

MODEL 6143, 6163

7/8" Diameter

Single Turn

Conductive Plastic

Precision Potentiometer /
Position Sensor



2

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	6143: 10 mil. shaft rev.	6163: 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.	
	6143	6163
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

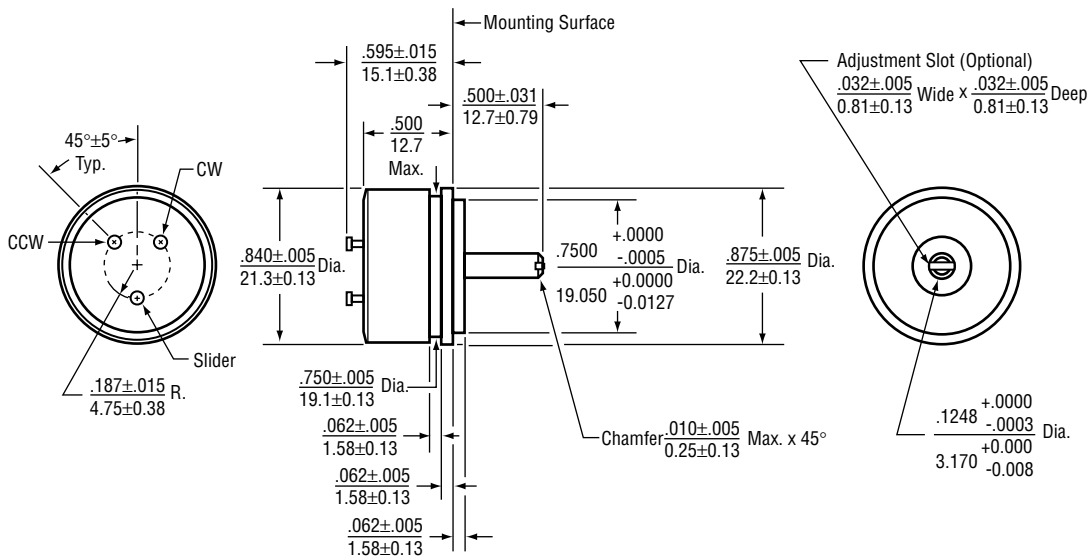
STANDARD RESISTANCE VALUES, OHMS

1K	2K	5K	10K	20K	50K
----	----	----	-----	-----	-----

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

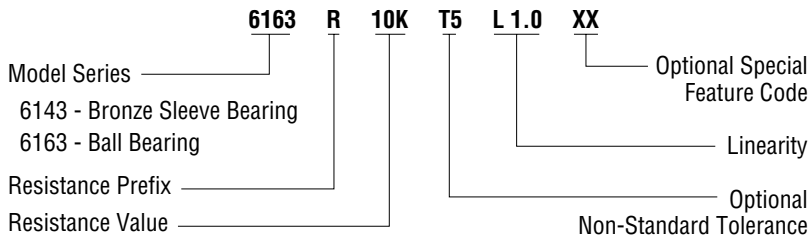
OUTLINE DIMENSIONS (Inch/mm)



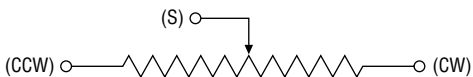
SPECIAL FEATURES

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

