

## 7/8" (22.2 mm) Precision Industrial Potentiometer, Bushing And Servo Mount Versions, Conductive Plastic


**FEATURES**

- High quality
- Rugged one piece metal housing
- Long rotational life
- Wide operating temperature range
- Linearities down to  $\pm 0.25\%$  special
- Optional sealed construction (bushing mount only)
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**QUICK REFERENCE DATA**

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	7/8" (22.2 mm)

**ELECTRICAL SPECIFICATIONS**

PARAMETER	MIL-PRF-39023 TEST PROCEDURES APPLY
Resistance	1 k $\Omega$ to 100 k $\Omega$
Resistance Tolerance	$\pm 20\%$
Special to	$\pm 10\%$
Linearity	$\pm 2.0\%$
Special to	$\pm 0.25\%$
Temperature Coefficient of Resistance	$\pm 600$ ppm/ $^{\circ}$ C
Power Rating	1.0 W at 40 $^{\circ}$ C ambient
Derated to	0 W at 125 $^{\circ}$ C
Electrical Angle	340 $^{\circ}$ $\pm$ 4 $^{\circ}$
End Voltage	0.5 % maximum
Dielectric Withstanding	1000 V <sub>RMS</sub> , 60 Hz
Insulation Resistance	100 M $\Omega$ minimum, 500 V <sub>DC</sub>
Output Smoothness	0.1 %

**MECHANICAL SPECIFICATIONS**

PARAMETER		
Weight	0.5 oz. maximum (14 g)	
Rotation	360 $^{\circ}$ (continuous)	
Mount Bearing Type	<b>BUSHING</b> Sleeve bearing	<b>SERVO</b> Ball bearing
Operating Torque		
Starting	0.30 oz. - in (21.6 g - cm)	0.25 oz. - in (18 g - cm)
Running	0.25 oz. - in (18 g - cm)	0.15 oz. - in (10.8 g - cm)
Mechanical Tolerance (in/mm) (maximum)		
Shaft Runout (TIR)	0.002" (0.05 mm)	0.002" (0.05 mm)
Pilot Dia Runout (TIR)	-	0.002" (0.05 mm)
Lateral Runout (TIR)	0.005" (0.13 mm)	0.002" (0.05 mm)
Shaft End Play	0.006" (0.15 mm)	0.005" (0.13 mm)
Shaft Radial Play	0.003" (0.08 mm)	0.002" (0.05 mm)

**ORDERING INFORMATION/DESCRIPTION**

157	B	50K	20 %	C	BO10
MODEL	MOUNTING	OHMIC VALUE	TOLERANCE ON OHMIC VALUE	LINEARITY	PACKAGING
	B = Bushing S = Servo			C: $\pm 0.25\%$	Box of 10 pieces

### SAP PART NUMBERING GUIDELINES

157	S	502	M	X	B10
MODEL	STYLE	OHMIC VALUE	TOLERANCE ON OHMIC VALUE	LINEARITY	PACKAGING
		502 = 5K	M: $\pm 20\%$	X: $\pm 2\%$	Box of 10 pieces

### DIMENSIONS in inches (millimeters)



### MATERIAL SPECIFICATIONS

Housing/Bushing	Aluminum, anodized
Rear Lid	Ceramic
Shaft	Stainless steel
Terminals	Solderable
Bushing Mount Hardware	Lockwasher, internal tooth steel, nickel plated
Panel Nut	Brass, nickel plated

### ENVIRONMENTAL SPECIFICATIONS

Temperature	- 55 °C + 125 °C	
Rotational Life	<b>BUSHING</b> 5 million shaft revolutions	<b>SERVO</b> 10 million shaft revolutions
Moisture Resistant	Yes	
Vibration	15 g 10 to 2000 Hz	
Shock	50 g	
Salt Spray	96 h	
Load Life	900 h	



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