

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

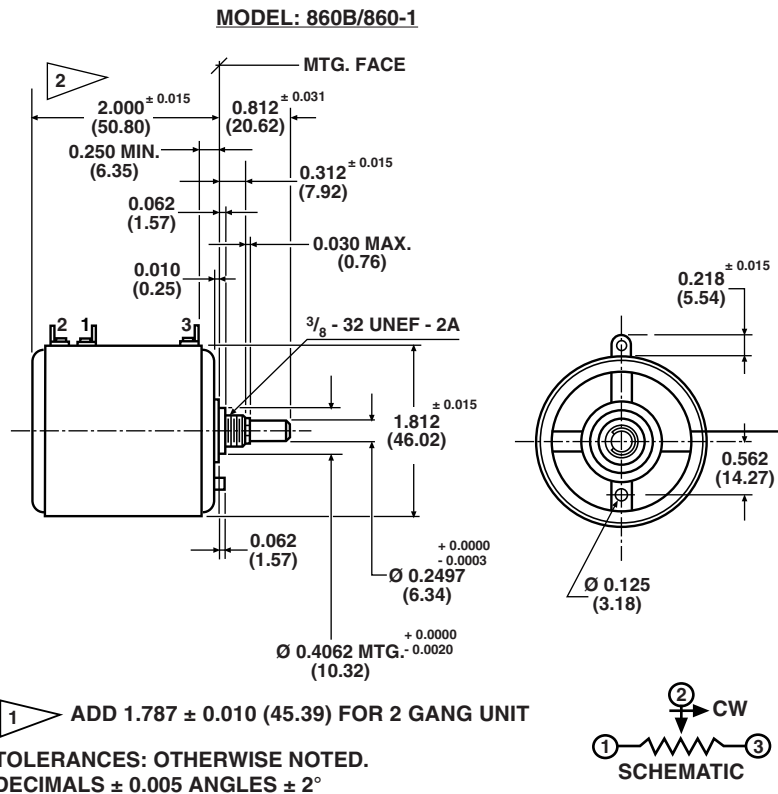
Model 860 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

| | | | | |
|------------|---------------|-----------------------------------|---|------------------|
| 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 | |

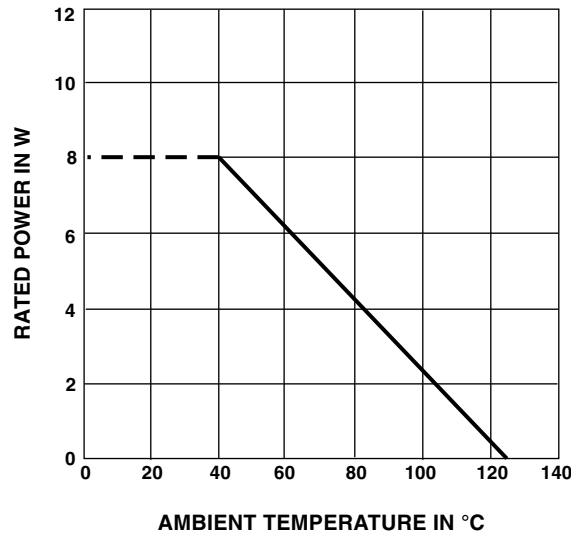


| MATERIAL SPECIFICATIONS | |
|--|---|
| Bushing | Aluminum, nickel plated |
| Housing and front lid | Molded glass filled thermoset plastic |
| Rear lid | Molded glass filled nylon |
| Shaft | Stainless steel, non magnetic, non-passivated |
| Terminals | Brass, plated for solderability |
| Mounting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



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