

# Precision Potentiometer

## Model A Series



### Features:

- 1-13/16" diameter
- 10-turn
- Wirewound



### ELECTRICAL

Resistance Range, Ohms	10 to 500K
Standard Resistance Tolerance	< 100 Ohms = $\pm 5\%$ , $\geq 100$ Ohms = $\pm 3\%$
Minimum Practical Resistance Tolerance	$\pm 1\%$
Independent Linearity	< 300 Ohms = $\pm 0.50\%$ , $\geq 300$ Ohms = $\pm 0.25\%$
Minimum Practical Independent Linearity	$\pm 0.15\%$ , $\leq 20$ Ohms $\pm 0.10\%$ , < 100 Ohms $\pm 0.075\%$ , < 300 Ohms $\pm 0.05\%$ , $\geq 300$ Ohms
Power Rating, Watts	5.0 at 40°C derating to 0 at 85°C
Input Voltage, Maximum	1,000Vdc not to exceed power rating
Dielectric Strength	1,000V rms
Insulation Resistance, Minimum	1,000 Megohms
Noise, Maximum	500 Ohms: RT $\leq 2613.7$ Ohms 250 Ohms: RT > 2613.7 Ohms
Actual Electrical Travel	3600° + 4° - 0°
Tap Tolerance	$\leq 20$ Ohms = $\pm 3^\circ$ , < 100 Ohms = $\pm 2^\circ$ < 300 Ohms = $\pm 1.5^\circ$ , $\geq 300$ Ohms = $\pm 1^\circ$
End Voltage, Maximum (% of input voltage)	10 Ohms = 3%, 25 Ohms = 1.2% 50 Ohms = 0.6%, $\geq 100$ Ohms = 0.25%

This model available in a hybrid version – contact factory for details.

### ENVIRONMENTAL (MIL-R-12934)

Operating Temperature Range	Static: -65°C to +85°C Dynamic: -40°C to +85°C
Temperature Cycling	5 cycles, -65°C to +85°C (5% $\Delta$ R)
Shock, 6ms Sawtooth	100G's (0.1ms discontinuity max.)
Vibration	6 hours, 10 to 55 Hz (5% $\Delta$ RT, 0.1ms discontinuity max.)
Moisture Resistance	Ten 24 hour cycles (3% $\Delta$ R)
High Temperature Exposure	1,000 hours at 85°C (5% $\Delta$ R)
Rotational Load Life	2 mil. shaft rev. + 900 hrs. at rated wattage at 40°C (5% $\Delta$ R)

### General Note

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### MECHANICAL

Total Mechanical Travel	3600° + 4° – 0°
Number of Gangs, Maximum	3
Weight, Nominal (Single Gang)	4.4 oz.
Static Stop Strength	550 oz.-in.
Backlash, Maximum	1°
Panel Nut Tightening Torque, Maximum	25 lb.-in.
Shaft End Play, Maximum	.005"
Shaft Runout, T.I.R., Maximum	.0005"
Pilot Diameter Runout, T.I.R., Maximum	.002"
Lateral Runout, T.I.R., Maximum	.003"
Shaft Radial Play, Maximum	.003"
Start/Run Torque, Maximum (per gang)	3.0 oz.-in.

### STANDARD RESISTANCE VALUES, OHMS

Total Resistance	Theoretical Resolution (% Nominal)	Tempco of Wire
10	0.082	+800 ppm/°C *
25	0.040	+800 ppm/°C *
50	0.031	+800 ppm/°C *
100	0.040	±20 ppm/°C
200	0.031	±20 ppm/°C
500	0.024	±20 ppm/°C
1K	0.021	±20 ppm/°C
2K	0.016	±20 ppm/°C
5K	0.014	+130 ppm/°C *
10K	0.011	+130 ppm/°C *
20K	0.009	+130 ppm/°C *
50K	0.007	+130 ppm/°C *
100K	0.006	±20 ppm/°C
200K	0.005	±20 ppm/°C
300K	0.005	±20 ppm/°C
500K	0.005	±20 ppm/°C

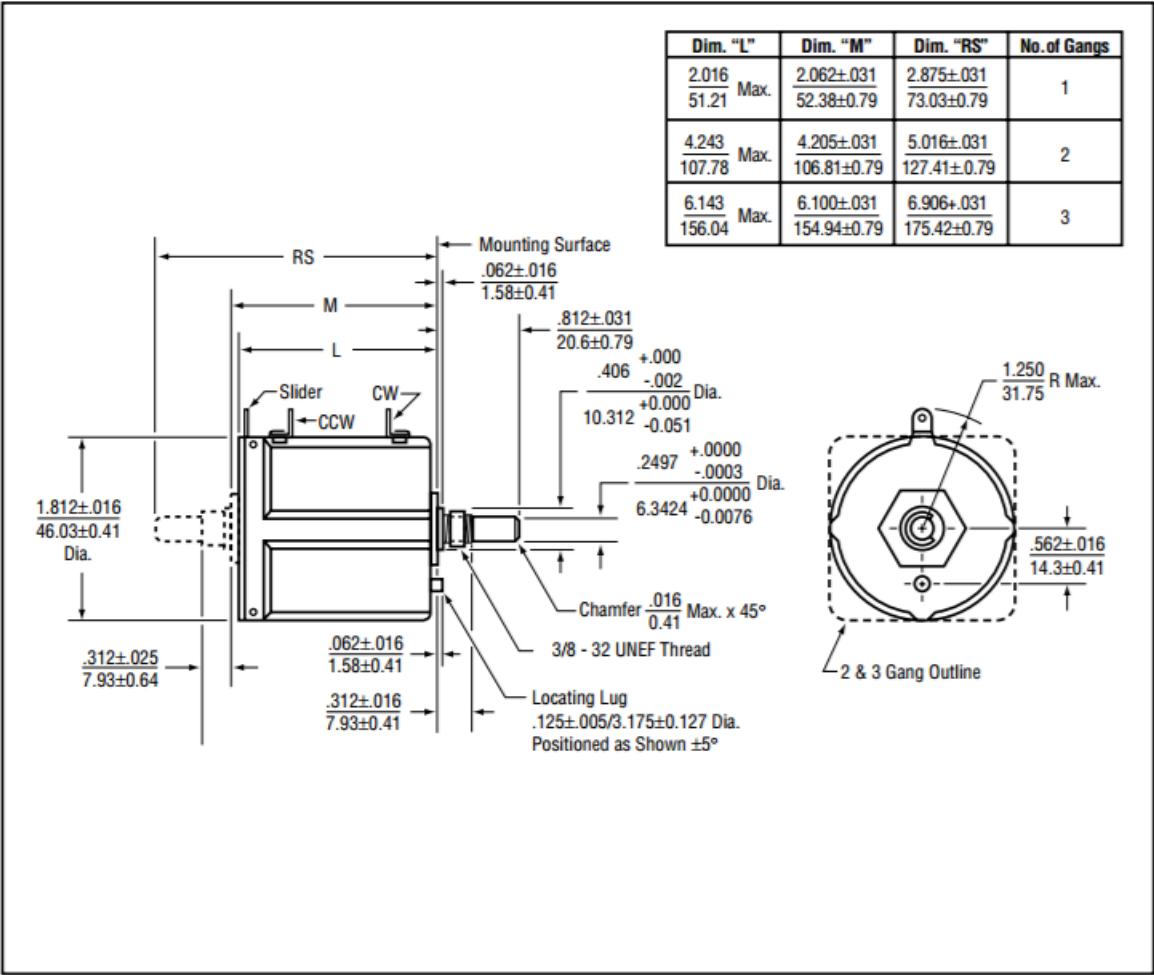
\* Lower tempco available as a special model.

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### METRIC CONVERSIONS

1 in.	25.4mm
1 oz.	28.4 gm

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

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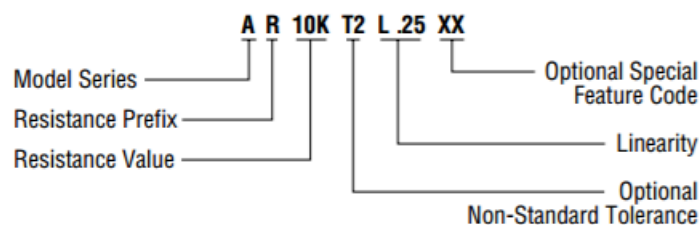
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### SPECIAL FEATURE CODES

Center Tap	CT
Linearity Tape	LT
Rear Shaft Extension	RS
Flatted Shaft	FS
Slotted Shaft	SS
Shaft Lock	SL
Color Coded	CC
Additional Gangs	2G or 3G

### ORDERING INFORMATION



### MATCHING TURNS COUNTING DIALS

2606, 2607, 2626, 2627, 2646, 2647, 2126, 2606S, 2607S, 2646S, 2647S, RB

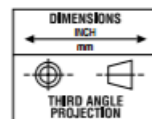
### CIRCUIT DIAGRAM



### 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



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