## Model 860

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**Vishay Spectrol** 

# 1<sup>13</sup>/<sub>16</sub>" (46 mm) Ten Turn Wirewound Potentiometer, Bushing Mount



### FEATURES

- Gangable up to 2 sections
- Large range of ohmic values: 20  $\Omega$  to 200 k $\Omega$
- Extra taps available upon request
- · Ideally suits for all industry applications

QUICK REFERENCE DATA			
Sensor type	ROTATIONAL, multi turn wirewound		
Output type	Output by turrets		
Market appliance	Industrial		
Dimensions	1 <sup>13/</sup> 16" (46 mm)		

ELECTRICAL SPECIFICATIONS	5		
PARAMETER			
Total resistance Standard range Tolerance: 200 $\Omega$ and above Below 200 $\Omega$	20 Ω to 200 kΩ <b>STANDARD</b> ± 3 % ± 5 %	Special up to 500 kΩ <b>SPECIAL</b> ± 1 % ± 3 %	
Linearity (independent)	± 0.25 % standard		
20 $\Omega$ to 50 $\Omega$ 50 $\Omega$ to 200 $\Omega$ 200 $\Omega$ to 5 k $\Omega$ 5 k $\Omega$ and above	± 0.15 % ± 0.10 % ± 0.05 % ± 0.025 %		
Noise	100 Ω ENR		
Electrical angle	3600° + 4° - 0°		
Power rating	8.0 W at 40 °C derated to zero at 125 °C		
Insulation resistance	1000 M $\Omega$ minimum 500 V <sub>DC</sub>		
Dielectric strength	1000 V <sub>RMS</sub> , 60 Hz		
Absolute minimum resistance	Not to exceed linearity x total resistance or 1 $\Omega$ , whichever is greater		
End Voltage	0.5 % of total applied voltage maximum		
Phasing	CCW end points sect. 2 phased to sect 1 within 1°		
Taps (extra)	Available as special standard tolerance ± 1°		

ORDERING INFORMATION/DESIGNATION				
Model 860 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:				
860	В	1	20K	BO10
MODEL	BUSHING MOUNT	NUMBER OF SECTIONS	RESISTANCE OF EACH SECTION	PACKAGING
		From 1 up to 2 sections (maximum)	Beginning with the section nearest the mounting end	Box of 10 pieces

SAP PART NUMBE	ERING GUIDELINES			
860	В	1	203	B10
MODEL	STYLE	NUMBER OF SECTIONS	OHMIC VALUE OF SECTION Nº 1	PACKAGING

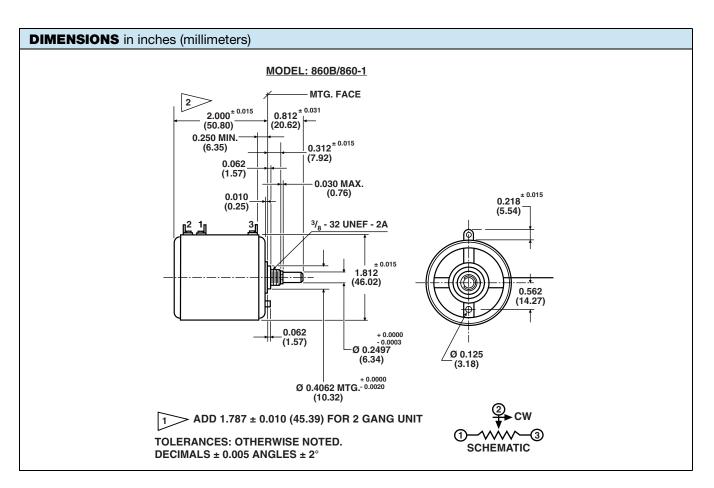
1 For technical questions, contact: <u>sferprecisionpot@vishay.com</u> Document Number: 57093

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MECHANICAL SPECIFICA	TIONS			
PARAMETER				
Rotation	3600° +	- 4° - 0°		
Bearing type	Sleeve	bearing		
Torque (maximums): Section 1 Section 2	<b>STARTING</b> 1.75 oz in (126.02 g - cm) 2.55 oz in (183.62 g - cm)	<b>RUNNING</b> 1.26 oz in (90.01 g - cm) 1.85 oz in (133.21 g - cm)		
Runouts (maximums) Shaft (TIR) Pilot dia (TIR) Lateral (TIR) Shaft end play Shaft radial play	0.002" (0 0.005" (0 0.002" min. 0.010" ma:	0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.002" min. 0.010" max. (0.05 cm to 0.25 cm) 0.003" max. (0.08 cm)		
Weight (maximums) Single section Additional section		4.5 oz. (127.58 g) 4.0 oz. (113.40 g)		
Stop strength	750 oz in (static) (54.01 kg - cm)			
Ganging	2 sections maximum ears of clamp band between sections positioned 45°, ± 10° CCW from terminal center line			
Moment inertia	15.0 g - cm <sup>2</sup> maximum			

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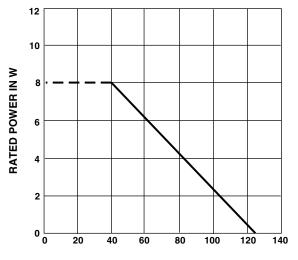
# Vishay Spectrol

MATERIAL SPECIFICATIONS			
Bushing	Aluminum, nickel plated		
Housing and front lid	Molded glass filled thermoset plastic		
Rear lid	Molded glass filled nylon		
Shaft	Stainless steel, non magnetic, non-passivated		
Terminals	Brass, plated for solderability		
Mounting hardware Lockwasher: Panel nut:	Internal tooth steel, nickel plated Brass, nickel plated		

ENVIRONMENTAL SPECIFICATIONS			
Vibration	10 <i>g</i> thru 500 CPS		
Shock	50 <i>g</i>		
Rotational life	500 000 shaft revolutions		
Load life	900 h		
Temperature range	- 55 °C to + 125 °C		
Salt spray	48 h		

# MARKING Unit identification Units will be marked with Vishay Spectrol name and model no, resistance and resistance tolerance, linearity, terminal identification, and date code. Example of a marking for a standard part: 860-11202

#### POWER RATING CHART



#### AMBIENT TEMPERATURE IN °C

RESISTANCE ELEMENT DATA					
STANDARD RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUMCURRENT AT 70 °C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMPERATURE COEFFICIENT (ppm/°C)
20	0.044	0.009	632	13	800
50	0.027	0.014	400	20	800
100	0.024	0.024	283	28	800
200	0.028	0.056	200	40	180
500	0.023	0.115	126	63	20
1K	0.018	0.182	89	89	20
2K	0.020	0.402	63	126	20
5K	0.015	0.754	40	200	20
10K	0.013	1.23	28	283	20
20K	0.010	1.97	20	400	20
50K	0.007	3.69	13	632	20
100K	0.007	6.51	8.9	894	20
200K	0.005	9.63	5.0	1000	20
500K	0.004	20.0	2.0	1000	20

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