Smart choice for power

xantrex

XKW 8-125
XKW 20-50
XKW 33-33
XKW 40-25
XKW 60-18
XKW 80-13
XKW 150-7
XKW 300-3.5
XKW 600-1.7

Operating Manual

XKW 1000 Watt Series Programmable DC Power Supply

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Specifications

Electrical Specifications

These specifications are warranted over a temperature range of 0 °C to 50 °C.

Specifications are subject to change without notice.

Table 1.2 Electrical Specifications for 8 V to 60 V Models

Models	8-125	20-50	33-33	40-25	60-18
Output Ratings:					
Output Voltage	0-8 V	0-20 V	0-33 V	0-40 V	0-60 V
Output Current	0-125 A	0-50 A	0-33 A	0-25 A	0-18 A
Output Power	1000 W	1000 W	1089 W	1000 W	1080 W
Line Regulation: [1]					
Voltage	8 mV	20 mV	33 mV	40 mV	60 mV
Current	125 mA	50 mA	33 mA	25 mA	18 mA
Load Regulation: [2]					
Voltage	8 mV	20 mV	33 mV	40 mV	60 mV
Current	125 mA	50 mA	33 mA	25 mA	18 mA
Meter Accuracy:					
Voltage	0.09 V	0.3 V	0.43 V	0.5 V	0.7 V
Current	1.35 A	0.6 A	0.43 A	0.35 A	0.28 A
OVP Adjustment Range:	0.4-8.8 V	1.0-22 V	1.65-36.3 V	2-44 V	3-66 V
Output Noise and Ripple: (20 Hz - 20 MHz)					
Voltage (p-p)	50 mV	50 mV	100 mV	100 mV	150 mV
Voltage (rms)	10 mV	10 mV	10 mV	10 mV	20 mV
Drift:[3]					
Voltage	4 mV	10 mV	16.5 mV	20 mV	30 mV
Current	62.5 mA	25 mA	16.5 mA	12.5 mA	9 mA
Temperature Coefficient: [4]					
Voltage	1.6 mV	4 mV	6.6 mV	8 mV	12 mV
Current	37.5 mA	15 mA	9.9 mA	7.5 mA	5.4 mA
Nominal Output Capacitance:	66,000µF	30,000µF	10,000µF	10,000µF	10,000µF
Nominal Capacitance (Output to Chassis):	200nF	270nF	300nF	250nF	250nF

1. For input voltage variation over the AC input voltage range, with constant rated load.
2. For 0-100% load variation, with constant nominal line voltage.
3. Maximum drift over 8 hours with constant line, load and temperature, after 90 minute warm-up.
4. Change in output per °C change in ambient temperature, with constant line and load.

Table 1.3 Electrical Specifications for 80 V to 600 V Models

Models	80-13	150-7	300-3.5	600-1.7
Output Ratings:				
Output Voltage	0-80 V	0-150 V	0-300 V	0-600 V
Output Current	0-125 A	0-7 A	0-3.5 A	0-1.7 A
Output Power	1040 W	1050 W	1050 W	1020 W
Line Regulation: [1]				
Voltage	80 mV	150 mV	300 mV	600 mV
Current	13 mA	7 mA	3.5 mA	1.7 mA
Load Regulation: [2]				
Voltage	80 mV	150 mV	300 mV	600 mV
Current	13 mA	7 mA	3.5 mA	1.7 mA
Meter Accuracy:				
Voltage	0.9 V	1.6 V	4.0 V	7.0 V
Current	0.23 A	0.08 A	0.045 A	0.018 A
OVP Adjustment Range:	4-88 V	7.5-165 V	15-330 V	30-660 V
Output Noise and Ripple: (20 Hz - 20 MHz)				
Voltage (p-p)	150 mV	200 mV	200 mV	500 mV
Voltage (rms)	20 mV	30 mV	40 mV	100 mV
Drift:[3]				
Voltage	40 mV	75 mV	150 mV	300 mV
Current	6.5 mA	3.5 mA	1.75 mA	0.85 mA
Temperature Coefficient: [4]				
Voltage	16 mV	30 mV	60 mV	120 mV
Current	3.9 mA	2.1 mA	1.05 mA	0.51 mA
Nominal Output Capacitance:	3,000µF	440µF	440µF	4.7µF
Nominal Capacitance (Output to Chassis):	250nF	250nF	270nF	220nF

1. For input voltage variation over the AC input voltage range, with constant rated load.
2. For 0-100% load variation, with constant nominal line voltage.
3. Maximum drift over 8 hours with constant line, load and temperature, after 90 minute warm-up.
4. Change in output per °C change in ambient temperature, with constant line and load.

Additional Specifications

Rise Time (No Load, Full Load): [1]	300 ms (full load and no load)
Fall Time (No Load): [1]	5 s
Fall Time (Full Load): [1]	200 ms
Voltage Mode Transient Response:[2]	1 ms
Time Delay from power on until output stable	2 s maximum

1. Measured with stepped 0-10 V analog programming source and a resistive load.
2. Time for the output voltage to recover within 1% band for 30% step load change from 70% to 100% or 100% to 70%.

Input Conditions

Rated AC Input Voltage with Maximum Input Current	200-250 Vac at 10 Arms or 100-130 Vac at 20 Arms
Maximum AC Input Power	1300 W at full load
Operational AC Input Voltage	200-250 Vac or 100-130 Vac
Input Frequency Range	47-63 Hz
Power Factor	approx. 0.7 at full load

Additional Features

Switching Frequency	Nominal 100 kHz, 200 kHz output ripple >80 V models: 80 kHz, 160 kHz output ripple
Output Hold-up Time	15 ms at full load, nominal line
Maximum Voltage Differential from either output to safety ground	±600 Vdc
Insulation Resistance	Input to chassis: >30 MΩ, with 500 Vdc;[1] Output to chassis: >20 MΩ, with 1000 Vdc.
Isolation Voltage	Input to output: 1350 Vac

1. To protect from power surges, the units have a 420 Vac varistor built in to act as an over-voltage clamp. The above insulation resistance specification is subject to be measured with the varistors taken out of the circuit

Remote Programming and Monitoring

Remote Start/Stop and Interlock	TTL compatible input. Contact Closure, 12-250 Vac or 12-130 Vdc
Remote Monitoring	0-5 V[1]
Remote Programming and Monitoring Accuracy	Programming better than 5% Monitoring voltage 10% Current 5%
Maximum Remote Sense Line Drop Compensation	1 V[2]

1. The 0-5 V voltage monitor signal is uncalibrated while the 0-5 V current monitor is calibrated, 0 = 0% output, 5 V = 100% output.
2. 0.5 V on 8-125 model.

Environmental Specification

Operating Temperature Range	0-50 °C
Storage Temperature Range	-55 °C to +85 °C
Humidity Range	Up to 80% non-condensing
Operating Altitude	Derate maximum operating temperature by 1°C per 1,000 feet (300 m) for operation between 5,000 feet and (1,500 m) and 15,000 feet (4,500 m)
Storage Altitude	Up to 50,000 feet (15,000 m)
Installation Category	II
Pollution Degree	2

Mechanical Specifications

Front Panel V and I Control	10-turn voltage and current potentiometers
Front Panel Voltage Control Resolution	0.02% of V max
Front Panel Voltage and Current Meters	3 or 4 digit LED readouts for each. See Table 1.2 and Table 1.3 for accuracy.
AC Input Connector Type	2 screw (#6) terminal block
Output Connector	Low voltage: busbars; High voltage: 6 pin AMP connector
Sense Connector	Low voltage: Part of J3 (DB25) on rear panel High voltage: Output connector
Analog Programming Connector	Part of J3 (DB25) on rear panel
Chassis Ground	1 chassis ground screw on rear panel
Cooling	Fan cooled. Air exhausts to rear. Over temperature shutdown: automatic restart.
Mounting	Integral rack mount ears on front panel
Dimensions	1.71 in. (41.635 mm) H x 19 in. (482.6 mm) W x 17.475 in. (443.865 mm) D
Weight	Approximately 18 lb. (8.2 kg)
Approvals	CSA Certified to CSA Bulletin 556B FCC Part 15B and Industry Canada Class A CE Marked for Low Voltage Directive and EMC Directive (Class A emissions)