XPFM200A+ Medical Power Supply

FEATURES:

- Medical version of ATX200 power supply
- Approved to IEC601-1 and UL2601
- Includes power factor correction to IEC1000-3-2
- Conducted emissions to CISPR11 class B/IEC601-1-2
- CE marked to LVD

SPECIFICATIONS:

Ac Input
90-264 Vac, 47-63 Hz single phase.

Input Current
Maximum input current at minimum input voltage and full load is 3.5 A. Active Power Factor Correction circuitry assures compliance with IEC1000-3-2, Class A.

Inrush Current
Inrush is limited by internal thermistors. The inrush at 240 Vac, averaged over the first ac half-cycle under cold start conditions will not exceed 37 A. Worst case current under hot start conditions will be 60 Amps.

Input Protection
Internal ac fuse provided on all units. The fuse is designed to blow only if a catastrophic failure occurs in the unit. The fuse does not blow on unsustained overload or short circuit.

Efficiency
75% typical at full rated load, nominal input voltage, depending on load distribution.

Output Power
Continuous output power 200 W.

Overload Protection
Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit on V1, 2 & 3; thermal foldback type on V4, 5, 6. Power limit factory set to cycle outputs off at 240 W typical. Recovery after removal of fault is automatic.

Over Voltage Protection
Built in on V1, 2 and 6 with firing point set per Table 1. OVP firing shuts down power supply.

Voltage Adjustment
Factory set to specified voltage. Potentiometer on V1 not considered user accessible.

No Load Turn-On/Standby
A minimum load of 1 A on V2 is required for proper regulation. If not met, no degradation of reliability will occur.

Output Regulation
Regulation for all outputs is the maximum deviation from initial set point under all line and load conditions. Initial set tolerance is measured with all outputs at 50 % of full rated load.

Remote Sense
Provided as a standard feature on V2 (+) lead of all models. Capable of compensating for 0.25 V total of cabling losses in output voltages.

Output Noise
0.5% RMS, 1% Pk-Pk, 20 MHz Bandwidth, differential mode. Measured using a differential noise probe. Probe should be placed directly across the power supply output terminals terminated with a 1uF low Z capacitor.

Transient Response
All outputs stay within their specified regulation limits with a 20% load change. $\Delta i / \Delta t < 0.2$ A / µs.

Hold-Up Time
25 ms total from loss of ac input at full load until loss of regulation.

Inhibit
Inhibit signal is pulled to the dc output common to inhibit V1 - 5 voltages. (V = < 0.4V, sink > 1.5mA)

Power Good
TTL / CMOS compatible output rises high 100 to 400 ms after V2 reaches regulation and should assure that sufficient energy is stored in the input section to provide normal power fail / shutdown.

Temperature Coefficient
0.03% / °C typical on all outputs.

Turn-On Time
Less than 2 s at 120 Vac 25°C

Storage
-40 to +85 °C.

Leakage Current
90µA under normal conditions (120 Vac @ 60 Hz). Maximum under single-fault conditions (264 Vac @ 50 Hz) is 300 µA.

EMI/EMC Compliance
All models include built-in EMI filtering to meet the following emissions requirements:

EMI SPECIFICATIONS	COMPLIANCE LEVEL
Conducted Emissions	EN55011, Class B; FCC Class B
Static Discharge	EN61000-4-2, 6 kV contact 8 kV air
RF Field Susceptibility	EN61000-4-3, 3V/meter
Fast Transients / Bursts	EN61000-4-4, 2 kV, 5 kHz
Surge Susceptibility	EN61000-4-5, 1 kV diff., 2 kV com.
Conducted RF Susceptibility	EN61000-4-6, 3V
Voltage Sags & Surges	EN61000-4-11

Safety Agency
All models are certified to be in compliance with the applicable requirements of UL2601-1, CSA-C22.2 No. 601.1, IEC601-1/60601-1.

Model	Output No.	Output	Minimum Current	Maximum Current	Peak (E) Current	Total Regulation	OVP Trip	Ripple and Noise	Notes
XPFM200A+	1(C)	+3.3 V	0.1 A	14 A	16 A	±4%	4 V± 0.3 V	2%	D
	2 (C)	+5.1 V	1 A	22 A	28 A	±4%	6.2 V 0.5 V	1%	
	3 (A)	+12 V	0.1 A	7 A	9 A	±5%		1%	
	4 (B)	-12 V	0 A	0.8 A	0.8 A	±8%		1%	
	5	-5 V	0 A	0.5 A	0.5 A	±6%		1%	
	6 (E)	+5 VSB	0 A	1.5 A	--	±4%	6.2 V ±0.8 V	2%	
XPFM200B+	1 (C)	+2.7 V	0.1 A	14 A	16 A	±4%	4 V± 0.3 V	2%	D
	2 (C)	+5 V	1 A	22 A	28 A	±4%	6.2 V 0.5 V	1%	
	3 (A)	+12 V	0.1 A	7 A	9 A	±5%		1%	
	4 (B)	-12 V	0 A	0.8 A	0.8 A	±8%		1%	
	5	-5 V	0 A	0.5 A	0.5 A	±6%		1%	
	6 (E)	+5 VSB	0 A	1.5 A	--	±4%	6.2 V ±0.8 V	2%	

A. To maintain regulation on V3, the +5.1 V current must be at least 1/5 of V3 and not greater than 5 times the V3 current. Required +5 V to be adjusted to within ±1% with at least a 1 A load to maintain regulation on this output.
B. Combined current of V4, 5 must not exceed 0.8 A.
C. Combined load for V1, 2 must not exceed 125 W.
D. 200 Series has external fan, for internal fan replace 200 in model number with 201.
E. V6 maximum current is 1.25 A at initial start up.

XPFM200+ MECHANICAL SPECIFICATIONS:

INPUT
100-240VAC 4.6A
50/60Hz

OUTPUT P1

		MOLEX P/N'S (OR EQUIV.) HOUSING	CONTACT
CONNECTOR:		P/N: 39-30-0200	P/N: 39-00-0039
MATING CONNECTOR:		P/N: 39-28-1203	N/A

PIN #	OUTPUT	PIN #	OUTPUT
1	+3.3V	11	+3.3V & 3.3V Sense
2	+3.3V	12	-12V
3	COMMON	13	COMMON
4	+5V	14	PS-ON
5	COMMON	15	COMMON
6	+5V	16	COMMON
7	COMMON	17	COMMON
8	POK	18	-5V
9	+5V SB	19	+5V
10	+12V	20	+5V

OUTPUT P2,3,4 & 5

		AMP P/N'S (OR EQUIV.) HOUSING	CONTACT
CONNECTOR:		P/N: 1-480424-0	P/N: 60617-1
MATING CONNECTOR:		P/N: 1-480426-0	P/N: 60618-1

PIN #	OUTPUT
1	+12V
2	COMMON
3	COMMON
4	+5V

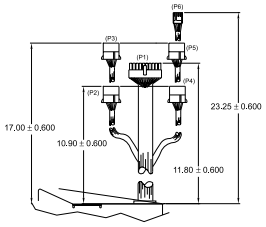
OUTPUT P6

		AMP P/N'S (OR EQUIV.) HOUSING	CONTACT
CONNECTOR:		P/N: 171822-4	P/N: 170262-1
MATING CONNECTOR:			N/A

PIN #	OUTPUT
1	+5V
2	COMMON
3	COMMON
4	+12V

WEIGHT 4.0 LBS. MAX.

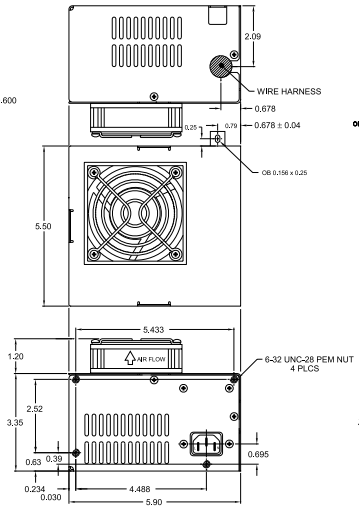
TOLERANCES:
X.XX =± 0.030 (0.76MM)
X.XXX =± 0.010 (0.25MM)



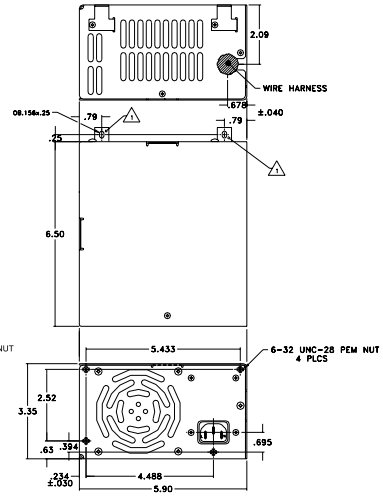
WIRE HARNESS

P/N: 171825-4

XPFM200 External Fan



XPFM201 Internal Fan



Environmental Specification	Operating	Non-operating
Temperature (A)	0 to 40ºC	-40 to +85ºC
Humidity (A)	0 to 95% RH	0 to 95% RH
Shock (B)	20 g_{pk}	40 g_{pk}
Altitude	-500 to 10,000 ft	-500 to 40,000 ft
Vibration (C)	1.5 g_{rms}, 0.003 g^2/Hz	5 g_{rms}, 0.026 g^2/Hz

A. Units should be allowed to warm up/operate under non-condensing conditions before application of power. Cooling provided by internal fan— heatsink temperatures should not exceed 90ºC for extended periods in the installation.

B. Random vibration—10 to 2000Hz, 6dB/octave roll-off from 350 to 2000Hz, 3 orthogonal axes. Tested for 10 min./axis operating and 1 hr./axis non-operating.

C. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.