

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



FEATURES

- Gangable up to 2 sections
- Large range of ohmic values: 15 Ω to 50 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 | MODEL 830 | |
|--|---|---|
| Total resistance Standard range Tolerance: 200 Ω and above Below 200 Ω | 15 Ω to 50 kΩ STANDARD ± 3 % ± 5 % | SPECIAL to 150 kΩ SPECIAL ± 1 % ± 3 % |
| Linearity (independent) | ± 0.25 % standard | |
| 15 Ω to 1 kΩ 1 kΩ to 5 kΩ 5 kΩ to 25 kΩ 25 kΩ and above | ± 0.15 % ± 0.10 % ± 0.075 % ± 0.05 % | |
| Noise | 100 Ω ENR | |
| Electrical rotation | 1080° +4° -0° | |
| Power rating | 3.0 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° | |

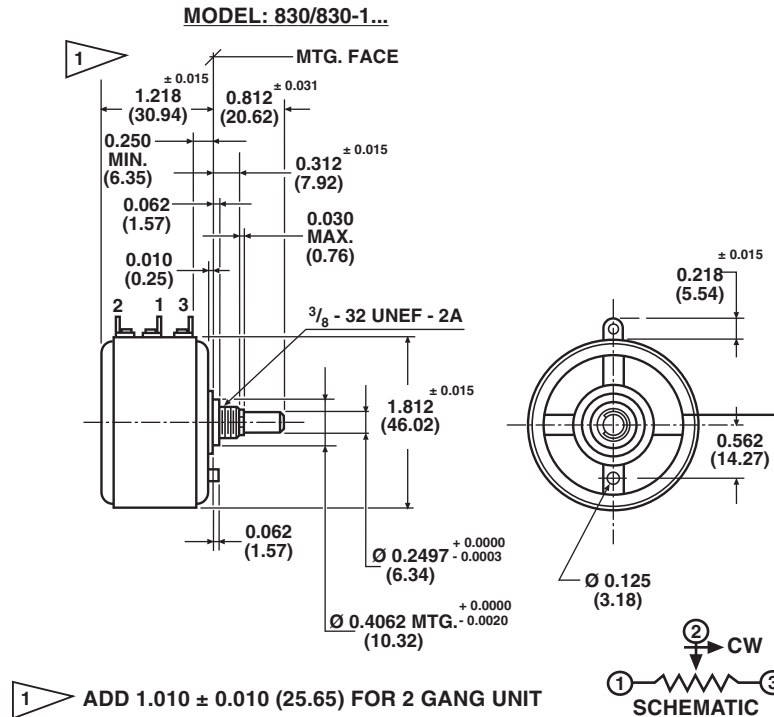
ORDERING INFORMATION/DESCRIPTION

Model 830 can be ordered from this datasheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

| | | | | |
|------------|---------------|--|--|-------------------------------|
| 830 | B | 1 | 20K | BO10 |
| MODEL | BUSHING MOUNT | NUMBER OF SECTIONS From 1 up to 2 sections (maximum) | RESISTANCE OF EACH SECTION Beginning with the section nearest the mounting end | PACKAGING Box of 10 pieces |

SAP PART NUMBERING GUIDELINES

| | | | | |
|------------|----------|-------------------|-----------------------------|------------|
| 830 | B | 1 | 203 | B10 |
| MODEL | STYLE | NUMBER OF SECTION | OHMIC VALUE OF SECTION N° 1 | PACKAGING |

DIMENSIONS in inches (millimeters)


TOLERANCES: OTHERWISE NOTED.
 DECIMALS ± 0.005 ANGLES ± 2°

MECHANICAL SPECIFICATIONS

| PARAMETER | | |
|-----------------------------|--|-------------------------------|
| Rotation | 1080° +4° -0° | |
| Bearing type | Sleeve bearing | |
| Torque (maximums): starting | 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 | 3.0 oz. (85.05 g) | |
| Additional section | 2.5 oz. (70.80 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 | 5.5 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 |

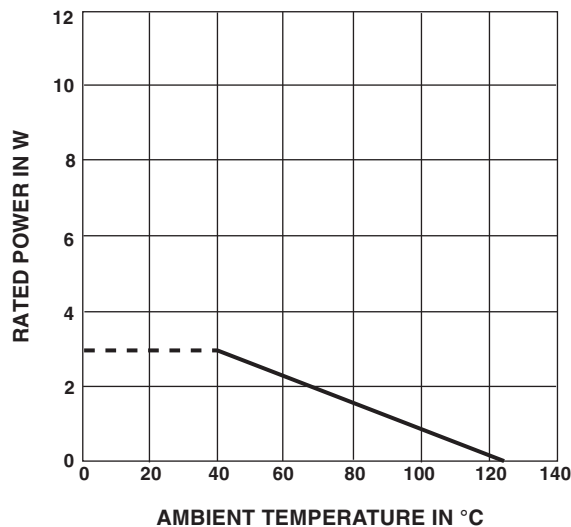
| ENVIRONMENTAL SPECIFICATIONS | |
|------------------------------|--------------------------|
| Vibration | 10 g thru 500 CPS |
| Shock | 50 g |
| Rotational life | 500 000 shaft revolution |
| Load life | 900 h |
| Temperature range | -55 °C to +125 °C |
| Salt spray | 48 h |

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability.

| MARKING | |
|---------------------|--|
| Unit identification | Units will be marked with Spectrol name and model no, resistance and resistance tolerance, linearity, terminal identification, and date code. Example of a marking for a standard part: 830-11103 |

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 TEMP. COEF. (ppm/°C) |
| 20 | 0.094 | 0.019 | 387 | 8 | 800 |
| 50 | 0.074 | 0.037 | 245 | 12 | 800 |
| 100 | 0.071 | 0.071 | 173 | 17 | 180 |
| 200 | 0.072 | 0.145 | 122 | 25 | 20 |
| 500 | 0.064 | 0.320 | 77 | 39 | 20 |
| 1K | 0.050 | 0.500 | 55 | 55 | 20 |
| 2K | 0.047 | 0.948 | 39 | 77 | 20 |
| 5K | 0.035 | 1.73 | 24 | 125 | 20 |
| 10K | 0.029 | 2.92 | 17 | 176 | 20 |
| 20K | 0.024 | 4.80 | 12 | 250 | 20 |
| 50K | 0.017 | 8.31 | 8 | 375 | 20 |
| 100K | 0.015 | 14.5 | 5 | 600 | 20 |
| 150K | 0.013 | 20.0 | 4 | 750 | 20 |



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