Model 7280
7/8” Diameter
10 Turn Wirewound
Precision Potentiometer

MODEL STYLES AVAILABLE

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7281</td>
<td>1/8” Shaft, 1/4” Bushing</td>
</tr>
<tr>
<td>7283</td>
<td>1/8” Shaft, Servo</td>
</tr>
<tr>
<td>7284</td>
<td>6 mm shaft, 3/8” Bushing</td>
</tr>
<tr>
<td>7286</td>
<td>1/4” Shaft, 3/8” Bushing</td>
</tr>
<tr>
<td>7288</td>
<td>(for heavy side load applications)</td>
</tr>
</tbody>
</table>

ELECTRICAL

1 Specifications subject to change without notice.

<table>
<thead>
<tr>
<th>Specification</th>
<th>7281, 7284, 7286, 7288</th>
<th>7283</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Range</td>
<td>100 to 100K ohms</td>
<td></td>
</tr>
<tr>
<td>Standard Resistance Tolerance</td>
<td>±5%</td>
<td></td>
</tr>
<tr>
<td>Minimum Practical Resistance Tolerance</td>
<td>±1%</td>
<td></td>
</tr>
<tr>
<td>Independent Linearity</td>
<td>±0.25%</td>
<td></td>
</tr>
<tr>
<td>Minimum Practical Independent Linearity</td>
<td>±0.15% (&lt;300 ohms), ±0.075% (≥300 ohms)</td>
<td></td>
</tr>
<tr>
<td>Power Rating</td>
<td>2.0 Watts at 70°C, derating to 0 at 125°C</td>
<td></td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1,000 V rms</td>
<td></td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1,000 Megohms minimum</td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>100 ohms maximum</td>
<td></td>
</tr>
<tr>
<td>Actual Electrical Travel</td>
<td>3600° +10° -0° (≥100 ohms), 3600° +10° -5° (≤100 ohms)</td>
<td></td>
</tr>
<tr>
<td>End Voltage</td>
<td>maximum 0.25% of input voltage</td>
<td>±3°</td>
</tr>
<tr>
<td>Tap Tolerance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MECHANICAL

<table>
<thead>
<tr>
<th>Specification</th>
<th>7281, 7284, 7286, 7288</th>
<th>7283</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Mechanical Travel</td>
<td>3600° +15° -0°</td>
<td></td>
</tr>
<tr>
<td>Number of Gangs</td>
<td>2 maximum</td>
<td></td>
</tr>
<tr>
<td>Weight (single gang)</td>
<td>0.75 oz. nominal</td>
<td></td>
</tr>
<tr>
<td>Backlash</td>
<td>1° maximum</td>
<td></td>
</tr>
<tr>
<td>Static Stop Strength</td>
<td>maximum 48 oz.-in.</td>
<td>36 oz.-in.</td>
</tr>
<tr>
<td>Panel Nut Tightening Torque</td>
<td>maximum 25 lb.-in.</td>
<td>n/a</td>
</tr>
<tr>
<td>Shaft End Play</td>
<td>maximum 0.010”</td>
<td>0.005”</td>
</tr>
<tr>
<td>Shaft Runout</td>
<td>maximum T.I.R. 0.003”</td>
<td>0.002”</td>
</tr>
<tr>
<td>Pilot Diameter Runout</td>
<td>maximum T.I.R. 0.004”</td>
<td>0.002”</td>
</tr>
<tr>
<td>Lateral Runout</td>
<td>maximum T.I.R. 0.005”</td>
<td>0.004”</td>
</tr>
<tr>
<td>Shaft Radial Play</td>
<td>maximum 0.003”</td>
<td>0.002”</td>
</tr>
<tr>
<td>Start/Run Torque (per gang, ES option adds 0.5 oz.-in.)</td>
<td>maximum 0.8 oz.-in.</td>
<td>0.6 oz.-in.</td>
</tr>
</tbody>
</table>

2 Linearity is measured between 1% and 99% of input voltage.
Model 7280

ENVIRONMENTAL (MIL-PRF-12934)

- Operating Temperature Range: -40°C to +125°C dynamic, -55°C to +125°C static
- Temperature Cycling: 5 cycles, -55°C to +125°C, maximum 5% ΔR
- Shock: 6 ms Saw-tooth, 100 G’s, 0.1 ms maximum discontinuity
- Vibration: 15 G’s, 10 to 2,000 Hz, maximum 5% ΔR, 0.1 ms maximum discontinuity
- Moisture Resistance: Five 24 hour cycles, maximum 3% ΔR
- High Temperature Exposure: 1,000 hours at 125°C, maximum 5% ΔR
- Rotational Load Life (1 lb side load for 7288): 1M shaft revolutions + 900 hours at 2.0 Watts & 70°C, maximum 5% ΔR
- Ingress Protection Rating (IP Code): IP50, IP66 available as option (feature code ES)

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Model Series</th>
<th>Resistance Prefix</th>
<th>Resistance Value</th>
<th>Optional Feature Code (see table)</th>
<th>Optional Non-standard Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>7286 R</td>
<td>10K</td>
<td>T2</td>
<td>L.25</td>
<td>xx</td>
</tr>
</tbody>
</table>

FEATURE CODES

- Center Tap: CT
- Linearity Tape: LT
- Flatted Shaft: FS
- Slotted Shaft (standard on single cup 7286 & 7288 without RS feature): SS
- Rear Shaft Extension (7281, 7286, 7288 single cup only): RS
- Shaft Lock (7281, 7286, 7288 only): SL
- High Torque 2-6 oz.-in. (7286 & 7288 only): HT
- Additional Gang: 2G
- Gold Plated Solder Lug Terminals (see optional terminal configuration): FT
- Seal (IP66) 7284, 7286, or 7288 only: ES

STANDARD RESISTANCE VALUES

<table>
<thead>
<tr>
<th>Total Resistance (Ohms)</th>
<th>Theoretical Resolution (% nominal)</th>
<th>Tempco of wire (ppm/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0.059</td>
<td>±20</td>
</tr>
<tr>
<td>200</td>
<td>0.037</td>
<td>±20</td>
</tr>
<tr>
<td>500</td>
<td>0.030</td>
<td>±20</td>
</tr>
<tr>
<td>1K</td>
<td>0.024</td>
<td>±20</td>
</tr>
<tr>
<td>2K</td>
<td>0.020</td>
<td>±20</td>
</tr>
<tr>
<td>5K</td>
<td>0.018</td>
<td>±20</td>
</tr>
<tr>
<td>10K</td>
<td>0.017</td>
<td>±20</td>
</tr>
<tr>
<td>20K</td>
<td>0.016</td>
<td>±20</td>
</tr>
<tr>
<td>50K</td>
<td>0.010</td>
<td>±20</td>
</tr>
<tr>
<td>100K</td>
<td>0.008</td>
<td>±20</td>
</tr>
</tbody>
</table>

CIRCUIT DIAGRAM

When multiple Feature Codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).
Model 7280

MATCHING TURNS COUNTING DIALS

7281: RBJ, 2601, 2641
7286, 7288: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S

OUTLINE DRAWINGS

Models 7281, 7284, 7286, & 7288
Bushing Mount with Sleeve Bearing

Optional Terminal Configuration

Use Special Feature Code “FT” to order.

BI Technologies Corporation
4200 Bonita Place, Fullerton, CA 92835 USA
Phone: 714 447 2345    Website: www.bitechnologies.com
February 4, 2014
Model 7280

OUTLINE DRAWINGS (continued)

Model 7283
Servo Mount with Ball Bearing

Optional Terminal Configuration

Use Special Feature Code "FT" to order.

Enlarged View B