

Single gen-set control solutions



Single genset solutions present a first step to the world of ComAp's high quality power generation control systems. Our mission is to build on the experiences gained in complex, high-end applications, and transfer them in a range of powerful, yet simple and intuitive products dedicated for the single genset applications.

To deliver on our promise, ComAp has launched a new generation of one of the world's most successful controllers in its class – the InteliLite. Completely redesigned, with highly reputable ComAp PLC logic inside, 4G and GPS capability, the new InteliLite sets a new standard in the single genset control systems market.

What ComAp offers



Easy to use and flexible







- If it is easy to use, then it saves time and if it saves time, then it saves money! This is the concept behind our products and solutions.
- This family of controllers comes with a new and very intuitive PC software.
- The PC software has many pre-defined functions and settings to make the configuration process easier, but also provides you with the freedom to define the controller settings yourself.
- The built-in PLC allows you to respond to more complex and specific needs of your installations saving you the cost of an external PLC solution.
- > ComAp's PLC is so easy to use that you'll able to come up with what you need from the very start.
- All our products are designed to meet or even exceed quality and safety standards. This guarantees the reliability of our products, reduces the maintenance cost and give you the peace of mind you deserve.

Key benefits

PLC

> New level of flexibility enabling customers to meet any application requirements.

4G and GPS

> With 4G/GPS capabilities we incorporated a fast wireless internet connectivity and advanced functions such as Geofencing and Tracking, protecting our customers' generating-sets at all times.

New design

> Attractive, thinner and with hide and light symbols even more transparent. A brand new design with the InteliLite spirit.

Plug-in and CAN modules

You can seamlessly expand the number of inputs & outputs or provide the controller with the appropriate communication channel thanks to our range of plug-and-play extension and communication modules.

InteliConfig

> InteliLite comes with a new PC software delivering unmatched configuration possibilities in an intuitive way.



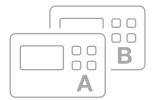






- Get the gen-set under your watch and control it from basically anywhere using the wide range of communication capabilities that we offer. You will save a lot of money by sending technicians to the site only when it is really needed.
- WebSupervisor, 4G (LTE), GPRS, GPS, Ethernet, ModBus, SNMP, Email / SMS alerts, and unit control.
- AirGate technology will help you easily to connect to the device even if you do not know anything about the provided IP address.





- We understand that it is important for you to highlight your brand and therefore we are open and willing to agree with you on offering a tailored solution on a case by case basis.
- You are expert in your field and you can have some special functional requirements from your device. We are open to discuss with you to reach it with the ComAp controller.

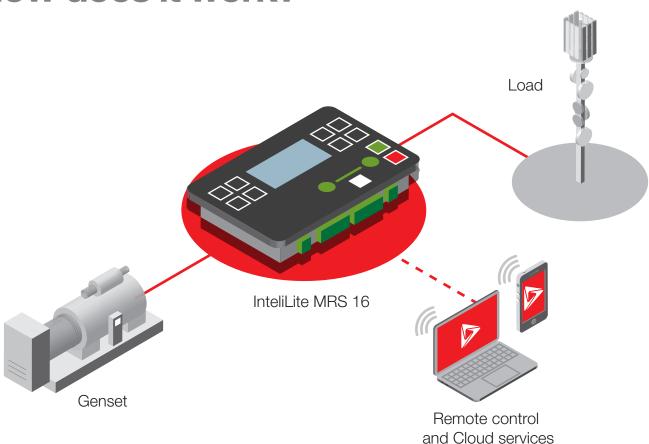
MRS solution



ComAp's MRS (Manual or Remote Start) family of controllers allow you to effectively operate, monitor, and control a single gen-set, either manually on the gen-set itself, or remotely using any internet enabled device (smartphone, tablet, or PC). Featuring extensive reporting and

performance logs, with full gen-set monitoring and protection, the MRS family of controllers also has range of plug-in extension modules available enabling I/O upgrades and additional communication options.

How does it work?



AMF solution



ComAp's AMF (Automatic Mains Failure) family of controllers allow you to effectively operate, monitor, and control a single gen-set operating in stand-by mode. Full gen-set monitoring and protection, outstanding EFI engine support, and featuring extensive reporting and

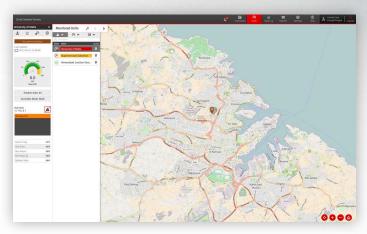
performance logs, the AMF family of controllers also has range of plug-inextension modules available enabling I/O upgrades and additional communication options.

How does it work? Load Load Mains InteliLite AMF 25 Remote control and Cloud services

Easy communication

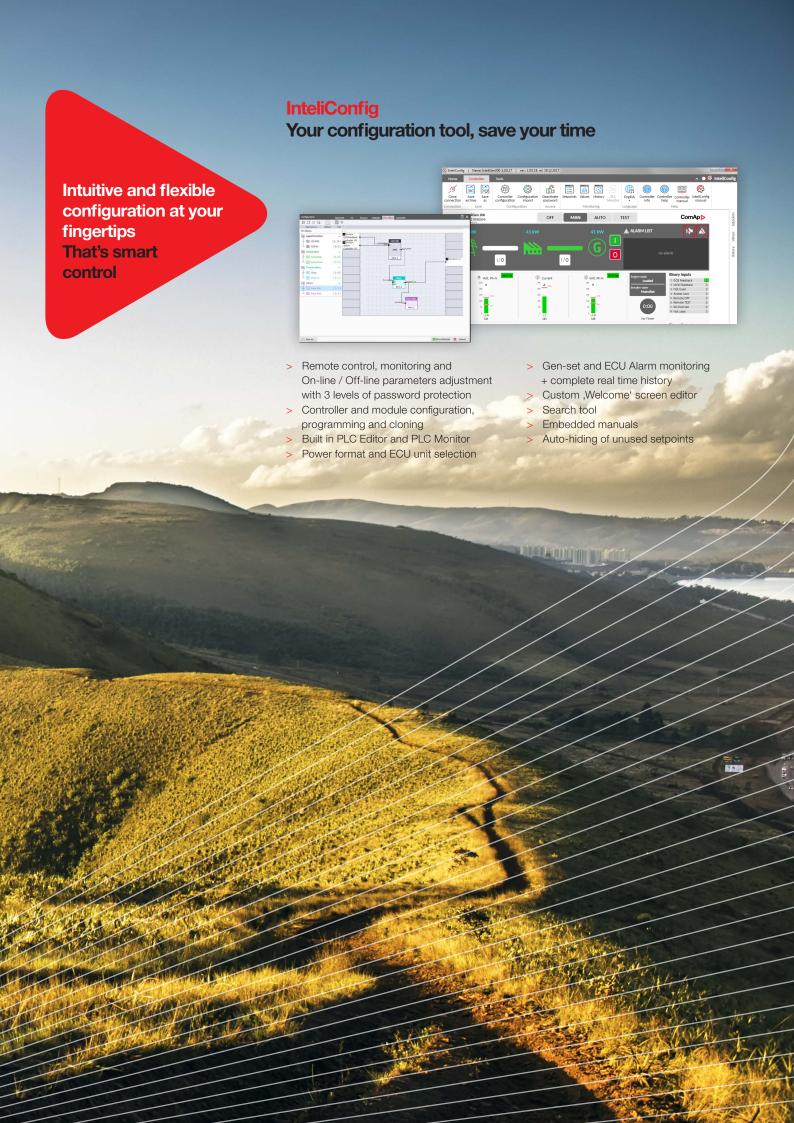
WebSupervisor 4

Your entire fleet, safe in your pocket



WebSupervisor is cloud-based system designed for monitoring and controlling ComAp controllers via the internet. This system offers a number of beneficial features that help optimize revenue for machinery fleets, as each piece of equipment can be individually monitored for all





Applications

Prime power system

In rental application

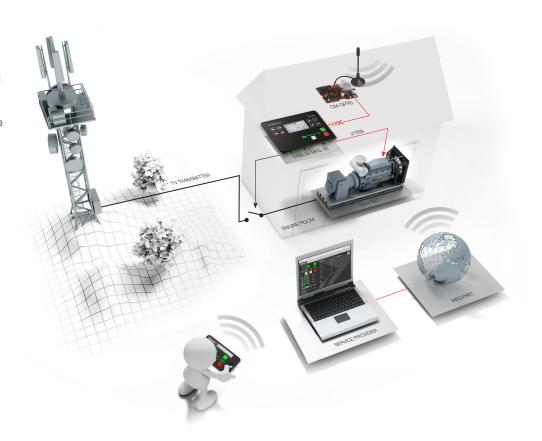
- Manual and remote start for gen-sets with electronic engines. InteliNano^{NT} MRS starts, controls and monitors the gen-set and controls the circuit breaker to supply the load.
- The generator is protected by built in over/ under voltage and frequency protection systems.
- The controller communicates with the engine management unit via a CAN J1939 bus and shows engine values and alarms on a graphical LCD screen.



Prime power system

With remote monitoring via Internet

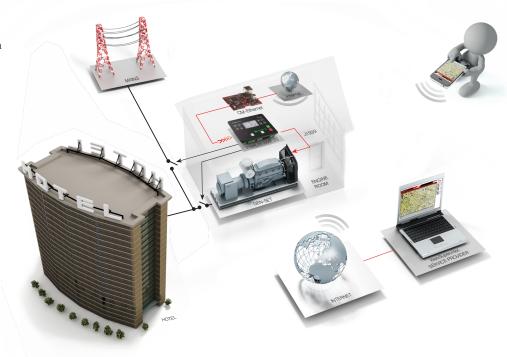
- > In this system the gen-set is used as the primary power source.
- InteliLite MRS 16, a Manual and Remote Start controller with electronic engine support, will monitor, protect and control the gen-set and the circuit breaker to supply the load.
- The controller communicates with engine management unit via a CAN J1939 bus. Engine values and alarms are visible on a graphical LCD screen in plain language – no need to learn cryptic flashing or numeric error codes.



Standby system

In commercial application

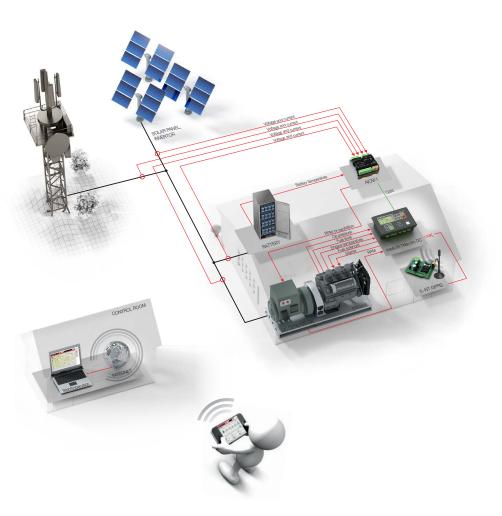
- In standby systems, the load is supplied by the mains and the gen-set is used as a back-up.
- InteliLite AMF 25, an Auto Mains Failure controller with electronic engine support, continuously monitors the mains and in case of any failure it automatically starts the engine and transfers the load to the generator.
- The controller communicates with engine management unit via a CAN J1939 bus. Engine values and alarms are visible on a graphical LCD screen in plain language – no need to learn cryptic flashing or numeric error codes.



DC cycling system

For remote telecom tower sites

- > Use a ComAp system including InteliLite Telecom DC to efficiently control your DC variable speed generating-set, renewable DC power source and battery for a reliable and cost-effective off-grid solution.
- > Due to higher efficiency DC cycling solution can deliver additional OPEX savings when compared to AC cycling or non-cycling solution.
- > Remote monitoring for optimal service intervals, fault reporting and reduced logistics costs.



References

📜 Hainan Island, China

Telecom Tower and Data Centre Power Control and Critical Backup

The local telecom provider deployed over 300 base transceiver stations (BTS) on Hainan Island. As the customer already had their own AMF/ATS system, ComAp provided InteliLite NT MRS 16 controllers, which have been used in connection with their diesel gen-sets. Used extensively across the mobile world, the InteliLite NT MRS 16 is popular for its simple configuration, local language support, advanced remote communication features, and its many different configuration capabilities and plug-in modules.

To be able to keep all users' data safe, all mobile operators need a reliable backup power system for their data centres. The installation for our customer on Hainan Island is no exception. ComAp has also delivered a solution for a local data centre. To ensure N+1 redundancy criteria were met, the 'H-system' configuration was used in this application. This configuration allows the interconnection of two mains incomers and two 1,800-kW standby generators through a bus-tie

breaker into a redundant standby system. Various configurations of the site provide flexible distribution of the power from the mains incomers, or one or both generators to the load feeders. Everything is controlled by ComAp InteliGen NT and InteliMains NT controllers and the whole site is monitored using InteliVision 17Touch screens in the control room.



Australia

Transmitting and recieving stations for marine radio signals

Kordia is one of Australia's largest Telecommunications Systems Integration service delivery organisations. They specialize in designing and building telecommunications systems, including mobile phone relay centres and radio transmission towers throughout Australia. Recently Greenbird Technology worked with Kordia to upgrade the transmitting and recieving stations for marine radio signals along the Australian coast.

The entire project consisted of delivering 9 control panels fitted with InteliLite^{NT} AMF 25 (5x) and InteliLite^{NT} MRS 16 (4x). Each controller was equipped with following ComAp accessories:

- > IL-NT BIO8 and IG-IOM for I/O expansion
- IB-Lite for MODBUS TCP communication protocol between controlers and site PC

Engines we controlled were Yanmar and John Deere, power output between 8 kW and 50 kW.

The main benefits were controls diagnostics and remote signals (start, stop, fault reset etc) options provided by IB-Lite, together with controllers offering genset protections and overall robust control system. The sites are going to be further enhanced with InternetBridge-NT modules to add all the units to WebSupervisor.





United Kingdom

Silverwood Business Park

AJ Power have recently completed the installation and commissioning of 2× 220 kVA sound attenuated canopy units with AMF controls and 2500 litre tank at the "Silverwood Business Park", Northern Ireland for MITIE.

MITIE are a facilities, property and asset management firm and a leading FTSE 250 Business with over 56,000 people and revenues in excess of GBP 1.7 billion. The Silverwood site houses a critical call centre for MITIE operations.

The project is equipped with two gen-sets and one incoming mains supply. The site uses the ComAp InteliLiteNT AJP3200* controllers and the ComAp InteliATSNT, there are 2× IL-NT AJP3200* remote display panels and an InteliATSNT PWR on the switchboard. The 2 gen-sets also have 2× IL-NT AJP3200* panels fitted on them. The InteliATSNT has an IB-Lite fitted allow it to be connected into MITIE's local network via an Ethernet connection, and provides the facility to monitor and test the system via PC monitoring and control software.





^{*} AJP3200 is a custom gen-set controller based on InteliLiteNT

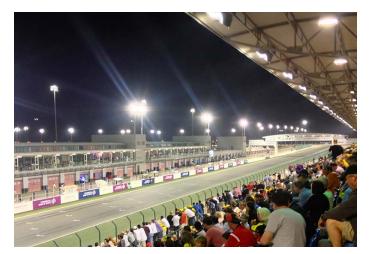


Losail International Circuit

Thanks to the renewed agreement with QMMF, Losail Circuit management, Pramac supplied 44 generators that will illuminate the race events that are due to be held on the Qatar track. Since the 2004 MotoGP Championship, the first level motorbike race category has held a stage in Qatar on the Losail circuit. Due to the extremely hot conditions, from 2006, the race is being held at night. This was possible thanks to the Pramac generators that provide power to the 3,600 light fixtures that are distributed along the circuit. This will generate around 11 MW of power, enough to ensure the right visibility to all the riders that will take part in the races.

The 44 GSW diesel generators can generate 330 kVA each, powered by Volvo Penta engines, are protected by a soundproof enclosure, and equipped with an automatic control panel unit, a GPRS modem for remote control and sand trap air filters for the notorious desert storms. A special modified version of ComAp's InteliLiteNT AMF 25, (called the ACO3) was installed in the control panel on each of the generators to ensure reliable, and easily monitored, control for the race organisers.

The supply of the generators has increased the strong connection between Pramac and the MotoGP world championship. The passion that has always distinguished the company founded in 1966 in Casole d'Elsa and that has become a multinational leader in the field of energy and movement thanks to innovative and dynamic ideas.







Key products

InteliLite Telecom

Auto Mains Failure (AMF) genset controller for telecommunications.

- > Smart battery charging and cycling management for lower OPEX
- > WebSupervisor, AirGate and LOCATE support
- > Automatic SMS on alarm or event & genset control over SMS*
- On-line control and monitoring over web pages (embedded web server) via plug & play IB-Lite
- > Optional GSM/GPRS modem/wireless Internet via IL-NT GPRS
- > Fuel theft protection and Total fuel consumption monitoring
- > Air-conditioning control
- > Full gen-set monitoring and protection
- Outstanding EFI engine support with diagnostic messages in plain text via J1939
- > Detailed RTC event and performance log
- Multiple languages (user changeable) in controller, even more in installation suite
- > Plug-in and CAN bus extension modules capability
- > A/B start battery support



InteliLite Telecom DC

DC genset controller for telecom tower applications.

- > Uses variable speed DC generators to charge batteries
- Charging current/voltage regulated by speed (variable speed engines, dual speed engines) or excitation (single speed engines)
- Automatic Start and Stop according to the accumulator voltage and charging current
- > Voltage compensation according to battery temperature
- > Charging time limitation and other protection
- > Circuit-breaker control
- Service cycle allows the maintenance people to trigger the charging manually
- > Fuel measurement function
- > Complete monitoring, control and protection of the system
- > Main screen layout adapted for DC applications
- > ComAp SCADA compatible (several equipment creating the network)
- WebSupervisor, AirGate and LOCATE support*
- > Automatic SMS on alarm*



^{*} Plug-in module required

InteliLite MRS 11

Single gen-set controller for prime power applications.

- > Easy to install, configure and use
- 5 languages in the controller
- > 3 level of password
- > 3 sets of alternative configuration
- > Direct communication with EFI engines
- > Tier 4 final ready
- > Remote monitoring and control
- Wide range of communication capabilities including:
 - connection via RS232, RS485, CAN and on board USB
 - internet access using Ethernet
 - Modbus (TCP/RTU)
- > Active SMS and emails in different languages
- > In-built PLC, complemented with a PLC monitoring tool in InteliConfig
- > 3 analog inputs, 6 binary inputs and 6 binary outputs on-board
- > 2× 10 A binary outputs for cranking and fuel solenoid
- More I/Os available over plug-in or CAN modules (CM-BIO8-EFCP, Inteli AIN8, Inteli IO8/8, IGS-PTM)
- > Remote Annunciator over CAN
- > Real time clock
- > Multipurpose flexible timers
- > Flexible event based history with up to 350 events
- > True RMS measurement
- > Comprehensive protections



InteliLite MRS 16

Single gen-set controller for prime power applications.

- > Easy to install, configure and use
- > 5 languages in the controller
- > 3 level of password
- > 3 sets of alternative configuration
- > Direct communication with EFI engines
- > Tier 4 final ready
- > Total remote monitoring and control
- > Cloud-based monitoring and control via WebSupervisor
- > Wide range of communication capabilities including:
 - connection via RS232, RS485, CAN and on board USB
 - internet access using Ethernet, GPRS, 3G or 4G
 - support for Modbus (TCP/RTU) and SNMP (v1/v2c including traps)
- > Active SMS and emails in different languages
- > Geofencing and tracking via WebSupervisor
- > In-built PLC, complemented with a PLC monitoring tool in InteliConfig
- > 4 analog inputs, 7 binary inputs and 7 binary outputs on-board
- > 2x 10 A binary outputs for cranking and fuel solenoid
- More I/Os available over plug-in or CAN modules (CM-BIO8-EFCP, Inteli AIN8, Inteli IO8/8, IGS-PTM)
- > Remote Annunciator over CAN
- > Activation of outputs based on inputs
- Load shedding, dummy load capability
- > Real time clock (with battery)
- > Multipurpose flexible timers
- > Flexible event based history with up to 350 events
- > True RMS measurement
- > Comprehensive protections
- Possibility to disable protections
- > Available also in low temperature version



InteliLite AMF 20

Single gen-set controller for stand-by and prime power applications.

- > Easy to install, configure and use
- > 5 languages in the controller
- > 3 level of password
- > 3 sets of alternative configuration
- > Direct communication with EFI engines
- > Tier 4 final ready
- > Remote monitoring and control
- > Wide range of communication capabilities including:
 - connection via RS232, RS485, CAN and on board USB
 - internet access using Ethernet
 - Modbus (TCP/RTU)
- > Active SMS and emails in different languages
- > In-built PLC, complemented with a PLC monitoring tool in InteliConfig
- > 3 analog inputs, 7 binary inputs and 7 binary outputs on-board
- > 2× 10 A binary outputs for cranking and fuel solenoid
- More I/Os available over plug-in or CAN modules (CM-BIO8-EFCP, Inteli AIN8, Inteli IO8/8, IGS-PTM)
- > Remote Annunciator over CAN
- > Real time clock
- > Multipurpose flexible timers
- > Flexible event based history with up to 350 events
- > True RMS measurement
- > Comprehensive protections



InteliLite AMF 25

Single gen-set controller for stand-by and prime power applications.

- > Easy to install, configure and use
- > 5 languages in the controller
- > 3 level of password
- > 3 sets of alternative configuration
- > Direct communication with EFI engines
- > Tier 4 final ready
- > Total remote monitoring and control
- > Cloud-based monitoring and control via WebSupervisor
- > Wide range of communication capabilities including:
 - connection via RS232, RS485, CAN and on board USB
 - internet access using Ethernet, GPRS, 3G or 4G
 - support for Modbus (TCP/RTU) and SNMP (v1/v2c including traps)
- > Active SMS and emails in different languages
- > Geofencing and tracking via WebSupervisor
- > In-built PLC, complemented with a PLC monitoring tool in InteliConfig
- > 4 analog inputs, 8 binary inputs and 8 binary outputs on-board
- > 2x 10 A binary outputs for cranking and fuel solenoid
- More I/Os available over plug-in or CAN modules (CM-BIO8-EFCP, Inteli AIN8, Inteli IO8/8, IGS-PTM)
- > Remote Annunciator over CAN
- > Activation of outputs based on inputs
- Load shedding, dummy load capability
- > Real time clock (with battery)
- > Multipurpose flexible timers
- > Flexible event based history with up to 350 events
- > True RMS measurement
- > Comprehensive protections
- > Possibility to disable protections
- > Available also in low temperature version



InteliLite 9

Next generation of Auto Mains Failure (AMF) gen-set controller

- > Direct communication with EFI engines
- > Easy to install, configure and use
- > Wide range of communication capabilities:
 - Connection via RS232, RS 485, CAN or USB
 - Internet acces using Ethernet
 - Support fot Modbus RTU and TCP
- > Active SMS and emails in different languages
- > 2x 10 A Binary output for cranking and fuel solenoid
- > 3 analog inputs / 6 binary inputs / 6 binary outputs on board
 - Option for additional I/Os over modules
- > E-Stop input
- > Slot for plug-in module
- > Flexible event based history with up to 150 events
- > Tier 4 final support
- > Activation of fuel pump Binary outputs based on Analog inputs
- > Comprehensive gen-set protections
- > Multiple flexible timers
- > True RMS measurement
- > AMR and MRS function in single firmware
- > Up to 3 alternative configurations switchable by Binary inputs
- > 5 languages in the controller
- > Adjustable D+ level
- > Adjustable choke function
- > Magnetic pickup for precise RPM measurement
- > Runhour counter source internal or ECU
- > Possibility to disable protections



InteliNano^{NT} Plus

Top-of-the-range model from InteliNano $^{\rm NT}$ family. AMF and MRS controller with current measurement and support for EFI engine.

- > AMF and MRS controller in one model
- > 1/3 Phase generator voltage measurement (3/3 phase when used as MRS controller)
- > 1 Phase generator current measurement
- > 3 Phase mains voltage measurement
- > Connection type and voltage auto detect
- > Various generator and engine protections
- > Biggest LCD screen in its class
- > Icon menu, no text
- > Automatic or manual MCB and GCB control
- > "Zero" power consumption mode
- > Battery voltage, Service time and Running hours indication
- > All setpoints and I/O's configurable via front panel
- > Ability to catch up on running engine (for manual engine start)
- > Light Tower mode supported





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CM-Ethernet¹⁾

- > Internet / Ethernet module with 10/100 Mbit interface over RJ45 socket
- > Embedded webserver for monitoring and basic adjustments
- > ModBus TCP and full SNMP support
- > ComAp TCP for remote access and full control over InteliConfig

CM-GPRS¹⁾

- > Mobile and wireless communication module providing wireless internet connectivity over GPRS and GSM communication
- > Remote monitoring and control capabilities via InteliConfig, WebSupervisor and active SMS / Emails alerts and control





CM-4G-GPS¹⁾

- Combined module that offers fast speed 4G communication capability, including active SMS / Emails alerts and control
- > GPS location with geofencing and tracking

CM-RS232-485¹⁾

- > Communication module with dual port for RS232 and RS485 providing 2 separate and independent COM channels
- > Supports Modbus RTU, ECU link and direct connection to LiteEdit and other ComAp's PC software





EM-BIO8-EFCP1)

- Extension module with 8 configurable binary terminals for inputs or outputs
- Possibility to connect a current transformer for earth fault current measurement and protection

IGS-PTM

- > Module providing 8× BINs, 8× BOUTs, 4× AINs and 1× AOUT
- > The state of binary inputs/outputs is indicated by LEDs
- > Measures values from Pt100 and Ni100 sensors
- > Connected over CAN bus

Controller features

	InteliNano ^{N™} PLUS	inteliNano ^{NT} MRS 3	InteliLite ^{N™} MRS 3	InteliLite ^{N™} MRS 4	InteliLite ^{NT} AMF 8
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Binary inputs / outputs	6/6 ¹⁾	6 / 6 ¹⁾	4/4	4 / 4	4/6
Analog inputs	3	3	3	3	3
2×10 A binary outputs	•	•	-	-	-
Input / output configurations	• / •	• / •	• / •	• / •	• / •
D+ battery charging alternator circuit	•	•	•	•	•
Magnetic pickup	-	•	-	-	•
AMF / MRS functions	• / •	-/ •	• / •	• / •	• / •
GCB / MCB control with feedback	• / •	• / _	•4) / •4)	•4) / •4)	
3ph voltage measurement Gen. / Mains	•2) / •	• / -	• / -	• / -	• / •
3ph current measurement	_3)	•	•	•	•
Frequency measurement Gen. / Mains	• / •	• / -	• / -	• / -	• / •
kW / kWh / kVA measurement	_/_/•	•/•/•	• / • / •	• / • / •	• / • / •
Generator protections	•	•	•	•	•
Earth fault current protections	-	-	-	-	-
History file	•	•	•	•	•
RTC / Battery	-/-	-/-	-/-	-/-	-/-
PLC	-	=	=	=	-
Remote control	-	-	•	•	0
4G	-	-	-	-	-
Tracking & Geofencing	-	-	-	-	_
Active SMS / E-mails	-	-	0 / –	0 / –	0 / —
AirGate	-	-	-	-	0
WebSupervisor	-	-	-	-	•
USB integrated	•	•	o ⁵⁾	o ⁷⁾	0
ECU support via CAN	•	•	-	•	-
Modbus support / SNMP support / SNMP traps	-/-/-	-/-/-	0 / - / -	0 / - / -	0/-/-
Plug-in modules	-	-	O ⁶⁾	O ⁶⁾	O ⁶⁾
Manual speed control ¹⁾	-	-	-	-	-
Total fuel consumption	-	-	-	-	-
Fuel pump	-	-	-	-	-
Dummy load / Load shedding	-	-	-	-	•
Auto. temperature based heating & cooling	-				
Analog calibration	-	-	-	-	-
Connection type autodetect	•	•	-	-	-
Tier 4 Final support	-	-	-	-	-

KEY • Included

– ExcludedOptional – plug-in module required

GCB: Generator circuit breaker

MCB: Mains circuit breaker

1) 1 binary input is shared with binary output
2) 1 ph; 3 ph when used as MRS controller

3) 1 ph is available

Manual / Automatic GCB and MCB control, but without feedback
 Only with order code IL2M3USBXAB

6) IL-NT RS232, IL-NT RS232-485, IL-NT GPRS, IL-NT S-USB, IL-NT AOUT8, IL-NT BIO8

InteliLite ^{NT} AMF 9	InteliLite 9	InteliLite MRS 11	InteliLite MRS 16	InteliLite AMF 20	InteliLite AMF 25
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- 7) Only with order code IL2M4USBXAB 8) CM-RS232-485, CM-GPRS, CM-4G-GPS, CM-Ethernet, EM-BIO8-EFCP
- 9) Without breaker feedback





Try it now!

Visit www.websupervisor.net and get your free demo account.



Product overview



InteliLite MRS 11

Single gen-set controller for prime power applications



InteliLite MRS 16

Single gen-set controller for prime power applications



InteliLite AMF 20

 Single gen-set controller for stand-by and prime power applications



InteliLite AMF 25

 Single gen-set controller for stand-by and prime power applications



InteliLite 9

A new Auto Mains Failure (AMF) gen-set controller



InteliNano^{NT} Plus

Top-of-the-range model from InteliNano^{NT} family with current measurement and support for EFI engine



InteliLite Telecom

 Auto Mains Failure (AMF) genset controller for telecommunications



InteliLite Telecom DC

DC genset controller for telecom tower applications









CM-GPRS

SSM modem / wireless internet module

CM-4G-GPS

> 4G modem / wireless internet module

CM-RS232-485

 Dual port extension board

CM-Ethernet

Internet / ethernet plug-in module including web server

EM-BIO8-EFCP

Hybrid current input
 & binary input/output
 extension module



Manufacturer:

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f we in

Local distributor / partner:

