

Model 6143, 6163

7/8" Diameter Single Turn Conductive Plastic Precision Potentiometer / Position Sensor



MODEL STYLES AVAILABLE

6143	1/8" Shaft, Bronze Sleeve Bearing
6163	1/8" Shaft, Ball Bearing

ELECTRICAL¹

Resistance Range	1K to 100K Ohms
Standard Resistance Tolerance	±10%
Minimum Practical Resistance Tolerance	±5%
Independent Linearity ²	±1%
Minimum Practical Independent Linearity	±0.5%
Input Voltage	400 VDC maximum, not to exceed power rating
Power Rating	1.0 Watt at 70°C, derating to 0 at 125°C
Dielectric Strength	750 V rms
Insulation Resistance	1,000 Megohms minimum
Output smoothness	0.1% maximum
Actual Electrical Travel	340° nominal
Electrical Continuity Travel	350° nominal
End Voltage	maximum 0.5% of input voltage
Resolution	essentially infinite
Temperature Coefficient of Resistance ³	-400 ppm/°C typical
Temperature Coefficient of Output Voltage ⁴	±10 ppm/°C typical

MECHANICAL

Total Mechanical Travel	360° continuous
Number of Gangs	1 maximum
Weight	0.46 oz. nominal
Shaft Runout	maximum T.I.R. 0.003"
Pilot Diameter Runout	maximum T.I.R. for 6143: 0.005", for 6163: 0.003"
Lateral Runout	maximum T.I.R. for 6143: 0.005", for 6163: 0.003"
Shaft Radial Play	maximum 0.005"
Start/Run Torque	maximum 0.6 oz.in. for 6143, 0.5 oz.-in. for 6163
Bearing type	6143: bronze sleeve bearing, 6163: ball bearing

¹ Specifications subject to change without notice.

² Linearity is measured between 1% and 99% of input voltage.

³ Special TCR available to ±100 ppm/°C.

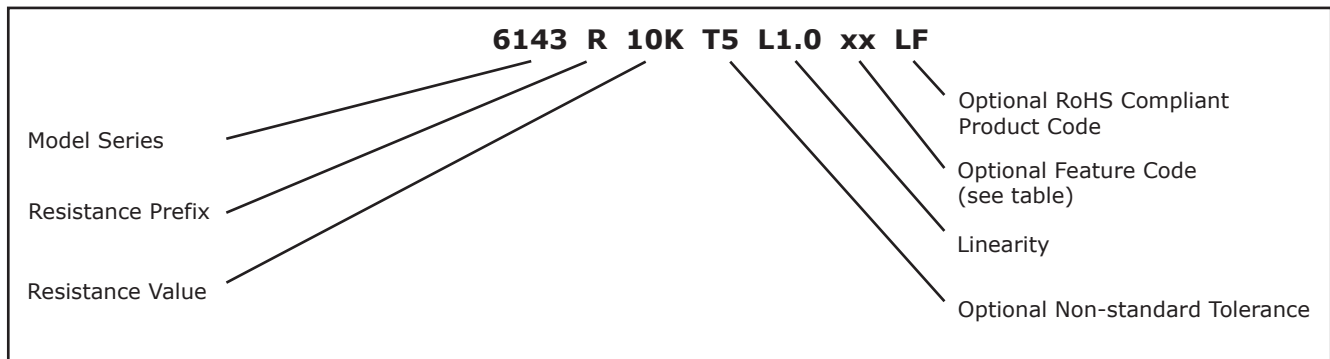
⁴ Measured with 10 VDC CW to CCW and slider at 50% of electrical travel

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ENVIRONMENTAL (MIL-PRF-39023)

Operating Temperature Range	-40°C to +125°C dynamic, -65°C to +125°C static
Temperature Cycling	5 cycles, -65°C to +125°C, maximum 10% ΔR
Shock	6 ms Saw-tooth, 100 G's, 0.1 ms maximum discontinuity
Vibration	10 G's, 10 to 500 Hz, maximum 2% ΔR, 0.1 ms maximum discontinuity
Moisture Resistance	five 24 hour cycles, maximum 10% ΔR
High Temperature Exposure	1,000 hours at 125°C, maximum 0.5% ΔR
Rotational Life	6143: 5 million shaft revolutions, 6163: 25 million shaft revolutions
Rotational Load Life	5 million shaft revolutions at 1.0 Watt & 70°C, maximum 10% ΔR

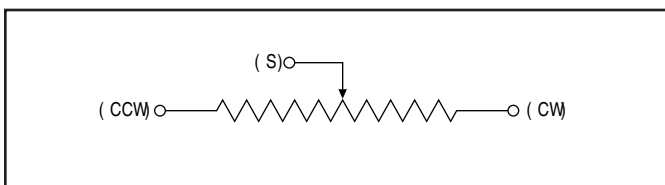
ORDERING INFORMATION



FEATURE CODES

Linearity Tape	LT
Flatted Shaft	FS
Slotted Shaft	SS

CIRCUIT DIAGRAM



STANDARD RESISTANCE VALUES

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