

# Single-Turn Precision Potentiometer

## Model 5311



### Features:

- 1-5/16" diameter
- Wirewound



### Electrical

|   |   |
|---|---|
| Resistance Range, Ohms                  | 10 to 44.6K   |
| Standard Resistance Tolerance           | ±3% (±5% ≤40 Ohms)  |
| Minimum Practical Resistance Tolerance  | ±1%   |
| Independent Linearity                   | ±0.5% (±1% ≤250 Ohms)   |
| Minimum Practical Independent Linearity | ±1.0%, ≤40 Ohms<br>±0.75%, 41-99 Ohms<br>±0.5%, 100-249 Ohms<br>±0.25%, ≥250 Ohms |
| Input Voltage                           | 400Vdc not to exceed power rating   |
| Power Rating, Watts                     | 2.0 at 40°C derating to 0 at 85°C   |
| Dielectric Strength                     | 1,000V rms  |
| Insulation Resistance, Minimum          | 1,000 Megohms   |
| Noise, Maximum                          | 100 Ohms (250 Ohms: RT ≤500 Ohms)   |
| Actual Electrical Travel                | 352° ±2° Continuous model<br>350° ±2° Stop model                                  |
| Tap Tolerance                           | ±1° (±2° <100 Ohms)   |
| End Voltage, Maximum                    | Linearity x Input Voltage   |

### Environmental

|                             |   |
|-----------------------------|---|
| Operating Temperature Range | -25°C to +85°C  |
| Temperature Cycling         | 5 cycles, -25°C to +85°C (5% ΔR)                      |
| Shock, 6ms Sawtooth         | 100G's (0.1ms discontinuity max.)                     |
| Vibration                   | 10G's, 10 to 500 Hz (5% ΔR, 0.1ms discontinuity max.) |
| Moisture Resistance         | Five 24 hour cycles (3% ΔR)                           |
| High Temperature Exposure   | 1,000 hours at 85°C (5% ΔR)                           |
| Rotational Load Life        | 500K shaft rev. at rated wattage at 85°C (5% ΔR)      |

Specifications subject to change without notice.

#### 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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## Mechanical

| Total Mechanical Travel                | 360° Continuous model |
|--|-----------------------|
|  | 350° ±2° Stop model   |
| Number of Gangs, Maximum               | 1                     |
| Weight, Nominal                        | 1.5 oz.               |
| Static Stop Strength                   | 48 oz.-in.            |
| Shaft End Play, Maximum                | .007"                 |
| Shaft Runout, T.I.R., Maximum          | .0025"                |
| Pilot Diameter Runout, T.I.R., Maximum | .0025"                |
| Lateral Runout, T.I.R., Maximum        | .003"                 |
| Shaft Radial Play, Maximum             | .004"                 |
| Starting Torque, Maximum               | 1.0 oz.-in.           |
| Running Torque, Maximum                | 0.7 oz.-in.           |

## Standard Resistance Values, Ohms

| Total Resistance | Theoretical Resolution (% Nominal) | Tempco of Wire |
|------------------|------------------------------------|----------------|
| 10               | 0.491                              | ± 20 ppm/°C    |
| 100              | 0.233                              | ± 20 ppm/°C    |
| 500              | 0.187                              | ± 20 ppm/°C    |
| 1K               | 0.150                              | ± 20 ppm/°C    |
| 2K               | 0.117                              | ± 20 ppm/°C    |
| 5K               | 0.090                              | ± 20 ppm/°C    |
| 10K              | 0.073                              | ± 20 ppm/°C    |
| 20K              | 0.066                              | ± 20 ppm/°C    |
| 30K              | 0.060                              | ± 20 ppm/°C    |

### 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 |

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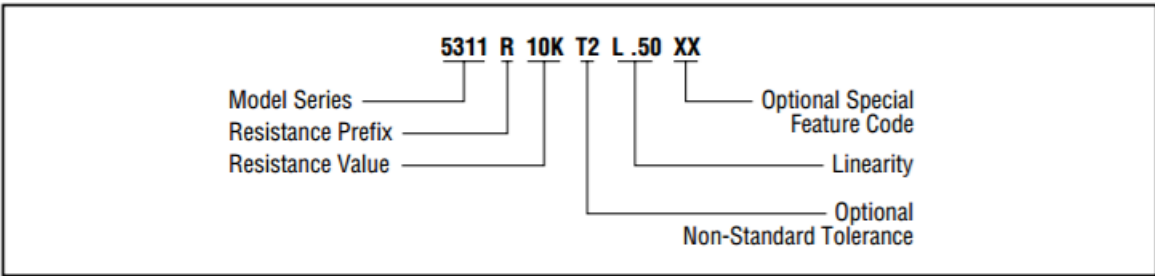
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### SPECIAL FEATURES

|                |    |
|----------------|----|
| Center Tap     | CT |
| Linearity Tape | LT |
| Flatted Shaft  | FS |
| Slotted Shaft  | SS |
| 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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