



PM301 300W Medical & ITE Power Supplies

Features:

- BF class insulation
- Operation altitude up to 5000 meters
- Suitable for both Class I and Class II applications *
- 3 X 6 inch foot print with 1.5 inch low profile
- Less than 220 µA leakage current
- Meet EN55011/ 55022 and FCC Class B
- Power Factor 0.98 typical
- 100 % burn in at full load
- Short-circuit protection (latch)
- Power Factor 0.98 typical
- 100% burn in at full load
- Short-circuit protection (Latch)
- Power Fail Detect (PFD) signal
- Inhibit- TTL high to disable output
- Compliant with RoHS requirements
- High efficiency 92% typical
- Power consumption on standby mode less than 1W at standby power 5V /m 100 mA



RoHS



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 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 certified for IEC/ EN/ UL/ CSA 60601-1 for medical applications. The units are design also to IEC/ EN/UL/ CSA 609501 and suitable for data networking, industrial and telecommunication applications.

Model ^{(1) (3)}	Output								Efficiency (typical) 115/230 VAC
	V1	Min Current	Max Current at convection ⁽²⁾	Max Current at 10 CFM ⁽²⁾	Peak Current ⁽⁵⁾	Tol	Ripple & Noise ⁽⁴⁾	Max. Power	
PM301-12A	12V	0A	16.67A	25.00A	30.0A	±2%	120mV	200/300W	89/91%
PM301-13A	15V	0A	13.34A	20.00A	24.0A	±2%	150mV	200/300W	89/92%
PM301-13-2A	19V	0A	10.53A	15.80A	18.9A	±2%	190mV	200/300W	89/91%
PM301-14A	24V	0A	8.34A	12.50A	14.5A	±2%	240mV	200/300W	89/92%
PM301-16A	30V	0A	6.67A	10.00A	11.0A	±2%	300mV	200/300W	89/92%
PM301-17A	36V	0A	5.56A	8.34A	9.6A	±2%	360mV	200/300W	89/92%
PM301-18A	48V	0A	4.17A	6.25A	7.5A	±2%	480mV	200/300W	90/92%

NOTES:

1. Suffix "A" in model numbers denotes PCB constructed form. Change suffix "A" to "B" for L-bracket form, e.g. PM301-14B. Change "A" to "C" for enclosed form with cover and fan assembly, e.g. PM301-14C.
2. 200 W without moving air or 300 W with 10 CFM forced air provided by user for "A" and "B" versions, 300 W for "C" version with cover and fan assembly.
3. 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
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 capacitor in parallel with a 0.1 µF ceramic capacitor across the output.
5. Peak output current with 10% duty cycle maximum for less than 15 seconds, average power not to exceed maximum power rating.



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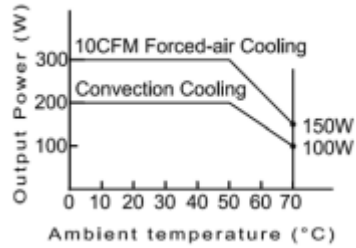
Specifications	
Safety Standards & EMC Specifications	
Safety Standard Approvals	ULES 60601-1, CSA C22.2 No. 60601-1 File No. E178020 TÜV EN60601-1 TÜV EN60950-1 UL 60950-1, CSA C22.2 No. 60950-1 File No. E137410
EMI Standard	EN55011/EN55022, FCC, and VCCI radiated and conducted
EMC Performance	EN61000-3-2: Harmonic distortion, Class A and D EN61000-3-3: Line flicker EN61000-4-2: ESD, ±15 KV air and ± 8KV contact EN61000-4-3: Radiated immunity, 10V/m EN61000-4-4: Fast transient/burst, ±2KV EN61000-4-5: Surge, ±1 KV diff., ±2 KV com. EN61000-4-6: Conducted immunity, 10Vrms EN61000-4-8: Magnetic field immunity, 30 A/m EN61000-4-11: Voltage dip immunity, 30% reduction for 500ms, and 100% reduction for 10ms
*Consult with TT Electronics for information on additional country safety approvals	
Input Specifications	
Input Voltage Range	90 to 264VAC
Input Frequency Range	47 to 63Hz
Input Current	4.0A (rms) @100VAC, 60 Hz 2.0A (rms) @240VAC, 50 Hz
Earth Leakage Current	220µA max. @ 264VAC, 63Hz
Touch Current	100µA max. @ 264 VAC, 63Hz
Output Specifications	
Ripple & Noise	1% peak to peak maximum
Remote Sense	Compensation for cable losses up to 0.5V
Overvoltage Protection	Set at 112-140% of its nominal output voltage
Overcurrent Protection	All outputs protected to short circuit conditions
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 us after a 25% step load change
Fan Power	12 V at 1A maximum (isolated)
Standby power	5V at 2A maximum or 12V at 1A maximum
Environmental Specifications	
Operating Temperature	-0°C to +70°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% to 95% non-condensing
Temperature Derating	De-rate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions
General Specifications	
Switching Frequency	100KHz
Power Factor	0.98 typical
Efficiency	87% minimum on all models
Turn on delay time	3s maximum at 100 VAC
Hold-up Time	10ms minimum at 110 VAC
Line Regulation	±0.5% maximum at full load
Inrush Current	20A @ 115 Vac or 40A @ 230 Vac at 25°C cold start
Withstand Voltage	4000 VDC from input to output (2 MOPP) 1500 VDC from input to ground (1 MOPP) 1500 VDC from output to ground (To verify AC strength, get correct test method to avoid power supply damage.)
MTBF	150,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F



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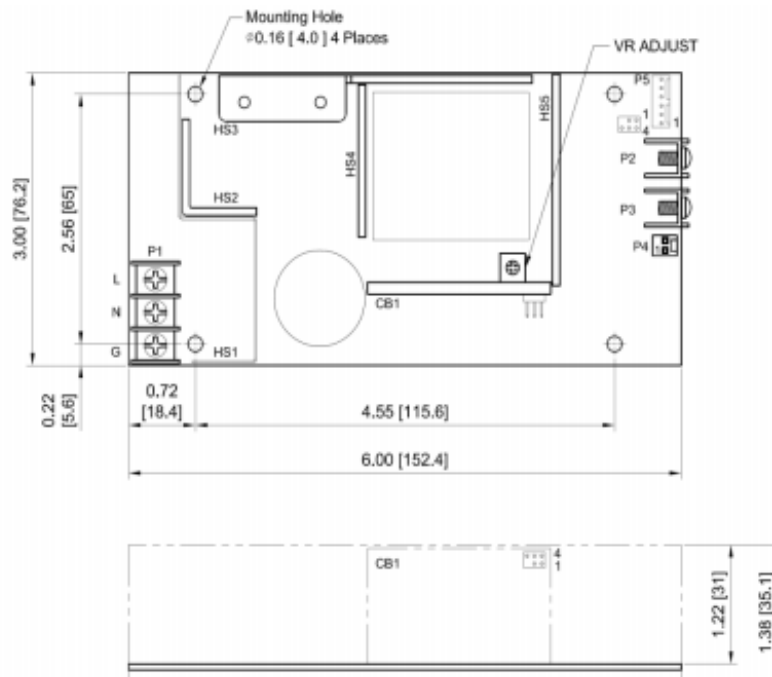
Diagrams

OUTPUT POWER DERATING CURVE



MECHANICAL SPECIFICATIONS

PCB constructed Form



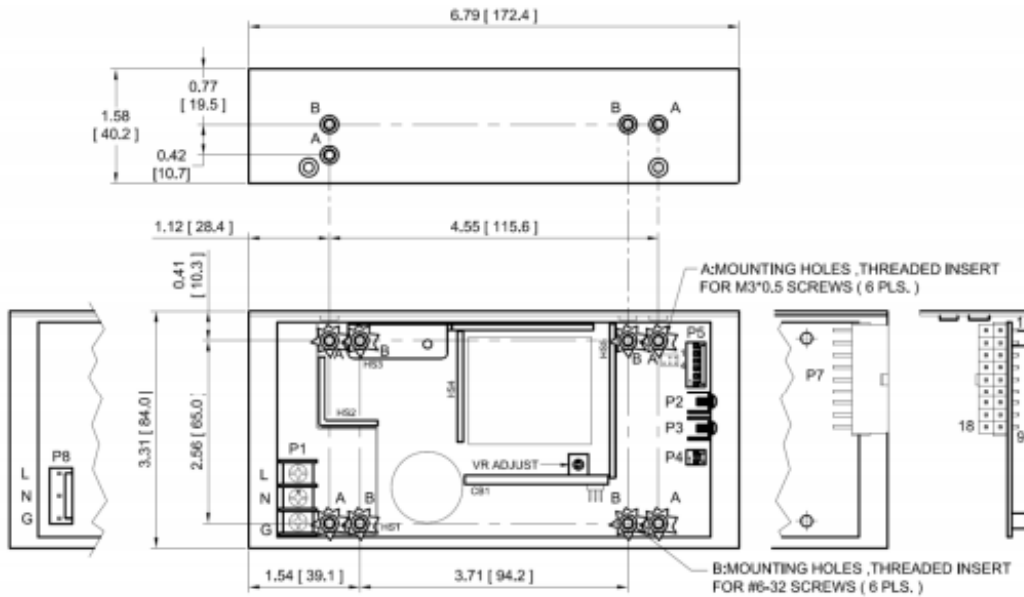


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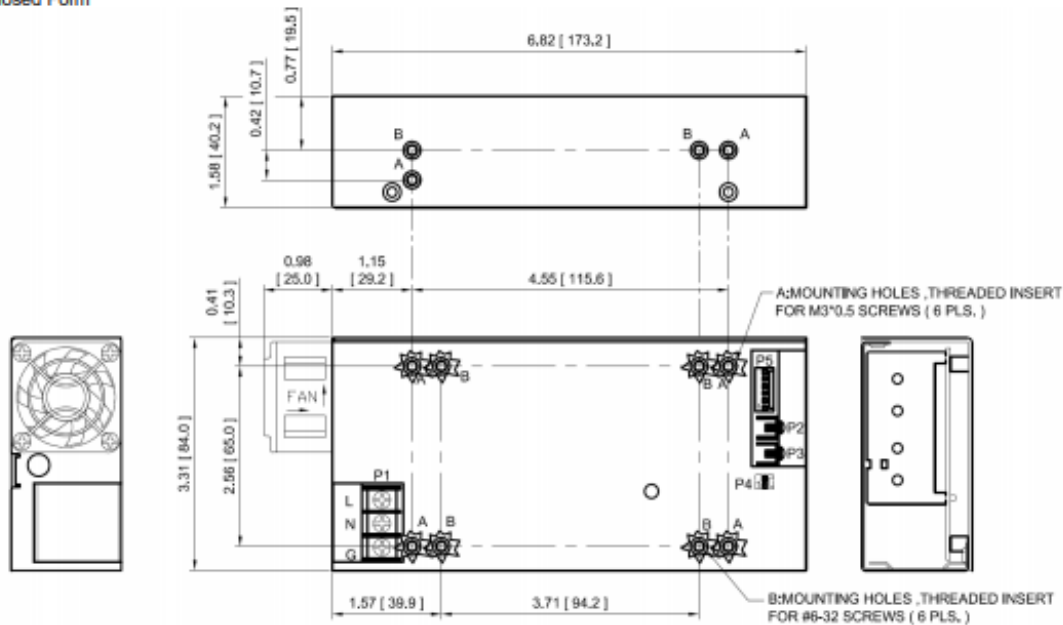
Diagrams

MECHANICAL SPECIFICATIONS

L-bracket Form



Enclosed Form



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
4. Output connector P2 and P3: M3 x 0.5 screw connections
5. Fan connector P4: Molex header 22-04-1021 or equivalent, mating with Molex housing 22-01-1022 or equivalent.
6. Connectors P5: Molex header 22-04-1061 or equivalent, mating with Molex housing 22-01-1062 or equivalent.
7. Optional output connector P7: Molex header 39-30-1180 or equivalent, mating with Molex housing 39-01-2185 or equivalent.
8. Optional input connector P8: Molex header 26-60-4050 or equivalent, mating with Molex housing 09-50-8050 or equivalent.
9. 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.
10. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.



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Diagrams

UNIVERSAL INPUT

PM301 MEDICAL & ITE SERIES

PIN CHART

Connector	P1, P8			P2	P3	P4	
PIN NO.	1	2	3			1	2
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	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	+12V Fan