

## DESCRIPTION

The PM1100 series of AC-DC switching power supplies in a package of 5.91 x 9.25 x 2.4 inches are capable of delivering 1100 watts of continuous power. The units are constructed on a printed circuit board with an enclosed format for mechanical support and heat sinking. They are designed for medical applications including those needing BF rated insulation and/or an operation altitude up to 5000 meters.

## FEATURES

- BF Class insulation
- Operation altitude up to 5000 meters
- Compact size 5.91" x 9.25" x 2.4"
- Less than 300  $\mu$ A leakage current
- EN55011 Class B conducted emissions
- Inhibit - TTL low to disable output
- Standard PS Off and DC OK signals
- High Efficiency 89% typical
- Compliant with RoHS requirements
- Standby output 5 VDC at 200 mA
- Variable speed internal fan
- Overvoltage protection
- Overcurrent protection
- Over temperature protection

## INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	12.5 A (rms) @ 100 VAC, 60 Hz 5.2 A (rms) @ 240 VAC, 50 Hz
Earth leakage current:	300 $\mu$ A max. @ 264 VAC, 63 Hz
Touch current:	100 $\mu$ A max. @ 264 VAC, 63 Hz

## OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Remote sense:	Compensation for cable losses up to 0.5 V
Over voltage protection:	Set at 112-140% of nominal output voltage, latching by recycle input to reset
Over current protection:	Set at 120-140% of maximum output current
Short circuit protection:	Latching by recycle input to reset
Over temperature protection:	Latching by recycle input to reset
Temperature coefficient:	All outputs $\pm 0.04\%$ / $^{\circ}$ C maximum
Transient response:	Maximum excursion of 4%, recovering to 1% of final value within 500 us after a 25% step load change
Standby power:	5 V at 200 mA maximum
Fan power:	12 V at 1.0 A maximum

## ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-10 $^{\circ}$ 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, applicable to convection and forced-air cooling conditions

## PM1100 SERIES



**CE**  
**RoHS**

## SAFETY STANDARD APPROVALS



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



TÜV EN 60601-1

## GENERAL SPECIFICATIONS

Switching frequency:	40 KHz to 200 KHz
Efficiency:	See rating chart
Hold-up time:	10 ms minimum at 110 VAC
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	50 A @ 115 VAC, or 100 A @ 230 VAC, at 25 $^{\circ}$ C cold start
Withstand voltage:	4000 VAC from input to output (2MOPP) 1500 VAC from input to ground (1MOPP) 1500 VAC from output to ground
MTBF:	100,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F
EMC Performance (EN60601-1-2)	
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, $\pm 15$ KV air and $\pm 8$ KV contact
EN61000-4-3:	Radiated immunity, 9-28 V/m
EN61000-4-4:	Fast transient/burst, $\pm 2$ KV
EN61000-4-5:	Surge, $\pm 1$ KV diff., $\pm 2$ 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

## INTERFACE SIGNALS

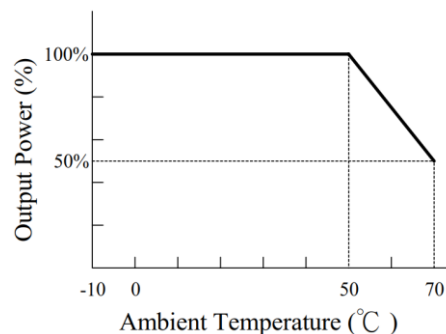
PFD: TTL high for normal operation,  
low upon loss of input power,  
turn-on delay time 100-2500 ms,  
turn-off delay time 1 ms minimum

Inhibit: TTL low to turn off output

DC OK: TTL high when output voltage >90%

PS OFF: TTL high to turn off output

## OUTPUT POWER DERATING CURVE



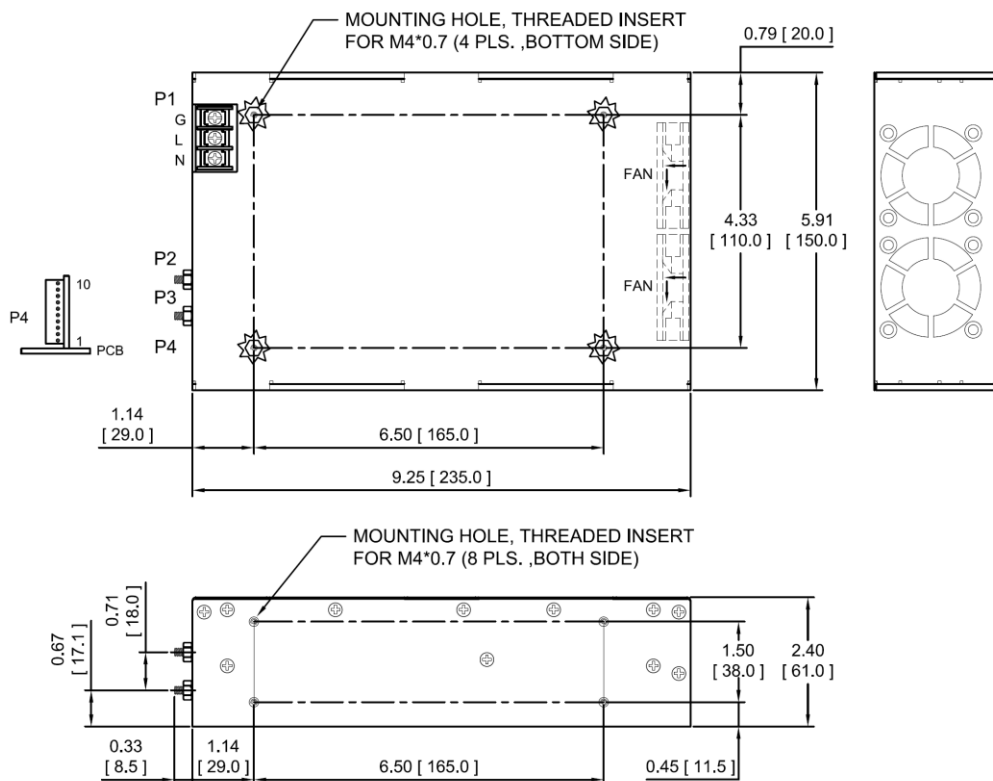
## OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output							Efficiency (typical) 115/230 Vac
	V1	Min. Current	Max. Current	Peak Current	Tol.	Ripple & Noise <sup>(2)</sup>	Max. Output Power <sup>(1)</sup>	
PM1100-14C	24 V	0 A	45.84 A	52.10 A	±2%	240 mV	1100 W /1250 W	88 /92%
PM1100-15C	28 V	0 A	39.29 A	44.65 A	±2%	280 mV	1100 W /1250 W	88 /92%
PM1100-16C	32 V	0 A	34.38 A	39.07 A	±2%	320 mV	1100 W /1250 W	90 /93%
PM1100-17-1C	34 V	0 A	32.35 A	36.77 A	±2%	340 mV	1100 W /1250 W	89 /93%
PM1100-17C	36 V	0 A	30.56 A	34.73 A	±2%	360 mV	1100 W /1250 W	90 /93%
PM1100-18-1C	42 V	0 A	26.20 A	29.77 A	±2%	420 mV	1100 W /1250 W	89 /92%
PM1100-18C	48 V	0 A	22.92 A	26.10 A	±2%	480 mV	1100 W /1250 W	89 /92%

### NOTES:

1. Peak current and power possible at 170-260 VAC input, 10 seconds, 35% duty cycle.
2. 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  $\mu$ F tantalum capacitor in parallel with a 0.1  $\mu$ F ceramic capacitor across the output.

## MECHANICAL SPECIFICATIONS



### NOTES:

1. Dimensions shown in inches [mm], tolerance 0.02 [0.5] maximum.
2. Input connector P1 is Dinkle terminal P/N DT-4C-B01W-03, with nickel plated M3.5 screws or equivalent.
3. Output connectors P2 and P3 are for M5\*0.8 screw connections.
4. Output connector P4 is Molex header 22-05-7105 or equivalent, mating with Molex housing 50-37-5103 or equivalent.
5. Weight: 2.884 Kgs (6.35 lbs.) approx. for enclosed form.
6. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

# UNIVERSAL INPUT

# PM1100 MEDICAL SERIES

## PIN CHART

Connector	P1 (AC)			P2		P3	
PIN NO.	1	2	3	1	2	1	2
Polarity	Neutral	Live	Ground	+V1		V1 Return	

Connector	P4									
PIN NO.	1	2	3	4	5	6	7	8	9	10
Polarity	FAN Return	+12V FAN	PS OFF	DC OK	+5V Standby	Inhibit	PFD	-V1 Sense	+V1 Sense	common Return