

**PROTEK POWER**

## PM150 Medical & ITE Power Supplies (100-150W)

### Features:

- BF Class insulation
- Operation altitude up to 5000 meters
- Suitable for both Class I and Class II applications\*
- 2 x 4 inch foot print with 1.3 inch low profile
- Less than 275  $\mu$ A leakage current
- Wide input range 80 -264 VAC
- Meet EN55011 /55022 and FCC Class B
- Power Factor 0.98 typical
- 100% burn -in at full load
- Short -circuit protection
- Over-temperature protection
- Power Fail Detect (PFD) signal (optional)
- Compliant with RoHS requirements
- No load power consumption less than 0.5W without PFD or 1W with PFD



### Description:

The PM150 series of AC-DC switching power supplies in a package of 2 x 4 x 1.3 inches are capable of delivering 100-150 watts of continuous power at 7.5 CFM forced air cooling or 100 watts at convection cooling. The units are constructed on a printed circuit board. They are specially designed for medical applications. The units are certified also to IEC /EN /UL /CSA 60950-1 and suitable for data networking, industrial and telecommunication applications.

Model <sup>1</sup>	Output								Efficiency (typical) @115/230 Vac
	V1	Min. Load	Max. Current at convection	Max. Current at 7.5 CFM	Peak <sup>2</sup> Current	Tol.	Ripple & Noise <sup>4</sup>	Max. Output Power <sup>3</sup>	
PM150-12A	12V	0A	8.35A	12.5A	14A	±2%	120mV	100W/150W	90/92%
PM150-13A	15V	0A	6.70A	10A	11A	±2%	150mV	100W/150W	89/91%
PM150-13-1A	18V	0A	5.56A	8.34A	9.2A	±2%	180mV	100W/150W	91/92%
PM150-14A	24V	0A	4.20A	6.25A	7A	±2%	240mV	100W/150W	89/92%
PM150-16A	30V	0A	3.34A	5A	5.6A	±2%	300mV	100W/150W	89/92%
PM150-17A	36V	0A	2.78A	4.17A	4.6A	±2%	360mV	100W/150W	90/92%
PM150-18A	48V	0A	2.10A	3.13A	3.5A	±2%	480mV	100W/150W	89/92%

#### NOTES:

1. To order a model with PFD signal, please consult factory to get an exclusive part number distinguishing it from the standard model without PFD signal.
2. Peak output current with 10% duty cycle maximum for less than 15 seconds, average power not to exceed maximum power rating.
3. The first value of max. power is at convection cooling. The second value is with 7.5 CFM forced air provided by user.
4. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10  $\mu$ F tantalum (or electrolytic) capacitor in parallel with a 0.1  $\mu$ F ceramic capacitor across the output except model PM150-12A which is with a 47  $\mu$ F tantalum (or electrolytic) capacitor in parallel with a 0.1  $\mu$ F ceramic capacitor across the output.



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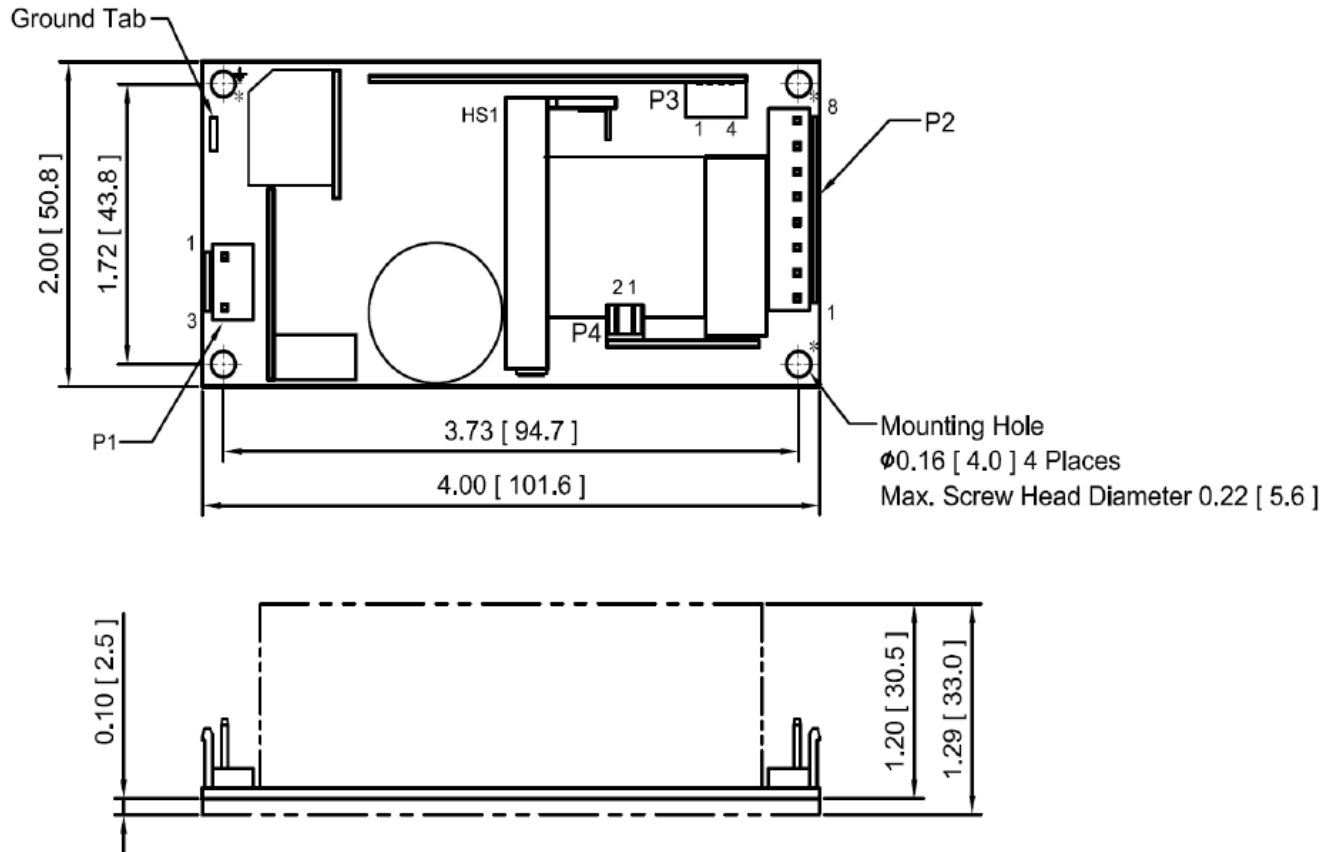
Specifications	
Safety Standards & EMC Specifications	
Safety Standard Approvals	UL ES 60601-1, CSA C22.2 No. 60601-1 File No. E178020 TÜV EN 60601-1 UL 60950-1 CSA C22.2 No. 60950-1 TÜV EN 60950-1
EMI Standard	EN55011/EN55022, FCC, and VCCI Class B (radiated and conducted)
EMC Performance	EN61000-3-2: Harmonic distortion, Class A and D EN61000-3-3: Line flicker EN61000-4-2: ESD, $\pm 15$ KV air and $\pm 8$ KV contact EN61000-4-3: Radiated immunity, 10V/m EN61000-4-4: Fast transient/burst, $\pm 2$ KV EN61000-4-5: Surge, $\pm 1$ KV diff., $\pm 2$ KV com. EN61000-4-6: Conducted immunity, 10Vrms EN61000-4-8: Magnetic field immunity, 30 A/m EN61000-4-11: Voltage dip immunity, 30% reduction for 500ms, and 100% reduction for 10ms
*Consult with TT Electronics for information on additional country safety approvals	
Input Specifications	
Input Voltage Range	80 to 264VAC
Input Frequency Range	47 to 63Hz
Input Current	1.7A (rms) for 115VAC or 0.85A (rms) for 230VAC
Earth Leakage Current	275 $\mu$ A max. @ 264VAC, 63Hz
Touch Current	100 $\mu$ A max. @ 264 VAC, 63Hz
Output Specifications	
Remote Sense	Compensation for cable losses up to 0.5V
Overvoltage Protection	Set 112-140% of nominal output voltage
Overcurrent Protection	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 500 $\mu$ s after a 25% step load change
Fan Power	12V at 0.5 A maximum (isolated)
Environmental Specifications	
Operating Temperature	0°C to +70°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% to 95% non-condensing
Temperature Derating	De-rate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions
General Specifications	
Hold-up Time	10ms minimum at 120 VAC
Switching Frequency	133 KHz (typical)
Power Factor	0.98 Typical
Line Regulation	$\pm 0.5\%$ maximum at full load
Inrush Current	80A @ 115 Vac or 200A @ 160 Vac at 25°C cold start
Withstand Voltage	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 1500 VAC from output to ground
MTBF	250,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F



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### Diagrams



#### NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1: JST header P/N B3P-VH, mating with JST housing P/N VHR-3N or equivalent.
4. Output connector P2: JST header P/N B8P-VH, mating with JST housing P/N VHR-8N or equivalent.
5. Connector P3: JST header B4B-PH-K-S (LF) (SN), mating with JST housing PHR-4 or equivalent.
6. FAN connector P4: JST header B2B-PH-K-S (LF) (SN), mating with JST housing PHR-2 or equivalent.
7. Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.
8. To ensure compliance with level B emissions, connect the three "\*" marked mounting holes with metallic standoffs to chassis.
9. Weight: 200 grams (0.44 lbs.) approx.