www.vishay.com

**Vishay Spectrol** 

#### <sup>7</sup>/<sub>8</sub>" (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 <sup>7</sup>/<sub>8</sub>" (22.2 mm)

#### **FEATURES**

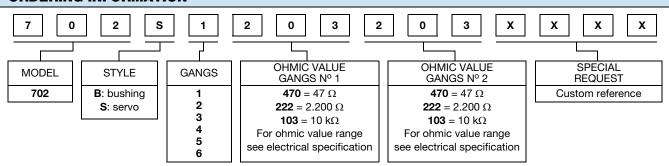
• Large range of ohmic values: From 5  $\Omega$  up to 100 kΩ

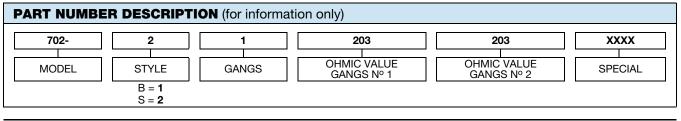


COMPLIANT

- 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 $\Omega$ 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 $\Omega$ whichever is greater			
End voltage	Linearity x total applied voltage for total resistance above 20 $\Omega$ , 2.0 % of total applied voltage for 20 $\Omega$ and below			
Linearity (independent)	STANDARD	BEST PRACTICAL		
5 Ω to 100 Ω	± 1.0 %	± 0.75 %		
100 $\Omega$ to 500 $\Omega$	± 1.0 %	± 0.50 %		
500 $\Omega$ to 5 k $\Omega$	± 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 <sub>DC</sub>			
Dielectric strength	1000 V <sub>BMS</sub> , 60 Hz			
Taps (extra)	9 available as special, standard tolerance ± 2°			
Phasing (CCW end points)	Additional sections phased to section 1 within ± 1°			





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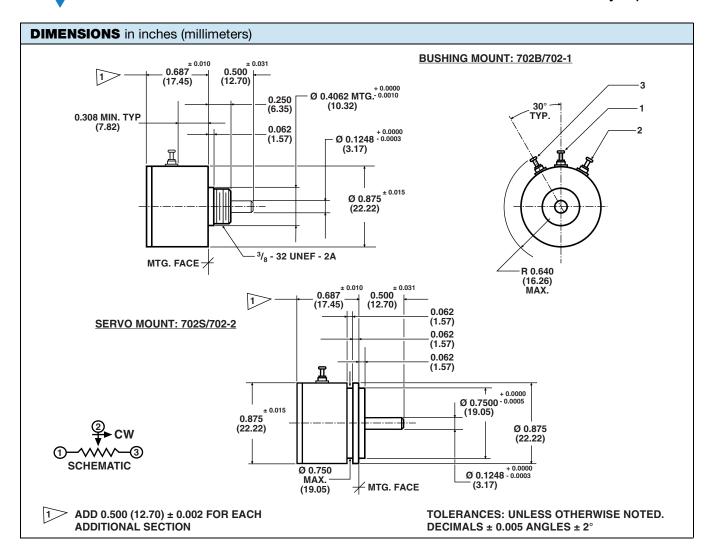
For technical questions, contact: sferprecisionpot@vishay.com

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# 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	<b>STARTING</b> 0.10 oz in (7.20 g - cm) 0.25 oz in (18.00 g - cm) 0.10 oz in (7.20 g - cm)	<b>RUNNING</b> 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 <sup>2</sup> per section maximum				
Weight: Single section Each additional section	0.6 oz. (17.01 g) 0.2 oz. (5.67 g)				

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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		

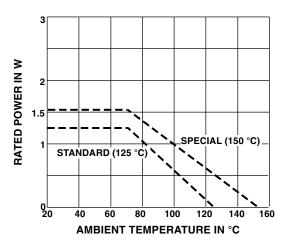
Note

 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)





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