

InteliNano AMF 5



Order code: IN2AMF5XBAANP, IN2AMF5XBAA

Controller for single gen-set applications

Datasheet

Product description

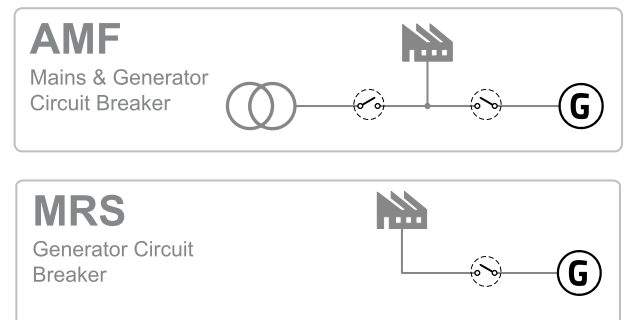
- > Single Gen-set controller for stand-by and prime-power applications
- > All-in-one intuitive and powerful PC tool for configuration, monitoring and control, locally or remotely
- > Easy to install, configure, use and monitor

Key features

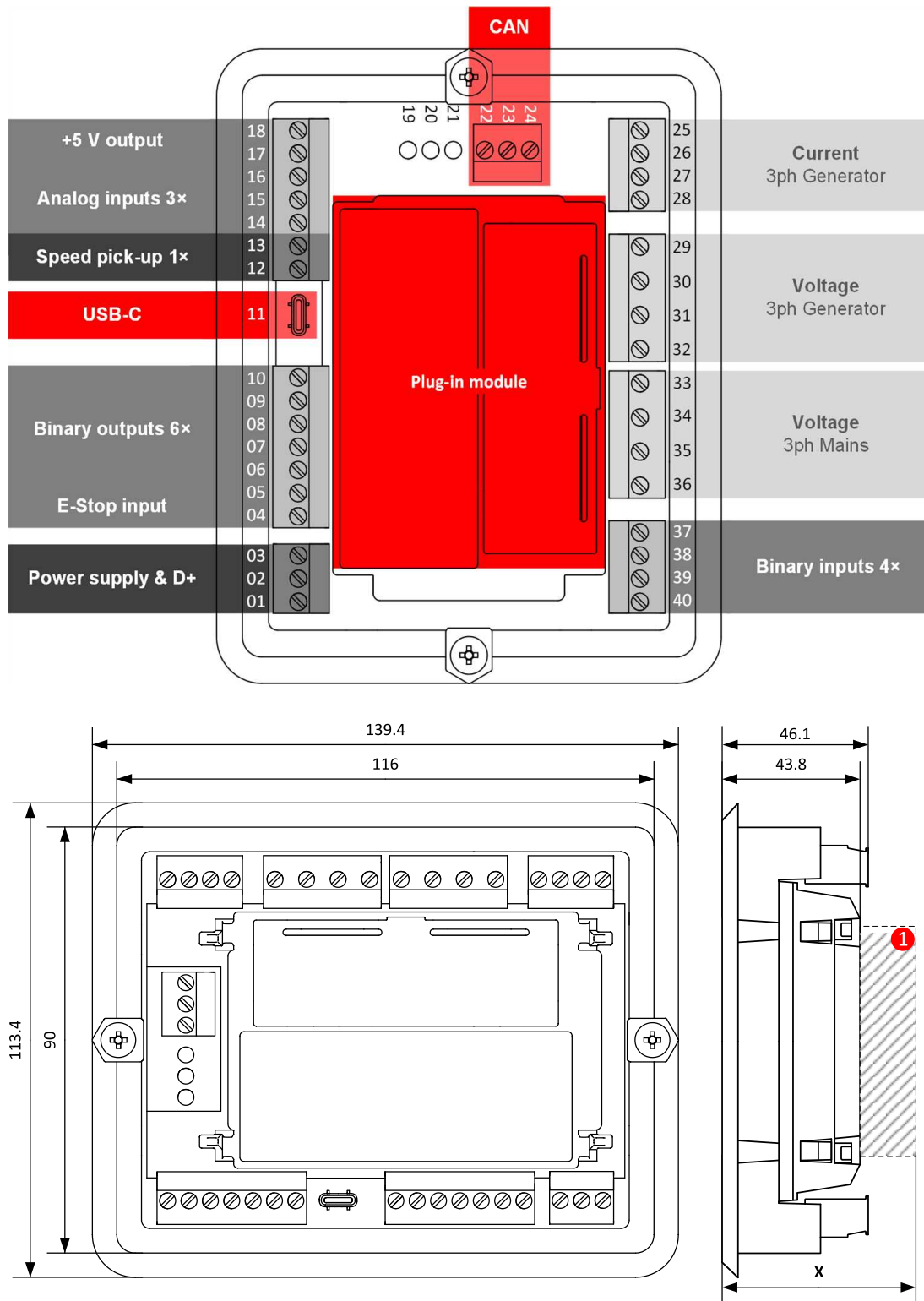
- > Stand-by and prime-power application in one unit
- > Auto Mains Failure application functionality
- > Manual (or) Remote Start/Stop application functionality
- > Engine controller (no generator functions and protections)
- > Large graphic monochrome backlit LCD display with contrast adjustment
- > Full 3-phase current and voltage measurement
- > 6 binary outputs, 4 + 1 binary inputs, 3 analog inputs (2x R + 1x R/U/I)
- > +5V output reference for analog inputs
- > Emergency Stop functionality (E-Stop)
- > Slot for extension plug-in module (Modbus, Internet)
- > ECU support (Tier 4 Final, Stage V)
- > Real Time Clock with battery backup (full calendar)
- > Power over USB-C for controller configuration and firmware update
- > Low power mode
- > True RMS measurement
- > Individually calibrated and checked
- > Remote monitoring support (AirGate 2.0, WSV, InteliScada)
- > Internet access using Ethernet/4G-GPS plug-in module

- > Modbus RTU using RS232-485 plug-in module
- > Geo-fencing using 4G-GPS plug-in module
- > Detailed history log with up to 100 records
- > User setpoints and protections
- > Two languages in the controller
- > Translator functionality
- > User Access Management
- > Cyber security improvement
- > Multi-purpose schedulers and timer
- > Maintenance timer
- > Modbus register mapping possibility
- > Cut-out: 118 × 92 mm
- > Low Noise EMC design

Application overview



Dimensions, terminals and mounting



Note: ¹ The final depth "X" of the controller depends on the selected plug-in module – it can vary between 43.8 mm and 62 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 118 × 92 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)	2 W
RTC battery	Replaceable (3 V)
Fusing power	2 A w/o BOUT consumption
E-Stop fusing	10 A
Max. power dissipation	5.5 W

Operating conditions

Protection degree (front panel)	IP50 , IP65 with optional gasket seal
Operating temperature	-20°C to +70°C
Max. operating altitude	5000 m above sea level, with derating over 2000 m
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
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Linear measurement and protection range

Measurement inputs	3ph-n Gen, 3ph-n Mains
Measurement range	10-277 V AC* / 10-480 V AC (EU) 10-346 V AC* / 10-600 V AC (US/Canada)
Max measured voltage	350 V AC Ph-N 660 V AC Ph-Ph
Accuracy	2 %
Frequency range	5-80 Hz (accuracy 0.1 Hz)
Input impedance	0.72 M Ω ph-ph , 0.36 M Ω ph-n

Note: *) Maximum effective voltage on the voltage terminals must be lower than 300 V against minus battery voltage and for overvoltage CAT III or lower.

Display

Type	Graphical backlit monochromatic 3.2"
Resolution	132 × 64 px

Communications

USB Device	USB-C
CAN	Non-isolated, 250 / 50 kbps, Terminator impedance 120 Ω Fixed Internal Terminator
Protocols	Modbus RTU/TCP SNMP v1/v2c/v3 J1939

Current measurement

Measurement inputs	3ph Gen current
Measurement range	/1A or /5A
Max. allowed current	10 A
Accuracy	± 30 mA for 0-2 A; 2 % 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	4
Close/Open indication	0-2 V DC close contact 6-36 V DC open contact

Binary outputs

Number	6
Max. current	BO1,2=5 A (60 °C); BO3-6=0.5 A
Switching to	positive supply terminal

Analog inputs

Number	1x switchable (R/U/I)
Range	R = 0-2500 Ω ; U = 0-10 V; I = 0-20 mA
Accuracy	R: ± 3 % ± 7 Ω in range 0-250 Ω R: ± 6 % in range 250-2500 Ω U: ± 1.5 % ± 150 mV I: ± 1.5 % ± 0.3 mA

+5 V Power supply output

Max. current	25 mA
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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 accessories

Product	Description	Order code
Gasket IN2	Additional gasket for IntelliNano AMF controllers, protection degree IP65 (front panel)	OT1GIN2XXAX
Gasket IN2 (60pcs)	Additional gasket for IntelliNano AMF controllers, protection degree IP65 (front panel), 60 pieces	OT2GIN2XXAX

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 for AirGate connection only	CM3ETHERXBX

Note: Controller has one slot for plug-in modules.

Note: Plug-in module is supported on controller hardware version HW 2.0 or higher.

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	Current unbalance	46
Stopping device	5	Negative sequence voltage	47
Multifunction device	11	Incomplete sequence relay	48
Underspeed	14	Overcurrent	50/50TD
Overspeed	12	Breaker failure	50BF
Starting-to-running transition contactor	19	Overvoltage	59
Thermal relay	26	Aux Over Voltage	59X
Undervoltage	27	Pressure switch	63
Aux Battery Under Voltage	27X	Liquid level switch	71
Annunciator	30	Reclosing relay	79
Overload (real power)	32P	Overfrequency	81O
Reverse Power	32R	Underfrequency	81U
Master sequence device	34	Auto selective control/transfer	83

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/s²; T=6 ms) > EN 60068-2-30 25/55°C, RH 95%, 48hours > EN 60529 (front panel IP50, front panel IP65 with gasket, back side IP20) > UL 6200		
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