



Order code: IS2GASXXBAB

## Controller for Gas Gen-set Application

# Datasheet

### Product description

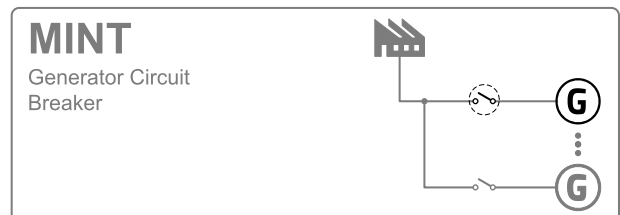
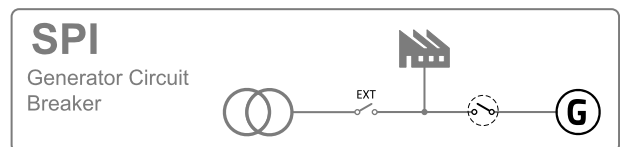
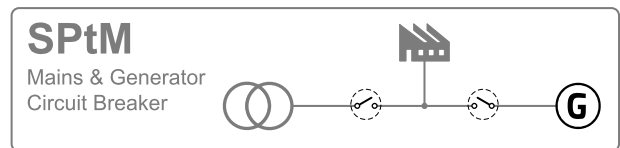
- ▶ The InteliSys Gas is an industrial grade controller for gas gen-set based CHPs and power generation applications.
- ▶ Preconfigured functions, scalable and configurable I/Os, broad communication capabilities and an easy-to-change software allows to adapt the controller to various applications without greater efforts.

- ▶ Baseload, Imp / Exp, TempByPower, Peak shaving, Voltage and PF control (AVR bias output)
- ▶ Event-based and PreMortem history with customer-selectable list of stored values; RTC; statistic values
- ▶ Overspeed and Emergency stop detection

### Key features

- ▶ Predefined adjustable functions for gas gen-set
- ▶ Large built-in PLC interpret to suit individual needs and design demanding applications like CHPs
- ▶ SIL2 certification for selected channels
- ▶ Grid codes requirements support (e.g. VDE-AR-N 4105, BDEW Richtlinien)
- ▶ Support wide range of applications – from single to multiple, from island to network parallel operation
- ▶ Power management function including new mode of effective engine run in network parallel operation
- ▶ Plug&Play support of ComAp InteliVision display family
- ▶ Automatic synchronization and power control (via speed governor or ECU)

### Application overview



## Technical data

### Power supply

Power supply range	8-36 VDC
Power consumption	0.4 A / 8 VDC 0.15 A / 24 VDC 0.1 A / 36 VDC
RTC battery	10 years (replaceable by official service)
Fusing	2 A (without BOUT consumption)

### Operating conditions

Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +80°C
Operating humidity	95 % w/o condensation
Vibration	5 - 25 Hz, $\pm 1.6$ mm 25-100 Hz, $a = 4$ g
Shocks	$a=200$ m/s <sup>2</sup>

### Voltage measurement

Measurement inputs	3 ph-n Gen voltage 3 ph-n Mains/Bus voltage
Measurement range	110 V / 277 V
Max allowed voltage	125 %
Accuracy	1 % of 110 V / 277 V
Frequency range	40-70 Hz (at accy 0.1 Hz)
Input impedance	0.6 M $\Omega$ ph-ph 0.3 M $\Omega$ ph-n

### Current measurement

Measurement inputs	3 ph Gen current 1 ph Mains current
Measurement range	1 A / 5 A
Max allowed continuous current	10x Inom / 2x Inom
Accuracy	2 % of 1 A / 5 A
Input impedance	< 0.1 $\Omega$

### Binary inputs

Number	16 non-isolated
Input resistance	4.7 k $\Omega$
Close/Open indication	0 - 2 VDC close contact > 4 VDC open contact

### Binary outputs

Number	16 non-isolated
Max current	0.5 A (2 A per group)
Switching to	negative/positive supply terminal

### Analog inputs

Number	4 non-isolated
Type	Switchable (Voltage, Resistance, Current)
Resolution	10 bits, max 4 decimals
Range	0-5 VDC/0-2500 $\Omega$ /0-20 mA
Input impedance	>100 k $\Omega$ / $>100$ k $\Omega$ /180 $\Omega$
Accuracy	$\pm 1$ % of meas. value $\pm 1$ mV $\pm 2$ % of meas value $\pm 2$ $\Omega$ $\pm 1$ % of meas value $\pm 0.5$ mA

### Analog outputs

Number	1
Type	Switchable (Voltage, Current)
Range	0 - 10 VDC / 0 - 20 mA
Max current/load	5 mA/500 $\Omega$
Accuracy	$\pm 0.5$ % of output value $\pm 20$ mV $\pm 0.5$ % of output value $\pm 100$ $\mu$ A

### Magnetic pick-up

Voltage input range	2 Vpk-pk to 50 Veff
Frequency input range	4 Hz to 15 kHz
Frequency measurement tolerance	0.2 %

### Voltage regulator output

Type	5 V TTL PWM / $\pm 10$ VDC with IG-AVRi interface
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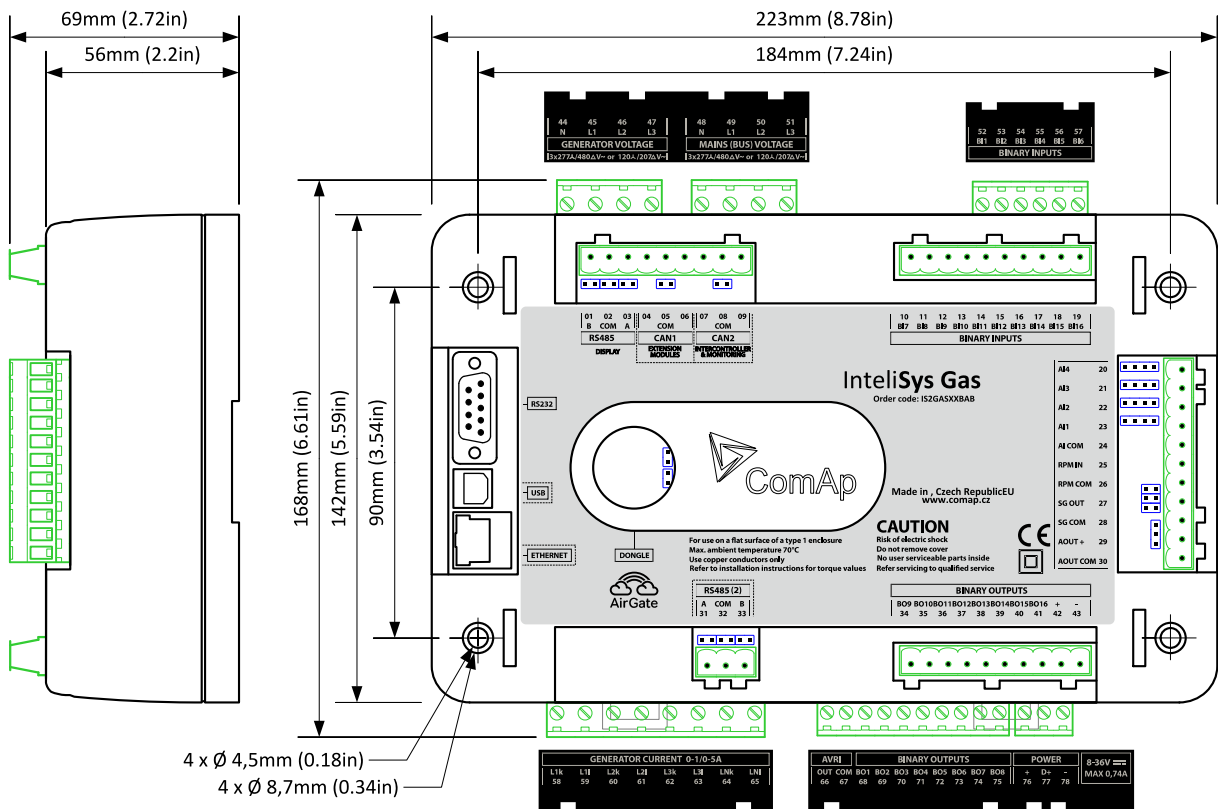
### Speed governor output

Voltage output	$\pm 10$ VDC / max. 15 mA
Voltage output via resistor	$\pm 10$ VDC via 10 k $\Omega$ resistor / max. 1 mA
PWM	500-3000 Hz / 5V / max. 10mA

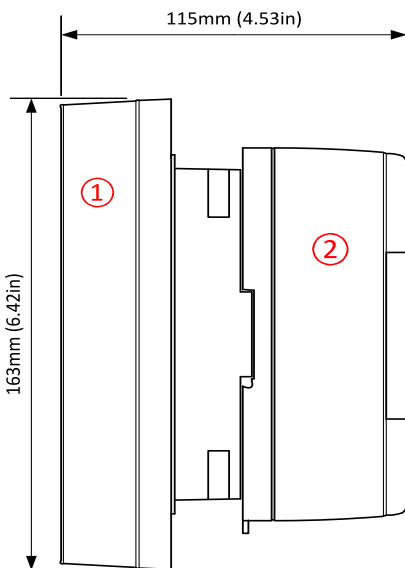
### Communications

RS232	Direct/Modbus, non-isolated
RS485	Direct/Modbus, isolated
Display port	non-isolated RS485, only terminal connection
USB port	Direct, isolated
Ethernet port	LAN/Internet, Modbus TCP, SNMP, WebServer, AirGate
CAN1	External modules 250 kbps, max 200 m, Isolated
CAN2	Intercontroller and comm extensions 250 / 50 kbps, max 200 / 1000 m, Isolated

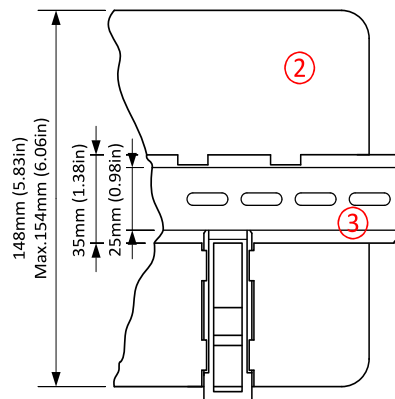
## Dimensions, terminals and mounting



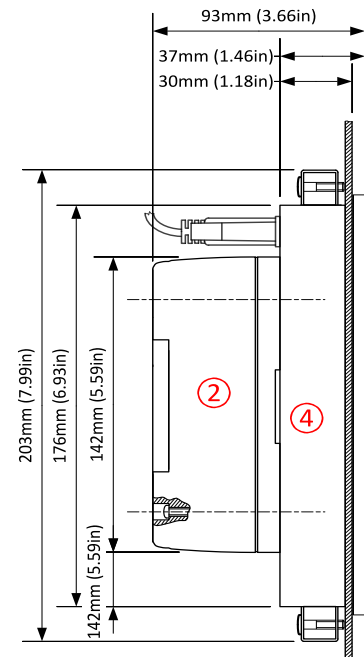
### Panel door mounting (InteliVision 5)



### DIN rail mounting



### Panel door mounting (InteliVision 8)



- ① IntelliVision 5
- ② IntelliSys Gas
- ③ DIN rail
- ④ IntelliVision 8

## Available extension modules

Product	Description	Order code
Inteli IO8/8	8 Binary inputs, 8 Binary outputs and 2 Analog outputs packed in a small unit (HW switchable to IO16/0)	<a href="#">I-IO8/8</a>
Inteli IO8/8	HW switchable to IO16/0 - 16 Binary inputs packed in a small unit	<a href="#">I-IO8/8</a>
Inteli AIN8	8 Analog inputs (R, I, V) and 1 pulse/frequency input in a small unit	<a href="#">I-AIN8</a>
Inteli AIN8TC	8 Thermocouple Analog inputs in a small unit	<a href="#">I-AIN8TC</a>
Inteli AIO9/1	9 Analog inputs (4x DC, 4x thermocouples, 1x R) in a small unit	<a href="#">I-AIO9/1</a>
IS-AIN8	8 Analog inputs packed in a rugged metal unit	<a href="#">IS-AIN8</a>
IGS-PTM	8 Binary inputs, 8 Binary outputs, 4 Analog inputs and 1 Analog output in a unit	<a href="#">IGS-PTM</a>
IGL-RA15	15 Binary LED output (3 colors) packed in a rugged metal unit	<a href="#">IGL-RA15</a>
I-AOUT8	8 Analog outputs packed in a rugged metal unit	<a href="#">I-AOUT8</a>
InternetBridge-NT	Multiple Internet connections (PC and Modbus) to all controllers on CAN2 or RS485	<a href="#">IB-NT</a>
I-LB+	Direct connection (PC) to all controllers on CAN2 or RS485	<a href="#">I-LB+</a>


## Related products

Product	Description	Order code
InteliVision 5	Color 5.6" display for monitoring and control	<a href="#">INTELIVISION 5</a>
InteliVision 8	Color 8" display for advanced monitoring, control & trending, USB capable	<a href="#">INTELIVISION 8</a>
InteliVision 12Touch	Color 12" touch display for advanced monitoring, control & trending, USB capable	<a href="#">RD1IV12TBZH</a>
InteliVision 17Touch	Color 17" touchscreen display designed for complete monitoring and control of multiple controllers or cogeneration installation.	<a href="#">IV17T2</a>
ECON-4	Digital speed governor dedicated for speed control of gas or diesel engines.	<a href="#">ECON-4</a>

## Functions and protections

Description	ANSI code	Description	ANSI code	Description	ANSI code	Description	ANSI code
Synchronism check	25	Excitation loss	40	Overcurrent (IDMT)	51	AC reclosing	79
Undervoltage	27	Current unbalance	46	Earth fault current IDMT	51N+64	Overfrequency	81H
Overload	32	Voltage asymmetry and phase sequence	47	Power factor	55	Underfrequency	81L
Load shedding	32P	Temperature monitoring	49T	Overvoltage	59	ROCOF	81R
Reverse power	32R	Generator overcurrent	50	Gas (fuel) level	71		
Undercurrent	37	Earth fault current	50N+64	Vector shift	78		

## Certificates and standards

This product is CE compliant.			
▶ EN 60068-2-6 ed.2:2008	▶ EN 60068-2-30, May 2000	▶ EN 61010-1:2003	
▶ EN 60068-2-27 ed.2:2010	▶ EN 60068-2-64		
This product is tested according to:			
▶ VDE ARN 4105:2011; DIN VDE V 0124-100:2012 (Cl. 5.3.3, 5.3.4, 5.3.6, 5.4.3, 5.4.5, 5.4.6, 5.5)			
▶ BDEW Medium-Voltage Guideline: 2008; FGW TR3:2013 (Clauses 4.2.2, 4.2.3, 4.2.4, 4.3.2, 4.3.3, 4.3.4., 4.5, 4.6., 4.7)			
All certificates and standards are available on: <a href="https://webstore.iec.ch/">https://webstore.iec.ch/</a>			

