

# 1 <sup>13</sup>/<sub>16</sub>" (46 mm) Three Turn Wirewound Potentiometer Bushing Mount



QUICK REFERENCE DATA				
Sensor type	ROTATIONAL, multi turn wirewound			
Output type	Output by turrets			
Market appliance	Industrial			
Dimensions	1 <sup>13</sup> / <sub>16</sub> " (46 mm)			

#### **FEATURES**

- Gangable up to 2 sections
- Large range of ohmic values: 15  $\Omega$  to 50 k $\Omega$
- Extra taps available upon request
- Ideally suits for all industry applications

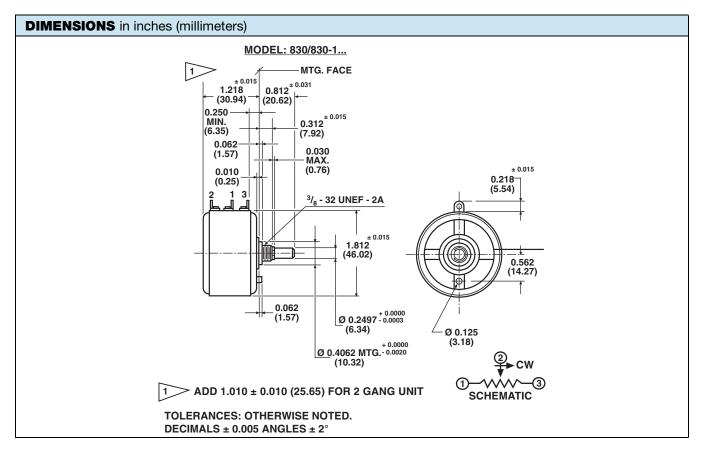
PARAMETER	MODEL 830			
Total resistance Standard range Tolerance: 200 $\Omega$ and above Below 200 $\Omega$	15 Ω to 50 kΩ <b>STANDARD</b> ± 3 % ± 5 %	<b>SPECIAL</b> to 150 kΩ <b>SPECIAL</b> ± 1 % ± 3 %		
Linearity (independent)	± 0.25 %	± 0.25 % standard		
$15\Omega$ to $1~k\Omega$ $1~k\Omega$ to $5~k\Omega$ $5~k\Omega$ to $25~k\Omega$ 25 $k\Omega$ 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 M $\Omega$ minimum 500 V $_{DC}$			
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 ± 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	В	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					
830 B 1		1	203	B10	
MODEL	STYLE	NUMBER OF SECTION	OHMIC VALUE OF SECTION Nº 1	PACKAGING	

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MECHANICAL SPECIFIC	ATIONS			
PARAMETER				
Rotation	1080° +4° -0°			
Bearing type	Sleeve	bearing		
Torque (maximums): starting Section 1 Section 2	<b>STARTING</b> 1.75 oz in (126.02 g - cm) 2.55 oz in (183.62 g - cm)	<b>RUNNING</b> 1.26 oz in (90.01 g - cm) 1.85 oz in (133.21 g - cm)		
Runouts (maximums) Shaft (TIR) Pilot dia. (TIR) Lateral (TIR) Shaft end play Shaft radial play	0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.002" min. 0.010" max. (0.05 cm to 0.25 cm) 0.003" max. (0.08 cm)			
Weight (maximums) Single section Additional section	3.0 oz. (85.05 g) 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 <sup>2</sup> maximum			



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## Vishay Spectrol

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			

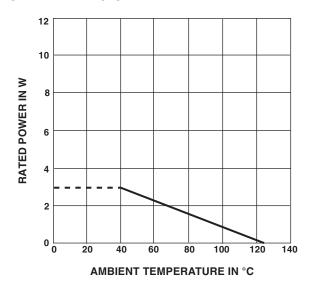
ENVIRONMENTAL SPECIFICATIONS			
Vibration	10 g thru 500 CPS		
Shock	50 <i>g</i>		
Rotational life	500 000 shaft revolution		
Load life	900 h		
Temperature range	-55 °C to +125 °C		
Salt spray	48 h		

#### 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)	RESO- LUTION (%)	OHMS PER TURN		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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