

SGC185

REMOTE SWITCHGEAR CONTROL UNIT



1 DESCRIPTION

The SGC185 remote terminal unit for MV automation. Its main function is switchgear controlling/monitoring and communication to control center.

The SGC185 supports a wide selection of communication protocols such as IEC 60870, IEC 61850, DNP3.0, MODBUS, ...

2 FUNCTIONS

The SGC185 provides several control functions such as:

- Fault Passage Detection (5 – 1000A).
- Voltage monitoring with programable dual high/low threshold.
- Broken cable alarm.
- Sag/swell alarm and report.
- Fully programable auto sectionalizer.
- Inrush current restraint.

- Password resetable auto sectionalizer operation count.
- Remote/Local operation selectable with a front panel switch.
- Select before operate.
- Gas low operate lock.
- Fully field/remote upgradable software.
- Voltage, current, phasor, power and harmonic metering.
- 8-channel oscillography with 64 samples/cycle (COMTRADE format).
- Non volatile storage for up to 200 events.
- 16 optoisolated configurable digital inputs.
- 8 SPDT 16A configurable relay outputs.
- Continuous self-monitoring.

There is a large graphic display, a keyboard and 29 LEDs (8 of them are fully configurable) for easy field operation.

Pug-in screw connectors for fast an secure connection.

The unit is configurable through the front panel interface (password protected) and also through a serial connection to a laptop with the provided software.

3 COMMUNICATIONS

This RTU is fully interoperable with any commercial SCADA compliant with any of the following communication standards such as "iControl"¹.

- IEC 60870-5-101
- IEC 60870-5-104
- DNP 3.0
- MODBUS
- IEC 61850

RS232, RS422 and Ethernet connectivity support. The RTU can be configured via either FTP (Ethernet connection), USB connection to a laptop or direct download from an USB Stick.

The RTU is configured with an easy to use tool "iConfWizard".

¹"iControl" is an easy to use and highly customizable SCADA software provided by iGRID. Please ask us for more information.

4 TECHNICAL SPECIFICATIONS

Power supply			
Auxiliary input voltage	Option 12:	9 – 18 Vdc	
	Option 24:	18 – 36Vdc	
	Option 110:	36 – 150 Vdc	
	Option 220:	85 – 264 Vac	
Power rating	<5 W		
Fault Passing Detection			
Current Threshold	0.1 – 20A (secondary)		
Detection time	< 20 ms		
Upstream trip verify time	50 – 5000 ms		
Self Reset Time	0 – 240 min.		
Voltage Detection Reset Time	0 – 30 s		
I2 Blocking Threshold	5 – 50 %		
Voltage Monitor			
Voltage Threshold (low)	10 – 95 %Un		
Voltage Threshold (high)	105 – 200 %Un		
Voltage Verify Time	50 – 1000 ms		
Voltage Detection Time	0.1 – 300 s		
Voltage Anomaly Detection Time	0.1 – 300 s		
Sag Threshold	50 – 90 %Un		
Sag Max Increment	-25 ... -5 %Un		
Swell Threshold	110 – 150 %Un		
Swell Increment	+5 ... +25 %Un		
Sag/Swell Min Time	100 – 1000 ms		
Sag/Swell Max Time	1 – 300 s		
Automatic Sectionaliser			
Cycle Count	1 - 100		
Cycle Forget Time	0.1 – 500 s		
Digital Inputs			
Detection Level (Bipolar)	Option 12:	Low:	0 – 4 Vdc
		High:	8,6 – 18 Vdc
	Option 24:	Low:	0 – 8 Vdc
		High	16 – 36 Vdc
	Option 110:	Low:	0 – 10 Vdc
		High:	34 – 150 Vdc
	Option 220:	Low:	0 – 40 Vac

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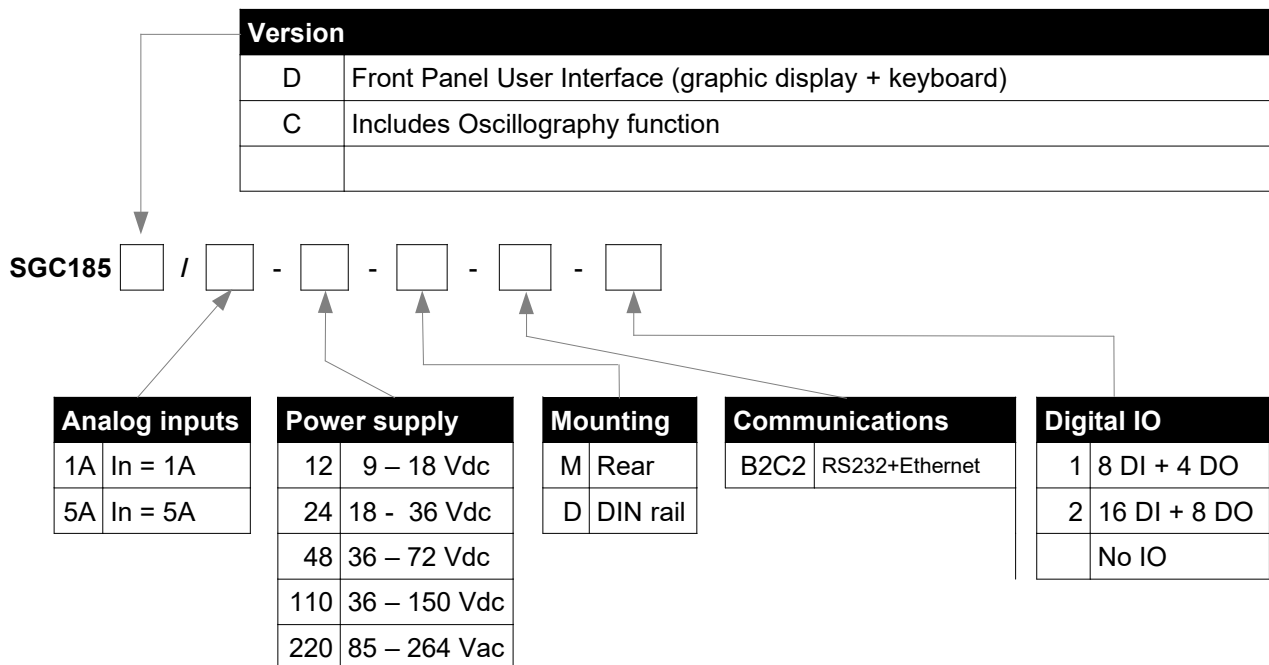
		High:	160 – 264 Vac
Power consumption	<0,1 W		
Cabling section	2,5 mm²		
Option 1: 3 isolated inputs and 5 inputs with 1 common. Option 2: 6 isolated inputs and 2 groups of 5 inputs with 1 common.			
Digital Outputs			
Nominal Voltage	250 V		
Max Load Current	8 A		
Cabling Section	2,5 mm²		
Configuration	SPDT Relay Output		
Analog Inputs			
Current			
Nominal Current	1 or 5 A		
Nominal Consumption	0,05 VA		
Thermal Current (I _{th})	5 I _N (permanent) / 100 I _N (1s)		
Accuracy	0,1 I _N < I < 20 I _N		1%
Voltage			
Nominal Voltage	Option 12/220:	230 Vac	
	Option 24/48/110:	120 / $\sqrt{3}$ Vac	
Max input voltage	Option 12/220:	275 Vac	
	Option 24/48/110:	150 Vac	
Accuracy	0,8 U _N < U < 1.2 U _N		1%
Sampling Frequency	64 samples/cycle		
Analog Bandwidth	1 kHz		
Other			
Temperature range	-10 °C ÷ 60 °C		
Body Dimensions (W x H x L)	113 mm x 201 mm x 132 mm		
Weight	1.5 kg		

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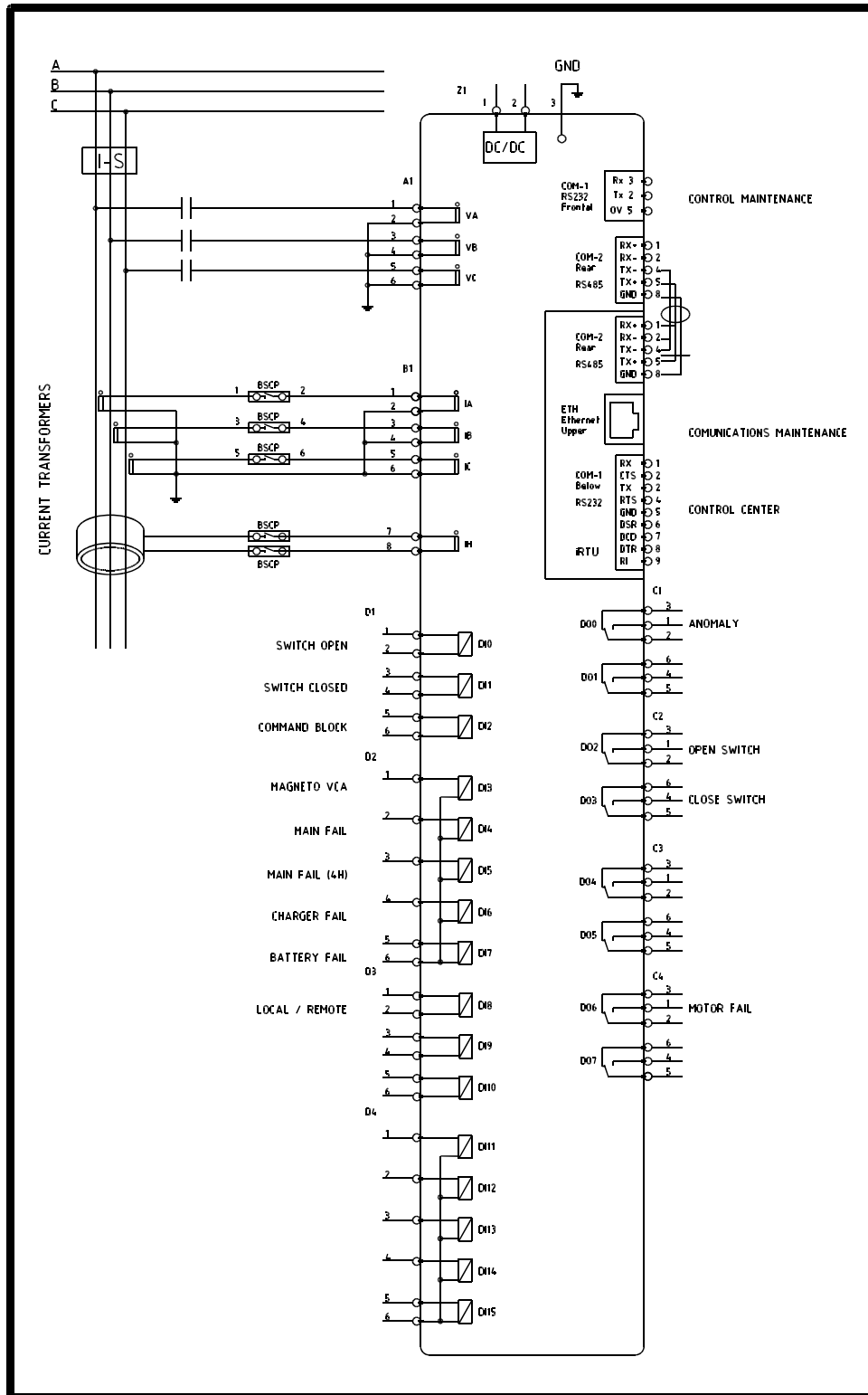
5 TESTINGS

- Dielectric strength: 2kV / 50Hz 1 min. according C.E.I 255-5.
- Surge 5 kV. peak 1.2/50 μ s according C.E.I 255-5.
- Electrical disturbance testing of 1 MHz: 2.5 kV longitudinal y 1kV transversal, class III according CEI 255-5.
- Fast transient: 2kV according CEI 255-22-4 class III.
- Electromagnetic immunity tests: according to document UNIPED E ref NORM (SPEC) 13."Automation and Control Apparatus for Generating Stations and Substations – Electromagnetic Compatibility Requirements."

6 MODELS

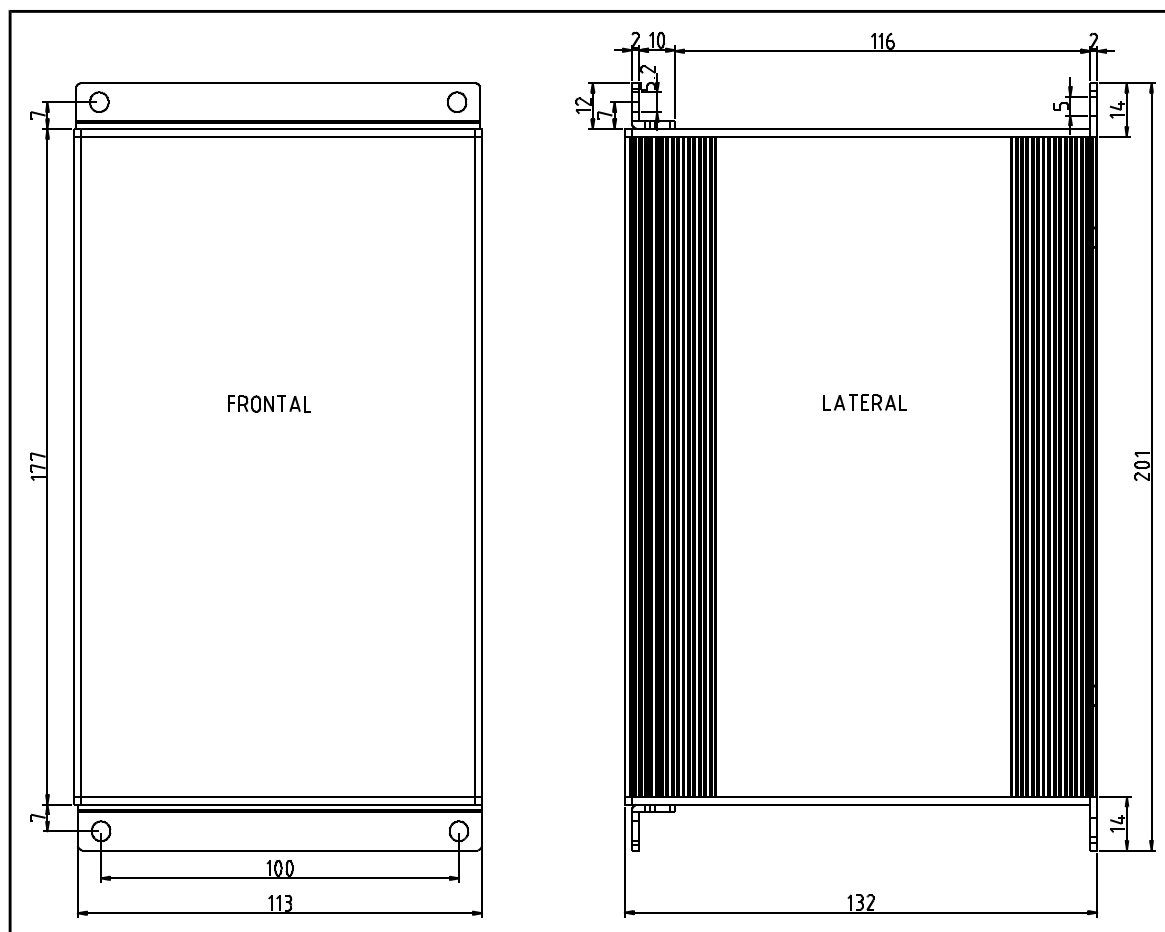


7 CONNECTION SCHEMATIC



SGC185

8 SIZE



Flush/wall mount version shown. Device without frontal fastenings and rear DIN rail mount also available.