Sorensen XPD Series

Compact 500 Watt Quarter-Rack DC Power Supply

- Analog programming
- Universal input
- Zero voltage "soft switching"
- Power factor correction (PFC)
- Front and rear connectors
- Ten-turn front panel knobs
- Remote sense with 5V line loss compensation
- LabVIEW® and LabWindows® drivers

The Sorensen XPD Series features the smallest 500-watt programmable power supply available. The XPD Series is ideal for benchtop, ATE and OEM applications where a wide range of output voltage or current is needed in a compact unit.

The XPD can be combined in a mix-and-match configuration with the quarter-rack 300-watt HPD series and 60-watt XT series. Each unit features zero voltage "soft switching" to virtually eliminate switching transients. This switching technology contributes to high efficiency, low noise, and high reliability. The XPD series also features power factor correction (PFC) technology to enable low current draw and to greatly reduce generation of input current harmonics.

500–540 W

7.5–120 V

4.5–67 A

	~	115	230

GPIB RS232

XPD Series : Product Specifications[1]

Output : Voltage and Current					
Models	7.5-67	18-30	33-16	60-9	120-4.5
Output Ratings					
Output Voltage [2]	0-7.5 V	0-18 V	0-33 V	0-60 V	0-120 V
Output Current [3]	0-67 A	0-30 A	0-16 A	0-9 A	0-4.5 A
Output Power	502.5 W	540 W	528 W	540 W	540 W
Line Regulation [4]					
Voltage	2.8 mV	3.8 mV	5.3 mV	8 mV	14 mV
Current	7.7 mA	4 mA	2.6 mA	2 mA	2 mA
Load Regulation [5]					
Voltage	2.8 mV	3.8 mV	5.3 mV	8 mV	14 mV
Current	11.7 mA	8 mA	6.6 mA	5.9 mA	5.5 mA
Meter Accuracy					
Voltage (1% of Vmax + 1 count)	0.2 V	0.3 V	0.5 V	0.7 V	2.2 V
Current (1% of Imax + 1 count)	0.8 A	0.4 A	0.3 A	0.2 A	0.2 A
Output Noise (90-20 MHz)					
Voltage (p-p)	50 mV	50 mV	75 mV	125 mV	180 mV
Output Ripple					
Voltage	5 mV	5 mV	7.5 mV	10 mV	20 mV
Current [6]	250 mA	250 mA	150 mA	150 mA	75 mA
Drift (60 minutes) [7]					
Voltage (0.15% of Vmax)	11.3 mV	27 mV	49.5 mV	90 mV	180 mV
Current (0.3% of Imax)	201 mA	90 mA	48 mA	27 mA	13.5 mA
Drift (8 hours) [8]					
Voltage (0.03% of Vmax)	2.3 mV	5.4 mV	9.9 mV	18 mV	36 mV
Current (0.05% of Imax)	34 mA	15 mA	8 mA	4.5 mA	2.3 mA
Temperature Coefficient [9]					
Voltage (0.015% of Vmax/°C)	1.2 mV	2.7 mV	5 mV	9 mV	18 mV
Current (0.02% of Imax/°C)	13.4 mA	6 mA	3.2 mA	1.8 mA	0.9 mA
OVP Adjustment Range					
(5% to 110% of Vmax)	0.4-8.3 V	0.9-19.8 V	1.7-36.3 V	3-66 V	6-132 V
Efficiency [10]	81%	83%	85%	85%	84%

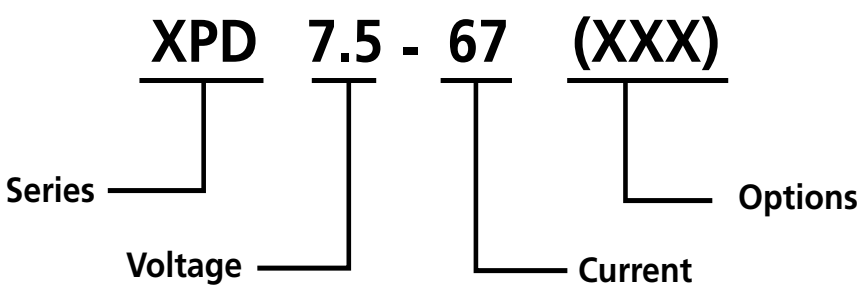
Specifications subject to change without notice.

1. All electrical specifications are represented at the full operating temperature range for all models, unless otherwise stated.
2. Minimum output voltage is < 0.15% of rated voltage at zero output setting.
3. Minimum output current is < 0.2% of rated current at zero setting when measured with rated load resistance. Front output current limited to 30 A maximum.
4. For input voltage variation over the AC input voltage range, with constant rated load.
5. For 0-100% load variation, with constant nominal line voltage.
6. Current mode noise is measured from 10% to 100% of rated output voltage, full current.
7. Maximum drift over 60 minutes with constant line, load, and temperature, after power up.
8. Maximum drift over 8 hours with constant line, load, and temperature, after 60 minute warm-up.
9. Change in output per °C change in ambient temperature, with constant line and load.
10. Typical efficiency at 120 V and full output power.
11. Interface specifications at 25°C ± 5°C, nominal line input of 120 Vac. Apply accuracy specifications according to the following voltage program accuracy example: Set a model 18-30 power supply to 10 V. The expected result will be within the range of 10 V ± 75 mV ± 0.12% of the set voltage of 10 V.

XPD 500 W Internal Interface Specifications with RS-232 or GPIB Interface Installed[11]					
Models	7.5-67	18-30	33-16	60-9	120-4.5
Program Accuracy					
Voltage (mV)	10 +0.12%	75 +0.12%	75 +0.12%	150 +0.3%	180 +0.25%
Current (mA)	250 +0.1%	140 +0.1%	115 +0.15%	80 +0.15%	80 +0.1%
OVP (mV)	80	200	330	600	1200
Readback Accuracy					
Voltage (mV)	30 (±0.12%)	75 (±0.12%)	75 (±0.2%)	150 (±0.3%)	180 (±0.25%)
Current (mA)	250 (±0.1%)	140 (±0.1%)	115 (±0.15%)	80 (±0.15%)	80 (±0.1%)
Input					
Operational AC Input Voltage	85-264 Vac, 47-63 Hz; power factor corrected. Derate maximum output power to 450 W for AC input less than 95 V.				
Maximum Input Current	7 A maximum at 100 Vac, 6 A maximum at 120 Vac, 3 A maximum at 220 Vac				
General					
Power Factor	0.98 minimum for full load at nominal voltage				
Input Harmonic Distortion	Current harmonics meet IEC 1000-3-2				
Switching Frequency	125 kHz (250 kHz output ripple)				
Time Delay	3 sec maximum, from power on to output stable				
Voltage Mode Transient Response Time	1 ms for output voltage to recover within 0.5% of its previous level after a step change in load current of up to 50% of rated output				
Maximum Voltage Differential	±300 Vdc from output to safety ground				
Remote On/Off and Interlock	5-15 V signal or TTL-compatible input, selectable logic. TTL input impedance: 2 k (in series with one diode drop)				
Remote Analog Programming (Full Scale Input)	Voltage and current programming inputs (source must be floating): 0-10 V voltage sources. Input impedance (V and I): 20 k				
Remote Programming & Monitoring Accuracy	1% of full scale output for the default range				
Front Panel Voltage and Current Control	10-turn voltage and current potentiometers				
Front Panel Voltage Control Resolution	0.02% of maximum voltage				
AC Input Connector Type	IEC 320 connector, appropriate power cord provided for destination country				
Main Output Connector	Front panel: five-way binding posts. Maximum current limit 30 A; Rear Panel: 7.5-18 V models: Bus bars; 33-120 V models: wire clamp connectors.				
Approvals	CE-marked units meet: EN61010-1, EN61000-6-2 and EN61000-6-4; CSA C/US certified to UL3111-1 and CSA C22.2 No 1010.1; Meets USA EMC standard: FCC, part 15B, Class A; Meets Canadian EMC standard: ICES-001, Class A.				
Environmental					
Operating Temperature	0 to 50°C				
Storage Temperature	-40°C to 85°C				
Humidity Range	Up to 95% RH, non-condensing				
Physical					
Dimensions	Width: 4.2″ (109.2 mm) Height: 5.2″ (134.7 mm) Depth: 13″ (330 mm)				
Weight	9.0 lb (4.1 kg)				
Protection Features					
Over voltage protection per output					
Switchable remote or local sense					

XPD Series

Model Number Description



Options and Accessories

MGA *	GPIB / IEEE 488.1
MRA *	RS-232 interface card
RM-XPDG-2	19-inch Rack Mount Kit for up to four XPD, HPD, XEL or XT power supplies
M13	Locking bushings
M13A	Locking knobs

* Options cannot be combined