The TMP90 is a series of AC/DC desktop power adapters with 60 to 90 watts of continuous output power. They are enclosed in a 94V-1 rated case with an IEC 320/C14 or C18 inlet for medical and ITE applications. All models meet EN55011, EN55022 and FCC class B emission limits, and are designed for medical applications.

**FEATURES**

- Low safety ground leakage current
- IEC320/C14 (Class I) or C18 (Class II) Inlet
- 90 to 264VAC wide input range
- Optional output connectors
- Overvoltage & overcurrent protections
- 0.98 PFC
- 100% burn-in
- Compliant with CEC and Energy Star efficiency level IV requirements (except ≤12V output models)
- No load power consumption less than 0.5W
- Average active efficiency ≥85%
- Compliant with RoHS requirements

**INPUT SPECIFICATIONS**

- **Input voltage:** 90 to 264VAC
- **Input frequency:** 47 to 63Hz
- **Input current:** 1.20A (rms) for 115VAC
  0.60A (rms) for 230VAC
- **Earth leakage current:** 90µA max. @ 115VAC, 60Hz
  150µA max. @ 230VAC, 50Hz

**OUTPUT SPECIFICATIONS**

- **Output voltage/current:** See rating chart
- **Total output power:** See rating chart
- **Ripple and noise:** 2% peak to peak maximum
- **Over voltage protection:** Set at 112-140% of its nominal output voltage
- **Over current protection:** Protected to short circuit conditions
- **Temperature coefficient:** ±0.04%/°C maximum
- **Transient response:** Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500µs after a 25% step load change

**ENVIRONMENTAL SPECIFICATIONS**

- **Operating temperature:** 0°C to +60°C
- **Storage temperature:** -40°C to +85°C
- **Relative humidity:** 5% to 95% non-condensing
- **Derating:** Derate from 100% at +40°C linearly to 50% at +60°C

**GENERAL SPECIFICATIONS**

- **Switching frequency:** 50 KHz - 110 KHz
- **Power factor:** 0.98 Typical
- **Efficiency:** 85% min. (78% min. for TMP90-05, TMP90-06, TMP90-09 and TMP90-12)
- **Hold-up time:** 15 msec minimum at 110VAC
- **Line regulation:** ±0.5% maximum at full load
- **Inrush current:** 40 amps @ 115VAC or 60 amps @ 230VAC, @ 25°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°C ambient, calculated per MIL-HDBK-217F

**EMC Performance (IEC60601-1-2: 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 and D
- **EN61000-3-3:** Line flicker
- **EN61000-4-2:** ESD, ±8KV air and ±6KV contact
- **EN61000-4-3:** Radiated immunity, 3V/m
- **EN61000-4-4:** Fast transient/burst, ±2KV
- **EN61000-4-5:** Surge, ±1KV diff, ±2KV 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

**Safety Standard Approvals**

- UL 60601-1
- CSA C22.2 No. 601.1
- TÜV EN60601-1

**CERTIFICATIONS**

- UL 60601-1
- CSA C22.2 No. 601.1
- TÜV (LVD)
- RoHS

**CONTACT**

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3350 Scott Blvd., Bldg. 13, Santa Clara, California 95054, USA
Phone: 408-988-6616 ● Fax: 408-988-6622 ● email: sales@trumpower.com ● Website: www.TRUMPower.com
### MEDICAL GRADE TMP90 SERIES

#### OUTPUT VOLTAGE/CURRENT RATING CHART

<table>
<thead>
<tr>
<th></th>
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<td>TMP90-05</td>
<td>5V</td>
<td>0A</td>
<td>12.0A</td>
<td>5%</td>
<td>60W</td>
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<tr>
<td>TMP90-06</td>
<td>6V</td>
<td>0A</td>
<td>10.0A</td>
<td>5%</td>
<td>60W</td>
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<tr>
<td>TMP90-09</td>
<td>9V</td>
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<tr>
<td>TMP90-12</td>
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<td>TMP90-13.5</td>
<td>13.5V</td>
<td>0A</td>
<td>6.3A</td>
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<tr>
<td>TMP90-15</td>
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<tr>
<td>TMP90-18</td>
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<td>90W</td>
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#### 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 model with IEC320/C18 inlet with class II insulation, add suffix “C2”, e.g. TMP90-12-C2.

#### MECHANICAL SPECIFICATIONS

**PIN CHART**

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<th>Product No.</th>
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<td>OUTPUT +V</td>
<td>RETURN</td>
<td>OUTPUT +V</td>
<td>AC Ground</td>
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