

Laboratory Power Supplies

SG Series

Programmable Precision DC Power Supply 5kW - 150kW // 40V - 600V



High Power Density: Up to 15kW in a 3U / 30kW in a 6U chassis

Wide Voltage Range: 0-40V up to 0-600V, in increments of 5kW from 5 to 30kW

Fast Load Transient Response: Protection from undesired voltage excursions

Low Ripple and Noise: Suitable for the most sensitive applications

Parallelable up to 150kW: Expandable as your requirement grows

Modular Design: Upgradeable for the ultimate in investment protection

Sequencing: Program custom waveforms

Easy-to-read Fluorescent Display: SGI supports English, French, German, Italian, Spanish, Chinese, Japanese, and Korean languages

16-bit Resolution: Optional IEEE-488.2 + RS-232C or Ethernet provides precise control

Ethernet Control: LXI Class C compliant communication with integrated web server

Direct Relay Control: Control output and sense isolation relays, along with polarity relays. (Ethernet Option Only)

Hardware Trigger: Ethernet Option Only

The SG series represents the next generation of high power programmable DC power supplies. Designed for exceptional load transient response, low noise and the highest power density in the industry. The industry leading power density is enhanced by a stylish front air intake allowing supplies to be stacked without any required clearance between units. At the heart of the SG series is a 5kW power module. Depending on the output voltage, one to six modules can be configured in a single chassis to deliver 5kW to 30kW of power. Combinations of these chassis can then be easily paralleled to achieve power levels up to 150kW. Paralleled units operate like one single supply providing total system current. Available in two control versions, the SGA has basic analog controls, while the SGI provides intelligent control features.

Input:

Nominal Voltage	208/220 VAC (operating range 187-242 VAC)
3 phase, 3 wire + ground	380/400 VAC (operating range 342 - 440 VAC)
	440/480 VAC (operating range 396 - 528 VAC)
Frequency	47 - 63Hz
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

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. Units may be stacked without spacing
Approvals	Certified to UL/CSA 61010 and IEC/EN 61010-1, CE Compliant, Semi-F47 Compliant

Physical:

Dimensions	Width: 19.00" (48.3cm), Depth 25.0" (63.5cm) Height: 5-15kW units: 3U - 5.25" rack mount (13.34cm) 20-30kW units: 6U - 10.5" rack mount (26.67cm)
Weight	3U < 80 lbs. (36kg) 6U < 160 lbs. (73kg)

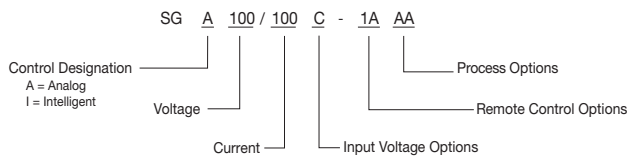
Output:

Ripple & Noise (Voltage Mode)	See Output: Voltage & Current Ranges Chart Above. Ripple and noise specified at full load, nominal AC input
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
Line Regulation	(± 10% of nominal AC input, constant load) Voltage Mode: +/- 0.01% of full scale Current Mode: +/- 0.05% of full scale
Load Regulation	(no load to full load, nominal AC input) Voltage Mode: +/- 0.02% of full scale Current Mode: +/- 0.1% of full scale
Efficiency	87% typical at nominal line and max load
Stability	±0.05% of set point after 8 hrs. warm-up 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: Voltage and Current Ranges								
	3U			6U			Ripple & Noise	
	5 kW	10 kW	15 kW	20 kW	25 kW	30 kW	rms (20 Hz-300 kHz)	p-p (20 Hz-20 MHz)
Voltage	Current							
40	125	250	375	500*	625*	750*	20 mV	75 mV
60	83	167	250	333	417	500	20 mV	75 mV
80	63	125	188	250	313	375	20 mV	100 mV
100	50	100	150	200	250	300	20 mV	100 mV
160	31	63	94	125	156	188	25 mV	150 mV
200	25	50	75	100	125	150	25 mV	175 mV
250	20	40	60	80	100	120	30 mV	200 mV
330	15	30	45	61	76	91	30 mV	200 mV
400	12	25	38	50	63	75	30 mV	300 mV
600	8	17	25	33	42	50	60 mV	350 mV

SGI / SGA Comparison Chart		
Feature	SGA	SGI
Modular Design	x	x
Fast Load Transient	x	x
Parallelable	x	x
Analog & Digital Summing	Optional	x
Direct Front Panel V/I Control	x	x
3½ Digit LED Readout	x	
Graphics Display		x
Sequencing		x
Save/Recall Setups		x
System Power Readouts		x
Constant Power Mode		x
IEEE-488.2/RS-232C	Optional	RS-232C Std IEEE-488.2 Optional
LXI Compliant Ethernet	Optional	Optional

SGI / SGA Model Number Description:



Options and Accessories:

Control Options: A: Analog
I: Intelligent

Input Options: C: Input Voltage 187 / 242VAC, 3 Phase
D: Input Voltage 342 / 440VAC, 3 Phase
E: Input Voltage 396 / 528VAC, 3 Phase

Remote Control Options: 0A: No Option
1A: IEEE-488.2 + 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)

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)

Contact factory for other combinations

Programming & Read-back Specifications					
	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: +/- 0.15% 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