

Model 100

1 - 5/16" (33.3mm) Single Turn Wirewound Precision Potentiometer



FEATURES

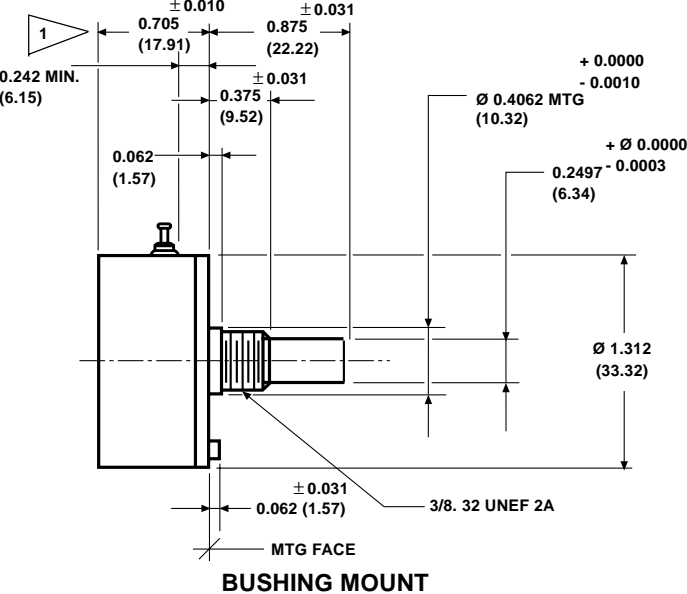
- 1 - 5/16" Round
- Bushing or Servo
- 5Ω to 20KΩ

ELECTRICAL SPECIFICATIONS		
PARAMETER	STANDARD	SPECIAL
Total Resistance: Tolerance: 50Ω and above Below 50Ω	5Ω to 20KΩ ± 3% ± 5%	to 35KΩ ± 1% ± 3%
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 3KΩ 3KΩ to 15KΩ 15KΩ and above	STANDARD ± 1.0% ± 0.5% ± 0.5% ± 0.5% ± 0.5%	BEST PRACTICAL ± 0.50% ± 0.35% ± 0.25% ± 0.20% ± 0.15%
Noise	100Ω ENR (MIL-R-12934)	
Rotation	352° ± 2°	
Power Rating	2.75 watts at 40°C Ambient	
Insulation Resistance	100MΩ min, 500VDC	
Dielectric Strength	1000V _{RMS} , 60Hz	
Taps (Extra)	STANDARD ± 1°	SPECIAL 13
Phasing	CCW taps of multiple sections aligned with CCW tap of section 1 to ± 1°	
Absolute Minimum Resistance	Linearity x total resistance or 0.5Ω, whichever is greater	

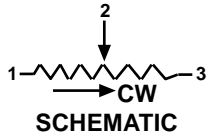
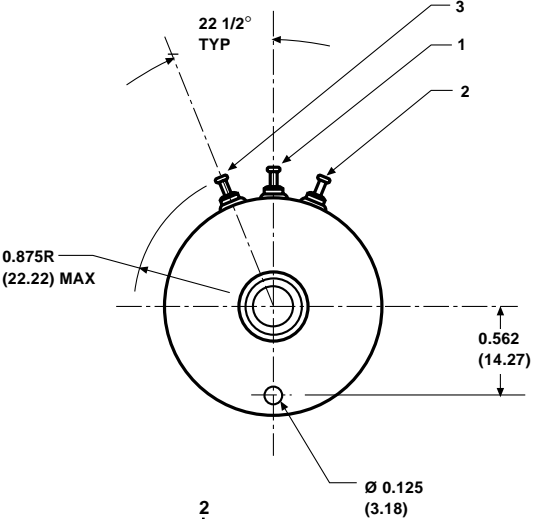
ORDERING INFORMATION			
The Model 100 can be ordered from this data sheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:			
100	1	4	xxx
MODEL	MOUNTING TYPE	RESISTANCE OF EACH SECTION	NUMBER OF SECTIONS IN GANG
	1. Servo 2. Bushing	Beginning with the section nearest the mounting end	
Example: Model 100, Servo, 10K/10K/30K/100Ω, 4 section Example: Model 100, Bushing, 5K, single section Example: 100 - 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.			
NOTE: Specifications subject to change without notice			

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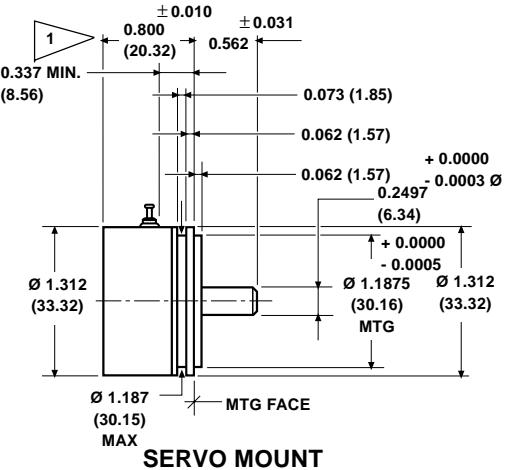
DIMENSIONS in inches (millimeters)



BUSHING MOUNT



SCHEMATIC



SERVO MOUNT

± 0.002
 ADD 0.566 (14.38) FOR EACH ADDITIONAL SECTION

**TOLERANCES: UNLESS OTHERWISE NOTED.
 DECIMALS ± 0.005 ANGLES ± 2°**

MECHANICAL SPECIFICATIONS		
PARAMETER		
Rotation	360° (continuous)	
Bearing Type	Servo mount: ball bearing Bushing mount: sleeve bearing	
Ganging	6 sections maximum, terminal alignment, added sections, within ± 10° of section 1 terminals	
Torque (Maximums)	STARTING	RUNNING
Servo, 1 Section	0.60 oz - in (43.20gm - cm)	0.30 oz - in (21.60gm - cm)
Bushing, 1 Section	1.00 oz - in (72.00gm - cm)	0.75 oz - in (54.00gm - cm)
Each Additional Section	0.30 oz - in (21.60gm - cm)	0.30 oz - in (21.60gm - cm)
Mechanical Tolerances (Maximums):	BUSHING	SERVO
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)	0.005 in (0.13cm)	0.002 in (0.05cm)
Shaft End Play	0.005 in (0.13cm)	0.005 in (0.13cm)
Shaft Radial Play	0.004 in (0.10cm)	0.002 in (0.05cm)
Moment of Inertia	1.0gm - cm ² per section maximum	
Weight:		
Single Section	2.0 oz maximum	
Each Additional Section	0.75 oz maximum	

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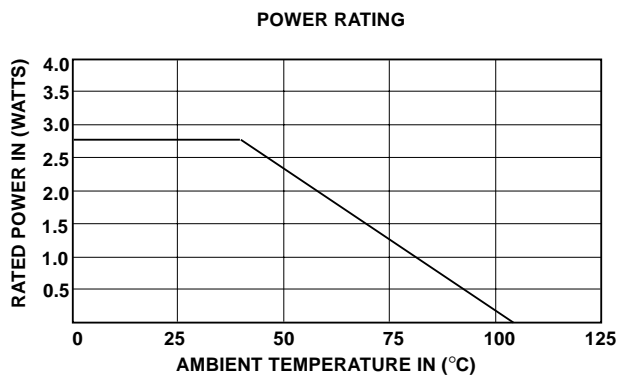
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MATERIAL SPECIFICATIONS	
Housing and Lids	Aluminum, anodized
Shaft	Stainless steel, non-magnetic non-passivated
Terminals	Brass, plated for solderability
Bushing Mount Hardware Lockwasher Internal Tooth: Panel nut:	Steel, nickel plated Brass, nickel plated

ENVIRONMENTAL SPECIFICATIONS	
Vibration	15g thru 2000 CPS
Shock	50g
Salt Spray	96 Hours
Rotational Life	1 million shaft revolutions
Load Life	900 Hours
Temperature Range Moisture Resistant	- 55°C to + 105°C

MARKING	
Unit Identification	Units shall be marked with Spectrol name, model number and data code and on each section, resistance, resistance tolerance, linearity and terminal identification

POWER RATING CHART



RESISTANCE ELEMENT DATA					
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	0.346	0.017	742	3.7	800
10	0.298	0.030	524	5.2	800
20	0.236	0.047	371	7.4	800
50	0.244	0.122	235	12	20
100	0.222	0.222	166	17	20
200	0.181	0.361	117	23	20
500	0.178	0.885	74	37	20
1K	0.138	1.38	52	52	20
2K	0.105	2.09	37	74	20
5K	0.085	4.23	23	117	20
10K	0.069	6.84	17	166	20
20K	0.058	11.5	12	235	20
35K	0.058	20.0	8.8	310	20