Multi-Turn Precision Potentiometer

Model 9300 Series

Features:

- 1-13/16” diameter
- 3-turn
- Wirewound

RoHS 2 compliant



Model Styles Available

9301	1/4” Shaft, 3/8” Bushing
9303	1/4” Shaft, Servo

Electrical

Resistance Range, Ohms	30 to 190K
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity	±0.25%
Minimum Practical Independent Linearity	±0.2%, < 150 Ohms ±0.1%, 150-1,500 Ohms ±0.05%, 1,501-9,999 Ohms ±0.04%, ≥10K Ohms
Power Rating, Watts	3.0 at 70°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	1,080° + 3° – 0°, ≤100 Ohms 1,080° + 2° – 0°, 101-700 Ohms 1,080° + 1° – 0°, >700 Ohms
Electrical Continuity Over Travel	+90° ±5° at each end
Tap Tolerance	±2°, ≤100 Ohms ±1°, 101-700 Ohms ±0.5°, >700 Ohms
End Voltage, Maximum	Within Std. Linearity Tolerance

Specifications subject to change without notice.

General Note
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Mechanical

Total Mechanical Travel		1260° ± 5°
Number of Cups, Maximum		3
Weight, Nominal (per gang)		3.4 oz.
Static Stop Strength		600 oz.-in.
Backlash, Maximum		Essentially zero
Shaft End Play, Maximum		.005"
Shaft Runout, T.I.R., Maximum		.0005"
Pilot Diameter Runout, T.I.R., Maximum		.001"
Lateral Runout, T.I.R., Maximum		.0015"
Starting Torque, Maximum		1.3 oz.-in.
Running Torque, Maximum		0.9 oz.-in.
Panel Nut Tightening Torque, Maximum	**9301**	**9303**
	25 lb.-in.	N/A
Shaft Radial Play, Maximum	0.002"	0.001"

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	50G's (0.1ms discontinuity max.)
Vibration	5G's, 10 to 2,000 Hz (5% ΔR, 0.1ms discontinuity max.)
Moisture Resistance	Ten 24 hour cycles (3% ΔR)
High Temperature Exposure	1,000 hours at 125°C (5% ΔR)
Rotational Load Life	2 mil. shaft rev. plus 900 hrs. at rated wattage at 70°C (5% ΔR)

STANDARD RESISTANCE VALUES, OHMS

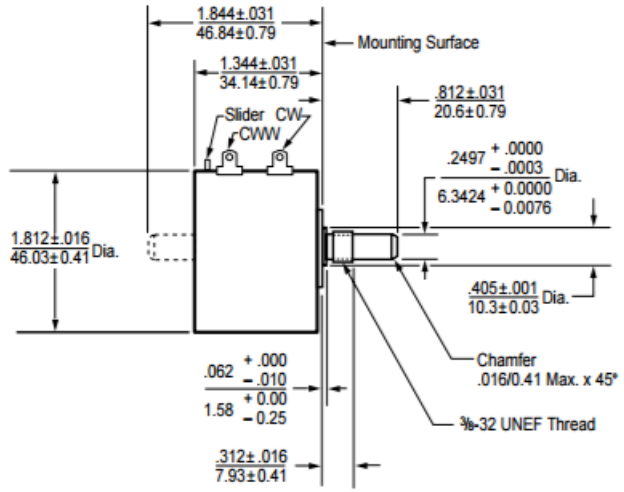
Total Resistance	Theoretical Resolution (% Nominal)	Tempco of Wire
1K	0.039	±20 ppm/°C
5K	0.032	±20 ppm/°C
10K	0.027	±20 ppm/°C
20K	0.021	±20 ppm/°C
50K	0.017	±20 ppm/°C

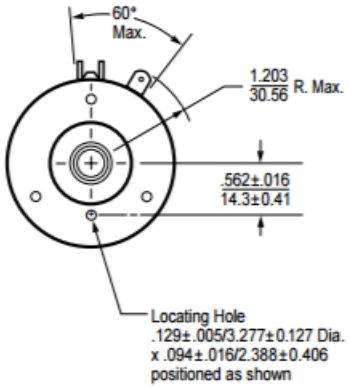
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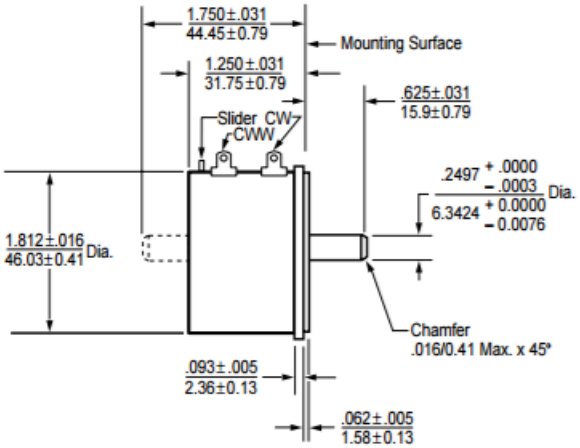
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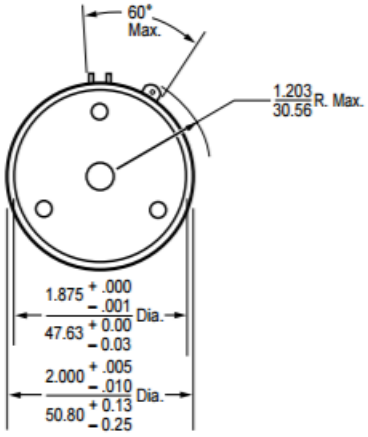
Model 9301
Bushing Mount





Model 9303
Servo Mount





METRIC CONVERSIONS

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

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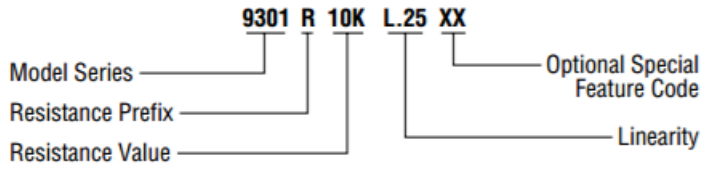
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SPECIAL FEATURES

Center Tap	CT
Linearity Tape	LT
Rear Shaft Extension	RS
Flatted Shaft	FS
Slotted Shaft	SS
Shaft Lock (9301 only)	SL

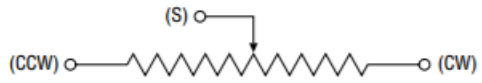
ORDERING INFORMATION



MATCHING TURNS COUNTING DIALS

9301: 2606, 2607, 2626, 2627, 2646, 2647, RB

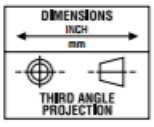
CIRCUIT DIAGRAM



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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