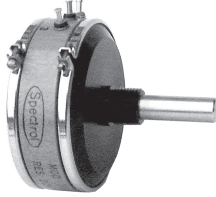


1 3/4" (44.5 mm) Single Turn Wirewound Precision Potentiometer



FEATURES

- Large range of ohmic values: 5 Ω to 65 kΩ
- Screw, servo or bushing mount types available
- Up to 6 sections on the same shaft
- Extra taps upon request



| ELECTRICAL SPECIFICATIONS | | |
|--|--|---|
| PARAMETER | | |
| Total Resistance Tolerance: 50 Ω and above Below 50 Ω | STANDARD 5 Ω to 50 kΩ ± 3 % ± 5 % | SPECIAL 65 kΩ ± 1 % ± 3 % |
| Absolute Minimum Resistance | Linearity x total resistance or 0.5 Ω, whichever is greater | |
| End Voltage | Linearity x total applied voltage for total resistance above 20 Ω, 2.0 % of total applied voltage for 20 Ω and below | |
| Linearity (Independent) 5 Ω to 50 Ω 50 Ω to 500 Ω 500 Ω to 2 kΩ 2 kΩ and above | STANDARD ± 1.00 % ± 0.50 % ± 0.25 % ± 0.25 % | BEST PRACTICAL ± 0.50 % ± 0.35 % ± 0.20 % ± 0.15 % |
| Noise | 100 Ω ENR | |
| Electrical Angle | 350° ± 2° | |
| Power Rating: Section 1 : 3.5 W Additional Sections | 70 °C ambient derated to zero at 125 °C 75 % of the rating of section 1 (2.6 W at 70 °C) | |
| Insulation Resistance | 1000 MΩ minimum, 500 V _{DC} | |
| Dielectric Strength | 1000 V _{RMS} , 60 Hz | |
| Taps (Extra) | From 1 up to 19 (max.) | |
| Phasing (CCW End Points) | Additional sections phased to section 1 within ± 1° | |

| ORDERING INFORMATION/DESCRIPTION | | | | |
|--|---|-----------------------|-------------|----------------|
| 202 | C | 1 | 50K | BO1 |
| MODEL | MOUNTING TYPE | NUMBER OF SECTIONS | OHMIC VALUE | PACKAGING |
| | B: Bushing S: Servo C: Screw | From 1 up to 6 (Max.) | | Box of 1 piece |
| Other characteristics will be standard as described on this data sheet. If special characteristics are required, such as: special linearity tolerance, special resistance tolerance, extra taps, non-linear functions, etc., please state these on your order and allow additional lead time for delivery. | | | | |

| SAP PART NUMBERING GUIDELINES | | | | |
|-------------------------------|---------------|--------------------|-------------|----------------|
| 202 | S | 1 | 503 | BO1 |
| MODEL | MOUNTING TYPE | NUMBER OF SECTIONS | OHMIC VALUE | PACKAGING |
| | Servo | | 503 = 50K | Box of 1 piece |

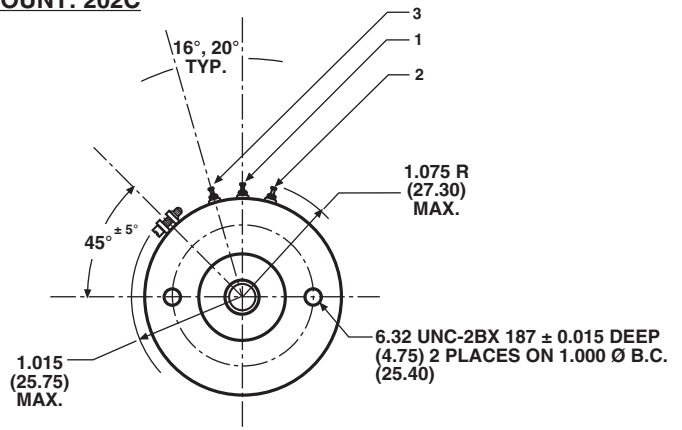
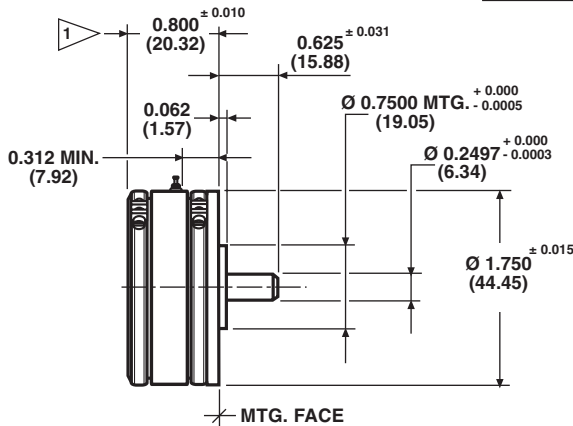


1 3/4" (44.5 mm) Single Turn Wirewound Precision Potentiometer

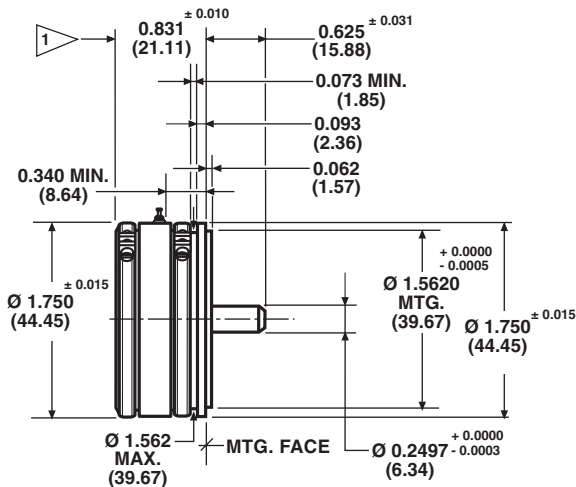
Vishay Spectrol

DIMENSIONS in inches (millimeters)

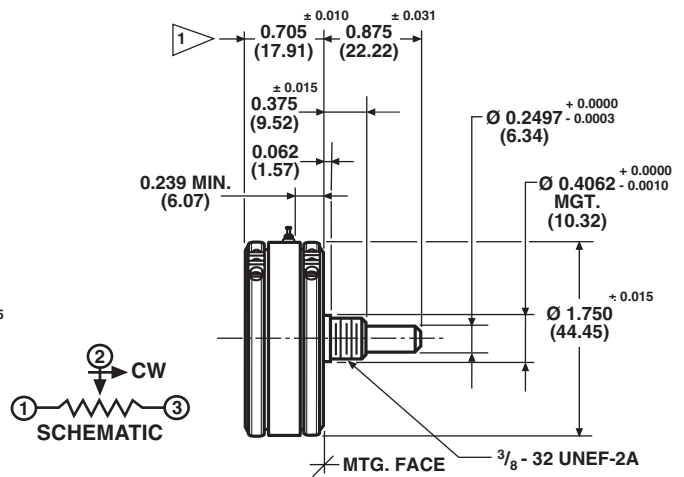
SCREW MOUNT: 202C



SERVO MOUNT: 202S



BUSHING MOUNT: 202B



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

1 ADD 0.500 ± 0.002 FOR EACH ADDITIONAL SECTION (12.70)

| MECHANICAL SPECIFICATIONS | | |
|---|--|--|
| PARAMETER | | |
| Mechanical Rotation | 360° (continuous) | |
| Bearing Type | Screw and servo mount: Ball bearing Bushing mount: Sleeve bearing | |
| Ganging | 6 sections maximum, Terminal alignment, added sections, within ± 10° of section 1 Terminals | |
| Torque (Maximums) 1 Section Servo and Screw Types Bushing, 1 Section Each Additional Section | STARTING 0.7 oz. - in (50.40 g - cm) 1.0 oz. - in (72.00 g - cm) 0.4 oz. - in (28.80 g - cm) | RUNNING 0.4 oz. - in (28.80 g - cm) 0.7 oz. - in (50.40 g - cm) 0.3 oz. - in (21.60 g - cm) |
| Mechanical Runouts (Maximums): Shaft Runout (TIR/in) Pilot Dia. Runout (TIR) Lateral Runout (TIR) Shaft End Play Shaft Radial Play | SERVO AND SCREW 0.002" (0.05 cm) 0.002" (0.05 cm) 0.003" (0.08 cm) 0.005" (0.13 cm) 0.002" (0.05 cm) | BUSHING 0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.005" (0.13 cm) 0.003" (0.08 cm) |
| Moment of Inertia | 1.0 g - cm ² per section maximum | |
| Weight (Maximums): Single Section Each Additional Section | 3.0 oz. (85.05 g) 1.0 oz. (28.35 g) | |

Model 202



Vishay Spectrol

1 3/4" (44.5 mm) Single Turn Wirewound
Precision Potentiometer

| MATERIAL SPECIFICATIONS | |
|--|--|
| Housing and Lids | Aluminum, anodized |
| Shaft And Clamp Rings | Stainless steel, non-magnetic non-passivated |
| Terminals | Brass, plated for solderability |
| Bushing Mount Hardware Lockwasher Internal Tooth: Panel Nut: | Steel, nickel plated Brass, nickel plated |

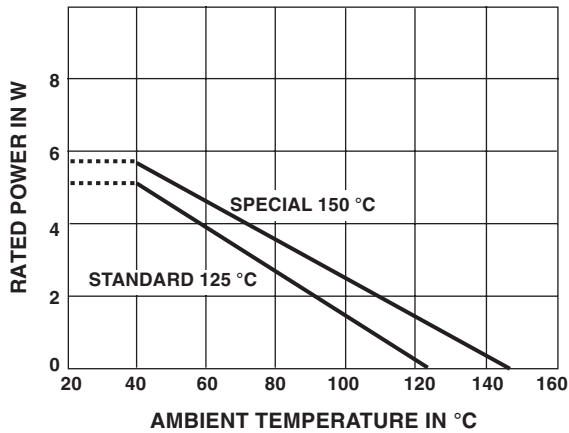
| MARKING | |
|---------------------|--|
| Unit Identification | Units shall be marked with Vishay Spectrol name, model number and data code on each section, resistance, resistance tolerance, linearity and terminal identification |

| ENVIRONMENTAL SPECIFICATIONS | |
|------------------------------|-----------------------------|
| Vibration | 15 g thru 2000 Hz |
| Shock | 50 g |
| Salt Spray | 96 h |
| Rotational Life | 1 million shaft revolutions |
| Load Life | 900 h |
| Operating Temperature Range | - 55 °C to + 125 °C |

POWER RATING CHART

(Ratings for cup No.1.

Additional cups 75 % of values shown)



| RESISTANCE ELEMENT DATA | | | | | |
|--------------------------------|----------------|---------------|---------------------------------------|---------------------------------|----------------------|
| STANDARD RESISTANCE VALUES (Ω) | RESOLUTION (%) | OHMS PER TURN | MAXIMUM CURRENT AT 70 °C AMBIENT (mA) | MAXIMUM VOLTAGE ACROSS COIL (V) | TEMP. COEF. (ppm/°C) |
| 5 | 0.320 | 0.016 | 835 | 4.19 | 800 |
| 10 | 0.240 | 0.024 | 591 | 5.92 | 800 |
| 20 | 0.190 | 0.038 | 418 | 8.37 | 800 |
| 50 | 0.212 | 0.106 | 264 | 13.3 | 20 |
| 100 | 0.181 | 0.181 | 187 | 18.7 | 20 |
| 200 | 0.150 | 0.300 | 133 | 26.3 | 20 |
| 500 | 0.115 | 0.575 | 83.4 | 42.0 | 20 |
| 1K | 0.103 | 1.03 | 59.1 | 59.2 | 20 |
| 2K | 0.094 | 1.89 | 41.8 | 83.7 | 20 |
| 5K | 0.068 | 3.42 | 26.4 | 133 | 20 |
| 10K | 0.059 | 5.91 | 18.7 | 187 | 20 |
| 20K | 0.048 | 9.52 | 13.2 | 265 | 20 |
| 50K | 0.044 | 22.0 | 8.37 | 422 | 20 |



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