

## 1 5/16" (33.3 mm) Industrial Single Turn, Bushing Mount, Conductive Plastic Potentiometer



<b>QUICK REFERENCE DATA</b>	
Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	1 5/16" (33.3 mm)

### FEATURES

- Center tap available
- Continuous rotation and mechanical stops both standard
- Suitable model for all types of industrial applications
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



<b>ELECTRICAL SPECIFICATIONS</b>		
PARAMETER	MIL-PRF-39023 TEST PROCEDURES APPLY	
Ohmic Value Range	STANDARD 1 kΩ to 50 kΩ	SPECIAL 1 kΩ to 50 kΩ
Tolerance	± 10 %	± 5 %
Linearity (independent)	STANDARD ± 0.5 %	BEST PRACTICAL ± 0.25 %
Output Smoothness	0.1 % maximum	
Power Rating	40 °C ambient 2 W derated to zero at 125 °C	
Electrical Angle	345° ± 4°	
Continuous	340° ± 5°	
Stops		
Insulation Resistance	1000 MΩ minimum at 500 V <sub>DC</sub>	
Dielectric Strength	1000 V <sub>RMS</sub> , 60 Hz	
Absolute Minimum Resistance	1.0 % of total resistance	
Minimum Voltage	0.5 % maximum	
Temperature Coefficient of Resistance	± 600 ppm/°C maximum	

<b>MATERIAL SPECIFICATIONS</b>	
Housing	Molded glass filled thermoplastic
Rear Lid	Glass filled thermoset plastic
Shaft	Stainless steel, non-magnetic
Terminals	Brass, plated for solderability, non-passivated
Mount Hardware	Steel, nickel plated
Lockwasher Internal Tooth: Panel nut:	Brass, nickel plated

<b>ENVIRONMENTAL SPECIFICATIONS</b>	
Vibration	15 g thru 2000 Hz
Shock	50 g
Salt Spray	48 h
Rotational Life	2 million
Shaft Revolutions	
Operating Temperature Range	-55 °C to +125 °C

#### Note

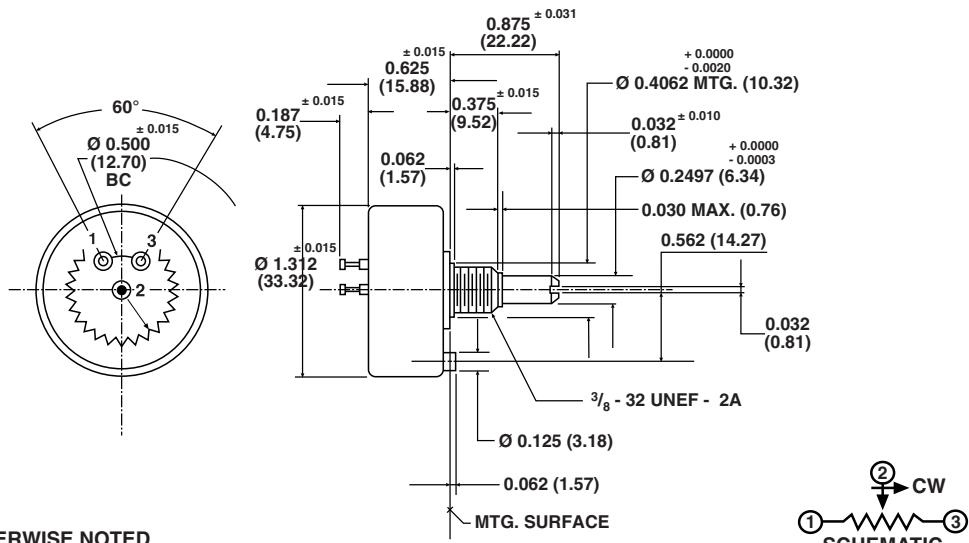
- Nothing stated herein shall be construed as a guarantee of quality or durability

<b>ORDERING INFORMATION</b>											
1	3	8	B	2	0	5	0	2	X	X	X
MODEL	STYLE	MECHANICAL OPTIONS	FEATURES	VALUE	SPECIAL REQUEST						
138	B: bushing	0 = continuous 2 = stops	0 = standard 1 = center tap	470 = 47 Ω 222 = 2.200 Ω 103 = 10 kΩ For ohmic value range see electrical specification	Custom reference						

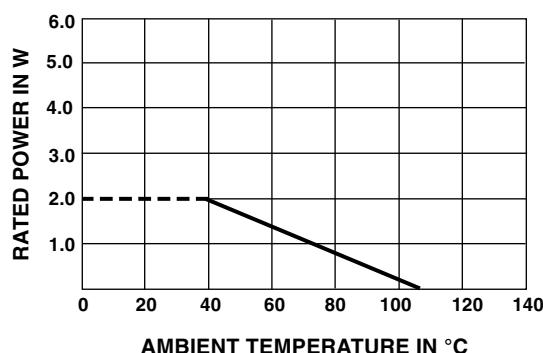
**PART NUMBER DESCRIPTION** (for information only)

138-	2-	1-	502	xxxx
MODEL	MECHANICAL OPTIONS	FEATURES	OHMIC VALUE	SPECIAL

**DIMENSIONS** in inches (millimeters)

MODEL 138B/138...

**MECHANICAL SPECIFICATIONS**

PARAMETER		
Rotation	360° (continuous) 340° $\pm 5^\circ$ stops	
Bearing Type	Sleeve	
Torque (maximums)	<b>STARTING</b> 1.0 oz. - in (72 g - cm)	<b>RUNNING</b> 0.7 oz. - in (50.40 g - cm)
Runouts (maximums)		
Shaft Runout (TIR)		0.002" (0.05 mm)
Pilot Dia. Runout (TIR)		0.003" (0.08 mm)
Lateral Runout (TIR)		0.005" (0.13 mm)
Shaft End Play		0.008" (0.20 mm)
Shaft Radial Play		0.003" (0.08 mm)
Weight	1.0 oz. maximum (28.35 g)	
Stop Strength	8.0 in - lbs (9.21 kg - cm) (stops version only)	

**POWER RATING CHART**

**MARKING**

Unit Identification	Units shall be marked with Vishay Spectrol name, model number, resistance and tolerance, linearity, terminal identification, and data code. Applicable test procedures: MIL-R-39023 Example of a marking for a standard part: 138-2-0-502
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