InteliLite[NT]

SINGLE SET GEN-SET CONTROLLER

Description

The InteliLite[NT] 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[NT] 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, Deutz, Detroit Diesel, 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

AirGate
simply connected

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."

AMPS

ISO 9001 CERTIFIED Quality Management ComAp spol. s r. o.

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Features

- **3 phase AMF function**[1)]
  - 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[1)] 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
  - Genset Active and Reactive Energy counter[3)]
  - Mains Active and Reactive Energy counter[5)]
  - Apparent power
- **Event and performance log + RTC**
  - Flexible event based history with up to 119 events
  - Reason, Running hours + all important values are stored [2)]
  - Reason, Date and Time + all important values are stored [3)]
  - Battery backed-up RTC [3)]
  - Test Run scheduler [1)]
- **User interface**
  - Graphic 128 × 64 pixels display
  - 2 languages, user changeable from PC
  - Wide range of languages in package
  - Setpoints adjustable via keyboard or PC
  - Buttons with mechanical feedback
  - Customized front facia on request
- **Inputs and outputs**
  - 3 configurable analog inputs with wide list of predefined senders
  - 6/7 [1)] or up to 14/15 [1)] (with IL-NT BIO8) binary inputs
  - 6/7 [1)] or up to 14/15 [1)] (with IL-NT BIO8) binary outputs
  - Magnetic pick-up input
  - D+ pre-excitationn 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
- **Active calls**
  - 2 channels
  - SMS or E-mails
- **Miscellaneous features**
  - Support of telecom applications with special firmware
  - Integrates with UPS systems [4)]
  - Dual AMF/Mutual stand-by system
  - Automatic temperature based cooling/heating
  - Load shedding, dummy load
  - Customer logo screen
  - Two multipurpose timers
  - Genset control over SMS
- **Communication interfaces**
  - Optional RS232, RS485 (including Modem support) or USB plug-in interface
  - Modbus RTU/TCP (requires RS485 interface/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 × 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

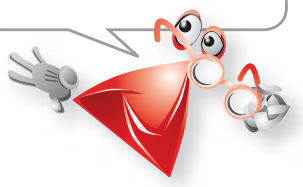
ANSI code	Protection
59	Overvoltage
27	Undervoltage
47	Voltage asymmetry
81H	Overfrequency
81L	Underfrequency
50+51	Overcurrent*
46	Current unbalance
32	Overload
47	Phase rotation**
71	Gas (Fuel) level

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

IL-NT supports J1939 for all major brands:

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

and others



Accessories

- **IL-NT RS232** – RS232 Extension Board
- **IL-NT RS232-485** – Dual Port Extension Board
- **IL-NT S-USB** – Service USB Module
- **IL-NT AOUT8** – Analog Outputs for PWM Gauges Module
- **IL-NT BIO8** – Binary Input/ Output Module
- **IB-Lite** – Internet/Ethernet Plug-in Module including Web Server
- **IL-NT GPRS** – GSM Modem/ Wireless Internet Module
- **IL-NT RD (SW)** – Remote Display Software for InteliLite[NT] Controllers
- **IGS-PTM** [3)] – Analog/Binary Input/Output Module
- **IGS-IOM** [3)] – Analog/Binary Input/Output Module
- **IGL-RA15** [3)] – Remote Annunciator

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

1) only for AMF models
2) only for MRS 10 and AMF 20 models
3) only for MRS 15, MRS 16 and AMF 25 models
4) detail information available on request
5) only for AMF 25 models

Some of the listed features will be available in the next SW versions.

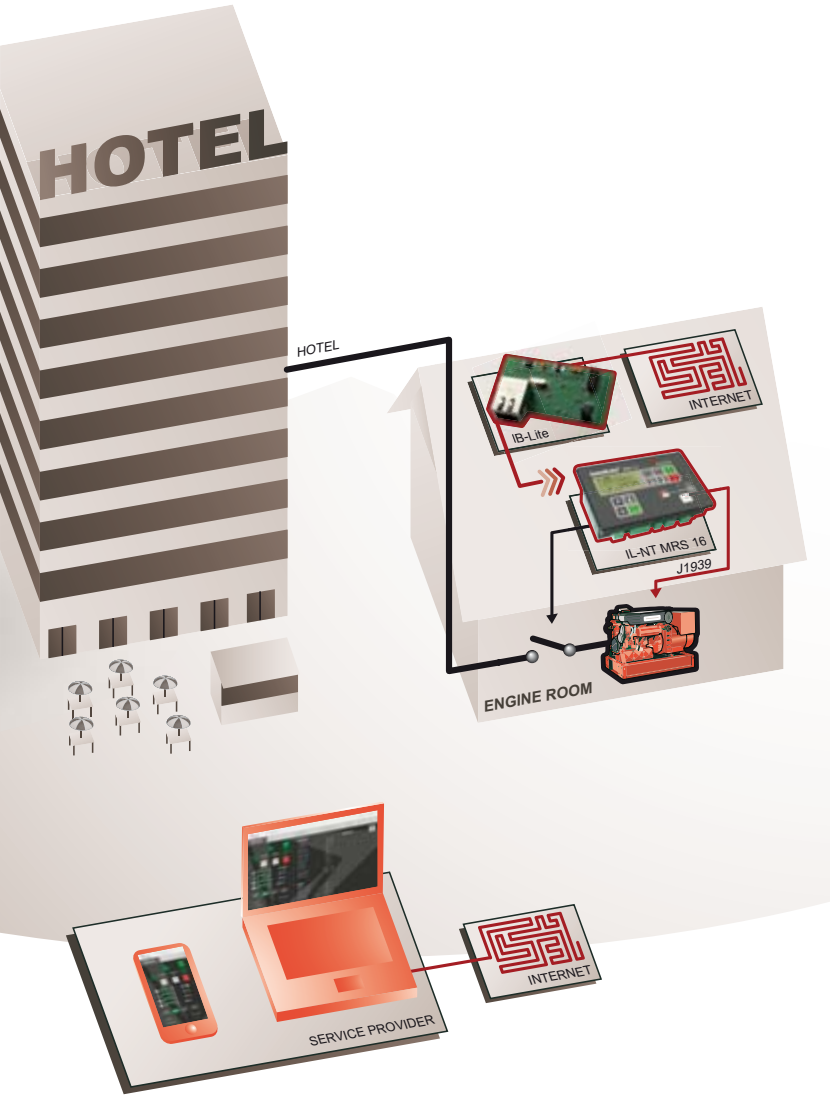
Typical applications

PRIME MOVER SYSTEM

REMOTE MONITORING VIA INTERNET

- Manual and remote start of gen-set with electronic engine. InteliLite^{NT} 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.
- Controller sends active E-mails upon alarm event.
- Generator is protected by built in over/under voltage and frequency protections and IDMT overcurrent protection.
- Controller communicates with engine management unit by CAN J1939 bus. Engine values and alarms are visible on graphical LCD screen in plain language – no need to learn cryptic flashing or numeric error codes.

Scope of supply:
- 1× InteliLite^{NT} MRS 16
- 1× IB-Lite

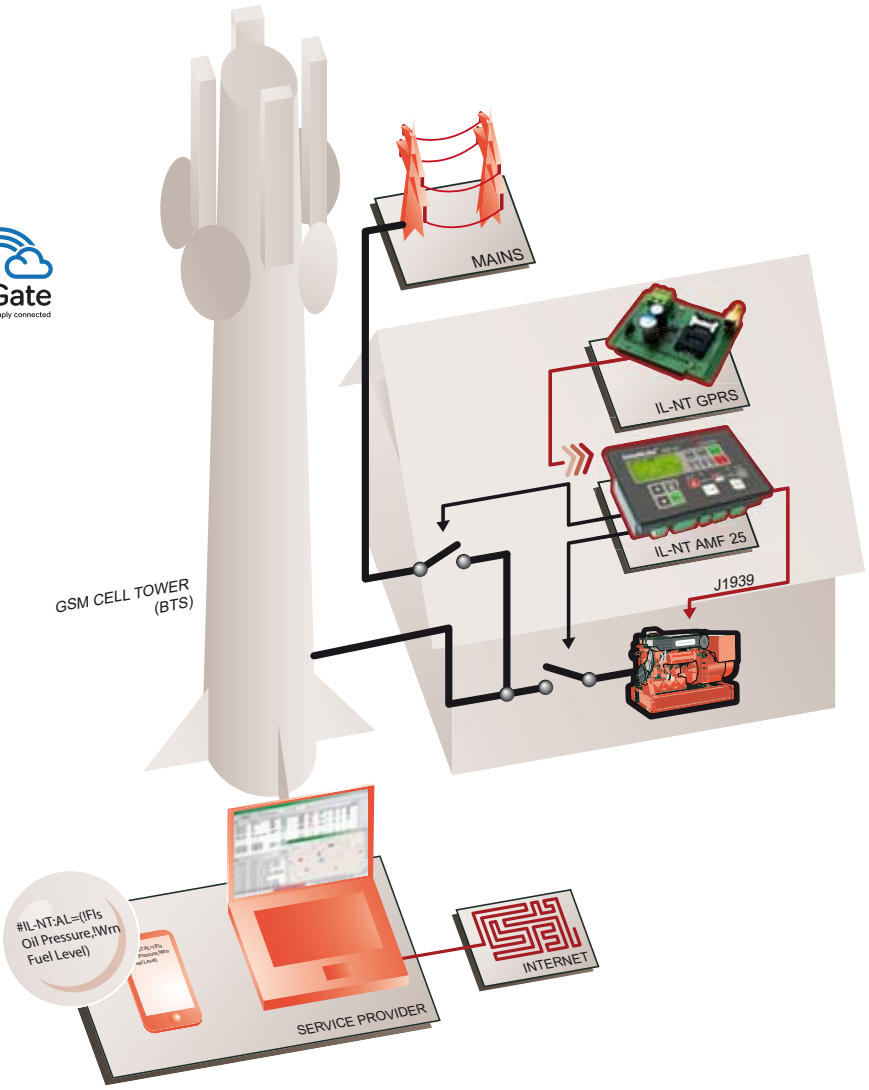


STANDBY SYSTEM

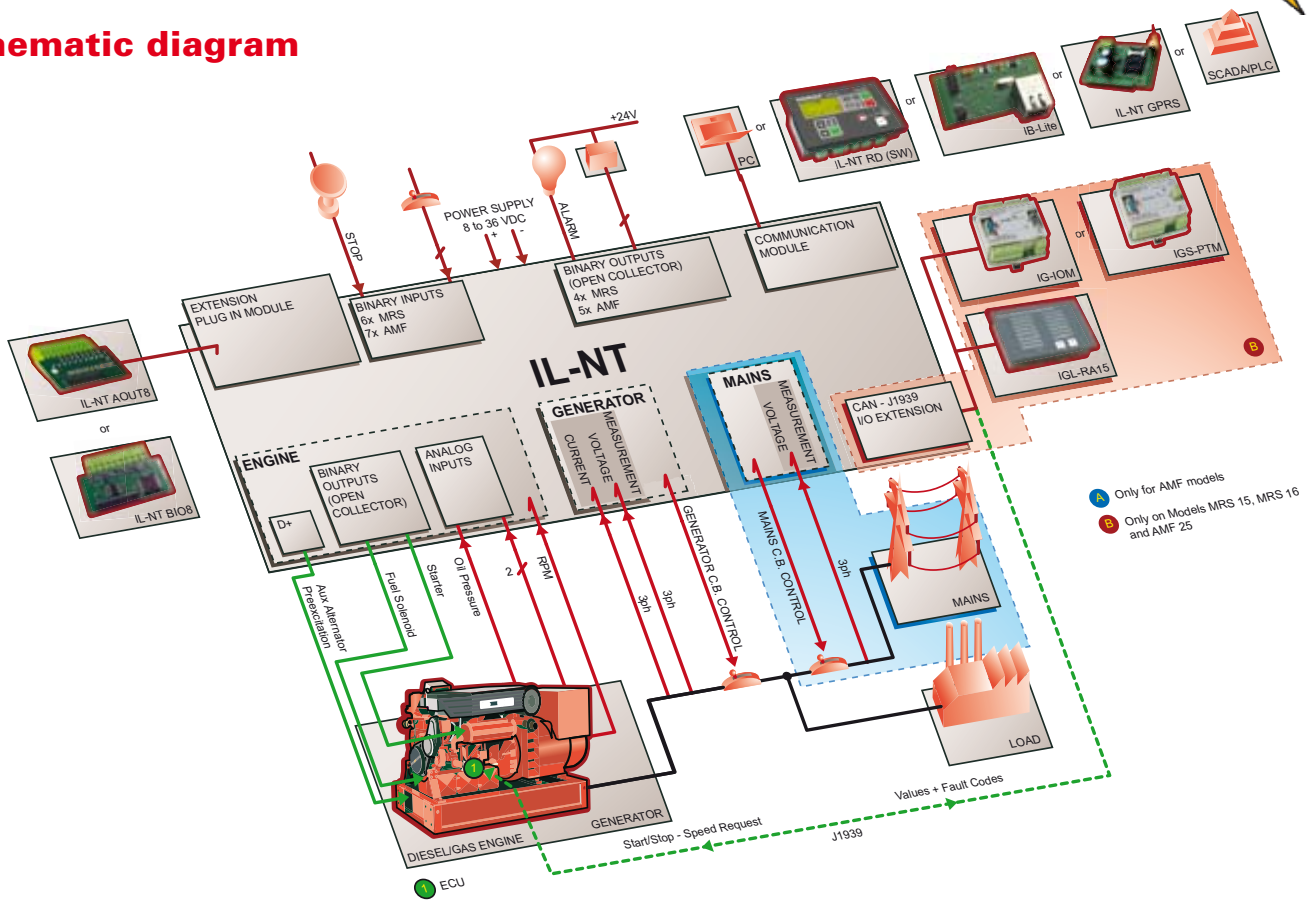
REMOTE MONITORING VIA INTERNET

- Stand-by gen-set with electronic engine. InteliLite^{NT} 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.
- Service provider can monitor gen-set operation remotely via GPRS modem.
- Operator can use LiteEdit for single gen-set view or WebSupervisor for fleet management.
- Generator is protected by built in over/under voltage and frequency protections and IDMT overcurrent protection.
- Controller communicates with engine management unit by CAN J1939 bus. Engine values and alarms are visible on graphical LCD screen in plain language – no need to learn cryptic flashing or numeric error codes.

Scope of supply:
- 1× InteliLite^{NT} AMF 25
- 1× IL-NT GPRS



Schematic diagram



Available models

MRS 10

MANUAL AND REMOTE START CONTROLLER

AirGate

- 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

AirGate

- 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

AirGate

- 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

AirGate

- 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

AirGate

- 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

Functions chart for selected InteliLite^{NT} Controllers

FUNCTIONS/ CONTROLLERS	InteliLite^{NT} MRS 10	InteliLite^{NT} MRS 15	InteliLite^{NT} MRS 16	InteliLite^{NT} AMF 20	InteliLite^{NT} AMF 25
Model	MRS 10	MRS 15	MRS 16	AMF 20	AMF 25
Binary inputs/outputs	6 / 6	6 / 6	6 / 6	7 / 7	7 / 7
Analog inputs	3	3	3	3	3
Magnetic pick-up	●	●	●	●	●
AMF 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, IDMT overcurrent	3 ph, IDMT overcurrent	3 ph	3 ph, IDMT overcurrent
kW/kWh/kVA measurement	● / – / ●	● / ● / ●	● / ● / ●	● / – / ●	● / ● / ●
Generator protections	●	●	●	●	●
Full history file/Running hours history	– / ●	● / –	● / –	– / ●	● / –
RTC with battery	–	●	●	–	●
GCB/MCB control with feedback	●[1]/ –	●[1]/ –	●[2]/ –	● / ●	● / ●
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, IGS-PTM	IGL-RA15, IG-IOM, IGS-PTM	–	IGL-RA15, IG-IOM, IGS-PTM
8 analog gauge drivers	O	O	O	O	O
Remote communication interface[3]	O	O	O	O	O
Modem interface	O	O	O	O	O
Modbus interface	O	O	O	O	O
Remote display	O	O	O	O	O
Cummins Modbus	–	O	O	–	O
Active SMS/E-mails	O	O	O	O	O
Dummy load/Load shedding	●	●	●	●	●
Auto. temperature based heating / cooling	●	●	●	●	●

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

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