

# InteliSys<sup>NTC</sup> BaseBox



## Gen-set controller

# Datasheet

### Product description

- Comprehensive paralleling gen-set controller
- Parallel operation up to 32 gen-sets
- High level control for complex systems
- CHP and gas engine controller

### Key features

- Load sharing and VAR sharing via CAN
- Virtual shared inputs and outputs via CAN
- Support of wide range of applications
  - Single or multiple gen-sets in parallel to mains operation with automatic back up function, multiple island operation
- Advanced power management function
- Customizable load control in parallel to mains
- Wide range of ECU support
- Extended communication capabilities
  - Full Modbus slave support
  - GPS and AirGate support and more
- Highly configurable
  - Timers, Extended internal PLC, Force values and more
- Compatible with ComAp's InteliVision displays
- Active e-mail messaging and SMS

Extensive built-in protection functions

- Standard protections
- User configurable protection

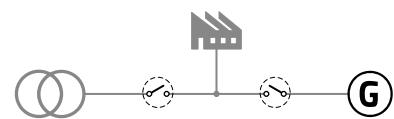
Extendable with ComAp's extension modules

True RMS (TRMS) is used with Voltage, Current and Power measurement

### Application overview

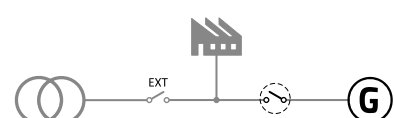
#### SPtM

Mains & Generator Circuit Breaker



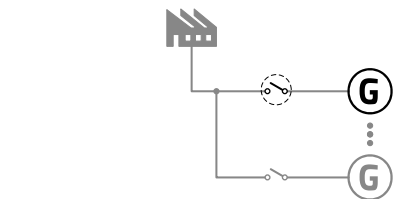
#### SPI

Generator Circuit Breaker



#### MINT

Generator Circuit Breaker



## 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 BOUW consumption)

### Operating conditions

Operating temperature	-40°C to +70°C
Storage temperature	-40°C to +80°C
Max. operating altitude	2000 m above sea level for max 480 V
	4000 m above sea level for max 400 V
Operating humidity	95 % non-condensing (EN 60068-2-30)
Vibration	5-25 Hz, ±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	110V / 277V ph-n
Max allowed voltage	125 % ph-n
Accuracy	1 % of 110V / 277V
Frequency range	40-70 Hz (accuracy 0.1 Hz)
Input impedance	0.6 MΩ ph-ph
	0.3 MΩ ph-n

### Current measurement

Measurement inputs	3 ph Gen current 1 ph Mains current galvanically isolated
Measurement range	1 A / 5 A
Max allowed continuous current	200 % / 200 %
Accuracy	2 % of 1 A / 5 A
Input impedance	<0.1 Ω

### Binary inputs

Number	16 non-isolated
Input resistance	4.7 kΩ
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)
	group 1: BO1-8; group 2: BO9-16
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 Ω/0-20 mA
Input impedance	>100 kΩ/>100 kΩ/180 Ω
Accuracy	±1 % of meas. value ±1 mV
	±2 % of meas value ±2 Ω
	±1 % of meas value ±0.5 mA

### Analog outputs

Number	1
Type	Switchable (Voltage, Current)
Range	0-10 VDC/0-20 mA
Max current/load	5 mA/500 Ω
Accuracy	±0.5 % of output value ±20 mV
	±0.5 % of output value ±100 μA

### 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 / ± 10 VDC with IG-AVRi interface
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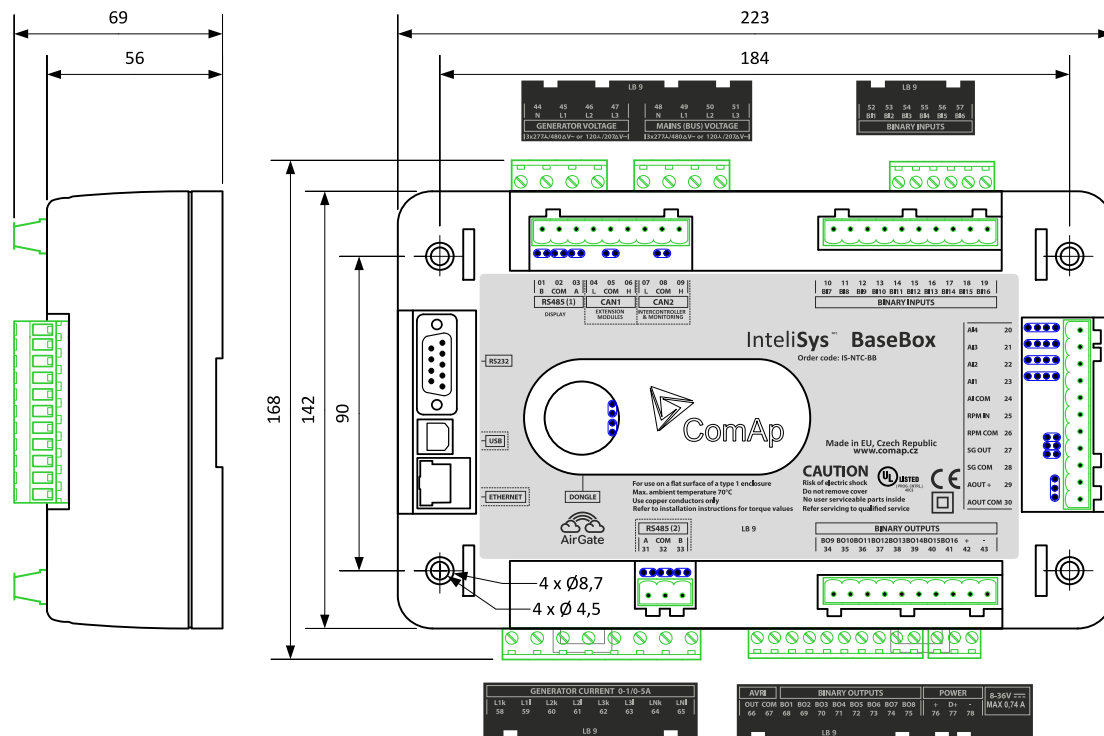
### Speed governor output

Voltage output	± 10 VDC / max. 15 mA
Voltage output via resistor	± 10 VDC via 10 kΩ resistor / max . 1 mA
PWM	500÷3000 Hz / 5V / max. 10mA

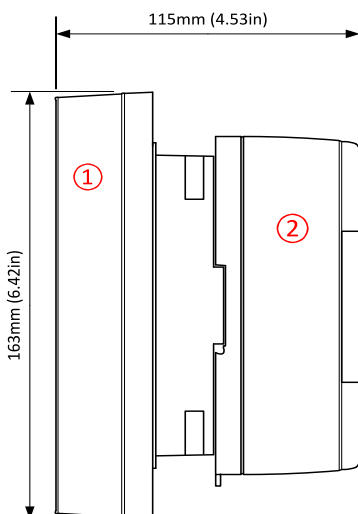
### Communications

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

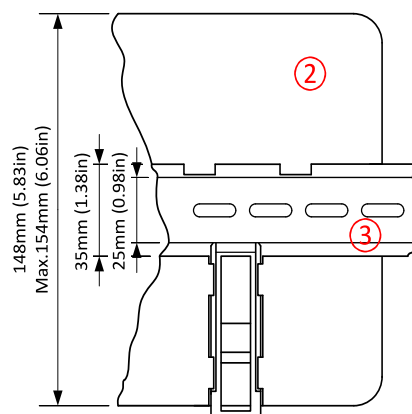
## Dimensions, terminals and mounting



### Panel door mounting with IntelliVision 5

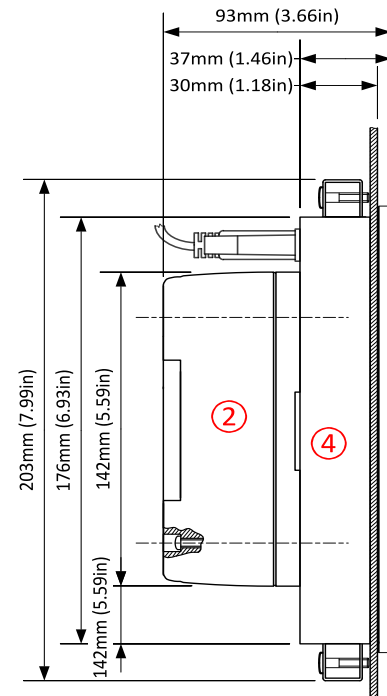


### DIN-rail mounting



- ① IntelliVision5
- ② IntelliSys<sup>NTC</sup> BaseBox
- ③ DIN-rail
- ④ IntelliVision 8

### Panel door mounting with IntelliVision 8



**Note:** IntelSys<sup>NTC</sup> BaseBox can be mounted on a standard DIN rail or, in combination with IntelliVision 5 or IntelliVision 8, it can be door mounted. IntelliVision 5 features mounting rail for direct mounting. Mounting in combination with IntelliVision 8 uses four screws provided in the IntelSys<sup>NTC</sup> BaseBox package.

## Available extension modules

Product	Description
Inteli IO8/8	8 Binary inputs, 8 Binary outputs and 2 Analog outputs packed in a small unit (HW switchable to IO16/0)
Inteli AIN8	8 Analog inputs (R, I, V) and 1 pulse/frequency input in a small unit
Inteli AIN8TC	8 Thermocouple Analog inputs in a small unit
Inteli AIO9/1	9 Analog inputs (4x DC, 4x thermocouples, 1x R) in a small unit
IS-AIN8	8 Analog inputs packed in a rugged metal 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
I-AOUT8	8 Analog outputs packed in a rugged metal unit
InternetBridge-NT	Multiple Internet connections (PC and Modbus) to all controllers on CAN2 or RS485
I-LB+	Direct connection (PC) to all controllers on CAN2 or RS485

## Related products

Product	Description
InteliVision 5	Color 5.6" display for monitoring and control
InteliVision 8	Color 8" display for advanced monitoring, control & trending, USB capable
InteliVision 12Touch	Color 12" touch display for advanced monitoring, control & trending, USB capable
InteliVision 17Touch	Color 17" touchscreen display designed for complete monitoring and control of multiple controllers or cogeneration installation.
ECON-4	Digital speed governor dedicated for speed control of gas or diesel engines.

## Functions and protections

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

Support of functions and protections as defined by ANSI (American National Standards Institute):

Description	ANSI code	Description	ANSI code
Master unit	1	Voltage unbalance	47
Stopping device	5	Incomplete sequence relay	48
Multi-function device	11	Overcurrent	50/50TD
Overspeed	12	Earth fault	50G
Underspeed	14	Overcurrent IDMT	51
Starting-to-running transition contractor	19	AC circuit breaker	52
Synchronizing-check	25	Overvoltage	59
Thermal relay	26	Pressure switch	63
Undervoltage	27	Liquid level switch	71
Annunciator	30	Alarm relay**	74
Overload(real power)	32P	Reclosing relay	79
Reverse power	32R	Overfrequency	81O
Master sequence device	34	Underfrequency	81U
Excitation loss	40	ROCOF	81R
Unit sequence starting *	44	Auto selective control/transfer	83
Current unbalance	46		

\*MINT

\*\*Extension module [[[Undefined variable Products.IGL-RA15]]] required



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