



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



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



RoHS COMPLIANT

| 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 | BEST PRACTICAL |
| | ± 0.5 % | ± 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 _{DC} | |
| Dielectric Strength | 1000 V _{RMS} , 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 |

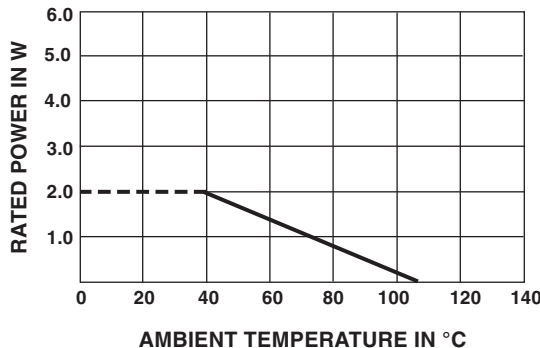
DIMENSIONS in inches (millimeters)

MODEL 138B/138-...

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

| MECHANICAL SPECIFICATIONS | | |
|---------------------------|--|---|
| PARAMETER | | |
| Rotation | 360° (continuous) 340° ± 5° stops | |
| Bearing Type | Sleeve | |
| Torque (maximums) | STARTING 1.0 oz. - in (72 g - cm) | RUNNING 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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