About SGC 121

The SGC 121 controller contains all the functions needed to protect and control the genset, the genset breaker and also a mains breaker. The controller also has a deep sleep function. This function stops all normal controller functions when the genset is not in operation, which extends the battery life.

The values and alarms are shown on the LCD display screen and operators can control the system from the display.

The SGC 121 controller can measure the voltage and frequency for mains and gensets, and the electrical load (true RMS). The controller can also do electronic governing for engines with a mechanical fuel systems with the help of a rotary actuator.

You can use the DEIF Smart connect software to configure the inputs and outputs. You can also configure the parameters on the controller.

Display and language functions

Display and language
Use the buttons on the controller to control the genset breaker and the mains breaker. There is also a button to stop alarms. You can also configure parameters from the display. The display is a full graphics LCD display and backlit.

The controller supports many language, for example, English, Chinese and Spanish.

Password protection and event logs
The controller has two password levels that you can configure on the controller.

The controller has an event log for 100 events with real-time clock stamps and engine running hours information. EEPROM is also available for extended event logs.

SGC 121 features

Monitoring
You can use the SGC 121 to monitor:
- Single phase, 2-phase, 3-phase, and split-phase voltage, frequency, load current, and power factor.
- Engine safety parameters. For example, the engine temperature, oil pressure and fuel level.

Control
Use the SGC 121 to control:
- Coolant temperature
- Idle speed
- Automatic fuel transfer

Running modes
The SGC 121 controller has an AUTO mode and a manual mode.

Operation modes
In AUTO mode, the controller supports these applications:
- Island
- Automatic mains failure (AMF)
- Remote start/stop
- Auto exercise
- Engine drive

You can also use the auto start/stop function in AUTO mode. Activate the digital start/stop input to start the engine. Deactivate the input to stop the engine.

Battery charging alternator
The controller supports the battery charging alternator I/O interface.

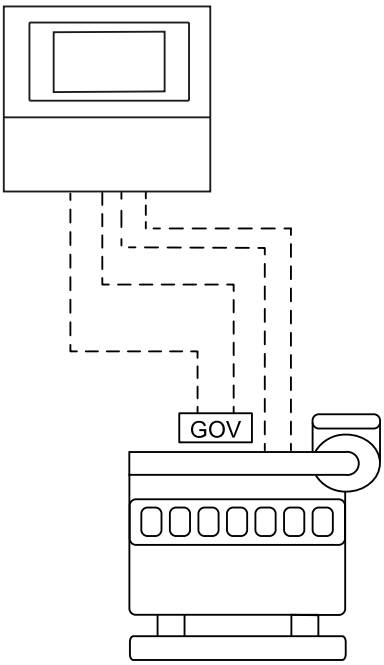
Counters
- Engine starts
- Engine trips
- Engine running hours
- Genset and mains kWh, kVAh, kvarh
- Maintenance

2-level password protection
To protect against unauthorised changes.

Event logs
The controller has an event log for 100 events with real-time clock stamps and engine running hours information. EEPROM is also available for extended event logs.

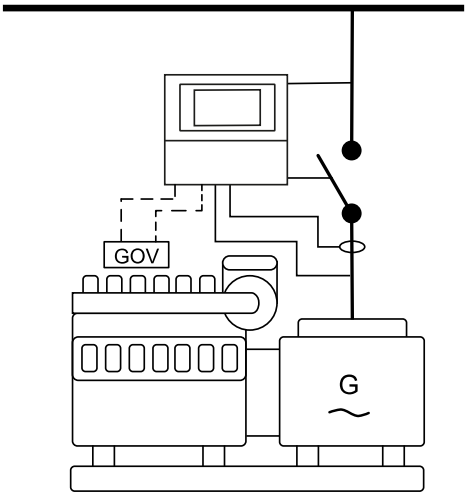
Electronic governing
The SGC 121 can do electronic governing for engines with mechanical fuel systems when you have installed a rotary actuator.

Engine drive and island operation



Engine drive

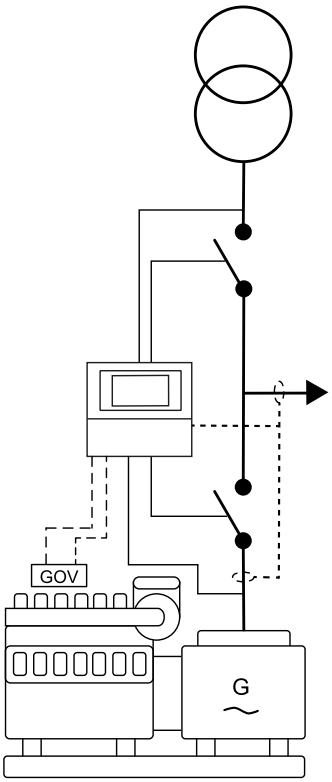
Use the SGC to control one engine. The controller has all the functions necessary to protect the engine.



Island

Island mode is typically used in power plants that are isolated from other power generation systems.

Automatic mains failure (AMF)



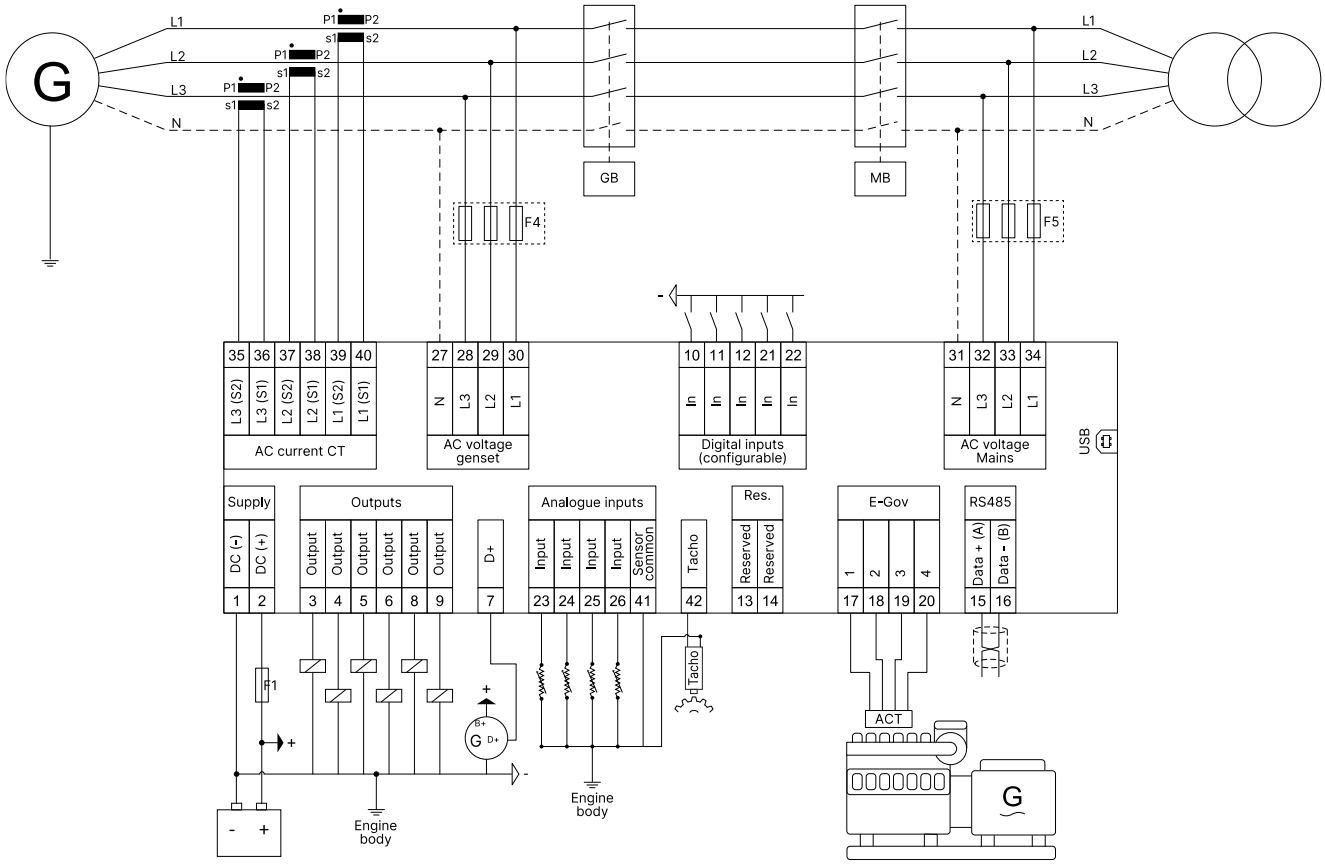
Automatic mains failure (AMF)

If there is a significant loss of mains power or a total blackout, the controller automatically changes the supply to the generator.

This makes sure that there is power during a mains failure and prevents damage to electrical equipment.

You can place the CT on the line from the genset or on the load side.

Typical wiring



Communication

- RS-485
- USB

Approvals

- CE
- UL
- See www.deif.com for the most recent approvals.

Power supply

- Nominal voltage: 12/24 V DC
- Operating range: 8 to 32 V DC

Inputs and outputs

- Digital inputs:
  - 5 x switch-to-ground. You can configure 4 switch-to-ground inputs through analogue inputs
  - Negative switching
  - Maximum input voltage: +32 V
  - Minimum input voltage: -24 V
  - Current source: 2.42 mA to 7.27 mA (depends on the battery voltage)
- Digital outputs: 6 x 0.5 A, configurable
- Analogue inputs:
  - 3 x resistive inputs, configurable
    - 2 x 10 to 1000 Ω
    - 1 x 10 to 5000 Ω
  - 1 x 4 to 20 mA

Environment

- Operating temperature: -20 to +65 °C (-4 to +149 °F)
- Storage temperature: -30 to +75 °C (-22 to +167 °F)
- Humidity: 0 to 95 % RH
- Protection degree: IP65 in panel

Measurements

Mains/genset voltage measurement
32 to 300 V AC RMS for phase-neutral, 32 to 520 V AC RMS for phase-phase, 5 to 75 Hz

Load current measurement
Nominal: -/5 A for current transformer (CT) secondary

Magnetic pickup measurement
0.2 to 45 V RMS, 10 Hz to 10 kHz

Electronic governing

- Output for rotary actuator
- 2.5 V ± 2 V input for target speed bias
- 2.5 V for zero bias

Dimensions

Dimensions: 139.0 mm (5.47 in) x 114.0 mm (4.49 in) x 38.3 mm (1.51 in)

Panel cut-out: 118.0 mm (4.65 in) x 93.0 mm (3.66 in)

Protections

1 x Reverse power.....ANSI 32R
1 x Over-current..... ANSI 50TD
3 x Over-voltage..... ANSI 59
3 x Under-voltage.....ANSI 27P
3 x Over-frequency..... ANSI 81O
3 x Under-frequency..... ANSI 81U
1 x Overload.....ANSI 32F
1 x Under-speed..... ANSI 14
1 x Overspeed..... ANSI 12
1 x Unbalanced load
1 x Low load
2 x Phase reversal detection
1 x Configurable crank connect
1 x Battery monitoring
1 x Charging alternator
1 x Pre-heat
1 x Coolant temperature
1 x Lube oil pressure
1 x Fuel level
1 x Fuel theft
1 x ECU communication failure
1 x ECU diagnostic lamps

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