

## DESCRIPTION

The PMP105 series of AC/DC switching power supplies are for 90-105 watts of continuous output power. They are enclosed in a 94V-0 rated polycarbonate case with an IEC320/C14, C6, C18 or C8 inlet to mate with interchangeable cord for world-wide use. All models meet EN55011 class B emission limits, and are designed for medical applications.

## FEATURES

- Low safety ground leakage current
- Wide input range 90 to 264 VAC
- Optional output connectors
- 100% burn-in at full load
- Overvoltage protection
- Over temperature protection
- Overcurrent protection
- Compliant with CEC and Energy Star Efficiency level V requirements
  - \* No load power consumption less than 0.5 W
  - \* Average active efficiency greater than 87%
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

|                        |                                                    |
|------------------------|----------------------------------------------------|
| Input voltage:         | 90-264 VAC                                         |
| Input frequency:       | 47-63 Hz                                           |
| Input current:         | 1.4 A (rms) for 115 VAC<br>0.7 A (rms) for 230 VAC |
| Earth leakage current: | 200 $\mu$ 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 at the full load                                                                                    |
| Over voltage protection:     | Provided and set at 115-140% 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:     | $\pm 0.04\%$ / $^{\circ}$ C maximum                                                                                         |
| Transient response:          | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change |

## ENVIRONMENTAL SPECIFICATIONS

|                        |                                                                          |
|------------------------|--------------------------------------------------------------------------|
| Operating temperature: | 0 $^{\circ}$ C to +60 $^{\circ}$ C                                       |
| Storage temperature:   | -40 $^{\circ}$ C to +85 $^{\circ}$ C                                     |
| Relative humidity:     | 5% to 95% non-condensing                                                 |
| Temperature derating:  | Derate from 100% at +40 $^{\circ}$ C linearly to 50% at +60 $^{\circ}$ C |

## PMP105 SERIES

**RoHS**


## SAFETY STANDARD APPROVALS



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



TÜV EN 60601-1

## GENERAL SPECIFICATIONS

|                               |                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switching frequency:          | 70-140 KHz                                                                                                                                                                                                                                                |
| Power factor:                 | 0.98 Typical at 115 VAC                                                                                                                                                                                                                                   |
| Efficiency:                   | 87% min. at full load                                                                                                                                                                                                                                     |
| Hold-up time:                 | 10 ms minimum at 110 VAC                                                                                                                                                                                                                                  |
| Line regulation:              | $\pm 0.5\%$ maximum at full load                                                                                                                                                                                                                          |
| Inrush current:               | 80 A @ 115 VAC or 120 A @ 230 VAC, at 25 $^{\circ}$ C cold start                                                                                                                                                                                          |
| Withstand voltage:            | 5600 VDC from input to output (2 MOPP)<br>2100 VDC from input to ground (1 MOPP)<br>700 VDC from output to ground<br>(To verify AC strength, get correct test method to avoid power supply damage.)<br>For Class II models, 4000 VAC from input to output |
| MTBF:                         | 150,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F                                                                                                                                                                       |
| EMC Performance (EN60601-1-2) |                                                                                                                                                                                                                                                           |
| EN55011:                      | Class B conducted, class B radiated                                                                                                                                                                                                                       |
| EN61000-3-2:                  | Harmonic distortion, class A and D                                                                                                                                                                                                                        |
| EN61000-3-3:                  | Line flicker                                                                                                                                                                                                                                              |
| EN60601-1-2                   |                                                                                                                                                                                                                                                           |
| 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                                                                                                                                                                                  |

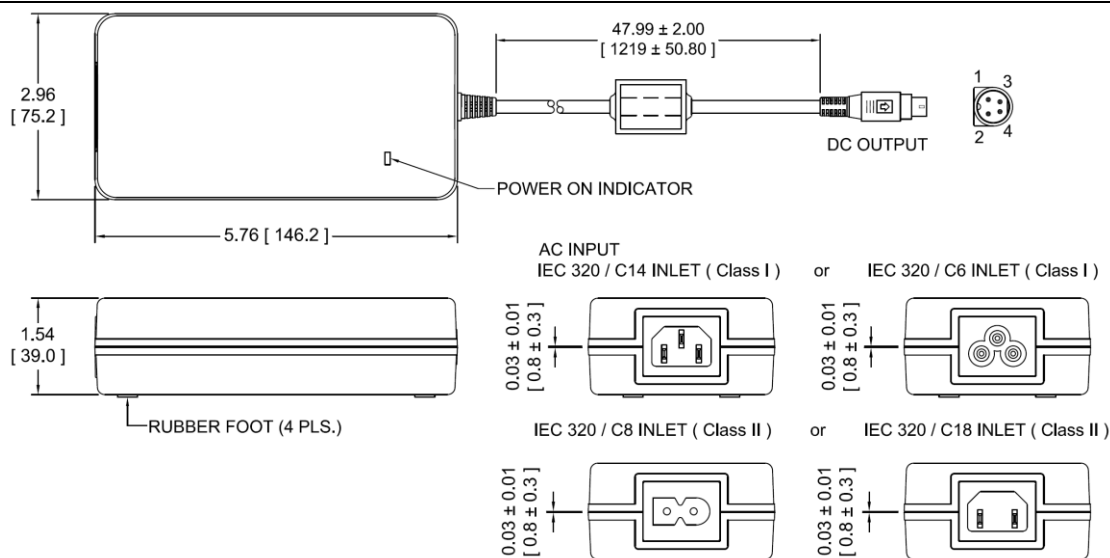
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model                  |                         | Output   |       |                    |                             |      |                               |            | Average Active Efficiency (typical) @ 115 / 230 Vac |
|------------------------|-------------------------|----------|-------|--------------------|-----------------------------|------|-------------------------------|------------|-----------------------------------------------------|
| Class I <sup>(1)</sup> | Class II <sup>(2)</sup> | V1       | Imin. | I <sub>max</sub> . | Peak Current <sup>(3)</sup> | Tol. | Ripple & Noise <sup>(4)</sup> | Max. Power |                                                     |
| PMP105-12              | PMP105SF-12             | 12 V     | 0 A   | 7.50 A             | 15.00 A                     | ±5%  | 120 mV                        | 90 W       | 87 / 87%                                            |
| PMP105-12-1            | PMP105SF-12-1           | 13 V     | 0 A   | 6.93 A             | 13.80 A                     | ±5%  | 130 mV                        | 90 W       | 87 / 87%                                            |
| PMP105-13              | PMP105SF-13             | 14 -16 V | 0 A   | 6.79 A             | 13.58 A                     | ±5%  | 150 mV                        | 95 W       | 87 / 88%                                            |
| PMP105-13-1            | PMP105SF-13-1           | 18 -19 V | 0 A   | 5.84 A             | 11.60 A                     | ±5%  | 180 mV                        | 105 W      | 88 / 88%                                            |
| PMP105-13-3            | PMP105SF-13-3           | 20 -21 V | 0 A   | 5.25 A             | 10.50 A                     | ±5%  | 200 mV                        | 105 W      | 88 / 89%                                            |
| PMP105-14              | PMP105SF-14             | 24 -25 V | 0 A   | 4.38 A             | 8.70 A                      | ±5%  | 240 mV                        | 105 W      | 88 / 89%                                            |
| PMP105-15              | PMP105SF-15             | 28 -29 V | 0 A   | 3.75 A             | 4.50 A                      | ±5%  | 280 mV                        | 105 W      | 88 / 89%                                            |
| PMP105-16              | PMP105SF-16             | 30 -32 V | 0 A   | 3.50 A             | 4.20 A                      | ±5%  | 300 mV                        | 105 W      | 88 / 89%                                            |
| PMP105-17              | PMP105SF-17             | 36 -38 V | 0 A   | 2.92 A             | 3.50 A                      | ±5%  | 360 mV                        | 105 W      | 89 / 90%                                            |
| PMP105-18              | PMP105SF-18             | 46 -50 V | 0 A   | 2.29 A             | 2.70 A                      | ±5%  | 480 mV                        | 105 W      | 90 / 91%                                            |

### NOTES:

- Class I models are equipped with IEC320/C14 inlet. To order a model with C6 inlet, add "S" to the prefix, PMP105, of model number, e.g. PMP105S-12.
- Class II models are equipped with IEC320/C8 inlet. To order a model with C18 inlet, change "SF" in the prefix of model number to "F", e.g. PMP105F-12.
- For 10 seconds maximum, average power not to exceed maximum power rating.
- 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



### NOTES:

- Dimensions shown in inches [mm], tolerance 0.02 [0.5] maximum.
- Weight: 681 grams (1.505 lbs.) approx.
- Refer to Section titled "OPTIONAL OUTPUT CONNECTORS". Add the suffix assigned for a selected connector to a wanted model number, e.g. PMP105-14-B1, for ordering.
- Output cable length of PMP105-12, PMP105-12-1, and PMP105-13 is 37.4 inches [950mm].

## PIN CHART

| PIN | 1         | 2   | 3         | 4   |
|-----|-----------|-----|-----------|-----|
|     | V1 Return | +V1 | V1 Return | +V1 |

## OUTPUT POWER DERATING CURVE

