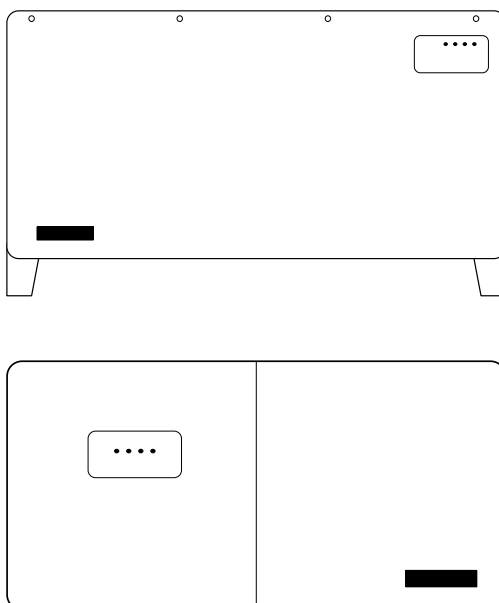


Image 5.258 DFM

### Controllers that support the BESS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
On Off Statuses	OnOffStatuses	500	
Oper Mode	OperMode	500	
VSG Mode OFF	VSGModeOff	500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Fault Reset	FaultReset	1000	
On Off Grid	OnOffGrid	1000	
System Start	SystemStart	2000	
System Stop	SystemStop	2000	
VSG Mode	VSG Mode	1000	

ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Absorbed Energy	Absorbed Energy	2000	
Active Power	Active Power	500	
Active Power L1	Active Power L1	1000	
Active Power L2	Active Power L2	1000	
Active Power L3	Active Power L3	1000	
Alm Fault Stat	AlmFaultStat	500	
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
Grid Frequency	Grid Frequency	1000	
Grid Voltage L1L2	Grid Voltage L1L2	1000	
Grid Voltage L2L3	Grid Voltage L2L3	1000	
Grid Voltage L3L1	Grid Voltage L3L1	1000	
Reactive Power	Reactive Power	500	
Reactive Power L1	Reactive Power L1	1000	
Reactive Power L2	Reactive Power L2	1000	
Reactive Power L3	Reactive Power L3	1000	
Released Energy	Released Energy	2000	
Simulated SOC	Simulated SOC	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	500	
Off-grid AC Freq regulation	Off-grid AC Freq reg	200	
Off-grid AC voltage regulation	Off-grid AC volt reg	200	
Reactive Power Setpoint	Reactive Power Setpoint	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RJ45 connector	Controller
Ethernet	A	RJ45 (Modbus TCP)

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

For correct function of RS485, terminal resistor might needed to be switched ON only on the last inverter in the BUS chain.

# 6.11.4 Delta Electronics devices support

ECU Type	Device type	Source documentation version
<a href="#">M series (page 911)</a>	Delta inverters from the M series family (RPI-3 M6A/M8A/M10A/M15A/M20A/M30A/M50A/M66H/M88H)	v1.0
<a href="#">PCS100HV (page 979)</a>	Delta battery inverters PCS100HV BESS	v1.1.8
<a href="#">Site Controller (page 852)</a>	Smart Grid Communication Site-Controller	v.0.0.6

## PCS100HV

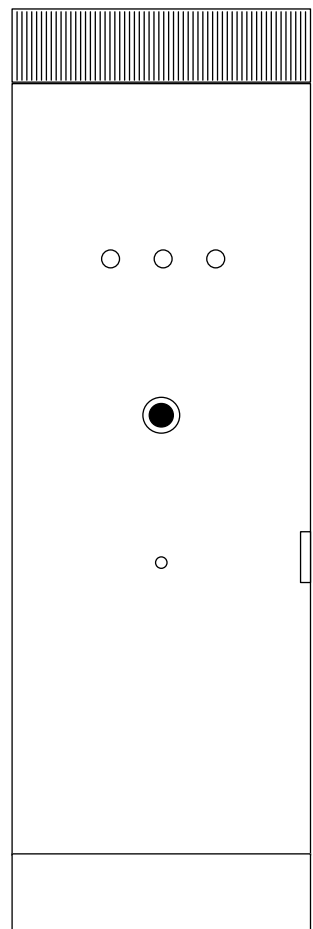


Image 5.259 PCS100HV

### Controllers that support the PCS100HV:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register

ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
PCS Power OnOFF	PCS Power OnOFF	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	1000	
Ambient Temperature	Ambient Temperature	1000	
Battery Rated Voltage	Battery Rated Voltage	1000	
DC Bus Current	DC Bus Current	1000	
DC Bus Voltage	DC Bus Voltage	1000	
L1 Load Current RMS	L1 Load Current RMS	1000	
L1-L2 Voltage PCC	L1-L2 Voltage PCC	1000	
L1-L2 Voltage in Cabinet	L1-L2 Voltage in Cabinet	1000	
L2 Load Current RMS	L2 Load Current RMS	1000	
L2-L3 Voltage PCC	L2-L3 Voltage PCC	1000	
L2-L3 Voltage in Cabinet	L2-L3 Voltage in Cabinet	1000	
L3 Load Current RMS	L3 Load Current RMS	1000	
L3-L1 Voltage PCC	L3-L1 Voltage PCC	1000	
L3-L1 Voltage in Cabinet	L3-L1 Voltage in Cabinet	1000	
Micro-Grid Frequency	Micro-Grid Frequency	1000	
Micro-Grid RS L1-L2	Micro-Grid RS L1-L2	1000	
Micro-Grid RS L1-N	Micro-Grid RS L1-N	1000	
Micro-Grid RS L2-L3	Micro-Grid RS L2-L3	1000	
Micro-Grid RS L2-N	Micro-Grid RS L2-N	1000	
Micro-Grid RS L3-L1	Micro-Grid RS L3-L1	1000	
Micro-Grid RS L3-N	Micro-Grid RS L3-N	1000	
Power Switch Status	Power Switch Status	1000	
Rating AC Current	Rating AC Current	500	
Rating AC Frequency	Rating AC Frequency	500	
Rating AC Line-Line Voltage	Rating AC Line-Line Voltage	500	
Rating AC Power	Rating AC Power	500	
Rating DC Current	Rating DC Current	500	



Reactive Power	Reactive Power	1000	
Sink Temperature	Sink Temperature	1000	
SoC High Fault	SoC High Fault	1000	
SoC High Warning	SoC High Warning	1000	
SoC Low Fault	SoC Low Fault	1000	
SoC Low Warning	SoC Low Warning	1000	
System Status	System Status	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Demand	Active Power Demand	1000	
Reactive Power Demand	Reactive Power Demand	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite, 3 - IntelDrive Lite, 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano, 7 - IntelGen200, IntelGen500

## Recommended wiring

Function	RS485	Controller
<b>RS485 A</b>	Data+	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	Data-	RS485 B
<b>+ (positive)</b>	VCC	N/A
<b>- (negative)</b>	GND	N/A

## 6.11.5 DynaPower devices support

ECU Type	Device type	Source documentation version
<a href="#">BEES V1 (page 983)</a>	MPS125 Battery storage (Sunspec 123)	v15
<a href="#">BTM (page 981)</a>	BTM-250	v3
<a href="#">BEES V2 (page 988)</a>	MPS125 Battery storage (Sunspec 700)	v5

## BTM

### Controllers that support the BESS:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Inverter PQ/Uf Mode Feedback	Inverter PQ/Uf Mode Feedback	500	
KDC Feedback	KDC Feedback	500	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Auto Restart	Auto Restart	100	
Auto Transfer Disable	Auto Transfer	500	

	Disable		
PQ/Uf Mode Selection	PQ/Uf Mode Selection	100	
<b>ECU analog outputs (controller's inputs)</b>			
Configuration Name	Name	Polling period	Register
Active Power	Active Power	100	
Active Power Setpoint Feedback	Active Power Setpoint Feedback	500	
Apparent Power	Apparent Power	500	
Controller Chassis Temperature	Controller Chassis Temperature	500	
Current Grid Status	Current Grid Status	500	
DC Current	DC Current	500	
DC Power	DC Power	500	
DC Voltage	DC Voltage	500	
Fault 1	Fault 1	500	
Fault 2	Fault 2	500	
Frequency	Frequency	100	
Frequency Setpoint Feedback	Frequency Setpoint Feedback	500	
Grid Current L1	Grid Current L1	500	
Grid Current L2	Grid Current L2	500	
Grid Current L3	Grid Current L3	500	
Grid Voltage L1-L2	Grid Voltage L1-L2	500	
Grid Voltage L2-L3	Grid Voltage L2-L3	500	
Grid Voltage L3-L1	Grid Voltage L3-L1	500	
IC Alarm 1	IC Alarm 1	500	
IC Alarm 2	IC Alarm 2	500	
IC Fault 1	IC Fault 1	500	
IC Fault 2	IC Fault 2	500	
IC State	IC State	500	
IC Status 1	IC Status 1	500	
Inverter Alarms	Inverter Alarms	500	
Inverter Heat Sink Temperature	Inverter Heat Sink Temperature	500	
Last Grid Fault	Last Grid Fault	500	
Max Cell Temperature	Max Cell Temperature	1000	
Max Cell Voltage	Max Cell Voltage	1000	
Min Cell Temperature	Min Cell Temperature	1000	
Min Cell Voltage	Min Cell Voltage	1000	
PCS States	PCS States	500	
Reactive Power	Reactive Power	100	
Reactive Power Setpoint Feedback	Reactive Power Setpoint Feedback	500	
Status	Status	500	
Switches	Switches	500	

System DC Current	System DC Current	1000	
System DC Voltage	System DC Voltage	1000	
System SOC	System SOC	1000	
System SOH	System SOH	1000	
Voltage Setpoint Feedback	Voltage Setpoint Feedback	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Setpoint	Active Power Setpoint	100	
Output Frequency Setpoint	Output Frequency Setpoint	100	
Output Voltage Setpoint	Output Voltage Setpoint	100	
PCS Control	PCS Control	100	
Reactive Power Setpoint	Reactive Power Setpoint	100	
Watchdog	Watchdog	100	
Watchdog Timeout Period	Watchdog Timeout Period	100	

## Recommended wiring

### Ethernet

<b>Function</b>	<b>RJ45 connector</b>	<b>Controller</b>
Ethernet	RS485out	Ethernet

### BESS V1

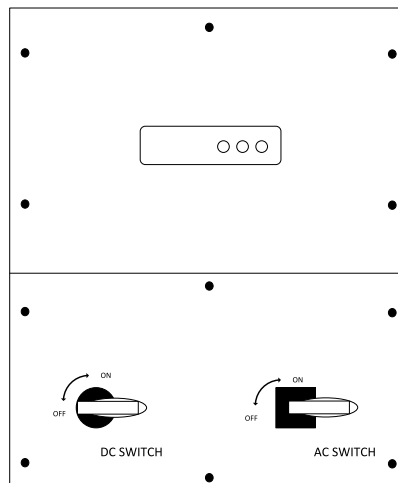


Image 5.260 BESS

## Controllers that support the BESS:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
AC Disconnect	AC Disconnect	1000
AC Disconnect Switch Fault	AC Disconnect Switch Fault	1000
AC Grid Fault (VF_	AC Grid Fault (VF_	1000
AC Grid Overvoltage	AC Grid Overvoltage	1000
AC Overcurrent	AC Overcurrent	1000
AC Overvoltage	AC Overvoltage	1000
AC SPD Fault	AC SPD Fault	1000
AC-DC Power Mismatch Fault	AC-DC Power Mismatch Fault	1000
AG_FreqHiLim 1	AG_FreqHiLim 1	1000
AG_FreqHiLim 2	AG_FreqHiLim 2	1000
AG_FreqHiLim 3	AG_FreqHiLim 3	1000
AG_FreqHiLim 4	AG_FreqHiLim 4	1000
AG_FreqHiLim 5	AG_FreqHiLim 5	1000
AG_FreqLoLim 1	AG_FreqLoLim 1	1000
AG_FreqLoLim 2	AG_FreqLoLim 2	1000
AG_FreqLoLim 3	AG_FreqLoLim 3	1000
AG_FreqLoLim 4	AG_FreqLoLim 4	1000
AG_FreqLoLim 5	AG_FreqLoLim 5	1000
AG_VhiLim 1	AG_VhiLim 1	1000
AG_VhiLim 2	AG_VhiLim 2	1000
AG_VhiLim 3	AG_VhiLim 3	1000
AG_VhiLim 4	AG_VhiLim 4	1000
AG_VhiLim 5	AG_VhiLim 5	1000
AG_VloLim 1	AG_VloLim 1	1000
AG_VloLim 2	AG_VloLim 2	1000
AG_VloLim 3	AG_VloLim 3	1000
AG_VloLim 4	AG_VloLim 4	1000
AG_VloLim 5	AG_VloLim 5	1000
AUF_FreqHiLim 1	AUF_FreqHiLim 1	1000
AUF_FreqHiLim 2	AUF_FreqHiLim 2	1000
AUF_FreqHiLim 3	AUF_FreqHiLim 3	1000
AUF_FreqHiLim 4	AUF_FreqHiLim 4	1000
AUF_FreqHiLim 5	AUF_FreqHiLim 5	1000
AUF_FreqLoLim 1	AUF_FreqLoLim 1	1000
AUF_FreqLoLim 2	AUF_FreqLoLim 2	1000
AUF_FreqLoLim 3	AUF_FreqLoLim 3	1000
AUF_FreqLoLim 4	AUF_FreqLoLim 4	1000
AUF_FreqLoLim 5	AUF_FreqLoLim 5	1000
AUF_VhiLim 1	AUF_VhiLim 1	1000
AUF_VhiLim 2	AUF_VhiLim 2	1000
AUF_VhiLim 3	AUF_VhiLim 3	1000
AUF_VhiLim 4	AUF_VhiLim 4	1000
AUF_VhiLim 5	AUF_VhiLim 5	1000

AUF_VloLim 1	AUF_VloLim 1	1000
AUF_VloLim 2	AUF_VloLim 2	1000
AUF_VloLim 3	AUF_VloLim 3	1000
AUF_VloLim 4	AUF_VloLim 4	1000
AUF_VloLim 5	AUF_VloLim 5	1000
Auto Transfer Enabled	Auto Transfer Enabled	1000
Cabinet Overtemperature	Cabinet Overtemperature	1000
Capacitor Difference Fault	Capacitor Difference Fault	1000
Capacitor Overvoltage	Capacitor Overvoltage	1000
Capacitor Voltage Fault	Capacitor Voltage Fault	1000
Conn	Conn	5000
Control Power Fault	Control Power Fault	1000
Cooldown Period Active	Cooldown Period Active	1000
DC Contactor Aux. Open	DC Contactor Aux. Open	1000
DC Disconnect	DC Disconnect	1000
DC Fuse	DC Fuse	1000
DC Overcurrent	DC Overcurrent	1000
DC Overcurrent HW	DC Overcurrent HW	1000
DC Overvoltage HW	DC Overvoltage HW	1000
DC Precharge Fault	DC Precharge Fault	1000
DC SPD Fault	DC SPD Fault	1000
Device Key Fault	Device Key Fault	1000
Emergency Power Off Fault	Emergency Power Off Fault	1000
External Contactor Fault	External Contactor Fault	1000
Fan 1 Status	Fan 1 Status	1000
Fan 2 Status	Fan 2 Status	1000
Fault Active	Fault Active	1000
Frequency Watt Parameter active	Frequency Watt Parameter active	1000
IGBT Overtemperature	IGBT Overtemperature	1000
Inv-Overcurrent HW	Inv-Overcurrent HW	1000
OutPFSet_Ena	OutPFSet_Ena	5000
Over Temperature	Over Temperature	1000
Overload Active	Overload Active	1000
PCS Heartbeat	PCS Heartbeat	1000
Reconnection Active	Reconnection Active	1000

Setting Files Fault	Setting Files Fault	1000
Soft Ramp Active	Soft Ramp Active	1000
Terminal Grid OK	Terminal Grid OK	1000
UF Mode AC Fault	UF Mode AC Fault	1000
UpStream AC Aux. Open	UpStream AC Aux. Open	1000
Upstream Contactor Enabled	Upstream Contactor Enabled	1000
Upstream Grid OK	Upstream Grid OK	1000
Vdc Over Voltage	Vdc Over Voltage	1000
Vdc Under Voltage	Vdc Under Voltage	1000
Watchdog Enabled	Watchdog Enabled	1000
Watchdog Fault	Watchdog Fault	1000
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit Enable	Active Power Limit Enable	1000
Controller Heartbeat	Controller Heartbeat	1000
Fault Reset	Fault Reset	1000
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
ARtg	ARtg	2000
Active Grid Fault	Active Grid Fault	1000
Active Power	Active Power	1000
Active UF Mode Fault	Active UF Mode Fault	1000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
Frequency	Frequency	1000
Frequency UF Droop Slope	Frequency UF Droop Slope	1000
IAC_RMS_Rated	IAC_RMS_Rated	1000
Last Grid Fault	Last Grid Fault	1000
Last UF Mode Fault	Last UF Mode Fault	1000

Max DC Charge Current Limit	Max DC Charge Current Limit	1000
Max DC Discharge Current Limit	Max DC Discharge Current Limit	1000
Miscellaneous Status Register	Miscellaneous Status Register	1000
Nominal Active Power	Nominal Active Power	2000
Operating States	Operating States	1000
Operation Mode Select	Operation Mode Select	1000
OutPFSet	OutPFSet	5000
PF	PF	1000
Reactive Power	Reactive Power	1000
Reconnect Counter	Reconnect Counter	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
UF Mode Freq Adjust	UF Mode Freq Adjust	1000
UF Mode Volt Adjust	UF Mode Volt Adjust	1000
VA	VA	1000
VARtg	VARtg	2000
VARRtgQ1	VARRtgQ1	2000
VARWMaxPct	VARWMaxPct	5000
Vendor Event Bitfield 1	Vendor Event Bitfield 1	1000
Vendor Event Bitfield 2	Vendor Event Bitfield 2	1000
Vendor Event Bitfield 3	Vendor Event Bitfield 3	1000
Vendor Operating State	Vendor Operating State	1000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
Voltage UF Droop Slope	Voltage UF Droop Slope	1000
WH	WH	1000
WMaxLimPct	WMaxLimPct	5000

ECU analog inputs (controller's outputs)		
Configuration Name	Name	Polling period
Active Power Limit	Active Power Limit	1000
Frequency UF Droop Slope out	Frequency UF Droop Slope out	1000
Operation Mode Select	Operation Mode Select	1000
PCS Set Operation	PCS Set Operation	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000
UF Mode Freq Adjust out	UF Mode Freq Adjust out	1000
UF Mode Volt Adjust out	UF Mode Volt Adjust out	1000
Voltage UF Droop Slope out	Voltage UF Droop Slope out	1000

## Recommended wiring

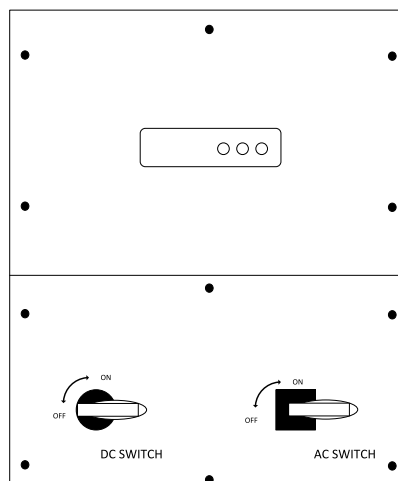
### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RS485out	Ethernet

### BESS V2





**Controllers that support the BESS:**Refer to [Compatibility Table \(page 10\)](#)**Available parameters**

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
AC Disconnect Open	AC Disconnect Open	1000
AC Disconnect Switch Fault	AC Disconnect Switch Fault	1000
AC Grid Fault (VF)	AC Grid Fault (VF)	1000
AC Grid Overvoltage	AC Grid Overvoltage	1000
AC Overcurrent	AC Overcurrent	1000
AC Overvoltage	AC Overvoltage	1000
AC SPD Fault	AC SPD Fault	1000
AC Voltage Above Limit	AC Voltage Above Limit	1000
AC Voltage Phase sequence	AC Voltage Phase sequence	1000
AC Voltage Under Limit	AC Voltage Under Limit	1000
AC-DC Power Mismatch Fault	AC-DC Power Mismatch Fault	1000
Active Cooldown Period	Active Cooldown Period	1000
Blown String Fuse on Input	Blown String Fuse on Input	1000
CAN Fault	CAN Fault	1000
Cabinet Open	Cabinet Open	1000
Cabinet Overtemperature	Cabinet Overtemperature	1000
Capacitor Difference Fault	Capacitor Difference Fault	1000
Capacitor Overvoltage	Capacitor Overvoltage	1000
Capacitor Voltage Fault	Capacitor Voltage Fault	1000
Control Power Fault	Control Power Fault	1000
DC Current Charge	DC Current Charge	1000
DC Current Discharge	DC Current Discharge	1000
DC Disconnect Open	DC Disconnect Open	1000
DC Fuse	DC Fuse	1000
DC High Voltage Limit	DC High Voltage Limit	1000
DC Low Voltage Limit	DC Low Voltage Limit	1000

DC Over Voltage	DC Over Voltage	1000
DC Overcurrent	DC Overcurrent	1000
DC Overcurrent HW	DC Overcurrent HW	1000
DC Overvoltage HW	DC Overvoltage HW	1000
DC Precharge Fault	DC Precharge Fault	1000
DC SPD Fault	DC SPD Fault	1000
Device Key Fault	Device Key Fault	1000
Estop Fault	Estop Fault	1000
External Contactor Fault	External Contactor Fault	1000
Fan fault	Fan fault	1000
Fault Active	Fault Active	1000
Frequency Above Limit	Frequency Above Limit	1000
Frequency Under Limit	Frequency Under Limit	1000
Generic Memory/Comm Error	Generic Memory/Comm Error	1000
Grid Disconnect	Grid Disconnect	1000
Ground Fault	Ground Fault	1000
Hardware Test Failure	Hardware Test Failure	1000
IGBT Overtemperature	IGBT Overtemperature	1000
InverterOver Current HW	InverterOver Current HW	1000
Iq Limit Alarm	Iq Limit Alarm	1000
Kdc Contactor Fault	Kdc Contactor Fault	1000
Leakage current fault	Leakage current fault	1000
Loss of Phase Fault	Loss of Phase Fault	1000
Low Memory Alarm	Low Memory Alarm	1000
Manual Shutdown	Manual Shutdown	1000
Manufacturer Alarm	Manufacturer Alarm	1000
Master/Slave Mismatch Alarm	Master/Slave Mismatch Alarm	1000
One or more warnings Active	One or more warnings Active	1000
Over Temperature	Over Temperature	1000
Overload Fault	Overload Fault	1000
Overload warning	Overload warning	1000
Power Mismatch	Power Mismatch	1000
RMS Overcurrent Fault	RMS Overcurrent Fault	1000
Setting Files Fault	Setting Files Fault	1000
Slave CAN Alarm	Slave CAN Alarm	1000
State/Mode Mismatch Fault	State/Mode Mismatch Fault	1000

Time stamp fault	Time stamp fault	1000
UF Mode AC Fault	UF Mode AC Fault	1000
Under Temperature	Under Temperature	1000
VDC Over Voltage	VDC Over Voltage	1000
VDC Under Voltage	VDC Under Voltage	1000
Vendor - AC Overcurrent	Vendor - AC Overcurrent	1000
Vendor - Cabinet Overtemperature	Vendor - Cabinet Overtemperature	1000
Vendor - IGBT Overtemperature	Vendor - IGBT Overtemperature	1000
Vendor-Over Temperature	Vendor-Over Temperature	1000
Watchdog Fault	Watchdog Fault	1000
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
AC Max Current Setting	AC Max Current Setting	1000
Active Power	Active Power	1000
Active Power Max Rating	Active Power Max Rating	1000
Active Power Max Setting	Active Power Max Setting	1000
Active Power Setpoint	Active Power Setpoint	1000
Active Power Setpoint %	Active Power Setpoint %	1000
Alarm Reset Fdb	Alarm Reset Fdb	1000
Apparent Power	Apparent Power	1000
Apparent Power Max Rating	Apparent Power Max Rating	1000
Charge Rate Max Rating	Charge Rate Max Rating	1000
Control Mode	Control Mode	1000
Controller Heartbeat Fdb	Controller Heartbeat Fdb	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DC Charge Current Limit	DC Charge Current Limit	1000
DC Current	DC Current	1000
DC Discharge Current Limit	DC Discharge Current Limit	1000
DC Power	DC Power	1000
DC Voltage	DC Voltage	1000
DER Heartbeat	DER Heartbeat	1000
DER Operating State	DER Operating	1000

	State	
DER Operational Characteristics	DER Operational Characteristics	1000
Discharge Rate Max Rating	Discharge Rate Max Rating	1000
Frequency	Frequency	1000
Frequency Droop Fdb	Frequency Droop Fdb	1000
Grid Connection State	Grid Connection State	1000
Heat Sink Temperature	Heat Sink Temperature	1000
IGBT/MOSFET Temperature	IGBT/MOSFET Temperature	1000
Iq Charge Limit in Uf Mode	Iq Charge Limit in Uf Mode	1000
Iq Discharge Limit in Uf Mode	Iq Discharge Limit in Uf Mode	1000
Limit Max Power % Enable	Limit Max Power % Enable	1000
Limit Max Power % Setpoint	Limit Max Power % Setpoint	1000
Operating State	Operating State	1000
Operation Mode Select Fdb	Operation Mode Select Fdb	1000
Power Factor	Power Factor	1000
Power Factor Enable Absorb	Power Factor Enable Absorb	1000
Power Factor Enable Inject	Power Factor Enable Inject	1000
Reactive Power	Reactive Power	1000
Reactive Power Priority	Reactive Power Priority	1000
Reactive Power Setpoint	Reactive Power Setpoint	1000
Reactive Power Setpoint %	Reactive Power Setpoint %	1000
Set Active Power Enable	Set Active Power Enable	1000
Set Active Power Mode Fdb	Set Active Power Mode Fdb	1000
Set Operation Fdb	Set Operation Fdb	1000
Set Reactive Power Enable	Set Reactive Power Enable	1000
Set Reactive Power Mode Fdb	Set Reactive Power Mode Fdb	1000
Total AC Current	Total AC Current	1000
Uf Mode Frequency Adjustment Fdb	Uf Mode Frequency Adjustment Fdb	1000
Uf Mode Voltage Adjustment Fdb	Uf Mode Voltage	1000

	Adjustment Fdb	
Voltage Droop Fdb	Voltage Droop Fdb	1000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Setpoint kW	Active Power Setpoint kW	1000
Alarm Reset	Alarm Reset	1000
Charge Rate Max VA	Charge Rate Max VA	1000
Controller Heartbeat	Controller Heartbeat	1000
DC Charge Limit	DC Charge Limit	1000
DC Discharge Limit	DC Discharge Limit	1000
Discharge Rate Max VA	Discharge Rate Max VA	1000
Fan Control	Fan Control	1000
Frequency Droop	Frequency Droop	1000
Operation Mode Select	Operation Mode Select	1000
Reactive Power Setpoint kVAr	Reactive Power Setpoint kVAr	1000
Set Active Power Mode	Set Active Power Mode	1000
Set Active Power Mode Enable	Set Active Power Mode Enable	1000
Set Operation	Set Operation	1000
Set Reactive Power Mode	Set Reactive Power Mode	1000
Set Reactive Power Mode Enable	Set Reactive Power Mode Enable	1000
Uf Mode Frequency Adjustment	Uf Mode Frequency Adjustment	1000
Uf Mode Voltage Adjustment	Uf Mode Voltage Adjustment	1000
Voltage Droop	Voltage Droop	1000

Recommended wiring

RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

Ethernet

Function	RJ45 connector	Controller
Ethernet	RS485out	Ethernet

6.11.6 EPCPower devices support

ECU Type	Device type
<a href="#">BESS (page 994)</a>	CAB1000 Battery storage

BESS

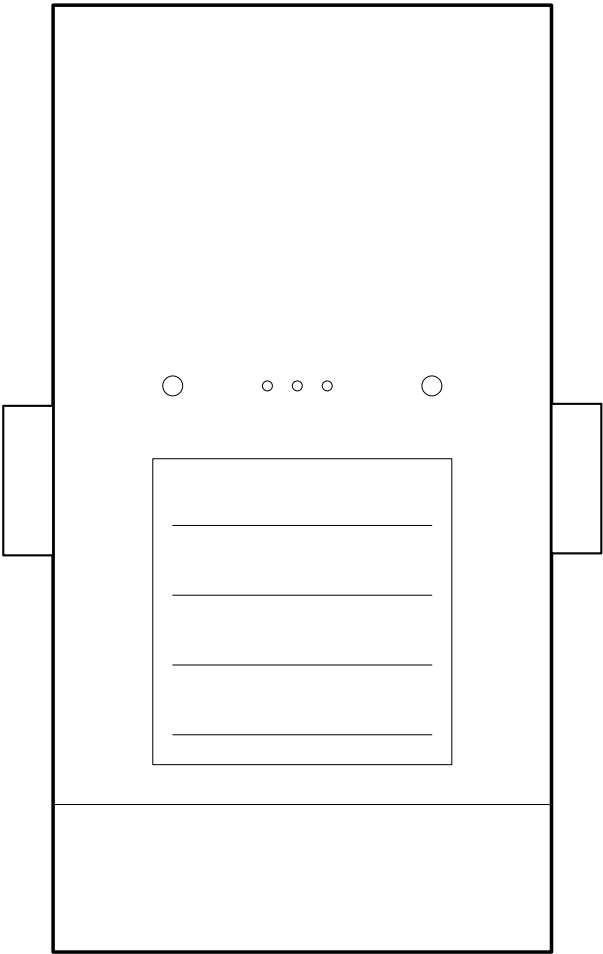


Image 5.262 BESS

Controllers that support the BESS:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
Control Mode	Control Mode	1000
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Active Power Limit Enable	Active Power Limit Enable	1000
Connect	Connect	1000
Control Mode out	Control Mode out	1000
Fault Clear out	Fault Clear out	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
ARtg	ARtg	2000
Active Power	Active Power	1000
AhrRtg	AhrRtg	2000
Bridge A Temperature	TmpA	1000
Bridge B Temperature	TmpB	1000
Conn	Conn	5000
Conn_RvrtTms	Conn_RvrtTms	5000
Conn_WinTms	Conn_WinTms	5000
Coolant Temperature	Tpmlnlt	1000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
Fault Flags	Fault Flags	1000
Frequency	Frequency	1000
Grid Voltage	Grid Voltage	1000
MaxChaRte	MaxChaRte	2000
MaxDisChaRte	MaxDisChaRte	2000
Nominal Active Power	Nominal Active Power	2000
OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
OutPFSet_RmpTms	OutPFSet_RmpTms	5000
OutPFSet_RvrtTms	OutPFSet_RvrtTms	5000

OutPFSet_WinTms	OutPFSet_WinTms	5000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
Reactive Power Command	Reactive Power Command	1000
Real Power Command	Real Power Command	1000
St	St	1000
StVnd	StVnd	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
VARtg	VARtg	2000
VArAvalPct	VArAvalPct	5000
VArMaxPct	VArMaxPct	5000
VArPct_Ena	VArPct_Ena	5000
VArPct_Mod	VArPct_Mod	5000
VArPct_RmpTms	VArPct_RmpTms	5000
VArPct_RvrtTms	VArPct_RvrtTms	5000
VArPct_WinTms	VArPct_WinTms	5000
VArRtgQ1	VArRtgQ1	2000
VArRtgQ2	VArRtgQ2	2000
VArRtgQ3	VArRtgQ3	2000
VArRtgQ4	VArRtgQ4	2000
VArWMaxPct	VArWMaxPct	5000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WHRtg	WHRtg	2000
WMaxLimPct	WMaxLimPct	5000
WMaxLimPct_RmpTms	WMaxLimPct_RmpTms	5000
WMaxLimPct_RvrtTms	WMaxLimPct_RvrtTms	5000
WMaxLimPct_WinTms	WMaxLimPct_WinTms	5000
WMaxLim_Ena	WMaxLim_Ena	5000
Warning Flags	Warning Flags	1000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit	Active Power Limit	1000



Control Source out	Control Source out	1000
Grid Apparent Current Limit	Grid Apparent Current Limit	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000
Reactive Power Command out	CmdReactivePwr	1000
Real Power Command out	CmdRealPwr	1000
VDC Setpoint	VDC Setpoint	1000

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RS485out	Ethernet

## 6.11.7 HITACHI devices support

ECU Type	Device type	Source documentation version
<a href="#">PQstorl R3 (page 997)</a>	PQstorl R3	rev.A

### PQstorl R3

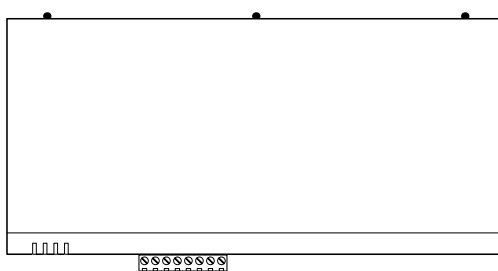


Image 5.263 PQstorl R3

## Controllers that support the PQstorl R3:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register

ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
AIP State	AIP State	1000	
Battery Current	Battery Current	1000	
Battery Voltage	Battery Voltage	1000	
Bus U DC	Bus U DC	1000	
Current DSP Warning	Current DSP Warning	1000	
Current Error	Current Error	1000	
Current rms L1	Current rms L1	1000	
Current rms L2	Current rms L2	1000	
Current rms L3	Current rms L3	1000	
Frequency	Frequency	1000	
I Am Master	I Am Master	1000	
Inverter Active Power	Inverter Active Power	1000	
Inverter Apparent Power	Inverter Apparent Power	1000	
Inverter Reactive Power	Inverter Reactive Power	1000	
Inverter U DC	Inverter U DC	1000	
Max U DC	Max U DC	1000	
Nominal Current Rating	Nominal Current Rating	1000	
Nominal Frequency	Nominal Frequency	1000	
Nominal Voltage	Nominal Voltage	1000	
Output Status	Output Status	1000	
THD Current L1	THD Current L1	1000	
THD Current L2	THD Current L2	1000	
THD Current L3	THD Current L3	1000	
THD Voltage L2 L3	THD Voltage L2 L3	1000	
THD Voltage L1 L2	THD Voltage L1 L2	1000	
THD Voltage L3 L1	THD Voltage L3 L1	1000	
Total Active Power	Total Active Power	1000	
Total Apparanet Power	Total Apparanet Power	1000	
Total I DC	Total I DC	1000	
Total Inverter Current L1	Total Inverter Current L1	1000	
Total Inverter Current L2	Total Inverter Current L2	1000	
Total Inverter Current L3	Total Inverter Current L3	1000	
Total Inverter Current N	Total Inverter Current N	1000	
Total Reactive Power	Total Reactive	1000	

	Power		
Voltage Imbalance	Voltage Imbalance	1000	
Voltage rms L1 L2	Voltage rms L1 L2	1000	
Voltage rms L2 L3	Voltage rms L2 L3	1000	
Voltage rms L3 L1	Voltage rms L3 L1	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Action Request	Action Request	1000	
Function Auto Restart	Function Auto Restart	1000	
Ground Fault	Ground Fault	1000	
Modbus Event ID	Modbus Event ID	1000	
Nominal Frequency	Nominal Frequency	1000	
Nominal Voltage	Nominal Voltage	1000	
Reset Fault	Reset Fault	1000	
Set P	Set P	1000	
Set Q	Set Q	1000	
Start Request	Start Request	1000	
Stop Request	Stop Request	1000	
U Max	U Max	1000	
U Min	U Min	1000	
Unbalance	Unbalance	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

<b>Requested speed (Spd-Requested) settings for IntelliGen<sup>NT</sup>, IntelliSys<sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000</b>			
Source	SpeedReq RPM <sup>1</sup>		
Convert	NO		
Limits	N/A		N/A
	N/A		N/A

<b>Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile</b>			
Source	Speed Request		
Convert	YES		
Limits	0.0 %		Min eng. speed (800RPM)
	100.0 %		Max eng. speed (2100RPM)

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (InteliDriveDCU Marine ver. 3.0 and newer, InteliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	COM port 1-6	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

## 6.11.8 Huawei devices support

ECU Type	Device type	Source documentation version
<a href="#">SUN2000 (page 933)</a>	Huawei SUN2000 (V200R002)	v2
<a href="#">Smart Logger 2000 (page 931)</a>	Huawei SmartLogger 2000	v1
<a href="#">Smart Logger 3000 EMI (page 936)</a>	Huawei SmartLogger 3000 Enviromental Monitor Instrument application	v3
<a href="#">Smart Logger 3000 ESS (page 1000)</a>	Huawei SmartLogger 3000 ESS application (e.g. LUNA2000)	v3
<a href="#">Smart Logger 3000 PM (page 937)</a>	Huawei SmartLogger 3000 Power Meter application	v3
<a href="#">Smart Logger 3000 PV (page 939)</a>	Huawei SmartLogger 3000 PV application	v3

## Smart Logger 3000 ESS

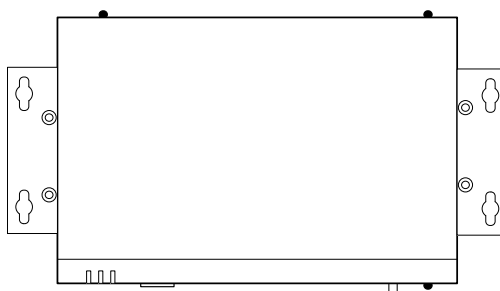


Image 5.264 Smart Logger 3000 ESS

## Controllers that support the Smart Logger 3000 ESS:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register

ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ESS Shutdown	ESS Shutdown	500	
ESS Startup	ESS Startup	500	
Power on/off	Power on/off	500	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Active ESS Power Adjustment Pct	Active ESS Power Adjustment Pct	1000	
Active ESS Power Adjustment Val	Active ESS Power Adjustment Val	1000	
Active Power	Active Power	1000	
Active power Adjustment	Active power Adjustment	1000	
Active power Adjustment Pct	Active power Adjustment Pct	1000	
Chargeable Capacity	Chargeable Capacity	1000	
DC Current	DC Current	1000	
Dischargeable Capacity	Dischargeable Capacity	1000	
E-Daily	E-Daily	1000	
E-Total	E-Total	1000	
ESS PCS Shutdown	ESS PCS Shutdown	500	
ESS PCS in Operation	ESS PCS in Operation	500	
Ess EndOfCcharge SOC	Ess EndOfCcharge SOC	1000	
Ess EndOfDischarge SOC	Ess EndOfDischarge SOC	1000	
Max. Active Adjustment	Max. Active Adjustment	1000	
Max. Reactive Adjustment	Max. Reactive Adjustment	1000	
Maximum ESS Charge Power	Maximum ESS Charge Power	1000	
Maximum ESS Discharge Power	Maximum ESS Discharge Power	1000	
Min. Active Adjustment	Min. Active Adjustment	1000	
Min. Reactive Adjustment	Min. Reactive Adjustment	1000	
Power Factor	Power Factor	500	
Power Factor Adjustment	Power Factor Adjustment	1000	
Quantity of Running ESS PCSs	Quantity of Running ESS PCSs	1000	
Rated ESS Capacity	Rated ESS Capacity	1000	
Rated ESS Power	Rated ESS Power	1000	
Reactive ESS Power Adjust Val	Reactive ESS Power Adjust Val	1000	
Reactive Power	Reactive Power	1000	
Reactive power Adjustment	Reactive power	1000	

	Adjustment		
SOC	SOC	1000	
SOE	SOE	1000	
SOH	SOH	1000	
Total Related Capacity of Grid Connected Inverters	Total Rel. Cap. of Grid Invert.	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active ESS Power Adjustment Val	Active ESS Power Adjustment Val	1000	
Active power Adjustment Pct	Active power Adjustment Pct	1000	
Frequency Adjustment for VSG	Frequency Adjustment for VSG	1000	
PCS Working Mode	PCS Working Mode	1000	
Reactive ESS Power Adjust Val	Reactive ESS Power Adjust Val	1000	
Reactive power Adjustment	Reactive power Adjustment	1000	
Voltage Adjustment for VSG	Voltage Adjustment for VSG	1000	

**Note:** By default the device is prepared for separate PV or ESS applications. In case there is need to support older version of SmartLogger with aggregated PV and ESS function, user has to manually reconfigure writing registers: Active PV/ESS Power Adjustment Pct to Active Power Adjustment Pct , Reactive PV/ESS Power Adjustment Val to Reactive Power Adjustment

### Recommended wiring

Function	COM port 1-3	Controller
RS485 A	+	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	-	RS485 B

## 6.11.9 Pixii devices support

ECU Type	Device type supported	Source documentation version
<a href="#">BEES Gateway (page 1003)</a>	Pixii gateway controller	v2.1

## BESS Gateway

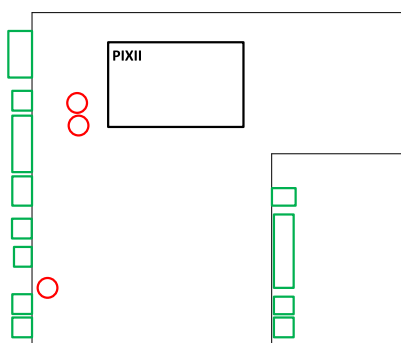


Image 5.265 Pixii BESS Gateway

### Controllers that support the BESS Gateway:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Ready for regulation adr. 3900	Ready for regulation adr. 3900	1000	
Ready for regulation adr. 3910	Ready for regulation adr. 3910	1000	
Regulation started	Regulation started	1000	
Start battery calibration	Start battery calibration	1000	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Enable reactive power	Enable reactive power	1000	
Reset alarm	Reset alarm	1000	
Start regulation	Start regulation	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
AC active power phase A	AC active power phase A	1000	
AC active power phase B	AC active power phase B	1000	
AC active power phase C	AC active power phase C	1000	
AC active power total	AC active power total	1000	
AC apparent power phase A	AC apparent power phase A	1000	
AC apparent power phase B	AC apparent power phase B	1000	

AC apparent power phase C	AC apparent power phase C	1000	
AC apparent power total	AC apparent power total	1000	
AC boltage phase A	AC boltage phase A	1000	
AC current phase B	AC current phase B	1000	
AC current phase C	AC current phase C	1000	
AC current total	AC current total	1000	
AC cuurent phase A	AC cuurent phase A	1000	
AC energy exported	AC energy exported	1000	
AC energy imported	AC energy imported	1000	
AC frequency	AC frequency	1000	
AC reactive power phase A	AC reactive power phase A	1000	
AC reactive power phase B	AC reactive power phase B	1000	
AC reactive power phase C	AC reactive power phase C	1000	
AC reactive power total	AC reactive power total	1000	
AC voltage phase B	AC voltage phase B	1000	
AC voltage phase C	AC voltage phase C	1000	
Active power, total or phase A	Active power, total or phase A	1000	
Actual power regulation	Actual power regulation	1000	
Actual power regulation	Actual power regulation	1000	
Alarms	Alarms	1000	
Average battery SOC	Average battery SOC	1000	
Average battery SOH	Average battery SOH	1000	
Bat. Max. Safety SOC limit	Bat. Max. Safety SOC limit	1000	
Bat. Min. safety SOC limit	Bat. Min. safety SOC limit	1000	
Battery SOC average	Battery SOC average	1000	
Battery SOC maximum	Battery SOC maximum	1000	
Battery SOC minimum	Battery SOC minimum	1000	
Battery SOH average	Battery SOH average	1000	



Battery SOH maximum	Battery SOH maximum	1000	
Battery SOH minimum	Battery SOH minimum	1000	
Cabinet energy exported	Cabinet energy exported	1000	
Cabinet energy imported	Cabinet energy imported	1000	
Charge when above	Charge when above	1000	
Currently running service	Currently running service	1000	
DC current	DC current	1000	
DC input current Md.1	DC input current Md.1	1000	
DC input current Md.2	DC input current Md.2	1000	
DC input current Md.3	DC input current Md.3	1000	
DC input current Md.4	DC input current Md.4	1000	
DC input current Md.5	DC input current Md.5	1000	
DC input current Md.6	DC input current Md.6	1000	
DC input current, total	DC input current, total	1000	
DC input power Md.1	DC input power Md.1	1000	
DC input power Md.2	DC input power Md.2	1000	
DC input power Md.3	DC input power Md.3	1000	
DC input power Md.4	DC input power Md.4	1000	
DC input power Md.5	DC input power Md.5	1000	
DC input power Md.6	DC input power Md.6	1000	
DC input power, total	DC input power, total	1000	
DC input voltage Md.1	DC input voltage Md.1	1000	
DC input voltage Md.2	DC input voltage Md.2	1000	
DC input voltage Md.3	DC input voltage Md.3	1000	
DC input voltage Md.4	DC input voltage Md.4	1000	
DC input voltage Md.5	DC input voltage Md.5	1000	
DC input voltage Md.6	DC input voltage Md.6	1000	

DC input voltage, average	DC input voltage, average	1000	
DC output current Md.1	DC output current Md.1	1000	
DC output current Md.2	DC output current Md.2	1000	
DC output current Md.3	DC output current Md.3	1000	
DC output current Md.4	DC output current Md.4	1000	
DC output current Md.5	DC output current Md.5	1000	
DC output current Md.6	DC output current Md.6	1000	
DC output current, total	DC output current, total	1000	
DC output power Md.1	DC output power Md.1	1000	
DC output power Md.2	DC output power Md.2	1000	
DC output power Md.3	DC output power Md.3	1000	
DC output power Md.4	DC output power Md.4	1000	
DC output power Md.5	DC output power Md.5	1000	
DC output power Md.6	DC output power Md.6	1000	
DC output power, total	DC output power, total	1000	
DC output voltage Md.1	DC output voltage Md.1	1000	
DC output voltage Md.2	DC output voltage Md.2	1000	
DC output voltage Md.3	DC output voltage Md.3	1000	
DC output voltage Md.4	DC output voltage Md.4	1000	
DC output voltage Md.5	DC output voltage Md.5	1000	
DC output voltage Md.6	DC output voltage Md.6	1000	
DC output voltage, average	DC output voltage, average	1000	
DC power	DC power	1000	
DC voltage	DC voltage	1000	
Discharge when below	Discharge when below	1000	
Energy available for charge	Energy available for charge	1000	
Energy available for discharge	Energy available for discharge	1000	
Erroneous input value setting	Erroneous input	1000	

	value setting		
Extended status for cabinet 1	Extended status for cabinet 1	1000	
Extended status for cabinet 10	Extended status for cabinet 10	1000	
Extended status for cabinet 11	Extended status for cabinet 11	1000	
Extended status for cabinet 12	Extended status for cabinet 12	1000	
Extended status for cabinet 13	Extended status for cabinet 13	1000	
Extended status for cabinet 14	Extended status for cabinet 14	1000	
Extended status for cabinet 15	Extended status for cabinet 15	1000	
Extended status for cabinet 16	Extended status for cabinet 16	1000	
Extended status for cabinet 17	Extended status for cabinet 17	1000	
Extended status for cabinet 18	Extended status for cabinet 18	1000	
Extended status for cabinet 19	Extended status for cabinet 19	1000	
Extended status for cabinet 2	Extended status for cabinet 2	1000	
Extended status for cabinet 20	Extended status for cabinet 20	1000	
Extended status for cabinet 21	Extended status for cabinet 21	1000	
Extended status for cabinet 22	Extended status for cabinet 22	1000	
Extended status for cabinet 23	Extended status for cabinet 23	1000	
Extended status for cabinet 24	Extended status for cabinet 24	1000	
Extended status for cabinet 25	Extended status for cabinet 25	1000	
Extended status for cabinet 26	Extended status for cabinet 26	1000	
Extended status for cabinet 27	Extended status for cabinet 27	1000	
Extended status for cabinet 28	Extended status for cabinet 28	1000	
Extended status for cabinet 29	Extended status for cabinet 29	1000	
Extended status for cabinet 3	Extended status for cabinet 3	1000	
Extended status for cabinet 30	Extended status for cabinet 30	1000	
Extended status for cabinet 31	Extended status for cabinet 31	1000	
Extended status for cabinet 32	Extended status for cabinet 32	1000	

Extended status for cabinet 4	Extended status for cabinet 4	1000	
Extended status for cabinet 5	Extended status for cabinet 5	1000	
Extended status for cabinet 6	Extended status for cabinet 6	1000	
Extended status for cabinet 7	Extended status for cabinet 7	1000	
Extended status for cabinet 8	Extended status for cabinet 8	1000	
Extended status for cabinet 9	Extended status for cabinet 9	1000	
Handshake counter	Handshake counter	1000	
Keep service active	Keep service active	1000	
Maximum change in disch/char	Maximum change in disch/char	1000	
Maximum charge	Maximum charge	1000	
Maximum discharge	Maximum discharge	1000	
Module no. 1	Module no. 1	1000	
Module no. 2	Module no. 2	1000	
Module no. 3	Module no. 3	1000	
Module no. 4	Module no. 4	1000	
Module no. 5	Module no. 5	1000	
Module no. 6	Module no. 6	1000	
Module status Md.1	Module status Md.1	1000	
Module status Md.2	Module status Md.2	1000	
Module status Md.3	Module status Md.3	1000	
Module status Md.4	Module status Md.4	1000	
Module status Md.5	Module status Md.5	1000	
Module status Md.6	Module status Md.6	1000	
Number of PV connected modules	Number of PV connected modules	1000	
OK PV connected modules	OK PV connected modules	1000	
Plan energy exported	Plan energy exported	1000	
Plant energy imported	Plant energy imported	1000	
Plant system status	Plant system status	1000	
Reactive power, total or phase A	Reactive power, total or phase A	1000	

Ready for regulation	Ready for regulation	1000	
Remain. dur. of running service	Remain. dur. of running service	1000	
SOC after calibration	SOC after calibration	1000	
Service duration	Service duration	1000	
Set running service	Set running service	1000	
Status-currently running service	Status-currently running service	1000	
Stop running service	Stop running service	1000	
System available energy	System available energy	1000	
System available energy HR	System available energy HR	1000	
System available power	System available power	1000	
System available power HR	System available power HR	1000	
System energy maximum available	System energy maximum available	1000	
System energy total nominal	System energy total nominal	1000	
System events for cabinet 1	System events for cabinet 1	1000	
System events for cabinet 10	System events for cabinet 10	1000	
System events for cabinet 11	System events for cabinet 11	1000	
System events for cabinet 12	System events for cabinet 12	1000	
System events for cabinet 13	System events for cabinet 13	1000	
System events for cabinet 14	System events for cabinet 14	1000	
System events for cabinet 15	System events for cabinet 15	1000	
System events for cabinet 16	System events for cabinet 16	1000	
System events for cabinet 17	System events for cabinet 17	1000	
System events for cabinet 18	System events for cabinet 18	1000	
System events for cabinet 19	System events for cabinet 19	1000	
System events for cabinet 2	System events for cabinet 2	1000	
System events for cabinet 20	System events for cabinet 20	1000	
System events for cabinet 21	System events for	1000	

	cabinet 21		
System events for cabinet 22	System events for cabinet 22	1000	
System events for cabinet 23	System events for cabinet 23	1000	
System events for cabinet 24	System events for cabinet 24	1000	
System events for cabinet 25	System events for cabinet 25	1000	
System events for cabinet 26	System events for cabinet 26	1000	
System events for cabinet 27	System events for cabinet 27	1000	
System events for cabinet 28	System events for cabinet 28	1000	
System events for cabinet 29	System events for cabinet 29	1000	
System events for cabinet 3	System events for cabinet 3	1000	
System events for cabinet 30	System events for cabinet 30	1000	
System events for cabinet 31	System events for cabinet 31	1000	
System events for cabinet 32	System events for cabinet 32	1000	
System events for cabinet 4	System events for cabinet 4	1000	
System events for cabinet 5	System events for cabinet 5	1000	
System events for cabinet 6	System events for cabinet 6	1000	
System events for cabinet 7	System events for cabinet 7	1000	
System events for cabinet 8	System events for cabinet 8	1000	
System events for cabinet 9	System events for cabinet 9	1000	
System power available for dis.	System power available for dis.	1000	
System power, maximum available	System power, maximum available	1000	
System power, total nominal	System power, total nominal	1000	
System status for cabinet 1	System status for cabinet 1	1000	
System status for cabinet 10	System status for cabinet 10	1000	
System status for cabinet 11	System status for cabinet 11	1000	
System status for cabinet 12	System status for cabinet 12	1000	
System status for cabinet 13	System status for	1000	

	cabinet 13		
System status for cabinet 14	System status for cabinet 14	1000	
System status for cabinet 15	System status for cabinet 15	1000	
System status for cabinet 16	System status for cabinet 16	1000	
System status for cabinet 17	System status for cabinet 17	1000	
System status for cabinet 18	System status for cabinet 18	1000	
System status for cabinet 19	System status for cabinet 19	1000	
System status for cabinet 2	System status for cabinet 2	1000	
System status for cabinet 20	System status for cabinet 20	1000	
System status for cabinet 21	System status for cabinet 21	1000	
System status for cabinet 22	System status for cabinet 22	1000	
System status for cabinet 23	System status for cabinet 23	1000	
System status for cabinet 24	System status for cabinet 24	1000	
System status for cabinet 25	System status for cabinet 25	1000	
System status for cabinet 26	System status for cabinet 26	1000	
System status for cabinet 27	System status for cabinet 27	1000	
System status for cabinet 28	System status for cabinet 28	1000	
System status for cabinet 29	System status for cabinet 29	1000	
System status for cabinet 3	System status for cabinet 3	1000	
System status for cabinet 30	System status for cabinet 30	1000	
System status for cabinet 31	System status for cabinet 31	1000	
System status for cabinet 32	System status for cabinet 32	1000	
System status for cabinet 4	System status for cabinet 4	1000	
System status for cabinet 5	System status for cabinet 5	1000	
System status for cabinet 6	System status for cabinet 6	1000	
System status for cabinet 7	System status for cabinet 7	1000	
System status for cabinet 8	System status for cabinet 8	1000	

System status for cabinet 9	System status for cabinet 9	1000	
Systepower available for charg.	Systepower available for charg.	1000	
Wait for flag	Wait for flag	1000	
Warnings	Warnings	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Communication status	Communication status	1000	
Control power activate	Control power activate	1000	
Handshake counter	Handshake counter	50	
Power reguation set-point	Power reguation set-point	1000	
Power reguation set-point HR	Power reguation set-point HR	1000	
Remaining charging energy	Remaining charging energy	1000	
Remaining discharging energy	Remaining discharging energy	1000	
Set reactive power	Set reactive power	1000	

## Recommended wiring

### Ethernet

<b>Function</b>	<b>RJ-45 connector</b>	<b>Controller</b>
Ethernet	RJ-45	RJ-45 (modbus ethernet)

## 6.11.10 KORE Power devices support

<b>ECU Type</b>	<b>Device type</b>
<a href="#">Mark1 (page 1012)</a>	Mark1

### Mark1

#### Controllers that support the Mark1

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Alarm Reset	Alarm Reset	1000



Average Cell Voltage	LionS_CellVAvg	1000
Average Module Temperature	LionB_ModTmpAvg	1000
Average Module Temperature 2	LionS_ModTmpAvg	1000
Average String Current	LionB_StrAAvg	1000
Average String Voltage	LionB_StrVAvg	1000
Battery Cell Balancing Count	LionB_NCellBal	1000
Battery Heartbeat	Battery Heartbeat	1000
Battery Power Request	Battery Power Request	1000
Battery Type	Battery Type	1000
Charge Status of Storage	Charge Status of Storage	1000
Connected String Count	LionB_NStrCon	1000
Connection Failure Reason	LionS_ConFail	1000
Contractor Status	LionS_ConSt	1000
Control Mode	Control Mode	1000
Controller Heartbeat	Controller Heartbeat	1000
Cycle Count	Cycle Count	1000
External Battery Voltage	External Battery Voltage	1000
Max Cell Voltage	LionS_CellVMax	1000
Max Cell Voltage Module	LionS_CellVMaxMod	1000
Max Charge Current	Max Charge Current	1000
Max Discharge Current	Max Discharge Current	1000
Max Module Temperature	LionB_ModTmpMax	1000
Max Module Temperature 2	LionS_ModTmpMax	1000
Max Module Temperature Module	LionB_ModTmpMaxMod	1000
Max Module Temperature Module 2	LionS_ModTmpMaxMod	1000
Max Module Temperature String	LionB_ModTmpMaxStr	1000
Max String Current	LionB_StrAMax	1000
Max String Current String	LionB_StrAMaxStr	1000
Max String Voltage	LionB_StrVMax	1000
Max String Voltage String	LionB_StrVmaxStr	1000
Maximum Reserve Percent	SocRsvMax	1000
Min Cell Voltage	LionS_CellVMin	1000
Min Cell Voltage Module	LionS_CellVMinMod	1000
Min Module Temperature	Min Module Temperature	1000
Min Module Temperature 2	LionS_ModTmpMin	1000
Min Module Temperature Module	Min Module Temperature Module	1000
Min Module Temperature Module 2	LionS_ModTmpMinMod	1000

Min Module Temperature String	Min Module Temperature String	1000
Min String Current	LionB_StrAMin	1000
Min String Current String	LionB_StrMinStr	1000
Min String Voltage	LionB_StrVMin	1000
Min String Voltage String	LionB_StrVMinStr	1000
Minimum Reserve Percent	SoCRsvMin	1000
Nameplate Charge Capacity	AHRtg	1000
Nameplate Energy Capacity	Nameplate Energy Capacity	1000
Nameplate Max Charge Rate	Nameplate Max Charge Rate	1000
Nameplate Max SoC	Nameplate Max SoC	1000
Nameplate Min SoC	Nameplate Min SoC	1000
Nameplate Max Discharge Rate	Nameplate Max Discharge Rate	1000
PCS State Request	PCS State Request	1000
Self Discharge Rate	Self Discharge Rate	1000
State of Charge	State of Charge	1000
State of Health	State of Health	1000
State of the Battery Bank	State of the Battery Bank	1000
String Cell Balancing Count	LionS_NCellBal	1000
String Current	LionS_A	1000
String Cycle Count	LionS_NCyc	1000
String Depth of Discharge	LionS_DoD	1000
String Event 1	LionS_Evt1	1000
String Event 2	LionS_Evt2	1000
String State of Charge	LionS_SoC	1000
String State of Health	LionS_SoH	1000
String Status	LionS_St	1000
String Voltage	LionS_V	1000
Total DC Current	Current	1000
Total Power	Total Power	1000
Vendor Event Battlefield 1	LionS_EvtVnd1	1000
Vendor Event Battlefield 2	LionS_EvtVnd2	1000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Connect/Disconnect String	LionS_SetCon	1000
Enable/Disable String	LionS_SetEna	1000
Maximum Reserve Percent	SocRsvMax	1000
Minimum Reserve Percent	SocRsvMin	1000

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

### Ethernet

Function	RJ45 connector	Controller
Ethernet	RJ45 connector	Ethernet

## 6.11.11 KStar devices support

ECU Type	Device type	Source documentation version
<a href="#">PWG (page 1036)</a>	PV inverters GSE 1250-3125	v2.9

### GSE

#### Controllers that support the GSE:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
15V Power Supply Failure	15V Power Supply Failure	500	
AC Auxiliary Power Supply Failure	AC Auxiliary Power Supply Fail	500	
AC Circuit Breaker is Open	AC Circuit Breaker is Open	500	
AC Fan Failure	AC Fan Failure	500	
Allow Boot Bit	Allow Boot Bit	500	
Allow Charging Bit	Allow Charging Bit	500	
Allow Discharging Bit	Allow Discharging Bit	500	
BMS Communication Failure	BMS Communication Failure	500	
Battery Open Circuit Failure	Battery Open Circuit Failure	500	
Battery Reverse Connected Fault 1	Batt Reverse Connected Fault 1	500	
Battery Undervoltage Fault 1	Battery Undervoltage Fault 1	500	
Battery Undervoltage Fault 2	Battery Undervoltage Fault 2	500	
Battery Voltage Low Alarm 1	Battery Voltage Low Alarm 1	500	
Bus Overvoltage Fault 2	Bus Overvoltage Fault 2	500	

CT or Hall open circuit Fault 1	CT or Hall open circuit Fault 1	500	
CT or Hall open circuit Fault 2	CT or Hall open circuit Fault 2	500	
Connector Cable Failure	Connector Cable Failure	500	
Converter Out of Sync	Converter Out of Sync	500	
Converter Over Temperature 1	Converter Over Temperature 1	500	
Converter Over Temperature 2	Converter Over Temperature 2	500	
Converter Overcurrent 1	Converter Overcurrent 1	500	
Converter Overcurrent 2	Converter Overcurrent 2	500	
DC Auxiliary Power Supply Failure	DC Auxiliary Power Supply Fail	500	
DC Bus Overvoltage Fault 1	DC Bus Overvoltage Fault 1	500	
DC Bus Short Circuit Fault 1	DC Bus Short Circuit Fault 1	500	
DC Switch Failure 1	DC Switch Failure 1	500	
DC Switch Failure 2	DC Switch Failure 2	500	
Drive Cable Fault 1	Drive Cable Fault 1	500	
Drive Cable Fault 2	Drive Cable Fault 2	500	
Dry Contact 1 Fault	Dry Contact 1 Fault	500	
Dry Contact 2 Fault	Dry Contact 2 Fault	500	
Dry Contact 3 Fault	Dry Contact 3 Fault	500	
Dry Contact 4 Fault	Dry Contact 4 Fault	500	
Dry Contact 5 Fault	Dry Contact 5 Fault	500	
Dry Contact 6 Fault	Dry Contact 6 Fault	500	
EMS Communication Failure	EMS Communication Failure	500	
Emergency Shutdown	Emergency Shutdown	500	
Fault of Leakage Current	Fault of Leakage Current	500	
General Alarm Position	General Alarm Position	500	
Grid Frequency Abnormal	Grid Frequency Abnormal	500	
High Voltage Crossing	High Voltage Crossing	500	
Insulation Impedance Abnormal	Insulation Impedance Abnormal	500	
Inverter Fault 1	Inverter Fault 1	500	
Inverter Fault 2	Inverter Fault 2	500	
Inverter Missing Phase Fault 1	Inverter Missing Phase Fault 1	500	
Inverter Missing Phase Fault 2	Inverter Missing Phase Fault 2	500	

Island Protection	Island Protection	500	
Lightning Protection Failure	Lightning Protection Failure	500	
Low Voltage Crossing	Low Voltage Crossing	500	
Output Contactor Open Circuit 1	Output Contactor Open Circuit 1	500	
Output Contactor Open Circuit 2	Output Contactor Open Circuit 2	500	
Output Contactor Short Circuit 1	Output Contactor Short Circuit 1	500	
Output Contactor Short Circuit 2	Output Contactor Short Circuit 2	500	
Overload Protection 1	Overload Protection 1	500	
Overload Protection 2	Overload Protection 2	500	
Power Grid Overvoltage Failure	Power Grid Overvoltage Failure	500	
Power Grid Reverse Phase Sequence	Power Grid Reverse Phase Seq	500	
Power Grid Undervoltage Failure	Power Grid Undervoltage Failure	500	
Reduce Amount of Grid Connection	Reduce Amount of Grid Connection	500	
Repair Switch Closed	Repair Switch Closed	500	
Total Fault Position	Total Fault Position	500	
Wave Limiting Fault 1	Wave Limiting Fault 1	500	
Wave Limiting Fault 2	Wave Limiting Fault 2	500	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Setpoint Feedback	Active Power Setpoint Feedback	500	
Ambient Temperature	Ambient Temperature	500	
Charging Volume on That Day	ChargeDay	1000	
Converter Running Status	Converter Running Status	500	
DC Module 1 - Active Power	DC Module 1 - Active Power	500	
DC Module 1 - Current	DC Module 1 - Current	500	
DC Module 1 - Voltage	DC Module 1 - Voltage	500	
DC Module 2 - Active Power	DC Module 2 - Active Power	500	
DC Module 2 - Current	DC Module 2 - Current	500	
DC Module 2 - Voltage	DC Module 2 - Voltage	500	
Discharge Volume on That Day	DischargeDay	1000	
Grid Connection Feedback	Grid Connection Feedback	500	
Module 1 - Active Power	Module 1 - Active Power	500	
Module 1 - Apparent Power	Module 1 - Apparent Power	500	
Module 1 - Current A	Module 1 - Current A	500	
Module 1 - Current B	Module 1 - Current B	500	
Module 1 - Current C	Module 1 - Current C	500	

Module 1 - IGBT temperature	Module 1 - IGBT temperature	500	
Module 1 - Inductor temperature	Module 1 - Inductor temperature	500	
Module 1 - Reactive Power	Module 1 - Reactive Power	500	
Module 1 - line voltage AB	Module 1 - line voltage AB	500	
Module 1 - line voltage BC	Module 1 - line voltage BC	500	
Module 1 - line voltage CA	Module 1 - line voltage CA	500	
Module 2 - Active Power	Module 2 - Active Power	500	
Module 2 - Apparent Power	Module 2 - Apparent Power	500	
Module 2 - Current A	Module 2 - Current A	500	
Module 2 - Current B	Module 2 - Current B	500	
Module 2 - Current C	Module 2 - Current C	500	
Module 2 - IGBT temperature	Module 2 - IGBT temperature	500	
Module 2 - Inductor temperature	Module 2 - Inductor temperature	500	
Module 2 - Reactive Power	Module 2 - Reactive Power	500	
Module 2 - line voltage AB	Module 2 - line voltage AB	500	
Module 2 - line voltage BC	Module 2 - line voltage BC	500	
Module 2 - line voltage CA	Module 2 - line voltage CA	500	
Monthly Charge Volume	ChargeHighMonth	1000	
Monthly Discharge Volume High	DischargeHighMonth	1000	
Output Current A	Output Current A	500	
Output Current B	Output Current B	500	
Output Current C	Output Current C	500	
Output Frequency	Output Frequency	500	
Output Power Factor	Output Power Factor	500	
Output line voltage, AB	Output line voltage, AB	500	
Output line voltage, BC	Output line voltage, BC	500	
Output line voltage, CA	Output line voltage, CA	500	
Power Factor Setpoint Feedback	Power Factor Setpoint Feedback	500	
Reactive Power Control Mode Feedback	Reactive Power Control Mode Fdb	500	
Reactive Power Setpoint Feedback	Reactive Power Setpoint Feedback	500	
Total Active Power Output	Total Active Power Output	500	
Total Annual Charge Volume	ChargeHighAnnual	1000	
Total Annual Discharge Volume	DischargeHighAnnual	1000	
Total Apparent Power Output	Total Apparent Power Output	500	
Total Reactive Power Output	Total Reactive Power Output	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Setpoint	Active Power Setpoint	500	
Grid Connection	Grid Connection	500	

Power Factor Setpoint	Power Factor Setpoint	500	
Reactive Power Control Mode	Reactive Power Control Mode	500	
Reactive Power Setpoint	Reactive Power Setpoint	500	
Remote Control Switch Machine	Remote Control Switch Machine	500	

## Recommended wiring

### RS485

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## Communication settings

Function	Settings
Baud rate	9600
Start bit	1
Data bits	8
Parity	None

### Ethernet

Function	TCP/IP connector	Controller
Ethernet	RJ45	RJ45

## 6.11.12 Oztek devices support

ECU Type	Device type
<a href="#">Oztek BESS (1xx) (page 1019)</a>	OZpcs-RS40 (1xx sunspec models)
<a href="#">Oztek BESS (7xx) (page 1022)</a>	OZpcs-RS40 (7xx sunspec models)

### Oztek BESS (1xx)

#### Controllers that support the Oztek BESS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
Conn	Conn	5000
Local/Remote Controll	Local Remote	1000

PCS Control Mode	PCS Control Mode	2000
VARPct_Ena	VARPct_Ena	5000
WMaxLim_Ena	WMaxLim_Ena	5000
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit Enable	Active Power Limit Enable	1000
Fault Reset	Fault Reset	1000
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
ARtg	ARtg	2000
Active Power	Active Power	1000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DErTyp	DErTyp	2000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
Factory Temperature Error bitfield	TempError Bitfield	2000
Frequency	Frequency	1000
Maximum DC Charge Current	A-Max DC Charge	2000
Maximum DC Discharge Current	A-Max DC Discharge	2000
Nominal Active Power	Nominal Active Power	2000
OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
PCS Heartbeat	PCS Heartbeat	1000
PCS Operating State	PCS Operating State	2000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
St	St	1000
StVnd	StVnd	1000



TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
User Configuration Error Status bitfield	Config Error Status	2000
VA	VA	1000
VARtg	VARtg	2000
VARtgQ1	VARtgQ1	2000
VARtgQ2	VARtgQ2	2000
VARtgQ3	VARtgQ3	2000
VARtgQ4	VARtgQ4	2000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WMaxLimPct	WMaxLimPct	5000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
Active Power Limit	Active Power Limit	1000
Grid From Droop V/Q Proportional Gain	Droop V/Q Gain	1000
Grid From Droop W/P Proportional Gain	Droop W/P Gain	1000
Grid From Frequency Command	F-Command	1000
Grid From Frequency Command Slew Rate	F-Command Slew	1000
Grid From Voltage Command	V-Command	1000
Grid From Voltage Command Maximum	V-Command Max	1000
Grid From Voltage Command Slew Rate	V-Command Slew	1000
Heartbeat	Heartbeat	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000
Ramp Rate for Change in Power Setpoint	RampRate SP	1000
Set Operation	Set Operation	1000
Setoint for Nominal Frequency at the ECP	F-Nominal SP	1000
Voltage at the PCC (RMS,line-to-line)	V-PCC (RMS)	1000

## Recommended wiring

### RS485

Function	RS485 J1 connector	Controller
RS485 A	5	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	15	RS485 B

### Oztek BESS (7xx)

#### Controllers that support the Oztek BESS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Alarm Reset	Alarm Reset	1000
Limit Max Activ Percent Enable	Limit Max Activ Percent Enable	1000
PCS Control Mode	PCS Control Mode	1000
PCS Control Mode Default	PCS Control Mode Default	1000
PF Absorbing Enable	PF Absorbing Enable	1000
PF injecting Enable	PF injecting Enable	1000
Set Active Power Enable	Set Active Power Enable	1000
Set Reactive Power Enable	Set Reactive Power Enable	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
AC Voltage Nominal	AC Voltage Nominal	2000
AC Wiring Type	AC Wiring Type	1000
Active Power	Active Power	1000
Active Ride-Through Status	Active Ride- Through Status	2000
Alarm Bitfield	Alarm Bitfield	1000
Apparent Power	Apparent Power	1000

Avg Voltage L-L	Avg Voltage L-L	1000
Avg Voltage L-N	Avg Voltage L-N	1000
Cabinet Temperature	Cabinet Temperature	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
DC Current	DC Current	1000
DC Heat Sink Temperature	DC Heat Sink Temperature	1000
DC Power	DC Power	1000
DC Voltage	DC Voltage	1000
DER Mode Bitfield	DER Mode Bitfield	1000
Factory Fault Status	Factory Fault Status	2000
Fan Status	Fan Status	2000
Frequency	Frequency	1000
Grid Connection State	Grid Connection State	1000
Grid Form Frequency Command	Grid Form Frequency Command	2000
Grid Form Voltage Command	Grid Form Voltage Command	2000
Grid Form Voltage Command Max	Grid Form Voltage Command Max	2000
Grid Form Voltage Command Min	Grid Form Voltage Command Min	2000
Grid From Droop V/Q Proportional Gain	Droop V/Q Gain	2000
Grid From Droop W/P Proportional Gain	Droop W/P Gain	2000
Grid From Freq Cmd Slew Rate	Grid From Freq Cmd Slew Rate	2000
Grid From Voltage Cmd Slew Rate	Grid From Voltage Cmd Slew Rate	2000
Heat Sink Temperature	Heat Sink Temperature	1000
Inverter State	Inverter State	1000
Limit Max Activ Percent Enable	Limit Max Activ Percent Enable	1000
Limit Max Activ Percent Setpoint	Limit Max Activ Percent Setpoint	1000
Local/Remote Control	Local/Remote Control	1000
Max Active Power	Max Active Power	2000
Max DC Charge Current	Max DC Charge Current	2000

Max DC Discharge Current	Max DC Discharge Current	2000
Max Estimated IGBT Temp	Max Estimated IGBT Temp	1000
Nominal Frequency	Nominal Frequency	2000
Operating State	Operating State	1000
PCS Control Mode	PCS Control Mode	2000
PCS Control Mode Default	PCS Control Mode Default	2000
PCS Fault Status	PCS Fault Status	2000
PCS Heartbeat	PCS Heartbeat	1000
PCS Warning Status	PCS Warning Status	2000
PCS operating State	PCS operating State	2000
Power Factor	Power Factor	1000
Reactive Power	Reactive Power	1000
Resume Status	Resume Status	2000
Set operation	Set operation	1000
Temperature Status	Temperature Status	2000
Total AC Current	Total AC Current	1000
Total Energy Absorbed	Total Energy Absorbed	1000
Total Energy Injected	Total Energy Injected	1000
Total Reactive Energy Abs	Total Reactive Energy Abs	1000
Total Reactive Energy Inj	Total Reactive Energy Inj	1000
Transformer Temperature	Transformer Temperature	1000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>
AC Voltage Nominal	AC Voltage Nominal	1000
Active Power Setpoint Pct	Active Power Setpoint Pct	1000
Controller Heartbeat	Controller Heartbeat	500

Grid Form Frequency Command	Grid Form Frequency Command	250
Grid Form Voltage Command	Grid Form Voltage Command	250
Grid Form Voltage Command Max	Grid Form Voltage Command Max	1000
Grid Form Voltage Command Min	Grid Form Voltage Command Min	1000
Grid From Droop V/Q Proportional Gain	Droop V/Q Gain	1000
Grid From Droop W/P Proportional Gain	Droop W/P Gain	1000
Grid From Freq Cmd Slew Rate	Grid From Freq Cmd Slew Rate	1000
Grid From Voltage Cmd Slew Rate	Grid From Voltage Cmd Slew Rate	1000
Limit Max Activ Percent Setpoint	Limit Max Activ Percent Setpoint	1000
Max Active Power	Max Active Power	1000
Max DC Charge Current	Max DC Charge Current	1000
Max DC Discharge Current	Max DC Discharge Current	1000
Power Factor Absorbing Setpoint	Power Factor Absorbing Setpoint	1000
Power Factor Injecting Setpoint	Power Factor Injecting Setpoint	1000
Reactive Power Setpoint Pct	Reactive Power Setpoint Pct	1000
Set Operation	Set Operation	1000
Set Reactive Power Mode	Set Reactive Power Mode	1000
Set Reactive Power Priority	Set Reactive Power Priority	1000

## Recommended wiring

### RS485

Function	RS485 J1 connector	Controller
RS485 A	5	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	15	RS485 B

## 6.11.13 Pylontech devices support

ECU Type	Device type	Source documentation version
<a href="#">BMS (page 1026)</a>	HV (SC1000-S1500) Power Cube H & M series battery racks	v1.32

### BMS

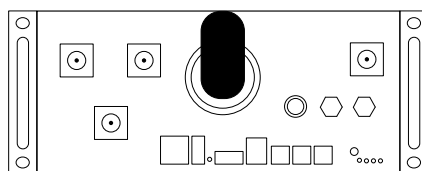


Image 5.266 Pylontech BMS

## Controllers that support the BMS

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Abnormal Leakage Current Alarm	Abnormal Leakage Current Alarm	2000	
All BMS Offline error	All BMS Offline error	2000	
BMIC error	BMIC error	2000	
BMS Internal bus error	BMS Internal bus error	2000	
BMS communication lost alarm	BMS communication lost alarm	2000	
BMS disconnect alarm	BMS disconnect alarm	2000	
BMU Internal bus error	BMU Internal bus error	2000	
Battery Cell High Voltage Alarm	Battery Cell High Voltage Alarm	2000	
Battery Cell Low Voltage Alarm	Battery Cell Low Voltage Alarm	2000	
Battery Cell Over Voltage Prot	Battery Cell Over Voltage Prot	2000	

Battery Cell Under Voltage Prot	Battery Cell Under Voltage Prot	2000	
Battery damage error	Battery damage error	2000	
Cell temp Imbalance alarm	Cell temp Imbalance alarm	2000	
Cell voltage Imbalance alarm	Cell voltage Imbalance alarm	2000	
Charge High Temperature Alarm	Charge High Temperature Alarm	2000	
Charge Low Temperature Alarm	Charge Low Temperature Alarm	2000	
Charge Over Curren Protection	Charge Over Curren Protection	2000	
Charge Over Current Alarm	Charge Over Current Alarm	2000	
Charge Over Temperature Prot	Charge Over Temperature Prot	2000	
Charge Under Temperature Prot	Charge Under Temperature Prot	2000	
Current Alarm	Current Alarm	2000	
Current IC Error	Current IC Error	2000	
Current Leakage Error	Current Leakage Error	2000	
Current Protection	Current Protection	2000	
DCOV ERR	DCOV ERR	2000	
Discharge High Temperature Alarm	Discharge High Temperature Alarm	2000	
Discharge Low Temperature Alarm	Discharge Low Temperature Alarm	2000	
Discharge Over Current Alarm	Discharge Over Current Alarm	2000	
Discharge Over Current Prot	Discharge Over Current Prot	2000	
Discharge Over Temperature Prot	Discharge Over Temperature Prot	2000	
Discharge Under Temperature Prot	Discharge Under Temperature Prot	2000	
Emergency stop	Emergency stop	2000	
Fan warn	Fan warn	2000	
INPUT RV ERR	INPUT RV ERR	2000	
INTERNAL COMM ERR	INTERNAL COMM ERR	2000	
Insulation fault	Insulation fault	2000	
Keep	Keep	2000	
MBMS comn with BMS error	MBMS comn with BMS error	2000	
Main High Temperature Alarm	Main High Temperature Alarm	2000	
Module High Temperature Alarm	Module High Temperature Alarm	2000	
Module High Voltage Alarm	Module High Voltage Alarm	2000	

Module Low Voltage Alarm	Module Low Voltage Alarm	2000	
Module Over Temperature Prot	Module Over Temperature Prot	2000	
Module Over Voltage Protection	Module Over Voltage Protection	2000	
Module Under Voltage Prot	Module Under Voltage Prot	2000	
Pile High Voltage Alarm	Pile High Voltage Alarm	2000	
Pile Low Voltage Alarm	Pile Low Voltage Alarm	2000	
Pile Over Voltage Prot	Pile Over Voltage Prot	2000	
Pile System charge status	Pile System charge status	2000	
Pile System discharge status	Pile System discharge status	2000	
Pile System idle status	Pile System idle status	2000	
Pile System sleep status	Pile System sleep status	2000	
Pile Under Voltage Prot	Pile Under Voltage Prot	2000	
RELAY ERR	RELAY ERR	2000	
Safety check failure	Safety check failure	2000	
Self-test modu	Self-test modu	2000	
Self-test module Initial error	Self-test module Initial error	2000	
Self-test module coulomb error	Self-test module coulomb error	2000	
Self-test volt error	Self-test volt error	2000	
Short Circuit Protection	Short Circuit Protection	2000	
Shutdown circuit error	Shutdown circuit error	2000	
Single Sec Undervoltage Prot	Single Sec Undervoltage Prot	2000	
System abuse alarm	System abuse alarm	2000	
TMPR ERR	TMPR ERR	2000	
Temperature Alarm	Temperature Alarm	2000	
Temperature Protection	Temperature Protection	2000	
Terminal Temp Abnormality Alarm	Terminal Temp Abnormality Alarm	2000	
VOLT ERR	VOLT ERR	2000	
Voltage Alarm	Voltage Alarm	2000	
Voltage Protection	Voltage Protection	2000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>



ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Basic Status	Basic Status	2000	
Charge Capacity	Charge Capacity	2000	
Charge Command	Charge Command	2000	
Current	Current	2000	
Daily accumulate charge cap	Daily accumulate charge cap	2000	
Daily accumulate discharge cap	Daily accumulate discharge cap	2000	
Discharge Capacity	Discharge Capacity	2000	
Discharge Command	Discharge Command	2000	
Heartbeat Signal	Heartbeat Signal	2000	
History accumulate charge cap	History accumulate charge cap	2000	
History accumulate discharge cap	History accumulate discharge cap	2000	
Negat Sys Max Discharge Current	Negat Sys Max Discharge Current	2000	
Negative Sys Max Charge Current	Negative Sys Max Charge Current	2000	
No Batteries modules in one pile	No Batteries modules in one pile	2000	
No Cells in one pile	No Cells in one pile	2000	
Pile Max Charge Current	Pile Max Charge Current	2000	
Pile Max Charge Voltage	Pile Max Charge Voltage	2000	
Pile Max Discharge Current	Pile Max Discharge Current	2000	
Pile Max Discharge Voltage	Pile Max Discharge Voltage	2000	
Posit Sys Max Discharge Current	Posit Sys Max Discharge Current	2000	
Positive Sys Max Charge Current	Positive Sys Max Charge Current	2000	
Remain Capacity	Remain Capacity	2000	
Sleep Control	Sleep Control	2000	
Stage of Energy	Stage of Energy	2000	
State of Charge	State of Charge	2000	
State of Health	State of Health	2000	
System Error Protection	System Error Protection	2000	
Temperature	Temperature	2000	
Total Voltage	Total Voltage	2000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Charge Command	Charge Command	2000	
Discharge Command	Discharge	2000	

	Command		
Sleep Control	Sleep Control	2000	

## Recommended wiring

Function	RJ45	Controller
CAN H	4	CAN1 (extension modules/J1939) – CAN H
CAN COM	N/A	CAN1 (extension modules/J1939) – CAN COM
CAN L	5	CAN1 (extension modules/J1939) – CAN L
RS485A	7	RS485A
RS485B	8	RS485B

## 6.11.14 SMA devices support

ECU Type	Device type	Source documentation version
<a href="#">SolidQ (page 949)</a>	SMA SOLID-Q 50 & SOLID-Q PRO 60 inverter	--
<a href="#">Sunny Tripower / Sunny Boy (page 947)</a>	Sunny Tripower and Sunny Boy	v1.4
<a href="#">Sunny Island BESS (page 1030)</a>	Sunny Island BESS	v1.0
<a href="#">DataManager M (page 951)</a>	DataManager M	v1.1
<a href="#">Sunny Island X (page 1032)</a>	SunnyIsland X	v2

## Sunny Island BESS

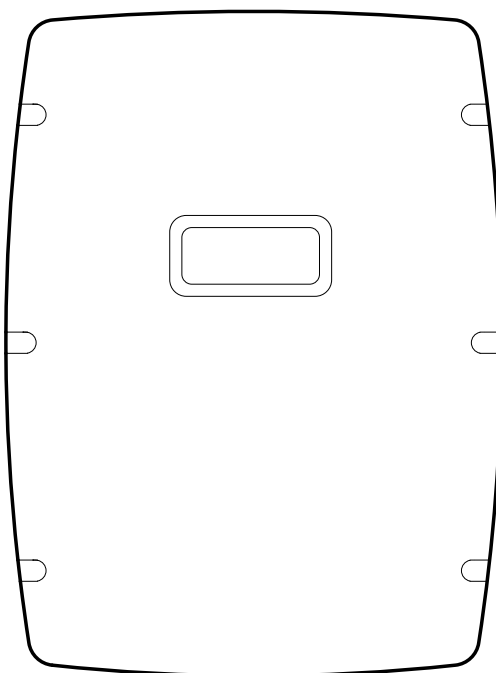


Image 5.267 Sunny Island BESS

### Controllers that support the PV Inverters:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Power Control Enable	Power Control Enable	1000	40151
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Absorbed Energy	Absorbed Energy	10000	30595
Active Battery Charging Mode	Active Battery Charging Mode	1000	30853
Active Power	Active Power	1000	30775
Active Power L1	Active Power L1	1000	30777
Active Power L2	Active Power L2	1000	30779
Active Power L3	Active Power L3	1000	30781
Actual Battery Capacity	Actual Battery Capacity	1000	30847
Actual Battery Charging Set Volt	Actual Battery Charging Set Volt	1000	30855
Battery Current	Battery Current	1000	30843
Battery Nominal Capacity	Battery Nominal Capacity	10000	40187
Battery Temperature	Battery Temperature	1000	30849
Battery Voltage	Battery Voltage	1000	30851
Battery cycles	Battery cycles	1000	30859
Grid Frequency	Grid Frequency	1000	30803
Grid Voltage L1	Grid Voltage L1	1000	30783
Grid Voltage L2	Grid Voltage L2	1000	30785
Grid Voltage L3	Grid Voltage L3	1000	30787
Num of Battery Charges	Num of Battery Charges	1000	30857
Operation Mode FeedIn	Operation Mode FeedIn	1000	30835
Operation Mode StatV	Operation Mode StatV	1000	30825
Reactive Power	Reactive Power	1000	30805
Reactive Power L1	Reactive Power L1	1000	30807
Reactive Power L2	Reactive Power L2	1000	30809
Reactive Power L3	Reactive Power L3	1000	30811
Released Energy	Released Energy	10000	30597
State of Charge	State of Charge	1000	30845
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	1000	40149
Reactive Power Setpoint	Reactive Power Setpoint	1000	40153

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 B

## Sunny Island X

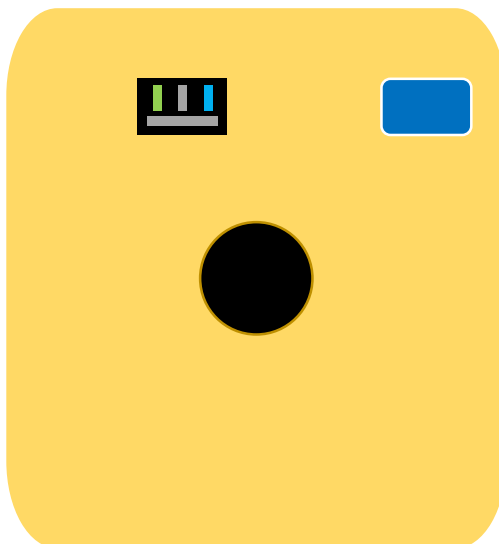


Image 5.268 Sunny Island X

## Controllers that support the Sunny Island X:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Absorbed Energy	Absorbed Energy	1000	1058
Active Power	Active Power	1000	1008
Apparent Power	Apparent Power	1000	1012
Available Charging Power	Available Charging Power	1000	1050
Available Discharging Power	Available Discharging Power	1000	1052
Available Inverter Power	Available Inverter Power	1000	1062
Available Overexcited Reactive P	Available Overexcited Reactive P	1000	1054
Available Underexcited React. P	Available Underexcited React. P	1000	1056

	P		
Battery Current	Battery Current	1000	1026
Battery Temperature	Battery Temperature	1000	1038
Battery Voltage	Battery Voltage	1000	1024
Condition	Condition	1000	1066
Current Battery Capacity	Current Battery Capacity	1000	1036
Derating Status	Derating Status	1000	1064
EEl displacement power factor	EEl displacement power factor	1000	1014
General Operating Mode	General Operating Mode	1000	1106
General Operating Status	General Operating Status	1000	1004
Grid Frequency	Grid Frequency	1000	1022
Grid Voltage L1-L2	Grid Voltage L1-L2	1000	1016
Grid Voltage L2-L3	Grid Voltage L2-L3	1000	1018
Grid Voltage L3-L1	Grid Voltage L3-L1	1000	1020
Highest Measured Battery Temp.	Highest Measured Battery Temp.	1000	1042
Lowest Measured Battery Temp.	Lowest Measured Battery Temp.	1000	1040
Operating Mode Active Power Set.	Operating Mode Active Power Set.	1000	1120
Operating Time	Operating Time	1000	1028
Rated Reactive P VArMaxQ1Rtg	Rated Reactive P VArMaxQ1Rtg	1000	1110
Rated Reactive P VArMaxQ2Rtg	Rated Reactive P VArMaxQ2Rtg	1000	1112
Rated Reactive P VArMaxQ3Rtg	Rated Reactive P VArMaxQ3Rtg	1000	1114
Rated Reactive P VArMaxQ4Rtg	Rated Reactive P VArMaxQ4Rtg	1000	1116
Rated active P WMaxOutRtg	Rated active P WMaxOutRtg	1000	1108
Rated apparent power VAMaxOutRtg	Rated apparent power VAMaxOutRtg	1000	1122
Reactive Power	Reactive Power	1000	1010
Released Energy	Released Energy	1000	1032
Remain. Available Charg. Energy	Remain. Available Charg. Energy	1000	1046
Remain. Available Disharg. Energy	Remain. Available Disharg. Energy	1000	1048
State of Charge	State of Charge	1000	1044
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Fast Shut-down	Fast Shut-down	1000	2010
Inverter Frequency	Inverter Frequency	1000	2006
Inverter Nominal Voltage	Inverter Nominal	1000	2008

	Voltage		
Maximum Active Power	Maximum Active Power	1000	2004
Min width of deep discharge area	Min width of deep discharge area	1000	2102
Minimum Active Power	Minimum Active Power	1000	2002
Off-Grid Command	Off-Grid Command	1000	2014
Reactive Power Setpoint	Reactive Power Setpoint	1000	2000
Type of AC Control	Type of AC Control	1000	2012
Upper SOC Limit	Upper SOC Limit	1000	2100

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 B

## 6.11.15 Shanghai Electric Guoxuan devices support

ECU Type	Device type	Source documentation version
<a href="#">PWG (page 1036)</a>	Elite-SCU V1.3	v1.3

## Elite SCU

### Controllers that support the Elite SCU:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Air Conditioner Comm Fail	Air Conditioner Comm Fail	2000	
Battery Stack Device Failure	Battery Stack Device Failure	2000	
Critical Failure	Critical Failure	2000	
Fire Alarm	Fire Alarm	2000	
Fire Fighting Equipment Failure	Fire Fighting Equipment Failure	2000	
Fire Spray	Fire Spray	2000	
Flooding Failure	Flooding Failure	2000	
Heavy Failure	Heavy Failure	2000	
High Fault	High Fault	2000	
IO module Communication Fail	IO module Communication Fail	2000	

Lightning Protection Failure	Lightning Protection Failure	2000	
PCS Equipment Failure	PCS Equipment Failure	2000	
SCUs and Bbus Communication Fail	SCUs and Bbus Communication Fail	2000	
SCUs and PCS Communication Fail	SCUs and PCS Communication Fail	2000	
T/H Sensor Communication Fail	T/H Sensor Communication Fail	2000	
Total Communication Failure	Total Communication Failure	2000	
Warning	Warning	2000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AB Line voltage	AB Line voltage	2000	
Accumulated Charge Amount	Accumulated Charge Amount	2000	
Accumulated Discharge Amount	Accumulated Discharge Amount	2000	
Active Power	Active Power	2000	
Amount of Rechargeable Energy	Amount of Rechargeable Energy	2000	
Apparent Power	Apparent Power	2000	
BC Line Voltage	BC Line Voltage	2000	
CA Line Voltage	CA Line Voltage	2000	
Control Mode	Control Mode	2000	
DC Current	DC Current	2000	
DC Power	DC Power	2000	
DC Voltage	DC Voltage	2000	
Failure State	Failure State	2000	
Frequency	Frequency	2000	
Maximum Charging Power	Maximum Charging Power	2000	
Maximum Discharging Power	Maximum Discharging Power	2000	
Phase A Current	Phase A Current	2000	
Phase B Current	Phase B Current	2000	
Phase C Current	Phase C Current	2000	
Power Factor	Power Factor	2000	
Reactive Power	Reactive Power	2000	
Running Status	Running Status	2000	
SCU Can Be Discharged	SCU Can Be Discharged	2000	
State Of Charge	State Of Charge	2000	

ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	2000	
Local/Remote Toggle	Local/Remote Toggle	2000	
Off-grid Mode Setting	Off-grid Mode Setting	2000	
Reactive Power Setpoint	Reactive Power Setpoint	2000	
Switch On/Off	Switch On/Off	2000	

### Recommended wiring

Function	TCP/IP connector	Controller
Ethernet	RJ45	Ethernet

## 6.11.16 Sinexcel devices support

ECU Type	Device type	Source documentation version
<a href="#">PWG (page 1036)</a>	Sinexcel PW2 / PWS1	V217
<a href="#">PWS1 (page 1038)</a>	Sinexcel PWS1-135M	V124

### PWG

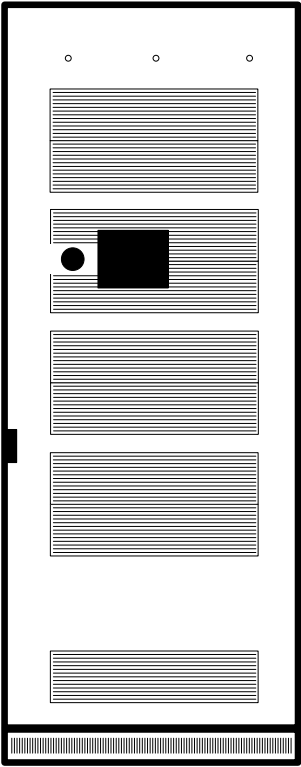


Image 5.269 Sinexcel PWG



## Controllers that support the PWG:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
On Off Statuses	OnOffStatuses	500	
Oper Mode	OperMode	500	
VSG Mode OFF	VSGModeOff	500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Fault Reset	FaultReset	1000	
On Off Grid	OnOffGrid	1000	
System Start	SystemStart	2000	
System Stop	SystemStop	2000	
VSG Mode	VSG Mode	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Absorbed Energy	Absorbed Energy	2000	
Active Power	Active Power	500	
Active Power L1	Active Power L1	1000	
Active Power L2	Active Power L2	1000	
Active Power L3	Active Power L3	1000	
Alm Fault Stat	AlmFaultStat	500	
Current L1	Current L1	1000	
Current L2	Current L2	1000	
Current L3	Current L3	1000	
Grid Frequency	Grid Frequency	1000	
Grid Voltage L1L2	Grid Voltage L1L2	1000	
Grid Voltage L2L3	Grid Voltage L2L3	1000	
Grid Voltage L3L1	Grid Voltage L3L1	1000	
Reactive Power	Reactive Power	500	
Reactive Power L1	Reactive Power L1	1000	
Reactive Power L2	Reactive Power L2	1000	
Reactive Power L3	Reactive Power L3	1000	
Released Energy	Released Energy	2000	
Simulated SOC	Simulated SOC	1000	
ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register
Active Power Setpoint	Active Power Setpoint	500	
Off-grid AC Freq regulation	Off-grid AC Freq reg	200	
Off-grid AC voltage regulation	Off-grid AC volt reg	200	
Reactive Power Setpoint	Reactive Power Setpoint	500	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite , 3 - IntelDrive Lite , 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano , 7 - IntelGen200, IntelGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## PWS1

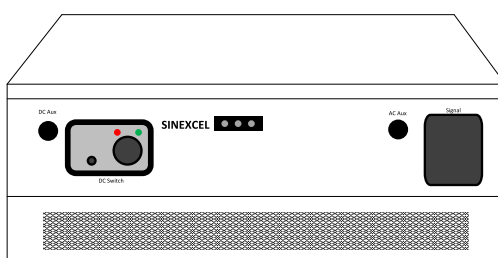


Image 5.270 Sinexcel PWS1

## Controllers that support the PWS1:

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Island Freq Regulation READ	Island Freq Regulation READ	500	
Island Voltage Regulation READ	Island Voltage Regulation READ	500	
L1-L2 voltage of AC bus	L1-L2 voltage of AC bus	2000	
L2-L3 voltage of AC bus	L2-L3 voltage of AC bus	2000	
L3-L1 voltage of AC bus	L3-L1 voltage of AC bus	2000	
OnGrid/OffGrid	OnGrid/OffGrid	2000	
P Setpoint READ	P Setpoint READ	2000	
Q Setpoint READ	Q Setpoint READ	2000	
VSG PF droop rate READ	VSG PF droop rate READ	2000	

VSG VQ droop rate READ	VSG VQ droop rate READ	2000	
VSG dumping factor READ	VSG dumping factor READ	2000	
VSG mode setting READ	VSG mode setting READ	2000	
VSG time constant READ	VSG time constant READ	2000	
cteni P mode	cteni P mode	2000	
cteni Q mode	cteni Q mode	2000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Clear Fault 1	Clear Fault 1	1000	
Island Freq Regulation	Island Freq Regulation	1000	
Island Voltage Regulation	Island Voltage Regulation	1000	
MicroGrid Control command	MicroGrid Control command	1000	
OnGrid/OffGrid 1	OnGrid/OffGrid 1	1000	
P Power Control Mode 1	P Power Control Mode 1	1000	
P Setpoint	P Setpoint	1000	
Q Power Control Mode 1	Q Power Control Mode 1	1000	
Q Setpoint	Q Setpoint	1000	
Total Start 1	Total Start 1	1000	
Total Stop 1	Total Stop 1	1000	
VSG PF droop rate	VSG PF droop rate	1000	
VSG VQ droop rate	VSG VQ droop rate	1000	
VSG damping factor	VSG damping factor	1000	
VSG mode setting	VSG mode setting	1000	
VSG time constant	VSG time constant	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
<b>RS485 A</b>	A	RS485 A
<b>RS485 COM</b>	N/A	RS485 COM
<b>RS485 B</b>	B	RS485 B

## 6.11.17 Tesla devices support

ECU Type	Device type	Source documentation version
<a href="#">Megapack (page 1040)</a>	Tesla Megapack	v3.2
<a href="#">System Controller V2 (page 1042)</a>	System Controller V2	v2

### Megapack

#### Controllers that support the Sunny Island BESS:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Command Shutdown System Status	Command Shutdown System Status	500	
Island Control Mode Status	Island Control Mode Status	500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Command Shutdown System	Command Shutdown System	1000	
Island Control Mode Setpoint	Island Control Mode Setpoint	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
3 Phase Average AC voltage	3 Phase Average AC voltage	500	
3 Phase Total AC Current	3 Phase Total AC Current	500	
AC Frequency	AC Frequency	500	
Alert Direct Command Timeout	Alert Direct Command Timeout	500	
Alert Fault Inverter Block Comm	Alert Fault Inverter Block Comm	500	
Alert Indication System Limits	Alert Indication System Limits	500	
Alert Loss Meter Communications	Alert Loss Meter Communications	500	
Availale Full Charge Energy	Availale Full Charge Energy	500	
Charge Power until derating	Charge Power until derating	500	
Discharge Energy until derating	Discharge Energy until derating	500	

Energy Remaining at Nom Temp	Energy Remaining at Nom Temp	500	
Island On Off Grid Indication	Island On Off Grid Indication	500	
Maximum Apparent Power 1	Maximum Apparent Power 1	500	
Maximum Apparent Power 2	Maximum Apparent Power 2	500	
Maximum Charge Power 1	Maximum Charge Power 1	500	
Maximum Charge Power 2	Maximum Charge Power 2	500	
Maximum Discharge Power 1	Maximum Discharge Power 1	500	
Maximum Discharge Power 2	Maximum Discharge Power 2	500	
Number Healthy Inverter Blocks	Number Healthy Inverter Blocks	500	
Number of Battery Meters	Number of Battery Meters	500	
Number of Bus Meters	Number of Bus Meters	500	
Number of Generation Meters	Number of Generation Meters	500	
Number of Inverter Blocks	Number of Inverter Blocks	500	
Number of Load meters	Number of Load meters	500	
Number of Site Meters	Number of Site Meters	500	
Power Delta Frequency Support	Power Delta Frequency Support	500	
Rated System Energy	Rated System Energy	500	
Reactive Power Delat Volt-VAr	Reactive Power Delat Volt-VAr	500	
Reactive Power Status	Reactive Power Status	500	
Real Exported Eenergy Acumm	Real Exported Eenergy Acumm	500	
Real Imported Energy Acumm	Real Imported Energy Acumm	500	
Real Power Status	Real Power Status	500	
Total 3 Phase Apparent Power	Total 3 Phase Apparent Power	500	
Total 3 Phase Reactive Power	Total 3 Phase Reactive Power	500	
Total 3 Phase Real Power	Total 3 Phase Real Power	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Nominal Frequency Setpoint	Nominal Frequency Setpoint	1000	

Nominal Voltage Setpoint	Nominal Voltage Setpoint	1000	
Power Frequency Slope Setpoint	Power Frequency Slope Setpoint	1000	
Volt VAR Slope Setpoint	Volt VAR Slope Setpoint	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## State of Charge computation

Because Tesla BESS Megapack does not provide explicit parameter with calculated "State of Charge" (SOC) percentage, thus user has to calculate it himself.

To do that Tesla provides two parameters:



*Available Full Charge Energy*



*Energy Remaining at Nom Temp*

Using these you can calculate SOC in controller PLC logic like so:

$SOC(\%) = \text{Energy Remaining at Nom Temp} / \text{Available Full Charge Energy}$

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 B
Battery + (positive)	N/A
Battery - (negative)	N/A

## System Controller V2

### Controllers that support the System Controller V2:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register

ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Allowed to Black Start	Allowed to Black Start	500	
Auxiliary Load Power	Auxiliary Load Power	500	
Battery Apparent Power	Battery Apparent Power	500	
Battery Direct Reactive Power Command	Batt Direct Reactive Power Cmd	500	
Battery Direct Reactive Power Ramp Rate	Bat Direct React Power Ramp Rate	500	
Battery Direct Real Power Command	Battery Direct Real Power Cmd	500	
Battery Direct Real Power Ramp Rate	Batt Direct Real Power Ramp Rate	500	
Battery Energy Export	Battery Energy Export	500	
Battery Energy Import	Battery Energy Import	500	
Battery Frequency	Battery Frequency	500	
Battery Meter CT/PT failure	Battery Meter CT/PT failure	500	
Battery Meter Invalid	Battery Meter Invalid	500	
Battery Meter Is Part of Aggregate	Battery Meter-Part of Aggregate	500	
Battery Meter MIA	Battery Meter MIA	500	
Battery Meter Out of Bounds	Battery Meter Out of Bounds	500	
Battery Meter Unreasonable	Battery Meter Unreasonable	500	
Battery Reactive Power	Battery Reactive Power	500	
Battery Real Power	Battery Real Power	500	
Battery State of Energy	Battery State of Energy	500	
Battery Voltage	Battery Voltage	500	
Black Start Attempts Remaining	Black Start Attempts Remaining	500	
Black Start Request	Black Start Request	500	
Breaker Closed	Breaker Closed	500	
Busway Apparent Power	Busway Apparent Power	500	
Busway Energy Export	Busway Energy Export	500	
Busway Energy Import	Busway Energy Import	500	
Busway Frequency	Busway Frequency	500	
Busway Hard Limiter Enable	Busway Hard Limiter Enable	500	
Busway Hard Limiter Export Limit	Busway Hard Limiter Export Limit	500	

Busway Hard Limiter Import Limit	Busway Hard Limiter Import Limit	500	
Busway Hard Limiter Output	Busway Hard Limiter Output	500	
Busway Meter CT/PT Failure	Busway Meter CT/PT Failure	500	
Busway Meter Invalid	Busway Meter Invalid	500	
Busway Meter Is part of aggregate	Busway Meter-part of aggregate	500	
Busway Meter MIA	Busway Meter MIA	500	
Busway Meter Out of Bounds	Busway Meter Out of Bounds	500	
Busway Meter Unreasonable	Busway Meter Unreasonable	500	
Busway Reactive Power	Busway Reactive Power	500	
Busway Real Power	Busway Real Power	500	
Busway Voltage	Busway Voltage	500	
Cease to Energize	Cease to Energize	500	
Charge from Solar Only	Charge from Solar Only	500	
Closed Loop Control Enable	Closed Loop Control Enable	500	
Customer Command Timed Out	Customer Command Timed Out	500	
Direct Reactive Power Output	Direct Reactive Power Output	500	
Direct Real Power Output	Direct Real Power Output	500	
Dispatchable Apparent Power	Dispatchable Apparent Power	500	
Dispatchable Charge Power	Dispatchable Charge Power	500	
Dispatchable Discharge Power	Dispatchable Discharge Power	500	
Downward Spinning Reserve	Downward Spinning Reserve	500	
Downward Spinning Reserve Threshold	Downward Spin. Reserve Threshold	500	
Enable Trips	Enable Trips	500	
Energy Status	Energy Status	500	
Export Excitation	Export Excitation	500	
Export Power Factor	Export Power Factor	500	
Export Solar Only	Export Solar Only	500	
Frequency Droop Enable	Frequency Droop Enable	500	
Frequency Droop Output	Frequency Droop Output	500	
Frequency Reference	Frequency Reference	500	



Frequency Target	Frequency Target	500	
Full Battery Energy	Full Battery Energy	500	
Generator Apparent Power	Generator Apparent Power	500	
Generator Energy Export	Generator Energy Export	500	
Generator Energy Import	Generator Energy Import	500	
Generator Frequency	Generator Frequency	500	
Generator Meter CT/PT	Generator Meter CT/PT	500	
Generator Meter Invalid	Generator Meter Invalid	500	
Generator Meter MIA	Generator Meter MIA	500	
Generator Meter Out of Bounds	Generator Meter Out of Bounds	500	
Generator Meter Unreasonable	Generator Meter Unreasonable	500	
Generator Power Target	Generator Power Target	500	
Generator Reactive Power	Generator Reactive Power	500	
Generator Real Power	Generator Real Power	500	
Generator Voltage	Generator Voltage	500	
Generator meter Is Part of Aggregate	Gen. meter-Part of Aggregate	500	
Grid Frequency	Grid Frequency	500	
Grid OK	Grid OK	500	
Grid Voltage	Grid Voltage	500	
Hardware Capable Adjusted Charge Power	Hardware Cap Adj Charge Power	500	
Hardware Capable Charge Power	Hardware Capable Charge Power	500	
Hardware Capable Discharge Power	Hardware Capable Discharge Power	500	
Heat Mode Enable	Heat Mode Enable	500	
Import Excitation	Import Excitation	500	
Import Power Factor	Import Power Factor	500	
Instantaneous Load	Instantaneous Load	500	
Intentional Island	Intentional Island	500	
Island Battery Enabled	Island Battery Enabled	500	
Island Status	Island Status	500	
Islanding Controller Mia	Islanding Controller Mia	500	
Lower Deadnand	Lower Deadnand	500	
Maintain Energy Enable	Maintain Energy Enable	500	

Maintain Energy Output	Maintain Energy Output	500	
Maintain Energy Target	Maintain Energy Target	500	
Maximum Load Drop	Maximum Load Drop	500	
Maximum Load Step	Maximum Load Step	500	
Maximum Off-Grid SOE	Maximum Off-Grid SOE	500	
Microgrid Controller - User Solar Limit	Microgrid Con. - User Solar Lim	500	
Microgrid Enable	Microgrid Enable	500	
Microgrid Frequency	Microgrid Frequency	500	
Microgrid OK	Microgrid OK	500	
Microgrid Voltage	Microgrid Voltage	500	
Minimum Off-Grid SOE	Minimum Off-Grid SOE	500	
Mode Request	Mode Request	500	
Net Load	Net Load	500	
Net Load Apparent Power	Net Load Apparent Power	500	
Net Load Energy Export	Net Load Energy Export	500	
Net Load Energy Import	Net Load Energy Import	500	
Net Load Frequency	Net Load Frequency	500	
Net Load Meter CT/PT	Net Load Meter CT/PT	500	
Net Load Meter Invalid	Net Load Meter Invalid	500	
Net Load Meter MIA	Net Load Meter MIA	500	
Net Load Meter Out of Bounds	Net Load Meter Out of Bounds	500	
Net Load Meter Unreasonable	Net Load Meter Unreasonable	500	
Net Load Reactive Power	Net Load Reactive Power	500	
Net Load Real Power	Net Load Real Power	500	
Net Load Voltage	Net Load Voltage	500	
Net Load meter Is Part of Aggregate	Net Load meter-Part of Aggregate	500	
Nominal Energy	Nominal Energy	500	
Nominal Frequency	Nominal Frequency	500	
Nominal Reactive Power	Nominal Reactive Power	500	
Nominal Real Power Charge	Nominal Real Power Charge	500	
Nominal Real Power Discharge	Nominal Real Power Discharge	500	
Not Substantially Available	Not Substantially Available	500	

Number of Available Megapacks	Number of Available Megapacks	500	
OD Reconnection Threshold	OD Reconnection Threshold	500	
OF1 Threshold	OF1 Threshold	500	
OF1 Timer	OF1 Timer	500	
OF1 Enable	OF1 Enable	500	
OF2 Enable	OF2 Enable	500	
OF2 Threshold	OF2 Threshold	500	
OF2 Timer	OF2 Timer	500	
OF3 Threshold	OF3 Threshold	500	
OF3 Timer	OF3 Timer	500	
OF3 Enable	OF3 Enable	500	
OV Reconnection Threshold	OV Reconnection Threshold	500	
OV1 Enable	OV1 Enable	500	
OV1 Threshold	OV1 Threshold	500	
OV1 Timer	OV1 Timer	500	
OV2 Threshold	OV2 Threshold	500	
OV2 Timer	OV2 Timer	500	
OV2 Enable	OV2 Enable	500	
OV3 Enable	OV3 Enable	500	
OV3 Threshold	OV3 Threshold	500	
OV3 Timer	OV3 Timer	500	
Ok to Island	Ok to Island	500	
Peak Power Enable	Peak Power Enable	500	
Permit Service Enable	Permit Service Enable	500	
Phase Difference	Phase Difference	500	
Power Factor Enable	Power Factor Enable	500	
Power Factor Output	Power Factor Output	500	
Proportional Gain	Proportional Gain	500	
Proportional Gain Lower	Proportional Gain Lower	500	
Proportional Gain Upper	Proportional Gain Upper	500	
Ramp Time	Ramp Time	500	
Reactive Operator Limit Maximum	Reactive Operator Limit Maximum	500	
Reactive Operator Limit Minimum	Reactive Operator Limit Minimum	500	
Reactive Power Available Limited	Reactive Power Available Limited	500	
Ready Apparent Power	Ready Apparent Power	500	
Real Maximum	Real Maximum	500	
Real Minimum	Real Minimum	500	
Real Operator Limit Maximum	Real Operator Limit Maximum	500	

Real Operator Limit Minimum	Real Operator Limit Minimum	500	
Real Power Available Limited	Real Power Available Limited	500	
Reconnection Time	Reconnection Time	500	
Reference Frequency	Reference Frequency	500	
Reference Voltage	Reference Voltage	500	
Remaining Battery Energy	Remaining Battery Energy	500	
Reset Black Start Attempt Count	Reset Black Start Attempt Count	500	
Solar Apparent Power	Solar Apparent Power	500	
Solar Energy Export	Solar Energy Export	500	
Solar Energy Import	Solar Energy Import	500	
Solar Frequency	Solar Frequency	500	
Solar Meter CT/PT Failure	Solar Meter CT/PT Failure	500	
Solar Meter Invalid	Solar Meter Invalid	500	
Solar Meter Is Part of Aggregate	Solar Meter Is Part of Aggregate	500	
Solar Meter MIA	Solar Meter MIA	500	
Solar Meter Out of Bounds	Solar Meter Out of Bounds	500	
Solar Meter Unreasonable	Solar Meter Unreasonable	500	
Solar Power Limit	Solar Power Limit	500	
Solar Reactive Power	Solar Reactive Power	500	
Solar Real Power	Solar Real Power	500	
Solar Real Power Limit	Solar Real Power Limit	500	
Solar Voltage	Solar Voltage	500	
State Request	State Request	500	
Stop Charging From Generator SOE	Stop Charging From Generator SOE	500	
Swing Bus Preferred Maximum Power	Swing Bus Preferred Max Power	500	
Swing Bus Preferred Minimum Power	Swing Bus Preferred Min. Power	500	
Time Response	Time Response	500	
UF Reconnection Threshold	UF Reconnection Threshold	500	
UF1 Threshold	UF1 Threshold	500	
UF1 Timer	UF1 Timer	500	
UF1 Enable	UF1 Enable	500	
UF2 Threshold	UF2 Threshold	500	
UF2 Enable	UF2 Enable	500	
UF2 Timer	UF2 Timer	500	

UF3 Threshold	UF3 Threshold	500	
UF3 Timer	UF3 Timer	500	
UF3 Enable	UF3 Enable	500	
UV Reconnection Threshold	UV Reconnection Threshold	500	
UV1 Enable	UV1 Enable	500	
UV1 Threshold	UV1 Threshold	500	
UV1 Timer	UV1 Timer	500	
UV2 Enable	UV2 Enable	500	
UV2 Threshold	UV2 Threshold	500	
UV2 Timer	UV2 Timer	500	
UV3 Enable	UV3 Enable	500	
UV3 Threshold	UV3 Threshold	500	
UV3 Timer	UV3 Timer	500	
Upper Deadband	Upper Deadband	500	
Upward Spinning Reserve	Upward Spinning Reserve	500	
Upward Spinning Reserve Threshold	Upward Spin. Reserve Threshold	500	
User Generator Dispatch Request	User Generator Dispatch Request	500	
User Generator Reserve Request	User Generator Reserve Request	500	
User Solar Limit	User Solar Limit	500	
User Start	User Start	500	
User Wind Limit	User Wind Limit	500	
Volt-Var Enable	Volt-Var Enable	500	
Volt-Var Output	Volt-Var Output	500	
Volt-Var Q1	Volt-Var Q1	500	
Volt-Var Q2	Volt-Var Q2	500	
Volt-Var Q3	Volt-Var Q3	500	
Volt-Var Q4	Volt-Var Q4	500	
Volt-Var Time Response	Volt-Var Time Response	500	
Volt-Var V1	Volt-Var V1	500	
Volt-Var V2	Volt-Var V2	500	
Volt-Var V3	Volt-Var V3	500	
Volt-Var V4	Volt-Var V4	500	
Volt-Watt Enable	Volt-Watt Enable	500	
Volt-Watt P2	Volt-Watt P2	500	
Volt-Watt Real Maximum	Volt-Watt Real Maximum	500	
Volt-Watt Time response	Volt-Watt Time response	500	
Volt-Watt V1	Volt-Watt V1	500	
Volt-Watt V2	Volt-Watt V2	500	
Voltage Reference	Voltage Reference	500	
Voltage Target	Voltage Target	500	
Watt-Var Enable	Watt-Var Enable	500	

Watt-Var Output	Watt-Var Output	500	
Watt-Var P1	Watt-Var P1	500	
Watt-Var P2	Watt-Var P2	500	
Watt-Var P3	Watt-Var P3	500	
Watt-Var P4	Watt-Var P4	500	
Watt-Var P5	Watt-Var P5	500	
Watt-Var P6	Watt-Var P6	500	
Watt-Var Q1	Watt-Var Q1	500	
Watt-Var Q2	Watt-Var Q2	500	
Watt-Var Q3	Watt-Var Q3	500	
Watt-Var Q4	Watt-Var Q4	500	
Watt-Var Q5	Watt-Var Q5	500	
Watt-Var Q6	Watt-Var Q6	500	
Watt-Var Time Response	Watt-Var Time Response	500	
Wind Apparent Power	Wind Apparent Power	500	
Wind Energy Export	Wind Energy Export	500	
Wind Energy Import	Wind Energy Import	500	
Wind Frequency	Wind Frequency	500	
Wind Meter CT/PT	Wind Meter CT/PT	500	
Wind Meter Invalid	Wind Meter Invalid	500	
Wind Meter MIA	Wind Meter MIA	500	
Wind Meter Out of Bounds	Wind Meter Out of Bounds	500	
Wind Meter Unreasonable	Wind Meter Unreasonable	500	
Wind Power Limit	Wind Power Limit	500	
Wind Reactive Power	Wind Reactive Power	500	
Wind Real Power	Wind Real Power	500	
Wind Voltage	Wind Voltage	500	
Wind meter Is Part of Aggregate	Wind meter Is Part of Aggregate	500	
<b>ECU analog inputs (controller's outputs)</b>			
Configuration Name	Name	Polling period	Register
Battery Direct Reactive Power Command	Batt Direct Reactive Power Cmd	1000	
Battery Direct Reactive Power Ramp Rate	Bat Direct React Power Ramp Rate	1000	
Battery Direct Real Power Command	Battery Direct Real Power Cmd	1000	
Battery Direct Real Power Ramp Rate	Batt Direct Real Power Ramp Rate	1000	
Black Start Request	Black Start Request	1000	
Busway Hard Limiter Enable	Busway Hard Limiter Enable	1000	
Busway Hard Limiter Export Limit	Busway Hard Limiter Export Limit	1000	
Busway Hard Limiter Import Limit	Busway Hard	1000	

	Limiter Import Limit		
Busway Hard Limiter Output	Busway Hard Limiter Output	1000	
Charge from Solar Only	Charge from Solar Only	1000	
Closed Loop Control Enable	Closed Loop Control Enable	1000	
Enable Meter Trips	Enable Meter Trips	1000	
Export Excitation	Export Excitation	1000	
Export Power Factor	Export Power Factor	1000	
Export Solar Only	Export Solar Only	1000	
Frequency Droop Enable	Frequency Droop Enable	1000	
Frequency Target	Frequency Target	1000	
Heat Mode Enable	Heat Mode Enable	1000	
Import Excitation	Import Excitation	1000	
Import Power Factor	Import Power Factor	1000	
Intentional Island	Intentional Island	1000	
Lower Deadband	Lower Deadband	1000	
Maintain Energy Enable	Maintain Energy Enable	1000	
Maintain Energy Target	Maintain Energy Target	1000	
Maximum Load Drop	Maximum Load Drop	1000	
Maximum Load Step	Maximum Load Step	1000	
Maximum Off-Grid SOE	Maximum Off-Grid SOE	1000	
Microgrid Controller - User Solar Limit	Microgrid Con. - User Solar Lim	1000	
Microgrid Enable	Microgrid Enable	1000	
Minimum Off-Grid SOE	Minimum Off-Grid SOE	1000	
Mode Request	Mode Request	1000	
Net Load	Net Load	1000	
OD Reconnection Threshold	OD Reconnection Threshold	1000	
OF1 Threshold	OF1 Threshold	1000	
OF1 Timer	OF1 Timer	1000	
OF1 Enable	OF1 Enable	1000	
OF2 Enable	OF2 Enable	1000	
OF2 Threshold	OF2 Threshold	1000	
OF2 Timer	OF2 Timer	1000	
OF3 Threshold	OF3 Threshold	1000	
OF3 Timer	OF3 Timer	1000	
OF3 Enable	OF3 Enable	1000	
OV Reconnection Threshold	OV Reconnection Threshold	1000	

OV1 Enable	OV1 Enable	1000	
OV1 Threshold	OV1 Threshold	1000	
OV1 Timer	OV1 Timer	1000	
OV2 Threshold	OV2 Threshold	1000	
OV2 Timer	OV2 Timer	1000	
OV2 Enable	OV2 Enable	1000	
OV3 Enable	OV3 Enable	1000	
OV3 Threshold	OV3 Threshold	1000	
OV3 Timer	OV3 Timer	1000	
Opticaster Enable	Opticaster Enable	1000	
Peak Power Enable	Peak Power Enable	1000	
Permit Service Enable	Permit Service Enable	1000	
Power Factor Enable	Power Factor Enable	1000	
Power Factor Output	Power Factor Output	1000	
Proportional Gain Lower	Proportional Gain Lower	1000	
Proportional Gain Upper	Proportional Gain Upper	1000	
Ramp Time	Ramp Time	1000	
Reactive Operator Limit Maximum	Reactive Operator Limit Maximum	1000	
Reactive Operator Limit Minimum	Reactive Operator Limit Minimum	1000	
Real Maximum	Real Maximum	1000	
Real Minimum	Real Minimum	1000	
Real Operator Limit Maximum	Real Operator Limit Maximum	1000	
Real Operator Limit Minimum	Real Operator Limit Minimum	1000	
Reconnection Time	Reconnection Time	1000	
Reference Frequency	Reference Frequency	1000	
Reference Voltage	Reference Voltage	1000	
Reset Black Start Attemp Count	Reset Black Start Attemp Count	1000	
Solar Real Power Limit	Solar Real Power Limit	1000	
State Request	State Request	1000	
Stop Charging From Generator SOE	Stop Charging From Generator SOE	1000	
Time Response	Time Response	1000	
UF Reconnection Threshold	UF Reconnection Threshold	1000	
UF1 Threshold	UF1 Threshold	1000	
UF1 Timer	UF1 Timer	1000	
UF1 Enable	UF1 Enable	1000	
UF2 Threshold	UF2 Threshold	1000	



UF2 Enable	UF2 Enable	1000	
UF2 Timer	UF2 Timer	1000	
UF3 Threshold	UF3 Threshold	1000	
UF3 Timer	UF3 Timer	1000	
UF3 Enable	UF3 Enable	1000	
UV Reconnection Threshold	UV Reconnection Threshold	1000	
UV1 Enable	UV1 Enable	1000	
UV1 Threshold	UV1 Threshold	1000	
UV1 Timer	UV1 Timer	1000	
UV2 Enable	UV2 Enable	1000	
UV2 Threshold	UV2 Threshold	1000	
UV2 Timer	UV2 Timer	1000	
UV3 Enable	UV3 Enable	1000	
UV3 Threshold	UV3 Threshold	1000	
UV3 Timer	UV3 Timer	1000	
Upper Deadband	Upper Deadband	1000	
User Solar Limit	User Solar Limit	1000	
User Start	User Start	1000	
User Wind Limit	User Wind Limit	1000	
Volt-Var Enable	Volt-Var Enable	1000	
Volt-Var Output	Volt-Var Output	1000	
Volt-Var Q1	Volt-Var Q1	1000	
Volt-Var Q2	Volt-Var Q2	1000	
Volt-Var Q3	Volt-Var Q3	1000	
Volt-Var Q4	Volt-Var Q4	1000	
Volt-Var Time Response	Volt-Var Time Response	1000	
Volt-Var V1	Volt-Var V1	1000	
Volt-Var V2	Volt-Var V2	1000	
Volt-Var V3	Volt-Var V3	1000	
Volt-Var V4	Volt-Var V4	1000	
Volt-Watt Enable	Volt-Watt Enable	1000	
Volt-Watt P2	Volt-Watt P2	1000	
Volt-Watt Time response	Volt-Watt Time response	1000	
Volt-Watt V1	Volt-Watt V1	1000	
Volt-Watt V2	Volt-Watt V2	1000	
Voltage Target	Voltage Target	1000	
Watt-Var Enable	Watt-Var Enable	1000	
Watt-Var Output	Watt-Var Output	1000	
Watt-Var P1	Watt-Var P1	1000	
Watt-Var P2	Watt-Var P2	1000	
Watt-Var P3	Watt-Var P3	1000	
Watt-Var P4	Watt-Var P4	1000	
Watt-Var P5	Watt-Var P5	1000	
Watt-Var P6	Watt-Var P6	1000	
Watt-Var Q1	Watt-Var Q1	1000	

Watt-Var Q2	Watt-Var Q2	1000	
Watt-Var Q3	Watt-Var Q3	1000	
Watt-Var Q4	Watt-Var Q4	1000	
Watt-Var Q5	Watt-Var Q5	1000	
Watt-Var Q6	Watt-Var Q6	1000	
Watt-Var Time Response	Watt-Var Time Response	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	Controller
RS485 A	RS485 A
RS485 COM	RS485 COM
RS485 B	RS485 B
Battery + (positive)	N/A
Battery - (negative)	N/A

## 6.11.18 Sunspec devices support

ECU Type	Engine type
<a href="#">Sunspec PV (page 969)</a>	Support of generic Sunspec photovoltaic inverter device
<a href="#">Sunspec BESS (page 1054)</a>	Support of generic Sunspec BESS device
<a href="#">Sunspec PV (page 969)</a>	Support of generic Sunspec photovoltaic inverter device using 700s models
<a href="#">Sunspec BESS (page 1054)</a>	Support of generic Sunspec BESS device using 700s models

## Sunspec BESS

### Controllers that support the Sunspec BESS

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	Name	Polling period
ECU binary inputs (controller's outputs - commands)		
Configuration Name	Name	Polling period
Active Power Limit Enable	Active Power Limit Enable	1000
ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
ARtg	ARtg	2000

Active Power	Active Power	1000
AhrRtg	AhrRtg	2000
Alarm Reset	Alarm Reset	1000
Battery Power Request	Battery Power Request	1000
Battery Type	Battery Type	1000
Charge Status of Storage	Charge Status of Storage	1000
Conn	Conn	5000
Conn_RvrtTms	Conn_RvrtTms	5000
Conn_WinTms	Conn_WinTms	5000
Control Mode	Control Mode	1000
Controller Heartbeat	Controller Heartbeat	1000
Current	Current	1000
Current L1	Current L1	1000
Current L2	Current L2	1000
Current L3	Current L3	1000
Cycle Count	Cycle Count	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERTyp	DERTyp	2000
Distributed Energy Heartbeat	Distributed Energy Heartbeat	1000
Distributed Energy Resource Type	Distributed Energy Resource Type	1000
Event Bitfield	Event Bitfield	1000
Evt1	Evt1	1000
Evt2	Evt2	1000
EvtVnd1	EvtVnd1	1000
EvtVnd2	EvtVnd2	1000
EvtVnd3	EvtVnd3	1000
EvtVnd4	EvtVnd4	1000
External Battery Voltage	External Battery Voltage	1000
Frequency	Frequency	1000
Max Charge Current	Max Charge Current	1000
Max Discharge Current	Max Discharge Current	1000
MaxChaRte	MaxChaRte	2000
MaxDisChaRte	MaxDisChaRte	2000
Maximum Reserve Percent	Maximum Reserve Percent	1000
Minimum Reserve Percent	Minimum Reserve Percent	1000
Nameplate Energy Capacity	Nameplate Energy Capacity	1000

Nameplate Max Charge Rate	Nameplate Max Charge Rate	1000
Nameplate Max SoC	Nameplate Max SoC	1000
Nameplate Min SoC	Nameplate Min SoC	1000
Nameplate Max Discharge Rate	Nameplate Max Discharge Rate	1000
Nominal Active Power	Nominal Active Power	2000
OutPFSet	OutPFSet	5000
OutPFSet_Ena	OutPFSet_Ena	5000
OutPFSet_RmpTms	OutPFSet_RmpTms	5000
OutPFSet_RvrtTms	OutPFSet_RvrtTms	5000
OutPFSet_WinTms	OutPFSet_WinTms	5000
PCS State Request	PCS State Request	1000
PF	PF	1000
PFRtgQ1	PFRtgQ1	2000
PFRtgQ2	PFRtgQ2	2000
PFRtgQ3	PFRtgQ3	2000
PFRtgQ4	PFRtgQ4	2000
Reactive Power	Reactive Power	1000
Self Discharge Rate	Self Discharge Rate	1000
St	St	1000
StVnd	StVnd	1000
State of Charge	State of Charge	1000
State of Health	State of Health	1000
State of the Battery Bank	State of the Battery Bank	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
VA	VA	1000
VARtg	VARtg	2000
VArAvalPct	VArAvalPct	5000
VArMaxPct	VArMaxPct	5000
VArPct_Ena	VArPct_Ena	5000
VArPct_Mod	VArPct_Mod	5000
VArPct_RmpTms	VArPct_RmpTms	5000
VArPct_RvrtTms	VArPct_RvrtTms	5000
VArPct_WinTms	VArPct_WinTms	5000
VARtgQ1	VARtgQ1	2000
VARtgQ2	VARtgQ2	2000

VArRtgQ3	VArRtgQ3	2000
VArRtgQ4	VArRtgQ4	2000
VArWMaxPct	VArWMaxPct	5000
Voltage L1	Voltage L1	1000
Voltage L1L2	Voltage L1L2	1000
Voltage L2	Voltage L2	1000
Voltage L2L3	Voltage L2L3	1000
Voltage L3	Voltage L3	1000
Voltage L3L1	Voltage L3L1	1000
WH	WH	1000
WHRtg	WHRtg	2000
WMaxLimPct	WMaxLimPct	5000
WMaxLimPct_RmpTms	WMaxLimPct_RmpTms	5000
WMaxLimPct_RvrtTms	WMaxLimPct_RvrtTms	5000
WMaxLimPct_WinTms	WMaxLimPct_WinTms	5000
WMaxLim_Ena	WMaxLim_Ena	5000
<b>ECU analog inputs (controller's outputs)</b>		
Configuration Name	Name	Polling period
Active Power Limit	Active Power Limit	1000
Maximum Reserve Percent	Maximum Reserve Percent	1000
Minimum Reserve Percent	Minimum Reserve Percent	1000
PF Set	PF Set	1000
PF Set Enable	PF Set Enable	1000

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Sunspec BESS 700

### Controllers that support the Sunspec BESS 700

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
Configuration Name	Name	Polling period
WMaxLimPctEna	WMaxLimPctEna	1000
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	Name	Polling period
PFWAbsEna	PFWAbsEna	1000
PFWInjEna	PFWInjEna	1000
VarSetEna	VarSetEna	1000
WMaxLimPctEna	WMaxLimPctEna	1000
WSetEna	WSetEna	1000

ECU analog outputs (controller's inputs)		
Configuration Name	Name	Polling period
A	A	1000
ACType	ACType	1000
AChaMax	AChaMax	1000
ADisChaMax	ADisChaMax	1000
AL1	AL1	1000
AL2	AL2	1000
AL3	AL3	1000
AMaxRtg	AMaxRtg	1000
AlmRst	AlmRst	1000
Alrm	Alrm	1000
ChaSt	ChaSt	1000
ConnSt	ConnSt	1000
CtrlHb	CtrlHb	1000
DCA	DCA	1000
DCV	DCV	1000
DCW	DCW	1000
DERHb	DERHb	1000
DERMode	DERMode	1000
DisChaRte	DisChaRte	1000
Evt1	Evt1	1000
Hb	Hb	1000
Hz	Hz	1000
InvSt	InvSt	1000
LocRemCtl	LocRemCtl	1000
NCyc	NCyc	1000
OpCtl	OpCtl	1000
PF	PF	1000
ReqInvState	ReqInvState	1000
ReqW	ReqW	1000
SoC	SoC	1000
SoCMax	SoCMax	1000
SoCMin	SoCMin	1000
SoCRsvMin	SoCRsvMin	1000
SoH	SoH	1000
SocRsvMax	SocRsvMax	1000
St	St	1000
State	State	1000
Tmp	Tmp	1000
TmpCab	TmpCab	1000
TmpOt	TmpOt	1000
TmpSnk	TmpSnk	1000
TmpTrns	TmpTrns	1000
TotVarhAbs	TotVarhAbs	1000
TotVarhInj	TotVarhInj	1000
TotWhAbs	TotWhAbs	1000

TotWhInj	TotWhInj	1000
Typ	Typ	1000
V	V	1000
VA	VA	1000
VAMaxRtg	VAMaxRtg	1000
VL1	VL1	1000
VL1L2	VL1L2	1000
VL2	VL2	1000
VL2L3	VL2L3	1000
VL3	VL3	1000
VL3L1	VL3L1	1000
VNom	VNom	1000
Var	Var	1000
W	W	1000
WChaRteMax	WChaRteMax	1000
WChaRteMaxRtg	WChaRteMaxRtg	1000
WDisChaRteMax	WDisChaRteMax	1000
WDisChaRteMaxRtg	WDisChaRteMaxRtg	1000
WHRtg	WHRtg	1000
WMax	WMax	1000
WMaxLimPct	WMaxLimPct	1000
WMaxRtg	WMaxRtg	1000

#### ECU analog inputs (controller's outputs)

Configuration Name	Name	Polling period
AlarmReset	AlarmReset	1000
ControllerHb	ControllerHb	500
OpCtl	OpCtl	1000
PFAbs	PFAbs	1000
PFInj	PFInj	1000
SoCRsvMin	SoCRsvMin	1000
SocRsvMax	SocRsvMax	1000
VNom	VNom	1000
VarSetMod	VarSetMod	1000
VarSetPct	VarSetPct	1000
VarSetPri	VarSetPri	1000
WMax	WMax	1000
WMaxLimPct	WMaxLimPct	1000
WSetPct	WSetPct	1000

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## 6.12 Power Inverters

## 6.12.1 Danfoss devices support

ECU Type	Device type	Source documentation version
<a href="#">Microgrid Converter (page 1060)</a>	Microgrid Converter EC-C1200-450	v1.0
<a href="#">Line Converter (page 1062)</a>	Line Converter EC-C1200-450	v1.0
<a href="#">Switch Converter (page 1067)</a>	Switch Control Converter EC-C1200-450	v1.0
<a href="#">Motor Inverter (page 1064)</a>	Motor Inverter EC-C1200-450	v1.0
<a href="#">VLT Aqua Drive (page 1079)</a>	VLT Aqua Drive	v2.0

### Microgrid Converter

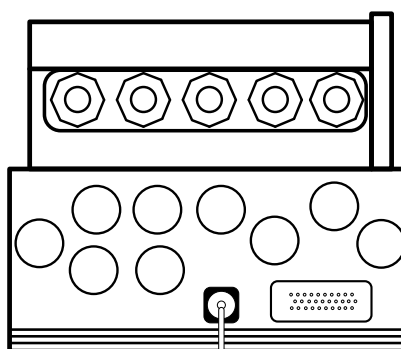


Image 5.271 Danfoss Converter

### Controllers that support the Microgrid Converter:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
RunStatus		Run Status
FaultStatus		Fault Status
WarningStatus		Warning Status
DigitInputPin1		Digital Input Pin 1
DigitInputPin2		Digital Input Pin 2
DigitInputPin3		Digital Input Pin 3
DigitInputPin4		Digital Input Pin 4
DigitInputPin5		Digital Input Pin 5
RunStatusMG		Run Status MG
FaultStatusMG		Fault Status MG
ReadyForRun		Ready For Run
SoftStartAct		Soft Start Active



ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
SysAppReqCmd		System Application Request Cmd
AlarmReset		Alarm Reset
SetDigOutPin1		Set Digital Output Pin 1
SetDigOutPin2		Set Digital Output Pin 2
SetDigOutPin3		Set Digital Output Pin 3
SetDigOutPin4		Set Digital Output Pin 4
SetDigOutPin5		Set Digital Output Pin 5
MGAAppReqCmd		Microgrid Application Request Cmd
RunCmd		Run Command
SoftStart		Soft Start
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
LCLFiltCntStat		LCL Filter Contactor Status
T-PwrSwitchHi		Power Switch Junction Temp Highest
T-HighestPT100		Highest of Enabled External PT100
T-LowestPT100		Lowest of Enabled External PT100
T-ExtPT100Cha1		External PT100 Channel 1
T-ExtPT100Cha2		External PT100 Channel 2
T-ExtPT100Cha3		External PT100 Channel 3
T-ExtPT100Cha4		External PT100 Channel 4
T-ExtPT100Cha5		External PT100 Channel 5
SysFaultWord1		System Fault Word 1
SysFaultWord2		System Fault Word 2
V-InputPin1*		Input Voltage Pin 1
V-InputPin2*		Input Voltage Pin 2
V-InputPin3*		Input Voltage Pin 3
V-InputPin4*		Input Voltage Pin 4
V-LL		Voltage L-L
Frequency*		Frequency
I-Phase		Phase Current
PowerFactor*		Power Factor
V-DCLink		DC Link Voltage
I-DCLink		DC Link Current
PwrApparent*		Apparent Power
TotalActPwr*		Total Active Power
ActPwrPhase1*		Active Power Phase 1
ActPwrPhase2*		Active Power Phase 2
ActPwrPhase3*		Active Power Phase 3
I-Phase1		Current Phase 1
I-Phase2		Current Phase 2
I-Phase3		Current Phase 3
I-NeutralWire		Current Neutral Wire
V-PhaseL1L2		Voltage Phase L1-L2
V-PhaseL2L3		Voltage Phase L2-L3
V-PhaseL3L1		Voltage Phase L3-L1

TotalReactPwr*		Total Reactive Power
ReactPwrPhase1*		Reactive Power Phase 1
ReactPwrPhase2*		Reactive Power Phase 2
ReactPwrPhase3*		Reactive Power Phase 3
CtrlStatusWord		Control Status Word
CtrlLimitWord		Control Limit Word
CtrlFaultWord		Control Fault Word
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
LCLFiltContact		LCL Filter Contactor
CtrlMode		Control Mode
VoltLLSetpoint		Voltage L-L Setpoint
FreqSetpoint*		Frequency Setpoint
ActPowerSp*		Active Power Setpoint

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## Line Converter

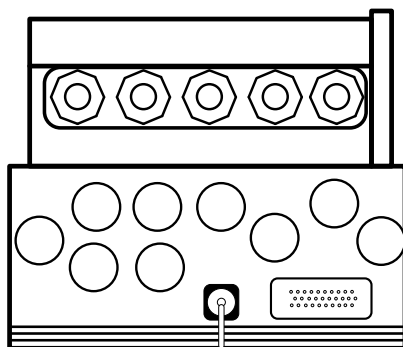


Image 5.272 Danfoss Converter

### Controllers that support the Line Converter:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

<b>ECU binary outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
RunStatus		Run Status

FaultStatus		Fault Status
WarningStatus		Warning Status
DigitInputPin1		Digital Input Pin 1
DigitInputPin2		Digital Input Pin 2
DigitInputPin3		Digital Input Pin 3
DigitInputPin4		Digital Input Pin 4
DigitInputPin5		Digital Input Pin 5
RunStatusMG		Run Status LC
FaultStatusMG		Fault Status LC
ReadyForRun		Ready For Run
<b>ECU binary inputs (controller's outputs - commands)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
SysAppReqCmd		System Application Request Cmd
AlarmReset		Alarm Reset
SetDigOutPin1		Set Digital Output Pin 1
SetDigOutPin2		Set Digital Output Pin 2
SetDigOutPin3		Set Digital Output Pin 3
SetDigOutPin4		Set Digital Output Pin 4
SetDigOutPin5		Set Digital Output Pin 5
LCRequestCmd		LC Request Cmd
RunCmd		Run Command
<b>ECU analog outputs (controller's inputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
LCLFiltCntStat		LCL Filter Contactor Status
T-PwrSwitchHi		Power Switch Junction Temp Highest
T-HighestPT100		Highest of Enabled External PT100
T-LowestPT100		Lowest of Enabled External PT100
T-ExtPT100Cha1		External PT100 Channel 1
T-ExtPT100Cha2		External PT100 Channel 2
T-ExtPT100Cha3		External PT100 Channel 3
T-ExtPT100Cha4		External PT100 Channel 4
T-ExtPT100Cha5		External PT100 Channel 5
SysFaultWord1		System Fault Word 1
SysFaultWord2		System Fault Word 2
V-InputPin1*		Input Voltage Pin 1
V-InputPin2*		Input Voltage Pin 2
V-InputPin3*		Input Voltage Pin 3
V-InputPin4*		Input Voltage Pin 4
Frequency*		Frequency
ActPwr*		Active Power
V-RMS		Voltage RMS
I-RMS		Current RMS
ReactPwr*		Reactive Power
V-DCLink		DC Link Voltage
I-DCLink		DC Link Current
CtrlStatusWord		Control Status Word
CtrlLimitWord		Control Limit Word

ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
LCLFiltContact		LCL Filter Contactor
CtrlMode		Control Mode
V-DCLink		DC Link Voltage
ActPwrRef*		Active Power Reference
ReactPwrRef*		Reactive Power Reference
ActPowerMinLim*		Active Power Minimum Limit
ActPowerMaxLim*		Active Power Maximum Limit
I-DCLinkMinLim		DC Link Current Minimum Limit
I-DCLinkMaxLim		DC Link Current Maximum Limit

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## Motor Inverter

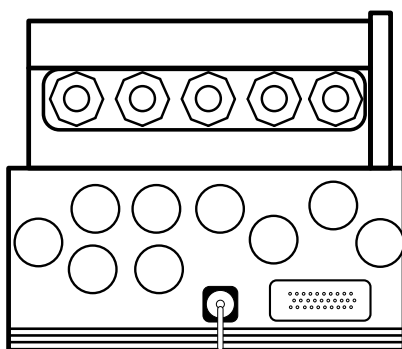


Image 5.273 Danfoss Converter

### Controllers that support the Motor Inverter:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
RunStatus		Run Status
FaultStatus		Fault Status
WarningStatus		Warning Status
DigitInputPin1		Digital Input Pin 1

DigitInputPin2		Digital Input Pin 2
DigitInputPin3		Digital Input Pin 3
DigitInputPin4		Digital Input Pin 4
DigitInputPin5		Digital Input Pin 5
RunStatus		Motor Run Status
FaultStatus		Motor Fault Status
ReadyForRun		Ready For Run
RdyForRefStat		Ready For Reference Status
ResolvUseStat		Resolver in Use Status
ResolvWarnStat		Resolver Signal Warning Status
<b>ECU binary inputs (controller's outputs - commands)</b>		
Configuration Name	SPN	J1939 Name
SysAppReqCmd		System Application Request Cmd
AlarmReset		Alarm Reset
SetDigOutPin1		Set Digital Ouput Pin 1
SetDigOutPin2		Set Digital Ouput Pin 2
SetDigOutPin3		Set Digital Ouput Pin 3
SetDigOutPin4		Set Digital Ouput Pin 4
SetDigOutPin5		Set Digital Ouput Pin 5
MotCtrlReqCmd		Motor Control Application Request Cmd
MotorRunCmd		Motor Run Command
EnaResolver		Enable Resolver
ReqResolvOffs		Request Resolver Offset
EnaResolvFdb		Enable Resolver Feedback
StoreResolvPar		Store Resolver Parameters
<b>ECU analog outputs (controller's inputs)</b>		
Configuration Name	SPN	J1939 Name
T-PwrSwitchHi		Power Switch Junction Temp Highest
T-HighestPT100		Highest of Enabled External PT100
T-LowestPT100		Lowest of Enabled External PT100
T-ExtPT100Cha1		External PT100 Channnel 1
T-ExtPT100Cha2		External PT100 Channnel 2
T-ExtPT100Cha3		External PT100 Channnel 3
T-ExtPT100Cha4		External PT100 Channnel 4
T-ExtPT100Cha5		External PT100 Channnel 5
SysFaultWord1		System Fault Word 1
SysFaultWord2		System Fault Word 2
V-InputPin1*		Input Voltage Pin 1
V-InputPin2*		Input Voltage Pin 2
V-InputPin3*		Input Voltage Pin 3
V-InputPin4*		Input Voltage Pin 4
Speed		Actual Motor Speed
Torque		Actual Motor Torque
V-DCLink		Acutal DC Link Voltage
MechActPower*		Actual Motor Mechanical Power
I-Phase		Phase Current
I-DCLink		DC Link Current

CtrlStatusWord		Motor Control Status Word
CtrlLimitWord		Motor Control Limit Word
CtrlFaultWord		Motor Control Fault Word
CtrlLimErrWord		Motor Control Limit Error Word
Frequency*		Actual Motor Frequency
RotorPosFull		Rotor Position Full Revolutions
ResStateOffID		State of Resolver Offset Identification
ResDirectStat		Resolver Direction Status
ResPolePairSt		Resolver Pole Pair Status
ResSaveStatus		Resolver Save Status
ResOffObtained		Resolver Offset Obtained
ResOffsetInUse		Resolver Offset In Use
ResolverSpeed		Resolver Speed
<b>ECU analog inputs (controller's outputs)</b>		
<b>Configuration Name</b>	<b>SPN</b>	<b>J1939 Name</b>
CtrlMode		Control Mode
SpeedRef		Speed Reference
TorqueRef		Torque Reference
V-DCLinkRef		DC Link Voltage Reference
ActPwrRef*		Motor Active Power Reference
FrequencyRef*		Frequency Reference
SpeedLimitMax		Motor Speed Limit Max
SpeedLimitMin		Motor Speed Limit Min
TorqueLimitMax		Motor Torque Limit Max
TorqueLimitMin		Motor Torque Limit Min
DCOvervoltLim		DC Link Overvoltage Control Limit
DCOvervLimBeg		DC Link Overvoltage Control Limitation Begins
DCUndervLimBeg		DC Link Undervoltage Control Limitation Begins
DCUndervoltLim		DC Link Undervoltage Control Limit
MechPwrLimMax*		Mechanical Power Limit Max
MechPwrLimMin*		Mechanical Power Limit Min
DCCurrLimMax		DC Link Current Limit Max
DCCurrLimMin		DC Link Current Limit Min
SpeedCtrlGain*		Speed Control Gain
SpdCtrlIntTime*		Speed Control Integral Time
SpdRampTime*		Speed Reference Ramp Time
TrqLimTimeMot*		Torque Limit Time Motoring
TrqLimTimeGen*		Torque Limit Time Generating
ResolvOffsetID		Resolver Offset ID Method

\*The parameter requires extended controller's support. Please refer controller's manual for further information.

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## Switch Converter

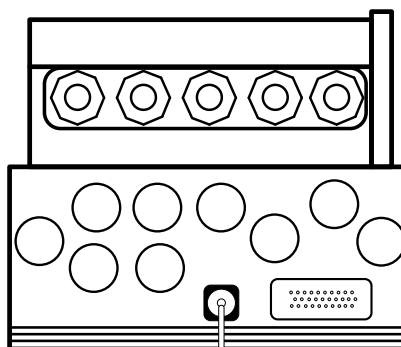


Image 5.274 Danfoss Converter

## Controllers that support the Switch Converter

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
RunStatus		Run Status
FaultStatus		Fault Status
WarningStatus		Warning Status
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
SysAppReqCmd		System Application Request Cmd
AlarmReset		Alarm Reset
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
ContactStatus		Contact Status
CtrlSwStatus		Control Switch Status
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
CtrlSwContact		Control Switch Contactor
CtrlSwCmd		Control Switch Command

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite, 3 - InteliDrive Lite, 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano, 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.12.2 SINOSOAR devices support

ECU Type	Device type	Source documentation version
<a href="#">EES Inverter (page 1068)</a>	SP100HC, SP100HC, SP100HC-1, SP110HS, SP110HS-1	v1.0

### EES Inverter

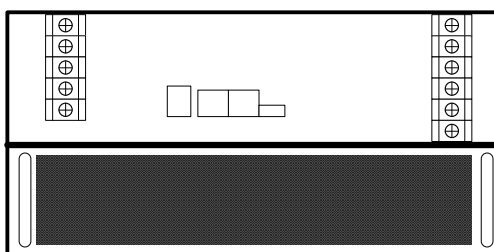


Image 5.275 EES Inverter

### Controllers that support the EES Inverter:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Fault Summary	Fault Summary	500	
Grid and Battery Faults	Grid and Battery Faults	500	
Inverter Faults	Inverter Faults	500	
Off Grid Status	Off Grid Status	500	
Off-Grid	Off-Grid	500	
On-Grid	On-Grid	500	
Start/Stop Status	Start/Stop Status	500	
ECU binary inputs (controller's outputs - commands)			
Configuration Name	Name	Polling period	Register
Island Detection	Island Detection	1000	
Reactive Power Adjustment Mode	Reactive Power Adjustment Mode	1000	
ECU analog outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
A-Phase Active Power	A-Phase Active	500	



	Power		
A-Phase Apparent Power	A-Phase Apparent Power	500	
A-Phase Current Output	A-Phase Current Output	500	
A-Phase Reactive Power	A-Phase Reactive Power	500	
A-Phase Voltage	A-Phase Voltage	500	
AB Line Voltage	AB Line Voltage	500	
Active Power	Active Power	500	
B-Phase Active Power	B-Phase Active Power	500	
B-Phase Apparent Power	B-Phase Apparent Power	500	
B-Phase Current Output	B-Phase Current Output	500	
B-Phase Reactive Power	B-Phase Reactive Power	500	
B-Phase Voltage	B-Phase Voltage	500	
BC Line Voltage	BC Line Voltage	500	
BMS Temperature	BMS Temperature	500	
Battery Capacity	Battery Capacity	500	
Battery Current	Battery Current	500	
Battery SOC	Battery SOC	500	
Battery SOH	Battery SOH	500	
Battery Voltage	Battery Voltage	500	
Bus Voltage N	Bus Voltage N	500	
Bus Voltage P	Bus Voltage P	500	
C-Phase Active Power	C-Phase Active Power	500	
C-Phase Apparent Power	C-Phase Apparent Power	500	
C-Phase Current Output	C-Phase Current Output	500	
C-Phase Reactive Power	C-Phase Reactive Power	500	
C-Phase Voltage	C-Phase Voltage	500	
CA Line Voltage	CA Line Voltage	500	
DC Charging Capacity	DC Charging Capacity	500	
DC Current	DC Current	500	
DC Discharge Capacity	DC Discharge Capacity	500	
DC Power	DC Power	500	
DC Voltage	DC Voltage	500	
Electric Capacity	Electric Capacity	500	
Grid Frequency	Grid Frequency	500	
Power Supply To Power Grid	Power Supply To Power Grid	500	
Total Active Power	Total Active Power	500	

Total Apparent Power	Total Apparent Power	500	
Total PF	Total PF	500	
Total Reactive Power	Total Reactive Power	500	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Active Power Dispatch	Active Power Dispatch	1000	
Reactive Power Expectation	Reactive Power Expectation	1000	
Set PF	Set PF	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.12.3 TRUMPF devices support

ECU Type	Device type supported
<a href="#">TruConvert AC 3025 (page 1070)</a>	TruConvert AC 3025

### TruConvert AC 3025

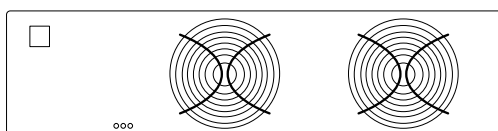


Image 5.276 TruConvert AC 3025

### Controllers that support the TruConvert AC 3025

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

<b>ECU binary outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AC Operation Mode	AC Operation Mode	1000	

Alarm Reset	Alarm Reset	1000	
Power Stage	Power Stage	1000	
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AC/DC Act Nominal Power	AC/DC Act Nominal Power	1000	
AC/DC Active Grid Forming Mode	AC/DC Active Grid Forming Mode	1000	
AC/DC Active Grid Type	AC/DC Active Grid Type	1000	
AC/DC Nominal Grid Frequency	AC/DC Nominal Grid Frequency	1000	
AC/DC Nominal Grid Voltage	AC/DC Nominal Grid Voltage	1000	
Active DC link ref voltage	Active DC link ref voltage	1000	
Actual Alarms Count	Actual Alarms Count	1000	
Actual Cos Phi L1	Actual Cos Phi L1	1000	
Actual Cos Phi L2	Actual Cos Phi L2	1000	
Actual Cos Phi L3	Actual Cos Phi L3	1000	
Actual Main State	Actual Main State	1000	
Actual Power AC L1 Display	Actual Power AC L1 Display	1000	
Actual Power AC L1 Total	Actual Power AC L1 Total	1000	
Actual Power AC L2 Display	Actual Power AC L2 Display	1000	
Actual Power AC L2 Total	Actual Power AC L2 Total	1000	
Actual Power AC L3 Display	Actual Power AC L3 Display	1000	
Actual Power AC L3 Total	Actual Power AC L3 Total	1000	
Actual Warnings Count	Actual Warnings Count	1000	
Alarm 1	Alarm 1	1000	
Alarm 10	Alarm 10	1000	
Alarm 11	Alarm 11	1000	
Alarm 12	Alarm 12	1000	
Alarm 13	Alarm 13	1000	
Alarm 14	Alarm 14	1000	
Alarm 15	Alarm 15	1000	
Alarm 16	Alarm 16	1000	
Alarm 17	Alarm 17	1000	
Alarm 18	Alarm 18	1000	
Alarm 19	Alarm 19	1000	
Alarm 2	Alarm 2	1000	
Alarm 20	Alarm 20	1000	

Alarm 3	Alarm 3	1000	
Alarm 4	Alarm 4	1000	
Alarm 5	Alarm 5	1000	
Alarm 6	Alarm 6	1000	
Alarm 7	Alarm 7	1000	
Alarm 8	Alarm 8	1000	
Alarm 9	Alarm 9	1000	
Apparent Power AC L1	Apparent Power AC L1	1000	
Apparent Power AC L1 Total	Apparent Power AC L1 Total	1000	
Apparent Power AC L2	Apparent Power AC L2	1000	
Apparent Power AC L2 Total	Apparent Power AC L2 Total	1000	
Apparent Power AC L3	Apparent Power AC L3	1000	
Apparent Power AC L3 Total	Apparent Power AC L3 Total	1000	
Grid Frequency	Grid Frequency	1000	
Grid Voltage L1	Grid Voltage L1	1000	
Grid Voltage L2	Grid Voltage L2	1000	
Grid Voltage L3	Grid Voltage L3	1000	
Phase Current L1	Phase Current L1	1000	
Phase Current L2	Phase Current L2	1000	
Phase Current L3	Phase Current L3	1000	
Reactive Power AC L1 Total	Reactive Power AC L1 Total	1000	
Reactive Power AC L2 Total	Reactive Power AC L2 Total	1000	
Reactive Power AC L3 Total	Reactive Power AC L3 Total	1000	
Total Alarms Count	Total Alarms Count	1000	
Total Warnings Count	Total Warnings Count	1000	
Voltage External N to PE	Voltage External N to PE	1000	
Voltage Internal N to PE	Voltage Internal N to PE	1000	
Warning 1	Warning 1	1000	
Warning 10	Warning 10	1000	
Warning 11	Warning 11	1000	
Warning 12	Warning 12	1000	
Warning 13	Warning 13	1000	
Warning 14	Warning 14	1000	
Warning 15	Warning 15	1000	
Warning 16	Warning 16	1000	
Warning 17	Warning 17	1000	
Warning 18	Warning 18	1000	

Warning 19	Warning 19	1000	
Warning 2	Warning 2	1000	
Warning 20	Warning 20	1000	
Warning 3	Warning 3	1000	
Warning 4	Warning 4	1000	
Warning 5	Warning 5	1000	
Warning 6	Warning 6	1000	
Warning 7	Warning 7	1000	
Warning 8	Warning 8	1000	
Warning 9	Warning 9	1000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
AC/DC Balance Mode	AC/DC Balance Mode	1000	
AC/DC DC Voltage Ref	AC/DC DC Voltage Ref	1000	
AC/DC DC Voltage Ref US	AC/DC DC Voltage Ref US	1000	
AC/DC Delta UZ set	AC/DC Delta UZ set	1000	
AC/DC Gain Sym From Grid	AC/DC Gain Sym From Grid	1000	
Grid Forming Mode	Grid Forming Mode	1000	
Grid Type	Grid Type	1000	
Island Droop Control Freq Slope	Island Droop Control Freq Slope	1000	
Island Droop Control Volt Slope	Island Droop Control Volt Slope	1000	
Island Frequency Offset	Island Frequency Offset	1000	
Island Volage Adjustment Factor	Island Volage Adjustment Factor	1000	
Max Grid Current L1	Max Grid Current L1	1000	
Max Grid Current L2	Max Grid Current L2	1000	
Max Grid Current L3	Max Grid Current L3	1000	
PF Set	PF Set	1000	
Power Setpoint AC	Power Setpoint AC	1000	
Power Setpoint L1	Power Setpoint L1	1000	
Power Setpoint L2	Power Setpoint L2	1000	
Power Setpoint L3	Power Setpoint L3	1000	
Power Setpoint P	Power Setpoint P	1000	

Power Setpoint P1	Power Setpoint P1	1000	
Power Setpoint P2	Power Setpoint P2	1000	
Power Setpoint P3	Power Setpoint P3	1000	
Power Setpoint Q	Power Setpoint Q	1000	
Power Setpoint Q1	Power Setpoint Q1	1000	
Power Setpoint Q2	Power Setpoint Q2	1000	
Power Setpoint Q3	Power Setpoint Q3	1000	
Precharge DC Link Config	Precharge DC Link Config	1000	
Preset Actuator	Preset Actuator	1000	
Setpoint PF L1	Setpoint PF L1	1000	
Setpoint PF L2	Setpoint PF L2	1000	
Setpoint PF L3	Setpoint PF L3	1000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Recommended wiring

Function	RJ-45 Master Out	Controller
RS485 A	??	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	??	RS485 B

## 6.13 Stepper Control Units

### 6.13.1 Motortech devices support

ECU Type	Device type supported
<a href="#">MIC 850 (page 893)</a>	MIC 3, MIC4, MIC4+, MIC5, MIC5+, MIC6, MIC 850
<a href="#">Varistep 1 (page 1075)</a>	Varistep 1
<a href="#">Varistep 2 (page 1077)</a>	Varistep 2

## Varistep 1

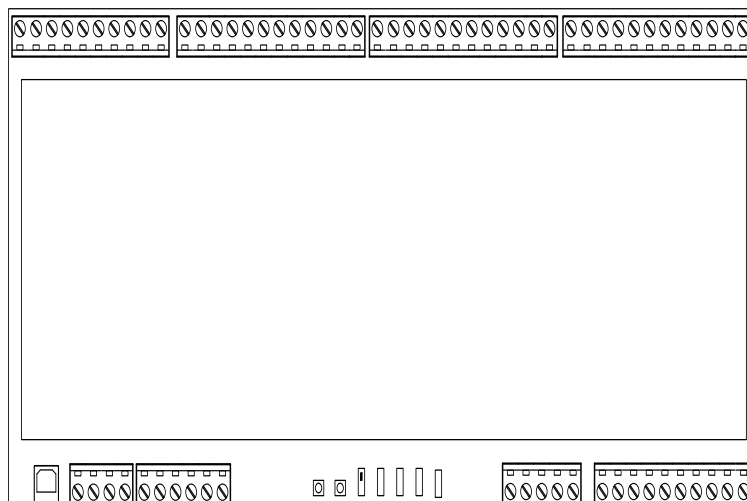


Image 5.277 Varistep 1

### Controllers that support the Varistep 1:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Offline		Offline
Mode		Error
Man/Auto		Manual / Auto Mode
StepError		Step Error
Timeout		Time out error
LowPwr		Low power error
OverTemp		Over temperature error
OverCurr		Over Current Error
OpenPosition		Open position
ClosePosition		Close position
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Reset		Reset
StepToClose		Step to close
StepToOpen		Step to open
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CurrentPos		Current position in %
ExtTargetPos		External Target Position
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Opening		Opening in percent
Mode		Mode

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite , 3 - IntelliDrive Lite , 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano , 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
<b>CAN H</b>	CAN1 (extension modules/J1939) – CAN H
<b>CAN COM</b>	CAN1 (extension modules/J1939) – CAN COM
<b>CAN L</b>	CAN1 (extension modules/J1939) – CAN L
<b>Battery + (positive)</b>	N/A
<b>Battery - (negative)</b>	N/A
<b>Key Switch</b>	Any binary output configured as ECU PwrRelay
<b>Analog Speed Control</b>	SG OUT
<b>Analog Speed Control</b>	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).



## Varistep 2

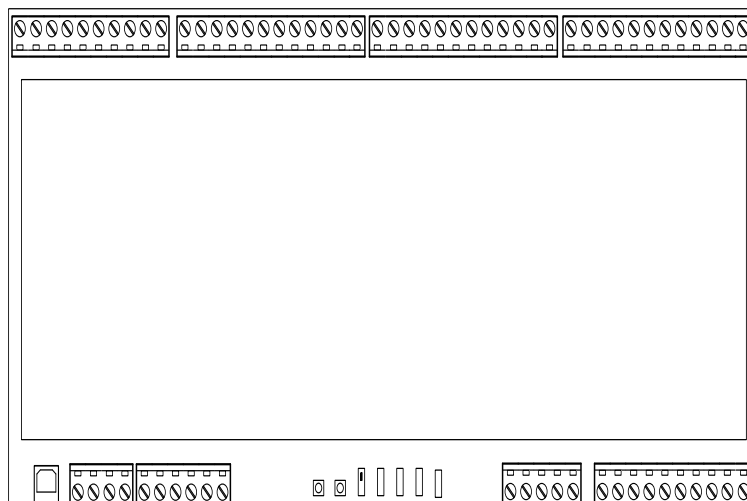


Image 5.278 Varistep 2

### Controllers that support the Varistep 2:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
Offline		Offline
Mode		Error
Man/Auto		Manual / Auto Mode
StepError		Step Error
Timeout		Time out error
LowPwr		Low power error
OverTemp		Over temperature error
OverCurr		Over Current Error
OpenPosition		Open position
ClosePosition		Close position
ECU binary inputs (controller's outputs - commands)		
Configuration Name	SPN	J1939 Name
Reset		Reset
StepToClose		Step to close
StepToOpen		Step to open
ECU analog outputs (controller's inputs)		
Configuration Name	SPN	J1939 Name
CurrentPos		Current position in %
ExtTargetPos		External Target Position
ECU analog inputs (controller's outputs)		
Configuration Name	SPN	J1939 Name
Opening		Opening in percent
Mode		Mode

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

## Controller's analog output for speed control configuration

Requested speed (Spd-Requested) settings for IntelliGen <sup>NT</sup> , IntelliSys <sup>NT</sup> IntelliSys Gas, IntelliLite 4, IntelliGen 1000, IntelliGen 500 G2, IntelliGen4 200 or IntelliSys 2000		
Source	SpeedReq RPM <sup>1</sup>	
Convert	NO	
Limits	N/A	N/A
	N/A	N/A

Requested speed (Spd-Requested) settings for IntelliDrive DCU, IntelliDrive Mobile		
Source	Speed Request	
Convert	YES	
Limits	0.0 %	Min eng. speed (800RPM)
	100.0 %	Max eng. speed (2100RPM)

Internal controller's value of the calculator is calculated from the low/high limits from the ECU Library now (IntelliDriveDCU Marine ver. 3.0 and newer, IntelliDriveDCU Industrial ver. 3.4 and newer). It was calculated from the internal controller's limits related to the particular analogue output source. If the limits are different in the FW and ECU Library, the transmitted value may be different.

## Recommended wiring

Function	Controller
CAN H	CAN1 (extension modules/J1939) – CAN H
CAN COM	CAN1 (extension modules/J1939) – CAN COM
CAN L	CAN1 (extension modules/J1939) – CAN L
Battery + (positive)	N/A
Battery - (negative)	N/A
Key Switch	Any binary output configured as ECU PwrRelay
Analog Speed Control	SG OUT
Analog Speed Control	SG COM

For more information about diagnostic connector layout see **SAE - J1939 diagnostic connector on page 56**.

## Aftertreatment lamps

Each lamp can have its own set of supported active states which it can be either Solid (lamps is ON), Blinking slow (1Hz) or Blinking fast (2Hz). The priority of these states is Solid < Blink slow < Blink fast. Meaning of different lamps needs to be consulted with documentation for the engine. Standard behavior can be found at [After-treatment support \(page 58\)](#).

### Motortech Varistep3 (2) aftertreatment lamps

<sup>1</sup>If a custom source is used (PLC output, analog input, etc. ) the value has to have exactly one decimal point (0.0 - 3000.0).

	Not Supported		Not Supported		Not Supported		Not Supported
	Not Supported		Not Supported		Not Supported		Not Supported

## 6.14 Motor Control

### 6.14.1 Danfoss devices support

ECU Type	Device type	Source documentation version
<a href="#">Microgrid Converter (page 1060)</a>	Microgrid Converter EC-C1200-450	v1.0
<a href="#">Line Converter (page 1062)</a>	Line Converter EC-C1200-450	v1.0
<a href="#">Switch Converter (page 1067)</a>	Switch Control Converter EC-C1200-450	v1.0
<a href="#">Motor Inverter (page 1064)</a>	Motor Inverter EC-C1200-450	v1.0
<a href="#">VLT Aqua Drive (page 1079)</a>	VLT Aqua Drive	v2.0

### VLT Aqua Drive

Image 5.279 VLT Aqua Drive

#### Controllers that support the Line Converter:

Refer to [Compatibility Table \(page 10\)](#)

#### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
1.8vSuppLow Alarm(A48)	1.8vSuppLow Alarm(A48)	2000	
10vLow Warn(W1)	10vLow Warn(W1)	2000	
24vSuppLow Alarm(A47)	24vSuppLow Alarm(A47)	2000	
24vSupplyLow Warn(W47)	24vSupplyLow Warn (W47)	2000	
AMANotOK Alarm	AMANotOK Alarm	2000	
Brake IGBT Alarm(A27)	Brake IGBT Alarm(A27)	2000	
BrakeChk Alarm(A28)	BrakeChk Alarm(A28)	2000	
BrakeChk Warn(W28)	BrakeChk Warn(W28)	2000	
BrakeIGBT Warn(W27)	BrakeIGBT Warn(W27)	2000	

BrakeOvld Alarm(A26)	BrakeOvld Alarm(A26)	2000	
BrakeOvld Warn(W26)	BrakeOvld Warn(W26)	2000	
BrakeRestor Alarm(A25)	BrakeRestor Alarm(A25)	2000	
BrakeRestor Warn(W25)	BrakeRestor Warn(W25)	2000	
BrokenBelt Warn	BrokenBelt Warn	2000	
ClockFail Warn	ClockFail Warn	2000	
CtrlCardTemp Alarm(A65)	CtrlCardTemp Alarm (A65)	2000	
CtrlCardTemp Warn(W65)	CtrlCardTemp Warn (W65)	2000	
CtrlWordTO Alarm(A17)	CtrlWordTO Alarm(A17)	2000	
CtrlWordTO Warn(W17)	CtrlWordTO Warn(W17)	2000	
CurrentLim Warn(W59)	CurrentLim Warn(W59)	2000	
DCOverVolt Alarm(A7)	DCOverVolt Alarm(A7)	2000	
DCOverVolt Warn(W7)	DCOverVolt Warn(W7)	2000	
DCUnderVolt Alarm(A8)	DCUnderVolt Alarm(A8)	2000	
DCUnderVolt Warn(W8)	DCUnderVolt Warn(W8)	2000	
DCVoltHigh Warn(W5)	DCVoltHigh Warn(W5)	2000	
DCVoltLow Warn(W6)	DCVoltLow Warn(W6)	2000	
DangerousFail Alarm(A72)	DangerousFail Alarm (A72)	2000	
DriveINIT Alarm(A80)	DriveINIT Alarm(A80)	2000	
ECB Error Alarm	ECB Error Alarm	2000	
ECB Warn	ECB Warn	2000	
EarthFault Warn(W14)	EarthFault Warn(W14)	2000	
EncoderLoss Warn(W90)	EncoderLoss Warn(W90)	2000	
EndofCurve Warn	EndofCurve Warn	2000	
ExtdStatusWord Warn	ExtdStatusWord Warn	2000	
Fans Warn	Fans Warn	2000	
FansError Alarm	FansError Alarm	2000	
FdbkFault Warn(W61/90)	FdbkFault Warn(W61/90)	2000	
FdbkFlt Alarm(A61/90)	FdbkFlt Alarm(A61/90)	2000	
FieldbusFlt Alarm(A34)	FieldbusFlt Alarm(A34)	2000	
FieldbusFlt Warn(W34)	FieldbusFlt Warn(W34)	2000	
GndFlt Alarm(A14)	GndFlt Alarm(A14)	2000	
HeatSinkTemp Alarm(A29)	HeatSinkTemp Alarm (A29)	2000	
HeatSinkTemp Warn(W29)	HeatSinkTemp Warn (W29)	2000	
InrushFault Alarm(A33)	InrushFault Alarm(A33)	2000	
InternalFault Alarm(A38)	InternalFault Alarm(A38)	2000	
InverterOvld Alarm(A9)	InverterOvld Alarm(A9)	2000	
InverterOvld Warn(W9)	InverterOvld Warn(W9)	2000	
KTY Error Alarm	KTY Error Alarm	2000	
KTY Warn	KTY Warn	2000	
LiveZeroError Alarm(A2)	LiveZeroError Alarm(A2)	2000	
LiveZeroError Warn(W2)	LiveZeroError Warn(W2)	2000	
LowTemp Warn(W66)	LowTemp Warn(W66)	2000	

MainsFail Alarm(A36)	MainsFail Alarm(A36)	2000	
MainsFail Warn(W36)	MainsFail Warn(W36)	2000	
MainsPhLoss Alarm(A4)	MainsPhLoss Alarm(A4)	2000	
MainsPhLoss Warn(W4)	MainsPhLoss Warn(W4)	2000	
MechBrakeLow Alarm(A63)	MechBrakeLow Alarm (A63)	2000	
MotorETROver Alarm(A10)	MotorETROver Alarm (A10)	2000	
MotorETROver Warn(W10)	MotorETROver Warn (W10)	2000	
MotorThOver Alarm(A11)	MotorThOver Alarm(A11)	2000	
MotorThOver Warn(W11)	MotorThOver Warn(W11)	2000	
NoMotor Warn(W3)	NoMotor Warn(W3)	2000	
OptionChg Alarm(A67)	OptionChg Alarm(A67)	2000	
Overcurrent Alarm(A13)	Overcurrent Alarm(A13)	2000	
Overcurrent Warn(W13)	Overcurrent Warn(W13)	2000	
PTC1SafeStop Alarm(A71)	PTC1SafeStop Alarm (A71)	2000	
PTC1SafeTqueOFF Warn(W71)	PTC1SafeTqueOFF Warn(W71)	2000	
SafeTqOFF Alarm(A68)	SafeTqOFF Alarm(A68)	2000	
SafeTqueOFF Warn(W68)	SafeTqueOFF Warn (W68)	2000	
ServTripTypeCode Alarm	ServTripTypeCode Alarm	2000	
ServiceTrip Alarm	ServiceTrip Alarm	2000	
ShortCircuit Alarm(A16)	ShortCircuit Alarm(A16)	2000	
SpeedLim Warn(W49)	SpeedLim Warn(W49)	2000	
TorqueLim Alarm(A12)	TorqueLim Alarm(A12)	2000	
TorqueLim Warn(W12)	TorqueLim Warn(W12)	2000	
U PhaseLoss Alarm(A30)	U PhaseLoss Alarm(A30)	2000	
V PhaseLoss Alarm(A31)	V PhaseLoss Alarm(A31)	2000	
VoltageLim Warn(W64)	VoltageLim Warn(W64)	2000	
W PhaseLoss Alarm(A32)	W PhaseLoss Alarm (A32)	2000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Current	Current	2000	
Frequency [%]	Frequency [%]	2000	
Frequency [Hz]	Frequency [Hz]	2000	
Power [hp]	Power [hp]	2000	
Power[kW]	Power[kW]	2000	
Speed	Speed	2000	
Torque[%]	Torque[%]	2000	
Torque[Nm]	Torque[Nm]	2000	
Voltage	Voltage	2000	

ECU analog inputs (controller's outputs)			
Configuration Name	Name	Polling period	Register

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - InteliLite<sup>NT</sup>, 2 - InteliLite , 3 - InteliDrive Lite , 4 - InteliCompact<sup>NT</sup>, 5 - InteliNano<sup>NT</sup>, 6 - InteliDrive Nano , 7 - InteliGen200, InteliGen500

## Recommended wiring

Function	RS485 connector	Controller
RS485 A	A	RS485 A
RS485 COM	N/A	RS485 COM
RS485 B	B	RS485 B

## 6.14.2 Schweitzer Engineering Laboratories devices support

ECU Type	Engine type	Source documentation version
<a href="#">700 (page 1082)</a>	700 series	v1.0

### 700

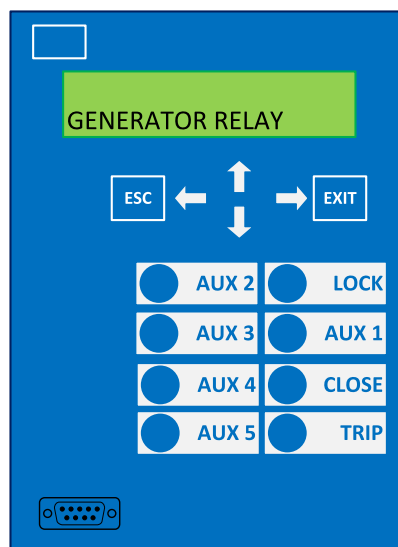


Image 5.280 Pack controller

## Controllers that support the 700

Refer to [Compatibility Table \(page 10\)](#)

## Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
40 FLD Loss Trip	40 FLD Loss Trip	2000	
46 NegSeq Trip	46 NegSeq Trip	2000	
46 NegSeq Warn	46 NegSeq Warn	2000	
49A Thermal Alarm	49A Thermal Alarm	2000	

49T Thermal Trip	49T Thermal Trip	2000	
50 GND Trip	50 GND Trip	2000	
50 NegSeq Trip	50 NegSeq Trip	2000	
50 Phase Trip	50 Phase Trip	2000	
51 GND Trip	51 GND Trip	2000	
51 NegSeq Trip	51 NegSeq Trip	2000	
51 Phase Trip	51 Phase Trip	2000	
5th Harmonic Alm	5th Harmonic Alm	2000	
64G/64F GND Trip	64G/64F GND Trip	2000	
67 GND Trip	67 GND Trip	2000	
67 NegSeq Trip	67 NegSeq Trip	2000	
67 Phase Trip	67 Phase Trip	2000	
AI Hi/Lo Alarm	AI Hi/Lo Alarm	2000	
Backup Trip	Backup Trip	2000	
Breaker Fail Trip	Breaker Fail Trip	2000	
Breaker Monitor Warn	Breaker Monitor Warn	2000	
Comm Fault	Comm Fault	2000	
Comm Idle	Comm Idle	2000	
Comm Loss	Comm Loss	2000	
Config Fault	Config Fault	2000	
Demand Alarm	Demand Alarm	2000	
Diff Alarm 87A	Diff Alarm 87A	2000	
Faulted/Trip Status	Faulted/Trip Status	2000	
Frequency 81 Trip	Frequency 81 Trip	2000	
GND Diff 87N Trip	GND Diff 87N Trip	2000	
HALARM	HALARM	2000	
IN101 Status	IN101 Status	2000	
IN102 Status	IN102 Status	2000	
IN301 Status	IN301 Status	2000	
IN302 Status	IN302 Status	2000	
IN303 Status	IN303 Status	2000	
IN304 Status	IN304 Status	2000	
IN305 Status	IN305 Status	2000	
IN306 Status	IN306 Status	2000	
IN307 Status	IN307 Status	2000	
IN308 Status	IN308 Status	2000	
IN401 Status	IN401 Status	2000	
IN402 Status	IN402 Status	2000	
IN403 Status	IN403 Status	2000	
Inadvertent ENRG Trip	Inadvertent ENRG Trip	2000	
Loss of Potential	Loss of Potential	2000	
Neutral 50 Trip	Neutral 50 Trip	2000	
Neutral 51 Trip	Neutral 51 Trip	2000	
O/V 59P Trip	O/V 59P Trip	2000	
O/V 59P Warn	O/V 59P Warn	2000	

OUT101 Status	OUT101 Status	2000	
OUT102 Status	OUT102 Status	2000	
OUT301 Status	OUT301 Status	2000	
OUT302 Status	OUT302 Status	2000	
OUT303 Status	OUT303 Status	2000	
OUT304 Status	OUT304 Status	2000	
OUT401 Status	OUT401 Status	2000	
OUT402 Status	OUT402 Status	2000	
OUT403 Status	OUT403 Status	2000	
OUT404 Status	OUT404 Status	2000	
Out of Step Trip	Out of Step Trip	2000	
Power Element Trip	Power Element Trip	2000	
RTD Alarm	RTD Alarm	2000	
RTD Fault	RTD Fault	2000	
RTD Trip	RTD Trip	2000	
Remote Trip	Remote Trip	2000	
Restr Diff 87R	Restr Diff 87R	2000	
Restrctd Earth Trip	Restrctd Earth Trip	2000	
SALARM	SALARM	2000	
Trip	Trip	2000	
U/V 27P Trip	U/V 27P Trip	2000	
U/V 27P Warn	U/V 27P Warn	2000	
UnRestr Diff 87U Trip	UnRestr Diff 87U Trip	2000	
Volts/Hertz Trip	Volts/Hertz Trip	2000	
Volts/Hertz Warn	Volts/Hertz Warn	2000	
WARNING	WARNING	2000	
Warning Status	Warning Status	2000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
<b>ECU analog outputs (controller's inputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
A Phase Gen Current	A Phase Gen Current	2000	
B Phase Gen Current	B Phase Gen Current	2000	
C Phase Gen Current	C Phase Gen Current	2000	
Event Log Number	Event Log Number	2000	
Event Type	Event Type	2000	
Firmware Revision	Firmware Revision	1000	
Gen A-B Volt	Gen A-B Volt	2000	
Gen A-N Volt	Gen A-N Volt	2000	
Gen B-C Volt	Gen B-C Volt	2000	
Gen B-N Volt	Gen B-N Volt	2000	
Gen C-A Volt	Gen C-A Volt	2000	



Gen C-N Volt	Gen C-N Volt	2000	
Gen Frequency	Gen Frequency	2000	
Gen Power Factor	Gen Power Factor	2000	
Neutral Current	Neutral Current	2000	
Number of Events	Number of Events	2000	
Sync Frequency	Sync Frequency	2000	
Sync Volt	Sync Volt	2000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
EventLogNumberReq	EventLogNumberReq	2000	
Reset Command	Reset Command	2000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelliLite<sup>NT</sup>, 2 - IntelliLite, 3 - IntelliDrive Lite, 4 - IntelliCompact<sup>NT</sup>, 5 - IntelliNano<sup>NT</sup>, 6 - IntelliDrive Nano, 7 - IntelliGen200, IntelliGen500

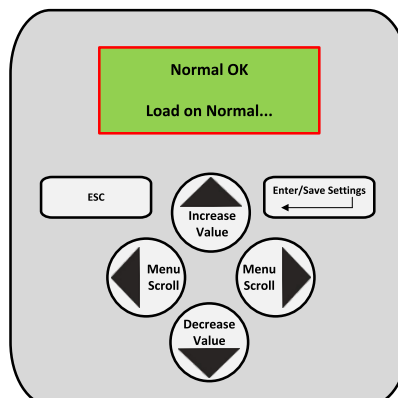
## Recommended wiring

Function	RJ45 connector	Controller
Modbus TPU	RJ45	Ethernet (Modbus)

## 6.14.3 Schneider devices support

ECU Type	Device type	Source documentation version
<a href="#">Conext (page 954)</a>	Three Phase PV Inverter 60 kW - 66 kVA (E) / 63.4 kVA (A) (Applicable to Both NA and IEC Model)	v3.0
<a href="#">Conext XW (page 956)</a>	Conext XW and XW+ series	A.3
<a href="#">ASCO 7000 (page 1085)</a>	ASCO 7000 Group 5 Controller (ATS)	2/2023

### ASCO 7000



## Controllers that support the Conext XW:

Refer to [Compatibility Table \(page 10\)](#)

### Available parameters

ECU binary outputs (controller's inputs)			
Configuration Name	Name	Polling period	Register
Auxiliary on Emergency	Auxiliary on Emergency	2000	
Auxiliary on Normal	Auxiliary on Normal	2000	
CTTS Transfer Switch Locked Out	CTTS Transfer Switch Locked Out	2000	
CTTS extended parallel alarm	CTTS extended parallel alarm	2000	
CTTS failure to synch alarm	CTTS failure to synch alarm	2000	
DTTS Load Disconnect	DTTS Load Disconnect	2000	
Emergency Breaker Tripped	Emergency Breaker Tripped	2000	
Emergency Phase Rotation is ABC	Emergency Phase Rotation is ABC	2000	
Emergency Phase Rotation is CBA	Emergency Phase Rotation is CBA	2000	
Emergency Source 3 Phase sensing	Emergency Source 3 Phase sensing	2000	
Emergency Source Available	Emergency Source Available	2000	
Engine Exerciser Load Active	Engine Exerciser Load Active	2000	
Engine running	Engine running	2000	
External F17 is Active	External F17 is Active	2000	
External param. lock is active	External param. lock is active	2000	
Feature 17	Feature 17	2000	
Feature 29	Feature 29	2000	
Feature 30	Feature 30	2000	
Feature 34A	Feature 34A	2000	
Feature 34B	Feature 34B	2000	
Feature 34T	Feature 34T	2000	
Feature 5	Feature 5	2000	
Feature 6B	Feature 6B	2000	
Feature 6C	Feature 6C	2000	

Feature 6D	Feature 6D	2000	
Feature 6Z	Feature 6Z	2000	
Feature 89	Feature 89	2000	
Feature Alarm Reset	Feature Alarm Reset	2000	
Feature CT Bypass	Feature CT Bypass	2000	
Is Nominal Frequency 60Hz	Is Nominal Frequency 60Hz	2000	
Main on Emergency	Main on Emergency	2000	
Main on Normal	Main on Normal	2000	
Normal Breaker Tripped	Normal Breaker Tripped	2000	
Normal Phase Rotation is ABC	Normal Phase Rotation is ABC	2000	
Normal Phase Rotation is CBA	Normal Phase Rotation is CBA	2000	
Normal Source 3 Phase sensing	Normal Source 3 Phase sensing	2000	
Normal Source Available	Normal Source Available	2000	
SCL Normal Breaker	SCL Normal Breaker	2000	
SLC Emergency Breaker status	SLC Emergency Breaker status	2000	
Transfer Switch Bypass or not	Transfer Switch Bypass or not	2000	
Transfer Switch or Dual Breaker	Transfer Switch or Dual Breaker	2000	
<b>ECU binary inputs (controller's outputs - commands)</b>			
Configuration Name	Name	Polling period	Register
<b>ECU analog outputs (controller's inputs)</b>			
Configuration Name	Name	Polling period	Register
Control Panel State Index	Control Panel State Index	2000	
Control Panel Status State Data	Control Panel Status State Data	2000	
Event causes	Event causes	2000	
Event day of month	Event day of month	2000	
Event day of week	Event day of week	2000	
Event hour	Event hour	2000	
Event minute	Event minute	2000	
Event month	Event month	2000	
Event number	Event number	2000	
Event second	Event second	2000	
Event type	Event type	2000	
Event year	Event year	2000	
Nominal Voltage Index	Nominal Voltage Index	2000	

Number of entries in log	Number of entries in log	2000	
PT Ratio Denominator	PT Ratio Denominator	1000	
PT Ratio Numerator	PT Ratio Numerator	1000	
Phase Shift Between Sources	Phase Shift Between Sources	2000	
S1 Frequency	S1 Frequency	2000	
S1 Volt Unbalance	S1 Volt Unbalance	2000	
S1 Voltage A-B	S1 Voltage A-B	2000	
S1 Voltage B-C	S1 Voltage B-C	2000	
S1 Voltage C-A	S1 Voltage C-A	2000	
S2 Frequency	S2 Frequency	2000	
S2 Volt Unbalance	S2 Volt Unbalance	2000	
S2 Voltage A-B	S2 Voltage A-B	2000	
S2 Voltage B-C	S2 Voltage B-C	2000	
S2 Voltage C-A	S2 Voltage C-A	2000	
Soft Load Contr. mode (Bits 0-5)	Soft Load Contr. mode (Bits 0-5)	2000	
Software Date Char 1	Software Date Char 1	2000	
Software Date Char 2	Software Date Char 2	2000	
Software Date Char 3	Software Date Char 3	2000	
Software Date Char 4	Software Date Char 4	2000	
Software Date Char 5	Software Date Char 5	2000	
Software Date Char 6	Software Date Char 6	2000	
Software Version Char 1	Software Version Char 1	2000	
Software Version Char 2	Software Version Char 2	2000	
Software Version Char 3	Software Version Char 3	2000	
Software Version Char 4	Software Version Char 4	2000	
Software Version Char 5	Software Version Char 5	2000	
Software Version Char 6	Software Version Char 6	2000	
Transfer Switch Amp Rating Index	Transfer Switch Amp Rating Index	2000	
Transfer Switch Type (Bit 3-4)	Transfer Switch Type (Bit 3-4)	2000	
<b>ECU analog inputs (controller's outputs)</b>			
<b>Configuration Name</b>	<b>Name</b>	<b>Polling period</b>	<b>Register</b>
Event Number Select	Event Number Select	2000	

While some controllers support all parameters from the list above, the controllers listed below can support only some of the parameters. These are then denoted with the same number.

1 - IntelLite<sup>NT</sup>, 2 - IntelLite , 3 - IntelDrive Lite , 4 - IntelCompact<sup>NT</sup>, 5 - IntelNano<sup>NT</sup>, 6 - IntelDrive Nano , 7 - IntelGen200, IntelGen500

Recommended wiring

Ethernet

Function	RJ45 connector	Controller
Modbus TPU	RJ45	Ethernet

# 7 List of texts of ECU fault codes

7.1 AGCO Power EEM4 Fault Codes .....	1093
7.2 Altronic CD200 Fault Codes .....	1097
7.3 Altronic NGI 1000RC Fault Codes .....	1097
7.4 Baudouin LECM E6 Fault Codes .....	1097
7.5 Baudouin SECM70 Fault Codes .....	1105
7.6 Baudouin WISE10B/E Fault Codes .....	1105
7.7 Baudouin WISE15 Fault Codes .....	1109
7.8 Baudouin WISE13G Fault Codes .....	1112
7.9 Caterpillar ADEM A6 Fault Codes .....	1112
7.10 Caterpillar J1939 Fault Codes .....	1116
7.11 Caterpillar ADEM & EMCP Fault Codes .....	1120
7.12 Caterpillar EMCP3 Module Fault Codes .....	1125
7.13 Caterpillar ADEM Master Fault Codes .....	1129
7.14 Caterpillar ADEM & EMCP Fault Codes .....	1133
7.15 Caterpillar ADEM A6 Master Fault Codes .....	1137
7.16 Cummins CM500 Fault Codes .....	1141
7.17 Cummins CM558 Fault Codes .....	1142
7.18 Cummins CM570 Fault Codes .....	1143
7.19 Cummins CM700 Fault Codes .....	1144
7.20 Cummins CM800 Fault Codes .....	1144
7.21 Cummins CM850 Fault Codes .....	1145
7.22 Cummins CM2150 Fault Codes .....	1147
7.23 Cummins CM2150 Main Fault Codes .....	1149
7.24 Cummins CM2250 Fault Codes .....	1152
7.25 Cummins CM2350 Fault Codes .....	1153
7.26 Cummins CM2350 Main Fault Codes .....	1158
7.27 Cummins CM2350 Industrial Fault Codes .....	1163
7.28 Cummins CM2358 Fault Codes .....	1168
7.29 Cummins CM2358 Parent Fault Codes .....	1169
7.30 Cummins CM2880 Industrial Fault Codes .....	1169
7.31 Cummins CM2880 Fault Codes .....	1174
7.32 Cummins GCS Fault Codes .....	1179
7.33 Cummins PGI (Obsolete) Fault Codes .....	1179
7.34 Cummins PGI G-Drive Fault Codes .....	1183
7.35 Dongfeng Cummins Fault Codes .....	1185
7.36 Daimler Chrysler ADM2 Fault Codes .....	1187
7.37 DaimlerChrysler ADM3 Fault Codes .....	1188
7.38 DDC DDEC IV/V Fault Codes .....	1189
7.39 Deep Sea DSEA109 Fault Codes .....	1191
7.40 Deutz EMR2 Fault Codes .....	1191
7.41 Deutz EMR3 Fault Codes .....	1191

7.42 Deutz EMR4 Fault Codes .....	1194
7.43 Deutz EMR5 Fault Codes .....	1196
7.44 Doosan G2 EDC17 Fault Codes .....	1199
7.45 Doosan MD1 Fault Codes .....	1203
7.46 Doosan G40 EDC17 Fault Codes .....	1206
7.47 Econtrols EICS Fault Codes .....	1210
7.48 Econtrols EICS Parent Fault Codes .....	1213
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7.133 Standard J 1939 generator Fault Codes .....	1480
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7.136 Trijekt Gas Fault Codes .....	1483
7.137 VM Industrial Fault Codes .....	1484
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7.139 Volvo Industrial Fault Codes .....	1487
7.140 Volvo Marine Prop Fault Codes .....	1490
7.141 Volvo Industrial EMS2.4 Fault Codes .....	1493
7.142 Volvo Marine EMS2.3-2.4 Fault Codes .....	1496
7.143 Volvo ACM Fault Codes .....	1500
7.144 Volvo EMS J1587 Fault Codes .....	1500
7.145 Volvo EMS4 BMS Fault Codes .....	1501
7.146 Waukesha ESM Fault Codes .....	1510
7.147 Weichai Wise10B V1 Fault Codes .....	1511
7.148 Weichai Wise12B Fault Codes .....	1513
7.149 Weichai Wise13A Fault Codes .....	1513
7.150 Weichai Wise15A Fault Codes .....	1514
7.151 Weichai Wise18B Fault Codes .....	1517
7.152 Weichai Wise18B Duel Fault Codes .....	1524
7.153 Weichai Wise15A Fault Codes .....	1528
7.154 YaMZ EDC7 Fault Codes .....	1531
7.155 Yanmar TNV Fault Codes .....	1531
7.156 Yanmar EDC17 Fault Codes .....	1532
7.157 Yanmar TNV EGC1030 Fault Codes .....	1533
7.158 Yuchai YC-BCR Fault Codes .....	1534
7.159 Yuchai YC-LH Main Fault Codes .....	1534
7.160 Yuchai YC-LH Fault Codes .....	1535
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## 7.1 AGCO Power EEM4 Fault Codes

Fault Code (SPN)	Text
3	FuelInjectors
51	ThrottleVlv1
91	APP
94	P-FuelDelivery

97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
723	Spd-Speed2
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1043	12VSupply
1076	FuelInjPump
1077	FuelInjPump
1109	EPS SDAApproach
1110	EPS Shutdown

1136	T-ECU
1485	ECMMainRelay
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
4201	Spd-Engine1
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5VDCSupply1
9022	5VDCSupply2
9023	5VDCSupply3
9024	WaterInFuel
9025	SelfTestWtchdg
9026	SelfTestVolt
9027	SelfTestVolt
9030	MainRelay1
9031	MainRelay2
9032	MainRelay3
9033	MainRelay
9034	MainRelay
9035	NormalRecovery
9036	FullRestart
9070	CrankSpeed
9071	CrankSpeed
9072	CrankSpeed
9080	CamSpeed
9081	CamSpeed
9082	CamSpeed
9083	CamSpeed
9090	EngineSpeed
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	PressReliefVlv
9152	P-FuelFlt
9153	P-FuelFlt
9174	MPROP
9230	EngSpecMismtch

9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTOInputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput
520200	Powerstages
520201	EngineCAN
520202	MainRelay1
520203	MainRelay2
520208	RailPRV
520209	FuelInjectors
520210	FuelInjectors
520212	Internal0105
520213	Internal0106
520214	Internal0107
520215	Internal 0108
520216	Internal0109
520217	Internal0110
520218	Internal0111
520219	Internal0112
520220	Internal0113
520221	Internal0114
520222	Internal0115
520223	Internal0116
520224	Internal0117
520225	Internal0118
520226	Internal0119
520227	Internal0120
520228	Internal0121
520229	Internal0122
520230	EngineSpec
520232	DigitalInputs
520233	Internal0128
520234	Internal0129
520235	Internal0130

520236	Internal0131
520240	InjectorBank0
520241	InjectorBank1
520243	RailPRV
520244	RailPRV
520245	RailPRV
520246	RailPRV
520247	Internal0123
520297	Internal0132
520298	Internal0133
524287*	HiddenCode

\*Hidden fault code by default

## 7.2 Altronic CD200 Fault Codes

Fault Code (SPN)	Text
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## 7.3 Altronic NGI 1000RC Fault Codes

Fault Code (SPN)	Text
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## 7.4 Baudouin LECM E6 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
168	Battery
171	T-AmbientAir
174	T-Fuel
175	T-Oil
633	FuelActCmd
677	StarterMotor
1043	InternalSpplF
1116	GasFuelCrrFct
1127	P-Turbo1Boost
1131	T-IntManifold2
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6

1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1184	T-Turbo1Out
1185	T-Turbo2Out
1244	FuelActCmd2
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1319	P-IntBankImbal
1322	Misfire
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl

1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1390	P-Fuel1VlvInt
1391	P-FuelDiff
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1442	FuelVlvPos1
1443	FuelVlvPos2
1695	ExhO2SensFuelC
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2452	Pwr-Real
3226	AT1OutNOx
3227	AT1OutOxygen1
3232	AT1OutGS1Heat
3234	AT1OutNOxFMI
3464	ThrottleCmd

3465	ThrottleCmd2
3466	P-Fuel2VlvInt
3509	SensorSupply01
3510	SensorSupply02
3563	P-IntakeManAbs
3675	TurboBpssPos
3783	LossOfMAPSens
4076	T-Coolant2
4210	HS03 Prelube
4753	T-AT1GasCatInt
4754	T-AT1GasCatOut
5367	TurboBypass1
5375	Throttle1GenAI
5378	Throttle2GenAI
5381	FuelValve1
5388	TurboBypass2
5390	TurboBypass2
5422	P-FuelFltInt
5587	MAT
5791	T-TurboBypass1
6048	HS04 Speed Sw1
6051	HS01 Aux Svcs
6052	HS08 MPRD
6053	HS06 Power
6056	LS04 SpeedSw3
6057	LS03 SpeedSw2
6060	LS08 Gen Ctrl
6061	LS07 PowerErr
6062	LS06 SD Relay
6063	LS05 AIRelay
6064	LS12 MPRD Pwr
6065	LS11 MAT Pwr
6066	LS10 FB Ok Pwr
6067	LS09 Power Err
6575	AFR
6647	HS05FuelValve1
6885	P-FuelVlv2Diff
8324	HS06FuelValve2
8621	EEPROM
8856	Lube Oil Level
12894	ExhTempFail
516051	FuelBlendProc
516101	E6IgnCAN1 Flt
516102	E6IgnCAN2 Flt
516103	E6IgnCAN3 Flt
516104	E6IgnCalMemFlt
516105	E6IgnFPGARfrsh



516106	E6lgnTPUFlt
516107	E6lgnTempSens
516108	E6lgnMainPwrIn
516110	E6lgnIntVoltF
516111	E6lgnBoostVolt
516112	E6lgnHVXDCROut
516115	E6lgnDiscOut
516121	E6lgnShtBatC1
516122	E6lgnShtBatC2
516123	E6lgnShtBatC3
516124	E6lgnShtBatC4
516125	E6lgnShtBatC5
516126	E6lgnShtBatC6
516127	E6lgnShtBatC7
516128	E6lgnShtBatC8
516129	E6lgnShtBatC9
516130	E6lgnShtBatC10
516131	E6lgnShtBatC11
516132	E6lgnShtBatC12
516133	E6lgnShtBatC13
516134	E6lgnShtBatC14
516135	E6lgnShtBatC15
516136	E6lgnShtBatC16
516137	E6lgnShtBatC17
516138	E6lgnShtBatC18
516139	E6lgnShtBatC19
516140	E6lgnShtBatC20
516151	E6lgnShtBatC1
516152	E6lgnShtBatC2
516153	E6lgnShtBatC3
516154	E6lgnShtBatC4
516155	E6lgnShtBatC5
516156	E6lgnShtBatC6
516157	E6lgnShtBatC7
516158	E6lgnShtBatC8
516159	E6lgnShtBatC9
516160	E6lgnShtBatC10
516161	E6lgnShtBatC11
516162	E6lgnShtBatC12
516163	E6lgnShtBatC13
516164	E6lgnShtBatC14
516165	E6lgnShtBatC15
516166	E6lgnShtBatC16
516167	E6lgnShtBatC17
516168	E6lgnShtBatC18
516169	E6lgnShtBatC19
516170	E6lgnShtBatC20

516201	E6KnkCAM1Flt
516202	E6KnkCAM2Flt
516204	E6KnkEngCalMem
516205	E6Knk eTPUFlt
516207	E6KnkTempSnsF
516208	E6KnkMainPwrIn
516210	E6KnkIntrVoltF
516215	E6KnkDscrtOut1
516216	E6KnkDscrtOut2
516217	E6KnkAnaOut1F
516218	E6KnkAnaOut2F
516304	EEPROMPrimF
516305	MainFPGARfrsh
516306	EEPROMSecF
516319	AnaOut1Err
516320	AnaOut2Err
516321	UEGO1 VM
516322	UEGO1 UN
516323	UEGO1 IA/IP
516324	UEGO1 HTR
516325	UEGO1
516326	UEGOAnalogInS
516327	UEGO1AirCalF
516328	UEGO1SensFail
516331	UEGO2 VM
516332	UEGO2 UN
516333	UEGO2 IA/IP
516334	UEGO2 HTR
516335	UEGO2
516337	UEGO2AirCalF
516338	UEGO2 SensorF
516339	Rategroup
516340	InternIOModWD
516341	EthNet2ModbusE
516342	SerialModbusE
516400	Thrttl1Supply
516401	Thrttl2Supply
516405	Bypass 1
516406	Bypass 2
516410	EASYgenWdogT/O
516411	IgnWDDDataT/O
516412	KnockWDDDataT/O
516413	TCModWdT/O
516420	Tecjet1KeyOff
516421	Tecjet2KeyOff
516425	Trim1 Alarm
516426	Trim2 Alarm

516430	Trim1
516431	Trim 2
516435	Trim1 Position
516436	Trim2 Position
516440	Trim1 Derating
516441	Trim2 Derating
516500	E6IgnCmdMsgT/O
516510	E6IgnTimPatErr
516511	E6IgnCnkSnsMis
516512	E6IgnCrnkConfE
516513	E6IgnCrnkSynch
516514	E6IgnCrnkLossE
516515	E6IgnSncSnsMis
516516	E6IgnCamConfE
516517	E6IgnCamSynch
516518	E6IgnCamTooth
516519	E6IgnCamSnsMis
516520	E6IgnSyncConfE
516521	E6IgnSyncSynch
516522	E6IgnSyncLossE
516540	E6IgnEngOversp
516541	E6IgnShutdown
516542	E6 Ignition
516543	E6IgnUknTiming
516544	E6IgnProfSlot
516545	E6IgnMUXGrp
516546	E6IgnMapConFlt
516611	E6IgnCrnkSignE
516700	E6KnkCmdMsgT/O
516710	E6KnkTimPatEr
516711	E6KnkCrnkSnsMi
516712	E6KnkCrnkConfE
516713	E6KnkCrnkSyncE
516714	E6KnkCrnkLossE
516715	E6KnkCamSnsMi
516717	E6KnkCamSynch
516718	E6KnkCamLossE
516719	E6KnkTDCSnsMi
516720	E6KnkSyncConfE
516721	E6KnkSyncSynch
516722	E6KnkSyncLossE
516740	E6KnkEngOver
516741	E6KnkInterErr
516743	KnockNotSamp
516900	CAN4 Error
516901	CAN1 Error
516902	CAN2 Error

516903	CAN3 Error
516905	EtherNetModbus
516910	EASYgenWDT/O
516913	ExterIOModWD
516940	EngOverspeed
516942	LOP2SensVol
516943	CH4SensInput
516944	RemotelInput
516945	SpeedBias
516946	PotmeterInVolt
516947	AlarmRelay
516948	ShutdnRelay
516949	E6IgnitDriveF
516950	FuelBlendRatio
516952	BioGasN/A
516953	PwrPriorFBRat
516954	LdReducKeepFB
516955	ThrttlAtMaxPos
516956	LdSPNNotReached
516957	TJ2PosLimit
516958	FBProcLimit
516959	Fail to Crank
516960	NoIgnitConfirm
516961	EngFailToLight
516962	FailToStart
516963	FailToSCtrlSpd
516964	StallDurStart
516965	IgnStopDurStrt
516966	P-Oil Fail
516967	StrtAtmptFail
516968	EngStallDurRun
516969	IgnStopDurRun
516970	IgnStopDurCldn
516971	FailToSpindown
516972	SafeStFIToSD
516973	SafeStFIToDrSo
516974	KeyoffSeqFail
516975	KeyoffSeqFail
516976	Balance Differ
516977	BankBalLimit
516978	CoolInFailInR
516979	InterEmergStop
516980	TorqueLim
516981	Spare
516982	ThrottleLim
516983	UnCntrlOverPwr
516984	E6 Boot Up

516985	IOLockAsserted
516986	NOxCtrlFail
516987	Nox Ccorr
516988	NOx ppm HiHi
516989	P-NGFuelStrt
516990	P-BioFuelStrt
516991	RefMAP
516992	CtrlActMisconf
524287*	HiddenCode

\*Hidden fault code by default

## 7.5 Baudouin SECM70 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
110	T-Coolant
168	Battery
632	FuelShtoff1
636	PositionSensor
637	TimingSensor
1268	IgnitionCoil01
524287*	HiddenCode

\*Hidden fault code by default

## 7.6 Baudouin WISE10B/E Fault Codes

Fault Code (SPN)	Text
19	P-Oil
21	T-ECU
28	APP3
29	APP2
30	P-BwbCrankcase
48	P-Barometric
59	TranShiftFGear
84	Spd-WheelBased
91	APP
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff

108	P-Barometric
109	P-Coolant1
110	T-Coolant
132	IntAirMassFlow
153	P-Crankcase
157	P-Fuel1Inj1Met
168	Battery
174	T-Fuel
175	T-Oil
176	T-TurboOil
190	EngineSpeed
444	V-BatteryInp2
507	DriverID
558	AP1LowIdleSw
571	BrakeSwitch
597	Brake
598	Clutch
626	StartEnbl1
677	StarterMotor
723	Spd-Speed2
976	PTO
987	ProtectLamp
1136	T-ECU
1157	T-Bearing 1
1158	T-Bearing 2
1159	T-Bearing 3
1160	T-Bearing 4
1161	T-Bearing 5
1162	T-Bearing 6
1163	T-Bearing 7
1164	T-Bearing 8
1165	T-Bearing 9
1166	T-Bearing10
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1331	MisfireCyl 9
1332	MisfireCyl 10
1413	Cyl 1IgnTiming
1414	Cyl 2IgnTiming
1415	Cyl 3IgnTiming
1416	Cyl 4IgnTiming

1417	Cyl 5IgnTiming
1418	Cyl 6IgnTiming
1442	FuelVlvPos1
1443	FuelVlvPos2
1623	Spd-TachoShaft
1624	Spd-Tachograph
1637	T-Coolant3
1639	Spd-Fan
1675	StarterMode
1769	Overspeed
2802	DataMemoryUsg
2898	StartEnbl2Cfg
3363	DEFTnkHeater
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4201	Spd-Engine1
4203	LimpHomeMode
4204	Spd-Sens2Timg
4205	Spd-Sens3Timg
4340	DEFHeater1
4344	DEFHeater3
4346	DEFHeater4
4815	FanActuator
5366	TurboBypass1
6315	Blowoff valve
516678	Error0MSM01
516679	Error10MSM01
516689	Error1MSM01
516700	Error2MSM01
516703	Error3MSM01
516704	Error4MSM01
516705	Error5MSM01
516706	Error6MSM01
516707	Error7MSM01
516708	Error8MSM01
516709	Error9MSM01
516814	Ms+SlaveNotSup
516816	Ms+SlaveNotSup
518653	Actuator 1 SC
518654	Actuator 2 SC
518655	Actuator 3 SC
518656	Actuator 4 SC
518659	Actuator 5 SC
518661	Actuator 6 SC
518663	Actuator 7 SC
518665	Actuator 8 SC

518667	24-hour load
518699	MS01Msg
518700	MS01Msg
518701	MS01Msg
518702	MS01Msg
518703	MS01Msg
518704	MS01Msg
518705	MS01Msg
518706	MS01Msg
518707	MS01Msg
518708	MS01Msg
518709	MS01Msg
518710	MS01Msg
518711	MS01Msg
518712	MS01Msg
518713	MS01Msg
518714	MS01Msg
518715	MS01Msg
518716	MS01Msg
518717	MS01Msg
518718	MS01Msg
518719	MS01Msg
518720	MS01Msg
518721	MS01Msg
518722	MS01Msg
518800	CAN2 BusOff
518801	CAN3 BusOff
519600	DFCPrimSecFail
519601	DFCPrimSecFail
519602	DFCPrimSecFail
519603	DFCPrimSecFail
520198	TorqueLmtError
520203	S/SBttnLocked
520208	ExhBrakeFlap
520210	DosingNozzle
520217	J1939TRF1
520219	MILNoLamp
520221	GearGapTooLong
520223	P-HighTest
520241	PRVOpenTimes
520243	P-RailOffset
520250	WrmOpenLoad
520252	APP12Plaus
520253	T50Timeout
520261	FuelHeater
520264	SRCWaterInFuel
520277	SCRRemApp1



520278	SCRRemApp2
520289	FuelFilter
522000	CANCommError
522013	J1939EBC1
522014	LockCar
522015	J1939
522021	J1939ERC1DR
522022	J1939ETC1
522023	J1939ETC2
522030	J1939RxCCVS
522032	J1939TC01
522035	J1939TSC1AE
522036	J1939TSC1AR
522037	J1939TSC1DE
522038	J1939TSC1DR
522039	J1939TSC1PE
522040	J1939TSC1TE
522041	J1939TSC1TR
522042	J1939TSC1VE
522043	J1939TSC1VR
522051	J1939HRVD
522052	J1939CM1
522053	J1939EGF1
522056	J1939CM1
522062	J1939CM1
522063	J1939ETC7
522065	RemoteAPP
522102	GPSKeyError
523003	DFCError
523470	PRVNotOpen
523471	V-GenHigh
523472	V-BatteryHigh

## 7.7 Baudouin WISE15 Fault Codes

Fault Code (SPN)	Text
29	APP2
59	TranShiftFGear
84	Spd-WheelBased
91	APP
95	P-FuelFiltDiff
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric

110	T-Coolant
132	IntAirMassFlow
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
507	DriverID
571	BrakeSwitch
597	Brake
598	Clutch
626	StartEnbl1
976	PTO
1136	T-ECU
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1331	MisfireCyl 9
1332	MisfireCyl 10
1413	Cyl 1IgnTiming
1414	Cyl 2IgnTiming
1415	Cyl 3IgnTiming
1416	Cyl 4IgnTiming
1417	Cyl 5IgnTiming
1418	Cyl 6IgnTiming
1442	FuelVlvPos1
1443	FuelVlvPos2
1623	Spd-TachoShaft
1624	Spd-Tachograph
1639	Spd-Fan
1675	StarterMode
1769	Overspedd
2802	DataMemoryUsg
2898	StartEnbl2Cfg
3363	DEFTnkHeater
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4201	Spd-Engine1
4203	LimpHomeMode
4340	DEFHeater1
4344	DEFHeater3
4346	DEFHeater4

4815	FanActuator
520198	TorqueLmtError
520203	S/SBttnLocked
520208	ExhBrakeFlap
520210	DosingNozzle
520217	J1939TRF1
520219	MILNoLamp
520221	GearGapTooLong
520223	P-HighTest
520241	PRVOpenTimes
520243	P-RailOffset
520250	WrmOpenLoad
520252	APP12Plaus
520253	T50Timeout
520261	FuelHeater
520264	SRCWaterInFuel
520277	SCRRemApp1
520278	SCRRemApp2
520289	FuelFilter
522000	CANCommError
522013	J1939EBC1
522014	LockCar
522015	J1939
522021	J1939ERC1DR
522022	J1939ETC1
522023	J1939ETC2
522030	J1939RxCCVS
522032	J1939TC01
522035	J1939TSC1AE
522036	J1939TSC1AR
522037	J1939TSC1DE
522038	J1939TSC1DR
522039	J1939TSC1PE
522040	J1939TSC1TE
522041	J1939TSC1TR
522042	J1939TSC1VE
522043	J1939TSC1VR
522051	J1939HRVD
522052	J1939CM1
522053	J1939EGF1
522056	J1939CM1
522062	J1939CM1
522063	J1939ETC7
522065	RemoteAPP
522102	GPSKeyError
523003	DFCError

523470	PRVNotOpen
523471	V-GenHigh
523472	V-BatteryHigh

## 7.8 Baudouin WISE13G Fault Codes

Fault Code (SPN)	Text
91	APP
95	P-FuelFiltDiff
100	P-Oil
102	P-Intake
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
168	Battery
175	T-Oil
1136	T-ECU
1442	FuelVlvPos1
1623	Spd-TachoShaft
1769	Overspeed
2898	StartEnbl2Cfg
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
4201	Spd-Engine1
4203	LimpHomeMode
522043	InhibitLmp

## 7.9 Caterpillar ADEM A6 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil

101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
441	T-Auxiliary1
442	T-Auxiliary2
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11

662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDAApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int

1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1387	P-Auxiliary1
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput

1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
2452	Pwr-Real
2456	Pwr-Reactive
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode

\*Hidden fault code by default

## 7.10 Caterpillar J1939 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil



101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13

664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out

1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput

1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
2452	Pwr-Real
2456	Pwr-Reactive
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
5686	Exh.Port 1
5687	Exh.Port 2
5688	Exh.Port 3
5689	Exh.Port 4
5690	Exh.Port 5
5691	Exh.Port 6
5692	Exh.Port 7
5693	Exh.Port 8
5694	Exh.Port 9
5695	Exh.Port 10
5696	Exh.Port 11
5697	Exh.Port 12
5698	Exh.Port 13
5699	Exh.Port 14
5700	Exh.Port 15
5701	Exh.Port 16
524287*	HiddenCode

\*Hidden fault code by default

## 7.11 Caterpillar ADEM & EMCP Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2

30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
625	SCADA DataLink
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor

639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11

1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl

1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
1656	AutoStart
1664	AutoStartFail
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2452	Pwr-Real
2456	Pwr-Reactive
2648	Maintenance
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4000	ExhBrakeSwitch
4002	RemoteStart
4003	RemoteStop
4006*	Cooldown
4007*	EMCPNotInAuto
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode



\*Hidden fault code by default

## 7.12 Caterpillar EMCP3 Module Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
625	SCADA DataLink

626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDAApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5

1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl

1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
1656	AutoStart
1664	AutoStartFail
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2452	Pwr-Real
2456	Pwr-Reactive
2648	Maintenance
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4000	ExhBrakeSwitch

4002	RemoteStart
4003	RemoteStop
4006*	Cooldown
4007*	EMCPNotInAuto
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode

\*Hidden fault code by default

## 7.13 Caterpillar ADEM Master Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated

190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
625	SCADA DataLink
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw

1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17

1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
1656	AutoStart
1664	AutoStartFail
2433	T-Exh2Manf1



2434	T-Exh1Manif1
2452	Pwr-Real
2456	Pwr-Reactive
2648	Maintenance
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4000	ExhBrakeSwitch
4002	RemoteStart
4003	RemoteStop
4006*	Cooldown
4007*	EMCPNotInAuto
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode

\*Hidden fault code by default

## 7.14 Caterpillar ADEM & EMCP Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch

167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
625	SCADA DataLink
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03

704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09

1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput
1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput

1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
1656	AutoStart
1664	AutoStartFail
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2452	Pwr-Real
2456	Pwr-Reactive
2648	Maintenance
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4000	ExhBrakeSwitch
4002	RemoteStart
4003	RemoteStop
4006*	Cooldown
4007*	EMCPNotInAuto
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode

\*Hidden fault code by default

## 7.15 Caterpillar ADEM A6 Master Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
30	P-BwbCrankcase
38	FuelLevel2
51	ThrottleVlv1
81	DPFIntake
82	P-AirStart
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir

107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
137	P-AuxGage
153	P-Crankcase
158	KeySwitch
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
234	Software
237	VIN
441	T-Auxiliary1
442	T-Auxiliary2
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15

666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
898	Spd-Requested
924	AuxiliaryOut 1
925	AuxiliaryOut 2
970	AuxShutdown
971	DerateSw
1109	EPS SDAApproach
1110	EPS Shutdown
1122	T-AltBearing1
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1180	T-Turbo1Int
1181	T-Turbo2Int
1182	T-Turbo3Int
1183	T-Turbo4Int
1185	T-Turbo2Out
1203	P-AuxCoolant
1239	FuelLeakage1

1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1387	P-Auxiliary1
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput



1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1401	Cyl 9IgnOutput
1402	Cyl10IgnOutput
1403	Cyl11IgnOutput
1404	Cyl12IgnOutput
1405	Cyl13IgnOutput
1406	Cyl14IgnOutput
1407	Cyl15IgnOutput
1408	Cyl16IgnOutput
1409	Cyl17IgnOutput
1410	Cyl18IgnOutput
1411	Cyl19IgnOutput
1412	Cyl20IgnOutput
1485	ECMMainRelay
2452	Pwr-Real
2456	Pwr-Reactive
3216	SCR IntakeNOx
3381	I-ExitField
3581	ModbusDataLink
4193	T-CoolPumpOut
5578	P-FuelDelivAbs
524287*	HiddenCode

\*Hidden fault code by default

## 7.16 Cummins CM500 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
135	P-FuelDelivery
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed

191	Spd-OutShaft
558	AP1LowIdleSw
620	5VSupply
626	StartEnbl1
627	Pwr-Supply
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
974	APPRemote
1076	FuelInjPump
1077	FuelInjPump
1078	FuelInjPump
1083	AuxiliaryIO 1
1084	AuxiliaryIO 2
1129	P-Turbo3Boost
1131	T-IntManifold2
1132	T-IntManifold3
1172	T-Turbo1CInt
1173	T-Turbo2CInt
1244	FuelActCmd2
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1384	SDDatalink
524287*	HiddenCode

\*Hidden fault code by default

## 7.17 Cummins CM558 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
168	Battery
190	EngineSpeed
444	V-BatteryInp2
623	StopLamp
624	WarningLamp
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd

639	J1939CANBus
724	O2Sensor
1136	T-ECU
1204	ElectricalLoad
1442	FuelVlvPos1
2634	PowerRelay
3464	ThrottleCmd
3509	SensorSupply01
3510	SensorSupply02
3563	P-IntakeManAbs
3938	GenGovernBias
520352	SDIgnitRelay
520353	CarburInletGas
524287*	HiddenCode

\*Hidden fault code by default

## 7.18 Cummins CM570 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1

627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay

## 7.19 Cummins CM700 Fault Codes

Fault Code (SPN)	Text
175	T-Oil
3551	OilPrim
3601	FuelShtoffLeak
3606	SDRequest
524287*	HiddenCode

\*Hidden fault code by default

## 7.20 Cummins CM800 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1

110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
524287*	HiddenCode

\*Hidden fault code by default

## 7.21 Cummins CM850 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil

101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
166	Pwr-Rated
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
611	SysDiagCode1
612	SysDiagCode2
620	5VSupply
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
636	PositionSensor
637	TimingSensor
639*	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
697	PWMDriver1
723	Spd-Speed2
898	Spd-Requested
970	AuxShutdown
971	DerateSw

1075	LiftPump
1109	EPS SDApproach
1110	EPS Shutdown
1347	FuelPmpAsmbl1
1485	ECMMainRelay
2802	DataMemoryUsg
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3597	Pwr-OutSupply1
3938	GenGovernBias
4182	GenOutFreq
4183	GenDroop
524287*	HiddenCode

\*Hidden fault code by default

## 7.22 Cummins CM2150 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
93	AuxiliaryTrq
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
167	SysCharging
168	Battery
171	T-AmbientAir
175	T-Oil
190	EngineSpeed
251	RealTimeClock
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1

558	AP1LowIdleSw
612	MagneticSpeed
625	PropDatalink
626	StartEnbl1
627	Pwr-Supply
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1072	CompBrakeOut1
1073	CompBrakeOut2
1074	ExhBrakeOut
1075	LiftPump
1112	CompBrakeOut3
1136	T-ECU
1172	T-Turbo1CInt
1188	TurboWstAct1
1195	A-Tpassword
1209	P-ExhaustPres1
1244	FuelActCmd2
1245	TimeAct2
1267	SDIdleAcc
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1388	P-Auxiliary2
1590	AdaptiveCC
1761	DEFTnkLevel
2623	AP1Channel2
2629	T-Turbo1Outlet
2789	T-Turbo1Int



2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
3031	T-DEFTnk
3050	CatalystBank1
3058	EGRSysMonitor
3064	DPFSysMonitor
3226	AT1OutNOx
3228	AT1OutGS1Pwr
3241	T-AT1Exh1
3245	T-AT1Exh3
3249	T-AT1Exh2
3251	P-DPFDiff
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3489	AT1AirAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3555	AmbAirDensity
3556	AT1-Fuellnj
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
3703	DPFIInhSwitch
4097	AT1FuelDrain
4340	DEFHeater1
4342	DEFHeater2
4360	T-SCR1Intake
4363	T-SCR1Outlet
4794	AT1SCRMissing
524287*	HiddenCode

\*Hidden fault code by default

## 7.23 Cummins CM2150 Main Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
93	AuxiliaryTrq

94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
167	SysCharging
168	Battery
171	T-AmbientAir
175	T-Oil
190	EngineSpeed
251	RealTimeClock
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
558	AP1LowIdleSw
612	MagneticSpeed
625	PropDataLink
626	StartEnbl1
627	Pwr-Supply
629	Controller1
630	CalibratMemory
632	FuelShutoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote

1072	CompBrakeOut1
1073	CompBrakeOut2
1074	ExhBrakeOut
1075	LiftPump
1112	CompBrakeOut3
1136	T-ECU
1172	T-Turbo1CInt
1188	TurboWstAct1
1195	A-Tpassword
1209	P-ExhaustPres1
1244	FuelActCmd2
1245	TimeAct2
1267	SDIdleAcc
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1388	P-Auxiliary2
1590	AdaptiveCC
1761	DEFTnkLevel
2623	AP1Channel2
2629	T-Turbo1Outlet
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
3031	T-DEFTnk
3050	CatalystBank1
3058	EGRSysMonitor
3064	DPFSysMonitor
3226	AT1OutNOx
3228	AT1OutGS1Pwr
3241	T-AT1Exh1
3245	T-AT1Exh3
3249	T-AT1Exh2
3251	P-DPFDiff
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3489	AT1AirAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05

3555	AmbAirDensity
3556	AT1-FuellInj
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
3703	DPFInhSwitch
4097	AT1FuelDrain
4340	DEFHeater1
4342	DEFHeater2
4360	T-SCR1Intake
4363	T-SCR1Outlet
4794	AT1SCRMissing
524287*	HiddenCode

\*Hidden fault code by default

## 7.24 Cummins CM2250 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
97	WaterInFuel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
168	Battery
171	T-AmbientAir
190	EngineSpeed
411	P-EGR1Diff
412	T-EGR1
611	SysDiagCode1
627	Pwr-Supply
629	Controller1
633	FuelActCmd
639	J1939CANBus
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7

658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
723	Spd-Speed2
729	IntAirHeater1
1075	LiftPump
1136	T-ECU
1209	P-ExhaustPres1
1231	CANBusOFF
1347	FuelPmpAsmbl1
1378	OilChange
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3555	AmbAirDensity
3597	Pwr-OutSupply1
4795	DPFMissing
4796	DOCMissing
524287*	HiddenCode

\*Hidden fault code by default

## 7.25 Cummins CM2350 Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo

104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
168	Battery
171	T-AmbientAir
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
442	T-Auxiliary2
558	AP1LowIdleSw
612	SysDiagCode2
626	StartEnbl1
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
649	P-ExhBankReg
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15

666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1075	LiftPump
1081	WaitStartLamp
1109	EPS SDAproach
1127	P-Turbo1Boost
1136	T-ECU
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1209	P-ExhaustPres1
1213	MalfuncLamp
1231	J1939Net2
1235	J1939Net3
1239	FuelLeakage1
1267	SDIdleAcc
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1387	P-Auxiliary1
1388	P-Auxiliary2
1563	IncompContr
1569	TorqueDerate
1623	Spd-TachoShaft
1632	TorqueLimit
1639	Spd-Fan
1668	J1939Net4
1675	StarterMode
1761	DEFTnkLevel
1800	T-BatterySLI1
2006	SA 6
2623	AP1Channel2
2629	T-Turbo1Outlet
2630	T-AirCoolerOut
2633	VGTTNozzle
2634	PowerRelay
2789	T-Turbo1Int

2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
2978	TorqueEstLoss
3031	T-DEFTnk
3060	CoolSysMonitor
3216	SCR IntakeNOx
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3226	AT1OutNOx
3227	AT1OutOxygen1
3228	AT1OutGS1Pwr
3242	T-DPFIntake
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3255	SCR2IntakeNOx
3265	AT2OutNOx
3353	Alternator1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3364	DEFQuality
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3490	AT1PurgeAir
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3515	T-DEFTnk2
3521	DEFProperty
3555	AmbAirDensity
3556	AT1HydroCarb1
3597	Pwr-OutSupply1
3610	P-DPFOutlet
3667	AirShutoff
3695	RegenInhibit
3703	DPFInhSwitch
3713	DPFInhTimeout
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
3936	DPFSystem
4094	NOxInsfDEF



4096	NOxEmptyDEF
4097	AT1FuelDrain
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4331	DEFDosingQ
4334	P-DEFDoser1
4337	T-DEFDoser1
4339	SCRFeedback
4340	DEFHeater1
4342	DEFHeater2
4344	DEFHeater3
4360	T-SCR1Intake
4363	T-SCR1Outlet
4364	SCRCnvEfficiency
4376	DEFDosing1
4490	Humidity
4765	T-AT1CatalInt
4766	T-AT1CatalOut
4792	AT1SCR
4793	AT1WarmUpDOC
4794	AT1SCRMissing
4795	DPFMissing
4796	DOCMissing
4809	T-AT1DOCInt
4810	T-AT1DOCOut
5018	AT1DOC
5019	P-EGR1Out
5024	AT1IntNOxHeat
5031	AT1OutNOxHeat
5125	SensorSupply07
5246	SCR Severity
5298	AT1DOC
5319	DPFIncomplReg
5357	InjFuelError
5380	FuelValve1
5394	DEFDoserVlv1
5395	IdleFuelQntt
5396	CrankcaseVnt
5397	DPFRegenFreq
5484	FanCltch2Out
5491	DEFHeater
5571	CRReliefVlv
5585	P-Fuel1InjRal1
5625	ExhBank1PReg
5626	ExhBank1PReg
5741	AT1OutSoot

5742	DPFTempSensor
5743	SCRTempSensor
5745	DEFDosing1
5746	DEFDosing1
5747	AT1OutSootHtr
5793	DesFueling
5797	WarmUpDOC
5798	DEFDosing1
5838	EGRVlvMalfunct
5839	DEFConsumption
5840	DEFDosing
5841	DEFQ
5842	SCRMalfunction
6301	WaterInFuel2
6653	P-FuelInjRail1
6655	ECUPwrLamp
6713	VGT SW
6881	SCROverride
6882	DOCTempModule
6918	SCR InhSwitch
6928	SCR InhTimeout
520199	CruiseControl
520320	CrankcsDepVlv
520435	GlowPlugMod
520595	CrankcaseVent
520668	AT1 OutNOx
520716	DEFVlv1Heat
520784	FanBlade
520791	BoostCurve
520808	ESD
520809	TimeAirShutoff
524287*	HiddenCode

\*Hidden fault code by default

## 7.26 Cummins CM2350 Main Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake

103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
168	Battery
171	T-AmbientAir
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
442	T-Auxiliary2
558	AP1LowIdleSw
612	SysDiagCode2
626	StartEnbl1
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
649	P-ExhBankReg
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14

665	InjectorCyl15
666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1075	LiftPump
1081	WaitStartLamp
1109	EPS SDApproach
1127	P-Turbo1Boost
1136	T-ECU
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1209	P-ExhaustPres1
1213	MalfuncLamp
1231	J1939Net2
1235	J1939Net3
1239	FuelLeakage1
1267	SDIdleAcc
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1387	P-Auxiliary1
1388	P-Auxiliary2
1563	IncompContr
1569	TorqueDerate
1623	Spd-TachoShaft
1632	TorqueLimit
1639	Spd-Fan
1668	J1939Net4
1675	StarterMode
1761	DEFTnkLevel
1800	T-BatterySLI1
2006	SA 6
2623	AP1Channel2
2629	T-Turbo1Outlet
2630	T-AirCoolerOut
2633	VGTHNozzle
2634	PowerRelay

2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
2978	TorqueEstLoss
3031	T-DEFTnk
3060	CoolSysMonitor
3216	SCR IntakeNOx
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3226	AT1OutNOx
3227	AT1OutOxygen1
3228	AT1OutGS1Pwr
3242	T-DPFIntake
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3255	SCR2IntakeNOx
3265	AT2OutNOx
3353	Alternator1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3364	DEFQuality
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3490	AT1PurgeAir
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3515	T-DEFTnk2
3521	DEFProperty
3555	AmbAirDensity
3556	AT1HydroCarb1
3597	Pwr-OutSupply1
3610	P-DPFOutlet
3667	AirShutoff
3695	RegenInhibit
3703	DPFInhSwitch
3713	DPFInhTimeout
3750	DPFNoMetRegen
3826	DEFAvgConsumpt
3936	DPFSystem

4094	NOxInsfDEF
4096	NOxEmptyDEF
4097	AT1FuelDrain
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4331	DEFDosingQ
4334	P-DEFDoser1
4337	T-DEFDoser1
4339	SCRFeedback
4340	DEFHeater1
4342	DEFHeater2
4344	DEFHeater3
4360	T-SCR1Intake
4363	T-SCR1Outlet
4364	SCRConvEfficiency
4376	DEFDosing1
4490	Humidity
4765	T-AT1CatalInt
4766	T-AT1CatalOut
4792	AT1SCR
4793	AT1WarmUpDOC
4794	AT1SCRMissing
4795	DPFMissing
4796	DOCMissing
4809	T-AT1DOCInt
4810	T-AT1DOCOut
5018	AT1DOC
5019	P-EGR1Out
5024	AT1IntNOxHeat
5031	AT1OutNOxHeat
5125	SensorSupply07
5246	SCR Severity
5298	AT1DOC
5319	DPFIncomplReg
5357	InjFuelError
5380	FuelValve1
5394	DEFDoserVlv1
5395	IdleFuelQntt
5396	CrankcaseVnt
5397	DPFRegenFreq
5484	FanCltch2Out
5491	DEFHeater
5571	CRRReliefVlv
5585	P-Fuel1InjRal1
5625	ExhBank1PReg
5626	ExhBank1PReg

5741	AT1OutSoot
5742	DPFTempSensor
5743	SCRTempSensor
5745	DEFDosing1
5746	DEFDosing1
5747	AT1OutSootHtr
5793	DesFueling
5797	WarmUpDOC
5798	DEFDosing1
5838	EGRVlvMalfunct
5839	DEFConsumption
5840	DEFDosing
5841	DEFQ
5842	SCRMalfunction
6301	WaterInFuel2
6653	P-FuelInjRail1
6655	ECUPwrLamp
6713	VGT SW
6881	SCROverride
6882	DOCTempModule
6918	SCR InhSwitch
6928	SCR InhTimeout
520199	CruiseControl
520320	CrankcsDepVlv
520435	GlowPlugMod
520595	CrankcaseVent
520668	AT1 OutNOx
520716	DEFVlv1Heat
520784	FanBlade
520791	BoostCurve
520808	ESD
520809	TimeAirShutoff
524287*	HiddenCode

\*Hidden fault code by default

## 7.27 Cummins CM2350 Industrial Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil

101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
168	Battery
171	T-AmbientAir
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
442	T-Auxiliary2
558	AP1LowIdleSw
612	SysDiagCode2
626	StartEnbl1
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
649	P-ExhBankReg
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12



663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1075	LiftPump
1081	WaitStartLamp
1109	EPS SDApproach
1117	ECUPwrDwnFault
1127	P-Turbo1Boost
1136	T-ECU
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1209	P-ExhaustPres1
1213	MalfuncLamp
1231	J1939Net2
1235	J1939Net3
1239	FuelLeakage1
1267	SDIdleAcc
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1387	P-Auxiliary1
1388	P-Auxiliary2
1563	IncompContr
1569	TorqueDerate
1623	Spd-TachoShaft
1632	TorqueLimit
1639	Spd-Fan
1668	J1939Net4
1675	StarterMode
1761	DEFTnkLevel
1800	T-BatterySLI1
2006	SA 6
2623	AP1Channel2
2629	T-Turbo1Outlet

2630	T-AirCoolerOut
2633	VGTHNozzle
2634	PowerRelay
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
2978	TorqueEstLoss
3031	T-DEFTnk
3060	CoolSysMonitor
3216	SCR IntakeNOx
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3226	AT1OutNOx
3227	AT1OutOxygen1
3228	AT1OutGS1Pwr
3242	T-DPFIntake
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3255	SCR2IntakeNOx
3265	AT2OutNOx
3353	Alternator1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3364	DEFQuality
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3490	AT1PurgeAir
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3515	T-DEFTnk2
3521	DEFProperty
3555	AmbAirDensity
3556	AT1HydroCarb1
3597	Pwr-OutSupply1
3610	P-DPFOutlet
3667	AirShutoff
3695	RegenInhibit
3703	DPFInhSwitch
3713	DPFInhTimeout

3750	DPFNoMetRegen
3826	DEFAvgConsmpt
3936	DPFSystem
4094	NOxInsfDEF
4096	NOxEmptyDEF
4097	AT1FuelDrain
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4331	DEFDosingQ
4334	P-DEFDoser1
4337	T-DEFDoser1
4339	SCRFeedback
4340	DEFHeater1
4342	DEFHeater2
4344	DEFHeater3
4360	T-SCR1Intake
4363	T-SCR1Outlet
4364	SCRCnvEffcncty
4376	DEFDosing1
4490	Humidity
4765	T-AT1CatalInt
4766	T-AT1CatalOut
4792	AT1SCR
4793	AT1WarmUpDOC
4794	AT1SCRMissing
4795	DPFMissing
4796	DOCMissing
4809	T-AT1DOCInt
4810	T-AT1DOCOut
5018	AT1DOC
5019	P-EGR1Out
5024	AT1IntNOxHeat
5031	AT1OutNOxHeat
5125	SensorSupply07
5246	SCR Severity
5298	AT1DOC
5319	DPFIncomplReg
5357	InjFuelError
5380	FuelValve1
5394	DEFDoserVlv1
5395	IdleFuelQntt
5396	CrankcaseVnt
5397	DPFRegenFreq
5484	FanCltch2Out
5491	DEFHeater
5571	CRRReliefVlv

5585	P-Fuel1InjRal1
5625	ExhBank1PReg
5626	ExhBank1PReg
5741	AT1OutSoot
5742	DPFTempSensor
5743	SCRTempSensor
5745	DEFDosing1
5746	DEFDosing1
5747	AT1OutSootHtr
5793	DesFueling
5797	WarmUpDOC
5798	DEFDosing1
5838	EGRVlvMalfunc
5839	DEFConsumption
5840	DEFDosing
5841	DEFQ
5842	SCRMalfunction
6301	WaterInFuel2
6653	P-FuelInjRail1
6655	ECUPwrLamp
6713	VGT SW
6881	SCROverride
6882	DOCTempModule
6918	SCR InhSwitch
6928	SCR InhTimeout
520199	CruiseControl
520320	CrankcsDepVlv
520435	GlowPlugMod
520595	CrankcaseVent
520668	AT1 OutNOx
520716	DEFVlv1Heat
520784	FanBlade
520791	BoostCurve
520808	ESD
520809	TimeAirShutoff
524287*	HiddenCode

\*Hidden fault code by default

## 7.28 Cummins CM2358 Fault Codes

Fault Code (SPN)	Text
190	EngineSpeed
648	P-ExhSensor
1204	ElectricalLoad
3545	GCB
3551	OilPrim
3552	OilPreHeated

3606	SDRequest
3607	ESDRequest
3644	DerateRequest
3938	GenGovernBias
4079	GovSpdCmd
524287*	HiddenCode

\*Hidden fault code by default

## 7.29 Cummins CM2358 Parent Fault Codes

Fault Code (SPN)	Text
190	EngineSpeed
648	P-ExhSensor
1204	ElectricalLoad
3545	GCB
3551	OilPrim
3552	OilPreHeated
3606	SDRequest
3607	ESDRequest
3644	DerateRequest
3938	GenGovernBias
4079	GovSpdCmd
524287*	HiddenCode

\*Hidden fault code by default

## 7.30 Cummins CM2880 Industrial Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir

107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor

651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost

1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet



2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce

4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.31 Cummins CM2880 Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated

168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14

665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6

1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated

3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.32 Cummins GCS Fault Codes

### 7.33 Cummins PGI (Obsolete) Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
93	NetBrakeTrq
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake

103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
166	Pwr-Rated
168	Battery
171	T-AmbientAir
173	T-Exhaust
174	T-Fuel
175	T-Oil
183	FuelRate
190	EngineSpeed
191	Spd-OutShaft
251	Time
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
558	AP1LowIdleSw
597	Brake
611	SysDiagCode1
612	SysDiagCode2
623	StopLamp
627	Pwr-Supply
629	Controller1
630	CalibratMemory
633	FuelActCmd
639	J1939CANBus
640	ProtectionInp
641	TurboGeometry
644	Spd-ExtInput
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13



664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
697	PWMDriver1
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1073	CompBrakeOut2
1075	LiftPump
1112	CompBrakeOut3
1128	P-Turbo2Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1172	T-Turbo1CInt
1208	P-OilFiltInt
1209	P-ExhaustPres1
1231	CANBusOff
1235	CANBusOff
1242	Pwr-Brake
1265	OilBurnVlv
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5

1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1331	MisfireCyl 9
1332	MisfireCyl 10
1333	MisfireCyl 11
1334	MisfireCyl 12
1335	MisfireCyl 13
1336	MisfireCyl 14
1337	MisfireCyl 15
1338	MisfireCyl 16
1347	FuelPmpAsmbl1
1377	SynchroSwitch
1378	OilChange
1380	RemoteOilRsv
1387	P-Auxiliary1
1388	P-Auxiliary2
1484	OthersECU TC
1563	IncompContr
1632	TorqueLimit
1634	CVN Error
1800	T-BatterySLI1
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2623	AP1Channel2
2630	T-AirCoolerOut
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
3050	CatalystBank1
3058	EGRSysMonitor
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3481	AT1FuelRate
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3549	P-OilFltOut
3555	AmbAirDensity
3556	AT1HydroCarb1

3597	Pwr-OutSupply1
3610	P-DPFOutlet
3703	DPFIInhSwitch
3936	DPFSystem
3938	GenGovernBias
4182	GenOutFreq
4183	GenDroop
4184	GenGain
4185	SDOverspeed
4186	SD P-LowOil
4187	SD T-HiEngine
4188	P-PreLowOil
4223	T-PreHighWrn
4795	DPFMissing
4796	DOCMissing
5298	AT1DOC
520199	CruiseControl
520320	Crankcase
520441	P-EGROutSensor
520442	T-EGRMixSensor
520448	CrankcaseVent
524286	TemporaryUse
524287*	HiddenCode

\*Hidden fault code by default

## 7.34 Cummins PGI G-Drive Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
166	Pwr-Rated

168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
611	SysDiagCode1
612	SysDiagCode2
620	5VSupply
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
636	PositionSensor
637	TimingSensor
639*	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
697	PWMDriver1
723	Spd-Speed2
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1075	LiftPump
1109	EPS SDApproach
1110	EPS Shutdown
1347	FuelPmpAsmbl1
1485	ECMMainRelay
2802	DataMemoryUsg
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3597	Pwr-OutSupply1
3938	GenGovernBias

4182	GenOutFreq
4183	GenDroop
524287*	HiddenCode

\*Hidden fault code by default

## 7.35 Dongfeng Cummins Fault Codes

Fault Code (SPN)	Text
27	EGR1
81	DPFIntake
84	Spd-WheelBased
91	APP
93	AuxiliaryTrq
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
167	SysCharging
168	Battery
171	T-AmbientAir
175	T-Oil
190	EngineSpeed
251	RealTimeClock
411	P-EGR1Diff
412	T-EGR1
441	T-Auxiliary1
558	AP1LowIdleSw
612	MagneticSpeed
625	PropDataLink
626	StartEnbl1
627	Pwr-Supply
629	Controller1
630	CalibratMemory
632	FuelShtoff1
633	FuelActCmd
635	TimingActuator
639	J1939CANBus
640	ProtectionInp

641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
703	AuxiliaryIO 03
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
1072	CompBrakeOut1
1073	CompBrakeOut2
1074	ExhBrakeOut
1075	LiftPump
1112	CompBrakeOut3
1136	T-ECU
1172	T-Turbo1CInt
1188	TurboWstAct1
1195	A-Tpassword
1209	P-ExhaustPres1
1244	FuelActCmd2
1245	TimeAct2
1267	SDIdleAcc
1347	FuelPmpAsmbl1
1349	P-Fuel1Inj2
1378	OilChange
1388	P-Auxiliary2
1590	AdaptiveCC
1761	DEFTnkLevel
2623	AP1Channel2
2629	T-Turbo1Outlet
2789	T-Turbo1Int
2791	EGR1Vlv1
2797	FuelInjectorG1
2884	AuxGovernor
3031	T-DEFTnk
3050	CatalystBank1
3058	EGRSysMonitor
3064	DPFSysMonitor
3226	AT1OutNOx
3228	AT1OutGS1Pwr
3241	T-AT1Exh1
3245	T-AT1Exh3
3249	T-AT1Exh2

3251	P-DPFDiff
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3480	P-AT1Fuel
3481	AT1FuelRate
3482	AT1FuelEnb
3489	AT1AirAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3555	AmbAirDensity
3556	AT1-Fuellnj
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
3703	DPFInhSwitch
4097	AT1FuelDrain
4340	DEFHeater1
4342	DEFHeater2
4360	T-SCR1Intake
4363	T-SCR1Outlet
4794	AT1SCRMissing
524287*	HiddenCode

\*Hidden fault code by default

## 7.36 Daimler Chrysler ADM2 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch

168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
524287*	HiddenCode

\*Hidden fault code by default

## 7.37 DaimlerChrysler ADM3 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff



108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
524287*	HiddenCode

\*Hidden fault code by default

## 7.38 DDC DDEC IV/V Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel

100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDAApproach
1110	EPS Shutdown
1485	ECMMainRelay
524287*	HiddenCode

\*Hidden fault code by default

## 7.39 Deep Sea DSEA109 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.40 Deutz EMR2 Fault Codes

Fault Code (SPN)	Text
84	Spd-WheelBased
91	APP
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
536*	IgnoreFC
524287*	HiddenCode

\*Hidden fault code by default

## 7.41 Deutz EMR3 Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery

174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
624	WarningLamp
630	CalibratMemory
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
676	GlowPlugRelay
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
923	PowerOutput
975	Fan1EstSpd
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1109	EPS SDApproach
1231	CANBusOff
1235	CANBusOff
1237	SdOverride
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1346	MisfireCyl 24
1638	T-Hydraulic
2634	PowerRelay
2791	EGR1Vlv1

523212	FrmMngTOEngPrt
523216	FrmMngTOPrHt
523218	FrmMngTORxCCVS
523222	FrmMngTOTCO1
523238	FrmMngTOSwtOut
523239	FrmMngDecV1
523240	FrmMngFunModCt
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523370	CompresionTest
523420	Watchdog
523450	MultiStateSw
523451	MultiStateSw
523452	MultiStateSw
523470	RailPressValve
523490	ShutoffCond
523500	FrmMngTxTO
523550	TPUDefect
523561	BIPCyl1
523562	BIPCyl2
523563	BIPCyl3
523564	BIPCyl4
523565	BIPCyl5
523566	BIPCyl6
523567	BIPCyl7
523568	BIPCyl8
523600	SerialComm
523601	V-Reference
523602	Spd-Fan
523604	FrmMngTOEngTmp
523605	FrmMngTOTSC1AE
523606	FrmMngTOTSC1AR
523607	FrmMngTOTSC1DE
523608	FrmMngTOTSC1DR
523609	FrmMngTOTSC1PE
523610	FrmMngTOTSC1VE
523611	FrmMngTOTSC1VR
523612	ECUIntMonitor
523613	P-Rail
523615	MeterUnitValve
523617	HWEMonCom
524287*	HiddenCode

\*Hidden fault code by default

## 7.42 Deutz EMR4 Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
563	ABS
624	WarningLamp
630	CalibratMemory
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
676	GlowPlugRelay
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
923	PWMOutput
975	Fan1EstSpd
1072	CompBrakeOut1
1074	ExhBrakeOut

1079	Supply1
1080	Supply2
1081	WaitStartLamp
1109	EPS SDApproach
1231	CANBusOff
1235	CANBusOff
1237	SdOverride
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1346	MisfireCyl 24
1443	FuelVlvPos2
1444	Cyl 1Cmbustion
1445	Cyl 2Cmbustion
1446	Cyl 3Cmbustion
1447	Cyl 4Cmbustion
1448	Cyl 5Cmbustion
1449	Cyl 6Cmbustion
1450	Cyl 7Cmbustion
1451	Cyl 8Cmbustion
1638	T-Hydraulic
2634	PowerRelay
2791	EGR1Vlv1
523212	FrmMngTOEngPrt
523216	FrmMngTOPrHt
523218	FrmMngTORxCCVS
523222	FrmMngTOTCO1
523238	FrmMngTOSwtOut
523239	FrmMngDecV1
523240	FrmMngFunModCt
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523370	CompresionTest
523420	Watchdog
523450	MultiStateSw
523451	MultiStateSw
523452	MultiStateSw
523470	RailPressValve
523490	ShutoffCond

523500	FrmMngTxTO
523550	TPUDefect
523561	BIPCyl1
523562	BIPCyl2
523563	BIPCyl3
523564	BIPCyl4
523565	BIPCyl5
523566	BIPCyl6
523567	BIPCyl7
523568	BIPCyl8
523600	SerialComm
523601	V-Reference
523602	Spd-Fan
523604	FrmMngTOEngTmp
523605	FrmMngTOTSC1AE
523606	FrmMngTOTSC1AR
523607	FrmMngTOTSC1DE
523608	FrmMngTOTSC1DR
523609	FrmMngTOTSC1PE
523610	FrmMngTOTSC1VE
523611	FrmMngTOTSC1VR
523612	ECUIntMonitor
523613	P-Rail
523615	MeterUnitValve
523617	HWEMonCom
524287*	HiddenCode

\*Hidden fault code by default

## 7.43 Deutz EMR5 Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery



174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
563	ABS
624	WarningLamp
630	CalibratMemory
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
676	GlowPlugRelay
677	StarterMotor
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
923	PWMOutput
975	Fan1EstSpd
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1109	EPS SDApproach
1231	CANBusOff
1235	CANBusOff
1237	SdOverride
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1346	MisfireCyl 24
1443	FuelVlvPos2
1444	Cyl 1Cmbustion
1445	Cyl 2Cmbustion

1446	Cyl 3Cmbustion
1447	Cyl 4Cmbustion
1448	Cyl 5Cmbustion
1449	Cyl 6Cmbustion
1450	Cyl 7Cmbustion
1451	Cyl 8Cmbustion
1638	T-Hydraulic
2634	PowerRelay
2791	EGR1Vlv1
523212	FrmMngTOEngPrt
523216	FrmMngTOPrHt
523218	FrmMngTORxCCVS
523222	FrmMngTOTCO1
523238	FrmMngTOSwtOut
523239	FrmMngDecV1
523240	FrmMngFunModCt
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523370	CompresionTest
523420	Watchdog
523450	MultiStateSw
523451	MultiStateSw
523452	MultiStateSw
523470	RailPressValve
523490	ShutoffCond
523500	FrmMngTxTO
523550	TPUDefect
523561	BIPCyl1
523562	BIPCyl2
523563	BIPCyl3
523564	BIPCyl4
523565	BIPCyl5
523566	BIPCyl6
523567	BIPCyl7
523568	BIPCyl8
523600	SerialComm
523601	V-Reference
523602	Spd-Fan
523604	FrmMngTOEngTmp
523605	FrmMngTOTSC1AE
523606	FrmMngTOTSC1AR
523607	FrmMngTOTSC1DE
523608	FrmMngTOTSC1DR

523609	FrmMngTOTSC1PE
523610	FrmMngTOTSC1VE
523611	FrmMngTOTSC1VR
523612	ECUIntMonitor
523613	P-Rail
523615	MeterUnitValve
523617	HWEMonCom
524287	HiddenCode

## 7.44 Doosan G2 EDC17 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
51	ThrottleVlv1
91	APP
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
444	V-BatteryInp2
558	AP1LowIdleSw
626	StartEnbl1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1076	FuelInjPump
1081	WaitStartLamp
1382	P-FuelFltDiff

1485	ECMMainRelay
1612	InjVlvDIScBnk
1639	Spd-Fan
1761	DEFTnkLevel
1846	TorqueLimitPr
1867	SCRMonECUTemp
2789	T-Turbo1Int
2791	EGR1Vlv1
3031	T-DEFTnk
3224	SCR IntakeNOx
3234	AT1OutNOxFMI
3242	T-DPFIntake
3251	P-DPFDiff
3360	DEFContr1
3361	DEFDosing1
3363	DEFTnkHeater
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3516	DEFConcentrat
3517	DEFTnkLevel
3519	DEFTnk2
3520	DEFProperties
3532	DEFTnkVolume
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3701	DPFStatus
3715	DPFInhLockout
3720	DPFAshLoad
4082	FuelPump
4335	P-SCRDosAir
4344	DEFHeater3
4354	DEFHeater1
4355	DEFHeater2
4356	DEFHeater3
4364	SCRCnvEfficncy
4365	DEFTnk1
4374	Spd-DEFPump1
4781	DPFSoot
5313	DPFSootDeviat
5319	DPFIncomplReg
5397	DPFRegenFreq
5419	ThrottleAct
5435	DEFPump

5436	DEFTnkDrnVlv
5491	DEFHeater
5571	CRReliefVlv
5629	DPFInhExhPres
5706	DEFHeater
5713	AT1OutNOx
5714	AT1IntNOxSnsr
5717	NOxISlfDiagRes
5718	NOxOSlfDiagRes
5746	DEFDosing1
5965	DEFCntModule1
6323	PSPSCB
6385	StarterMotor
6875	P-DEFDoser
6915	SCR Lamp
6916	SCR Status
7069	DEFHeater
7107	DEFPump
7416	DEFPump
7538	DEFContr2
7540	DEFHeater
7748	StrtHSSCB
7749	StrtLSSCB
55296	EEPRdErr
55552	EEPWrErr
57344	ComCM1TO
61441	ComEBC1TO
61454	ComAT1IG1TO
61455	ComAT1OG1TO
64923	ComA1DEFIRxTO
65110	ComAT1T1ITO
65164	ComAAI2EDCTO
65241	ComRxAUXIO1TO
65265	ComRxCCVSTO
65272	ComTRF1TO
65400	ComRxSMVCUTO
65401	DFC_ComDPM1TO
65402	DFC_ComDPM9TO
104332	DHegnMntgPlaus
104385	DFCNOxIncrMnt
520601	DFCNOxIncrMnt
520618	DFC_MoCADCNTP
520641	MoCROMErxXPg
520642	SyncLossOf
520643	DFC_MoFOvR
520696	DFC_MoCADCTst
520697	MoCADCVltgRat

520698	MoCComErrCnt
520699	DFC_MoCComSPI
520700	MoCSOPErrNoChk
520701	MoCSOPErrRespT
520702	MoCSOPErrSPI
520703	DFC_MoCSOPMM
520704	MoCSOPOSTOut
520705	MoCSOPPsvTstEr
520706	MoCSOPTimeOut
520707	DFC_MoCSOPUpLi
520723	SCRIndERGLv1
520724	SCRIndERGLv2
520725	SCRIndERGLv3
520726	SCRIndDosInt 1
520727	SCRIndDosInt 2
520728	SCRIndDosInt 3
520729	SCRIndDosInt 4
520730	SCRIndDosIntrW
520736	SCRIndDEFQual1
520737	SCRIndDEFQual2
520738	SCRIndDEFQual3
520739	SCRIndDEFQualW
520740	SCRIndTamper1
520741	SCRIndTamper2
520742	SCRIndTamper3
520743	SCRIndTampWar
520790	SCRIndRepeLv1
520791	SCRIndRepeLv2
520792	SCRIndRepeLv3
520796	DFC_MoFAPP
520797	DFC_MoFESpd
520798	MoFInjDatET
520799	MoFInjDatPhi
520800	DFC_MoFInjQnt
520801	DFC_MoFMode1
520802	DFC_MoFMode2
520803	DFC_MoFMode3
520804	DFC_MoFQntCor
520805	DFC_MoFRailP
520806	DFC_MoFTrqCmp
520807	DFC_MonLimSet
524287*	HiddenCode

\*Hidden fault code by default

## 7.45 Doosan MD1 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
51	ThrottleVlv1
91	APP
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
444	V-BatteryInp2
558	AP1LowIdleSw
626	StartEnbl1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1076	FuelInjPump
1081	WaitStartLamp
1382	P-FuelFltDiff
1485	ECMMainRelay
1612	InjVlvDIScBnk
1639	Spd-Fan
1761	DEFTnkLevel
1846	TorqueLimitPr
1867	SCRMonECUTemp
2789	T-Turbo1Int
2791	EGR1Vlv1
3031	T-DEFTnk

3224	SCR IntakeNOx
3234	AT1OutNOxFMI
3242	T-DPFIntake
3251	P-DPFDiff
3360	DEFContr1
3361	DEFDosing1
3363	DEFTnkHeater
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3516	DEFConcentrat
3517	DEFTnkLevel
3519	DEFTnk2
3520	DEFProperties
3532	DEFTnkVolume
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3701	DPFStatus
3715	DPFInhLockout
3720	DPFAshLoad
4082	FuelPump
4335	P-SCRDosAir
4344	DEFHeater3
4354	DEFHeater1
4355	DEFHeater2
4356	DEFHeater3
4364	SCRConcEfficiency
4365	DEFTnk1
4374	Spd-DEFPump1
4781	DPFSoot
5313	DPFSootDeviat
5319	DPFIncomplReg
5397	DPFRegenFreq
5419	ThrottleAct
5435	DEFPump
5436	DEFTnkDrnVlv
5491	DEFHeater
5571	CRReliefVlv
5629	DPFInhExhPres
5706	DEFHeater
5713	AT1OutNOx
5714	AT1IntNOxSnsr
5717	NOxISlfDiagRes
5718	NOxOSlfDiagRes



5746	DEFDosing1
5965	DEFCntModule1
6323	PSPSCB
6385	StarterMotor
6875	P-DEFDoser
6915	SCR Lamp
6916	SCR Status
7069	DEFHeater
7107	DEFPump
7416	DEFPump
7538	DEFContr2
7540	DEFHeater
7748	StrtHSSCB
7749	StrtLSSCB
55296	EEPRdErr
55552	EEPWrErr
57344	ComCM1TO
61441	ComEBC1TO
61454	ComAT1IG1TO
61455	ComAT1OG1TO
64923	ComA1DEFIRxTO
65110	ComAT1T1ITO
65164	ComAAI2EDCTO
65241	ComRxAUXIO1TO
65265	ComRxCCVSTO
65272	ComTRF1TO
65400	ComRxSMVCUTO
65401	DFC_ComDPM1TO
65402	DFC_ComDPM9TO
104332	DHegnMntgPlaus
104385	DFCNOxIncrMnt
520601	DFCNOxIncrMnt
520618	DFC_MoCADCNTP
520641	MoCROMErrXPg
520642	SyncLossOf
520643	DFC_MoFOvR
520696	DFC_MoCADCTst
520697	MoCADCVItgRat
520698	MoCComErrCnt
520699	DFC_MoCComSPI
520700	MoCSOPErrNoChk
520701	MoCSOPErrRespT
520702	MoCSOPErrSPI
520703	DFC_MoCSOPMM
520704	MoCSOPOSTOut
520705	MoCSOPPsvTstEr
520706	MoCSOPTimeOut

520707	DFC_MoCSOPUpLi
520723	SCRIndERGLv1
520724	SCRIndERGLv2
520725	SCRIndERGLv3
520726	SCRIndDosInt 1
520727	SCRIndDosInt 2
520728	SCRIndDosInt 3
520729	SCRIndDosInt 4
520730	SCRIndDosIntrW
520736	SCRIndDEFQual1
520737	SCRIndDEFQual2
520738	SCRIndDEFQual3
520739	SCRIndDEFQaulW
520740	SCRIndTamper1
520741	SCRIndTamper2
520742	SCRIndTamper3
520743	SCRIndTampWar
520790	SCRIndRepeLv1
520791	SCRIndRepeLv2
520792	SCRIndRepeLv3
520796	DFC_MoFAPP
520797	DFC_MoFESpd
520798	MoFIinjDatET
520799	MoFIinjDatPhi
520800	DFC_MoFIinjQnt
520801	DFC_MoFMode1
520802	DFC_MoFMode2
520803	DFC_MoFMode3
520804	DFC_MoFQntCor
520805	DFC_MoFRailP
520806	DFC_MoFTrqCmp
520807	DFC_MonLimSet
524287*	HiddenCode

\*Hidden fault code by default

## 7.46 Doosan G40 EDC17 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
51	ThrottleVlv1
91	APP
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold

108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
444	V-BatteryInp2
558	AP1LowIdleSw
626	StartEnbl1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1076	FuelInjPump
1081	WaitStartLamp
1382	P-FuelFltDiff
1485	ECMMainRelay
1612	InjVlvDIScBnk
1639	Spd-Fan
1761	DEFTnkLevel
1846	TorqueLimitPr
1867	SCRMonECUTemp
2789	T-Turbo1Int
2791	EGR1Vlv1
3031	T-DEFTnk
3224	SCR IntakeNOx
3234	AT1OutNOxFMI
3242	T-DPFIntake
3251	P-DPFDiff
3360	DEFContr1
3361	DEFDosing1
3363	DEFTnkHeater
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04

3513	SensorSupply05
3516	DEFConcentrat
3517	DEFTnkLevel
3519	DEFTnk2
3520	DEFProperties
3532	DEFTnkVolume
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3701	DPFStatus
3715	DPFInhLockout
3720	DPFAshLoad
4082	FuelPump
4335	P-SCRDosAir
4344	DEFHeater3
4354	DEFHeater1
4355	DEFHeater2
4356	DEFHeater3
4364	SCRConcEfficiency
4365	DEFTnk1
4374	Spd-DEFPump1
4781	DPFSoot
5313	DPFSootDeviat
5319	DPFIncomplReg
5397	DPFRegenFreq
5419	ThrottleAct
5435	DEFPump
5436	DEFTnkDrnVlv
5491	DEFHeater
5571	CRReliefVlv
5629	DPFInhExhPres
5706	DEFHeater
5713	AT1OutNOx
5714	AT1IntNOxSnsr
5717	NOxSlfDiagRes
5718	NOxOSlfDiagRes
5746	DEFDosing1
5965	DEFCntModule1
6323	PSPSCB
6385	StarterMotor
6875	P-DEFDoser
6915	SCR Lamp
6916	SCR Status
7069	DEFHeater
7107	DEFPump
7416	DEFPump
7538	DEFContr2

7540	DEFHeater
7748	StrtHSSCB
7749	StrtLSSCB
55296	EEPRdErr
55552	EEPWrErr
57344	ComCM1TO
61441	ComEBC1TO
61454	ComAT1IG1TO
61455	ComAT1OG1TO
64923	ComA1DEFIRxTO
65110	ComAT1T1ITO
65164	ComAAI2EDCTO
65241	ComRxAUXIO1TO
65265	ComRxCCVSTO
65272	ComTRF1TO
65400	ComRxSMVCUTO
65401	DFC_ComDPM1TO
65402	DFC_ComDPM9TO
104332	DHegnMntgPlaus
104385	DFCNOxIncrMnt
520601	DFCNOxIncrMnt
520618	DFC_MoCADCNTP
520641	MoCROMErxXPg
520642	SyncLossOf
520643	DFC_MoFOvR
520696	DFC_MoCADCTst
520697	MoCADCVltgRat
520698	MoCComErrCnt
520699	DFC_MoCComSPI
520700	MoCSOPErrNoChk
520701	MoCSOPErrRespT
520702	MoCSOPErrSPI
520703	DFC_MoCSOPMM
520704	MoCSOPOSTOut
520705	MoCSOPPsTstEr
520706	MoCSOPTimeOut
520707	DFC_MoCSOPUpLi
520723	SCRIndERGLv1
520724	SCRIndERGLv2
520725	SCRIndERGLv3
520726	SCRIndDosInt 1
520727	SCRIndDosInt 2
520728	SCRIndDosInt 3
520729	SCRIndDosInt 4
520730	SCRIndDosIntrW
520736	SCRIndDEFQual1
520737	SCRIndDEFQual2

520738	SCRIndDEFQual3
520739	SCRIndDEFQualW
520740	SCRIndTamper1
520741	SCRIndTamper2
520742	SCRIndTamper3
520743	SCRIndTampWar
520790	SCRIndRepeLvl1
520791	SCRIndRepeLvl2
520792	SCRIndRepeLvl3
520796	DFC_MoFAPP
520797	DFC_MoFESpd
520798	MoFInjDatET
520799	MoFInjDatPhi
520800	DFC_MoFInjQnt
520801	DFC_MoFMode1
520802	DFC_MoFMode2
520803	DFC_MoFMode3
520804	DFC_MoFQntCor
520805	DFC_MoFRailP
520806	DFC_MoFTrqCmp
520807	DFC_MonLimSet
524287*	HiddenCode

\*Hidden fault code by default

## 7.47 Econtrols EICS Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
94	P-FuelDelivery
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
110	T-Coolant
168	Battery
175	T-Oil
441	T-Auxiliary1
442	T-Auxiliary2
515	Spd-Desired
628	ProgramMemory
629	Controller1
630	CalibratMemory
632	FuelShtoff1
636	PositionSensor

639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
704	AuxiliaryIO 04
705	AuxiliaryIO 05
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
723	Spd-Speed2
731	Knock1
924	AuxiliaryOut 1
1079	Supply1
1080	Supply2
1082	CoolantLoadInc
1192	TurboWstAct
1213	MalfuncLamp
1231	CAN2 Fail
1235	CAN3 Fail
1321	StarterLockout
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1385	T-Auxiliary1
1386	T-Auxiliary2
1634	HW_ID_Fail
2807	FuelShtoff2
2840	Mult-EcmMsgLst
3050	CatalystBank1
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1

3468	T-1Fuel2
3670	MaxCrankAttemp
3673	ThrottleVlv2
4236	ShortTFuelTrm1
4237	LongTFuelTrim1
4238	ShortTFuelTrm2
4239	LongTFuelTrim2
6016	Fuse4OpnCirc
6017	Fuse3OpnCirc
6018	Fuse2OpnCirc
6019	Fuse1OpnCirc
6023	Fuse5OpnCirc
520170	Mult-EcmMsgLst
520260	EPR Primary
520261	EPR Secondary
520270	MFGComLost
520271	MFGCircFIt
520272	MFA/AtComLost
520273	MFA/AtCircFIt
520274	MFGDataLost
520275	MFA/AtDataLost
520276	MFG TPS
520277	MFA/At TPS
520278	MFG Voltage
520279	MFGFluidTemp
520280	MFGUpstrPress
520281	MFGDwnstrPress
520282	MFGDeltaPressZ
520283	MFGDeltaPress
520284	MFGGeneralFIt
520285	MFA/At TPS
520286	MFA/At TPS
520287	MFA/At Voltage
520292	MFA/AtGnrIFIt
520293	MFG Backfire
520294	MFA/AtBackfire
520297	MFG FlowLow
520298	MFG FlowHigh
520401	Fuel Impurity
523005	RTD1
523006	RTD2
523007	RTD3
523008	RTD4
523009	TANK 1
523011	UEGO1
523012	UEGO2
523013	UEGO2



523014	UEGO2
523015	UEGO2
523016	UEGO2
523017	UEGO2
523018	UEGO2
523019	UEGO2
523020	UEGO2
523021	UEGO2
523022	UEGO2
523023	UEGO2
523024	CatInletOTemp
523025	CatOutOTemp
523026	Spark1kV
523027	Spark2kV
523028	Spark3kV
523029	Spark4kV
523030	Spark5kV
523031	Spark6kV
523032	Spark7kV
523033	Spark8kV
523034	T-High AnyCat
523035	SuctionP
523036	SuctionP
523037	T-HighDeltaCat
523038	ESD Shutdown
523039	TANKoutShdn
523042	T-HighDeltaCat
523043	Warning Short
523044	Opto1
523045	Opto2
523046	Opto3

## 7.48 Econtrols EICS Parent Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
94	P-FuelDelivery
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
110	T-Coolant
168	Battery
175	T-Oil
441	T-Auxiliary1

442	T-Auxiliary2
515	Spd-Desired
628	ProgramMemory
629	Controller1
630	CalibratMemory
632	FuelShtoff1
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
704	AuxiliaryIO 04
705	AuxiliaryIO 05
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
723	Spd-Speed2
731	Knock1
924	AuxiliaryOut 1
1079	Supply1
1080	Supply2
1082	CoolantLoadInc
1192	TurboWstAct
1213	MalfunctLamp
1231	CAN2 Fail
1235	CAN3 Fail
1321	StarterLockout
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1385	T-Auxiliary1
1386	T-Auxiliary2
1634	HW_ID_Fail
2807	FuelShtoff2
2840	Mult-EcmMsgLst
3050	CatalystBank1
3056	OxygenBank1
3217	AT1IntOxygen1

3218	AT1IntGSPwr
3221	AT1IntWROxygen1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3670	MaxCrankAttempt
3673	ThrottleVlv2
4236	ShortTFuelTrm1
4237	LongTFuelTrim1
4238	ShortTFuelTrm2
4239	LongTFuelTrim2
6016	Fuse4OpnCirc
6017	Fuse3OpnCirc
6018	Fuse2OpnCirc
6019	Fuse1OpnCirc
6023	Fuse5OpnCirc
520170	Mult-EcmMsgLst
520260	EPR Primary
520261	EPR Secondary
520270	MFGComLost
520271	MFGCircFIt
520272	MFA/AtComLost
520273	MFA/AtCircFIt
520274	MFGDataLost
520275	MFA/AtDataLost
520276	MFG TPS
520277	MFA/At TPS
520278	MFG Voltage
520279	MFGFluidTemp
520280	MFGUpstrPress
520281	MFGDwnstrPress
520282	MFGDeltaPressZ
520283	MFGDeltaPress
520284	MFGGeneralFIt
520285	MFA/At TPS
520286	MFA/At TPS
520287	MFA/At Voltage
520292	MFA/AtGnrlFIt
520293	MFG Backfire
520294	MFA/AtBackfire
520297	MFG FlowLow
520298	MFG FlowHigh
520401	Fuel Impurity
523005	RTD1

523006	RTD2
523007	RTD3
523008	RTD4
523009	TANK 1
523011	UEGO1
523012	UEGO2
523013	UEGO2
523014	UEGO2
523015	UEGO2
523016	UEGO2
523017	UEGO2
523018	UEGO2
523019	UEGO2
523020	UEGO2
523021	UEGO2
523022	UEGO2
523023	UEGO2
523024	CatInletOTemp
523025	CatOutOTemp
523026	Spark1kV
523027	Spark2kV
523028	Spark3kV
523029	Spark4kV
523030	Spark5kV
523031	Spark6kV
523032	Spark7kV
523033	Spark8kV
523034	T-High AnyCat
523035	SuctionP
523036	SuctionP
523037	T-HighDeltaCat
523038	ESD Shutdown
523039	TANKoutShdn
523042	T-HighDeltaCat
523043	Warning Short
523044	Opto1
523045	Opto2
523046	Opto3

## 7.49 Econtrols EICS Child Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
94	P-FuelDelivery
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake

105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
110	T-Coolant
168	Battery
175	T-Oil
441	T-Auxiliary1
442	T-Auxiliary2
515	Spd-Desired
628	ProgramMemory
629	Controller1
630	CalibratMemory
632	FuelShtoff1
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
704	AuxiliaryIO 04
705	AuxiliaryIO 05
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
723	Spd-Speed2
731	Knock1
924	AuxiliaryOut 1
1079	Supply1
1080	Supply2
1082	CoolantLoadInc
1192	TurboWstAct
1213	MalfunctLamp
1231	CAN2 Fail
1235	CAN3 Fail
1321	StarterLockout
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1385	T-Auxiliary1

1386	T-Auxiliary2
1634	HW_ID_Fail
2807	FuelShtoff2
2840	Mult-EcmMsgLst
3050	CatalystBank1
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3670	MaxCrankAttemp
3673	ThrottleVlv2
4236	ShortTFuelTrm1
4237	LongTFuelTrim1
4238	ShortTFuelTrm2
4239	LongTFuelTrim2
6016	Fuse4OpnCirc
6017	Fuse3OpnCirc
6018	Fuse2OpnCirc
6019	Fuse1OpnCirc
6023	Fuse5OpnCirc
520170	Mult-EcmMsgLst
520260	EPR Primary
520261	EPR Secondary
520270	MFGComLost
520271	MFGCircFIt
520272	MFA/AtComLost
520273	MFA/AtCircFIt
520274	MFGDataLost
520275	MFA/AtDataLost
520276	MFG TPS
520277	MFA/At TPS
520278	MFG Voltage
520279	MFGFluidTemp
520280	MFGUpstrPress
520281	MFGDwnstrPress
520282	MFGDeltaPressZ
520283	MFGDeltaPress
520284	MFGGeneralFIt
520285	MFA/At TPS
520286	MFA/At TPS
520287	MFA/At Voltage

520292	MFA/AtGnrIFlt
520293	MFG Backfire
520294	MFA/AtBackfire
520297	MFG FlowLow
520298	MFG FlowHigh
520401	Fuel Impurity
523005	RTD1
523006	RTD2
523007	RTD3
523008	RTD4
523009	TANK 1
523011	UEGO1
523012	UEGO2
523013	UEGO2
523014	UEGO2
523015	UEGO2
523016	UEGO2
523017	UEGO2
523018	UEGO2
523019	UEGO2
523020	UEGO2
523021	UEGO2
523022	UEGO2
523023	UEGO2
523024	CatInletOTemp
523025	CatOutOTemp
523026	Spark1kV
523027	Spark2kV
523028	Spark3kV
523029	Spark4kV
523030	Spark5kV
523031	Spark6kV
523032	Spark7kV
523033	Spark8kV
523034	T-High AnyCat
523035	SuctionP
523036	SuctionP
523037	T-HighDeltaCat
523038	ESD Shutdown
523039	TANKoutShdn
523042	T-HighDeltaCat
523043	Warning Short
523044	Opto1
523045	Opto2
523046	Opto3

## 7.50 E-controls ETECS Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
94	P-FuelDelivery
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
110	T-Coolant
168	Battery
175	T-Oil
441	T-Auxiliary1
442	T-Auxiliary2
515	Spd-Desired
628	ProgramMemory
629	Controller1
630	CalibratMemory
632	FuelShtoff1
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
704	AuxiliaryIO 04
705	AuxiliaryIO 05
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
723	Spd-Speed2
731	Knock1
924	AuxiliaryOut 1
1079	Supply1
1080	Supply2
1082	CoolantLoadInc



1192	TurboWstAct
1213	MalfunctLamp
1231	CAN2 Fail
1235	CAN3 Fail
1321	StarterLockout
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1385	T-Auxiliary1
1386	T-Auxiliary2
1634	HW_ID_Fail
2807	FuelShtoff2
2840	Mult-EcmMsgLst
3050	CatalystBank1
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3670	MaxCrankAttemp
3673	ThrottleVlv2
4236	ShortTFuelTrm1
4237	LongTFuelTrim1
4238	ShortTFuelTrm2
4239	LongTFuelTrim2
6016	Fuse4OpnCirc
6017	Fuse3OpnCirc
6018	Fuse2OpnCirc
6019	Fuse1OpnCirc
6023	Fuse5OpnCirc
520170	Mult-EcmMsgLst
520260	EPR Primary
520261	EPR Secondary
520270	MFGComLost
520271	MFGCircFilt
520272	MFA/AtComLost
520273	MFA/AtCircFilt
520274	MFGDataLost
520275	MFA/AtDataLost
520276	MFG TPS
520277	MFA/At TPS
520278	MFG Voltage
520279	MFGFluidTemp

520280	MFGUpstrPress
520281	MFGDwnstrPress
520282	MFGDeltaPressZ
520283	MFGDeltaPress
520284	MFGGeneralFlt
520285	MFA/At TPS
520286	MFA/At TPS
520287	MFA/At Voltage
520292	MFA/AtGnrIFlt
520293	MFG Backfire
520294	MFA/AtBackfire
520297	MFG FlowLow
520298	MFG FlowHigh
520401	Fuel Impurity
523005	RTD1
523006	RTD2
523007	RTD3
523008	RTD4
523009	TANK 1
523011	UEGO1
523012	UEGO2
523013	UEGO2
523014	UEGO2
523015	UEGO2
523016	UEGO2
523017	UEGO2
523018	UEGO2
523019	UEGO2
523020	UEGO2
523021	UEGO2
523022	UEGO2
523023	UEGO2
523024	CatInletOTemp
523025	CatOutOTemp
523026	Spark1kV
523027	Spark2kV
523028	Spark3kV
523029	Spark4kV
523030	Spark5kV
523031	Spark6kV
523032	Spark7kV
523033	Spark8kV
523034	T-High AnyCat
523035	SuctionP
523036	SuctionP
523037	T-HighDeltaCat
523038	ESD Shutdown

523039	TANKoutShdn
523042	T-HighDeltaCat
523043	Warning Short
523044	Opto1
523045	Opto2
523046	Opto3

## 7.51 Enmar i7 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
157	P-Fuel1Inj1Met
168	Battery
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
636	PositionSensor
637	TimingSensor
641	TurboGeometry
646	Turbo1WstDrive
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
1127	P-Turbo1Boost
1136	T-ECU
1244	FuelActCmd2
1377	SynchroSwitch
2515	V-BusL3N
2791	EGR1Vlv1
3241	T-AT1Exh1
3249	T-AT1Exh2
3509	SensorSupply01

3510	SensorSupply02
3598	Pwr-OutSupply2
524287*	HiddenCode

\*Hidden fault code by default

## 7.52 FORD e-control Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP1LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode

697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1

1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2

520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFI
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFI
520801	ExhtCamPosErr
520803	MegaJectorFI
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1 Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFI
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1
524287*	HiddenCode

\*Hidden fault code by default

## 7.53 GM e-control Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP1LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02



703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfuncLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4

2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygen1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2
520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFI

520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFI
520801	ExhtCamPosErr
520803	MegaJectorFI
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFI
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1
524287*	HiddenCode

\*Hidden fault code by default

## 7.54 GM e-control LCI Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil

102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP1LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13

723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater

3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG
520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2
520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFI
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFI

520801	ExhtCamPosErr
520803	MegaJectorFI
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFI
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal
524260	SensorSupplyV2
524261	SensorSupplyV1
524287*	HiddenCode

\*Hidden fault code by default

## 7.55 GM MEFI4/MEFI5B Fault Codes

Fault Code (SPN)	Text
38	FuelLevel2
51	ThrottleVlv1
84	Spd-WheelBased
94	P-FuelDelivery
96	FuelLevel1
98	OilLevel
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
113	GovernorDroop
174	T-Fuel

175	T-Oil
620	5VSupply
627	Pwr-Supply
630	CalibratMemory
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
723	Spd-Speed2
3563	P-IntakeManAbs
65537	OxygenSensor1
65538	EGRNotTracking
65539	EST
65540	ESTOrBypass
65541	Coil A Fault
65542	Coil B Fault
65543	Coil C Fault
65544	Coil D Fault
65545	Coil E Fault
65546	Coil F Fault
65547	Coil G Fault
65548	Coil H Fault
65549	Knock1Inactive
65550	Knock2Inactive
65551	ROM
65552	OxygenSensor1
65553	OxygenSensor2
65554	FuelPumpRelay
65555	Inj A Short
65556	Inj B Short
65557	Recirculate
65558	DepsprRef
65559	CANHWFault
65560	CANGovCmd
65561	OxyVoltageA1
65562	OxyVoltageA2
65563	OxyVoltageB1
65564	OxyVoltageB2
65565	OxyFuelTrimA
65566	OxyFuelTrimB
65567	OxyResponseA1
65568	OxyResponseB1



65570	CamPhaserW
65571	CamPhaserX
65572	CamPhaserY
65573	CamPhaserZ
65580	CPU
65581	MHC
65582	NvRAM
65590	Misfire
65591	MisfireCyl1
65592	MisfireCyl2
65593	MisfireCyl3
65594	MisfireCyl4
65595	MisfireCyl5
65596	MisfireCyl6
65597	MisfireCyl7
65598	MisfireCyl8
65599	MisfireRandom
65600	TacModuleFault
65601	EtcTps2
65602	EtcTps1
65604	EtcPps2
65605	EtcPps1
65610	EtcTps12Corr
65613	EtcPps12Corr
65615	EtcActuation
65616	EtcProcess
65618	EtcReturn
65620	V5Buff A
65621	V5Buff B
65671	Cat A Temp
65672	Cat B Temp
65673	Cat A Temp
65674	Cat B Temp
65675	Cat A Eff
65676	Cat B Eff
65677	Cat A Exotherm
65678	Cat B Exotherm
65690	VarGov
65701	GenerWarning1
65702	GenerWarning2
65703	StopEngine
65710	EmergencyStop
65723	CamSensorW
65724	CamSensorX
65725	CamSensorY
65726	CamSensorZ
66001	StarterRelayLS

66002	StarterRelayHS
66003	MilDriver
66004	SvsLamp
66005	GovStatusLamp
66006	DTCLamp3
66007	BuzzerDriver
66008	DTCLamp1
66009	DTCLamp2
66010	SlowModeLamp
66011	SpeedBasedOut
66012	TransUpShift
66013	Powertrain
66014	Powertrain
66015	CanisterPurge
66016	EGR
66017	FuelPump1Relay
66018	Tachometer
66019	OxyHeaterA1
66020	OxyHeaterB1
66021	OxyHeaterA2
66022	OxyHeaterB2
66025	FuelPump2Relay
66026	ShiftInterrupt
66030	InterCooler
66035	BoostControl
66040	OEMOutput1
66041	OEMOutput2
66042	OEMOutput3
66043	OEMOutput4
524287*	HiddenCode

\*Hidden fault code by default

## 7.56 GM MEFI6 Fault Codes

Fault Code (SPN)	Text
27	EGR1
38	FuelLevel2
51	ThrottleVlv1
84	Spd-WheelBased
87	CruiseCSetHigh
91	APP
94	P-FuelDelivery
96	FuelLevel1
98	OilLevel
100	P-Oil
103	Spd-Turbo
105	T-IntManifold

106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
113	GovernorDroop
132	IntAirMassFlow
135	P-FuelDelivery
158	KeySwitch
159	P-GasFuelSppl
167	SysCharging
168	Battery
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
237	VIN
245	TtlVehicleDist
527	CruseControl
596	CCEnable
597	Brake
599	CCSet
600	CCCoast
601	CCResume
602	CCAccelerate
620	5VSupply
623	StopLamp
627	Pwr-Supply
628	ProgramMemory
630	CalibratMemory
632	FuelShutoff1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
650	Pwr-DriveUnit
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
680	VlvVarSwirl
723	Spd-Speed2
731	Knock1
836	Tachometer
837	Speedometer

876	ComprClutch
911	ServComponent
931	FuelSupplyPump
987	ProtectLamp
1071	CoolFanDrive
1127	P-Turbo1Boost
1188	TurboWstAct1
1195	A-Tpassword
1196	A-Tcomponent
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1321	StarterLockout
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1397	Cyl 5IgnOutput
1398	Cyl 6IgnOutput

1399	Cyl 7IgnOutput
1400	Cyl 8IgnOutput
1442	FuelVlvPos1
1634	CVNError
1635	CMM
1765	FuelVlvPosCmd1
2000	SA 0
2430	CoolantLevel
2434	T-Exh1Manif1
2628	P-GasTnk1Low
2645	WakeUpControl
2659	EGR1MassFR
2807	FuelShtoff2
2923	SteeringAxle
3050	CatalystBank1
3051	Catalyst2
3053	EvaporativeMon
3061	ColdStartMon
3217	AT1IntOxygen1
3223	AT1IntGSHeater
3227	AT1OutOxygen1
3232	AT1OutGS1Heat
3256	AT2IntOxygen
3261	AT2IntGSHeater
3266	AT2OutOxygen1
3271	AT2OutGS1Heat
3464	ThrottleCmd
3472	AT1AirPrAct
3476	AT2AirPrAct
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3563	P-IntakeManAbs
3673	ThrottleVlv2
4002	RemoteStart
4256	Spd-CrankLow
65537	OxySens
65538	EGR
65539	EST
65540	EST
65541	CoilA Fault
65542	CoilB Fault
65543	CoilC Fault
65544	CoilD Fault
65545	CoilE Fault
65546	CoilF Fault
65547	CoilG Fault

65548	CoilH Fault
65549	Knock1Inactive
65550	Knock2Inactive
65551	ROMChecksum
65552	OxySens1
65553	OxySens2
65554	FuelPumpRelay
65555	ChargeOil
65557	EGRFault
65559	CanHWFail
65560	CanGovCmdLost
65561	V-Oxy
65562	V-PostOxy
65565	OxyFuelTrim
65567	OxyResponse
65580	CPU
65581	MHC
65582	NvRAM
65585	FuelSelectInp
65601	EtcTps2
65602	EtcTps1
65604	EtcPps2
65605	EtcPps1
65613	EtcPps12
65615	EtcActuation
65616	EtcProcess
65618	EtcReturn
65675	CatalystA
65676	CatalystB
65701	CoolantLevel
65723	CamSensorW
65724	CamSensorX
65725	CamSensorY
65728	CamSensorZ
66002	StarterRelay
66003	MilDriver
66011	GasLockOff
66013	PowertrainDrv
66014	Powertrain
66015	FuelCtrlValve
66019	OxyHeater
66021	PostOxyHeater
75701	CoolantLevel
522545	MILLamp
522608	O2Heater
522609	RearO2
522610	Throttle

522611	ThrottleArea1
522612	ThrottleArea2
522613	ThrottleArea3
522614	ThrottleFailed
522615	ThrottleClosed
522616	Throttle
522617	ThrottleNotDwn
522630	O2LeanBank1
522631	O2RichBank1
522632	O2LeanBank2
522633	O2RichBank2
522635	LFBK1LeanFuel
522636	LFBK1RichFuel
522637	LFBK2LeanFuel
522638	LFBK2RichFuel
522690	SPIBusError
522691	ChecksumError
522692	RedundantFlt
522694	ChecksumError
522712	PedalSensor1
522713	PedalSensor2
522729	InjectorGain
522730	InjectorOffset
522731	P-Injector
522735	O2Bank1
522736	O2Bank1
522739	O2HeaterBank1
522740	O2HeaterBank2
522743	RachLeanResp1
522744	RachLeanResp2
522745	MarkSpaceRatio
522746	MarkSpaceRatio
522747	PeriodFltBank1
522748	PeriodFltBank2
522749	RachLeanResp1
522750	RachLeanResp2
522752	FailToStart
522755	FuelPump
523821	OilLamp
524260	5VPowerSupply
524261	5VPowerSupply
524266	ThrottleMotor
524286	ThrottleMotor
524287	TorqReduction

## 7.57 GM SECM Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
102	P-Intake
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
158	KeySwitch
190	EngineSpeed
632	FuelShtoff1
651	InjectorCyl 1
724	O2Sensor
911	ServComponent
912	ServComponent
913	ServComponent
1079	Supply1
1116	GasFuelCrrFct
1118	ExhOxygenDes
1119	ExhOxygen
1213	MalfunctLamp
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1379	ServiceCI
1442	FuelVlvPos1
1443	FuelVlvPos2
3057	OxygenBank1
3464	ThrottleCmd
524287*	HiddenCode

\*Hidden fault code by default

## 7.58 Guascor LECM E6 Fault Codes

Fault Code (SPN)	Text
516096	AFRLean
516097	AFRRich
516100	MAP1SensVoltLo
516101	MAP1SensVoltHi
516102	MAP2SensVoltLo
516103	MAP2SensVoltHi



516104	MAPDiffOOR
516105	MAPHi
516110	MAT1SensInpLo
516112	MAT1SensInpHi
516113	MAT2SensVoltLo
516114	MAT2SensVoltHi
516115	LossofMATsSens
516116	MATHi
516121	UEGO1Failure
516122	UEGONrnstVltLo
516123	UEGO1SensFlt
516124	UEGOAINsSensLo
516125	UEGOAINsSensHi
516126	UEGONrnstVltHi
516127	NOxSens1Alrm
516128	NOxSens2Alrm
516129	NOxSensHtrOpn
516130	NOxSensHtrShrt
516131	NOxSensOpen
516132	NOxSensShort
516133	NoxO2SensOpn
516134	NoxO2SensShrt
516135	NOxContrlFail
516161	CH4SensInpLo
516162	CH4SensInpHi
516167	TPS1InpVoltLo
516168	TPS1InpVoltHi
516169	TPS2InpVoltLo
516170	TPS2InpVoltHi
516171	BoostPSVoltLo
516172	BoostPSVoltHi
516173	Thrott1PWMMFlt
516174	Thrott2PWMMFlt
516175	BypassPWMMFlt
516176	EIDDriverFlt
516177	LamCCorrMax
516178	LamCCorrMin
516179	GQCLCCorrMax
516180	GQCLCCorrMin
516181	NOxCCorrMin
516182	NOxCCorrMax
516183	CAN1PortFlt
516184	CAN2PortFlt
516185	CAN3PortFlt
516186	CAN4PortFlt
516187	CAN1TxError
516188	CAN2TxError

516189	CAN3TxError
516190	CAN4TxError
516191	CAN1RxError
516192	CAN2RxError
516193	CAN3RxError
516194	CAN4RxError
516206	MisfireDetect
516209	PTPSensVoltLo
516210	PTPSensVoltHi
516211	MixThrtt1NotOK
516212	MixThrtt2NotOK
516213	BypassNotOK
516216	ThrottleLimit
516217	NOxSens1Wtchdg
516218	NOxSens2Wtchdg
516221	Tecjet1FGTHi
516222	Tecjet1FGPHi
516223	Tecjet1CoilHi
516225	Tecjet1FGTLo
516226	Tecjet1FGPLo
516229	Tcjet1FGTLoLim
516230	Tecjet1dPLoLim
516231	Tcjet1FGPLoLim
516233	Tcjet1FGTHiLim
516234	Tecjet1dPHiLim
516235	Tcjet1FGPHiLim
516236	Tecjet1FloNR
516239	Tecjet2FGTHi
516240	Tecjet2FGPHi
516243	Tecjet2FGTLo
516244	Tecjet2FGPLo
516245	Tecjet2CoilLo
516246	Tcjet2BattVLo
516247	Tcjet2FGTLoLim
516248	Tecjet2dPLoLim
516249	Tcjet2FGPLoLim
516250	Tcjet2BattVHi
516251	Tcjet2FGTHiLim
516252	Tecjet2dPHiLim
516253	Tcjet2FGPHiLim
516254	Tecjet2FloNR
516255	Tecjet1VivePos
516256	Tecjet1dPHi
516257	Tcjet1VivPosHi
516258	Tecjet1dPLo
516259	Tcjet1VivPosLo
516260	Tecjet1SD

516261	Tcjet1IntFlt
516262	Tcjet1ZeroPrs
516263	Tecjet2dPHi
516264	Tcjet2VlvPosHi
516265	Tecjet2dPLo
516266	Tcjet2VlvPosLo
516307	ProAct1Alarm
516308	ProAct2Alarm
516309	FseriesAlarm
516310	EasYgenWtchdog
516311	BioGasNA
516312	FuelBlndRatLo
516313	FuelBlndRatHi
516314	FuelBlndProcLo
516315	FuelBlndProcHi
516316	PwrFBRatioLim
516317	LdReducFBRatio
516318	ThrottleMax
516319	LoadSetpntNR
516320	TJ2PosLimiter
516321	FBProcLimiter
516322	EasYgenStpCmnd
516323	TCModulWtchdg
516380	EIDOpnPrmCyl1
516381	EIDOpnPrmCyl2
516382	EIDOpnPrmCyl3
516383	EIDOpnPrmCyl4
516384	EIDOpnPrmCyl5
516385	EIDOpnPrmCyl6
516386	EIDOpnPrmCyl7
516387	EIDOpnPrmCyl8
516388	EIDOpnPrmCyl9
516389	EIDOpnPrmCyl10
516390	EIDOpnPrmCyl11
516391	EIDOpnPrmCyl12
516392	EIDOpnPrmCyl13
516393	EIDOpnPrmCyl14
516394	EIDOpnPrmCyl15
516395	EIDOpnPrmCyl16
516396	EIDOpnPrmCyl17
516397	EIDOpnPrmCyl18
516398	EIDOpnPrmCyl19
516399	EIDOpnPrmCyl20
516400	EIDShrtCyl1
516401	EIDShrtCyl2
516402	EIDShrtCyl3
516403	EIDShrtCyl4

516404	EIDShrtCyl5
516405	EIDShrtCyl6
516406	EIDShrtCyl7
516407	EIDShrtCyl8
516408	EIDShrtCyl9
516409	EIDShrtCyl10
516410	EIDShrtCyl11
516411	EIDShrtCyl12
516412	EIDShrtCyl13
516413	EIDShrtCyl14
516414	EIDShrtCyl15
516415	EIDShrtCyl16
516416	EIDShrtCyl17
516417	EIDShrtCyl18
516418	EIDShrtCyl19
516419	EIDShrtCyl20
516500	PlugLifeCyl1
516501	PlugLifeCyl2
516502	PlugLifeCyl3
516503	PlugLifeCyl4
516504	PlugLifeCyl5
516505	PlugLifeCyl6
516506	PlugLifeCyl7
516507	PlugLifeCyl8
516508	PlugLifeCyl9
516509	PlugLifeCyl10
516510	PlugLifeCyl11
516511	PlugLifeCyl12
516512	PlugLifeCyl13
516513	PlugLifeCyl14
516514	PlugLifeCyl15
516515	PlugLifeCyl16
516516	PlugLifeCyl17
516517	PlugLifeCyl18
516518	PlugLifeCyl19
516519	PlugLifeCyl20
516520	EIDCrnkSensor
516521	EIDSyncSensor
516522	EIDCamSensor
516523	EIDTimingErr
516524	EIDOverspeed
516525	EIDMappingFit
516526	EIDBoostVoltLo
516527	EIDBoostVoltHi
516547	EIDCrankSignl
516548	EIDToothCount
516549	EIDSyncConfig

516550	EIDSyncSynch
516551	EIDSyncLoss
516552	EIDSyncSignal
516553	EIDSyncTthCnt
516554	EIDCamConfig
516555	EIDCamSynch
516556	EIDCamLoss
516557	EIDCamSignal
516558	EIDCamToothCnt
516559	EIDCAN1Severe
516560	EIDCAN1Intrmtn
516561	EIDCAN2Severe
516562	EIDCAN2Intrmtn
516563	EIDCAN3Severe
516564	EIDCAN3Intrmtn
516687	UEGO1VMShort
516688	UEGO1VMVubLoV
516689	UEGO1VMShrtBat
516690	UEGO1VMOpnWire
516691	UEGO1UNShort
516692	UEGO1UNVubLoV
516693	UEGO1UNShrtB+
516694	UEGO1UNOpnWire
516695	UEGO1IA/IPShrt
516696	UEGO1IA/VubLoV
516697	UEGO1IA/ShrtB+
516698	UEGO1IAOpnWire
516699	UEGO1HTROpnWir
516700	UEGO1HTRShrt
516701	UEGO1HTROvrTmp
516702	UEGO1RunFail
516703	UEGO1FailHeat
516704	UEGO1CtITmpWnd
516705	UEGO1AirCalLim
516706	UEGO1AirCalFit
516707	LECMBootUp
516708	MAPDiffOOR
516709	LossMAPSensr
516710	BackfreIntMan
516711	MAP HH
516712	EngOverspeed
516713	ExternalESD
516714	InternalESD
516715	LossLoadSens
516716	LoadHiHi
516717	LossMATsens
516718	MATHiHi

516719	LubeOilTmpHiHi
516720	FuelVlv1Msmtdch
516721	FuelVlv2Msmtdch
516722	AirTempHiHi
516732	Thrott1PWMFlt
516733	Thrott2PWMFlt
516734	BypassPWMFlt
516735	EIDDriverFlt
516736	CAN1PortFlt
516737	CAN2PortFlt
516738	CAN3PortFlt
516739	CAN4PortFlt
516749	MisfireDetect
516750	MixThrot1NotOK
516751	MixThrot2NotOK
516752	BypassNotOK
516753	UncntrlOvrpwr
516754	Tecjet1Wtchdg
516755	Tecjet2Wtchdg
516756	KnockWatchdog
516757	IgnitionWtchdg
516758	Proact1Wtchdg
516759	Proact2Wtchdg
516760	FSries1Wtchdg
516761	TJ1CANFloDmnd
516762	TJ2CANFloDmnd
516763	TJ1ValvePos
516764	Tecjet1SD
516765	TJ1IntrnlFlt
516766	TJ1ZeroPrsDet
516767	TJ1KeySWOFF
516768	TJ2VlvPosErr
516769	Tecjet2SD
516770	TJ2IntrnlFlt
516771	TJ2ZeroPrsDet
516772	TJ2KeySWOFF
516773	IOLockAssrtd
516783	Proact1RunEna
516784	Proact1GnrlSD
516785	Proact2RunEna
516786	Proact2GnrlSD
516787	F-SriesBoostSD
516788	EasYgenWtchdg
516789	TCModlWtchdg
516858	StartFail
516859	EngineStall
516860	IgnitionOffRun

516861	IgnOffCool
516862	EIDIgnitionSD
516863	EIDHiTempSD
516864	EIDDrvrEnabSD
516865	EIDDrvrEnaSDSU
516866	KnockSensFail
524287*	HiddenCode

\*Hidden fault code by default

## 7.59 Hatz EDC17 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.60 Huegli Tech SG50 & SG100 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.61 Heinzmann Ariadne Fault Codes

Fault Code (SPN)	Text
102	P-Intake
190	EngineSpeed
228	Spd-SensCalib
627	Pwr-Supply
628	ProgramMemory
629	Controller1
639	J1939CANBus
723	Spd-Speed2
810	ErrOverSpeed
1136	T-ECU
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09







733	ErrFeedback
810	ErrOverSpeed
974	APPRemote
1204	ElectricalLoad
524287*	HiddenCode

\*Hidden fault code by default

## 7.65 Heinzmann Pandaros Fault Codes

Fault Code (SPN)	Text
91	APP
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
501	Signage
625	ErrCANBus
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
638	FuelRack1Act
723	Spd-Speed2
733	ErrFeedback
810	ErrOverSpeed
974	APPRemote
1204	ElectricalLoad
524287*	HiddenCode

\*Hidden fault code by default

## 7.66 Heinzmann Phlox Fault Codes

Fault Code (SPN)	Text
102	P-Intake
190	EngineSpeed
228	Spd-SensCalib
627	Pwr-Supply
628	ProgramMemory
629	Controller1
636	PositionSensor
639	J1939CANBus
723	Spd-Speed2

810	ErrOverSpeed
1136	T-ECU
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1278	IgnitionCoil11
1279	IgnitionCoil12
1280	IgnitionCoil13
1281	IgnitionCoil14
1282	IgnitionCoil15
1283	IgnitionCoil16
1284	IgnitionCoil17
1285	IgnitionCoil18
1286	IgnitionCoil19
1287	IgnitionCoil20
1288	IgnitionCoil21
1289	IgnitionCoil22
1290	IgnitionCoil23
1291	IgnitionCoil24
1292	IgnCntrModule1
1434	IgnitionTime2
1435	IgnitionTime3
1436	IgnitionTime
1464	ErrIgnitTiming
3590	GenkW
524287*	HiddenCode

\*Hidden fault code by default

## 7.67 Isuzu ECM Fault Codes

Fault Code (SPN)	Text
91	APP
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
157	P-Fuel1Inj1Met
158	KeySwitch
172	T-AirIntake1
174	T-Fuel
190	EngineSpeed
628	ProgramMemory
633	FuelActCmd
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
675	GlowPlugLamp
676	GlowPlugRelay
677	StarterMotor
697	PWMDriver1
723	Spd-Speed2
987	ProtectLamp
1077	FuelInjPump
1079	Supply1
1080	Supply2
1131	T-IntManifold2
1239	FuelLeakage1
1240	FuelLeakage2
1347	FuelPmpAsmbl1
1381	P-FuelPmpInt
1485	ECMMainRelay
10001	EGRPosition
10002	EGRValveCntr
10003	InjectNozzCom1
10004	InjectNozzCom2
10005	ChargeCircuit1
10006	ChargeCircuit2
10007	CPU

10008	A/Dconversion
10009	5VSupplyFail3
10010	5VSupplyFail4
10011	5VSupplyFail5
10013	EEPROM
10032	QRCode
10033	RAM
10044	SCR
10045	ADIC
10046	Sw-IC1Int
10048	Sw-IC1Comm
10050	Injector
10051	InjComm
10052	InjCheckSum
524287*	HiddenCode

\*Hidden fault code by default

## 7.68 Iveco EDC Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired

620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
60717	TSC1Checksum
65579*	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens
65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error
65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad

65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error
65652	Bank2Error
65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPctl
65685	PCRDeviation
65686	Cyl1Timing
65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2
65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstlv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity
65711	SPN1Message

131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator
131218	BPA
131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message
262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr
262296	Cylinder6
262312	WrongUrea
262319	SPN4Message
524287*	HiddenCode

\*Hidden fault code by default

## 7.69 Iveco EDC Main Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir



107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDAApproach
1110	EPS Shutdown
1485	ECMMainRelay
60717	TSC1Checksum
65579*	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens
65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error

65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad
65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error
65652	Bank2Error
65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPCTl
65685	PCRDeviation
65686	Cyl1Timing
65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2

65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstlv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity
65711	SPN1Message
131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator
131218	BPA
131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message
262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr

262296	Cylinder6
262312	WrongUrea
262319	SPN4Message
524287*	HiddenCode

\*Hidden fault code by default

## 7.70 Iveco Adem III Fault Codes

Fault Code (SPN)	Text
29	APP2
100	P-Oil
105	T-IntManifold
108	P-Barometric
109	P-Coolant1
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
677	StarterMotor
723	Spd-Speed2
729	IntAirHeater1
1108	EPS TimerOvrd
1127	P-Turbo1Boost
1239	FuelLeakage1
1661	AutoStartLamp
1980	Overspeed
1981	P-OilLamp
1984	SDLamp
1985	5VSupplyJ1
1986	RemoteOperLamp
1987	T-ColdLamp

1993	WrmLamp
1994	DiagnosticLamp
1995	PersModuleErr
1997	FuelValve
1998	5VSupplyJ2
524287*	HiddenCode

\*Hidden fault code by default

## 7.71 Iveco MD1 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1

652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1043	V-ECUSupply
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
4781	DPFSoot
5466	DPFSootThr
60717	TSC1Checksum
65579	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens
65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error
65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad
65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error

65652	Bank2Error
65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPctl
65685	PCRDeviation
65686	Cyl1Timing
65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2
65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstlv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity
65711	SPN1Message
131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator

131218	BPA
131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message
262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr
262296	Cylinder6
262312	WrongUrea
262319	SPN4Message
518201	ECU PowerRelay
518254	Checksum
518255	RollingCounter
519859	TorqueLimAct
524287*	HiddenCode

\*Hidden fault code by default

## 7.72 Iveco MD1 IPU Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir



107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1043	V-ECUSupply
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
4781	DPFSoot
5466	DPFSootThr
60717	TSC1Checksum
65579	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens

65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error
65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad
65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error
65652	Bank2Error
65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPctl
65685	PCRDeviation
65686	Cyl1Timing

65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2
65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstlv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity
65711	SPN1Message
131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator
131218	BPA
131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message

262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr
262296	Cylinder6
262312	WrongUrea
262319	SPN4Message
518201	ECU PowerRelay
518254	Checksum
518255	RollingCounter
519859	TorqueLimAct
524287*	HiddenCode

\*Hidden fault code by default

## 7.73 Iveco MD1 Marine Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1

630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1043	V-ECUSupply
1109	EPS SDAApproach
1110	EPS Shutdown
1485	ECMMainRelay
4781	DPFSoot
5466	DPFSootThr
60717	TSC1Checksum
65579	PSAirHeater1
65585	T-CoolantSens
65588	P-BoostSens
65589	T-FuelSens
65592	P-OilSens
65594	OilTempSens
65617	Cyl1Error
65618	Cyl2Error
65619	Cyl3Error
65620	Cyl4Error
65621	Cyl5Error
65622	Cyl6Error
65625	PWMPowerstage
65626	AD-Channel
65627	P-High
65633	Cyl1ShortCir
65634	Cyl2ShortCir
65635	Cyl3ShortCir
65636	Cyl4ShortCir
65637	Cyl5ShortCir
65638	Cyl6ShortCir
65639	Cyl1OpenLoad
65640	Cyl2OpenLoad
65641	Cyl3OpenLoad
65642	Cyl4OpenLoad
65643	Cyl5OpenLoad

65644	Cyl6OpenLoad
65645	RailMonitor
65649	Bank1Error
65650	Bank1Error
65651	Bank2Error
65652	Bank2Error
65659	Misfire
65660	ChipError
65662	InjectionLimit
65668	SRA2EDC
65669	Load-IdleRange
65670	V-Supply
65671	PosGovernor
65672	NegGovernor
65673	EGRPowerStage
65674	EGRBypass
65675	ThrottActuator
65677	PosGovernor
65678	NegGovernor
65679	RgnNrmTime
65681	P-Boost
65682	BPA
65683	Spd-Turbine
65684	EPctl
65685	PCRDeviation
65686	Cyl1Timing
65687	Cyl1Calibr
65688	Cylinder5
65689	P-P2
65690	Spd-Turbine
65691	Spd-TurbineHi
65692	P-P3
65693	T-InnerCtrl
65694	T-OuterCtrl
65695	EGSys-NOxEstlv
65697	LambdaNox
65698	NoxSensor
65699	NoxSensor
65700	NoxSensor
65701	DM1DCUTimeout
65702	SCR1Timeout
65704	LowUreaLevel
65705	T-Gas
65707	VDC1
65708	EGR
65709	T-ExhaustGas
65710	AirHumidity

65711	SPN1Message
131206	AirMassSignal
131208	GovernorCheck
131209	EGRPowerStage
131211	ValveActuator
131218	BPA
131221	PCRCheck
131222	Cyl2Timing
131223	Cyl2Calibr
131224	Cylinder6
131233	LambdaNox
131238	SCR2Timeout
131240	LowUreaLevel
131243	P-GasPipe
131244	GasFlowRt
131247	SPN2Message
196741	DriftLimit
196742	AirMassSignal
196745	EGRPowerStage
196747	TVA
196754	BPA
196758	Cyl3Timing
196759	Cyl3Calibr
196760	Cylinder5
196776	UreaSensor
196783	SPN3Message
262278	Reference
262294	Cyl4Timing
262295	Cyl4Calibr
262296	Cylinder6
262312	WrongUrea
262319	SPN4Message
518201	ECU PowerRelay
518254	Checksum
518255	RollingCounter
519859	TorqueLimAct
524287*	HiddenCode

\*Hidden fault code by default

## 7.74 Iveco EDC17 Fault Codes

Fault Code (SPN)	Text
27	EGR1
91	APP
97	WaterInFuel
100	P-Oil
102	P-Intake

105	T-IntManifold
108	P-Barometric
110	T-Coolant
152	ECUResets
157	P-Fuel1Inj1Met
166	Pwr-Rated
168	Battery
171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
641	TurboGeometry
651	InjectorCyl 1
652	InjectorCyl 2
654	InjectorCyl 4
656	InjectorCyl 6
675	GlowPlugLamp
676	GlowPlugRelay
677	StarterMotor
1116	GasFuelCrrFct
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1209	P-ExhaustPres1
1240	FuelLeakage2
1321	StarterLockout
1442	FuelVlvPos1
1443	FuelVlvPos2
1485	ECMMainRelay
1648	ECU fault
1675	StarterMode
2791	EGR1Vlv1
2797	FuelInjectorG1
2798	FuelInjectorG2
3242	T-DPFIntake
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3597	Pwr-OutSupply1
3606	SDRequest
3607	ESDRequest
4009	FuelFiltHeater
4076	T-Coolant2
4207	MsgChecksum



4765	T-AT1CatalInt
5006	MoCSOP
5246	SCR Severity
5313	DPFSootDeviat
5319	DPFIncomplReg
5324	GlwPlgPLUGSC_0
5325	GlwPlgPLUGSC_3
5326	GlwPlgPLUGSC_1
5327	GlwPlgPLUGSC_2
5358	Cyl1InjFuelQlt
5359	Cyl2InjFuelQlt
5361	Cyl4InjFuelQlt
5363	Cyl6InjFuelQlt
5419	ThrottleAct
5441	MoFinjDat
5466	DPFSootThr
5571	CRReliefVlv
5572	ADC fault
5838	EGRVlvMalfunct
516445	EGRVlvCircuit
518144	ECUInternalFlt
518145	ECUInternalFlt
518146	PwrStagesInj
518147	PwrStagesInj
518148	PwrStagesInj
518149	MoFinjQnt
518152	MoFOvR
518153	MonLimCurr
518154	MonLimLead
518155	MoFTTrqCmp
518156	MonLimSet
518500	GlwPlgDiagErr
518506	GlwPlgSCG
519095	TrbChOvrTemp
519198	EGR Valve
519199	EGR Valve
519212	EGRRglNpl1
519545	DPF Temp
519744	RailMeUn
519745	RailMeUn3
520194	ThrottleVlv
520195	ThrottleVlv
520615	R2S2_MscComm1
524287*	HiddenCode

\*Hidden fault code by default

## 7.75 JCB Delphi DCM Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
84	Spd-WheelBased
86	CruiseCSetSpd
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4

655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
731	Knock1
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
1075	LiftPump
1076	FuellnjPump
1079	Supply1
1080	Supply2
1083	AuxiliaryIO 1
1109	EPS SDAproach
1110	EPS Shutdown
1213	MalfunctLamp
1485	ECMMainRelay
1804	StartEnbl2
2648	Maintenance
3695	RegenInhibit
3696	RegenForce
521318	EGR L2
521325	InterruptL2
521327	Quality L2
521328	Tampering L2
521367	EGR L1
521369	EGRWrnlnduce
521370	InterruptL 1
521372	InterWrnlnduce
521373	DEFLevWrnlnduc
521377	Quality L1
521379	QualWrnlnduce
521380	Tampering L 1
521382	TamperWrnlnduc
521451	DEF Level L1
521452	DEF Level L2
521459	SCRCatStatVHi
521460	SCRCatStatCrit
524287*	HiddenCode

\*Hidden fault code by default

## 7.76 JCB Delphi DCM Main Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
84	Spd-WheelBased
86	CruiseCSetSpd

91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
731	Knock1
898	Spd-Requested

970	AuxShutdown
971	DerateSw
974	APPRemote
1075	LiftPump
1076	FuelInjPump
1079	Supply1
1080	Supply2
1083	AuxiliaryIO 1
1109	EPS SDApproach
1110	EPS Shutdown
1213	MalfunctLamp
1485	ECMMainRelay
1804	StartEnbl2
2648	Maintenance
3695	RegenInhibit
3696	RegenForce
521318	EGR L2
521325	InterruptL2
521327	Quality L2
521328	Tampering L2
521367	EGR L1
521369	EGRWrnInduce
521370	InterruptL1
521372	InterWrnInduce
521373	DEFLevWrnInduc
521377	Quality L1
521379	QualWrnInduce
521380	Tampering L1
521382	TamperWrnInduc
521451	DEF Level L1
521452	DEF Level L2
521459	SCRCatStatVHi
521460	SCRCatStatCrit
524287*	HiddenCode

\*Hidden fault code by default

## 7.77 JCB Delphi DCM Att Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
84	Spd-WheelBased
86	CruiseCSetSpd
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil

101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
731	Knock1
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
1075	LiftPump
1076	FuelInjPump

1079	Supply1
1080	Supply2
1083	AuxiliaryIO 1
1109	EPS SDApproach
1110	EPS Shutdown
1213	MalfunctLamp
1485	ECMMainRelay
1804	StartEnbl2
2648	Maintenance
3695	RegenInhibit
3696	RegenForce
521318	EGR L2
521325	InterruptL2
521327	Quality L2
521328	Tampering L2
521367	EGR L1
521369	EGRWrnInduce
521370	InterruptL1
521372	InterWrnInduce
521373	DEFLevWrnInduc
521377	Quality L1
521379	QualWrnInduce
521380	Tampering L1
521382	TamperWrnInduc
521451	DEF Level L1
521452	DEF Level L2
521459	SCRCatStatVHi
521460	SCRCatStatCrit
524287*	HiddenCode

\*Hidden fault code by default

## 7.78 John Deere JDEC Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl

157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
237	VIN
412	T-EGR1
515	Spd-Desired
611	SysDiagCode1
620	5VSupply
627	Pwr-Supply
629	Controller1
632	FuelShtoff1
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1076	FuelInjPump
1077	FuelInjPump
1078	FuelInjPump
1079	Supply1
1080	Supply2
1109	EPS SDApproach
1110	EPS Shutdown
1172	T-Turbo1CInt
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1485	ECMMainRelay
1569	TorqueDerate
2000	SA 0
2630	T-AirCoolerOut
524287*	HiddenCode

\*Hidden fault code by default



## 7.79 Kohler KDI Fault Codes

Fault Code (SPN)	Text
28	APP3
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
96	FuelLevel1
97	WaterInFuel
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
167	SysCharging
171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
249	TtlRevolutions
430	V-StarterSolen
626	StartEnbl1
637	TimingSensor
1083	AuxiliaryIO 1
1084	AuxiliaryIO 2
1127	P-Turbo1Boost
1349	P-Fuel1Inj2
1382	P-FuelFiltDiff
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput
1639	Spd-Fan
2791	EGR1Vlv1
2802	DataMemoryUsg
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3250	T-DPFIntermed
3251	P-DPFDiff
3349	TranTSC1Rate
3509	SensorSupply01
3510	SensorSupply02
3720	DPFAshLoad

3936	DPFSystem
4082	FuelPump
4781	DPFSoot
5283	THCACH/L
5829	EGR1Vlv1Err
521272	Intercharge
523350	COM1InjDrive
523352	COM2injDrive
524287*	HiddenCode

\*Hidden fault code by default

## 7.80 Kohler KDI Main Fault Codes

Fault Code (SPN)	Text
28	APP3
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
96	FuelLevel1
97	WaterInFuel
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
167	SysCharging
171	T-AmbientAir
174	T-Fuel
190	EngineSpeed
249	TtlRevolutions
430	V-StarterSolen
626	StartEnbl1
637	TimingSensor
1083	AuxiliaryIO 1
1084	AuxiliaryIO 2
1127	P-Turbo1Boost
1349	P-Fuel1Inj2
1382	P-FuelFiltDiff
1393	Cyl 1IgnOutput
1394	Cyl 2IgnOutput
1395	Cyl 3IgnOutput
1396	Cyl 4IgnOutput

1639	Spd-Fan
2791	EGR1Vlv1
2802	DataMemoryUsg
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3250	T-DPFIntermed
3251	P-DPFDiff
3349	TranTSC1Rate
3509	SensorSupply01
3510	SensorSupply02
3720	DPFAshLoad
3936	DPFSystem
4082	FuelPump
4781	DPFSoot
5283	THCACH/L
5829	EGR1Vlv1Err
521272	Intercharge
523350	COM1InjDrive
523352	COM2injDrive
524287*	HiddenCode

\*Hidden fault code by default

## 7.81 Kohler KDI Att Fault Codes

Fault Code (SPN)	Text

## 7.82 Kubota Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
100	P-Oil
102	P-Intake
108	P-Barometric
110	T-Coolant
157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
190	EngineSpeed
628	ProgramMemory
633	FuelActCmd
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2

653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
677	StarterMotor
679	P-InjRegulator
723	Spd-Speed2
1077	FuelInjPump
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
3246	T-DPFOutlet
3251	P-DPFDiff
3252	AT1Exh2FMI
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3701	DPFStatus
4765	T-AT1CatalInt
523523	Comm1Injector
523524	Comm2Injector
523525	V-InjectorChrg
523527	FlashROM
523535	V-InjectorChrg
523536	EGRFeedback
523537	T-EGRMotor
523539	PumpSeizing
523540	PumpSeizing
523541	EGRLiftSensor
523543	APP CANbus
523544	GlowRelay
523547	CAN2busOff
523548	CAN2busError
523572	EGRActuator
523574	EGRActuator
523575	EGRMotor
523576	EGRMotor
523577	EGRMotor
523578	EGRCommError
523580	IntThtrtFdb
523582	IntThtrtLift
523589	T-LowCoolant
523590	ParkRegenTimeO
523591	CAN CCVSError
523592	CAN CM1Error
523593	CAN DDC1Error
523594	CAN ETC2Error

523595	CAN ETC5Error
523596	CAN TSC1Error
523598	CAN EBC1Error
523599	T-ExhSensor
523600	InitPumpCalib
523601	T-ExhGas
523602	GenFrequency
523604	CAN1busOff
523700	EEPROM
523701	EEPROM
523702	EEPROM
524287*	HiddenCode

\*Hidden fault code by default

## 7.83 Kubota EDC17 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
97	WaterInFuel
100	P-Oil
102	P-Intake
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
157	P-Fuel1Inj1Met
168	Battery
171	T-AmbientAir
172	T-AirIntake1
190	EngineSpeed
628	ProgramMemory
633	FuelActCmd
636	PositionSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
676	GlowPlugRelay
677	StarterMotor
679	FuelInjPrsReg
723	Spd-Speed2
1077	FuelInjPump
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
3242	T-DPFIntake
3246	T-DPFOutlet

3251	P-DPFDiff
3252	AT1Exh2FMI
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3701	DPFStatus
3936	DPFSystem
4765	T-AT1CatalInt
4772	T-AT2CatalOut
523523	Cyl1and4Short
523524	Cyl2and3Short
523525	InjectChrgVLow
523527	ECU CPUerr
523535	InjectChrgVHi
523538	QR data error
523543	AccPosSensErr
523544	BShortAidRelay
523547	CAN2 Bus off
523548	CAN-KubotaErr
523572	EGRPosSensFail
523574	EGRActuator
523575	EGR Actuator
523576	EGR Overheat
523577	EGR TempSens
523578	EGRCommErr
523580	IntakeThrottle
523582	IntakeThrottle
523589	LowCoolantTemp
523590	ManRegenT/Out
523591	CAN CCVS err
523592	CAN CM1 Err
523593	CAN DDC1 Err
523594	CAN ETC2 Err
523595	CAN ETC5 Err
523596	CAN TSC1 Err
523598	CAN EBC1 Err
523599	ExhstTempSens
523601	HiExhstTemp
523602	HiFreqRegen
523603	Pre-Overheat
523604	CAN1 Bus off
523605	IntInjectShort
523637	ThrctlCommErr
523700	EEPROMchecksum
524287*	HiddenCode

\*Hidden fault code by default

## 7.84 Liebherr LIDEC1 Fault Codes

Fault Code (SPN)	Text
27	EGR1
29	APP2
81	DPFIntake
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
158	KeySwitch
171	T-AmbientAir
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
1136	T-ECU
1172	T-Turbo1CInt
1174	T-Turbo3CInt
1176	P-Turbo1Intake
1178	P-Turbo3Intake
1349	P-Fuel1Inj2
1638	T-Hydraulic
1761	DEFTnkLevel
1800	T-BatterySLI1
2629	T-Turbo1Outlet
2630	T-AirCoolerOut
2799	T-Turbo2Outler
2801	T-Turbo4Outler
524287*	HiddenCode

\*Hidden fault code by default

## 7.85 Liebherr LIDEC2 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
100	P-Oil

100	P-Oil
102	P-Intake
102	P-Intake
105	T-IntManifold
105	T-IntManifold
105	T-IntManifold
108	P-Barometric
158	KeySwitch
175	T-Oil
175	T-Oil
175	T-Oil
190	EngineSpeed
190	EngineSpeed
633	FuelActCmd
636	PositionSensor
636	PositionSensor
639	J1939CANBus
677	StarterMotor
695	OverrideMode
731	Knock1
898	Spd-Requested
900	TorqueMode
973	RetarderSelect
1136	T-ECU
1136	T-ECU
1136	T-ECU
1172	T-Turbo1CInt
1212	T-AuxCoolant
1212	T-AuxCoolant
1231	Can2
1294	SparkPlug 1
1295	SparkPlug 2
1296	SparkPlug 3
1297	SparkPlug 4
1298	SparkPlug 5
1299	SparkPlug 6
1300	SparkPlug 7
1301	SparkPlug 8
1302	SparkPlug 9
1303	SparkPlug10
1303	SparkPlug10
1304	SparkPlug11
1305	SparkPlug12
1306	SparkPlug13
1307	SparkPlug14
1308	SparkPlug15
1309	SparkPlug16



1310	SparkPlug17
1311	SparkPlug18
1312	SparkPlug19
1313	SparkPlug20
1313	SparkPlug20
1352	Cyl 1KnockLvl
1353	Cyl 2KnockLvl
1354	Cyl 3KnockLvl
1355	Cyl 4KnockLvl
1356	Cyl 5KnockLvl
1357	Cyl 6KnockLvl
1358	Cyl 7KnockLvl
1359	Cyl 8KnockLvl
1360	Cyl 9KnockLvl
1361	Cyl10KnockLvl
1362	Cyl11KnockLvl
1363	Cyl12KnockLvl
1364	Cyl13KnockLvl
1365	Cyl14KnockLvl
1366	Cyl15KnockLvl
1367	Cyl16KnockLvl
1368	Cyl17KnockLvl
1369	Cyl18KnockLvl
1370	Cyl19KnockLvl
1371	Cyl20KnockLvl
1372	Cyl21KnockLvl
1373	Cyl22KnockLvl
1374	Cyl23KnockLvl
1375	Cyl24KnockLvl
1620	TachographCom
1668	Can4
3464	ThrottleCmd
3597	Pwr-OutSupply1
3938	GenGovernBias
3938	GenGovernBias
5374	AirThrottleVlv
5386	TurboWstgAct1
5445	AirThrottleVlv
5783	T-EGR1Out
6651	Knock2
516140	EcuTSnsr2
516141	EcuTSnsr3
516184	DashboardCom
516191	InjBoostUWarn
516195	PLCCOM
516197	SecInjEcuCom
516245	SmrtSnsrRly

516340	WstgCom
516351	IcoDwnPSnsr
516356	ComWithSecEcu
516424	StrtrDigInpSc
516493	SecInjEcuErr
516497	AirThrottleVlv
516498	AirThrottleVlv
516499	AirThrottleVlv
516500	AirThrottleVlv
516511	StartersConn
516519	GeneratorSynch
516520	PwrFbPlaus
516521	PwrFbU
516522	PwrFbCurr
516523	PwrFbSp
516526	GCB
516533	Wastegate
516534	Wastegate
516535	Wastegate
516536	Wastegate
516537	Wastegate
516538	Wastegate
516539	Wastegate
516540	Wastegate
516541	Wastegate
516542	CabCtrlrCom
516544	EngStrtrPlaus
516563	DigOutHiSide3
516569	IgnCtrlrCom2
516579	GasSplyVlv1
516580	GasSplyVlv2
516609	PowerDeviation
516610	WarningKnk1
516611	WarningKnk10
516612	WarningKnk11
516613	WarningKnk12
516614	WarningKnk13
516615	WarningKnk14
516616	WarningKnk15
516617	WarningKnk16
516618	WarningKnk17
516619	WarningKnk18
516620	WarningKnk19
516621	WarningKnk2
516622	WarningKnk20
516623	WarningKnk21
516624	WarningKnk22

516625	WarningKnk23
516626	WarningKnk24
516627	WarningKnk3
516628	WarningKnk4
516629	WarningKnk5
516630	WarningKnk6
516631	WarningKnk7
516632	WarningKnk8
516633	WarningKnk9
516634	CmbChmbTSnsr1
516635	CmbChmbTSnsr2
516636	CmbChmbTSnsr3
516637	CmbChmbTSnsr4
516638	CmbChmbTSnsr5
516639	CmbChmbTSnsr6
516640	CmbChmbTSnsr7
516641	CmbChmbTSnsr8
516642	CmbChmbTSnsr9
516643	CmbChmbTSnsr10
516644	CmbChmbTSnsr11
516645	CmbChmbTSnsr12
516646	CmbChmbTSnsr13
516647	CmbChmbTSnsr14
516648	CmbChmbTSnsr15
516649	CmbChmbTSnsr16
516650	CmbChmbTSnsr17
516652	CmbChmbTSnsr18
516653	CmbChmbTSnsr19
516654	CmbChmbTSnsr20
516692	CooltTSnsrOut
516693	3WayVlvEngOpen
516694	3WayVlvIcoCls
516695	CooltTSnsrIn
516696	CooltTSnsrVlv1
516697	CooltTSnsrVlv2
516698	CooltEngInT
516699	3WayVlvEngCls
516700	3WayVlvIcoOpen
516701	CooltEngOutT
516702	CooltEngVlvP1
516703	CooltEngVlvP2
516704	CooltPSnsrVlv1
516705	CooltPSnsrVlv2
516706	CooltEngVlvP1
516706	CooltPEngIn
516740	CooltEngVlvT1
516741	CooltEngVlvT2

516742	SpdAdjmtCurr
516743	KnockSensor3
516744	KnockSensor4
516745	KnockSensor5
516746	KnockSensor6
516767	KnockSensor1
516768	KnockSensor2
516769	KnockSensor3
516770	KnockSensor4
516771	KnockSensor5
516772	KnockSensor6
516773	KnockSensor7
516774	KnockSensor8
516775	KnockSensor9
516776	KnockSensor10
516777	KnockSensor11
516778	KnockSensor12
516779	KnockSensor13
516780	KnockSensor14
516781	KnockSensor15
516782	KnockSensor16
516783	KnockSensor17
516784	KnockSensor18
516785	KnockSensor19
516786	KnockSensor20
516787	KnockSensor21
516788	KnockSensor22
516789	KnockSensor123
516790	KnockSensor24
524287*	HiddenCode

\*Hidden fault code by default

## 7.86 Mahindra AFS Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.87 MAN MFR Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler

81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual

514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable

981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant

1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2



3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.88 MAN EDC17 Master Fault Codes

Fault Code (SPN)	Text
81	DPFIntake
94	P-FuelDelivery
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
168	Battery
171	T-AmbientAir
173	T-Exhaust
609	Controller2
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
1079	Supply1

1080	Supply2
1131	T-IntManifold2
1761	DEFTnkLevel
524287*	HiddenCode

\*Hidden fault code by default

## 7.89 MAN EDC17 Slave Fault Codes

Fault Code (SPN)	Text
81	DPFIntake
94	P-FuelDelivery
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
168	Battery
171	T-AmbientAir
173	T-Exhaust
609	Controller2
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
1079	Supply1
1080	Supply2
1131	T-IntManifold2
1761	DEFTnkLevel
524287*	HiddenCode

\*Hidden fault code by default

## 7.90 MAN EDC17 Fault Codes

Fault Code (SPN)	Text
81	DPFIntake
94	P-FuelDelivery
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
110	T-Coolant
168	Battery
171	T-AmbientAir
173	T-Exhaust

609	Controller2
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
1079	Supply1
1080	Supply2
1131	T-IntManifold2
1761	DEFTnkLevel
524287*	HiddenCode

\*Hidden fault code by default

## 7.91 MAN MFR Master Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch

159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12

663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4

1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2

3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.92 MAN MFR Slave Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFiltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN



247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested

970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19

1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch

3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.93 MAN MFR Statistics Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff

100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp

626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown

1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel

1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig



3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFiltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.94 Marathon DVR2000EC Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.95 MESA SECM70 Fault Codes

Fault Code (SPN)	Text
51	ThrotVlvPosHgh
51	ThrotVlvPosLow
51	ThrotVlvStat
51	ThrotVlvFault
51	TPSdataDrift
51	TPS1LowPosLow
51	TPS1HghPosHgh
51	TPS1HghPosLow
51	TPSsensConf
51	TPSintermitten
100	P-OilLow
100	P-OilVhgh
100	P-OilVlow
100	P-Oil
102	P-IntVhgh
102	P-IntVlow
102	P-IntDataDrftL
102	P-IntDataDrftH

105	T-IntManVhgh
105	T-IntManVlow
105	T-IntManRng
105	T-IntManHTE
106	P-IntManDriftH
106	P-IntManVhgh
106	P-IntManVlow
106	P-IntManDriftL
106	P-IntManKeyOn
106	P-IntManConn
106	P-IntManStuck
106	P-IntManXcheck
106	P-IntManBckfir
110	T-CoolVhigh
110	T-CoolVlow
110	T-CoolOvrTmp
110	T-CoolOvrHeat
110	T-CoolStuck
110	T-CoolSlow
168	BatteryHTE
168	BatteryLTE
168	DrvpHTE
173	T-ExhaustVhgh
173	T-ExhaustHTE
173	T-ExhaustVlow
175	T-OilVhgh
175	T-OilVlow
175	T-OilHgh
175	T-OilRlow
189	SpeedRefInpHgh
189	SpeedRefInpLow
190	Overspeed
629	CPUloadHgh
629	MemFaultRAM
629	MemFaultFLASH
632	NatGasFuelLock
632	FuelSOstuckOpn
632	LowFuelPress
636	CrkSensorLoss
636	CrkSensorSync
636	CrkSensorOther
636	CrkSensorPhase
637	CamSensorOther
637	CamSensorPhase
637	CamPhaserDrv
637	CamSensorLoss
639	CANbus

639	CANbusWarn
725	HEIESTbypOp
731	KnockSensOp
731	KnockSensSTG
855	UEGOHtrTempHgh
855	UEGOHtrTempLow
855	UEGOHtrSTG
855	UEGOHtrOp
855	UEGOHtrSTB
855	UEGOHtrTempCtl
916	TimeBaseSrv1
916	TimeBaseSrv2
916	TimeBaseSrv3
977	Fan1ShortOp
1131	P-Int2Vhgh
1131	P-Int2Vlow
1131	P-Int2HTE
1188	WasteGateOpSTG
1204	EngineOverload
1213	MILopSTG
1247	EngineOverPwr
1257	Sprk8MaxCur
1268	Sprk1MaxCur
1268	Sprk1OpenPr
1269	Sprk2MaxCur
1269	Sprk2OpenPr
1270	Sprk3MaxCur
1270	Sprk3OpenPr
1271	Sprk4MaxCur
1271	Sprk4OpenPr
1272	Sprk5MaxCur
1272	Sprk5OpenPr
1273	Sprk6MaxCur
1273	Sprk6OpenPr
1274	Sprk7MaxCur
1274	Sprk7OpenPr
1275	Sprk8OpenPr
1322	MisfSnglMulti
1322	MisfSevere
1323	MisfCyl1
1324	MisfCyl2
1325	MisfCyl3
1326	MisfCyl4
1327	MisfCyl5
1328	MisfCyl6
1329	MisfCyl7
1330	MisfCyl8

1352	KnockCyl1
1353	KnockCyl2
1354	KnockCyl3
1355	KnockCyl4
1356	KnockCyl5
1357	KnockCyl6
1358	KnockCyl7
1359	KnockCyl8
1391	PdeltaVhgh
1391	PdeltaVlow
1391	PdeltaHTE
1391	PdeltaLTE
1391	PdeltaZeroOffs
1442	EFRvIvStat
1442	EFRposVlow
1442	EFRposVhgh
1442	EFRvIvDrift
1442	EFRposAdaptLow
1442	EFRposAdaptHgh
1639	FanCILoppCtrl
1639	FanUnexpNoise
1675	AutoCrkAtmptEx
1675	AutoCrkAtmpt
1675	StarterRelay
1692	BoostP-HTE
1692	BoostP-LTE
1692	BoostP-Overb
1695	O2learnHgh
1695	O2learnLow
1695	O2learnHgh
1695	O2learnLow
2452	LoadSensVhgh
2452	LoadSensVlow
2791	EGRvIvOpStg
2980	P-fuelVhgh
2980	P-fuelVlow
3057	UEGO-Ip
3057	UEGOLearnFail
3057	UEGOLearnLow
3057	UEGOLearnHgh
3057	UEGO-SNS-Op
3057	UEGO-SNS-STG
3057	UEGO-SNS-STB
3057	UEGO-Lean
3057	UEGO-Rich
3217	O2preCatStuck
3217	O2preCatLean

3217	O2preCatRich
3217	O2preInpHgh
3217	O2preInpLow
3217	O2corrMultLow
3217	O2corrMultHgh
3217	O2preCatHtr
3227	O2postCatVhgh
3227	O2postCatVlow
3227	O2postCatLean
3227	O2postCatRich
3227	O2postCatHtr
3464	ThrotVlvHbridg
3464	ThrotVlvOpen
3464	ThrotVlvSpring
3464	ThrotVlvStuck
3673	TPS2VoltHgh
3673	TPS2VoltLow
3673	TPS2LowPosHgh
3673	TPS2LowPosLow
3673	TPS2HghPosHgh
3673	TPS2HghPosLow
516098	KnockSens2Op
516098	KnockSens2STG
520555	UEGO-INRC-Op
520555	UEGO-INRC-STG
520555	UEGO-INRC-STB
520556	UEGO-SR-Op
520556	UEGO-SR-STG
520556	UEGO-SR-STB
524287*	HiddenCode

\*Hidden fault code by default

## 7.96 MTU ADEC J1939 Fault Codes

Fault Code (SPN)	Text
0*	HiddenCode
3	HI T-Fuel
4	SS T-Fuel
5	HI T-ChargeAir
6	SS T-ChargeAir
9	HI T-CoolInter
10	SS T-CoolInter
15	LO P-Lube Oil
16	SS P-Lube Oil
19	HI T-ExhaustA
20	SS T-ExhaustA
21	HI T-ExhaustB

22	SS T-ExhaustB
23	LO CoolLevel
24	SS CoolLevel
25	HI P-Diff Oil
26	SS P-Diff Oil
30	SS Overspeed
31	HI ETC1Overspd
32	SS ETC1Overspd
33	HI P-DiffFuel
34	SS P-DiffFuel
36	HI ETC2Overspd
37	SS ETC2Overspd
44	LO CoolLvInt
51	HI T-Lube Oil
52	SS T-Lube Oil
57	LO P-coolant
58	SS P-Coolant
59	SS T-CoolantL3
60	SS T-CoolantL4
65	LO P-Fuel
66	SS P-Fuel
67	HI T-Coolant
68	SS T-Coolant
81	AL RailLeakage
82	HI P-Fuel
83	LO P-Fuel
89	SS Speed Low
90	SS IdleNtReach
91	SS ReleaseSpd
92	SS StarterSpd
93	SS T-Preheat
94	LO T-Preheat
95	AL Prelubric
102	AL FuelConsCnt
104	AL EngHoursCnt
109	P-Coolant1
118	LO ECUPwrSupp
119	LOLO ECUPower
120	HI ECUPwrSupp
121	HIHI ECUPower
122	HI T-ECU
141	AL PwrTooHigh
142	AL MCR1HourExc
176	AL LifeDataNA
177	AL LifeDataInc
180	AL CAN1NodeLst
181	AL CAN2NodeLst

182	AL CANWrongPar
183	AL CANNNoPUData
184	AL CANPUDDataEr
186	AL CAN1BusOff
187	AL CAN1ErrPass
188	AL CAN2BusOff
189	AL CAN2ErrPass
201	SD T-Coolant
202	SD T-Fuel
203	SD T-ChargeAir
205	SD T-CoolInter
206	SD T-ExhaustA
207	SD T-ExhaustB
208	SD P-ChargeAir
211	SD P-Lube Oil
212	SD P-Coolant
213	SD P-Cool LT
215	SD P-HD
216	SD T-Lube Oil
219	SD T-IntakeAir
220	SD LvlCoolWatr
221	SD P-Diff Oil
222	SD LeakFuelLvl
223	SD LvlCoolIntr
227	SD OilPressure
228	SD P-Fuel
229	AL StopCamshaf
230	SD CranksftSpd
231	SD CamshaftSpd
232	SD ChrgrSpeed1
239	SD P-Diff Fuel
240	SD P-Fuel
245	SD ECUPwrSupp
266	SD SpeedDemand
269	SD LoadAnalog
270	SD FreqInput
301	AL TimingCIA1
302	AL TimingCIA2
303	AL TimingCIA3
304	AL TimingCIA4
305	AL TimingCIA5
306	AL TimingCIA6
307	AL TimingCIA7
308	AL TimingCIA8
309	AL TimingCIA9
310	AL TimingCIA10
311	AL TimingCIB1

312	AL TimingCIB2
313	AL TimingCIB3
314	AL TimingCIB4
315	AL TimingCIB5
316	AL TimingCIB6
317	AL TimingCIB7
318	AL TimingCIB8
319	AL TimingCIB9
320	AL TimingCIB10
321	AL WiringCIA1
322	AL WiringCIA2
323	AL WiringCIA3
324	AL WiringCIA4
325	AL WiringCIA5
326	AL WiringCIA6
327	AL WiringCIA7
328	AL WiringCIA8
329	AL WiringCIA9
330	AL WiringCIA10
331	AL WiringCIB1
332	AL WiringCIB2
333	AL WiringCIB3
334	AL WiringCIB4
335	AL WiringCIB5
336	AL WiringCIB6
337	AL WiringCIB7
338	AL WiringCIB8
339	AL WiringCIB9
340	AL WiringCIB10
341	AL OpenLdCIA1
342	AL OpenLdCIA2
343	AL OpenLdCIA3
344	AL OpenLdCIA4
345	AL OpenLdCIA5
346	AL OpenLdCIA6
347	AL OpenLdCIA7
348	AL OpenLdCIA8
349	AL OpenLdCIA9
350	AL OpenLdCIA10
351	AL OpenLdCIB1
352	AL OpenLdCIB2
353	AL OpenLdCIB3
354	AL OpenLdCIB4
355	AL OpenLdCIB5
356	AL OpenLdCIB6
357	AL OpenLdCIB7
358	AL OpenLdCIB8



359	AL OpenLdCIB9
360	AL OpenLdCIB10
361	AL PwrStageLow
362	AL PwrStagHigh
363	AL StopPwrStag
365	AL StopMVWirin
371	AL Wiring TO1
381	AL WiringTOP1
382	AL WiringTOP2
383	AL WiringTOP3
384	AL WiringTOP4
390	AL MCRExceeded
400	AL DigitInp 1
401	AL DigitInp 2
402	AL DigitInp 3
403	AL DigitInp 4
404	AL DigitInp 5
405	AL DigitInp 6
406	AL DigitInp 7
407	AL DigitInp 8
408	AL Emerg Stop
410	LO U-PDU
411	LOLO U-PDU
412	HI U-PDU
413	HIHI U-PDU
414	HI WtrFuelPref
415	LO P-Cool LT
416	SS P-Cool LT
417	SD WtrFuelpref
438	LO P-Fuel 2
439	HI P-Fuel 2
441	AL Syst2Leaks
444	SD U-PDU
445	SD P-Amb Air
446	SD P-HD2
448	HI P-ChargeAir
449	SS P-ChargeAir
450	SD TorqueInp
454	SS PowerReduct
463	SD AUX 2
464	SD P-AUX 1
468	SD T-AUX 1
469	SD AUX 1
470	SD T-ECU
471	SD CoilCurr
472	AL Stop SD
474	AL Wiring FO

475	AL CR Trigger
476	AL CrashRecErr
478*	AL YellowAlarm
479*	AL Red Alarm
480	AL ExtEngProt
510	AL Override
515	AL Starter
543	AL >1 FDHSlave
544	AL ConfigChang
549	AL PwrInterrupt
555	AL Call MTU
576	AL ESCMOverrid
586	LO P-Oil
594	AL L1 UDVFault
595	AL L2 UDVFault
598	AL L1 UDVFault
599	AL L2 UDVFault
610	AL HPFuel1Wir
611	AL HPFuel2Wir
612	AL PresValve1
613	AL PresValve2
1203	P-AuxCoolant
524287*	HiddenCode

\*Hidden fault code by default

## 7.97 MTU ADEC J1939 P-engines Fault Codes

Fault Code (SPN)	Text
52	T-Intcooler
94	P-FuelDelivery
95	P-FuelFltDiff
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2

898	Spd-Requested
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1157	T-Bearing 1
1158	T-Bearing 2
1159	T-Bearing 3
1160	T-Bearing 4
1161	T-Bearing 5
1162	T-Bearing 6
1163	T-Bearing 7
1164	T-Bearing 8
1165	T-Bearing 9
1166	T-Bearing10
1167	T-Bearing11
1169	Spd-Turbo2
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
2433	T-Exh2Manif1
2434	T-Exh1Manif1
2629	T-Turbo1Outlet
3676	AftcoolCoolLvl
520257	EngSpdCamshaft

520258	EngSpdCrnkShft
520264	PPCFailAct
520286	P-Fuel
520292	P-LubeOilEMU
520302	T-CoolantEMU
520382	OverspeedEMU
520395	T-SplashOilB1
520396	T-SplashOilB2
520397	T-SplashOilB3
520398	T-SplashOilB4
520399	T-SplashOilB5
520400	T-SplashOilB6
520401	T-SplashOilB7
520402	T-SplashOilB8
520403	T-SplashOilB9
520404	T-SplashOilB10
520405	WireBreakTOP2
520567	P-OilReFillPmp
520573	RelVoltLoJ1939
520574	RelDefektJ1939
520586	EmergencyStop2
520587	EmergencyStop3
520588	EmergencyStop4
520589	ValveA
520590	ValveB
520797	P-FuelPreFilt
520921	AirFlaps
520922	BarrinGearEnga
521063	P-FuelPreFDiff
521595	P-FuelPrefilt
524287*	HiddenCode

\*Hidden fault code by default

## 7.98 MTU DDEC10 Fault Codes

Fault Code (SPN)	Text
70	ParkingBrake
84	Spd-WheelBased
91	APP
98	OilLevel
100	P-Oil
107	P-AirFilt1Diff
110	T-Coolant
111	CoolantLvl
120	T-HydroRetOil
158	KeySwitch
168	Battery

171	T-AmbientAir
191	Spd-OutShaft
247	EngineRunHours
523	TranGear
527	CruseControl
558	AP1LowIdleSw
571	BrakeSwitch
596	CCEnable
597	Brake
598	Clutch
599	CCSet
600	CCCoast
602	CCAccelerate
609	Controller2
628	ProgramMemory
629	Controller1
639	J1939CANBus
667	InjectorCyl17
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
707	AuxiliaryIO 07
708	AuxiliaryIO 08
709	AuxiliaryIO 09
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
714	AuxiliaryIO 14
715	AuxiliaryIO 15
716	AuxiliaryIO 16
924	AuxiliaryOut 1
925	AuxiliaryOut 2
926	AuxiliaryOut 3
972	AccelInterlock
973	RetarderSelect
974	APPRemote
979	RemPROPreprg
986	ReqFan1Spd
1121	EBS BrakeSw
1237	SdOverride
1482	TranSA
1484	OthersECU TC
1623	Spd-TachoShaft
1624	Spd-Tachograph

1681	BattSwHold
1716	RetSelection
2003	SA 3
2011	SA 11
2017	SA 17
2023	SA 23
2025	SA 25
2033	SA 33
2042	SA 42
2049	SA 49
2596	MaxSpdLimit
2623	AP1Channel2
2646	AuxiliaryOut 4
2882	AltRatingSel
3353	Alternator1
3510	SensorSupply02
3511	SensorSupply03
3606	SDRequest
3645	TransferCase
3695	RegenInhibit
3696	RegenForce
3840	AuxiliaryIO 17
3841	AuxiliaryIO 18
3842	AuxiliaryIO 19
3843	AuxiliaryIO 20
3844	AuxiliaryIO 21
3845	AuxiliaryIO 22
3846	AuxiliaryIO 23
3847	AuxiliaryIO 24
3848	AuxiliaryIO 25
3849	AuxiliaryIO 26
3850	AuxiliaryIO 27
3851	AuxiliaryIO 28
3852	AuxiliaryIO 29
3853	AuxiliaryIO 30
3854	AuxiliaryIO 31
3855	AuxiliaryIO 32
3856	AuxiliaryIO 33
3857	AuxiliaryIO 34
3858	AuxiliaryIO 35
3859	AuxiliaryIO 36
3860	AuxiliaryIO 37
3861	AuxiliaryIO 38
3862	AuxiliaryIO 39
3863	AuxiliaryIO 40
3864	AuxiliaryIO 41
3865	AuxiliaryIO 42

3866	AuxiliaryIO 43
3867	AuxiliaryIO 44
3868	AuxiliaryIO 45
3869	AuxiliaryIO 46
3870	AuxiliaryIO 47
3871	AuxiliaryIO 48
3872	AuxiliaryIO 49
3873	AuxiliaryIO 50
4206	CountrChecksum
524280	RemoteAPP
524281	J1939Link
524283	GenWiring
524284	CPC4
524285	Parameter01/07
524286	MCM,ACM,CPC
524287	PredictiveCC

## 7.99 MTU ECU7 direct Fault Codes

Fault Code (SPN)	Text
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## 7.100 MTU ECU9 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
52	T-Intcooler
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
157	P-Fuel1Inj1Met
158	KeySwitch
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust

174	T-Fuel
175	T-Oil
176	T-TurboOil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
623	StopLamp
624	WarningLamp
898	Spd-Requested
966	DiagTestMode
1083	AuxiliaryIO 1
1131	T-IntManifold2
1136	T-ECU
1168	P-TurboOil
1169	Spd-Turbo2
1170	Spd-Turbo3
1171	Spd-Turbo4
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1203	P-AuxCoolant
1208	P-OilFiltInt
1237	SdOverride
1239	FuelLeakage1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1385	T-Auxiliary1
1387	P-Auxiliary1
1638	T-Hydraulic
1761	DEFTnkLevel
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2602	HydroOil
2629	T-Turbo1Outlet
2631	P-ChrgAirCOut
3031	T-DEFTnk
3226	AT1OutNOx
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3468	T-1Fuel2
3517	DEFTnkLevel
3543	Operating
3562	P-IntakeMan2
3563	P-IntakeManAbs



3668	ChrgAirCoolLvl
3673	ThrottleVlv2
3703	DPFIInhSwitch
4193	T-CoolPumpOut
4337	T-DEFDoser1
4348	DEFDosingQ
4360	T-SCR1Intake
4363	T-SCR1Outlet
4375	DEFPumpDrive
4390	T-DEF2Doser1
4401	DEF2DosingQ
4413	T-SCR2Intake
4415	T-SCR2Outlet
4441	DEF2PumpDrive
4490	Humidity
4765	T-AT1CatalInt
4990	BatteryCharger
5422	P-FuelFltInt
5571	CRReliefVlv
520406	P-OilNivPump
520837	Starter Speed
520838	EngRunUpSpeed
520872	AL Wiring
520873	Selected Mode
520874	No Valid Mode
520875	Speed Demand
520876	Stop Button
520877	Start Button
520878	Up Button
520879	Down Button
520880	Ext. SpdDemand
520881	Spd Demand Inc
520882	Bin SpdLimit
520883	Droop 2 Switch
520884	FreqSwitch
520885	Test Overspeed
520886	OverrideButton
520887	Alarm Reset
520888	CylinderCutOut
520889	RequestBinTest
520890	ExtProtection
520891	Prelubrication
520892	ExtInc IdleBin
520893	RequestDBR
520900	Wiring CylA1
520901	Wiring CylA2
520902	Wiring CylA3

520903	Wiring CylA4
520904	Wiring CylA5
520905	Wiring CylA6
520906	Wiring CylA7
520907	Wiring CylA8
520908	Wiring CylA9
520909	Wiring CylA10
520910	Wiring CylB1
520911	Wiring CylB2
520912	Wiring CylB3
520913	Wiring CylB4
520914	Wiring CylB5
520915	Wiring CylB6
520916	Wiring CylB7
520917	Wiring CylB8
520918	Wiring CylB9
520919	Wiring CylB10
520923	SS T-Coolant
520924	Power too high
520930	Open LdCylA1
520931	Open LdCylA2
520932	Open LdCylA3
520933	Open LdCylA4
520934	Open LdCylA5
520935	Open LdCylA6
520936	Open LdCylA7
520937	Open LdCylA8
520938	Open LdCylA9
520939	Open LdCylA10
520940	Open LdCylB1
520941	Open LdCylB2
520942	Open LdCylB3
520943	Open LdCylB4
520944	Open LdCylB5
520945	Open LdCylB6
520946	Open LdCylB7
520947	Open LdCylB8
520948	Open LdCylB9
520949	Open LdCylB10
521026	PwrReduction
521027	ALStopSD
524287*	HiddenCode

\*Hidden fault code by default

## 7.101 MTU ECU9 Main Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
52	T-Intcooler
94	P-FuelDelivery
95	P-FuelFiltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
157	P-Fuel1Inj1Met
158	KeySwitch
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
623	StopLamp
624	WarningLamp
898	Spd-Requested
966	DiagTestMode
1083	AuxiliaryIO 1
1131	T-IntManifold2
1136	T-ECU
1168	P-TurboOil
1169	Spd-Turbo2
1170	Spd-Turbo3
1171	Spd-Turbo4
1172	T-Turbo1CInt
1176	P-Turbo1Intake

1177	P-Turbo2Intake
1203	P-AuxCoolant
1208	P-OilFiltInt
1237	SdOverride
1239	FuelLeakage1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1385	T-Auxiliary1
1387	P-Auxiliary1
1638	T-Hydraulic
1761	DEFTnkLevel
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2602	HydroOil
2629	T-Turbo1Outlet
2631	P-ChrgAirCOut
3031	T-DEFTnk
3226	AT1OutNOx
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3468	T-1Fuel2
3517	DEFTnkLevel
3543	Operating
3562	P-IntakeMan2
3563	P-IntakeManAbs
3668	ChrgAirCoolLvl
3673	ThrottleVlv2
3703	DPFInhSwitch
4193	T-CoolPumpOut
4337	T-DEFDoser1
4348	DEFDosingQ
4360	T-SCR1Intake
4363	T-SCR1Outlet
4375	DEFPumpDrive
4390	T-DEF2Doser1
4401	DEF2DosingQ
4413	T-SCR2Intake
4415	T-SCR2Outlet
4441	DEF2PumpDrive
4490	Humidity
4765	T-AT1CatalInt
4990	BatteryCharger
5422	P-FuelFiltInt
5571	CRRReliefVlv
520406	P-OilNivPump
520837	Starter Speed

520838	EngRunUpSpeed
520872	AL Wiring
520873	Selected Mode
520874	No Valid Mode
520875	Speed Demand
520876	Stop Button
520877	Start Button
520878	Up Button
520879	Down Button
520880	Ext. SpdDemand
520881	Spd Demand Inc
520882	Bin SpdLimit
520883	Droop 2 Switch
520884	FreqSwitch
520885	Test Overspeed
520886	OverrideButton
520887	Alarm Reset
520888	CylinderCutOut
520889	RequestBinTest
520890	ExtProtection
520891	Prelubrication
520892	ExtInc IdleBin
520893	RequestDBR
520900	Wiring CylA1
520901	Wiring CylA2
520902	Wiring CylA3
520903	Wiring CylA4
520904	Wiring CylA5
520905	Wiring CylA6
520906	Wiring CylA7
520907	Wiring CylA8
520908	Wiring CylA9
520909	Wiring CylA10
520910	Wiring CylB1
520911	Wiring CylB2
520912	Wiring CylB3
520913	Wiring CylB4
520914	Wiring CylB5
520915	Wiring CylB6
520916	Wiring CylB7
520917	Wiring CylB8
520918	Wiring CylB9
520919	Wiring CylB10
520923	SS T-Coolant
520924	Power too high
520930	Open LdCylA1
520931	Open LdCylA2

520932	Open LdCylA3
520933	Open LdCylA4
520934	Open LdCylA5
520935	Open LdCylA6
520936	Open LdCylA7
520937	Open LdCylA8
520938	Open LdCylA9
520939	Open LdCylA10
520940	Open LdCylB1
520941	Open LdCylB2
520942	Open LdCylB3
520943	Open LdCylB4
520944	Open LdCylB5
520945	Open LdCylB6
520946	Open LdCylB7
520947	Open LdCylB8
520948	Open LdCylB9
520949	Open LdCylB10
521026	PwrReduction
521027	ALStopSD
524287*	HiddenCode

\*Hidden fault code by default

## 7.102 MTU ECU9 SCR Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
52	T-Intcooler
94	P-FuelDelivery
95	P-FuelFiltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
104	P-TurboLubeOil
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
157	P-Fuel1Inj1Met
158	KeySwitch

171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
623	StopLamp
624	WarningLamp
898	Spd-Requested
966	DiagTestMode
1083	AuxiliaryIO 1
1131	T-IntManifold2
1136	T-ECU
1168	P-TurboOil
1169	Spd-Turbo2
1170	Spd-Turbo3
1171	Spd-Turbo4
1172	T-Turbo1CInt
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1203	P-AuxCoolant
1208	P-OilFiltInt
1237	SdOverride
1239	FuelLeakage1
1349	P-Fuel1Inj2
1380	RemoteOilRsv
1385	T-Auxiliary1
1387	P-Auxiliary1
1638	T-Hydraulic
1761	DEFTnkLevel
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2602	HydroOil
2629	T-Turbo1Outlet
2631	P-ChrgAirCOut
3031	T-DEFTnk
3226	AT1OutNOx
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3468	T-1Fuel2
3517	DEFTnkLevel

3543	Operating
3562	P-IntakeMan2
3563	P-IntakeManAbs
3668	ChrgAirCoolLvl
3673	ThrottleVlv2
3703	DPFInhSwitch
4193	T-CoolPumpOut
4337	T-DEFDoser1
4348	DEFDosingQ
4360	T-SCR1Intake
4363	T-SCR1Outlet
4375	DEFPumpDrive
4390	T-DEF2Doser1
4401	DEF2DosingQ
4413	T-SCR2Intake
4415	T-SCR2Outlet
4441	DEF2PumpDrive
4490	Humidity
4765	T-AT1CatalInt
4990	BatteryCharger
5422	P-FuelFltInt
5571	CRReliefVlv
520406	P-OilNivPump
520837	Starter Speed
520838	EngRunUpSpeed
520872	AL Wiring
520873	Selected Mode
520874	No Valid Mode
520875	Speed Demand
520876	Stop Button
520877	Start Button
520878	Up Button
520879	Down Button
520880	Ext. SpdDemand
520881	Spd Demand Inc
520882	Bin SpdLimit
520883	Droop 2 Switch
520884	FreqSwitch
520885	Test Overspeed
520886	OverrideButton
520887	Alarm Reset
520888	CylinderCutOut
520889	RequestBinTest
520890	ExtProtection
520891	Prelubrication
520892	ExtInc IdleBin
520893	RequestDBR



520900	Wiring CylA1
520901	Wiring CylA2
520902	Wiring CylA3
520903	Wiring CylA4
520904	Wiring CylA5
520905	Wiring CylA6
520906	Wiring CylA7
520907	Wiring CylA8
520908	Wiring CylA9
520909	Wiring CylA10
520910	Wiring CylB1
520911	Wiring CylB2
520912	Wiring CylB3
520913	Wiring CylB4
520914	Wiring CylB5
520915	Wiring CylB6
520916	Wiring CylB7
520917	Wiring CylB8
520918	Wiring CylB9
520919	Wiring CylB10
520923	SS T-Coolant
520924	Power too high
520930	Open LdCylA1
520931	Open LdCylA2
520932	Open LdCylA3
520933	Open LdCylA4
520934	Open LdCylA5
520935	Open LdCylA6
520936	Open LdCylA7
520937	Open LdCylA8
520938	Open LdCylA9
520939	Open LdCylA10
520940	Open LdCylB1
520941	Open LdCylB2
520942	Open LdCylB3
520943	Open LdCylB4
520944	Open LdCylB5
520945	Open LdCylB6
520946	Open LdCylB7
520947	Open LdCylB8
520948	Open LdCylB9
520949	Open LdCylB10
521026	PwrReduction
521027	ALStopSD
524287*	HiddenCode

\*Hidden fault code by default

## 7.103 MTU Engine Interface Module Fault Codes

Fault Code (SPN)	Text
92	Load
95	P-FuelFltDiff
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
166	Pwr-Rated
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
898	Spd-Requested
1110	EPS Shutdown
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1157	T-Bearing 1
1158	T-Bearing 2
1159	T-Bearing 3
1160	T-Bearing 4
1161	T-Bearing 5

1162	T-Bearing 6
1163	T-Bearing 7
1164	T-Bearing 8
1165	T-Bearing 9
1166	T-Bearing10
1167	T-Bearing11
1169	Spd-Turbo2
1239	FuelLeakage1
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
3563	P-IntakeManAbs
520195	ExtInterlock
520202	SafetyProtOvr
520211	BatteryCharger
520219	IntPowerSupply
520231	ESDFail
520240	StarterFail
520254	T-ChargeAir
520256	EngController
520257	Spd-Camshaft
520258	Spd-Crankshaft
520261	BarringGear
520264	PrimingPump
520292	P-Lube Oil EMU
520302	T-Coolant
520382	Overspeed EMU
520395	T-Spl Oil B1
520396	T-Spl Oil B2
520397	T-Spl Oil B3
520398	T-Spl Oil B4
520399	T-Spl Oil B5
520400	T-Spl Oil B6
520401	T-Spl Oil B7
520402	T-Spl Oil B8
520403	T-Spl Oil B9
520404	T-Spl Oil B10
520405	WB TOP2 EMU
520817	V-Starter
520818	NotReady
520819	StarterNtReady
520824	V-MainSypply
520825	V-RedSypply
520826	ESD
522194	AmberAlarm

522195	RedAlarm
522197	EIM
524287*	HiddenCode

\*Hidden fault code by default

## 7.104 MTU MIP4000 Fault Codes

Fault Code (SPN)	Text
0*	HiddenCode
1	EmergencyStop
2	MessageStop
3	MessageAlarm
5	ManualESD
6	EngineESD
11	StatusX20
24	MIPPanelCB
27	CoolingWtr
28	MixCoolingWtr
31	P-Gas
32	P-Gas
34	GasLeakage
39	T-MIPBoard
40	T-MIPBoard
41	T-MIPBoard
46	Lvl-FrameOil
47	CoolingWtr
48	CoolingWtr
49	LubeOilRefill
50	AuxDrivesVlt
53	T-WindingU1
54	T-WindingU1
55	T-WindingU1
56	T-WindingV1
57	T-WindingV1
58	T-WindingV1
59	T-WindingW1
60	T-WindingW1
61	T-WindingW1
65	Engine stop
66	RedAlarmEng
67	YellowAlarmEng
68	Spd-GenLow
69	V-Mains HiHi
70	V-Mains LoLo
71	T-Bearing DE
72	T-Bearing DE
73	T-Bearing DE

78	LoadCtrlSet
81	GasVlv2Fail
82	GasVlv1Fail
84	GCBSyncFail
86	GCBFail
87	GCBOpenFail
88	GCBOpenFail
89	GBCCloseFail
90	MCBFail
92	MCBCloseFail
94	F-Gen Hi
95	F-Gen Lo
96	V-Gen Hi
97	V-Gen Lo
98	Gen OverLoad
99	Gen RewPwr
100	I-Gen Hi
101	I-Gen Hi
103	Gen Load ~
104	Gen PF Fail
105	Gen PF Fail
106	I-Gen Diff
107	I-Gen Diff
108	I-Gen Diff
109	GenL1Fail
110	GenL2Fail
111	GenL3Fail
112	MainsProtFail
113	F-Mains Hi
114	F-Mains Lo
115	V-Mains Hi
116	V-Mains Lo
117	Mains df dt
118	MainsAsymmetry
119	MainsPhaseJump
130	CoolHeatFail
131	WasteOilPump
133	F-Generator
134	CommExtFail
135	GenDiodeFault
137	PLCBattery
138	PLCForcing
139	SafeChainRFai
140	EngineCommFail
146	GeneratorVolt
161	GCBOpened
163	MIP AC Fail

179	T-Bearing NDE
180	T-Bearing NDE
181	T-Bearing NDE
182	TestActive
183	GCB Tripped
190	PowModuleFail
191	Module1Fail
192	Module2Fail
193	Module3Fail
194	Module4Fail
195	Module5Fail
196	Module6Fail
197	Module7Fail
198	Module8Fail
199	Module9Fail
200	Module10Fail
201	CommIslandFail
204	2thPwrModule
229	AnalogIOFail
230	V-Gen
231	I-Gen
232	I-GenN Hi
233	GenCapacitPwr
248	2thPwrModule
249	2thPwrModule
250	2thPwrModule
251	Module11Fail
252	Module12Fail
253	Module13Fail
254	Module14Fail
255	Module15Fail
256	Module16Fail
257	Module17Fail
258	Module18Fail
259	Module19Fail
260	Module20Fail
261	Module21Fail
262	Module22Fail
263	Module23Fail
264	Module24Fail
265	Module25Fail
266	Module26Fail
267	Module27Fail
268	Module28Fail
269	Module29Fail
270	Module30Fail
271	PLCCfgWrong

274	V-Mains HiAvg
275	V-Mains HiHi
276	V-Mains LoLo
327	MainsProtExt
328	DiffProtTrip
330	GenAVR: Error
344	T-GearOil
345	T-GearOil
346	P-GearOil
347	T-GearOil
348	T-GearOil
354	GenOverFreq2
356	GenUnderFreq2
358	GenOverVolt2
359	GenUnderVolt2
366	GenOverCurr3
367	GenOverCurr4
371	F-Mains Hi
373	F-Mains Lo
379	V-Mains Lo
380	V-Mains Lo
381	V-Mains Lo
382	V-Mains Lo
384	Mains LVFRT1
385	Mains LVFRT2
391	MainSWAuxOpen
392	2thPwrModule
393	LoadCtrlSystem
394	Low Load
397	LoadRampExceed
398	LubeOilRefill
400	ChckAlarmParam
401	P-Oil Lo
402	P-Oil SS
403	T-ExhaustA Hi
404	T-ExhaustA SS
405	T-ExhaustB Hi
406	T-ExhaustB SS
407	P-Diff-Oil Hi
408	P-Diff-Oil SS
409	Spd-Over SS
410	Spd-ETC1 Hi
411	Spd-ETC1 SS
412	Spd-ETC2 Hi
413	Spd-ETC2 SS
414	T-Oil Hi
415	T-Oil SS

416	T-IntAir Hi
417	T-IntAir HiHi
418	P-Coolant Lo
419	P-Coolant SS
420	P-CrankCase Hi
421	P-CrankCase SS
422	T-Coolant Hi
423	T-Coolant SS
424	Spd-EngLow SS
425	Spd-NotIdle SS
426	Spd-NotRise SS
427	Spd-NotStrt SS
428	T-Preheat SS
429	T-Preheat Lo
430	Prelubrication
431	HrsCntrDefect
432	V-SpplyECU Lo
433	V-SpplyECULoLo
434	V-SpplyECU Hi
435	V-SpplyECUHiHi
436	T-ECU Hi
437	LifeData
438	LifeData
439	CAN1NodeLost
440	CAN2NodeLost
441	CANWrongParam
442	CAN PU-Data
443	CAN PU-Data
444	CAN1BusOff
445	CAN1Error
446	CAN2BusOff
447	CAN2Error
448	EMUParam
449	T-Coolant SD
450	Lvl-Oil SD
451	T-ExhaustA SD
452	T-ExhaustB SD
453	P-Oil SD
454	P-Coolant SD
455	P-CrankCase SD
456	T-Oil SD
457	T-IntAir SD
458	P-DiffOil SD
459	P-OilB.Fltr SD
460	StopCamshaft
461	Spd-CamshaftSD
462	Spd-Charger1SD



463	Spd-Charger2SD
464	V- ECUPower SD
465	Spd-Demand SD
466	WiringTOP1
467	WiringTOP2
468	WiringTOP3
469	WiringTOP4
470	T-IntAirB SD
471	T-CoolB.Eng SD
472	P-CoolDiff Lo
473	P-Coolant Hi
474	P-CoolB.Eng Lo
475	P-CoolB.Eng SS
476	T-CoolB.Eng Hi
477	T-CoolB.Eng SS
478	P-ChrgMixD Hi
479	P-ChrgMixDHiHi
480	T-ChrgMix Hi
481	T-ChrgMixHiHi
482	T-ChrgMix Lo
483	Pwr-RedAct SS
484	T-IntAir Lo
485	T-IntAir LoLo
486	P-CoolB.Eng SD
487	T-ECU SD
488	Stop SD
489	WiringPWM CM2
490	CombAlarmYel
491	CombAlarmRed
492	P-ChrgMixA SD
493	P-ChrgMixB SD
494	P-ChrgMixD SD
495	T-ChrgMix SD
496	P-ChrgMixAHiHi
497	P-ChrgMixBHiHi
498	P-CoolantDi SD
499	StarterNotEng
500	P-ChrgMixB. SD
501	P-IntAirFltASD
502	P-IntAirFltBSD
503	WiringPWM CM1
504	WiringPWM1
505	WiringPWM2
506	MultiFDHSlaves
507	Configuration
508	GasCntrlCheck
509	IgnitionFault

510	GasVlvFault
511	Spd-Collapse
512	MixThrttlAFIt
513	MixThrttlBFIt
514	P-IntAirA.FItA
515	P-IntAirA.FItA
516	P-IntAirA.FItB
517	P-IntAirA.FItB
518	SAM MissData
519	CANRetardTime
520	CANRetardTime
521	CANRetardTime
522	CB Closed
523	HutChangespd
524	ActVlvHu Lo
525	ActVlvHu LoLo
526	ActVlvHu Hi
527	AtcVlvHu HiHi
528	NoxValue Lo
529	NoxValue LoLo
530	NoxValue Hi
531	NoxValue HiHi
532	KnockIntensity
533	ReqAngThrttlA
534	ReqAngThrttlB
535	PreheatingErr
536	GETCommLost
537	IC92xCommLost
538	FSeriesCommLst
539	TecJetCommLost
540	ProActACommLst
541	ProActBCommLst
542	NOxACommLost
543	NOxBCommLost
544	PhytronAComm
545	PhytronBComm
546	OilRefillError
547	GETYellow
548	IC92xYellow
549	FSeriesYellow
550	TecJetYellow
551	ProActAYellow
552	ProActBYellow
553	NOxAYellow
554	NOxB Yellow
555	PhyAYellow
556	PhyBYellow

557	GETRed
558	IC92xRed
559	FSeriesRed
560	TecJetRed
561	ProActARed
562	ProActBRed
563	NOxARed
564	NOxBRed
565	PhyARed
566	PhyBRed
567	LubeOilMin
568	LubeOilMax
569	OilRefill Lo
570	OilRefill Hi
571	Lvl-OilRefillHi
572	T-Gas SD
573	T-Gas L1
574	T-Gas L2
575	P-AmbAir SD
576	CrashInit.Err
577	VerkabelungPWM
578	VerkabelungPWM
579	P-AmbAir SD
580	T0-AmAir SD
581	AirHumidity SD
582	EleEngPwrAl2
583	ActFuelVlvL1
584	Rel.HumidityL1
585	TurningActiv
586	MIC5Yellow
587	MIC5Red
588	MIC5CommLost
589	ESIActivated
590	MIC5SigDiff
591	CAN3BusOff
592	CAN3Error
593	CAN4BusOff
594	CAN4Error
595	DevelopPRSet
596	AirHumidity SD
597	ParamDownload
598	DeltaNOx(AB)Hi
599	DeltaNox(AB)Hi
600	T-ExhA1 Hi
601	T-ExhA2 Hi
602	T-ExhA3 Hi
603	T-ExhA4 Hi

604	T-ExhA5 Hi
605	T-ExhA6 Hi
606	T-ExhA7 Hi
607	T-ExhA8 Hi
608	T-ExhA9 Hi
609	T-ExhA10 Hi
610	T-ExhA1 HiHi
611	T-ExhA2 HiHi
612	T-ExhA3 HiHi
613	T-ExhA4 HiHi
614	T-ExhA5 HiHi
615	T-ExhA6 HiHi
616	T-ExhA7 HiHi
617	T-ExhA8 HiHi
618	T-ExhA9 HiHi
619	T-ExhA10 HiHi
620	T-ExhA1 HiHi
621	T-ExhA2 HiHi
622	T-ExhA3 HiHi
623	T-ExhA4 HiHi
624	T-ExhA5 HiHi
625	T-ExhA6 HiHi
626	T-ExhA7 HiHi
627	T-ExhA8 HiHi
628	T-ExhA9 HiHi
629	T-ExhA10 HiHi
630	T-ExhB1 Hi
631	T-ExhB2 Hi
632	T-ExhB3 Hi
633	T-ExhB4 Hi
634	T-ExhB5 Hi
635	T-ExhB6 Hi
636	T-ExhB7 Hi
637	T-ExhB8 Hi
638	T-ExhB9 Hi
639	T-ExhB10 Hi
640	T-ExhB1 HiHi
641	T-ExhB2 HiHi
642	T-ExhB3 HiHi
643	T-ExhB4 HiHi
644	T-ExhB5 HiHi
645	T-ExhB6 HiHi
646	T-ExhB7 HiHi
647	T-ExhB8 HiHi
648	T-ExhB9 HiHi
649	T-ExhB10 HiHi
650	T-ExhB1 HiHi

651	T-ExhB2 HiHi
652	T-ExhB3 HiHi
653	T-ExhB4 HiHi
654	T-ExhB5 HiHi
655	T-ExhB6 HiHi
656	T-ExhB7 HiHi
657	T-ExhB8 HiHi
658	T-ExhB9 HiHi
659	T-ExhB10 HiHi
660	T-ExhA1 Lo
661	T-ExhA2 Lo
662	T-ExhA3 Lo
663	T-ExhA4 Lo
664	T-ExhA5 Lo
665	T-ExhA6 Lo
666	T-ExhA7 Lo
667	T-ExhA8 Lo
668	T-ExhA9 Lo
669	T-ExhA10 Lo
670	T-ExhA1 LoLo
671	T-ExhA2 LoLo
672	T-ExhA3 LoLo
673	T-ExhA4 LoLo
674	T-ExhA5 LoLo
675	T-ExhA6 LoLo
676	T-ExhA7 LoLo
677	T-ExhA8 LoLo
678	T-ExhA9 LoLo
679	T-ExhA10 LoLo
680	T-ExhB1 Lo
681	T-ExhB2 Lo
682	T-ExhB3 Lo
683	T-ExhB4 Lo
684	T-ExhB5 Lo
685	T-ExhB6 Lo
686	T-ExhB7 Lo
687	T-ExhB8 Lo
688	T-ExhB9 Lo
689	T-ExhB10 Lo
690	T-ExhB1 LoLo
691	T-ExhB2 LoLo
692	T-ExhB3 LoLo
693	T-ExhB4 LoLo
694	T-ExhB5 LoLo
695	T-ExhB6 LoLo
696	T-ExhB7 LoLo
697	T-ExhB8 LoLo

698	T-ExhB9 LoLo
699	T-ExhB10 LoLo
700	T-ExhMean Hi
701	T-ExhMean HiHi
702	T-Exhaust SD
703	CommLostECU
704	GasVlv1Fdbck
705	GasVlvStatus
706	GasVlvFdbck
707	LocalESD SS
750	P-ZeroDetect
751	ZeroFlowDetect
752	FlowNotReached
753	ValvePosError
754	T-HighElectric
755	T-EleFailHigh
756	FGTFailHigh
757	DeltaPFailHigh
758	FGPFailHigh
759	I-CoilFail Hi
760	PosFail Hi
761	T-ElectFail Lo
762	FGTFail Lo
763	P-DeltaFail Lo
764	FGPFail Lo
765	I-CoilFail Lo
766	PosFail Lo
767	AnalnErr Lo
768	AnalnErr Hi
769	PWMDuty
770	PWMDuty
771	V-BattError Lo
772	FGTLimit Lo
773	P-DeltaLmt Lo
774	FGPLimit Lo
775	V-BattError Hi
776	FGTLimit Hi
777	P-DeltaLmt Hi
778	FGPLimit Hi
779	Watchdog
780	CANFlowDmd
781	TecJet SD
782	TecJet IntFlt
783	Keyswitch
784	ParameterErr
785	ParameterErr
786	EEPReadFlt

787	EEPWriteFlt
788	ReadingParam
789	ADC Error
790	5V Error
791	Neg9V Error
792	12V Error
793	ADCTestError
794	CANTimeChng
795	ExceptionError
796	FactoryCalErr
800	PrimOpenCyl1
801	PrimOpenCyl2
802	PrimOpenCyl3
803	PrimOpenCyl4
804	PrimOpenCyl5
805	PrimOpenCyl6
806	PrimOpenCyl7
807	PrimOpenCyl8
808	PrimOpenCyl9
809	PrimOpenCyl10
810	PrimOpenCyl11
811	PrimOpenCyl12
812	PrimOpenCyl13
813	PrimOpenCyl14
814	PrimOpenCyl15
815	PrimOpenCyl16
816	PrimOpenCyl17
817	PrimOpenCyl18
818	PrimOpenCyl19
819	PrimOpenCyl20
820	PrimShortCyl1
821	PrimShortCyl2
822	PrimShortCyl3
823	PrimShortCyl4
824	PrimShortCyl5
825	PrimShortCyl6
826	PrimShortCyl7
827	PrimShortCyl8
828	PrimShortCyl9
829	PrimShortCyl10
830	PrimShortCyl11
831	PrimShortCyl12
832	PrimShortCyl13
833	PrimShortCyl14
834	PrimShortCyl15
835	PrimShortCyl16
836	PrimShortCyl17

837	PrimShortCyl18
838	PrimShortCyl19
839	PrimShortCyl20
850	RingGearSignal
851	ResetSignal
852	CamshaftSignal
853	NrOfGearTeeth
854	UnknownCode
855	Overspeed SD
856	E2PROM
857	GlobalTiming
858	GlobalTiming
859	IndividualTime
860	Selftest SD
861	PrimRtExceeded
862	PrimChannel1
863	PrimChannel2
864	PrimChannel3
865	PrimChannel4
866	PrimChannel5
867	PrimChannel6
868	PrimChannel7
869	PrimChannel8
870	PrimChannel9
871	PrimChannel10
872	PrimChannel11
873	PrimChannel12
874	PrimChannel13
875	PrimChannel14
876	PrimChannel15
877	PrimChannel16
878	PrimChannel17
879	PrimChannel18
880	PrimChannel19
881	PrimChannel20
882	PrimChannel21
883	PrimChannel22
884	PrimChannel23
885	PrimChannel24
886	RingGearSignal
887	ResetSignal
888	CamshaftSignal
889	SCRFaultOdd
890	SCRFaultEven
891	EnergyLvl
892	EnergyLvl
900	SecOpenCyl1



901	SecOpenCyl2
902	SecOpenCyl3
903	SecOpenCyl4
904	SecOpenCyl5
905	SecOpenCyl6
906	SecOpenCyl7
907	SecOpenCyl8
908	SecOpenCyl9
909	SecOpenCyl10
910	SecOpenCyl11
911	SecOpenCyl12
912	SecOpenCyl13
913	SecOpenCyl14
914	SecOpenCyl15
915	SecOpenCyl16
916	SecOpenCyl17
917	SecOpenCyl18
918	SecOpenCyl19
919	SecOpenCyl20
920	SecShortCyl1
921	SecShortCyl2
922	SecShortCyl3
923	SecShortCyl4
924	SecShortCyl5
925	SecShortCyl6
926	SecShortCyl7
927	SecShortCyl8
928	SecShortCyl9
929	SecShortCyl10
930	SecShortCyl11
931	SecShortCyl12
932	SecShortCyl13
933	SecShortCyl14
934	SecShortCyl15
935	SecShortCyl16
936	SecShortCyl17
937	SecShortCyl18
938	SecShortCyl19
939	SecShortCyl20
950	KnockSensorA1
951	KnockSensorB1
952	KnockSensorA2
953	KnockSensorB2
954	KnockSensorA3
955	KnockSensorB3
956	KnockSensorA4
957	KnockSensorB4

958	KnockSensorA5
959	KnockSensorB5
960	KnockSensorA6
961	KnockSensorB6
962	KnockSensorA7
963	KnockSensorB7
964	KnockSensorA8
965	KnockSensorB8
966	KnockSensorA9
967	KnockSensorB9
968	KnockSensorA10
969	KnockSensorB10
971	ErrorStatus
972	CombinedError
973	InternalError
974	ErrorCamshaft
1000	InternalFault
1001	StopCommanded
1002	V-InputFault
1003	PositionError
1004	T-SensorFault
1005	T-DeratingAct
1006	T-Above120°C
1007	LossOfPosDmd
1008	DmdTrackFault
1009	AnaPosiDmdFlt
1010	PWMPosDmdFlt
1011	CANPosDmdFlt
1012	CANFault
1013	CANStopComd
1014	InternalFault
1015	StopCommanded
1016	V-InputFault
1017	PositionError
1018	T-SensorFault
1019	T-DeratingAct
1020	T-Above120°C
1021	LossOfPosDmd
1022	DmdTrackFault
1023	AnaPosiDmdFlt
1024	PWMPosDmdFlt
1025	CANPosDmdFlt
1026	CANFault
1027	CANStopComd
1050	PWMInput Hi
1051	PWMInput Lo
1052	AnalInput Hi

1053	AnalInput Lo
1054	V-InpSupply Hi
1055	V-InpSupply Lo
1056	T-ElectronicHi
1057	T-ElectronicLo
1058	PositionError
1059	RunEnNotActive
1060	SpringFailed
1061	InternalFault
1062	CANFault
1063	Shutdown
1064	Alarm
1065	DeratingActive
1100	PositionAErr
1101	V-AlarmA Lo
1102	T-Error A
1103	T-Alarm A
1104	Circuit A
1105	Watchdog A
1106	PositionBErr
1107	V-AlarmB Lo
1108	T-Error B
1109	T-Alarm B
1110	Circuit B
1111	Watchdog B
1112	HIDeltaO5Nox
1113	P-CrankCase Lo
1114	P-CrankCs LoLo
1115	Pwr-Diff HiHi
1116	Pwr-Diff LoLo
1117	EILProtection
1118	EILAlarm
1119	EILDffEngNr
1150	Pwr-GasSensA
1151	T-GasSensA
1152	NoxReadingA
1153	WideRangeO2 A
1154	Pwr-GasSensB
1155	T-GasSensB
1156	NoxReadingB
1157	WideRangeO2 B
1164	Synchro
1165	OperationalErr
1166	NoSigDetected
1167	PolarityFailed
1168	WrongPolarity
1169	NoIndexMark

1170	WrNrTriggerE
1171	SignalMissing
1172	SignalFaulty
1173	IndexMark
1174	IndexToEarly
1175	IndexToLate
1176	OperationalErr
1177	SystemErr
1178	T-Limit
1179	Pwr-OutputLim
1180	InvCoilData
1181	InvConfig
1182	InvTrggrConfig
1183	ConfigChecksum
1184	I-AnaCurrent
1185	V-AnaSignal
1186	V-AuxInputs
1187	V-TrggrSupply
1188	GlobalTiming
1189	GeneralFault
1190	Overspeed
1191	Spd-DetSelfst
1192	Shutdown
1193	OutOfBoardFlt
1194	HV PowerSupply
1195	T-Sensor
1196	I-Sensor
1197	T-Limit
1198	Pwr-OutLimit
1199	Synchro
1200	OperationalErr
1201	NoSigDetected
1202	PolarityFailed
1203	WrongPolarity
1204	NoIndexMark
1205	WrNrTrggrE
1206	SignalMissing
1207	SignalFaulty
1208	IndexMark
1209	IndexToEarly
1210	IndexToLate
1211	Synchro
1212	OperationalErr
1213	NoSigDetected
1214	PolarityFailed
1215	WrongPolarity
1216	NoIndexMark

1217	WrNrTrggrE
1218	SignalMissing
1219	SignalFaulty
1220	IndexMark
1221	IndexToEarly
1222	IndexToLate

\*Hidden fault code by default

## 7.105 MTU MIP4000 CAN Fault Codes

Fault Code (SPN)	Text
516097	EmergencyStop
516098	MessageStop
516099	MessageAlarm
516101	ManualESD
516102	EngineESD
516107	StatusX20
516120	MIPPanelCB
516123	CoolingWtr
516124	MixCoolingWtr
516127	P-Gas
516128	P-Gas
516130	GasLeakage
516135	T-MIPBoard
516136	T-MIPBoard
516137	T-MIPBoard
516142	Lvl-FrameOil
516143	CoolingWtr
516144	CoolingWtr
516145	LubeOilRefill
516146	AuxDrivesVlt
516149	T-WindingU1
516150	T-WindingU1
516151	T-WindingU1
516152	T-WindingV1
516153	T-WindingV1
516154	T-WindingV1
516155	T-WindingW1
516156	T-WindingW1
516157	T-WindingW1
516161	Engine stop
516162	RedAlarmEng
516163	YellowAlarmEng
516164	Spd-GenLow
516165	V-Mains HiHi
516166	V-Mains LoLo
516167	T-Bearing DE

516168	T-Bearing DE
516169	T-Bearing DE
516174	LoadCtrlSet
516177	GasVlv2Fail
516178	GasVlv1Fail
516180	GCBSyncFail
516182	GCBFail
516183	GCBOpenFail
516184	GCBOpenFail
516185	GCBCloseFail
516186	MCBFail
516188	MCBCloseFail
516190	F-Gen Hi
516191	F-Gen Lo
516192	V-Gen Hi
516193	V-Gen Lo
516194	Gen OverLoad
516195	Gen RewPwr
516196	I-Gen Hi
516197	I-Gen Hi
516199	Gen Load ~
516200	Gen PF Fail
516201	Gen PF Fail
516202	I-Gen Diff
516203	I-Gen Diff
516204	I-Gen Diff
516205	GenL1Fail
516206	GenL2Fail
516207	GenL3Fail
516208	MainsProtFail
516209	F-Mains Hi
516210	F-Mains Lo
516211	V-Mains Hi
516212	V-Mains Lo
516213	Mains df dt
516214	MainsAsymmetry
516215	MainsPhaseJump
516226	CoolHeatFail
516227	WasteOilPump
516229	F-Generator
516230	CommExtFail
516231	GenDiodeFault
516233	PLCBattery
516234	PLCForcing
516235	SafeChainRFai
516236	EngineCommFail
516242	GeneratorVolt

516245	PrelubBSFail
516257	GCBOpened
516259	MIP AC Fail
516275	T-Bearing NDE
516276	T-Bearing NDE
516277	T-Bearing NDE
516278	TestActive
516279	GCB Tripped
516286	PowModuleFail
516287	Module1Fail
516288	Module2Fail
516289	Module3Fail
516290	Module4Fail
516291	Module5Fail
516292	Module6Fail
516293	Module7Fail
516294	Module8Fail
516295	Module9Fail
516296	Module10Fail
516297	CommIslandFail
516300	2thPwrModule
516325	AnalogIOFail
516326	V-Gen
516327	I-Gen
516328	I-GenN Hi
516329	GenCapacitPwr
516344	2thPwrModule
516345	2thPwrModule
516346	2thPwrModule
516347	Module11Fail
516348	Module12Fail
516349	Module13Fail
516350	Module14Fail
516351	Module15Fail
516352	Module16Fail
516353	Module17Fail
516354	Module18Fail
516355	Module19Fail
516356	Module20Fail
516357	Module21Fail
516358	Module22Fail
516359	Module23Fail
516360	Module24Fail
516361	Module25Fail
516362	Module26Fail
516363	Module27Fail
516364	Module28Fail

516365	Module29Fail
516366	Module30Fail
516367	PLCCfgWrong
516370	V-Mains HiAvg
516371	V-Mains HiHi
516372	V-Mains LoLo
516373	OpenGCBGridFlt
516381	T-MixWtrInlet
516385	CBEFault
516386	MainsProt1
516387	MainsProt2
516388	MainsProt3
516423	MainsProtExt
516424	DiffProtTrip
516426	GenAVR: Error
516434	MapTestbedAct
516440	T-GearOil
516441	T-GearOil
516442	P-GearOil
516443	T-GearOil
516444	T-GearOil
516448	TurningNxtStrt
516450	GenOverFreq2
516452	GenUnderFreq2
516454	GenOverVolt2
516455	GenUnderVolt2
516462	GenOverCurr3
516463	GenOverCurr4
516467	F-Mains Hi
516469	F-Mains Lo
516475	V-Mains Lo
516476	V-Mains Lo
516477	V-Mains Lo
516478	V-Mains Lo
516480	Mains LVFRT1
516481	Mains LVFRT2
516487	MainSWAuxOpen
516488	2thPwrModule
516489	LoadCtrlSystem
516490	Low load
516492	T-MixWtrLo
516493	LoadRampExceed
516494	LubeOilRefill
516496	ChckAlarmParam
516497	P-Oil Lo
516498	P-Oil SS
516499	T-ExhaustA Hi



516500	T-ExhaustA SS
516501	T-ExhaustB Hi
516502	T-ExhaustB SS
516503	P-Diff-Oil Hi
516504	P-Diff-Oil SS
516505	Spd-Over SS
516506	Spd-ETC1 Hi
516507	Spd-ETC1 SS
516508	Spd-ETC2 Hi
516509	Spd-ETC2 SS
516510	T-Oil Hi
516511	T-Oil SS
516512	T-IntAir Hi
516513	T-IntAir HiHi
516514	P-Coolant Lo
516515	P-Coolant SS
516516	P-CrankCase Hi
516517	P-CrankCase SS
516518	T-Coolant Hi
516519	T-Coolant SS
516520	Spd-EngLow SS
516521	Spd-NotIdle SS
516522	Spd-NotRlse SS
516523	Spd-NotStrt SS
516524	T-Preheat SS
516525	T-Preheat Lo
516526	Prelubrication
516527	HrsCntrDefect
516528	V-SpplyECU Lo
516529	V-SpplyECULoLo
516530	V-SpplyECU Hi
516531	V-SpplyECUHiHi
516532	T-ECU Hi
516533	LifeData
516534	LifeData
516535	CAN1NodeLost
516536	CAN2NodeLost
516537	CANWrongParam
516538	CAN PU-Data
516539	CAN PU-Data
516540	CAN1BusOff
516541	CAN1Error
516542	CAN2BusOff
516543	CAN2Error
516544	EMUParam
516545	T-Coolant SD
516546	Lvl-Oil SD

516547	T-ExhaustA SD
516548	T-ExhaustB SD
516549	P-Oil SD
516550	P-Coolant SD
516551	P-CrankCase SD
516552	T-Oil SD
516553	T-IntAir SD
516554	P-DiffOil SD
516555	P-OilB.Fltr SD
516556	StopCamshaft
516557	Spd-CamshaftSD
516558	Spd-Charger1SD
516559	Spd-Charger2SD
516560	V- ECUPower SD
516561	Spd-Demand SD
516562	WiringTOP1
516563	WiringTOP2
516564	WiringTOP3
516565	WiringTOP4
516566	T-IntAirB SD
516567	T-CoolB.Eng SD
516568	P-CoolDiff Lo
516569	P-Coolant Hi
516570	P-CoolB.Eng Lo
516571	P-CoolB.Eng SS
516572	T-CoolB.Eng Hi
516573	T-CoolB.Eng SS
516574	P-ChrgMixD Hi
516575	P-ChrgMixDHiHi
516576	T-ChrgMix Hi
516577	T-ChrgMixHiHi
516578	T-ChrgMix Lo
516579	Pwr-RedAct SS
516580	T-IntAir Lo
516581	T-IntAir LoLo
516582	P-CoolB.Eng SD
516583	T-ECU SD
516584	Stop SD
516585	WiringPWM CM2
516586	CombAlarmYel
516587	CombAlarmRed
516588	P-ChrgMixA SD
516589	P-ChrgMixB SD
516590	P-ChrgMixD SD
516591	T-ChrgMix SD
516592	P-ChrgMixAHiHi
516593	P-ChrgMixBHiHi

516594	P-CoolantDi SD
516595	StarterNotEng
516596	P-ChrgMixB. SD
516597	P-IntAirFltASD
516598	P-IntAirFltBSD
516599	WiringPWM CM1
516600	WiringPWM1
516601	WiringPWM2
516602	MultiFDHSlaves
516603	Configuration
516604	GasCntrlCheck
516605	IgnitionFault
516606	GasVlvFault
516607	Spd-Collapse
516608	MixThrttlAFIt
516609	MixThrttlBFlt
516610	P-IntAirA.FltA
516611	P-IntAirA.FltA
516612	P-IntAirA.FltB
516613	P-IntAirA.FltB
516614	SAM MissData
516615	CANRetardTime
516616	CANRetardTime
516617	CANRetardTime
516618	CB Closed
516619	HutChangespd
516620	ActVlvHu Lo
516621	ActVlvHu LoLo
516622	ActVlvHu Hi
516623	AtcVlvHu HiHi
516624	NoxValue Lo
516625	NoxValue LoLo
516626	NoxValue Hi
516627	NoxValue HiHi
516628	KnockIntensity
516629	ReqAngThrttlA
516630	ReqAngThrttlB
516631	PreheatingErr
516632	GETCommLost
516633	IC92xCommLost
516634	FSeriesCommLst
516635	TecJetCommLost
516636	ProActACommLst
516637	ProActBCommLst
516638	NOxACommLost
516639	NOxBCommLost
516640	PhytronAComm

516641	PhytronBComm
516642	OilRefillError
516643	GETYellow
516644	IC92xYellow
516645	FSeriesYellow
516646	TecJetYellow
516647	ProActAYellow
516648	ProActBYellow
516649	NOxAYellow
516650	NOxB Yellow
516651	PhyAYellow
516652	PhyBYellow
516653	GETRed
516654	IC92xRed
516655	FSeriesRed
516656	TecJetRed
516657	ProActARed
516658	ProActBRed
516659	NOxARed
516660	NOxBRed
516661	PhyARed
516662	PhyBRed
516663	LubeOilMin
516664	LubeOilMax
516665	OilRefill Lo
516666	OilRefill Hi
516667	Lvl-OilRefilHi
516668	T-Gas SD
516669	T-Gas L1
516670	T-Gas L2
516671	P-AmbAir SD
516672	CrashInit.Err
516673	VerkabelungPWM
516674	VerkabelungPWM
516675	P-AmbAir SD
516676	T0-AmAir SD
516677	AirHumidity SD
516678	EleEngPwrAl2
516679	ActFuelVlvL1
516680	Rel.HumidityL1
516681	TurningActiv
516682	MIC5Yellow
516683	MIC5Red
516684	MIC5CommLost
516685	ESIActivated
516686	MIC5SigDiff
516687	CAN3BusOff

516688	CAN3Error
516689	CAN4BusOff
516690	CAN4Error
516691	DevelopPRSet
516692	AirHumidity SD
516693	ParamDownload
516694	DeltaNOx(AB)Hi
516695	DeltaNox(AB)Hi
516696	T-ExhA1 Hi
516697	T-ExhA2 Hi
516698	T-ExhA3 Hi
516699	T-ExhA4 Hi
516700	T-ExhA5 Hi
516701	T-ExhA6 Hi
516702	T-ExhA7 Hi
516703	T-ExhA8 Hi
516704	T-ExhA9 Hi
516705	T-ExhA10 Hi
516706	T-ExhA1 HiHi
516707	T-ExhA2 HiHi
516708	T-ExhA3 HiHi
516709	T-ExhA4 HiHi
516710	T-ExhA5 HiHi
516711	T-ExhA6 HiHi
516712	T-ExhA7 HiHi
516713	T-ExhA8 HiHi
516714	T-ExhA9 HiHi
516715	T-ExhA10 HiHi
516716	T-ExhA1 HiHi
516717	T-ExhA2 HiHi
516718	T-ExhA3 HiHi
516719	T-ExhA4 HiHi
516720	T-ExhA5 HiHi
516721	T-ExhA6 HiHi
516722	T-ExhA7 HiHi
516723	T-ExhA8 HiHi
516724	T-ExhA9 HiHi
516725	T-ExhA10 HiHi
516726	T-ExhB1 Hi
516727	T-ExhB2 Hi
516728	T-ExhB3 Hi
516729	T-ExhB4 Hi
516730	T-ExhB5 Hi
516731	T-ExhB6 Hi
516732	T-ExhB7 Hi
516733	T-ExhB8 Hi
516734	T-ExhB9 Hi

516735	T-ExhB10 Hi
516736	T-ExhB1 HiHi
516737	T-ExhB2 HiHi
516738	T-ExhB3 HiHi
516739	T-ExhB4 HiHi
516740	T-ExhB5 HiHi
516741	T-ExhB6 HiHi
516742	T-ExhB7 HiHi
516743	T-ExhB8 HiHi
516744	T-ExhB9 HiHi
516745	T-ExhB10 HiHi
516746	T-ExhB1 HiHi
516747	T-ExhB2 HiHi
516748	T-ExhB3 HiHi
516749	T-ExhB4 HiHi
516750	T-ExhB5 HiHi
516751	T-ExhB6 HiHi
516752	T-ExhB7 HiHi
516753	T-ExhB8 HiHi
516754	T-ExhB9 HiHi
516755	T-ExhB10 HiHi
516756	T-ExhA1 Lo
516757	T-ExhA2 Lo
516758	T-ExhA3 Lo
516759	T-ExhA4 Lo
516760	T-ExhA5 Lo
516761	T-ExhA6 Lo
516762	T-ExhA7 Lo
516763	T-ExhA8 Lo
516764	T-ExhA9 Lo
516765	T-ExhA10 Lo
516766	T-ExhA1 LoLo
516767	T-ExhA2 LoLo
516768	T-ExhA3 LoLo
516769	T-ExhA4 LoLo
516770	T-ExhA5 LoLo
516771	T-ExhA6 LoLo
516772	T-ExhA7 LoLo
516773	T-ExhA8 LoLo
516774	T-ExhA9 LoLo
516775	T-ExhA10 LoLo
516776	T-ExhB1 Lo
516777	T-ExhB2 Lo
516778	T-ExhB3 Lo
516779	T-ExhB4 Lo
516780	T-ExhB5 Lo
516781	T-ExhB6 Lo

516782	T-ExhB7 Lo
516783	T-ExhB8 Lo
516784	T-ExhB9 Lo
516785	T-ExhB10 Lo
516786	T-ExhB1 LoLo
516787	T-ExhB2 LoLo
516788	T-ExhB3 LoLo
516789	T-ExhB4 LoLo
516790	T-ExhB5 LoLo
516791	T-ExhB6 LoLo
516792	T-ExhB7 LoLo
516793	T-ExhB8 LoLo
516794	T-ExhB9 LoLo
516795	T-ExhB10 LoLo
516796	T-ExhMean Hi
516797	T-ExhMean HiHi
516798	T-Exhaust SD
516799	CommLostECU
516800	GasVlv1Fdbck
516801	GasVlvStatus
516802	GasVlvFdbck
516803	LocalESD SS
516811	V-MainsUnd6-8
516812	V-MainsUnd1-4
516813	V-MainsUnd4-7
516814	V-MainsUnd7-10
516815	V-MainsOvr1-4
516816	V-MainsOvr4-7
516817	V-MainsOvr7-8
516818	P-GasLow
516846	P-ZeroDetect
516847	ZeroFlowDetect
516848	FlowNotReached
516849	ValvePosError
516850	T-HighElectric
516851	T-EleFailHigh
516852	FGTFailHigh
516853	DeltaPFailHigh
516854	FGPFailHigh
516855	I-CoilFail Hi
516856	PosFail Hi
516857	T-ElectFail Lo
516858	FGTFail Lo
516859	P-DeltaFail Lo
516860	FGPFail Lo
516861	I-CoilFail Lo
516862	PosFail Lo

516863	AnalnErr Lo
516864	AnalnErr Hi
516865	PWMDuty
516866	PWMDuty
516867	V-BattError Lo
516868	FGTLimit Lo
516869	P-DeltaLmt Lo
516870	FGPLimit Lo
516871	V-BattError Hi
516872	FGTLimit Hi
516873	P-DeltaLmt Hi
516874	FGPLimit Hi
516875	Watchdog
516876	CANFlowDmd
516877	TecJet SD
516878	TecJet IntFlt
516879	Keyswitch
516880	ParameterErr
516881	ParameterErr
516882	EEPReadFlt
516883	EEPWriteFlt
516884	ReadingParam
516885	ADC Error
516886	5V Error
516887	Neg9V Error
516888	12V Error
516889	ADCTestError
516890	CANTimeChng
516891	ExceptionError
516892	FactoryCalErr
516896	PrimOpenCyl1
516897	PrimOpenCyl2
516898	PrimOpenCyl3
516899	PrimOpenCyl4
516900	PrimOpenCyl5
516901	PrimOpenCyl6
516902	PrimOpenCyl7
516903	PrimOpenCyl8
516904	PrimOpenCyl9
516905	PrimOpenCyl10
516906	PrimOpenCyl11
516907	PrimOpenCyl12
516908	PrimOpenCyl13
516909	PrimOpenCyl14
516910	PrimOpenCyl15
516911	PrimOpenCyl16
516912	PrimOpenCyl17



516913	PrimOpenCyl18
516914	PrimOpenCyl19
516915	PrimOpenCyl20
516916	PrimShortCyl1
516917	PrimShortCyl2
516918	PrimShortCyl3
516919	PrimShortCyl4
516920	PrimShortCyl5
516921	PrimShortCyl6
516922	PrimShortCyl7
516923	PrimShortCyl8
516924	PrimShortCyl9
516925	PrimShortCyl10
516926	PrimShortCyl11
516927	PrimShortCyl12
516928	PrimShortCyl13
516929	PrimShortCyl14
516930	PrimShortCyl15
516931	PrimShortCyl16
516932	PrimShortCyl17
516933	PrimShortCyl18
516934	PrimShortCyl19
516935	PrimShortCyl20
516936	T-ExhaustA1
516937	T-ExhaustA2
516938	T-ExhaustA3
516939	T-ExhaustA4
516940	T-ExhaustA5
516941	T-ExhaustA6
516942	T-ExhaustA7
516943	T-ExhaustA8
516944	T-ExhaustA9
516945	T-ExhaustA10
516996	SecOpenCyl1
516997	SecOpenCyl2
516998	SecOpenCyl3
516999	SecOpenCyl4
517000	SecOpenCyl5
517001	SecOpenCyl6
517002	SecOpenCyl7
517003	SecOpenCyl8
517004	SecOpenCyl9
517005	SecOpenCyl10
517006	SecOpenCyl11
517007	SecOpenCyl12
517008	SecOpenCyl13
517009	SecOpenCyl14

517010	SecOpenCyl15
517011	SecOpenCyl16
517012	SecOpenCyl17
517013	SecOpenCyl18
517014	SecOpenCyl19
517015	SecOpenCyl20
517016	SecShortCyl1
517017	SecShortCyl2
517018	SecShortCyl3
517019	SecShortCyl4
517020	SecShortCyl5
517021	SecShortCyl6
517022	SecShortCyl7
517023	SecShortCyl8
517024	SecShortCyl9
517025	SecShortCyl10
517026	SecShortCyl11
517027	SecShortCyl12
517028	SecShortCyl13
517029	SecShortCyl14
517030	SecShortCyl15
517031	SecShortCyl16
517032	SecShortCyl17
517033	SecShortCyl18
517034	SecShortCyl19
517035	SecShortCyl20
517036	T-ExhaustB1
517037	T-ExhaustB2
517038	T-ExhaustB3
517039	T-ExhaustB4
517040	T-ExhaustB5
517041	T-ExhaustB6
517042	T-ExhaustB7
517043	T-ExhaustB8
517044	T-ExhaustB9
517045	T-ExhaustB10
517046	KnockSensorA1
517047	KnockSensorB1
517048	KnockSensorA2
517049	KnockSensorB2
517050	KnockSensorA3
517051	KnockSensorB3
517052	KnockSensorA4
517053	KnockSensorB4
517054	KnockSensorA5
517055	KnockSensorB5
517056	KnockSensorA6

517057	KnockSensorB6
517058	KnockSensorA7
517059	KnockSensorB7
517060	KnockSensorA8
517061	KnockSensorB8
517062	KnockSensorA9
517063	KnockSensorB9
517064	KnockSensorA10
517065	KnockSensorB10
517067	ErrorStatus
517068	CombinedError
517069	InternalError
517070	ErrorCamshaft
517096	InternalFault
517097	StopCommanded
517098	V-InputFault
517099	PositionError
517100	T-SensorFault
517101	T-DeratingAct
517102	T-Above120°C
517103	LossOfPosDmd
517104	DmdTrackFault
517105	AnaPosiDmdFlt
517106	PWMPosDmdFlt
517107	CANPosDmdFlt
517108	CANFault
517109	CANStopComd
517110	InternalFault
517111	StopCommanded
517112	V-InputFault
517113	PositionError
517114	T-SensorFault
517115	T-DeratingAct
517116	T-Above120°C
517117	LossOfPosDmd
517118	DmdTrackFault
517119	AnaPosiDmdFlt
517120	PWMPosDmdFlt
517121	CANPosDmdFlt
517122	CANFault
517123	CANStopComd
517146	PWMInput Hi
517147	PWMInput Lo
517148	AnalInput Hi
517149	AnalInput Lo
517150	V-InpSupply Hi
517151	V-InpSupply Lo

517152	T-ElectronicHi
517153	T-ElectronicLo
517154	PositionError
517155	RunEnNotActive
517156	SpringFailed
517157	InternalFault
517158	CANFault
517159	Shutdown
517160	Alarm
517161	DeratingActive
517208	HI Delta O5 Nox
517209	P-CrankCase Lo
517210	P-CrankCs LoLo
517211	Pwr-Diff HiHi
517212	Pwr-Diff LoLo
517213	EILProtection
517214	EILAlarm
517215	EILDiffEngNr
517216	P-ChrgMixHiHi
517217	P-ChrgMixLoLo
517218	P-CoolantHi
517219	CANRtrddTime
517220	FastGasMaxTime
517221	P-LubeOilLo
517222	T-ExhaustHi
517223	WiringPWM
517246	Pwr-GasSensA
517247	T-GasSensA
517248	NoxReadingA
517249	WideRangeO2 A
517250	Pwr-GasSensB
517251	T-GasSensB
517252	NoxReadingB
517253	WideRangeO2 B
517260	Synchro
517261	OperationalErr
517262	NoSigDetected
517263	PolarityFailed
517264	WrongPolarity
517265	NoIndexMark
517266	WrNrTriggerE
517267	SignalMissing
517268	SignalFaulty
517269	IndexMark
517270	IndexToEarly
517271	IndexToLate
517272	OperationalErr

517273	SystemErr
517274	T-Limit
517275	Pwr-OutputLim
517276	InvCoilData
517277	InvConfig
517278	InvTrggrConfig
517279	ConfigChecksum
517280	I-AnaCurrent
517281	V-AnaSignal
517282	V-AuxInputs
517283	V-TrggrSupply
517284	GlobalTiming
517285	GeneralFault
517286	Overspeed
517287	Spd-DetSelfst
517288	Shutdown
517289	OutOfBoardFlt
517290	HV PowerSupply
517291	T-Sensor
517292	I-Sensor
517293	T-Limit
517294	Pwr-OutLimit
517295	Synchro
517296	OperationalErr
517297	NoSigDetected
517298	PolarityFailed
517299	WrongPolarity
517300	NoIndexMark
517301	WrNrTrggrE
517302	SignalMissing
517303	SignalFaulty
517304	IndexMark
517305	IndexToEarly
517306	IndexToLate
517307	Synchro
517308	OperationalErr
517309	NoSigDetected
517310	PolarityFailed
517311	WrongPolarity
517312	NoIndexMark
517313	WrNrTrggrE
517314	SignalMissing
517315	SignalFaulty
517316	IndexMark
517317	IndexToEarly
517318	IndexToLate
524287*	HiddenCode

\*Hidden fault code by default

## 7.106 MTU MIP4000 v.4 CAN Fault Codes

Fault Code (SPN)	Text
516097	EmergencyStop
516098	MessageStop
516099	MessageAlarm
516101	ManualESD
516102	EngineESD
516107	StatusX20
516120	MIPPanelCB
516123	CoolingWtr
516124	MixCoolingWtr
516127	P-GasA
516128	P-GasA
516129	P-GasB
516130	GasLeakageA
516131	GasLeakageB
516135	T-MIPBoard
516136	T-MIPBoard
516137	T-MIPBoard
516142	Lvl-FrameOil
516143	CoolingWtr
516144	CoolingWtr
516145	LubeOilRefill
516146	AuxDrivesVolt
516149	T-WindingU1
516150	T-WindingU1
516151	T-WindingU1
516152	T-WindingV1
516153	T-WindingV1
516154	T-WindingV1
516155	T-WindingW1
516156	T-WindingW1
516157	T-WindingW1
516161	P-GasB
516162	RedAlarmEng
516163	YellowAlarmEng
516164	Spd-GenLow
516165	V-Mains HiHi
516166	V-Mains LoLo
516167	T-Bearing DE
516168	T-Bearing DE
516169	T-Bearing DE
516172	GasFailB
516173	GasFailB
516174	LoadCtrlSet
516177	GasVlv2Fail
516178	GasVlv1Fail

516180	GCBSyncFail
516182	GCBFail
516183	GCBOpenFail
516184	GCBOpenFail
516185	GCBCloseFail
516186	MCBFail
516188	MCBCloseFail
516190	F-Gen Hi
516191	F-Gen Lo
516192	V-Gen Hi
516193	V-Gen Lo
516194	Gen OverLoad
516195	Gen RewPwr
516196	I-Gen Hi
516197	I-Gen Hi
516199	Gen Load ~
516200	Gen PF Fail
516201	Gen PF Fail
516202	I-Gen Diff
516203	I-Gen Diff
516204	I-Gen Diff
516205	GenL1Fail
516206	GenL2Fail
516207	GenL3Fail
516208	MainsProtFail
516209	F-Mains Hi
516210	F-Mains Lo
516211	V-Mains Hi
516212	V-Mains Lo
516213	Mains df dt
516214	MainsAsymmetry
516215	MainsPhaseJump
516226	CoolHeatFail
516227	WasteOilPump
516229	F-Generator
516230	CommExtFail
516231	GenDiodeFault
516233	PLCBattery
516234	PLCForcing
516235	SafeChainRFai
516236	EngineCommFail
516242	GeneratorVolt
516245	Pre-LubricFail
516253	StartAbort
516257	GCBOpened
516259	MIP AC Fail
516275	T-Bearing NDE

516276	T-Bearing NDE
516277	T-Bearing NDE
516278	TestActive
516279	GCB Tripped
516286	PowModuleFail
516287	Module1Fail
516288	Module2Fail
516289	Module3Fail
516290	Module4Fail
516291	Module5Fail
516292	Module6Fail
516293	Module7Fail
516294	Module8Fail
516295	Module9Fail
516296	Module10Fail
516297	CommsIslandFail
516300	2thPwrModule
516322	T-GearOil
516323	T-GearOil
516324	T-Bearing
516325	AnalogIOFail
516326	V-Gen
516327	I-Gen
516328	I-GenN Hi
516329	GenCapacitPwr
516344	2thPwrModule
516345	2thPwrModule
516346	2thPwrModule
516347	Module11Fail
516348	Module12Fail
516349	Module13Fail
516350	Module14Fail
516351	Module15Fail
516352	Module16Fail
516353	Module17Fail
516354	Module18Fail
516355	Module19Fail
516356	Module20Fail
516357	Module21Fail
516358	Module22Fail
516359	Module23Fail
516360	Module24Fail
516361	Module25Fail
516362	Module26Fail
516363	Module27Fail
516364	Module28Fail
516365	Module29Fail



516366	Module30Fail
516367	PLCCfgWrong
516369	T-Brearing
516370	V-Mains HiAvg
516371	V-Mains HiHi
516372	V-Mains LoLo
516373	Prot-GCB-Open
516381	T-MixWtrInlet
516386	MainsProt1
516387	MainsProt2
516388	MainsProt3
516423	MainsProtExt
516424	DiffProtTrip
516426	GenAVR: Error
516434	60HzTestbed
516440	T-GearOil
516441	T-GearOil
516442	P-GearOil
516443	T-GearOil
516444	T-GearOil
516448	TurningNxtStrt
516450	GenOverFreq2
516452	GenUnderFreq2
516454	GenOverVolt2
516455	GenUnderVolt2
516462	GenOverCurr3
516463	GenOverCurr4
516467	F-Mains Hi
516469	F-Mains Lo
516475	V-Mains Lo
516476	V-Mains Lo
516477	V-Mains Lo
516478	V-Mains Lo
516480	Mains LVFRT1
516481	Mains LVFRT2
516487	MainSWAuxOpen
516488	2thPwrModule
516489	LoadCtrlSystem
516490	Low load
516492	T-MixWtrLo
516493	LoadRampExceed
516494	LubeOilRefill
516496	ChckAlarmParam
516497	P-Oil Lo
516498	P-Oil SS
516499	T-ExhaustA Hi
516500	T-ExhaustA SS

516501	T-ExhaustB Hi
516502	T-ExhaustB SS
516503	P-Diff-Oil Hi
516504	P-Diff-Oil SS
516505	Spd-Over SS
516506	Spd-ETC1 Hi
516507	Spd-ETC1 SS
516508	Spd-ETC2 Hi
516509	Spd-ETC2 SS
516510	T-Oil Hi
516511	T-Oil SS
516512	T-IntAir Hi
516513	T-IntAir HiHi
516514	P-Coolant Lo
516515	P-Coolant SS
516516	P-CrankCase Hi
516517	P-CrankCase SS
516518	T-Coolant Hi
516519	T-Coolant SS
516520	Spd-EngLow SS
516521	Spd-NotIdle SS
516522	Spd-NotRise SS
516523	Spd-NotStrt SS
516527	HrsCntrDefect
516528	V-SpplyECU Lo
516529	V-SpplyECULoLo
516530	V-SpplyECU Hi
516531	V-SpplyECUHiHi
516532	T-ECU Hi
516540	CAN1BusOff
516541	CAN1Error
516542	CAN2BusOff
516543	CAN2Error
516545	T-Coolant SD
516547	T-ExhaustA SD
516548	T-ExhaustB SD
516549	P-Oil SD
516550	P-Coolant SD
516551	P-CrankCase SD
516552	T-Oil SD
516553	T-IntAir SD
516554	P-DiffOil SD
516555	P-OilB.Fltr SD
516557	Spd-CamshaftSD
516558	Spd-Charger1SD
516559	Spd-Charger2SD
516560	V- ECUPower SD

516563	WiringTOP2
516564	WiringTOP3
516566	T-IntAirB SD
516567	T-CoolB.Eng SD
516568	P-CoolDiff Lo
516569	P-Coolant Hi
516570	P-CoolB.Eng Lo
516571	P-CoolB.Eng SS
516572	T-CoolB.Eng Hi
516573	T-CoolB.Eng SS
516574	P-ChrgMixD Hi
516575	P-ChrgMixDHiHi
516576	T-ChrgMix Hi
516577	T-ChrgMixHiHi
516578	T-ChrgMix Lo
516579	Pwr-RedAct SS
516580	T-IntAir Lo
516581	T-IntAir LoLo
516582	P-CoolB.Eng SD
516583	T-ECU SD
516584	Stop SD
516586	CombAlarmYel
516587	CombAlarmRed
516588	P-ChrgMixA SD
516589	P-ChrgMixB SD
516590	P-ChrgMixD SD
516591	T-ChrgMix SD
516594	P-CoolantDi SD
516596	P-ChrgMixB. SD
516597	P-IntAirFltASD
516598	P-IntAirFltBSD
516605	IgnitionFault
516606	GasVlvFault
516607	Spd-Collapse
516608	MixThrttIAFlt
516609	MixThrttIBFlt
516610	P-IntAirA.FltA
516611	P-IntAirA.FltA
516612	P-IntAirA.FltB
516613	P-IntAirA.FltB
516615	CANRetardTime
516616	CANRetardTime
516617	CANRetardTime
516618	CB Closed
516619	HutChangespd
516620	ActVlvHu Lo
516621	ActVlvHu LoLo

516622	ActVlvHu Hi
516623	AtcVlvHu HiHi
516624	NoxValue Lo
516625	NoxValue LoLo
516626	NoxValue Hi
516627	NoxValue HiHi
516628	KnockIntensity
516629	ReqAngThrctlA
516630	ReqAngThrctlB
516631	PreheatingErr
516634	FSeriesCommLst
516635	TecJetCommLost
516636	ProActACommLst
516637	ProActBCommLst
516638	NOxACommLost
516639	NOxBCommLost
516640	TecJetBComLost
516642	OilRefillError
516645	FSeriesYellow
516646	TecJetYellow
516647	ProActAYellow
516648	ProActBYellow
516649	NOxAYellow
516650	NOxB Yellow
516651	TecJetB
516655	FSeriesRed
516656	TecJetRed
516657	ProActARed
516658	ProActBRed
516659	NOxARed
516660	NOxBRed
516661	TecJetB
516663	LubeOilMin
516664	LubeOilMax
516665	OilRefill Lo
516666	OilRefill Hi
516667	Lvl-OilRefillHi
516669	T-Gas L1
516670	T-Gas L2
516671	P-AmbAir SD
516672	CrashInit.Err
516673	VerkabelungPWM
516674	VerkabelungPWM
516679	ActFuelVlvL1
516680	Rel.HumidityL1
516681	TurningActiv
516682	MIC5Yellow

516683	MIC5Red
516684	MIC5CommLost
516685	ESIActivated
516686	MIC5SigDiff
516687	CAN3BusOff
516688	CAN3Error
516689	CAN4BusOff
516690	CAN4Error
516691	DevelopPRSet
516692	AirHumidity SD
516693	ParamDownload
516694	DeltaNOx(AB)Hi
516695	DeltaNox(AB)Hi
516696	T-ExhH1 A1
516697	T-ExhH1 A2
516698	T-ExhH1 A3
516699	T-ExhH1 A4
516700	T-ExhH1 A5
516701	T-ExhH1 A6
516702	T-ExhH1 A7
516703	T-ExhH1 A8
516704	T-ExhH1 A9
516705	T-ExhH1 A10
516706	T-ExhH2 A1
516707	T-ExhH2 A2
516708	T-ExhH2 A3
516709	T-ExhH2 A4
516710	T-ExhH2 A5
516711	T-ExhH2 A6
516712	T-ExhH2 A7
516713	T-ExhH2 A8
516714	T-ExhH2 A9
516715	T-ExhH2 A10
516716	T-ExhHi2Abs A1
516717	T-ExhHi2Abs A2
516718	T-ExhHi2Abs A3
516719	T-ExhHi2Abs A4
516720	T-ExhHi2Abs A5
516721	T-ExhHi2Abs A6
516722	T-ExhHi2Abs A7
516723	T-ExhHi2Abs A8
516724	T-ExhHi2Abs A9
516725	T-ExhHi2AbsA10
516726	T-ExhH1 B1
516727	T-ExhH1 B2
516728	T-ExhH1 B3
516729	T-ExhH1 B4

516730	T-ExhH1 B5
516731	T-ExhH1 B6
516732	T-ExhH1 B7
516733	T-ExhH1 B8
516734	T-ExhH1 B9
516735	T-ExhH1 B10
516736	T-ExhH2 B1
516737	T-ExhH2 B2
516738	T-ExhH2 B3
516739	T-ExhH2 B4
516740	T-ExhH2 B5
516741	T-ExhH2 B6
516742	T-ExhH2 B7
516743	T-ExhH2 B8
516744	T-ExhH2 B9
516745	T-ExhH2 B10
516746	T-ExhHi2Abs B1
516747	T-ExhHi2Abs B2
516748	T-ExhHi2Abs B3
516749	T-ExhHi2Abs B4
516750	T-ExhHi2Abs B5
516751	T-ExhHi2Abs B6
516752	T-ExhHi2Abs B7
516753	T-ExhHi2Abs B8
516754	T-ExhHi2Abs B9
516755	T-ExhHi2AbsB10
516756	T-ExhLo1 A1
516757	T-ExhLo1 A2
516758	T-ExhLo1 A3
516759	T-ExhLo1 A4
516760	T-ExhLo1 A5
516761	T-ExhLo1 A6
516762	T-ExhLo1 A7
516763	T-ExhLo1 A8
516764	T-ExhLo1 A9
516765	T-ExhLo1 A10
516766	T-ExhLo2 A1
516767	T-ExhLo2 A2
516768	T-ExhLo2 A3
516769	T-ExhLo2 A4
516770	T-ExhLo2 A5
516771	T-ExhLo2 A6
516772	T-ExhLo2 A7
516773	T-ExhLo2 A8
516774	T-ExhLo2 A9
516775	T-ExhLo2 A10
516776	T-ExhLo1 B1

516777	T-ExhLo1 B2
516778	T-ExhLo1 B3
516779	T-ExhLo1 B4
516780	T-ExhLo1 B5
516781	T-ExhLo1 B6
516782	T-ExhLo1 B7
516783	T-ExhLo1 B8
516784	T-ExhLo1 B9
516785	T-ExhLo1 B10
516786	T-ExhLo2 B1
516787	T-ExhLo2 B2
516788	T-ExhLo2 B3
516789	T-ExhLo2 B4
516790	T-ExhLo2 B5
516791	T-ExhLo2 B6
516792	T-ExhLo2 B7
516793	T-ExhLo2 B8
516794	T-ExhLo2 B9
516795	T-ExhLo2 B10
516796	T-ExhInAllHi1
516797	T-ExhInAllHi2
516798	T-ExhMean ABHi
516799	T-ExhInhA Hi1
516800	T-ExhInhA Hi2
516801	T-ExhInhB Hi1
516802	T-ExhInhB Hi2
516811	V-MainsUnd6-8
516812	V-MainsUnd1-4
516813	V-MainsUnd4-7
516814	V-MainsUnd7-10
516815	V-MainsOvr1-4
516816	V-MainsOvr4-7
516817	V-MainsOvr7-8
516818	P-GasLow
516823	Noise Hi1 A1
516824	Noise Hi1 A2
516825	Noise Hi1 A3
516826	Noise Hi1 A4
516827	Noise Hi1 A5
516828	Noise Hi1 A6
516829	Noise Hi1 A7
516830	Noise Hi1 A8
516831	Noise Hi1 A9
516832	Noise Hi1 A10
516833	Noise Hi1 B1
516834	Noise Hi1 B2
516835	Noise Hi1 B3

516836	Noise Hi1 B4
516837	Noise Hi1 B5
516838	Noise Hi1 B6
516839	Noise Hi1 B7
516840	Noise Hi1 B8
516841	Noise Hi1 B9
516842	Noise Hi1 B10
516846	P-ZeroDetect
516847	ZeroFlowDetect
516848	FlowNotReached
516849	ValvePosError
516850	T-HighElectric
516851	T-EleFailHigh
516852	FGTFailHigh
516853	DeltaPFailHigh
516854	FGPFailHigh
516855	I-CoilFail Hi
516856	PosFail Hi
516857	T-ElectFail Lo
516858	FGTFail Lo
516859	P-DeltaFail Lo
516860	FGPFail Lo
516861	I-CoilFail Lo
516862	PosFail Lo
516878	TecJet IntFlt
516896	PrimOpenCyl A1
516897	PrimOpenCyl A2
516898	PrimOpenCyl A3
516899	PrimOpenCyl A4
516900	PrimOpenCyl A5
516901	PrimOpenCyl A6
516902	PrimOpenCyl A7
516903	PrimOpenCyl A8
516904	PrimOpenCyl A9
516905	PrimOpenCylA10
516906	PrimOpenCyl B1
516907	PrimOpenCyl B2
516908	PrimOpenCyl B3
516909	PrimOpenCyl B4
516910	PrimOpenCyl B5
516911	PrimOpenCyl B6
516912	PrimOpenCyl B7
516913	PrimOpenCyl B8
516914	PrimOpenCyl B9
516915	PrimOpenCylB10
516916	PrimShortCylA1
516917	PrimShortCylA2



516918	PrimShortCylA3
516919	PrimShortCylA4
516920	PrimShortCylA5
516921	PrimShortCylA6
516922	PrimShortCylA7
516923	PrimShortCylA8
516924	PrimShortCylA9
516925	PrimShortCylA10
516926	PrimShortCylB1
516927	PrimShortCylB2
516928	PrimShortCylB3
516929	PrimShortCylB4
516930	PrimShortCylB5
516931	PrimShortCylB6
516932	PrimShortCylB7
516933	PrimShortCylB8
516934	PrimShortCylB9
516935	PrimShortCylB10
516936	T-ExhaustCylA1
516937	T-ExhaustCylA2
516938	T-ExhaustCylA3
516939	T-ExhaustCylA4
516940	T-ExhaustCylA5
516941	T-ExhaustCylA6
516942	T-ExhaustCylA7
516943	T-ExhaustCylA8
516944	T-ExhaustCylA9
516945	T-ExhaustCylA10
516946	TecJetBNoPress
516947	TecJetBNoFlow
516948	TecJetBFlowLo
516949	TecJetBVLvErr
516950	TecJetB T-ElHi
516951	TecJetB T-ElHi
516952	TecJetBFtgHi
516953	TecJetBDeIPHi
516954	TecJetBFpgHi
516955	TecJetBCoilAHi
516956	TecJetBPosHi
516957	TecJetB T-ElLo
516958	TecJetBFgtLo
516959	TecJetBDeIPLo
516960	TecJetBFgpLo
516961	TecJetBCoilALo
516962	TecJetBPosLo
516978	TecJetB IntFit
516996	SecOpenCyl A1

516997	SecOpenCyl A2
516998	SecOpenCyl A3
516999	SecOpenCyl A4
517000	SecOpenCyl A5
517001	SecOpenCyl A6
517002	SecOpenCyl A7
517003	SecOpenCyl A8
517004	SecOpenCyl A9
517005	SecOpenCyl A10
517006	SecOpenCyl B1
517007	SecOpenCyl B2
517008	SecOpenCyl B3
517009	SecOpenCyl B4
517010	SecOpenCyl B5
517011	SecOpenCyl B6
517012	SecOpenCyl B7
517013	SecOpenCyl B8
517014	SecOpenCyl B9
517015	SecOpenCyl B10
517016	SecShortCyl A1
517017	SecShortCyl A2
517018	SecShortCyl A3
517019	SecShortCyl A4
517020	SecShortCyl A5
517021	SecShortCyl A6
517022	SecShortCyl A7
517023	SecShortCyl A8
517024	SecShortCyl A9
517025	SecShortCyl A10
517026	SecShortCyl B1
517027	SecShortCyl B2
517028	SecShortCyl B3
517029	SecShortCyl B4
517030	SecShortCyl B5
517031	SecShortCyl B6
517032	SecShortCyl B7
517033	SecShortCyl B8
517034	SecShortCyl B9
517035	SecShortCyl B10
517036	T-ExhaustCylB1
517037	T-ExhaustCylB2
517038	T-ExhaustCylB3
517039	T-ExhaustCylB4
517040	T-ExhaustCylB5
517041	T-ExhaustCylB6
517042	T-ExhaustCylB7
517043	T-ExhaustCylB8

517044	T-ExhaustCylB9
517045	T-ExhaustCyB10
517046	KnockSensorA1
517047	KnockSensorB1
517048	KnockSensorA2
517049	KnockSensorB2
517050	KnockSensorA3
517051	KnockSensorB3
517052	KnockSensorA4
517053	KnockSensorB4
517054	KnockSensorA5
517055	KnockSensorB5
517056	KnockSensorA6
517057	KnockSensorB6
517058	KnockSensorA7
517059	KnockSensorB7
517060	KnockSensorA8
517061	KnockSensorB8
517062	KnockSensorA9
517063	KnockSensorB9
517064	KnockSensorA10
517065	KnockSensorB10
517066	T-DeviceExuAkm
517067	T-DeviceExuAkm
517068	PwrSplyExuAkm
517069	PwrSplyExuLo1
517070	PwrSplyExuLo2
517071	PwrSplyExuHi1
517072	PwrSplyExuHi2
517073	ECUCommLost
517074	FlashCommErr
517075	ExpParSetAkm
517076	ParConsistFail
517077	CAN1 ErrorP
517078	CAN1 BusOff
517079	CAN2 ErrorP
517080	CAN2 BusOff
517081	CAN1 NodeFail
517082	CAN2 NodeFail
517083	CAN3 ErrorP
517084	CAN3 BusOff
517085	Camshaft
517086	Crankshaft
517087	EngSyncLost
517088	EngOverspdH1
517089	EngECUAkmH1
517090	Knock Hi1

517091	Knock Hi2
517092	KnockSignalErr
517093	KnockSignalErr
517096	InternalFault
517098	V-InputFault
517099	PositionError
517100	T-SensorFault
517101	T-DeratingAct
517102	T-Above120°C
517103	LossOfPosDmd
517104	DmdTrackFault
517107	CANPosDmdFlt
517108	CANFault
517109	CANStopComd
517110	InternalFault
517112	V-InputFault
517113	PositionError
517114	T-SensorFault
517115	T-DeratingAct
517116	T-Above120°C
517117	LossOfPosDmd
517118	DmdTrackFault
517121	CANPosDmdFlt
517122	CANFault
517123	CANStopComd
517150	V-InpSupply Hi
517151	V-InpSupply Lo
517152	T-ElectronicHi
517153	T-ElectronicLo
517154	PositionError
517156	SpringFailed
517157	InternalFault
517167	PwrCut-Off
517168	MaxAngleThrctl
517169	ChrgMixMeanH1
517170	ChrgMixMeanH2
517171	T-Coolant Lo1
517172	T-Coolant Lo2
517173	T-Coolant Lo3
517174	ChrgMix H1
517175	T-InterCoolant
517176	T-InterCoolant
517177	CrankshaftSpd
517178	MCR exceeded
517179	OpenLoad DI1
517180	OpenLoad DI2
517181	OpenLoad DI3

517182	OpenLoad DI4
517183	OpenLoad DI5
517184	OpenLoad DI6
517185	OpenLoad DI7
517186	OpenLoad DI8
517187	OpenLoadEmerg
517188	CorrLimReached
517189	T-InterCoolant
517190	TransLockEnggd
517191	ClosingIntAir
517194	P-Exhaust
517195	EmissionFit
517196	EmissionWrn
517197	SpdDemandFail
517198	Cashrecorder
517199	HeartbeatLost
517200	EmergStopAct
517201	LoadProfData
517202	AirHumidity B
517203	P-Exhaust B
517204	T-ChrgMixB
517205	NOxARemLife
517206	NOxBRemLife
517207	CL_EXU_AKM
517208	HIDeltaO5Nox
517209	P-CrankCase Lo
517210	P-CrankCs LoLo
517213	EILProtection
517214	EILAlarm
517215	EILDffEngNr
517216	P-ChrgMixHiHi
517217	P-ChrgMixLoLo
517218	P-CoolantHi
517219	CANRtrddTime
517220	FastGasMaxTime
517221	P-LubeOilLo
517222	T-ExhaustHi
517223	WiringPWM
517255	T-AmbHwFault
517256	phi-ambHwFaut
517257	PwrRedHumMntr
517258	P3DeviatHumMnt
517259	ErrCalcHumMon
517260	Crankshaft2
517261	Crankshaft2
517272	IC DefectCrit
517273	IC IntError

517274	T-IC Hi1
517275	P-IC Hi1
517286	OverspeedE1
517290	V-HighFail
517293	T-IC Hi2
517294	p-IC Hi2
517295	CamshaftSync
517296	CamshaftIC
517307	CrankshaftSync
517308	CrankshaftSync
517319	MICafterV-fail
517320*	HiddenCode
517321*	HiddenCode
517322*	HiddenCode
517323*	HiddenCode
517324*	HiddenCode
517325*	HiddenCode
517326*	HiddenCode
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517380*	HiddenCode
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518402*	HiddenCode
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518471*	HiddenCode
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518474*	HiddenCode
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518476*	HiddenCode
518477*	HiddenCode
518478*	HiddenCode
518479*	HiddenCode
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518483*	HiddenCode

518484*	HiddenCode
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518486*	HiddenCode
518487*	HiddenCode
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518491*	HiddenCode
518492*	HiddenCode
518493*	HiddenCode
518494*	HiddenCode
518495*	HiddenCode
518496*	HiddenCode
524287*	HiddenCode

\*Hidden fault code by default

## 7.107 MTU SMART Connect Fault Codes

Fault Code (SPN)	Text
52	T-Intcooler
94	P-FuelDelivery
100	P-Oil
105	T-IntManifold
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
157	P-Fuel1Inj1Met
158	KeySwitch
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
247	EngineRunHours
898	Spd-Requested
1136	T-ECU
1237	SdOverride
1349	P-Fuel1Inj2
2629	T-Turbo1Outlet
3563	P-IntakeManAbs
520837	Spd-Starter
520838	Spd-RunUp
520857	Spd-DemandFail
520875	Spd-DemandFail
520900	CylA1Wiring
520901	CylA2Wiring
520902	CylA3Wiring
520903	CylA4Wiring

520904	CylA5Wiring
520905	CylA6Wiring
520910	CylB1Wiring
520911	CylB2Wiring
520912	CylB3Wiring
520913	CylB4Wiring
520914	CylB5Wiring
520915	CylB6Wiring
520923	T-Coolant
520924	Pwr-SupplyHi
520930	CylA1Interrup
520931	CylA2Interrup
520932	CylA3Interrup
520933	CylA4Interrup
520934	CylA5Interrup
520935	CylA6Interrup
520940	CylB1Interrup
520941	CylB2Interrup
520942	CylB3Interrup
520943	CylB4Interrup
520944	CylB5Interrup
520945	CylB6Interrup
520982	U-PDU
520983	Throttle1
520984	Throttle2
520985	PressControl
520986	PressControl
520990	InitError
520992	SmartConnect
520993	SmartConnect
521004	T-Preheat
521016	CamshaftSensor
521017	Crankshaft
521018	Camshaft
521020	InjAmplifierLo
521021	InjAmplifierHi
521022	InjAmplifier
521023	MV Cabling
521026	Pwr-Limit
521027	Stop SD
521040	ProtectionEIL
521041	ErrorEIL
521128	SmartConnect
524287*	HiddenCode

\*Hidden fault code by default



## 7.108 MWM SECM70 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
110	T-Coolant
168	Battery
189	Spd-Rated
190	EngineSpeed
629	Controller1
632	FuelShutoff1
636	PositionSensor
637	TimingSensor
639	J1939CANBus
725	IgnCtrlMode
855	Heater02
1204	ElectricalLoad
1247	Power
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1391	P-FuelDiff
1442	FuelVlvPos1
1692	P-IntManDesAbs
1695	ExhO2SensFuelC
2980	P-FuelOut
3057	OxygenBank1
3217	AT1IntOxygen1
3509	SensorSupply01
3938	GenGovernBias
6575	FuelQualTestMd
524287*	HiddenCode

\*Hidden fault code by default

## 7.109 MWM ADEM 4 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.110 Perkins ADEM A6E11 Fault Codes

Fault Code (SPN)	Text
97	WaterInFuel
100	P-Oil
107	P-AirFilt1Diff
111	CoolantLvl
441	T-Auxiliary1
1387	P-Auxiliary1
524287*	HiddenCode

\*Hidden fault code by default

## 7.111 Perkins 1300 Fault Codes

Fault Code (SPN)	Text
1	InjectorCyl#1
2	InjectorCyl#2
3	InjectorCyl#3
4	InjectorCyl#4
5	InjectorCyl#5
6	InjectorCyl#6
41	SensPower8V
51	ThrottleVlv1
91	APP
92	Load
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase

157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
234	Software
237	VIN
247	EngineRunHours
248	DataLinkComm
253	CheckSysParams
254	ECMFault
261	TimingCalib
262	SensPower5V
268	CheckPrgParams
273	P-TurboOutlet
274	P-Atmosphere
281	ActionAlrtLamp
282	Overspeed
285	T-Coolant
286	P-LubeOil
323	SDLamp
324	WrmLamp
342	Spd-Sensor2
443	P-AuxGage2
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
678	8VDCSupply

695	OverrideMode
723	Spd-Speed2
799	ServiceTool
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1108	EPS TimerOvrd
1109	EPS SDApproach
1110	EPS Shutdown
1111	EPS Config
1266	OilReplVlv
1485	ECMMainRelay
1664	AutoStartFail
524287*	HiddenCode

\*Hidden fault code by default

## 7.112 Perkins ECM Fault Codes

Fault Code (SPN)	Text
1	InjectorCyl#1
2	InjectorCyl#2
3	InjectorCyl#3
4	InjectorCyl#4
5	InjectorCyl#5
6	InjectorCyl#6
41	SensPower8V
51	ThrottleVlv1
91	APP
92	Load
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1

174	T-Fuel
175	T-Oil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
234	Software
237	VIN
247	EngineRunHours
248	DataLinkComm
253	CheckSysParams
254	ECMFault
261	TimingCalib
262	SensPower5V
268	CheckPrgParams
273	P-TurboOutlet
274	P-Atmosphere
281	ActionAlrtLamp
282	Overspeed
285	T-Coolant
286	P-LubeOil
323	SDLamp
324	WrnLamp
342	Spd-Sensor2
443	P-AuxGage2
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
678	8VDCSupply
695	OverrideMode
723	Spd-Speed2
799	ServiceTool
898	Spd-Requested

970	AuxShutdown
971	DerateSw
1108	EPS TimerOvr
1109	EPS SDApproach
1110	EPS Shutdown
1111	EPS Config
1266	OilReplVlv
1485	ECMMainRelay
1664	AutoStartFail
524287*	HiddenCode

\*Hidden fault code by default

## 7.113 PSI e-control Fault Codes

Fault Code (SPN)	Text
29	APP2
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
100	P-Oil
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
109	P-Coolant1
110	T-Coolant
168	Battery
173	T-Exhaust
174	T-Fuel
190	EngineSpeed
441	T-Auxiliary1
442	T-Auxiliary2
443	P-AuxGage2
444	V-BatteryInp2
515	Spd-Desired
558	AP1LowIdleSw
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
639	J1939CANBus
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4

655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
695	OverrideMode
697	PWMDriver1
698	PWMDriver2
699	PWMDriver3
700	PWMDriver4
701	AuxiliaryIO 01
702	AuxiliaryIO 02
703	AuxiliaryIO 03
704	AuxiliaryIO 04
705	AuxiliaryIO 05
706	AuxiliaryIO 06
710	AuxiliaryIO 10
711	AuxiliaryIO 11
712	AuxiliaryIO 12
713	AuxiliaryIO 13
723	Spd-Speed2
724	O2Sensor
731	Knock1
920	AudibleAlarm
925	AuxiliaryOut 2
926	AuxiliaryOut 3
1079	Supply1
1080	Supply2
1127	P-Turbo1Boost
1192	TurboWstAct
1213	MalfunctLamp
1239	FuelLeakage1
1268	IgnitionCoil01
1269	IgnitionCoil02
1270	IgnitionCoil03
1271	IgnitionCoil04
1272	IgnitionCoil05
1273	IgnitionCoil06
1274	IgnitionCoil07
1275	IgnitionCoil08
1276	IgnitionCoil09
1277	IgnitionCoil10
1321	StarterLockout
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3

1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1347	FuelPmpAsmbl1
1348	FuelPmpAsmbl1
1384	SDDatalink
1386	T-Auxiliary2
1485	ECMMainRelay
1692	P-IntManDesAbs
2000	SA 0
2646	AuxiliaryOut 4
2647	AuxiliaryOut 5
3050	CatalystBank1
3051	Catalyst2
3056	OxygenBank1
3217	AT1IntOxygen1
3218	AT1IntGSPwr
3221	AT1IntWROxygn1
3222	AT1IntGSHeater
3225	AT1IntOxygen
3227	AT1OutOxygen1
3256	AT2IntOxygen
3266	AT2OutOxygen1
3468	T-1Fuel2
3673	ThrottleVlv2
4236	Closes-LoopGB1
4237	Adap-LearnGB1
4238	Closes-LoopGB2
4239	Adap-LearnGB1
520197	Knock2Sensor
520199	FPP1/2Invalid
520200	AdpLrnGasBank1
520201	AdpLrnGasBank2
520202	AdaptLearnLPG
520203	AdaptLearnNG
520204	C-LGasolBank1
520205	C-LGasolBank2
520206	ClosedLoopLPG
520207	Closed-loopNG
520208	EGO2Open/Lazy
520209	EGO3Open/Lazy
520210	EGO4Open/Lazy
520211	CatalInactGas1
520212	CatalInactGas2
520213	CatalInactLPG



520214	CatalInactOnNG
520215	AUXAnaPullDn1V
520216	AUXAnaPullUp1V
520217	AUXAnaPullUp2V
520218	AUXAnaPullUp3V
520219	AUXAnaPullUp1
520220	AUXAnaPullUp2
520221	AUXAnaPullUp3
520222	AUX digital1
520223	AUX digital2
520224	AUX digital3
520230	PWM5
520240	T-GasFuelVFI
520241	Knock2
520250	FPP1
520251	V-TPS2
520252	IACwiring
520260	MegaJector
520270	Gov1/2/3Fail
520401	FuelImpurityH
520800	InCam/DistFI
520801	ExhtCamPosErr
520803	MegaJectorFI
522525	CatalystInact
522540	PWM3-Gauge3
522593	MegaJectorComm
522594	V-MegaJector
522595	MegaJectorAct
522596	MegaJectorCirc
522597	MegaJectorComm
522598	PWM4 Short
522599	Injector1Short
522600	Injector4Short
522601	Injector2Short
522602	Injector3Short
522603	T-GasFuelVFI
522604	PowerRelay
522606	EGO2Open/Lazy
522655	CLGasBank1/LPG
522660	AdpLrnGas1/LPG
522697	MicroprocFail
522710	V-TPS1
522711	V-TPS2
522712	V-FPP1
522737	EGO1Open/Lazy
522752	CAMInputSignal

524260	SensorSupplyV2
524261	SensorSupplyV1
524287*	HiddenCode

\*Hidden fault code by default

## 7.114 Scania S6 Singlespeed Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
164	P-Fuel1InjCtr
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
608	J1587Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6

677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
975	Fan1EstSpd
1080	Supply2
1184	T-Turbo1Out
1188	TurboWstAct1
1231	CAN Bus OFF
1239	FuelLeakage1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
2791	EGR1Vlv1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed
65535*	HiddenCode
524287*	HiddenCode

\*Hidden fault code by default

## 7.115 Scania S6 Singlespeed Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
164	P-Fuel1InjCtr
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
608	J1587Datalink

620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
975	Fan1EstSpd
1080	Supply2
1184	T-Turbo1Out
1188	TurboWstAct1
1231	CAN Bus OFF
1239	FuelLeakage1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
2791	EGR1Vlv1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed
65535*	HiddenCode
524287*	HiddenCode

\*Hidden fault code by default

## 7.116 Scania S6 Allspeed Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
524287*	HiddenCode
20	P-Coolant1
51	ThrottleVlv1
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase

102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
164	P-Fuel1InjCtr
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
608	J1587Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
975	Fan1EstSpd
1080	Supply2
1231	CAN Bus OFF
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
2791	EGR1Vlv1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed

\*Hidden fault code by default

## 7.117 Scania S8 Allspeed Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
46	P-PneuSupply
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7

658	InjectorCyl 8
677	StarterMotor
723	Spd-Speed2
788	TranClutchAct
968	IdleIncrement
972	AccelInterlock
974	APPRemote
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvr
1110	EPS Shutdown
1135	T-Oil2
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompressor
1791	TrqLimitMax
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3

3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3354	Alternator2
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCIInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2



5285	DPFTripFuel
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode

\*Hidden fault code by default

## 7.118 Scania S8 Singlespeed Fault Codes

Fault Code (SPN)	Text
27	EGR1
46	P-PneuSupply
51	ThrottleVlv1
70	ParkingBrake
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software

521	BrakePedal
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
696	ReqSpeedCC
898	Spd-Requested
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvr
1110	EPS Shutdown
1135	T-Oil2
1188	TurboWstAct1
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1624	Spd-Tachograph
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode

1761	DEFTnkLevel
2609	P-A/CCompresor
2791	EGR1Vlv1
2797	FuellInjectorG1
2798	FuellInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3353	Alternator1
3354	Alternator2
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3464	ThrottleCmd
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3509	SensorSupply01
3510	SensorSupply02
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3585	EmergencySD
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4000	ExhBrakeSwitch

4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	ChrgAirCooler1
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode
0xFFFF*	HiddenCode

\*Hidden fault code by default

## 7.119 Scania S8 Allspeed Main Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
46	P-PneuSupply
51	ThrottleVlv1
91	APP
94	P-FuelDelivery

97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
723	Spd-Speed2
788	TranClutchAct
968	IdleIncrement
972	AccelInterlock
974	APPRemote
986	ReqFan1Spd
1086	P-ParkingAir

1108	EPS TimerOvr
1110	EPS Shutdown
1135	T-Oil2
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompressor
1791	TrqLimitMax
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3360	DEFContr1
3361	DEFDosing1

3362	DEFDosing1
3363	DEFTnkHeater
3354	Alternator2
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	DPFTripFuel
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater

5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode

\*Hidden fault code by default

## 7.120 Scania S8 Singlespeed Main Fault Codes

Fault Code (SPN)	Text
27	EGR1
46	P-PneuSupply
51	ThrottleVlv1
70	ParkingBrake
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
521	BrakePedal
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry



645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
696	ReqSpeedCC
898	Spd-Requested
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvr
1110	EPS Shutdown
1135	T-Oil2
1188	TurboWstAct1
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1624	Spd-Tachograph
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompresor
2791	EGR1Vlv1
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4

2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3353	Alternator1
3354	Alternator2
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3464	ThrottleCmd
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3509	SensorSupply01
3510	SensorSupply02
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3585	EmergencySD
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4000	ExhBrakeSwitch
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1

4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	ChrgAirCooler1
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode
0xFFFF*	HiddenCode

\*Hidden fault code by default

## 7.121 Scania S8 Allspeed Att Fault Codes

Fault Code (SPN)	Text
0xFFFF*	HiddenCode
46	P-PneuSupply
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant

111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
723	Spd-Speed2
788	TranClutchAct
968	IdleIncrement
972	AccelInterlock
974	APPRemote
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvrd
1110	EPS Shutdown
1135	T-Oil2
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4

1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompressor
1791	TrqLimitMax
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet
3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3354	Alternator2
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3515	T-DEFTnk2

3516	DEFConcentrat
3563	P-IntakeManAbs
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot
4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	DPFTripFuel
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode

\*Hidden fault code by default

## 7.122 Scania S10 Allspeed Fault Codes

Fault Code (SPN)	Text
27	EGR1
46	P-PneuSupply
51	ThrottleVlv1
70	ParkingBrake
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
111	CoolantLvl
131	P-ExhaustPres
132	IntAirMassFlow
156	P-Fuel1Inj1
167	SysCharging
168	Battery
171	T-AmbientAir
172	T-AirIntake1
174	T-Fuel
175	T-Oil
188	Spd-Idle
190	EngineSpeed
234	Software
521	BrakePedal
532	Spd-HighIdle
558	AP1LowIdleSw
559	AP KickDownSw
590	TimerState
597	Brake
598	Clutch
636	PositionSensor
641	TurboGeometry
645	Tachometer
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7

658	InjectorCyl 8
677	StarterMotor
696	ReqSpeedCC
898	Spd-Requested
986	ReqFan1Spd
1086	P-ParkingAir
1108	EPS TimerOvrd
1110	EPS Shutdown
1135	T-Oil2
1188	TurboWstAct1
1239	FuelLeakage1
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1329	MisfireCyl 7
1330	MisfireCyl 8
1442	FuelVlvPos1
1443	FuelVlvPos2
1483	SourceAddress
1484	OthersECU TC
1485	ECMMainRelay
1569	TorqueDerate
1624	Spd-Tachograph
1632	TorqueLimit
1639	Spd-Fan
1675	StarterMode
1761	DEFTnkLevel
2609	P-A/CCompresor
2791	EGR1Vlv1
2797	FuelInjectorG1
2798	FuelInjectorG2
2858	DataConfig1
2859	DataConfig2
2860	DataConfig3
2861	DataConfig4
2862	DataConfig5
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3245	T-AT1Exh3
3246	T-DPFOutlet



3249	T-AT1Exh2
3251	P-DPFDiff
3275	T-AT2Exh1
3279	T-AT2Exh3
3283	T-AT2Exh2
3340	P-ChrgAirC1Int
3353	Alternator1
3354	Alternator2
3360	DEFContr1
3361	DEFDosing1
3362	DEFDosing1
3363	DEFTnkHeater
3464	ThrottleCmd
3468	T-1Fuel2
3471	AT1FuelPrAct
3472	AT1AirPrAct
3480	P-AT1Fuel
3485	P-AT1SupplyAir
3509	SensorSupply01
3510	SensorSupply02
3515	T-DEFTnk2
3516	DEFConcentrat
3563	P-IntakeManAbs
3585	EmergencySD
3606	SDRequest
3607	ESDRequest
3673	ThrottleVlv2
3822	EGR1Vlv2
3936	DPFSystem
4000	ExhBrakeSwitch
4090	NOx
4094	NOxInsfDEF
4095	NOxIntrDEF
4096	NOxEmptyDEF
4201	Spd-Engine1
4202	Spd-Engine3
4225	NOxControlSys
4301	AT1FuelInjHeat
4334	P-DEFDoser1
4337	T-DEFDoser1
4341	DEFHeater1
4343	DEFHeater2
4345	DEFHeater3
4347	DEFHeater4
4374	Spd-DEFPump1
4427	T-DEF2Tnk
4782	DPFSoot

4809	T-AT1DOCInt
4810	T-AT1DOCOut
4814	CoolantPumpCmd
5264	EGR2Vlv1
5265	EGR2Vlv2
5285	ChrgAirCooler1
5401	TurboBypassAct
5419	ThrottleAct
5421	TurboWstgAct1
5435	DEFPump
5485	DEFPump
5541	P-Turbo1Outlet
5543	ExhBrakeAct
5706	DEFHeater
5743	SCRTempSensor
5745	DEFDosing1
5841	DEFQ
7461	Spd-DEFPump2
524287*	HiddenCode
0xFFFF*	HiddenCode

\*Hidden fault code by default

## 7.123 Siemens GCS-E Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.124 Sinotruk BBM Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.125 Sinotruk BBM Main Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.126 Standard J1939 engine Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN

247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested

970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19

1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch

3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.127 Standard J1939 monitor Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff

100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-Oil
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp



626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown

1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel

1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig

3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFiltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.128 EEM2 or EEM3 Faul Codes

Fault Code (SPN)	Text
51	ThrottlePos
91	AccelPedalPos
94	FuelDelPress
97	WaterInFuelInd
98	EngineOilLevel
100	EngOil Press
101	CrankcasePress
102	Boost Press
105	Intake Temp
106	AirInletPress
107	AirFiltDifPres
108	BarometricPres
109	Coolant Press
110	EngCool Temp
111	Coolant Level
153	CrankcasePress
157	FuelRail Press
168	BatteryVoltage
172	AirInlet Temp
174	Fuel Temp
175	EngOil Temp
189	RatedEngSpeed
190	EngineSpeed
231	J1939 Datalink
237	VIN
515	EngDesOpSpeed

620	5V SupplyFail
626	PrehActuator
628	EMSProgFailure
629	EEPROMChecksum
630	CalibrMemFail
636	Crank Sensor
637	TimingSensor
639	J1939 CAN Bus
651	InjectorCyl#1
652	InjectorCyl#2
653	InjectorCyl#3
654	InjectorCyl#4
655	InjectorCyl#5
656	InjectorCyl#6
677	EngStartRelay
898	RequestedSpeed
970	AuxEngSdSwitch
971	EngDerateSwth
1109	EngSdApproach
1110	Engine Sd
1136	ECU Temp
1485	ECU MainRelay
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	AmbientPress
9021	5Vdc Supply 1
9022	5Vdc Supply 2
9023	5Vdc Supply 3
9024	WaterInFuelSup
9025	SelfTestWtchdg
9026	SelfTestVoltHi
9027	SelfTestVoltLo
9030	MainRelay1Shrt
9031	MainRelay2Shrt
9032	MainRelay3Shrt
9033	MainRelay
9034	MainRelayDfct
9035	NormalRecovery
9036	Full restart
9070	CrankSpeedSens
9071	CrankSpeedSens
9072	CrankSpeedSens
9080	CamSpeedSensor
9081	CamSpeedSensor
9082	CamSpeedSensor
9083	CamSpeedSensor
9090	EngineSpeedErr

9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	Rail Pressure
9151	PressReliefVlv
9152	FuelFiltrPress
9153	FuelFiltrPress
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	ID Module
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTO InputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput

## 7.129 SISU EEM3 Gen-set Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric

109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1
168	Battery
172	T-AirIntake
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1136	T-ECU
1485	ECMMainRelay
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5Vdc Supply 1
9022	5Vdc Supply 2
9023	5Vdc Supply 3
9024	WaterInFuel
9025	SelfTestWtchdg
9026	SelfTestVoltHi
9027	SelfTestVoltLo
9030	MainRelay1Shrt

9031	MainRelay2Shrt
9032	MainRelay3Shrt
9033	MainRelay
9034	MainRelayDfct
9035	NormalRecovery
9036	FullRestart
9070	CrankSpeedSens
9071	CrankSpeedSens
9072	CrankSpeedSens
9080	CamSpeedSensor
9081	CamSpeedSensor
9082	CamSpeedSensor
9083	CamSpeedSensor
9090	EngineSpeedErr
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	PressReliefVlv
9152	P-FuelFiltr
9153	P-FuelFiltr
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule
9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTOInputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput
524287*	HiddenCode

\*Hidden fault code by default



## 7.130 SISU EEM3 Propulsion Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach

1110	EPS Shutdown
1136	T-ECU
1485	ECMMainRelay
9006	VehicleCANoff
9008	IDmoduleCANoff
9010	P-Ambient
9021	5VSupply 1
9022	5VSupply 2
9023	5VSupply 3
9024	WaterInFuelSpp
9025	SelfTestWtchdg
9026	V-SelfTestHi
9027	V-SelfTestLo
9030	MainRelay1Shrt
9031	MainRelay2Shrt
9032	MainRelay3Shrt
9033	MainRelay
9034	MainRelayDfct
9035	NormalRecovery
9036	FullRestart
9070	Spd-CrankSens
9071	Spd-CrankSens
9072	Spd-CrankSens
9080	Spd-CamSensor
9081	Spd-CamSensor
9082	Spd-CamSensor
9083	Spd-CamSensor
9090	Spd-EngineErr
9107	InvalidECUAddr
9131	SolenoidValve1
9132	SolenoidValve2
9133	SolenoidValve3
9134	SolenoidValve4
9135	SolenoidValve5
9136	SolenoidValve6
9140	Throttle2Sens
9141	Throttle3Sens
9150	P-Rail
9151	P-ReliefVlv
9152	P-FuelFiltr
9153	P-FuelFiltr
9174	MPROP
9230	EngSpecMismtch
9231	EngSNMismatch
9233	IDM-NotPresent
9234	IDM-NotComptbl
9235	IDModule

9236	IDM-MemDefect
9237	IDM-Watchdog
9238	IDM-Brownout
9239	EngSpecMissing
9240	EngSNMissing
9241	IDM-NotPresent
9242	GeneratedByPTE
9243	MaxECUByPTE
9305	BadDIConfig
9306	PTO InputError
9310	ExternalFlt1
9311	ExternalFlt2
9312	TorqCtrlInput
524287*	HiddenCode

\*Hidden fault code by default

## 7.131 Standard J1939 engine Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFlt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFltrDiff
127	P-Oil
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1

157	P-Fuel1Inj1
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10

661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested
970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2

1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19
1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater

3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch
3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.132 Standard J1939 monitor Fault Codes

Fault Code (SPN)	Text
22	P-ExtCrankcase
29	APP2
51	ThrottleVlv1
52	T-Intcooler
81	DPFIntake
91	APP
92	Load
94	P-FuelDelivery
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
99	P-OilFltDiff
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
112	P-CoolFiltrDiff
127	P-OilTransm
132	IntAirMassFlow
153	P-Crankcase
156	P-Fuel1Inj1
157	P-Fuel1Inj1Met
158	KeySwitch
159	P-GasFuelSppl
166	Pwr-Rated
168	Battery
170	T-CabInterior
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
176	T-TurboOil
183	FuelRate
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN



247	EngineRunHours
250	TotalFuelUsed
441	T-Auxiliary1
442	T-Auxiliary2
512	TorqueDemand
513	TorqueActual
514	Torque
515	Spd-Desired
518	ReqTorque
519	Spd-DesAsym
558	AP1LowIdleSw
620	5VSupply
623	StopLamp
624	WarningLamp
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
667	InjectorCyl17
668	InjectorCyl18
669	InjectorCyl19
670	InjectorCyl20
671	InjectorCyl21
672	InjectorCyl22
673	InjectorCyl23
674	InjectorCyl24
677	StarterMotor
695	OverrideMode
898	Spd-Requested

970	AuxShutdown
971	DerateSw
974	APPRemote
975	Fan1EstSpd
976	PTO
980	PTOEnable
981	PTOAccelerate
982	PTOResume
983	PTODecelerate
987	ProtectLamp
1029	TripAFuelRate
1081	WaitStartLamp
1109	EPS SDApproach
1110	EPS Shutdown
1122	T-AltBearing1
1123	T-AltBearing2
1124	T-AltWinding1
1125	T-AltWinding2
1126	T-AltWinding3
1127	P-Turbo1Boost
1128	P-Turbo2Boost
1129	P-Turbo3Boost
1130	P-Turbo4Boost
1131	T-IntManifold2
1132	T-IntManifold3
1133	T-IntManifold4
1134	ChAirThermost
1136	T-ECU
1137	T-ExhPort 1
1138	T-ExhPort 2
1139	T-ExhPort 3
1140	T-ExhPort 4
1141	T-ExhPort 5
1142	T-ExhPort 6
1143	T-ExhPort 7
1144	T-ExhPort 8
1145	T-ExhPort 9
1146	T-ExhPort10
1147	T-ExhPort11
1148	T-ExhPort12
1149	T-ExhPort13
1150	T-ExhPort14
1151	T-ExhPort15
1152	T-ExhPort16
1153	T-ExhPort17
1154	T-ExhPort18
1155	T-ExhPort19

1156	T-ExhPort20
1176	P-Turbo1Intake
1177	P-Turbo2Intake
1180	T-Turbo1Int
1181	T-Turbo2Int
1203	P-AuxCoolant
1208	P-OilFiltInt
1239	FuelLeakage1
1387	P-Auxiliary1
1483	SourceAddress
1485	ECMMainRelay
1675	StarterMode
1693	TurboWastgate
1761	DEFTnkLevel
1802	T-IntManifold5
1803	T-IntManifold6
2433	T-Exh2Manf1
2434	T-Exh1Manif1
2435	P-SeaWtrPmpOut
2629	T-Turbo1Outlet
2809	P-AirFilt2Diff
3031	T-DEFTnk
3041	FlashProtect
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3242	T-DPFIntake
3246	T-DPFOutlet
3251	P-DPFDiff
3363	DEFTnkHeater
3468	T-1Fuel2
3515	T-DEFTnk2
3516	DEFConcentrat
3553	CoolPreHeated
3563	P-IntakeManAbs
3609	P-DPFIntake
3610	P-DPFOutlet
3695	RegenInhibit
3696	RegenForce
3697	DPFLamp
3698	HEST Lamp
3699	DPFPassive
3700	DPFRegenAct
3701	DPFStatus
3702	DPFInhibited
3703	DPFInhSwitch
3704	DPFInhClutch

3705	DPFInhBrake
3706	DPFInhPTO
3707	DPFInhIdle
3708	DPFInhNeutral
3709	DPFInhSpeed
3710	DPFInhBrake2
3711	DPFInhExhTmp
3712	DPFInhSysFlt
3713	DPFInhTimeout
3714	DPFInhSysLock
3715	DPFInhLockout
3716	DPFInhWarmed
3717	DPFInhLowSpd
3718	DPFInhConfig
3719	DPFSootLoad
3720	DPFAshLoad
3750	DPFNoMetRegen
3826	DEFAvgConsmpt
4080	FreqSelect
4175	DPFRegenForce
4360	T-SCR1Intake
4363	T-SCR1Outlet
5245	DEFLowLevel
5246	SCR Severity
5417	P-FuelFltInt
5504	HydrocarbPurg
5629	DPFInhExhPres
6915	SCR Lamp
6918	SCR InhSwitch
524287*	HiddenCode

\*Hidden fault code by default

## 7.133 StandardJ 1939 generator Fault Codes

Fault Code (SPN)	Text
2436	FreqGenAvgLN
2437	FreqGenL1N
2438	FreqGenL2N
2439	FreqGenL3N
2440	V-GenAvgLL
2441	V-GenAB-LL
2442	V-GenBC-LL
2443	V-GenCA-LL
2444	V-GenAvgLN
2445	V-GenL1N
2446	V-GenL2N
2447	V-GenL3N

2448	I-GenAvgLN
2449	I-GenL1N
2450	I-GenL2N
2451	I-GenL3N
2452	Pwr-Real
2453	Pwr-RealA
2454	Pwr-RealB
2455	Pwr-RealC
2456	Pwr-Reactive
2457	Pwr-ReactiveA
2458	Pwr-ReactiveB
2459	Pwr-ReactiveC
2460	Pwr-Apparent
2461	Pwr-ApparentA
2462	Pwr-ApparentB
2463	Pwr-ApparentC
2464	PF-GenOverall
2465	PF-GenA
2466	PF-GenB
2467	PF-GenC
2468	GenkWhE
2469	GenkWhI
2470	FreqUtl
2471	FreqUtlA
2472	FreqUtlB
2473	FreqUtlC
2474	V-UtlAvgLL
2475	V-UtlAB-LL
2476	V-UtlBC-LL
2477	V-UtlCA-LL
2478	V-UtlAvgLN
2479	V-UtlL1N
2480	V-UtlL2N
2481	V-UtlL3N
2482	I-UtlAvg
2483	I-UtlA
2484	I-UtlB
2485	I-UtlC
2486	Pwr-URReal
2487	Pwr-URRealA
2488	Pwr-URRealB
2489	Pwr-URRealC
2490	Pwr-URReactive
2491	Pwr-URReactiveA
2492	Pwr-URReactiveB
2493	Pwr-URReactiveC
2494	Pwr-UAApparent

2495	Pwr-UApparentA
2496	Pwr-UApparentB
2497	Pwr-UApparentC
2498	PF-UtlOverall
2499	PF-UtlA
2500	PF-UtlB
2501	PF-UtlC
2502	UtilitykWhE
2503	UtilitykWhI
2504	BusFrequency
2505	FreqBusA
2506	FreqBusB
2507	FreqBusC
2508	BusVoltage LL
2509	V-BusAB-LL
2510	V-BusBC-LL
2511	V-BusCA-LL
2512	V-BusLN
2513	V-BusL1N
2514	V-BusL2N
2515	V-BusL3N
2516	GenACPhase
2517	PhaseDiff
2518	PF-GenLagging
2519	PF-GenALagging
2520	PF-GenBLagging
2521	PF-GenCLagging
2522	PF-UtlOverall
2523	PF-UtlALagging
2524	PF-UtlBLagging
2525	PF-UtlCLagging
2526	GenPhaseMatch
2527	V-GenMatch
2528	Freq-Match
2529	GenInSync
2530	GenDeadBus
2531	UtlPhaseMatch
2532	V-Match
2533	Freq-Match
2534	InSync
2535	DeadBus
3375	VRLoadCmp
3376	VRVar/PF Mode
3377	VRFreqUnComp
3378	VRSoftStart
3379	VREnabled
3380	V-Excitation

3381	I-ExitField
3382	V-OutputBias
3383	Pwr-RegQ
3384	PF-Req
3385	PF-ReqLagging
3386	V-ReqLineLine
524287*	HiddenCode

\*Hidden fault code by default

## 7.134 Steyr M1 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.135 Steyr EDC17 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.136 Trijekt Gas Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
100	P-Oil
105	T-IntManifold
106	P-IntakeAir
108	P-Barometric
110	T-Coolant
168	Battery
629	Controller1
1136	T-ECU
2433	T-Exh2Manf1
2434	T-Exh1Manif1
3216	SCR IntakeNOx
3255	SCR2IntakeNOx
516096	Aux. Temp. 1
516097	Aux. Temp. 2
516098	Aux. Temp. 3
516099	Aux. Temp. 4
516100	Aux. Temp. 5
516101	Aux. Temp. 6

516104	Lambda 1
516105	Lambda 2
516111	TorqueMeasured
516112	PowerMeasured
516113	TorqueCalc
516114	PowerCalc
524287*	HiddenCode

\*Hidden fault code by default

## 7.137 VM Industrial Fault Codes

Fault Code (SPN)	Text
27	EGR1
51	ThrottleVlv1
84	Spd-WheelBased
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
164	P-Fuel1InjCtr
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
237	VIN
515	Spd-Desired
597	Brake
598	Clutch
604	TranNeutral



620	5VSupply
624	WarningLamp
625	FMTCTNonMonoMap
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
634	ThrtBypassVlv
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
675	GlowPlugLamp
676	GlowPlugRelay
677	StarterMotor
723	Spd-Speed2
767	TranRevSwitch
835	OilLevel
859	Heater06
898	Spd-Requested
970	AuxShutdown
971	DerateSw
976	PTO
977	FanDrive
979	RemPROPreprg
1079	Supply1
1109	EPS SDApproach
1110	EPS Shutdown
1137	T-ExhPort 1
1138	T-ExhPort 2
1213	MalfunctLamp
1347	FuelPmpAsmbl1
1351	AirCompressor
1484	OthersECU TC
1485	ECMMainRelay
1680	CabHeatingZone
524287*	HiddenCode

\*Hidden fault code by default

## 7.138 VM Marine Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
164	P-Fuel1InjCtr
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
228	Spd-SensCalib
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
624	WarningLamp
626	StartEnbl1
627	Pwr-Supply
628	ProgramMemory
629	Controller1
630	CalibratMemory
633	FuelActCmd
636	PositionSensor
637	TimingSensor
639	J1939CANBus
641	TurboGeometry
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3

654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
677	StarterMotor
679	FuellInjPrsReg
723	Spd-Speed2
835	OilLevel
898	Spd-Requested
970	AuxShutdown
971	DerateSw
976	PTO
1079	Supply1
1109	EPS SDApproach
1110	EPS Shutdown
1347	FuelPmpAsmbl1
1485	ECMMainRelay
1680	CabHeatingZone
524287*	HiddenCode

\*Hidden fault code by default

## 7.139 Volvo Industrial Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1

173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
411	P-EGR1Diff
412	T-EGR1
608	J1587 Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1072	CompBrakeOut1
1080	Supply2
1231	CAN bus Off
1136	T-ECU
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
1639	Spd-Fan
1668	J1939 Network4
1761	DEFTnkLevel
2017	SA 17
2036	SA 36
2659	EGR1MassFR
2791	EGR1Vlv1
3031	T-DEFTnk

3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed
3361	DEFDosing1
3364	DEFQuality
3468	T-1Fuel2
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4364	SCRCnvEfficiency
4752	EGR1CoolerEfc
5394	DEFDoserVlv1
5765	T-EGR1Act
520192	PistonCoolSw
520193	P-SeaWater
520194	StarterInput
520195	StopInput
520244	P-Fuel RelValv
520245	FuelPressReg
520335	ECM-IntBattLow
520416	CommLoss
520566	EngSupcharAct
520567	ATT1ExhGasTWet
520570	P-OilFilter
520688	ATT1ExhGasTDry
520691	PentaSC1
520692	IntSupchSense
520750	High-PFuelLeak
520751	HPHuelLeakage
520752	High-PFuelLeak
0x00014	EngCool Press
0x0001A	Fan Speed
0x0005E	Fuel Press
0x00061	Water in fuel
0x00062	Oil Level
0x00063	Oil Diff Press
0x00064	EngOil Press
0x00066	Boost Press
0x00069	Intake Temp
0x0006A	AirInletPress
0x0006C	Barom Press
0x0006E	EngCool Temp
0x0006F	Coolant Level
0x00099	CrankcasePress

0x0009E	BattPotential
0x000AD	Exhaust Temp
0x000AE	Fuel Temp
0x000AF	EngineOil Temp
0x200E7	SAE J1939 fail
0x200E8	5V DC Fail
0x200F0	Prg MemoryFail
0x200F5	EMS HW Failure
0x200FA	SAE J1587 fail
0x200FD	CalibrMem fail
0x200FE	Controller#1
0x30001	Injector 1
0x30002	Injector 2
0x30003	Injector 3
0x30004	Injector 4
0x30005	Injector 5
0x30006	Injector 6
0x30015	Pickup Cam
0x30016	Pickup Crank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	Starter Output
0x40006	ExtSTOP Active
0x40008	Piston CoolPr
0x40062	J1587 Sync
0x40084	J1587 Throttl
0x4010B	SeaWater Press
0x600C9	J1939 Datalink
0x600D8	J1939 Bus
0x73C01	Primary Batt
0x73C02	Secondary Batt
0x73C03	15 supply
0x73C04	30 supply
0x73C05	EMS supply
0x73C06	Extra supply
524287*	HiddenCode

\*Hidden fault code by default

## 7.140 Volvo Marine Prop Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil

101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
158	KeySwitch
164	P-Fuel1InjCtr
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	J1939Datalink
608	J1587Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
975	Fan1EstSpd
1080	Supply2
1231	CAN Bus OFF
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
2791	EGR1Vlv1
3249	T-AT1Exh2

3353	Alternator1
3522	AT1FuelUsed
520192	PistonCool
520193	P-SeaWater
520194	StarterInput
520195	StopInput
520245	FuelPressReg
520570	P-OilFilter
520691	PentaSC1
520751	HPHuelLeakage
0x00014	P-Coolant
0x0001A	Spd-Fan
0x0005E	P-Fuel
0x00061	WaterInFuel
0x00062	OilLevel
0x00063	P-OilDiff
0x00064	P-Oil
0x00066	P-Boost
0x00069	T-Intake
0x0006A	P-AirInlet
0x0006C	P-Barometric
0x0006E	T-Coolant
0x0006F	CoolantLevel
0x00099	P-Crankcase
0x0009E	V-Battery
0x000AD	T-Exhaust
0x000AE	T-Fuel
0x000AF	T-Oil
0x200E7	SAEJ1939Fail
0x200E8	5VDCFail
0x200F0	PrgMemoryFail
0x200F5	EMSHWFailure
0x200FA	SAEJ1587Fail
0x200FD	CalibrMemFail
0x200FE	Controller#1
0x30001	Injector1
0x30002	Injector2
0x30003	Injector3
0x30004	Injector4
0x30005	Injector5
0x30006	Injector6
0x30015	PickupCam
0x30016	PickupCrank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	StarterOutput
0x40006	ExtSTOPActive



0x40008	P-PistonCool
0x40062	J1587Sync
0x40084	J1587Throttle
0x4010B	P-SeaWater
0x600C9	J1939Datalink
0x600D8	J1939Bus
0x73C01	PrimaryBatt
0x73C02	SecondaryBatt
0x73C03	15Supply
0x73C04	30Supply
0x73C05	EMSSupply
0x73C06	ExtraSupply
524287*	HiddenCode

\*Hidden fault code by default

## 7.141 Volvo Industrial EMS2.4 Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
411	P-EGR1Diff
412	T-EGR1
608	J1587 Datalink

620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1072	CompBrakeOut1
1080	Supply2
1231	CAN bus Off
1136	T-ECU
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
1659	CoolTermostat1
1675	StarterMode
1639	Spd-Fan
1668	J1939 Network4
1761	DEFTnkLevel
2017	SA 17
2036	SA 36
2659	EGR1MassFR
2791	EGR1Vlv1
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed
3361	DEFDosing1

3364	DEFQuality
3468	T-1Fuel2
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4364	SCRCnvEfficiency
4752	EGR1CoolerEfc
5394	DEFDoserVlv1
5765	T-EGR1Act
520192	PistonCoolSw
520193	P-SeaWater
520194	StarterInput
520195	StopInput
520244	P-Fuel RelValv
520245	FuelPressReg
520335	ECM-IntBattLow
520416	CommLoss
520566	EngSupcharAct
520567	ATT1ExhGasTWet
520570	P-OilFilter
520688	ATT1ExhGasTDry
520691	PentaSC1
520692	IntSupchSense
520750	High-PFuelLeak
520751	HPHuelLeakage
520752	High-PFuelLeak
0x00014	EngCool Press
0x0001A	Fan Speed
0x0005E	Fuel Press
0x00061	Water in fuel
0x00062	Oil Level
0x00063	Oil Diff Press
0x00064	EngOil Press
0x00066	Boost Press
0x00069	Intake Temp
0x0006A	AirInletPress
0x0006C	Barom Press
0x0006E	EngCool Temp
0x0006F	Coolant Level
0x00099	CrankcasePress
0x0009E	BattPotential
0x000AD	Exhaust Temp
0x000AE	Fuel Temp
0x000AF	EngineOil Temp
0x200E7	SAE J1939 fail
0x200E8	5V DC Fail
0x200F0	Prg MemoryFail

0x200F5	EMS HW Failure
0x200FA	SAE J1587 fail
0x200FD	CalibrMem fail
0x200FE	Controller#1
0x30001	Injector 1
0x30002	Injector 2
0x30003	Injector 3
0x30004	Injector 4
0x30005	Injector 5
0x30006	Injector 6
0x30015	Pickup Cam
0x30016	Pickup Crank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	Starter Output
0x40006	ExtSTOP Active
0x40008	Piston CoolPr
0x40062	J1587 Sync
0x40084	J1587 Throttl
0x4010B	SeaWater Press
0x600C9	J1939 Datalink
0x600D8	J1939 Bus
0x73C01	Primary Batt
0x73C02	Secondary Batt
0x73C03	15 supply
0x73C04	30 supply
0x73C05	EMS supply
0x73C06	Extra supply
524287*	HiddenCode

\*Hidden fault code by default

## 7.142 Volvo Marine EMS2.3-2.4 Fault Codes

Fault Code (SPN)	Text
20	P-Coolant1
51	ThrottleVlv1
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
103	Spd-Turbo
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff

108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
153	P-Crankcase
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
172	T-AirIntake1
173	T-Exhaust
175	T-Oil
190	EngineSpeed
231	TripFuel
411	P-EGR1Diff
412	T-EGR1
608	J1587 Datalink
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
641	TurboGeometry
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
679	FuelInjPrsReg
729	IntAirHeater1
970	AuxShutdown
975	Fan1EstSpd
1072	CompBrakeOut1
1080	Supply2
1231	CAN bus Off
1136	T-ECU
1184	T-Turbo1Out
1188	TurboWstAct1
1239	FuelLeakage1
1347	FuelPmpAsmbl1
1485	ECMMainRelay
1659	CoolTermostat1

1675	StarterMode
1639	Spd-Fan
1668	J1939 Network4
1761	DEFTnkLevel
2017	SA 17
2036	SA 36
2659	EGR1MassFR
2791	EGR1Vlv1
3031	T-DEFTnk
3216	SCR IntakeNOx
3226	AT1OutNOx
3241	T-AT1Exh1
3249	T-AT1Exh2
3353	Alternator1
3522	AT1FuelUsed
3361	DEFDosing1
3364	DEFQuality
3468	T-1Fuel2
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4364	SCRCnvEfficiency
4752	EGR1CoolerEfc
5394	DEFDoserVlv1
5765	T-EGR1Act
520192	PistonCoolSw
520193	P-SeaWater
520194	StarterInput
520195	StopInput
520244	P-Fuel RelValv
520245	FuelPressReg
520335	ECM-IntBattLow
520416	CommLoss
520566	EngSupcharAct
520567	ATT1ExhGasTWet
520570	P-OilFilter
520688	ATT1ExhGasTDry
520691	PentaSC1
520692	IntSupchSense
520750	High-PFuelLeak
520751	HPHuelLeakage
520752	High-PFuelLeak
0x00014	EngCool Press
0x0001A	Fan Speed
0x0005E	Fuel Press
0x00061	Water in fuel
0x00062	Oil Level

0x00063	Oil Diff Press
0x00064	EngOil Press
0x00066	Boost Press
0x00069	Intake Temp
0x0006A	AirInletPress
0x0006C	Barom Press
0x0006E	EngCool Temp
0x0006F	Coolant Level
0x00099	CrankcasePress
0x0009E	BattPotential
0x000AD	Exhaust Temp
0x000AE	Fuel Temp
0x000AF	EngineOil Temp
0x200E7	SAE J1939 fail
0x200E8	5V DC Fail
0x200F0	Prg MemoryFail
0x200F5	EMS HW Failure
0x200FA	SAE J1587 fail
0x200FD	CalibrMem fail
0x200FE	Controller#1
0x30001	Injector 1
0x30002	Injector 2
0x30003	Injector 3
0x30004	Injector 4
0x30005	Injector 5
0x30006	Injector 6
0x30015	Pickup Cam
0x30016	Pickup Crank
0x30020	WastegateOut
0x30021	CoolingFan
0x40003	Starter Output
0x40006	ExtSTOP Active
0x40008	Piston CoolPr
0x40062	J1587 Sync
0x40084	J1587 Throttl
0x4010B	SeaWater Press
0x600C9	J1939 Datalink
0x600D8	J1939 Bus
0x73C01	Primary Batt
0x73C02	Secondary Batt
0x73C03	15 supply
0x73C04	30 supply
0x73C05	EMS supply
0x73C06	Extra supply
524287*	HiddenCode

\*Hidden fault code by default

## 7.143 Volvo ACM Fault Codes

Fault Code (SPN)	Text
628	ProgramMemory
639	J1939CANBus
1761	DEFTnkLevel
2000	ACM Error
3031	T-DEFTnk
3241	T-AT1Exh1
3354	Alternator2
3360	DEFContr1
3363	DEFTnkHeater
3510	SensorSupply02
3519	DEFTnk2
3520	DEFProperties
3521	DEFProperty
3532	DEFTnkVolume
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
4334	P-DEFDoser1
4355	DEFHeater2
4356	DEFHeater3
4366	DEFTnk1Heater
4374	Spd-DEFPump1
4375	DEFPumpDrive
4376	DEFDosing1
5016	Pwr-OutSupply4
5392	DEFDosing1
5394	DEFDoserVlv1
5435	DEFPump
5485	DEFPump
524287*	HiddenCode

\*Hidden fault code by default

## 7.144 Volvo EMS J1587 Fault Codes

Fault Code (SPN)	Text
0x00014	EngCool Press
0x0001A	Fan Speed
0x0005E	Fuel Press
0x00061	Water in fuel
0x00062	Oil Level
0x00063	Oil Diff Press
0x00064	EngOil Press
0x00066	Boost Press
0x00069	Intake Temp
0x0006A	AirInletPress



0x0006B	AirFilterInd
0x0006E	EngCool Temp
0x0006F	Coolant Level
0x00099	CrankcasePress
0x0009E	BattPotential
0x000AD	Exhaust Temp
0x000AF	EngineOil Temp
0x200E7	SAE J1939 fail
0x200E8	5V DC Fail
0x200F0	Prg MemoryFail
0x200FA	SAE J1587 fail
0x200FD	CalibrMem fail
0x200FE	Controller#1
0x30001	Injector 1
0x30002	Injector 2
0x30003	Injector 3
0x30004	Injector 4
0x30005	Injector 5
0x30006	Injector 6
0x30015	Pickup Cam
0x30016	Pickup Crank
0x30020	Wastegate
0x30021	CoolingFan
0x30059	Compressor
0x40003	Starter Output
0x40006	ExtSTOP Active
0x40008	Piston CoolPr
0x4010B	SeaWater Press
0x600C9	J1939 Datalink
0x600D8	J1939 Bus
0x70070	Exh.WetTemp
0x73C01	Primary Batt
0x73C02	Secondary Batt
0x73C03	15 supply
0x73C04	30 supply
0x73C05	EMS supply
0x73C06	Extra supply

## 7.145 Volvo EMS4 BMS Fault Codes

Fault Code (SPN)	Text
108	P-Barometric
158	KeySwitch
172	T-AirIntake1
177	T-TransOil
191	Spd-OutShaft
597	Brake
628	ProgramMemory

639	J1939CANBus
1669	J1939Network5
1670	J1939Network6
2017	LostCommA
3509	SensorSupply01
3510	SensorSupply02
5613	AltitudeSensor
5618	TransGearCyl1
5620	TransGearCyl2
6585	TransOutSpeed
520275	Gear1ValveHS
520347	HVBattPackBV
520350	HVBattPackB
520351	HVBattPreConB
520352	HVBMUContB
520354	HVBattPackB
520357	DrvMotATorq
520361	LostCommHVB1
520364	HVBattCellA
520389	CombChrgCtrl
520420	GearboxForkPS
520437	LostCommHVC
520438	LostCommHVD
520451	HVMCUTraction
520452	HVDriveline
520454	DCDCConvPerf
520460	DrvMotAPos
520461	DCDCConvPerf
520462	HVMCUWatch
520463	DCDCConvStat
520467	LostCommHVA
520468	HVBMUVoltA
520469	HVDCU1OutVolt
520473	HVCoolLvIC1
520475	HVBattVoltIso
520479	DrvMotAPhaseU
520480	DrvMotACtrl
520482	HVBattPackA
520483	HVDCU1TracA
520485	HVBattPreCon
520486	DCDCConvTempA
520487	DrvMotInvTempA
520488	HVMCUVS
520490	HVMCUIntVS5V
520491	HVMCUIntVSSU
520493	DCDCConvVoltA
520494	HVDCU1LSCurr

520496	DCDCConvPerf
520497	DrvMotAPerf
520498	HVMCUPResolv
520499	HVBattPosCon
520500	HVBattNegCon
520501	HVBMUContA
520503	HVBattPosConB
520504	HVBattNegConB
520507	HVBattCool-T-A
520508	HVBattCool-T-B
520509	DCDCConvVoltB
520510	HVBattPackA
520511	DCDCConvB
520512	DCDCConvB
520514	DCDCConvOutB
520516	DCDCConvTracB
520517	DCDCConvB
520518	DCDCConvB
520519	ElecPropCtrl
520521	HVBattCoolHA
520522	LostCommDCU1
520523	LostCommDC
520524	LostCommDrive
520533	HVMBattSOCDiv
520542	DrvMotACtrl
520543	HVMCUProgMem
520545	DCDCConvTempB
520571	DCU2LostComm
520572	DCConvLSCurrB
520597	HVBattChrgSwA
520598	BattChrgSwAVS
520600	BattChrgAModVS
520601	BattCharger
520602	BattChrgLock
520603	BattChrgIn
520615	HVBattPackCV
520616	HVBattPackDV
520617	HVBattPackC
520618	HVBattPackD
520619	HVBattPreConC
520620	HVBattPreConD
520621	HVBMUContC
520622	HVBMUContD
520625	HVBattPackC
520626	HVBattPackD
520629	HVBattPosConC
520630	HVBattNegConC

520631	HVBattPosConD
520632	HVBattNegConD
520644	MCULostComm
520646	DCDCLostComm
520647	HVFuseA
520648	HVFuseB
520649	HVFuseC
520650	HVFuseD
520657	BattChrgSwB
520658	BattChrgSwBVS
520661	DrvMotACtrl
520662	DrvMotACtrl
520663	BattChrgTempHi
520667	DrvMotBCtrl
520668	HVMCU2ProgMem
520670	HVMCU2Watch
520671	DrvMotBTorq
520672	DrvMotBPhaseU
520673	DrvMotBCtrl
520674	MCU2LostComm
520675	MCU2LostComm
520678	DrvMotBCtrl
520679	DrvMotBCtrl
520680	DrvMotInvTempB
520681	HVMCU2VoltSup
520684	HVCoolLvlC3
520685	MotCool-T-A
520693	HVMCU2TracVolt
520694	DrvMotBPerf
520695	HVMCU2Resolv
520696	DrvMotBPos
520697	LostCommDriveB
520705	HVMCU2IntVS5V
520706	HVMCU2IntVSSU
520820	SoftIncHVBI
520830	SoftIncoDrvMot
520844	Fan1Ctrl
520845	Fan2Ctrl
520846	CoolPumpACtrl
520847	CoolPumpBCtrl
520848	HVSysCoolPumpC
520849	HVSysCoolPumpD
520850	HVSysCoolPumpE
520851	HVSysCoolTempA
520852	HVSysCoolTempB
520853	HVSysCoolTempC
520854	HVSysCoolTempD

520856	HVBattChrgSwC
520857	BattChrgSwCVS
520858	HVBattPackE
520859	HVBattPackF
520860	HVBattPackG
520861	HVBattPackH
520862	HVBattPackI
520863	HVBattPackJ
520864	HVBattPackK
520865	HVBattPackL
520882	HVBattPackA
520883	HVBattPackB
520884	HVBattPackC
520885	HVBattPackD
520902	CommErrHVBI
520903	CommErrHVBI
520913	CommErrDriveC
520914	CommErrTVMU
520916	CommErrCCCM
520922	HVLoopA
520923	HVLoopB
520924	HVLoopC
520925	HVLoopHS
520946	SoftIncDCCtrlA
520950	BattChrgB
520951	BattChrgBIn
520956	ChrgSysCCS
520962	VehHardIncomp
520963	DST3Invalid
520966	CompFailTVMU
521011	HVBattPackA
521012	HVBattPackB
521013	HVBattPackC
521014	HVBattPackD
521015	HVBattPackE
521016	HVBattPackF
521025	DrvMotCCtrl
521026	DrvMotDCtrl
521027	DrvMotECtrl
521028	DrvMotFCtrl
521030	DrvMotCTorq
521031	DrvMotDTorq
521033	DrvMotFTorq
521034	DrvMotCPhaseU
521037	DrvMotFPhaseU
521038	CommErrDriveD
521040	CommErrDriveF

521043	DrvMotCInvPerf
521046	DrvMotFInvPerf
521047	DrvMotInvTempC
521050	DrvMotInvTempF
521053	DrvMotCTemp
521056	DrvMotFInvPerf
521059	DrvMotCPosA
521062	DrvMotFPosA
521070	MotCtrlUnitsID
521071	DCDCConvID
521072	TracBattID
521079	HVILLoopAStart
521080	HVILLoopBStart
521081	HVILLoopCStart
521082	TracVoltSysAct
521127	HVPropCoolVlvA
521128	HVPropCoolVlvB
521129	HVPropCoolVlvC
521130	HVPropCoolVlvD
521135	CtrlModGrndE
521136	CtrlModGrndF
521137	CtrlModGrndG
521141	CtrlModGrndM
521142	InvData-ModA
521145	SoftIncBattMod
521146	ChrgCtrlIDPin
521147	HVCoolUnitComp
521148	HVCoolCompOutP
521149	ComErrCoolUnit
521205	CoolHeatA-Volt
521297	HVBattPreConE
521298	HVBattPreConF
521301	HVBatt-E-VFlt
521302	HVBatt-F-VFlt
521303	HVBattPosConE
521304	HVBattNegConE
521305	HVBattPosConF
521306	HVBattNegConF
521307	APUOutACFreq
521308	APUOutDCVolt
521309	ACePTOConnInt
521310	DCePTOConnInt
521311	BattChrgAACS
521312	ACePTOSwitch
521313	DCePTOSwitch
521314	APUOutACCirc
521315	APUOutDCCirc

521319	BattChrgModA
521320	HVBattCellBalB
521321	HVBattCellBalC
521322	HVBattCellBalD
521323	HVBattCellBalE
521324	HVBattCellBalF
521325	HVBattAVolt
521326	HVBattBVolt
521327	HVBattCVolt
521328	HVBattDVolt
521329	HVBattEVolt
521330	HVBattFVolt
521331	HVFuseE
521332	HVFuseF
521333	HVBattPackA
521334	HVBattPackB
521335	HVBattPackC
521336	HVBattPackD
521337	HVBattPackE
521338	HVBattPackF
521339	HVBattPackE
521340	HVBattPackF
521341	HVBattPackDet
521342	HVBattPackBDet
521343	HVBattPackCDet
521344	HVBattPackDDet
521345	HVBattPackEDet
521346	HVBattPackFDet
521347	HVBattIntModA
521348	HVBattIntModB
521349	HVBattIntModC
521350	HVBattIntModD
521351	HVBattIntModE
521352	HVBattIntModF
521353	HVBattModAPerf
521354	HVBattModBPerf
521355	HVBattModCPerf
521356	HVBattModDPerf
521357	HVBattModEPerf
521358	HVBattModFPerf
521359	HVBattPackE
521360	HVBattPackF
521361	HVBattVoltSnsA
521362	HVBattVoltSnsB
521363	HVBattVoltSnsC
521364	HVBattVoltSnsD
521365	HVBattVoltSnsE

521366	HVBattVoltSnsF
521367	HVBattVoltSnsA
521368	HVBattVoltSnsB
521369	HVBattVoltSnsC
521370	HVBattVoltSnsD
521371	HVBattVoltSnsE
521372	HVBattVoltSnsF
521425	HVBattChrgA
521543	HVBMUContE
521544	HVBMUContF
521545	HVBattAThrmRun
521546	HVBattBThrmRun
521547	HVBattCThrmRun
521548	HVBattDThrmRun
521549	HVBattEThrmRun
521550	HVBattFThrmRun
521551	BattModAComErr
521553	CtrlPilot
521556	ProxDetectA
521558	BattChrgCoupA
521561	HVChrgCurrHi
521562	HVBChrgCurrHi
521563	HVCChrgCurrHi
521564	HVDChrgCurrHi
521565	HVEChrgCurrHi
521566	HVFChrgCurrHi
521567	HVDischCurrHi
521568	HVBDischCurrHi
521569	HVCDischCurrHi
521570	HVDDischCurrHi
521571	HVEDischCurrHi
521572	HVFDischCurrHi
521573	LostCommChrgA
521581	CtrlMod
521631	HVGThermRun
521632	HVHThermRun
521647	ChrgSwATemp
521648	ChrgSwBTemp
521649	ChrgSwCTemp
521652	HVPackAIntlk
521653	HVPackBIntlk
521654	HVPackCIntlk
521655	HVPackDIntlk
521656	HVPackEIntlk
521657	HVPackFIntlk
521699	DrvMotACtrl
521700	DrvMotBCtrl



521723	ChrgNegConA
521724	ChrgPosConA
521725	ChrgNegConB
521726	ChrgPosConB
521727	ChrgNegConC
521728	ChrgPosConC
521760	HVCoolPumpF
521761	HVCoolPumpG
521762	HVCoolPumpH
521763	HVCoolPumpI
521768	CoolCompTemp
521772	ElecPropEn
	HiddenCode

## 7.146 Waukesha ESM Fault Codes

Fault Code	Text
211	OilPressSenFlt
212	IMAP-LB SenFlt
213	OilTempSenFlt
214	IMAP-RB SenFlt
221	IMAT SenFlt
222	MainFuelValve
223	OilPressLow
224	Knock
225	KnockSenFlt
231	Cyl1-IgnitFlt
232	Cyl2-IgnitFlt
233	Cyl3-IgnitFlt
234	Cyl4-IgnitFlt
235	Cyl5-IgnitFlt
241	Cyl6-IgnitFlt
242	Cyl7-IgnitFlt
243	Cyl8-IgnitFlt
244	Cyl9-IgnitFlt
245	Cyl10-IgnitFlt
251	Cyl11-IgnitFlt
252	Cyl12-IgnitFlt
253	Cyl13-IgnitFlt
254	Cyl14-IgnitFlt
255	Cyl15-IgnitFlt
311	Cyl16-IgnitFlt
312	EngOverload
313	IgnitionFault
314	RemoteRPMFlt
315	HighIMAT
322	CalibrateAct
323	StuckThrotLink
332	IgnitCommFlt
333	CoolTempHigh
335	OilTempHigh
353	IgnitPwrHigh
341	StepperLeftFlt
342	StepperRightFlt
343	LBOxygSensFlt
344	ExhTempHighLB
345	RBOxygSensFlt
351	ExhTempHighRB
413	LeanLimitLeft
415	RichLimitLeft
422	CoolTempSenFlt

423	LeanLimitRight
425	RichLimitRight
432	StepperCommFlt
441	ThrottleActFlt
451	RemoteRPMOver
454	BattVoltOut
455	ECUTempHigh
523	AlternatorFlt
541	UserDI Changed
542	StartWithRPM>0
552	EngBeingDriven
555	InternalFault
65748	CrankMagPickup
65750	CamMagPickup
65757	EngOverspeed
65758	CustomerSd
65759	OilPressLow
65760	Knock
65767	OverCrank
65768	EngineStall
65787	CustOverspeed
65848	EngOverload
65849	Lockout/Ignit
65851	HighIMAT
65869	CoolTempHigh
65871	KnockAbsThres
66087	Update Err/Flt
66089	SecurityViolat
66091	InternalFault

## 7.147 Weichai Wise10B V1 Fault Codes

Fault Code (SPN)	Text
19	P-Oil
21	T-ECU
48	P-Barometric
91	APP
97	WaterInFuel
100	P-Oil
102	P-Intake
108	P-Barometric
110	T-Coolant
157	P-Fuel1Inj1Met
168	Battery
175	T-Oil
444	V-BatteryInp2
651	InjectorCyl 1
652	InjectorCyl 2

653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
723	Spd-Speed2
977	FanDrive
1135	T-Oil2
1136	T-ECU
1442	FuelVlvPos1
1637	T-Coolant3
1769	DFCEnvPChnFail
1795	DFC_EnvPElcErr
2659	EGR1MassFR
3258	AT2IntGSTmp
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3562	P-IntakeMan2
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
3599	Pwr-OutSupply3
4201	Spd-Engine1
4203	DFCRailPSRCMin
4204	DFCBattUSRCMax
5016	Pwr-OutSupply4
5017	Pwr-OutSupply5
5125	SensorSupply07
5126	SensorSupply08
5127	SensorSupply09
5128	SensorSupply10
5290	DFCDevLBattUHi
6614	DFCDevLBattULo
7354	DFCInjVlvDINoL
7749	Starter2fdb
8488	T-ChrAirClrOut
524287*	HiddenCode

\*Hidden fault code by default

## 7.148 Weichai Wise12B Fault Codes

Fault Code (SPN)	Text
29	APP2
59	TranShiftFGear
84	Spd-WheelBased
91	APP
95	P-FuelFiltDiff
98	OilLevel
99	P-OilFiltDiff
100	P-Oil
102	P-Intake
105	T-IntManifold
107	P-AirFilt1Diff
108	P-Barometric
110	T-Coolant
132	IntAirMassFlow
168	Battery
174	T-Fuel
175	T-Oil
190	EngineSpeed
507	DriverID
571	BrakeSwitch
597	Brake
598	Clutch
626	StartEnbl1
976	PTO
1136	T-ECU
1442	FuelVlvPos1
1443	FuelVlvPos2
1623	Spd-TachoShaft
1624	Spd-Tachograph
1639	Spd-Fan
1675	StarterMode
2802	DataMemoryUsg
2898	StartEnbl2Cfg
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
4201	Spd-Engine1
524287*	HiddenCode

\*Hidden fault code by default

## 7.149 Weichai Wise13A Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.150 Weichai Wise15A Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
596	MFLvCrCtlMode
597	Brake
598	Clutch
624	WarningLamp
630	CalibratMemory
636	PositionSensor
645	Tachometer
651	InjVlvCyl1
652	InjVlvCyl2
653	InjVlvCyl3
654	InjVlvCyl4
655	InjectorCyl 5
656	InjVlvCyl5
676	GlowPlugRelay
677	StarterMotor
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
970	AuxShutdown
985	A/CHiPressFan

1071	CoolFanDrive
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1108	EPS TimerOvrd
1192	TurboWstAct
1213	MalfunctLamp
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1351	AirCompressor
1485	MRlyCD
1624	Spd-Tachograph
1639	Spd-Fan
2634	PowerRelay
2791	EGR1Vlv1
520192	ADCMon
520193	AFSCDPISDrft
520194	ASLLCD
520195	AirCtlGvnrMax
520196	AirCtlGvnrMin
520197	CABCD
520198	ClgAbsTst
520199	CoVMDCSh
520200	ComprTst
520201	EATSCDBET
520202	EATSCDClgZn
520203	EATSCDlnAir
520204	EBSwPrSelPlaus
520206	EGPpCDP3
520207	FIFCDHtg
520208	FWEngGsFIRtHtr
520209	FWEngTmp2Sens
520210	FWTODashDspl
520211	FWTOEBC1
520212	FWTOERC1DR
520213	FWTOETC1
520214	FWTOGsFlowRt
520215	FWTOHRVD
520216	FWTORxAMCON
520218	FWTORxCCVS

520219	FWTOTSC1VE
520220	FWTOTSC1VR
520221	GearbxInc
520222	HWEMonRcyLckd
520223	HpTst
520224	IAHSCD
520225	InjCrvInjLim
520226	InjVlvNumInj
520227	MSSCD
520228	OvRMonSigA
520229	PCRGvnrDvtMax
520230	PCRGvnrDvtMin
520231	PSPCDActr
520232	RunUpTst
520233	ShOffTst
520234	TVACD
520236	FMTCNonMonoMap
520237	FWTOTTimeDate
520238	FWTOWSI
520239	VarMngCodDs
520240	brk1crctlImp
520241	brk1crctlrls
520242	brk1swterr
520243	rmtapp1
520244	rmtapp2
523218	FWTORxCCVS
523222	FWTOTCO1
523350	InjVlvBnk1A
523351	InjVlvBnk1B
523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523420	Montr
523470	PRVMon
523500	FWTxTO
523550	TPUMon
523600	WdCom
523601	SSpMon3
523604	FWTORxEngTemp2
523605	FWTOTSC1AE
523606	FWTOTSC1AR
523607	FWTOTSC1DE
523608	FWTOTSC1DR
523612	HWEMonUSupply
523613	RailMeUn



523615	MeUnCDNoLoad
523617	HWEMonCom
524287*	HiddenCode

\*Hidden fault code by default

## 7.151 Weichai Wise18B Fault Codes

Fault Code (SPN)	Text
29	SRCHighAPP2
29	SRCLowAPP2
30	CrCsBlbyLim1Hi
30	CrCsBlbyLim2Hi
30	CrCsPSRCMax
30	CrCsPSRCMin
91	SRCHighAPP1
91	SRCLowAPP1
95	FuelPFItDsSRCM
95	FuelPFItDsSRCM
97	FISysWtDet
100	OilPMin
100	OilPSwmpPhysRn
100	OilPSwmpPhysRn
100	OilPSwmpSRCMax
100	OilPSwmpSRCMin
102	PlntkVUsPhysRn
102	PlntkVUsPhysRn
102	PlntkVUsSRCMax
102	PlntkVUsSRCMin
107	PAirFitDsPhysR
107	PAirFitDsPhysR
107	PAirFitDsSRCMa
107	PAirFitDsSRCMi
108	EnvPSRCMax
108	EnvPSRCMin
110	CEngDsTPhysRng
110	CEngDsTPhysRng
110	CEngDsTSRCMax
110	CEngDsTSRCMin
111	CLLSCDLow
157	RailPSRCMax
157	RailPSRCMin
168	BattUSRCMax
168	BattUSRCMin
175	OilTPhysRngHi
175	OilTPhysRngLo
175	OilTSRCMax
175	OilTSRCMin

444	DevLibBattUHi
444	DevLibBattULo
558	SyncAPP
596	CrCUIModeNpl
651	InjVlv_DI_NoLd
651	InjVlv_DI_ResH
651	InjVlv_DI_ScBn
651	InjVlv_DI_ScCy
651	InjVlv_DI_ScHs
651	InjVlv_DI_ScbH
653	InjVlv_DI_NoLd
653	InjVlv_DI_ResH
653	InjVlv_DI_ScBn
653	InjVlv_DI_ScCy
653	InjVlv_DI_ScHs
653	InjVlv_DI_ScbH
655	InjVlv_DI_NoLd
655	InjVlv_DI_ScCy
655	InjVlv_DI_ScHs
657	InjVlv_DI_NoLd
657	InjVlv_DI_ScCy
657	InjVlv_DI_ScHs
659	InjVlv_DI_NoLd
659	InjVlv_DI_ScCy
659	InjVlv_DI_ScHs
661	InjVlv_DI_NoLd
661	InjVlv_DI_ScCy
661	InjVlv_DI_ScHs
677	Strt1SCB
677	Strt1SCG
974	SRCHighRmtAPP1
974	SRCHighRmtAPP2
974	SRCLowRmtAPP1
974	SRCLowRmtAPP2
977	ComFanActrErr
1136	TECUPhysRngHi
1136	TECUPhysRngLo
1136	TECUSRCMax
1136	TECUSRCMin
1442	MeUnOIHsLs
1442	MeUnScHsLs
1442	MeUnScbHs
1442	MeUnScbLs
1442	MeUnScgHs
1442	MeUnScgLs
1590	ComACC1DLC
1590	ComACC1TO

1675	StSysCntMaxErr
1675	StSysInhibLoad
1688	AirHt2StickOnN
1769	EngPrtOvrSpd
1795	ItgHigh
1795	ItgLow
1845	ComTCFG2DLC
1845	ComTCFG2TO
2899	IAirHtOL
2899	IAirHtOvrTemp
2899	IAirHtSCB
2899	IAirHtSCG
3509	SSpMon1OV
3509	SSpMon1UV
3509	SSpMon1
3510	SSpMon2OV
3510	SSpMon2UV
3510	SSpMon2
3511	SSpMon3OV
3511	SSpMon3UV
3511	SSpMon3
3512	SSpMon4OV
3512	SSpMon4UV
3512	SSpMon4
3563	PCACDsLpPhysRn
3563	PCACDsLpPhysRn
3563	PCACDsLpSRCMax
3563	PCACDsLpSRCMin
4201	EpmCrSErrSig
4201	EpmCrSNoSig
5521	stAftLubErr
5791	TTrbnDsPhysRng
5791	TTrbnDsPhysRng
5791	TTrbnDsSRCMax
5791	TTrbnDsSRCMin
6201	TrbChPWMHSOL
6201	TrbChPWMHSOL_M
6201	TrbChPWMHSOvrT
6201	TrbChPWMHSOvrT
6201	TrbChPWMHSSCB
6201	TrbChPWMHSSCB_
6201	TrbChPWMHSSCG
6201	TrbChPWMHSSCG_
6201	TrbChPWMLSOL
6201	TrbChPWMLSOL_M
6201	TrbChPWMLSOverT
6201	TrbChPWMLSOverT

6201	TrbChPWMLSSCB
6201	TrbChPWMLSSCB_
6201	TrbChPWMLSSCG
6201	TrbChPWMLSSCG_
6385	Strt1OL
6385	Strt1OvrTemp
6614	PSPSCB
6614	PSPSCG
6719	FuelPPrePumpPR
6719	FuelPPrePumpSR
6719	FuelPPrePumpSR
7717	EpmCaSI1ErrSig
7717	EpmCaSI1NoSig
7717	EpmCaSI1OfsErr
7750	StrtOL
7750	StrtOvrTemp
7750	StrtSCB
7750	StrtSCG
8420	FuelTPhysRngHi
8420	FuelTPhysRngLo
8420	FuelTSRCMax
8420	FuelTSRCMin
8488	TCACDsPhysRngH
8488	TCACDsPhysRngL
8488	TCACDsSRCMax
8488	TCACDsSRCMin
8607	TCACDsLpPhysRn
8607	TCACDsLpPhysRn
8607	TCACDsLpSRCMax
8607	TCACDsLpSRCMin
516642	PRVFrOpnPresIn
516642	PRVFrOpnPresSh
516642	PRVOpn
516655	RailMeUn0
516655	RailMeUn2
516655	RailMeUn3
516657	RailMonInjRIs
516710	ComMsgCfgRept
517144	ComActvCodeDLC
517144	ComActvCodeTO
517145	ComAmbConTO
517146	ComCANPurgReqS
517147	ComCCVSRollgCn
517148	ComCM1DLC
517149	ComDDDLc
517149	ComDDTO
517150	ComDEC1RollgCn

517600	EleOilPumpOL
517600	EleOilPumpOvrT
517604	EleOilPumpSCB
517604	EleOilPumpSCG
517621	InjCrvInjLimIn
517663	EmergencyStopRlyO
517663	EmergencyStopRlyO
517663	EmergencyStopRlyS
517663	EmergencyStopRlyS
518100	ComShip1DLC
518100	ComShip1TO
518650	T50Err
518672	ComAMBDLC
518672	ComAMBTTO
518673	ComDrvCyclIdle
518674	ComEBC1DLC
518674	ComEBC1TO
518676	ComEEC1TO
518677	ComEEC2TO
518678	ComEEC3TO
518679	ComEEC5TO
518680	ComEFL_P1TO
518685	ComERC1TO
518686	ComETC1DLC
518686	ComETC1RollgCn
518686	ComETC1TO
518687	ComETC2DLC
518687	ComETC2RollgCn
518687	ComETC2TO
518688	ComETC7DLC
518688	ComETC7TO
518689	ComEngShOffEBC
518689	ComEngTempTO
518690	ComFIEcoTO
518690	ComGbxData
518691	ComHRLFCTO
518691	ComHRWDLC
518693	ComHRWTO
518694	ComIC1TO
518697	ComLFCTO
518698	ComMFD1TO
518725	ComRxCCVSDLC
518725	ComRxCCVSTO
518726	ComRxDEC1DLC
518726	ComRxDEC1TO
518754	ComT50StMaxErr
518755	ComTCO1DLC

518755	ComTCO1TO
518756	ComTOShutDwn
518757	ComTOTSC1ACCEA
518757	ComTOTSC1ACCEP
518758	ComTOTSC1ACCRA
518758	ComTOTSC1ACCRP
518759	ComTOTSC1AEAct
518759	ComTOTSC1AEPas
518760	ComTOTSC1ARAct
518760	ComTOTSC1ARPas
518761	ComTOTSC1DEAct
518761	ComTOTSC1DEPas
518762	ComTOTSC1DRAct
518762	ComTOTSC1DRPas
518763	ComTOTSC1PEAct
518763	ComTOTSC1PEPas
518764	ComTOTSC1TEAct
518764	ComTOTSC1TEPas
518765	ComTOTSC1TRAct
518765	ComTOTSC1TRPas
518766	ComTOTSC1VEAct
518766	ComTOTSC1VEPas
518767	ComTOTSC1VRAct
518767	ComTOTSC1VRPas
518768	ComTRF1DLC
518768	ComTRF1TO
518769	ComTSC1ACCEDLC
518769	ComTSC1ACCMsg
518769	ComTSC1ACCMsg
518769	ComTSC1ACCETO
518770	ComTSC1ACCRDLC
518770	ComTSC1ACCRMMsg
518770	ComTSC1ACCRMMsg
518770	ComTSC1ACCRTO
518771	ComTSC1AEDLC
518771	ComTSC1AEMsgCh
518771	ComTSC1AEMsgCo
518771	ComTSC1AETO
518772	ComTSC1ARDLC
518772	ComTSC1ARMMsgCh
518772	ComTSC1ARMMsgCo
518772	ComTSC1ARTO
518773	ComTSC1DEDLC
518773	ComTSC1DEMsgCh
518773	ComTSC1DEMsgCo
518773	ComTSC1DETO
518774	ComTSC1DRDLC

518774	ComTSC1DRMsgCh
518774	ComTSC1DRMsgCo
518774	ComTSC1DRTO
518775	ComTSC1PEDLC
518775	ComTSC1PEMsgCh
518775	ComTSC1PEMsgCo
518775	ComTSC1PETO
518776	ComTSC1TEDLC
518776	ComTSC1TEMsgCh
518776	ComTSC1TEMsgCo
518776	ComTSC1TETO
518777	ComTSC1TRDLC
518777	ComTSC1TRMsgCh
518777	ComTSC1TRMsgCo
518777	ComTSC1TRTO
518778	ComTSC1VEDLC
518778	ComTSC1VEMsgCh
518778	ComTSC1VEMsgCo
518778	ComTSC1VETO
518779	ComTSC1VRDLC
518779	ComTSC1VRMsgCh
518779	ComTSC1VRMsgCo
518779	ComTSC1VRTO
518780	ComTimeDateDLC
518780	ComTimeDateTO
518781	ComTraEngCrkEn
518782	ComTxCCVSTO
518784	ComTxTC1TO
518785	ComVDC1DLC
518785	ComVDC1TO
518786	ComVDHRDLC
518786	ComVDHRTO
518787	ComVDTO
518787	ComVEP1TO
518788	ComVHTO
518789	ComWFITO
518792	DrvDemMode
518794	ECBtnStopDEC1S
518797	ECBtnStrtDEC1S
518798	ECBtnStrtSig
518800	BusDiagBusOffT
524287*	HiddenCode

\*Hidden fault code by default

## 7.152 Weichai Wise18B Duel Fault Codes

Fault Code (SPN)	Text
16	FuelFiltBlock
19	P-Oil
20	P-Coolant1
21	T-ECU
28	APP3
29	APP2
30	P-BwbCrankcase
48	P-Barometric
59	TranShiftFGear
91	APP
95	P-FuelFiltDiff
96	FuelLevel1
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
157	P-Fuel1Inj1Met
167	SysCharging
168	Battery
170	T-CabInterior
171	T-AmbientAir
175	T-Oil
444	V-BatteryInp2
518	ReqTorque
558	AP1LowIdleSw
567	RemoteLockSpd
568	RemoteLockStrt
571	BrakeSwitch
575	ABS OffRoad
596	CCEnable
597	Brake
626	StartEnbl1
647	FanClutch1Out
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5



656	InjectorCyl 6
657	InjectorCyl 7
658	InjectorCyl 8
659	InjectorCyl 9
660	InjectorCyl10
661	InjectorCyl11
662	InjectorCyl12
663	InjectorCyl13
664	InjectorCyl14
665	InjectorCyl15
666	InjectorCyl16
677	StarterMotor
723	Spd-Speed2
729	IntAirHeater1
974	APPRemote
976	PTO
977	FanDrive
987	ProtectLamp
1109	EPS SDApproach
1135	T-Oil2
1136	T-ECU
1181	T-Turbo2Int
1189	TurboWstAct2
1207	T-ECU
1208	P-OilFiltInt
1209	P-ExhaustPres1
1213	MalfunctLamp
1239	FuelLeakage1
1240	FuelLeakage2
1349	P-Fuel1Inj2
1382	P-FuelFiltDiff
1442	FuelVlvPos1
1443	FuelVlvPos2
1569	TorqueDerate
1590	AdaptiveCC
1623	Spd-TachoShaft
1637	T-Coolant3
1639	Spd-Fan
1659	CoolTermostat1
1675	StarterMode
1688	Air Heating
1769	EngOverspeed
1795	I-Alternator
2435	P-SeaWtrPmpOut
2623	AP1Channel2
2625	AP2Channel2
2659	EGR1MassFR

2809	P-AirFilt2Diff
2810	P-AirFilt3Diff
2811	P-AirFilt4Diff
2898	StartEnbl2Cfg
2899	StartEnbl1Cfg
2901	ECU error
2970	AP2LowIdleSw
3062	AC compressor
3286	DPF2Intake
3340	P-ChrgAirC1Int
3341	P-ChrgAirC2Int
3359	OilFilterBlock
3361	DEFDosing1
3464	ThrottleCmd
3465	ThrottleCmd2
3509	SensorSupply01
3510	SensorSupply02
3511	SensorSupply03
3512	SensorSupply04
3513	SensorSupply05
3514	SensorSupply06
3515	T-DEFTnk2
3519	DEFTnk2
3549	P-OilFiltOut
3562	P-IntakeMan2
3563	P-IntakeManAbs
3597	Pwr-OutSupply1
3598	Pwr-OutSupply2
3599	Pwr-OutSupply3
3606	SDRequest
3675	TurboBpssPos
4000	ExhBrakeSwitch
4009	FuelFiltHeater
4076	T-Coolant2
4193	T-CoolPumpOut
4201	Spd-Engine1
4203	Crankshaft
4204	Crankshaft
4210	OilPump
4331	DEFDosingQ
4376	DEFDosing1
4752	EGR1CoolerEfc
5016	Pwr-OutSupply4
5017	Pwr-OutSupply5
5024	AT1IntNOxHeat
5082	P-LowOilLamp
5084	CoolLvlLamp

5099	P-LowOilLampD
5125	SensorSupply07
5126	SensorSupply08
5127	SensorSupply09
5128	SensorSupply10
5257	EGR2MassFR
5260	EGR2CoolerEfc
5264	EGR2Vlv1
5265	EGR2Vlv2
5289	AirCooler
5290	T-AirIntake
5357	InjFuelError
5371	TurboWstgAct1
5372	TurboWstgAct1
5375	TurboV1CANErr
5376	T-TurboValve1
5378	TurboV2CANErr
5379	T-TurboValve2
5384	TurboWstgAct2
5385	TurboWstgAct2
5386	TurboWstgAct1
5387	TurboWstgAct2
5417	P-FuelFltInt
5435	DEFPump
5451	TurboWstgAct1
5484	FanClitch2Out
5521	AfterLubeErr
5541	P-Turbo1Outlet
5544	P-Turbo2Outlet
5668	ECU error
5708	P-Coolant2
5738	FuelSystem
5749	P-ExhaustPres2
5783	T-EGR1Out
5784	T-EGR1
5787	T-EGR1Vlv1Err
5788	T-EGR1Vlv2
5925	T-Oil
6209	T-Coolant 2
6294	Turbo1WstgAct2
6295	Turbo2WstgAct1
6302	ECU_S Vent Err
6303	ECU_S LowCool
6385	StarterMotor
6614	FuelPump_M
6615	FuelPump_S
6719	P-FuelBefPump

6720	P-FuelBefPump
6816	P-FuelRetLine
7381	VGT
7468	P-DEFHeater10
7470	P-DEFHeater2
7717	CamshaftPh_M
7718	CamshaftPh_S
7748	Starter1Fdb
7750	StartMsgCnt
7782	TorqueLimit
7853	AirConCAN
8420	T-Fuel Limit_M
8421	T-Fuel Limit_S
8487	T-ChrAirClrIn
8488	T-ChrAirClrOut
8607	P-Mixer2Intake
524287*	HiddenCode

\*Hidden fault code by default

## 7.153 Weichai Wise15A Fault Codes

Fault Code (SPN)	Text
29	APP2
84	Spd-WheelBased
91	APP
95	P-FuelFltDiff
97	WaterInFuel
98	OilLevel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
111	CoolantLvl
132	IntAirMassFlow
157	P-Fuel1Inj1Met
158	KeySwitch
168	Battery
171	T-AmbientAir
172	T-AirIntake1
173	T-Exhaust
174	T-Fuel
175	T-Oil
190	EngineSpeed
520	RetarderTorque
596	MFLvCrCtlMode
597	Brake

598	Clutch
624	WarningLamp
630	CalibratMemory
636	PositionSensor
645	Tachometer
651	InjVlvCyl1
652	InjVlvCyl2
653	InjVlvCyl3
654	InjVlvCyl4
655	InjectorCyl 5
656	InjVlvCyl5
676	GlowPlugRelay
677	StarterMotor
729	IntAirHeater1
730	IntAirHeater2
898	Spd-Requested
970	AuxShutdown
985	A/CHiPressFan
1071	CoolFanDrive
1072	CompBrakeOut1
1074	ExhBrakeOut
1079	Supply1
1080	Supply2
1081	WaitStartLamp
1108	EPS TimerOvrdr
1192	TurboWstAct
1213	MalfunctLamp
1322	Misfire
1323	MisfireCyl 1
1324	MisfireCyl 2
1325	MisfireCyl 3
1326	MisfireCyl 4
1327	MisfireCyl 5
1328	MisfireCyl 6
1351	AirCompressor
1485	MRlyCD
1624	Spd-Tachograph
1639	Spd-Fan
2634	PowerRelay
2791	EGR1Vlv1
520192	ADCMon
520193	AFSCDPIStDrft
520194	ASLLCD
520195	AirCtlGvnrMax
520196	AirCtlGvnrMin
520197	CABCD
520198	ClgAbsTst

520199	CoVMDCSh
520200	ComprTst
520201	EATSCDBET
520202	EATSCDCIgZn
520203	EATSCDInAir
520204	EBSwPrSelPlaus
520206	EGPpCDP3
520207	FIFCDHtg
520208	FWEngGsFIRtHtr
520209	FWEngTmp2Sens
520210	FWTODashDspl
520211	FWTOEBC1
520212	FWTOERC1DR
520213	FWTOETC1
520214	FWTOGsFlowRt
520215	FWTOHRVD
520216	FWTORxAMCON
520218	FWTORxCCVS
520219	FWTOTSC1VE
520220	FWTOTSC1VR
520221	GearbxInc
520222	HWEMonRcyLckd
520223	HpTst
520224	IAHSCD
520225	InjCrvInjLim
520226	InjVlvNumInj
520227	MSSCD
520228	OvRMonSigA
520229	PCRGvnrDvtMax
520230	PCRGvnrDvtMin
520231	PSPCDActr
520232	RunUpTst
520233	ShOffTst
520234	TVACD
520236	FMTCTNonMonoMap
520237	FWTOTTimeDate
520238	FWTOWSI
520239	VarMngCodDs
520240	brk1crctlImp
520241	brk1crctlrls
520242	brk1swterr
520243	rmtapp1
520244	rmtapp2
523218	FWTORxCCVS
523222	FWTOTCO1
523350	InjVlvBnk1A
523351	InjVlvBnk1B

523352	InjVlvBnk2A
523353	InjVlvBnk2B
523354	InjVlvChipA
523355	InjVlvChipB
523420	Montr
523470	PRVMon
523500	FWTxTO
523550	TPUMon
523600	WdCom
523601	SSpMon3
523604	FWTORxEngTemp2
523605	FWTOTSC1AE
523606	FWTOTSC1AR
523607	FWTOTSC1DE
523608	FWTOTSC1DR
523612	HWEMonUSupply
523613	RailMeUn
523615	MeUnCDNoLoad
523617	HWEMonCom
524287*	HiddenCode

\*Hidden fault code by default

## 7.154 YaMZ EDC7 Fault Codes

Fault Code (SPN)	Text
100	P-Oil
729*	HiddenCode
524287*	HiddenCode

\*Hidden fault code by default

## 7.155 Yanmar TNV Fault Codes

Fault Code (SPN)	Text
91	APP
94	P-FuelDelivery
97	WaterInFuel
98	OilLevel
100	P-Oil
101	P-Crankcase
102	P-Intake
105	T-IntManifold
106	P-IntakeAir
107	P-AirFilt1Diff
108	P-Barometric
109	P-Coolant1
110	T-Coolant
111	CoolantLvl

153	P-Crankcase
158	KeySwitch
168	Battery
172	T-AirIntake1
174	T-Fuel
175	T-Oil
189	Spd-Rated
190	EngineSpeed
231	TripFuel
237	VIN
515	Spd-Desired
620	5VSupply
626	StartEnbl1
628	ProgramMemory
629	Controller1
630	CalibratMemory
636	PositionSensor
637	TimingSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
677	StarterMotor
898	Spd-Requested
970	AuxShutdown
971	DerateSw
1109	EPS SDApproach
1110	EPS Shutdown
1485	ECMMainRelay
524287*	HiddenCode

\*Hidden fault code by default

## 7.156 Yanmar EDC17 Fault Codes

Fault Code (SPN)	Text
51	ThrottleVlv1
91	APP
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
157	P-Fuel1Inj1Met
167	SysCharging



173	T-Exhaust
174	T-Fuel
190	EngineSpeed
412	T-EGR1
630	CalibratMemory
633	FuelActCmd
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
1209	P-ExhaustPres1
1485	ECMMainRelay
2791	EGR1Vlv1
2797	FuelInjectorG1
2798	FuelInjectorG2
2950	InThrottleAct1
2951	InThrottleAct2
3242	T-DPFIntake
3250	T-DPFIntermed
3251	P-DPFDiff
3609	P-DPFIntake
3719	DPFSootLoad
3720	DPFAshLoad
522323	AirCleanBlock
522329	OilyWaterSep
522400	CrankshSpdSens
522401	CamshSpdSens
522571	SupplyPump
522573	DPF OverAccC
522574	DPF OverAccP
522575	DPF RegenFail
522577	DPF RegenFail
522596	ECR1_CAN2Error
522610	EGR_CAN1Error
522994	E-ECU Internal
524287*	HiddenCode

\*Hidden fault code by default

## 7.157 Yanmar TNV EGC1030 Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
100	P-Oil
108	P-Barometric
110	T-Coolant
158	KeySwitch

167	SysCharging
190	EngineSpeed
628	ProgramMemory
630	CalibratMemory
638	FuelRack1Act
639	J1939CANBus
1078	FuelInjPump
1079	Supply1
1136	T-ECU
1202	ImmobSysFault
1210	FuelRack
1485	ECMMainRelay
522241	FuelRackActu
522242	ColdStart
522243	AirHeaterRelay
522251	EGRStepMotorA
522252	EGRStepMotorB
522253	EGRStepMotorC
522254	EGRStepMotorD
522314	T-Coolant
522323	AirCleaner
522329	OilyWater
522402	AuxSpeedSens
522727	EECUIntFault
522728	EECUIntFault
522730	Immobilizer
524287*	HiddenCode

\*Hidden fault code by default

## 7.158 Yuchai YC-BCR Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.159 Yuchai YC-LH Main Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.160 Yuchai YC-LH Fault Codes

Fault Code (SPN)	Text
100	P-Oil
524287*	HiddenCode

\*Hidden fault code by default

## 7.161 Yuchai YC-ECU Fault Codes

Fault Code (SPN)	Text
29	APP2
91	APP
97	WaterInFuel
100	P-Oil
102	P-Intake
105	T-IntManifold
108	P-Barometric
110	T-Coolant
158	KeySwitch
168	Battery
174	T-Fuel
175	T-Oil
558	AP1LowIdleSw
599	CCSet
629	Controller1
636	PositionSensor
639	J1939CANBus
651	InjectorCyl 1
652	InjectorCyl 2
653	InjectorCyl 3
654	InjectorCyl 4
655	InjectorCyl 5
656	InjectorCyl 6
697	PWMDriver1
702	AuxiliaryIO 02
703	AuxiliaryIO 03
706	AuxiliaryIO 06
707	AuxiliaryIO 07
723	Spd-Speed2
729	IntAirHeater1
966	DiagTestMode
969	RemAccelEnable
1079	Supply1
1080	Supply2
1136	T-ECU
1213	MalfuncLamp
1231	CAN bus off
1675	StarterMode
524287*	Hiddencode

\*Hidden fault code by default

# 8 Notes

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## 8.1 Software compatibility

Version 8.12.0 can be imported into GenConfig, DriveConfig, LiteEdit and IntelliConfig as a standard firmware package. It must be used with the following versions of ComAp PC software to support all features of ECU Library:

- > GenConfig ver. 4.1.0 or newer
- > DriveConfig ver. 4.1.0 or newer
- > LiteEdit 6.1.0 or newer
- > IntelliConfig ver. 2.61.0 or newer