

DESCRIPTION

The PM301 series of AC-DC switching power supplies in a package of 3 x 6 x 1.5 inches are capable of delivering 200-300 watts of continuous power at 10 CFM forced air cooling or 200 watts at convection cooling. A L-bracket or cover-and-fan assembly can be added during manufacturing. They are specially designed for medical applications, but not for life-supporting equipment. The units are certified also to IEC /EN /UL /CSA 60950-1 and suitable for data networking, computer and telecommunication applications.

FEATURES

- * BF Class insulation
- * Operation up to 5000 meters
- * 3 x 6 inch footprint with 1.5 inch low profile
- * Less than 220 µA leakage current
- * High efficiency 92% typical
- * Compliant with RoHS requirements
- * Meet EN55011 /55022 and FCC Class B
- * 100-240 VAC input with active PFC
- * No load power consumption less than 1 W at standby power 5V /100 mA
- * Power Fail Detect (PFD) signal (option)
- * 100% burn-in at full load
- * Short-circuit protection (Latch)

INPUT SPECIFICATIONS

Input Range: 90-264 Vac
 Input Frequency: 47-63 Hz
 Input Current: 4.0 A (rms) for 115 VAC
 2.0 A (rms) for 230 VAC
 Earth Leakage Current: 275 µA max. @ 264 VAC, 63 Hz
 Touch current: 100 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output Voltage/Current: see rating chart.
 Max. Output Power: see rating chart.
 Ripple & Noise: 1% peak to peak maximum
 Remote sense: Compensation for cable loss up to 0.5 V
 Over Voltage Protection: Set at 112-140% of nominal output voltage
 Over Current Protection: Protected to output short circuit conditions
 Temperature coefficient: All outputs ±0.04% / °C maximum
 Transient response: Maximum excursion of 4% , recovering to 1% of final value within 500 us after a 25% step load change
 Fan power: 12 V at 0.5 A maximum (isolated)
 Standby power: 5 V at 2.0 A maximum or 12 V at 1.0 A maximum

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature: 0°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, applicable to convection and forced-air cooling conditions

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

OUTPUT RATING CHART

Model Name	Output						Efficiency (typical)		Max. Output Watt.
	V1	Min. load	Max. Current at convection	Max. Current at 10 CFM	Tol.	Ripple & Noise	@ 200 W 115/230 Vac	@ 300 W 115/230 Vac	
PM301-12A	12.0 V	0,0 A	16,67 A	25,00 A	±2%	120mV	89 /91%	88 /90%	200 W /300 W
PM301-13A	15.0 V	0,0 A	13,34 A	20,00 A	±2%	150mV	89 /92%	88 /91%	200 W /300 W
PM301-13-2A	19.0 V	0,0 A	10,53 A	15,80 A	±2%	190mV	89 /91%	88 /90%	200 W /300 W
PM301-14A	24.0 V	0,0 A	8,34 A	12,50 A	±2%	240mV	89 /92%	88 /91%	200 W /300 W
PM301-16A	30.0 V	0,0 A	6,67 A	10,00 A	±2%	300mV	89 /92%	88 /91%	200 W /300 W
PM301-17A	36.0 V	0,0 A	5,56 A	8,34 A	±2%	360mV	89 /92%	88 /91%	200 W /300 W
PM301-18A	48.0 V	0,0 A	4,17 A	6,25 A	±2%	480mV	89 /92%	88 /91%	200 W /300 W

*Suffix "A" in model numbers denotes PCB constructed form. Change suffix "A" to "B" for L-bracket form, e.g. PM301-14B. Change "B" to "C" for enclosed from with cover and fan assembly, e.g. PM301-14C.

*200 W without moving air or 300 W with 10 CFM forced air provided by user for "A" and "B" version, 300 W for "C" version with cover and fan assembly.

*Standby power output 5 V at 2 A. Add suffix "-12" for standby power output 12 V at 1.0 A, e.g. PM301-12A-12

*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 capacitor in parallel with a 0.1 µF ceramic capacitor across the output.


PM301 SERIES



SAFETY STANDARD APPROVALS

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

 TÜV EN 60601-1

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

 TÜV EN 60950-1

GENERAL SPECIFICATIONS

Switching frequency: 100KHz (typical)
 Efficiency (Typical): 87% minimum on all models
 Hold-up time: 10 ms minimum at 110 VAC
 Turn on delay time: 3 s maximum at 100 VAC
 Line regulation: ±0.5% maximum at full load
 Inrush Current: 20A@115V, or 40A@230V, at 25 °C 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
 250,000 hours at full load at 25°C ambient
 calculated per MIL-HDBK-217F

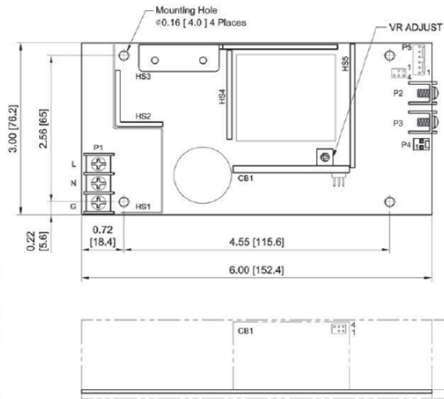
MTBF:

EMC Performance:

EN55011: 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 and D
 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 dip immunity, 30% reduction for 500ms, 60% reduction for 100 ms, and >95% reduction for 10 ms

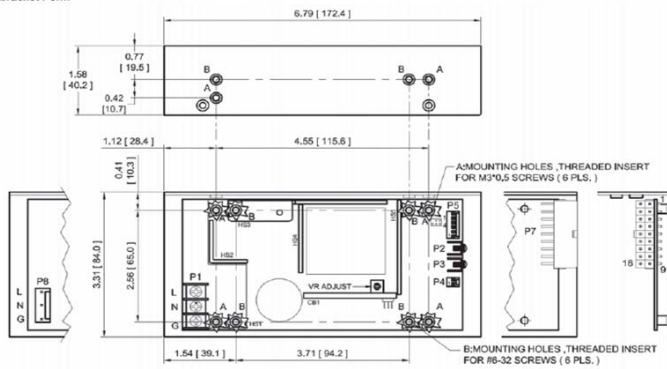
MECHANICAL SPECIFICATIONS

PCB constructed Form

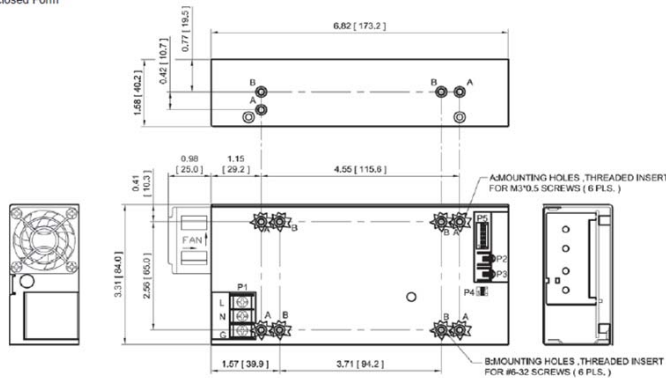


- * Dimension : shown in inches [mm]
- * Tolerance 0.02 [0.5] maximum
- * Input connector P1: Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
- * Output connector P2& P3: P2 and P3: M3 x 0.5 screw connections
- * FAN connector P4: Molex header 22-04-1021 or equivalent, mating with Molex housing 22-01-1022 or equivalent.
- * Connector P5: Molex header 22-04-1061 or equivalent, mating with Molex housing 22-01-1062 or equivalent.
- * Option output connector P7: Molex header 39-30-1180 or equivalent, mating with Molex housing 39-01-2185 or equivalent.
- * Option input connector P8: Molex header 26-60-4050 or equivalent, mating with Molex housing 09-50-8050 or equivalent.
- * Weight: 510 grams (1.12 lbs.) approx. for PCB form, 612 grams (1.35 lbs.) approx. for L-bracket form, 744 grams (1.64 lbs.) approx. for enclosed form.
- * Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

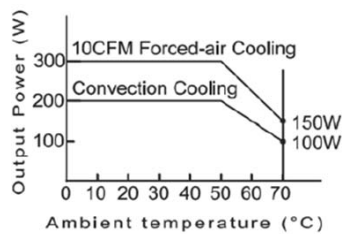
L-bracket Form



Enclosed Form



OUTPUT POWER DERATING CURVE



PIN CHART

PIN CHART

Connector	P1, P8			P2	P3	P4	
	PIN NO.	1	2			3	1
Polarity	Live	Neutral	Ground	+V1	Common Return	+12V Fan (Isolated)	Fan Return (Isolated)

Connector	P5						
	PIN NO.	1	2	3	4	5	6
Polarity	-Sense	+Sense	PFD	Inhibit	+5V/+12V Standby	Common Return	

Connector	P7									
	PIN NO.	1	2	3	4	5	6	7	8	9
Polarity	+5V/+12V Standby	Inhibit	+V1	+V1	+V1	+V1	+V1	+V1	+V1	Fan Return
PIN NO.	10	11	12	13	14	15	16	17	18	
Polarity	Standby Return	PFD	Common Return	Common Return	Common Return	Common Return	Common Return	Common Return	Common Return	+12V Fan