

# InteliLite 4

## Controller for single gen-set applications

### SW version 1.8.0

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# 1 General information

## 1.1 Version information

Major version with new features - passive synchronization, 400Hz support (under SW key), Sprinkler support and bugfixing.

## 1.2 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.

**WARNING:** 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.

**CAUTION:** 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.

# 2 Changes in the version 1.8.0

## 2.1 New features

- Sprinkler system support - new type of emergency function for supporting applications with gensets supplying sprinkler systems required specifically in Germany (standard **VdS CEA 4001 Guidelines for sprinkler systems**). Available in AMF25 and MRS16 models.
  - The function is activated by LBI SPRINKLER
  - The behavior of a controller is set by the new setpoints withing the setpoint group Sprinkler, these are *Cranking Attempts for Sprinkler, Close GCB During Sprinkler, Unload Genset Time, After Sprinkler Time, 2nd Level Prot Block in AfSp Time*
- Close transition/Passive synchronization support. Available in AMF25 in AMF mode only. *Internal* GCB control is required.
  - Transition modes: Open / InPhase / Close (up to 200 ms).
  - There is a new setpoint group Transition Settings and contain all needed parameters: *MCB Open Latency, MCB Close Latency, GCB Open Latency, GCB Close Latency, Voltage Window, Frequency Window, Synchronization Timeout*.
- 400 Hz measurement for GPU applications support in AMF25 and MRS16 models. The function is available with the SW key only (order code: SK400HZX01)
  - New frequency range is up to 520 Hz. Any value over 70 Hz needs a SW key.
- Selection of IDMT curve.
  - Settings is available in group Protections, subgroup IDMT. Options for *IDMT Curve* setpoints are:
    - ANSI SIT (standard intensive)
    - ANSI VIT (very intensive)
    - ANSI EIT (extremely intensive)
    - IEC SIT
    - IEC VIT
    - IEC EIT
- ECU Power Relay function modification to support multiple ECU devices
  - Possibility to choose which ECU affects the functionality of LBO ECU POWER RELAY
- Increased number of user defined setpoint groups and subgroups
- PLC upgrades
  - Added Ramp block to standard AMF25 and MRS16
  - PLC block Comp Time was replaced by newer type Comp Delay
- Improved Engine application
  - Increased number of PLC blocks in a standard Engine archive
  - Added Engine PLC Extended archive - configuration for advanced engine applications where more PLC blocks is needed. SW key is required for the archive activation (order code: SKPLCILX01).
  - Improvement of history record for Engine application
  - LBO READY TO LOAD is visible

- Mains Screen Lines improvements, more space for value description
- Modbus client functionality added to standard and engine applications based on IL4 AMF25 or IL4 MRS16. SW key is required for support of more than 2 values (order code: SKMODCLI03)
- Statistic screens improvements - user friendly categorization of statistic values at the screen of the controller. Newly there are following categories of statistic screens:
  - Statistics - general statistic values
  - Maintenance - special screen for maintenance purposes showing SN, Date, Time, Running Hours and Maintenance Timers
  - Exercise Timers
  - Hybrid statistics - statistic values connected with Hybrid application, e.g. charging/discharging hours or kWh
  - Others - rental timers, universal values, pulse counters
- New value *Load P Relative* (in %, considering nominal power as 100%)
- D+ functionality improvement for prolonging the excitation. New setpoint *D+ Additional Charge Time* in Engine Settings.
- Improvement of LBONEUTRAL POSITION. Newly it works in AUTO mode too. When the LBI is active, CU opens all breakers and activates LBO NEUTRAL CLOSE/OPEN (and NEUTRAL ON COIL) and stays in neutral breaker position.

## 2.2 Repairs

- Correction of screens with graphical font (e.g. Chinese)
- BOC/SD alarms inconsistency fix
- Fix of SOC start in MRS mode

# 3 Changes in the version 1.7.2

## 3.1 Repairs

- Fixed issue with screens for graphical languages - e.g. Chinese

# 4 Changes in the version 1.7.1

## 4.1 Repairs

- Incorrect operation of the display heating which can lead to display damage - LT HW version only

# 5 Changes in the version 1.7.0

## 5.1 New features

- Support of engine application
    - New archives based on AMF8, AMF9, AMF25 and MRS16 models
    - All settings for generator are hidden
    - All generator protections are disabled
    - Only "generator" LED is available
      - LED is red when there is 2nd level alarm
      - LED is green when actual RPMs are higher than starting RPM setpoint
    - Extended PLC for AMF25 and MRS16 Engine archives
    - Main Screen Gauge setpoint
      - options of this setpoint was changed to RPM and AIN1
  - 4th set of alternate configuration in AMF25 and MRS16
  - Support of user setpoint groups and subgroups
  - Adding user analog values to display - statistic screens
    - Universal LAI 1 and Universal LAI 2 added
    - These analog inputs can be renamed
    - When LAI is configured, actual value of LAI is visible in statistics screens
  - Reset of maintenance timers
    - LBIs Maintenance Timer X Reset added
    - When LBI is activated Maintenance Timer X is reset to default values (RH and interval timer)
    - It is possible to add password protection to this function - IntelliConfig - controller configuration - others
      - access rules - commands
    - When password protection is used, login via controller front facia is required
  - Support of predefined modbus ECU
  - Support of reading of ECU fault codes over modbus
  - Setpoint CB Control In MAN Mode added
    - Full control - actual behaviour, user has full control of both breakers
    - Auto Trans - automatic transition of load
- Example:** MAN mode, GCB is closed and MCB is open. When MCB is pressed, GCB is automatically opened and MCB is closed.
- Disabling of in-build protections
    - This function was added to AMF8, AMF9 and AMF20
  - AIN Switch
    - This function was added to AMF8 and AMF20

- LBI ECU Stopped Engine
  - This LBI is useful in situations where Gen-set is controller by an ECU or other device which also includes engine protections and can stop the engine itself.
- Reverse Power
  - Principle of calculation of this protection was changed to IDMT type
- Support of multiplexing for J1939 protocol
- ECU screens - support of numbers with more than 7 digits
  - Name of value is automatically overwritten by actual number of value

## 5.2 Repairs

- It is possible to skip idle phase in MAN mode by pressing start button
- Incorrect DM1 decoding for MAN MFR ECU
- History records for MCB removed from MRS16
- Change of CU language when user is not logged in is available
- Total Fuel consumption - correct calculation for values received from ECU
- RPM regulation of Cummins CM2358 ECU
- Value Number Of Starts is not increased when LBI Force Idle is Used

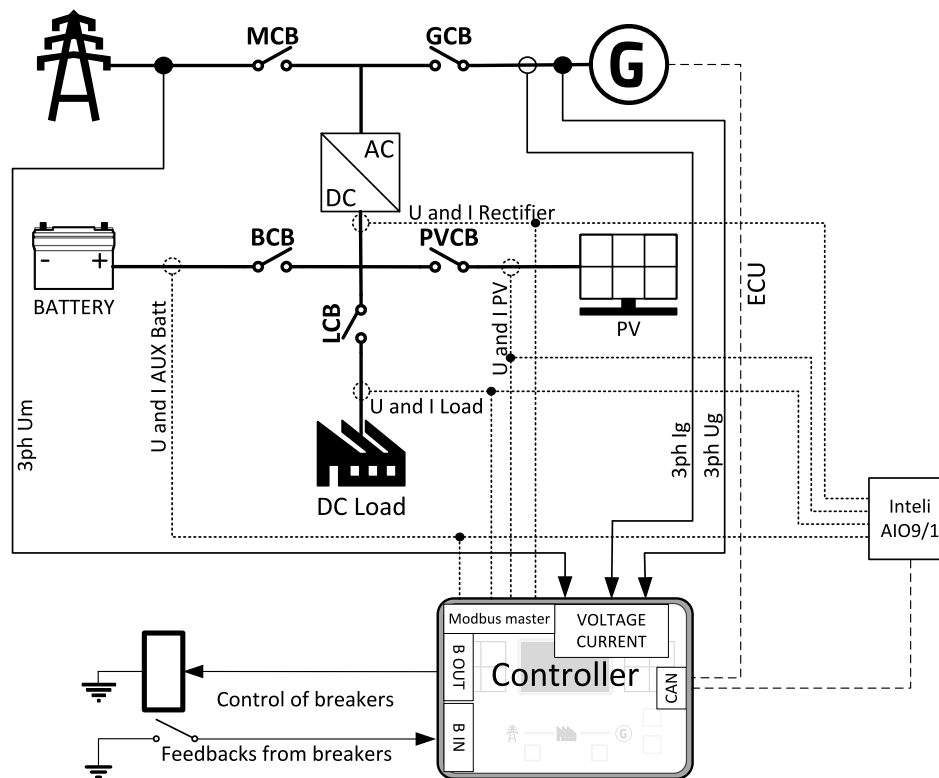


# 6 Changes in the version 1.6.0

## 6.1 New features

- Support of Hybrid application
  - Advanced monitoring of backup batteries and photovoltaic (PV) systems.
  - Battery status information can be accurately measured through the DC module (IntelAiO9/1) or obtained from the rectifier or Battery Management System (BMS) via Modbus communication, and properly connected with predefined LAI (logical analog inputs) within the configuration.
  - Start/Stop Conditions – setting of starting/stopping conditions for the genset regarding to SOC (State of Charge) or U/I (battery DC voltage and current) or Capacity.
  - Full Charge Cycle – enhanced option for increasing the charging time for each n-th cycle to prolong the battery life.
  - Cycle Limitation – enhanced option for limitation of the charging cycles for each day to prolong the battery life.
  - Silent Hours – enhanced option for avoiding of the unwanted noise from running genset.
  - Low AUX Batt Protection – safeguards the backup battery from the risk associated with deep discharging.

**IMPORTANT:** The “Hybrid” configuration is needed for enabling the functionality.



**Note:** For more information please see *IntelliLite 4 Global Guide 1.6.0*.

- It is possible to rename default names of existing objects in the configuration, for instance:
  - Maintenance Timers
  - Pulse/Hours Counters
  - User Buttons
  - Timers and Rental Timers
- New parameter used for configuration of J1939 ECU
  - This parameter defines delay for ECU Communication Fail alarm. Range of parameter is 0.3 – 10.0s
- New temperature sensors are supported
  - PT100 (°C)
  - PT1000 (°C)
  - NI100 (°C)
  - NI1000 (°C)
  - PT100 (°F)
  - PT1000 (°F)
  - NI100 (°F)
  - NI1000 (°F)
- Improved method for calculation of fuel consumption
- Universal values for modbus interface added
  - RemoteControl 2B
    - 4 analog values
  - RemoteControl Bin
    - 16 binary values
- Actual values of exercise timers are visible
- Default value of setpoint MCB Close Delay
  - New default value is 5s
- Values for actual voltage and current unbalance added
- LBI Idle Bypass added

## Idle Bypass

Description
<p>When this LBI is active, controller will skip Idle phase.</p> <ul style="list-style-type: none"> <li>➤ LBI is active before Idle Time - controller goes directly to Stabilization phase</li> <li>➤ LBI is activated during Idle Time - Idle Time is skipped and controller goes to Stabilization phase</li> </ul>

- Support of predefined linear sensors
- Conditioned Run Hours counters are not connected with running engine condition - there is only 1 condition for these counters - appropriate LBI
- Support of 32 bit values read from ECU or Modbus devices
- Extended range of the setpoint *Cranking Attempts* up to 20
- Setpoint *Gen VT Ratio* and *Mains VT Ratio* has 2 decimal places
- Reverse Power protection - available also in AMF8 model

- Current Unbalance protection - available also in AMF8 model
- Adjustment of Phase Rotation - available in all IntelliLite 4 models
- Improved user access management - access level based was replaced by a role-based system
  - Individual user accounts can be assigned to individual roles
    - Role 0: administrator
    - Role 1-7: configurable roles
    - Role 8: Modbus
    - Role 9: SNMP
- Sunset/Sunrise function
  - The function calculates the sunrise and sunset based on GPS coordinates and activates a dedicated LBO and/or start/stop a genset
- Low limit of setpoint Nominal Voltage
  - Limit is decreased to 10V
- Comp Time PLC block was replaced by improved Comp Delay block
  - During a configuration upgrade the Comp Time block will be replaced automatically
- New PLC block Analog Change Monitor
  - This block monitors decreasing/increasing change of analog value
- Dual Starter
  - New history message for unsuccessful start - Start By Starter 1 Failed or Start By Starter 2 Failed
- Value for 4G module Modem IMEI added
- LBIs Start Button and Stop Button - available also in AMF8 model
- Setpoint Modbus Server Address added
  - This setpoint adjusts controller address for Modbus communication
  - Range of setpoint is 1 .. 247
- Adjustment of access rules
  - All setpoint are available for editing without password in default archive
- Extended range of the selected setpoints up to 32 000 kW
  - *Nominal power*
  - *Nominal power split phase*
- Extended range of setpoint Nominal Frequency
  - Range of setpoint extended up to 120Hz
- Multi ECU Support improved
  - AMF8, AMF9 - 2 ECU modules
  - AMF20, AMF25, MRS16, AMF25 Hybrid, MRS16 Hybrid - 3 ECU modules
- Main screen configuration
  - Setpoints Main screen Line 1 and 2
    - Options added - AIN2, AIN3 and AIN4
  - Main Screen Gauge - setpoint added
    - Options: Gen kW, Gen V, RPM

## 6.2 Repairs

- > LBOs for ECU alarms - LBO is active all the time when alarm is active
- > Setpoint MCB Opens On - option Gen Run
  - » MCB is opened when Min Stab Time Elapses to minimize blackout of load
- > Correct decimal places for Total Fuel Consumption value
- > Stop Solenoid is activated during cranking pause phases
- > Alarm Wrn MCB Fail To Open
  - » It is possible to clear alarm if Mains returns and MCB is still closed
- > SNMP trap identifier for protections
- > AMF procedure when mains returns before GCB is closed
  - » MCB is closed after MCB Close Delay and genset is stopped

# 7 Changes in the version 1.5.3

## 7.1 New features

- SNMP improvement
  - support of SNMP v3
  - FW 1.1.0.7 or newer of CM3-Ethernet plug-in module is required

# 8 Changes in the version 1.5.2

## 8.1 Repairs

- SNMP Traps
  - correct text for SNMP traps generated from universal binary and analog protections
  - correct OID for SNMP traps generated from universal binary and analog protections
- Improvement of communication with plug-in modules

# 9 Changes in the version 1.5.1

## 9.1 Repairs

- Incorrect indication of gen healthy state
  - Gen healthy state (green generator LED) was incorrectly active when CT location was adjusted to Load option and MCB was closed

# 10 Changes in the version 1.5.0

## 10.1 New features

- PLC extension for AMF25 and MRS16 models
  - 2x PLC block (AxB/C)±D added



# 11 Changes in the version 1.4.0

## 11.1 New features

- LBI EXTERNAL MAINS FAIL was added

### External Mains Fail Relay

#### Description

Binary input for external mains fail indication.

When the LBI: EXTERNAL MAINS FAIL RELAY is active:

- Controller accepts that MCB was opened by an external mains fail relay, it means that it does not try to close MCB
- It behaves like in case of a standard mains failure, which is evaluated from the mains voltages measurement (the front panel mains icon is red, LBO: AL MAINS FAIL is active, Gen-set is started when controller is in the AUTO mode etc.)
- Controller displays alarm *ALI External Mains Fail*

When the LBI: EXTERNAL MAINS FAIL RELAY is deactivated:

- Controller automatically closes MCB, if it is in the OFF/AUTO mode and mains is healthy
- It behaves like in case of a standard mains return (if healthy mains voltage is detected)
- Alarm *ALI External Mains Fail* automatically disappears

**Note:** This input can be used for Mains fail simulation

- Setpoint *Phase Rotation Protection* was added

### Phase Rotation Protection

Setpoint group	Protections	Alternative config	NO
Range [units]	Enabled/Disabled/ExtDisable [-]		
Default value	Enabled	Step	[-]

#### Description

This setpoint adjusts the behavior of generator Phase Rotation protection.

Enabled:	Protection is enabled. Behavior of protection is adjusted via setpoint <i>Phase Rotation</i> .
Disabled:	Protection is disabled.
ExtDisable:	Protection is enabled or disabled by the state of LBI PROTECTION FORCE DISABLE

- LBO HISTORY RECORD INDICATION PULSE was added

### History Record Indication

#### Description

This LBO triggers 1s pulse when new history record is created in history log.

**Note:** When more history records are created at the same time, only one 1s pulse is created.

- LBI EMERGENCY MANUAL is available also for AMF8 and AMF9 models
- Screen filter modification
  - Time base of filter was extended to reduce displayed values fluctuation
- MRS archives for AMF8 and AMF9 were created
  - IntelliLite AMF8-MRS archive
  - IntelliLite AMF9-MRS archive
- Setpoint *Manual ECU Activation Timeout* was added

## Manual ECU Activation Timeout

Setpoint group	Engine settings	Alternative config	NO
Range [units]	0 .. 300 [min]		
Default value	60 min	Step	1 min
<b>Description</b>			
The setpoint allows user to set length of ECU manual activation in OFF mode. LBO ECU POWER RELAY is activated by Start button. This LBO is active until Stop button is pressed, or until timeout elapses or until mode is changed.			

- LBI FORCE IDLE was added

## Force Idle

<b>Description</b>
This logical binary input can force engine to idle speed in MAN or AUTO mode.
<b>Note:</b> <i>This binary input has no influence on engine cooling speed.</i>
<b>IMPORTANT: GCB has to be open</b>
<b>Activation of LBI:</b>
Following procedure is executed:
<ul style="list-style-type: none"> <li>➤ Alarm <i>AHI Manual Idle</i> is activated</li> <li>➤ LBO IDLE/NOMINAL is switched to idle state and value <i>Requested RPM</i> goes to <i>Idle RPM</i> value</li> <li>➤ Underfrequency protection and undervoltage protection are not evaluated</li> <li>➤ Controller is in Manual Idle state until deactivation of this LBI</li> </ul>
<b>Deactivation of LBI</b>
<ul style="list-style-type: none"> <li>➤ Controller goes to MinStab state</li> <li>➤ <i>AHI Manual Idle</i> is not present in alarm list</li> <li>➤ LBO IDLE/NOMINAL is switched to nominal state and value <i>Requested RPM</i> goes to nominal value</li> <li>➤ Controller goes to Running state</li> </ul>

- Exercise Timers in AMF9 model
  - 6 timers available

- Control of 3-position switch was added
  - LBI NEUTRAL POSITION
  - LBOs NEUTRAL CLOSE/OPEN and NEUTRAL ON COIL

## Neutral Position

Description
In MAN mode this input switches a three position ATS switch to its neutral position – it activates the binary outputs NEUTRAL CLOSE/OPEN and NEUTRAL ON COIL. MCB and GCB are switched to off.

## Neutral Close/Open

Description
The output controls the neutral position of the three positions ATS switch. The ATS switch must react within 5 seconds to a close or open command, otherwise an alarm is issued.

## Neutral ON Coil

Description
The output activates the neutral position coil of the three positions ATS switch. The pulse lasts for 5 seconds.

- Setpoint *Modbus Mode* added

## Modbus Mode

Setpoint group	Communication Settings	Alternative config	NO
Range [units]	8N1 / 8N2 / 8E1 [-]		
Default value	8N1	Step	[-]
Description			
This setpoint adjusts communication mode of Modbus-RTU.			
<b>Possible options</b>			
8N1	8 data bits, 1 stop bit, no parity		
8N2	8 data bits, 2 stop bits, no parity		
8E1	8 data bits, 1 stop bit, even parity		

# 11.2 Repairs

- Setpoint *GCB control mode* - No Button
  - GCB is closed also in MAN mode automaticaly
- Current measurement after power on of Controller
  - Current is correctly measured when CU is power ON, Mains is OK and MCB is closed.
- Binary sensor for analog inputs shows correct data
- Switching of Alternate Configuration
  - it is possible to switch alternate configuration only in engine Ready state
  - issue when configuration was switch immediately when engine goes to stop phase was fixed

# 12 Changes in the version 1.3.4

## 12.1 Update

- Added support of 15 character long order code.

# 13 Changes in the version 1.3.3

## 13.1 Update

- Power measurement now available in lower power levels.
- IL4 will now display power below 500 W. New lower limit is 100 W..

# 14 Changes in the version 1.3.2

## 14.1 Repairs

- USB host repairs and optimization.
- Modbus communication improvement.

# 15 Changes in the version 1.3.1

## 15.1 Repairs

- Long-term ECU communication stability fix

**IMPORTANT:** Due to long-term ECU communication stability fix we recommend to upgrade to version 1.3.1 during the regular Gen-set maintenance.

# 16 Changes in the version 1.3.0

## 16.1 New features

- Multi ECU support.
  - We now support two ECU modules.
- New Dummy Load function.
  - This function is meant to prevent engine from running without load, which can in some cases shorten engine lifespan. It is a way user can set when to load external power bank and when to unload it.
  - Group of setpoints Load Shedding renamed to Load Management.
  - Added subgroup Load Shedding and Dummy Load.
  - Added new setpoints *Dummy Load Active (GenOnly / Disable)*, *Dummy Load On Level*, *Dummy Load On Level Del*, *Dummy Load Off Level*, *Dummy Load Off Level Del* and LBOs DUMMY LOAD STAGE 1 - 2 for AMF8 and AMF9 and DUMMY LOAD STAGE 1 - 5 for AMF20, AMF25 and MRS16 applications.
- Controller history improvements.
  - Default columns order modified.
  - Configurable via IntelliConfig.
  - History clearing button available in IntelliConfig.
- New conditioned Running Hours Counters.
  - Values *Conditioned Running Hours 1,2* increments based on running engine and active LBI *CONDITIONE RUNNING HOURS 1,2*.
- Aftertreatment update.
  - *ATTFilterLamp* is renamed to *ATDPFLamp* in LBI, LBO, history and alarm messages.
  - Non mission regeneration conditions changed: LBI GCB DISABLE = 1 condition is removed.
  - GCB closed condition is removed.
- Daylight saving time.
  - Setpoint *Sumer Time Mode* is replaced by new setpoints: *DST Switching Mode*, *DST Period Rule*, *Time Mode*.
- Analog input offset adjustment.
  - Moved to AIN configuration.
- Setting up of the Timers via HMI screens simplified.
  - Switch between the Timer setup screens is done by the button enter.
- HMI History Browsing.
  - When the first item is selected in history, pressing of the UP button leads to the last history item to be selected.
  - When the last item is selected in history, pressing of the DOWN button leads to the first history item to be selected.
- HMI Screens Update.
  - On Main Screen when value *Timer Value* is 00:00:00, it is hidden after 10s delay.
  - On Main Screen when value *Timer Text* is No Timer, it is hidden after 10s delay.
  - On Statistics Screen values, *Date*, *Time*, *Pulse Counter 1,2* are added.



- TOTAL EMERGENCY STOP.
  - Available as LBI, alarm and Fixed protection state.
  - LBI used in emergency is able to open not only GCB breaker but also MCB breaker.
- Text USB key changed to USB drive.
- LAI ENGINE SPEED.
  - This LAI selects the source of RPM.
- LBI START BLOCKING.
  - Start of the Gen-set is blocked if this binary input gets active before Start command is issued. While start is blocked, alarm *ALI Start Blocking* is active.
- LBI ECU KEY SWITCH.
  - Now available in models AMF8, AMF9 and AMF20 (previously only in AMF25 and MRS16).
- Pulse Counters range increased to 1 000 000.
- LBO GEN-SET ACTIVE.
  - The output is closed at the beginning of the Prestart Time period and opens when the Gen-set is fully stopped.
- Common LBOs for alarms.
  - LBOs Common Alarm Active Level 1,2 is active when there is an alarm level 1,2 unconfirmed or confirmed in the alarmlist.
  - LBOs Common Alarm Level 1,2 is active when there is an alarm level 1,2 unconfirmed present in the alarmlist.
- LBO INITIALIZED gets active after the controller is initialized.
- LBO PERIPHERAL MODULE COMM FAIL.
  - The LBO is active anytime when at least one module is in comm fail – regardless the protection is set upon the lost of any specific module.
- Modbus Remote Start/Stop.
  - Using register address 4700 in Modbus while in AUTO mode activates the function *Remote Start/Stop*.
- Setpoint *Earth Fault Sd* range increased to 200 A.
- Setpoint *Mains Voltage Detection* in MRS application.
  - Ability to turn on or off alarm *Mains Voltage Detected*.
- Setpoint *Transfer Delay* available in AMF8.
- Log-in record in controller history.
  - User is able to turn off writing the login message into history.
- Setpoints *CT Ratio Prim*, *CT Ratio Sec*.
- Setpoints *Mains Overvoltage Delay*, *Mains Undervoltage Delay*.
- Setpoints *Minimal* and *Maximal Stabilization Time* range increased to 3600.
- Setpoint *Dual Starter* has 3rd option: 111222.
- User setpoints can be located in selected setpoints groups and subgroups.
- Timer option Manual On.
  - When this option is selected, the LBO EXERCISE TIMER is turned on.

- Timer option for *Remote Start/Stop*.
- New format for HW version is supported.
  - **Example:** 1.0.0.0
- Value *Total Fuel Consumption* added on CU screen when ECU is configured.
- User protection type: Alarm List Indication + History Record (AHI) added.
- PLC update.
  - Models IL4 AMF25, IL4 MRS16: Ana Switch +4.
  - Model IL4 AMF8: XOR/RS +1.
- Alarm *Sd Parallel Work*.
  - Alarm can be triggered in MAN Mode when GCB is closed and MCB feedback changes from open to closed.
- New LBIs SWITCH TO OFF, SWITCH TO MAN, SWITCH TO AUTO.
- New LBOs for buttons states.
  - LBOs START BUTTON STATE, STOP BUTTON STATE, FLTRES BUTTON STATE, HORN RES BUTTON STATE, MCB BUTTON STATE, GCB BUTTON STATE.
  - LBO is active as long as it's button is pressed or it's LBI is active.
- Autodetect Nominal Current.
  - When decimal power format selected, the value *Nominal Current* was 10x higher. *Nominal Current* is always no decimal value regardless the power format.
  - Calculation of value *Nominal Current* in Autodetect modified:
    - For *Connection Type*: SplPhL1L2 and SplPhL1L3 power factor 1 is used in the formula of calculation of value *Nominal Current*.
    - For the other types: High Leg Delta, 3Ph Low Y, 3Ph High Y, Mono Phase power factor 0.8 is used.

## 16.2 Repairs

- Uploading of configuration or FW via onboard RS485 accidentally failed.
- User Logout with index 127 on Modbus.
  - History record: User Logout was removed when onboard RS485 is used for Modbus.
- Setpoint *Starting Overspeed Protection*.
  - When setpoint *Starting Overspeed Sd* > setpoint *Overspeed Sd*, the threshold for protection was *Overspeed Sd* and not *Starting Overspeed Sd*.
- Missing vBreakerState and vEngineState in SNMP.
  - Breaker state and Engine state were missing in SNMP MIB table.
- Display contrast setting lost after power off.
- Contrast setting was fixed.

# 17 Changes in the version 1.2.2

## 17.1 Repairs

- Default value for setpoint *Transfer Delay* in IL4 AMF8 model
  - Default value was changed to 1s in AMF8 model

**Note:** *This setpoint is hidden in AMF8 model.*

# 18 Changes in the version 1.2.1

## 18.1 Repairs

- Repair of binary input function Mains Fail Block
  - Behavior of MCB come up to state of mains which can be affected by this LBI

# 19 Changes in the version 1.2.0

## 19.1 New features

- Increase the numbers of PLC blocks for AMF 25 and MRS 16:

PLC Block	Previous	Update
OR/AND	16	64
XOR/RS	8	16
Comp Hyst	4	8
Comp Time	2	8
Comp Win	0	8
Math Fc	0	4
Timer	2	2
Delay	8	32
Counter	2	4
Hold	0	2
Decomp	4	4

- New PLC blocks for AMF 25 and MRS 16:
  - Comp Win – The block output is switched on whenever the input analog value is in the range defined by Low and High levels.
  - Math Fc – The block performs basic mathematical operations of 2 to 8 analog operands based on selected function. Available functions are: Addition, Substraction, Absolute subtraction, Average, Minimal value, Maximal value
  - Hold – The block is holding Input value based on value of Hold and selected mode (Edge, Level). The Output has resolution and dimension based on setting of the block.
- User Button 8-16 setpoints and LBOs User Button 8-16 added for AMF 25 and MRS 16.
- Timers 5-16 added for AMF 25 and MRS 16
- Fail Safe Binary State setpoint
  - The setpoint adjusts the behavior of binary inputs of extended module when the received value is not valid due to the communication error.
- For setpoint Running Hours Base the range is increased to 20000
- Added 12 more ECU analog inputs.
- Cloning available via IntelliConfig
  - Cloning feature allows user to clone one controller or Plug-in modules configuration User Access Management included and firmware to another controller.

## 19.2 Repairs

- For MRS 16 setpoint *RS485 Mode* added option DualMaster
- For AMF 25 and MRS 16 Dual operation is working using on-board RS485 with any controller address

- Firmware upgrade over AirGate is possible from any older firmware version to any newer major firmware version.
- MCB control outputs (MCB CLOSE/OPEN, MCB ON COIL) do not activate for a short time after restart or switch on or programming when MCB Logic = Close Off and MCB Feedback is not configured.

# 20 Changes in the version 1.1.1

## 20.1 Repairs

- LCD backlight non-functional after return from power fail.
  - LCD backlight was never switched on when backlight timeout elapsed.
- Automatic logout of user via HMI.
  - User is automatically logout after 5 minutes when there is no user's action.
- USB Host firmware update not working from version 1.0.0 to 1.1.0.

# 21 Changes in the version 1.1.0

## 21.1 New features

- Non mission DPF regeneration
  - Several conditions which must be fulfilled have been added to start/stop DPF regeneration
- New LBIs GCB and MCB DISABLE
  -

### GCB Disable

<b>Related FW</b>	1.8.0	<b>Related applications</b>	AMF, MRS
<b>Comm object</b>	62		
<b>Description</b>			
When this LBI is active, it is not possible to close GCB – LBO GCB Close/Open, GCB ON Coil cannot be activated by panel GCB close button, or close command or by auto command.			

➤➤

### MCB Disable

<b>Related FW</b>	1.8.0	<b>Related applications</b>	AMF, MRS
<b>Comm object</b>	124		
<b>Description</b>			
When this LBI is active, it is not possible to close MCB – LBO MCB Close/Open, MCB ON Coil cannot be activated by panel MCB close button, or close command or by auto command.			

- New PLC block Decomposer
  - The block converts the analog input value to binary form and provides selected bits as binary outputs.
- New Setpoints
  - Telephone Number 5,6,7,8,9,10
    - for models AMF25 and MRS16
- New Aftertreatment LBIs
  - ECU YELLOW LAMP SOLID, ECU YELLOW LAMP BLINK, ECU YELLOW LAMP FAST BLINK
  - ECU RED LAMP SOLID, ECU RED LAMP BLINK, ECU RED LAMP FAST BLINK
  - ECU WAIT TO START SOLID, ECU WAIT TO START BLINK, ECU WAIT TO START FAST BLINK
  - ATT FILTER LAMP SOLID, ATT FILTER LAMP BLINK, ATT FILTER LAMP FAST BLINK
  - ATT HEST LAMP SOLID, ATT HEST LAMP BLINK, ATT HEST LAMP FAST BLINK
  - ATT SCR ERROR LAMP SOLID, ATT SCR ERROR LAMP BLINK, ATT SCR ERROR LAMP FAST BLINK
  - ATT DEF LEVEL LAMP SOLID, ATT DEF LEVEL LAMP BLINK, ATT DEF LEVEL LAMP FAST BLINK
  - ATT INHIBITED LAMP SOLID, ATT INHIBITED LAMP BLINK, ATT INHIBITED LAMP FAST BLINK



➤ Values renamed

Old name	New name	Old name	New name
Load kW	Load P	Load kVAr L1	Load Q L1
Load kVAr	Load Q	Load kVAr L2	Load Q L2
Load kVA	Load S	Load kVAr L3	Load Q L3
Load kW L1	Load P L1	Load kVA L1	Load S L1
Load kW L2	Load P L2	Load kVA L2	Load S L2
Load kW L3	Load P L3	Load kVA L3	Load S L3

## 21.2 Repairs

- In Chinese language Current HMI screen dashed line which represent nominal current is added.
- *Wrn Event/Alarm email/SMS 1-4 Fail* is shown when there is an error sending email or sms.
- In IntelliConfig Controller Info section correct firmware version of offline archive is shown.
- For Volvo ECU module ECU Stop Pulse is send during frequency change procedure.
- In MRS application the GCB is not closed when controller is in Test Mode

## 22 Related information

### 22.1 Available files

<b>Firmware (*.exe)</b>
<b>For IntelliLite 4</b>
IntelliLite4-Install-Suite.exe

Table 22.1 Available firmware

<b>Archives (*.ail4)</b>				
<b>For IntelliLite AMF25</b>	<b>For IntelliLite AMF20</b>	<b>For IntelliLite AMF8</b>	<b>For IntelliLite AMF9</b>	<b>For IntelliLite MRS16</b>
IntelliLite4-AMF25-1.8.0	IntelliLite4-AMF20-1.8.0	IntelliLite4-AMF8-1.8.0	IntelliLite4-AMF9-1.8.0	IntelliLite4-MRS16-1.8.0

Table 22.2 Available archives

### 22.2 Available HW

	<b>IntelliLite 4 AMF25</b>	<b>IntelliLite 4 AMF20</b>	<b>IntelliLite 4 AMF8</b>	<b>IntelliLite 4 AMF9</b>	<b>IntelliLite 4 MRS16</b>
<b>Binary Inputs</b>	8	6	6	8	8
<b>Binary Outputs</b>	8	6	6	8	8
<b>Analog Inputs</b>	4	3	3	3	4
<b>Communications</b>	USB, RS232-485, 4G, Ethernet	USB, RS232-485, 4G, Ethernet	USB, RS232-485, 4G, Ethernet	USB, RS232-485, 4G, Ethernet	USB, RS232-485, 4G, Ethernet

Table 22.3 Available hardware

### 22.3 Available related documentation

<b>Documents</b>	<b>Description</b>
IntelliLite 4 AMF25 Global Guide	Global Guide of the controller <a href="#">IntelliLite 4 AMF25 Global Guide</a>
IntelliLite 4 AMF20 Global Guide	Global Guide of the controller <a href="#">IntelliLite 4 AMF20 Global Guide</a>
IntelliLite 4 AMF8 Global Guide	Global Guide of the controller <a href="#">IntelliLite 4 AMF8 Global Guide</a>

Documents	Description
InteliLite 4 AMF9 Global Guide	Global Guide of the controller <a href="#">InteliLite 4 AMF9 Global Guide</a>
InteliLite 4 MRS16 Global Guide	Global Guide of the controller <a href="#">InteliLite 4 MRS16 Global Guide</a>
InteliLite 4 Datasheet	Basic information about the controller <a href="#">InteliLite 4 Datasheet</a>

# 23 Notes

## 23.1 Document history

Revision number	Related sw. version	Date	Author
19	1.8.0	3.4.2025	Michal Slavata
18	1.7.2	20.1.2025	Michal Slavata
17	1.7.1	28.11.2024	Michal Slavata
16	1.7.0	25.10.2024	Michal Slavata
15	1.6.0	7.6.2024	Michal Slavata
14	1.5.3	10.10.2023	Michal Slavata
13	1.5.2	26.9.2023	Michal Slavata
12	1.5.1	1.3.2023	Michal Slavata
11	1.4.0	5.1.2023	Michal Slavata
10	1.3.4	14.11.2022	Cenek Pec
9	1.3.3	10.9.2022	Cenek Pec
8	1.3.2	26.7.2022	Cenek Pec
7	1.3.1	11.7.2022	Cenek Pec
6	1.3.0	30.4.2022	Jan Liptak
5	1.2.2	13.1.2022	Michal Slavata
4	1.2.1	23.12.2021	Michal Slavata
3	1.2.0	12.11.2021	Jan Liptak
2	1.1.1	9.7.2021	Jan Liptak
1	1.1.0	18.6.2021	Jan Liptak