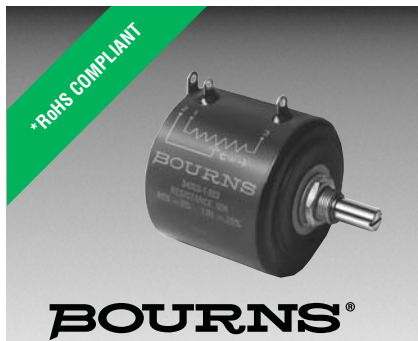




## Features

- Bushing mount
- Optional  $\pm 0.05$  linearity option
- Excellent wiper stability
- High stop strength
- Sealable
- RoHS compliant\*

## 3400 - Precision Potentiometer

### Electrical Characteristics<sup>1</sup>

|                                                              |                                                |
|--------------------------------------------------------------|------------------------------------------------|
| Standard Resistance Range.....                               | 100 to 500 K ohms                              |
| Total Resistance Tolerance.....                              | $\pm 3\%$                                      |
| Independent Linearity.....                                   | $\pm 0.15\%$                                   |
| Effective Electrical Angle.....                              | $3600^\circ \pm 4^\circ, -0^\circ$             |
| Absolute Minimum Resistance.....                             | 1 ohm or 0.15 % maximum (whichever is greater) |
| Noise.....                                                   | 100 ohms ENR maximum                           |
| Dielectric Withstanding Voltage.....                         | MIL-STD-202, Method 301                        |
| Sea Level.....                                               | 1,000 VAC minimum                              |
| 80,000 Feet.....                                             | 300 VAC minimum                                |
| Power Rating (Voltage Limited By Power Dissipation, or.....) | (40 °C) 5 watts                                |
| 1,000 VAC, Whichever Is Less.....                            | (125 °C) 0 watt                                |
| Insulation Resistance (500 VDC).....                         | 1,000 megohms minimum                          |
| Resolution.....                                              | See recommended part number                    |

### Environmental Characteristics<sup>1</sup>

|                                                                           |                                             |
|---------------------------------------------------------------------------|---------------------------------------------|
| Operating Temperature Range.....                                          | $+1^\circ\text{C}$ to $+125^\circ\text{C}$  |
| Storage Temperature Range.....                                            | $-65^\circ\text{C}$ to $+125^\circ\text{C}$ |
| Temperature Coefficient Over Storage Temperature Range <sup>2</sup> ..... | $\pm 20$ ppm/ $^\circ\text{C}$ maximum/unit |
| Vibration.....                                                            | 10 G                                        |
| Wiper Bounce.....                                                         | 0.1 millisecond maximum                     |
| Total Resistance Shift.....                                               | $\pm 2\%$ maximum                           |
| Voltage Ratio Shift.....                                                  | $\pm 0.1\%$ maximum                         |
| Shock.....                                                                | 50 G                                        |
| Wiper Bounce.....                                                         | 0.1 millisecond maximum                     |
| Total Resistance Shift.....                                               | $\pm 2\%$ maximum                           |
| Voltage Ratio Shift.....                                                  | $\pm 0.1\%$ maximum                         |
| Load Life.....                                                            | 1,000 hours, 5 watts                        |
| Total Resistance Shift.....                                               | $\pm 2\%$ maximum                           |
| Rotational Life (No Load).....                                            | 2,000,000 shaft revolutions <sup>2</sup>    |
| Total Resistance Shift.....                                               | $\pm 5\%$ maximum                           |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B).....           |                                             |
| Total Resistance Shift.....                                               | $\pm 2\%$ maximum                           |
| IP Rating.....                                                            | IP 40                                       |

### Mechanical Characteristics<sup>1</sup>

|                                       |                                                                                                                          |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Stop Strength.....                    | 53 N-cm (75 oz.-in.) min.                                                                                                |
| Mechanical Angle.....                 | $3600^\circ \pm 4^\circ, -0^\circ$                                                                                       |
| Torque (Starting & Running).....      | 0.35 N-cm (0.5 oz.-in.) max.                                                                                             |
| Mounting.....                         | 170-200 N-cm (15-18 lb.-in.)                                                                                             |
| Shaft Runout.....                     | 0.08 mm (0.003 in.) T.I.R.                                                                                               |
| Lateral Runout.....                   | 0.13 mm (0.005 in.) T.I.R.                                                                                               |
| Shaft End Play.....                   | 0.25 mm (0.010 in.) T.I.R.                                                                                               |
| Shaft Radial Play.....                | 0.08 mm (0.003 in.) T.I.R.                                                                                               |
| Pilot Diameter Runout.....            | 0.08 mm (0.003 in.) T.I.R.                                                                                               |
| Backlash.....                         | 1.0 ° maximum                                                                                                            |
| Weight.....                           | Approximately 21 gm                                                                                                      |
| Terminals.....                        | Gold-plated solder lugs                                                                                                  |
| Soldering Condition.....              |                                                                                                                          |
| Manual Soldering.....                 | 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                                                                                                          |
| Marking.....                          | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code. |
| Ganging (Multiple Section Pots.)..... | 2 cups maximum                                                                                                           |
| Hardware.....                         | One lockwasher (H-37-2) and one mounting nut (H-38-2) is shipped with each potentiometer.                                |

- 1 At room ambient:  $+25^\circ\text{C}$  nominal and 50 % relative humidity nominal, except as noted.  
 2 Consult manufacturer for complete specification details for resistances below 500 ohms and above 100K ohms.

### Recommended Part Numbers

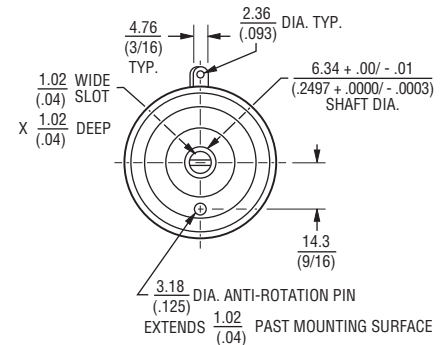
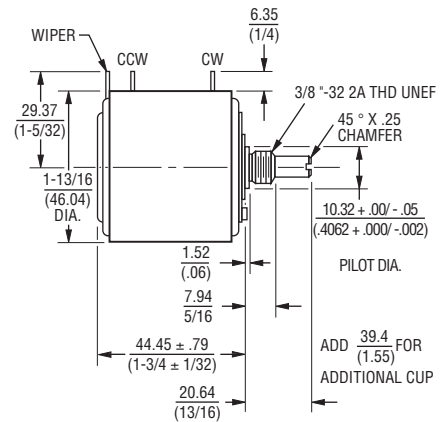
| Part Number  | Resistance ( $\Omega$ ) | Resolution (%) |
|--------------|-------------------------|----------------|
| 3400S-1-102L | 1,000                   | .020           |
| 3400S-1-502L | 5,000                   | .013           |
| 3400S-1-103L | 10,000                  | .010           |

**BOLDFACE** LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

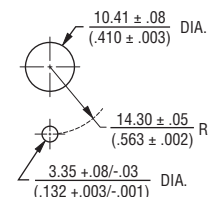
FOR OTHER OPTIONS CONSULT FACTORY.

ROHS IDENTIFIER:  
L = COMPLIANT

### Product Dimensions

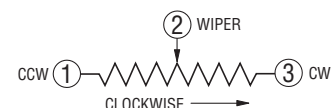


### RECOMMENDED PANEL LAYOUT



RECOMMENDED PCB THICKNESS: 2.46 (.097)  
 MOUNTING TORQUE: 15-18 LB.-IN.

TOLERANCES: EXCEPT WHERE NOTED  
 DECIMALS: .XX  $\pm$  .25 (.010), .XXX  $\pm$  .13 (.005)  
 FRACTIONS:  $\pm 1/64$   
 DIMENSIONS: MM (IN.)



\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
 Specifications are subject to change without notice.

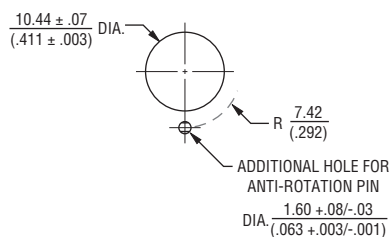
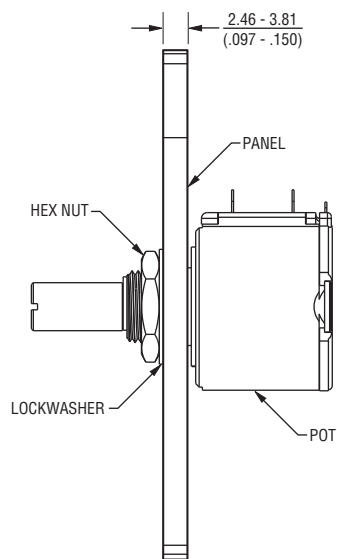
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# 3400 - Precision Potentiometer

**BOURNS®**

## Panel Thickness Dimensions

(For Bushing Mount Only)



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.

REV. 08/13

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Users should verify actual device performance in their specific applications.