

## 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

- BF Class insulation
- Suitable for both Class I and Class II applications\*
- Medical and ITE approvals
- Compact size 2" x4" x1.18"
- Single, dual and triple outputs
- Wide-range input 90-264 VAC
- 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<br>0.5 A (rms) for 240 VAC |
| Earth Leakage current: | 150 µA max. @ 264 VAC, 63 Hz                       |
| Touch current:         | 100 µA max. @ 264 VAC, 63 Hz                       |

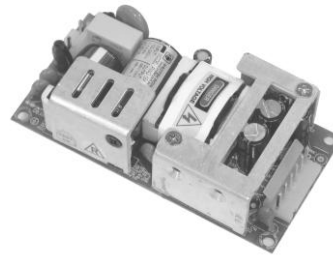
## OUTPUT SPECIFICATIONS

|                          |   |
|--------------------------|---|
| Output voltage/current:  | See rating chart.   |
| Maximum output power:    | See rating chart.   |
| Ripple and noise:        | 100 mV peak to peak on 3.3 V & 5.0 V models, 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 $\pm 0.04\%$ /°C maximum  |
| Transient response:      | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change |

## ENVIRONMENTAL SPECIFICATIONS

|                        |  |
|------------------------|--|
| Operating temperature: | -10°C to +70°C                                     |
| Storage temperature:   | -40°C to +85°C                                     |
| Relative humidity:     | 5% to 95% non-condensing                           |
| Derating:              | Derate from 100% at +50°C linearly to 50% at +70°C |

## PM42 SERIES



**CE**  
**RoHS**

## 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



TÜV EN 60950-1

## 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 ms 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°C cold start  |
| Withstand voltage:                  | 4000 VAC from input to output (2 MOPP)<br>1500 VAC from input to ground (1 MOPP)<br>1500 VAC from output to ground |
| MTBF:                               | 400,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F   |
| EMC Performance (IEC60601-1-2:2014) |  |
| 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, $\pm 15$ KV air and $\pm 8$ KV contact  |
| EN61000-4-3:                        | Radiated immunity, 10 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, 10 Vrms  |
| EN61000-4-8:                        | Magnetic field immunity, 30 A/m  |
| EN61000-4-11:                       | Voltage dip immunity, 30% reduction for 500 ms, 100% reduction for 10 ms   |

\* When installing a PM42-XXA (Open Frame) model in Class II end application, the power supply shall be mounted on insulating posts, in a manner that provides at minimum 5mm Clearance and 8mm Creepage between the power supply and any accessible conductive parts.

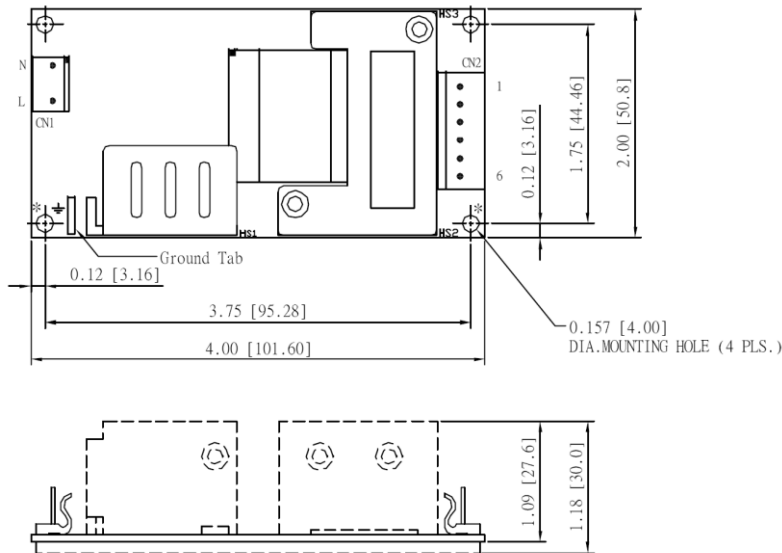
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model <sup>(1)</sup> | Output #1 |              |              |      | Output #2 |              |              |      | Output #3 |              |              |      | Max. Output Power |
|----------------------|-----------|--------------|--------------|------|-----------|--------------|--------------|------|-----------|--------------|--------------|------|-------------------|
|                      | V1        | Min. Current | Max. Current | Tol. | V2        | Min. Current | Max. Current | Tol. | V3        | Min. Current | Max. Current | 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        | 6.0 A        | ±3%  | +12 V     | 0.1 A        | 2.0 A        | ±5%  |           | (N/A)        |              |      | 40 W              |
| PM42-25A             | +5 V      | 0.5 A        | 6.0 A        | ±3%  | +24 V     | 0.1 A        | 1.0 A        | ±5%  |           | (N/A)        |              |      | 40 W              |
| PM42-31A             | +5 V      | 0.5 A        | 6.0 A        | ±3%  | +12 V     | 0.1 A        | 2.0 A        | ±5%  | -12 V     | 0 A          | 0.3 A        | ±4%  | 40 W              |
| PM42-31-3A           | +3.3 V    | 0.8 A        | 6.0 A        | ±3%  | +5 V      | 0.1 A        | 2.0 A        | ±5%  | +12 V     | 0 A          | 0.3 A        | ±4%  | 30 W              |
| PM42-31-5A           | +5 V      | 0.5 A        | 6.0 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        | 6.0 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        | 6.0 A        | ±3%  | +24 V     | 0.1 A        | 1.0 A        | ±5%  | -12 V     | 0 A          | 0.3 A        | ±4%  | 40 W              |

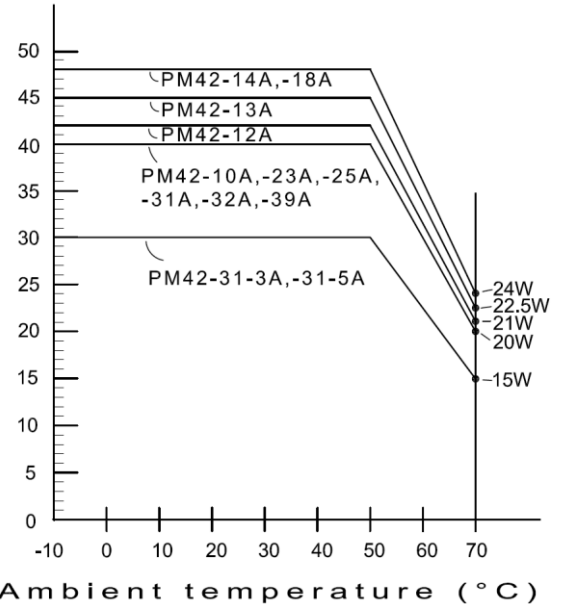
### NOTES:

- Safety approvals are for PCB form only. To order unit with cover fitted, change suffix "A" to "C".
- 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.
- 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.

## MECHANICAL SPECIFICATIONS



## OUTPUT POWER DERATING CURVE



### NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Connector CN1: Molex header 09-65-2038 or equivalent, mating with Molex housing 09-50-1031 or equivalent.
- Connector CN2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
- Ground tab is 0.25 [6.35] x 0.032 [0.8]
- To ensure compliance with level B emissions, connect the two "\*" marked mounting holes with metallic standoffs to chassis.
- Weight: 205 grams (0.45 lbs.) approx.

## PIN CHART

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