ComAp
The heart of smart control

InteliGen 500

Generator P

Power Factor	0.94 L
Gen Frequency	50.1 Hz
Gen Voltage	231 V
Fuel Level	80 %
Oil Pressure	9.2 Bar
Coolant Temp	89 °C
RPM	1503 RPM
DEF Level	85 %
DPF Soot Load	5 %

0   kW   130

102

Loaded	
IslOper	
Timer	0 s

Close MCB   Open GCB

STATUS

G2

InteliGen 500 G2

Order code: IG4500XXBAA

Controller for multiple gen-set applications

Datasheet

Product description

A paralleling controller with 5" color display for advanced and more complex diesel Gen-set applications supporting both single and multiple Gen-sets running in mains connected or island operations. It is a direct successor of InteliGen 500 and the InteliGen NT(C) GC line.
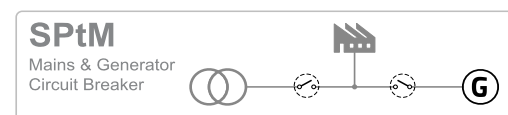
Key benefits

> StageV and Tier 4 Final ready to easily control the aftertreatment system
>> StageV and Tier4 Final ready by default including customizable lamp behaviour and J1939 user-defined messages.

> Cyber security by design to protect your business
>> Controller meets the requirements of ISA 62443 level 2 by design.

> Dynamic spinning reserve to prevent supply drops in the island installations with renewables
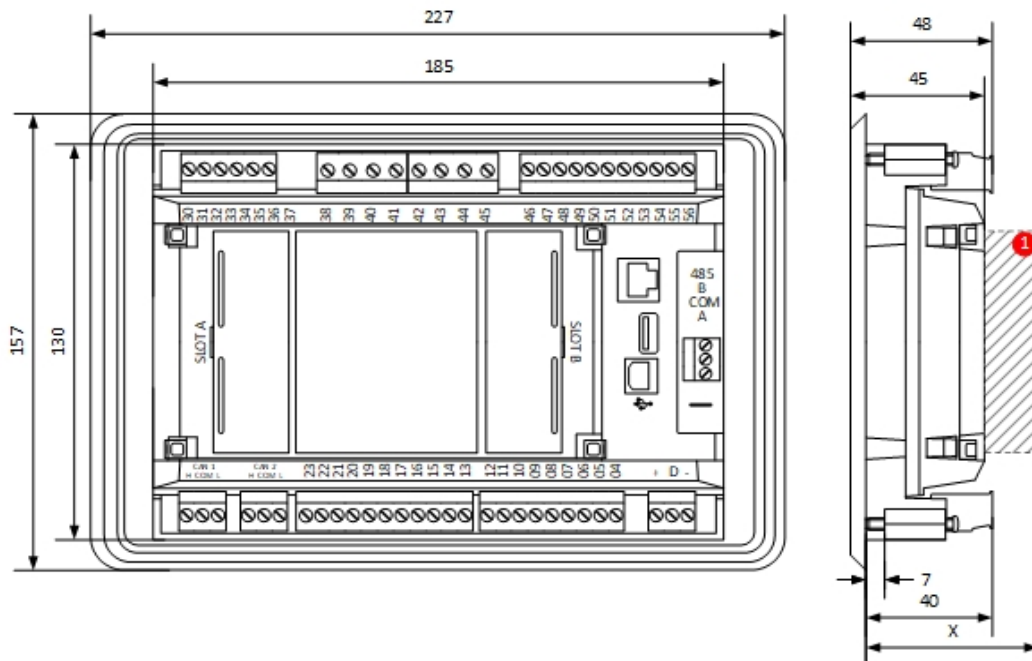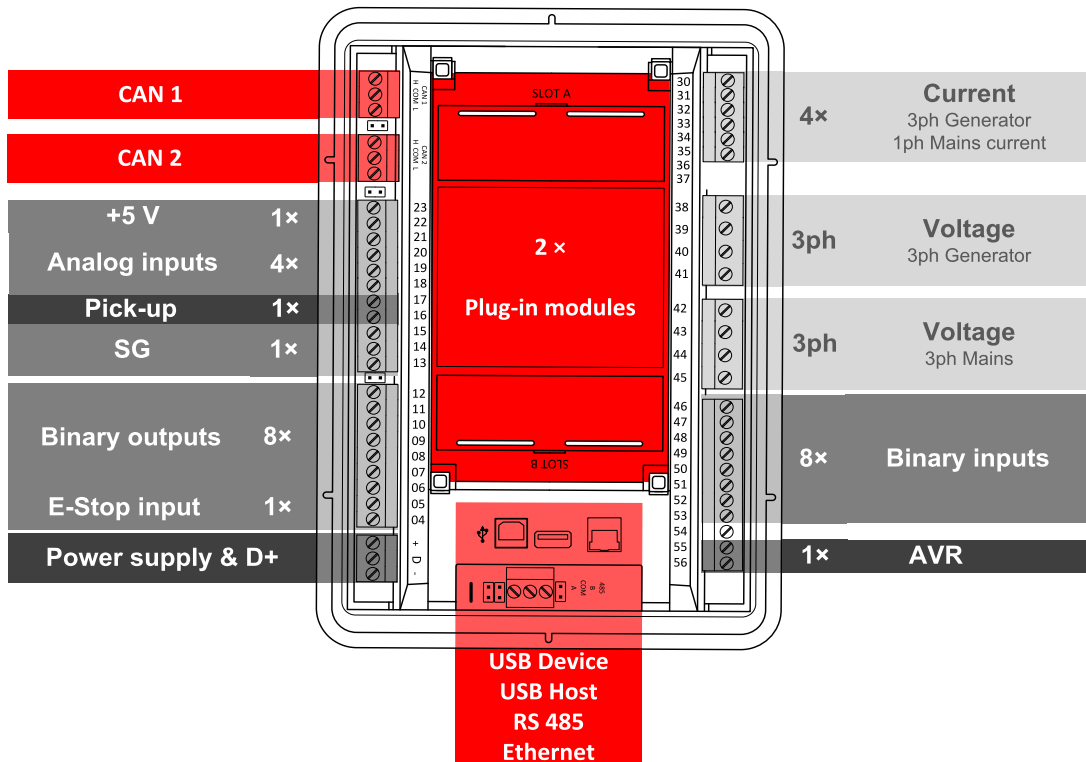>> The support of hybrid applications with InteliSys NTC Hybrid

Key features

> Cooperation of up to 32 Gen-sets/mains/tie controllers for complex installations

> Built-in PLC interpreter
>> Internal PLC interpreter with an easy-to-use ComAp's PLC Editor, for simple and fast creation of specific logic

> Remote connection and monitoring
>> Support of Airgate 2.0 for much faster and more reliable remote connection without the need for a static or a public IP address
>> WebSupervisor for fleet management
>> InteliSCADA for site monitoring

> Improved HW platform
>> 5V reference output for supplying analog sensors
>> Earth fault current protection (EFCP) directly in the controller

> Communication capabilities
>> USB host/device, CAN, RS485, Ethernet
>> Modbus RTU/TCP, SNMP v1 and v2c, J1939

> Compatible Load/VAr Sharing and Power Management with InteliCompact NT, InteliGen and InteliSys NT families

> User access management with 10 unique user accounts

> Slots for plug-in modules for 4G and GPS, additional Ethernet port, RS232/485 connection or additional binary inputs/outputs

Application overview

MINT
Generator Circuit Breaker

SPtM
Mains & Generator Circuit Breaker

Dimensions, terminals and mounting

CAN 1		
CAN 2		
+5 V	1×	
Analog inputs	4×	
Pick-up	1×	
SG	1×	
Binary outputs	8×	
E-Stop input	1×	
Power supply & D+		

SLOT A

2 ×
Plug-in modules

SLOT B

USB Device
USB Host
RS 485
Ethernet

4×	**Current** 3ph Generator / 1ph Mains current
3ph	**Voltage** 3ph Generator
3ph	**Voltage** 3ph Mains
8×	**Binary inputs**
1×	**AVR**

❶ Plug-in module

Note: Dimension "x" depends on a plug-in module

Note: Dimensions are in millimeters.

Note: The final depth of the controller depends on the selected plug-in module – it can vary between 47 mm and "x" 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 mounted into panel doors as a standalone unit using provided holders. The requested cutout size is 187 × 132 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 VDC
Power consumption (without modules)	6 W
RTC battery	Replaceable (3 V)
Fusing power	5 A / 6 × 0.5 A BOUT
E-Stop fusing	2 A
Max. Power Dissipation	10 W

Operating conditions

Protection degree (front panel)	IP 65
Operating temperature	-30 ˚C to +70 ˚C (-40 °C to +70 ˚C)*
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 = 4 g
Shocks	a = 500 m/s^2
Surrounding air temperature rating 70 °C Suitable for pollution degree 2	

D+

Max. output current	250 mA
Charging fail threshold	Adjustable

Voltage measurement

Measurement inputs	3ph-n Gen voltage , 3ph-n Mains
Measurement range	10-277 V AC / 10-480 V AC (EU) 10-346 V AC / 10-600 V AC (US/Canada)
Linear measurement and protection range	350 V AC Ph-N 660 V AC Ph-Ph
Accuracy	1 %
Frequency range	30-70 Hz (accuracy 0.1 Hz)
Input impedance	0.72 MΩ ph-ph , 0.36 MΩ ph-n

Voltage regulator output

Isolation	Isolated
Type	max ±10 V DC

Speed governor output

Isolation	Non-isolated
Output Type	±10 V DC or 5 V @ 500 Hz, PWM selectable by jumper

Display

Type	Build-in colour TFT 5"
Resolution	800 × 480 px

Communications

USB Device	Non-isolated type B connector
USB Host	Non-isolated type A connector
RS485	Isolated
Ethernet	10/100 Mbit
CAN 1 + CAN 2	Isolated, 250 / 50 kbps, Terminator impedance 120 Ω

Current measurement

Measurement inputs	3ph Gen current, 1ph Mains current
Measurement range	5 A
Max. allowed current	10 A
Accuracy	±20 mA for 0-2 A; 1 % 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	8, non-isolated
Close/Open indication	0-2 VDC close contact 6-36 VDC open contact

Binary outputs

Number	8, non-isolated
Max. current	BO 1-8 = 0.5 A
Switching to	positive supply terminal

Analog inputs

Number	4, switchable (R/U/I)
Range	R = 0-2500 Ω; U = 0-10 V; I = 0-20 mA
Accuracy	R: ±2 % from value ±5 Ω in range 0-250 Ω R: ±4 % from value in range 250 Ω-2500 Ω U: 1 % from value ±100 mV I: 1 % from value ±0.2 mA

+5 V Power supply output

Max. current	100 mA

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

Note: *) If the device is powered on above -30 °C.

Available plug-in modules

Product	Description	Order code
CM-RS232-485	Dual port interface	CM223248XBX
CM2-4G-GPS	4G & GPS plug-in communication module	CM24GGPSXBX
CM3-Ethernet	Internet / Ethernet plug-in communication module	CM3ETHERXBX
EM-BIO8-EFCP	8 additional binary inputs/outputs	EM2BIO8EXBX

Note: Controller has 2 slots for plug-in modules.

Available CAN modules

Product	Description	Order code
IGL-RA15	CAN remote annunciator with 15 LEDs	EM2IGLRABAA
Inteli AIN8	CAN module with 8 analog inputs	I-AIN8
Inteli IO8/8	CAN module with 8 binary inputs and 8 binary outputs	I-IO8/8
IGS-PTM	CAN module with 8 binary inputs, 8 binary outputs, 4 analog inputs and 1 analog output	IGS-PTM
Inteli AIN8TC	CAN module with 8 analog inputs dedicated for thermocouple sensors only.	I-AIN8TC
Inteli AIO9/1	CAN module with analog inputs and outputs – designed for DC measurement.	I-AIO9/1
I-CR	CAN Repeater Module.	I-CR
I-CR-R	CAN Redundancy Module.	I-CR-R

Available external display

Product	Description	Order code
InteliVision 5.2	5" TFT external display with 800 × 480 px resolution.	RD2IV5BXBAA

List of SW key features

SW Key feature	Order code
Extended feature – IG500 G2 Suite	SKEFSUITE01

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	Incomplete sequence relay	48
Stopping device	5	Overcurrent	50/50TD
Multi-function device	11	Earth fault**	50G
Overspeed	12	Breaker failure	50BF
Underspeed	14	Overcurrent IDMT	51
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	Alarm relay***	74
Overload (real power)	32P	Vector shift	78
Reverse power	32R	Reclosing relay	79
Master sequence device	34	Overfrequency	81O
Unit sequence starting*	44	Underfrequency	81U
Current unbalance	46	ROCOF	81R
Voltage unbalance / Negative sequence voltage	47	Auto selective control/transfer	83

*MINT   ** extension module IGL-RA15 required

Certifications and standards

- ❯ EN 61000-6-2
- ❯ EN 61000-6-4
- ❯ EN 61010-1
- ❯ 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/s^2; T=6 ms)
- ❯ EN 60068-2-30:2005 25/55°C, RH 95%, 48hours
- ❯ EN 60529 (front panel IP65, back side IP20)

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