InteliSys^{NTC} BaseBox

PREMIUM AND COGENERATION **GEN-SET CONTROLLER WITH** DETACHABLE COLOUR DISPLAY





WebSupervisor

AirGate

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.



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."







ComAp products meet the highest standards, with every stage of production undertaken in accordance with the ISO certification obtained in 1998





Description

InteliSys^{NTC} BaseBox is an expandable controller for both single and multiple gen-sets operating in standby or parallel modes, especially in cogeneration (CHP) and other complex applications.

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. Native cooperation of up to 32 gen-sets is a standard feature.

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

New ethernet connections together with AirGate make remote internet connection to new InteliSys^{NTC} BaseBox easy. After registration of InteliSys^{NTC} BaseBox on our website you can simply monitor the site on the internet using WebSupervisor.

InteliSys^{NTC} BaseBox can be connected with InteliVision 8 and/or other ComAp displays.

Benefits

- Support of engines with ECU (Electronic Control Unit)
- Þ Excellent configurability to match customers' needs exactly
- Þ 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** Þ
- 8" colour TFT display 1)
- Configurable soft keys¹⁾
- Trends¹⁾ Þ

IIS

I ISTED

The product has

Plug and play system¹⁾ Þ

1) It is concerned in connection with InteliVision 8

the UI Certification

Controlin

Features

- CHP support (programmable PID loops and other built-in PLC functions)
- Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
- Automatic synchronizing and power control (via speed governor or ECU)
- Baseload, Import / Export, TempByPower
- 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
- Inputs and outputs configurable for various customer needs
- 1x RS232 / 2x RS485 interface with Modbus support; Analog / GSM / ISDN / CDMA modem communication support; SMS messages; ECU Modbus interface; secondary RS485 converter is isolated
- Event-based history (up to 4000 records) with customerselectable list of stored values; RTC; statistic values
- Integrated PLC programmable functions
- Interface to remote display units (InteliVision 8, InteliVision 5 RD)
- USB 2.0 slave interface
- Ethernet connection (RJ45)
- Bipolar binary output possibility to use BO as High or Low side switch
- Pre mortem history (50 records)

Order code

Product	Order code
InteliSys ^{NTC} BaseBox	IS-NTC-BB

Integrated fixed and configurable protections

- 3 phase integrated generator protections (U + f)
- IDMT overcurrent + Shortcurrent protection
- Overload protection
- Reverse power protection
- Earth fault protection
- 3 phase integrated mains protections (U + f)
- Vector shift 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 customized protections
- Application security

ANSI CODES

ANSI code	Protection		ANSI code	Protection	
25	Synchronism check		50N+64	Earth fault current*	
27	Undervoltage		51	Generator overcurrent,	
32	Overload			Earth fault current	
32P	Load shedding		51N+64	IDMT	
32R	Reverse power		55	55 Power factor*	
37	Undercurrent*		59	Overvoltage	
40	Excitation loss		71	Gas (fuel) level	
40	Generator current	78	Vectorshift		
46 unbalance		79	AC Reclosing		
47	Voltage asymmetry and phase sequence		81H	Generator overfrequency	
49T	Temperature monitoring*		81L	Generator underfrequency	
50	Generator short current		81R	ROCOF	

* Can be created using universal protections





Upgrade kit

IGS-NT-LSM + PMS dongle:

- Enables multiple isolated parallel or multiple parallel with mains operation (with CAN bus)
- Digital load sharing
- Digital VAr sharing
- Optimizing number of running engines: Power management; kW, kVA or % load based

Extension modules

- up to 12× Inteli IO8/8 Binary input/output, analog output module
- up to 10× Inteli AIN8* Analog/Impulse input module
- up to 10× IS-AIN8 Analog input module
- up to 10× Inteli AIN8TC* (or IS-AIN8TC) Module for thermocouple measurement
- up to 4× IGS-PTM Analog/binary input/output module
- up to 4x I-AOUT8 Analog output module
- ▶ up to 4× IGL-RA15 Remote annunciator

* Available from Q2/2014

Communication modules and PC tools

InternetBridge-NT – Communication module with cellular/ethernet connection

Controlin

- I-LB+ Local bridge supporting USB communication
- I-CB ECU communication bridge
- I-CR CAN repeater module
- 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 3× InteliVision 5 New generation 5,7" colour display unit
- up to 3× InteliVision 5 RD New generation 5,7" remote colour display unit
- ▶ up to 6× InteliVision 8 8" Colour detachable display unit
- InteliVision 17Touch 17" Touchscreen display unit
- up to 3× IS-Display Detachable display module

Typical application

STANDBY SYSTEM WITH LOAD SHEDDING ADVANCED DISPLAYS

Description:

- The system guarantees emergency standby power in case of mains failure.
- InteliMains^{NT} BaseBox provides AMF function and activates mains to gen-sets changeover in the case of mains failure no break return to mains.
- Load shedding can take place during the changeover to trip the unessential load when gen-set goes to island.
- Gen-set starts, the power is ramped-up, load is reconnected. The second gen-set is started if needed (more load requires more gen-set power).
- Automatic forward and reverse synchronisation with soft load ramp-up and ramp-down during changeover is available.
- Wide range of engine and generator protections, including vector shift protection are standard features.
- Automatic optimization of number of running sets according to load can be selected.
- Automatic equalization of running hours of particular engines is available.
- History file with performance log stored in InteliGen^{NT} BaseBox allows easy backtracking and problem solving.

Scope of supply:

- ▶ 2× InteliGen^{NT} BaseBox
- 2× InteliVision 8
- 1× InteliMains^{NT} BaseBox
- 3× InteliVision 5
- 2× IG-AVRi
- 2× IG-AVRi-TRANS/LV
- 2× IGS-NT-LSM + PMS dongle

ROOMS



Functions chart

Product	InteliGen™	InteliGen ^ℕ BaseBox	InteliGen ^{™C} BaseBox	InteliSys ^{ℕℸϲ} BaseBox
Order code	IG-NT-GC	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	ontrol with feedback		•	•
Integrated PLC	Standard ²⁾	2) Standard ²⁾		Extended
Input configuration	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 ³⁾ , Modbus	CAN1, CAN2, RS232, RS485, Ethernet ³⁾ , 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	• 4)	• 4)	• 4)	• 4)
Display	LCD 128×64	External	External	External
History (max records) ⁵⁾	500	1000	1000	4000

KEY

included CAN1 for peripheral modules and ECU (J1939)

CAN2 intercontroller can: monitoring With IS-AIN8, IS-AIN8TC, IS-BIN16/8, I-OUT8 or IGS-PTM

2) More PLC blocks are available with IGS-NT-miniCHP dongle 3)

- With communication modules With IGS-NT-LSM+PMS dongle 4)
- 5)
- Depends on number of values in history record

References

Shirebrook site

Alkane Energy is a clean tech 'Gas to Power' energy company that uses methane to generate electricity in more than 20 operational sites located across the UK, running power plant ranging between 0,5 MW and 10 MW.

1)

Alkane's model uses standard scalable plant with modular containerised engine units, which are managed by mobile maintenance engineers using web based remote monitoring of engine performance data to maximise operating effectiveness across the engine fleet.

A key component towards making this achievable has been the adoption and upgrade to the latest web based engine monitoring and control systems, often replacing aging control systems with ComAp's InteliSys^{NTC} BaseBox and InteliVision 8.

Alkane also made full use of the latest pc software, ScreenEditor, to fully personalise the screen content. By using the simple toolbox maintenance engineers were able to alter factory default settings by changing screen content, background images, selecting colours and choosing engine data graphics.



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