ComAp®

The heart of smart control

InteliMains 510

Datasheet

Mains supervision controller
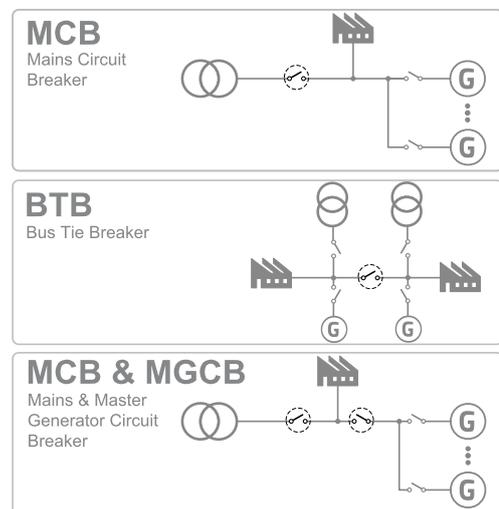
Product description

InteliMains 510 is the mains supervision controller used for synchronizing set of gensets to the Mains/Utility or but-tie-breaker operations, primarily intended for switchgear and targeting advanced and more complex applications. It is a direct successor of InteliMains NT-GC.
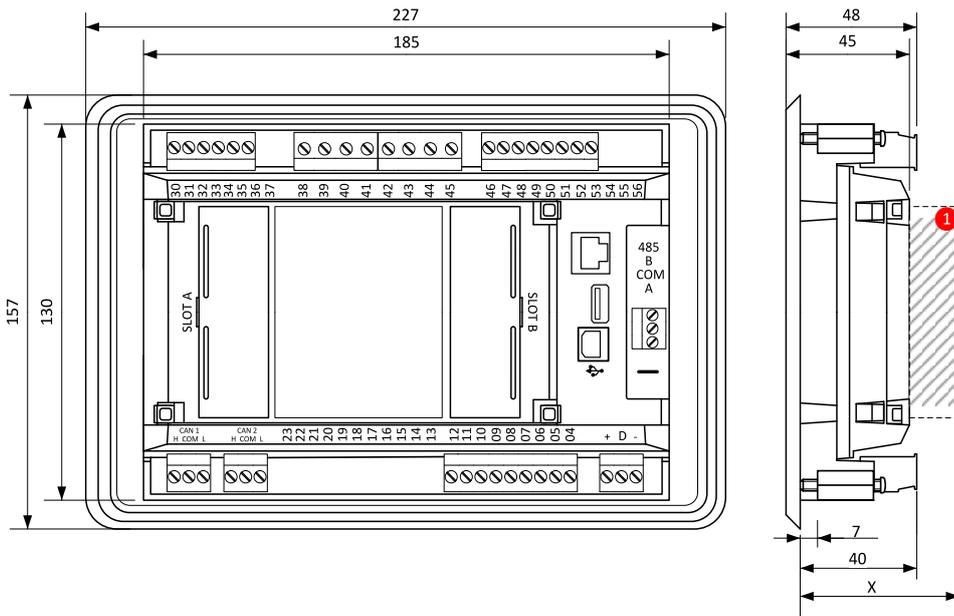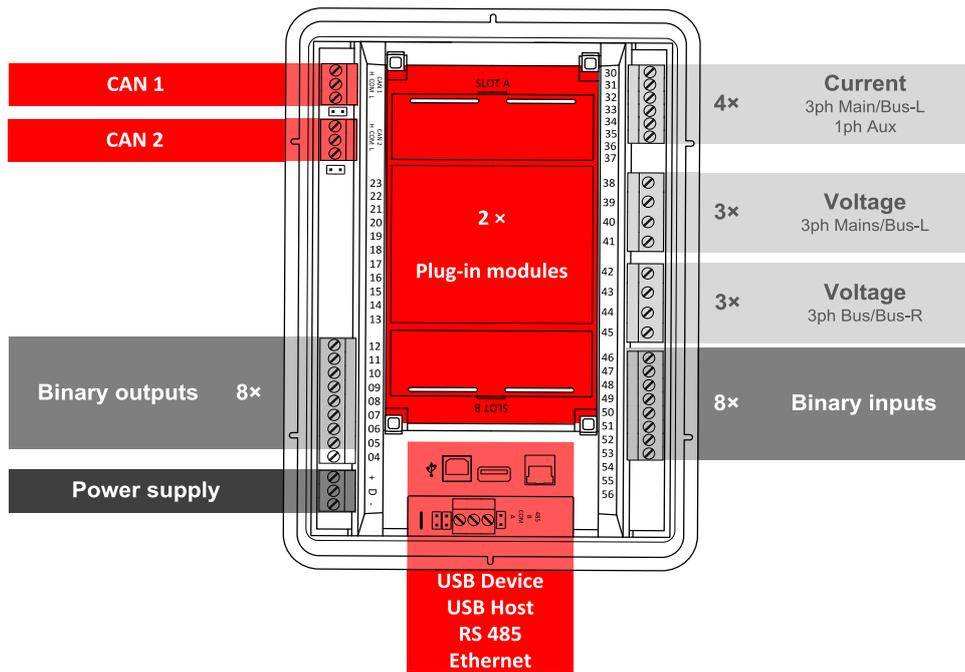
Key features

> Support for installations with the option for cooperation with up to 32 gen-sets/mains/tie controllers

> Built-in PLC interpreter with the use of ComAp's free PLC Editor for easy configuration

> AirGate 2.0 to connect to your equipment remotely, without worrying about your asset's IP address

> Remote control and monitoring of your gen-set operations with WebSupervisor, our cloud-based fleet management tool

> Compatible load/Var sharing and power management with other ComAp solutions

> A wide range of plug-in modules allowing you to easily extend the functionality of the controller

> One hardware for more applications, enabling an easy switch between MCB, MGCB and BTB applications

> Event-based history for fast and easy troubleshooting

> Peak shaving for limiting the import from the mains (e.g. due to higher prices)

> Load shedding ensuring the most important loads are running even when there is a lack of power

> Keeping your business and data as safe as possible, meeting the ISA 62443 level 2 – level 3 security requirements

> Faster and cost-effective operations with signal sharing over a CAN bus across a group of control units

> User-defined protections and setpoints on top of default protection

> Controller redundancy minimizing solution downtime and ensuring the power isn't compromised

> AirGate 2.0 for easy connection to your equipment remotely, without worrying about your asset's IP address

> Dynamic spinning reserve preventing supply drops in hybrid installations with PVs

> Secure user management

> Possibility to have a mains application in a gen-set controller with firmware upload functions

> Clear visualization and overview of all important information on the built-in colour display

Application overview

MCB
Mains Circuit Breaker

BTB
Bus Tie Breaker

MCB & MGCB
Mains & Master Generator Circuit Breaker

Dimensions, terminals and mounting

CAN 1
CAN 2

4× **Current**
3ph Main/Bus-L
1ph Aux

2 ×
Plug-in modules

3× **Voltage**
3ph Mains/Bus-L

3× **Voltage**
3ph Bus/Bus-R

Binary outputs 8×

8× **Binary inputs**

Power supply

USB Device
USB Host
RS 485
Ethernet

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^2
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)	10-277 V AC / 10-480 V AC (EU) 10-346 V AC / 10-600 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 0.1 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, 250 / 50 kbps, Nominal impedance 120 Ω

Available plug-in modules

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

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

Available CAN modules

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

Available External displays

Product	Description	Order code
InteliVision 5.2	Remote colour display for ComAp controllers, for monitoring and control of single gen-set for various applications.	RD2IV5BXBAA
InteliVision 10Touch	10" PC panel designed for a broad range of ComAp's paralleling and single gen-set controllers for various applications.	RD1IV10TBPF
InteliVision 18Touch G2	18" PC panel providing comprehensive overview and monitoring of your complex installations.	RD2IV18TBPE

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	Voltage unbalance	47
Stopping device	5	Incomplete sequence relay	48
Multi-function device	11	Overcurrent	50/50TD
Speed and frequency matching device	15	Breaker failure	50BF
Starting-to-running transition contactor	19	Overcurrent IDMT	51
Synchronizing-check	25	Overvoltage	59
Thermal relay	26	Aux Over Voltage	59X
Undervoltage	27	Alarm relay *	74
Aux Battery Under Voltage	27X	Vector shift	78
Annunciator	30	Reclosing relay	79
Overload (real power)	32P	Overfrequency	81O
Master sequence device	34	Underfrequency	81U
Unit sequence starting	44	ROCOF	81R
Current unbalance	46	Auto selective control/transfer	83

* extension module IGL-RA15 required

> EN 61000-6-2
> EN 61000-6-4
> EN 61010-1
> EN 60068-2-1 (-20 °C/16 h for std, -40 °C/16 h for LT version)
> EN 60068-2-2 (70 °C/16 h)
> EN 60068-2-6 (2÷25 Hz/±1,6 mm; 25÷100 Hz/4,0 g)

> EN 60068-2-27 (a=500 m/s^2; T=6 ms)
> EN 60068-2-30:2005 25/55°C, RH 95%, 48hours
> EN 60529 (front panel IP65, back side IP20)
> UL 6200 (pending)
> FCC

CE

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