**6638 - Precision Potentiometer**

**Features**
- 7/8" (22 mm) diameter single-turn conductive plastic
- Bushing mount
- Excellent resolution
- High rotational life – ball bearing shaft support
- Non-standard features and specifications available

**Electrical Characteristics**

- Standard Resistance Range: 1 K to 100 K ohms
- Total Resistance Tolerance: ±10%
- Independent Linearity: ±1%
- Effective Electrical Angle: 340° ±3°
- End Voltage: 0.5% maximum
- Output Resistance (MIL-STD-202, Method 106): 0.1% maximum
- Dielectric Withstanding Voltage (MIL-STD-202, Method 301): Sea Level 750 VAC minimum
- Power Rating (Voltage Limited By Power Dissipation or 300 VAC, Whichever is Less): +70 °C, 1 watt
- Insulation Resistance (500 VDC): 1,000 megohms minimum
- Temperature Coefficient Over Storage Temperature Range: ±500 ppm/°C maximum
- Storage Temperature Range: -65 °C to +125 °C
- Operating Temperature Range: +1 °C to +125 °C
- Total Resistance Shift: ±10% maximum
- Voltage Ratio Shift: ±0.5% maximum
- Total Resistance Shift: ±5% maximum
- Voltage Ratio Shift: ±0.5% maximum
- Total Resistance Shift: ±10% maximum
- Rotational Life (No Load): 20,000,000 shaft revolutions
- Resolution: Essentially infinite
- Mechanical Angle: Continuous
- Torque (Starting & Running): 0.18 N-cm (0.25 oz.-in.) maximum
- Shaft Runout: 0.025 mm (0.001 in.) T.I.R.
- Shaft End Play: 0.13 mm (0.005 in.) T.I.R.
- Backlash: 0.1° maximum
- Weight: 18 g

**Product Dimensions**

**Environmental Characteristics**

- Operating Temperature Range: +1 °C to +125 °C
- Storage Temperature Range: -65 °C to +125 °C
- Temperature Coefficient Over Storage Temperature Range: ±500 ppm/°C maximum
- Vibration: ±50 G
- Shock: ±50 G
- Wiper Bounce: 0.1 millisecond maximum
- Total Resistance Shift: ±10% maximum
- Voltage Ratio Shift: ±0.5% maximum
- Total Resistance Shift: ±10% maximum
- Rotational Life (No Load): 20,000,000 shaft revolutions
- Total Resistance Shift: ±10% maximum
- Mechanical Angle: Continuous
- Torque (Starting & Running): 0.18 N-cm (0.25 oz.-in.) maximum
- Shaft Runout: 0.025 mm (0.001 in.) T.I.R.
- Shaft End Play: 0.13 mm (0.005 in.) T.I.R.
- Backlash: 0.1° maximum
- Weight: 18 g

**Non-standard features and specifications available**

**Recommended Part Numbers**

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Resistance (Ω)</th>
</tr>
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<tbody>
<tr>
<td>6638S-1-102</td>
<td>1,000</td>
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<tr>
<td>6638S-1-502</td>
<td>5,000</td>
</tr>
<tr>
<td>6638S-1-103</td>
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