

# MODEL 9300 SERIES

## 1-13/16" Diameter

### 3-Turn

### Wirewound

### Precision Potentiometer



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#### MODEL STYLES

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.

**ENVIRONMENTAL (MIL-R-12934)**

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)

**MECHANICAL**

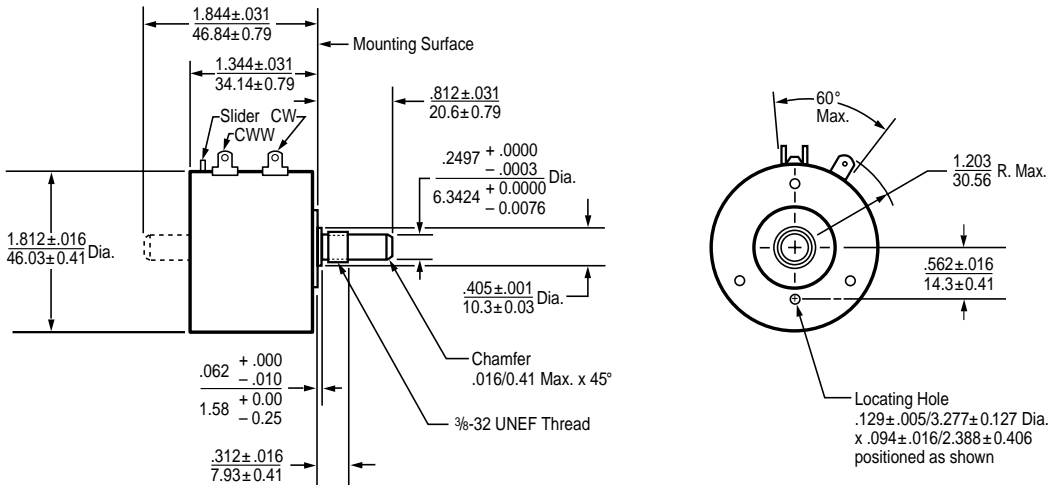
Total Mechanical Travel	1260° ± 5°
Number of Cups, Maximum	3
Weight, Nominal (per gang)	3.4 oz.
Static Stop Strength	600 oz.-in.
Backlash, Maximum	Essentially zero
Shaft End Play, Maximum	.005"
Shaft Runout, T.I.R., Maximum	.0005"
Pilot Diameter Runout, T.I.R., Maximum	.001"
Lateral Runout, T.I.R., Maximum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

**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

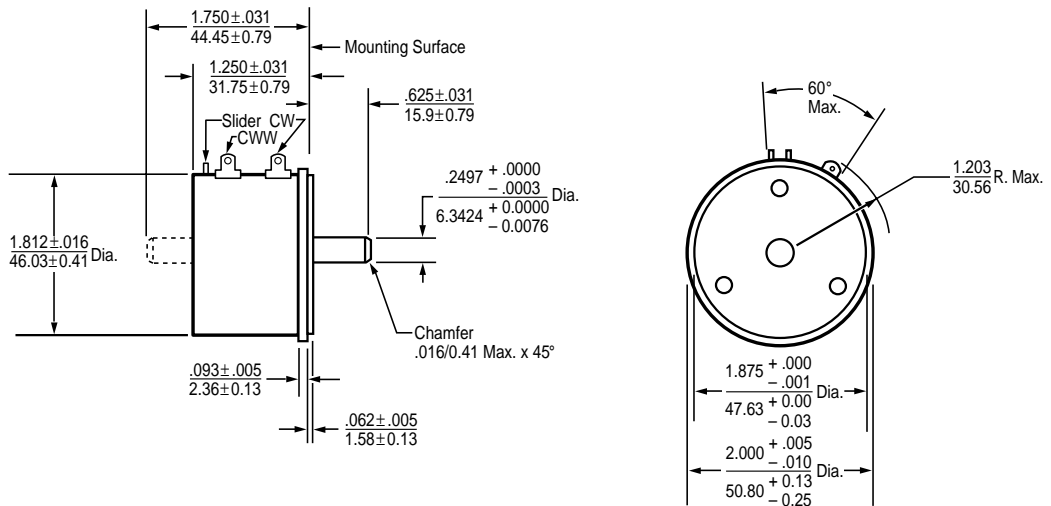
## OUTLINE DIMENSIONS (Inch/mm)

### Model 9301 Bushing Mount



## OUTLINE DIMENSIONS (Inch/mm)

### Model 9303 Servo Mount



## METRIC CONVERSIONS

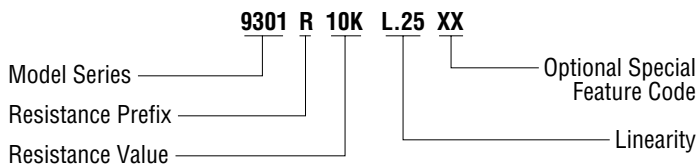
1 in.	25.4 mm
1 oz.	28.4 gm

1 oz.-in.	0,007 N-m
1 lb.-in.	0,113 N-m

## SPECIAL FEATURES

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

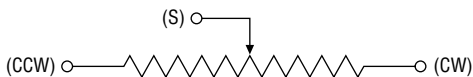
## ORDERING INFORMATION



## 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 =  $\pm .01$  inches  
 (.25mm)  
 Angular =  $\pm 2$  degrees

