

XPR Series

6 kW Programmable DC Power Supply
Power Factor Correction
High Power Solution for Bulk Power Applications



Zero voltage "soft switching"
Power Factor Correction (PFC)
Remote sense with 5 V line loss compensation
Simultaneous display of output voltage and current
Automatic Voltage/Current mode crossover
Auxiliary status lines for monitoring power supply conditions
Remote interlock
Parallel connected units for higher power requirements
Analog programming and readback capabilities
Over voltage protection
Over temperature protection
Sense protection

The analog-controlled 6 kW Series of Programmable DC Power Supplies with Power Factor Correction - (XPR Series) is designed for bulk power applications, where analog functionality is preferred over digital programming. The power supplies are ideal for applications such as burn-in, electroplating, battery charging, and steering magnets. With "soft switching" technology that ensures low temperature operation and eliminates high voltage transients that stress power transistors.

XPR comes with standard analog control for resistive or voltage programming of the output voltage and current limits, and a straightforward front panel that features a seven segment LED display with several status and alarm indicators, and 10-turn knobs for voltage and current control. The front panel buttons allow users to conveniently set and view the over voltage protection set points, view the output voltage and current limits, enable output shutdown, and offer the flexibility of toggling control of the power supply between the front panel and remote analog control.

General Specifications

Operational AC input voltage	3Ø 190-242 VAC (optional 3Ø 342 - 500 VAC) 3 wire and safety ground, 47-63 Hz
Input Power Factor Correction	0.95 (standard version), 0.9 (HV version)
Remote analog programming	Voltage and current programming inputs: 0-5 k, 0-10 k (2%) resistances; 0-5 V, 0-10 V (1%) voltage sources (10 V default)
Remote analog monitoring	Voltage and current monitor outputs 0-5 V, 0-10 V (default) ranges for 0-100% of output (1%)
Dimensions (HxWxD)	5.22 x 19.0 x 18.23" (132.5 x 482.6 x 463.0 mm)
Weight	75 lb (34 kg)
Regulatory approvals	CE, UL, CSA, and FCC compliant

Note: Specifications are subject to change without notice.

Electrical Specifications for the XPR Series

Model	10-600	20-300	30-200	40-150	60-100	80-75	100-60	150-40	300-20	600-10
Output Ratings:										
Output Voltage ¹	0-10 V	0-20 V	0-30 V	0-40 V	0-60 V	0-80 V	0-100 V	0-150 V	0-300 V	0-600 V
Output Current ²	0-600 A	0-300 A	0-200 A	0-150 A	0-100 A	0-75 A	0-60 A	0-40 A	0-20 A	0-10 A
Output Power	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W	6000 W
Line Regulation:³										
Voltage (0.01% of V _{max})	1 mV	2 mV	3 mV	4 mV	6 mV	8 mV	10 mV	15 mV	30 mV	60 mV
Current (0.05% of I _{max})	300 mA	150 mA	100 mA	75 mA	50 mA	37.5 mA	30 mA	20 mA	10 mA	5 mA
Load Regulation:⁴										
Voltage (0.05% of V _{max} +5 mV)	10 mV	15 mV	20 mV	25 mV	35 mV	45 mV	55 mV	80 mV	155 mV	305 mV
Current (0.1% of I _{max} +20 mA)	620 mA	320 mA	220 mA	170 mA	120 mA	95 mA	80 mA	60 mA	40 mA	30 mA
Meter Accuracy:										
Voltage (0.5% of V _{max} +1 count)	0.06 V	0.200 V	0.250 V	0.300 V	0.400 V	0.500 V	0.600 V	1.75 V	2.5 V	4.0 V
Current (0.5% of I _{max} +1 count)	4.0 A	2.5 A	2.0 A	1.75 A	0.600 A	0.480 A	0.400 A	0.300 A	0.200 A	0.06 A
Output Noise (0-20 MHz):										
Voltage (p-p)	100 mV	75 mV	75 mV	75 mV	100 mV	100 mV	100 mV	150 mV	250 mV	350 mV
Output Ripple (rms):										
Voltage	10 mV	10 mV	12 mV	15 mV	15 mV	15 mV	20 mV	20 mV	30 mV	80 mV
Current ⁵	3100 mA	1600 mA	1000 mA	750 mA	450 mA	320 mA	230 mA	120 mA	50 mA	25 mA
Drift (30 minutes):⁶										
Voltage (0.04% of V _{max})	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.6% of I _{max})	3600 mA	1800 mA	1200 mA	900 mA	600 mA	450 mA	360 mA	240 mA	120 mA	60 mA
Drift (8 hours):⁷										
Voltage (0.02% of V _{max})	2 mV	4 mV	6 mV	8 mV	12 mV	16 mV	20 mV	30 mV	60 mV	120 mV
Current (0.4% of I _{max})	240 mA	120 mA	80 mA	60 mA	40 mA	30 mA	24 mA	16 mA	8 mA	4 mA
Temperature coefficient:⁸										
Voltage (0.04% of V _{max} /°C)	4 mV	8 mV	12 mV	16 mV	24 mV	32 mV	40 mV	60 mV	120 mV	240 mV
Current (0.06% of I _{max} /°C)	360 mA	180 mA	120 mA	90 mA	60 mA	45 mA	36 mA	24 mA	12 mA	6 mA
OVP Adjustment Range:										
(0 to 103% of V _{max})	0.5-10.3 V	1-20.6 V	1.5-30.9 V	2-41.2 V	3-61.8 V	4-88 V	5-110 V	7.5-165 V	15-330 V	30-660 V
Efficiency:⁹										
	85%	87%	87%	87%	89%	89%	90%	90%	91%	91%

1. Minimum output voltage is <0.3% of rated voltage at zero output setting.

2. Minimum output current is <0.2% of rated current at zero output setting when measured with rated load resistance.

3. For input voltage variation over the AC input voltage range, with constant rated load.

4. For 0-100% load variation, with constant nominal line voltage.

5. Current mode noise is measured from 10% to 100% of rated output voltage, full current, unit in CC mode.

6. Maximum drift over 30 minutes with constant line, load, and temperature, after power on.

7. Maximum drift over 8 hours with constant line, load, and temperature, after 30 minute warm-up.

8. Change in output per °C change in ambient temperature, with constant line and load.

9. Typical efficiency at nominal input voltage and full output power.

Option:

Isolated analog control (ISOL)