Empowering your control

GC315

Automatic Mains Failure microcontroller based, genset controller, perfect for all ATS + AMF genset applications

DESCRIPTION

Capable **AMF** and **Autostart genset controller** with 3 phase (RMS) mains voltages and 3 phase (RMS) generator voltages and currents monitoring. Integrated J1939 Canbus interface to electronic engines, and traditional interface for non-electronic engines

GC315 is suited for managing the most common three-phases generator applications (**Single Prime Mover and Single Stand-by gensets**).

Extensive input and output capability with optional communication interfaces (*Plus* and *Link* 5G ready versions), make this an extremely powerful single genset controller.

GC315 with its self-adjustable contrast graphic display, and its user-friendly interface, provide you an instant visualization of the measures and alarms coming from the genset.

The adjustable parameters of the controller allow the use of this device for standard and customized tasks, can be directly set with the controller's keyboard, or using the free software tool (**BoardPrg**3), available on SICES' Website.

A version with built in GPRS/GPS tracking (**GC315***Link* 5G) is particularly suited for mobile or **rental applications**, where asset tracking and monitoring is required.

GC315*Link* 5G has built in global 5G modem with global 2G fallback capability, which also embeds the GNSS localization system (GPS/GLONASS/BD) to provide a high availability solution that offers industry-leading **accuracy and performance**.

GC315, in all versions, is able to measure the mains frequency and compute the mains power, also when the load is connected to the mains itself. It's also able to measure the neutral of mains and generator voltages. Thanks to the separated push buttons, one for the MCB (Mains Circuit Breaker) and one for the GCB (Generator Circuit Breaker), the control of the genset in manual mode becomes easier.

INPUTS - OUTPUTS AND AUXILIARY FUNCTIONS

8+1 Programmable digital Inputs

8 Digital output

3 Analogue inputs

AND/OR Logic control

Event history log

16 Calendars and 4 timers

USB port

RS232
Plus and *Link* Versions

RS485
Plus and *Link* Versions

Ethernet connection
Plus Versions

GPRS/GPS
Link Versions

TIER4 final STAGE V

5G ready
Link Versions

Details:

- N. 8+1 digital Inputs (N.1 for the emergency stop push button).
- N. 3 analogue inputs, if not used, can be used as not insulated digital inputs.
- N.1 input for D+ (if not used in this way, it can be used as digital).
- N. 2 aux. relay (5A) for fuel solenoid + crank.
- N. 4 digital static outputs.
- N. 2 delays (10A) for power changeover management.
- Further virtual Inputs and Outputs are available with AND/OR logics for selectable functions.

As option:

- N. 32 additional and configurable digital I/O with DITEL module.
- N. 10 additional and configurable analogue inputs for Pt100 (DIGRIN), thermocouples (DITHERM) or 0...10mA - 0...20mA (DIVIT).
- N. 10 additional fixed analogue inputs listed in CANBUS J1939 protocol.
- N. 4 additional and configurable analogue outputs (DANOUT).

MAIN FEATURES

- Remote control systems.
- True RMS readings on mains voltages and on generator voltages and currents. Neutral measure included.
- Active, reactive and apparent power measurements.
- Frequency and power measurement on mains input.
- Engine speed measurement by frequency, pick-up or W.
- 8 programmable inputs and 8 programmable outputs.
- Additional current measurement for neutral or ground fault protection (50N + 64).
- Graphic display with self or manual adjustable contrast based on the temperature.
- Insulated and auto-supplied J1939 and MTU MDEC CAN interface.
- USB interface with MODBUS RTU protocol.
- RS232 serial port with MODBUS RTU protocol.
- RS485 insulated serial port with MODBUS RTU protocol.
- Ethernet interface with MODBUS TCP protocol.
- GPRS Modem.
- Possible connection to the software **SIMONE.**
- Real Time Clock with rechargeable battery.
- Events and data recording.
- Free monitoring tool **SicesSupervisor3.**

MEASURES

Mains Voltages: L1-N, L2-N, L3-N, L1-L2, L2-L3, L3-L1 True RMS measures. Lx-N max. voltage < 300Vac cat. IV.
option 100V available on demand.

Generator voltages: L1-N, L2-N, L3-N, L1-L2, L2-L3, L3-L1 True RMS measures Lx-N max. voltage < 300Vac cat. IV.
option 100V available on demand.

Generator currents: L1, L2, L3, N (*) True RMS measures. Rated current: 5Aac Overload measurable current: 4 x 5Aac (sinusoidal).
(*) *Neutral generator current as alternative to differential protection or to be used for mains power measurements from CT (Standard) or Tore (option).*

Generator and mains frequency meter: Resolution = 0.1 Hz. Accuracy = ±50ppm, ±35ppm/°C (typical).

Battery voltmeter: Resolution = 0.1V.

Oil pressure gauge: VDO 0-10 Bar, VDO 0-5 Bar, Veglia 0-8 Bar (settable curve based on sensors available).

Water or oil thermometer: VDO, Veglia, BERU (settable curve based on sensors available).

Fuel level: VDO, Veglia (settable curve based on sensors available).

Engine revolution counter: By pick-up. Programmable teeth number. Same Input can be used by W signal.

D+ **for the measure of the alternator battery charger voltage.**

Power and power factor measures are available as total measure and also for each single phase.
Maximum power and currents reached values are logged with date and time.

Additional measures available based on the insulated and auto-supplied CAN J1939.

PROTECTIONS

Status	• Mains live. • Generator live. • Mains contactor closed. • Generator contactor closed. • Engine running. • Engine cooling.
Generator protections	• Underfrequency (81U). • Overfrequency (81O). • Undervoltage (27). • Overvoltage (59). • Loss of excitation (Reverse reactive 40). • Time dependent overcurrent (51). • Phase overcurrent with voltage restraint/control (51V). • Instantaneous overcurrent (50, 50V). • Phase sequence (47). • Current and voltage unbalance (46/47). • Differential protection (87N). • Ground fault protection (50N/64). • Negative sequence (46-I2).
Engine protections	• Fuel reserve. • Min./max. fuel level. • Min./max. battery voltage. • Min./max. oil pressure. • Min./max. coolant and oil temperature. • Maximum power (32). • Closing of mains contactor or gen set contactor failed. • Engine over crank. • Over speed from generator frequency or pick-up or W. • Belt breakage. • Operating conditions not reached. • Min./max. auxiliary current. • Emergency Stop.
ins protections	• Min./max. mains voltage (27/59). • Min./max. mains frequency (81U/81O). • Mains failure.

A set of high efficiency LEDs are used for signaling the current status of the genset and for the visualization of alarm occurred.
By means of textual messages, it is possible to realize the type of the alarm/ shut-down occurred.

EMBEDDED FUNCTIONS

- Engine diagnostic codes.
- Real Time Clock with internal rechargeable lithium battery.
- Periodical test.
- Hours counter for the maintenance schedule.
- Starter counters with delays cranks counters.
- Daily counter with embedded calendar for the maintenance.
- Smart weekly and monthly calendar for selecting specific days of the year.
- Configurable automatic daylight save time.
- AND/OR logics and configurable TIMERS.
- Remote start and stop.
- 126 Events log.
- Fuel pump management.
- Pre-glow and coolant heater management.
- Embedded alarm horn.
- Possibility of graphic customization with low costs.
- Programmable via PC or controller's keyboard.
- Remote firmware update.
- SMS communication.
- NTP, DHCP and DNS.
- N. 1 threshold as load shedding.

Multilingual device

The display languages available are:
English, Italian, French, Russian, Spanish and Portuguese/Bra.

COMMUNICATIONS

GC315

- N.1 USB port.
- N.1 Insulated CANBUS J1939 and MTU MDEC Interface.

GC315*Plus*

- N.1 USB Port.
- N.1 Serial port RS232 Modbus RTU.
- N.1 Insulated serial port RS485 Modbus RTU.
- N.1 RJ45 port as Ethernet interface Modbus TCP.
- N.1 Insulated CANBUS J1939 and MTU MDEC Interface.

GC315*Link*

- N.1 USB port.
- N.1 Serial port RS232 Modbus RTU.
- N.1 Insulated serial port RS485 Modbus RTU.
- N.1 Insulated CANBUS J1939 and MTU MDEC Interface.
- GPRS Modem.
- GPS Antenna.
- Motion sensor, accelerometer and gyroscope.
- Compliance with CE1588.

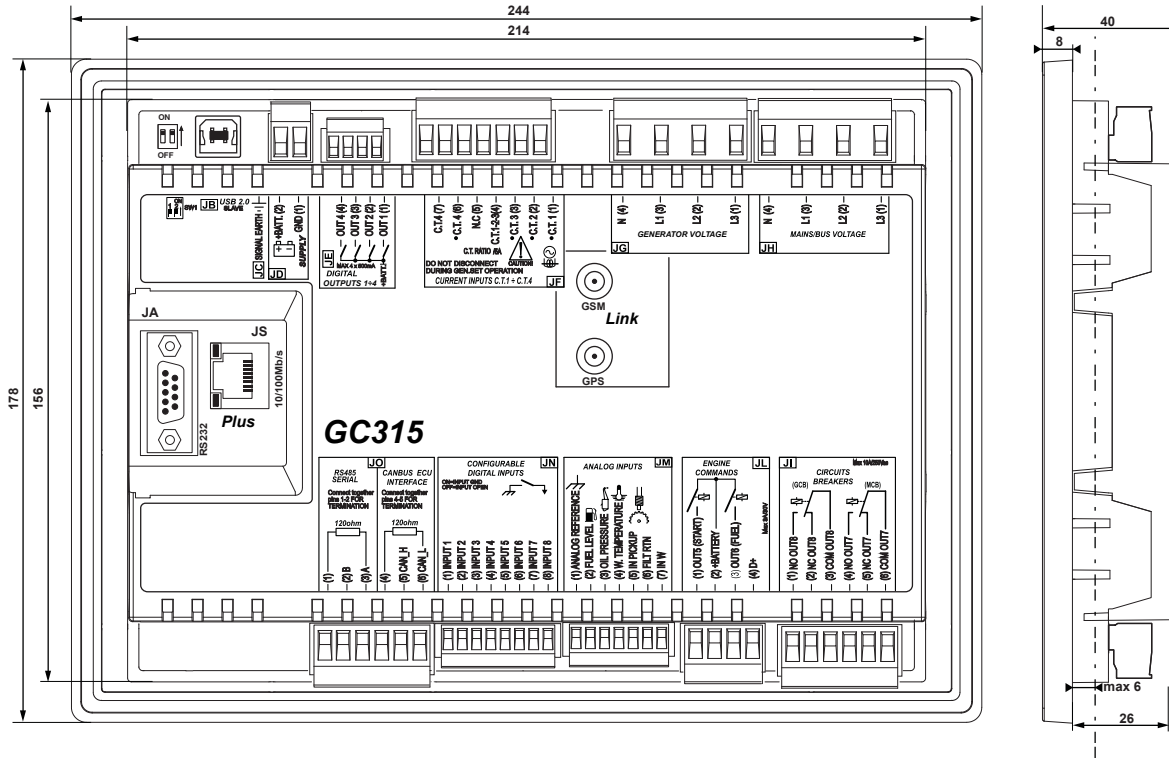
As option

- REWIND - GPRS/GSM/GPS Device.
- DANCE - Ethernet interface.

GC315*Link* and **GC315*Plus*** provides a direct interface with **SIMONE** software, for a real time monitoring system, without any external devices.

TECHNICAL DATA

- Supply voltage: 7...32 Vdc.
- Power consumption: typical less than 2W (auto mode, stand-by, AMF active, LCD lamp saving active).
- Operating frequency: 50Hz or 60Hz.
- Voltage measurement range: 30-520V L-L (50Hz) 35-520V L-L (60Hz).
- Operating temperature: -25 °C to +60 °C.
- LCD with backlight.
- Protection degree: IP65 (gasket included).
- Weight: 600gr.
- Overall dimension: 244 (W) x 178 (H) x 40 (D) mm.
- Panel cut-out: 218(W) x 159(H) mm.
- Graphic display dimensions: 70x38 mm - 128x64 pixel.
- Specific function for French market EJP / EJP-T.
- EMC: EN61326-1 compliant.
- Safety: built in conformity to EN61010-1.



CERTIFIED MANAGEMENT SYSTEM
ISO 9001 - ISO 14001
BS OHSAS 18001

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S.I.C.E.S. SRL

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