

# MODEL 7600 SERIES

1-13/16" Diameter

10-Turn

Wirewound

Precision Potentiometer



2

## MODEL STYLES

|      |                          |
|------|--------------------------|
| 7601 | 1/4" Shaft, 3/8" Bushing |
| 7603 | 1/4" Shaft, Servo        |

## ELECTRICAL

|   |   |
|---|---|
| Resistance Range, Ohms                  | 1K to 650K  |
| Standard Resistance Tolerance           | ±5%   |
| Minimum Practical Resistance Tolerance  | ±1%   |
| Independent Linearity                   | ±0.15%  |
| Minimum Practical Independent Linearity | ±0.1%, < 500 Ohms<br>±0.05%, 500-4,999 Ohms<br>*±0.025%, ≥ 5K Ohms                              |
| Power Rating, Watts                     | 5.0 at 70°C derating to 0 at 125°C  |
| Input Voltage, Maximum                  | 1,000Vdc Not to Exceed Power Rating   |
| Dielectric Strength                     | 1,000V RMS  |
| Insulation Resistance, Minimum          | 1,000 Megohms   |
| Noise, Maximum                          | 100 Ohms  |
| Actual Electrical Travel                | 3,600° + 3° -0°, ≤ 300 Ohms<br>3,600° + 2° -0°, 301-2,500 Ohms<br>3,600° + 1° -0°, > 2,500 Ohms |
| Electrical Continuity Over Travel       | +90° ±5° at each end  |
| Tap Tolerance                           | ±2°, ≤ 300 Ohms<br>±1°, 301-2,500 Ohms<br>±0.5°, ≥ 2,500 Ohms                                   |
| End Voltage, Maximum                    | Within Std. Linearity Tolerance   |

Specifications subject to change without notice.

\*May require external pads.

## ENVIRONMENTAL (MIL-R-12934)

|                             |  |
|-----------------------------|--|
| Operating Temperature Range | Static: -65°C to +125°C<br>Dynamic: -40°C to +125°C              |
| Temperature Cycling         | 5 cycles, -65°C to +125°C (5% ΔR)                                |
| Shock, 6ms Sawtooth         | 100G's (0.1ms discontinuity max.)                                |
| Vibration                   | 5G's, 10 to 2,000 Hz (5% ΔR, 0.1ms discontinuity max.)           |
| Moisture                    | Ten 24 hour cycles (3% ΔR)                                       |
| High Temperature Exposure   | 1,000 hours at 125°C (5% ΔR)                                     |
| Rotational Load Life        | 2 mil. shaft rev. plus 900 hrs. at rated wattage at 70°C (5% ΔR) |

## MECHANICAL

|  |                       |
|--|-----------------------|
| Total Mechanical Travel                | 3,780° ± 5°           |
| Number of Cups, Maximum                | 2                     |
| Weight, Nominal (per gang)             | 5.5 oz.               |
| Static Stop Strength                   | 600 oz.-in.           |
| Backlash, Maximum                      | Essentially zero      |
| Shaft End Play, Maximum                | .005"                 |
| Shaft Runout, T.I.R., Maximum          | .0005"                |
| Pilot Diameter Runout, T.I.R., Maximum | .001"                 |
| Lateral Runout, T.I.R., Maximum        | .0015"                |
| Starting Torque, Maximum               | 1.3 oz.-in.           |
| Running Torque, Maximum                | 0.9 oz.-in.           |
|  | <b>7601      7603</b> |
| Panel Nut Tightening Torque, Maximum   | 25 lb.-in.      N/A   |
| Shaft Radial Play, Maximum             | 0.002"      0.001"    |

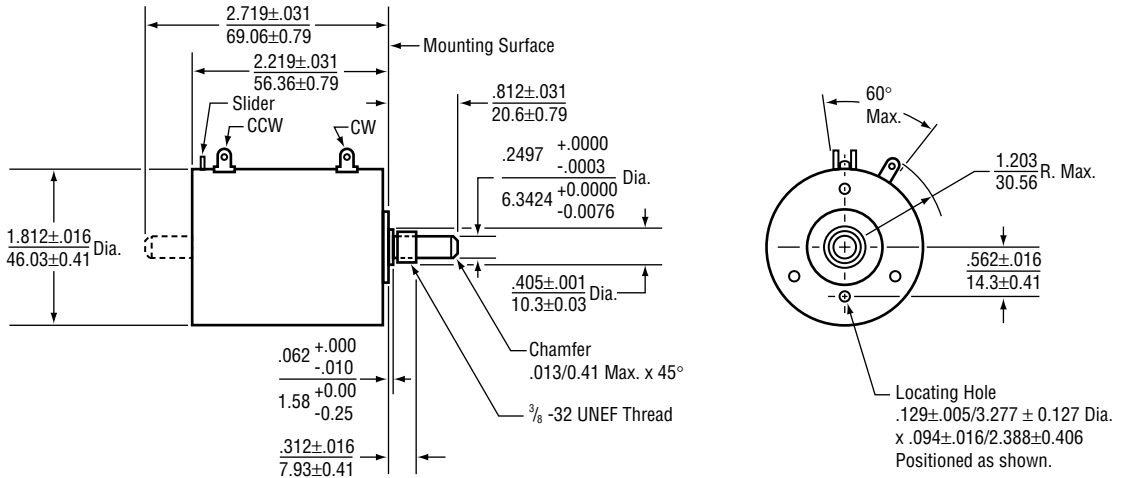
## STANDARD RESISTANCE VALUES, OHMS

| Total Resistance | Theoretical Resolution (% Nominal) | Tempco of Wire |
|------------------|------------------------------------|----------------|
| 1K               | 0.019                              | ±20 ppm/°C     |
| 5K               | 0.011                              | ±20 ppm/°C     |
| 10K              | 0.012                              | ±20 ppm/°C     |
| 20K              | 0.009                              | ±20 ppm/°C     |
| 50K              | 0.007                              | ±20 ppm/°C     |
| 100K             | 0.006                              | ±20 ppm/°C     |

## OUTLINE DIMENSIONS (Inch/mm)

### Model 7601

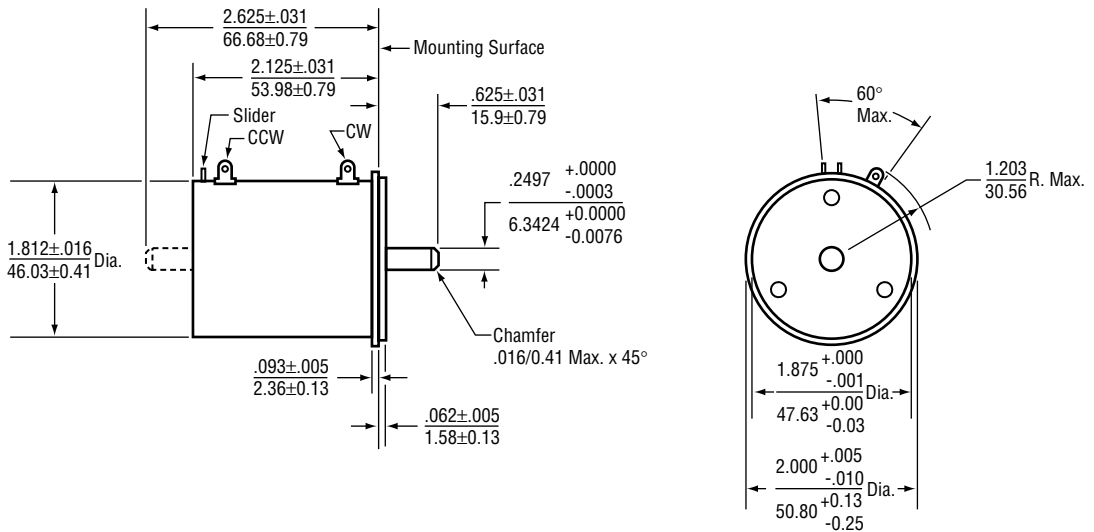
#### Bushing Mount



## OUTLINE DIMENSIONS (Inch/mm)

### Model 7603

#### Servo Mount



## METRIC CONVERSIONS

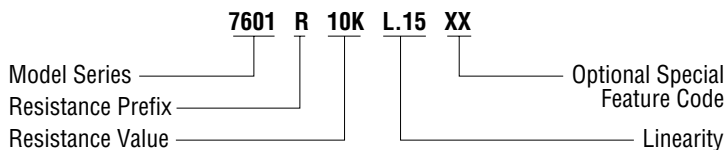
|       |         |
|-------|---------|
| 1 in. | 25.4 mm |
| 1 oz. | 28.4 gm |

|           |           |
|-----------|-----------|
| 1 oz.-in. | 0,007 N-m |
| 1 lb.-in. | 0,113 N-m |

## SPECIAL FEATURES

|                        |    |
|------------------------|----|
| Center Tap             | CT |
| Linearity Tape         | LT |
| Rear Shaft Extension   | RS |
| Flatted Shaft          | FS |
| Slotted Shaft          | SS |
| Shaft Lock (7601 only) | SL |

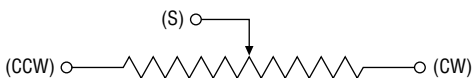
## ORDERING INFORMATION



## MATCHING TURNS COUNTING DIALS

7601: 2606, 2607, 2626, 2627, 2646, 2647, 2126, 2606S, 2607S, 2646S, 2647S, RB

## 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 =  $\pm .01$  inches  
 (.25mm)  
 Angular =  $\pm 2$  degrees

