

# MODEL 6143, 6163

7/8" Diameter

Single Turn

Conductive Plastic

Precision Potentiometer /  
Position Sensor



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## MODEL STYLES

6143

1/8" Shaft, Bronze Sleeve Bearing

6163

1/8" Shaft, Ball Bearing

## ELECTRICAL

Resistance Range, Ohms	1K to 100K
Standard Resistance Tolerance	±10%
Minimum Practical Resistance Tolerance	±5%
Independent Linearity*	±1.0%
Minimum Practical Independent Linearity	±0.5%
Input Voltage, Maximum	400Vdc not to exceed power rating
Power Rating, Watts	1.0 at 70°C derating to 0 at 125°C
Dielectric Strength	750V rms
Insulation Resistance, Minimum	1,000 Megohms
Output Smoothness, Maximum	0.1%
Actual Electrical Travel, Nominal	340°
Electrical Continuity Travel, Minimum	350°
End Voltage, Maximum	0.5% of Input Voltage
Resolution	Essentially infinite
Temperature Coefficient**	-800 ppm/°C

Specifications subject to change without notice.

\* Linearity is measured between 1% and 99% of input voltage.

\*\* Special tempco available to ±100ppm/°C.

**ENVIRONMENTAL (MIL-R-39023)**

Operating Temperature Range	Static: -65°C to +125°C Dynamic: -40°C to +125°C	
Temperature Cycling	5 cycles, -65°C to +125°C (10% ΔR)	
Shock, 6ms Sawtooth	100G's (0.1ms discontinuity max.)	
Vibration	10G's, 10 to 500 Hz (2% ΔR, 0.1ms discontinuity max.)	
Moisture Resistance	Five 24 hour cycles (10% ΔR)	
High Temperature Exposure	1,000 hours at 125°C (0.5% ΔR)	
Rotational Life	<b>6143:</b> 10 mil. shaft rev.	<b>6163:</b> 25 mil. shaft rev.
Rotational Load Life	5 mil. shaft rev. at rated wattage at 70°C (10% ΔR)	

**MECHANICAL**

Total Mechanical Travel	360° continuous	
Number of Gangs, Maximum	1	
Weight, Nominal	0.46 oz.	
	<b>6143</b>	<b>6163</b>
Shaft Runout, T.I.R., Maximum	.003"	.003"
Pilot Diameter Runout, T.I.R., Maximum	.005"	.003"
Lateral Runout, T.I.R., Maximum	.005"	.003"
Shaft Radial Play, Maximum	.005"	.005"
Start/Run Torque, Maximum	0.6 oz.-in.	0.5 oz.-in.
Bearing Type	Bronze Sleeve Bearing	Ball Bearing

**STANDARD RESISTANCE VALUES, OHMS**

1K	2K	5K	10K	20K	50K
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**METRIC CONVERSIONS**

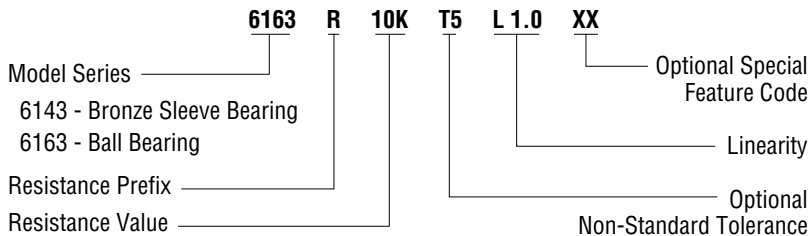
1 in.	25.4 mm	1 oz.-in.	0,007 N-m
1 oz.	28.4 gm	1 lb.-in.	0,113 N-m



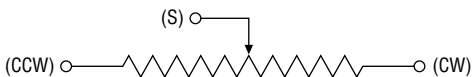
## SPECIAL FEATURES

Linearity Tape	LT
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

