Sorensen™
SGX

Sorensen SGX Programmable Precision High Power DC Power Supply with Touch Screen Display

(4–150 kW, 10–1000 V, 5–6000 A)

The Sorensen SGX Series represents the next generation of high power programmable DC power supplies. The SGX 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 20V output in a 3U package, the SGX 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 SGX 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 the total system current.

Introducing Sorensen SGX with Touch Screen

Advantages:

- Quickly and expertly control supply with intuitive touch screen.
- High Power Density: up to 15 kW in 3U chassis; 30kW in 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
- Parallelable up to 150 kW
- Form, fit and function compatibility with previous SG power supplies

Advanced Intelligent Control

The SGX Series is operated from the intuitive, easy-to-use front panel touch screen display. Quickly access output programming parameters, measurements, sequencing, configuration and system settings from the touch screen interface. Functions and parameters can be directly selected from the touch screen or by using the encoder selector button. The control resolution is adjusted by a dynamic rate change algorithm that combines the benefits of precise control over small parameter changes with quick sweeps through the entire range.

Additionally, the instrument can be controlled via LXI Ethernet and RS232 standard control interfaces, as well as through the optional GPIB control interface.

9250 Brown Deer Road, San Diego, CA 92121 USA • 858-458-0223 • **www.programmablepower.com**

AMETEK® PROGRAMMABLE POWER

Sorensen SGX Series: Product Specifications & Details

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			
Output Rise Time (40-1000V)	≈< 100 ms 10-90% of full scale typical - full resistive load (Contact factory for model specific slew rates)			
Output Voltage Rise Time (10-30V)	Rise Time, ms max	Condition		
	10	Measured from 10% to 90% of the output voltage change - resistive load, typical		
Output Voltage Fall Time (10-30V)	Fall Time, ms max			Condition
	No Load	100% CC Load	100% CR	Measured from 90% to 10% of the output voltage change. - resistive load, typical
	50	10	10	
Output Current Rise Time (10-30V)	Rise Time, ms max	Condition		
	20	Measured from 10% to 90% of the output current change - resistive load, typical		
Output Current Fall Time (10-30V)	Fall Time, ms max	Condition		
	10	Measured from 90% to 10% of the output current change - resistive load, typical		
Line 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)			
Load Regulation (with sense wires used)	(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 within 1ms to +/-0.75% of full-scale of steady-state 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, typical			
Temperature Coefficient	0.02%/ C of maximum output voltage rating for voltage set point, typical 0.03%/ C of maximum output current rating for current set point, typical			
Output Float Voltage	Negative terminal within +/- 300 V of chassis potential. (We recommend the use of optional isolated analog Interface.) Supplies in "series" have a system current limit of the lowest current supply in the system.			

Output: Voltage and Current Ranges

	3U			6U			Ripple & Noise	
Power	4/5 kW	8/10 kW	12/15 kW	16/20 kW	20/25 kW	24/30 kW	**rms** (20 Hz-300 kHz)	**p-p** (20 Hz-20 MHz)
Voltage	Current							
10	400	800	1200	1600*	2000*	2400*	20 mV	50 mV
15	267	534	801	1068*	1335*	1602*	20 mV	50 mV
20	250	500	750	1000*	1250*	1500*	20 mV	60 mV
30	167	334	501	668*	835*	1002*	20 mV	60 mV
40	125	250	375	500*	625*	750*	20 mV	75 mV
50	100	200	300	400*	500*	600*	20 mV	75 mV
60	83	167	250	333	417	500	20 mV	75 mV
75	67	133	200	267	333	400	20 mV	100 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
300	17	33	50	67	83	100	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
500	10	20	30	40	50	60	50mV	350mV
600	8	17	25	33	42	50	60 mV	350 mV
800	6.2	12.5	18.7	25*	31.2*	37.5*	80 mV	500 mV
1000	5	10	15	20*	25*	30*	100 mV	650 mV

* By way of paralleling 3U supplies

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