



110 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PMP110 series of AC/DC switching power supplies are for 110 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 inlet to mate with interchangeable cord for world-wide use. An on/off switch can be added at request. All models meet CISPR 11 and FCC class B emission limits, and are designed for medical applications, not for life support equipment.

PMP110 SERIES



FEATURES

- Dual, triple or quadruple outputs
- Optional output connectors
- Optional on/off switch
- Optional Power Fail Detect (PFD) signal
- 100% burn-in
- Wide input range 85 to 264VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Compliant with RoHS requirements

Safety Standard Approvals :



UL 2601-1, CSA C22.2 NO. 601.1
File No. E178020



TÜV EN60601-1
Certificate No. T9954597

INPUT SPECIFICATIONS

Input voltage : 85 to 264VAC
Input frequency : 47 to 63Hz
Input current : 3.20A (rms) for 115 VAC
 1.80A (rms) for 230VAC
Earth leakage current : 90uA max. @ 115VAC, 60Hz
 150uA max. @230VAC, 50Hz

ENVIRONMENTAL SPECIFICATIONS

Operating temperature : 0°C to +70°C
Storage temperature : -40°C to +85°C
Relative humidity : 5% to 95% non-condensing
Derating : Derate from 100% at +50°C
 linearly to 50% at +70°C

OUTPUT SPECIFICATIONS

Output voltage/current : See rating chart
Total output power : 110 watts maximum
Ripple and noise : 1% peak to peak maximum
Overvoltage protection : Provided on output #1 only;
 set at 112-132% 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 500us after a 25% step load change
PFD signal (optional): TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to +5V output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after +5V is within regulation.

GENERAL SPECIFICATIONS

Switching frequency : 20KHz to 250KHz, varies with load and line
Efficiency : 70% minimum on single output models with $V_o \geq 12\text{V}$, 65% minimum on the others
Hold-up time : 12 msec minimum at 110VAC
Line regulation : $\pm 0.5\%$ maximum at full load
Inrush current : 15 amps @ 115VAC or 30 amps @ 230VAC, at 25°C cold start
Withstand voltage : 4000VAC from input to output
 1500VAC from input to ground
 500VAC from output to ground
MTBF : 550,000 hours minimum at full load at 25°C ambient, calculated per MIL-HDBK-217F, excluding DC fan.

EMC Performance (EN60601-1-2: 2001)

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, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ contact
EN61000-4-3: Radiated immunity, 3V/m for 80~2500MHz
EN61000-4-4: Fast transient/burst, $\pm 2\text{KV}$
EN61000-4-5: Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.
EN61000-4-6: Conducted immunity, 3Vrms
EN61000-4-8: Magnetic field immunity, 3A/m
EN61000-4-11: Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms and >95% reduction for 10ms

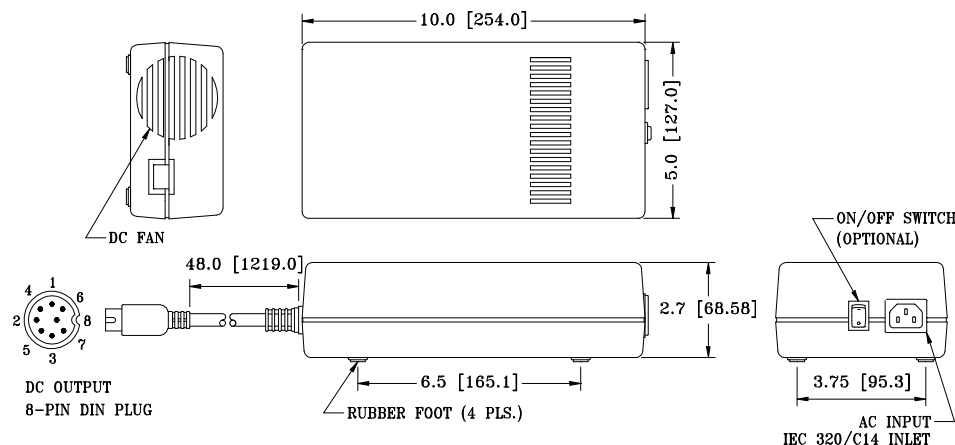
UNIVERSAL INPUT PMP110 MEDICAL SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

MODEL (2)	Output #1				Output #2 (1)					Output #3				Output #4				Maximum Output Power
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Ipeak	Tol	Vnom.	Imin.	Imax.	Tol	Vnom.	Imin.	Imax.	Tol.	
PMP110-23	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	(N/A)				(N/A)				110W
PMP110-31	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	(N/A)				110W
PMP110-32	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	(N/A)				110W
PMP110-40	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	-5V	0A	2A	5%	110W
PMP110-41	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	+24V	0A	2A	5%	110W
PMP110-42	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+12V	0A	2A	5%	110W
PMP110-45	+5V	0.8A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+24V	0A	2A	5%	110W
PMP110-45-1	+5V	2.0A	10A	5%	+12V	0A	5A	9.0A	5%	-12V	0A	2A	5%	+24V	1.5A	3A	10%	110W
PMP110-45-2	+5V	0.8A	10A	5%	+24V	0A	3A	5.0A	5%	-12V	0A	2A	5%	+12V	0A	2A	5%	110W
PMP110-46	+5V	0.8A	10A	5%	+15V	0A	4A	7.5A	5%	-15V	0A	2A	5%	-5V	0A	2A	5%	110W

- NOTES:
1. Peak output current with 10% maximum duty cycle for less than 60 seconds. Total peak power must not exceed 130 watts.
 2. The output #1 of model PMP110-45-1 needs a minimum current of 2A to support the other outputs at their maximum rated loads.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 1.40 Kgs (3.08 Lbs.) approx.
4. See [pages 6-19 to 6-26](#) for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PMP110-31-K1, for ordering.
5. To order a model with on/off switch, add suffix "S" to the model number, e.g. PMP110-31-K1-S.
6. To order a model with PFD signal, add suffix "PF" to the model number, e.g. PMP110-31-K1-PF.

PIN CHART

MODEL \ PIN		1	2	3	4	5	6	7	8
PMP110-23		COMMON RETURN	N.C.	OUTPUT #1.	N.C.	OUTPUT #2.	COMMON RETURN	OUTPUT #1	N.C. or PFD
PMP110-31	PMP110-32	COMMON RETURN	OUTPUT #3	OUTPUT #1.	N.C.	OUTPUT #2.	COMMON RETURN	OUTPUT #1	N.C. or PFD
PMP110-40	PMP110-41	COMMON RETURN	OUTPUT #3	OUTPUT #1.	OUTPUT #4	OUTPUT #2..	COMMON RETURN	OUTPUT #1	N.C. or PFD.
PMP110-42	PMP110-45								
PMP110-45-1	PMP110-45-2								
PMP110-46									