2" (50.8 mm) Single Turn Conductive Plastic Precision Potentiometer



FEATURES

- Bushing mount and servo mount types available
- Virtually infinite resolution
- Up to 6 sections available
- Rotational life exceeds 20 million shaft revolutions
- Co-molded track and multi-finger wiper provide low noise signal
- Large ohmic value range: 500 Ω to 100 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	2" (50.8 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER		
Total resistance standard range	500 Ω to 100 kΩ	
Tolerance	**STANDARD** ± 10 %	**SPECIAL** ± 5 %
Linearity (independent)	**STANDARD** ± 0.25 %	**SPECIAL** ± 0.05 %
Electrical angle	350° ± 2°	
Power rating Section 1 Additional sections	2.0 W at 70 °C ambient derated to zero at 125 °C (400 V_{DC} maximum) 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

3	0	8	S	1	2	0	3	2	0	3				

MODEL	STYLE	GANGS	OHMIC VALUE GANGS Nº 1	OHMIC VALUE GANGS Nº 2	SPECIAL REQUEST
308	**B**: bushing **S**: servo	**1** **2** **3** **4** **5** **6**	**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)

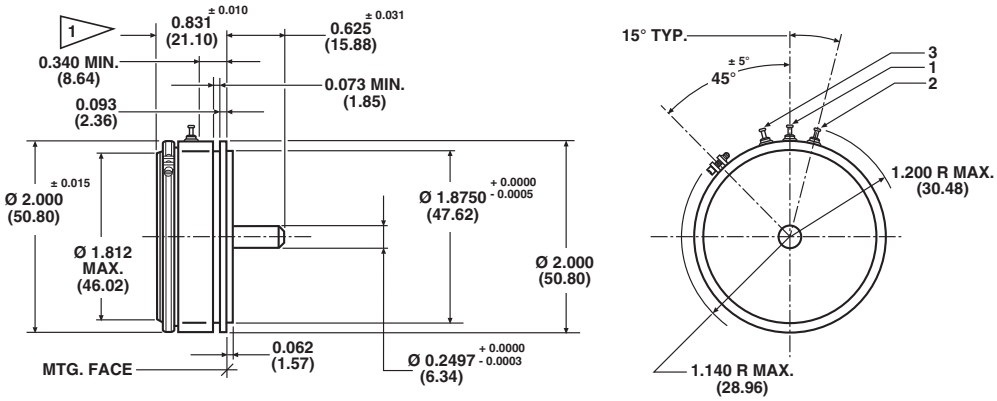
308-	1	2	103	203	xxxx
MODEL	STYLE	GANGS	OHMIC VALUE GANGS Nº 1	OHMIC VALUE GANGS Nº 2	SPECIAL
	B: 1 **S**: 2				

For technical questions, contact: sferprecisionpot@vishay.com

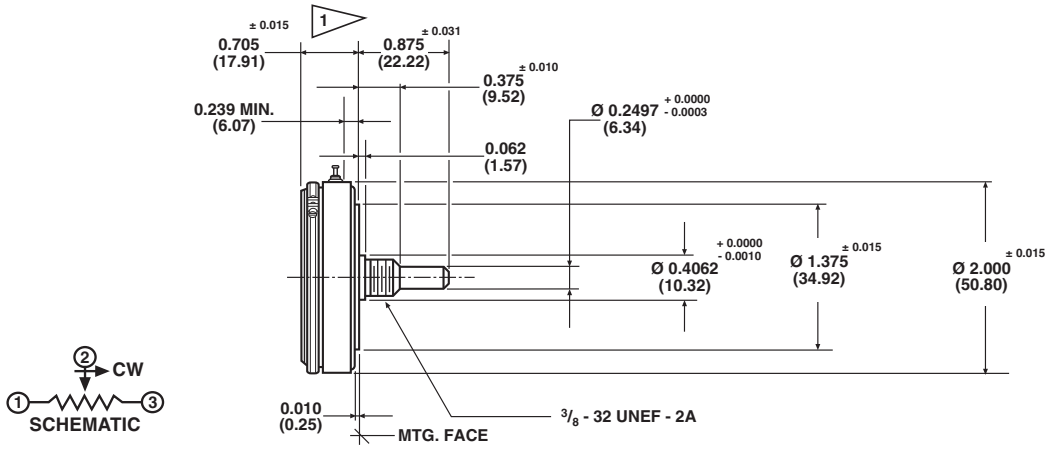
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DIMENSIONS in inches (millimeters)

SERVO MOUNT: 308S/308-2



BUSHING MOUNT: 308B/308-1



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: Bushing mount:	 Ball bearing Sleeve bearing	
Ganging	6 sections maximum. Terminal alignment, added sections, within ± 10° of section 1 terminals	
Torque (maximums) Mounting Servo, 1 section Bushing, 1 section Each additional section	**STARTING** 1.0 oz. - in (72.00 g - cm) 1.7 oz. - in (122.40 g - cm) 0.6 oz. - in (43.20 g - cm)	**RUNNING** 0.5 oz. - in (36.00 g - cm) 1.0 oz. - in (72.00 g - cm) 0.4 oz. - in (28.80 g - cm)
Runouts (maximums) Shaft (TIR/in) Pilot dia. (TIR) Lateral (TIR) Shaft end Play Shaft Radial play	**SERVO** 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	2.0 g - cm^2 per section maximum	
Weight Single section Each additional section	 4.0 oz. (127.57 g) 1.2 oz. (34.02 g)	

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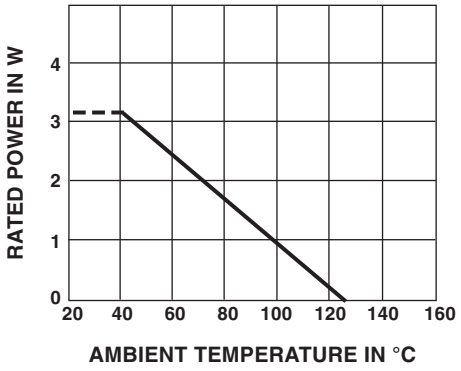
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MATERIAL SPECIFICATIONS	
Housing and lids	Aluminum, anodized
Shaft and clamp rings	Stainless steel, non-magnetic non-passivated
Terminals	Brass, gold plated for solderability
Bushing mount hardware Lockwasher internal tooth: Panel nut:	 Steel, nickel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

MARKING	
Unit identification	Units shall be marked with Spectrol name, model no, and data code, and on each section, resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 308-21503

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
Temperature range	-55 °C to +125 °C

Note

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

RESISITANCE ELEMENT DATA	
RESISTANCE VALUES (Ω)	**MAXIMUM VOLTAGE APPLICABLE (V)**
500	32
1K	45
2K	71
5K	100
10K	141
20K	224
50K	316
100K	350 (1)

Note

(1) Maximum voltage allowable

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