

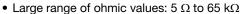
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Vishay Spectrol

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



FEATURES



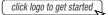


• Screw, servo or bushing mount types available

RoHS

- Up to 6 sections on the same shaft
- Extra taps upon request
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

DESIGN SUPPORT TOOLS



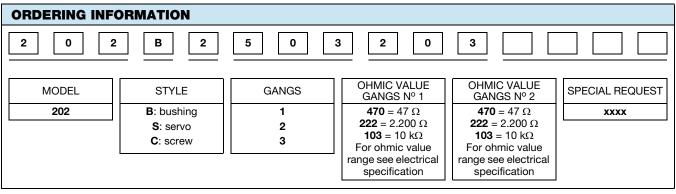


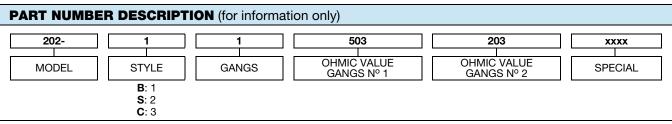
QUICK REFERENCE DATA		
Sensor type	ROTATIONAL, single turn wirewound	
Output type	Output by turrets	
Market appliance	Professional	
Dimensions	1 ¾" (44.5 mm)	

PARAMETER			
Total Resistance Tolerance: 50 Ω and above Below 50 Ω	STANDARD $5 \Omega \text{ to } 50 \text{ k}\Omega$ $\pm 3 \%$ $\pm 5 \%$	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) $5~\Omega~to~50~\Omega\\ 50~\Omega~to~500~\Omega\\ 50~\Omega~to~500~\Omega\\ 500~\Omega~to~2~k\Omega\\ 2~k\Omega~and~above$	\$TANDARD ± 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 M Ω minimum, 500 V $_{ m DC}$		
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°		

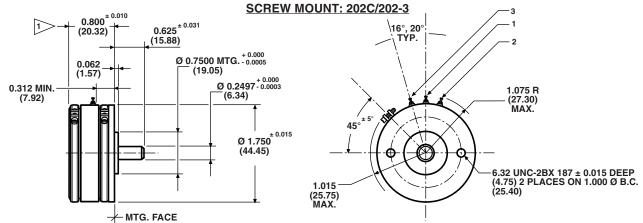
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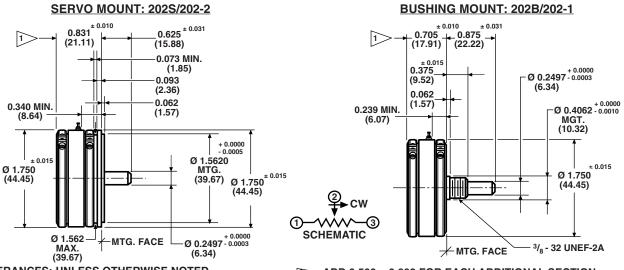
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DIMENSIONS in inches (millimeters)





TOLERANCES: UNLESS OTHERWISE NOTED. DECIMALS \pm 0.005 ANGLES \pm 2°

ADD 0.500 ± 0.002 FOR EACH ADDITIONAL SECTION (12.70)



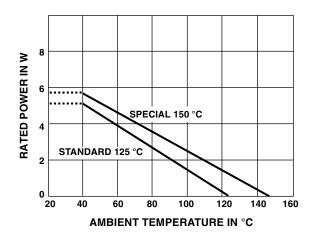
MECHANICAL SPECIFICATIONS					
PARAMETER					
Mechanical Rotation	360° (continuous)				
Bearing Type	Screw and servo mount: Ball bearing Bushing mount: Sleeve bearing				
Ganging	6 sections maximum, terminal alignment, added sections, within ± 10° of section 1 terminals				
Torque (maximums) 1 Section Servo and Screw Types Bushing, 1 Section Each Additional Section Mechanical Runouts (maximums): Shaft Runout (TIR/in) Pilot Dia. Runout (TIR) Lateral Runout (TIR) Shaft End Play Shaft Radial Play	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) 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)	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) BUSHING 0.002" (0.05 cm) 0.005" (0.13 cm) 0.005" (0.13 cm) 0.003" (0.08 cm)			
Moment of Inertia Weight (maximums): Single Section Each Additional Section	1.0 g - cm ² per section maximum 3.0 oz. (85.05 g) 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 Vishay 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: 202-22103 102

POWER RATING CHART

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



ENVIRONMENTAL SPECIFICATIONS		
15 g thru 2000 Hz		
50 <i>g</i>		
96 h		
1 million shaft revolutions		
900 h		
-55 °C to +125 °C		

Note

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

RESISTANCE ELEMENT DATA					
STANDARD RESISTANCE VALUES (\Omega)	RESO- LUTION (%)	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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Vishay

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