

# InteliMains 510



Order code: IM4510XXBAA

## Mains supervision controller

# Datasheet

### Product description

InteliMains 510 is the mains supervision controller used for synchronizing set of gensets to the Mains/Utility or bus-tie-breaker operations, primarily intended for switchgear and targeting advanced and more complex applications.

### Key benefits

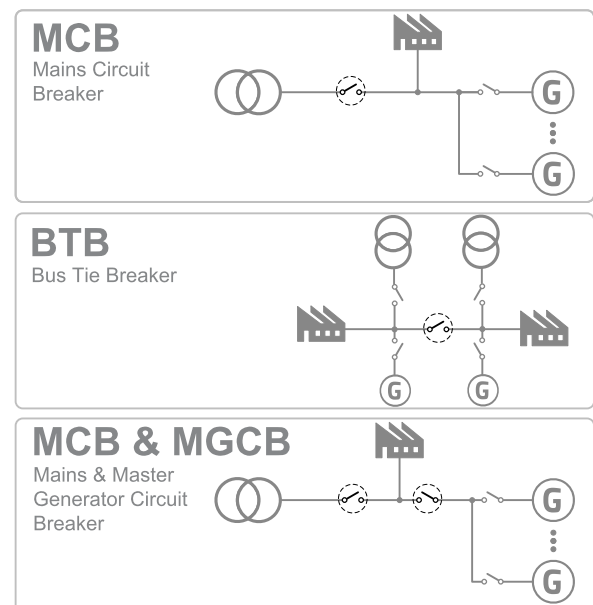
- **Great flexibility and wide range of applications** support
  - User-defined protections and setpoints, large PLC interpreter
  - Wide range of extension and plug-in modules
- **Communication capabilities and protocols**
  - In-built USB host/device, CAN, RS485 and Ethernet ports
  - Modbus RTU/TCP, SNMP v1, v2c and v3
- **Cyber security by design** to protect your business
  - Designed in relevant requirements according to ISA 62443 level 2-3

### Key features

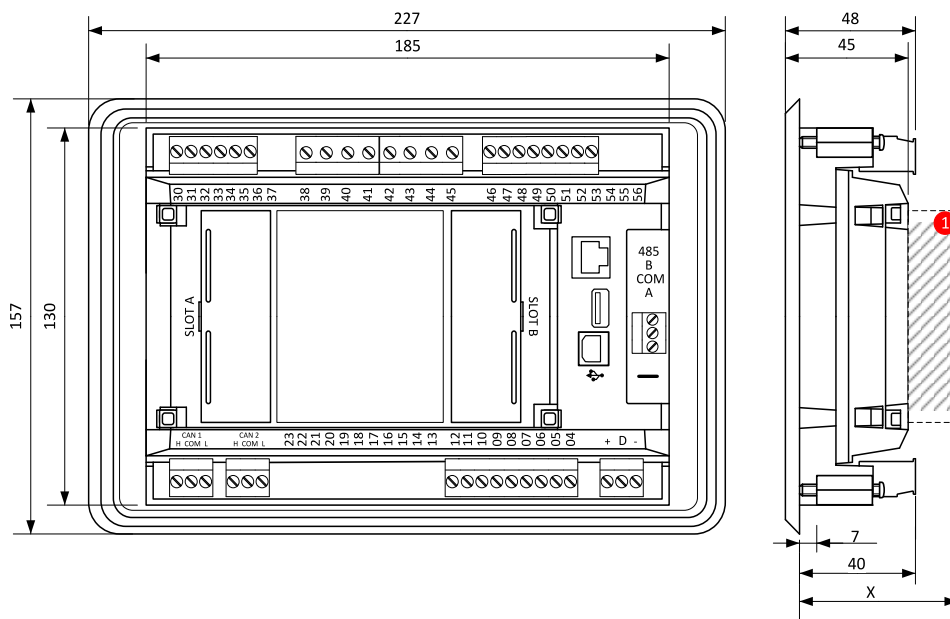
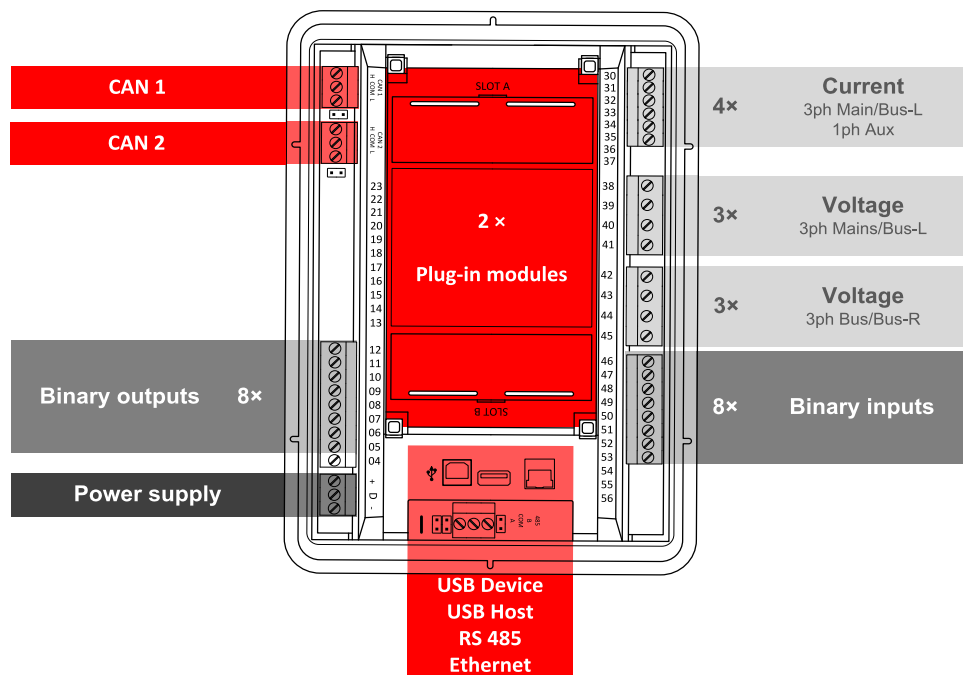
- Support for installations with the option for cooperation with up to **32 gen-sets/mains/tie controllers**
- Keeping your business and data as safe as possible, meeting the **ISA 62443 level 2 - level 3** security requirements
  - User access management with 10 unique user accounts with individual roles
- **One hardware for more applications**
  - Easy switching between MCB, MGCB and BTB applications
- Fast and cost-effective operations with **signal sharing over a CAN bus across a group of control units**
- **Clear visualisation and overview** of all important information on the **built-in colour display**

- **Built-in PLC interpreter** with the use PLC Editor
- **Remote connection and monitoring**
  - **AirGate 2.0** for easy connection to your equipment remotely, without worrying about your asset's IP address
- **User-defined protections and setpoints** on top of default parameters
- **Compatible load/Var sharing and power management** with other ComAp solutions
- **Slots for plug-in modules** for 4G and GPS, additional Ethernet port, RS232/485 connection or additional binary inputs/outputs

### Application overview



## Dimensions, terminals and mounting



### 1 Plug-in module

**Note:** Dimension "x" depends on a plug-in module

**Note:** Dimensions are in millimeters.

**Note:** The final depth of the controller depends on the selected plug-in module – it can vary between 47 mm and "x" mm. Mind also the size of connectors and cables (e.g. in case of RS232 connector, add about 60 mm more for standard RS232 connector and cable).

**Note:** The controller is mounted into panel doors as a standalone unit using provided holders. The requested cutout size is 187 × 132 mm. Use the screw holders delivered with the controller to fix the controller into the door.

# Technical data

## Power supply

Power supply range	8-36 V DC
Power consumption	5 W
RTC battery	Replaceable (3 V)
Fusing power	5 A / 6 × 0.5 A BOUT
Max. Power Dissipation	7 W

## Operating conditions

Operating temperature	-20 °C to +70 °C
Storage temperature	-30 °C to +80 °C
Operating humidity (norm 60068-2-30)	95 % non-condensing (EN 60068-2-30)
Protection degree	IP65
Vibration	5-25 Hz, ± 1.6 mm 25-100 Hz, a = 4 g
Shocks	a = 500 m/s <sup>2</sup>
Surrounding air temperature rating 70 °C.	
Suitable for pollution degree 2.	

## Current measurement

Measurement inputs	3ph Mains/Bus-L, 1ph Aux
Measurement range	5 A
Maximum continuous current	10 A
Accuracy	±20 mA for 0-2 A; 1 % of value for 2-5 A
Input impedance	< 0.1 Ω

## Voltage measurement

Measurement inputs	3ph-n Mains/Bus-L, 3ph-n Bus/Bus-R
Measurement range (L-N / L-L)	277 V AC / 480 V AC (EU) 346 V AC / 600 V AC (US/Canada)
Linear measurement and protection range	350 V AC Ph-N; 660 V AC Ph-Ph
Accuracy	1 %
Frequency range	30-70 Hz (accuracy 0.01 Hz, resolution 0.001 Hz)
Input impedance	0.72 MΩ ph-ph , 0.36 MΩ ph-n

## Display

Type	Build-in colour TFT 5"
Resolution	800 × 480 px

## Binary inputs

Number	8, non-isolated
Close/Open indication	0-2 V DC close contact 6-36 V DC open contact

## Binary outputs

Number	8, non-isolated
Max. current	BO 1-8 = 0.5 A
Switching to	Positive supply terminal

## Communications

USB Device	Non-isolated type B connector
USB Host	Non-isolated type A connector
RS 485	Isolated
ETH	10/100 Mbit
CAN 1 + CAN 2	Isolated, Nominal impedance 120 Ω CAN1: 250/125 kbps, CAN2: 250/125/50 kbps
Protocols	Modbus RTU/TCP SNMP v1/v2c/v3

## Available plug-in modules

Product	Description	Order code
CM-RS232-485	Dual port interface	<a href="#">CM223248XBX</a>
CM2-4G-GPS	4G & GPS plug-in communication module	<a href="#">CM24GGPSXBX</a>
CM3-Ethernet	Internet / Ethernet plug-in communication module	<a href="#">CM3ETHERXBX</a>
EM-BIO8-EFCP	8 additional binary inputs/outputs	<a href="#">EM2BIO8EXBX</a>

**Note:** Controller has 2 slots for plug-in modules.

## Available CAN modules

Product	Description	Order code
IGL-RA15	CAN remote annunciator with 15 LEDs	<a href="#">EM2IGLRABAA</a>
Intel AIN8	CAN module with 8 analog inputs	<a href="#">I-AIN8</a>
Intel IO8/8	CAN module with 8 binary inputs and 8 binary outputs	<a href="#">I-IO8/8</a>
IGS-PTM	CAN module with 8 binary inputs, 8 binary outputs, 4 analog inputs and 1 analog output	<a href="#">IGS-PTM</a>
Intel AIN8TC	CAN module with 8 analog inputs dedicated for thermocouple sensors only.	<a href="#">I-AIN8TC</a>
Intel AIO9/1	CAN module with analog inputs and outputs – designed for DC measurement.	<a href="#">I-AIO9/1</a>
I-CR	CAN Repeater Module.	<a href="#">I-CR</a>
I-CR-R	CAN Redundancy Module.	<a href="#">I-CR-R</a>

## Available External displays

Product	Description	Order code
IntelVision 5.2	5" TFT external display with 800 × 480 px resolution.	<a href="#">RD2IV5BXBAA</a>
IntelVision 10Touch	10.1" display unit for ComAp controllers with pre-installed IntelSCADA display.	<a href="#">RD1IV10TBPF</a>
IntelVision 13Touch	13.3" display unit for ComAp controllers with pre-installed IntelSCADA display.	<a href="#">RD1IV13TBME</a>
IntelVision 18Touch G2	18.5" display unit for ComAp controllers with pre-installed IntelSCADA Lite.	<a href="#">RD2IV18TBPE</a>

## Functions and Protections

Support of functions and protections as defined by ANSI (American National Standards Institute):

Description	ANSI code	Description	ANSI code
Master unit	1	Incomplete sequence relay	48
Multi-function device	11	Overcurrent	50/50TD
Speed and frequency matching device	15	Breaker failure	50BF
Data communication device	16	Overcurrent IDMT	51
Synchronizing-check	25	AC circuit breaker	52
Thermal relay	26	Power factor	55
Undervoltage	27	Overvoltage	59
Annunciator	30	Alarm relay*	74
Overload (real power)	32P	Vector shift	78
Master sequence device	34	Reclosing relay	79
Undercurrent	37	Overfrequency	81O
Unit sequence starting	44	Underfrequency	81U
Current unbalance	46	ROCOF	81R
Voltage unbalance	47	Auto selective control/transfer	83
		Regulating device	90





\* extension module IGL-RA15 required



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## Certifications and standards

<ul style="list-style-type: none"><li>&gt; EN 61000-6-2</li><li>&gt; EN 61000-6-4</li><li>&gt; EN 61010-1</li><li>&gt; EN 60068-2-1 (-20 °C/16 h for std, -40 °C/16 h for LT version)</li><li>&gt; EN 60068-2-2 (70 °C/16 h)</li><li>&gt; EN 60068-2-6 (2÷25 Hz/±1,6 mm; 25÷100 Hz/4,0 g)</li></ul>	<ul style="list-style-type: none"><li>&gt; EN 60068-2-27 (<math>a=500 \text{ m/s}^2</math>; <math>T=6 \text{ ms}</math>)</li><li>&gt; EN 60068-2-30 25/55°C, RH 95%, 48hours</li><li>&gt; EN 60529 (front panel IP65, back side IP20)</li><li>&gt; UL 6200</li><li>&gt; UKCA</li><li>&gt; EN IEC 60255-127</li><li>&gt; EN 60255-27</li><li>&gt; EN 60255-26</li><li>&gt; EN IEC 60255-181</li><li>&gt; EN IEC 60255-1</li></ul>	   
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