

1 13/16" (46 mm) Ten Turn Wirewound Potentiometer, Bushing Mount



FEATURES

- Gangable up to 2 sections
- Large range of ohmic values: 20 Ω to 200 k Ω
- 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 Ω to 200 k Ω	Special up to 500 k Ω
Standard range	STANDARD	SPECIAL
Tolerance:	$\pm 3\%$	$\pm 1\%$
200 Ω and above	$\pm 5\%$	$\pm 3\%$
Below 200 Ω		
Linearity (independent)	$\pm 0.25\%$ standard	
20 Ω to 50 Ω	$\pm 0.15\%$	
50 Ω to 200 Ω	$\pm 0.10\%$	
200 Ω to 5 k Ω	$\pm 0.05\%$	
5 k Ω and above	$\pm 0.025\%$	
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 Ω minimum 500 V _{DC}	
Dielectric strength	1000 V _{RMS} , 60 Hz	
Absolute minimum resistance	Not to exceed linearity x total resistance or 1 Ω , 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

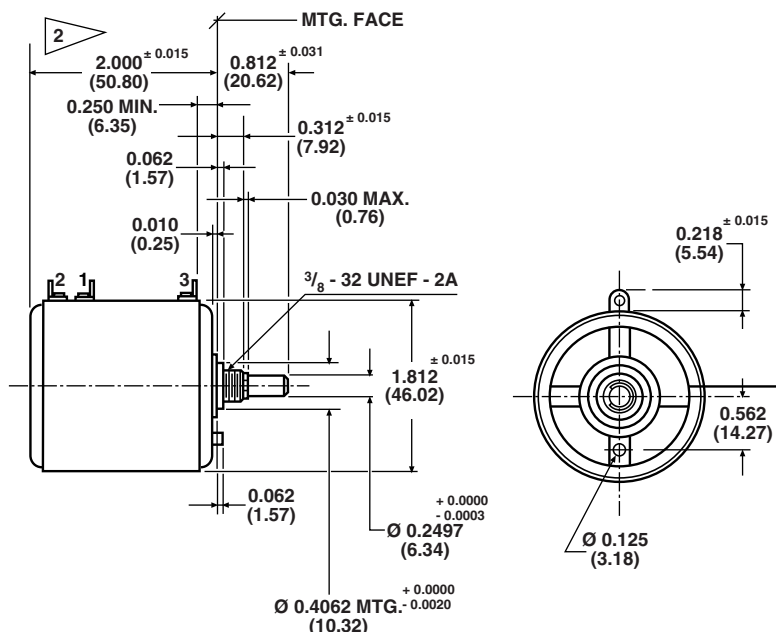
Model 860 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

860	B	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 NUMBERING GUIDELINES

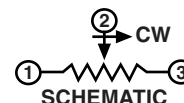
860	B	1	203	B10
MODEL	STYLE	NUMBER OF SECTIONS	OHMIC VALUE OF SECTION N° 1	PACKAGING

DIMENSIONS in inches (millimeters)

MODEL: 860B/860-1


1 ADD 1.787 ± 0.010 (45.39) FOR 2 GANG UNIT

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


MECHANICAL SPECIFICATIONS

PARAMETER		
Rotation	$3600^\circ + 4^\circ - 0^\circ$	
Bearing type	Sleeve bearing	
Torque (maximums):	STARTING	RUNNING
Section 1	1.75 oz. - in (126.02 g - cm)	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° , $\pm 10^\circ$ CCW from terminal center line	
Moment inertia	15.0 g - cm^2 maximum	

**MATERIAL SPECIFICATIONS**

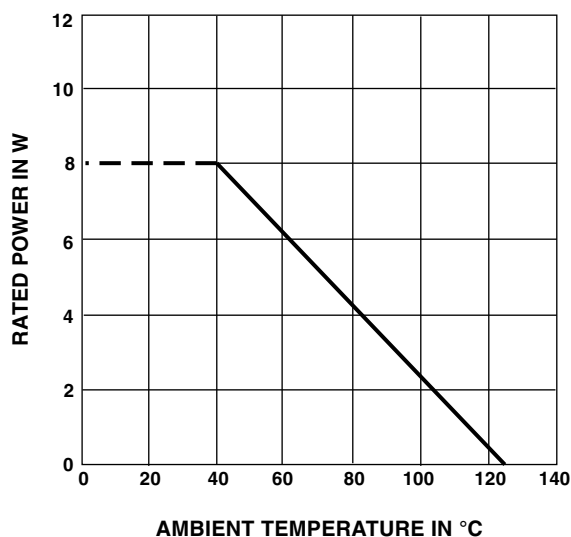
Bushing	Aluminum, nickel plated
Housing and front lid	Molded glass filled thermoset plastic
Rear lid	Molded glass filled nylon
Shaft	Stainless steel, non magnetic, non-passivated
Terminals	Brass, plated for solderability
Mounting hardware Lockwasher: Panel nut:	Internal tooth steel, nickel plated Brass,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

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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.