

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



## FEATURES

- Suitable model for all industrial applications
- Center tap available
- Continuous rotation and mechanical stops both standard
- Large electrical angle:  $352^\circ \pm 2^\circ$
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## QUICK REFERENCE DATA

|                  |                                   |
|------------------|-----------------------------------|
| Sensor type      | ROTATIONAL, single turn wirewound |
| Output type      | Output by turrets                 |
| Market appliance | Industrial                        |
| Dimensions       | 1 5/16" (33.3 mm)                 |

## ELECTRICAL SPECIFICATIONS

| PARAMETER                             | MIL-PRF-12934 TEST PROCEDURES APPLY                                              |                  |
|---------------------------------------|----------------------------------------------------------------------------------|------------------|
|                                       | STANDARD                                                                         | SPECIAL          |
| Total Resistance                      | 5 $\Omega$ to 20 k $\Omega$                                                      | to 35 k $\Omega$ |
| Tolerance: 50 $\Omega$ and Above      | $\pm 3\%$                                                                        | $\pm 1\%$        |
| Below 50 $\Omega$                     | $\pm 5\%$                                                                        | $\pm 3\%$        |
| Linearity (independent)               |                                                                                  | BEST PRACTICAL   |
| Total Resistance                      |                                                                                  |                  |
| 5 $\Omega$ to 20 $\Omega$             | $\pm 1.0\%$                                                                      | $\pm 0.75\%$     |
| 20 $\Omega$ to 200 $\Omega$           | $\pm 1.0\%$                                                                      | $\pm 0.50\%$     |
| 200 $\Omega$ and above                | $\pm 0.5\%$                                                                      | $\pm 0.25\%$     |
| 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                      |                                                                                  |                  |
| Continuous Rotation                   | $352^\circ \pm 2^\circ$                                                          |                  |
| Stops                                 | $340^\circ \pm 5^\circ$                                                          |                  |
| 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 W 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, Non-passivated |
| Mount Hardware             |                                                 |
| Lockwasher Internal Tooth: | Steel, nickel plated                            |
| Panel Nut:                 | Brass, nickel plated                            |

## ENVIRONMENTAL SPECIFICATIONS

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

## ORDERING INFORMATION/DESCRIPTION

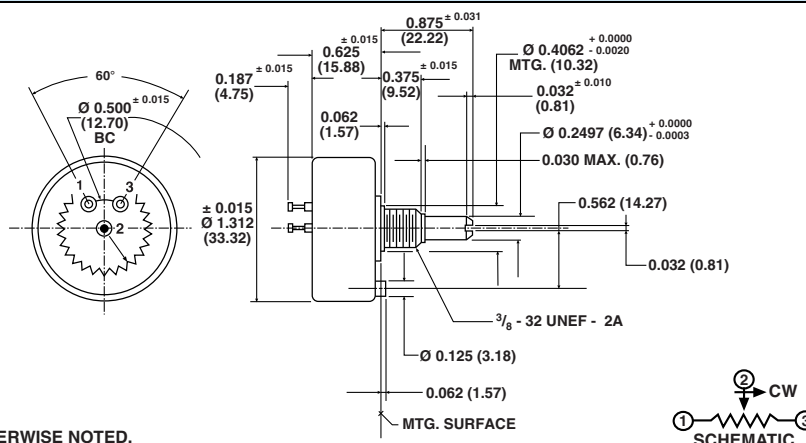
| 132                                                                                                                                                                                                                                                       | B             | 0                         | 0                                                                                | 20K         | BO10             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|----------------------------------------------------------------------------------|-------------|------------------|
| MODEL                                                                                                                                                                                                                                                     | BUSHING MOUNT | 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   | B     | 2                     | 1                     | 103         | B10              |
|-------|-------|-----------------------|-----------------------|-------------|------------------|
| MODEL | STYLE | MECHANICAL<br>OPTIONS | ELECTRICAL<br>OPTIONS | OHMIC VALUE | PACKAGING        |
|       |       | 2: With stops         | 1: With center tap    | 103: 10K    | Box of 10 pieces |

**DIMENSIONS** in inches (millimeters)

**MODEL 132B/132-...**

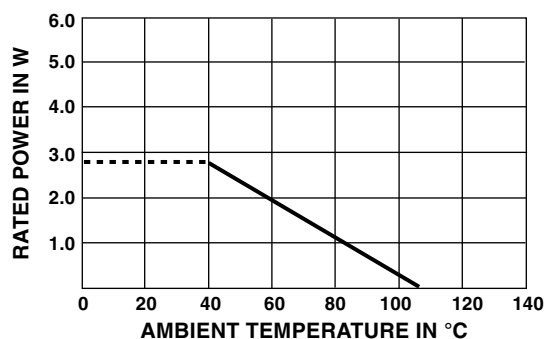


**TOLERANCES: UNLESS OTHERWISE NOTED.**  
**DECIMALS + 0.005 ANGLES + 2°**

## MECHANICAL SPECIFICATIONS

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



## 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.<br>Example of a marking for a standard part: 132-0-0-103 |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## RESISTANCE ELEMENT DATA

| RESISTANCE<br>VALUES<br>( $\Omega$ ) | RESO-<br>LUTION<br>(%) | OHMS<br>PER<br>TURN | MAXIMUM<br>CURRENT<br>AT 40 °C<br>AMBIENT<br>(mA) | MAXIMUM<br>VOLTAGE<br>ACROSS<br>COIL<br>(V) | WIRE<br>TEMP.<br>COEF.<br>(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                                 |



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