

# Single-Turn Precision Potentiometer

## Model 6670 Series



### Features:

- 2" diameter
- Conductive plastic technology



### Models Available

|      |                          |
|------|--------------------------|
| 6671 | 1/4" Shaft, 3/8" Bushing |
| 6673 | 1/4" Shaft, Servo        |

### Electrical

|                                                        |                                             |
|--------------------------------------------------------|---------------------------------------------|
| Resistance Range                                       | 1K to 300K Ohms                             |
| Standard Resistance Tolerance                          | ±10%                                        |
| Minimum Practical Resistance Tolerance                 | ±3%                                         |
| Independent Linearity <sup>2</sup>                     | ±0.25%                                      |
| Minimum Practical Independent Linearity                | ±0.1%                                       |
| Input Voltage                                          | 400 VDC maximum, not to exceed power rating |
| Power Rating                                           | 3.5 Watts at 70°C, derating to 0 at 125°C   |
| Dielectric Strength                                    | 1,000 V rms                                 |
| Insulation Resistance                                  | 1,000 Megohms minimum                       |
| Output smoothness                                      | 0.1% maximum                                |
| Actual Electrical Travel                               | 350° nominal                                |
| Electrical Continuity Travel                           | 354° minimum                                |
| End Voltage                                            | maximum 0.5% of input voltage               |
| Tap Tolerance                                          | maximum 0.5% of input voltage               |
| Resolution                                             | essentially infinite                        |
| Temperature Coefficient of Resistance <sup>3</sup>     | -400 ppm/°C typical                         |
| Temperature Coefficient of Output Voltage <sup>4</sup> | ±10 ppm/°C typical                          |

### Mechanical

|                         |                                                                |
|-------------------------|----------------------------------------------------------------|
| Total Mechanical Travel | 360° continuous                                                |
| Number of Gangs         | 4 maximum                                                      |
| Weight                  | 4.0 oz. single gang nominal, 1.5 oz. each added gang           |
| Shaft Runout            | maximum T.I.R. 0.001"                                          |
| Pilot Diameter Runout   | maximum T.I.R. 0.0015"                                         |
| Lateral Runout          | maximum T.I.R. 0.005"                                          |
| Shaft Radial Play       | maximum 0.002"                                                 |
| Start/Run Torque        | maximum 1.5 / 1.0 oz.-in. per gang, ES option adds 0.5 oz.-in. |

<sup>1</sup> Specifications subject to change without notice.

<sup>2</sup> Linearity is measured between 1% and 99% of input voltage.

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

<sup>4</sup> Measured with 10 VDC CW to CCW and slider at 50% of electrical travel.

#### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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## Model 5311



### Environmental

|                                     |                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------|
| 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                           | 15 G's, 10 to 2,000 Hz, maximum 2% ΔR, 0.1 ms maximum discontinuity            |
| Moisture Resistance                 | ten 24 hour cycles, maximum 10% ΔR                                             |
| High Temperature Exposure           | 1,000 hours at 125°C, maximum 0.5% ΔR                                          |
| Rotational Life                     | 25 million shaft revolutions                                                   |
| Rotational Load Life                | 5 million shaft revolutions plus 900 hours at 3.5 Watts & 70°C, maximum 10% ΔR |
| Ingress Protection Rating (IP Code) | IP50, IP66 available as option for 6671 (feature code ES)                      |

### Ordering Information

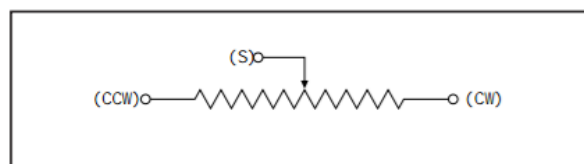
|                   |                              |                                   |
|-------------------|------------------------------|-----------------------------------|
|                   | <b>6671 R 10K T5 L.25 xx</b> |                                   |
| Model Series      |                              |                                   |
| Resistance Prefix |                              |                                   |
| Resistance Value  |                              |                                   |
|                   |                              | Optional Feature Code (see table) |
|                   |                              | Linearity                         |
|                   |                              | Optional Non-standard Tolerance   |

### FEATURE CODES

|                        |               |
|------------------------|---------------|
| Center Tap             | CT            |
| Linearity Tape         | LT            |
| Flatted Shaft          | FS            |
| Slotted Shaft          | SS            |
| Rear Shaft Extension   | RS            |
| Shaft Lock, 6671 only  | SL            |
| Additional Gangs       | 2G, 3G, or 4G |
| Seal (IP66), 6671 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 |
|----|----|----|-----|-----|-----|

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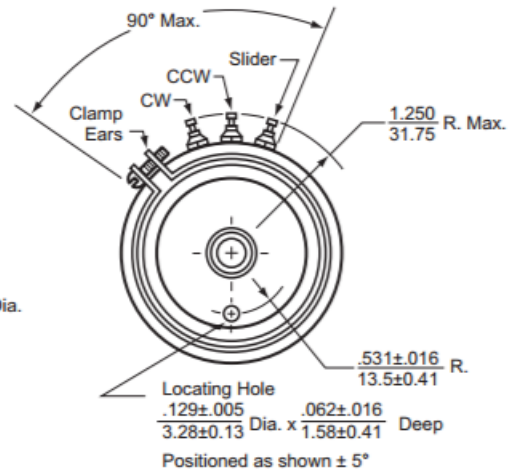
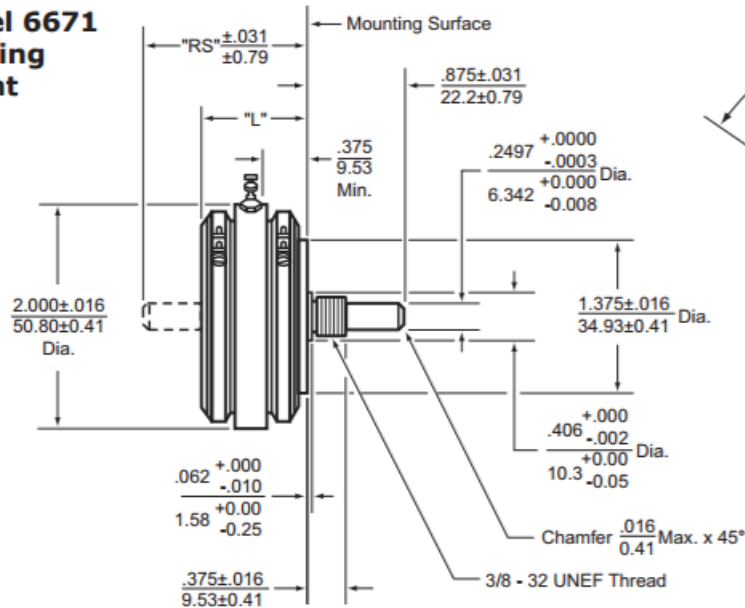
Issue C 04/2019 Page 2

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## Model 5311

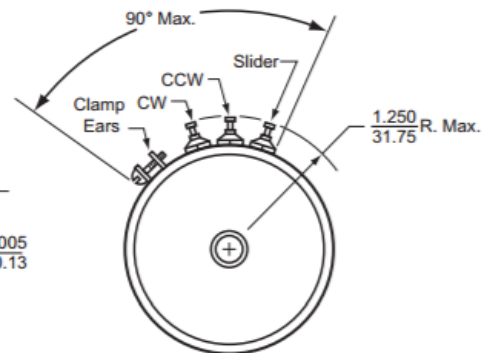
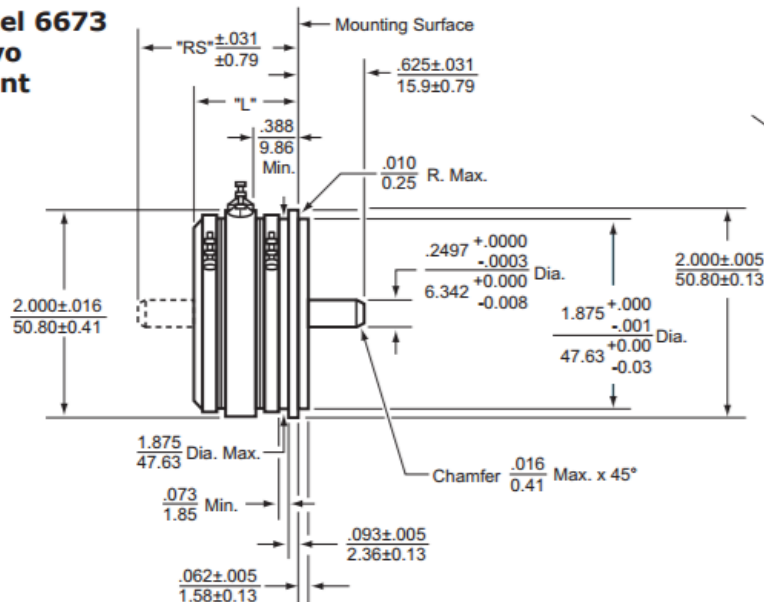


### Model 6671 Bushing Mount



| Dim. "L"                             | Dim. "RS"         | No. of Gangs |
|--------------------------------------|-------------------|--------------|
| $0.905 \pm 0.020$ / $22.9 \pm 0.51$  | $1.405$ / $35.69$ | 1            |
| $1.467 \pm 0.22$ / $37.26 \pm 0.56$  | $1.967$ / $49.96$ | 2            |
| $2.029 \pm 0.024$ / $51.54 \pm 0.61$ | $2.529$ / $64.24$ | 3            |
| $2.591 \pm 0.026$ / $65.81 \pm 0.66$ | $3.091$ / $78.51$ | 4            |

### Model 6673 Servo Mount



| Dim. "L"                             | Dim. "RS"         | No. of Gangs |
|--------------------------------------|-------------------|--------------|
| $1.020 \pm 0.015$ / $22.9 \pm 0.51$  | $1.405$ / $35.69$ | 1            |
| $1.467 \pm 0.22$ / $37.26 \pm 0.56$  | $1.967$ / $49.96$ | 2            |
| $2.029 \pm 0.024$ / $51.54 \pm 0.61$ | $2.529$ / $64.24$ | 3            |
| $2.591 \pm 0.026$ / $65.81 \pm 0.66$ | $3.091$ / $78.51$ | 4            |

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