

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. Approval to EN60601-1 safety standards improves design-in time and reduces end equipment compliance costs.

FEATURES

- Medical approval
- 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
- EN55011 class B emissions
- RoHS compliant

INPUT SPECIFICATIONS

Input voltage:	90-132 /180-264 VAC (Universal mains supply operation)
Input frequency:	47-63 Hz
Input current:	1.9 A (rms) for 100-120 VAC 1.1 A (rms) for 200-240 VAC
Earth leakage current:	150 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:	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, latching by recycle input to reset
Short circuit protection:	Automatic recovery
Temperature coefficient:	All outputs ±0.04% /°C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 µs 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
Temperature derating:	Derate from 100% at +50°C linearly to 50% at +70°C
Cooling:	Convection

PM100 SERIES

RoHS



SAFETY STANDARD APPROVALS



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



TÜV EN 60601-1

GENERAL SPECIFICATIONS

Switching frequency:	100 KHz (typical)
Efficiency:	88-90% @ 230 VAC full load
Hold-up time:	12 ms minimum at 110 VAC
Line regulation:	±0.2% maximum at full load
Inrush current:	40 A @ 115 VAC or 80 A @ 230 VAC, at 25°C cold start
Withstand voltage:	5600 VDC from input to output (2 MOPP) 2100 VDC from input to ground (1 MOPP) 700 VDC from output to ground (To verify AC strength, get correct test method to avoid power supply damage.)
MTBF:	140,000 hours at full load at 25°C ambient temperature, calculated per MIL-HDBK-217F
EMC Performance (EN60601-1-2)	
EN55011:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A
EN61000-3-3:	Line flicker
EN60601-1-2	
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
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms (criteria A @ 230 VAC, criteria B @ 100 VAC), 100% reduction for 10 ms

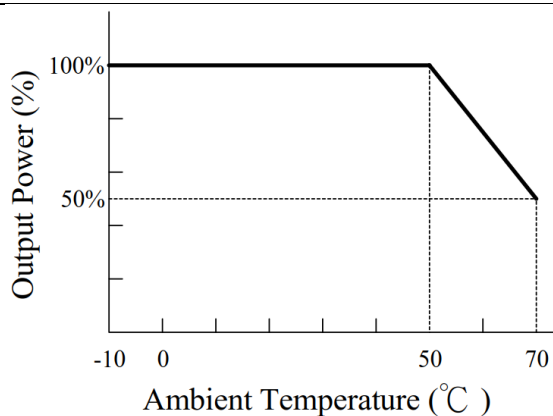
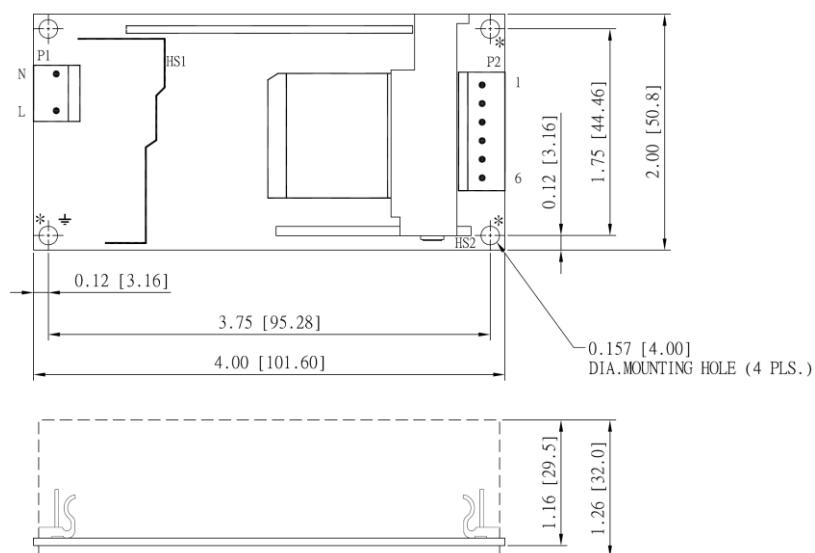
OUTPUT VOLTAGE/CURRENT RATING CHART

Model ⁽¹⁾	Output						Efficiency (typical) @ 115/230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise ⁽²⁾	Max. Power	
PM100-10A	5 V	0 A	20.00 A	±2 %	150 mV	100 W	87 /88%
PM100-12A	12 V	0 A	8.34 A	±2 %	120 mV	100 W	88 /89%
PM100-13A	15 V	0 A	6.70 A	±2 %	150 mV	100 W	88 /89%
PM100-13-1A	18 V	0 A	5.56 A	±2 %	180 mV	100 W	88 /89%
PM100-14A	24 V	0 A	4.20 A	±2 %	240 mV	100 W	87 /90%
PM100-15A	28 V	0 A	3.58 A	±2 %	280 mV	100 W	87 /90%
PM100-17A	36 V	0 A	2.78 A	±2 %	360 mV	100 W	88 /89%
PM100-18A	48 V	0 A	2.10 A	±2 %	480 mV	100 W	88 /89%

- 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 form, to "C" for enclosed form (see Outline Drawing of Cased Internal Switchers), e.g. PM100-14C.
2. 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 capacitor in parallel with a 0.1 μ F ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS

OUTPUT POWER DERATING CURVE



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	PM100-13-1A	PM100-17A						
PM100-12A	PM100-14A	PM100-18A	V1 Return	V1 Return	V1 Return	+V1	+V1	+V1
PM100-13A	PM100-15A							