



GENSYS 2.0 L.T

All-in-one genset control and paralleling unit



- Compact «All-in-one» module
- 5 isolated serial ports: USB, RS485, 2 CAN bus, Ethernet
- SD card reader
- New multi-function graphic display
- Fully compatible with all speed governors and AVR's
- J1939 communications with electronic Engines

The Gensys 2.0 L.T 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 protection
- Alternator control and protection
- Mechanical parameters display
- Electrical parameters display
- Genset synchronization
- Load sharing and kW control
- Load sharing and kVAR control

Gensys 2.0 L.T is configurable via its front panel or via a PC with GSCADA software.

The Gensys 2.0 L.T controller has an analogue load sharing line so as to be compatible with all types of analogue load sharers.

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 L.T unit is recommended for all types of power plant, from 1 to 14 generators.

For specific needs, Gensys 2.0 L.T can include the following options:

- Mains paralleling
- Phase shift compensation (ie: DYN 11)

INTER-UNIT ISOLATED CANBUS

The Gensys 2.0 L.T has an inter-unit isolated CAN bus port for information transfer (dead busbar management, static paralleling, KW and KVAR load sharing...).

The inter-unit bus allows more information exchanges between modules and reduces the wiring and the number of I/O used on each module.

APPLICATIONS

- Gas and fuel generators
- Cogeneration
- Turbo-alternator
- Synchronization and power management module (without engine control).
- 1 generator in change over mode with mains.
- 1 generator in parallel with mains: Base load or Peak shaving.
- 2 to 14 gensets in parallel and change over with mains.
- 2 to 14 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: GSCADA

CRE Technology developed a new software for the Gensys 2.0 L.T 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 in your user name and password for more security, you will have access to the G-SCADA interface composed of three modes:

Scada mode:

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

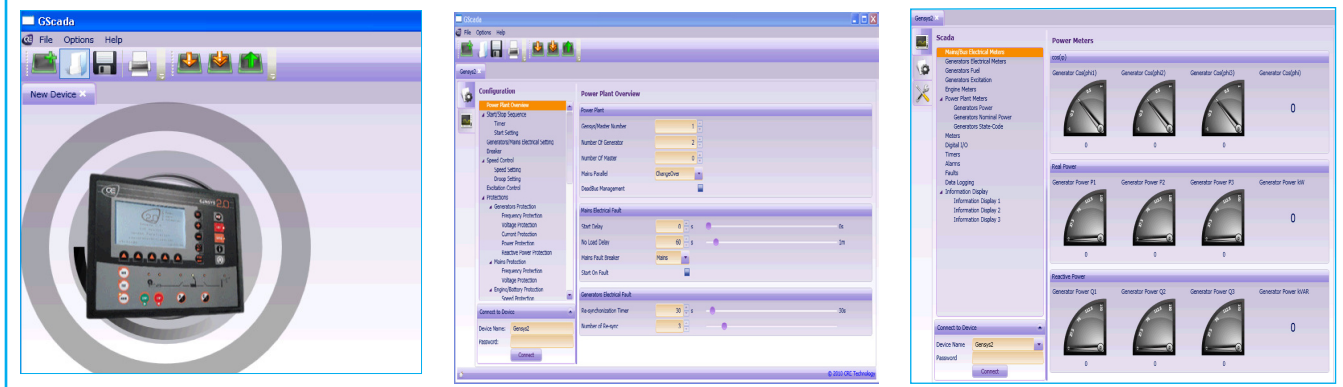
Configuration mode:

Configures the Gensys 2.0 L.T parameters by changing the values of the functions like Input/Output, Start/Stop or Speed Control, amongst others.

System mode:

Configures general parameters (date, time, screen saver, language,...)

G-SCADA can configure and monitor multiple Gensys simultaneously.



GENSETS WITH MAINS

When several generators are paralleled with mains, the MASTER 2.0 is used (connection via inter-module CAN bus) for:

- 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)

FUNCTIONS

Control & Management

- Manual & 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 14 generators)
- Constant voltage (or droop) kVAR load sharing control (via CAN bus serial port, up to 14 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, phase shit, df/dt.
- Phase sequence protection, phase shift compensation.

Synchronization

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



GENSYS 2.0 L.T

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 (kARh)

Alarms & events

- The last 50 alarms and last 50 shut-downs are recorded on non volatile memory.
- Data logging every 100ms.

Other

- Electronic droop function (droop <1%). Allows load sharing without inter-unit communication. Quasichronous® load sharing.
- "Watchdog" digital output for micro-processor life signal.

FEATURES

Voltages, currents & frequency

- DC voltage power supply input: 9 to 40VDC, 600mA at 12VDC & 300mA at 24VDC.
- AC voltage inputs: 100 to 480Vac, 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 – 15VAC minimum between phase and neutral.

- Voltage control signal: The voltage control (AVR) is made either by a +/-10VDC 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%. Tropic-proof circuits for normal operation in humid conditions.

Inputs, outputs

- Digital inputs: NO or NC to ground.
- Emergency stop input: Norm. Closed 24V.
- Relay outputs (crank & fuel): 16A. The 24V is provided through the emergency push button.
- Relay outputs (breakers): 5A, 230VAC max. NO + NC available.
- Transistor outputs: 350mA, over-current protected.
- Analogue inputs (oil pressure & water temp): 0 to 400 Ohms. Calibration is configurable.
- Analogue inputs (spare 1 & spare 2): 0 to 10KOhms.
- Calibration for speed and frequency control is made either by a +/-10VDC output with adjustable span and offset or by speed+/speed- contacts.
- Magnetic pick up input: 100 to 10.000Hz, 2VAC minimum.
- PWM output for CAT and Perkins engines
- Ports
 - 5 serial ports are available.
 - Ethernet for PC connection.
 - TCP Modbus.
 - RS485 for Modbus RTU (read and write) – male Sub-D 9 pins - 120 ohm resistors selected by micro-switch.
 - CAN bus for inter-Gensys 2.0 connection – male Sub-D 9 pins - 120 ohm resistors by selected by micro-switch.
 - USB for factory use only.

Size and weight

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

Certifications

- European Union Directives: EN 50081-2, EN 50082-2, 73/23EEC
- Front panel: IP65 protection. Back panel: IP20 protection.
- CAN bus J1939 – male Sub-D 9 pins - 120 ohm resistors selected by micro-switch.
- Ethernet I/O (remote communication – PC communication): for any requirements, please contact your CRE sales team.
- SD card reader

Other

- LCD characteristics: 114x64mm, 60 cd/m² backlight, 3 character sizes.
- Terminals: 2 piece connectors, 2,5mm².
- Languages: English, Spanish, French, Italian

PART NUMBER

A5322

ASSOCIATED PRODUCTS

Reduced: XGEN 1.5

Complementary: Master 2.0 and Gensys 2.0

