



E-Star Power Development Co., Ltd. (E-STAR)
No.305, Sec. 2, Jhongshan Rd., Banciao City, Taipei County 22067, Taiwan
Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

100W Open Frame type Medical power supply < PM100

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 are suited for medical, information technology and industrial applications, but not for life-supporting medical equipment. 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" × 4" × 1.26"
- High power density 10 W /cubic inch
- 100 W output with convection cooling up to +50°C
- Low earth leakage current
- Conducted EMI class B
- RoHS compliant

INPUT SPECIFICATIONS

Input voltage: 90-132 VAC or 180-264 VAC, autoranging
Input frequency: 47-63 Hz
Input current: 1.9A (rms) for 100-120 VAC
1.1A (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: 150 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 $\pm 0.04\%$ /°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°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
Cooling: Convection cooling

PM100 SERIES



CE (LVD)
RoHS

SAFETY STANDARD APPROVALS



UL 60601-1, CSA C22.2 No. 601.1
File No. E178020



TÜV EN60601-1



UL 60950-1, CSA-C22.2 No. 60950-1



TÜV EN60950-1

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 B radiated
FCC: Class B conducted, class B radiated
VCCI: Class B conducted, class B 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 10 ms
Performance criteria A, B, A @ 230 Vac
B, B, A @ 100 Vac



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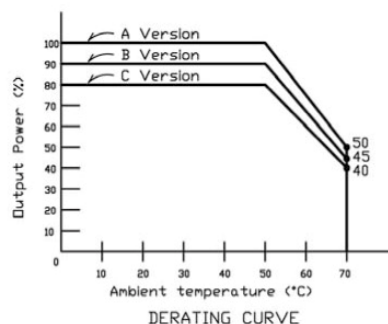
UNIVERSAL INPUT

PM100 MEDICAL & ITE SERIES

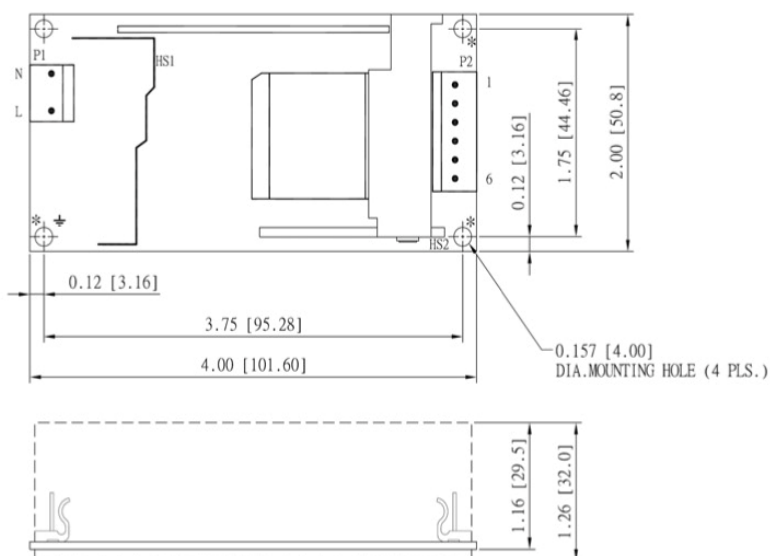
OUTPUT VOLTAGE/CURRENT RATING CHART

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 models with metallic L-bracket or box, change suffix "A" to "B" for L-bracket format, to "C" for enclosed format (Outline Drawing of Cased Internal Switchers), e.g. PM100-14C.
2. Ripple and noise: Peak to peak with 20 MHz bandwidth and 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor at rated line voltage and load ranges.



MECHANICAL SPECIFICATIONS



NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Connector P1: Molex header 09-65-2038 or equivalent, mating with Molex housing 09-50-1031 or equivalent.
- Connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
- To ensure compliance with level B emissions, connect the three "*" marked mounting holes with metallic standoffs to chassis.
- Weight: 190 grams (0.44 lbs.) approx

PIN CHART

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