

### DESCRIPTION

The PM42 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 30-48 watts of continuous output power at convection cooling. They operate at 90-264 VAC input voltage without the need of voltage selection, and are suited for medical, information technology and industrial applications. Approval to both EN60601-1 and EN60950-1 Safety Standards improves design-in time and reduces end equipment compliance costs.

### FEATURES

- Medical and industrial approvals
- Compact size 2" x4" x1.18"
- Single, dual and triple outputs
- Class I and Class II construction
- Low earth leakage current
- Level B emissions
- RoHS compliant

### INPUT SPECIFICATIONS

Input voltage: 90-264 VAC  
 Input frequency: 47-63 Hz  
 Input current: 0.9 A (rms) for 100 VAC  
 0.5 A (rms) for 240 VAC  
 Earth Leakage current: 150 uA max. @ 264 VAC, 63 Hz

### OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart.  
 Maximum output power: See rating chart.  
 Ripple and noise: 100mV peak to peak on 3.3V & 5.0 V model, 1% peak to peak on other models  
 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  $\pm 0.04\%$  / $^{\circ}\text{C}$  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

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature: -10 $^{\circ}\text{C}$  to +70 $^{\circ}\text{C}$   
 Storage temperature: -40 $^{\circ}\text{C}$  to +85 $^{\circ}\text{C}$   
 Relative humidity: 5% to 95% non-condensing  
 Derating: Derate from 100% to +50 $^{\circ}\text{C}$  linearly to 50% at +70 $^{\circ}\text{C}$

### PM42 SERIES



**CE** (LVD)  
RoHS

### SAFETY STANDARD APPROVALS



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



TÜV EN60601-1



UL 60950-1, CSA-C22.2 No. 60950-1



TÜV EN60950-1

### GENERAL SPECIFICATIONS

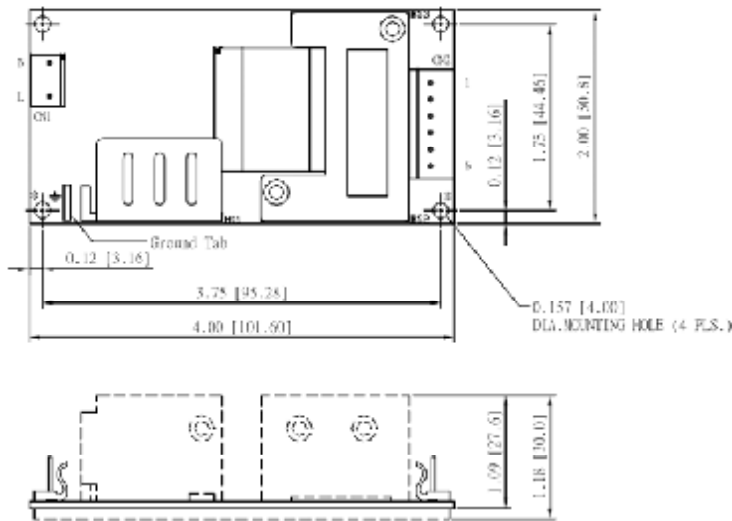
Switching frequency: 62 K  $\pm 5$  KHz  
 Efficiency: 80-88% typical except PM42-31-3A and PM42-31-5A at 75% typical  
 Hold-up time: 12 msec minimum at 110 VAC  
 Line regulation:  $\pm 0.5\%$  maximum at full load  
 Inrush current: 25 A @ 115 VAC, or 50 A @ 230 VAC, at 25 $^{\circ}\text{C}$  cold start  
 Withstand voltage: 4000 VAC from input to output  
 1500 VAC from input to ground  
 500 VAC from output to ground  
 MTBF: 400,000 hours at full load at 25 $^{\circ}\text{C}$  ambient, calculated per MIL-HDBK-217F  
 EMC Performance  
 EN55011 / EN55022: 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,  $\pm 8$  KV air and  $\pm 6$  KV contact  
 EN61000-4-3: Radiated immunity, 3 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, 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  
 >95% reduction for 10 ms

**OUTPUT VOLTAGE/CURRENT RATING CHART**

MODEL (1)	Output #1				Output #2				Output #3				Maximum Output Power
	Vnom.	Imin.	I <sub>max</sub> .	Tol.	Vnom.	Imin.	I <sub>max</sub> .	Tol.	Vnom.	Imin.	I <sub>max</sub> .	Tol.	
PM42-10A	5 V	0 A	8.0 A	2%		(N/A)				(N/A)			40 W
PM42-12A	12 V	0 A	3.5 A	2%		(N/A)				(N/A)			42 W
PM42-13A	15 V	0 A	3.0 A	2%		(N/A)				(N/A)			45 W
PM42-14A	24 V	0 A	2.0 A	2%		(N/A)				(N/A)			48 W
PM42-18A	48 V	0 A	1.0 A	2%		(N/A)				(N/A)			48 W
PM42-23A	+5 V	0.5 A	6 A	3%	+12 V	0.1 A	2 A	5%		(N/A)			40 W
PM42-25A	+5 V	0.5 A	6 A	3%	+24 V	0.1 A	1 A	5%		(N/A)			40 W
PM42-31A	+5 V	0.5 A	6 A	3%	+12 V	0.1 A	2 A	5%	-12 V	0 A	0.3 A	4%	40 W
PM42-31-3A	+3.3 V	0.8 A	6 A	3%	+5 V	0.1 A	2 A	5%	+12 V	0 A	0.3 A	4%	30 W
PM42-31-5A	+5 V	0.5 A	6 A	3%	+3.3 V	0 A	1.5 A	5%	+12 V	0 A	0.3 A	4%	30 W
PM42-32A	+5 V	0.5 A	6 A	3%	+15 V	0.1 A	1.5 A	5%	-15 V	0 A	0.3 A	4%	40 W
PM42-39A	+5 V	0.5 A	6 A	3%	+24 V	0.1 A	1 A	5%	-12 V	0 A	0.3 A	4%	40 W

- NOTE:
1. Safety approvals are for PCB form only. To order unit with cover fitted, change suffix "A" to "C".
  2. The output voltages of a multiple output model may go outside of the stated tolerance when an output load current is out of stated limits. All models may be operated at no-load without damage.
  3. Ripple and noise: Peak to peak with 20 MHz bandwidth and 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor at rated line voltage and load ranges.

**MECHANICAL SPECIFICATIONS**



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector mates with Moles housing 09-50-3061 and Moles 2878 series crimp terminal.
5. Ground tab is 0.25 [6.35] x 0.032 [0.8]
6. To ensure compliance with level B emissions, connect the two "\*" marked mounting holes with metallic standoffs to chassis.
7. Weight: 205 grams (0.45 lbs.) approx

**PIN CHART**

MODEL	PIN			1	2	3	4	5	6
	1	2	3						
PM42-10A PM42-14A	PM42-12A PM42-18A	PM42-13A	+V1	+V1	RTN	RTN	N.C	N.C	
PM42-23A	PM42-25A		+V1	+V1	RTN	RTN	N.C	+V2	
PM42-31A	PM42-32A	PM42-39A	+V1	+V1	RTN	RTN	-V3	+V2	
PM42-31-3A	PM42-31-5A		+V1	+V1	RTN	RTN	+V3	+V2	