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Kundratka 2359/17
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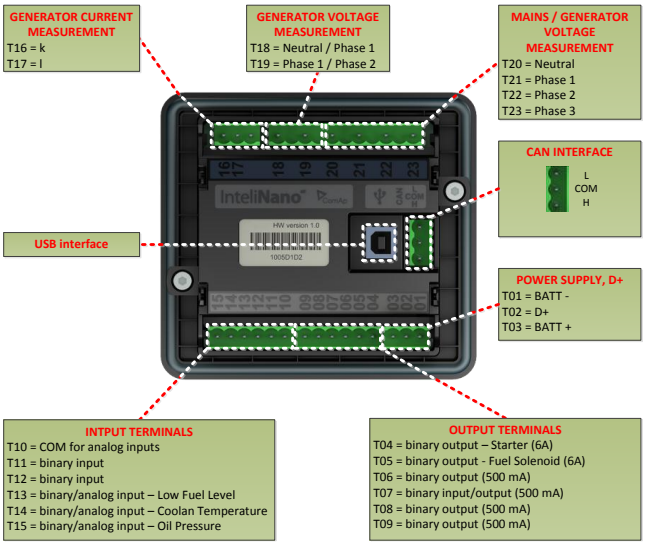
InteliNano NT®Plus

Fast User Guide

Typical wiring diagram



Dimensions

Case dimensions: 118mm x108mm x 40mm
Panel Cutout: 96mm x 96mm

WARNING!
If D+ is not used, connect this terminal to battery positive!

Accessing the setup mode

Ensure the engine is stopped and the controller is in Manual mode (green LED above button **Auto** is turned off).
If you have not configured the custom initialization (init) screen then press and hold **Stop** button, then briefly press ▲ button and then **Auto** .

If you have already created your own init screen then press and hold **Stop** button and then briefly press ▲, the custom init screen will appear, keep holding the **Stop** button. Then press ▼ to switch LCD to default init screen, and then press **Auto**.

To move up and down in the setup menu use ▲ and ▼ buttons. Press **Start** button to select or **Stop** button for exit.

	Basic settings		***Output settings***
	Engine parameters and protections		***Input settings***
	Generator protections		***ECU setting***
	AMF(Auto Mains Failure) settings		***Info***

Outputs and inputs

Output code	Output source	Type	Terminal assignment
O00	***Not Used***	binary	T04 , T05, T06, T07, T08, T09
O01	***Starter***	binary	T04
O02	***Fuel Solenoid***	binary	T05, T06, T07, T08, T09
O03	***Stop Solenoid***	binary	T05, T06, T07, T08, T09
O04	***Alarm***	binary	T04, T05, T06, T07, T08, T09
O05	***GCB Close/Open***	binary	T04, T05, T06, T07, T08, T09
O06	***MCB Close/Open***	binary	T04, T05, T06, T07, T08, T09
O07	***Ready To Load***	binary	T04, T05, T06, T07, T08, T09
O08	***Prestart***	binary	T04, T05, T06, T07, T08, T09
O09	***ECU Power Relay***	binary	T04, T05, T06, T07, T08, T09
O10	***Choke***	binary	
O11	***Glow Plugs***	binary	

	Normally Open Contact – output		Normally Open Contact - input button
	Normally Closed Contact – output		Normally Closed Contact – output

User curves			
	I21	***I23***	***I25***
1	VDO Level %	VDO 5 Bar	VDO 40-120 °C
2	Datcon Level %	VDO 10 Bar	VDO 50-150 °C
3		Datcon 5 Bar	Datcon High °C
4		Datcon 7 Bar	Datcon Low °C
5		Datcon 10 Bar	
X	Not selected	Not selected	Not selected

Input code	Input source	Type	Terminal assignment
I00	***Not Used***	binary	T07, T11, T12, T13, T14, T15
I01	***Emergency Stop***	binary	T07, T11, T12, T13, T14, T15
I02	***Remote Start/Stop***	binary	T11
I03	***Remote Start And Load***	binary	T11
I04	***Access Lock***	binary	T07, T11, T12, T13, T14, T15
I05	***AMF Blocked***	binary	T07, T11, T12, T13, T14, T15
I06	***MCB Feedback***	binary	T07, T11, T12, T13, T14, T15
I07	***GCB Feedback***	binary	T07, T11, T12, T13, T14, T15
I10	***External Warning 1***	binary	T07, T11, T12, T13, T14, T15
I11	***External Warning 2***	binary	T07, T11, T12, T13, T14, T15
I12	***External Warning 3***	binary	T07, T11, T12, T13, T14, T15
I13	***External Shutdown 1***	binary	T07, T11, T12, T13,T14, T15
I14	***External Shutdown 2***	binary	T07, T11, T12, T13, T14, T15
I15	***External Shutdown 3***	binary	T07, T11, T12, T13, T14, T15
I20	***Low Fuel Level***	binary	T07, T11, T12, T13, T14, T15
I21	***Fuel Level Analog***	analog	T13, T14, T15
I22	***Low Oil Pressure***	binary	T07, T11, T12, T13, T14, T15
I23	***Oil Pressure Analog***	analog	T13, T14, T15
I24	***High Coolant Temperature***	binary	T07, T11, T12, T13, T14, T15
I25	***Coolant Temperature Analog***	analog	T13, T14, T15
I29	***Fuel Level SD***	binary	T07, T11, T12, T13, T14, T15

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Setpoints

Use ▲ and ▼ buttons to move or change value. Start button to select setpoint or confirm changes and Stop button to go back.

Basic settings		
Setpoint code	**Setpoint name**	
B01	Nominal Voltage Ph-N	80 – 480 V
B02	Nominal Voltage Ph-Ph	80 – 600 V
B03	Nominal Frequency	50 Hz (1), 60 Hz (2)
B04	Connection Type	Mono Phase (1), SplitPhase (2), 3Ph3Wire (3), 3Ph4Wire (4)
B05	Units Format	Metric unit format (1), US unit format (2)
B06	AMF Function	Disable (1), Enable (2)
B07	Zero Power Mode Delay	0-360 min
B08	Light Tower Mode	Disable (1), Enable (2)
B09	Nominal Current	1 – 1000 A
B10	CT Ratio	1 – 5000 A
B11	Nominal RPM	100-4000

Generator protections		
Setpoint code	**Setpoint name**	
G01	Generator Overvoltage Shutdown	G02 – 200 %
G02	Generator Undervoltage Shutdown	0 - G01 %
G03	Generator Overfrequency Shutdown	G04 – 130 %
G04	Generator Underfrequency Shutdown	0 – G03 %
G05	Generator Short Circuit Shutdown	100 – 500 %
G06	Generator Short Circuit Delay	0 – 10,00 s

Engine parameters and protections		
Setpoint code	**Setpoint name**	
E01	Prestart Time	0-600 s
E02	Maximum Cranking Time	0-60 s
E03	Cooling Time	0-3600 s
E04	Oil Pressure Shutdown	0-10 Bar
E05	Coolant Temperature Shutdown	0 -150 °C
E06	Battery Undervoltage	8 – 40 V
E07	Warning Maintenance	0 – 10000 h
E08	Oil Pressure Starter Disengagement	Disable (1), Enable (2)
E09	Choke Time	0 – 3600 s
E10	Minimal Stabilization Time	1 – 300 s
E15	Fuel Level Shutdown	0 – 20%

AMF(Auto Mains Failure) settings		
Setpoint code	**Setpoint name**	
A01	Emergency Start Delay	0 – 600 s
A02	Mains Return Delay	1 – 3600 s
A03	Mains Overvoltage	A04 – 150 %
A04	Mains Undervoltage	50 – A03
A05	Mains Overfrequency	A06 – 150 %
A06	Mains Underfrequency	50 – A05 %

To apply all changes return to the main setup menu and restart the controller by pressing the Stop button.

Alarms and Events

Events
Mains Return
Mains Fail
Manual Start
Remote Start
AMF Start
Manual Stop
Remote Stop
AMF Stop
Auto On
Auto Off
Power On
Island Operation

Warnings
Warning Maintenance
Low Battery
Low Fuel Level
External Warning 1
External Warning 2
External Warning 3
ECU Communication Error
MCB Fail
Mains CCW Rotation

Shutdowns
Emergency Stop
Overspeed
Underspeed
Low Oil Pressure
High Coolant temperature
External Shutdown 1
External Shutdown 2
External Shutdown 3
GCB Fail
Generator Overvoltage
Generator Undervoltage
Generator Overfrequency
Generator Underfrequency
Generator CCW Rotation
Start Fail
Stop Fail
Battery Flat
Voltage Autodetect
Generator Short Circuit
Fuel Level SD

ECU

For ECU configuration use PC software NanoEdit. For more details see InteliNano AMF Reference Guide.

Technical data

Power supply range	6-36 VDC
Power supply drop-out immunity	100 ms
Power consumption	35 – 295 mA
Zero Power Mode consumption	52 - 344 µA
Binary outputs (up to 6)	
Low current outputs (4)	500 mA
High current output (2)	6 A (long term) / 10 A (short term) (L≤500mH)
Total output current	10 A (long term) / 16 A (short term) (L≤500mH)
Analog inputs (up to 3)	
Galvanic insulation	Not insulated
Electrical range	0 - 2500 kΩ
Resolution	0,1 Ω
Precision	2 % ± 3 Ω
Charging alternator preexcitation circuit	
Excitation current	100 mA
Charging fail threshold	80 %

Operating temperature	-20... 70 °C
Operating humidity	95 % non-condensing (IEC/EN 60068-2-30)
Protection degree (front panel)	IP65 with GASKET 4x405 only IP50 without gasket
Storage temperature	-30... 80 °C
Binary inputs (up to 6)	
Input resistance	1,5 kΩ
Closed contact voltage	<2 V
Open contact voltage	>3,5 V
Generator/Mains measurements	
Measurement input	1ph gen. voltage,1ph current, 3ph mains voltage
Measurement type	True RMS
Voltage range	480 V Ph-Ph (277 V Ph-N)
Max. measured voltage	340 V Ph-N
Voltage accuracy	1 %
Frequency range	40 – 70 Hz
Frequency accuracy	1 %
Current range	0 - 5 A
Current accuracy	2% True RMS

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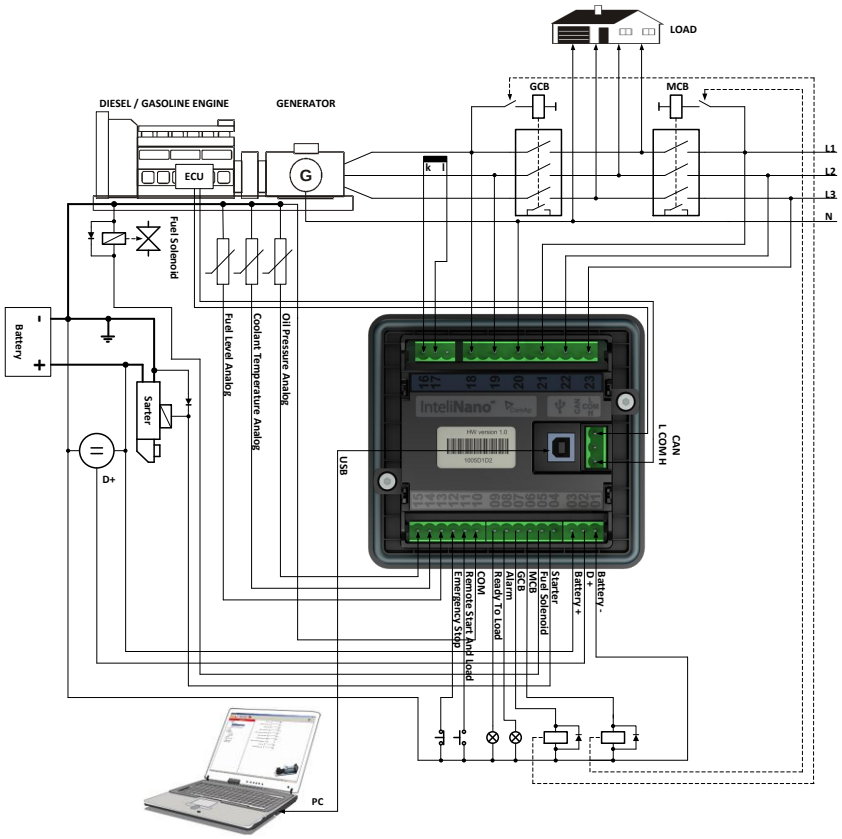
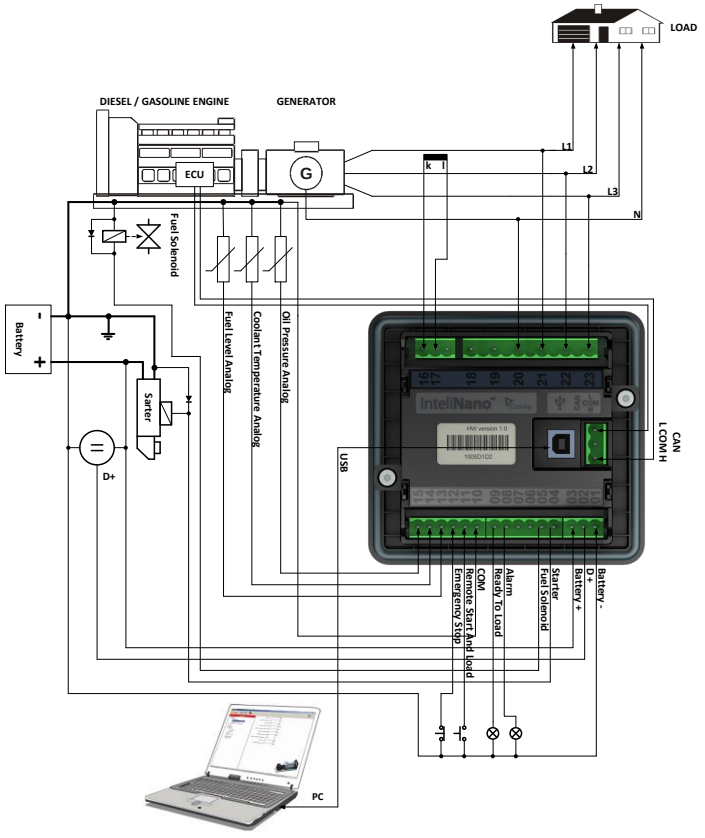
Typical wiring diagram of AMF application



Typical wiring diagram of MRS application