www.vishay.com

Vishay Spectrol

⁷/₈" (22.2 mm) Single Turn Wirewound (Precision Potentiometer)



QUICK REFERENCE DATA ROTATIONAL, single turn wirewound Sensor type Output type Output by turrets Market appliance Professional Dimensions ⁷/₈" (22.2 mm)

FEATURES

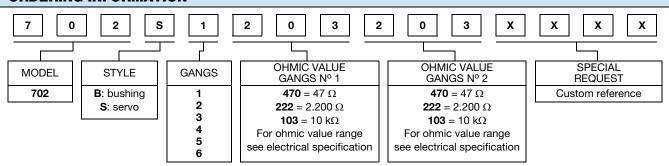
• Large range of ohmic values: From 5 Ω up to 100 kΩ

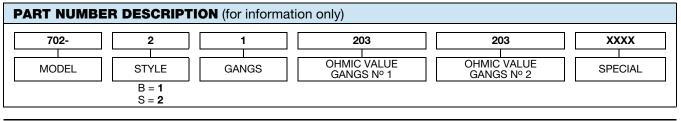


COMPLIANT

- Bushing mount or servo mount types are available
- · Extra taps upon request
- Gangable up to 6 sections
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

PARAMETER				
	STANDARD	SPECIAL		
Total resistance: (bushing 91 k Ω max.)	5 Ω to 20 kΩ	to 30 kΩ		
Tolerance: 20 Q and above	± 3 %	±1%		
Below 20 Ω	± 5 %	± 1 %		
Absolute minimum resistance	Linearity x total resistance or 0.5 Ω whichever is greater			
End voltage	Linearity x total applied voltage for total resistance above 20 Ω , 2.0 % of total applied voltage for 20 Ω and below			
Linearity (independent)	STANDARD	BEST PRACTICAL		
5 Ω to 100 Ω	± 1.0 %	± 0.75 %		
100 Ω to 500 Ω	± 1.0 %	± 0.50 %		
500 Ω to 5 k Ω	± 0.5 %	± 0.35 %		
5 kΩ and above	± 0.5 %	± 0.25 %		
Noise	100 Ω ENR			
Electrical angle	350° ± 2°			
Power rating				
Section 1		nt derated to zero at 125 °C		
Additional sections	75 % of the rating of section 1 (0.94 W at 70 °C)			
Insulation resistance	1000 MΩ minimum, 500 V _{DC}			
Dielectric strength	1000 V _{BMS} , 60 Hz			
Taps (extra)	9 available as special, standard tolerance ± 2°			
Phasing (CCW end points)	Additional sections phased to section 1 within ± 1°			





Revision: 29-Nov-17

1

Document Number: 57069

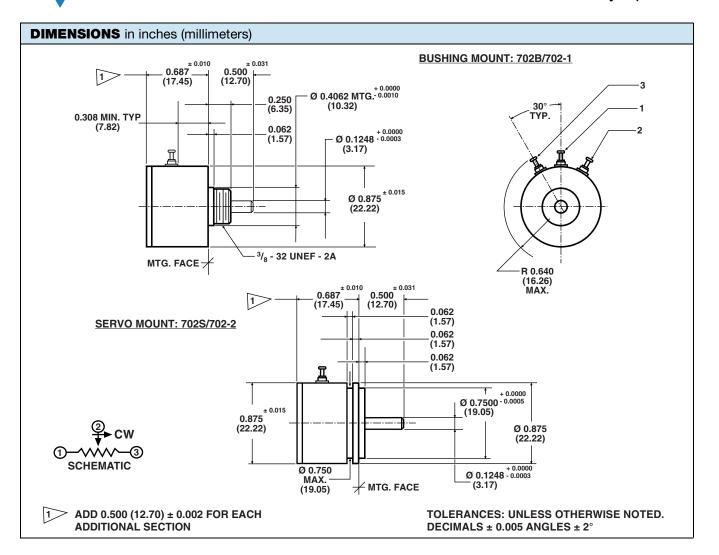
For technical questions, contact: sferprecisionpot@vishay.com

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

VISHAY, www.vishay.com

Model 702

Vishay Spectrol



MECHANICAL SPECIFICATIONS					
PARAMETER					
Rotation	360° continuous				
Bearing type	SERVO BUSHING Ball bearing Sleeve bearing				
Ganging	6 sections maximum Terminal alignment, added sections within ± 10° of section 1 terminals				
Torque (maximum) Servo section 1 Bushing section 1 Each additional section	STARTING 0.10 oz in (7.20 g - cm) 0.25 oz in (18.00 g - cm) 0.10 oz in (7.20 g - cm)	RUNNING 0.085 oz in (6.12 g - cm) 0.20 oz in (14.40 g - cm) 0.075 oz in (5.40 g - cm)			
Mechanical runouts (maximums): Shaft runout (TIR/In) Pilot dia. runout (TIR) Lateral runout (TIR) Shaft end play Shaft radial play	SERVO 0.002" (0.05 cm) 0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.002" (0.05 cm)	BUSHING 0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.005" (0.13 cm) 0.004" (0.10 cm)			
Moment of inertia	0.12 g - cm ² per section maximum				
Weight: Single section Each additional section	0.6 oz. (17.01 g) 0.2 oz. (5.67 g)				

2

Document Number: 57069

www.vishay.com

MATERIAL SPECIFICATIONS			
Housing and lids	Aluminum, anodized		
Shaft	Stainless steel, non-magnetic non-passivated		
Terminals	Brass, plated for solderability		
Bushing mount hardware Lockwasher internal tooth: Panel nut:	Steel, nickel plated Brass, nickel plated		

MARKING			
Unit identification	Units shall be marked with Vishay Spectrol name, model no and date code, and on each section: resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 702-11502		

Model 702

Vishay Spectrol

ENVIRONMENTAL SPECIFICATIONS			
Vibration	15 <i>g</i> thru 2000 CPS		
Shock	50 g		
Salt spray	96 h		
Rotational life	1 million shaft revolutions		
Load life	900 h		
Operating temperature range:	-55 °C +125 °C		

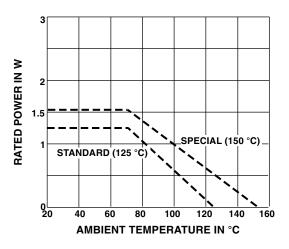
Note

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

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)	
5	0.460	0.023	500	2.50	800	
10	0.378	0.038	354	3.54	800	
20	0.374	0.075	250	5.00	180	
50	0.300	0.150	158	7.90	180	
100	0.271	0.271	112	11.2	20	
200	0.235	0.478	79.1	15.8	20	
500	0.206	1.03	50.0	25.0	20	
1K	0.156	1.56	35.4	35.4	20	
2K	0.127	2.55	25.0	50.0	20	
5K	0.101	5.07	15.8	79.0	20	
10K	0.095	8.50	11.2	112.0	20	
20K	0.090	17.9	7.90	158.0	20	
50K	0.075	37.9	5.00	250.0	20	
100K	0.065	64.5	3.54	354.0	20	

POWER RATING CHART

(Ratings for cup Nº. 1. Additional cups 75 % of values shown)





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.