

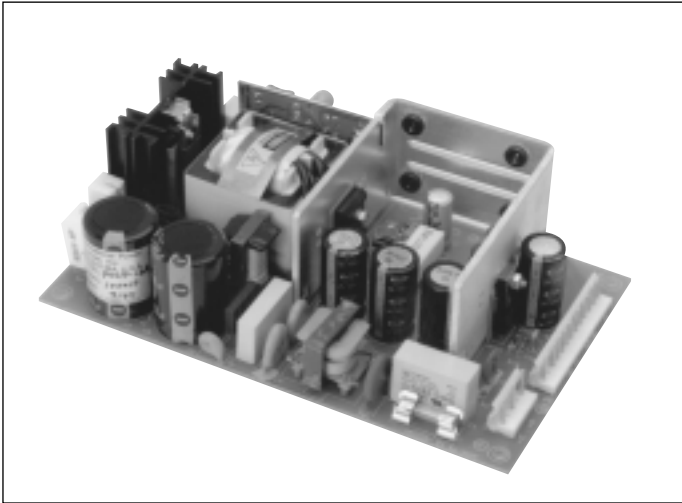
# Medical Switching Power Supply

**XPiQ inc.**

Intelligent Design Quality Product



**110 Watts**  
**PM110 Series**



- 4000 VAC Isolation
- 100% Burn-in
- Low Safety Leakage Current
- Wide Input Voltage 85 to 264 VAC
- Meets EMI Requirements of Medical Equipment
- Both Line and Neutral Fused for European Requirements

## Specification

All specifications typical at nominal line, full load and 25°C

### Input

- *Input Voltage* • 85 to 264 VAC
- *Input Frequency* • 47 to 440 Hz
- *Input Current* • 3.20A (rms) for 115 VAC  
1.8A (rms) for 230 VAC
- *Safety Ground* • 50µA max. at 110 VAC 60 Hz
- *Leakage Current* • 100µA max. at 240 VAC 50 Hz

### Output

- *Total output power:* • 0 to 110 watts
- *Ripple and noise:* • 1% peak to peak maximum
- *Overvoltage Protection:* • Provided on output #1 only; set at 112-132% of its nominal output voltage
- *Overcurrent Protection:* • All outputs protected to short circuit conditions
- *Temperature Coefficient:* • All outputs  $\pm 0.04\%/^{\circ}\text{C}$  maximum
- *Transient Response:* • Maximum excursion of 4% or better on all models, recovering to 1% of final value 500us after a 25% step load change
- *Line Regulation* •  $\pm 0.5\%$  max. at full load

### General

- *Efficiency* • 65% minimum at 110 watt output
- *Hold-up time* • 12 msec minimum at nominal input
- *Inrush Current* • 15 amps at 115 VAC or 30 amps at 230 VAC at 25°C cold start
- *Withstand Voltage* • 4000 VAC from input to output  
1500 VAC from input to ground  
500 VAC from output to ground
- *Insulation Resistance* • 10 Mohm minimum from output to ground

### Environmental

- *Operating Temperature* • 0°C to +70°C\*
- *Storage Temperature* • -40°C to +85°C
- *Relative Humidity* • 5% to 95% non-condensing
- *MTBF* • 100,000 hours minimum at full load at 25°C ambient
- *EMI Requirement* • Meets the conducted limits of EN 55011 (CISPR11) Level B
- *Safety Requirements* • Approved to: (Not for patient contact)  
a) UL2601  
b) CSA C22.2 No.601.1-M90 per CUL  
c) IEC 601-1/EN60601-1 (per TUV)

\* Derate linearly from 100% load at 50°C to 50% load at 70°C

# OUTPUT VOLTAGE & CURRENT RATINGS PM 110

Model	Output #1				Output #2					Output #3				Output #4				Maximum Output Power <sup>2</sup>
	Vnom	Imin	I <sub>max</sub>	Tol.	Vnom	Imin	I <sub>max</sub>	I <sub>peak</sub> <sup>1</sup>	Tol.	Vnom	Imin	I <sub>max</sub>	Tol.	Vnom	Imin	I <sub>max</sub>	Tol.	
PM110-10-1A	3.3V	0.0A	22.0A	3%														110W
PM110-10A	5.0V	0.0A	22.0A	3%														110W
PM110-12A	12.0V	0.0A	9.0A	2%														110W
PM110-13A	15.0V	0.0A	7.5A	2%														110W
PM110-14A	24.0V	0.0A	4.5A	2%														110W
PM110-16A	30.0V	0.0A	3.6A	3%														110W
PM110-23A	+5.0V	0.0A	10.0A	3%	+12V	0A	5A	9.0A	3%									110W
PM110-31A	+5.0V	0.0A	10.0A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%					110W
PM110-32A	+5.0V	0.0A	10.0A	3%	+15V	0A	4A	9.0A	3%	-15V	0A	1A	4%					110W
PM110-40A	+5.0V	0.0A	10.0A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	-5V	0.0A	1A	4%	110W
PM110-41A	+5.0V	0.0A	10.0A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%	+24V	0.0A	1A	4%	110W
PM110-42A	+5.0V	0.0A	10.0A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+12V	0.0A	1A	4%	110W
PM110-45A	+5.0V	0.0A	10.0A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+24V	0.0A	1A	4%	110W
PM110-45-1A	+5.0V	2.0A	10.0A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+24V	1.5A	3A	10%	110W
PM110-45-2A	+5.0V	0.0A	10.0A	3%	+24V	0A	3A	5.0A	3%	-12V	0A	1A	4%	+12V	0.0A	1A	4%	110W
PM110-46A	+5.0V	0.0A	10.0A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%	-5V	0.0A	1A	4%	110W

### Notes

1. Peak output current with 10% maximum duty cycle for less than 60 seconds.  
Total peak power must not exceed 110 watts.
2. 110 watts maximum at 25 CFM forced air cooling or 80 watts maximum at convection cooling.

### Pin Chart

Model	PIN	1, 2, 3	4, 5	6, 7	8, 9	10	11	12	13
PM110-10-1A	PM110-10A	OUTPUT	RETURN	RETURN	OUTPUT	P.F.D	N.C.	KEY	N.C.
PM110-12A	PM110-13A	#1			#1				
PM110-14A	PM110-16A								
PM110-23A		OUTPUT	COMMON	COMMON	OUTPUT	P.F.D.	OUTPUT	KEY	N.C.
		#1	RETURN	RETURN	#2		#2		
PM110-31A	PM110-32A	OUTPUT	COMMON	COMMON	OUTPUT	P.F.D.	OUTPUT	KEY	N.C.
		#1	RETURN	RETURN	#2		#3		
PM110-40A	PM110-41A	OUTPUT	COMMON	COMMON	OUTPUT	P.F.D.	OUTPUT	KEY	OUTPUT
PM110-42A	PM110-45A	#1	RETURN	RETURN	#2		#3		#4
PM110-45-1A	PM110-45-2A								
PM110-46A									

### Mechanical Details

