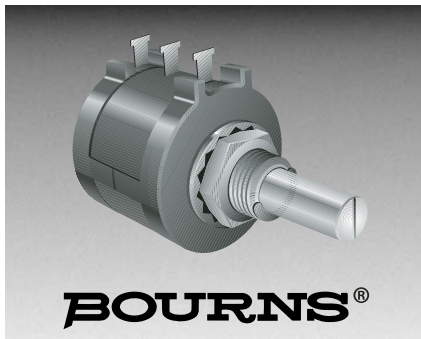




Features

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

- Non-standard features and specifications available

BOURNS®

3590 - Precision Potentiometer

Electrical Characteristics¹

Standard Resistance Range	200 to 100 K ohms
Total Resistance Tolerance	±5 %
Independent Linearity	±0.25 %
Effective Electrical Angle	3600 ° +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)	
Sea Level	1,500 VAC minimum
Power Rating (Voltage Limited By Power Dissipation or 450 VAC, Whichever is Less)	
+40 °C	2 watts
+125 °C	0 watt
Insulation Resistance (500 VDC)	1,000 megohms minimum
Resolution	See recommended part numbers

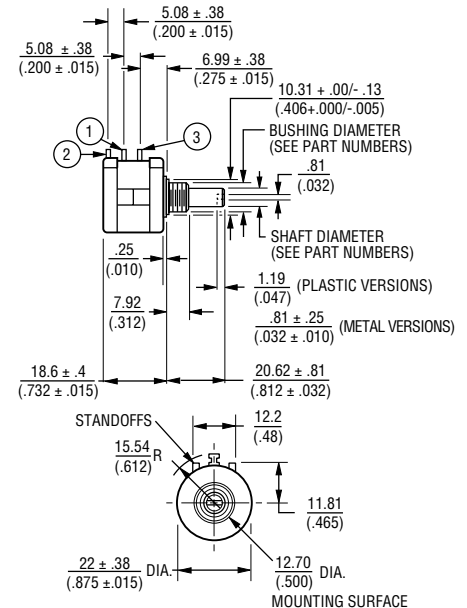
Environmental Characteristics¹

Operating Temperature Range	+1 °C to +125 °C
Storage Temperature Range	-55 °C to +125 °C
Temperature Coefficient Over Storage Temperature Range ²	±50 ppm/°C maximum/unit
Vibration	15 G
Wiper Bounce	0.1 millisecond maximum
Shock	50 G
Wiper Bounce	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	±5 % 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
Unsealed Versions (-1 -2, -5, and -6)	IP 40

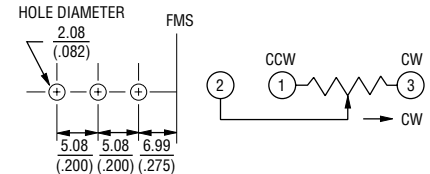
Mechanical Characteristics¹

Stop Strength	45 N-cm (64 oz.-in.) minimum
Mechanical Angle	3600 ° +10 °, -0 °
Torque (Starting & Running)	0.35 N-cm (0.5 oz.-in.) maximum (unsealed)
Mounting	1.1 N-cm (1.5 oz.-in.) maximum (sealed)
Shaft Runout	0.13 mm (0.005 in.) T.I.R.
Lateral Runout	0.20 mm (0.008 in.) T.I.R.
Shaft End Play	0.25 mm (0.010 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	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.
Marking	Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code.
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.



RECOMMENDED PC BOARD MOUNTING HOLE LOCATIONS



TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX ± .01, .XXX ± .013

FRACTIONS: ±1/64

DIMENSIONS: MM (IN.)

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)

BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

REV. 03/04

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

Recommended Part Numbers

(Printed Circuit)	(Solder Lug)	(Solder Lug)	Resistance (Ω)	Resolution (%)
3590P-2-102	3590S-2-102	3590S-1-102	1,000	.029
3590P-2-202	3590S-2-202	3590S-1-202	2,000	.023
3590P-2-502	3590S-2-502	3590S-1-502	5,000	.025
3590P-2-103	3590S-2-103	3590S-1-103	10,000	.020
3590P-2-203	3590S-2-203	3590S-1-203	20,000	.019
3590P-2-503	3590S-2-503	3590S-1-503	50,000	.013
3590P-2-104	3590S-2-104	3590S-1-104	100,000	.009