



30-40 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PM41 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 30 to 40 watts of continuous output power. They operate at 85 to 264VAC input voltage without the need of voltage selection. They are ideally suited for use in medical equipment, safety systems and monitoring equipment, not for life support.

FEATURES

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

INPUT SPECIFICATIONS

Input voltage : 85 to 264VAC;
110 to 280VDC

Input frequency : 47 to 63Hz

Input current : 1.1A (rms) for 115VAC
0.6A (rms) for 230VAC

Earth leakage current : 90uA max. @ 115VAC, 60Hz
150uA max. @ 230VAC, 50Hz

OUTPUT SPECIFICATIONS

Output voltage/current : See rating chart

Total output power : See rating chart

Ripple and Noise : 1% peak to peak max.

Over voltage protection : Provided on output; set at 112 - 132% of its nominal output voltage

Over current protection : The output 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 within 500us after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature : 0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$

Storage temperature : -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$

Relative humidity : 5% to 95% non-condensing

Derating : Derate from 100% at +50 $^{\circ}\text{C}$ linearly to 50% at +70 $^{\circ}\text{C}$

PM41 SERIES



Safety Standard Approvals :



UL 2601-1, CSA C22.2 NO. 601.1
File NO. E178020



TÜV EN60601-1
Certificate No. TA 50023606

GENERAL SPECIFICATIONS

Switching frequency: 42KHz $\pm 5\text{KHz}$

Efficiency: 70% minimum on single output model with $V_o \geq 12\text{V}$, 68% minimum on the others

Hold-up time: 20 msec minimum at 110VAC

Line regulation: $\pm 0.5\%$ maximum at full load

Inrush current: 12 amps @ 115VAC or 24 amps @ 230VAC, at 25 $^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK- 217F

EMC Performance (EN60601-1-2: 2001)

EN55011: Class B conducted, Class B radiated

FCC: Class B conducted, Class B radiated

VCCI: Class B conducted, Class B radiated

EN61000-3-2: Harmonic distortion, Class A and D

EN61000-3-3: Line flicker

EN61000-4-2: ESD, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ contact

EN61000-4-3: Radiated immunity, 3V/m for 80-2500MHz

EN61000-4-4: Fast transient/burst, $\pm 2\text{KV}$

EN61000-4-5: Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.

EN61000-4-6: Conducted immunity, 3Vrms

EN61000-4-8: Magnetic field immunity, 3A/m

EN61000-4-11: Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms and $>95\%$ reduction for 10ms

UNIVERSAL INPUT

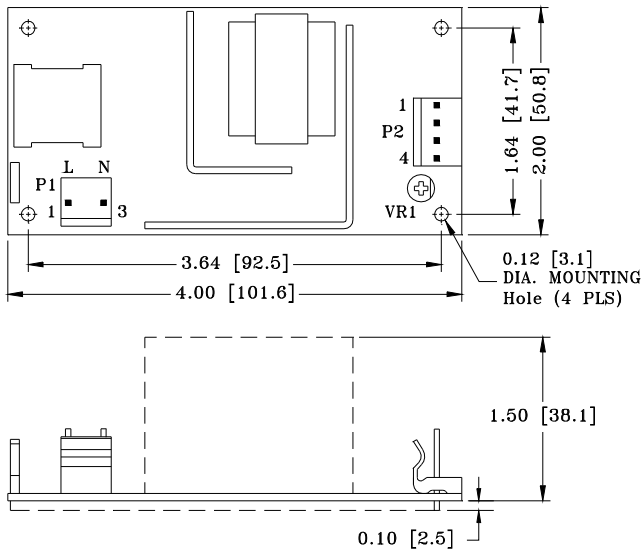
PM41 MEDICAL SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

MODEL	Vnom.	Output			Tol.	Maximum Output Power
		Imin.	Imax.			
PM41-10A	5.1V	0A	6.0A		2%	30W
PM41-12A	12V	0A	3.3A		2%	40W
PM41-13A	15V	0A	2.7A		2%	40W
PM41-13-1A	18V	0A	2.3A		2%	40W
PM41-14A	24V	0A	1.7A		2%	40W
PM41-15A	28V	0A	1.4A		2%	40W

NOTES: Ripple and noise: Peak-to-peak with 20MHz bandwidth and 10uF in parallel with a 0.1uF capacitor at rated line voltage and load ranges.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.03 [0.76] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector mates with Molex housing 09-50-3040 and Molex 2878 series crimp terminal.
5. Weight : 190 grams (PCB format)

PIN CHART

Single Output Models

MODEL	PIN	1	2	3	4	
PM41-10A PM41-13-1A	PM41-12A PM41-14A	PM41-13A PM41-15A	OUTPUT	OUTPUT	RETURN	RETURN