

## DESCRIPTION

The TMP150 is a series of medical grade, class I and class II, AC/DC desktop power adapters of 132 to 150 watts output power. They are enclosed in a 94V-1 rated case with an IEC 320/C14 or IEC 320/C18 AC 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.

## FEATURES

- Low safety ground leakage current
- Optional output connectors
- 100% burn-in
- 90 to 264VAC wide input range
- Overvoltage & overcurrent protections
- 0.98 PFC
- Compliant with CEC and Energy Star efficiency level IV requirements
- No load consumption less than 0.5W
- Average active efficiency  $\geq 85\%$
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

Input voltage :	90 to 264VAC
Input frequency :	47 to 63Hz
Input current :	2.0A (rms) for 115VAC 1.0A (rms) for 230VAC
Earth leakage current : (Class I)	90 $\mu$ A max. @ 115VAC, 60Hz 150 $\mu$ A max. @ 230VAC, 50Hz
Enclosure leakage current: (Class II)	90 $\mu$ A max. @ 264VAC, 50Hz

## OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	See rating chart
Ripple and noise :	2% peak to peak maximum
Overvoltage protection :	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 $\mu$ s 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 $^{\circ}\text{C}$

## TMP150 SERIES

*Class I, Class II*



RoHS

## Safety Standard Approvals :



UL 60601-1  
CSA C22.2 No. 601.1



TÜV EN60601-1

## GENERAL SPECIFICATIONS

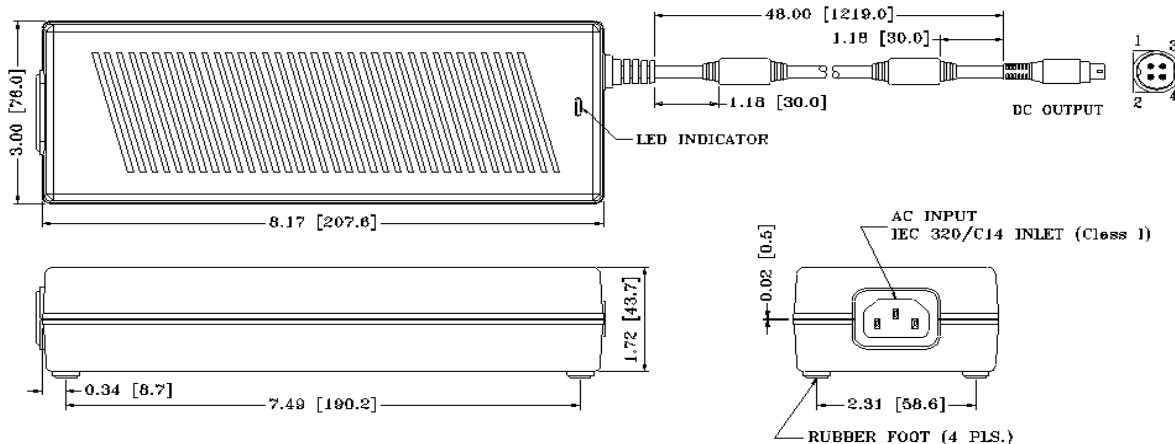
Switching frequency :	30KHz ~ 110KHz
Power factor :	0.98 typical at 115VAC
Efficiency :	85% min.
Hold-up time :	15 msec minimum at 110VAC
Line regulation :	$\pm 0.5\%$ maximum at full load
Inrush current :	60 amps @ 115VAC or 100 amps @ 230VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage :	4000VAC from input to output 1500VAC from input to ground 500VAC 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	
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 D
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
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

## OUTPUT VOLTAGE/CURRENT RATING CHART

Product No.	Vnom.	Output			Tol.	Maximum Output Power
		Imin.	Imax.			
TMP150-12	12.0V	0A	11.0A		5%	132W
TMP150-15	15.0V	0A	9.0A		5%	135W
TMP150-19	19.0V	0A	7.90A		5%	150W
TMP150-24	24.0V	0A	6.25A		5%	150W
TMP150-27	27.0V	0A	5.56A		5%	150W
TMP150-48	48.0V	0A	3.13A		5%	150W

NOTES: 1. Ripple and noise : Peak-to-peak with 20MHz bandwidth and 10µF tantalum capacitor in parallel with a 0.1µF ceramic capacitor at rated line voltage and load ranges.  
 2. To order a "Class II" model with IEC320/C18 inlet, add suffix "C2", e.g. TMP150-24-C2.

## MECHANICAL SPECIFICATIONS



\*Add suffix "C2" when ordering "Class II" units with IEC 320/C18 inlet.

### NOTES:

1. Dimensions show in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 960 grams approx.
4. Standard output connector is a male 4-pin power DIN. Please consult TRUMPower for other connector options.
5. TMP150-12, -15, -19 output connectors are without lock. TMP150-24, -27, -48 output connectors are with lock.

## PIN CHART

Product No.	PIN	1	2	3	4	Shell
		TMP150-12 TMP150-19 TMP150-27	TMP150-15 TMP150-24 TMP150-48	Return	Output +V	Return