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Vishay Spectrol

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



QUICK REFERENCE DATA		
Sensor type	ROTATIONAL, conductive plastic	
Output type	Output by turrets	
Market appliance	Professional	
Dimensions	1 ¾" (44.5 mm)	

FEATURES

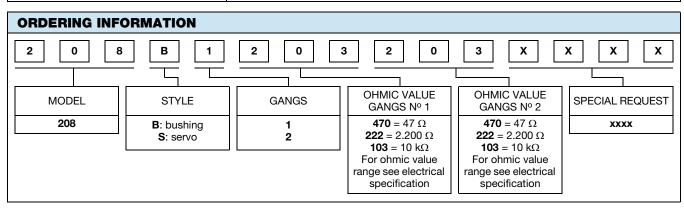
Rotational life exceeds 20 million shaft revolutions

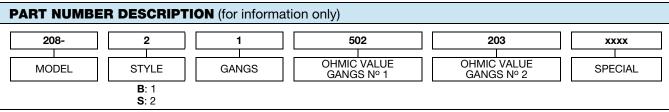


ROHS COMPLIANT

- · 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 k Ω to 50 k Ω
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

ELECTRICAL SPECIFICATIONS		
PARAMETER		
Total resistance tolerance	STANDARD 1 k Ω to 50 k Ω ± 10 %	SPECIAL - ± 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 % r	maximum
Insulation resistance	1000 M Ω 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

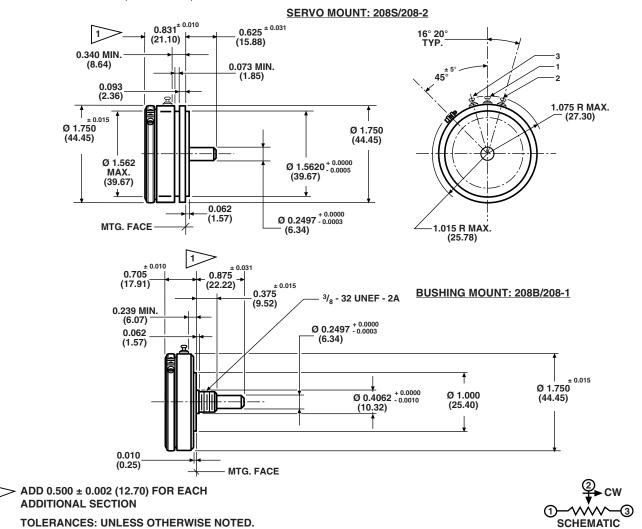






DIMENSIONS in inches (millimeters)

DECIMALS ± 0.005 ANGLES ± 2°



MECHANICAL SPECIFICATION	vs .	
PARAMETER		
Rotation	360° continuous	
Rearing type	SERVO MOUNT	BUSHING MOUNT
Bearing type	Ball bearing	Sleeve bearing
Ganging	6 sections maximum terminal alignment, added	
danging	sections within \pm 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 s	section maximum
Weight:		
Single section	3.0 oz. (85.05 g)	
Each additional section	1.0 oz. (28.35 g)	



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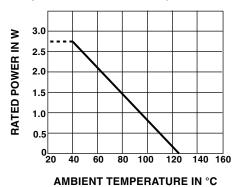
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MATERIAL SPECIFICATIONS		
Housing and lids	Aluminum, anodized	
Shaft and clamp rings	Stainless steel, non-magnetic non-passivated	
Terminals	Brass, plated for solderability	
Bushing mount hardware Lockwasher internal tooth: Panel nut:	Steel, nickel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