

MODEL SERIES 6180

7/8" Diameter

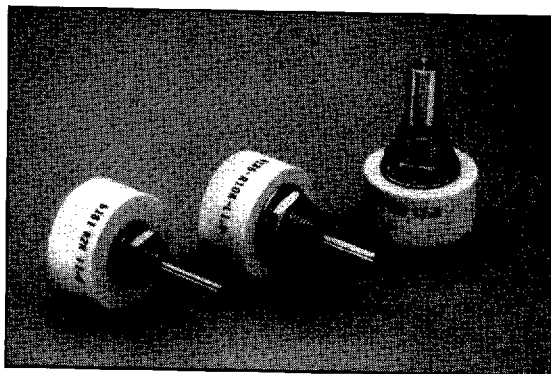
Single Turn

Conductive Plastic

Precision Potentiometer /

Position Sensor

Distributor Item



2

MODEL STYLES

| | |
|------|--------------------------|
| 6181 | 1/8" Shaft, 1/4" Bushing |
| 6186 | 1/8" Shaft, 3/8" Bushing |
| 6187 | 1/4" Shaft, 3/8" Bushing |

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 | 400V dc 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° (300° with stop feature) |
| Electrical Continuity Travel, Nominal | 350° (320° with stop feature) |
| End Voltage, Maximum | 0.5% of input voltage |
| Resolution | Essentially Infinite |
| Temperature Coefficient** | -800 ppm/°C |

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

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

Specifications subject to change without notice.

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 (25% ΔR) |
| High Temperature Exposure | 1,000 hours at 125°C (0.5% ΔR) |
| Rotational Life | 5 mil. shaft rev. |
| Rotational Load Life | 5 mil. shaft rev. (10% ΔR) |

MECHANICAL

| | |
|--------------------------------------|-----------------------------------|
| Total Mechanical Travel | 360° (320° ±3° with stop feature) |
| Number of Gangs, Maximum | 1 |
| Weight, Nominal (single gang) | 0.53 oz. |
| Backlash, Maximum | 1° |
| Static Stop Strength | 40 oz.-in. |
| Panel Nut Tightening Torque, Maximum | 25 lb.-in. |
| Start/Run Torque, Maximum | 1.0 oz.-in. |

STANDARD RESISTANCE VALUES, OHMS

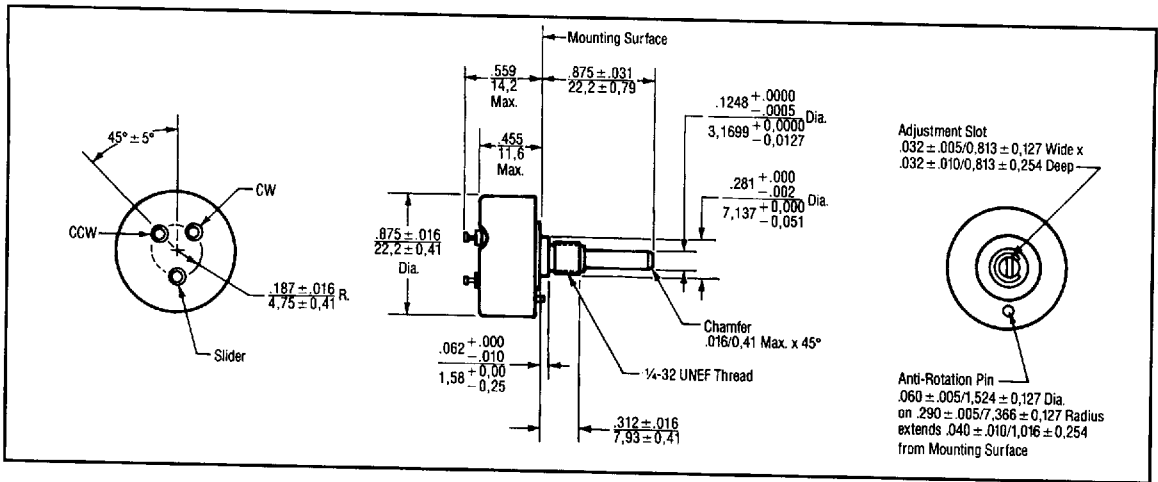
| | | | | | |
|----|----|----|-----|-----|-----|
| 1K | 2K | 5K | 10K | 20K | 50K |
|----|----|----|-----|-----|-----|

METRIC CONVERSIONS

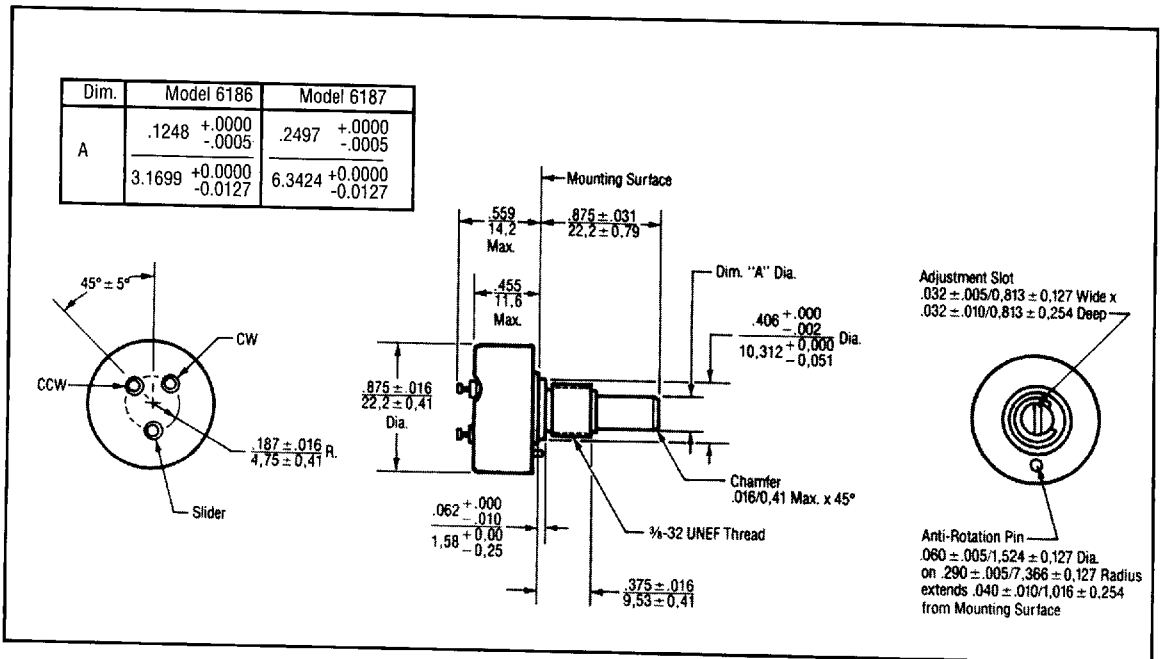
| | | | |
|-------|---------|-----------|-----------|
| 1 in. | 25.4mm | 1 oz.-in. | 0,007 N-m |
| 1 oz. | 28.4 gm | 1 lb.-in. | 0,113 N-m |

D 02F ■ 1336610 0003357 642 ■

MODEL 6181



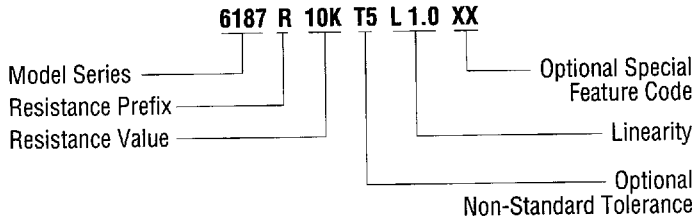
MODEL 6186 & 6187



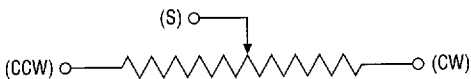
SPECIAL FEATURE CODES

| | |
|----------------|----|
| Center Tap | CT |
| Linearity Tape | LT |
| Shaft Lock | SL |
| Stop | ST |

ORDERING INFORMATION



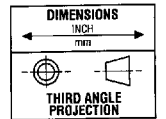
CIRCUIT DIAGRAM



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



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