

Single-Turn Precision Potentiometer

Model 5400 Series



Features:

- 1-7/16" diameter
- Wirewound



Models Available

5401	1/4" Shaft, 1/2" Bushing
5403	1/4" Shaft, Servo

Electrical

Resistance Range, Ohms	25 to 50K
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity	±1.0%, <100 Ohms ±0.5%, ≥100 Ohms
Minimum Practical Independent Linearity	±1%, <100 Ohms ±0.5%, 100-1,999 Ohms ±0.25%, 2K-9,999 Ohms ±0.15%, ≥10K Ohms
Power Rating, Watts	2.0 at 80°C derating to 0 at 125°C
Dielectric Strength	1,000V rms
Insulation Resistance, Minimum	1,000 Megohms
Noise, Maximum	100 Ohms
Actual Electrical Travel	354° ± 2°
Tap Tolerance	±1°
End Voltage, Maximum	Within Std. Linearity Tolerance

Environmental

Operating Temperature Range	Static: -65°C to +125°C Dynamic: -40°C to +125°C
Temperature Cycling	5 cycles, -65°C to +125°C (5% ΔR)
Shock, 6ms Sawtooth	100G's (0.1%ms discontinuity, max.)
Vibration	15G's, 10 to 2,000 Hz (5% ΔR, 0.1%ms discontinuity, max.)
Humidity	Ten 24 hour cycles (3% ΔR)
High Temperature Exposure	1,000 hours at 125°C (5% ΔR)
Rotational Load Life	At rated wattage at 70°C (5% ΔR) 5401: 500K shaft rev. plus 900 hrs. 5403: 1 mil. shaft rev. plus 900 hrs.

General Note

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Mechanical

Total Mechanical Travel	360° Continuous	
Number of Cups, Maximum	4	
Weight, Nominal	2.0 oz. Single Cup 0.7 oz. Each Added Cup	
Backlash, Maximum	Negligible	
Shaft End Play, Maximum	.005"	
	5401	5403
Shaft Runout, T.I.R., Maximum	.005"	.001"
Pilot Diameter Runout, T.I.R., Maximum	.001"	.0015"
Lateral Runout, T.I.R., Maximum	.0025"	.004"
Shaft Radial Play, Maximum	.0015"	.004"
Starting Torque, Maximum (per gang)	1.6 oz.-in.	0.6 oz.-in.
Running Torque, Maximum (per gang)	0.8 oz.-in.	0.4 oz.-in.

Standard Resistance Values, Ohms

Total Resistance	Theoretical Resolution (% Nominal)	Tempco of Wire
1K	0.125	±130 ppm/°C
2K	0.106	±130 ppm/°C
5K	0.081	±20 ppm/°C
10K	0.073	±20 ppm/°C
20K	0.059	±20 ppm/°C

METRIC CONVERSIONS

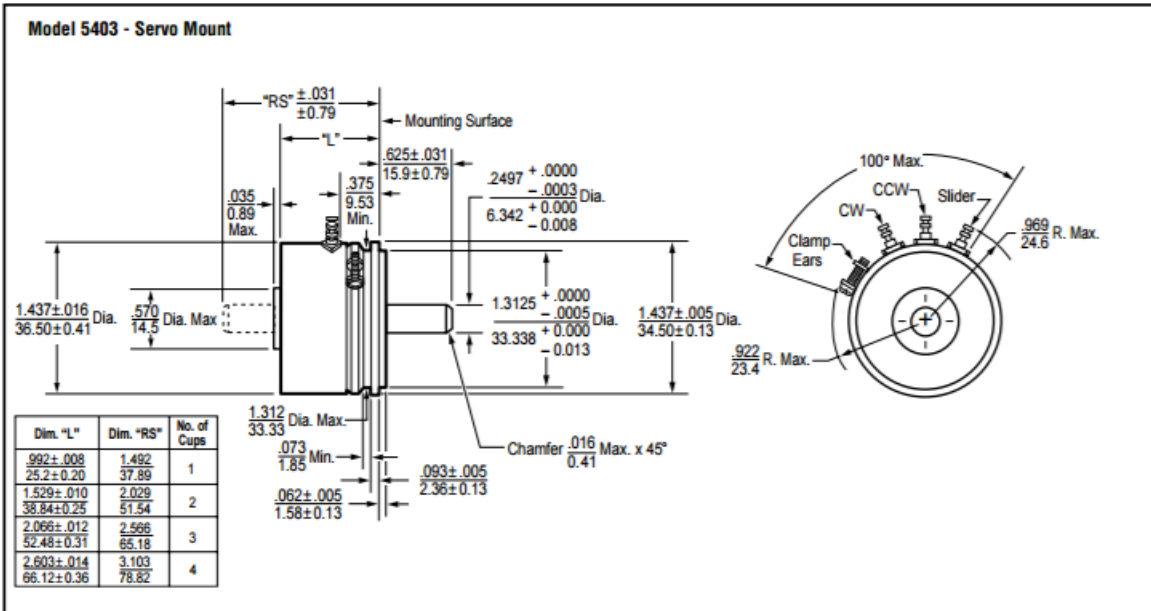
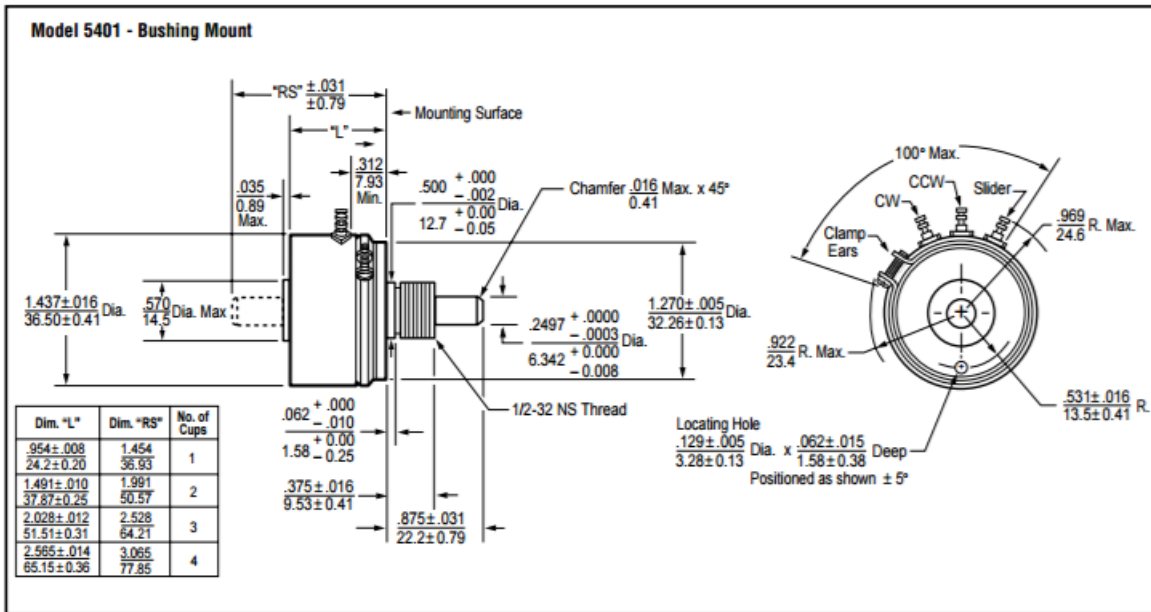
1 in.	25.4mm	1 oz.-in.	0,007 N-m
1 oz.	28.4 gm	1 lb.-in.	0,113 N-m

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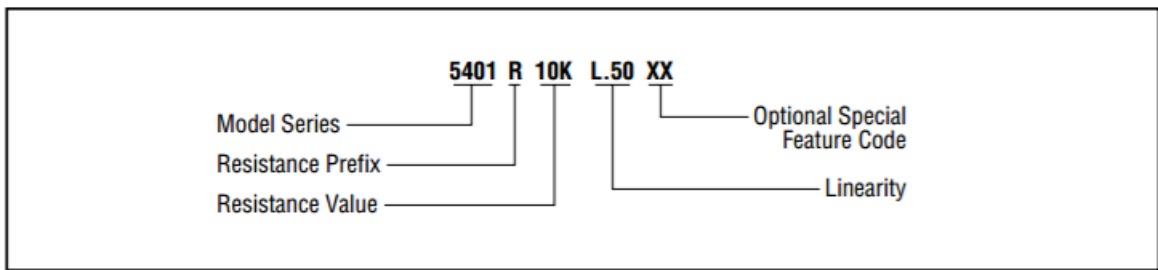
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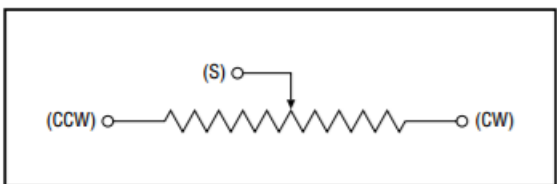
SPECIAL FEATURES

Center Tap	CT
Linearity Tape	LT
Rear Shaft Extension	RS
Flatted Shaft	FS
Slotted Shaft	SS

ORDERING INFORMATION



CIRCUIT DIAGRAM



NOTES

Metric equivalents, based on 1 inch = 25.4mm are rounded to the same number of significant figures as in the original English units and are provided for general information only.

Tolerances unless otherwise specified:
 Linear = ± .01 inches (.25mm)
 Angular = ± 2 degrees

DIMENSIONS
INCH
mm

THIRD ANGLE
PROJECTION

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