Features

- Bushing mount
- Optional AR pin feature
- Plastic or metal shaft and bushings
- Wirewound
- Solder lugs or PC pins
- Sealable (Full body seal)
- Designed for use in HMI applications

3590 - Precision Potentiometer

Electrical Characteristics

- Standard Resistance Range: 200 to 100 K ohms
- Total Resistance Tolerance: ±5 %
- Independent Linearity: ±0.25 %
- Effective Electrical Angle: 360 ° ±10 °, ±0 °
- Absolute Minimum Resistance: 1 ohm or 0.1 % maximum (whichever is greater)
- Noise: 100 ohms ENR maximum
- Dielectric Withstanding Voltage (MIL-STD-202, Method 301): 1,500 VAC minimum
- Pilot Diameter Runout: 0.08 mm (0.003 in.) T.I.R.
- Lateral Runout: 0.20 mm (0.008 in.) T.I.R.
- 90-113 N-cm (8-10 in.-lb.) (metal)
- RPM (Operating): 200 maximum
- Resolution: See recommended part numbers

Environmental Characteristics

- Operating Temperature Range: -40 °C to +125 °C
- Storage Temperature Range: -55 °C to +125 °C
- Temperature Coefficient Over Storage Temperature Range: ±50 ppm/°C maximum/Unit
- Vibration: 15 G
- Shock: 0.1 millisecond maximum
- Load Life: 1,000 hours, 2 watts
- Total Resistance Shift: ±2 % maximum
- Rotational Life (No Load): 1,000,000 shaft revolutions
- Total Resistance Shift: ±2 % maximum
- Moisture Resistance (MIL-STD-202, Method 103, Condition B)
- Total Resistance Shift: ±2 % maximum
- IP Rating: Sealed Versions (-3, -4, -7, and -8): IP 65
- Moisture Sensitivity Level: -2
- ESD Classification (HBM): N/A

Mechanical Characteristics

- Stop Strength: 45 N-cm (64 oz.-in.) minimum
- Mechanical Angle: 360 ° ±10 °, ±0 °
- Torque: 0.85 N-cm (1.2 oz.-in.) maximum (unsealed)
- Mounting: 1.41 N-cm (2.0 oz.-in.) maximum (sealed)
- 55-80 N-cm (5-7 lb.-in.) (plastic)
- Shaft Runout: 0.25 mm (0.010 in.) (T.I.R.)
- Lateral Runout: 0.20 mm (0.008 in.) (T.I.R.)
- Shaft Radial Play: 0.13 mm (0.005 in.) (T.I.R.)
- Pilot Diameter Runout: 0.08 mm (0.003 in.) (T.I.R.)
- Backlash: 1.0 ° maximum
- Weight: Approximately 19 G
- Terminals: Solder lugs or PC pins
- Soldering Condition: 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire; 370 °C (700 °F) max. for 3 seconds
- Wave Soldering: 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux; 260 °C (500 °F) max. for 5 seconds
- Wash processes: Not recommended
- Ganging (Multiple Section Potentiometers): 1 cup maximum
- Hardware: One lockwasher and one mounting nut is shipped with each potentiometer.

NOTE: For Anti-rotation pin add 91 after configuration dash number. Example: -2 becomes -291 to add AR pin.

1 At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

2 Consult manufacturer for complete specification details for resistances below 1K ohms.
3590 - Precision Potentiometer

Product Dimensions

-1, -3, -5, -7 Configurations

-2, -4, -6, -8 Configurations

Recommended PCB Layout

Schematic

Terminal Styles

"P" Terminal Style

"S" Terminal Style

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3590 - Precision Potentiometer

**Recommended Part Numbers**

<table>
<thead>
<tr>
<th>(Printed Circuit)</th>
<th>(Solder Lug)</th>
<th>(Solder Lug)</th>
<th>Resistance (Ω)</th>
<th>Resolution (%)</th>
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<tr>
<td>3590P-2-102L</td>
<td>359OS-2-102L</td>
<td>359OS-1-102L</td>
<td>1,000</td>
<td>.029</td>
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<td>.033</td>
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<td>359OS-1-103L</td>
<td>50,000</td>
<td>.033</td>
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<tr>
<td>3590P-2-203L</td>
<td>359OS-2-203L</td>
<td>359OS-1-203L</td>
<td>100,000</td>
<td>.039</td>
</tr>
</tbody>
</table>

**Panel Thickness Dimensions**

(For Bushing Mount Only)

2.46 - 3.81
(0.097 - 0.150)

**Shaft & Bushing Configurations**

(Bushing - Dxl, Shaft - D):

(-1) Plastic Bushing (3/8” x 5/16”) and Shaft (.2480 ± .001, - .002)

(-2) Metal Bushing (3/8” x 5/16”) and Shaft (.2497 ± .0000, - .0009)

(-3) Sealed, Plastic Bushing (3/8” x 5/16”) and Shaft (.2480 ± .001, - .002)

(-4) Sealed, Metal Bushing (3/8” x 5/16”) and Shaft (.2497 ± .0000, - .0009)

(-5) Metric, Plastic Bushing (9 mm x 7.94 mm) and Shaft (6 mm + 0, - .076 mm)

(-6) Metric, Metal Bushing (9 mm x 7.94 mm) and Shaft (6 mm + 0, - .023 mm)

(-7) Metric, Sealed, Plastic Bushing (9 mm x 7.94 mm) and Shaft (6 mm + 0, - .076 mm)

(-8) Metric, Sealed, Metal Bushing (9 mm x 7.94 mm) and Shaft (6 mm + 0, - .023 mm)

Anti-rotation pin hole is shown at six o’clock position for reference only. The actual location is determined by the customer’s application. Refer to the front view of the potentiometer to see the location of the optional A/R pin.

Panel thickness and hole diameters are recommended for best fit. However, customers may adjust the dimensions to suit their specific application.

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