

# Single-Turn Precision Potentiometer

## Model 6173



### Features:

- Low profile 7/8" diameter
- Conductive plastic technology



## Electrical

|  |   |
|--|---|
| Resistance Range                                       | 1K to 100K Ohms                             |
| Standard Resistance Tolerance                          | ±10%  |
| Minimum Practical Resistance Tolerance                 | ±5%   |
| Independent Linearity <sup>2</sup>                     | ±1%   |
| Minimum Practical Independent Linearity                | ±0.25%                                      |
| 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                                    | 1,000 V rms                                 |
| Insulation Resistance                                  | 1,000 Megohms minimum                       |
| Output smoothness                                      | 0.1% maximum                                |
| Actual Electrical Travel                               | 335° nominal                                |
| Electrical Continuity Travel                           | 346° minimum                                |
| End Voltage  | 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                  | 0.92 oz. single gang nominal, 0.6 oz. each added gang |
| Shaft Runout            | maximum T.I.R. 0.001"                                 |
| Pilot Diameter Runout   | maximum T.I.R. 0.001"                                 |
| Lateral Runout          | maximum T.I.R. 0.002"                                 |
| Shaft Radial Play       | maximum 0.001"  |
| Start/Run Torque        | maximum 0.5 oz.-in. per gang                          |

<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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TT Electronics | BI Technologies  
413 Rood RD, Suite 7  
Calexico, CA 92231  
Ph: +1 714 447 2345  
www.ttelectronics.com/bi-technologies

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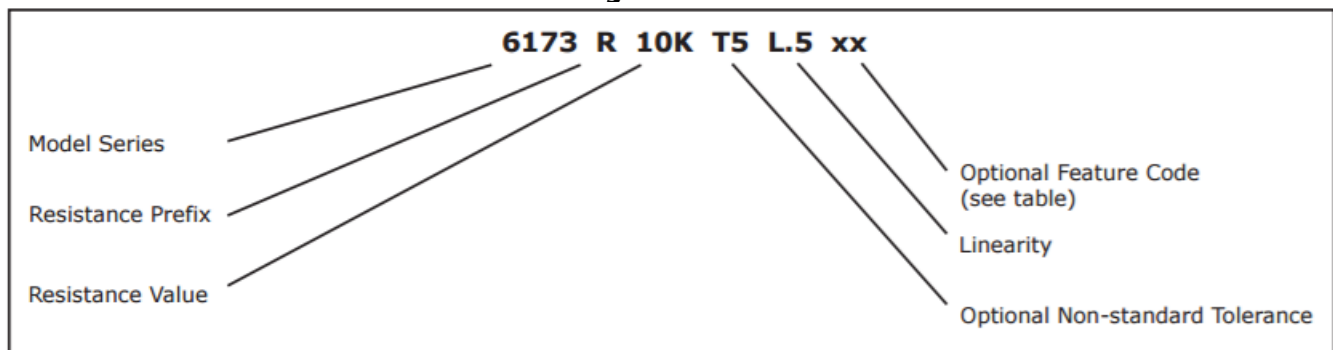
Model 6173



## 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 500 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 at 1.0 Watt & 70°C plus 900 hours at 1.0 Watt, maximum 10% ΔR |
| Ingress Protection Rating (IP Code) | IP50  |

## Ordering Information

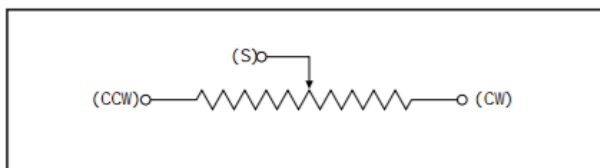


### FEATURE CODES

|                      |               |
|----------------------|---------------|
| Center Tap           | CT            |
| Linearity Tape       | LT            |
| Flatted Shaft        | FS            |
| Slotted Shaft        | SS            |
| Rear Shaft Extension | RS            |
| Additional Gangs     | 2G, 3G, or 4G |

When multiple Optional 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

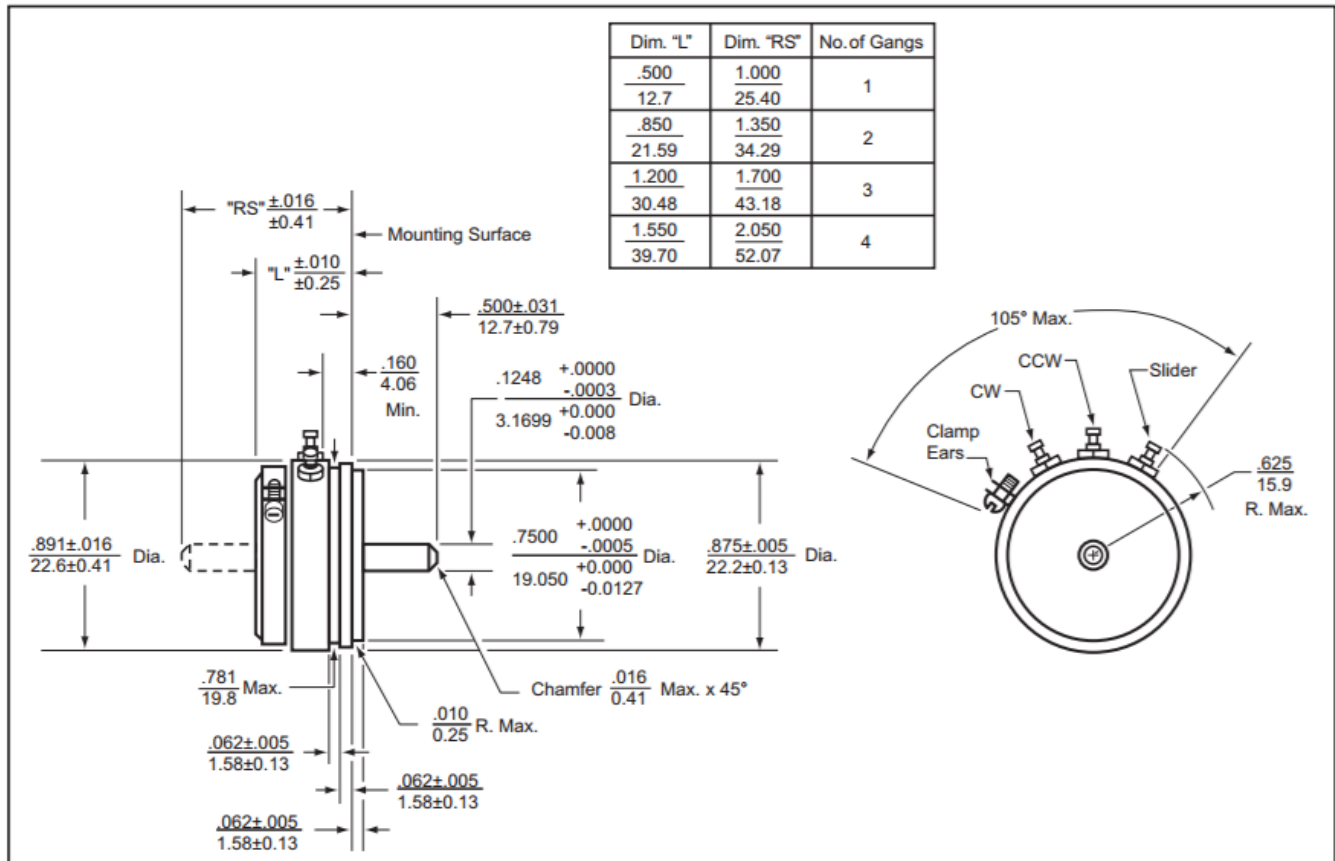
|    |    |    |     |     |     |
|----|----|----|-----|-----|-----|
| 1K | 2K | 5K | 10K | 20K | 50K |
|----|----|----|-----|-----|-----|

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