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The heart of smart control

InteliLite 4 MRS 16

Order code: IL4MRS16BAA, IL4MRS16BLA

Controller for single gen-set applications

Datasheet

Product description

- ▶ Advanced single Gen-set controller for stand-by and prime-power applications
- ▶ All-in-one intuitive & powerful PC tool for configuration/monitoring/control, locally or remotely
- ▶ Easy to install, configure and use
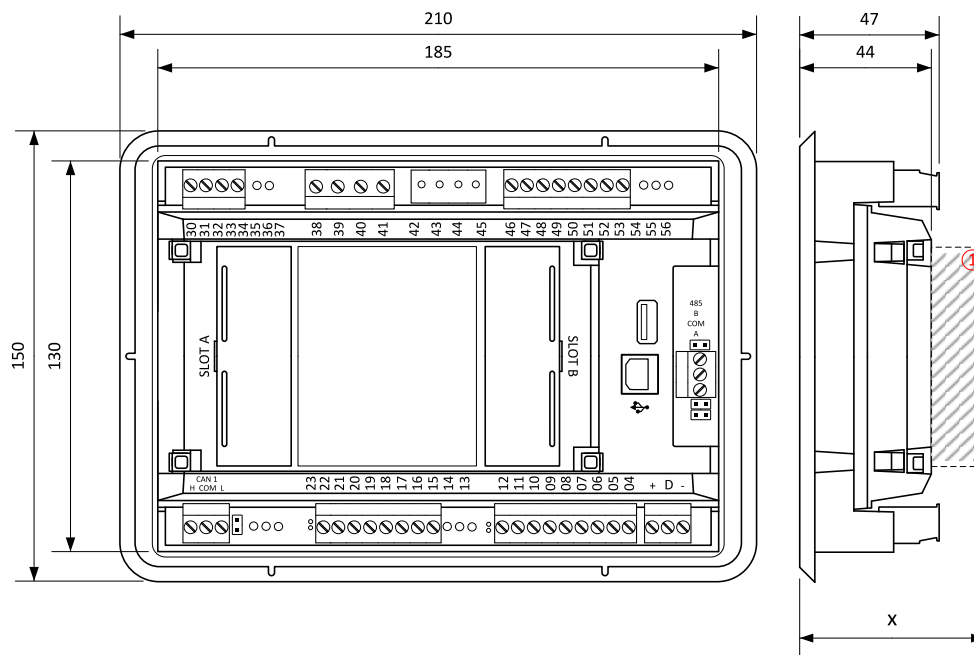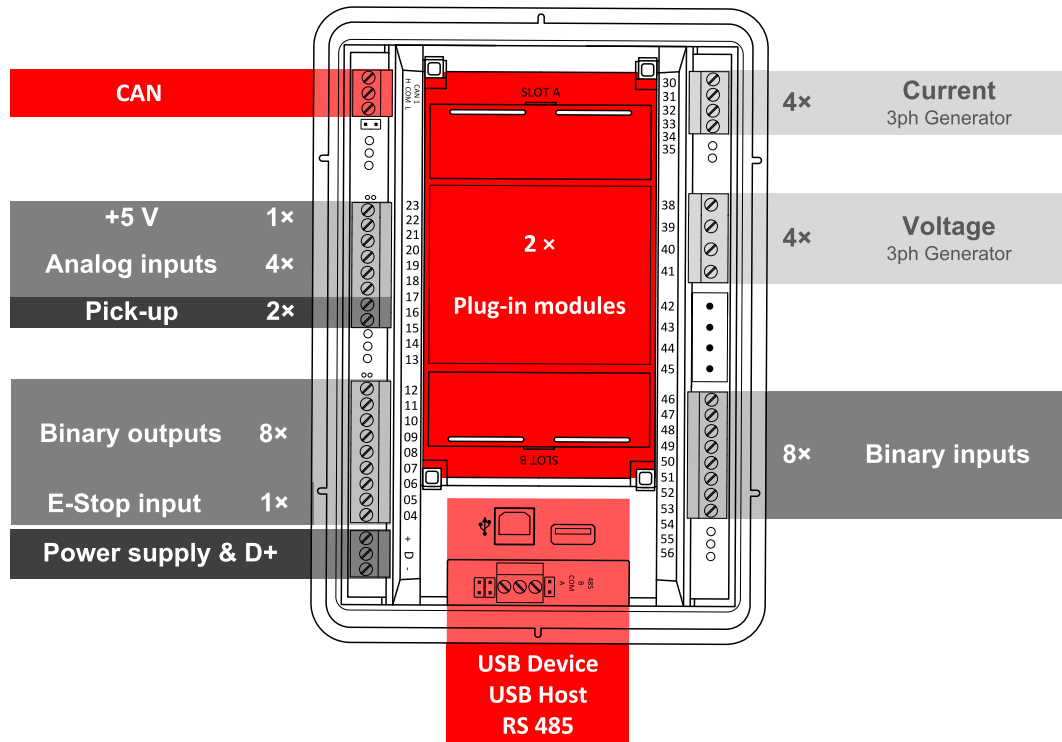
Key features

- ▶ Backlit symbols
- ▶ 8 binary outputs, 8 + 1 binary inputs, 4 analog inputs (U/I/R)
- ▶ +5 V output reference for analog inputs
- ▶ 2 high-current E-Stop binary outputs
- ▶ USB Host
- ▶ Inbuild RS485
- ▶ 2 slots for extension plug-in modules (Modbus, Internet, SMS, inputs/outputs)
- ▶ Extension CAN modules
- ▶ ECU support (Tier 4 Final, Stage V)
- ▶ RTC with battery back-up (full calendar)
- ▶ Power over USB for controller configuration
- ▶ Zero power mode
- ▶ True RMS measurement
- ▶ In-built PLC, complemented with a PLC monitoring tool in InteliConfig
- ▶ Full remote communications support (AirGate 2.0, WSV)
- ▶ Internet access using Ethernet / 4G, Modbus TCP/RTU, SNMP v1/v2c
- ▶ Active SMS and emails
- ▶ Detailed history log with up to 350 records

- ▶ Dual Mutual Standby application support
- ▶ Remote display
- ▶ User setpoints and protections
- ▶ 5 languages in the controller & Translator functionality
- ▶ User Access Management
- ▶ Cyber security improvement
- ▶ Alternative configurations
- ▶ Multi-purpose schedulers
- ▶ Modbus register mapping possibility
- ▶ Load shedding, dummy load management
- ▶ User buttons
- ▶ Geofencing based on GPS position
- ▶ Available also in low temperature version (Order code: IL4MRS16BLA)

Application overview

MRS
Generator Circuit Breaker

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Dimensions, terminals and mounting

CAN			4×	**Current** 3ph Generator
+5 V	1×		4×	**Voltage** 3ph Generator
Analog inputs	4×	**2 ×**		
Pick-up	2×	**Plug-in modules**		
Binary outputs	8×		8×	**Binary inputs**
E-Stop input	1×			
Power supply & D+				

USB Device
USB Host
RS 485

Note: The final depth of the controller depends on the selected plug-in module – it can vary between 41 mm and 56 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 to be 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

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Power supply

Power supply range	8-36 VDC
Power consumption (without modules)	3.5 W
RTC battery	Replaceable (3 V)
Fusing power	4 A w/o BOUT consumption
E-Stop fusing	10 A
Max. Power Dissipation	9 W

Operating conditions

Protection degree (front panel)	IP 65
Operating temperature	-20 ˚C to +70 ˚C
Operating temperature for Low Temp. version	-40 ˚C to +70 ˚C
Storage temperature	-30 ˚C to +80 ˚C
Operating humidity	95 % non-condensing (EN 60068-2-30)
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	

D+

Max. output current	250 mA
Charging fail threshold	80 % of Usupply

Voltage measurement

Measurement inputs	3ph-n Gen voltage
Measurement range	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 monochromatic 3.2"
Resolution	132 × 64 px

Communications

USB Device	Non-isolated type B connector
USB Host	Non-isolated type A connector
RS485	Isolated
CAN 1	Non-isolated, 250 / 50 kbps, Terminator impedance 120 Ω

Current measurement

Measurement inputs	3ph Gen current
Measurement range	5 A
Max. allowed current	10 A
Accuracy	±20 mA for 0-2 A; 1 % of value for 2-5 A
Input impedance	<0.1 Ω

E-Stop

Dedicated terminal for safe E-Stop input.

Physical supply for binary outputs 1 & 2.

Binary inputs

Number	8
Close/Open indication	0-2 VDC close contact 6-36 VDC open contact

Binary outputs

Number	8
Max. current	BO1,2 = 5 A; BO3-8 = 0.5 A
Switching to	positive supply terminal

Analog inputs

Number	4, switchable (R/U/I)
Range	R = 0-2500 Ω; U = 0-10 V; I = 0-20 mA
Accuracy	R: ±2 % from value ±5 Ω in range 0-250 Ω R: ±4 % from value in range 250 Ω-2500 Ω U: 1 % from value ±100 mV I: 1 % from value ±0.2 mA

+5 V Power supply output

Max. current	45 mA

Magnetic pickup

Voltage input range	4 Vpk-pk to 50 Vpk-pk in range 4 Hz to 1 kHz 6 Vpk-pk to 50 Vpk-pk in range 1 to 5 kHz 10 Vpk-pk to 50 Vpk-pk in range 5 to 10 kHz
Frequency input range	4 Hz to 10 kHz
Frequency measurement tolerance	0.2 % from measured value

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

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 / Negative sequence voltage**	47
Stopping device	5	**Incomplete sequence relay**	48
Multi-function device	11	**Overcurrent**	50/50TD
Overspeed	12	**Earth fault****	50G
Underspeed	14	**Overcurrent IDMT**	51
Starting-to-running transition contractor	19	**AC circuit breaker**	52
Thermal relay	26	**Overvoltage**	59
Undervoltage	27	**Pressure switch**	63
Annunciator	30	**Liquid level switch**	71
Overload (real power)	32P	**Alarm relay****	74
Reverse power	32R	**Reclosing relay**	79
Master sequence device	34	**Overfrequency**	81O
Unit sequence starting*	44	**Underfrequency**	81U
Current unbalance	46	**Auto selective control/transfer**	83

*Dual-operation   **Extension module EM-BIO8-EFCP required   *** extension module IGL-RA15 required

Certifications and standards

- ▶ 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)

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