

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

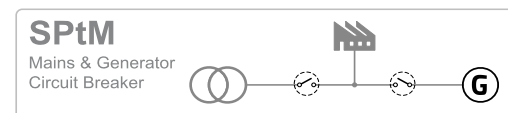
- > StageV and Tier 4 Final ready to easily control the aftertreatment system
  - >> StageV and Tier4 Final ready by default including customizable lamp behaviour and J1939 user-defined messages.
- > Cyber security by design to protect your business
  - >> Controller meets the requirements of ISA 62443 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





# 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 <sup>2</sup>
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
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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

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

### Available plug-in modules

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

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

### Available CAN modules

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

### Available external displays

Product	Description	Order code
InteliVision 5.2	5" TFT external display with 800 × 480 px resolution.	<a href="#">RD2IV5BXBAA</a>
InteliVision 10Touch	10.1" display unit for ComAp controllers with pre-installed InteliSCADA display.	<a href="#">RD1IV10TBPF</a>
InteliVision 13Touch	13.3" display unit for ComAp controllers with pre-installed InteliSCADA display.	<a href="#">RD1IV13TBME</a>
InteliVision 18Touch G2	18.5" display unit for ComAp controllers with pre-installed InteliSCADA Lite.	<a href="#">RD2IV18TBPE</a>

### List of Extended features

Extended feature	Description	Order code
IG500 G2 Suite	A bundle of features including large PLC capacity, shared signals over CAN line and more.	<a href="#">SKEFSUITE01</a>
Modbus Client	Modbus Client functionality for integration of 3 <sup>rd</sup> party devices.	<a href="#">SKMODBCLI01</a>



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## 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	Voltage unbalance / Negative sequence voltage	47
Stopping device	5	Incomplete sequence relay	48
Multi-function device	11	Temperature monitoring	49T
Overspeed	12	Overcurrent	50/50TD
Underspeed	14	Earth fault (module IGL-RA15 required)	50G
Speed and frequency matching device	15	Breaker failure	50BF
Data communication device	16	Overcurrent IDMT	51
Starting-to-running transition contactor	19	AC circuit breaker	52
Distance relay	21	Power factor	55
Synchronizing check	25	Overvoltage	59
Thermal relay	26	Aux Overvoltage	59X
Undervoltage	27	Pressure switch	63
Aux Battery Under Voltage	27X	Liquid level switch	71
Overload (real power)	32P	Alarm relay***	74
Reverse power	32R	Vector shift	78
Master sequence device	34	Reclosing relay	79
Undercurrent	37	Overfrequency	81O
Excitation loss	40	Underfrequency	81U
Unit sequence starting (MINT)	44	ROCOF	81R
Current unbalance	46	Auto selective control/transfer	83

## Certifications and standards

<ul style="list-style-type: none"> <li>&gt; EN 61000-6-2</li> <li>&gt; EN 61000-6-4</li> <li>&gt; EN 61010-1</li> <li>&gt; EN 60068-2-1 (-20 °C/16 h)</li> <li>&gt; EN 60068-2-2 (70 °C/16 h)</li> <li>&gt; EN 60068-2-6 (2+25 Hz / ±1,6 mm; 25+100 Hz / 4.0 g)</li> <li>&gt; EN 60068-2-27 (a=500 m/s<sup>2</sup>; T=6 ms)</li> </ul>	<ul style="list-style-type: none"> <li>&gt; EN 60068-2-30:2005 25/55°C, RH 95%, 48hours</li> <li>&gt; EN 60529 (front panel IP65, back side IP20)</li> <li>&gt; EN 60068-2-14:2009</li> <li>&gt; EN 60068-2-78: 2012</li> <li>&gt; UL 6200</li> <li>&gt; EN IEC 60255-127: 2014</li> <li>&gt; EN 60255-27: 2014</li> <li>&gt; EN 60255-26: 2013</li> <li>&gt; EN IEC 60255-181: 2020</li> <li>&gt; EN IEC 60255-1: 2023</li> </ul>	 	
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