

800 WATT MEDICAL & ITE POWER SUPPLIES

DESCRIPTION

The PM800 series of AC-DC switching power supplies in a package of 5 x 8.25×1.6 inches are capable of delivering 800 watts of continuous power. The units are constructed on a printed circuit board with an enclosure 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
- Less than 500 µA leakage current
- Meet EN55011 /55032 Class B
- Power Factor 0.98 typical
- Short-circuit protection (Latch)
- Power Fail Detect (PFD) signal
- PS ON TTL low to turn on output
- High Efficiency 92% typical
- Power consumption in standby mode less than 1W at standby power 5 V /100 mA
- PMBus interface (optional)
- Current share with OR-ing FET (optional)

INPUT SPECIFICATIONS

Input voltage:80-264 VACPower derating:Derate linearly from 100% at 90 VACto 90% at 85 Vac and 80% at 80 VACInput frequency:47-63 Hz; 400Hz @ 115VACInput current:7.8 A (rms) for 115 VAC4.1 A (rms) for 230 VACEarth leakage current:500 μA max. @ 264 VAC, 63 HzTouch current:100 μA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current: Total output power: Ripple and noise: Remote sense Overvoltage protection:

Overcurrent protection: Temperature coefficient: Transient response:

Standby power:

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: Storage temperature: Relative humidity: Temperature derating: See rating chart. See rating chart. 1% peak to peak maximum Compensation for cable losses up to 0.5 V Set at 112-140% of its nominal output voltage Output protected to short circuit conditions

All outputs $\pm 0.04\%$ /°C maximum Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change 5 V at 2.0 A maximum

-20°C to +70°C -40°C to +85°C 5% to 95% non-condensing Derate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions



C E RoHS



SAFETY STANDARD APPROVALS

UL/CSA/TUV 60601-1 UL/CSA/TUV 62368-1 (certifications to be applied for in Q4 2024)

GENERAL SPECIFICATIONS

Switching frequency: Efficiency: Turn on delay time Hold-up time: Line regulation: Inrush current:

Withstand voltage:

MTBF:

EMC Performance EN55011/EN55032: EN61000-3-2: EN61000-3-3: EN60601-1-2, EN55035 EN61000-4-2: EN61000-4-3: EN61000-4-4: EN61000-4-5: EN61000-4-6: EN61000-4-8: EN61000-4-11: 50 KHz (typical) 90% minimum on all models 3 s maximum at 100 VAC 20 ms minimum at 110 VAC ±0.5% maximum at full load 25 A @ 115 VAC or 50 A @ 230 VAC, at 25°C cold start 4000 VAC from input to output (2MOPP)

4000 VAC from input to output (2MOPP) 1500 VAC from input to ground (1 MOPP) 1500 VAC from output to ground 100,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F

Class B conducted, class B radiated Harmonic distortion, class A and D Line flicker

ESD, ±15 KV air and ±8 KV contact Radiated immunity, 9-28 V/m Fast transient/burst, ±2 KV Surge, ±1 KV diff., ±2 KV com Conducted immunity, 10 Vrms Magnetic field immunity, 30 A/m Voltage dip immunity, 30% reduction for 500 ms, 100% reduction for 10 ms

INTERFACE SIGNALS

- PFD: TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after V1 is within regulation.
- PS ON: TTL low to turn on output

OUTPUT POWER DERATING CURVE



OUTPUT VOLTAGE/CURRENT RATING CHART

Model ⁽¹⁾	Output						Efficiency (typical) 115/230 Vac	
Class I	V1	Min. Current	Max. Current	Peak Current ⁽²⁾	Tol.	Ripple & Noise ⁽³⁾	Max. /Peak Power ⁽²⁾	. 1
PM800-12C	12 V	0 A	66.67 A	83.34 A	±2%	120 mV	800 W /1000 W	90 /92%
PM800-13C	15 V	0 A	53.34 A	66.67 A	±2%	150 mV	800 W /1000 W	90 /92%
PM800-14C	24 V	0 A	33.34 A	41.67 A	±2%	240 mV	800 W /1000 W	91 /93%
PM800-16C	30 V	0 A	26.67 A	33.34 A	±2%	300 mV	800 W /1000 W	91 /93%
PM800-17C	36 V	0 A	22.23 A	27.78 A	±2%	360 mV	800 W /1000 W	92 /94%
PM800-18C	48 V	0 A	16.67 A	20.84 A	±2%	480 mV	800 W /1000 W	92 /94%
PM800-19C	54 V	0 A	14.82 A	18.52 A	±2%	480 mV	800 W /1000 W	92 /94%

NOTES:

 Add suffix "-P" with PMBus interface function, e.g. PM800-14C-P. Add suffix "-C" with current share function, e.g. PM800-14C-C. Add suffix "-CP" with PMBus interface and current share function, e.g. PM800-14C-CP. PMBus function is described in detail on this web site: <u>https://www.protek.com.tw/en/PMBus.html</u>.

2. Peak output current with 10% duty cycle for less than 10 seconds, for an average power less than 800W.

3. 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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NOTES:

- 1. Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum 2.
- Input connector P1 is Dinkle terminal P/N DT-65-C01W-3 with nickel plated M4 screws. 3.
- Output connector P2 is Dinkle 0166-8002C with nickel plated M5 screw. 4.
- 5. Signal port and Auxiliary DC output connector P3 is Molex P/N 51110-1851 (with locking ramp).

6. Weight: 1.5 Kgs (3.31 lbs.) approx.

- 7. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.
- 8. SCL and SDA are interface signals for PMBus.
- Current_Share_V is interface signal for current sharing.
 PDB_FAIL, A0, A1, PS_ALERT and PSKILL are interface signals for redundancy applications.

PIN CHART

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

Connector		P3				
PIN NO.	1	2	3	4	5	6
Polarity	+5V Standby	+5V Standby	Common Return	Common Return	SCL	SDA

PIN NO. 7 8 9 10 11	4.0
	12
Polarity Common Return +5V Standby PFD PS ON Current_Share_V PDI	B_FAIL

Connector P3									
PIN NO.	13	12	15	16	17	18			
Polarity	+V1 Sense	-V1 Sense	AO	A1	PS_ALERT	PSKILL			