

DESCRIPTION

The PMP60 series of AC/DC switching power supplies are for 30-60 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 / C14 inlet to mate with interchangeable cord for world-wide use. All models meet CISPR 11 and FCC class B emission limits, and are designed for medical applications, not for life supporting equipment.

FEATURES

- 12 standard desktop models
- Single, dual or triple outputs
- Optional output connectors
- Optional on/off switch
- 100% burn-in
- Wide input range 85-264 VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Compliant with CEC and Energy Star Efficiency level IV requirements for the products with single output
- * No load power consumption less than 0.5W
- * Average active efficiency $\geq 85\%$
- Compliant with RoHS requirement

INPUT SPECIFICATIONS

Input voltage:	85-264 VAC
Input frequency:	47-63 Hz
Input current:	1.22 A (rms) for 100 VAC 0.68 A (rms) for 240 VAC
Earth leakage current:	200 uA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	See rating chart.
Ripple and noise:	100mV peak to peak on 3.3V & 5.0V models, 1% peak to peak on other models
Overvoltage protection:	Provided on output #1 only; set at 112-140% of its nominal output voltage
Overcurrent protection:	All outputs protected to short circuit conditions
Temperature coefficient:	All outputs $\pm 0.04\%$ / $^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$
Storage temperature:	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +40 $^{\circ}\text{C}$ linearly to 50% at +60 $^{\circ}\text{C}$

PMP60 SERIES



CE (LVD)

RoHS

SAFETY STANDARD APPROVALS



UL 60601-1, CSA C22.2 No. 601.1

File No. E178020



TÜV EN60601-1



UL 60950-1, CSA C22.2 No. 60950-1

(except PMP60-14 by UL)



TÜV EN60950-1

GENERAL SPECIFICATIONS

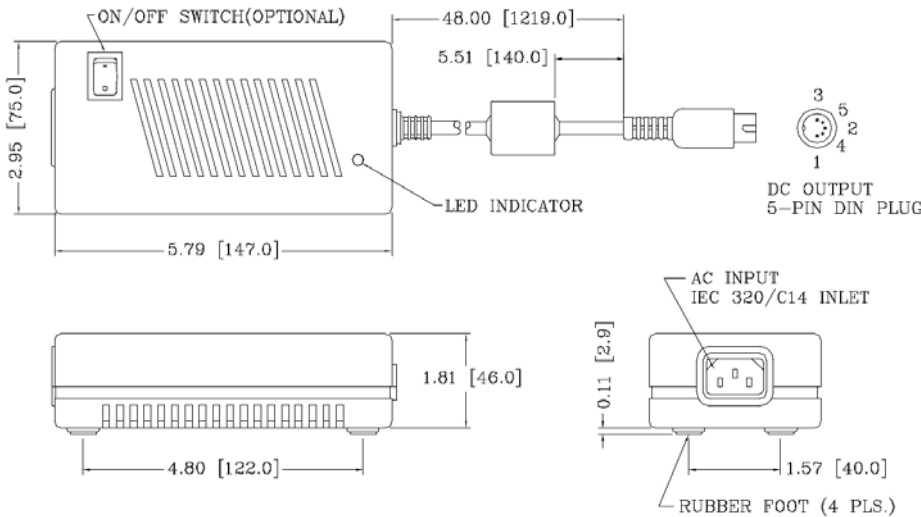
Switching frequency:	40 KHz-130 KHz
Efficiency:	85% minimum on single output models, 68-74% minimum on the others
Hold-up time:	10 msec minimum at 110 VAC
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	60 A @ 115 VAC or 100 A @ 230 VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage:	4000 VAC from input to output 1500 VAC from input to ground 500 VAC from output to ground
MTBF:	150,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK-217F
EMC Performance (EN60601-1-2)	
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, ± 8 KV air and ± 6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m for 80-2500 MHz
EN61000-4-4:	Fast transient/burst, ± 2 KV
EN61000-4-5:	Surge, ± 1 KV diff., ± 2 KV com
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 3 A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500 ms 60% reduction for 100 ms >95% reduction for 10 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

MODEL	Output #1				Output #2				Output #3				Maximum Output Power
	Vnom.	Imin	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
PMP60-12	11-13 V	0 A	5.46 A	5%		(N/A)					(N/A)		60 W
PMP60-13	13-17 V	0 A	4.62 A	5%		(N/A)					(N/A)		60 W
PMP60-13-1	17-21 V	0 A	3.53 A	5%		(N/A)					(N/A)		60 W
PMP60-14	21-27 V	0 A	2.86 A	5%		(N/A)					(N/A)		60 W
PMP60-16	27-33 V	0 A	2.23 A	3%		(N/A)					(N/A)		60 W
PMP60-17	33-39 V	0 A	1.82 A	3%		(N/A)					(N/A)		60 W
PMP60-18	46-50 V	0 A	1.31 A	3%		(N/A)					(N/A)		60 W
PMP60-23	+5 V	1 A	5.0 A	5%	+12 V	0.5 A	3.0 A	5%			(N/A)		40 W
PMP60-30	+3.3 V	1 A	6.0 A	5%	+5 V	0.5 A	3.0 A	5%	+12 V	0.1 A	0.7 A	10%	30 W
PMP60-31	+5 V	1 A	5.0 A	5%	+12 V	0.5 A	3.0 A	5%	-12 V	0.1 A	0.7 A	10%	40 W
PMP60-32	+5 V	1 A	5.0 A	5%	+15 V	0.4 A	2.3 A	5%	-15 V	0.1 A	0.7 A	10%	40 W
PMP60-36	+5 V	1 A	5.0 A	5%	+24 V	0.3 A	1.5 A	5%	+12 V	0.1 A	0.7 A	10%	40 W

- NOTES:
1. Ripple and noise: Peak to peak with 20 MHz bandwidth and 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor at rated line voltage and load ranges.
 2. 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.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 600 grams (1.33 lbs.) approx
4. Refer to Section titled "OPTIONAL OUTPUT CONNECTORS" for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PMP60-12-B2, for ordering.
5. To order a model with on / off switch, add suffix " S " to the model number, e.g. PMP60-12-B2-S

PIN CHART

MODEL	PIN	1	2	3	4	5
		PMP60-12 PMP60-13 PMP60-13-1 PMP60-14 PMP60-16 PMP60-17 PMP60-18	RETURN	RETURN	OUTPUT #1	RETURN
PMP60-23	COMMON RETURN	COMMON RETURN	OUTPUT #1	N.C.	OUTPUT #2	
PMP60-30 PMP60-31 PMP60-32 PMP60-36	COMMON RETURN	COMMON RETURN	OUTPUT #1	OUTPUT #3	OUTPUT #2	