

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


**RoHS  
COMPLIANT**
**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)

**QUICK REFERENCE DATA**

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	1 5/16" (33.3 mm)

**ELECTRICAL SPECIFICATIONS**

PARAMETER	MIL-PRF-39023 TEST PROCEDURES APPLY	
	STANDARD	SPECIAL
Ohmic Value Range	1 kΩ to 50 kΩ	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		
Continuous	345° ± 4°	
Stops	340° ± 5°	
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	

**MATERIAL SPECIFICATIONS**

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 Lockwasher Internal Tooth: Panel nut:	Steel, nickel plated Brass, nickel plated

**ENVIRONMENTAL SPECIFICATIONS**

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

**Note**

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

**ORDERING INFORMATION/DESCRIPTION**

138	B	0	0	20K	BO10
MODEL	BUSHING MOUNT	MECHANICAL OPTIONS	OTHER OPTIONAL FEATURES	RESISTANCE CODE	PACKAGING
		0. Continuous 2. Stops	0. Standard (end taps) 1. Center tap (within 5° of electrical center)		Box of 10 pieces

Other characteristics will be standard as described on this specification sheet. If special characteristics are required such as special linearity tolerance, special resistance tolerance, non-linear functions, etc., please state these on your order.



SAP PART NUMBERING GUIDELINES					
138	B	2	1	103	B10
MODEL	STYLE	MECHANICAL OPTIONS	FEATURES	OHMIC VALUE	PACKAGING
		With stops	With center tap		Box of 10 pieces

**DIMENSIONS** in inches (millimeters)

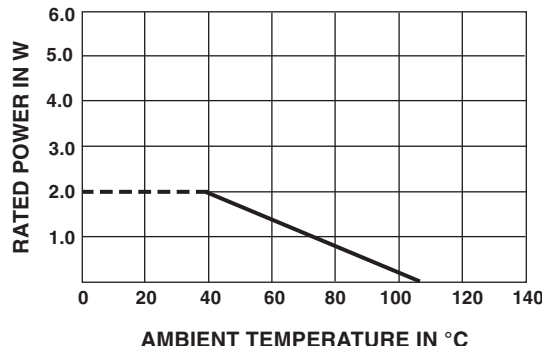
**MODEL 138B/138-...**

**TOLERANCES: UNLESS OTHERWISE NOTED.  
DECIMALS ± 0.005 ANGLES ± 2°**

**SCHEMATIC**

MECHANICAL SPECIFICATIONS		
PARAMETER		
Rotation	360° (continuous) 340° ± 5° 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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