

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



### FEATURES

- Center tap available
- Continuous rotation and mechanical stops both standard
- Suitable model for all types of industrial applications
- Compliant to RoHS directive 2002/95/EC



RoHS  
COMPLIANT

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

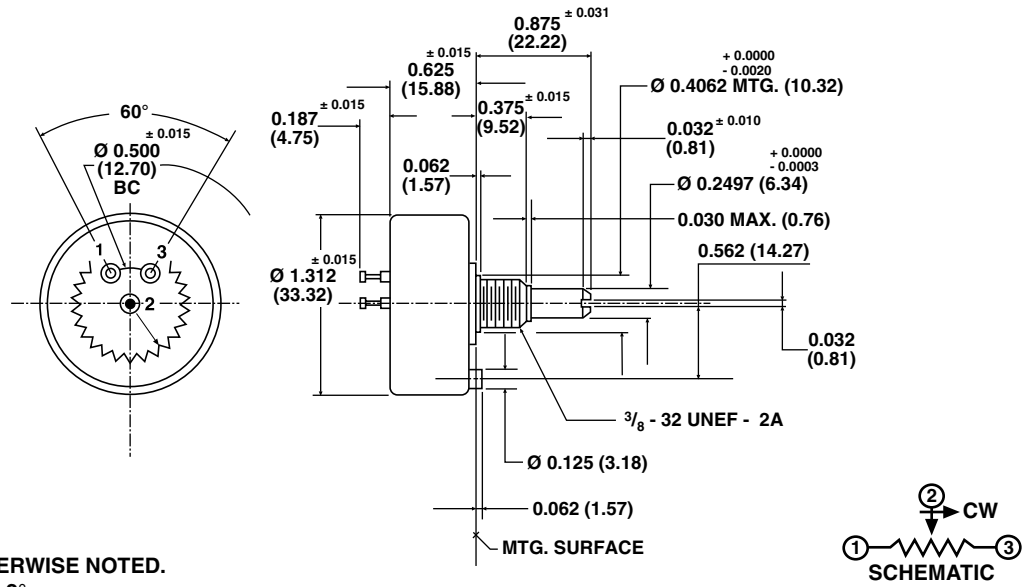
ORDERING INFORMATION/DESCRIPTION					
138	B	0	0	20K	BO10
MODEL	BUSHING MOUNT	MECHANICAL OPTIONS	OTHER OPTIONAL FEATURES	RESISTANCE CODE	PACKAGING
		0. Continuous 2. Stops	0. Standard (end taps) 1. Center tap (within 5° of electrical center)		Box of 10 pieces
Other characteristics will be standard as 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

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

Vishay Spectrol

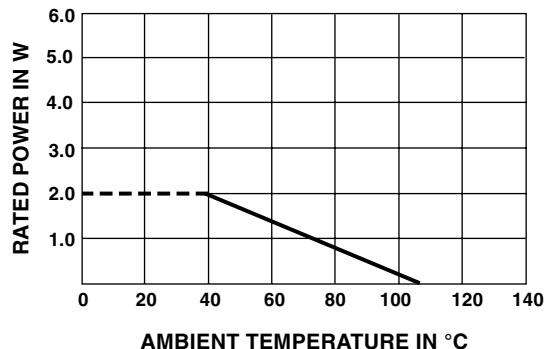
### DIMENSIONS in inches (millimeters)



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

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



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.