

- Engineering services for specific applications
- Fully compatible with with all speed governors & AVRs
- SD card reader, Ethernet
- Marine sequencies

# GENSYS 2.0 CORE MARINE



Core unit for all-in-one generator control & paralleling unit with integrated PLC : PMS

**PART NUMBER**

A53Z4

**SOFTWARE**

CRE Config / Easy PLC

**CABLE**

A53W1

**ASSOCIATED PRODUCTS**

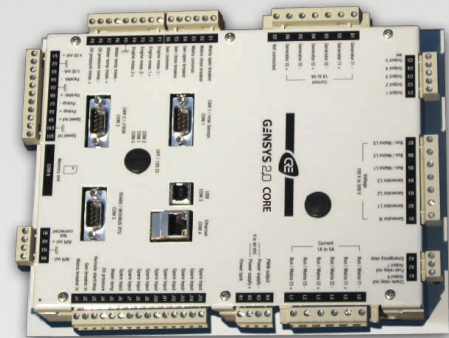
GENSYS 2.0

Complementary:

RDM2.0

The GENSYS 2.0 CORE MARINE is an easy-to-use rear-mounted, control and paralleling module which can synchronize up to 32 generators.

GENSYS 2.0 CORE MARINE is configured with CRE Config software or via its embedded Web site.



### PROGRAMMING BY EQUATIONS

The GENSYS 2.0 CORE MARINE module is on its own right as logical equations and sequences can be programmed directly by the user with a Easy PLC software (cf p 66) or a simple text editor software.

### INPUTS / OUTPUTS EXTENSION

The number of inputs/outputs that can be added is one of the most important on the market. Extension modules (DIN rail mounting) can be added on the CAN bus. This extends a large number and a large diversity of inputs/outputs up to 128 digital inputs, 64 digital outputs, 44 analog inputs, 32 analog outputs and CANopen standard module.

### MINIMUM OPTIONS

The GENSYS 2.0 CORE MARINE is offered full features with a minimum of options to fit all types of application without expensive add-on packages. For specific needs, the following options are available:

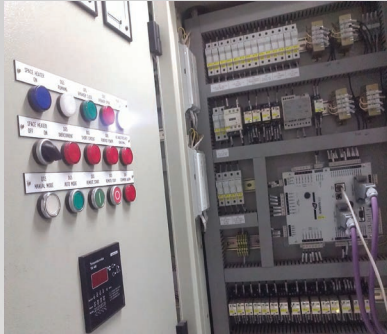
- Phase shift compensation (ie: Dyn11)

### INTER-UNIT ISOLATED CAN BUS

The GENSYS 2.0 CORE MARINE features an isolated CAN bus dedicated to inter-module communication (dead busbar management, static paralleling, kW and kVAR load sharing...).

CAN bus technology provides high reliability communication while maintaining low wiring cost and complexity.

## GENSYS 2.0 Core Marine - Core unit for all-in-one generator control & paralleling unit with integrated PLC : PMS



### FEATURES

#### Control and management

- Manual and automatic engine control.
- Automatic start/stop control depending on load demand.
- Dead busbar management.
- Isochronous or droop kW load sharing control (via CAN bus serial port, up to 32 generators)
- Constant voltage (or droop) kVAR load sharing control (via CAN bus, up to 32 generators)
- kW control (base load or peak shaving) when paralleling with mains.

#### Protections

- Generator electrical protections: <F, >F, <U, >U, >I, >In, >P, <P, <-P, >Q, <Q, <-Q
- Mains electrical protections (option) : <F, >F, <U, >U, >P, <P, <-P, >Q, <Q, <-Q, phase shift, df/dt.
- Phase sequence protection, phase shift compensation.

#### Synchronization

- Manual and automatic frequency and phase synchronization (differential frequency meter + synchroscope available on screen).
- Manual and automatic voltage synchronization (differential voltmeter available on screen).

#### Alarms and events

Up to 2000 events are recorded on non volatile memory.

- Data logging.

#### Other

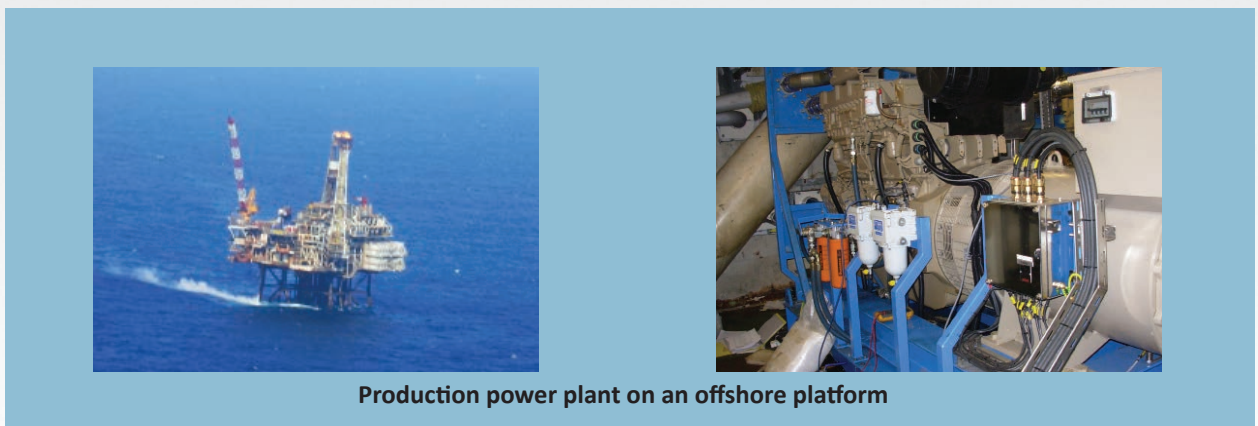
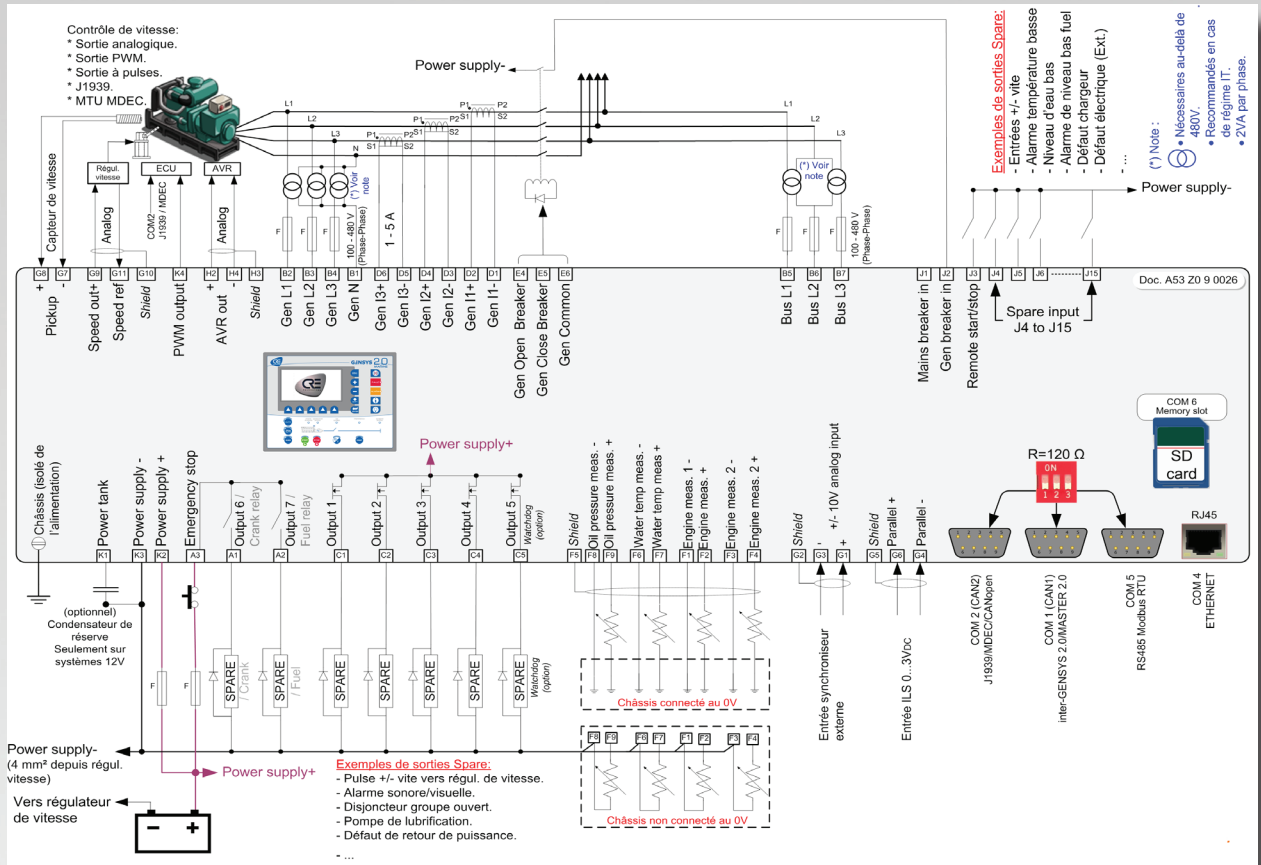
- "Watchdog" digital output for microprocessor life signal.

Our range of marine certified products, can meet a maximum of features and marine applications: synchronization and power management, uneven load sharing protection, paralleling between gensets and with shore, unbalance power management.



Military project (Minehunter vessel)

# GENSYS 2.0 Core Marine - Core unit for all-in-one generator control & paralleling unit with integrated PLC : PMS



## CRE TECHNOLOGY services

Like every CRE Technology product, the unit also benefits from our technical support. CRE Technology and their distributors can also provide pre-programmed GENSYS 2.0 MARINE according to customer requirements.

The company offers specific trainings to control the large GENSYS 2.0 MARINE applications and program the module.



## GENSYS 2.0 Core Marine - Core unit for all-in-one generator control & paralleling unit with integrated PLC : PMS

### CHARACTERISTICS

#### Current, voltage and frequency

- DC voltage power supply input: 8 to 40V<sub>DC</sub>, 600mA at 12V<sub>DC</sub> and 300mA at 24V<sub>DC</sub>.
- AC voltage inputs: 100 to 480V<sub>AC</sub>, 100mA max. Neutral terminal does not need to be connected.
- AC current inputs: 0 to 5A, 1VA. Each phase is isolated from the others.
- AC current overload: 15A during 10s.
- Frequency measurement: 45 to 70 Hz – 15V<sub>AC</sub> minimum between phase and neutral.
- Voltage control signal: the voltage control (AVR) is made either by a +/- 5V<sub>DC</sub> output with adjustable span and offset or by digital outputs +/- pulses.

#### Environment

- Operating temperature: -20 to +70°C
- Storage temperature: -30 to +80°C
- Humidity: 5 to 95%. Tropic-proof circuits for normal operation in humid conditions.
- IP20

#### Certifications

- European Union Directives: EN 50081-2, EN 50082-2, 73/23EEC
- DNV

#### Ports

- Isolated communication ports:
  - RS485 for Modbus RTU (read and write)/ male Sub-D 9 pins 120 Ω resistor selected by micro-switch.
  - CAN bus for inter-module connection: male Sub-D 9 pins 120 Ω resistor selected by micro-switch
  - CAN bus dedicated to options J1939, CANopen, I/O extensions: male Sub-D 9 pins 120 Ω resistor selected by micro-switch
  - Ethernet: PC communication/GENSYS2.0 CORE MARINE and RDM2.0 MARINE connection/Modbus TCP
- SD card reader

#### Size and weigh

- Size: 250x200x57mm (9.84x7.87x2.24in)
- Panel cut out: 177x228mm (6.97x8.98in)
- Weight: 1,9kg (4.2lb)

#### Inputs, outputs

- Emergency stop input: normally closed 24V.
- Relay outputs (crank and fuel): 5A. The 24V is provided through the emergency push button.
- Relay outputs (breakers): 5A, 230V<sub>AC</sub> max. NO + NC available.
- Transistor outputs: 350mA, over-current protected.
- Analog inputs (oil pressure and water temp): 0 to 400 Ω. Calibration is configurable.
- Analog inputs (spare 1 and spare 2): 0 to 10kΩ.
- Calibration for speed and frequency control is made either by a +/-10V<sub>DC</sub> output with adjustable span and offset or by speed+/speed- contacts.
- Magnetic pick up input: 100 to 10.000Hz, 2V<sub>AC</sub> minimum.
- PWM output for CAT and Perkins engines