

1 13/16" (46 mm) Ten Turn Wirewound Upper Grade Precision Potentiometer



FEATURES

- Large range of ohmic values: 20 Ω to 200 k Ω
- Bushing mount, servo mount and screw mount versions
- Gangable up to 3 sections
- Extra taps available upon request

ELECTRICAL SPECIFICATIONS

PARAMETER		
Total Resistance Tolerance: 200 Ω and Above Below 200 Ω	STANDARD 20 Ω to 200 k Ω $\pm 3\%$ $\pm 5\%$	SPECIAL 500 k Ω $\pm 1\%$ $\pm 3\%$
Linearity (Independent) 20 Ω to 50 Ω 50 Ω to 200 Ω 200 Ω and Above	STANDARD $\pm 0.25\%$ $\pm 0.25\%$ $\pm 0.25\%$	SPECIAL $\pm 0.15\%$ $\pm 0.10\%$ $\pm 0.05\%$
Noise	100 Ω ENR	
Electrical Rotation	3600° + 4° - 0°	
Power Rating Section 1 Each Additional Sections:	5.00 W 70 °C ambient, derated to zero at 125 °C 75 % of the rating of section 1 (3.8 W at 70 °C)	
Insulation Resistance	1000 M Ω minimum, 500 V _{DC}	
Dielectric Strength	1000 V _{RMS} , 60 Hz	
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 and below	
Phasing (CCW End Points)	Additional sections phased to section 1 within $\pm 1^\circ$	
Taps (Extra)	Available as special, standard tolerance $\pm 1^\circ$	

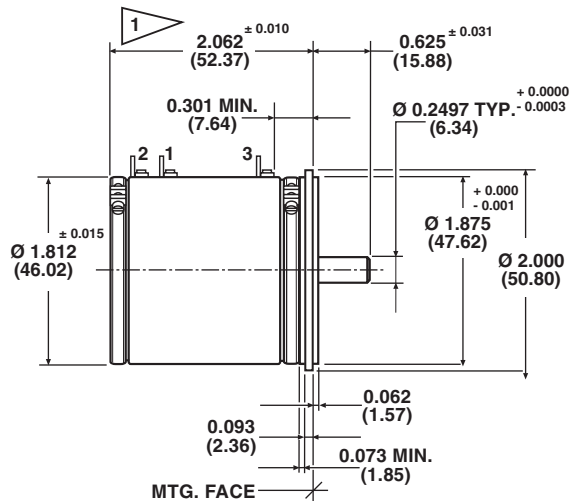
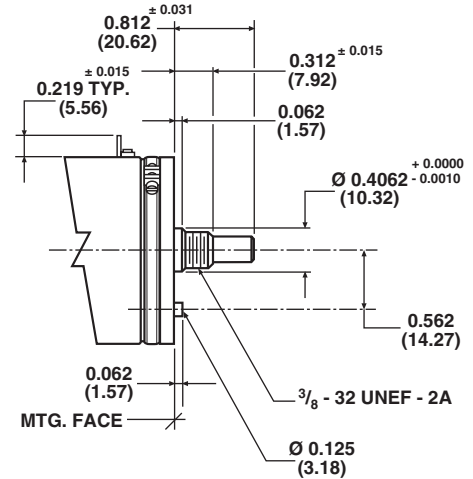
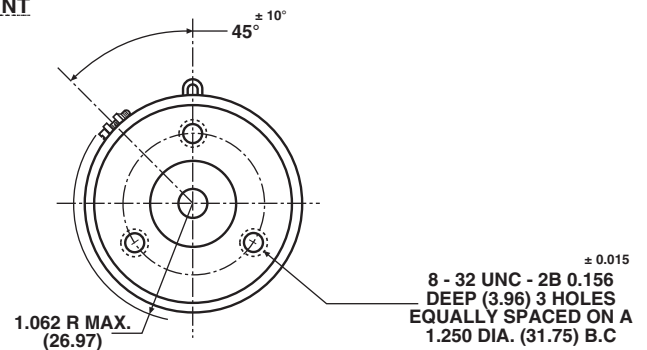
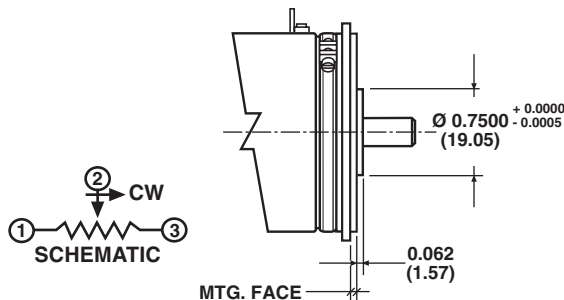
ORDERING INFORMATION/DESCRIPTION

Model 802 can be ordered from this data sheet with a variety of alternate characteristics, as shown above. For most rapid service on your order, please state:

802	S	1	10K	B01
MODEL	MOUNTING	NUMBER OF SECTIONS	RESISTANCE OF EACH SECTION	PACKAGING
	B: Bushing S: Servo C: Screw	From 1 up to 3 max.	Beginning with the section nearest the mounting end	Box of 1 piece

SAP PART NUMBERING GUIDELINES

802	S	1	103	B01
MODEL	STYLE	NUMBER OF SECTIONS	OHMIC VALUE OF SECTION N° 1	PACKAGING

**1 13/16" (46 mm) Ten Turn Wirewound
Upper Grade Precision Potentiometer****Vishay Spectrol****DIMENSIONS** in inches (millimeters)**SERVO MOUNT****BUSHING MOUNT****SCREW MOUNT****TOLERANCES: UNLESS OTHERWISE NOTED.**
DECIMALS ± 0.005 ANGLES ± 2°**1** ADD 1.770 ± 0.010 (44.96) FOR EACH
ADDITIONAL SECTION

MECHANICAL SPECIFICATIONS			
PARAMETER			
Rotation	3600° + 10° - 0°		
Bearing Type	SERVO Ball bearing	BUSHING Sleeve	SCREW Ball bearing
Torque (Maximums) Servo or Screw Section 1 Bushing Section 1 Each Additional Section	MAX STARTING 1.20 oz. - in (86.4 g - cm) 1.75 oz. - in (126.0 g - cm) 0.80 oz. - in (57.6 g - cm)		MAX RUNNING 0.80 oz. - in (57.6 g - cm) 1.25 oz. - in (90.0 g - cm) 0.60 oz. - in (43.2 g - cm)
Mechanical Runouts (Maximums): Shaft (TIR/in) Pilot Dia. Runout (TIR) Lateral Runout (TIR) Shaft End Play Shaft Radial Play	SERVO OR 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)		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)
Weight: Single Section Each Additional Section	5.5 oz. (156 g) 3.7 oz. (105 g)		
Stop Strength	1000 oz. - in, static (72 kg - cm)		
Ganging	3 sections maximum terminal alignment, added sections within ± 10° of section 1 terminals		
Moment of Inertia	15 g - cm ² per section maximum		

Model 802

Vishay Spectrol

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Upper Grade Precision Potentiometer



MATERIAL SPECIFICATIONS	
Housing	Glass filled thermoset plastic
Lids	Aluminum, anodized
Shaft	Stainless steel, non-magnetic, non-passivated
Terminals	Brass, plated for solderability
Clamp Ring	Stainless steel
Bushing Mount Hardware Lockwasher: Panel Nut:	Internal tooth steel, nickel plated Brass, nickel plated

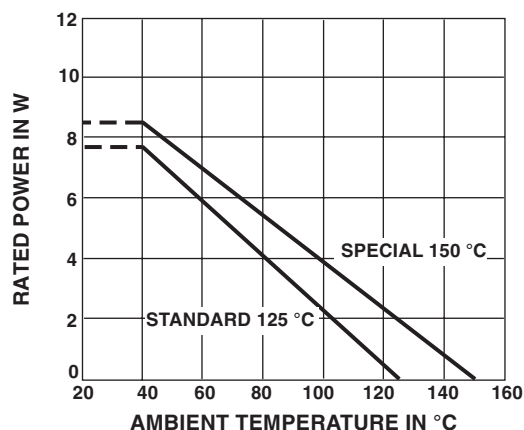
MARKING	
Unit Identification	Units shall be marked with Spectrol name and Model No, resistance and resistance tolerance, linearity, terminal identification, and date code

ENVIRONMENTAL SPECIFICATIONS	
Vibration	15 g thru 2000 CPS
Shock	50 g
Salt Spray	96 h
Rotational Life	2 million shaft revolutions
Load Life	900 h
Operating Temperature Range	- 55 °C to + 125 °C

POWER RATING CHART

(Ratings for cup N° 1.

Additional cups 75 % of values shown)



RESISTANCE ELEMENT DATA					
STANDARD RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT AT 70 °C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMP. COEF. (ppm/°C)
20	0.044	0.009	500	10.0	800
50	0.027	0.014	316	15.8	800
100	0.024	0.024	224	22.4	800
200	0.028	0.056	158	31.6	180
500	0.023	0.115	100	50.0	20
1K	0.018	0.182	70.7	70.7	20
2K	0.020	0.402	50.0	100	20
5K	0.015	0.754	31.6	158	20
10K	0.013	1.229	22.4	224	20
20K	0.010	1.970	15.8	316	20
50K	0.007	3.686	10.0	500	20
100K	0.007	6.507	7.07	707	20
200K	0.005	6.929	5.00	1000	20
500K	0.004	19.987	2.00	1000	20



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