PROTEK POWER

25-30 WATT MEDICAL POWER SUPPLIES

DESCRIPTION

The PMP31 series of AC/DC switching power supplies are for 25-30 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an inlet of the IEC320/C14 to mate with interchangeable cord for world-wide use. All models meet EN55011 and FCC class B emission limits, and are designed for medical applications, not for life-supporting equipment.

PMP31 SERIES

CE (LVD)

RoHS

FEATURES

- High efficiency
- Low ripple & noise
- Overvoltage protection
- Short-circuit protection
- Overpower protection
- 100% burn-in at full rated load
- Standby consumption less than 0.3 W
- Compliant with CEC and ENERGY STAR efficiency level V requirements
- Compliant with RoHS requirements

SAFETY STANDARD APPROVALS

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

IEC 60601-1 — TÜV EN 60601-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	1.0 A (rms) for 115 VAC 0.6 A (rms) for 230 VAC
Earth leakage current:	100 µA 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, except 75 mVp-p max. for PMP31-10
Overvoltage protection:	Set at 116% to 230% 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 us after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +40℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	10% to 90% non-condensing
Derating	Derate from 100% at +40℃ linearly to 50% at +60℃

GENERAL SPECIFICATIONS

Hold-up time:	8 ms minimum at 115 VAC
Turn on delay time:	3 s maximum at 115 VAC
Efficiency:	Compliant with Energy Star efficiency level V requirements (see rating chart)
Line regulation:	±0.5% maximum at full load
Inrush current:	50 A @ 115 VAC or 100 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	4000 VAC from input to output
MTBF:	300,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance (IEC60601-1-2)	
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
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
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 dip immunity, 30% reduction for 500 ms, 60% reduction for 100 ms, and >95% reduction for 10 ms

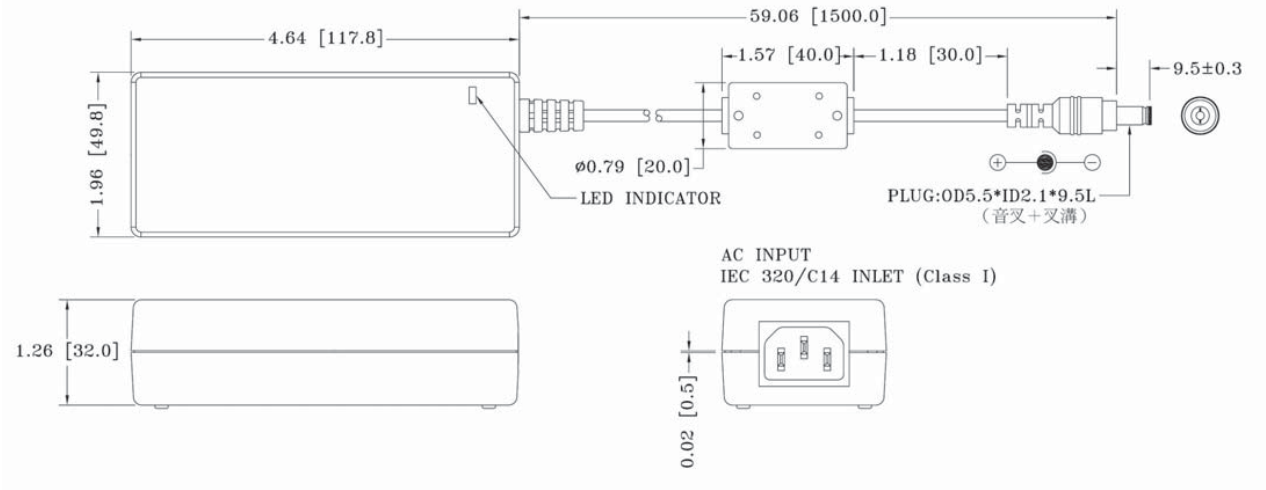
UNIVERSAL INPUT PMP31 MEDICAL SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average Active Efficiency (typical) @ 115 / 230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise(1)	Max. Output Power	
PMP31-10	5 V	0 A	5.0 A	±5%	75 mV	25 W	83 /81%
PMP31-11	9 V	0 A	3.33 A	±5%	90 mV	30 W	86 /84%
PMP31-12	12 V	0 A	2.5 A	±5%	120 mV	30 W	86 /85%
PMP31-13	15 V	0 A	2.0 A	±5%	150 mV	30 W	88 /86%
PMP31-13-1	18 V	0 A	1.66 A	±5%	180 mV	30 W	88 /86%
PMP31-14	24 V	0 A	1.25 A	±5%	240 mV	30 W	89 /87%
PMP31-18	48 V	0 A	0.625 A	±5%	480 mV	30 W	91 /90%

NOTES:
1. 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:
1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 260 grams (0.57 lbs.) approx.
4. Output cable is 1500 mm, 18 AWG, except 1000 mm 16 AWG for 5V and 9V output models, so as to comply with CEC and Energy Star efficiency level V requirements.
5. Output connector is 5.5 mm O.D., 2.1 mm I.D., 9.5 mm long barrel female connector, center positive voltage.

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