SorensenXG Series





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Sorensen XG 850, 1500 & 1700 Series

Up to 1700W of Power in a 1U Power Supply

The Sorensen XG 850, 1500 & 1700 Series are industry leading programmable DC power supplies designed for test, production, laboratory, OEM and quality assurance applications. Sitting at the top of the family, the XG 1700, is a high power density 1700 Watt, 1U programmable power supply with constant voltage and constant current modes, automatic cross-over and numerous features enabling cost effective, easy system integration.

Key Features

- Standard Digital Interfaces USB & RS232
- Auxiliary 5V / 15V outputs
- LXI Ethernet and Isolated analog interfaces
- Power Factor Correction PFC & universal AC input
- Sleep Mode Auto "sleeps" after period of non-use (1500 & 1700 only)
- Easy "cover on" soft calibration
- Programmable fold-back protection delay

Applications

- Burn-in
- Compliance Testing
- Materials Research
- Process Control
- Product Validation
- Automotive Electronics
- Rack ATE Systems
- Battery Charging

Features and Benefits

Easy Integration

The Sorensen XG Series of system power supplies are designed for ease of integration into automated test and other equipment. The XG Series has many control and indication signals such as shutdown, constant voltage (CV) vs. constant current (CC) mode indication, OVP, OCP, OTP, and so on. In addition, the analog control range is free selectable, enabling the XG to replace existing power supplies with little or no system engineering required.

Free selectable analog control range

Most DC power supplies provide a 0 to 5 or 0 to 10 V analog control range to control the DC output from zero to full DC output range. With the XG, the analog control range is free selectable starting at 0V to an upper range between 2V and 10V. In other words, the analog programming interface range is freely adjustable.

Auxiliary DC output channels with control

In many ATE systems one or more low power, fixed voltage supplies are needed to provide electrical power for any periphery within the ATE cabinet. For this purpose, the XG provides two standard auxiliary DC output channels. Both auxiliary power channels are controllable directly from the front-panel or through SCPI commands. With these channels, it is possible to drive output-disconnect or polarity-reversal relays, without needing a complicated computer controlled relay board.

Variable Fan Speed Control

The XG Series innovative approach to fan speed is determined by internal heat sink temperature. This allows the fans to adjust to a constant optimal speed when the output of the supply is being pulsed. This also reduces noise and increases fan life.

Remote Serial Programming

Digital programming is flexible and easy, because in addition to precise, digital encoder front panel control and simultaneous voltage and current displays, the XG includes standard RS232 and USB remote control interfaces. It also offers optional GPIB and LXI Class C Ethernet control inputs. Commonly used, SCPI compliant, device drivers are available to support system applications. To allow for fast programming and to unload your system controller, DC voltage or current sequences can be programmed into a specific memory location, using compliant SCPI commands. The XG supports autonomous program sequencing with the capability to upload and execute pre-programmed test routines including the operation of the auxiliary outputs, minimizing command latency and system controller overhead and thereby maximizing system throughput.

Simple Multi-Channel Serial Control

The XG Series, like most of the Sorensen DC power supplies, provides a multi-channel control system. With this method, it is possible to configure many power supplies into a one-master, multi-slave, single multi-channel power-sub-system. One master can control up to 30 slave-units through a simple cable (RS-485) using RJ-45 connectors

This method of multi-channel control is much easier to manage from a software programming point of view and provides much less complexity from an interfacing and wiring point of view (one single GPIB or IP address controlling multiple DC output channels).

The XG is a programmable DC power supply that operates as a voltage or current source. XG supplies are targeted to the Research and Development, Production Test, and OEM markets. The XG product family consists of three power ranges: 850, 1500 and 1700 watts. Each power range is comprised of 11 or 12 models with varying output voltage and current ratings. The models are categorized into three general groups from a design / manufacturing perspective:

XG 850W Model Range: 6-110 (6V, 110A) up to 600-1.4 (600V, 1.4A)

XG 1500W Model Range: 8-187.5 (8V, 187.5A) up to

600-2.6 (600V, 2.6A)

XG 1700W Model Range: 6-220 (6V, 220A) up to

600-2.8 (600V, 2.8A)

Key Modes

Power Saving Standby Mode (1500/1700 only)

When the XG 1500/1700 has been in an idle state, the supply can go into "sleep mode", much like a computer monitor. This will allow the user to save energy and minimize lab noise. Since an XG left in sleep mode is still "on" the user will have quicker access to an enabled output.

Output Auto Start Mode (Auto Restart)

The Auto Start mode establishes the state of the output of the power supply after recovery from a complete power cycle (all front panel LEDs are not illuminated), or after recovery from a PC failure or reboot. If Auto Start mode is set to On, the power supply output will return to its previous value. Also, after the loss of any remote digital control, the XG unit will remain active in its last programmed setting and will not disrupt any test process.

Auxiliary Auto Start Mode

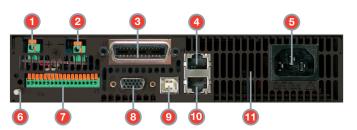
The Auxiliary Auto Start mode determines the state of the auxiliary output after a complete power cycle (all front panel LEDS are not illuminated). With Auxiliary Auto Start mode turned to On, the auxiliary output will be activated after the power supply is powered up again.

Foldback Mode

Foldback mode is used to disable the output when a transition is made between the operating modes. The power supply will turn off/disable the output and lock in foldback mode after a specified delay if the power supply transitions into CV mode or into CC mode, depending on the foldback mode settings. This feature is particularly useful for protecting current or voltage sensitive loads. Foldback can be set to trigger a switch when transitioning from CV to CC mode or from CC to CV mode.



Quick-connect spring-terminal-block





Rear Panel Connectors

	Real Faller Connections				
1	DC output connector positive (60-600 V)				
2	DC output connector negative (60-600 V)				
3	LAN or GPIB connector (optional)				
4	RS-232/RS485 Connector in port				
5	AC input				
6	Chassis ground screw				
7	Control connector				
8	Auxiliary output and isolated control connector				
9	USB connector				
10	RS-485 connector out port				
11	Fan Exhaust Vents				

13 DC output bus bar negative (6-40 V)

12

DC output bus bar positive (6-40 V)

Sorensen XG 850, 1500 & 1700 Series

850 Watt, 1500 Watt & 1700 Watt DC Programmable Power Supplies

AC Line Input Specifications						
Operational AC Input Voltage/Frequency	85–265 Vac continuous, 47–63 Hz, single phase					
Power Factor Correction	0.99@100/200 Vac, rated output power					
Programming Mode	APG	Digital				
Voltage Programming Accuracy (mV) ¹	± 0.5% of rated output voltage, max (0-4V/4K rang		0.1% output vo			
Current Programming Accuracy (mV) ¹	± 1% of rated output current, max (0-4V/4K rang		0.2% o utput cu			
Output Performance Specifications						
Transient Response Time ²	Less than 1 ms for 6 V to 60 V models. Less than 2 ms for 80 V to 600 V models*					
Environmental Specification	ns (Indoor use)					
Operating Temperature Range	32°F to 122°F, 100% load (0°C to 50°C)					
Regulatory Approvals						
Safety	CSA 22.2 No. 61010-1 and UL61010-1. Marked with c(UL) us, CE EN61010-1					
EMC	conducted emissio Complies with EN5 radiated emissions	Complies with EN61000-4 series of standards for				
Mechanical Specifications						
XG 1500 / 1700 Watt (W×H×D)	16.8 x 1.7 x 19.0 inch (429 x 43.6 x 483 mm without rack mount ears)					
XG 850 Watt (W×H×D)	8.4 x 1.7 x 19.0 inch (214 x 43.6 x 483 mm)					
XG 1500 / 1700 Watt Weight	22 lb (10 kg)					
XG 850 Watt Weight	11 lb (5 kg)					
Cooling	Forced air cooling by internal fans					
Feature	XG 850	XG 1500/1	1700	Order Option		
USB Interface	Standard	Standar	'd			
RS232 Interface	Standard	Standar	rd			
Power Factor Correction	Standard	Standar	rd			
Isolated Analog Interface	Standard	Option	1	MIA		
GPIB, IEEE 488.2	Option	Option	1	MGA		
LXI Class C Ethernet	Option	Option	1	MEB		
Rackmount Angle Brackets	Option	Option	1	RM-XG1		
Rackmount Kit for 1 unit	Option	N/A		RM-S-XG1		
Rackmount Kit for 2 units	Option	N/A		RM-D-XG1		
Model Number Description	33 - <u>25 (</u> 2	XXX)				

Output				
1700 Models	Output Voltage ³	Output Current ⁴		
XG 6-220	6 V	220 A		
XG 8-200	8 V	200 A		
XG 12-140	12 V	140 A		
XG 20-84	20 V	84 A		
XG 33-50	33 V	50 A		
XG 40-42	40 V	42 A		
XG 60-28	60 V	28 A		
XG 80-21	80 V	21 A		
XG 100-17	100 V	17 A		
XG 150-11.2	150 V	11.2 A		
XG 300-5.6	300 V	5.6 A		
XG 600-2.8	600 V	2.8 A		
1500 Models	Output Voltage ³	Output Current ⁴		
XG 8-187.5	8 V	187.5 A		
XG 12.5-120	12.5 V	120 A		
XG 20-76	20 V	76 A		
XG 30-50	30 V	50 A		
XG 40-38	40 V	38 A		
XG 60-25	60 V	25 A		
XG 80-19	80 V	19 A		
XG 100-15	100 V	15 A		
XG 150-10	150 V	10 A		
XG 300-5	300 V	5 A		
XG 600-2.6	600 V	2.6 A		
850 Models	Output Voltage ³	Output Current ⁴		
XG 6-110	6 V	110 A		
XG 8-100	8 V	100 A		
XG 12-70	12 V	70 A		
XG 20-42	20 V	42 A		
XG 33-25	33 V	25 A		
XG 40-21	40 V	21 A		
XG 60-14	60 V	14 A		
XG 80-10.5	80 V	10.5 A		
XG 100-8.5	100 V	8.5 A		
XG 150-5.6	150 V	5.6 A		
XG 300-2.8	300 V	2.8 A		
XG 600-1.4	600 V	1.4 A		
Line and Load				
Line Regulation Voltage	e (0.005% of rated output voltage +2 mV) ⁵			
Line Regulation Current		(0.005% of rated output voltage +2 mV) ⁶		
Load Regulation Voltage		(0.005% of rated output voltage + 2 mV) ⁷		
Load Regulation Current		(0.02% of rated output voltage + 2 mV)		
Load Regulation Current (0.02 % of fated output current +3 mA) 5				

^{*} Typica

- Typical APG or isolated APG accuracy can be improved to max accuracy by user calibration at the specific range selected.
- 2. Time for the output voltage to recover within 0.05% at its rated output for a load change 10-90% of rated ouput current. Output set point 10-100%
- 3. Minimum output voltage is guaranteed to be \leq 0.2% of the rated voltage at zero output setting. 4. Minimum output current is guaranteed to be \leq 0.4% of the rated current at zero output setting
- when measured with rated load resistance.
- 5. From 85-132 Vac or 170-265 Vac, constant load.
- 6. From 85-132 Vac or 170-265 Vac, constant load.
 7. From no load to full load, constant input voltage.
- 8. For load voltage change, equal to the unit voltage rating, constant input voltage.

Note: Full data sheet with detailed specs available at www.programmablepower.com Note: All specifications are subject to change.

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Voltage -

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Options