

## DESCRIPTION

The PMP180 /PMP180SF series of AC/DC switching power supplies are for 180 watts of continuous output power. They are enclosed in a 94V-0 rated polycarbonate case with an inlet of the IEC320/C14 or IEC320/C8 to mate with interchangeable cord for world-wide use. All models meet EN 55011 and FCC class B emission limits, and are designed for medical applications.

## FEATURES

- High efficiency
- Overvoltage protection
- Over-temperature protection
- Short-circuit protection
- 100% burn-in at full rated load
- Standby consumption less than 0.5 W
- Compliant with CEC and ENERGY STAR efficiency level V requirements
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

|                        |  |
|------------------------|--|
| Input voltage:         | 90-264 VAC   |
| Input frequency:       | 50-60 Hz   |
| Input current:         | 2.4 A (rms) for 115 VAC<br>1.2 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                  |

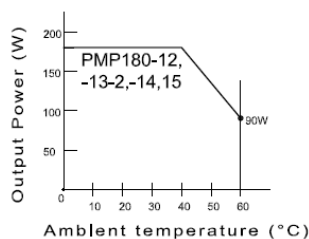
## OUTPUT SPECIFICATIONS

|                          |  |
|--------------------------|--|
| Output voltage /current: | See rating chart.  |
| Maximum output power:    | See rating chart.  |
| Ripple and noise:        | 380 mV peak to peak maximum  |
| Overvoltage protection:  | Set at 130% to 150% of its nominal output voltage  |
| Overcurrent protection:  | All models protected to short-circuit conditions   |
| 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: | 0°C to +60°C                                       |
| Storage temperature:   | -20°C to +80°C                                     |
| Relative humidity:     | 10% to 90% non-condensing                          |
| Derating               | Derate from 100% at +40°C linearly to 50% at +60°C |

## OUTPUT DERATING CURVE



## PMP180 SERIES



CE

RoHS



## SAFETY STANDARD APPROVALS



UL ES 60601-1, CSA C22.2 No. 60601-1  
File No. E211696



TÜV EN 60601-1

## GENERAL SPECIFICATIONS

|                                     |  |
|-------------------------------------|--|
| Hold-up time:                       | 5 ms minimum at 100 VAC  |
| Turn on delay time:                 | 3 s maximum at 100 VAC   |
| Power Factor:                       | 0.95 typical   |
| Efficiency:                         | 87% minimum at 100 VAC or 240 VAC  |
| Line regulation:                    | $\pm$ 0.5% maximum at full load  |
| Inrush current:                     | 45 A @ 115 VAC or 90 A @ 230 VAC at 25°C cold start                      |
| Withstand voltage:                  | 4000 VAC from input to output (2 MOPP)                                   |
| MTBF:                               | 100,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F |
| EMC Performance (IEC60601-1-2:2014) |  |
| 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, $\pm$ 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 |

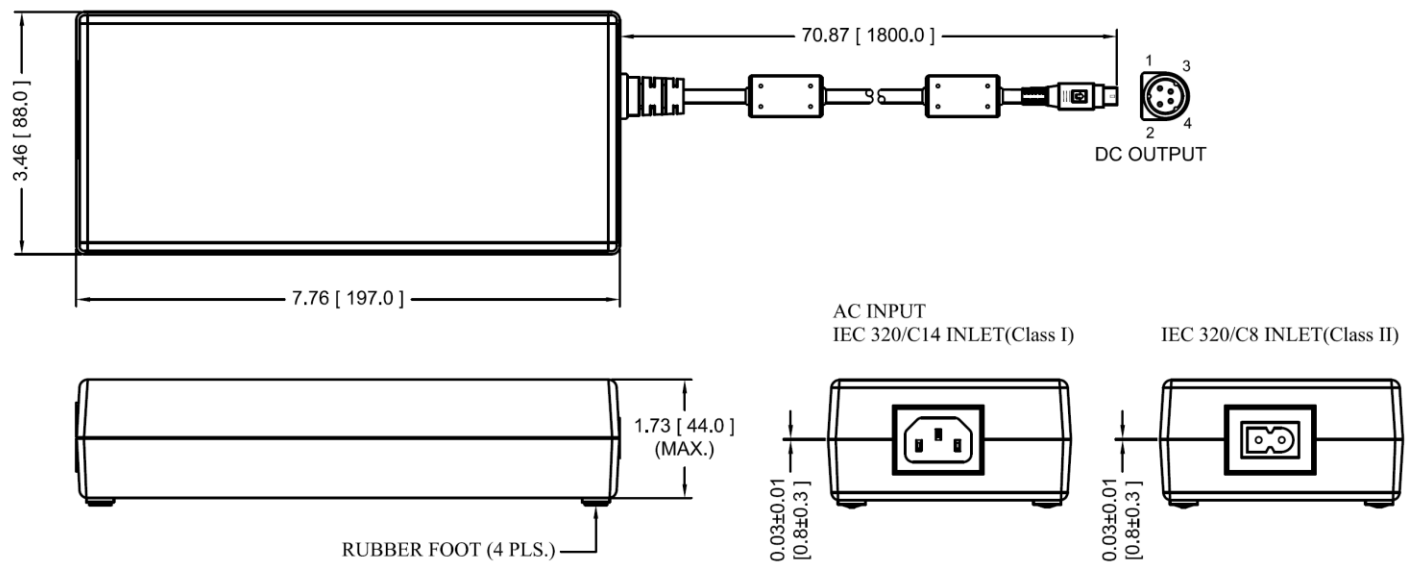
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model <sup>(1)</sup> |             | Output |                             |              |      |                               |            | Average Active Efficiency (typical) @ 115 / 230 Vac |
|----------------------|-------------|--------|-----------------------------|--------------|------|-------------------------------|------------|---|
| Class I              | Class II    | V1     | Min. Current <sup>(3)</sup> | Max. Current | Tol. | Ripple & Noise <sup>(2)</sup> | Max. Power |   |
| PMP180-12            | --          | 12 V   | 0.1 A                       | 15.00 A      | ±5%  | 380 mV                        | 180 W      | 87 /89%   |
| PMP180-13-2          | --          | 19 V   | 0.1 A                       | 9.47 A       | ±5%  | 380 mV                        | 180 W      | 88 /90%   |
| PMP180-14            | PMP180SF-14 | 24 V   | 0.1 A                       | 7.50 A       | ±5%  | 380 mV                        | 180 W      | 91 /92%   |
| PMP180-15            | --          | 28 V   | 0.1 A                       | 6.42 A       | ±5%  | 380 mV                        | 180 W      | 91 /92%   |

**NOTES:**

1. Class I models are equipped with IEC320/C14 inlet, and class II models with IEC320/C8 inlet.
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 47 µF electrolytic capacitor in parallel with a 0.1 µF ceramic capacitor across the output.
3. All models may be operated at no-load without damage. At no load, output voltage fluctuates beyond 5% due to the burst-mode operation of the control IC in them for energy saving.

## MECHANICAL SPECIFICATIONS



**NOTES:**

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 950 grams (2.09 lbs.) approx.
4. Output connector is 4 pin plug without lock, mating with Kycon P/N KPJX-4S-S socket or equivalent.
5. Refer to Section titled "OPTIONAL OUTPUT CONNECTORS". Add the suffix assigned for a selected connector to a wanted model number, e.g. PMP180-14-B1, for ordering.

## PIN CHART

| MODEL \ PIN  | 1   | 2   | 3                     | 4                     | Shield                |
|--|-----|-----|-----------------------|-----------------------|-----------------------|
| PMP180-12<br>PMP180-13-2<br>PMP180-14<br>PMP180-15 | +V1 | +V1 | V1 Return & AC Ground | V1 Return & AC Ground | V1 Return & AC Ground |
| PMP180SF-14  | +V1 | +V1 | V1 Return             | V1 Return             | V1 Return             |