InteliGen^{NTC} BaseBox

GENERAL PURPOSE GEN-SET CONTROLLER WITH DETACHABLE COLOUR DISPLAY

1)

Description

InteliGen^{NTC} BaseBox is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. The detachable modular construction allows easy installation with the potential for many different extension modules designed to suit individual customer requirements.

A built-in synchronizer and digital isochronous load sharer allow a total integrated solution for gen-sets in standby, island parallel or mains parallel with native cooperation of up to 32 gen-sets.

InteliGen^{NTC} BaseBox supports many standard ECU types and is specially designed to easily integrate new versions.

New ethernet connections together with AirGate make remote internet connection to new InteliGen^{NTC} BaseBox easy.

After registration of InteliGen^{NTC} BaseBox on our website you can simply monitor the site on the internet using WebSupervisor.

The controller is available in two models: InteliGen^{NT} BaseBox and InteliGen^{NTC} BaseBox

InteliGen^{NTC} BaseBox or InteliGen^{NT} BaseBox can be connected with InteliVision 5 and/or other ComAp displays.

Benefits

- Support of engines with ECU (Electronic Control Unit)
- Excellent configurability to match customers' needs exactly
- Complete integrated gen-set solution and signal sharing via CAN bus – minimum external components needed
- Many communication options – easy remote supervising and servicing
- Gen-set performance log for easy problem tracing
- Built-in PLC functions
- 5,7" colour TFT display [1)]
- Active buttons – fast access to important data [1)]
- Backlit buttons [2)]

1) It is concerned in connection with InteliVision 5
2) It is concerned in connection with InteliVision 5 RD

WebSupervisor
The WebSupervisor system, a secure web based remote monitoring system which allows equipment fitted with various types ComAp units to be monitored via the internet from a remote PC or other web enabled device such as smartphone, webbook, etc. It operates in any internet browser and needs no special software to be installed. User can view recorded data from their equipment, receive Email alerts on alarms and control the remote units. Dedicated App's for iPhone and Android provide a truly mobile constant connection with the monitored equipment.

LOCATE
ComAp's LOCATE system uses the power of cellular communications technology to provide users and peace of mind that the monitored asset is where it should be. Locate provides location data to the WebSupervisor system without the need for costly GPS positioning equipment and works anywhere there is a cellphone signal, even indoors. Not only will WebSupervisor show the position of the monitored equipment, it will also maintain a track history and show route of the movement on a map.
LOCATE – Simply Here!

AirGate
Modern communications made simple. ComAp's powerful AirGate technology is provided in a range of our controllers and makes remote internet connection to the ComAp controller easy. Just register the AirGate enabled controller on our website and from then on let ComAp's unique system locate and maintain contact with the controller, no need to worry about VPN's, Static IP addresses or corporate firewalls, simple! "AirGate – Simply connected."

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Features

- Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
- AMF function
- Automatic synchronizing and power control (via speed governor or ECU)
- Baseload, Import / Export
- Peak shaving
- Voltage and PF control (AVR)
- Generator measurement: U, I, Hz, kW, kVAr, kVA, PF, kWh, kVAhr
- Mains measurement: U, I, Hz, kW, kVAr, PF
- Selectable measurement ranges for AC voltages and currents – 120 / 277 V, 0–1 / 0–5 A [1)]
- Inputs and outputs configurable for various customer needs
- Bipolar binary outputs – possibility to use BO as High or Low side switch
- RS232 / RS485 interface with Modbus support; Analog / GSM / ISDN / CDMA modem support; SMS messages; ECU Modbus interface
- Secondary isolated RS485 interface [1)]
- Ethernet connection (RJ45) [1)]
- USB 2.0 slave interface [1)]
- Controller redundancy
- Event-based history (up to 1000 records) with customer-selectable list of stored values; RTC; statistic values
- Integrated PLC programmable functions
- Interface to remote display unit (InteliVision 5 RD)
- DIN-Rail mount

1) Available only for InteliGen^{NTC} BaseBox model

Order codes

Product	Order code
InteliGen^{NT} BaseBox	IG-NT-BB
InteliGen^{NTC} BaseBox	IG-NTC-BB

Integrated fixed and configurable protections

- 3 phase integrated generator protections (U + f)
- IDMT overcurrent + Shortcurrent protection
- Overload protection
- Reverse power protection
- Instantaneous and IDMT earth fault current
- 3 phase integrated mains protections (U + f)
- Vector shift and ROCOF protection
- All binary / analog inputs free configurable for various protection types: HistRecOnly / Alarm Only / Alarm + History indication / Warning / Off load / Slow stop / BreakerOpen&Cooldown / Shutdown / Shutdown override / Mains protect / Sensor fail
- Phase rotation and phase sequence protection
- Additional 160 programmable protections configurable for any measured value to create customer-specific protections
- Application security

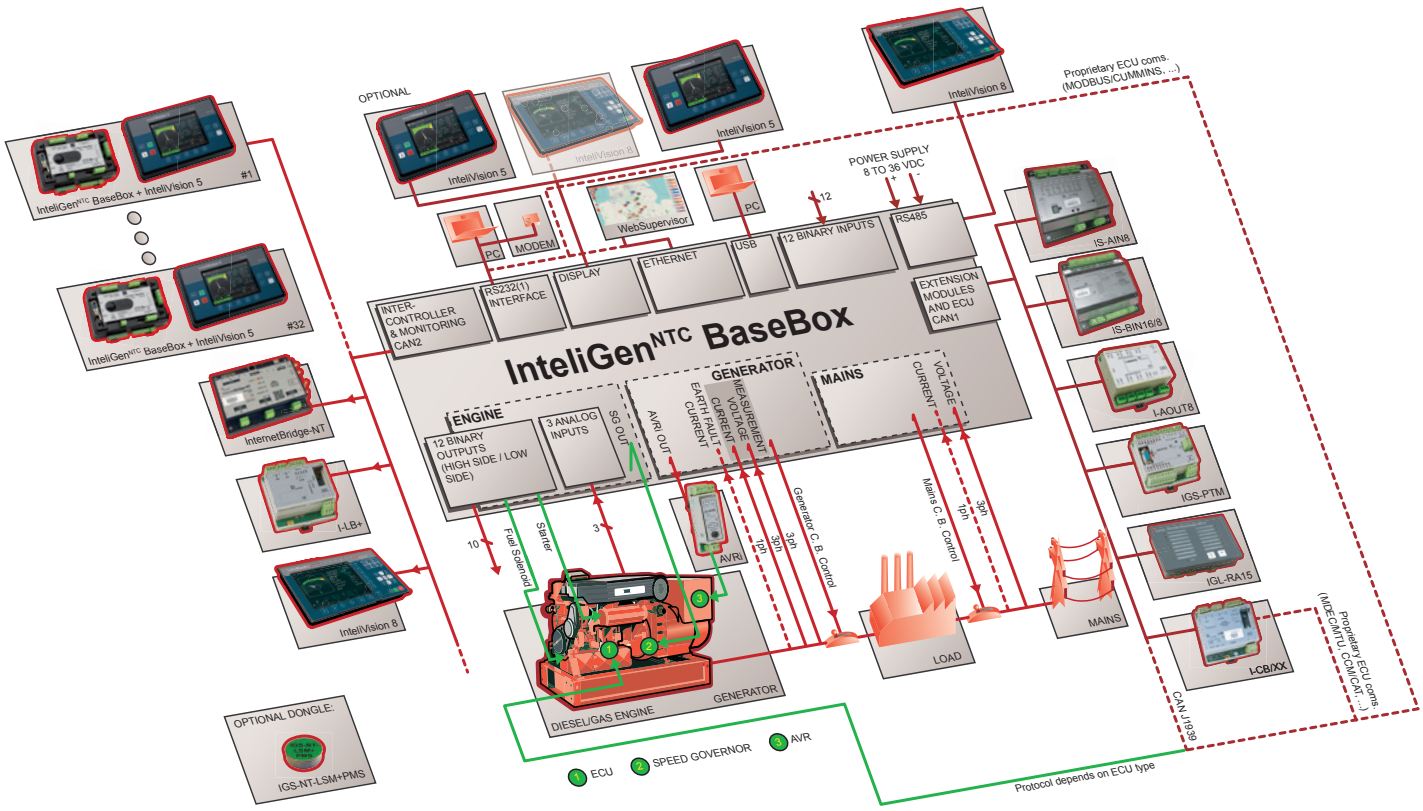
ANSI CODES

ANSI code	Protection
25	Synchronism check
27	Undervoltage
32	Overload
32P	Load shedding
32R	Reverse power
37	Undercurrent *
40	Excitation loss
46	Generator current unbalance
47	Voltage asymmetry and phase sequence
49T	Temperature monitoring *
50	Generator short current

ANSI code	Protection
50N+64	Earth fault current *
51	Generator overcurrent, IDMT
51N+64	Earth fault current, IDMT
55	Power factor *
59	Overvoltage
71	Gas (fuel) level
78	Vectorshift
79	AC Reclosing
81H	Generator overfrequency
81L	Generator underfrequency
81R	ROCOF

* can be created using universal protections

Schematic diagram



Upgrade kits

- **IGS-NT-LSM + PMS dongle:**
  - Enables Multiple isolated parallel or multiple parallel with mains
  - Optimizing number of running engines: Power management; kW, kVA or % load based
  - Digital Load Sharing
  - Digital VAr Sharing

Extension modules

- up to 4× **I-AOUT8** – Analog output extension module
- up to 2× **IGL-RA15** – Remote annunciator
- up to 4× **IGS-PTM** – Analog/binary input/output module
- up to 10× **IS-AIN8** – Analog input module
- up to 6× **IS-BIN16/8** – Binary input/output module
- up to 10× **IS-AIN8TC** – Module for thermocouple measurement

Communication modules and PC tools

- **InternetBridge-NT** – Communication module with cellular/ethernet connection
- **I-LB+** – Local bridge supporting USB communication
- **I-CB** – ECU communication bridge
- **WinScope** – Special graphical controllers´ monitoring software
- **WebSupervisor** – Cloud-based system for monitoring and controlling of ComAp controllers
- **GenConfig** – PC configuration tool
- **InteliMonitor** – PC monitoring tool

Remote displays

- up to 2× **InteliVision 5** – New generation 5,7´´ colour display unit
- up to 2× **InteliVision 5 RD** – New generation 5,7´´ remote colour display unit
- up to 6× **InteliVision 8** – 8´´ colour detachable display unit
- **InteliVision 17Touch** – Colour touch 17´´ display

Typical application

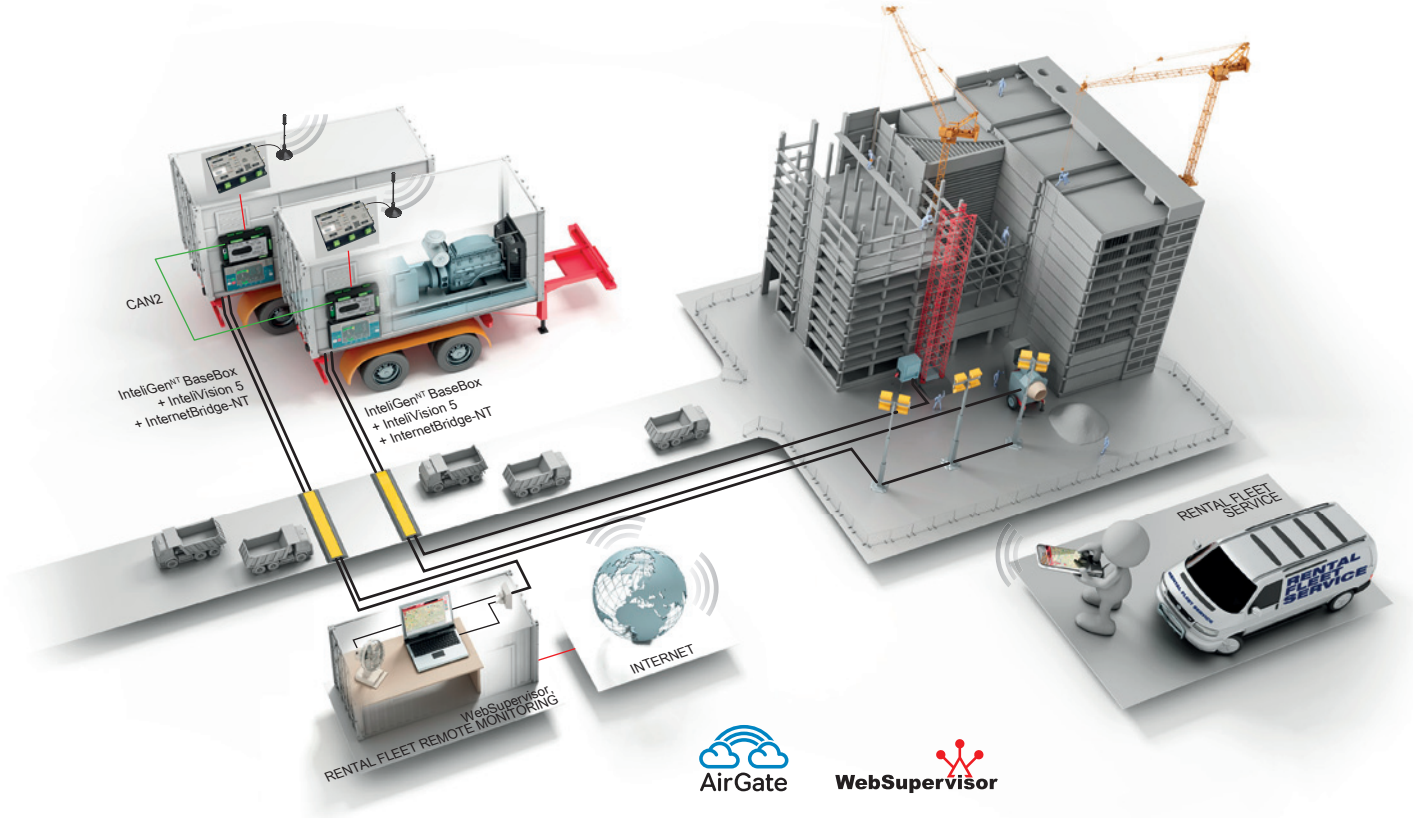
STANDBY SYSTEM WITH LOAD SHEDDING – ADVANCED DISPLAYS

Description:

- Containerized rental gen-sets are deployed as temporary and mobile power generation units providing essential energy for subsystems and construction machinery on building projects or civil engineering applications where mains power is not available or has been manually disconnected.
- The application shows rental gen-sets fitted with the latest remote communication module InternetBridge-NT which enables the central control facility and mobile service engineers to efficiently monitor, control and supervise equipment wherever it is located. By using the supportive web based software applications such as WebSupervisor, rental operators can significantly improve operational control.
- Each gen-set can be used in Stand-by, Single parallel to mains and Multiple parallel modes according to the position of Mode selector switch.
- Load sharing and VAr sharing can be conditionally switched from isochronous regulation to droop. It ensures reliable operation in case of cut off the CAN intercontroller communication line or cooperation with the gen-sets equipped with third-party control system.

Scope of supply:

- 2× InteliGen^{NT} BaseBox
- 2× InteliVision 5
- 2× InternetBridge-NT



InteliGen^{NTC} BaseBox

Functions chart

Product	InteliGen^{NT}	InteliGen^{NT} BaseBox	InteliGen^{NTC} BaseBox	InteliSys^{NTC} BaseBox
Order code	IG-NT	IG-NT-BB	IG-NTC-BB	IS-NTC-BB
Binary Inputs / Outputs	12/12 (108/108) [1]	12/12 (108/108) [1]	12/12 (108/108) [1]	16/16 (112/112) [1]
Analog Inputs/Outputs	3/0 (83/32) [1] (configurable as tristate)	3/0 (83/32) [1] (configurable as tristate)	3/0 (83/32) [1] (configurable as tristate)	4/1 (84/33) [1] (configurable as tristate)
AMF function	●	●	●	●
GCB control with feedback	●	●	●	●
Integrated PLC	Standard	Standard	Standard	Extended
Input configuration	●	●	●	●
Output configuration	●	●	●	●
Voltage measurement Gen / Mains (bus)	3 ph / 3 ph 277V	3 ph / 3 ph 277V	3 ph / 3 ph 120V / 277V	3 ph / 3 ph 120V / 277V
Current measurement	3ph + 1 / 6w IDMT overcurrent 5A	3ph + 1 / 6w IDMT overcurrent 5A	3ph + 1 / 6w IDMT overcurrent 1A / 5A	3ph + 1 / 6w IDMT overcurrent 1A / 5A
kW / kWh / kVA measurement	● / ● / ●	● / ● / ●	● / ● / ●	● / ● / ●
Communication interfaces	CAN1, CAN2, RS232, RS485, Ethernet [2], Modbus	CAN1, CAN2, RS232, RS485, Ethernet [2], Modbus	CAN1, CAN2, RS232, 2× RS485, USB, Ethernet, Modbus, ModbusTCP, AirGate, Web server	CAN1, CAN2, RS232, 2× RS485, USB, Ethernet, Modbus, ModbusTCP, AirGate, Web server
ECU support	●	●	●	●
Active call / SMS support	●	●	●	●
Forward / Reverse synchronizing / Mains parallel operation	● / ● / ●	● / ● / ●	● / ● / ●	● / ● / ●
Multiple operation / Power Management System	● [3]	● [3]	● [3]	● [3]
Display	LCD 128×64	External	External	External
History (max records) [4]	500	1000	1000	4000

KEY

● included
CAN1 for peripheral modules and ECU (J1939)
CAN2 intercontroller can; monitoring

[1] with IS-AIN8, IS-AIN8TC, IS-BIN16/8, I-OUT8 or IGS-PTM
[2] with communication modules
[3] with IGS-NT-LSM+PMS dongle
[4] depends on number of values in history record

References

Singapore

F1 Singapore Grand Prix

The race was illuminated by twenty-four individual 500 kVA generators, powering 1500 special lighting rigs. To control all this power the experienced team carefully considered all available systems on the market and chose ComAp's InteliGen^{NTC} BaseBox and InteliVision 8 combination. An event of this magnitude doesn't just need lighting. Beyond the track 12 further 50 kVA, InteliLite NT AMF 25 controlled generators were used to supply the monitoring system along the track.

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Customer satisfaction is our mission. We continuously develop our people to be the best to succeed in our mission.