

1-13/16" (46mm) Three Turn Wirewound Precision Potentiometer



FEATURES

- 15Ω to 50KΩ
- Bushing Mount and Servo Mount

ELECTRICAL SPECIFICATIONS		
PARAMETER	STANDARD	SPECIAL
Total Resistance Tolerance: 100 Ω and above Below 100Ω	15Ω to 50KΩ ± 3% ± 5%	150KΩ ± 1% ± 3%
Linearity (Independent) 15 to 1K Ω 1K to 5K 5K to 25K 25 K and above	STANDARD ± 0.25% ± 0.25% ± 0.25% ± 0.25%	SPECIAL ± 0.15% ± 0.10% ± 0.075% ± 0.05%
Noise	100Ω ENR	
Electrical Rotation	1080° + 4° - 0°	
Power Rating Section 1 Additional Sections	2.0 watts at 70°C ambient, derated to zero at 125°C 75% of the rating of section 1 (1.5 watts at 70°C)	
Insulation Resistance	1,000MΩ minimum, 500VDC	
Dielectric Strength	1,000V _{RMS} , 60Hz	
Absolute Minimum, Resistance	Linearity x total resistance 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	
Phasing (CCW End Points)	Additional sections phased to section 1 within ± 1°	
Taps (Extra)	42 available as special, standard tolerance ± 1°	

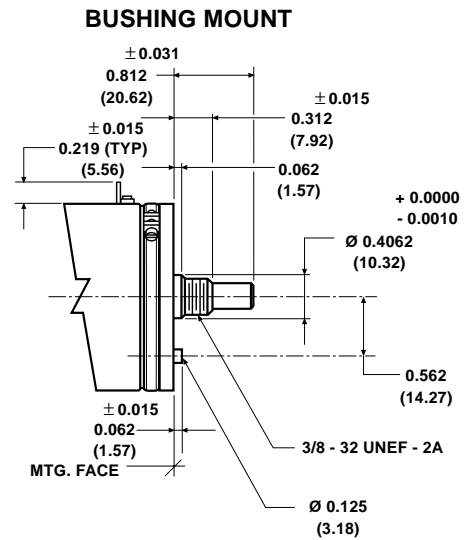
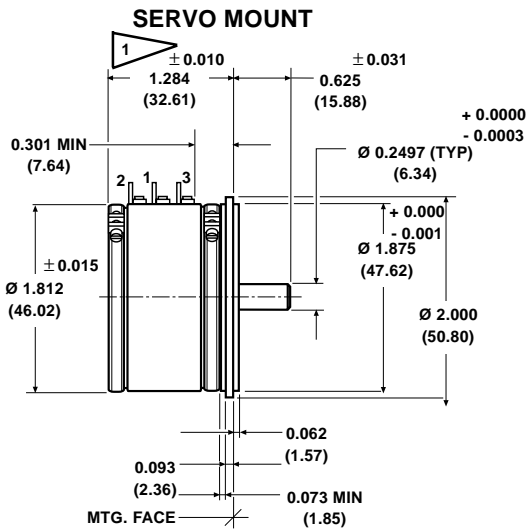
ORDERING INFORMATION			
The Model 852 can be ordered from this data sheet with a variety of alternate characteristics, as shown above. For most rapid service on your order, please state:			
852	1	3	XXX
MODEL	MOUNTING	RESISTANCE OF EACH SECTION	NUMBER OF SECTIONS IN GANG
	1. Servo 2. Screw 3. Bushing	Beginning with the section nearest the mounting end	
Example: Model 852, Screw, 15K/1500Ω/50Ω, 3 section			
Example: Model 852, Bushing, 10K, single section			
Example: 852 - 1 - 3 - 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.			

Model 852

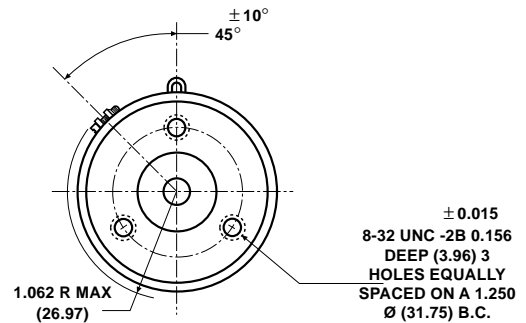
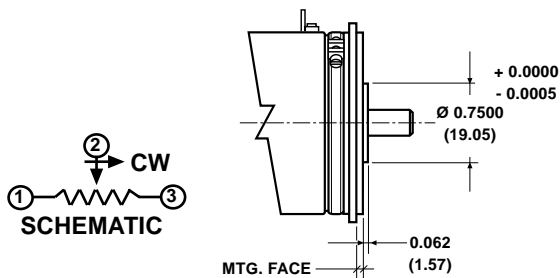
Spectrol

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DIMENSIONS in inches (millimeters)



SCREW MOUNT



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

ADD 0.992 \pm 0.010 (25.20) FOR EACH ADDITIONAL SECTION

MECHANICAL SPECIFICATIONS			
PARAMETER			
Rotation	1080° + 10° - 0°		
Bearing Type	SERVO Ball Bearing	SCREW Ball Bearing	BUSHING Sleeve bearing
Torque (Maximums)	STARTING		RUNNING
Servo or Screw Section 1	1.20 oz - in (86.4gm - cm)		0.80 oz - in (57.6gm - cm)
Bushing Section 1	1.75 oz - in (126.0gm - cm)		1.25 oz - in (90.0gm - cm)
Each Additional Section	0.80 oz - in (57.6gm - cm)		0.60 oz - in (43.2gm - 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)	0.003 in (0.08cm)		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)		0.003 in (0.08cm)
Weight (Maximums)			
Single Section	3.5 oz (99.2gm)		
Each Additional Section	2.7 oz (76.5gm)		
Stop Strength	1,000oz - in, static (72Kg - cm)		
Ganging	3 sections maximum, terminal alignment, added sections within $\pm 10^\circ$ of section 1 terminals		
Moment of Inertia	5.5gm - cm ² per section maximum		

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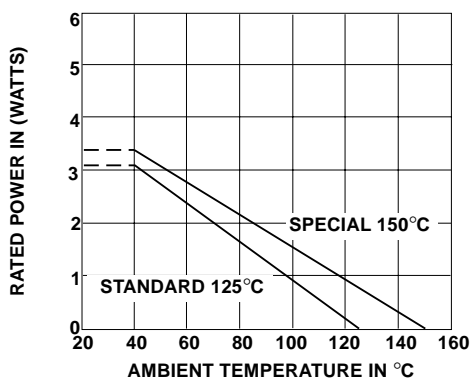
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MATERIAL SPECIFICATIONS	
Housing	Glass filled thermoset plastic
Lids	Aluminum, anodized
Shaft	Stainless steel, non-magnetic, non-passivated
Terminals	Brass, plated for solderability
Clamp Ring	Stainless steel
Bushing Mount Hardware	
Lockwasher Internal tooth:	Steel, nickel plated
Panel Nut:	Brass, nickel plated

MARKING	
Unit Identification	Units shall be marked with Spectrol name and model No, resistance and resistance tolerance, linearity, terminal identification and data code

ENVIRONMENTAL SPECIFICATIONS	
Vibration	15g thru 2000 CPS
Shock	50g
Salt Spray	96 Hours
Rotational Life	600,000 shaft revolutions
Load Life	900 Hours
Operating Temperature Range	- 55°C to + 125°C
Moisture Resistant	-

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)
20	0.094	0.019	316	6.33	800
50	0.074	0.037	200	10.0	800
100	0.071	0.071	141	14.2	180
200	0.072	0.145	100	20.0	20
500	0.064	0.320	63.2	31.6	110
1K	0.050	0.500	44.7	44.7	110
2K	0.047	0.948	31.6	63.3	20
5K	0.035	1.733	20.0	100	20
10K	0.029	2.923	14.1	142	20
20K	0.024	4.797	10.0	200	20
50K	0.017	8.313	6.32	316	20
100K	0.015	14.535	4.47	447	20
150K	0.013	19.987	3.65	548	20