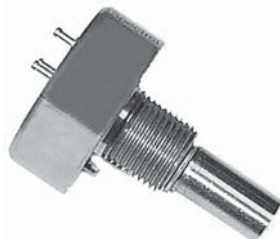


## 7/8" (22.2 mm) Single Turn Wirewound, Precision Potentiometer



### FEATURES

- Rugged, high-quality, all metal housing
- Short length behind panel 11/32" (8.76 mm)
- Ohmic value range: 5  $\Omega$  to 40 k $\Omega$
- Extra taps available
- Bushing and servo mount types
- 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       | 7/8" (22.2 mm)                    |

### ELECTRICAL SPECIFICATIONS

| PARAMETER                                                                                                                           |                                                                                 |                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Total Resistance<br>Standard Range                                                                                                  | 5 $\Omega$ to 20 k $\Omega$ - special to 40 k $\Omega$                          |                                                                       |
| Tolerance<br>50 $\Omega$ and Above:<br>Below 50 $\Omega$                                                                            | <b>STANDARD</b><br>$\pm 3\%$<br>$\pm 5\%$                                       | <b>SPECIAL</b><br>$\pm 1\%$<br>$\pm 3\%$                              |
| Linearity (independent)<br>Total Resistance<br>5 $\Omega$ to 100 $\Omega$<br>100 $\Omega$ to 500 $\Omega$<br>500 $\Omega$ 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>$\pm 0.35\%$ |
| Noise                                                                                                                               | 100 $\Omega$ ENR                                                                |                                                                       |
| Power Rating (at 40 °C ambient)                                                                                                     | 2 W<br>derated to zero at 125 °C                                                |                                                                       |
| Electrical Angle                                                                                                                    | 340° $\pm$ 2°                                                                   |                                                                       |
| Insulation Resistance                                                                                                               | 1000 M $\Omega$ minimum 500 V <sub>DC</sub>                                     |                                                                       |
| Dielectric Strength                                                                                                                 | 1000 V <sub>RMS</sub> , 60 Hz                                                   |                                                                       |
| Absolute Minimum Resistance                                                                                                         | Not to exceed linearity times total resistance<br>or 0.5 W whichever is greater |                                                                       |
| Minimum Voltage                                                                                                                     | 0.5 % max.                                                                      |                                                                       |
| Temperature Coefficient of Resistance                                                                                               | Refer to standard resistance element data                                       |                                                                       |

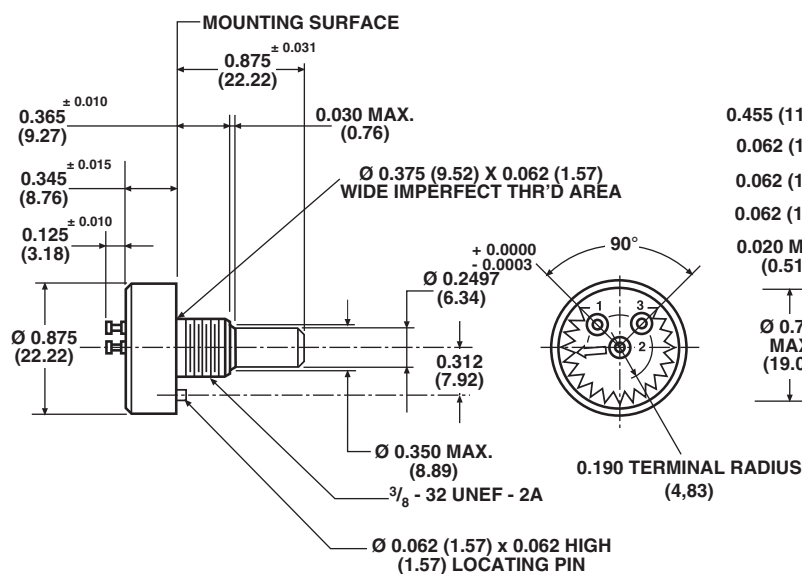
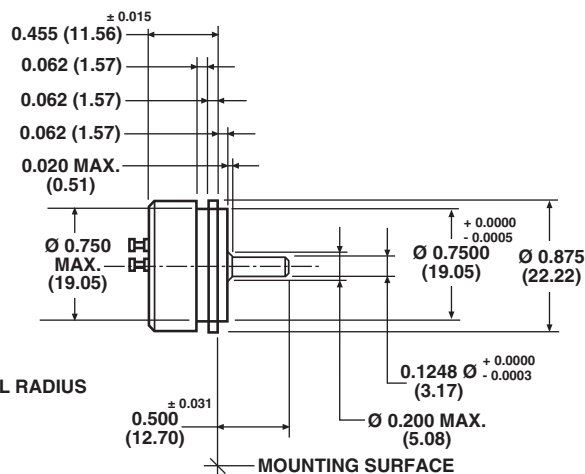
### ORDERING INFORMATION

|       |   |   |                        |   |                                                                                                                           |   |  |                 |  |  |
|-------|---|---|------------------------|---|---------------------------------------------------------------------------------------------------------------------------|---|--|-----------------|--|--|
| 1     | 5 | 2 | B                      | 1 | 0                                                                                                                         | 3 |  |                 |  |  |
| MODEL |   |   | STYLE                  |   | OHMIC VALUE                                                                                                               |   |  | SPECIAL REQUEST |  |  |
| 152   |   |   | B: bushing<br>S: servo |   | 470 = 47 $\Omega$<br>222 = 2.200 $\Omega$<br>103 = 10 k $\Omega$<br>For ohmic value range see<br>electrical specification |   |  | xxxx            |  |  |

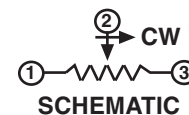
### PART NUMBER DESCRIPTION (for information only)

|       |              |       |             |         |
|-------|--------------|-------|-------------|---------|
| 152-  | 1            | 1     | 103         | xxxx    |
| MODEL | STYLE        | GANGS | OHMIC VALUE | SPECIAL |
|       | B: 1<br>S: 2 |       |             |         |


**DIMENSIONS** in inches (millimeters)

**BUSHING MOUNT TYPE: 152B/152-1...**

**SERVO MOUNT TYPE: 152S/152-2...**


TOLERANCES: UNLESS OTHERWISE NOTED.  
DECIMALS  $\pm 0.005$  ANGLES  $\pm 2^\circ$



| MECHANICAL SPECIFICATIONS     |                                                            |                              |
|-------------------------------|------------------------------------------------------------|------------------------------|
| PARAMETER                     |                                                            |                              |
| Rotation                      | 360° continuous                                            |                              |
| Bearing Type                  | Servo mount: Ball bearing<br>Bushing mount: Sleeve bearing |                              |
| Torque (maximums)             | <b>STARTING</b>                                            | <b>RUNNING</b>               |
| Servo                         | 0.25 oz. - in (18.00 g - cm)                               | 0.15 oz. - in (10.80 g - cm) |
| Bushing                       | 0.30 oz. - in (21.60 g - cm)                               | 0.25 oz. - in (18.00 g - cm) |
| Mechanical Runouts (maximums) | <b>BUSHING</b>                                             | <b>SERVO</b>                 |
| Shaft Runout                  | 0.002" (0.05 cm)                                           | 0.002" (0.05 cm)             |
| Pilot Dia. Runout             | -                                                          | 0.002" (0.05 cm)             |
| Lateral Runout                | 0.005" (0.13 cm)                                           | 0.002" (0.05 cm)             |
| Shaft End Play                | 0.006" (0.15 cm)                                           | 0.005" (0.13 cm)             |
| Shaft Radial Play             | 0.003" (0.08 cm)                                           | 0.002" (0.05 cm)             |
| Weight                        | 0.5 oz. maximum (14.18 g)                                  |                              |



### MATERIAL SPECIFICATIONS

|                                                                    |                                                 |
|--------------------------------------------------------------------|-------------------------------------------------|
| Housing                                                            | Aluminum, anodized                              |
| Shaft                                                              | Stainless steel, non-magnetic<br>non-passivated |
| Rear Lid                                                           | Molded glass filled phenolic                    |
| Terminals                                                          | Brass, plated for solderability                 |
| Bushing Mount Hardware<br>Lockwasher Internal Tooth:<br>Panel Nut: | Steel, nickel plated<br>Brass, nickel plated    |

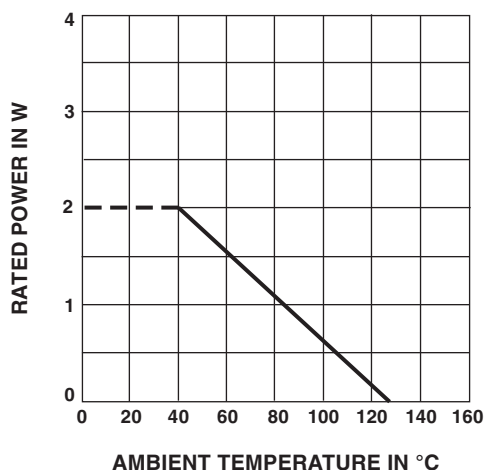
### ENVIRONMENTAL SPECIFICATIONS

|                                      |                                                       |
|--------------------------------------|-------------------------------------------------------|
| Vibration                            | 15 g thru 2000 Hz                                     |
| Shock                                | 50 g                                                  |
| Salt Spray                           | 96 h                                                  |
| Rotational Life Shaft<br>Revolution: | <b>Bushing</b><br>1 million <b>Servo</b><br>2 million |
| Load Life                            | 900 h                                                 |
| Operating Temperature Range          | -55 °C to +125 °C                                     |

#### Note

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

### POWER RATING CHART



### MARKING

|                            |                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit Identification</b> | Units shall be marked with Vishay Spectrol name, model number, resistance and tolerance, linearity terminal identification and data code.<br>Applicable test procedures: MIL-R-12934<br>Example of a marking for a standard part: 152-11202 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



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