



PROTEK POWER

80-100 WATT MEDICAL & ITE POWER SUPPLIES

DESCRIPTION

The PM101 series of AC-DC switching power supplies in a package of 2 x 4 x 1.29 inches are capable of delivering 100 watts of continuous power at 7.5 CFM forced air cooling or 80 watts at convection cooling. The units are constructed on a printed circuit board. They are suited for medical applications, information technology and industrial applications. Approval to both IEC60601-1 and IEC62368-1 safety standards improves design-in time and reduces end equipment compliance costs.

FEATURES

- BF class insulation
- Operation altitude up to 5000 meters
- 2 x 4 inch footprint with 1.29 inch low profile
- Less than 175 μ A leakage current
- Wide input range 80-264 VAC
- Meet EN55011 /55032 and FCC Class B
- Short-circuit protection
- Compliant with RoHS requirements
- No load power consumption less than 0.15W

INPUT SPECIFICATIONS

Input voltage:	80-264 VAC
Power derating:	Derate linearly from 100% at 90VAC To 90% at 85VAC and 80% at 80VAC
Input frequency:	47-63 Hz
Input current:	2.0 A (rms) for 115 VAC 1.2 A (rms) for 230 VAC
Earth leakage current:	175 μ A max. @ 264 VAC, 63 Hz
Touch current:	100 μ A max. @ 264 VAC, 63 Hz

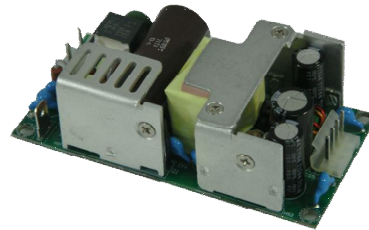
OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Over voltage protection:	set at 112-140% of its nominal output voltage, latching by recycle input to reset
Short circuit protection:	Automatic recovery
Over temperature protection:	Latching by recycle input to reset.
Temperature coefficient:	All outputs $\pm 0.04\%$ / $^{\circ}$ 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:	-20 $^{\circ}$ C to +70 $^{\circ}$ C
Storage temperature:	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Relative humidity:	5% to 95% non-condensing
Temperature derating:	Derate from 100% at +50 $^{\circ}$ C linearly to 50% at +70 $^{\circ}$ C, applicable to convection and forced-air cooling conditions

PM101 SERIES



CE
RoHS

SAFETY STANDARD APPROVALS



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



TÜV EN 60601-1



UL 62368-1, CSA C22.2 No. 62368-1



TÜV EN 62368-1

GENERAL SPECIFICATIONS

Switching frequency:	65 KHz (typical)
Efficiency:	See rating chart.
Hold-up time:	10 ms minimum at 100 W load and 115 VAC 10 ms minimum at 80 W load and 100 VAC
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	80 A @ 115 VAC or 160 A @ 230 VAC, at 25 $^{\circ}$ C cold start
Withstand voltage:	4000 VAC from input to output, 1500 VAC from input to ground, 1500 VAC from output to ground
MTBF:	150,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55011/ EN55032:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A
EN61000-3-3:	Line flicker
EN60601-1-2, EN55024	
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, 100% reduction for 10 ms

UNIVERSAL INPUT

PM101 MEDICAL & ITE SERIES

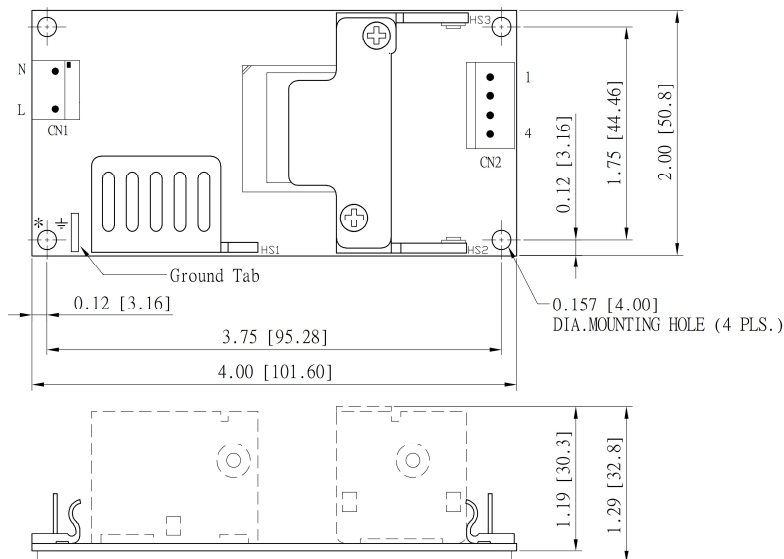
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output							Efficiency (typical) 115/230 Vac
	V1	Min. load	Max. Current at convection	Max. Current at 7.5 CFM	Tol.	Ripple & Noise ⁽²⁾	Max. Power ⁽¹⁾	
PM101-12A	12 V	0 A	6.67 A	8.34 A	±2%	120 mV	80 W /100 W	87 /90%
PM101-13A	15 V	0 A	5.34 A	6.67 A	±2%	150 mV	80 W /100 W	87 /90%
PM101-13-1A	18 V	0 A	4.45 A	5.56 A	±2%	180 mV	80 W /100 W	87 /90%
PM101-14A	24 V	0 A	3.34 A	4.17 A	±2%	240 mV	80 W /100 W	88 /90%
PM101-15A	28 V	0 A	2.86 A	3.58 A	±2%	280 mV	80 W /100 W	88 /90%
PM101-16-1A	32 V	0 A	2.50 A	3.13 A	±2%	320 mV	80 W /100 W	88 /90%
PM101-17A	36 V	0 A	2.23 A	2.78 A	±2%	360 mV	80 W /100 W	88 /90%
PM101-18A	48 V	0 A	1.67 A	2.09 A	±2%	480 mV	80 W /100 W	88 /90%

NOTES:

- The first value of max. power is at convection cooling. The second value is with 7.5 CFM forced air provided by user.
- 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 PM101-12A which is with a 22 μ F tantalum (or electrolytic) capacitor in parallel with a 0.1 μ F ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



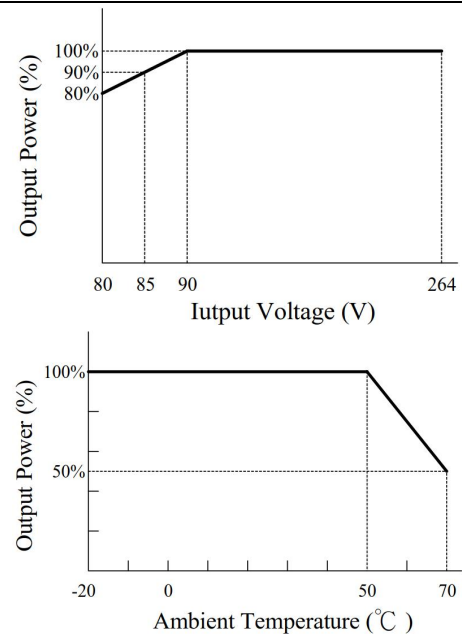
NOTES:

- Dimensions shown in inches [mm]; tolerance 0.02 [0.5] maximum.
- Input connector P1: Molex header 09-65-2038, mating with Molex housing 09-50-1031 or equivalent.
- Output connector P2: Molex header 09-65-2048, mating with Molex housing 09-50-1041 or equivalent.
- Ground tab is 0.25 [6.35] x 0.032 [0.8] fast-on connector.
- To ensure compliance with level B emissions, connect the three "*" marked mounting holes with metallic standoffs to chassis.
- Weight: 155 grams (0.34 lbs.) approx.

PIN CHART

Connect	CN1			CN2			
PIN NO.	1	2	3	1	2	3	4
Polarity	Live	Void	Neutral	V1	V1	Common Return	Common Return

OUTPUT POWER DERATING CURVE



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