GENSYS 2.0 LT

All-in-one genset control and paralleling unit

- Compact “all-in-one” module
- Isolated serial ports: RS485, 2 CAN bus,
- SD card reader , Ethernet
- New multi-function graphic display
- Fully compatible with all speed governors and AVRs
- J1939 communications with electronic engines
- Mains paralleling function

The GENSYS 2.0 LT is a control unit designed for generator electrical panels.

This “all-in-one” unit combines all necessary functions:

- **Three phase mains failure**
- **Engine start/stop and protections**
- **Alternator control and protections**
- **Mechanical parameters display**
- **Electrical parameters display**
- **Genset synchronization**
- **Load sharing and kW control**
- **Load sharing and kVAR control**

GENSYS 2.0 LT is configurable via its front panel or via a PC with CRE Config Software.

The GENSYS 2.0 LT controller has analog load sharing lines and is compatible with all types of analog load sharing modules.

MINIMUM OPTIONS

This compact controller is offered with a minimum of options to fit all types of application without expensive add-on packages. The GENSYS 2.0 LT unit is recommended for all types of power plant, from 1 to 32 generators.

For specific needs, GENSYS 2.0 LT can include the following options:

- Phase shift compensation (ie: Dyn11)
- External start module management

INTER-UNIT ISOLATED CAN BUS

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

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

APPLICATIONS

- Turbo-alternator
- Synchronization and power management module (without engine start sequence).
- 1 generator in change over mode with mains.
- 1 generator in no break charge over.
- 1 generator in parallel with mains: base load or peak shaving.
- 2 to 32 gensets in parallel and change over with mains.
- 2 to 32 gensets in parallel and paralleled with mains for load transfer. In this case, the MASTER 2.0 is used for mains paralleling via CAN bus.
- Static paralleling (engine stopped).

focus on

CRE CONFIG SOFTWARE

CRE Technology has developed a new software, that can be used with the GENSYS 2.0 LT module. It is PC operated via an Ethernet communication port.

This user friendly software allows you to control, configure and monitor your power plant.

After logging, you will access the 3 modes of the interface:

Scada mode:

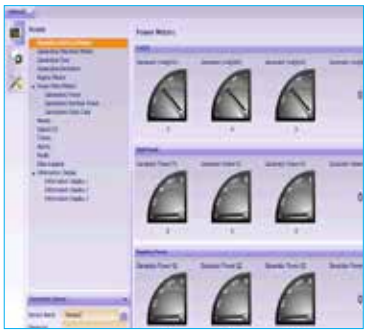
Monitors electrical, mechanical parameters and above all supervises your engines in real time.

Configuration mode:

Configures the GENSYS 2.0 LT parameters by changing functions like input / output, start/stop or speed control, amongst others.

System mode:

Configures general parameters (date, time, screen saver, language,...). CRE Config software can configure and monitor multiple GENSYS 2.0 simultaneously.



GENSETS WITH MAINS

A MASTER 2.0 unit can be used when several generators are paralleled with mains:

- CAN bus communication with GENSYS 2.0 LT units
- Three phase mains failure
- Paralleled gensets with several mains control
- Electrical protection for power plant and mains
- Electrical parameters display for power plant and mains
- Manual and automatic paralleling with mains (frequency, phase and voltage)
- Power factor control when paralleling with mains.
- kW power management with several modes:
- No break change over with load transfer
- Permanent paralleling in base load
- Permanent paralleling in peak shaving mode (export/import)

GENSYS 2.0 LT

FEATURES

Control and management

- Manual and automatic engine control.
- J1939 compatibility (Cummins, Volvo, Scania, MTU, CAT...)
- 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 serial port, up to 32 generators)
- Power factor control when paralleling with mains.
- 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, df/dt, vector jump.
- 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).
- Static paralleling.

Information display

- Engine parameters display: oil pressure, water temp, speed, hours run meter...
- Generator electrical parameters display:
  - Phase-phase Voltage (3 phase RMS)
  - Phase-neutral Voltage (3 phase RMS)
  - Current (3 phase RMS)
  - Frequency
  - Active power (3 phase + total)
  - Reactive power (3 phase + total)
  - Power factor (3 phase + total)
  - Active power energy (kWh)
  - Reactive power energy (kVARh)
- Mains electrical parameters display:
  - Phase-phase Voltage (3 phase RMS)
  - Current (3 phase)
  - Frequency
  - Active power
  - Reactive power
  - Power factor
  - Import active power energy (kWh)
  - Import reactive power energy (kVARh)

Alarms and events

- The last 50 alarms and last 50 shutdowns are recorded in non volatile memory.
- Data logging.

Other

- "Watchdog" digital output for microprocessor life signal.

CHARACTERISTICS

Current, voltage and frequency

- DC voltage power supply input: 8 to 40V_{DC}, 750mA at 12V_{DC} and 400mA at 24V_{DC}.
- AC voltage inputs: 100 to 480V_{AC}, 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_{AC} minimum between phase and neutral.
- Voltage control signal: AVR control either by a +/-5V_{DC} output with adjustable span and offset or by voltage+/voltage- contacts.

Environment

- Operating temperature: -20 to +70°C
- Storage temperature: -30 to +80°C
- Humidity: 5 to 95%. Circuits tropicalization for normal operation in humid conditions.
- IP65: front panel / IP20 : rear panel

Inputs, outputs

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

Ports

- Isolated communication ports are available:
  - RS485 for Modbus RTU (read and write)/ male Sub-D 9 pins 120 Ω resistors selected by micro-switch.
  - CAN bus for inter-GENSYS/ MASTER 2.0 connection: male Sub-D 9 pins 120 Ω resistors selected by micro-switch
  - CAN bus dedicated to options J1939: 120 Ω resistors selected by micro-switch
  - Ethernet: PC communication/ Modbus TCP
  - SD card reader

Size and weight

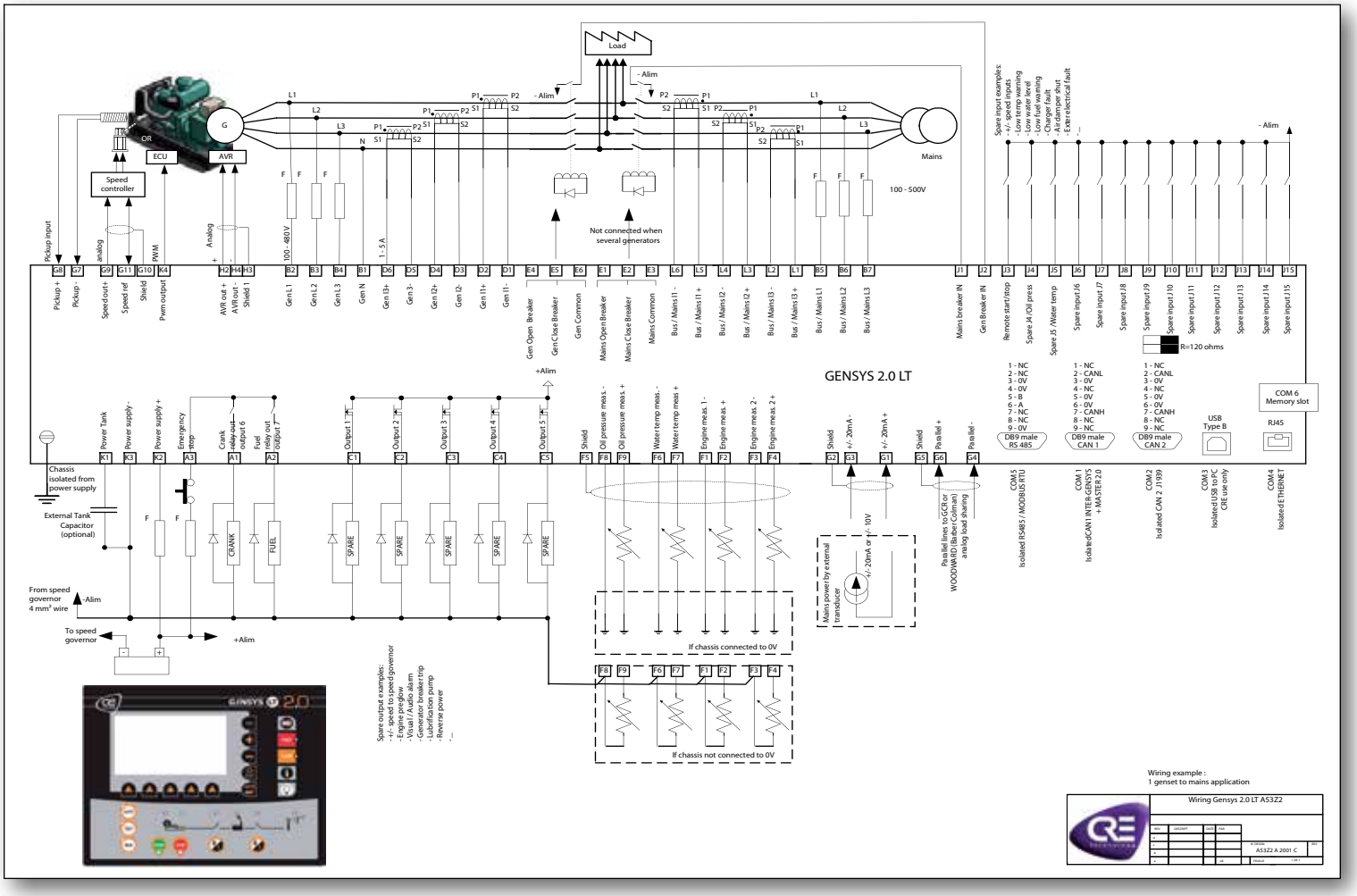
- Size: 248x197x57mm (9.76x7.76x2.24in)
- Panel cut out: 177x228mm (6.97x8.98in)
- Weight: 1.9kg (4.2lb)

Certifications

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

Other

- LCD characteristics: 114x64mm, 60 cd/m² backlight, 3 character sizes.
- Terminals: 2 piece connectors, 2,5mm².
- Standard languages: English, Spanish, French, Italian
- Other custom languages: downloadable on request



PART NUMBER
A53Z2

SOFTWARE
CRE Config

CABLE
A53W1

ASSOCIATED PRODUCTS
Upgrade: GENSYS 2.0
Complementary: Master 2.0