

SGC-250N Synchronous Generator Controller





Overview

The SGC-250N Synchronous Generator Controller is a prepackaged solution for applications that require single or dual DECS-250N Digital Excitation Control Systems. With the DECS-250N's enhanced capabilities and negative forcing, precise generator voltage control can be obtained. An optional integrated BEI-Ilg Generator Protection System provides generator current differential protection, monitoring, and metering with multiple generator protection schemes.

Features

- Negative Forcing
- 20-amp, six-thyristor rectifier bridge
- Single and dual redundant DECS-250N option
- · Dual control power provisions
- BESTCOMSPlus® PC software
- Preprogrammed logic
- Autotracking between modes of operation
- Autotracking between DECS-250N units for dual controller systems
- · Real time monitoring
- · Sequence of events recording
- Automatic tuning
- Extensive communication available
- USB
- · CAN bus communication
- Modbus® RS-485 RTU
- Ethernet 100Base-T (Modbus TCP)
- Reactive load sharing over communication
- Field flashing provisions
- · Provisions for sync check
- Optional automatic synchronizer
- · Optional integrated power system stabilizer (PSS)
- Optional BE1-11g Generator Protection System available on pan chassis/mounting plate

Benefits

- Negative forcing provides exceptional responses to system transients and load disturbances.
- The DECS-250N and optional BE1-11g used on the SGC-250N are programmed using BESTlogic[™]Plus within BESTCOMSPlus software. With its intuitive interface, BESTlogicPlus provides the flexibility to create custom logic schemes to meet specific requirements.
- An automatic tuning feature is integrated into the DECS-250N to reduce commissioning time and provide excellent system performance.
- Real time monitoring and event recording capture occurrences within the system for live data analysis.
- · Prewired for easy installation into new or existing enclosures.
- Dual control power provides redundancy to prevent undesired shutdown.
- Current transformer (CT) shorting provision for added safety.
- The SGC-250N is designed, built, and tested to optimize performance and reliability.

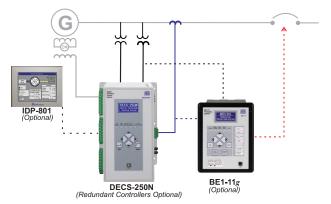


Figure 1 - Typical SGC-250N Connection Diagram featuring the Optional IDP-801 Interactive Display Panel



SGC-250N Synchronous Generator Controller

Specifications

Excitation Current

Up to 20 Adc

Operating Power (Excitation Power)

DECS-250N

Full load continuous field voltage:

208 Vac 1-phase nominal input power: 3-phase nominal input power: 120 Vac

125 Vdc

3-phase nominal input power: 240 Vac

Input Power Frequency:

50/60 Hz 61 to 420 Hz High:

Sensing Voltage Input (1-phase or 3-phase)

50 Hz: 100 Vac, 90 to 110 Vac Sensing Current Input (1-phase or 3-phase)

1 Aac or 5 Aac

Minimum Residual Voltage for Buildup

6 Vac

Contact Outputs

Make, Break, and Carry Ratings (Resistive):

24 Vdc: 7.0 Adc 120 Vdc: 7.0 Adc

Dual Control Power Input

82 to 132 Vac. 50/60 Hz AC:

DC: 90 to 132 Vdc

or

DC: 16 to 26 Vdc

AC: 82 to 132 Vac, 50/60 Hz BE1-11g:

SGC-250N-SXX001XXX

Environmental

Storage Temp:

Physical

Controller:

Operating Temp:

Control Power: 125 Vdc/120 Vac

0°C to 50°C (32°F to 122°F) -20°C to 60°C (-4°F to 140°F)

Single

Dimensions (WxHxD) (in): 21.65 x 37.40 x 10.12 Dimensions (WxHxD) (mm): 550 x 950 x 257.1

SGC-250N-SXX002XXX

Controller: Single BE1-11g: No

24 Vdc/120 Vac Control Power: Dimensions (WxHxD) (in): 21.65 x 29.53 x 10.12 Dimensions (WxHxD) (mm): 550 x 750 x 257.1

SGC-250N-DXX001XXX

Controller: Dual BE1-11g: No

125 Vdc/120 Vac Control Power: Dimensions (WxHxD) (in): 29.53 x 37.40 x 10.12 Dimensions (WxHxD) (mm): 750 x 950 x 257.1

SGC-250N-DXX002XXX

Controller: Dual BE1-11g: No

Control Power: 24 Vdc/120 Vac Dimensions (WxHxD) (in): 29.53 x 37.40 x 10.12 Dimensions (WxHxD) (mm): 750 x 950 x 257.1

SGC-250N-SXXP11XXX

Controller: Single BE1-11g: Yes

Control Power: 125 Vdc/120 Vac Dimensions (WxHxD) (in): 29.53 x 37.40 x 10.12 Dimensions (WxHxD) (mm): 750 x 950 x 257.1

SGC-250N-SXXP12XXX

Controller: Single BE1-11g: Yes

Control Power: 24 Vdc/120 Vac Dimensions (WxHxD) (in): 29.53 x 37.40 x 10.12 Dimensions (WxHxD) (mm): 750 x 950 x 257.1

SGC-250N-DXXP11XXX

Controller: Dual BE1-11g: Yes

Control Power: 125 Vdc/120 Vac **Contact Basler Electric** Dimensions:

SGC-250N-DXXP12XXX

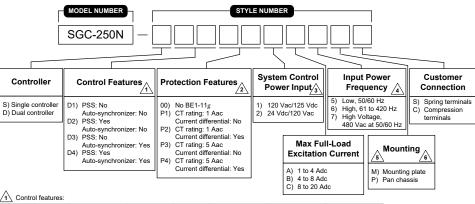
Controller: Dual BE1-11g: Yes

Control Power: 24 Vdc/120 Vac Dimensions: Contact Basler Electric

60 Hz:

120 Vac, 108 to 132 Vac

Please read and utilize all of the notes below the chart to ensure the appropriate control and protection features are specified in the main SGC-250 style chart.



1 Control features	3
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Control Features			Input Power Frequency	DECS-250 Terminals	Synchronizer	1 st Communication Protocol	2 nd Communication Protocol		
D1	3	Not included	4	Spring terminals	None	100Base-T (Modbus™ TCP)	None		
D2		PSS			Notie				
D3		Not included			Auto synchronizer		None		
D4		PSS							

2 Protection features:

Protection Features	Phase & Ground Current 7	Power Supply	RS-485 Protocol	Ethernet Protocol	Case	Alarm Contact	Option 1	Network Connection	Language	Option 2	Firmware
P1	P1 1 Aac P2		3 Modbus™	Modbus™ with BESTnet™ <i>Plus</i>	Vertical case	Normally closed	None			None	Latest Release
P2		3					Current Differential	Copper			
Р3		—					None	Ethernet			
P4							Current Differential				

Power supply for DECS-250N is determined by option chosen in the SGC-250N style number.

DECS-250N input power frequency is determined by option chosen in the SGC-250N style number. An SGC-250N with style number XXXXX7XX accepts 480 Vac operating power at 50/60 Hz to provide a 250 Vdc nominal power output.

The pan chassis consists of a rigid metal panel to hold the SGC-250N components. It is designed with additional structural supports to prevent it from bending or flexing. The mounting plate consists of a 16 gauge (1.59 mm) sheet of galvanized steel to which the SGC-250N components are mounted. Typically, the mounting plate is installed in a specially-sized enclosure.

√6 Pan chassis mounting option must be selected if dual controller and BE1-11g options are specified.

Protection features selections P2 and P4 provide current differential protection which equips the BE1-11g with dual phase and ground current sensing inputs.



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