

40 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PM40AL series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 40 watts of continuous output power. They operate at 85 to 264 VAC input voltage without the need of voltage selection. They are ideally suited for use in medical equipment, safety systems and monitoring equipment, not for patient contact.

FEATURES

- Low safety ground leakage current
- 100% burn-in
- Wide input range 85 to 264 VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Open PCB construction

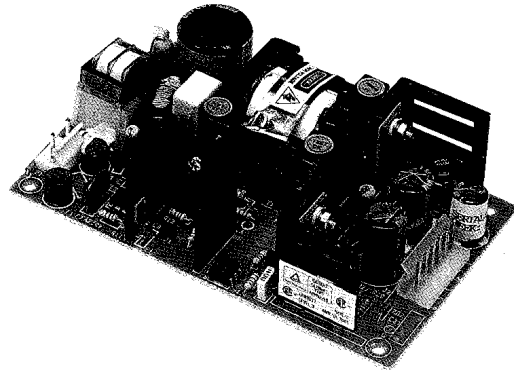
INPUT SPECIFICATIONS

Input voltage: 85 to 264 VAC
Input frequency: 47 to 63 Hz
Input current: 1.20A (rms) for 115VAC
 0.70A (rms) for 230VAC
Leakage current: 90uA max.@ 115VAC, 60 Hz
 150uA max.@ 230VAC, 50 Hz

OUTPUT SPECIFICATIONS

Output voltage/current : See rating chart
Total output power: 40 watts maximum
Ripple and noise : 1% peak to peak max.
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 +/-0.04%/ °C maximum
Transient response : Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change

PM40AL SERIES (LVD)



Safety Standard Approvals:



UL 2601-1
File No. E178020



C22.2 No. 601.1
File No. LR93632



EN 60601-1
Certificate No. R9172083

ENVIRONMENTAL SPECIFICATIONS

Operating temperature : 0°C to +70°C
Storage temperature : -40°C to +85°C
Relative humidity : 5% to 95% non-condensing
Derating : Derate from 100% at +50 °C linearly to 50% at +70 °C

GENERAL SPECIFICATIONS

Switching frequency: 36KHz +/-5KHz
Efficiency : 70% minimum on single output models with $V_o \geq 15V$, 65% minimum on the others
Hold-up time : 10 msec minimum at 110VAC
Line regulation : +/-0.5% maximum at full load
Inrush current : 15 amps @ 115VAC, or 30 amps @ 230VAC, at 25 °C cold start
Withstand voltage : 4000VAC from input to output
 1500VAC from input to ground
 500VAC from output to ground
MTBF : 600,000 hours minimum at full load at 25 °C ambient, calculated per MIL-HDBK-217F
EMI requirements : Meets conducted limits of
 (a) FCC Level B
 (b) EN 55011 Class B
Safety requirements : Meets or Exceeds:
 (a) UL 2601-1
 (b) CSA C22.2 No. 601.1
 (c) IEC 601-1 (EN 60601-1)

UNIVERSAL INPUT

PM40AL MEDICAL SERIES

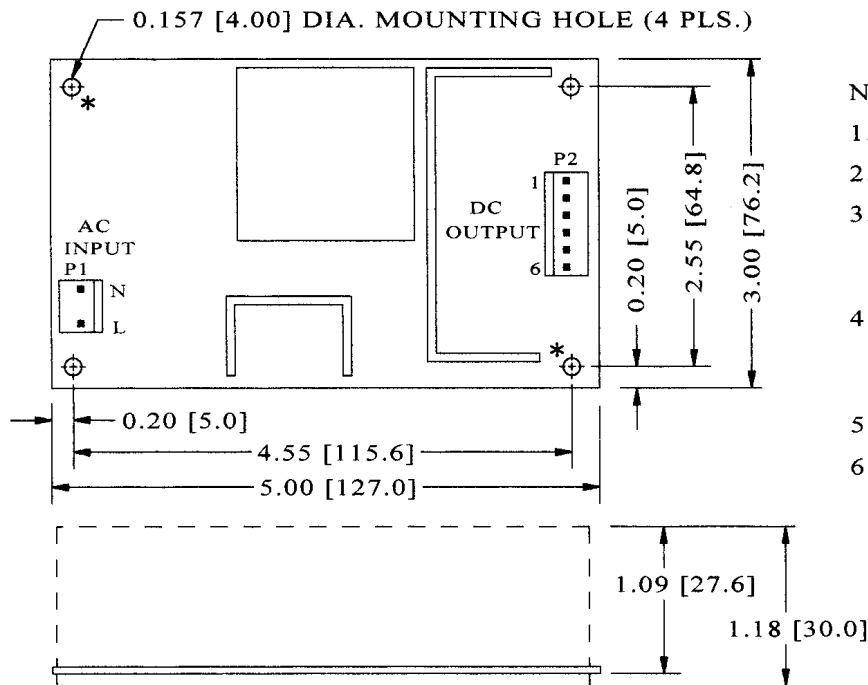
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output #1				Output #2				Output #3				Maximum Output Power
	Vnom.	Imin.	I _{max} .	Tol.	Vnom.	Imin.	I _{max} .	Tol.	Vnom.	Imin.	I _{max} .	Tol.	
PM40-10AL	5V	0A	8.0A	2%	(N/A)				(N/A)				40W
PM40-12AL	12V	0A	3.5A	1%	(N/A)				(N/A)				40W
PM40-13AL	15V	0A	3.0A	1%	(N/A)				(N/A)				40W
PM40-14AL	24V	0A	2.0A	1%	(N/A)				(N/A)				40W
PM40-18AL	48V	0A	0.9A	1%	(N/A)				(N/A)				40W
PM40-23AL	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%	(N/A)				40W
PM40-24AL	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%	(N/A)				40W
PM40-25AL	+5V	0.5A	3.0A	3%	+24V	0.1A	1A	5%	(N/A)				40W
PM40-30AL	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%	-5V	0.05A	0.3A	10%	40W
PM40-31AL	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%	-12V	0.05A	0.3A	10%	40W
PM40-32AL	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%	-15V	0.05A	0.3A	10%	40W
PM40-33AL	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%	-12V	0.05A	0.3A	10%	40W
PM40-39AL	+5V	0.5A	3.0A	3%	+24V	0.1A	1A	5%	-12V	0.05A	0.3A	10%	40W

Notes: (1) All multiple output models may be operated at no-load without damage. At no-load, output voltage tolerance increases to 10%

(2) Safety agency approvals are for the above listed models in PCB format. To order a model with a metallic L-bracket or box, change suffix "AL" to "BL" for L-bracket format or to "CL" for enclosed format (mechanical details shown in page 7-1), e.g. PM40-14BL.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.
5. Weight: 230 grams (PCB format).
6. It is strongly recommended to connect the two "*" marked mounting holes to system chassis through metallic stand-offs. This helps reduce greatly output noise.

PIN CHART

MODEL	PIN	1	2	3	4	5	6
PM40-10AL	PM40-12AL	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN
PM40-13AL	PM40-14AL	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN
PM40-18AL		OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN
PM40-23AL	PM40-24AL	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	N.C.
PM40-25AL		OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	N.C.
PM40-30AL	PM40-31AL	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #3
PM40-32AL	PM40-33AL	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #3
PM40-39AL		OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #3