PROTEK POWER

25-28 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PM25 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 25 to 28 watts of continuous output power. They operate at 85-264 VAC input voltage without the need of voltage selection. They are ideally suited for use in medical equipment, safety systems and monitoring equipment, not for life-support equipment.

FEATURES

- Low safety ground leakage current
- 100% burn-in
- Wide input range 85-264 VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Open PCB construction
- Compliant with RoHS requirements

INPUT SPECIFICATIONS

Input voltage :	85-264 VAC
Input frequency :	47-63 Hz
Input current :	0.70 A (rms) for 115 VAC 0.40 A (rms) for 230 VAC
Earth leakage current :	90 uA max. @ 115 VAC, 60 Hz 150 uA max. @ 230 VAC, 50 Hz

OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	See rating chart
Ripple and noise :	1% peak to peak maximum
Overvoltage protection :	Provided on output #1 only; set at 112-132% of its nominal output voltage
Overcurrent protection :	All outputs protected to short circuit conditions
Temperature coefficient :	All outputs ±0.04% /℃ 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

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +70℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50℃ linearly to 50% at +70℃

PM25 SERIES

CE (LVD)
RoHS

SAFETY STANDARD APPROVALS

UL 60601-1, CSA C22.2 No. 601.1
File No. E178020

TÜV EN60601-1

GENERAL SPECIFICATIONS

Switching frequency :	42±5 KHz
Efficiency :	70% minimum on single output model with Vo □12V, 68% minimum on the others
Hold-up time :	10 msec minimum at 110 VAC
Line regulation :	±0.5% maximum at full load
Inrush current :	10 A @ 115 VAC or 25 A @ 230 VAC, at 25℃ cold start
Withstand voltage :	4000 VAC from input to output 1500 VAC from input to ground 500 VAC from output to ground
MTBF :	500,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F

EMC Performance (EN60601-1-2: 2001)

EN55011:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 KV contact
EN61000-4-3:	Radiated immunity, 3 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, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 3 A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500 ms, 60% reduction for 100 ms and >95% reduction for 10 ms

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UNIVERSAL INPUT PM25 MEDICAL SERIES

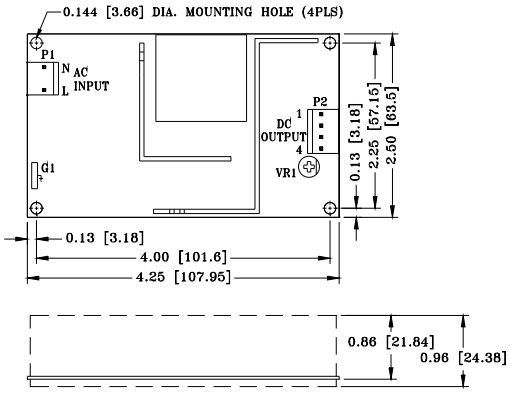
OUTPUT VOLTAGE/CURRENT RATING CHART

	Output #1				Output #2				Output #3				Maximum
MODEL	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Output Power
PM25-10A	5.1 V	0 A	5.5 A	2%		(N/A)				(N/A)			28 W
PM25-12A	12 V	0 A	2.3 A	1%		(N/A)				(N/A)			28 W
PM25-13A	15 V	0 A	1.9 A	1%		(N/A)				(N/A)			28 W
PM25-14A	24 V	0 A	1.2 A	1%		(N/A)				(N/A)			28 W
PM25-15A	28 V	0 A	1.0 A	1%		(N/A)				(N/A)			28 W
PM25-23A	+5.1 V	0.4 A	2.5 A	3%	+12 V	0.2 A	1.5 A	5%		(N/A)			25 W
PM25-25A	+5.1 V	0.4 A	2.5 A	3%	+24 V	0.1 A	0.8 A	5%		(N/A)			25 W
PM25-31A	+5.1 V	0.4 A	2.5 A	3%	+12 V	0.2 A	1.5 A	5%	-12 V	0.05 A	0.2 A	4%	25 W
PM25-32A	+5.1 V	0.4 A	2.5 A	3%	+15 V	0.1 A	1.0 A	5%	-15 V	0.05 A	0.2 A	4%	25 W
PM25-39A	+5.1 V	0.4 A	2.5 A	3%	+24 V	0.1 A	0.8 A	5%	-12 V	0.05 A	0.2 A	4%	25 W

NOTES:
1. All multiple output models may be operated at no-load without damage. At no-load, output voltage tolerance increases to 10%.
2. Ripple and noise: Peak to peak with 20MHz bandwidth and 10uF in parallel with a 0.1uF capacitor at rated line voltage and load ranges.
3. Safety agency approvals are for the above listed models in PCB format. To order a model with a metallic L-bracket or box, change suffix “A” to “B” for L-bracket format, to “C” for enclosed format to the model number (mechanical details shown in page 71), e.g. PM25-31C.

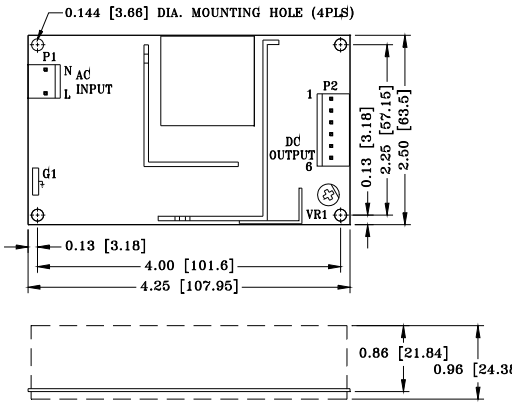
MECHANICAL SPECIFICATIONS

Single Output Models



NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.03 [0.76] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
4. Output connector mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal
5. Weight : 163 grams

Multiple Output Models



NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.03 [0.76] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
4. Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal
5. Weight : 175 grams

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PIN CHART

Single Output Models

MODEL \ PIN	1	2	3	4
PM25-10A PM25-12A PM25-13A PM25-14A PM25-15A	RETURN	RETURN	OUTPUT #1	OUTPUT #1

Multiple Output Models

MODEL \ PIN	1	2	3	4	5	6
PM25-23A PM25-25A	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	N.C.
PM25-31A PM25-32A PM25-39A	OUTPUT #2	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #3

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