

# 1 13/16" (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 13/16" (46 mm)

## ELECTRICAL SPECIFICATIONS

PARAMETER		
Total resistance	20 $\Omega$ to 200 k $\Omega$	Special up to 500 k $\Omega$
Standard range	<b>STANDARD</b>	<b>SPECIAL</b>
Tolerance:	$\pm 3\%$	$\pm 1\%$
200 $\Omega$ and above	$\pm 5\%$	$\pm 3\%$
Below 200 $\Omega$		
Linearity (independent)	$\pm 0.25\%$ standard	
20 $\Omega$ to 50 $\Omega$	$\pm 0.15\%$	
50 $\Omega$ to 200 $\Omega$	$\pm 0.10\%$	
200 $\Omega$ to 5 k $\Omega$	$\pm 0.05\%$	
5 k $\Omega$ and above	$\pm 0.025\%$	
Noise	100 $\Omega$ 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 $\pm 1^\circ$	

## ORDERING INFORMATION/DESIGNATION

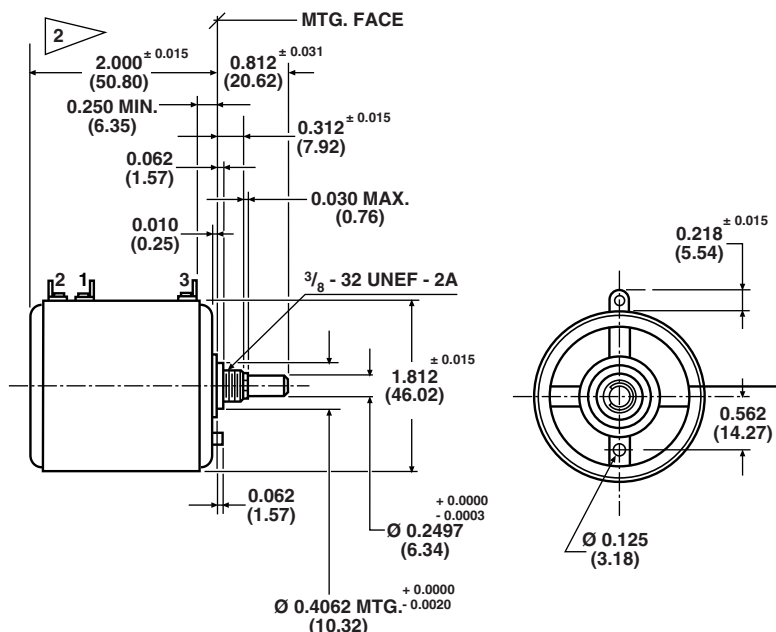
Model 860 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

<b>860</b>	<b>B</b>	<b>1</b>	<b>20K</b>	<b>BO10</b>
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 NUMBERING GUIDELINES

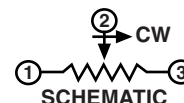
<b>860</b>	<b>B</b>	<b>1</b>	<b>203</b>	<b>B10</b>
MODEL	STYLE	NUMBER OF SECTIONS	OHMIC VALUE OF SECTION N° 1	PACKAGING

**DIMENSIONS** in inches (millimeters)

**MODEL: 860B/860-1**


1 ADD  $1.787 \pm 0.010$  (45.39) FOR 2 GANG UNIT

TOLERANCES: OTHERWISE NOTED.  
DECIMALS  $\pm 0.005$  ANGLES  $\pm 2^\circ$


**MECHANICAL SPECIFICATIONS**

PARAMETER		
Rotation	$3600^\circ \pm 4^\circ - 0^\circ$	
Bearing type	Sleeve bearing	
Torque (maximums):		
Section 1	<b>STARTING</b> 1.75 oz. - in (126.02 g - cm)	<b>RUNNING</b> 1.26 oz. - in (90.01 g - cm)
Section 2	2.55 oz. - in (183.62 g - cm)	1.85 oz. - in (133.21 g - cm)
Runouts (maximums)		
Shaft (TIR)	0.002" (0.05 cm)	
Pilot dia (TIR)	0.002" (0.05 cm)	
Lateral (TIR)	0.005" (0.13 cm)	
Shaft end play	0.002" min. 0.010" max. (0.05 cm to 0.25 cm)	
Shaft radial play	0.003" max. (0.08 cm)	
Weight (maximums)		
Single section	4.5 oz. (127.58 g)	
Additional section	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 $45^\circ \pm 10^\circ$ CCW from terminal center line	
Moment inertia	15.0 g - $\text{cm}^2$ maximum	

**MATERIAL SPECIFICATIONS**

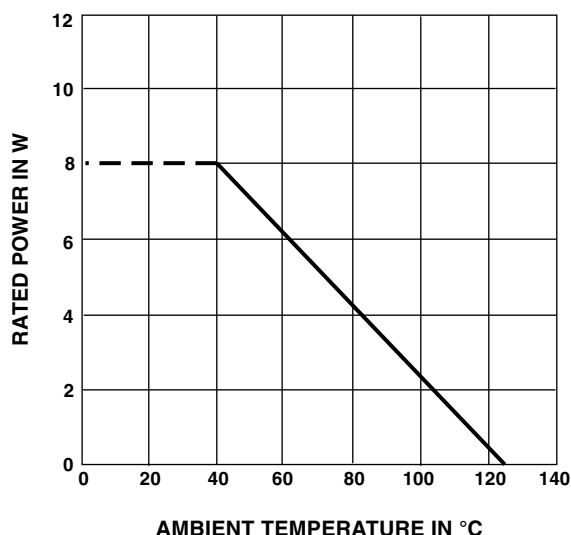
Bushing	Aluminum, nickel plated
Housing and front lid	Molded glass filled thermoset plastic
Rear lid	Molded glass filled nylon
Shaft	Stainless steel, non magnetic, non-passivated
Terminals	Brass, plated for solderability
Mounting hardware Lockwasher: Panel nut:	Internal tooth steel, nickel plated Brass,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

**ENVIRONMENTAL SPECIFICATIONS**

Vibration	10 g thru 500 CPS
Shock	50 g
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
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**POWER RATING CHART****RESISTANCE ELEMENT DATA**

STANDARD RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT 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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