

7/8" (22.2 mm) Precision Industrial Potentiometer, Bushing And Servo Mount Versions, Conductive Plastic


FEATURES

- High quality
- Rugged one piece metal housing
- Long rotational life
- Wide operating temperature range
- Linearities down to $\pm 0.25\%$ special
- Optional sealed construction (bushing mount only)
- 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 | 7/8" (22.2 mm) |

ELECTRICAL SPECIFICATIONS

| PARAMETER | MIL-PRF-39023 TEST PROCEDURES APPLY |
|---------------------------------------|---------------------------------------------|
| Resistance | 1 k Ω to 100 k Ω |
| Resistance Tolerance | $\pm 20\%$ |
| Special to | $\pm 10\%$ |
| Linearity | $\pm 2.0\%$ |
| Special to | $\pm 0.25\%$ |
| Temperature Coefficient of Resistance | ± 600 ppm/ $^{\circ}$ C |
| Power Rating | 1.0 W at 40 $^{\circ}$ C ambient |
| Derated to | 0 W at 125 $^{\circ}$ C |
| Electrical Angle | 340 $^{\circ}$ \pm 4 $^{\circ}$ |
| End Voltage | 0.5 % maximum |
| Dielectric Withstanding | 1000 V _{RMS} , 60 Hz |
| Insulation Resistance | 100 M Ω minimum, 500 V _{DC} |
| Output Smoothness | 0.1 % |

MECHANICAL SPECIFICATIONS

| PARAMETER | | |
|----------------------------------------|----------------------------------|------------------------------|
| Weight | 0.5 oz. maximum (14 g) | |
| Rotation | 360 $^{\circ}$ (continuous) | |
| Mount Bearing Type | BUSHING Sleeve bearing | SERVO Ball bearing |
| Operating Torque | | |
| Starting | 0.30 oz. - in (21.6 g - cm) | 0.25 oz. - in (18 g - cm) |
| Running | 0.25 oz. - in (18 g - cm) | 0.15 oz. - in (10.8 g - cm) |
| Mechanical Tolerance (in/mm) (maximum) | | |
| Shaft Runout (TIR) | 0.002" (0.05 mm) | 0.002" (0.05 mm) |
| Pilot Dia Runout (TIR) | - | 0.002" (0.05 mm) |
| Lateral Runout (TIR) | 0.005" (0.13 mm) | 0.002" (0.05 mm) |
| Shaft End Play | 0.006" (0.15 mm) | 0.005" (0.13 mm) |
| Shaft Radial Play | 0.003" (0.08 mm) | 0.002" (0.05 mm) |

ORDERING INFORMATION/DESCRIPTION

| 157 | B | 50K | 20 % | C | BO10 |
|-------|----------------------------------------|-------------|--------------------------|-----------------|------------------|
| MODEL | MOUNTING | OHMIC VALUE | TOLERANCE ON OHMIC VALUE | LINEARITY | PACKAGING |
| | B = Bushing S = Servo | | | C: $\pm 0.25\%$ | Box of 10 pieces |

SAP PART NUMBERING GUIDELINES

| 157 | S | 502 | M | X | B10 |
|-------|-------|-------------|--------------------------|-----------|------------------|
| MODEL | STYLE | OHMIC VALUE | TOLERANCE ON OHMIC VALUE | LINEARITY | PACKAGING |
| | | 502 = 5K | M: ± 20 % | X: ± 2 % | Box of 10 pieces |

DIMENSIONS in inches (millimeters)



MATERIAL SPECIFICATIONS

| | |
|------------------------|-------------------------------------------------|
| Housing/Bushing | Aluminum, anodized |
| Rear Lid | Ceramic |
| Shaft | Stainless steel |
| Terminals | Solderable |
| Bushing Mount Hardware | Lockwasher, internal tooth steel, nickel plated |
| Panel Nut | Brass, nickel plated |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|--------------------|-----------------------------------------------|----------------------------------------------|
| Temperature | - 55 °C + 125 °C | |
| Rotational Life | BUSHING 5 million shaft revolutions | SERVO 10 million shaft revolutions |
| Moisture Resistant | Yes | |
| Vibration | 15 g 10 to 2000 Hz | |
| Shock | 50 g | |
| Salt Spray | 96 h | |
| Load Life | 900 h | |



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