DESCRIPTION

The PM250 series of AC-DC switching power supplies in a package of 2 x 4 x 1.46 inches are capable of delivering 250 watts of continuous power at 10 CFM forced air cooling or 150 watts at convection cooling. A U-bracket or cover-and-fan assembly can be added during manufacturing. The units are specially certified to IEC /EN /UL /CSA 60601-1 for medical applications, and also certified to IEC /EN /UL /CSA 62368-1 for data networking, computer, telecommunication, audio/video and industrial applications.

FEATURES

- BF Class insulation
- Operation altitude up to 5000 meters
- 2 x 4 inch footprint with 1.46 inch low profile
- Less than 275 µA leakage current
- Wide input range 80-264 VAC
- Meet EN55011 /55032 Class B
- Power Factor 0.92 typical
- 100% burn-in at full load
- Short-circuit protection
- Over-temperature protection
- Compliant with RoHS requirements
- No load power consumption less than 0.3W

SPECIFICATIONS

Input voltage:	80-264 VAC
Input frequency:	47-63 Hz
Input current:	2.7 A (rms) for 115 VAC 1.35 A (rms) for 230 VAC
Earth leakage current:	220 µA max. @ 264 VAC, 63 Hz
Touch current:	100 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Remote sense	Compensation for cable losses up to 0.5 V
Over voltage protection:	set at 112-140% of its nominal output voltage
Over current protection:	Auto recovery
Over temp. protection	Auto recovery
Short circuit protection	Auto recovery
Temperature coefficient:	All outputs ±0.04% /℃ 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:	12 V at 0.5 A maximum
Standby power:	5 V at 1.0 A maximum (optional) (Auxiliary plus fan power no more than 8 W)
Start-up time:	Less than 1 second

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20℃ to +70℃, startup at -40℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Temperature derating:	Derate from 100% at +50℃ linearly to 50% at +70℃, applicable to convection and forced-air cooling conditions

PM250 SERIES

CE

RoHS

SAFETY STANDARD APPROVALS

GENERAL SPECIFICATIONS

Switching frequency:	55-300 KHz
Efficiency:	See rating chart.
Hold-up time:	10 ms minimum at 120 VAC
Line regulation:	±2% maximum at full load
Inrush current:	80 A @ 115 VAC or 160 A @ 230 VAC, at 25℃ 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:	150,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55011/EN55032:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN60601-1-2, EN55035	
EN61000-4-2:	ESD, ±15 KV air and ±8 KV contact
EN61000-4-3:	Radiated immunity, 9-28 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, 10 Vrms
EN61000-4-8:	Magnetic field immunity, 30 A/m
N61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms, 100% reduction for 10 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

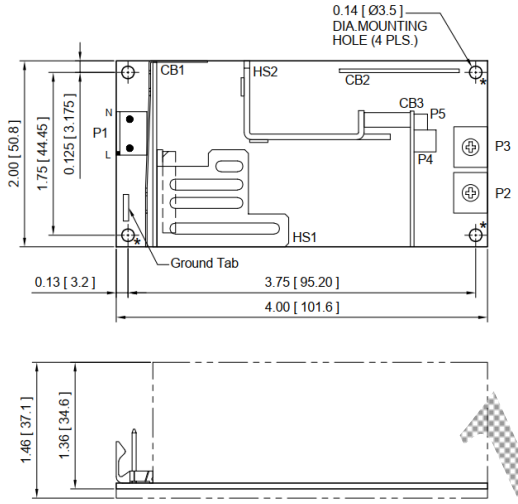
Model[1][3]	Output							Efficiency (typical) 115/230 Vac
	V1	Min. load	Max. Current at convection	Max. Current at 10 CFM	Tol.	Ripple & Noise[4]	Max. Power[2]	
PM250-12A	12 V	0 A	12.50 A	20.84 A	±2%	120 mV	150 W /250 W	91 /93%
PM250-13A	15 V	0 A	10.00 A	16.67 A	±2%	150 mV	150 W /250 W	91 /93%
PM250-13-1A	18 V	0 A	8.34 A	13.89 A	±2%	180 mV	150 W /250 W	91 /93%
PM250-14A	24 V	0 A	6.25 A	10.42 A	±2%	240 mV	150 W /250 W	92 /93%
PM250-15A	28 V	0 A	5.36 A	8.93 A	±2%	280 mV	150 W /250 W	92 /93%
PM250-16-1A	32 V	0 A	4.69 A	7.82 A	±2%	320 mV	150 W /250 W	92 /93%
PM250-17A	36 V	0 A	4.17 A	6.95 A	±2%	360 mV	150 W /250 W	92 /93%
PM250-18A	48 V	0 A	3.13 A	5.21 A	±2%	480 mV	150 W /250 W	92 /93%

NOTES:

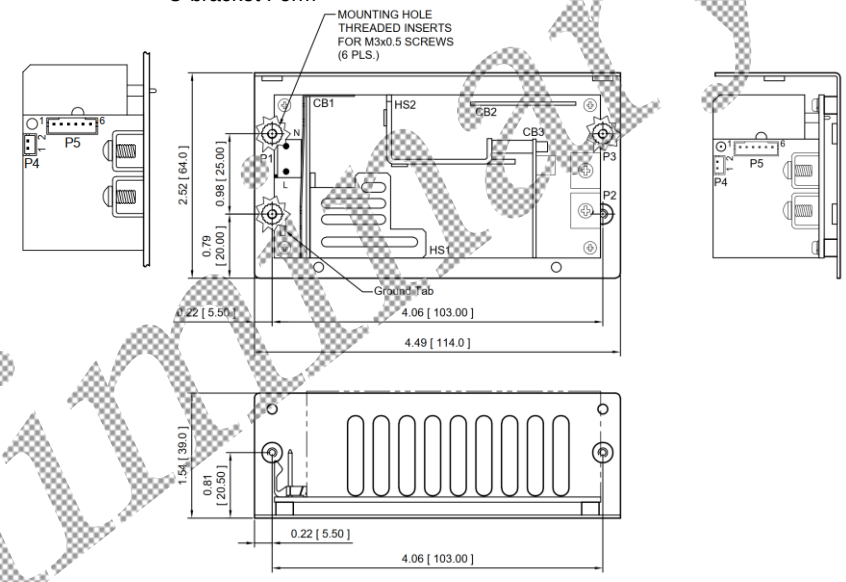
1. Suffix “A” in model numbers denotes PCB constructed form. Change suffix “A” to “B” for U-bracket form, e.g. PM250-14B. Change “A” to “C” for enclosed form with cover and fan assembly, e.g. PM250-14C.
2. “A” and “B” versions units provide 150 W power without moving air or 250 W with 10 CFM forced air provided by user. C version units with cover and fan assembly provide 250W power.
3. Standard models without “Inhibit” and “+5Vsb”. Add suffix “-I” with “Inhibit” and “+5Vsb”, e.g. PM250-14A-I.
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 µF tantalum (or electrolytic) capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS

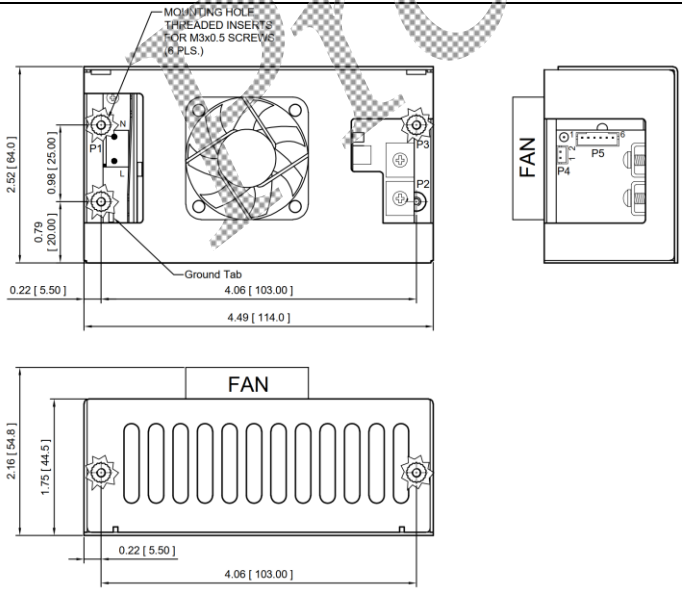
PCB Form



U-bracket Form



Enclosed Form



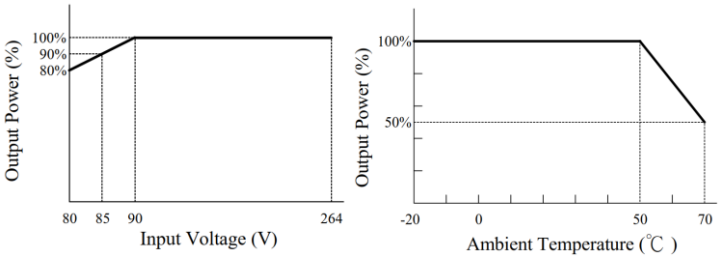
NOTES:
1. Dimensions shown in inches [mm], Tolerance 0.02 [0.5] maximum
2. Input connector P1: Molex header 26-60-4030, mating with Molex housing 09-50-8031 or equivalent.
3. Output connector P2 & P3: M3.5 * 0.5 screw connection.
4. Fan connector P4: JST header B2B-ZR-3.4 or equivalent, mating with JST housing ZHR-2 or equivalent.
5. Connector P5: JST header S6B-PH-K-S or equivalent, mating with JST housing PHR-6 or equivalent.
6. Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.
7. PCB form, to ensure compliance with level B emissions, connect the three "＊" marked mounting holes with metallic standoffs to chassis.
8. Weight: 210 grams (0.46 lbs.) approx. for PCB form, 260 grams (0.57 lbs.) approx. for U-bracket form, 318 grams (0.70 lbs.) approx. for enclosed form

INTERFACE SIGNALS

PFD: TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after V1 is within regulation.

Inhibit: (optional) Requires an external TTL high level signal to inhibit outputs.

OUTPUT POWER DERATING CURVES



PIN CHART

Connector	P1			P2	P3	P4	
PIN NO.	1	2	3	+V1	Common Return	+12V Fan	Common Return
Polarity	Live	Void	Neutral				

Connector	P5					
PIN NO.	1	2	3	4	5	6
Polarity	-Sense	+Sense	PFD	Inhibit (Optional)	+5V Standby (Optional)	Common Return