

200-300 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PM300 series comprising single and multiple output models for 200 to 300 watts of continuous output power is specially designed for medical and ITE applications, not for life support. They operate at 90 to 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.

FEATURES

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

INPUT SPECIFICATIONS

Input voltage :	90 to 264VAC
Input frequency :	47 to 63Hz
Input current :	4.7A (rms) for 115VAC 2.3A (rms) for 230VAC
Earth leakage current :	100uA max. @115VAC, 60Hz 220uA max. @ 230VAC, 50Hz

OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	See rating chart
Ripple and Noise :	2% peak to peak maximum
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 $\pm 0.04\%$ / $^{\circ}\text{C}$ maximum
Transient response :	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change
PFD signal :	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to master output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after master output is within regulation.
Remote inhibit :	Requires an external TTL high level signal to inhibit outputs for standard models.

PM300 SERIES

CE (LVD)
RoHS



Safety Standard Approvals :



UL60601-1, CSA C22.2 No. 601.1

File No. E178020

UL 60950-1

File No. E137410

TÜV EN60601-1



TÜV EN60950-1

ENVIRONMENTAL SPECIFICATIONS

Operating temperature :	0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$
Storage temperature :	40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
Relative humidity :	5% to 95% non condensing
Derating :	Derate from 100% at +50 $^{\circ}\text{C}$ linearly to 50% at +70 $^{\circ}\text{C}$
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 $\pm 10\text{KHz}$
Power factor :	0.98 typical
Efficiency :	70% minimum on all models
Hold-up time :	12 msec minimum at 110VAC
Line regulation :	$\pm 0.2\%$ maximum at full load
Inrush current :	30 amps @ 115VAC or 60 amps @230VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage :	4000VAC from input to output 1500VAC from input to ground 500VAC from output to ground
MTBF :	300,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL HDBK 217F
EMC Performance (EN60601-1-2: 2001)	
EN55011:	Class B conducted, Class B radiated
EN61000-3-2:	Harmonic distortion, Class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ contact
EN61000-4-3:	Radiated immunity, 3V/m
EN61000-4-4:	Fast transient/burst, $\pm 2\text{KV}$
EN61000-4-5:	Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.
EN61000-4-6:	Conducted immunity, 3Vrms
EN61000-4-8:	Magnetic field immunity, 3A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms and >95% reduction for 10ms

UNIVERSAL INPUT

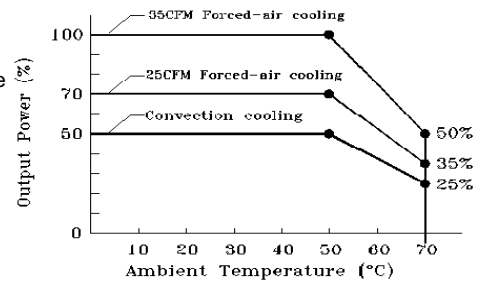
PM300 SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

(1) (2) (6) Model	Output # 1 (3)				Output # 2 (3)				Output # 3 (4)				Output # 4 (4)				Maximum Output Power (5)
	Vnom.	Imin.	I _{max}	Tol.	Vnom.	Imin.	I _{max}	Tol.	Vnom.	Imin.	I _{max}	Tol.	Vnom.	Imin.	I _{max}	Tol.	
PM300 12	12V	1.2A	25A	2%													300W
PM300 14	24V	0.6A	12.5A	2%													300W

NOTES:

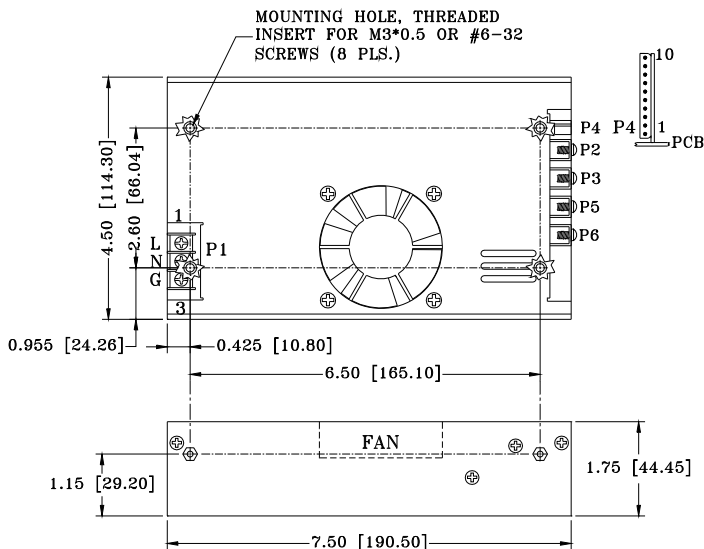
- Add suffix "B" for U bracket format or "C" for enclosed format with option fan control, e.g. PM300 45C.
- All outputs are floating. It can be connected externally for positive or negative output.
- Output #1 & #2 can be adjusted within $\pm 5\%$ of their nominal voltage.
- Output #3 & #4 can be adjusted within $\pm 15\%$ 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 3 is rated 200 watts with 35 CFM forced air cooling or 100 watts convection cooled. PM300 40 3 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%.



DERATING CURVE

MECHANICAL SPECIFICATIONS

Single Output Models



NOTES:

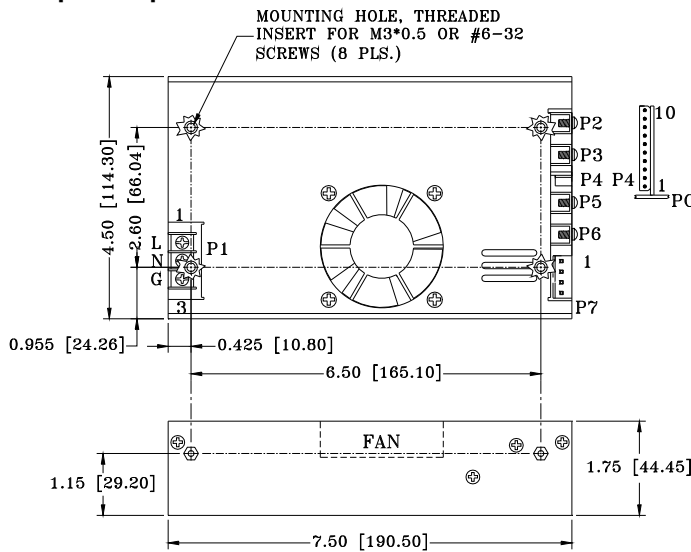
- Dimensions shown in inch [mm]
- Tolerance 0.02 [0.5] maximum
- Input connector P1 is Dinkle DT 35 B01W 03 screws are M3, Nickel plated.
- Connector P4 mates with Molex housing 50 37 5103 and pins 5263.
- Connectors P2, P3, P5 and P6: M3*0.5 screw connections
- Weight: 1.20 kgs. (2.64 lbs.) approx.
- DC fan on P4 is rated at 12V/0.1A.

UNIVERSAL INPUT

MECHANICAL SPECIFICATIONS

PM300 SERIES

Multiple Output Models



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT 35 B01W 03 screws are M3, Nickel plated.
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: 1.24 kgs. (2.73 lbs.) approx.
8. DC fan on P4 is rated at 12V/0.1A.

PIN CHART

Single Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM300 10 3	PM300 10	LIVE	NEUTRAL	GROUND	+VO1	+VO1	SIGNAL GROUND			
PM300 12	PM300 13						+S (VO1)	S (VO1)	PFD	
PM300 14	PM300 16									
PM300 18										

MODEL	CONN PIN	P4						P5	P6	P7			
		5	6	7	8	9	10			1	2	3	4
PM300 10 3	PM300 10	INHIBIT	N.C.	N.C.	N.C.	0V (FAN)	FAN	VO1	VO1	VOID	VOID	VOID	VOID
PM300 12	PM300 13												
PM300 14	PM300 16												
PM300 18													

Multiple Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM300 40 3	PM300 40	LIVE	NEUTRAL	GROUND	+VO1	VO1	SIGNAL GROUND			
PM300 41	PM300 42						+S (VO1)	S (VO1)	PFD	
PM300 45	PM300 46									
PM300 47	PM300 48									
PM300 49	PM300 410									
PM300 411	PM300 412									
PM300 413	PM300 414									

MODEL	CONN PIN	P4						P5	P6	P7			
		5	6	7	8	9	10			1	2	3	4
PM300 40 3	PM300 40	INHIBIT	N.C.	+S (VO2)	S (VO2)	0V (FAN)	FAN	+VO2	VO2	+VO3	VO3	+VO4	VO4
PM300 41	PM300 42												
PM300 45	PM300 46												
PM300 47	PM300 48												
PM300 49	PM300 410												
PM300 411	PM300 412												
PM300 413	PM300 414												