PROTEK

25-28 WATT MEDICAL SWITCHING 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 to 264VAC 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.

FEATURES

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

INPUT SPECIFICATIONS

Input voltage :	85 to 264VAC
Input frequency :	47 to 63 Hz
Input current :	0.7A (rms) for 115VAC 0.4A (rms) for 230VAC
Earth leakage current :	90uA max. @ 115VAC, 60Hz 150uA max. @ 230VAC, 50Hz

OUTPUT SPECIFICATIONS

Output voltage/current :	See Rating Chart
Total output power :	See Rating Chart
Ripple and Noise :	1% peak to peak max.
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 500us 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 :

c UL us — **UL 2601-1, CSA C22.2 No. 601.1**
File No. E178020

IEC 60601-1 — **TÜV EN60601-1**

GENERAL SPECIFICATIONS

Switching frequency :	42KHz ±5KHz
Efficiency :	70% minimum on single output model with Vo ≧12V, 68% minimum on the others
Hold-up time :	10 msec minimum at 110VAC
Line regulation :	±0.5% maximum at full load
Inrush current :	10 amps @ 115VAC or 25 amps @ 230VAC at 25℃ cold start
Withstand voltage :	4000VAC from input to output 1500VAC from input to ground 500VAC from output to ground
MTBF :	500,000 hours minimum 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, ± 8KV air and ± 6KV contact
EN61000-4-3:	Radiated immunity, 3V/m for 80~2500 MHz
EN61000-4-4:	Fast transient/burst, ± 2KV
EN61000-4-5:	Surge, ± 1KV diff., ± 2KV 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

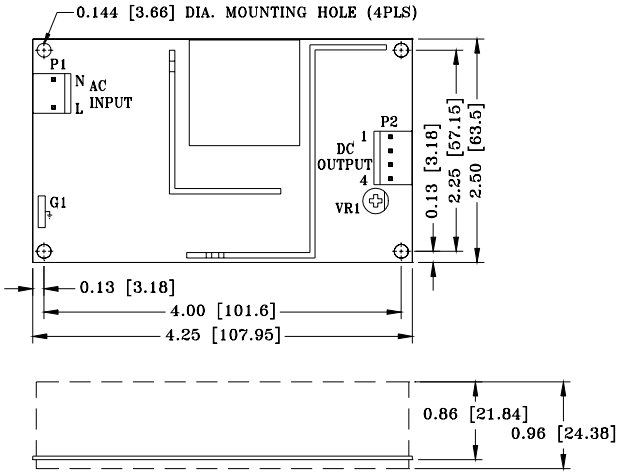
OUTPUT VOLTAGE/CURRENT RATING CHART

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

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 7-4), e.g. PM25-31C.

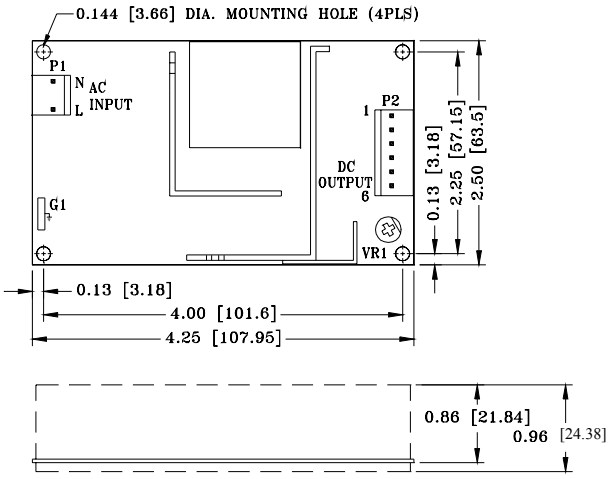
MECHANICAL SPECIFICATIONS

Single Output Models



NOTES:
1. Dimensions shown in inch [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 inch [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

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