

## 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
- IEC 60601-1-2 4th Edition EMC Compliant

## INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	50-60 Hz
Input current:	2.4 A (rms) for 115 VAC 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

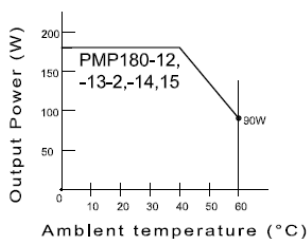
## OUTPUT SPECIFICATIONS

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 (See Derating)
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
Ingress Protection:	IP22 Compliant

## 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

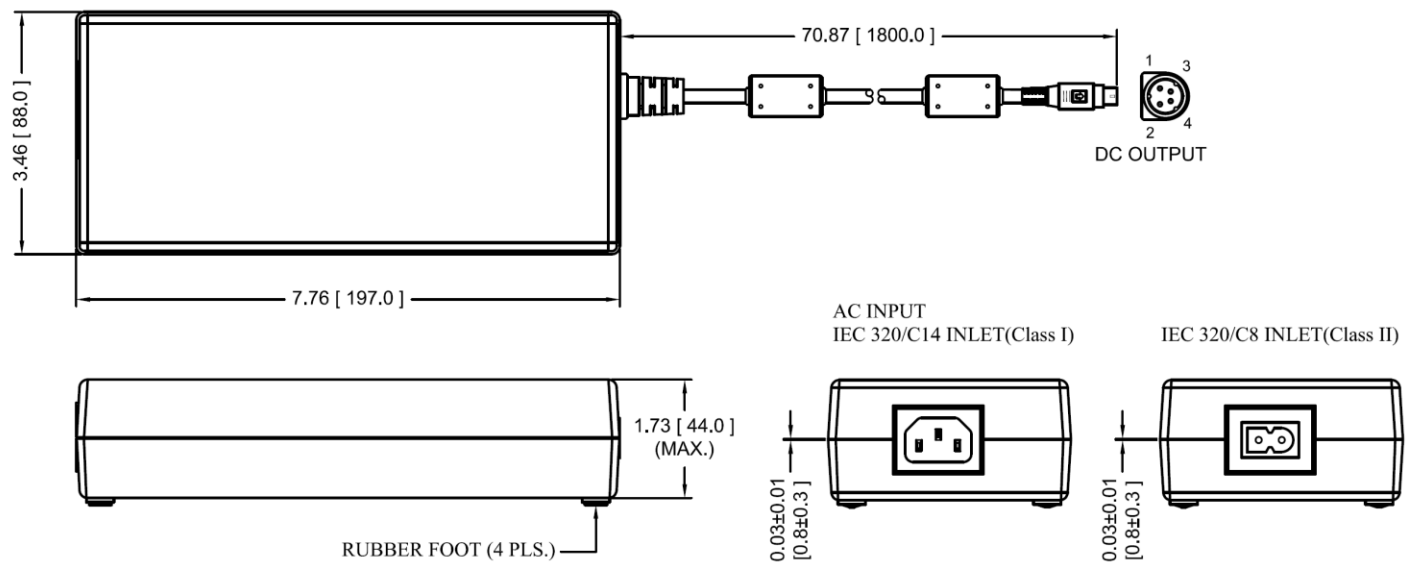
## OUTPUT VOLTAGE/CURRENT RATING CHART

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 PMP180-13-2 PMP180-14 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