

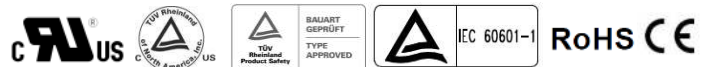


PROTEK POWER

# PM1100 Medical Power Supplies (1100W)

## Features:

- BF Class insulation
- Operation altitude up to 5000 meters
- Compact size 5.91" x 9.25" x 2.4"
- Less than 300 µA 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
- Thermal protection



## 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.

Model	Output							Efficiency (typical) @115/230 Vac
	V1	Min. Load	Max. Current at convection	Peak Current	Tol.	Ripple & Noise <sup>2</sup>	Max. Output Power <sup>1</sup>	
PM1100-14C	24V	0A	45.84A	52.10A	±2%	240mV	1100W/1250W	88/92%
PM1100-15C	28V	0A	39.29A	44.65A	±2%	280mV	1100W/1250W	88/92%
PM1100-16C	32V	0A	34.38A	39.07A	±2%	320mV	1100W/1250W	90/93%
PM1100-17-1C	34V	0A	32.35A	36.77A	±2%	340mV	1100W/1250W	89/93%
PM1100-17C	36V	0A	30.56A	34.73A	±2%	360mV	1100W/1250W	90/93%
PM1100-18-1C	42V	0A	26.20A	29.77A	±2%	420mV	1100W/1250W	88/92%
PM1100-18C	48V	0A	22.92A	26.10A	±2%	480mV	1100W/1250W	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 µF tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.



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Specifications	
Input Specifications	
Input Voltage Range	90 to 264VAC
Input Frequency Range	47 to 63Hz
Input Current	16A (rms) @100VAC, 60 Hz or 8A( rms) @240VAC, 50 Hz
Earth Leakage Current	300µA 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 112-140% of nominal output voltage
Overcurrent Protection	Set at 120-140% of maximum output current
Thermal Shutdown	Protected to overtemperature 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
Standby Power	5V at 200 mA maximum
Fan Power	12V at 1A maximum
Environmental Specifications	
Operating Temperature	-10°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	40 KHz to 200 KHz
Power Factor	>0.9
Hold-up Time	10ms minimum at 110 VAC
Line Regulation	±0.5% maximum at full load
Inrush Current	50A @ 115 Vac or 200A @ 100 Vac at 25°C cold start
Withstand Voltage	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 1500 VAC from output to ground
MTBF	100,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F



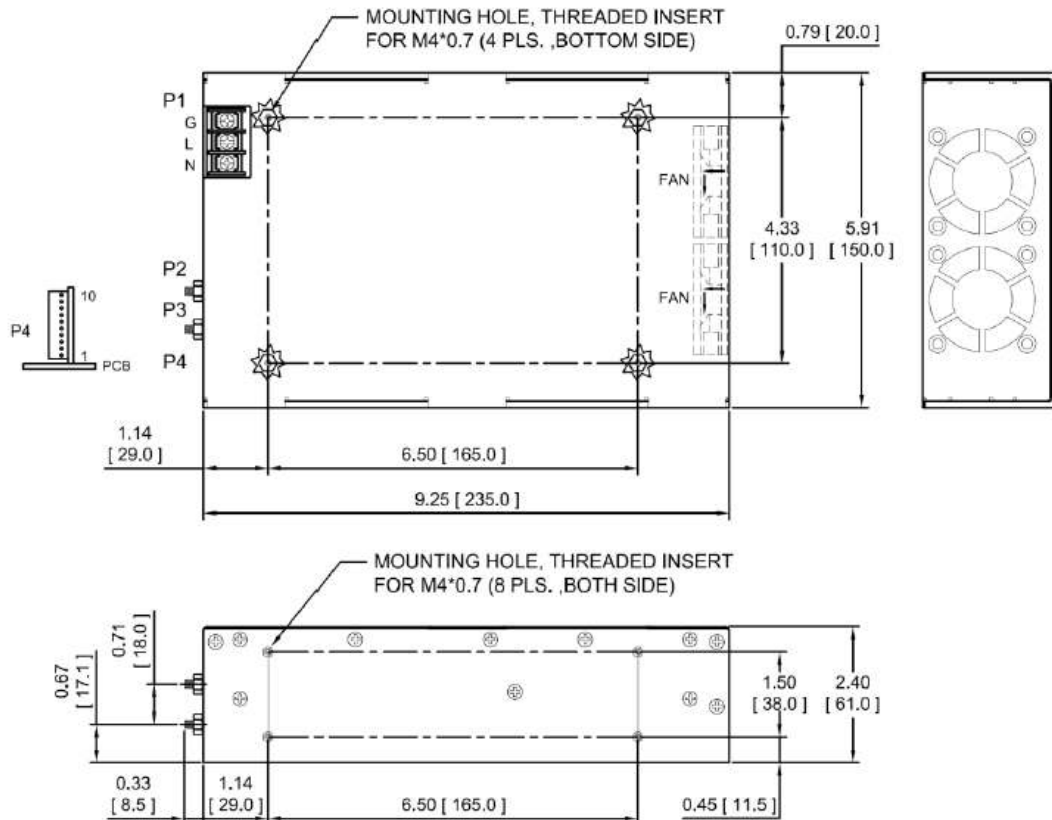
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Specifications	
Safety Standards & EMC Specifications	
Safety Standard Approvals	UL ES 60601-1, CSA C22.2 No. 60601-1 File No. E178020 TÜV EN 60601-1 UL 60950-1 CSA C22.2 No. 60950-1, CSA C22.2 No. 60950-1
EMI Standard	EN55011, FCC and VCCI Class B (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	



# PM1100 Medical Power Supplies (1100W)

## Diagrams



### NOTES:

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



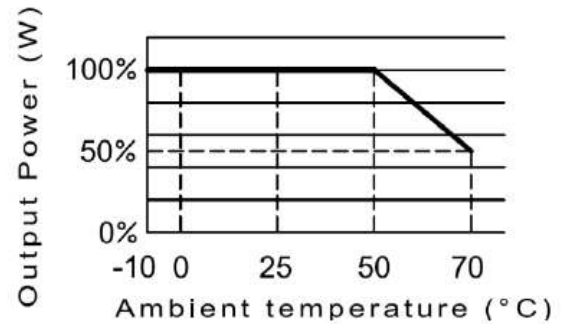
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## Diagrams

### 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 >95%
- PS OFF: TTL high to turn off output

### OUTPUT POWER DERATING CURVE



### PIN CHART

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