### **Programmable Precision High Power DC Power Supply**

- High Power Density: up to 15 kW in 3U, 30 kW in a 6U chassis
- Wide Voltage Range: 0-10V up to 0-1000V, from 4 to 30 kW
- Fast Load Transient Response: Protection from undesired voltage excursions
- Low Ripple and Noise
- Hardware Trigger (Ethernet Option)
- Parallelable up to 150 kW
- Sequencing: Free system controller & speed up test
- Low audible noise: Temperature controlled variable speed fans

The Sorensen SG Series (hereafter SG Series) represents the next generation of high power programmable DC power supplies. The SG Series is designed for exceptional load transient response, low noise and the highest power density in the industry. With a full 15 kW available down to 20VDC output in a 3U package the SG leads the industry in power density. The 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 5 kW power module. Depending on the output voltage, one to six modules can be configured in a single chassis to deliver 5 kW to 30 kW of power. Combinations of these chassis can then be easily paralleled to achieve power levels up to 150 kW. 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.



# 10–1000 V

### 5-6000 A



#### SGI: Advanced Intelligent Control

(Sorensen General purpose Intelligent) The SGI combines onboard intelligent controls with the outstanding power electronics common to all SG family supplies. These controls enable sophisticated sequencing, constant power mode and save/recall of instrument settings. Looping of sequences makes the SGI ideal for repetitive testing. An impressive vacuum fluorescent graphical display in eight languages, context sensitive "soft" keys and front panel keyboard simplify programming of the SGI.

#### SGA: Outstanding Value - Analog Control

(Sorensen General purpose Analog) The SGA, with its industry leading performance, is available for customers requiring simple front panel analog controls or external control. With the same high performance power electronics as the SGI, 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.

> AMETEK Programmable Power 9250 Brown Deer Road San Diego, CA 92121-2267 USA



### 4–150 kW

# **SG Series : Product Specifications**

Common										
Remote Sense		Terminals are provided to sense output voltage at point of load. Maximum line drop 5% of rated voltage per line for 40-100V models, line drop 1V of rated voltage per line for 10-20V models, 1.5V for 30V models, 2% of rated voltage per line for models 160V and greater. (Greater line drop is allowed, but output regulation specifications no longer apply).								
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		208/230 VAC (operating range 187 - 253 VAC) 380/400 VAC (operating range 342 - 440 VAC) 440/480 VAC (operating range 396 - 528 VAC)								
Frequency		47 – 63Hz , 40	00Hz ( 400Hz @ 20	8VAC, for 6	U units is optional modifica	tion and does not	carry CE, UL or CSA markings )			
>( >(		>0.75 typical >0.72 typical	>0.9 typical for 10V - 30V, 50V, 1000V and other models with optional "PF" modification. >0.75 typical for 208/220 VAC input (40V, 60V - 800V models, 0.9 available with modification "PF") >0.72 typical for 380/480 VAC input (40V, 60V - 800V models, 0.9 available with modification "PF") >0.69 typical for 440/480 VAC input (40V, 60V - 800V models, 0.9 available with modification "PF")							
Protection (typical)			hough , typical, on a 6.4 msec on all 3 p		ases, 3 cycle ride through o	n single phase; mis	ssing phase shutdown			
Programming &	Read-back Specif									
, <u>.</u>	-	Programming			Read-Back / Monito	ring				
	Accura		Resolution		Accuracy	Resolution	1			
Front panel Display	SGA: +/- (0.5%fs + 1 digit) SGI (40-1000V) +/- 0.1% of voltage at full scale SGI (40-1000V) +/- 0.4% of current at full scale		SGA: 3.5 digits - SGI: 4.0 digits	SGI, Volta	(0.5%fs + 1 digit) age: +/- 0.1% of full scale ent: +/- 0.4% of full scale	SGA: 3.5 digits	Knob control & Display read-back			
	SGI (10-30V) 0.1% of set point +0.1% of voltage rating SGI (10-30V) 0.1% of set point +0.4% of current rating			· ·	80V) 0.1% of actual % voltage rating	SGI: 4.0 digits				
Remote Analog Interface	Voltage +/-0.25% of full scale Current (40-1000V) 0.8% of full scale , (10-30V) 1.0% of full scale		NA	(40-1000V) +/-1.0% of full scale (10-30V) +/-0.5% of full scale		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		+/- 0.1% of full scale +/- 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 & Polarit	y-reversal relay	Digital 10-pin Molex type connector See www.programmablepower.com							
Software	IVI & CVI drivers ava	ailable under SUI	PPORT at: www.Pro	grammable	Power.com					
Physical		3U N	lodels (10V-30\	/)	3U Models (40)	/-1000V)	6U Models (60V-600V)			
Width		19.00 in (48.3	cm)		19.00 in (48.3 cm)		19.00 in (48.3 cm)			
Depth		28.09 in (71.35 cm)			26.4 in (67.1 cm)		27.18 in (69.04 cm)			
Height 5		5.25 in (13.3 cm)			5.25 in (13.3 cm)		10.5 in (26.7 cm)			
Weight		(4kW, 10V 15V) ≈<65 lbs (29 kg) (5kW, 20V 30V) ≈<65 lbs (29 kg) (8kW, 10V 15V) ≈<85 lbs (39 kg) (10kW, 20V 30V) ≈<85 lbs (39 kg) (12kW, 10V 15V) ≈<110 lbs (50 kg) (15kW, 20V 30V) ≈<110 lbs (50 kg)			(5kW) ≈ ≤60 lbs (27 kg) (10kW) ≈ ≤75 lbs (34 kg) (15kW) ≈ ≤90 lbs (41 kg)		(20kW) ≈ ≤140 lbs (64 kg) (25kW) ≈ ≤155 lbs (71 kg) (30kW) ≈ ≤170 lbs (78 kg)			
Shipping Weight		Contact factor	y for more product	& shipping	, J weights					

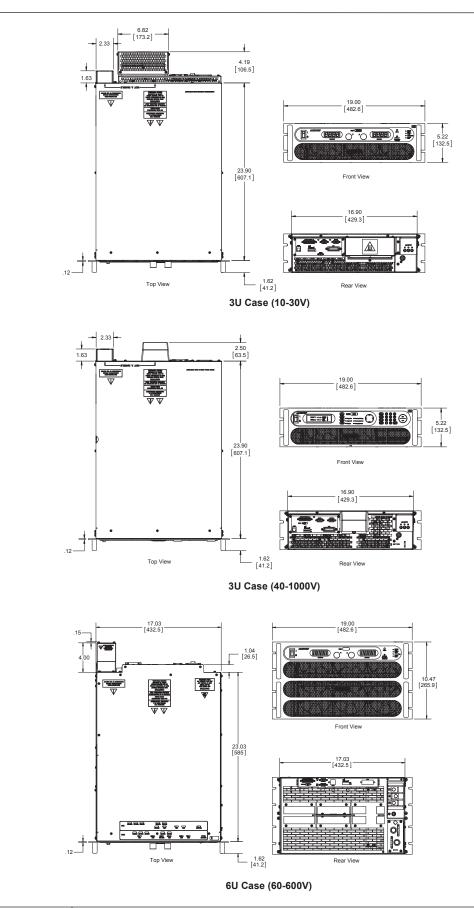
# SG Series : Product Specifications

## 4-150 kW

Output								
Ripple & Noise (Voltage Mode, Typical)	See Output: Voltage & Current Ranges Chart below. 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							
Output Rise Time (40-1000V)	≈< 100 ms 10-9	90% of full sca	ale typical -	full resistive load (	Contact factory	for model specif	ic slew rates)	
	Rise Time, ms, max Condition							
Output Voltage Rise Time (10-30V)	10		1	Measured from 10% to 90% of the output voltage change - resistive load, typical				
	Fall Time, ms m	ах	1		Condition			
Output Voltage Fall Time (10-30V)	No Load 1 100% CC Load			100% CR Load	Measured from 90% to 10% of the output voltage change resistive			
	50 10			100 /0 Cit Loud	load, typical			
	Rise Time, ms max							
Output Current Rise Time (10-30V)		IdX		Condition Measured from 10% to 90% of the output current change - resistive load, typical				
	20				5 to 90% of the	output current c	nange - resistive load,	турісаі
Output Current Fall Time (10-30V)	Fall Time, ms m	ax		ondition	4.00/ 6.1			
	10		I		to 10% of the	output current c	hange - resistive load,	typical
Line Regulation ( with sense wires used ) Load Regulation (with sense wires used)	(±10% of nominal AC input, constant load) Voltage Mode: +/- 0.01% of full scale (40-800V) Current Mode: +/- 0.05% of full scale (40-800V) Voltage Mode and Current Mode: +/- 0.05% of full scale (10-30V) (no load to full load, nominal AC input)							
	Voltage Mode: +/- 0.02% of full scale (40-800V) Current Mode: +/- 0.1% of full scale Voltage Mode: +/- 0.05% of full scale (10-30V)							
Load Transient Response	Recovers withir	n 1ms to +/-0.	75% of full-	scale of steadystat	e output for a 5	50% to 100% or	100% to 50% load cha	ange
Efficiency	87% typical at nominal line and max load							
	±0.05% of set point after 30 minute warm-up and over 8 hours at fixed line, load and temperature, typical							
Stability	±0.05% of set	point after 30	minute war	m-up and over 8 h	ours at fixed lin	e, load and temp	erature, typical	
Stability Temperature Coefficient	0.02%/ C of ma	aximum outpu	t voltage ra	m-up and over 8 h ting for voltage set ing for current set	t point, typical	e, load and temp	perature, typical	
	0.02%/ C of ma 0.03%/ C of ma Negative termin	aximum outpu aximum outpu nal within +/-	t voltage ra t current rat 300 V of ch	ting for voltage set ing for current set	t point, typical point, typical /e recommend t	the use of option	al isolated analog Inter	rface (IAI). )
Temperature Coefficient	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in "	aximum outpu aximum outpu nal within +/-	t voltage ra t current rat 300 V of ch	ting for voltage set ing for current set assis potential. (W	t point, typical point, typical /e recommend t	the use of option	al isolated analog Inter	rface (IAI). )
Temperature Coefficient Output Float Voltage	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in "	aximum outpu aximum outpu nal within +/-	t voltage ra t current rat 300 V of ch	ting for voltage set ing for current set assis potential. (W	t point, typical point, typical /e recommend t	the use of option	al isolated analog Inter	
Temperature Coefficient Output Float Voltage	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in "	aximum outpu aximum outpu nal within +/- series" have a	t voltage ra t current rat 300 V of ch	ing for voltage set ing for current set assis potential. ( W rent limit of the low	t point, typical point, typical /e recommend t west current sup	the use of option	al isolated analog Inter n. <b>Ripple &amp;</b>	Noise
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es	aximum outpu aximum outpu nal within +/- series" have a 3U	t voltage ra t current rat 300 V of ch system cur 12/15 kV	ing for voltage set ing for current set assis potential. ( W rent limit of the low	t point, typical point, typical /e recommend t west current sup 6U	the use of option oply in the syster	al isolated analog Inter n.	
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Power	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es	aximum outpu aximum outpu nal within +/- series" have a 3U	t voltage ra t current rat 300 V of ch system cur 12/15 kV	ting for voltage set ing for current set assis potential. ( W rent limit of the low 16/20 kW	t point, typical point, typical /e recommend t west current sup 6U	the use of option oply in the syster	al isolated analog Inter n. <b>Ripple &amp;</b> <b>rms</b>	Noise
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Power Voltage	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW	t voltage ra t current rat 300 V of ch system cur 12/15 kV	ing for voltage set ing for current set assis potential. ( W rent limit of the low / 16/20 kW Current	t point, typical point, typical Ve recommend t west current sup 6U 20/25 kW	the use of option oply in the syster 24/30 kW	al isolated analog Inter n. <b>Ripple &amp;</b> (20 Hz-300 kHz)	x Noise p-p (20 Hz-20 MHz)
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Power Voltage 10	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800	t voltage ra t current rat 300 V of ch system cur 12/15 kV 1200	ing for voltage set ing for current set assis potential. ( W rent limit of the low 4 16/20 kW Current 1600*	t point, typical point, typical Ve recommend t west current sup 6U 20/25 kW 2000*	the use of option oply in the syster 24/30 kW 2400*	al isolated analog Intern. Ripple & (20 Hz-300 kHz) 20 mV	z Noise p-p (20 Hz-20 MHz) 50 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Power Voltage 10 15	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 8/00 534	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801	A second	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335*	the use of option oply in the syster 24/30 kW 2400* 1602*	al isolated analog Inter n. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV	e Noise p-p (20 Hz-20 MHz) 50 mV 50 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Power Voltage 10 15 20	0.02%/ C of ma 0.03%/ C of ma Negative termii Supplies in " es 4/5 kW 400 267 250	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750	V 16/20 kW Current 1600* 1008* 1000*	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250*	24/30 kW 24/00* 1602* 1500*	al isolated analog Inter n. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV 20 mV	e Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Voltage 10 15 20 30	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334	t voltage ra t current raf 300 V of ch system cur 12/15 kV 1200 801 750 501	V 16/20 kW Current 1600* 1000* 668*	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835*	the use of option oply in the system 24/30 kW 2400* 1602* 1500* 1002*	al isolated analog Intern. Ripple & rms (20 Hz-300 kHz) 20 mV 20 mV 20 mV 20 mV 20 mV	r Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 15 20 30 40	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250	t voltage ra t current rat 300 V of ch system cur 12/15 kV 1200 801 750 501 375	V 16/20 kW Current 1600* 1000* 668* 500*	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625*	24/30 kW 24/30 kW 2400* 1602* 1500* 1002* 750*	al isolated analog Intern. <b>Ripple &amp;</b> <b>rms</b> (20 Hz-300 kHz) 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV	e Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 15 20 30 40 50	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750 501 375 300	V 16/20 kW Current 1600* 1068* 1000* 668* 500*	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500*	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600*	al isolated analog Intern. Ripple & rms (20 Hz-300 kHz) 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV 20 mV	e Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 15 20 30 40 50 60	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83	ximum outpu aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 534 500 334 250 200 167	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750 501 375 300 250	V 16/20 kW Current limit of the low V 16/20 kW Current 1068* 1000* 668* 500* 400* 333	t point, typical point, typical //e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500	al isolated analog Intern. Ripple & rms (20 Hz-300 kHz) 20 mV 20 mV	e Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Voltage 10 15 20 30 40 50 60 80	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63	ximum outpu aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750 501 375 300 250 188	ing for voltage set ing for current set         assis potential. (W rent limit of the low         16/20 kW         Current         1600*         1000*         668*         500*         400*         333         250	t point, typical point, typical //e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375	al isolated analog Intern. Ripple & rms (20 Hz-300 kHz) 20 mV 20 mV	R Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 15 20 30 40 50 60 80 100	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 50	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100	t voltage ra t current rat 300 V of ch system cur 12/15 kV 1200 801 750 501 375 300 250 188 150	ing for voltage set ing for current set         assis potential. (Wrent limit of the low         16/20 kW         Current         1600*         1068*         1000*         668*         500*         400*         333         250         200	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300	al isolated analog Intern. <b>Ripple &amp;</b> <b>rms</b> (20 Hz-300 kHz) 20 mV 20 mV	e Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 10 15 20 30 40 50 60 80 100 160	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 63 50 31	ximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100 63	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750 501 375 300 250 188 150 94	ing for voltage set ing for current set           assis potential. (W           rent limit of the low           16/20 kW           Current           1600*           1068*           1000*           668*           500*           400*           333           250           200           125	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188	al isolated analog Intern. Ripple & 20 mV 20 mV	e Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV 75 mV 100 mV 100 mV 100 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 15 20 30 40 50 60 80 100 160 200	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " res 4/5 kW 400 267 250 167 125 100 83 63 63 50 31 25	ximum outpu aximum outpu aximum outpu aximum outpu aximum outpu 3U 8/10 kW 800 534 534 500 334 250 200 167 125 100 63 50	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 1200 801 750 501 375 300 250 188 150 94 75	ing for voltage set ing for current set           assis potential. (W rent limit of the low           /         16/20 kW           Current           1600*           1068*           1000*           668*           500*           400*           333           250           200           125           100	t point, typical point, typical //e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188 150	al isolated analog Intern. <b>Ripple &amp;</b> <b>rms</b> (20 Hz-300 kHz) 20 mV 20 mV	R Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV 150 mV 150 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Voltage 10 10 15 20 30 40 50 60 80 100 160 200 250	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 50 31 25 20	ximum outpu aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100 63 50 40	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 12/00 801 750 501 375 300 250 188 150 94 75 60	ing for voltage set ing for current set           assis potential. (W rent limit of the low           16/20 kW           Current           1600*           1068*           1000*           668*           500*           400*           333           250           200           125           100           80	t point, typical point, typical //e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125 100	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188 150 120	al isolated analog Intern. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV 30 mV 20 mV 2	e Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV 150 mV 200 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 10 15 20 30 40 50 60 80 100 160 200 250 300	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 63 63 50 31 25 20 17	aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100 63 50 40 33	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 12/00 801 750 501 375 300 250 188 150 94 75 60 50	ing for voltage set ing for current set           assis potential. (W rent limit of the low           16/20 kW           Current           1600*           1068*           1000*           668*           500*           400*           333           250           200           125           100           80           67	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125 100 83	the use of option oply in the system 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188 150 188 150 120 100	al isolated analog Intern. Ripple & rms (20 Hz-300 kHz) 20 mV 20 mV 30 mV 30 mV	e Noise P-P (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV 100 mV 100 mV 200 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Range Voltage 10 10 15 20 30 40 50 60 60 60 80 100 160 200 250 300 330	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 63 63 50 31 25 20 17 17 15	ximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100 63 50 40 33 30	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 12/00 801 750 501 375 300 250 188 150 94 75 60 50 45	ing for voltage set ing for current set           assis potential. (W rent limit of the low           16/20 kW           Current           1068*           1000*           668*           500*           400*           333           250           200           125           100           80           67           61	t point, typical point, typical /e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125 125 100 83 76	24/30 kW 24/30 kW 24/30 kW 24/0* 1602* 1500* 1002* 750* 600* 500 375 300 188 150 188 150 120 100 91	al isolated analog Intern. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV 30 mV 30 mV 30 mV	x Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV 100 mV 100 mV 200 mV 200 mV
Temperature Coefficient Output Float Voltage Output: Voltage and Current Rang Voltage 10 10 15 20 30 40 50 60 80 60 80 100 160 200 250 300 330 400	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 63 50 31 25 20 17 15 12	ximum outpu aximum outpu aximum outpu aximum outpu aximum outpu series" have a 3U 8/10 kW 800 534 534 500 334 250 200 167 125 100 63 50 40 33 30 25	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 12/00 801 750 501 375 300 250 188 150 94 75 60 94 75 60 50 45 38	ing for voltage set ing for current set         assis potential. (W rent limit of the low         16/20 kW         Current         1600*         1008*         1000*         668*         500*         400*         333         250         200         125         1000         80         67         61         50	t point, typical point, typical // recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125 100 83 76 63	24/30 kW 24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188 150 188 150 120 100 91 75	al isolated analog Intern. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV 30 mV 30 mV 30 mV 30 mV	P-P (20 Hz-20 MHz)           50 mV           50 mV           60 mV           60 mV           75 mV           75 mV           100 mV           100 mV           150 mV           200 mV           200 mV           300 mV
Power           Voltage           10           15           20           30           40           50           60           80           100           20           30           40           50           60           80           100           160           200           300           300           300           300           300           300           300           300           300           300           300           300           300           300           300           300           300           300	0.02%/ C of ma 0.03%/ C of ma Negative termin Supplies in " es 4/5 kW 400 267 250 167 125 100 83 63 50 31 25 20 17 15 12 10	ximum outpu aximum outpu aximum outpu nal within +/- series" have a 3U 8/10 kW 800 534 500 334 250 200 167 125 100 63 50 40 33 30 25 20	t voltage ra t current rat 300 V of ch. system cur 12/15 kV 12/00 801 750 501 375 300 250 188 150 94 75 60 94 75 60 50 45 38 30	ing for voltage set ing for current set         assis potential. (W rent limit of the low         16/20 kW         Current         1000*         668*         500*         400*         333         250         200         1125         100         80         67         61         50         40	t point, typical point, typical //e recommend t west current sup 6U 20/25 kW 2000* 1335* 1250* 835* 625* 500* 417 313 250 156 125 100 83 76 63 50	24/30 kW 24/30 kW 24/00* 1602* 1500* 1002* 750* 600* 500 375 300 188 150 120 120 100 91 75 60	al isolated analog Intern. <b>Ripple &amp;</b> (20 Hz-300 kHz) 20 mV 20 mV 30 mV 30 mV 30 mV 30 mV 30 mV 30 mV	x Noise p-p (20 Hz-20 MHz) 50 mV 50 mV 60 mV 60 mV 75 mV 75 mV 75 mV 100 mV 100 mV 100 mV 200 mV 200 mV 200 mV 300 mV 300 mV

\* By way of paralleling 3U supplies

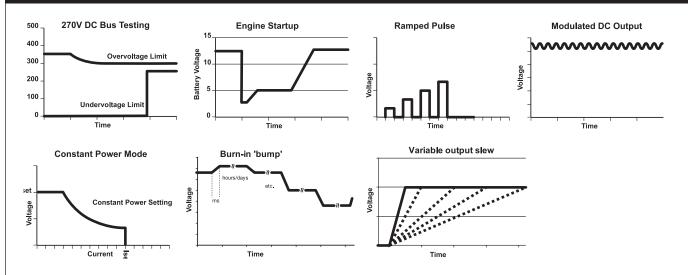
# SG Series : Product Diagram



# **SG Series**

## 4–150 kW

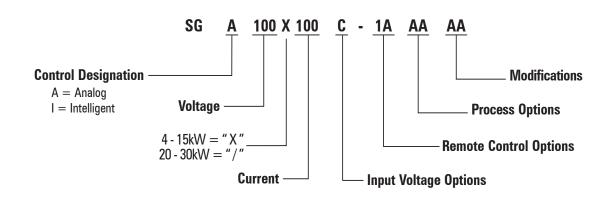
#### Advanced Power Simulation



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

SGI / SGA Comparison Chart					
Feature	SGA	SGI			
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	RS-232C Std, IEEE-488.2 Optional			
LXI Class C Ethernet/ RS-232	Optional	RS-232C Std, Ethernet Optional			
Front Panel Dust Filter	Optional (3U unit only)	Optional (3U unit only)			
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 by a NRTL, CE Compliant, Semi-F47 Compliant. LVD Categories: Installation Category II: Pollution Degree 2; Class II Equipment: for Indoor Use Only, back panel not user accessible (see user manual for installation instructions) EMC Directive, EN 61326:1998				
Front Panel Dust Filter	30 PPI (Pores Per Inch) - must ensure adequate airflow and / or de	rate max. temperature. 3U unit only.			

## **SG Series**



(For units with greater than 3 digits, Voltage/Current is represented in numeric format, e.g., above "100" represents 100A. For units at 1000 and above, the voltage is represented by the format "XKX", e.g. 1K2 = 1200V and 1K0 = 1000V)

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 (Note: SGI comes standard with RS-232C)         1C: Ethernet + RS-232C         1D: Isolated Analog Control         1E: Shaft Locks (SGA series only)         2A: Combined Options 1A+1D         2C: Combined Options 1A+1E (SGA Only)         2G: Combined Options 1C+1D         2H: Combined Options 1C+1E (SGA Only)         2J: Combined Options 1D+1E (SGA Only)         3C: Combined Options 1A+1D+1E (SGA Only)         3G: Combined Options 1C+1D+1E (SGA Only)
Process Options	AA: No option AB: Certificate of Calibration to ANSI / NCSL Z540-1 (includes Test Data)
Modifications	AJ: Front panel dust filter - factory installed - 3U unit only CV: 400Hz AC input @ 208 VAC ( does not carry CE, CSA or UL marks ) ( 6U only ) STD on 3U PF: Passive power factor correction to 0.9 (Only applicable to 40V, 60V to 800V. Included in 10V-30V, 50V and 1000V.)
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) K550532-01: Front panel dust filter - field installation kit - 3U unit only 5551082-01: Optional AC input cover kit - 3U unit only
Contact factory for other combina	tions

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