Single-Turn Precision Potentiometer

Model 5400 Series

Features:
- 1-7/16” diameter
- Wirewound

RoHS 2 compliant



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
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

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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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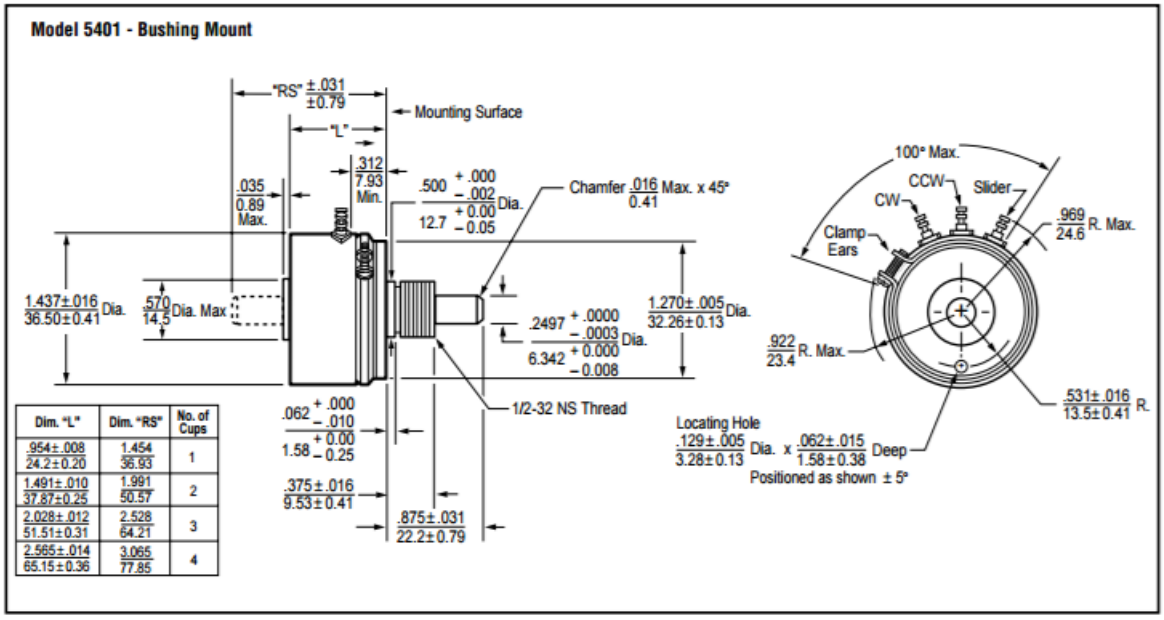
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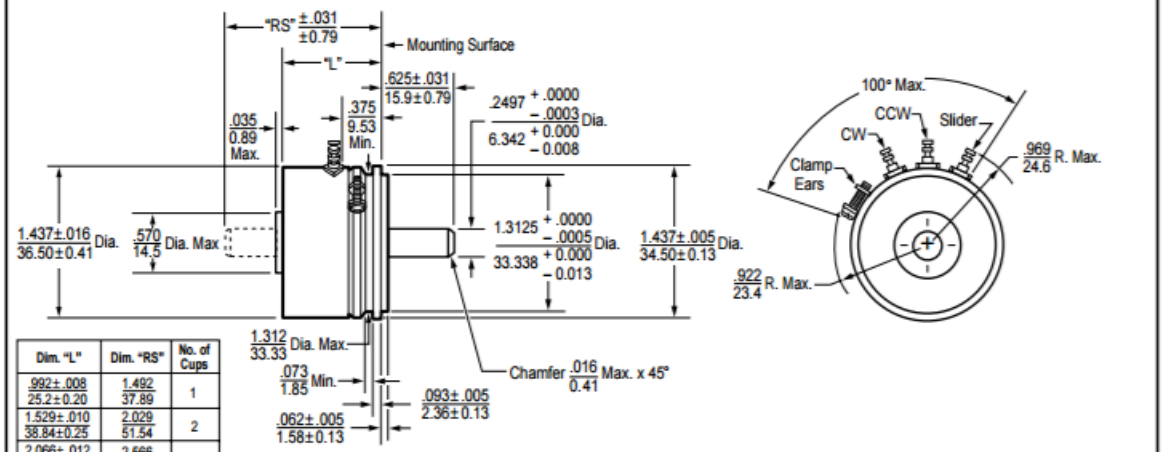
Model 5400

Model 5401 - Bushing Mount



Dim. "L"	Dim. "RS"	No. of Cups
.954±.008 24.2±0.20	1.454 36.93	1
1.491±.010 37.87±0.25	1.991 50.57	2
2.028±.012 51.51±0.31	2.528 64.21	3
2.565±.014 65.15±0.36	3.065 77.85	4

Model 5403 - Servo Mount



Dim. "L"	Dim. "RS"	No. of Cups
.992±.008 25.2±0.20	1.492 37.89	1
1.529±.010 38.84±0.25	2.029 51.54	2
2.066±.012 52.48±0.31	2.566 65.18	3
2.603±.014 66.12±0.36	3.103 78.82	4

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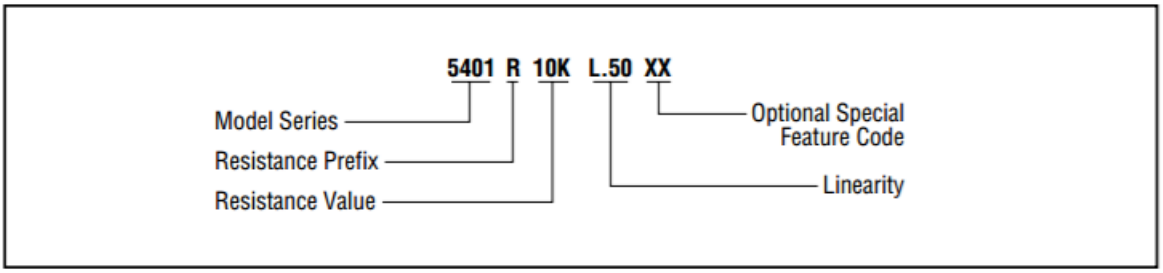
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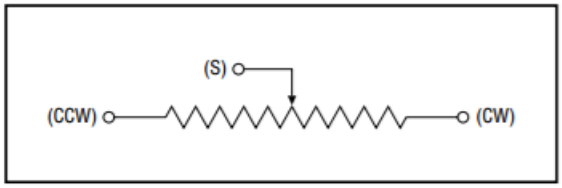
SPECIAL FEATURES

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

ORDERING INFORMATION



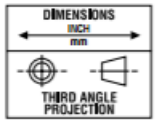
CIRCUIT DIAGRAM



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



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