

**DESCRIPTION**

The PM101 series of AC-DC switching power supplies in a package of 2 x 4 x 1.29 inches are capable of delivering 100 watts of continuous power at 7.5 CFM forced air cooling or 80 watts at convection cooling. The units are constructed on a printed circuit board. They are suited for medical applications, information technology and industrial applications. Approval to both IEC60601-1 and IEC62368-1 safety standards improves design-in time and reduces end equipment compliance costs.

**FEATURES**

- BF class insulation
- Operation altitude up to 5000 meters
- 2 x 4 inch footprint with 1.29 inch low profile
- Less than 175  $\mu$ A leakage current
- Wide input range 80-264 VAC
- Meet EN55011 /55032 and FCC Class B
- Short-circuit protection
- Compliant with RoHS requirements
- No load power consumption less than 0.15W

**INPUT SPECIFICATIONS**

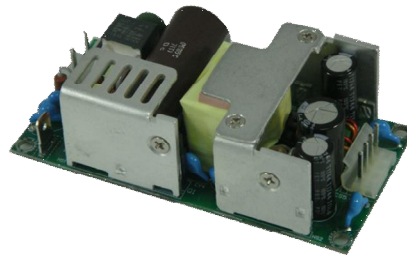
|                        |                                                                        |
|------------------------|------------------------------------------------------------------------|
| Input voltage:         | 80-264 VAC                                                             |
| Power derating:        | Derate linearly from 100% at 90VAC<br>To 90% at 85VAC and 80% at 80VAC |
| Input frequency:       | 47-63 Hz                                                               |
| Input current:         | 2.0 A (rms) for 115 VAC<br>1.2 A (rms) for 230 VAC                     |
| Earth leakage current: | 175 $\mu$ A max. @ 264 VAC, 63 Hz                                      |
| Touch current:         | 100 $\mu$ A max. @ 264 VAC, 63 Hz                                      |

**OUTPUT SPECIFICATIONS**

|                              |                                                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Output voltage/current:      | See rating chart.                                                                                                                |
| Maximum output power:        | See rating chart.                                                                                                                |
| Ripple and noise:            | 1% peak to peak maximum                                                                                                          |
| Over voltage protection:     | set at 112-140% of its nominal output voltage, latching by recycle input to reset                                                |
| Short circuit protection:    | Automatic recovery                                                                                                               |
| Over temperature protection: | Latching by recycle input to reset.                                                                                              |
| Temperature coefficient:     | All outputs $\pm 0.04\%$ / $^{\circ}$ C maximum                                                                                  |
| Transient response:          | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 $\mu$ s after a 25% step load change |

**ENVIRONMENTAL SPECIFICATIONS**

|                        |                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature: | -20 $^{\circ}$ C to +70 $^{\circ}$ C                                                                                                 |
| Storage temperature:   | -40 $^{\circ}$ C to +85 $^{\circ}$ C                                                                                                 |
| Relative humidity:     | 5% to 95% non-condensing                                                                                                             |
| Temperature derating:  | Derate from 100% at +50 $^{\circ}$ C linearly to 50% at +70 $^{\circ}$ C, applicable to convection and forced-air cooling conditions |

**PM101 SERIES**

CE  
RoHS

**SAFETY STANDARD APPROVALS**

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



TÜV EN 60601-1



UL 62368-1, CSA C22.2 No. 62368-1



TÜV EN 62368-1

**GENERAL SPECIFICATIONS**

|                      |                                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------|
| Switching frequency: | 65 KHz (typical)                                                                                   |
| Efficiency:          | See rating chart.                                                                                  |
| Hold-up time:        | 10 ms minimum at 100 W load and 115 VAC<br>10 ms minimum at 80 W load and 100 VAC                  |
| Line regulation:     | $\pm 0.5\%$ maximum at full load                                                                   |
| Inrush current:      | 80 A @ 115 VAC or 160 A @ 230 VAC, at 25 $^{\circ}$ C cold start                                   |
| Withstand voltage:   | 4000 VAC from input to output,<br>1500 VAC from input to ground,<br>1500 VAC from output to ground |
| MTBF:                | 150,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F                |
| EMC Performance      |                                                                                                    |
| EN55011/ EN55032:    | Class B conducted, class B radiated                                                                |
| EN61000-3-2:         | Harmonic distortion, class A                                                                       |
| EN61000-3-3:         | Line flicker                                                                                       |
| EN60601-1-2, EN55024 |                                                                                                    |
| EN61000-4-2:         | ESD, $\pm 15$ KV air and $\pm 8$ KV contact                                                        |
| EN61000-4-3:         | Radiated immunity, 9-28 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                           |

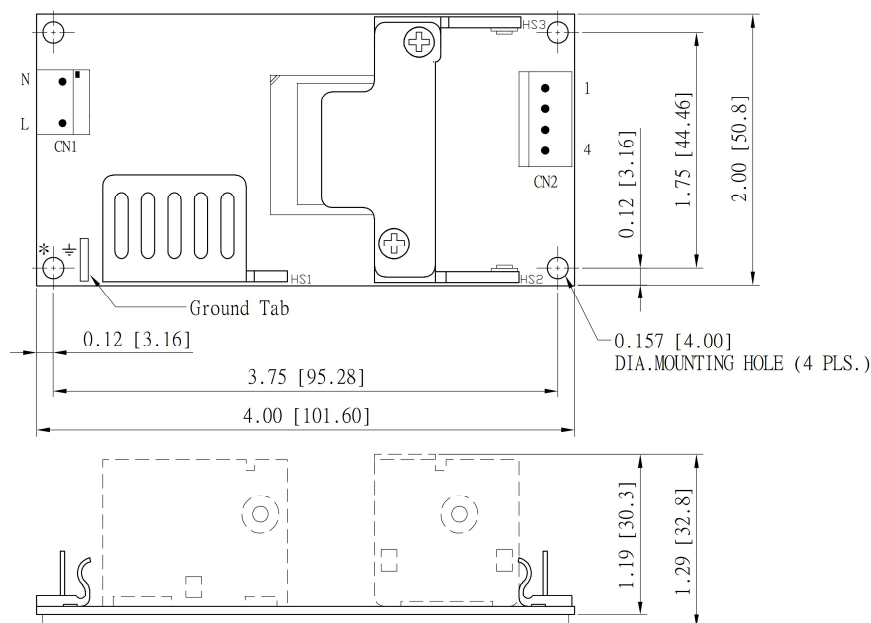
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model       | Output |           |                               |                            |      |                                  |                              | Efficiency<br>(typical)<br>115/230 Vac |
|-------------|--------|-----------|-------------------------------|----------------------------|------|----------------------------------|------------------------------|----------------------------------------|
|             | V1     | Min. load | Max. Current<br>at convection | Max. Current<br>at 7.5 CFM | Tol. | Ripple &<br>Noise <sup>(2)</sup> | Max.<br>Power <sup>(1)</sup> |                                        |
| PM101-12A   | 12 V   | 0 A       | 6.67 A                        | 8.34 A                     | ±2%  | 120 mV                           | 80 W /100 W                  | 87 /90%                                |
| PM101-13A   | 15 V   | 0 A       | 5.34 A                        | 6.67 A                     | ±2%  | 150 mV                           | 80 W /100 W                  | 87 /90%                                |
| PM101-13-1A | 18 V   | 0 A       | 4.45 A                        | 5.56 A                     | ±2%  | 180 mV                           | 80 W /100 W                  | 87 /90%                                |
| PM101-14A   | 24 V   | 0 A       | 3.34 A                        | 4.17 A                     | ±2%  | 240 mV                           | 80 W /100 W                  | 88 /90%                                |
| PM101-15A   | 28 V   | 0 A       | 2.86 A                        | 3.58 A                     | ±2%  | 280 mV                           | 80 W /100 W                  | 88 /90%                                |
| PM101-16-1A | 32 V   | 0 A       | 2.50 A                        | 3.13 A                     | ±2%  | 320 mV                           | 80 W /100 W                  | 88 /90%                                |
| PM101-17A   | 36 V   | 0 A       | 2.23A                         | 2.78 A                     | ±2%  | 360 mV                           | 80 W /100 W                  | 88 /90%                                |
| PM101-18A   | 48 V   | 0 A       | 1.67A                         | 2.09A                      | ±2%  | 480 mV                           | 80 W /100 W                  | 88 /90%                                |

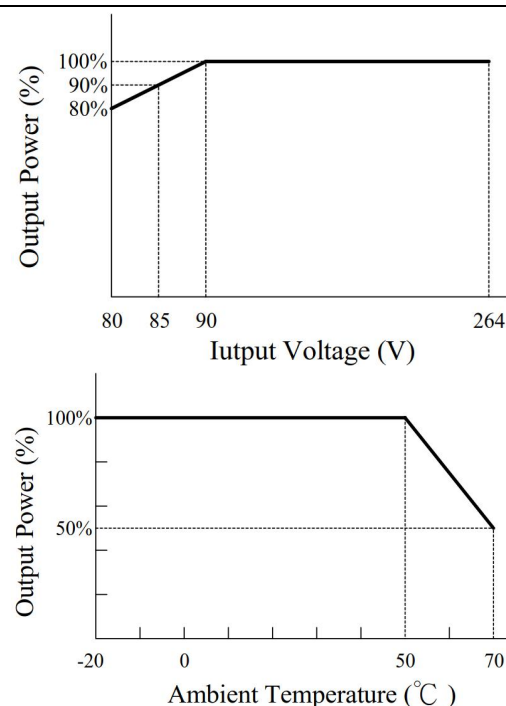
### NOTES:

1. The first value of max. power is at convection cooling. The second value is with 7.5 CFM forced air provided by user.
2. 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 (or electrolytic) capacitor in parallel with a 0.1 µF ceramic capacitor across the output except model PM101-12A which is with a 22 µF tantalum (or electrolytic) capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

## MECHANICAL SPECIFICATIONS



## OUTPUT POWER DERATING CURVE



### NOTES:

1. Dimensions shown in inches [mm]; tolerance 0.02 [0.5] maximum.
2. Input connector P1: Molex header 09-65-2038, mating with Molex housing 09-50-1031 or equivalent.
3. Output connector P2: Molex header 09-65-2048, mating with Molex housing 09-50-1041 or equivalent.
4. Ground tab is 0.25 [6.35] x 0.032 [0.8] fast-on connector.
5. To ensure compliance with level B emissions, connect the three “\*” marked mounting holes with metallic standoffs to chassis.
6. Weight: 155 grams (0.34 lbs.) approx.

## PIN CHART

| Connect  | CN1  |      |         | CN2 |    |               |               |
|----------|------|------|---------|-----|----|---------------|---------------|
| PIN NO.  | 1    | 2    | 3       | 1   | 2  | 3             | 4             |
| Polarity | Live | Void | Neutral | V1  | V1 | Common Return | Common Return |