About SGC 120 Mk II

The SGC 120 Mk II controller has all the functions needed to protect and control a genset, a genset breaker, and a mains breaker. The controller also comes with a deep sleep function, which stops all standard controller functions when the genset is not in operation. This helps to extend the battery life.

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

Use the Smart Connect Mk II software to configure parameters, log data, and supervise live data. M-Logic is also available from the software, which allows you to create custom functions using predefined events and outputs. The analogue comparator can be used to create custom alarms and logic functions.

Display and language functions

Display and language
The display is a full graphics LCD display and backlit. Use the buttons on the controller to start and stop sequences, and change the running mode. You can also configure parameters from the display.

The controller supports different languages, for example, English, Chinese and Spanish. Use the Smart Connect Mk II software to configure and customise the controller and software language.

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. EEPROM is also available for extended event logs.

SGC 120 Mk II functions

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.
- Fuel theft protection
- The engine battery

Control

- Coolant temperature
- Idle speed
- Automatic fuel transfer

Running modes
The SGC 120 Mk II 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.

Battery charging alternator
The controller has an I/O interface for the battery charging alternator.

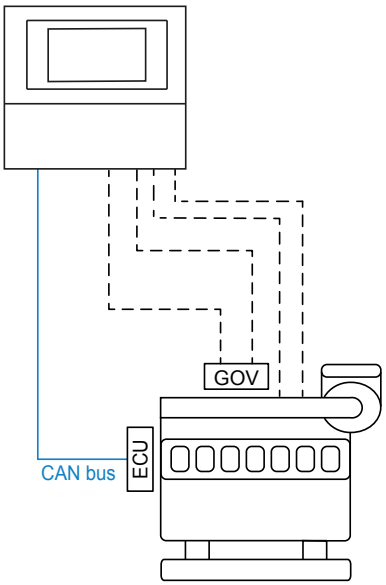
Counters

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

Smart Connect Mk II software

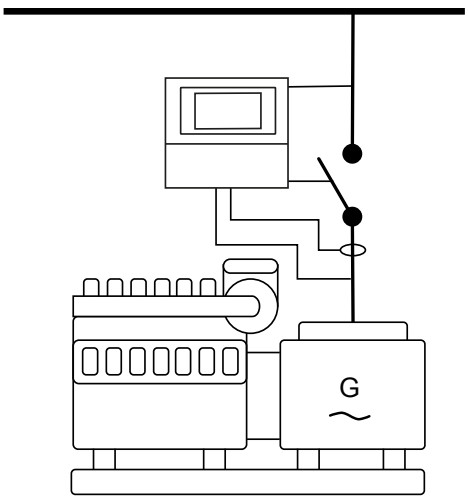
- **Analogue comparator**: Compare analogue values and create custom alarms.
- **Languages**: Change and customise the controller and software language.
- **Data logging**: Customise the data you want to log. It is also possible to save the logged data.
- **Configuration comparison tool**: Compare customised files with default values.
- **Multiple profiles**: You can configure multiple profiles
- **Live data supervision**
- **M-Logic**

Engine drive and island operation



Engine drive

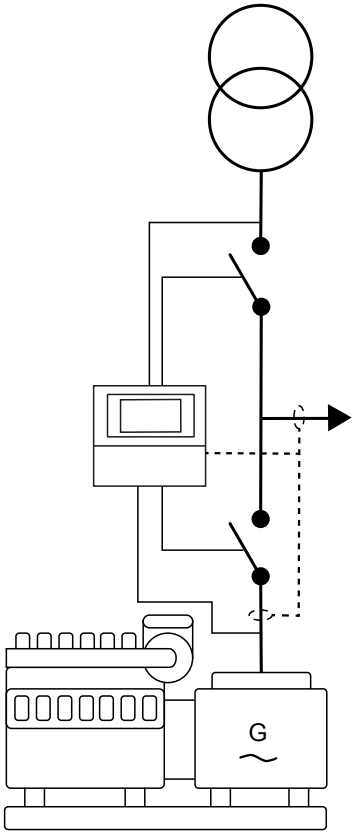
Use the SGC to control one engine. The controller has all the functions necessary to protect the engine.



Island

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

Automatic mains failure (AMF)



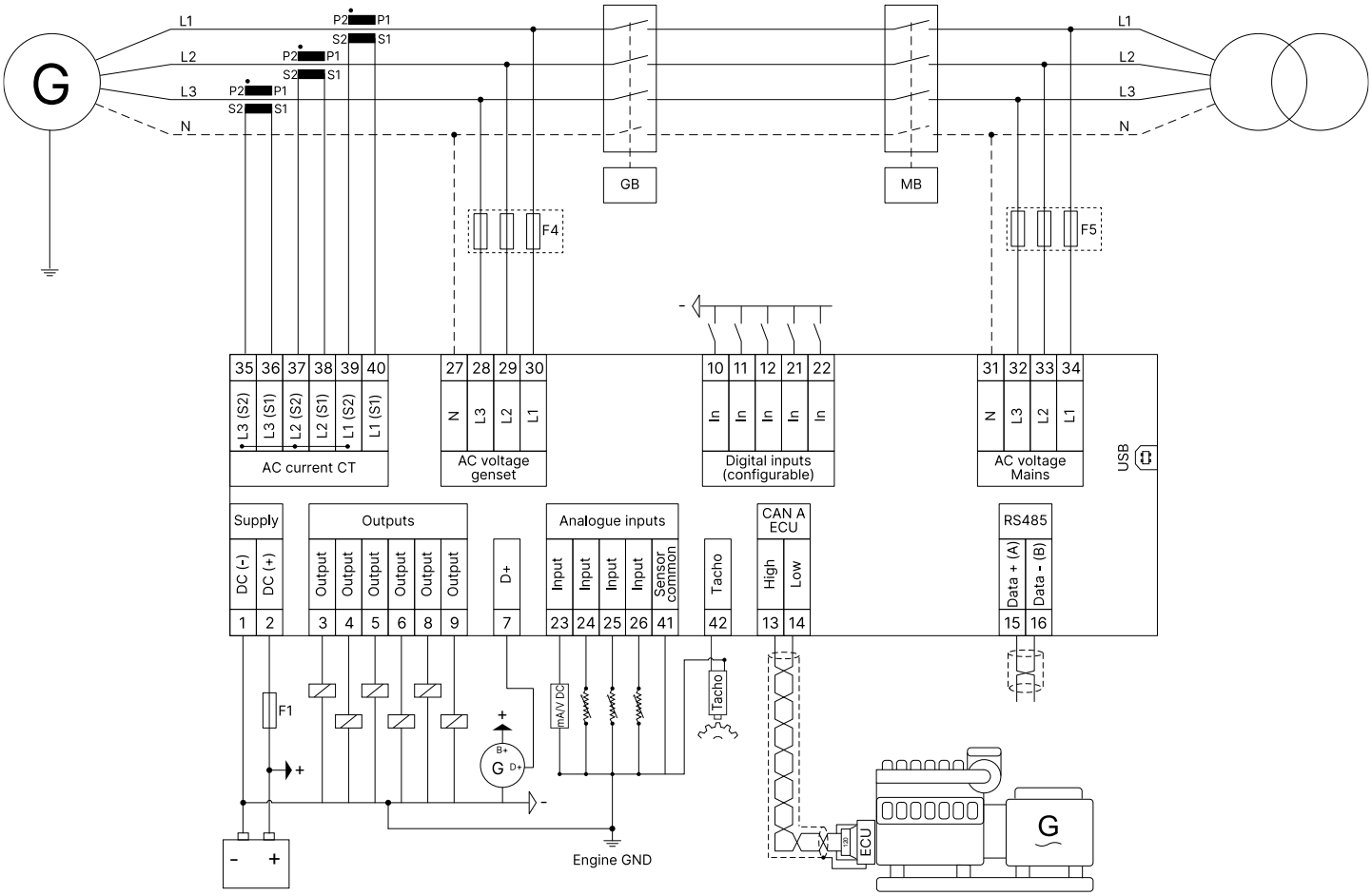
Automatic mains failure (AMF)

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



NOTE The S2 terminals are internally short.

Communication

- RS-485
- CAN bus for engine communication
- 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
    - 3 x 0 to 5000 Ω
  - 1 x 4 to 20 mA, configurable

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 and -/1 A for current transformer (CT) secondary

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

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

For more information:
DEIF A/S
Frisenborgvej 33, 7800 Skive, Denmark
Tel.: +45 9614 9614, info@deif.com
www.deif.com