

## 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  $\Omega$  to 100 k $\Omega$
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

### ELECTRICAL SPECIFICATIONS

PARAMETER		
Total Resistance Standard Range	500 $\Omega$ to 100 k $\Omega$	
Tolerance	<b>STANDARD</b> $\pm 10\%$	<b>SPECIAL</b> $\pm 5\%$
Linearity (Independent)	<b>STANDARD</b> $\pm 0.25\%$	<b>SPECIAL</b> $\pm 0.05\%$
Electrical Angle	$350^\circ \pm 2^\circ$	
Power Rating Section 1 Additional Sections	2.0 W at 70 $^\circ\text{C}$ ambient derated to zero at 125 $^\circ\text{C}$ (400 $V_{DC}$ maximum) 75 % of the rating of section 1	
Output Smoothness	0.1 % maximum	
Insulation Resistance	1000 M $\Omega$ 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 $\pm 1^\circ$ (ref. to section 1)	
Temperature Coefficient of Resistance	$\pm 600$ ppm/ $^\circ\text{C}$ maximum	

### 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

### 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 $^\circ\text{C}$ to + 125 $^\circ\text{C}$

### ORDERING INFORMATION/DESCRIPTION

The Model 308 can be ordered from this data sheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

308	B	1	20K	B01
MODEL	MOUNTING	NUMBER OF SECTIONS	TOTAL RESISTANCE OF EACH SECTION	PACKAGING
	B: Bushing S: Servo	Up to 6	Beginning with the section nearest the mounting end	Box of 1 piece

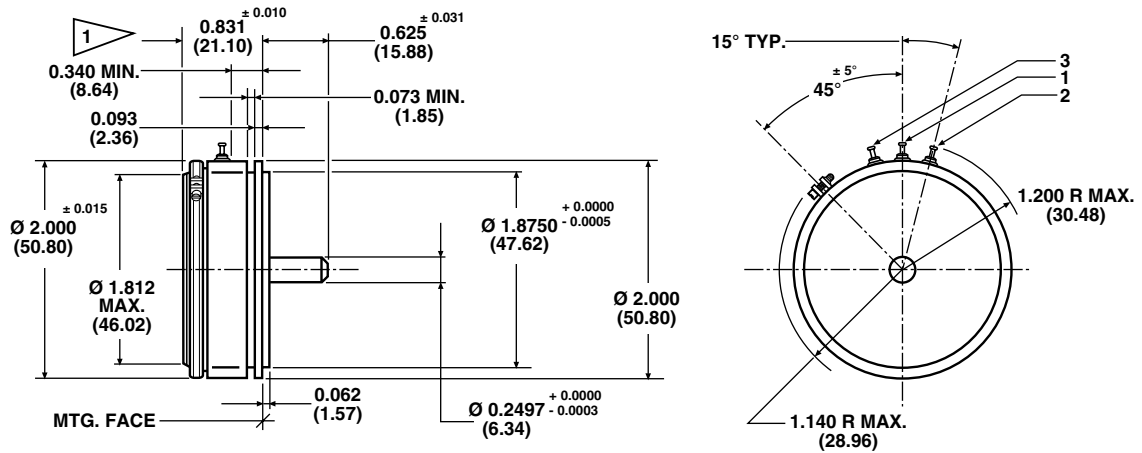
Other characteristics will be standard as described on this data sheet. If special characteristics are required, such as: special linearity tolerance, special resistance tolerance, extra taps, non-linear functions, etc., please state these on your order and allow additional lead time for delivery.

### SAP PART NUMBERING GUIDELINES

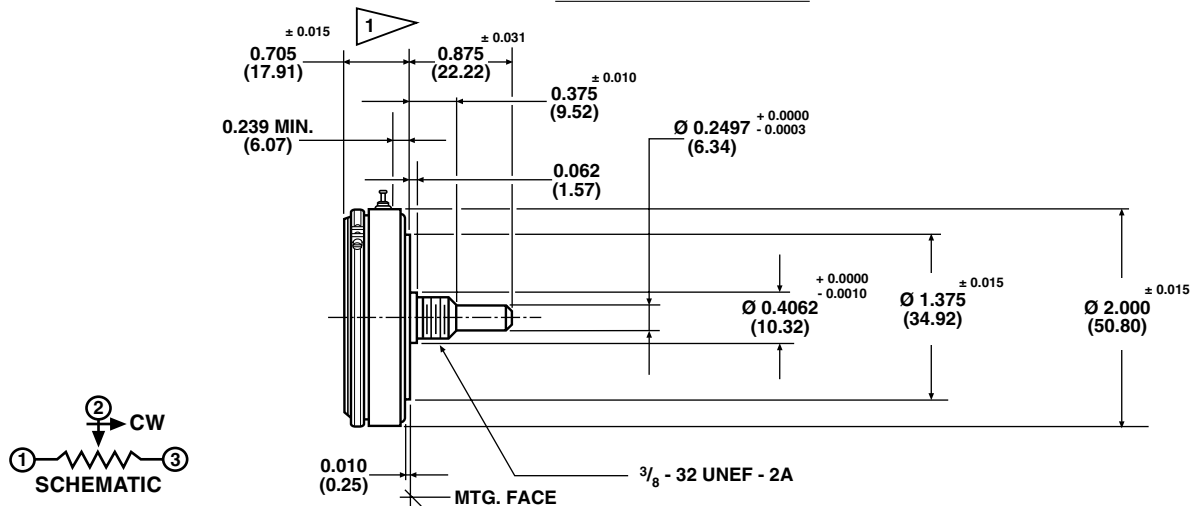
308	S	1	203	B01
MODEL	STYLE	GANG NUMBER	OHMIC VALUE GANG N° 1	PACKAGING
	B: Bushing S: Servo	From 1 up to 6	20K	

### DIMENSIONS in inches (millimeters)

#### SERVO MOUNT: 308 S



#### BUSHING MOUNT: 308 B

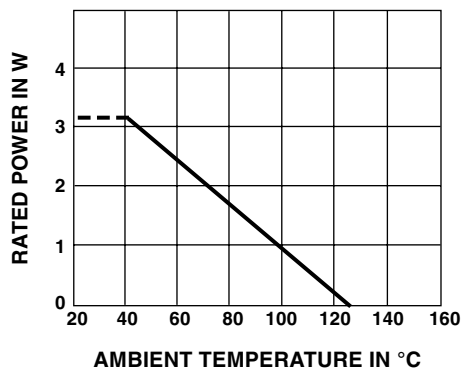


1 ADD 0.500 ± 0.002 (12.70) FOR EACH ADDITIONAL SECTION

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

### POWER RATING CHART

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



### RESISTANCE 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*

\* Maximum voltage allowable

# Model 308

Vishay Spectrol

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



## 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 $\pm 10^\circ$ of section 1 terminals	
Torque (Maximums) Mounting Servo, 1 Section Bushing, 1 Section Each Additional Section	<b>STARTING</b> 1.0 oz. - in (72.00 g - cm) 1.7 oz. - in (122.40 g - cm) 0.6 oz. - in (43.20 g - cm)	<b>RUNNING</b> 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	<b>SERVO</b> 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)	<b>BUSHING</b> 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 <sup>2</sup> per section maximum	
Weight Single Section Each Additional Section	4.0 oz. (127.57 g) 1.2 oz. (34.02 g)	

## MARKING

<b>Unit Identification</b>	Units shall be marked with Spectrol name, model no, and data code, and on each section, resistance, resistance tolerance, linearity and terminal identification
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### Disclaimer

All product specifications and data are subject to change without notice.

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