

Order code: IC-NT MINT

Gen-set Controller for Gen-sets in Multiple Parallel Applications

Datasheet

Product description

- ▶ Compact gen-set controller for gensets operating in multiple island and/or parallel to mains mode (together with MainsCompact NT)
- ▶ Cooperation of up to 32 gen-sets
- ▶ Simple paralleling (easy wiring, installation and configuration)

- ▶ Support of electronic controlled engines (J1939, Modbus)
- ▶ Event based history with capacity for nearby 200 records.

Key features

- ▶ Generator measurements: V, A, kW, kVAr (3 phase, true RMS), Hz, including energy counters
- ▶ Bus measurements: V (3 phase, true RMS), Hz
- ▶ Generator and Engine protections (incl. Vector Shift)
- ▶ Automatic synchronizing and load control (via speed governor or ECU)
- ▶ AVR control (Volt and PF control)
- ▶ Digital active and reactive load sharing
- ▶ Advanced power management function
 - Load Dependent Start/Stop
 - Load Demand Swap
 - Running Hours Equalization
- ▶ Wide range of communication interfaces – RS232, RS485, USB, Modbus, GSM/Analog modem, GPRS, Ethernet

Application overview



Technical data

Power supply

Power supply range	8-36 VDC
Power supply drop-out immunity	50 ms (from min. 10 V)
Power consumption	approx. 200 mA / 8 V; 50 mA / 36 V
Peak power consumption (LT)	approx. 0,56 A / 8 V; 1,8 A / 36 V
Backup battery type	CR 1225
Estimated backup battery lifetime	10 years
Max. Power Dissipation	4,5W

Operating conditions

Operating temperature	-20-70 °C
Operating temperature (LT version)	-40-70 °C
Operating humidity	95% non-condensing (IEC/EN 60068-2-30)
Protection degree (front panel)	IP65
Vibration	5-25 Hz, +/- 1,6 mm; 25-100 Hz, a = 4 g
Shocks	a _{max} 200 m/s ²
Storage temperature	-30-80 °C

Voltage measurement

Measurement inputs	3 ph generator voltage 3 ph bus 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 % from the range
Frequency range	30-70 Hz, measured from L3
Frequency accuracy	0,05 Hz

Current measurement

Measurement inputs	3ph generator current
Measurement type	True RMS
Current range	5 A
Max. measured current	9 A
Max. allowed current	12 A continuous, 50 A/1 s
Current accuracy	2 % from the range

Binary inputs

Number	9 non-isolated
Input resistance	4,2 kΩ
Common pole	Positive, V _s = 8-36 V DC
Close/Open indication	0-2 V close contact 4 V - V _s open contact

Binary outputs

Number	8 non-isolated
Operating voltage	8-36 V DC
Switching to	negative supply terminal
Max current	0,5 A (2 A per group)

Analog inputs

Number	3 non-isolated
Electrical range	0-2500 Ω
Resolution	10 bits, 4 digits
Precision	1 % from the range
Supported sensor types	Predefined: VDO 10Bar, VDO Temperature, VDO Fuel level User-defined: 10 points non-linear sensors can be defined by the user

Communication

CAN1	External modules 250 kbps, max 200 m Isolated
CAN2	Intercontroller and comm extensions 250/50 kbps, max 200/800 m Isolated

Magnetic pick-up

Voltage input range	2-70 V _{pp}
Frequency input range	4 Hz-10 kHz (min 2 V _{pp} @ 4 kHz, 6 V _{pp} @ 10 kHz)
Frequency measurement tolerance	0.2 %

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Excitation current	200 mA, during the engine start only
Charging fail threshold	80 % of U _{supply}

Voltage regulator output

Type	5 V TTL PWM / ± 10 VDC with IG-AVRi interface
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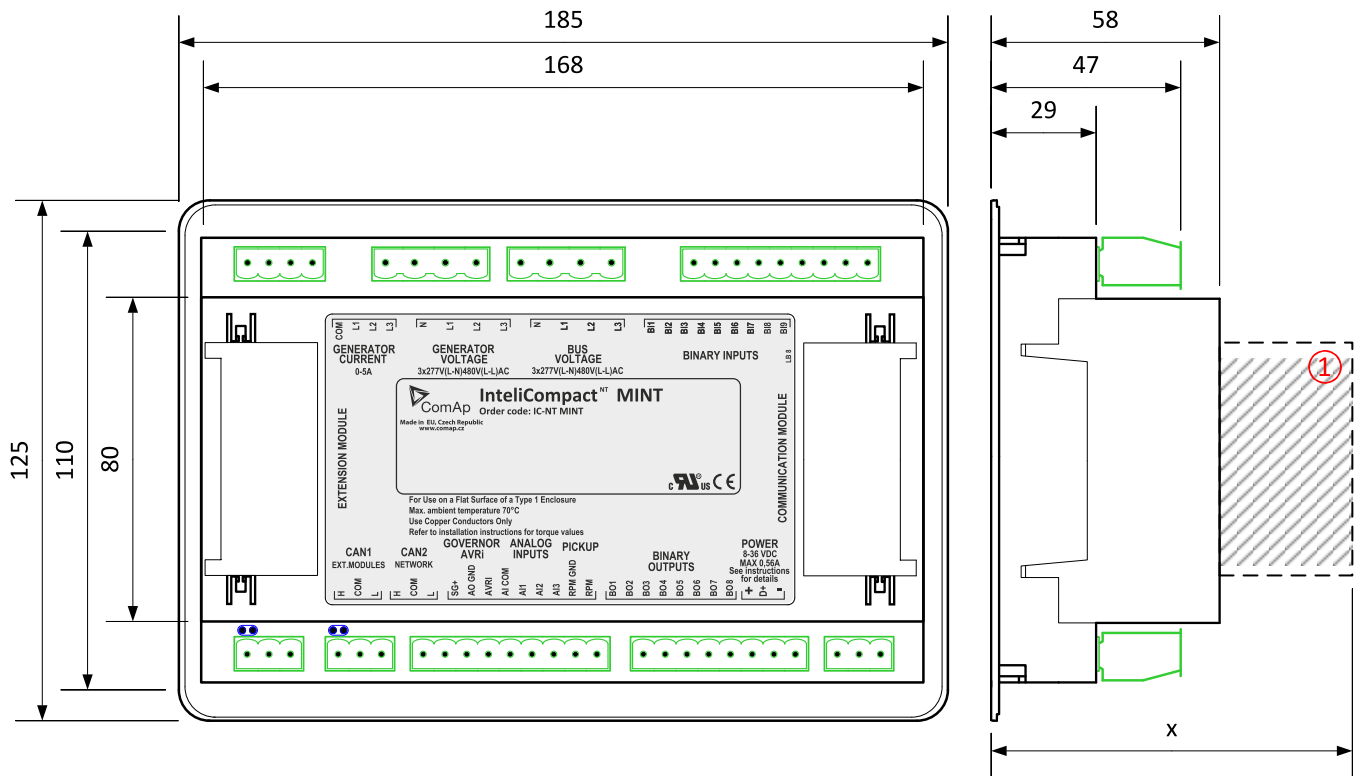
Speed governor output

Output type	0-10 V analog or 5 V @ 500 Hz PWM, selectable by jumper. Serial resistor 10 kΩ shortable by jumper
Galvanic isolation	Not isolated

Display

Type	Built-in monochromatic
Resolution	128x64

Dimensions, terminals and mounting

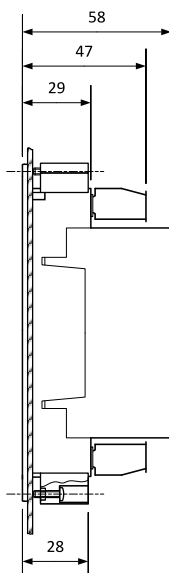


① Plug in module

Note: Dimension x depends on plug-in module

Panel door mounting

Overview of parameter x



Plug-in module	Parameter x [mm]
IL-NT-AOUT8	75
IL-NT-BIO8	74
IC-NT-CT-BIO7	76
IL-NT-RS232	113
IL-NT-RS232-485	115 @ RS232 / 74 @ RS485
IL-NT-GPRS	122
IL-NT-S-USB	128
IB-Lite	108

Note: Parameter x includes reserve for connectors of plug-in modules.

Note: The controller is to be mounted onto the switchboard door. The requested cut-out size is 175x115 mm. Use the screw holders delivered with the controller to fix the controller into the door.

Available extension modules

Product	Description
IL-NT-AOUT8	8 analog outputs packed in a unit
IL-NT-BIO8	8 binary inputs in a unit (HW switchable to 8 binary outputs)
IC-NT-CT-BIO7	7 binary inputs (HW switchable to 7 binary outputs) and 1 AC current measuring input
IG-IOM	8 binary inputs, 8 binary outputs, 4 analog inputs and 1 analog output in a unit
IGS-PTM	8 binary inputs, 8 binary outputs, 4 analog inputs and 1 analog output in a unit
IGL-RA15	15 binary LED output (3 colors) packed in a rugged metal unit
IL-NT-RS232	Communication module which provides additional RS232 interface for controller
IL-NT-RS232-485	Communication module which provides additional RS232 and RS485 interface for controller
IL-NT-GPRS	Communication module with integrated GSM modem with GPRS Internet connection
I-LB+	Direct connection (PC) to all controllers on CAN2
InternetBridge-NT	Multiple Internet connections (PC and Modbus) to all controllers on CAN2 or RS485
IL-NT-S-USB	Communication module which provides additional USB interface for controller
IB-Lite	Communication module which provides additional Ethernet interface for controller

Related products

Product	Description
MainsCompact-NT	Mains Controller for IntelliCompact NT MINT Gen-set Controllers
IG-AVRi	Interface between controller and generator AVR
IG-AVRi-TRANS/LV	Power supply transformer for IG-AVRi module
IC-NT RD (SW)	Remote Display Software for IntelliCompact NT

Functions and protections

The described product fully supports the following functions and protections as defined by ANSI (American National Standards Institute):

Description	ANSI code	Description	ANSI code
Engine overspeed	12	Generator under/overfrequency	81H,81L
Underspeed	14	Generator overcurrent	51
Synchronism Check	25	Generator short current	50
Generator overload	32	Generator current unbalance	46
Generator reverse power	32R	Phase sequence	47
Excitation Loss	40	Earth fault	50N+64
Generator under/overvoltage	59,27	Gas (fuel) level	71
Generator voltage unbalance	47	Vector shift	78



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