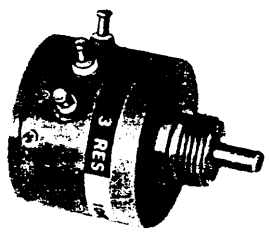
spectrol PRECISION POTENTIOMETERS

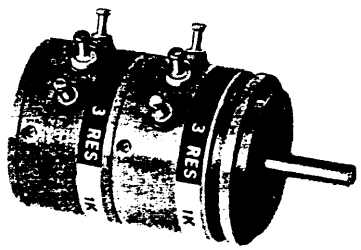
MODEL 708

- VIRTUALLY INFINITE RESOLUTION
- DESIGNED-IN RELIABILITY
- ROTATIONAL LIFE EXCEEDS 20 MILLION SHAFT REVOLUTIONS
- CO-MOLDED ELEMENT & MULTI-FINGER WIPER PROVIDE LOW NOISE OPERATION
- EXCELLENT TEMPERATURE & ENVIRONMENTAL STABILITY

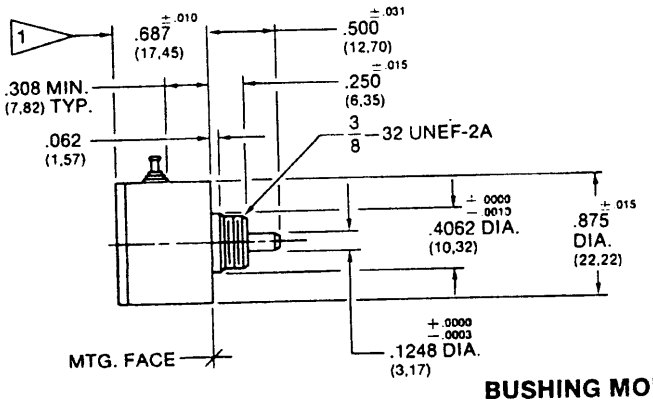
ACTUAL SIZE



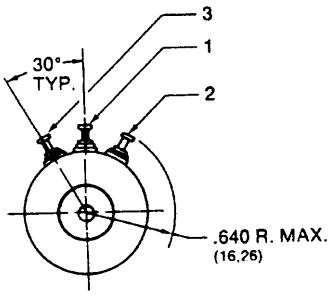
Model 708
Bushing Mount
Single Section

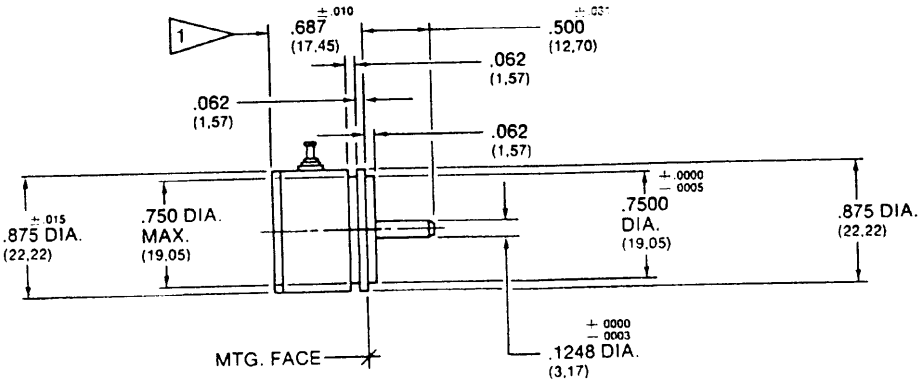


Model 708
Servo Mount
Two Section



BUSHING MOUNT

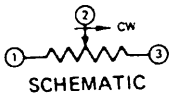




SERVO MOUNT

TOLERANCES: UNLESS OTHERWISE NOTED.
DECIMALS ±.005 ANGLES ±2°
BASIC DIMENSIONS ARE IN INCHES
MILLIMETER DIMENSION IN PARENTHESES

1 ADD .500 ±.002 (12,70) FOR EACH ADDITIONAL SECTION



SCHEMATIC

SPECIFICATIONS: (MIL-R-39023 Test Procedures Apply)

ELECTRICAL

TOTAL RESISTANCE	Standard range: 500Ω to 50KΩ Tolerance: Standard ±10%, Special to ±5%
LINEARITY (INDEPENDENT)	Standard ±0.5%, Special to ±0.2%
ROTATION	340° ±5°
POWER RATING	Section 1: 1.0 watts at 70°C ambient derated to zero at 125°C Additional sections: 75% of the rating of section 1
MINIMUM VOLTAGE	0.5% maximum
OUTPUT SMOOTHNESS	0.1% maximum
INSULATION RESISTANCE	1000 megohms min. 500 VDC
DIELECTRIC STRENGTH	1000 volts RMS, 60 Hz 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	±400 PPM/°C maximum

MECHANICAL

ROTATION	360° continuous		
BEARING TYPE	Servo Mount:	Ball bearing	
	Bushing Mount:	Sleeve bearing	
TORQUE [MAXIMUMS oz-in (gm-cm)]		Starting	Running
	Servo, 1 Section:	0.10 (7,20)	0.085 (6,12)
	Bushing, 1 Section:	0.25 (18,00)	0.20 (14,40)
	Each Additional Section:	0.10 (7,20)	0.075 (5,40)

MECHANICAL (Cont.)

RUNOUTS [MAXIMUMS

	Servo	Bushing
Shaft Runout (TIR/In.):	.002 (0,05)	.002 (0,05)
Pilot Dia. Runout (TIR):	.002 (0,05)	.002 (0,05)
Lateral Runout (TIR):	.002 (0,05)	.005 (0,13)
Shaft End Play:	.005 (0,13)	.005 (0,13)
Shaft Radial Play:	.002 (0,05)	.004 (0,10)

WEIGHT (MAXIMUMS)	Single Section: 0.6 oz (17,0 gm) Each Additional Section: 0.2 oz (5,67 gm)
GANGING	6 sections max., terminal alignment, added sections, within ±10° of section 1 terminals
MOMENT OF INERTIA	0.12 gm-cm² per section max.

MATERIALS

HOUSING AND LIDS	Aluminum, anodized
SHAFT	Stainless steel, non-magnetic, passivated
TERMINALS	Brass, gold plated
BUSHING MOUNT HARDWARE	Lockwasher, Internal tooth: steel, nickel plated Panel Nut: Brass, nickel plated

ENVIRONMENTAL

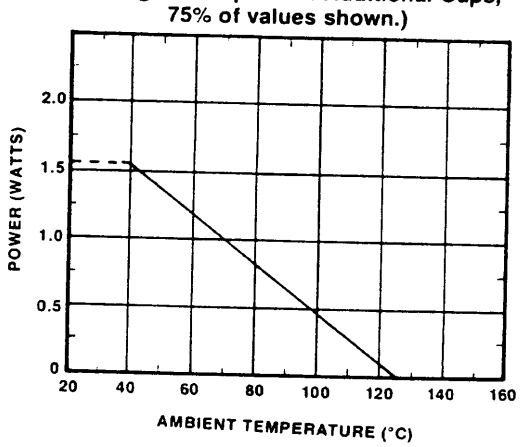
VIBRATION	15G thru 2000 Hz
SHOCK	50G's
SALT SPRAY	96 hours
ROTATIONAL LIFE	Servo: 20 million shaft revolutions Bushing: 5 million shaft revolutions
LOAD LIFE	900 hours
TEMPERATURE RANGE	−55° C to +125°C
MOISTURE RESISTANT	

MARKING

Units shall be marked with Spectrol name, model no., and date code, and on 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 VALUE (OHMS)	MAXIMUM VOLTAGE ACROSS COIL (VOLTS)
500	22
1K	32
2K	45
5K	71
10K	100
20K	141
50K	224

HOW TO ORDER THE MODEL 708

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

1. Model 708
2. Mounting type (servo or bushing).
3. Total resistance of each section, beginning with the section nearest the mounting end.
4. The number of sections.

Example—Model 708, Servo, 10K/10K/30K/500Ω, 4 sections.
Example—Model 708, Bushing, 5K, single section.

Other characteristics will be standard as described on this specification 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.

SPECTROL ELECTRONICS GROUP

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