

Vishay Spectrol

1¹³/₁₆" (46 mm) Three Turn Wirewound Potentiometer **Bushing Mount**



FEATURES

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

QUICK REFERENCE DATA			
Sensor type ROTATIONAL, multi turn wirewo			
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	5 % standard	
15 Ω to 1 kΩ 1 kΩ to 5 kΩ 5 kΩ to 25 kΩ 25 kΩ and above	$\begin{array}{c} \pm 0.15 \ \% \\ \pm 0.10 \ \% \\ \pm 0.075 \ \% \\ \pm 0.05 \ \% \end{array}$		
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 $\pm 1^{\circ}$		

ORDERING INF	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 NUM	IBERING GUIDE	LINES		
830	В	1	203	B10
MODEL	STYLE	NUMBER OF SECTION	OHMIC VALUE OF SECTION Nº 1	PACKAGING

Revision: 27-Mar-15

1 For technical questions, contact: sferprecisionpot@vishay.com Document Number: 57073

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000



www.vishay.com

Model 830

Vishay Spectrol



MECHANICAL SPECIFICATIONS				
PARAMETER				
Rotation	1080° +	4° -0°		
Bearing type	Sleeve b	pearing		
Torque (maximums): starting Section 1 Section 2	STARTING 1.75 oz in (126.02 g - cm) 2.55 oz in (183.62 g - cm)	RUNNING 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 ² maximum			

2

Document Number: 57073

For technical questions, contact: <u>sferprecisionpot@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>

Model 830

www.vishay.com

'ISHAY

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			

Vishay Spectrol

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)	RESO- LUTION (%)	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	

3



Vishay

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.