Sorensen SG Series

Programmable Precision High Power DC Power Supply

8 kW

30 V

267 A

208

ETHERNET GPIB LXI RS232

SGA: Outstanding Value - Analog Control
(Sorensen General purpose Analog) The SGA, with its industry leading price performance, is available for customers requiring simple front panel analog controls or external control. The SGA provides essential features like 10- turn potentiometers for setting voltage and current, 3 ½ digit LED readout plus front panel over-voltage protection (OVP) preview/adjustment and reset.

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Programmable Power
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AMETEK®
PROGRAMMABLE POWER

SG Series : Product Specifications

Common	
Remote Sense	Load-line loss compensation for models <= 100 V is 10% above full scale voltage total (5% per load-line), and models > 100 V is 4% above full scale voltage total (2% per load-line).
Parallel Operation	Up to 5 units may be paralleled for additional current within the power supply single-unit specifications, with exception of the DC output current set accuracy. Additional paralleled SG units will add 0.3% inaccuracy per unit. To parallel more than 5 units, contact factory.
Series Operation	Up to 2 units (see Output Float Voltage)
Input	
Nominal Voltage 3 phase, 3 wire + ground	208/220 VAC (operating range 187 - 242 VAC)
Frequency	47 – 63Hz (optional 400Hz @ 208VAC, does not carry CE, UL or CSA markings)
Power Factor	>0.9 typical at 208/220 VAC input >0.78 typical at 380/400 VAC input >0.69 typical at 440/480 VAC input
Protection (typical)	½ cycle ride-though on all three phases, 3 cycle ride through on single phase; missing phase shutdown (800V model 6.4 msec on all 3 phases)
Environmental	
Operating Temperature	0 to 50° C
Storage Temperature	-25° C to 65° C
Humidity Range	Relative humidity up to 95% non-condensing, 0° C – 50° C
Altitude	Operating full power available up to 5,000 ft. (~1,500 m), derate 10% of full power for every 1,000 feet higher; non-operating to 40,000 ft. (~12,000 m)
Cooling	Front and side air inlet, rear exhaust. Temperature controlled, variable speed fans. Units may be stacked without spacing.
Regulatory	Certified to UL/CSA 61010 and IEC/EN 61010-1, CE Compliant, Semi-F47 Compliant, Maryland by a NRTL
Front Panel Dust Filter	30 PPI (Pores Per Inch) - must ensure adequate airflow and / or derate max. temperature. 3U unit only.
Physical	
Dimensions	Width: 19.00" (48.3 cm), Depth 25.0" (63.5 cm) Height: 5-15 kW units: 3U – 5.25" rack mount (13.34 cm) 20-30 kW units: 6U – 10.5" rack mount (26.67 cm)
Weight	3U < 80 lbs. (36 kg) 6U <160 lbs. (73 kg)
Shipping Weight	Contact factory for more product & shipping weights.

Programming & Read-back Specifications (with sense wires used)

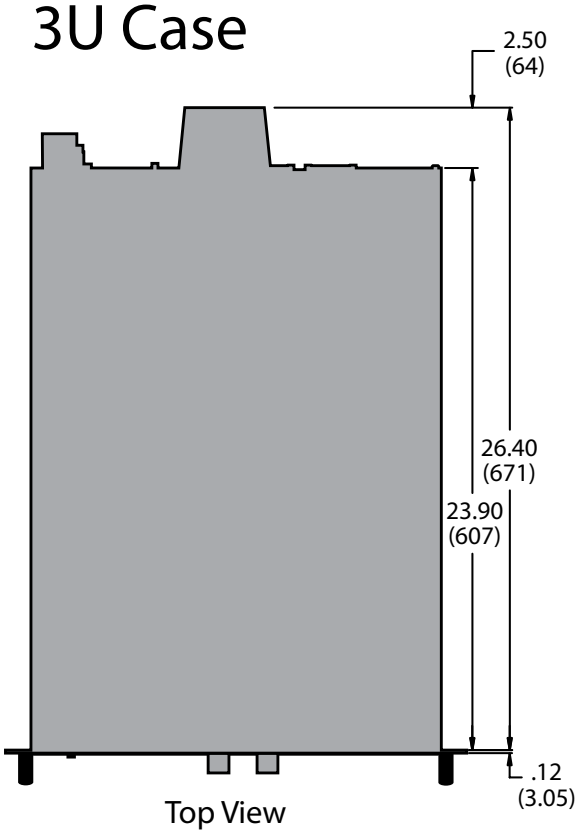
	Programming		Read-Back / Monitoring		
	Accuracy	Resolution	Accuracy	Resolution	
Front panel Display	SGA: +/- (0.5%fs + 1 digit) SGI, Voltage: +/- 0.1% of full scale SGI, Current: +/- 0.4% of full scale	SGA: 3.5 digits SGI: 4.0 digits	SGA: +/- (0.5%fs + 1 digit) SGI, Voltage: +/- 0.1% of full scale SGI, Current: +/- 0.4% of full scale	SGA: 3.5 digits SGI: 4.0 digits	Knob control & Display read-back
Remote Analog Interface	Voltage: +/-0.25% of full scale for 0-5 V range, +/-0.5% of full scale for 0-10 V range Current: 0.8% of full scale	NA	+/-1.0% of full scale (0 - 10V)	NA	25-pin D-sub connector (0~5 V or 0~10 V)
Remote Digital Interface	Voltage: +/- 0.1% of full scale, Current: +/- 0.4% of full scale	+/-0.002% of full scale	Voltage: +/- 0.1% of full scale, Current: +/- 0.4% of full scale	+/-0.002% of full scale	RS-232C (Standard on SGI), Optional IEEE-488.2 and Optional LXI Compliant 10/100 base-T Ethernet (see Options)
OVP	+/- 1% of full scale	+/-0.002% of full scale			Programming range: 5-110% Configured from front panel, remote analog or via optional digital inputs
User I/O	Disconnect & Polarity-reversal relay control (Only available with Ethernet Option)				Digital 10-pin Molex type connector See www.programmablepower.com
Software	IVI & CVI drivers available under SUPPORT at: www.ProgrammablePower.com				

Output	
Ripple & Noise (Voltage Mode, Typical)	See Output: Voltage & Current Ranges Chart Above. Ripple and noise specified at full load, nominal AC input. Noise measured with 6 ft. cable, 1µf at load
Ripple (Current Mode)	<+/- 0.04% of full scale rms current
DC Voltage Slew Rate	100 ms 5-95% of full scale typical (Contact factory for model specific slew rates)
DC Current Slew Rate	45A / ms typical - resistive load
Line Regulation (with sense wires used)	(±10% of nominal AC input, constant load) Voltage Mode: +/- 0.01% of full scale Current Mode: +/- 0.05% of full scale
Load Regulation (with sense wires used)	(no load to full load, nominal AC input) Voltage Mode: +/- 0.02% of full scale Current Mode: +/- 0.1% of full scale
Load Transient Response	Recovers within 1ms to +/-0.75% of full-scale of steadystate output for a 50% to 100% or 100% to 50% load change
Efficiency	87% typical at nominal line and max load
Stability	±0.05% of set point after 30 minute warm-up and over 8 hours at fixed line, load and temperature
Temperature Coefficient	0.02%/ C of maximum output voltage rating for voltage set point 0.03%/ C of maximum output current rating for current set point
Output Float Voltage	Negative terminal within +/- 300 V of chassis potential. (We recommend the use of optional isolated analog Interface (IAI).) Supplies in "series" should be the same output voltage/current.

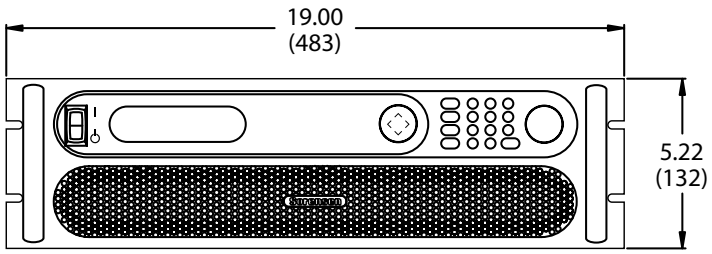
Output: Voltage and Current Ranges

	3U	Ripple & Noise	
Power	8 kW	**rms** (20 Hz-300 kHz)	**p-p** (20 Hz-20 MHz)
Voltage	Current		
30	267	20 mV	75 mV

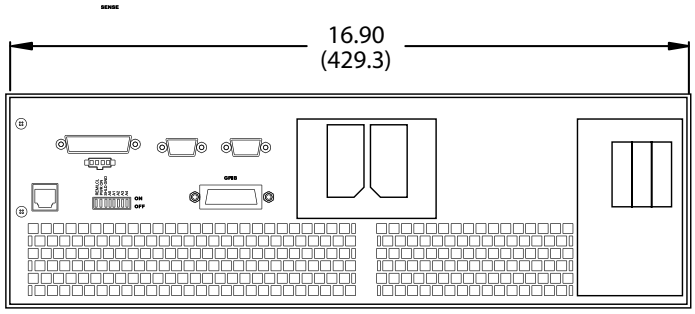
3U Case



Top View

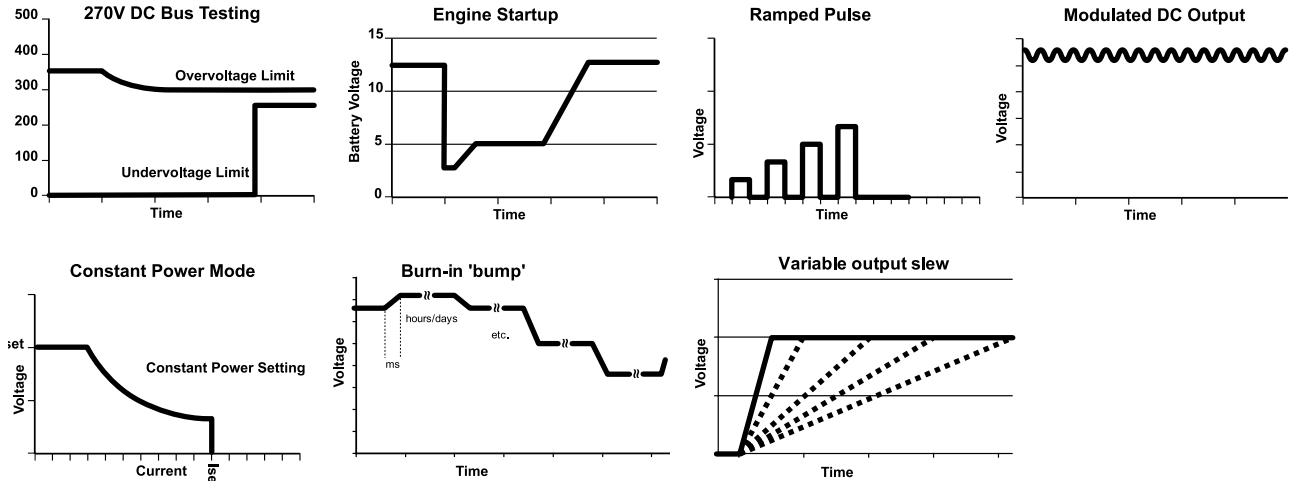


Front View



Rear View

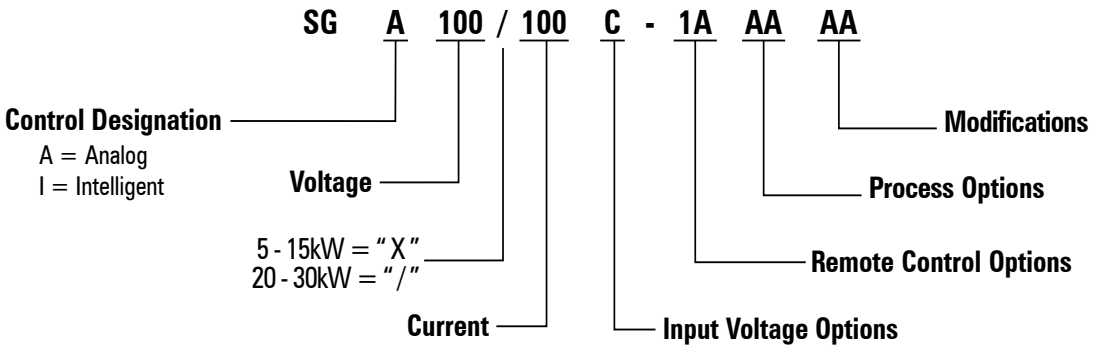
Advanced Power Simulation



SGI model provides constant power mode allowing independent setting of the max voltage, current and power

SGI / SGA Comparison Chart

Feature	SGA
Modular Design	•
Fast Load Transient	•
Parallelable	•
Analog & Digital Summing	Optional
Direct Front Panel V/I Control	•
3½ Digit LED Readout	•
Graphics Display	
Sequencing	
Save/Recall Setups	
System Power Readouts	
Constant Power Mode	
IEEE-488.2/RS-232C	Optional
LXI Class C Ethernet/ RS-232	Optional
Front Panel Dust Filter	Optional (3U unit only)



Options and Accessories	
Control Options	A: Analog I: Intelligent
Input Options	C: Input Voltage 187 / 242VAC, 3 Phase
Remote Control Options	0A: No Option 1A: IEEE-488.2 + RS-232C (Note: SGI comes standard with RS-232C) 1C: Ethernet + RS-232C 1D: Isolated Analog Control 1E: Shaft Locks (SGA series only)
Process Options	AA: No option AB: Certificate of Calibration (includes Test Data)
Modifications	AJ: Front panel dust filter - factory installed - 3U unit only
Accessories	890-453-03: Paralleling Cable (for up to 5 units, requires one cable per unit placed in parallel) K550212-01: 3U Rack Slides (for 5kW, 10kW and 15kW models) K550213-01: 6U Rack Slides (for 20kW, 25kW and 30kW models) 5550568-01: Front panel dust filter - field installation kit - 3U unit only 9550589-01: AC input cover - 3U unit only
Contact factory for other combinations	