ComAp®
The heart of smart control

InteliLite 4 MRS 16

Datasheet

Order code: IL4MRS16BAA, IL4MRS16BLA

Controller for single gen-set applications

Product description

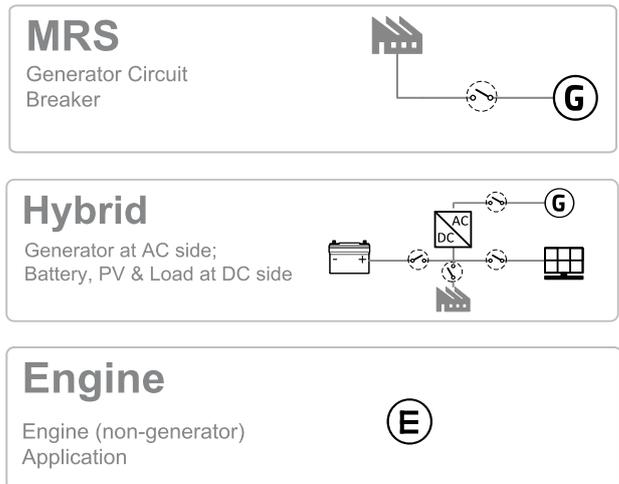Advanced single Gen-set controller for prime-power applications

Key benefits

> **Great flexibility** and **wide range of application** support
>> Variable predefined configurations tailored for specific applications
>> User defined protections and setpoints, integrated PLC logic

> **Full control with** fast and reliable **remote communication** support
>> Built-in USB host/device, CAN, RS485 interfaces
>> Extendable options including 4G/GPS, Ethernet and RS485/RS232
>> Support of Modbus RTU/TCP, SNMP v1/v2c/v3, J1939 protocols

> **Cyber security by design** to safeguard your business
>> Designed in relevant requirements according to ISA 62443 level 2-3

> **Enhanced ECU support**
>> StageV and Tier4Final ready by default with additional customisation
>> MultiECU support for enabling communication with more J1939 devices such as engine ECUs, battery chargers, AVRs etc.

Key features

> **3 applications in 1 HW: MRS** (Prime-power) – default, **Hybrid**, Engine
> Monitoring via **WebSupervisor**, **InteliSCADA**, **InteliConfig**, active **SMS** and **e-mails** or external SCADA system
> **Improved HW platform**
>> Switchable analogue inputs (R/U/I)
>> 5 V reference output for analogue CU AIN Calibration
>> 2 high-current E-Stop binary outputs
> **2 slots for** extension **plug-in modules** (more binary I/Os, 4G & GPS, Ethernet, RS232 & RS485)
>> Geo-fencing based on GPS
> Support of up to **5 extension CAN modules**
> Power over USB for configuration without standard power supply
> RTC with battery back-up, full calendar and enhanced scheduler

> Detailed history log with up to 350 records, including user logins and configuration changes
> Remote Display support via RS485 (special RD FW for InteliLite 4 controllers)
> Up to 5 languages in one configuration, over 20 default languages available, and an easy to use Translator
> Load shedding and dummy load management
> Alternative configurations for genset with variable voltage and frequency
> Tool for quick and organized configuration cloning in large production facilities
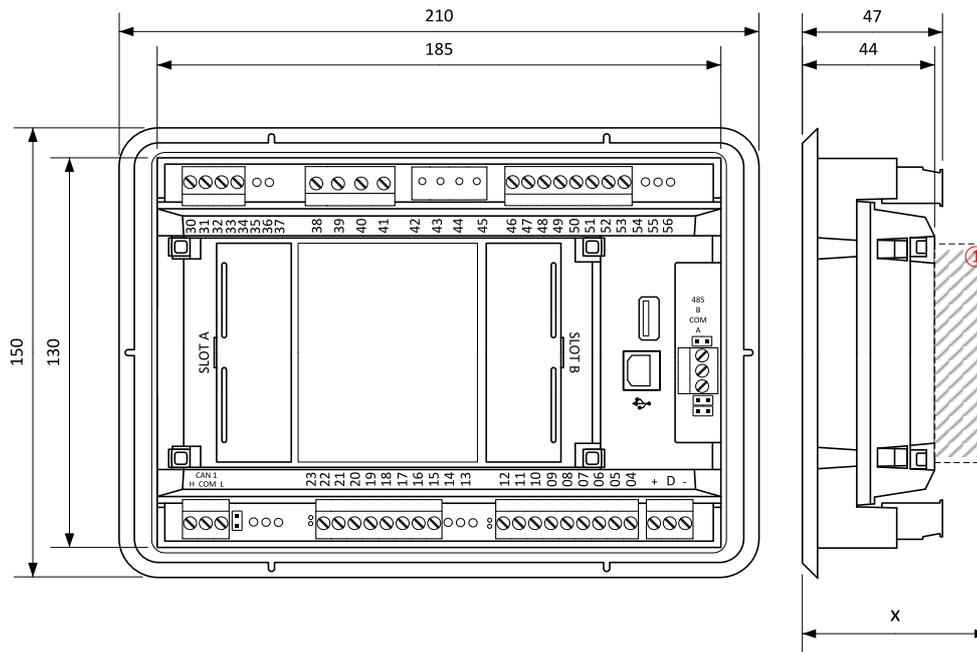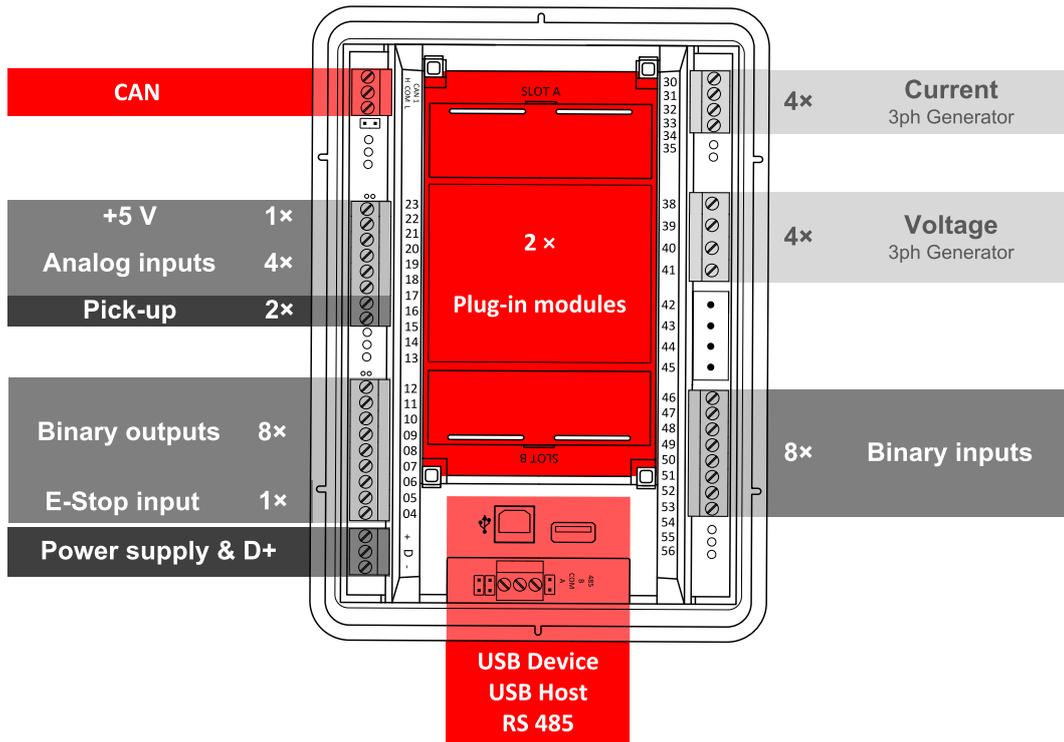> Available in low temperature version (order code: IL4MRS16BLA)

Application overview

MRS
Generator Circuit Breaker

Hybrid
Generator at AC side;
Battery, PV & Load at DC side

Engine
Engine (non-generator)
Application

InteliLite 4 MRS 16 Datasheet | Related HW ver: 1.0 | Related SW ver: 1.8.0 | Date of issue: 10/22/2025

Dimensions, terminals and mounting

CAN		4×	**Current** 3ph Generator
+5 V	1×	4×	**Voltage** 3ph Generator
Analog inputs	4×		
Pick-up	2×		
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

Power supply

Power supply range	8-36 V DC
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 = 400 m/s^2
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	Adjustable

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 30-520 Hz with SW key 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	Non-isolated, 250 / 50 kbps, Terminator impedance 120 Ω
Protocols	Modbus RTU/TCP SNMP v1/v2c/v3 J1939

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 V DC close contact 6-36 V DC open contact

Binary outputs

Number	8
Max. current	BO1,2=5 A (60°C); BO1,2=4 A (70°C), 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 (RS232 & RS485) plug-in communication module	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

List of SW Key Features

SW Key Feature	Order code
Modbus client for InteliLite 4	SKMODCLI03
PLC Package for InteliLite 4 Engine application	SKPLCILX01
400 Hz for InteliLite 4	SK400HZX01

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	**Breaker failure ANSI**	50BF
Starting-to-running transition contactor	19	**Overcurrent IDMT**	51
Thermal relay	26	**Overvoltage**	59
Undervoltage	27	**Aux Over Voltage**	59X
Aux Battery Under Voltage	27X	**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		

*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 61326-1
- EN 60068-2-1 (-20°C/16 h)
- 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 25/55°C, RH 95%, 48hours
- EN 60529 (front panel IP65, back side IP20)
- UL 6200

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