

Model 6180 series

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



MODEL STYLES AVAILABLE

6181	1/8" Shaft, 1/4" Bushing
6184	6 mm Shaft, 3/8" Bushing
6186	1/8" Shaft, 3/8" Bushing
6187	1/4" Shaft, 3/8" Bushing
6188 for side load applications	1/4" Shaft, 3/8" Bushing

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 (300° with stop feature)
Electrical Continuity Travel	350° nominal (320° with stop feature)
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 (320° ±3° with stop feature)
Number of Gangs	1 maximum
Weight	0.53 oz. nominal (single gang)
Backlash	1° maximum
Static Stop Strength	40 oz.-in.
Panel Nut Tightening Torque	25 lb.-in. maximum
Start/Run Torque	1.0 oz.-in.

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



BI Technologies Corporation

4200 Bonita Place, Fullerton, CA 92835 USA

Phone: 714 447 2345 Website: www.bitechnologies.com

May 21, 2014

Model 6180 page 1 of 3

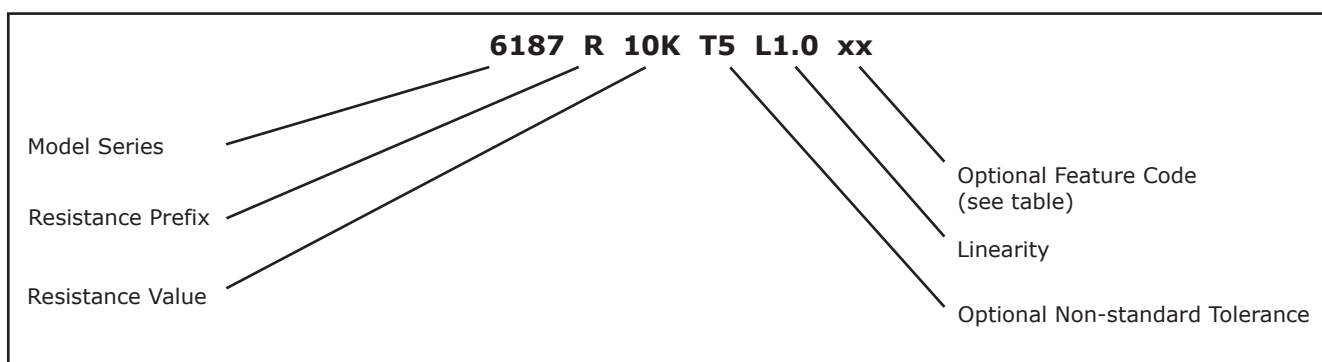


Model 6180

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 25% ΔR
High Temperature Exposure	1,000 hours at 125°C, maximum 0.5% ΔV _R
Rotational Life	5 million shaft revolutions (no sideload, 6187 up to 8 oz sideload)
Rotational Load Life	5 million shaft revolutions, maximum 10% ΔR
Ingress Protection Rating (IP Code)	IP50, IP66 available as option (feature code ES)

ORDERING INFORMATION

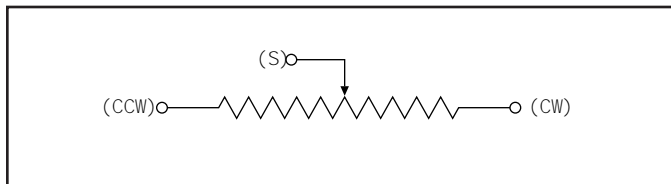


FEATURE CODES

Center Tap	CT
Linearity Tape	LT
Shaft Lock	SL
Stop	ST
Seal (IP66) 6184, 6187, or 6188 only	ES

When multiple feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

CIRCUIT DIAGRAM



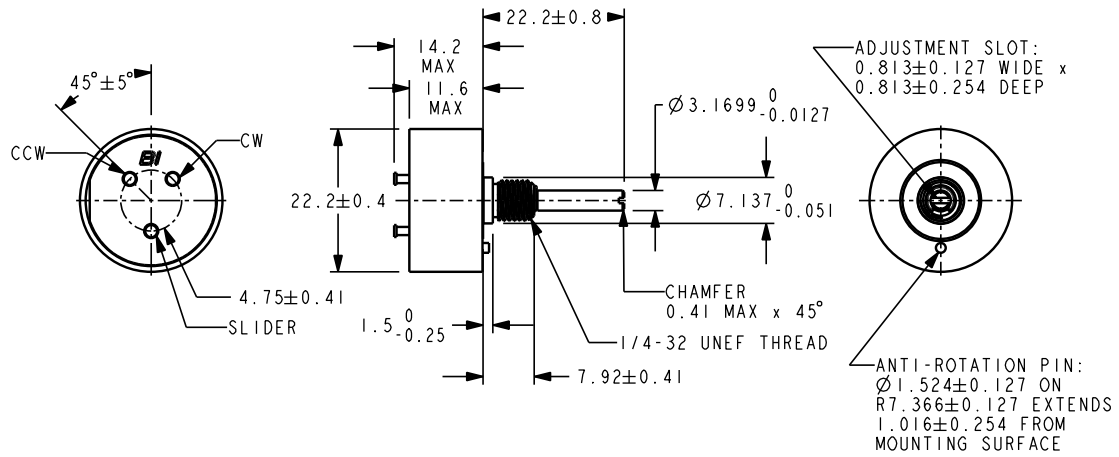
STANDARD RESISTANCE VALUES

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

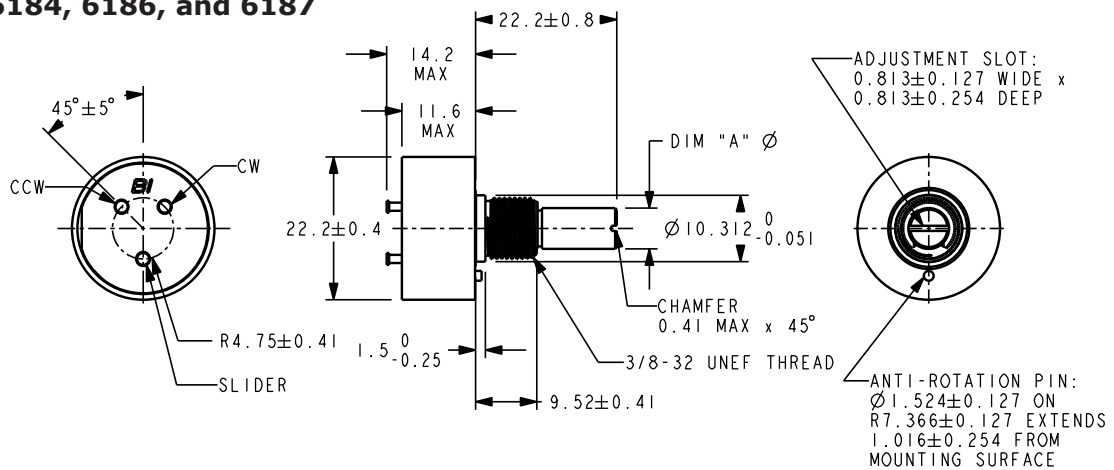
Model 6180

OUTLINE DRAWING

Model 6181



Models 6184, 6186, and 6187



DIM	MODEL 6184	MODEL 6186	MODEL 6187
A	6.0 +0.0000 -0.0127	3.1699 +0.0000 -0.0127	6.3424 +0.0000 -0.0127

Dimensions in mm