



100 WATT MEDICAL & ITE SWITCHING POWER SUPPLIES

DESCRIPTION

The PM100 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 100 watts of continuous output power at convection cooling. They operate at 90-264 VAC input voltage without the need of voltage selection, and are suited for medical, information technology and industrial applications. Approval to both EN 60601-1 and EN 60950-1 safety standards improves design-in time and reduces end equipment compliance costs.

FEATURES

- Medical and industrial approvals
- Compact size 2" x 4" x 1.26"
- Ultra high power density 10 W/cubic inch
- Wide-range input 90-132 VAC, or 180-264 VAC
- Low earth leakage current
- Conducted EMI class B
- RoHS compliant

INPUT SPECIFICATIONS

Input voltage: 90-132 VAC or 180-264 VAC
 Input frequency: 47-63 Hz
 Input current: 1.9A (rms) for 100-120 VAC
 1.0A (rms) for 200-240 VAC
 Earth leakage current: 150 uA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart
 Total output power: 100 watts maximum
 Ripple and noise: 250 mV peak to peak on 5.0 V model ,
 1% peak to peak on other models.
 Overvoltage protection: Provided on output; set at 110-140% 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
 within 500 us after a 25% step load
 change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: -10°C to $+70^{\circ}\text{C}$
 Storage temperature: -40°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 $+70^{\circ}\text{C}$
 Cooling: Convection cooling

PM100 SERIES



SAFETY STANDARD APPROVALS

Preliminary

GENERAL SPECIFICATIONS

Switching frequency: 100 KHz
 Efficiency: 87-90% @ 230 VAC full load.
 Hold-up time: 12 msec minimum at 110 VAC.
 Line regulation: $\pm 0.2\%$ maximum at full load
 Inrush current: 40 A @ 115 VAC or 80 A @ 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
 MTBF: 270,000 hours at full load at 25°C ambient
 temperature, calculated per MIL-HDBK-217F
 EMC Performance
 EN55011 / EN55022: Class B conducted, class A radiated
 Class B conducted, class A radiated
 FCC: Class B conducted, class A radiated
 VCC: Class B conducted, class A radiated
 EN61000-3-2: Harmonic distortion, class A
 EN61000-3-3: Line flicker
 EN61000-4-2: ESD, ± 8 KV air and ± 6 KV contact
 EN61000-4-3: Radiated immunity, 3 V/m
 EN61000-4-4: Fast transient/burst, ± 2 KV
 EN61000-4-5: Surge, ± 1 KV diff., ± 2 KV com.
 EN61000-4-6: Conducted immunity, 3 Vrms
 EN61000-4-8: Magnetic field immunity, 3 A/m
 EN61000-4-11: Voltage dips,
 30% reduction for 500 ms
 60% reduction for 100 ms
 >95% reduction for 5 sec.
 Performance criteria A, B, A.

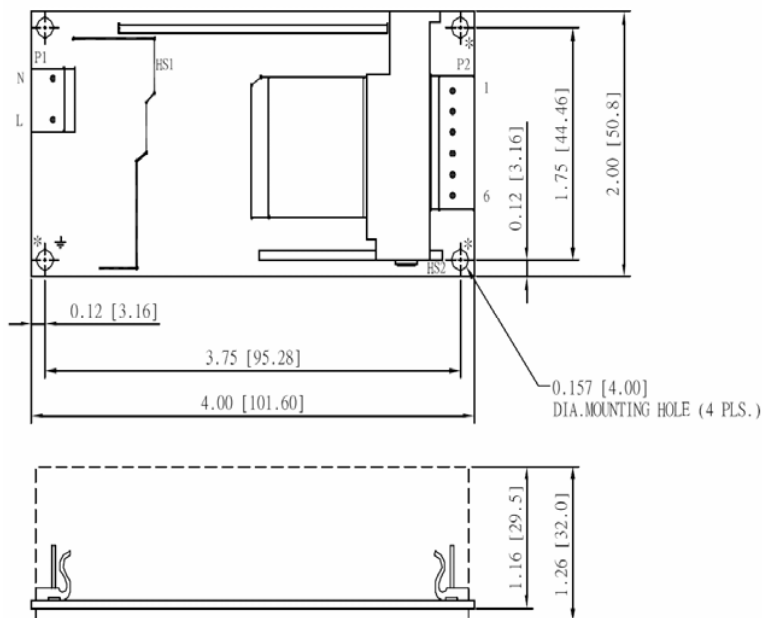
OUTPUT VOLTAGE/CURRENT RATING CHART

| MODEL(1) | Vnom. | Output | | | Maximum Output Power |
|-------------|-------|--------|--------|------|----------------------|
| | | Imin. | Imax. | Tol. | |
| PM100-10A | 5 V | 0 A | 20 A | 2% | 100 W |
| PM100-12A | 12 V | 0 A | 8.34 A | 2% | 100 W |
| PM100-13A | 15 V | 0 A | 6.7 A | 2% | 100 W |
| PM100-13-1A | 18 V | 0 A | 5.56 A | 2% | 100 W |
| PM100-14A | 24 V | 0 A | 4.2 A | 2% | 100 W |
| PM100-15A | 28 V | 0 A | 3.58 A | 2% | 100 W |
| PM100-17A | 36 V | 0 A | 2.78 A | 2% | 100 W |
| PM100-18A | 48 V | 0 A | 2.1 A | 2% | 100 W |

NOTES: 1. Safety approvals are for PCB form only. To order unit with cover fitted, change suffix "A" to "C".

Preliminary

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inches [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. To ensure compliance with level B emissions, connect the three "*" marked mounting holes with metallic standoffs to chassis.
6. Weight: 190 grams (0.44 lbs.) approx.

PIN CHART

| MODEL | PIN | | | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|-----------|-----------|---|--------|--------|--------|--------|--------|--------|
| | 1 | 2 | 3 | | | | | | |
| PM100-10A | PM100-12A | PM100-13A | | RETURN | RETURN | RETURN | OUTPUT | OUTPUT | OUTPUT |
| PM100-13-1A | PM100-14A | PM100-15A | | RETURN | RETURN | RETURN | OUTPUT | OUTPUT | OUTPUT |
| PM100-17A | PM100-18A | | | | | | | | |