

# InteliLite<sup>NT</sup>

## SINGLE SET GEN-SET CONTROLLER



**WebSupervisor**  
The WebSupervisor system, a secure web based remote monitoring system which allows equipment fitted with various types ComAp units to be monitored via the internet from a remote PC or other web enabled device such as smartphone, webbook, etc. It operates in any internet browser and needs no special software to be installed. User can view recorded data from their equipment, receive Email alerts on alarms and control the remote units. Dedicated App's for iPhone and Android provide a truly mobile constant connection with the monitored equipment.



**LOCATE**  
ComAp's LOCATE system uses the power of cellular communications technology to provide users and peace of mind that the monitored asset is where it should be. Locate provides location data to the WebSupervisor system without the need for costly GPS positioning equipment and works anywhere there is a cellphone signal, even indoors. Not only will WebSupervisor show the position of the monitored equipment, it will also maintain a track history and show route of the movement on a map. LOCATE – Simply Here!



**AirGate**  
Modern communications made simple. ComAp's powerful AirGate technology is provided in a range of our controllers and makes remote internet connection to the ComAp controller easy. Just register the AirGate enabled controller on our website and from then on let ComAp's unique system locate and maintain contact with the controller, no need to worry about VPN's, Static IP addresses or corporate firewalls, simple! "AirGate – Simply connected."

## Description

The InteliLite<sup>NT</sup> range offers a wide choice of integrated control solutions for gen-sets operating in single standby mode. Based on the field proven InteliLite architecture, the family of controllers fulfills every requirement from simple to complex and AMF to MRS applications – with specific models providing modem and internet control, user configuration and complete gen-set monitoring and protection.

All InteliLite<sup>NT</sup> controllers are easy to use with an intuitive user interface and graphic display. All of these models also feature a built-in event and performance log. Some incorporate a backed-up real time clock and others with running hours reference which makes troubleshooting even simpler.

The new design brings seamless integration with the latest breed of EFI engines, which include Caterpillar, Cummins, Detroit Diesel, Deutz, GM, Isuzu, Iveco, John Deere, MAN, MTU, Perkins, Scania, Sisu, VM Motori, Volvo Penta and others. This offers a higher level of functionality with users able to display a comprehensive range of values from the EFI engine on standard analog gauges and true RMS measurement of electric values.

## Benefits

- ▶ Less wiring and components
- ▶ Less engineering and programming
- ▶ Remote monitoring helps reduce call-out costs of service engineers
- ▶ Optional additional 8 binary inputs/outputs
- ▶ Optional Internet with control and monitoring over web pages
- ▶ Support of wireless Internet
- ▶ Active SMS/E-mails
- ▶ Direct communication with EFI engines
- ▶ Perfect price/performance ratio
- ▶ History log – easy troubleshooting and warranty claim handling



ComAp is a member of AMPS (The Association of Manufacturers of Power generating Systems).



ComAp products meet the highest standards, with every stage of production undertaken in accordance with the ISO certification obtained in 1998.

## Features

- ▶ **3 phase AMF function<sup>1)</sup>**
  - Over/Under frequency
  - Over/Under voltage
  - Voltage asymmetry
- ▶ **3 phase generator protections**
  - Over/Under frequency
  - Over/Under voltage
  - Current/Voltage asymmetry
  - Overcurrent/Overload
- ▶ **True RMS Voltage measurement**
  - 3 phase generator and mains<sup>1)</sup> voltages
  - Voltage range 277 V p-n, 480 V p-p
  - Maximal measured voltage 300 V p-n
  - PT ratio range 0.1–500
- ▶ **True RMS current measurements**
  - 3 generator phase currents
  - Current range 5 A
  - Maximal measured current 10 A
  - CT ratio range 1–5000
- ▶ **Power measurements**
  - Active/Reactive Power and Power Factor per phase
  - Gen-set Active and Reactive Energy counter<sup>2)</sup>
  - Mains Active and Reactive Energy counter<sup>3)</sup>
  - Apparent power
- ▶ **Event and performance log + RTC**
  - Flexible event based history with up to 119 events
  - Reason, Running hours + all important values are stored<sup>4)</sup>
  - Reason, Date and Time + all important values are stored<sup>2)</sup>
  - Battery backed-up RTC<sup>2)</sup>
  - Test Run scheduler<sup>1)</sup>
- ▶ **User interface**
  - Graphic 128 x 64 pixels display
  - 2 languages, user changeable from PC
  - Wide range of languages in package
  - Setpoints adjustable via controller buttons or PC
  - Large font in user interface
  - Buttons with mechanical feedback
  - Customized front fascia on request
- ▶ **Inputs and outputs**
  - 6/7<sup>1)</sup> or up to 14/15<sup>1)</sup> (with IL-NT BIO8) binary inputs
  - 6/7<sup>1)</sup> or up to 14/15<sup>1)</sup> (with IL-NT BIO8) binary outputs
  - 3 configurable analog inputs with wide list of predefined senders
  - Additional inputs/outputs available<sup>2)</sup> via IG-IOM or IGS-PTM
  - Magnetic pickup input
  - D+ pre-excitation terminal
  - Optional 8 analog gauge drive outputs, compatible with VDO, Style gauges
- ▶ **EFI engine support**
  - Cummins Modbus
  - Engine specific J1939 for all major manufacturers (see table below)
  - Diagnostic messages in plain text
- ▶ **SMS/E-mails**
  - SMS commands
  - E-mails<sup>5)</sup>
  - Alarm and event SMS
- ▶ **Miscellaneous features**
  - Support of telecom applications with special firmware
  - Integrates with UPS systems<sup>6)</sup>
  - Fuel theft protection
  - Mutual stand-by system
  - Automatic temperature based cooling/heating
  - Load shedding, dummy load
  - Customer logo screen
  - Two multipurpose timers
  - Alternative configuration (50Hz/60Hz)

- ▶ **Communication interfaces**
  - Optional RS232, RS485 (including Modem support) or USB plug-in interface
  - Modbus RTU/TCP (requires RS485 interface/IB-Lite)
  - SNMP (requires IB-Lite)
  - Optional Internet/Ethernet via IB-Lite
  - On-line control and monitoring over web pages (embedded web server) via IB-Lite
  - Optional GSM modem/wireless Internet via IL-NT GPRS
- ▶ **Mechanical and operation parameters**
  - Unit dimension 120 x 180 mm
  - Sealed front face rated for IP65
  - Hard plexiglass LCD cover
  - Operation temperature:
    - -20°C to +70°C standard version
    - -40°C to +70°C low temperature version
  - Power supply voltage 8–36 V
  - Voltage drops shorter than 50 ms do not affect operation

| ANSI code | Protection          |
|-----------|---------------------|
| 59        | Overvoltage         |
| 27        | Undervoltage        |
| 47        | Voltage asymmetry   |
| 81H       | Overfrequency       |
| 81L       | Underfrequency      |
| 50+51     | Overcurrent*        |
| 46        | Current unbalance   |
| 32        | Overload            |
| 47        | Phase rotation**    |
| 71        | Gas (Fuel) level    |
| 50N + 64  | Earth fault current |

\* For MRS 10 and AMF 20 models Shortcurrent only  
 \*\* Fixed setting

### InteliLite<sup>NT</sup> controllers support J1939 for all major brands:

- |                  |              |           |               |
|------------------|--------------|-----------|---------------|
| • Caterpillar    | • GM         | • MAN     | • Sisu        |
| • Cummins        | • Isuzu      | • MTU     | • VM Motori   |
| • Detroit Diesel | • Iveco      | • Perkins | • Volvo Penta |
| • Deutz          | • John Deere | • Scania  | and others    |



## Order codes

| Product                         | Order code  |
|---------------------------------|-------------|
| InteliLite <sup>NT</sup> MRS 10 | IL-NT MRS10 |
| InteliLite <sup>NT</sup> MRS 15 | IL-NT MRS15 |
| InteliLite <sup>NT</sup> MRS 16 | IL-NT MRS16 |
| InteliLite <sup>NT</sup> AMF 20 | IL-NT AMF20 |
| InteliLite <sup>NT</sup> AMF 25 | IL-NT AMF25 |

## Accessories

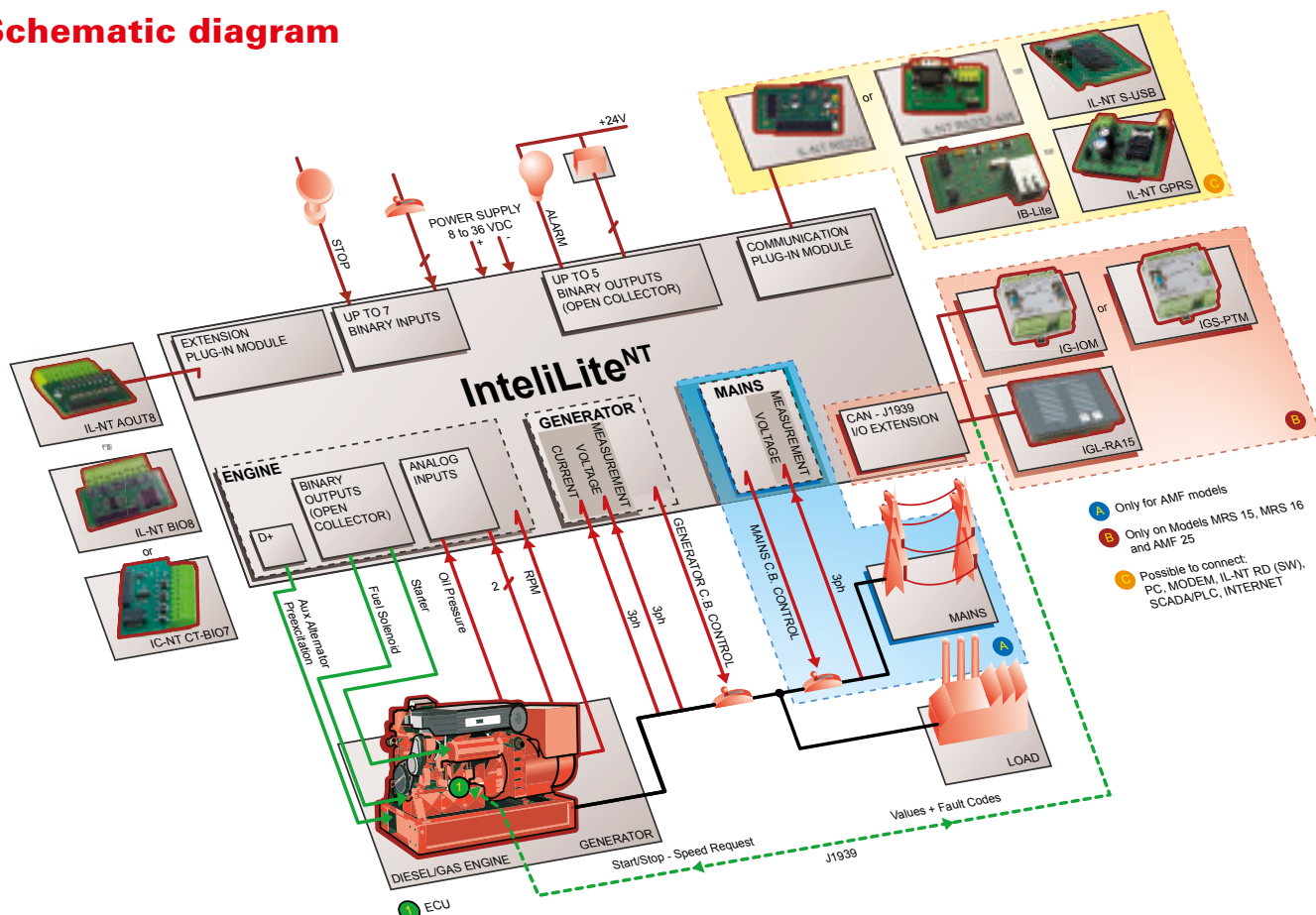
- ▶ **IL-NT RS232** – RS232 Extension Board
- ▶ **IL-NT RS232-485** – Dual Port Extension Board
- ▶ **IL-NT S-USB** – Service USB Module
- ▶ **IB-Lite** – Internet/Ethernet Plug-in Module including Web Server
- ▶ **IL-NT GPRS** – GSM Modem/Wireless Internet Module
- ▶ **IL-NT AOUT8** – Analog Outputs for PWM Gauges Module
- ▶ **IL-NT BIO8** – Binary Input/Output Module
- ▶ **IC-NT CT-BIO7** – Hybrid Current Input & Binary Input/Output Extension Module
- ▶ **IL-NT RD (SW)** – Remote Display Software for InteliLite<sup>NT</sup> Controllers
- ▶ **IGS-PTM<sup>2)</sup>** – Analog/Binary Input/Output Module
- ▶ **IG-IOM<sup>2)</sup>** – Analog/Binary Input/Output Module
- ▶ **IGL-RA15<sup>2)</sup>** – Remote Annunciator

### KEY

MRS – manual and remote start controller  
 AMF – automatic mains failure start controller

- 1) Only for AMF models
- 2) Only for MRS 15, MRS 16 and AMF 25 models
- 3) Only for AMF 25 models
- 4) Only for MRS 10 and AMF 20 models
- 5) E-mails only for IB-Lite
- 6) Detail information available on request

## Schematic diagram



## Available models

### MRS 10

MANUAL AND REMOTE START CONTROLLER



- 3 configurable analog inputs
- Magnetic pickup input
- D+ preexcitation terminal
- 6 binary inputs
- 6 binary outputs
- Automatic GCB control
- Running hours event and performance log
- Plug-in extension modules capability

### MRS 15

MANUAL AND REMOTE START CONTROLLER WITH SUPPORT FOR EFI ENGINES



- 3 configurable analog inputs
- Magnetic pickup input
- D+ preexcitation terminal
- 6 binary inputs
- 6 binary outputs
- Automatic GCB control
- CAN with J1939 support
- Plug-in and CAN bus extension modules capability
- RTC event and performance log

### MRS 16

MANUAL AND REMOTE START CONTROLLER WITH SUPPORT FOR EFI ENGINES



- 3 configurable analog inputs
- Magnetic pickup input
- D+ preexcitation terminal
- 6 binary inputs
- 6 binary outputs
- Automatic and manual GCB control
- CAN with J1939 support
- Plug-in and CAN bus extension modules capability
- RTC event and performance log

### AMF 20

AUTOMATIC MAINS FAILURE START CONTROLLER



- 3 configurable analog inputs
- Magnetic pickup input
- D+ preexcitation terminal
- 7 binary inputs
- 7 binary outputs
- Automatic and manual GCB and MCB control
- Gen-set current/power measurement
- Running hours event and performance log
- Plug-in extension modules capability

### AMF 25

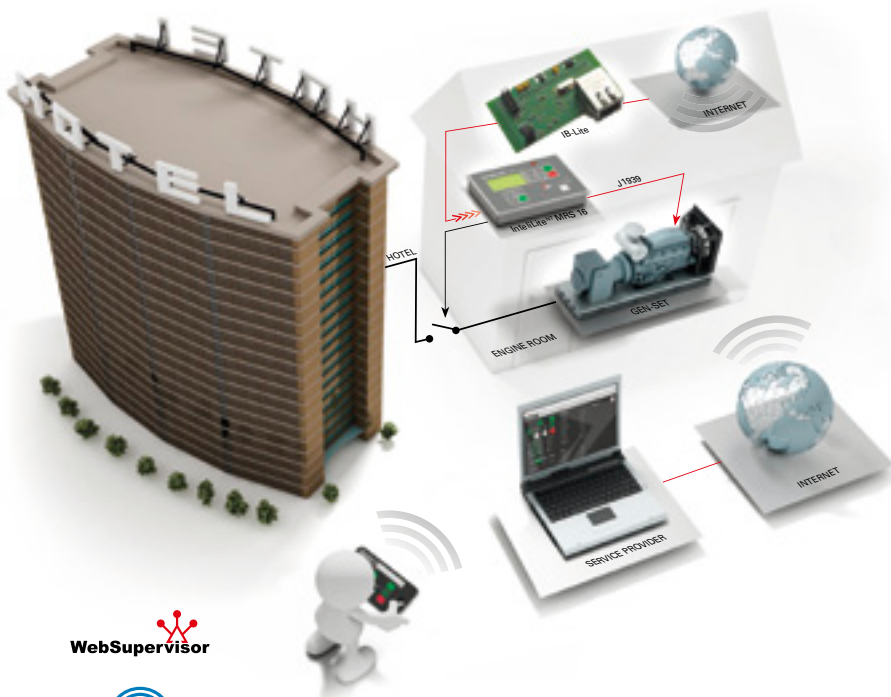
AUTOMATIC MAINS FAILURE START CONTROLLER WITH SUPPORT FOR EFI ENGINE



- 3 configurable analog inputs
- Magnetic pickup input
- D+ preexcitation terminal
- 7 binary inputs
- 7 binary outputs
- Automatic and manual GCB and MCB control
- CAN with J1939 support
- Plug-in and CAN bus extension modules capability
- RTC event and performance log
- Dual AMF/Mutual stand-by system
- Gen-set current/power measurement



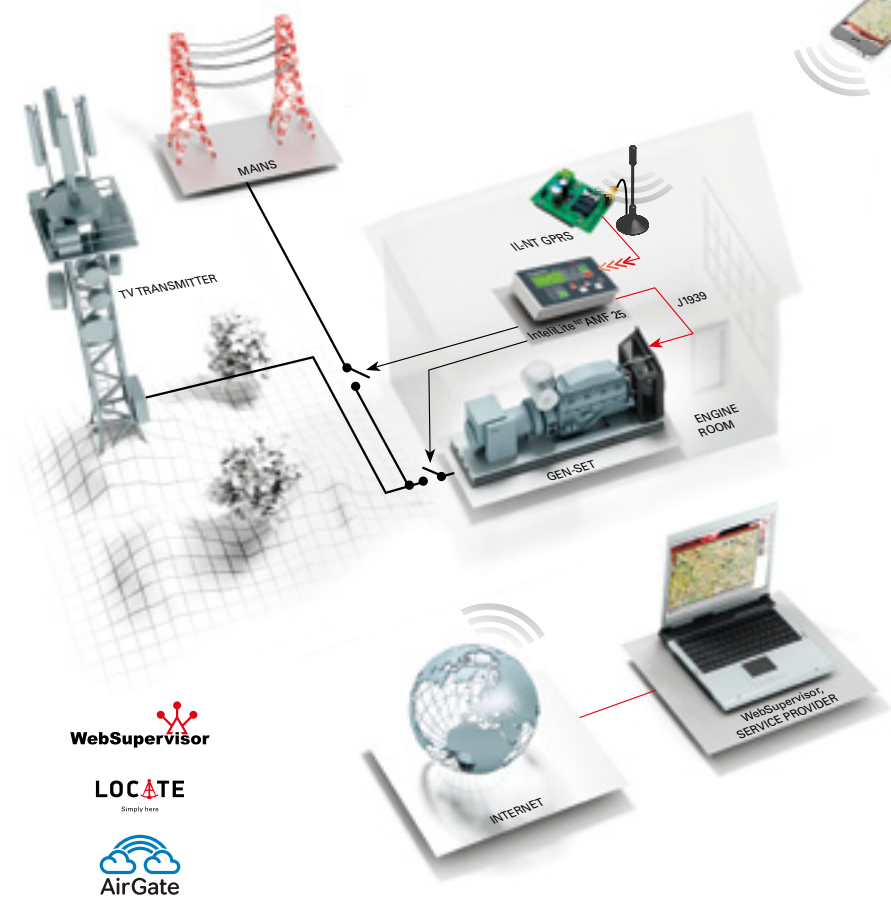
# Typical applications



## PRIME MOVER SYSTEM REMOTE MONITORING VIA INTERNET

- ▶ Manual and remote start of gen-set with electronic engine. IntelliLite<sup>NT</sup> MRS 16 starts, controls and monitors the gen-set and controls the circuit breaker to supply the load.
- ▶ Service provider can monitor and control gen-set operation remotely via Internet.
- ▶ The controller sends active E-mails upon alarm event.
- ▶ The generator is protected by a built in over/under voltage and frequency protections as well as IDMT overcurrent protection.
- ▶ The controller communicates with engine management unit by 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.

- Scope of supply:**
- ▶ 1x IntelliLite<sup>NT</sup> MRS 16
  - ▶ 1x IB-Lite



## STANDBY SYSTEM REMOTE MONITORING VIA INTERNET

- ▶ Stand-by gen-set with electronic engine. IntelliLite<sup>NT</sup> AMF 25 continuously monitors a mains supply and automatically starts an engine and switches load to a standby generator set in case of mains failure.
- ▶ The service provider can monitor the gen-set operation remotely via GPRS modem.
- ▶ The operator can use LiteEdit for a single gen-set view or WebSupervisor for total fleet management.
- ▶ The generator is protected by a built in over/under voltage and frequency protections as well as IDMT overcurrent protection.
- ▶ The controller communicates with engine management unit by 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.

- Scope of supply:**
- ▶ 1x IntelliLite<sup>NT</sup> AMF 25
  - ▶ 1x IL-NT GPRS

Function Overview of IntelliLite<sup>NT</sup> Controllers

|                                              | IntelliLite <sup>NT</sup><br>MRS 10 | IntelliLite <sup>NT</sup><br>MRS 15 | IntelliLite <sup>NT</sup><br>MRS 16 | IntelliLite <sup>NT</sup><br>AMF 20 | IntelliLite <sup>NT</sup><br>AMF 25 |
|----------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Model                                        | MRS 10                              | MRS 15                              | MRS 16                              | AMF 20                              | AMF 25                              |
| Order code                                   | IL-NT MRS10                         | IL-NT MRS15                         | IL-NT MRS16                         | IL-NT AMF20                         | IL-NT AMF25                         |
| Binary inputs/outputs                        | 6 / 6                               | 6 / 6                               | 6 / 6                               | 7 / 7                               | 7 / 7                               |
| Analog inputs                                | 3                                   | 3                                   | 3                                   | 3                                   | 3                                   |
| Magnetic pickup                              | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| AMF function/MRS function                    | - / ●                               | - / ●                               | - / ●                               | ● / ●                               | ● / ●                               |
| Input configuration                          | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| Output configuration                         | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| Voltage measurement Gen./Mains               | 3 ph / -                            | 3 ph / -                            | 3 ph / -                            | 3 ph / 3 ph                         | 3 ph / 3 ph                         |
| Current measurement                          | 3 ph                                | 3 ph,<br>IDMT overcurrent           | 3 ph,<br>IDMT overcurrent           | 3 ph                                | 3 ph,<br>IDMT overcurrent           |
| kW/kWh/kVA measurement                       | ● / - / ●                           | ● / ● / ●                           | ● / ● / ●                           | ● / - / ●                           | ● / ● / ●                           |
| Generator protections                        | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| Earth fault current protection               | -                                   | 0                                   | 0                                   | -                                   | 0                                   |
| Full history file/Running hours history      | - / ●                               | ● / -                               | ● / -                               | - / ●                               | ● / -                               |
| RTC with battery                             | -                                   | ●                                   | ●                                   | -                                   | ●                                   |
| GCB/MCB control with feedback                | ● <sup>1)</sup> / -                 | ● <sup>1)</sup> / -                 | ● <sup>2)</sup> / -                 | ● / ●                               | ● / ●                               |
| D+ battery charging alternator circuit       | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| Engine hours                                 | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| CAN-J1939 interface                          | -                                   | ●                                   | ●                                   | -                                   | ●                                   |
| Internet support with Web server             | with IB-Lite                        | with IB-Lite                        | with IB-Lite                        | with IB-Lite                        | with IB-Lite                        |
| Internet support over GPRS                   | with IL-NT GPRS                     | with IL-NT GPRS                     | with IL-NT GPRS                     | with IL-NT GPRS                     | with IL-NT GPRS                     |
| Extension modules                            | -                                   | IGL-RA15, IG-IOM,<br>IGS-PTM        | IGL-RA15, IG-IOM,<br>IGS-PTM        | -                                   | IGL-RA15, IG-IOM,<br>IGS-PTM        |
| Remote communication interface <sup>3)</sup> | 0                                   | 0                                   | 0                                   | 0                                   | 0                                   |
| Modbus interface                             | 0                                   | 0                                   | 0                                   | 0                                   | 0                                   |
| Remote display                               | 0                                   | 0                                   | 0                                   | 0                                   | 0                                   |
| Cummins Modbus                               | -                                   | 0                                   | 0                                   | -                                   | 0                                   |
| Active SMS/E-mails                           | 0                                   | 0                                   | 0                                   | 0                                   | 0                                   |
| Dummy load/Load shedding                     | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |
| Auto. temperature based heating/ cooling     | ●                                   | ●                                   | ●                                   | ●                                   | ●                                   |

**KEY** ● included  
- excluded  
0 optional – plug-in module required  
1) Automatic GCB control  
2) Automatic and manual GCB control  
3) RS232, RS485, USB, INTERNET, GPRS/GSM

Legend: IGL-RA15/IGS-PTM: Analog/binary input/output modules  
IGL-RA15: Remote annunciator  
GCB: Generator circuit breaker  
MCB: Mains circuit breaker

## References



### Poland

#### Using ComAp power controllers is a huge advantage

EPS SYSTEM produces power generators in Poland, using mostly IVECO, VOLVO-PENTA, PERKINS and MTU engines. Besides the production of generators, company provides and integrates power supply systems, including installation.

*"During 12 years of service, we have been handling various tasks in monitoring and control of power supply systems and generators. The technologies in this branch are continuously evolving which makes us resolve new and unusual requirements given by our clients. Using ComAp power controllers is a huge advantage not only for typical applications, but also in executing individual requests and demands. The vast majority of power generators we produce is equipped with an electronically controlled fuel injection combined with ComAp controllers and CAN interface. This simplifies production and maintenance and also helps with diagnostics."*

**Norbert Szymon Broniek**

Sales Manager

[www.epssystem.pl](http://www.epssystem.pl)



### USA

#### Stand-by Power for Manufacturing Facility

*"Our customer's site had more than 10 gensets of various makes and vintages spread out over as many buildings. As we were commissioning a new genset on their campus, we identified an opportunity to retrofit their existing fleet with IntelliLite<sup>NT</sup>, giving them the ability to monitor all their sets remotely. The remote communications flexibility has allowed our service department to respond to our customer's needs in an instant and provide them with great service. This has saved our customer an incredible amount of time and money."*

**Larry Davis**

Sales Manager

[www.acfstandbysystems.com](http://www.acfstandbysystems.com)

For more information about our products and applications visit

**[www.comap.cz](http://www.comap.cz)**



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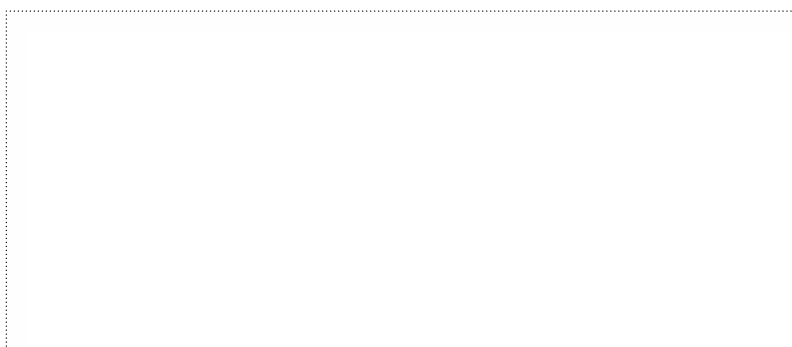
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