



PROTEK POWER



Electronics

POWER PARTNERS

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 2.75 μ 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 ¹ | Output | | | | | | | | Efficiency (typical) @115/230 Vac |
|--------------------|----------|----|-----------|----------------------------|-------------------------|---------------------------|-------|-----------------------------|--|
| | Class II | V1 | Min. Load | Max. Current at convection | Max. Current at 7.5 CFM | Peak ² Current | Tol. | Ripple & Noise ⁴ | |
| PM150-12A | 12V | 0A | 8.35A | 12.5A | 14A | $\pm 2\%$ | 120mV | 100W/150W | 90/92% |
| PM150-13A | 15V | 0A | 6.70A | 10A | 11A | $\pm 2\%$ | 150mV | 100W/150W | 89/91% |
| PM150-13-1A | 18V | 0A | 5.56A | 8.34A | 9.2A | $\pm 2\%$ | 180mV | 100W/150W | 91/92% |
| PM150-14A | 24V | 0A | 4.20A | 6.25A | 7A | $\pm 2\%$ | 240mV | 100W/150W | 89/92% |
| PM150-16A | 30V | 0A | 3.34A | 5A | 5.6A | $\pm 2\%$ | 300mV | 100W/150W | 89/92% |
| PM150-17A | 36V | 0A | 2.78A | 4.17A | 4.6A | $\pm 2\%$ | 360mV | 100W/150W | 90/92% |
| PM150-18A | 48V | 0A | 2.10A | 3.13A | 3.5A | $\pm 2\%$ | 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 μ F tantalum (or electrolytic) capacitor in parallel with a 0.1 μ F ceramic capacitor across the output except model PM150-12A which is with a 47 μ F tantalum (or electrolytic) capacitor in parallel with a 0.1 μ 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, ± 15 KV air and ± 8 KV contact EN61000-4-3: Radiated immunity, 10V/m EN61000-4-4: Fast transient/burst, ± 2 KV EN61000-4-5: Surge, ± 1 KV diff., ± 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 μ A max. @ 264VAC, 63Hz |
| Touch Current | 100 μ 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 $\pm 0.04\%/\text{°C}$ maximum |
| Transient Response | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us 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 |

General Note

All data sheets are subject to change without notice.

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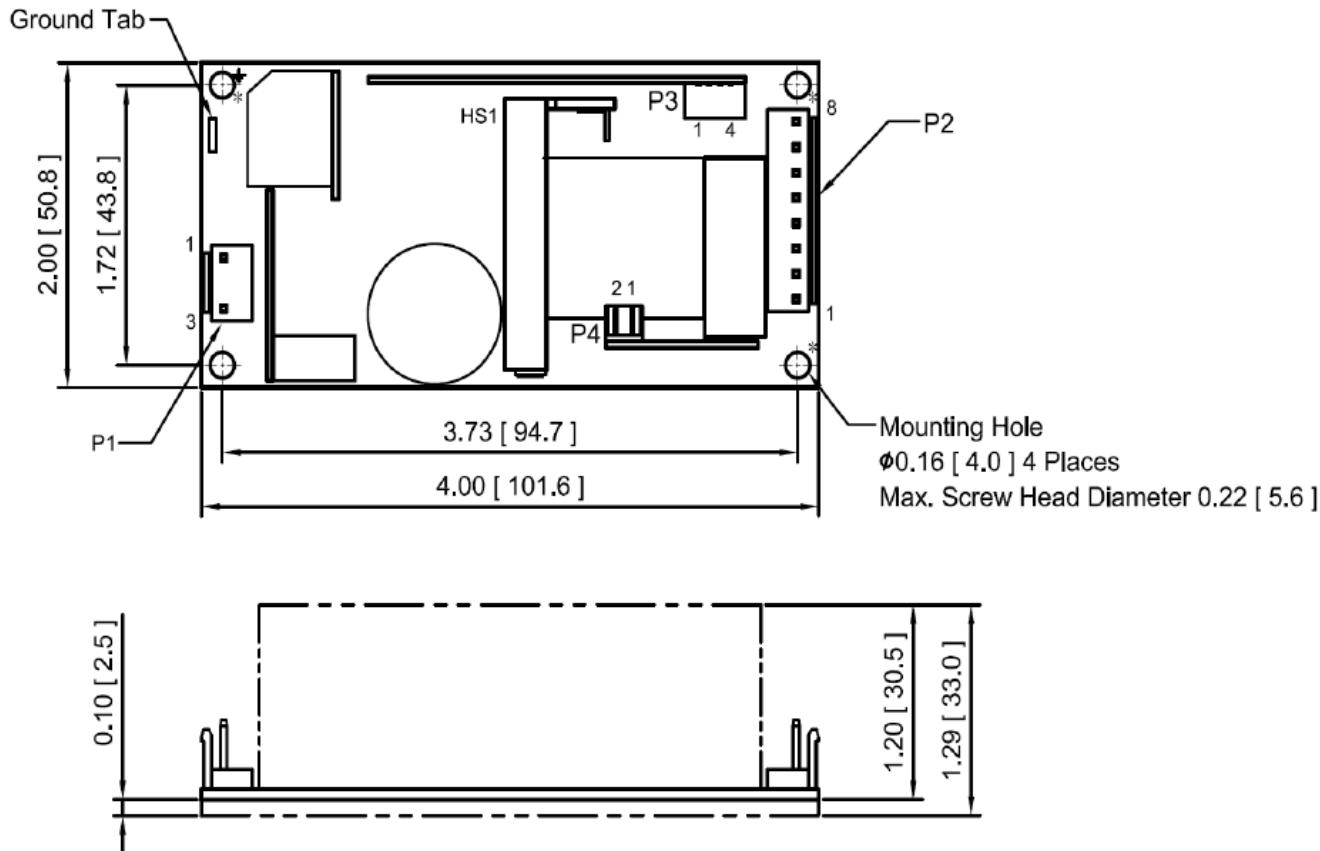


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Diagrams



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] x 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.

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