

InteliNano^{NT}



GEN-SET CONTROLLER



Benefits

- ▶ Supercompact and attractive design
- ▶ Integrated solution – less wiring and external components
- ▶ Standard industrial cutout dimensions
- ▶ The biggest graphical display in its class
- ▶ Language free, on display only symbols and numbers, no translation needed
- ▶ USB communication interface and CAN for outstanding support of EFI engines
- ▶ “Zero” power consumption, i.e. extended battery life
- ▶ Weak battery genset starting
- ▶ Event Log (10 events)
- ▶ Easy and user-friendly installation / operation
- ▶ Perfect price / performance ratio
- ▶ USB one cord programming

Description

InteliNano^{NT} is a cost effective generator set controller which offers outstanding protection, monitoring and control for small and middle size generator sets.

There are two different types available:

- ▶ AMF
- ▶ MRS

The InteliNano^{NT} AMF and MRS boast large and powerful graphical displays.

Both AMF and MRS communicate with license-free PC software via the integrated USB port for your convenience.

This software allows users to configure all the inputs, outputs and important parameters freely, as well as update the controller’s firmware to suit individual requirements.

All InteliNano^{NT} controllers can communicate via standard and proprietary CAN J1939 communication protocols to a wide range of EFI engines, which include Caterpillar, Cummins, Detroit Diesel, Deutz, GM, Isuzu, Iveco, John Deere, Kubota, MAN, MTU, Perkins, Scania, Sisu, Volvo Penta, Yanmar and others.

- ▶ ComAp’s uncompromised quality and performance
- ▶ AMF and MRS in one model, i.e. one stock only
- ▶ High speed engine support
- ▶ Dedicated for diesel and gasoline engines
- ▶ Shorter commissioning time – USB one-cord power supply and programming
- ▶ All setpoints and I/O’s configurable via front panel



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 mains measurement

- Over/Under frequency
- Over/Under voltage
- Phase rotation

▶ 3 phase generator protection

- Over/Under frequency
- Over/Under voltage
- Phase rotation

▶ True RMS voltage measurement

- 3 phase mains voltage¹⁾
- 3 phase generator voltage
- Voltage range 277 V p-n, 480 V p-p
- Maximal measured voltage 300 V p-n

▶ Engine protection

- Over/Under speed
- High temperature
- Oil pressure
- Low fuel warning
- Battery flat detection

▶ User interface

- Graphic 128 × 64 pixel display
- Icon menu, no text
- Setpoints adjustable via controller buttons or PC
- Buttons with mechanical feedback

▶ History

- Running hours
- 10 events, warnings or shutdown alarms with running hours stamp
- Yellow and red alarms from ECU

▶ Inputs and outputs

- 3 configurable analog inputs with wide list of predefined senders²⁾
- COM terminal for analog inputs
- 6 binary inputs³⁾
- 1 binary input is dedicated for controller remote wake up
- All outputs have positive logic (high side)
- All outputs are overcurrent protected
- 2 high current 6 A long – 10 A short
- 4 low current 0,5 A
- D+ pre-excitation terminal

▶ EFI engine support

- Engine specific J1939 for all major manufacturers (see table right)
- Diagnostic messages (SPN, FMI number)

▶ Miscellaneous features

- “Zero” power consumption
- Maintenance warning
- Customer logo screen
- Weak battery genset starting
- USB one-cord power supply and programming
- All setpoints and I/O’s configurable via front panel
- AMF and MRS in one model¹⁾

▶ Communication interface

- USB on board
- CAN interface (J1939 only)

▶ Mechanical and operation parameters

- Unit dimension 118 × 108 mm
- Cutout dimension 96 × 96 mm
- Sealed front face rated for IP65 for GASKET 4X405
- Operation temperature -20 °C to +70 °C
- Power supply voltage 5–36 V
- Voltage drops shorter than 50 ms do not affect operation

InteliNano^{NT} controllers support J1939 for all major brands:

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



Key:

¹⁾ Only for AMF model

²⁾ Analog inputs are shared with binary inputs

³⁾ 1 binary input is shared with binary output

Order codes

Controller	Order code
InteliNano ^{NT} AMF	IN-NT AMF
InteliNano ^{NT} MRS	IN-NT MRS

ANSI CODES

ANSI code	Protection
59	Overvoltage
27	Undervoltage
81H	Overfrequency
81L	Underfrequency
47	Phase rotation*
71	Gas level

* Fixed setting

Typical applications

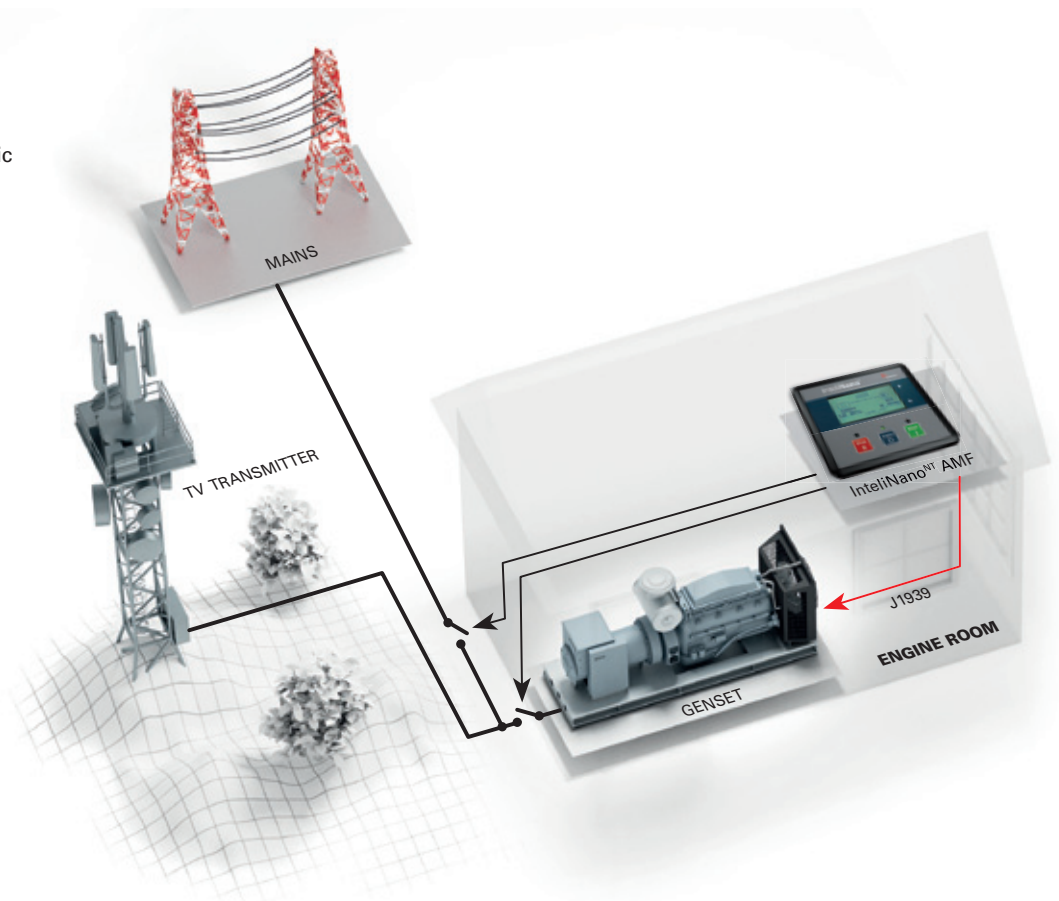
PRIME MOVER SYSTEM

- ▶ Manual and remote start of gen-sets with electronic engines. IntelliNano^{NT} MRS starts, controls and monitors the gen-set and controls the circuit breaker to supply the load.
- ▶ Generator is protected by built in over/under voltage and frequency protection systems.
- ▶ Controller communicates with engine management unit via CAN J1939 bus and shows engine values and alarms on graphical LCD screen.
- ▶ Prolonged battery lifetime – controller enters to sleep mode when generator is not used long time.

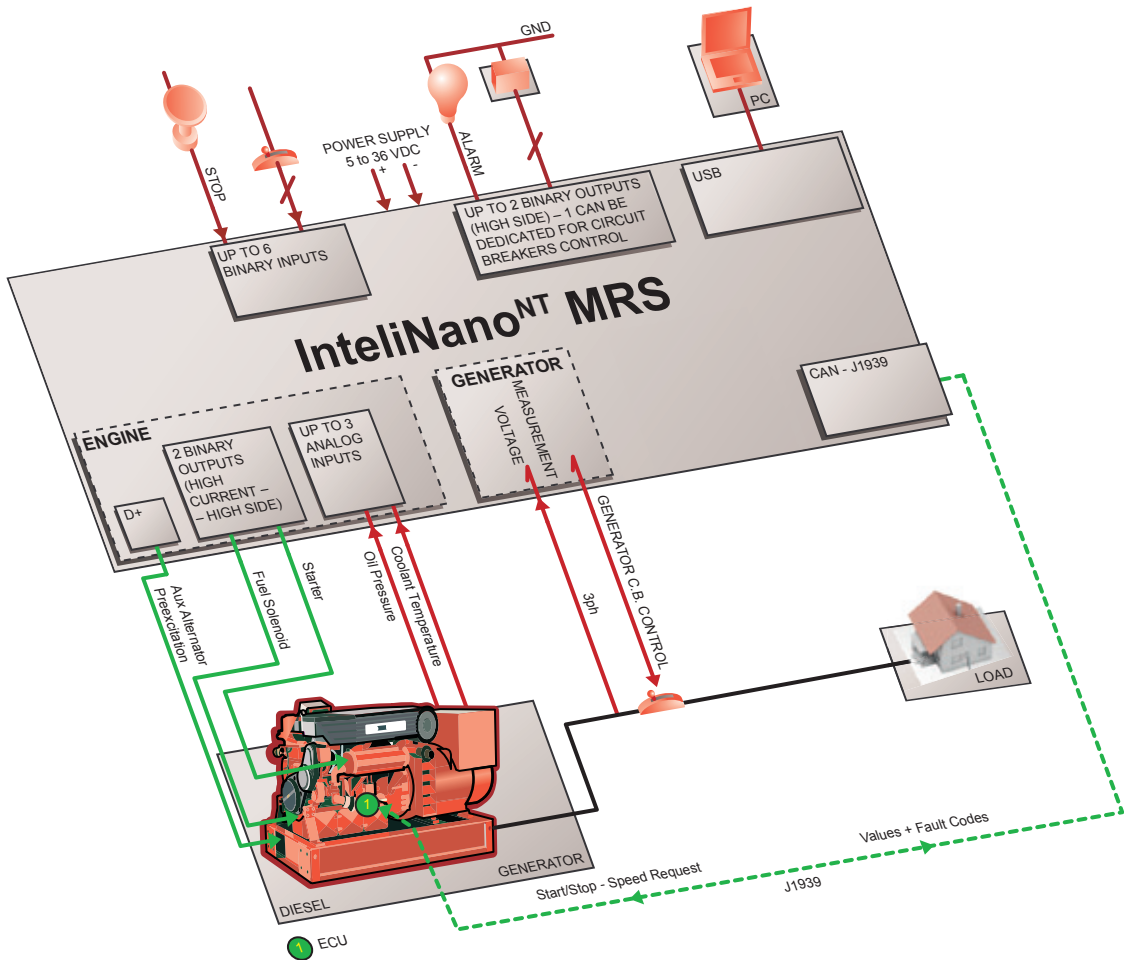
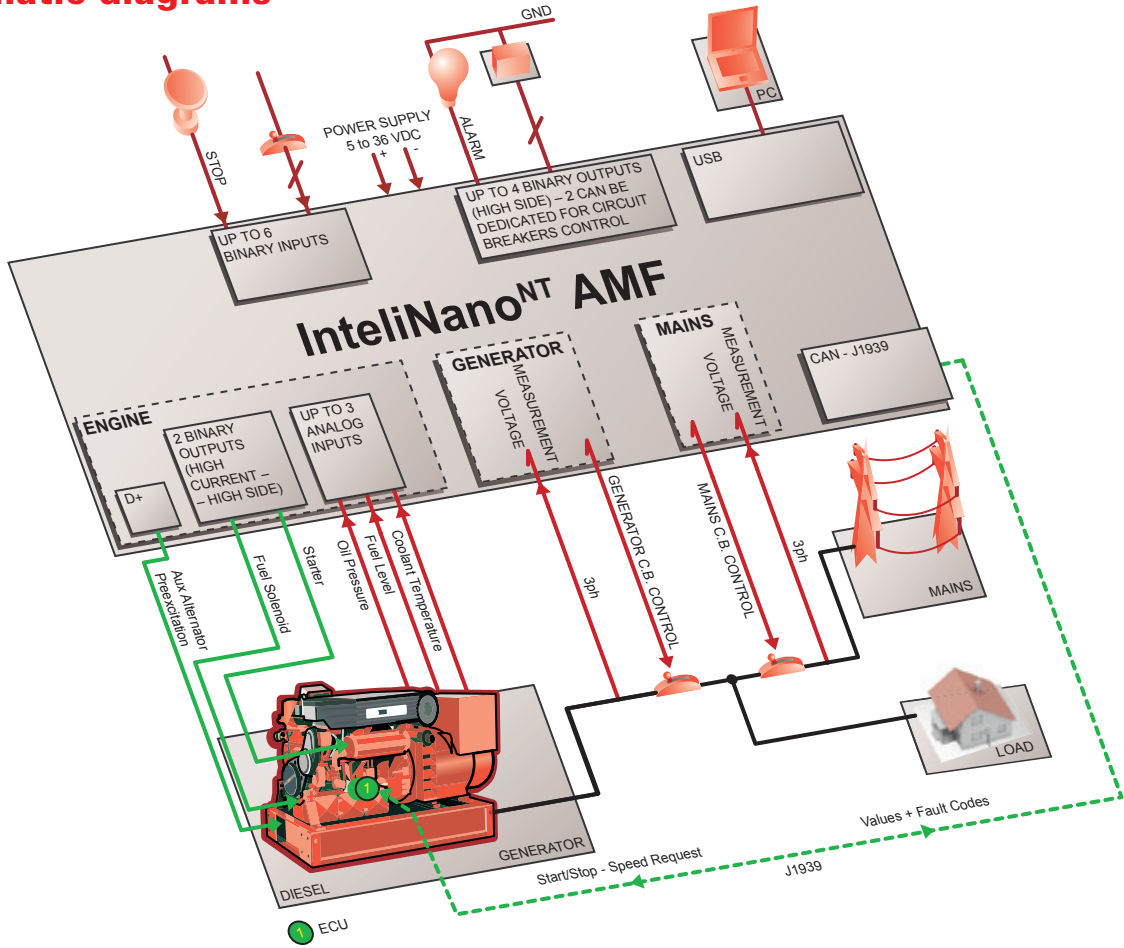


STANDBY SYSTEM

- ▶ Stand-by gen-set with electronic engine. IntelliNano^{NT} AMF continuously monitors a mains supply and automatically starts an engine and switches load to a standby generator set in case of failure.
- ▶ Generator is protected by built in over/under voltage and frequency protection systems.
- ▶ Controller communicates with engine management unit by CAN J1939 bus and shows engine values and alarms on graphical LCD screen.



Schematic diagrams



Available models



AMF

AUTOMATIC MAINS FAILURE START CONTROLLER WITH SUPPORT FOR EFI ENGINE

- ▶ 3 phase mains voltage measurement
- ▶ 3 phase generator voltage measurement
- ▶ Up to 3 analog inputs (shared with binary inputs)
- ▶ COM terminal for analog measurement
- ▶ Up to 6 binary inputs (1 binary input is shared with binary output)
- ▶ 2 high side – high current outputs
- ▶ 4 high side binary outputs
- ▶ Automatic or manual MCB and GCB control
- ▶ CAN J1939
- ▶ USB
- ▶ Big graphical LCD
- ▶ D+ pre-excitation terminal
- ▶ "Zero" power consumption
- ▶ AMF and MRS in one model



MRS

MANUAL AND REMOTE START CONTROLLER WITH SUPPORT FOR EFI ENGINE


- ▶ 3 phase generator voltage measurement
- ▶ Up to 3 analog inputs (shared with binary inputs)
- ▶ COM terminal for analog measurement
- ▶ Up to 6 binary inputs (1 binary input is shared with binary output)
- ▶ 2 high side – high current outputs
- ▶ 2 high side binary outputs
- ▶ Automatic or manual GCB control
- ▶ CAN J1939
- ▶ USB
- ▶ Big graphical LCD
- ▶ D+ pre-excitation terminal
- ▶ "Zero" power consumption

References



Slovenia / Use of IntelINano^{NT} controller for single gen-set



- ▶  **STUBELJ, Slovenia**
- ▶ Company producing and selling 2.0 – 2000 kVA generating sets, and providing all services connected with this business
- ▶ www.stubelj.si

Functions chart for InteliNano^{NT} models

FUNCTIONS /CONTROLLERS	InteliNano ^{NT} AMF	InteliNano ^{NT} MRS
Model	AMF	MRS
Order code	IN-NT AMF	IN-NT MRS
Binary inputs/outputs	6/6 ¹⁾	6/4 ¹⁾
Analog inputs	3 ²⁾	3 ²⁾
AMF function	●	–
MRS function	●	●
Input configuration	●	●
Output configuration	●	●
Voltage measurement Gen. / Mains	3 ph / 3 ph	3 ph / –
Generator protections	●	●
Event log / Running hours history	●	●
GCB/MCB control with feedback	● / ●	● / –
D+ battery charging alternator circuit	●	●
Engine hours	●	●
CAN-J1939 interface	●	●
USB communication port	●	●
LCD screen	●	●
Alarm LED	●	●
Weak battery genset starting	●	●
Maintenance warning	●	●
“Zero” power consumption	●	●

Key: ¹⁾ 1 binary input is shared with binary output

²⁾ analog inputs are shared with binary inputs

● included

– excluded

For more information about our products and applications visit

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