

# Sorensen™

## XG Series

**AMETEK®**  
PROGRAMMABLE POWER



# EASY SYSTEM INTEGRATION

**850 & 1700 Watt DC Programmable Power Supplies**

[WWW.PROGRAMMABLEPOWER.COM](http://WWW.PROGRAMMABLEPOWER.COM)

# Sorensen XG 850 & 1700 Series

## Now, 1700W of Power in a 1U Power Supply

The Sorensen XG 850 & 1700 Series are industry leading programmable DC power supplies designed for test, production, laboratory, OEM and quality assurance applications. The newest member 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.

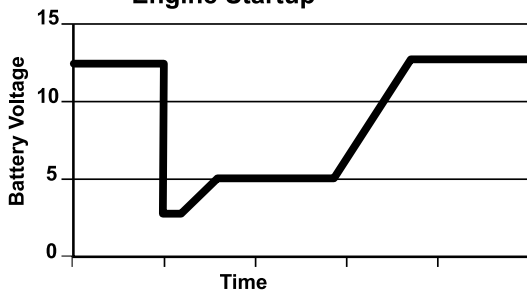
## Key Features

- Standard Digital Interfaces – USB & RS232/485
- 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 (1700 only)
- Easy “cover on” soft calibration
- Programmable fold-back protection delay

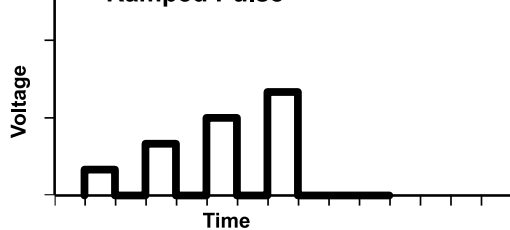
## Applications

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

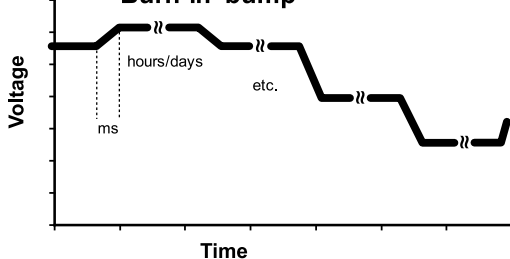
### Engine Startup



### Ramped Pulse



### Burn-in 'bump'



## Easy System Integration

The Sorensen XG Series of system power supplies are designed for ease of integration into automated test and other equipment.

### 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/RS485 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 store, recall 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.

One example is to simulate the engine startup standard used in the automotive industry. This unique Auto Sequence Programming functionality is additionally powerful combined with the XG's excellent slew-rate specifications.

### 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).

## 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.

## Digital I/O Features with Analog Control

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. But what if these analog control-signals are not exactly covering the range you need? XG analog control and read-back full scale signals can be user defined, from 0 to 2V to 0 to 10V, facilitating easy substitution of the XG into existing test or process control systems. In fact, it's just a push-of-a-button front-panel exercise, to make the XG compatible with your analog control system.

## Included Auxiliary Outputs

In many ATE systems one or more low power, fixed voltage supplies are needed to power accessories within the system. For this purpose, the XG Series provides two auxiliary DC output channels, 5V / 15V each 0.4 Amps. Both auxiliary power channels are switchable directly from the front-panel or through SCPI commands. In this way, it is possible to drive output disconnect or polarity reversal relays, without needing a complicated computer controlled relay board, further reducing system cost and complexity.

## Environmental Features

**Variable Fan Speed Control:** The XG's 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, which reduces audible noise and increases fan life.

**Power Saving Standby Mode (1700 Only):** When the XG 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 1700 left in sleep mode is still "on" the user will have quicker access to an enabled output.



**Quick-connect spring-terminal-block**



**DC output disconnect relays controlled by auxiliary output channels**

# Sorensen XG 850 & 1700 Series

## 850 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		
<b>Programming Mode</b>	APG	Digital	
Voltage Programming Accuracy (mV) <sup>1</sup>	± 0.5% of rated output voltage, max (0-4V/4K range)	± 0.1% of rated output voltage	
Current Programming Accuracy (mV) <sup>1</sup>	± 1% of rated output current, max (0-4V/4K range)	± 0.2% of rated output current	
Output Performance Specifications			
Transient Response Time <sup>2</sup>	Less than 1 ms for 6 V to 60 V models. Less than 2 ms for 80 V to 600 V models*		
Environmental Specifications (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 cCSAus, CE EN61010-1		
EMC	Complies with EN61326-1 Complies with EN55011, Class A, FCC Part 15A for conducted emissions Complies with EN55011 Class A, FCC Part 15A for radiated emissions Complies with EN61000-4 series of standards for immunity		
Mechanical Specifications			
XG 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 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 1700	Order Option
USB Interface	Standard	Standard	
RS232 Interface	Standard	Standard	
Power Factor Correction	Standard	Standard	
Isolated Analog Interface	Standard	Option	MIA
GPIB, IEEE 488.2	Option	Option	MGA
Ethernet	Option	-	MEA
LXI Class C Ethernet	-	Option	MEB
Rackmount Angle Brackets	Option	Option	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			

Output		
1700 Models	Output Voltage <sup>3</sup>	Output Current <sup>4</sup>
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
850 Models	Output Voltage <sup>3</sup>	Output Current <sup>4</sup>
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	(0.005% of rated output voltage +2 mV) <sup>5</sup>	
Line Regulation Current	(0.01% of rated output current +2 mA) <sup>6</sup>	
Load Regulation Voltage	(0.005% of rated output voltage + 2 mV) <sup>7</sup>	
Load Regulation Current	(0.02% of rated output current +5 mA) <sup>8</sup>	

\* Typical

- Typical APG or isolated APG accuracy can be improved to max accuracy by user calibration at the specific range selected.
- Time for the output voltage to recover within 0.05% at its rated output for a load change 10-90% of rated output current. Output set point 10-100%
- Minimum output voltage is guaranteed to be ≤ 0.2% of the rated voltage at zero output setting.
- Minimum output current is guaranteed to be ≤ 0.4% of the rated current at zero output setting when measured with rated load resistance.
- From 85-132 Vac or 170-265 Vac, constant load.
- From 85-132 Vac or 170-265 Vac, constant load.
- From no load to full load, constant input voltage.
- 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](http://www.programmablepower.com)  
Note: All specifications are subject to change.

07212010