

Model 702

Spectrol

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



FEATURES

- 5Ω to 20KΩ
- Bushing Mount and Servo Mount

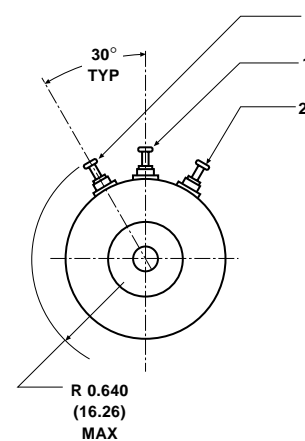
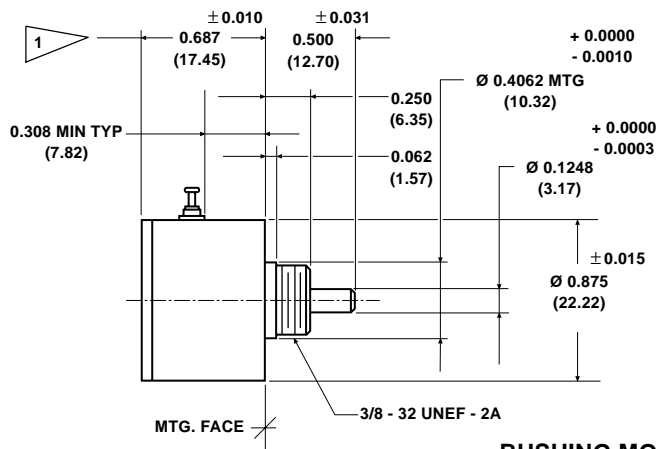
ELECTRICAL SPECIFICATIONS		
PARAMETER		
Total Resistance (Bushing 91KΩ max.) Tolerance: 20Ω and above Below 20Ω	STANDARD 5Ω to 20KΩ	SPECIAL 5Ω to 100KΩ
	± 3%	± 1%
	± 5%	± 3%
Absolute Minimum Resistance	Linearity x total resistance or 0.5Ω whichever is greater	
End Voltage	Linearity x total applied voltage for total resistance above 20Ω, 2.0% of total applied voltage for 20Ω and below	
Linearity (Independent) 5Ω to 100Ω 100Ω to 500Ω 500Ω to 5KΩ 5KΩ and above	STANDARD	BEST PRACTICAL
	± 1.0%	± 0.75%
	± 1.0%	± 0.50%
	± 0.5%	± 0.35%
	± 0.5%	± 0.25%
Noise	100Ω ENR	
Rotation	350° ± 2°	
Power Rating Section 1 Additional Sections	1.25 watt at 70°C ambient derated to zero at 125°C 75% of the rating of section 1 (0.94 watt at 70°C)	
Insulation Resistance	1000MΩ minimum 500 VDC	
Dielectric Strength	1000V _{RMS} , 60Hz	
Taps (Extra)	9 available as special, standard tolerance ± 2°	
Phasing (CCW End Points)	Additional sections phased to section 1 within ± 1°	

ORDERING INFORMATION			
The Model 702 can be ordered from this data sheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:			
702	1	4	XXX
MODEL	MOUNTING	TOTAL RESISTANCE OF EACH SECTION	NUMBER OF SECTIONS
	1. Servo 2. Bushing	Beginning with the section nearest the mounting end	
Example: Model 702, Servo, 10K/10K/30K/100Ω, 4 sections			
Example: Model 702, Bushing, 5K, single section			
Example: 702 - 1 - 4 - XXX			
Other characteristics will be standard as described on this data sheet. If special characteristics are required, such as: special linearity tolerance, special resistance tolerance, extra taps, non-linear functions, etc., please state these on your order and allow additional lead time for delivery.			

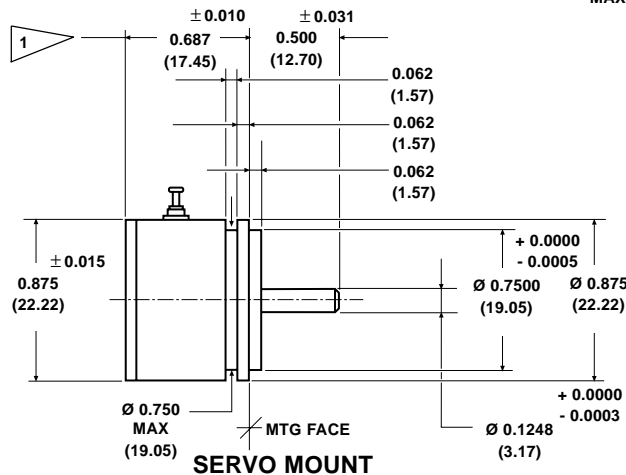
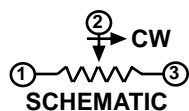
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DIMENSIONS in inches (millimeters)



BUSHING MOUNT



SERVO MOUNT

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

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
Gangng	6 sections maximum Terminal alignment, added sections within $\pm 10^\circ$ of section 1 terminals	
Torque (Maximums)	STARTING	RUNNING
Servo Section 1	0.10 oz - in (7.20gm - cm)	0.085 oz - in (6.12gm - cm)
Bushing Section 1	0.25 oz - in (18.00gm - cm)	0.20 oz - in (14.40gm - cm)
Each additional section	0.10 oz - in (7.20gm - cm)	0.075 oz - in (5.40gm - cm)
Mechanical Runouts (Maximums):	SERVO	BUSHING
Shaft Runout (TIR/in)	0.002 in (0.05cm)	0.002 in (0.05cm)
Pilot Dia. Runout (TIR)	0.002 in (0.05cm)	0.002 in (0.05cm)
Lateral Runout (TIR)	0.002 in (0.05cm)	0.005 in (0.13cm)
Shaft End Play	0.005 in (0.13cm)	0.005 in (0.13cm)
Shaft Radial Play	0.002 in (0.05cm)	0.004 in (0.10cm)
Moment of Inertia	0.12gm - cm ² per section maximum	
Weight:		
Single Section	0.6 oz (17.01gm)	
Each Additional Section	0.2 oz (5.67gm)	

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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

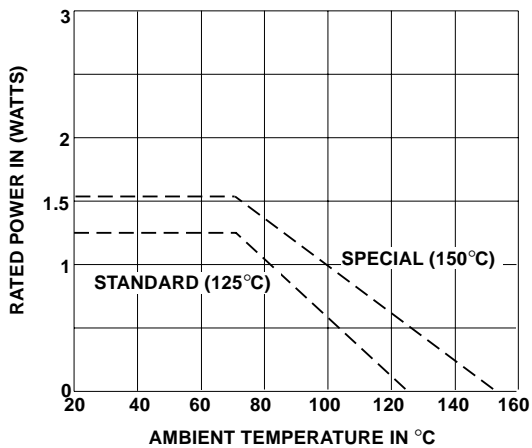
MARKING	
Unit Identification	Units shall be marked with Spectrol name, model no and date code, and on each section, resistance, resistance tolerance, linearity and terminal identification

ENVIRONMENTAL SPECIFICATIONS	
Vibration	15g thru 2000CPS
Shock	50g
Salt Spray	96 Hours
Rotational Life	1 million shaft revolutions
Load Life	900 Hours
Operating Temperature Range Moisture Resistant	- 55°C to + 125°C -

POWER RATING CHART

(Ratings for cup No. 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	0.085	8.50	11.2	112.0	20
20K	0.90	17.9	7.90	158.0	20
50K	0.75	37.9	5.00	250.0	20
100K	0.65	64.5	3.54	354.0	20