Spectrol

7/8” (22.2mm) Single Turn Conductive Plastic Precision Potentiometer

FEATURES

- Virtually Infinite Resolution
- Designed in Reliability
- Rotational Life Exceeds 20 Million Shaft Revolutions
- Co-Molded Element & Multifinger Wiper Provide Low Noise Operation
- Excellent Temperature & Environmental Stability

ELECTRICAL SPECIFICATIONS

PARAMETER		
Total Resistance Standard Range:	500Ω to 50KΩ	
Tolerance:	**STANDARD** ± 10%	**SPECIAL** ± 5%
Linearity (Independent)	**STANDARD** ± 0.5%	**SPECIAL** ± 0.2%
Rotation	340° ± 5°	
Power Rating Section 1: Additional sections:	1.0 watts at 70° ambient derated to zero at 125°C 75% of the rating of section 1	
Minimum Voltage	0.5% maximum	
Output Smoothness	0.1% maximum	
Insulation Resistance	1000MΩ minimum, 500VDC	
Dielectric Strength	$1000V_{RMS}$, 60Hz from Terminals to shaft	
Taps (Extra)	Extra taps available as special	
Phasing	Points at which output ratio is 0.5 aligned ± 1° (Ref to section 1)	
Temperature Coefficient of Resistance	± 400ppm/°C maximum	

ORDERING INFORMATION

The Model 708 can be ordered from this data sheet with a variety of alternate characteristics, as shown. For most rapid service on your order, please state:

708	**2**	**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 708, Servo, 10K/10K/30K/500Ω 4 sections
Example: Model 708, Bushing, 5K, single section
Example: **708 - 2 - 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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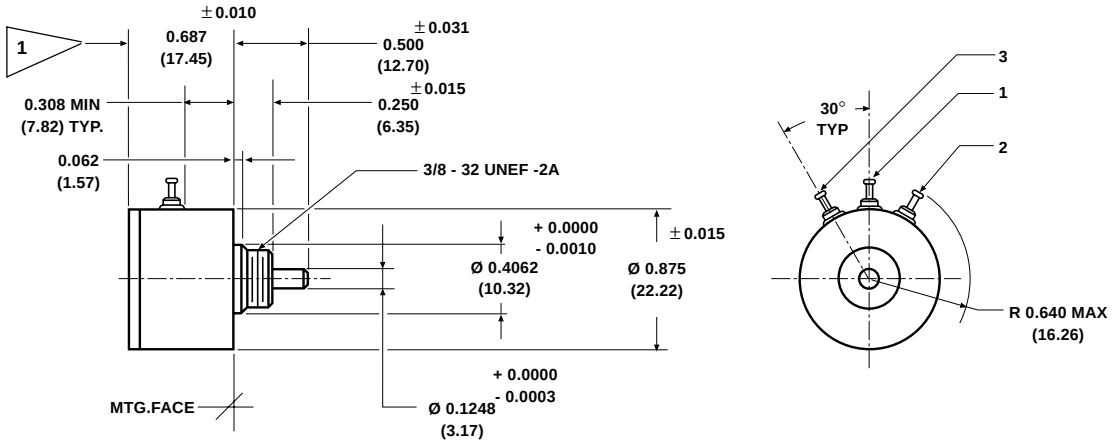
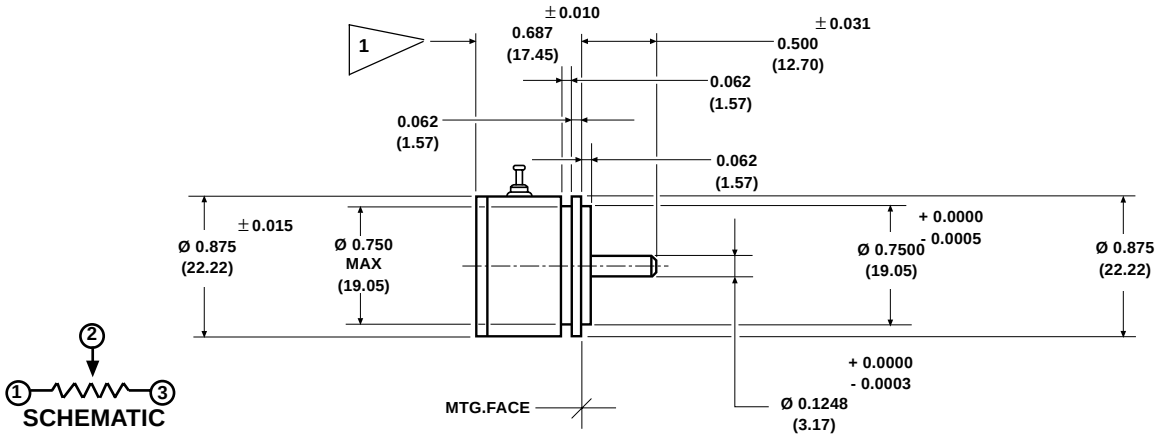
DIMENSIONS in millimeters

BUSHING MOUNT



SERVO MOUNT



SCHEMATIC

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

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

MECHANICAL SPECIFICATIONS		
PARAMETER		
Rotation	360° continuous	
Bearing Type Servo Mount: Bushing Mount:	 Ball Bearing Sleeve Bearing	
Torque (Maximums) Servo, 1 Section Bushing, 1 Section Each Additional Section	**STARTING** 0.10 oz - in (7.20gm - cm) 0.25 oz - in (18.00gm - cm) 0.10 oz - in (7.20gm - cm)	**RUNNING** 0.085 oz - in (6.12gm - cm) 0.20 oz - in (14.40gm - cm) 0.075 oz - in (5.40gm - cm)
Runouts (Maximums) Shaft Runout (TIR/in) Pilot Dia. Runout (TIR) Lateral Runout (TIR) Shaft End Play Shaft Radial Play	**SERVO** 0.002 in (0.05cm) 0.002 in (0.05cm) 0.002 in (0.05cm) 0.005 in (0.13cm) 0.002 in (0.05cm)	**BUSHING** 0.002 in (0.05cm) 0.002 in (0.05cm) 0.005 in (0.13cm) 0.005 in (0.13cm) 0.004 in (0.10cm)
Weight (Maximums) Single Section: Each Additional Section:	 0.6 oz (17.0gm) 0.2 oz (5.67gm)	
Ganging	6 sections max, terminal alignment, added sections within ± 10° of section 1 terminals	
Moment of Inertia	0.12gm - cm^2 per section maximum	

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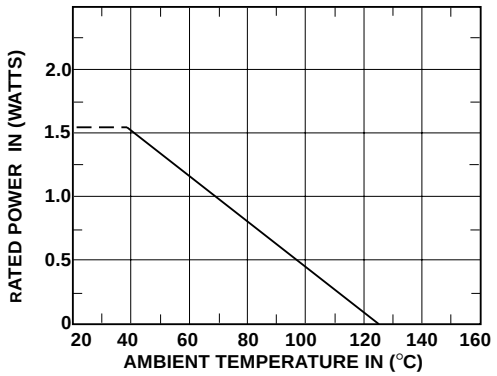
MATERIAL SPECIFICATIONS	
Housing and Lids	Aluminum, anodized
Shaft	Stainless steel, non-magnetic non-passivated
Terminals	Brass plated for solderability
Bushing Mount Hardware Lockwasher Internal tooth: Panel Nut:	 Steel, nickel plated Brass, nickel plated

ENVIRONMENTAL SPECIFICATIONS	
Vibration	15g thru 2000Hz
Shock	50g
Salt Spray	96 Hours
Rotational Life	Servo: 20 million shaft revolutions Bushing: 5 million shaft revolutions
Load Life	900 Hours
Temperature Range Moisture Resistant	-55°C to + 125°C –

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

POWER RATING CHART

(Ratings for cup No. 1.
Additional cups 75% of values shown)



RESISTANCE ELEMENT DATA	
RESISTANCE VALUES (Ω)	**MAXIMUM VOLTAGE ACROSS COIL (V)**
500	22
1K	32
2K	45
5K	71
10K	100
20K	141
50K	224