

Control Systems Product Overview





InteliLite^{NT}

MRS



InteliLite^{NT} MRS models are integrated controllers for single engine control in Manual and Remote Start applications, featuring full gen-set monitoring and protection.

The 4 MRS models are identified by a number which defines model capability (10, 11, 15, 16).

** Stated features available on this model*

- ▶ Support of engines equipped with ECU – J1939 interface (15, 16)*
- ▶ Automatic or manual start/stop of the gen-set
- ▶ Push buttons and LEDs for simple control
- ▶ Parameters adjustable via keyboard or PC
- ▶ 3 phase Generator protections
- ▶ Generator measurements (50/ 60 Hz): U1-U3, I1-I3, Hz, kVA, kW, kVAR, kWh
- ▶ Configurable programmable inputs and outputs
- ▶ Event based history file (15, 16)*

InteliLite^{NT}

AMF



InteliLite^{NT} AMF models are integrated controllers for gen-sets operating in single standby mode. It meets all possible requirements for AMF applications, including modem control, user configuration and full gen-set monitoring and protection.

The 2 AMF models are identified by a number which defines model capability (20, 25).

** Stated features available on this model*

- ▶ Support of engines equipped with ECU – J1939 interface (25) *
- ▶ Automatic or manual start/ stop of the gen-set
- ▶ Push buttons and LEDs for simple control
- ▶ Parameters adjustable via keyboard or PC
- ▶ Mains measurements (50/60 Hz): U1-U3, Hz
- ▶ Generator measurements (50/ 60 Hz): U1-U3, I1-I3, Hz, kVA, kW, kVAR, kWh
- ▶ Configurable programmable inputs and outputs
- ▶ Event based history file (25)*

InteliCompact^{NT}



InteliCompact^{NT} models are new integrated controllers for gen-sets operating in both standby and parallel modes. Functionality, optimized for ease of use, installation and configuration, includes built-in synchronizer and digital isochronous load sharer. Native cooperation of up to 32 gen-sets is a standard feature.

- ▶ AMF, continuous parallel function
- ▶ Support of engines equipped with ECU (J1939, Modbus and other proprietary protocols); alarm codes displayed in text form
- ▶ Baseload
- ▶ Optimizing of the number of running engines in multi-gen-set mode
- ▶ Inputs/outputs configurable for various customer needs
- ▶ Event based history file

MainsCompact^{NT}



MainsCompact^{NT} is designed for multiple (up to 31) gen-sets controlled by InteliCompact^{NT} and operating in parallel to mains. MainsCompact^{NT} controller connects the group of gen-sets to the mains.

- ▶ Mains measurement: U, I, Hz, kW, kVAR, kVA, PF, kWh, kVAhr
- ▶ Bus measurement: U, I, Hz
- ▶ Mains failure detection using integrated mains protections
- ▶ Systems with as well as without master generator breaker supported
- ▶ Configurable level switches based on mains import or object consumption
- ▶ Event based history file

InteliGen^{NT}



InteliGen^{NT} is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. Compact construction is optimized for these purposes; various HW modifications allow the customer to select the optimum type for a particular application.

- ▶ AMF, continuous parallel function
- ▶ Support of engines equipped with ECU (J1939, Modbus and other proprietary protocols); alarm codes displayed in text form
- ▶ Baseload, Import/Export, Analog extern load control
- ▶ Optimizing of the number of running engines in multi-gen-set mode
- ▶ Inputs/outputs configurable for various customer needs
- ▶ Event based history file with up to 500 records

Gen-set controllers



InteliSys^{NT}



InteliSys^{NT} is an expandable controller for both single and multiple gen-sets operating in standby or parallel modes, especially in CHP and other complex applications. Detachable construction (consisting of IS-NT-BB and IS-Display or InteliVision) allows easy installation with the potential for many different extension modules designed to suit individual customer requirements.

- ▶ CHP support (programmable PID loops and other built-in PLC functions)
- ▶ Support of engines equipped with ECU (J1939, Modbus and other proprietary protocols); alarm codes displayed in text form
- ▶ Baseload, Import/Export, Analog extern, TempByPower load control
- ▶ Optimizing of the number of running engines in multi-gen-set mode
- ▶ Inputs/outputs configurable for various customer needs
- ▶ Event based history file with up to 1000 records

InteliMains^{NT}



InteliMains^{NT} is designed for multiple (up to 31) gen-sets operating in parallel to mains. InteliMains 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.

- ▶ Mains measurement: U, I, Hz, kW, kVA, kVA, PF, kWh, kVAhr
- ▶ Bus measurement: U, I, Hz
- ▶ Mains failure detection using integrated mains protections
- ▶ Bus-tie application
- ▶ Selectable partial or full MCB control
- ▶ Configurable level switches based on mains import or object consumption
- ▶ Event based history file

ATS controllers



InteliATS^{NT}



InteliATS^{NT} models are new controllers designed to monitor the AC mains supply for under/over voltage, under/over frequency and voltage unbalance. Any mains supply disproportion causes the remote gen-set start and makes change over for both generator and mains contactors. The gen-set requires a remote start type control unit (e.g. the ComAp InteliLite^{NT} MRS 10 controller).

The models are identified by a name which defines model capability (STD, PWR).

- ▶ Automatic transfer between mains and generator power
- ▶ On-site controller configuration
- ▶ Remote configuration and monitoring
- ▶ Inputs/outputs configurable for various customer needs
- ▶ Mains measurements U1-U3, Hz
- ▶ Generator measurement U1-U3, Hz
- ▶ I1-I3, kVA, kW, kVA, kWh (PWR)**
- ▶ Active SMS/E-mails (PWR)**
- ▶ Event based history file (PWR)**

** The product will be available in Q4 2008.*

*** Stated features available on this model*

Generator controllers



InteliGen^{NT}® GeCon



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

- ▶ Cooperation with the engine controller is achieved using minimum inputs and outputs. GeCon does not take care about engine control – adjustable option
- ▶ Accepts external control of the engine and breaker manually
- ▶ Baseload, Import/Export, Analog extern load control
- ▶ Optimizing of the number of running engines in multi-gen-set mode
- ▶ Inputs/outputs configurable for various customer needs
- ▶ Event based history file with up to 500 records

Engine controllers



InteliDrive® Lite



InteliDrive Lite is a cost effective sophisticated engine controller, which features outstanding control, monitoring and protection for both mechanical and electronic diesel / gas engines in one unit. The extended product family offers a range of engine specific versions suitable for land-based and marine non classified applications.

- ▷ Engine control, monitoring and protection
- ▷ J1939 interface supporting wide range of EFI engines
- ▷ Speed measurement from pickup or from J1939
- ▷ 6 binary inputs and outputs, 3 analog inputs
- ▷ Input/outputs configuration
- ▷ Setpoints adjustable via keyboard or PC
- ▷ Password protection

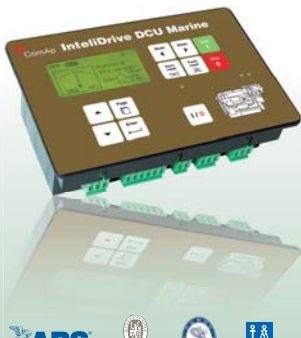
InteliDrive® DCU INDUSTRIAL



InteliDrive® DCU Industrial is a highly flexible sophisticated engine controller, which features outstanding control, monitoring and protection for both mechanical and electronic diesel / gas engines as well as peripheral equipment. Industrial software contains a set of programmable functions like comparators, timers, PID loops, logic functions and others for easy solution of any industrial application.

- ▷ Engine sequencing and control
- ▷ J1939 interface supporting wide range of EFI engines
- ▷ Engine monitoring and protections
- ▷ Integrated PLC
- ▷ Speed measurement from magnetic pick-up or from J1939
- ▷ Running hours meter, number of starts counter
- ▷ 14 binary inputs, 14 binary outputs, 8 analog inputs
- ▷ Input/output configuration
- ▷ Setpoints adjustable via keyboard or PC
- ▷ Recommended extension: ID-SCM, ID-SCM1

InteliDrive® DCU MARINE



InteliDrive® DCU Marine is an engine controller designed specially to meet the demanding needs of the marine market; providing a high level of performance coupled with extensive J1939/J1587 communication capabilities and incorporating hardwired safety functions and primary/secondary power switching.

- ▷ Engine sequencing and control
- ▷ Engine monitoring and protection
- ▷ Configurable J1939 interface with electronic engines including ECU Alarm indication
- ▷ Redundant module ID-RPU with hardwired safety functions activated in backup mode
- ▷ Automatic switchover to backup mode in case of detection of main unit failure
- ▷ Setpoints adjustable via keyboard or PC
- ▷ Recommended extension: ID-RPU



Off-road machinery controllers



InteliDrive® MOBILE



InteliDrive Mobile is designed for harsh environment of mobile equipment such as vehicles. It is a highly flexible sophisticated controller, which features outstanding control, monitoring and protection for diesel and gas engines as well as driven technology. The new controller offers range of engine specific versions.

- ▷ Engine control, monitoring and protections
- ▷ Integrated PLC for driven technology control
- ▷ J1939 interface supporting wide range of EFI engines
- ▷ Internal GSM modem and GPS location
- ▷ Configurable 16 binary inputs, 16 binary outputs, 8 analog inputs, 8 analog in (or) outputs for hydraulic proportional valves
- ▷ Operating temperature: -25°C - +70°C (optionally -40°C - +85°C)
- ▷ Enclosure IP67
- ▷ Anti condensation (Gore Membrane Venting)



Extension modules

IS-AIN8

Analogue input module, 8 inputs, CAN bus connection.

IS-BIN16/8

Binary input/output module, 16 inputs, 8 outputs, CAN bus connection.

I-AOUT8

Analogue output module, 8 outputs, CAN bus connection.

IGS-PTM

Input/output module designed for PT100 sensors, 8 binary and 4 analog inputs, 8 binary and 1 analog output.

IG-IOM

Input/output module, 8 binary and 4 analog inputs, 8 binary and 1 analog output.

ID-SCM

Interface module for IntelliDrive controllers for full support of internal PLC; 3 analog outputs, 2 frequency inputs, 2 impulse inputs.

ID-SCM1

Cost effective Analog Speed Governor interface with one 10V or 20 mA output.

ID-RPU

Redundant engine protection unit for IntelliDrive DCU Marine controllers.

IL-NT AOUT8

8 analog gauges plug-in interface module for IntelliLite^{NT}, Intelli/MainsCompact^{NT} and IntelliDrive Lite controllers.

NT-Converter

Load sharing interface module for IntelliGen^{NT} and IntelliSys^{NT} controllers.

IGL-RA15

Extension signalling unit for Intelli controllers, 15 LEDs with configurable colors.

Communication modules

IL-NT RS232 + RS485

RS232 + RS485 plug-in interface for IntelliATS^{NT}, IntelliLite^{NT}, Intelli/MainsCompact^{NT} and IntelliDrive Lite controllers.

IL-NT S-USB

USB service interface for IntelliATS^{NT}, IntelliLite^{NT}, Intelli/MainsCompact^{NT} and IntelliDrive Lite controllers.

IB-Lite

Ethernet module for IntelliATS^{NT}, IntelliLite^{NT}, Intelli/MainsCompact^{NT} and IntelliDrive Lite controllers.

IL-NT RS232

Extension board containing RS232 port for IntelliATS^{NT}, IntelliLite^{NT}, Intelli/MainsCompact^{NT} and IntelliDrive Lite controllers.

I-LB / I-LB+

Direct, modem or USB (I-LB+ version only) connection to multiple controllers, RS485, Modbus support for direct connection.

IG-IB

Internet bridge enables remote connection between controllers and superior service or monitoring software using ethernet or modem connection.

I-CR

Used for CAN bus extension in cases where the maximum distance limit would be exceeded.

ID-COM

IntelliDrive communication module.

ECU Communication modules

I-CB / (CAT DIESEL, CAT GAS, MTU MDEC, Deutz TEME)

Communication bridge for the mentioned engines with nonstandard communication interface.

Remote displays

I-RD-CAN

Remote signalling and control unit with CAN and RS232 interface for IntelliDrive controllers.

IG-Display

Additional display module for IntelliGen^{NT} controllers.

IS-Display

Detachable display module for IntelliSys^{NT} controllers.

IntelliVision

Controller display unit. New generation color display unit for either IntelliGen^{NT}, IntelliSys^{NT} or IntelliDrive controllers.



Simulators

StarterKit

Portable simulator for Intelli controllers.

MultiKit

Simulator of multiple gen-set applications with IntelliCompact^{NT}, IntelliGen^{NT} or IntelliSys^{NT} controllers.

MultiKit H

Simulator of complex site with 2 mains feeders and bus-tie breaker.

Additional modules

IG-AVRi

Interface between IntelliCompact^{NT}, IntelliGen^{NT} or IntelliSys^{NT} and generator AVR.

I-LBA

Starting undervoltage controller protection.

I-RB16/8

Relay board with 16/8 relays.



InteliMonitor

PC monitoring tool for Inteli controllers.



GenConfig

PC configuration tool for InteliGen^{NT} and InteliSys^{NT} controllers.



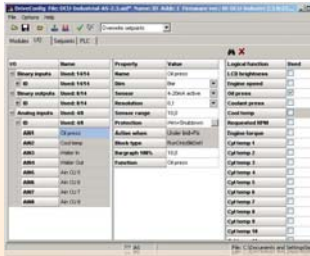
LiteEdit

PC tool for configuration and monitoring of InteliATS^{NT}, InteliLite^{NT}, Inteli/MainsCompact^{NT} and InteliDrive Lite controllers.



DriveConfig

PC tool for InteliDrive controllers configuration.



DriveMonitor

PC tool for InteliDrive controllers monitoring.



WinScope

Special graphical controllers' monitoring software.



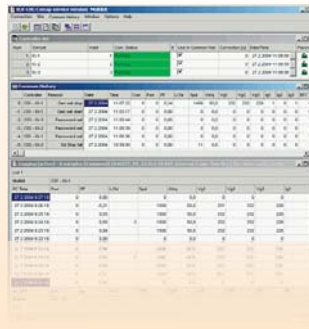
InteliSupervisor

SW tool for Gen-set fleet management.



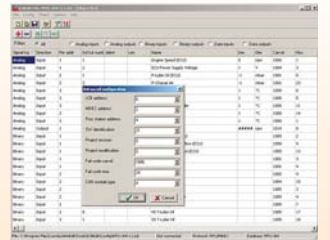
IGS-LOG

Continuous monitoring of Single & Multiple gen-set controllers.



I-CBEdit

Software tool for configuration of I-CB.



IL-NT IC-NT MC-NT IG-NT IS-NT IM-NT IA-NT ID

InteliMonitor	■	■	■	■	■	■	■	■
GenConfig				■	■	■		
LiteEdit	■	■	■					■*
DriveConfig								■
DriveMonitor								■
WinScope	■	■	■	■	■	■	■	■
InteliSupervisor				■	■			
IGS-LOG						■		
I-CBEdit				■	■			■

What do all those abbreviations mean?

- NT** – New Technology controller family
- IL** – InteliLite[®] controller
- IC** – InteliCompact controller
- MC** – MainsCompact controller
- IG** – InteliGen[®] controller
- IS** – InteliSys[®] controller
- IM** – InteliMains controller
- IA** – InteliATS controller
- ID** – InteliDrive[®] controller
- ATS** – Auto Transfer Switch
- AMF** – Auto Mains Failure
- MRS** – Manual Remote Start
- CHP** – Combined Heat & Power

* InteliDrive Lite only

Mains protections



NPU-FUV

3-phase mains protection:

- ▶ Vector shift protection
- ▶ 2 stage over/under frequency protections
- ▶ 2 stage over/under voltage protections
- ▶ Voltage asymmetry protections

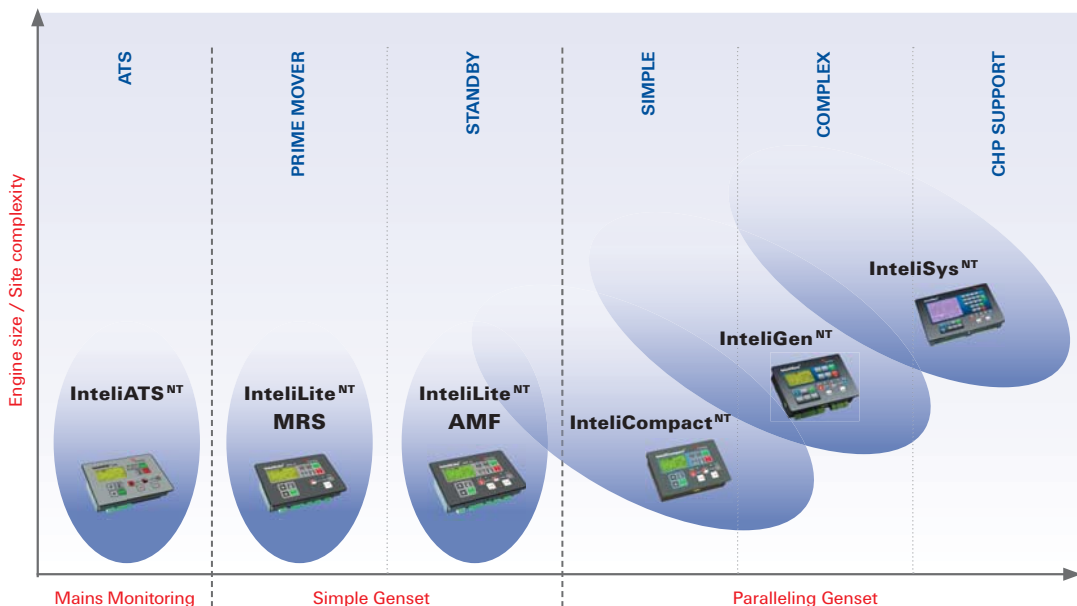
InteliProtec

Integrated protection solution for generators operating in parallel to mains applications. Incorporates:

- ▶ 2 stage over/under voltage protections
- ▶ 2 stage over/under frequency protections
- ▶ Vector shift
- ▶ Rate of change of frequency
- ▶ Over current, NVD
- ▶ Reverse power
- ▶ Earth fault protections
- ▶ Short term parallel protection



POWER GENERATION CONTROLLER OVERVIEW



InteliVision

InteliVision is a new generation display unit for either InteliGen^{NT} / InteliSys^{NT} or InteliDrive controllers. It is designed as a simple, easy to use Plug and Play solution, which also features our unique TRENDS monitoring as a standard feature.



The interactive simulator provides a taste of the new InteliVision, with demo and preview options illustrating screen information and function.



www.comap.cz/intelivision



Hotel Hyatt Regency Acapulco, Mexico

The Hyatt Regency Acapulco Hotel has a prime location on the Bay of Acapulco overlooking the Pacific Ocean and situated in the heart of the city. To ensure guests do not have their holiday experience spoiled by a power failure, the hotel has a stand-by emergency power supply provided by a 1000kW Caterpillar generator.

ComAp provided the updated switchboard, through Dupont Electric México, with the new control panel featuring ComAp's IntelliGen controller for full automatic synchronization and load management plus IG-timer to provide a time management function for the system.

Shearing machines, Belgium

Lefort S.A. is a recognised world leader in the design and manufacture of mobile shearing machines specialising in hydraulic shear balers and fragmentizers for processing scrap iron, metal sheet and bulky items.

The equipment is driven by a hydraulic pump coupled to a SCANIA engine (supplied by Werkhuizen Fr. Stevens NV) which is controlled by IntelliDrive DCU Industrial. The machine works as a big guillotine (scissor) and is designed to initially cut and then compress scrap metal into smaller pieces. The IntelliDrive DCU Industrial provides complete system management as well as controlling the hydraulic pressure by means of a standard integrated, free configurable PLC function.



„As one of the largest OEM for Volvo Penta in Asia we have chosen ComAp products as they feature functions essential for our market – such as Chinese /English language, and they have proved excellent in communicating with Volvo engines“.
Eric Wang, **Baifa Power, Wuxi, China**



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WinScope



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