

DESCRIPTION

The PM300 series comprising single and multiple output models for 200-300 watts of continuous output power is specially designed for medical application. They operate at 90-264 VAC 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.

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

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	4.7 A (rms) for 115 VAC 2.3 A (rms) for 230 VAC
Earth leakage current:	300 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:	2% peak to peak maximum on 3.3 V & 5.1 V and 1% peak to peak maximum on other voltage outputs
Over voltage protection:	Provided on output #1 only; set at 115-140% of its nominal output voltage, automatic recovery
Short circuit protection:	Automatic recovery
Over temperature protection:	Automatic recovery
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 μ s 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

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

PM300 SERIES



CE
RoHS

SAFETY STANDARD APPROVALS



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

TÜV EN 60601-1

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0 $^{\circ}$ 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
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:	70 KHz ± 10 KHz
Power factor:	0.98 typical
Efficiency:	70% minimum on all models
Hold-up time:	12 ms minimum at 110 VAC
Line regulation:	$\pm 0.2\%$ maximum at full load
Inrush current:	30 A @ 115 VAC or 60 A @ 230 VAC, at 25 $^{\circ}$ 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:	200,000 hours minimum at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55011:	Class B conducted, Class B radiate
EN61000-3-2:	Harmonic distortion, Class A and D
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, 100% reduction for 10 ms

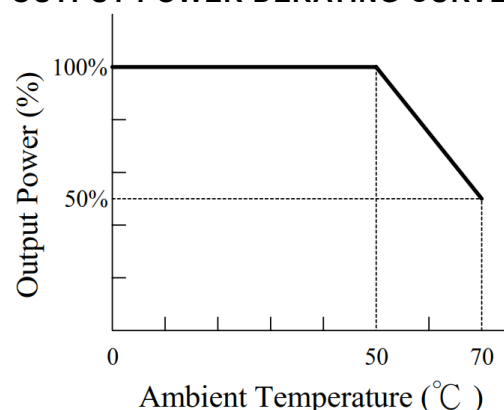
OUTPUT VOLTAGE/CURRENT RATING CHART

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.	V2	Imin.	Imax.	Tol.	V3	Imin.	Imax.	Tol.	V4	Imin.	Imax.	Tol.	
PM300-10-3B	3.3 V	3.0 A	60.7 A	±3%	(N/A)				(N/A)				(N/A)				100 W /200 W
PM300-10B	5.1 V	3.0 A	60.0 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-12B	12 V	1.2 A	25.0 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-13B	15 V	1.0 A	20.0 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-14B	24 V	0.6 A	12.5 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-16B	30 V	0.5 A	10.0 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-18B	48 V	0.5 A	6.3 A	±2%	(N/A)				(N/A)				(N/A)				150 W /300 W
PM300-40-3B	3.3 V	3.0 A	35.0 A	±3%	5.1 V	2.0 A	22 A	±2%	12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	125 W /250 W
PM300-40B	5.1 V	2.0 A	35.0 A	±2%	12 V	1.0 A	10 A	±2%	12 V	0 A	4 A	±4%	5.1 V	0 A	4 A	±4%	150 W /300 W
PM300-41B	5.1 V	2.0 A	35.0 A	±2%	15 V	0.8 A	8 A	±2%	15 V	0 A	4 A	±4%	24 V	0 A	2.5 A	±4%	150 W /300 W
PM300-42B	5.1 V	2.0 A	35.0 A	±2%	12 V	1.0 A	10 A	±2%	12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	150 W /300 W
PM300-45B	5.1 V	2.0 A	35.0 A	±2%	12 V	1.0 A	10 A	±2%	12 V	0 A	4 A	±4%	24 V	0 A	2.5 A	±4%	150 W /300 W
PM300-46B	5.1 V	2.0 A	35.0 A	±2%	12 V	1.0 A	10 A	±2%	12 V	0 A	4 A	±4%	15 V	0 A	4 A	±4%	150 W /300 W
PM300-47B	5.1 V	2.0 A	35.0 A	±2%	24 V	0.5 A	5 A	±2%	12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	150 W /300 W
PM300-48B	5.1 V	2.0 A	35.0 A	±2%	24 V	0.5 A	5 A	±2%	5.1 V	0 A	4 A	±4%	15 V	0 A	4 A	±4%	150 W /300 W
PM300-49B	5.1 V	2.0 A	35.0 A	±2%	12 V	1.0 A	10 A	±2%	5.1 V	0 A	4 A	±4%	24 V	0 A	2.5 A	±4%	150 W /300 W
PM300-410B	24 V	0.5 A	6.3 A	±2%	12 V	1.0 A	10 A	±2%	5.1 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	150 W /300 W
PM300-411B	24 V	0.5 A	6.3 A	±2%	12 V	1.0 A	10 A	±2%	5.1 V	0 A	4 A	±4%	24 V	0 A	2.5 A	±4%	150 W /300 W
PM300-412B	24 V	0.5 A	6.3 A	±2%	12 V	1.0 A	10 A	±2%	12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	150 W /300 W
PM300-413B	24 V	0.5 A	6.3 A	±2%	24 V	0.5 A	5 A	±2%	5.1 V	0 A	4 A	±4%	15 V	0 A	4 A	±4%	150 W /300 W
PM300-414B	24 V	0.5 A	6.3 A	±2%	24 V	0.5 A	5 A	±2%	12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	150 W /300 W

NOTES:

- 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.
- All outputs are floating. They can be connected externally for positive or negative output.
- Output #1 & #2 can be adjusted within ±5% of their nominal voltage.
- Output #3 & #4 can be adjusted within ±15% of their nominal voltage.
- 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.
- 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.
- Single output models may be operated at no-load. At no-load, output voltage tolerance increases to ±10%.
- 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.

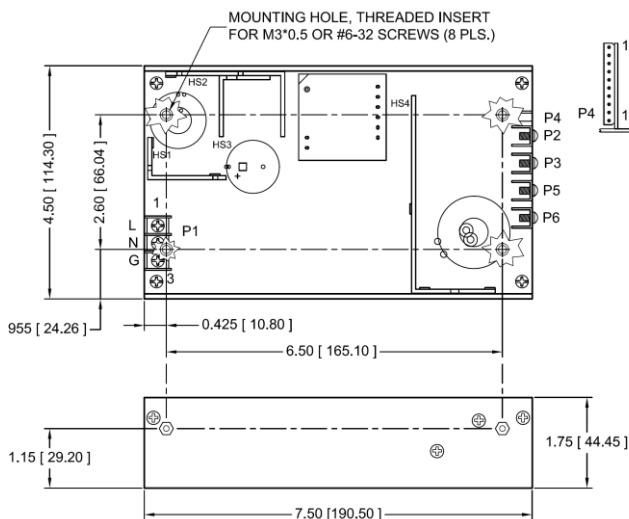
OUTPUT POWER DERATING CURVE



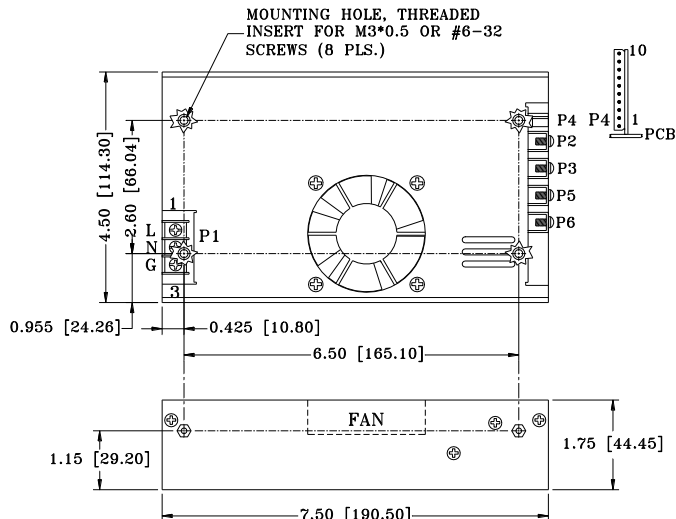
MECHANICAL SPECIFICATIONS

Single Output Models

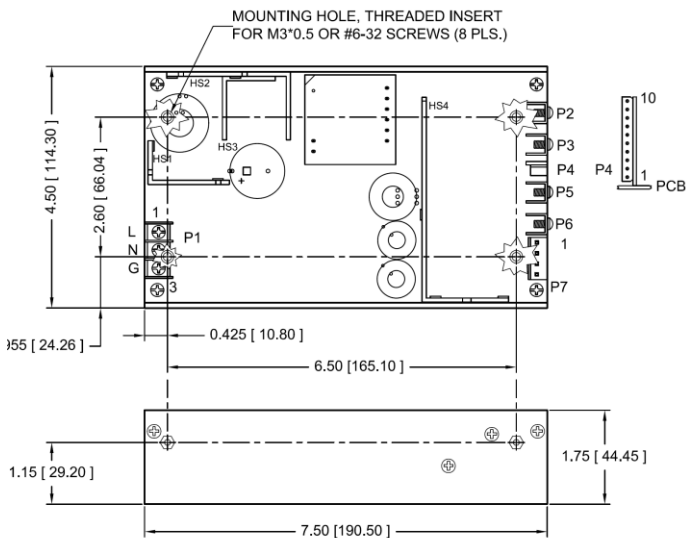
U-bracket Form



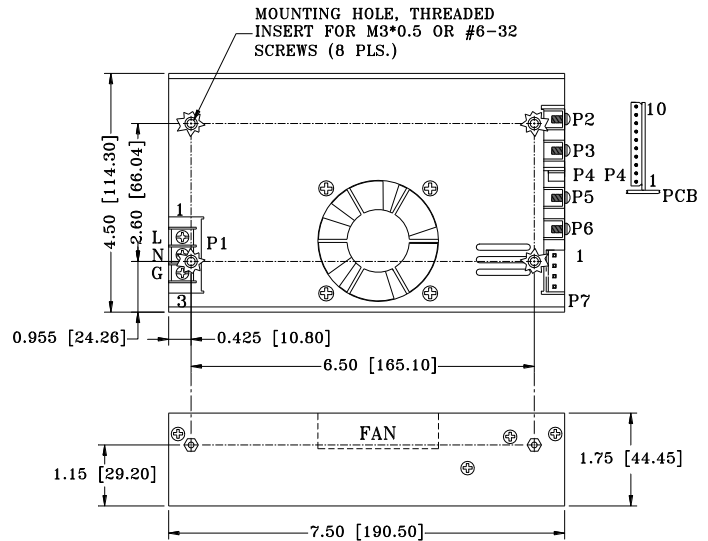
Enclosed Form



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

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

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