

### 1 - 1/16" (26.9mm) Single Turn Wirewound Precision Potentiometer



#### FEATURES

- 1 - 1/16" Round
- Bushing Mount, Single Section
- Servo Mount, Two Section
- 5Ω to 20K

ELECTRICAL SPECIFICATIONS		
PARAMETER	STANDARD	SPECIAL
Total Resistance Tolerance: 20Ω and above Below 20Ω	5Ω to 20KΩ ± 3% ± 5%	to 100KΩ ± 1% ± 3%
Linearity (Independent): 5Ω to 200Ω 200Ω to 2KΩ 2KΩ to 10KΩ 10KΩ and above	STANDARD ± 1.0% ± 0.5% ± 0.5 % ± 0.5%	BEST PRACTICAL ± 0.50% ± 0.35% ± 0.25% ± 0.20
Noise	100Ω ENR	
Rotation	350° ± 2°	
Power Rating Section 1: Additional Sections:	1.50 watts at 70°C ambient, derated to zero at 125°C 75% of the rating of section 1 (1.125 watts at 70°C)	
Insulation Resistance	1000MΩ minimum 50VDC	
Dielectric Strength	1000V <sub>RMS</sub> 60Hz	
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	
Phasing (CCW End Points)	Additional sections phased to section 1 within ± 1°	
Taps (Extra)	9 available as special standard tolerance ± 1°	

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

MARKING	
<b>Unit Identification</b>	Units shall be marked with Spectrol name and model number resistance and resistance tolerance, linearity, terminal identification and data code

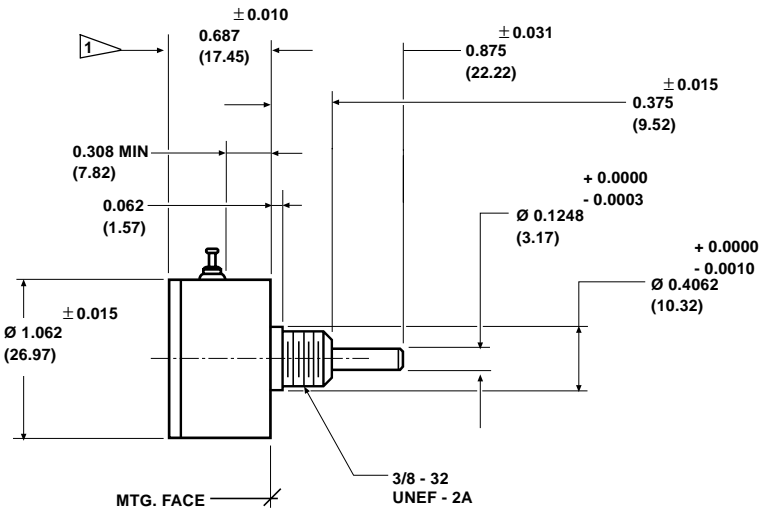
ORDERING INFORMATION			
The Model 122 can be ordered from this data sheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:			
<b>122</b>	<b>1</b>	<b>4</b>	<b>XXX</b>
MODEL	MOUNTING	TOTAL RESISTANCE OF EACH SECTION	NUMBER OF SECTIONS IN GANG
	1. Servo 2. Bushing	Beginning with the section nearest the mounting end	
Example: Model 122, Servo, 10K/ 10K/30K/100Ω, 4 section Example: Model 122, Bushing, 5K, single section Example: <b>122 - 1 - 4 - XXX</b>			
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 122

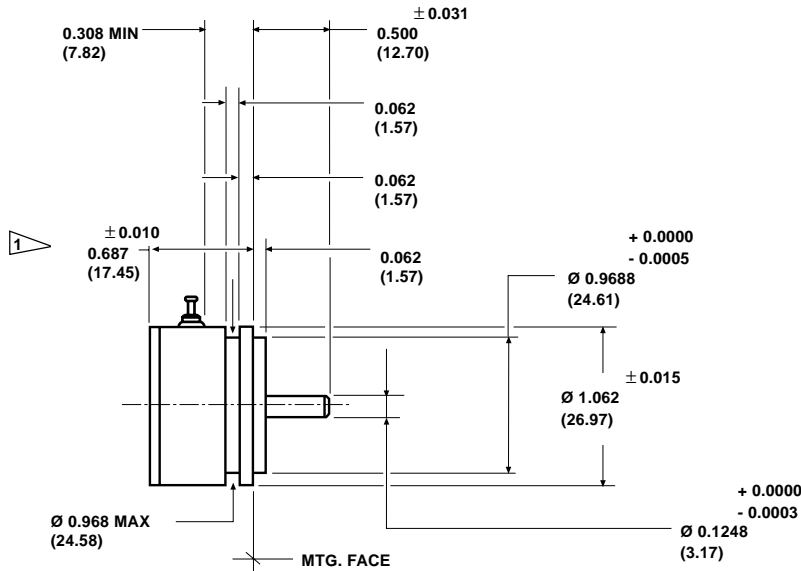
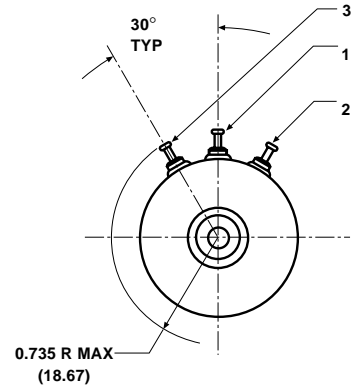
Spectrol

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DIMENSIONS in inches (millimeters)



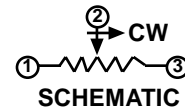
**BUSHING MOUNT**



**SERVO MOUNT**

ADD 0.500 ± 0.002 (12.70) FOR EACH ADDITIONAL SECTION

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

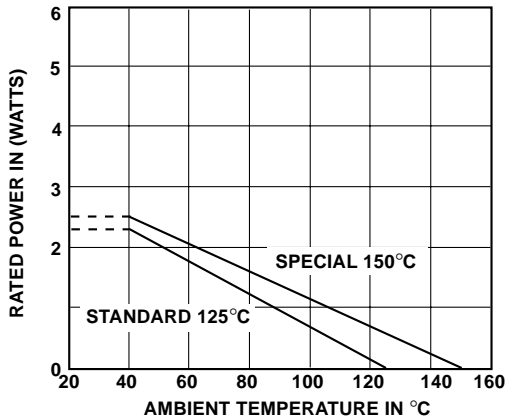


**SCHEMATIC**

## POWER RATING CHART

(Ratings for cup No. 1.

Additional cups 75% of values shown)



## 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	0.364	0.018	548	2.74	800
10	0.311	0.031	387	3.87	800
20	0.250	0.050	274	5.48	180
50	0.232	0.116	173	8.65	180
100	0.232	0.231	122	12.2	20
200	0.194	0.389	86.6	17.3	20
500	0.168	0.841	54.8	27.4	20
1K	0.156	1.557	38.7	38.7	20
2K	0.109	2.178	27.4	54.8	20
5K	0.088	4.382	17.3	86.5	20
10K	0.076	7.644	12.2	122	20
20K	0.071	14.235	8.66	173	20
50K	0.062	30.921	5.48	274	20
100K	0.052	51.983	3.87	387	20

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**Spectrol**

MECHANICAL SPECIFICATIONS		
PARAMETER		
Rotation	360° (continuous)	
Bearing Type	Servo mount: Ball bearing Bushing mount: Sleeve bearing	
Torque (Maximums)	<b>STARTING</b>	<b>RUNNING</b>
Servo, 1 Section	0.25 oz - in (18.0gm - cm)	0.15 oz - in (10.8gm - cm)
Bushing, 1 Section	0.30 oz - in (21.6gm - cm)	0.25 oz - in (18.0gm - cm)
Each Additional Section	0.20 oz - in (14.4gm - cm)	0.15 oz - in (10.8gm - cm)
Mechanical Runouts (Maximums):	<b>SERVO</b>	<b>BUSHING</b>
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)	0.003 in (0.08cm)
Weight (Maximums):		
Single Section	0.8 oz (22.7gm)	
Each Additional Section	0.4 oz (11.3gm)	
Ganging	6 sections maximum, terminal alignment, added sections within ± 10° of section 1 terminals	
Moment of Inertia	0.12gm - cm <sup>2</sup> per section maximum	