

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 μ A max. @ 115VAC, 60Hz 150 μ A max. @ 230VAC, 50Hz |
| Enclosure leakage current: (Class II) | 90 μ A max. @ 264VAC, 50Hz |

OUTPUT SPECIFICATIONS

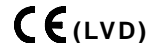
| | |
|---------------------------|--|
| Output voltage/current : | See rating chart |
| Total output power : | See rating chart |
| Ripple and noise : | 2% peak to peak maximum |
| Overvoltage protection : | Set at 112 – 140% of its nominal output voltage |
| Overcurrent protection : | All outputs protected 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 μ 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

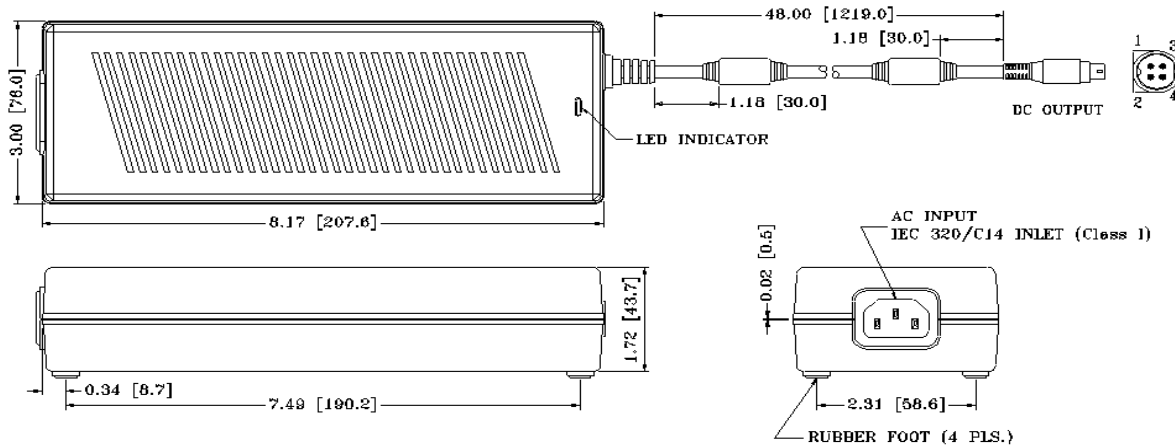
| | |
|---------------|--|
| EN55011: | Class B conducted, Class B radiated |
| FCC: | Class B conducted, Class B radiated |
| VCCI: | Class B conducted, Class B radiated |
| EN61000-3-2: | Harmonic distortion, Class D |
| EN61000-3-3: | Line flicker |
| EN61000-4-2: | ESD, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ 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 |