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MOTORTECH®

ALL-IN-ONE

MOTORTECH GAS ENGINE MANAGEMENT

Gas Engine Management – ALL-IN-ONE

For monitoring, controlling, regulating and system protection. ALL-IN-ONE.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.

Modular design (consisting of AIO.NT-controller and AIO.NT- or AIO.VISION-display) allows easy installation with the ability to add many different extension modules designed to suit individual customer requirements.

Built-in synchronizing, digital isochronous load sharing and air-fuel-ratio functions (requires additional dongle) 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.



AIO.NT supports many standard ECU (electronic control unit) 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).

Benefits

- Support of engines with ECU (Electronic control unit)
- Excellent configurability to match customer´s 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
- Air-Fuel-Ratio function for lean burn gas engines

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
- Controller redundancy
- 2× 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 (3× AIO.NT- or AIO.Vision-display)
- 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

Try the alternative.
Call the nearest MOTORTECH sales partner for more information.

InteliMains
- Import/Export
- Load Sharing
- Power Plant Managment
- Grid Monitoring
- Running Hours Optimization

InteliPro
- Designed to meet utility protection requirements
- Combines standard and optional features
- Advanced communications
- Data/event logging

or

MainsPro
- Protective functionalities
- Free assignment of 5 relay outputs
- 4 binary switches to remotely change operation of the unit
- Last trip recorded in order to provide the evidence of cause of trip





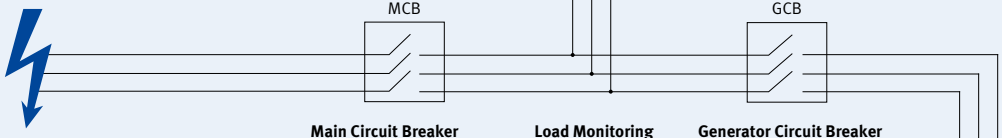


Generator
- 3 Phase Monitoring
- Over/Under Frequency
- Over/Under Voltage
- Interrupt free reverse synchronizing
- Overload Protection
- TempByPower load control
- Reverse Power Protection
- Load Surge Protection
- Voltage and PF Control (AVR)

LOAD

MCB

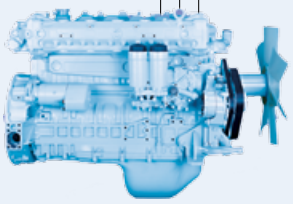
GCB



Main Circuit Breaker
- Control
- Reverse Synchronization
- Grid Monitoring

Load Monitoring
- Base Load
- Import/Export
- Peak Shaving

Generator Circuit Breaker
- Control Synchronization







Modem
- Remote Control
- Internet Bridge

GSM
- Active/Passive calls
- SMS Service

PC Monitoring Tool
- Visualization
- Programming

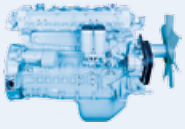
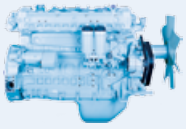
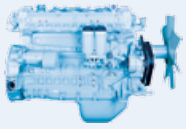
CAN2



up to 32 gensets





CAN1

Engine Managment (ECU)
- Speed Measurement/Control
- Engine Monitoring and Protection
- Exhaust Gas Temperature monitoring
- Air/Fuel Ratio Control
- Start/Stop Routines

Ethernet (only AIO.NTC-BB)

AIN8 / BIN16/8 / I-AOUT8 Modules etc.
- Digital inputs (80 max)
- Digital outputs (48 max)
- Analog inputs (84 max)
- Analog outputs (33 max)
- All kind of sensors usable (programmable)
- Status LEDs for In- and outputs



RS 232 / RS 485
- Modbus
- Direct PC-Connection
- Modem Connection
- SMS Managment
- Active Calls
- Internet



up to 32 devices

ALL-IN-ONE – Gas Engine Management – ALL-IN-ONE.NT/.NTC Controllers

P/N	Description
63.50.102	ALL-IN-ONE.NT controller – cogeneration Gen-Set controller (incl. AFR control)
63.50.102-HSS	ALL-IN-ONE.NT controller – cogeneration Gen-Set controller P/N 63.50.102 incl. plug-on module I-HSS-BIN6/10
63.50.104	ALL-IN-ONE.NTC controller – universal Gen-Set controller (incl. AFR control and AirGate® technology)
63.50.104-HSS	ALL-IN-ONE.NTC controller – universal Gen-Set controller P/N 63.50.104 incl. plug-on module I-HSS-BIN6/10
63.50.082	Mini-ALL-IN-ONE controller – universal controller for small Gen-Sets (incl. AFR control)

ALL-IN-ONE – Gas Engine Management – Display Units for ALL-IN-ONE.NT/.NTC Controllers

P/N	Description
63.50.105	ALL-IN-ONE.Vision display – 5.7 in. color display unit for ALL-IN-ONE.NT and ALL-IN-ONE.NTC controller
63.50.101	ALL-IN-ONE.Vision display – 8.0 in. color display unit for ALL-IN-ONE.NT and ALL-IN-ONE.NTC controller
63.50.115	ALL-IN-ONE.Vision display – 17.0 in. color display unit for ALL-IN-ONE.NT and ALL-IN-ONE.NTC controller for multiple Gen-Sets – touch screen
63.50.103	ALL-IN-ONE.NT display – detachable display unit for ALL-IN-ONE.NT and ALL-IN-ONE.NTC controller

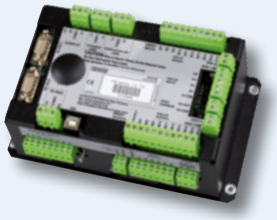
ALL-IN-ONE – Gas Engine Management – Dongles for ALL-IN-ONE.NT/.NTC Controllers



P/N	Description
63.50.061	Hardware dongle for ALL-IN-ONE.NT/.NTC controllers - AFR-PCM • Enables single isolated parallel with mains • Power management operation (with CAN Bus)
63.50.062	Hardware dongle for ALL-IN-ONE.NT/.NTC Controllers - AFR-PCLSM+PMS • 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 • Air/Fuel Ratio function for lean burn gas engines
63.50.085	Hardware dongle for Mini-ALL-IN-ONE - miniAFR-PCM • Enables single isolated parallel with mains for applications up to 75 kW (el.) • Air/Fuel Ratio function for lean burn gas engines • For applications up to 75 kW (el.)

AIO.NT/.NTC Controllers

AIO.NT Controller
P/N 63.50.102



AIO.NTC Controller
P/n 63.50.104



Available Display Units for AIO.NT/.NTC Controllers



AIO.Vision (17.0 in.)
P/N 63.50.115



AIO.Vision (8.0 in.)
P/N 63.50.101



AIO.Vision (5.7 in.)
P/N 63.50.105



AIO.NT
P/N 63.50.103

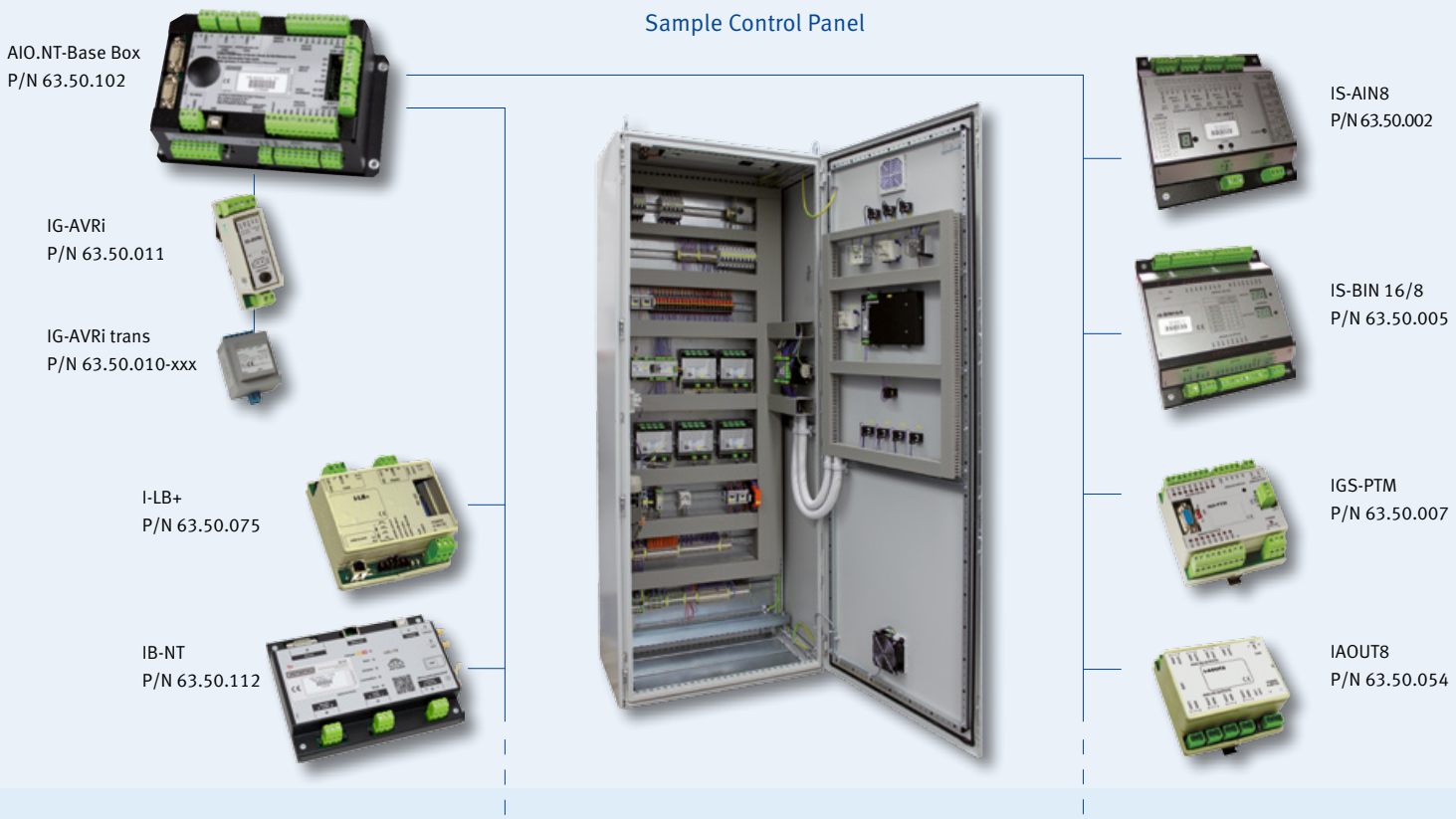
ALL-IN-ONE – Gas Engine Management – Other Controllers

P/N	Description
63.50.064	Mains supervision controller – IM-NT
63.50.064-BTB	Mains supervision controller Bus Tie Breaker – IM-NT BTB
63.50.064-MCB	Mains supervision controller Main Circuit Breaker – IM-NT MCB

ALL-IN-ONE - Gas Engine Management – Accessories

P/N	Supersedes	Description
63.50.002		Analog input module – AIN8
63.50.108		Analog input module (for thermocouples only) – AIN8TC
63.50.005		Binary input/output unit – IS-BIN16/8
63.50.007		Analog/binary input/output unit – IGS-PTM
63.50.007-HSS		Analog/binary input/output unit P/N 63.50.007 incl. plug-on module I-HSS-BIN8
63.50.011		AVR interface module – IG-AVRi
63.50.010-100		Power supply transformer for IG-AVRi module, 100-120 VAC, 50-60 Hz
63.50.010-230		Power supply transformer for IG-AVRi module, 230-480 VAC, 50-60 Hz
63.50.054		Analog output module – I-AOUT8
63.50.075	63.50.006	Modem unit – I-LB+
63.50.112	63.50.022	Internet bridge communication module – IB-NT
63.50.088		CAN repeater – I-CR

Sample Control Panel



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We buy equipment

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