

InteliSys^{NT}

PREMIUM AND COGENERATION GEN-SET CONTROLLER



Description

InteliSys^{NT} 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.

Detachable construction (consisting of IS-NT-BB and IS-Display or InteliVision 8) 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 co-operation of up to 32 gen-sets is a standard feature.

InteliSys^{NT} supports many standard ECU types and is specially designed to easily integrate new ones.

A powerful graphic display with user-friendly controls allows any user whatever their ability to find the information they need. The display on the basic version is capable of displaying graphical languages (e.g. Chinese).

ComAp is able to offer customized firmware solutions.

Benefits

- ▶ Support of engines with ECU (Electronic Control Unit)
- ▶ Excellent configurability to match customers' needs exactly
- ▶ Complete integrated gen-set solution incorporating built-in PLC and signal sharing via CAN bus – minimum external components needed
- ▶ Many communication options – easy remote supervising and servicing
- ▶ Perfect price/performance ratio
- ▶ Gen-set performance log for easy problem tracing



ComAp is a member of AMPS (The Association of Manufacturers of Power generating Systems).



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



Selected ComAp products have the UL Certification.

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, kVAh
- ▶ 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
- ▶ Controller redundancy
- ▶ 2x RS232/RS485 interface with Modbus protocol support; Analog/GSM/ISDN/CDMA modem communication support; SMS messages; ECU Modbus interface; secondary RS485 converter is isolated
- ▶ 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 units (IS-Display or/and IntelliVision 8)
- ▶ USB 2.0 slave interface
- ▶ Dimensions 284×180 mm (front panel)
- ▶ Sealed to IP65

Integrated fixed and configurable protections

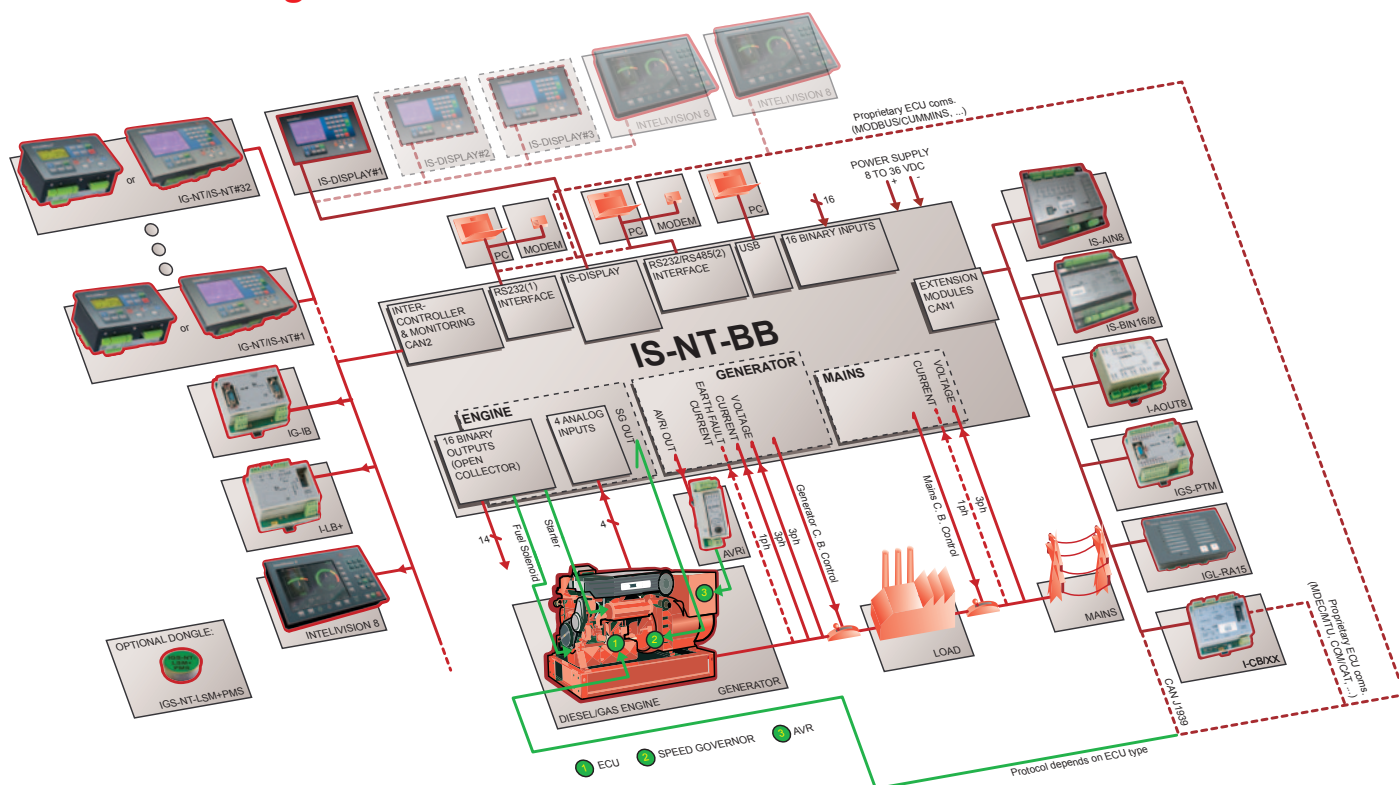
- ▶ 3 phase integrated generator protections (U + f)
- ▶ IDMT overcurrent + Shortcurrent protection
- ▶ Overload protection
- ▶ Reverse power protection
- ▶ Earth fault protection
- ▶ 3 phase integrated mains protections (U + f)
- ▶ Vector shift protection
- ▶ All binary/analog inputs free configurable 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 customer-specific protections
- ▶ Application security

ANSI CODES

| ANSI code | Protection | ANSI code | Protection |
|-----------|-------------------|-----------|-------------------|
| 59 | Overvoltage | 50N+64 | Earth fault |
| 27 | Undervoltage | 32R | Reverse power |
| 47 | Voltage asymmetry | 25 | Synchronism check |
| 81H | Overfrequency | 47 | Phase rotation |
| 81L | Underfrequency | 37 | Undercurrent* |
| 50+51 | Overcurrent | 55 | Power factor* |
| 46 | Current unbalance | 71 | Gas (fuel) level |
| 32 | Overload | | |

* can be created using universal protections

Schematic diagram



Communication modules and PC tools

- ▶ **I-CR** – CAN repeater module
- ▶ **IG-IB** – Internet bridge
- ▶ **I-LB+** – Local bridge
- ▶ **I-CB** – ECU communication bridge
- ▶ **InteliMonitor** – PC monitoring tool
- ▶ **WebSupervisor** – PC tool for Gen-set or machines fleet management
- ▶ **WinScope** – Special graphical controllers' monitoring software
- ▶ **GenConfig** – PC configuration tool

Extension modules and remote displays

- ▶ up to 4x **I-AOUT8** – Analog output extension module
- ▶ up to 2x **IGL-RA15** – Remote annunciator
- ▶ up to 4x **IGS-PTM** – Analog/binary input/output module
- ▶ up to 10x **IS-AIN8** – Analog input module
- ▶ up to 10x **IS-AIN8TC** – Analogue input module for thermocouples
- ▶ up to 6x **IS-BIN16/8** – Binary input/output module
- ▶ up to 8x **InteliVision 8** – Controller colour display unit
- ▶ up to 3x **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} 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.
- ▶ The second gen-set can be used as a backup set.
- ▶ History file with performance log stored in InteliSys^{NT} allows easy backtracking and problem solving

Scope of supply:

- ▶ 2x InteliSys^{NT}
- ▶ 2x IGS-NT-LSM+PMS dongle
- ▶ 2x InteliVision 8
- ▶ 1x InteliMains^{NT}
- ▶ 2x IG-AVRi
- ▶ 2x IG-AVRi-TRANS/LV

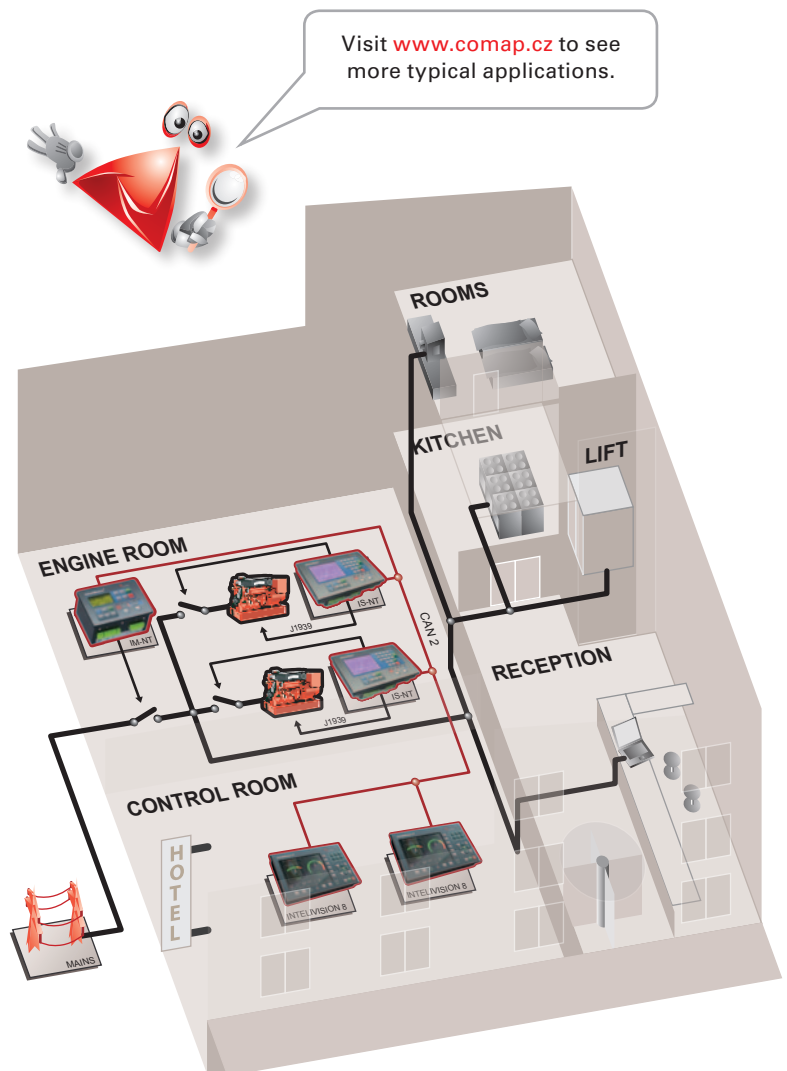
Upgrade kits

▶ IGS-NT-LSM+PMS dongle:

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

HW modifications

| Base box | Display | Brief info |
|-----------------|-------------------|---|
| IS-NT-BB | InteliVision 8 | Control unit with detachable color display |
| IS-NT-BB | IS-DISPLAY | Control unit with detachable monochromatic display |
| IS-NT-BB MARINE | InteliVision 8 | Marine certified control unit with detachable color display |
| IS-NT-BB MARINE | IS-DISPLAY MARINE | Marine certified control unit with detachable monochromatic display |
| IS-NT-BB | IS-DISPLAY LT | Control unit with detachable monochromatic display for operation down to -40° C |



InteliSys^{NT} RELATED PRODUCTS

InteliSys^{NT} Marine

PREMIUM MARINE CERTIFIED GEN-SET CONTROLLER

- ▶ InteliSys^{NT} Marine is an expandable controller for both single and multiple gen-sets operating in standby or parallel modes for marine applications.
- ▶ InteliSys^{NT} Marine = IS-NT-BB + IS-Display Marine or IS-NT-BB + InteliVision 8



InteliGen^{NT}

GENERAL PURPOSE HIGH-END GEN-SET CONTROLLER

- ▶ InteliGen^{NT} is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes.



InteliGen^{NT} Marine

HIGH-END MARINE CERTIFIED GEN-SET CONTROLLER

- ▶ InteliGen^{NT} Marine is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes for marine applications.



InteliMains^{NT}

MAINS SUPERVISION CONTROLLER

- ▶ InteliMains^{NT} is designed for multiple (up to 31) gen-sets operating in parallel to mains. The InteliMains^{NT} controller connects the group of gen-sets to the mains. It can serve as a bus-tie synchronizing controller between two groups of gen-sets.



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