

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 kΩ
- 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 kΩ | Special up to 500 kΩ |
| Standard range | STANDARD | SPECIAL |
| Tolerance: | | |
| 200 Ω and above | ± 3 % | ± 1 % |
| Below 200 Ω | ± 5 % | ± 3 % |
| Linearity (independent) | ± 0.25 % standard | |
| 20 Ω to 50 Ω | ± 0.15 % | |
| 50 Ω to 200 Ω | ± 0.10 % | |
| 200 Ω to 5 kΩ | ± 0.05 % | |
| 5 kΩ and above | ± 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 MΩ 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 ± 1° | |

ORDERING INFORMATION/DESIGNATION

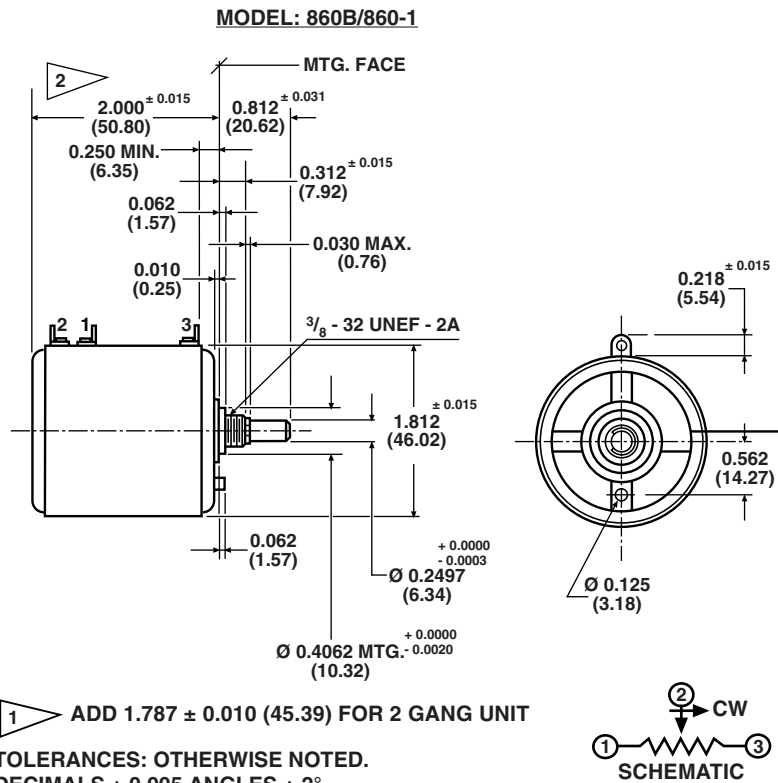
Model 860 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

| | | | | |
|------------|---------------|-----------------------------------|---|------------------|
| 860 | 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)



MECHANICAL SPECIFICATIONS

| PARAMETER | | |
|--------------------|--|-------------------------------|
| Rotation | 3600° + 4° - 0° | |
| 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°, ± 10° CCW from terminal center line | |
| Moment inertia | 15.0 g - cm ² maximum | |

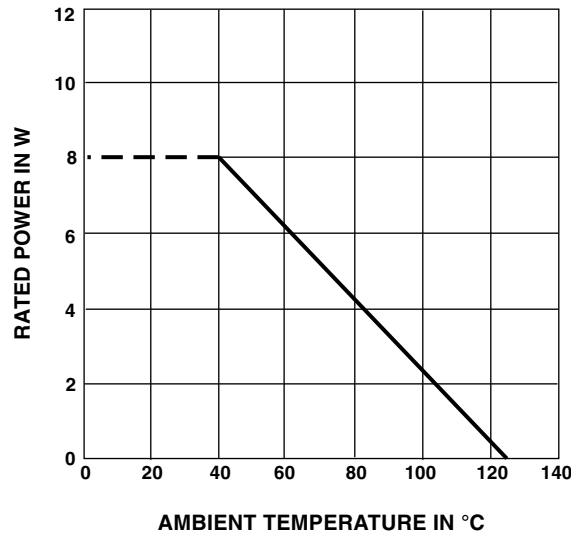


| MATERIAL SPECIFICATIONS | |
|--|---|
| Bushing | Aluminum, nickel plated |
| Housing and front lid | Molded glass filled thermoset plastic |
| Rear lid | Molded glass filled nylon |
| Shaft | Stainless steel, non magnetic, non-passivated |
| Terminals | Brass, plated for solderability |
| Mounting 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.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. 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.