

Single Genset Controllers, SGC 420/421



SGC 420

Main features

- **Auto, manual and remote start/stop** modes with night restriction option
- **17 inputs**, configurable
 - 5 resistive
 - 2 analogue I/V
 - 1 differential
 - 9 digital
- **7 digital outputs**, configurable
- **Modbus** over RS-485
- **Manually configurable** from the controller front buttons or from a PC using DEIF Smart Connect utility software
- **Backlit full graphics LCD** with power saving feature for extended battery lifetime
- Supports the **battery charging alternator I/O** interface
- **Supports Auto mode** (site battery monitoring, AMF, remote start/stop, auto exercise and cyclic) and manual operation modes
- **Magnetic Pickup Unit (MPU)** interface for engine speed measurement
- **Auto exercise mode** (2 events) to start and stop the genset for a preconfigured time
- **Monitors 1-phase/3-phase** voltage, frequency, load current and power factor for generator
- **Monitors engine safety parameters** like lube oil pressure, engine temperature, fuel level and more
- **Monitors telecom site battery backup level and shelter temperature** to reduce engine running and fuel consumption at telecom tower sites
- Controls **start relay, fuel relay, alarm horn** and more as digital outputs
- **Event log** for 100 events with real time clock (RTC) stamps and engine running hours information
- **Counters** for engine starts, engine trips, engine running hours, genset and Mains kWh, kVAh, kvarh
- **Measures** mains kW, kVA
- **CANbus** for engine communication with support for Stage 5/ Tier 4 Final
- **Built-in electronic governing** function with the help of a rotary actuator (SGC 421 only)

General description

The SGC 420/421 controllers are modern AMF genset controllers with a user-friendly HMI and full graphics LCD.

They include voltage and frequency measurement for mains and gensets, and electrical load measurement (true RMS).

Configurable analogue and digital inputs/outputs are provided for various features.

Modbus over RS-485 and CAN ports is available for remote communication.

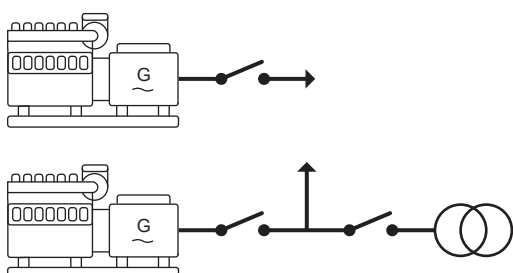
Start and stop gensets remotely using the Remote start/stop function.

Deep sleep mode is a useful feature that extends the battery lifetime by suspending the normal controller functions of when the genset is off.

Monitoring engine safety, electrical load, site battery backup voltage and shelter temperature (to reduce fuel consumption).

Configure parameters from a PC using DEIF Smart Connect utility software. Connect to the PC through the controller's USB Type B port.

In addition, the SGC 421 controller also includes an integrated electronic governing function.



Technical specifications

Power supply

- Nominal voltage: 12/24 V DC
- Operating range: 8 to 28 V DC
- Power transients, in compliance with ISO 7637-2

Operating conditions

- Operation: -20 to 65 °C
- Storage: -30 to 70 °C
- In compliance with IEC 60068-2-1, 2

Environment

- Vibration: 2G in X,Y and Z axes, in compliance with IEC 60068-2-6
- Shock: 15 g for 11 ms, in compliance with IEC 60068-2-27
- Humidity: 0 to 95 % RH, in compliance with IEC 60068-2-78
- Protection degree: IP65 for front face with optional gasket, in compliance with IEC 60529
- EMI/EMC: In compliance with IEC 61000-6-2, 4

Approvals

- CE approved:
 - Comply to the EU Low Voltage Directive: EN 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
 - Comply to the EU EMC directive EN 61000-6-2, 4
- UL

Technical specifications

Maximum standby current:

- ~0.09 A @ 12 V or 24 V DC
- 1 A (additional) for the actuator

Crank-start dropout survival period

- 20 ms for a drop from 12 V DC
- 50 ms for a drop from 24 V DC

Charging alternator interface

- 0.25 A @ 12 V DC
- 0.125 A @ 24 V DC
- Diagnostic voltage measurement

Digital outputs

- 5 x 1 A high-side drivers configurable for pre-heat, horn and more
- 2 x 5 A high-side drivers configurable for start relay, stop solenoid, fuel relay, contactors and more

Digital inputs

- 9 x switch-to-ground inputs for lube oil, temp, fuel level and more

Analogue inputs

- 5 x resistive inputs (10 to 1000 Ω), configurable
- 1 x 4 to 20 mA (LOP) / 0 to 5 V input
- 1 x 0 to 5 V input
- 1 x differential input (± 60 V DC) for site battery voltage

Mains/genset voltage measurement

- 32 to 300 V AC RMS @ 5 to 75 Hz for phase-to neutral

Load current measurement

- Nominal: -/5 A for current transformer (CT) secondary
- 4 CT inputs

CANbus for engine interface

- Baud rate: 250 kbps
- Packet size: 8 bytes
- Termination resistor of 120 Ω is provided

E-governor module interface (SGC 421 only)

- 1 A, 2-phase output for rotary actuators
- 2.5 ± 2 V input for target speed bias
- 2.5 V for zero bias

Dimensions

- External dimensions: 233 mm x 173 mm x 38.5 mm
- Mounting panel cut-out: 219 mm x 158 mm

For more information, please contact:

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