

## Industrial Rotary Position Sensor Bushing Mount Type, Conductive Plastic



### FEATURES

- Fully sealed for high immunity to environmental damage
- Excellent temperature stability
- Rotational life exceeds 2 million revolutions
- Low cost and wide range of options
- Stainless steel shaft
- Shock to 30 g vibration to 15 g at 10 Hz to 2000 Hz

### QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	15.81 mm x 17.46 mm




### ELECTRICAL SPECIFICATIONS

PARAMETER	
Standard resistance	1 k $\Omega$ to 100 k $\Omega$
Capability range	200 k $\Omega$
Resistance tolerance	$\pm 20\%$
Linearity	$\pm 2\%$
Power rating	1.0 W at 85 °C
Electrical travel	240° $\pm$ 4°
Dielectric withstanding	500 V <sub>RMS</sub> at 60 Hz minimum
Output smoothness	0.2 % maximum

### MECHANICAL SPECIFICATIONS

PARAMETER	
Bearing type	Sleeve
Mechanical rotation	250° $\pm$ 2°
Stop strength	10 in - lb minimum, 11.5 kg/cm
Starting torque	3.0 o.z - in maximum, 216 g/cm
Running torque	3.0 oz. - in maximum, 216 g/cm

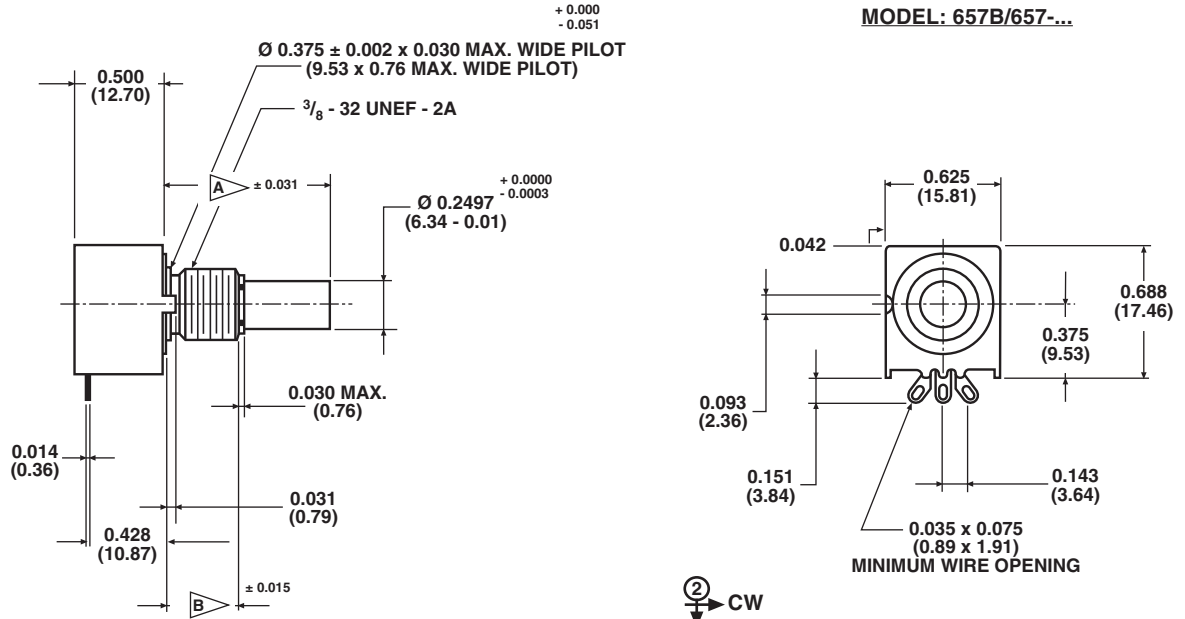
### ORDERING INFORMATION/DESCRIPTION

657	B	F	0			50 k $\Omega$	B10
MODEL	STYLE	SHAFT OPTIONS	SHAFT BUSHING OPTIONS			TOTAL RESISTANCE	PACKAGING
	<b>B</b> : Bushing	<b>R</b> - Round <b>F</b> - Flatted	 Shaft length <b>0</b> - 0.875" FMS <b>1</b> - 0.625" FMS <b>2</b> - 1.000" FMS <b>3</b> - 1.250" FMS	 Bushing length 0.375" FMS 0.250" FMS 0.500" FMS 0.750" FMS	 Flat 0.440" 0.315" 0.440" 0.440"		Box of 10 pieces

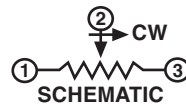
### SAP PART NUMBERING GUIDELINES

657B	R	1	103	BO10
MODEL	END SHAFT	SHAFT AND BUSHING OPTIONS	OHMIC VALUE	PACKAGING
	<b>R</b> : Round	(see above)		

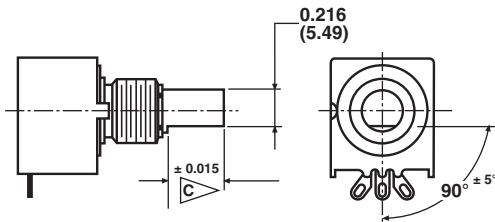
**DIMENSIONS** in inches (millimeters)



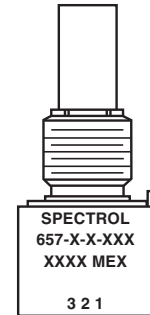
DECIMALS: XX ± 0.01 INCHES (± 0.25 mm)  
XX ± 0.005 INCHES (± 0.13 mm) ANGLES: ± 2°



**SHAFT FLAT AND PHASING DIAGRAM**



WITH SHAFT FLAT POSITIONED AS SHOWN, OUTPUT RATIO  
TO BE e/E = 0.50 ± 0.02



**STANDARD RESISTANCE VALUES**

CODE	RESISTANCE (Ω)
102	1K
202	2K
502	5K
103	10K
203	20K
503	50K
104	100K

**MATERIAL SPECIFICATIONS**

Shaft	Stainless steel
Bushing	Nickel plated brass
Housing	Thermoplastic
Element	Conductive plastic on alumina substrate

**ENVIRONMENTAL SPECIFICATIONS**

Rotational life	2 million revolutions
Vibration	15 g at 10 Hz to 2000 Hz
Operating temperature	-40 °C to +125 °C
Storage temperature	-55 °C to +150 °C
Temperature coefficient	± 600 ppm/°C
Shock	30 g
Resistant to solder heat	350 °C for 5 s
Moisture resistance IP rating	Sealed construction IP67* application to provide protection for wiring terminals

**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability.

**MARKING**

Unit identification	Vishay Spectrol, part number, data code, country of origin and terminal designation. Example of a marking for a standard part: 657-2-0-102
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