PROTEK POWER

TT Electronics
POWER PARTNERS

PM300 Medical & ITE Power Supplies (200-300W)

Features:

- EN61000-3-2 class A and D compliant
- Power Factor 0.98 typical
- Overvoltage protection
- Short-circuit protection
- Power Fail Detect (PFD) signal
- 100% burn-in at full rated load
- Remote sense on output #1 and output #2
- Remote inhibit –TTL high to disable output
- Compliant with RoHS requirements

CE
RoHS

c UL us IEC 60601-1 TÜV Rheinland Product Safety BAUART GEPRÜFT TYPE APPROVED

Description:

The PM300 series comprising single and multiple output models for 200-300 watts of continuous output power is specially designed for medical and ITE applications. They operate at 90-264VAC input voltage without the need of a selector strap. All auxiliary outputs are with magnetic amplifier to keep regulation. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking. A cover-and-fan assembly can be added during manufacturing.

Model[1,2,6]	Output #1[3,5]				Output #2[3,5]				Output #3[4]				Output #4[4]				Max. Output Power[5]
	V1	Imin	Imax	Tol.	V1	Imin	Imax	Tol.	V1	Imin	Imax	Tol.	V1	Imin	Imax	Tol.	
PM300-10-3B	3.3V	3A	60.7A	±3%	(N/A)												100W/200W
PM300-10B	5.1V	3A	60A	±2%	(N/A)												150W/300W
PM300-12B	12V	1.2A	25A	±2%	(N/A)												150W/300W
PM300-13B	15V	1A	20A	±2%	(N/A)												150W/300W
PM300-14B	24V	0.6A	12.5A	±2%	(N/A)												150W/300W
PM300-16B	30V	0.5A	10A	±2%	(N/A)												150W/300W
PM300-18B	48V	0.5A	6.3A	±2%	(N/A)												150W/300W
PM300-40-3B	3.3V	3A	35A	±3%	5.1V	2A	22A	±2%	12V	0A	4A	±4%	12V	0A	4A	±4%	125W/250W
PM300-40B	5.1V	2A	35A	±2%	12V	1A	10A	±2%	12V	0A	4A	±4%	5.1V	0A	4A	±4%	150W/300W
PM300-41B	5.1V	2A	35A	±2%	15V	0.8A	8A	±2%	15V	0A	4A	±4%	24V	0A	2.5A	±4%	150W/300W
PM300-42B	5.1V	2A	35A	±2%	12V	1A	10A	±2%	12V	0A	4A	±4%	12V	0A	4A	±4%	150W/300W
PM300-45B	5.1V	2A	35A	±2%	12V	1A	10A	±2%	12V	0A	4A	±4%	24V	0A	2.5A	±4%	150W/300W
PM300-46B	5.1V	2A	35A	±2%	12V	1A	10A	±2%	12V	0A	4A	±4%	15V	0A	4A	±4%	150W/300W
PM300-47B	5.1V	2A	35A	±2%	24V	0.5A	5A	±2%	12V	0A	4A	±4%	12V	0A	4A	±4%	150W/300W
PM300-48B	5.1V	2A	35A	±2%	24V	0.5A	5A	±2%	5.1V	0A	4A	±4%	15V	0A	4A	±4%	150W/300W
PM300-49B	5.1V	2A	35A	±2%	12V	1A	10A	±2%	5.1V	0A	4A	±4%	24V	0A	2.5A	±4%	150W/300W
PM300-410B	24V	0.5A	6.3A	±2%	12V	1A	10A	±2%	5.1V	0A	4A	±4%	12V	0A	4A	±4%	150W/300W
PM300-411B	24V	0.5A	6.3A	±2%	12V	1A	10A	±2%	5.1V	0A	4A	±4%	24V	0A	2.5A	±4%	150W/300W
PM300-412B	24V	0.5A	6.3A	±2%	12V	1A	10A	±2%	12V	0A	4A	±4%	12V	0A	4A	±4%	150W/300W
PM300-413B	24V	0.5A	6.3A	±2%	24V	0.5A	5A	±2%	5.1V	0A	4A	±4%	15V	0A	4A	±4%	150W/300W
PM300-414B	24V	0.5A	6.3A	±2%	24V	0.5A	5A	±2%	12V	0A	4A	±4%	12V	0A	4A	±4%	150W/300W

NOTES:

1. Suffix “B” in model numbers denotes U-bracket form. Change “B” to “C” for enclosed form with cover and fan assembly, e.g. PM300-45C.
2. All outputs are floating. They can be connected externally for positive or negative output.
3. Output #1 & #2 can be adjusted within ±5% of their nominal voltage.
4. Output #3 & #4 can be adjusted within ±15% of their nominal voltage.
5. 300 watts for "C" version with cover and fan assembly, 150 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 50%), or 300 watts with 35 CFM forced air provided by user.
6. PM300-10-3B is rated 200 watts with 35 CFM forced air cooling or 100 watts convection cooled. PM300-40-3B is rated 250 watts with 35 CFM forced air cooling (maximum current of output #1 & #2 derated to 50%) or 125 watts convection cooled.
7. Single output models may be operated at no-load. At no-load, output voltage tolerance increases to ±10%. 8. 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.

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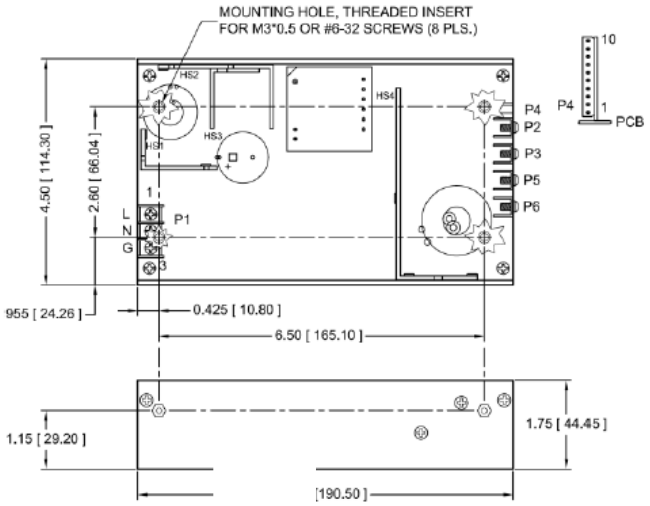
Specifications	
Safety Standards & EMC Specifications	
Safety Standard Approvals	ULES 60601-1, CSA C22.2 No. 60601-1 File No. E178020 TÜV EN60601-1 UL 60950-1, CSA C22.2 No. 60950-1 File No. E137410 TÜV EN60950-1
EMI Standard	EN55011/EN55022 Class B radiated and conducted
EMC Performance	EN61000-3-2: 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	4.7A (rms) @100VAC, 60 Hz / 2.3A (rms) @240VAC, 50 Hz
Earth Leakage Current	300µA max. @ 264VAC, 63Hz
Touch Current	100µA max. @ 264 VAC, 63Hz
Output Specifications	
Ripple & Noise	2% peak to peak maximum on 3.3 V & 5.1 V and 1% peak to peak maximum on other voltage outputs
Overvoltage Protection	Provided on output #1 only; set at 115-140% 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 350 mA maximum for B version 12 V at 100 mA maximum for C version
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
Cooling	200 /250 /300 watts continuous output power at 35 CFM forced air cooling or 100 /125 /150 watts at convention cooling
General Specifications	
Switching Frequency	70KHz ±10KHz
Power Factor	0.98 typical
Efficiency	70% minimum on all models
Hold-up Time	12ms minimum at 110 VAC
Line Regulation	±0.2% maximum at full load
Inrush Current	30A @ 115 Vac or 60A @ 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	300,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F
Interface Signals	
PFD	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1 ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after V1 output is within regulation.
Inhibit	Requires an external TTL high level signal to inhibit outputs for standard models

Diagrams

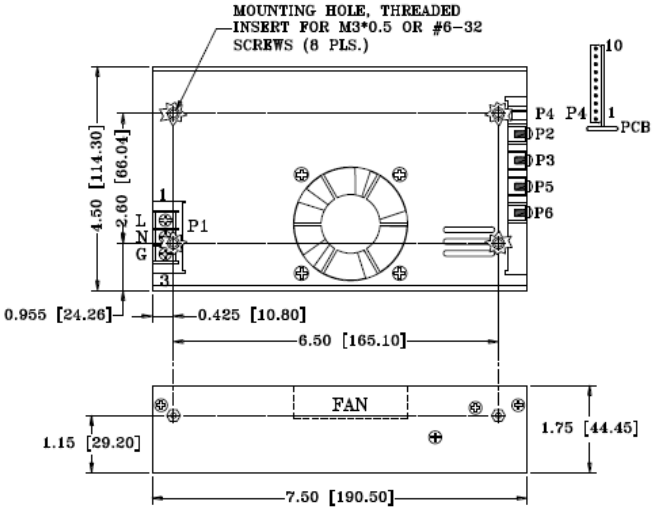
MECHANICAL SPECIFICATIONS

Single Output Models

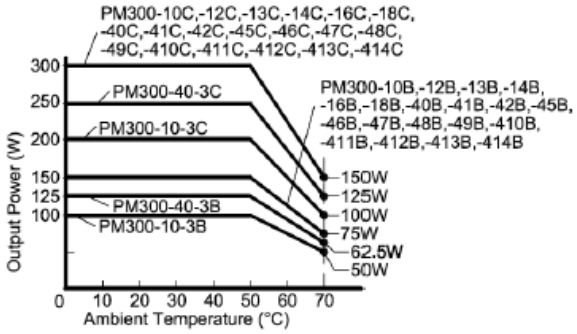
U-bracket Form



Enclosed Form



OUTPUT POWER DERATING CURVE



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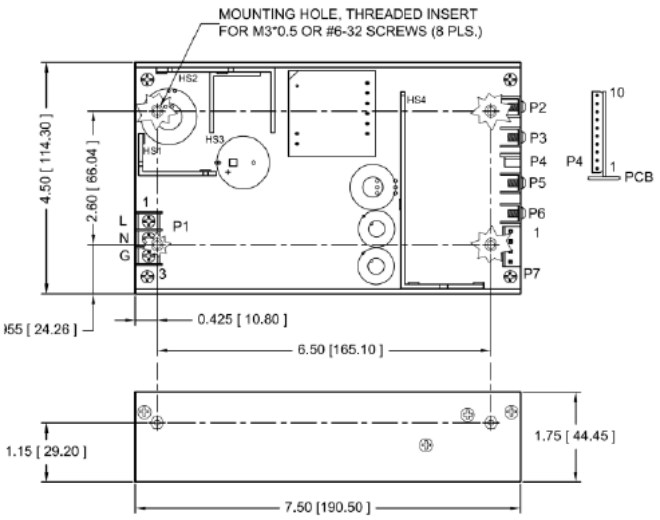
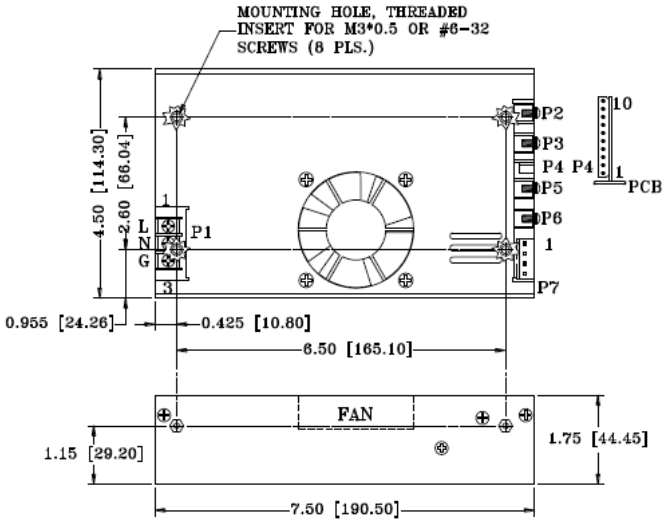
Multiple Output Models

U-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. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. Connectors P2, P3, P5 and P6: M3*0.5 screw connections
6. Output connector P7 mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal.
7. Weight: 1.10 Kgs. (2.42 lbs.) approx. for U-bracket form, 1.24 Kgs. (2.73 lbs.) approx. for Enclosed form.
8. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

PIN CHART

CONN / MODEL / PIN	P1 (AC)			P2	P3	P5	P6	P7			
	1	2	3					1	2	3	4
PM300-10-3B PM300-14B PM300-10B PM300-16B PM300-12B PM300-18B PM300-13B	Live	Neutral	Ground	+V1		V1 Return		N.A.			
PM300-40-3B PM300-48B PM300-40B PM300-49B PM300-41B PM300-410B PM300-42B PM300-411B PM300-45B PM300-412B PM300-46B PM300-413B PM300-47B PM300-414B	Live	Neutral	Ground	+V1	V1 Return	+V2	V2 Return	+V3	V3 Return	+V4	V4 Return

CONN / MODEL / PIN	P4									
	1	2	3	4	5	6	7	8	9	10
PM300-10-3B PM300-14B PM300-10B PM300-16B PM300-12B PM300-18B PM300-13B	Signal Common Return	+V1 Sense	-V1 Sense	PFD	Inhibit +V	N.C.	N.C.	N.C.	Fan Return	+12V Fan
PM300-40-3B PM300-48B PM300-40B PM300-49B PM300-41B PM300-410B PM300-42B PM300-411B PM300-45B PM300-412B PM300-46B PM300-413B PM300-47B PM300-414B	Signal Common Return	+V1 Sense	-V1 Sense	PFD	Inhibit +V	N.C.	+V2 Sense	-V2 Sense	Fan Return	+12V Fan