

## Features

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

**BOURNS®**

## 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.....	$3600^\circ + 4^\circ, -0^\circ$
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>

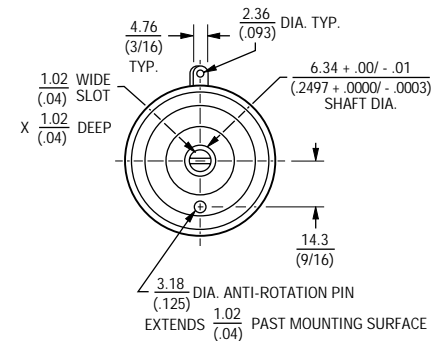
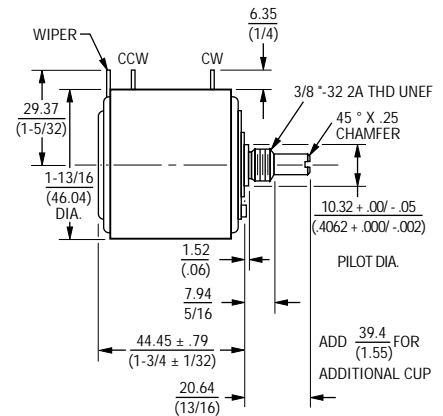
Operating Temperature Range.....	$+1^\circ\text{C}$ to $+125^\circ\text{C}$
Storage Temperature Range.....	$-65^\circ\text{C}$ to $+125^\circ\text{C}$
Temperature Coefficient Over Storage Temperature Range <sup>2</sup> .....	$\pm 20$ ppm/ $^\circ\text{C}$ maximum/unit
Vibration.....	10 G
Wiper Bounce.....	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>

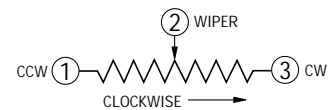
Stop Strength.....	388 N-cm (550 oz.-in.) minimum
Mechanical Angle.....	$3600^\circ + 4^\circ, -0^\circ$
Torque (Starting & Running).....	1.4 N-cm (2.0 oz.-in.) maximum
Mounting.....	170-200 N-cm (15-18 lb.-in.) maximum
Shaft Runout.....	0.05 mm (0.002 in.) T.I.R.
Lateral Runout.....	0.13 mm (0.005 in.) T.I.R.
Shaft End Play.....	0.13 mm (0.005 in.) T.I.R.
Shaft Radial Play.....	0.06 mm (0.0025 in.) T.I.R.
Pilot Diameter Runout.....	0.05 mm (0.002 in.) T.I.R.
Backlash.....	$1.0^\circ$ maximum
Weight.....	Approximately 110 gm
Terminals.....	Gold-plated solder lugs
Soldering Condition.....	Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025 " wire diameter. Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux.
Markings.....	Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, date code
Ganging (Multiple Section Potentiometers).....	2 cups maximum
Hardware.....	One lockwasher (H-37-2) and one mounting nut (H-38-2) is shipped with each potentiometer.

<sup>1</sup>At room ambient:  $+25^\circ\text{C}$  nominal and 50 % relative humidity nominal, except as noted.

<sup>2</sup>Consult manufacturer for complete specification details for resistances below 500 ohms and above 100 K ohms.



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



### Recommended Part Numbers

Part Number	Resistance	Resolution
3400S-1-102	1,000	.020
3400S-1-502	5,000	.013
3400S-1-103	10,000	.010

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

FOR OTHER OPTIONS CONSULT FACTORY.