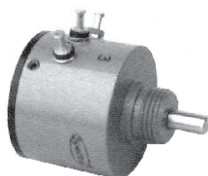


7/8" (22.2 mm) Single Turn Wirewound (Precision Potentiometer)



FEATURES

- Large range of ohmic values: From 5 Ω up to 100 k Ω
- 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


RoHS
COMPLIANT

QUICK REFERENCE DATA

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

ELECTRICAL SPECIFICATIONS

PARAMETER	STANDARD	SPECIAL
Total resistance: (bushing 91 k Ω max.) Tolerance: 20 Ω and above Below 20 Ω	5 Ω to 20 k Ω $\pm 3\%$ $\pm 5\%$	to 30 k Ω $\pm 1\%$ $\pm 3\%$
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) 5 Ω to 100 Ω 100 Ω to 500 Ω 500 Ω to 5 k Ω 5 k Ω and above	STANDARD $\pm 1.0\%$ $\pm 1.0\%$ $\pm 0.5\%$ $\pm 0.5\%$	BEST PRACTICAL $\pm 0.75\%$ $\pm 0.50\%$ $\pm 0.35\%$ $\pm 0.25\%$
Noise	100 Ω ENR	
Electrical angle	350° $\pm$ 2°	
Power rating Section 1 Additional sections	1.25 W at 70 °C ambient derated to zero at 125 °C 75 % of the rating of section 1 (0.94 W at 70 °C)	
Insulation resistance	1000 M Ω minimum, 500 V _{DC}	
Dielectric strength	1000 V _{RMS} , 60 Hz	
Taps (extra)	9 available as special, standard tolerance $\pm 2^\circ$	
Phasing (CCW end points)	Additional sections phased to section 1 within $\pm 1^\circ$	

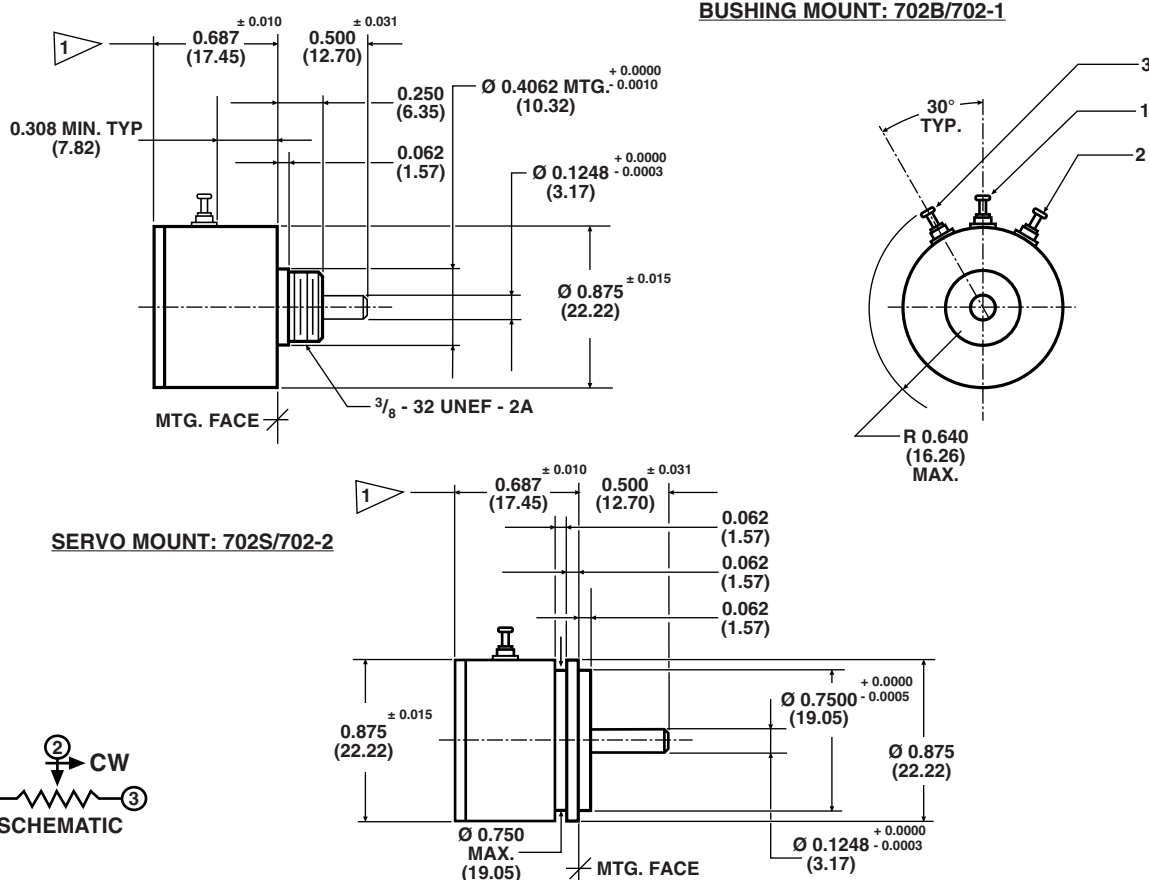
ORDERING INFORMATION

7	0	2	S	1	2	0	3	2	0	3	X	X	X	X
MODEL		STYLE		GANGS		OHMIC VALUE GANGS N° 1		OHMIC VALUE GANGS N° 2		SPECIAL REQUEST				
702		B: bushing S: servo		1 2 3 4 5 6		470 = 47 Ω 222 = 2.200 Ω 103 = 10 k Ω For ohmic value range see electrical specification		470 = 47 Ω 222 = 2.200 Ω 103 = 10 k Ω For ohmic value range see electrical specification		Custom reference				

PART NUMBER DESCRIPTION (for information only)

702-	2	1	203	203	XXXX
MODEL	STYLE	GANGS	OHMIC VALUE GANGS N° 1	OHMIC VALUE GANGS N° 2	SPECIAL
	B = 1 S = 2				

DIMENSIONS in inches (millimeters)



1 ADD 0.500 (12.70) ± 0.002 FOR EACH ADDITIONAL SECTION

**TOLERANCES: UNLESS OTHERWISE NOTED.
DECIMALS ± 0.005 ANGLES $\pm 2^\circ$**

MECHANICAL SPECIFICATIONS

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



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

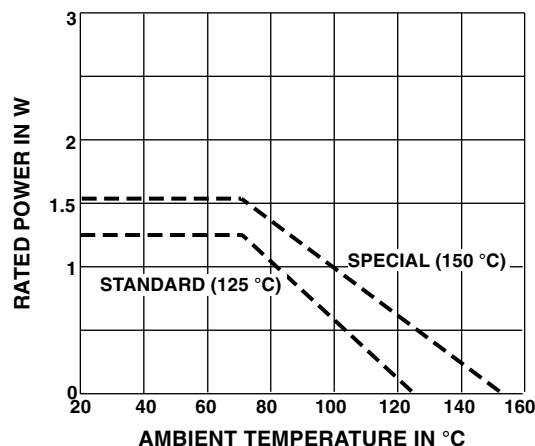
ENVIRONMENTAL SPECIFICATIONS	
Vibration	15 g thru 2000 CPS
Shock	50 g
Salt spray	96 h
Rotational life	1 million shaft revolutions
Load life	900 h
Operating temperature range:	-55 °C +125 °C

Note

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

POWER RATING CHART

(Ratings for cup N°. 1. Additional cups 75 % of values shown)



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)
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



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