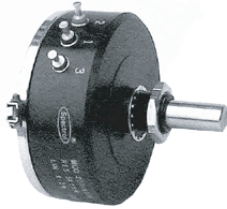


1 3/4" (44.5 mm) Single Turn Conductive Plastic Precision Potentiometer



FEATURES

- Rotational life exceeds 20 million shaft revolutions
- Virtually infinite resolution
- Designed for high reliability applications
- Co-molded track and multi-finger wiper provide low noise signal
- Bushing or servo types available up to 6 sections
- Ohmic value range: 1 kΩ to 50 kΩ
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

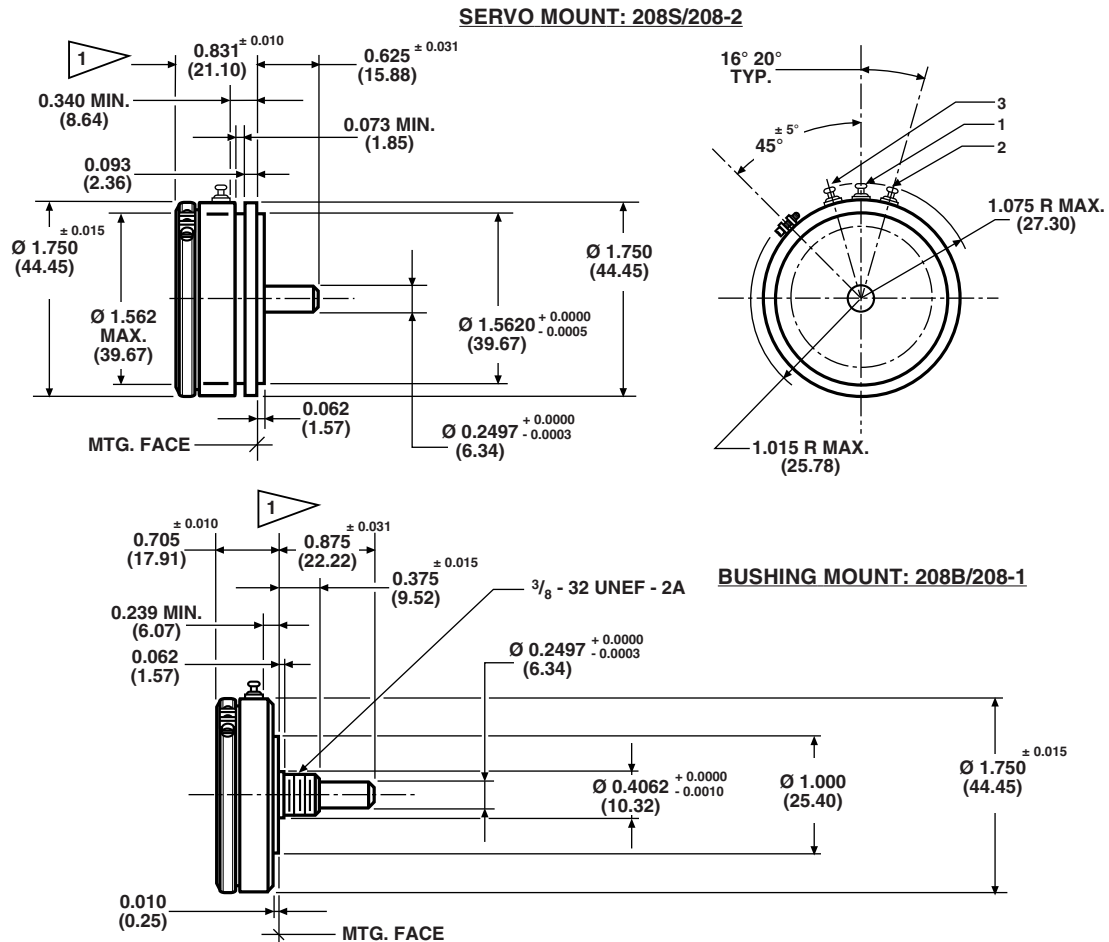
| QUICK REFERENCE DATA | |
|----------------------|--------------------------------|
| Sensor type | ROTATIONAL, conductive plastic |
| Output type | Output by turrets |
| Market appliance | Professional |
| Dimensions | 1 3/4" (44.5 mm) |

| ELECTRICAL SPECIFICATIONS | | |
|--|--|--------------------|
| PARAMETER | STANDARD | SPECIAL |
| Total resistance tolerance | 1 kΩ to 50 kΩ ± 10 % | - ± 5 % |
| Linearity (independent) | STANDARD ± 0.3 % | SPECIAL ± 0.1 % |
| Electrical angle | 350° ± 3° | |
| Power rating: Section 1: Additional sections | 1.75 W at 70 °C ambient derated to zero at 125 °C 75 % of the rating of section 1 | |
| Output smoothness | 0.1 % maximum | |
| Insulation resistance | 1000 MΩ minimum, 500 V _{DC} | |
| Dielectric strength | 1000 V _{RMS} , 60 Hz | |
| Taps (extra) | Extra taps available as special | |
| Phasing | Points at which output ratio is 0.5 aligned ± 1° (ref. to section 1) | |
| Temperature coefficient of resistance | ± 600 ppm/°C maximum | |

| ORDERING INFORMATION | | | | | | | | | | | | | | |
|----------------------|---|---|------------------------|---|--------|---|--|---|--|---|-----------------|---|---|---|
| 2 | 0 | 8 | B | 1 | 2 | 0 | 3 | 2 | 0 | 3 | X | X | X | X |
| MODEL | | | STYLE | | GANGS | | OHMIC VALUE GANGS N° 1 | | OHMIC VALUE GANGS N° 2 | | SPECIAL REQUEST | | | |
| 208 | | | B: bushing S: servo | | 1 2 | | 470 = 47 Ω 222 = 2,200 Ω 103 = 10 kΩ For ohmic value range see electrical specification | | 470 = 47 Ω 222 = 2,200 Ω 103 = 10 kΩ For ohmic value range see electrical specification | | xxxx | | | |

| PART NUMBER DESCRIPTION (for information only) | | | | | |
|--|--------------|-------|------------------------|------------------------|---------|
| 208- | 2 | 1 | 502 | 203 | xxxx |
| MODEL | STYLE | GANGS | OHMIC VALUE GANGS N° 1 | OHMIC VALUE GANGS N° 2 | SPECIAL |
| | B: 1 S: 2 | | | | |

DIMENSIONS in inches (millimeters)



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

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



| MECHANICAL SPECIFICATIONS | | |
|--------------------------------|---|--|
| PARAMETER | | |
| Rotation | 360° continuous | |
| Bearing type | SERVO MOUNT Ball bearing | BUSHING MOUNT Sleeve bearing |
| Ganging | 6 sections maximum terminal alignment, added sections within ± 10° of section 1 terminals | |
| Torque (maximums) | STARTING | RUNNING |
| Servo section 1 | 0.7 oz. - in (50.40 g - cm) | 0.4 oz. - in (28.80 g - cm) |
| Bushing section 1 | 1.0 oz. - in (72.0 g - cm) | 0.7 oz. - in (50.40 g - cm) |
| Each additional section | 0.4 oz. - in (28.80 g - cm) | 0.3 oz. - in (21.60 g - cm) |
| Mechanical runouts (maximums): | SERVO | BUSHING |
| Shaft (TIR/in) | 0.002" (0.05 cm) | 0.002" (0.05 cm) |
| Pilot dia. (TIR) | 0.002" (0.05 cm) | 0.002" (0.05 cm) |
| Lateral (TIR) | 0.003" (0.08 cm) | 0.005" (0.13 cm) |
| Shaft end play | 0.005" (0.13 cm) | 0.005" (0.13 cm) |
| Shaft radial play | 0.002" (0.05 cm) | 0.003" (0.08 cm) |
| Moment of inertia | 1.0 g - cm ² per section maximum | |
| Weight: | | |
| Single section | 3.0 oz. (85.05 g) | |
| Each additional section | 1.0 oz. (28.35 g) | |

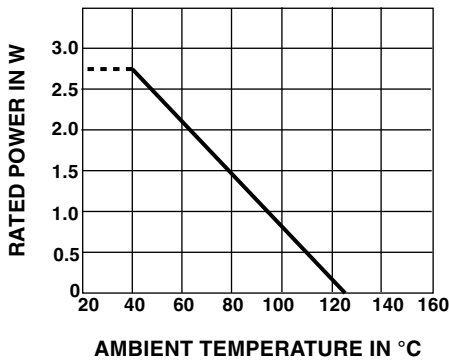


| MATERIAL SPECIFICATIONS | |
|--|--|
| Housing and lids | Aluminum, anodized |
| Shaft and clamp rings | Stainless steel, non-magnetic non-passivated |
| Terminals | Brass, plated for solderability |
| Bushing mount hardware Lockwasher internal tooth: Panel nut: | Steel, nickel plated Brass, nickel plated |

| MARKING | |
|---------------------|--|
| Unit identification | Units shall be marked with Spectrol name, model number and data code on each section, resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 208-12502 103 |

POWER RATING CHART

(Ratings for cup No. 1.
Additional cups 75 % of values shown)



| ENVIRONMENTAL SPECIFICATIONS | |
|------------------------------|---|
| Vibration | 15 g thru 2000 Hz |
| Shock | 50 g |
| Salt Spray | 96 h |
| Rotational life | Servo: 20 million shaft revolutions Bushing: 5 million shaft revolutions |
| 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.

| RESISTANCE ELEMENT DATA | |
|-------------------------|--------------------------------|
| RESISTANCE VALUES (Ω) | MAXIMUM VOLTAGE APPLICABLE (V) |
| 1K | 42 |
| 2K | 59 |
| 5K | 94 |
| 10K | 132 |
| 20K | 187 |
| 50K | 299 |



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