

## 1 5/16" (33.3 mm) Low Cost Industrial Single Turn Wirewound, Bushing Mount Type



### FEATURES

- Suitable model for all industrial applications
- Center tap available
- Continuous rotation and mechanical stops both standard
- Large electrical angle:  $352^\circ \pm 2^\circ$



RoHS  
COMPLIANT

| ELECTRICAL SPECIFICATIONS                                                                                                         |                                                                                  |                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| PARAMETER                                                                                                                         | MIL-PRF-12934 TEST PROCEDURES APPLY                                              |                                                                       |
|                                                                                                                                   | STANDARD                                                                         | SPECIAL                                                               |
| Total Resistance<br>Tolerance: 50 $\Omega$ and Above<br>Below 50 $\Omega$                                                         | 5 $\Omega$ to 20 k $\Omega$<br>$\pm 3\%$<br>$\pm 5\%$                            | to 35 k $\Omega$<br>$\pm 1\%$<br>$\pm 3\%$                            |
| Linearity (Independent)<br>Total Resistance<br>5 $\Omega$ to 20 $\Omega$<br>20 $\Omega$ to 200 $\Omega$<br>200 $\Omega$ and Above | <b>STANDARD</b><br>$\pm 1.0\%$<br>$\pm 1.0\%$<br>$\pm 0.5\%$                     | <b>BEST PRACTICAL</b><br>$\pm 0.75\%$<br>$\pm 0.50\%$<br>$\pm 0.25\%$ |
| Noise                                                                                                                             | 100 $\Omega$ ENR                                                                 |                                                                       |
| Power Rating                                                                                                                      | 40 $^\circ\text{C}$ ambient<br>2.75 W<br>derated to zero at 125 $^\circ\text{C}$ |                                                                       |
| Electrical Angle<br>Continuous Rotation<br>Stops                                                                                  | 352 $^\circ \pm 2^\circ$<br>340 $^\circ \pm 5^\circ$                             |                                                                       |
| Insulation Resistance                                                                                                             | 1000 M $\Omega$ minimum at 500 V <sub>DC</sub>                                   |                                                                       |
| Dielectric Strength                                                                                                               | 1000 V <sub>RMS</sub> , 60 Hz                                                    |                                                                       |
| Absolute Minimum Resistance                                                                                                       | 1.0 % of total resistance or 0.5 $\Omega$ whichever is greater                   |                                                                       |
| Minimum Voltage                                                                                                                   | 0.5 % maximum                                                                    |                                                                       |
| Temperature Coefficient of Resistance                                                                                             | Refer to standard resistance element data                                        |                                                                       |

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

| ENVIRONMENTAL SPECIFICATIONS         |                                                 |
|--------------------------------------|-------------------------------------------------|
| Vibration                            | 15 Gs thru 2000 Hz                              |
| Shock                                | 50 g                                            |
| Salt Spray                           | 48 h                                            |
| Rotational Life<br>Shaft Revolutions | 500 000                                         |
| Operating Temperature Range          | - 55 $^\circ\text{C}$ to + 125 $^\circ\text{C}$ |

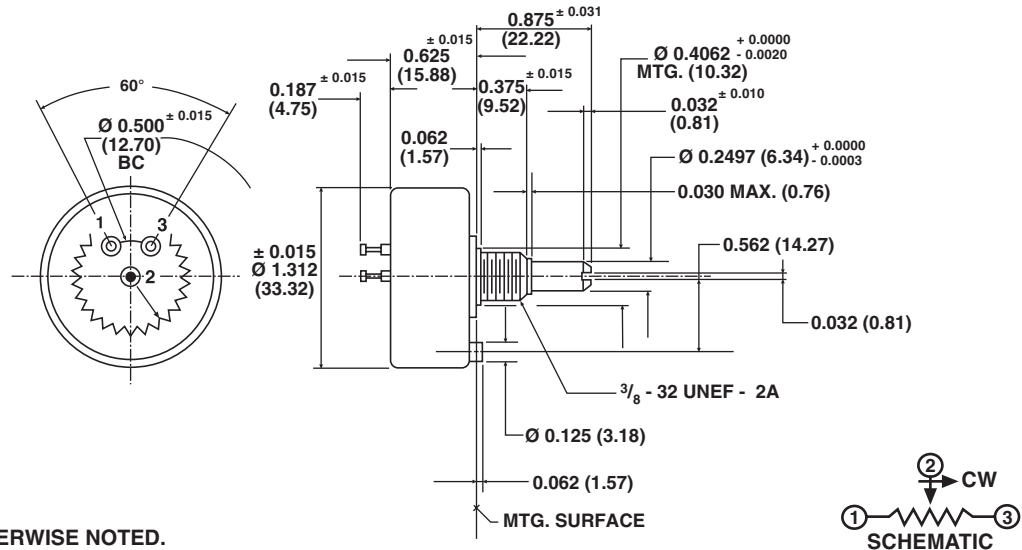
| ORDERING INFORMATION/DESCRIPTION                                                                                                                                                                                                                          |                           |                                                                                  |             |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------|-------------|------------------|
| 132                                                                                                                                                                                                                                                       | 0                         | 0                                                                                | 20K         | B010             |
| MODEL                                                                                                                                                                                                                                                     | MECHANICAL OPTIONS        | OTHER OPTIONAL FEATURES                                                          | OHMIC VALUE | PACKAGING        |
|                                                                                                                                                                                                                                                           | 0. Continuous<br>2. Stops | 0. Standard (end taps)<br>1. Center tap (within 5 $^\circ$ 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 |                    |                    |             |                  |
|-------------------------------|--------------------|--------------------|-------------|------------------|
| 132                           | 2                  | 1                  | 103         | B10              |
| MODEL                         | MECHANICAL OPTIONS | ELECTRICAL OPTIONS | OHMIC VALUE | PACKAGING        |
|                               | 2: With stops      | 1: With center tap | 103: 10K    | Box of 10 pieces |



**1 5/16" (33.3 mm) Low Cost Industrial Single Turn Vishay Spectrol Wirewound, Bushing Mount Type**

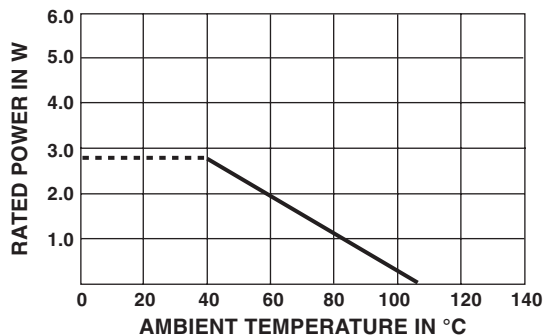
**DIMENSIONS** in inches (millimeters)



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

| MECHANICAL SPECIFICATIONS |                                                  |                                              |
|---------------------------|--------------------------------------------------|----------------------------------------------|
| PARAMETER                 |                                                  |                                              |
| Rotation                  | 360° (continuous) or 340° ± 5° (stops)           |                                              |
| Bearing Type              | Sleeve                                           |                                              |
| Torque (Maximums)         | <b>STARTING</b><br>1.0 oz. - in (72 g - cm)      | <b>RUNNING</b><br>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**



**RESISTANCE ELEMENT DATA**

| RESISTANCE VALUES (Ω) | RESOLUTION (%) | OHMS PER TURN | MAXIMUM CURRENT AT 40 °C AMBIENT (mA) | MAXIMUM VOLTAGE ACROSS COIL (V) | WIRE TEMP. COEF. (ppm/°C) |
|-----------------------|----------------|---------------|---------------------------------------|---------------------------------|---------------------------|
| 5                     | 0.419          | 0.021         | 742                                   | 3.71                            | 800                       |
| 10                    | 0.327          | 0.032         | 524                                   | 5.24                            | 800                       |
| 20                    | 0.280          | 0.056         | 371                                   | 7.42                            | 800                       |
| 50                    | 0.290          | 0.145         | 234                                   | 11.7                            | 20                        |
| 100                   | 0.251          | 0.251         | 166                                   | 16.6                            | 20                        |
| 200                   | 0.212          | 0.424         | 122                                   | 24.4                            | 20                        |
| 500                   | 0.161          | 0.806         | 74.2                                  | 37.1                            | 20                        |
| 1K                    | 0.150          | 1.50          | 52.4                                  | 52.4                            | 20                        |
| 2K                    | 0.132          | 2.64          | 37.1                                  | 74.2                            | 20                        |
| 5K                    | 0.107          | 5.34          | 23.4                                  | 117                             | 20                        |
| 10K                   | 0.080          | 7.98          | 16.6                                  | 166                             | 20                        |
| 20K                   | 0.067          | 13.4          | 12.2                                  | 244                             | 20                        |
| 35K                   | 0.057          | 20.0          | 8.88                                  | 311                             | 20                        |

| 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-12934 |



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