

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



### FEATURES

- Virtually infinite resolution
- Bushing mount and servo mount types available
- Rotational life exceeds 20 million shaft revolutions
- Co-molded track and multi-finger wiper provide low noise signal
- Ohmic value range: 500 Ω to 50 kΩ
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Professional
Dimensions	7/8" (22.2 mm)

### ELECTRICAL SPECIFICATIONS

PARAMETER		
Total resistance standard range	500 Ω to 50 kΩ	
Tolerance	<b>STANDARD</b> ± 10 %	<b>SPECIAL</b> ± 5 %
Linearity (independent)	<b>STANDARD</b> ± 0.5 %	<b>SPECIAL</b> ± 0.2 %
Electrical angle	340° ± 5°	
Power Rating Section 1: Additional sections:	1.0 W at 70° ambient derated to zero at 125 °C 75 % of the rating of section 1	
Output smoothness	0.1 % maximum	
Insulation resistance	1000 MΩ minimum, 500 V <sub>DC</sub>	
Dielectric strength	1000 V <sub>RMS</sub> , 60 Hz from terminals to shaft	
Taps (extra)	Extra taps available as special	
Phasing	Points at which output is 0.5 aligned ± 1° (ref. to section 1)	
Temperature coefficient of resistance	± 600 ppm/°C maximum	

### ORDERING INFORMATION/DESCRIPTION

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

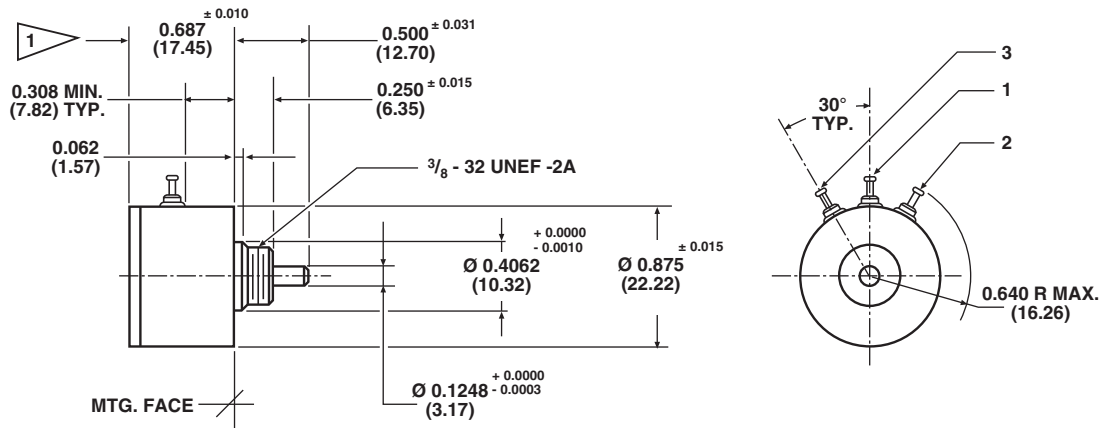
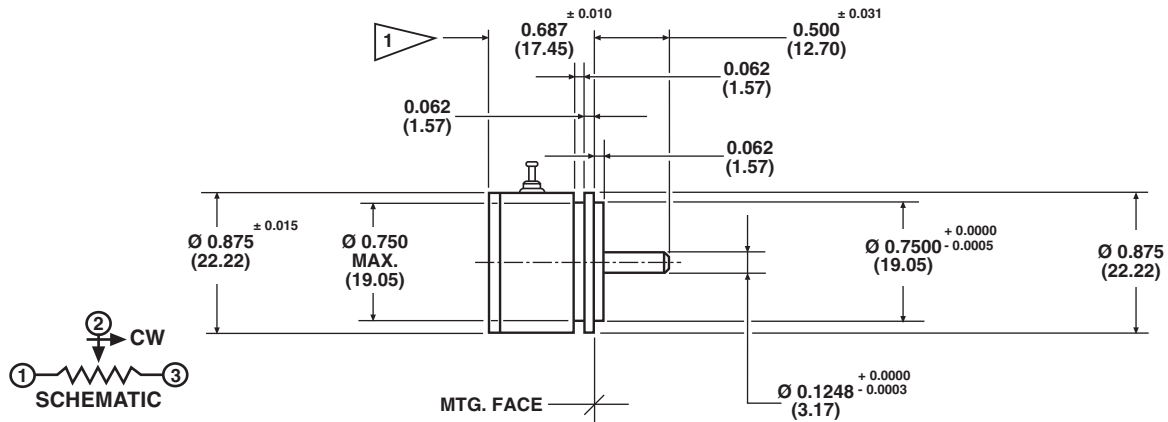
<b>708</b>	<b>B</b>	<b>1</b>	<b>10K</b>	<b>BO1</b>
MODEL	MOUNTING	NUMBER OF SECTIONS	TOTAL RESISTANCE OF EACH SECTION	PACKAGING
	<b>B:</b> Bushing <b>S:</b> Servo	Up to 6	Beginning with the section nearest the mounting end	Box of 1 piece

Other characteristics will be standard as described on this datasheet. 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.

### SAP PART NUMBERING GUIDELINES

<b>708</b>	<b>S</b>	<b>2</b>	<b>102</b>	<b>103</b>	<b>B01</b>
MODEL	STYLE	GANGS	OHMIC VALUE GANG N° 1	OHMIC VALUE GANG N° 2	PACKAGING
	<b>B:</b> Bushing <b>S:</b> Servo	From 1 up to 6	1K	10K	

**DIMENSIONS** in inches (millimeters)

**BUSHING MOUNT: 708B/708-1**

**SERVO MOUNT: 708S/708-2**


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

① ADD  $0.500 \pm 0.002$  (12.70) FOR EACH ADDITIONAL SECTION

**MECHANICAL SPECIFICATIONS**

PARAMETER		
Rotation	360° continuous	
Bearing type	Ball bearing	
Servo mount:	Sleeve bearing	
Bushing mount:	Sleeve bearing	
Torque (maximum)	<b>STARTING</b>	<b>RUNNING</b>
Servo, 1 section	0.10 oz. - in (7.20 g - cm)	0.085 oz. - in (6.12 g - cm)
Bushing, 1 section	0.25 oz. - in (18.00 g - cm)	0.20 oz. - in (14.40 g - cm)
Each additional section	0.10 oz. - in (7.20 g - cm)	0.075 oz. - in (5.40 g - cm)
Runouts (maximum)	<b>SERVO</b>	<b>BUSHING</b>
Shaft runout (TIR/in)	0.002" (0.05 cm)	0.002" (0.05 cm)
Pilot dia. runout (TIR)	0.002" (0.05 cm)	0.002" (0.05 cm)
Lateral runout (TIR)	0.002" (0.05 cm)	0.005" (0.13 cm)
Shaft end play	0.005" (0.13 cm)	0.005" (0.13 cm)
Shaft radial play	0.002" (0.05 cm)	0.004" (0.10 cm)
Weight (maximum)		
Single section:	0.6 oz. (17.0 g)	
Each additional section:	0.2 oz. (5.67 g)	
Ganging	6 sections max, terminal alignment, added sections within $\pm 10^\circ$ of section 1 terminals	
Moment of inertia	0.12 g - cm <sup>2</sup> per section maximum	



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	15 g thru 2000 Hz
Shock	50 g
Salt spray	96 h
Rotational life	Servo: 20 million shaft revolutions Bushing: 5 million shaft revolutions
Load life	900 h
Temperature range	-55 °C to +125 °C

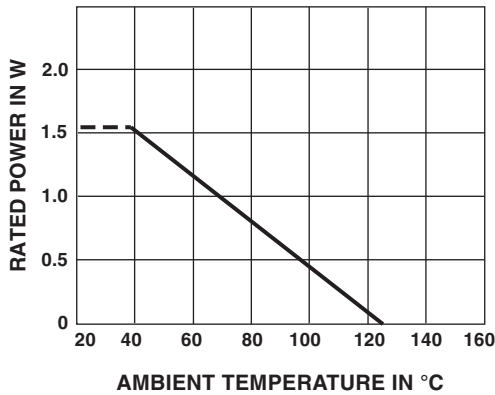
**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability.

MARKING	
Unit identification	Units shall be marked with Spectrol name, model no, and data code, and on each section, resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 708-22102103

### POWER RATING CHART

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



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



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