



## 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

# 6638 - Precision Potentiometer

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

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 Smoothness.....	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
+125 °C.....	0 watt
Insulation Resistance (500 VDC).....	1,000 megohms minimum
Resolution.....	Essentially infinite

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

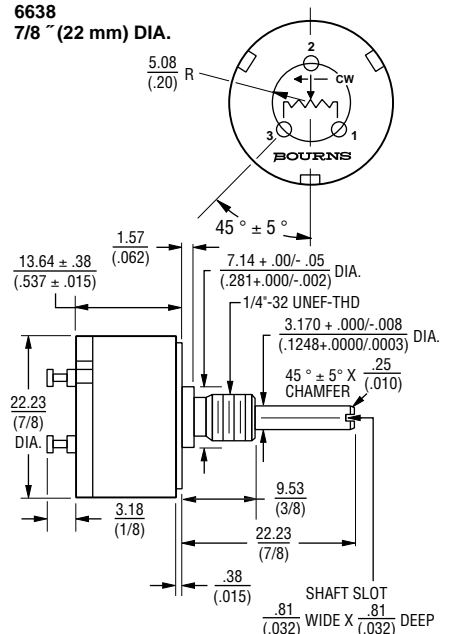
Operating Temperature Range.....	+1 °C to +125 °C
Storage Temperature Range.....	-65 °C to +125 °C
Temperature Coefficient Over Storage Temperature Range.....	±500 ppm/°C maximum
Vibration.....	15 G
Wiper Bounce.....	0.1 millisecond maximum
Total Resistance Shift.....	±5 % maximum
Voltage Ratio Shift.....	±0.5 % maximum
Shock.....	50 G
Wiper Bounce.....	0.1 millisecond maximum
Total Resistance Shift.....	±5 % maximum
Voltage Ratio Shift.....	±0.5 % maximum
Load Life.....	1,000 hours, 1 watt
Total Resistance Shift.....	±10 % maximum
Rotational Life (No Load).....	20,000,000 shaft revolutions
Total Resistance Shift.....	±10 % maximum
Moisture Resistance (MIL-STD-202, Method 106)	
Total Resistance Shift.....	±10 % maximum
IP Rating.....	IP 40

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

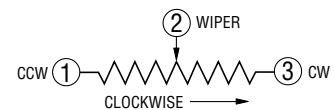
Mechanical Angle.....	Continuous
Torque (Starting & Running).....	0.18 N-cm (0.25 oz.-in.) maximum
Mounting.....	170-200 N-cm (15-18 lb.-in.) maximum
Shaft Runout.....	0.025 mm (0.001 in.) T.I.R.
Shaft End Play.....	0.13 mm (0.005 in.) T.I.R.
Shaft Radial Play.....	0.08 mm (0.003 in.) T.I.R.
Backlash.....	0.1° maximum
Weight.....	18 gm
Terminals.....	Rear turret type
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 Potentiometers).....	1 cup maximum
Hardware.....	One lockwasher (H-37-1) and one mounting unit (H-38-1) is shipped with each potentiometer.

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

### Product Dimensions



TOLERANCES: EXCEPT WHERE NOTED  
 DECIMALS: XX ± .51 (.02), XXX ± .127 (.005)  
 FRACTIONS: ±1/64  
 DIMENSIONS: MM (IN.)



### Recommended Part Numbers

Part Numbers	Resistance (Ω)
6638S-1-102	1,000
6638S-1-502	5,000
6638S-1-103	10,000

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

FOR OTHER OPTIONS CONSULT FACTORY.



**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

REV. 10/19

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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