

# Model 7380

## 7/8" Diameter

## 3 Turn Wirewound

## Precision Potentiometer



### MODEL STYLES AVAILABLE

|                                         |                          |
|-----------------------------------------|--------------------------|
| 7381                                    | 1/8" Shaft, 1/4" Bushing |
| 7383                                    | 1/8" Shaft, Servo        |
| 7386                                    | 1/4" Shaft, 3/8" Bushing |
| 7388 (for heavy side load applications) | 1/4" Shaft, 3/8" Bushing |

### ELECTRICAL<sup>1</sup>

|                                         |                                                        |
|-----------------------------------------|--------------------------------------------------------|
| Resistance Range                        | 100 to 30K ohms                                        |
| Standard Resistance Tolerance           | ±5%                                                    |
| Minimum Practical Resistance Tolerance  | ±1%                                                    |
| Independent Linearity <sup>2</sup>      | ±0.30% (<500 ohms), ±0.25% (≥500 ohms)                 |
| Minimum Practical Independent Linearity | ±0.30% (<500 ohms), ±0.20% (≥500 ohms)                 |
| Power Rating                            | 1.5 Watts at 70°C, derating to 0 at 125°C              |
| Dielectric Strength                     | 1,000 V rms                                            |
| Insulation Resistance                   | 1,000 Megohms minimum                                  |
| Noise                                   | 100 ohms maximum                                       |
| Actual Electrical Travel                | 1080° +10° -0° (>100 ohms), 1080° +10° -5° (≤100 ohms) |
| End Voltage                             | maximum 0.25% of input voltage                         |
| Tap Tolerance                           | ±3°                                                    |

### MECHANICAL

|                         |  |  |                  |
|-------------------------|--|--|------------------|
| Total Mechanical Travel |  |  | 1080° +15° -0°   |
| Number of Gangs         |  |  | 2 maximum        |
| Weight (single gang)    |  |  | 0.75 oz. nominal |
| Backlash                |  |  | 1° maximum       |
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<sup>1</sup> Specifications subject to change without notice.

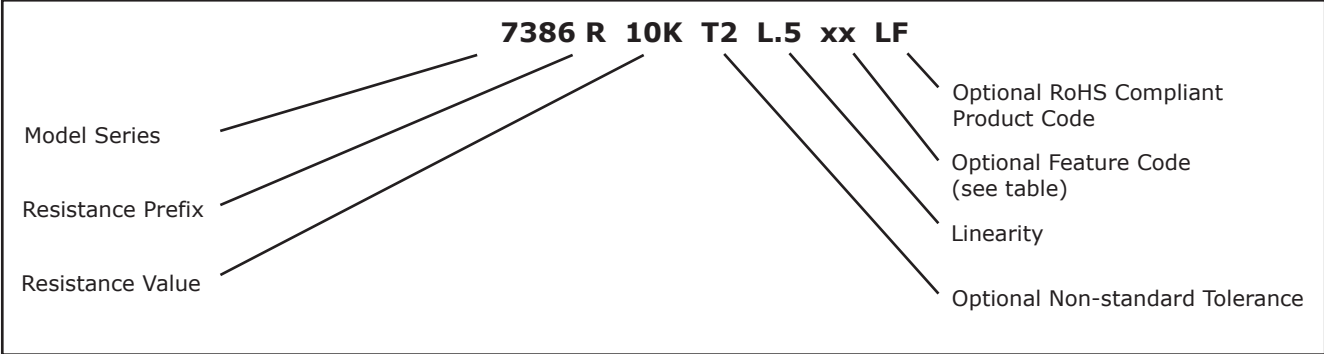
<sup>2</sup> Linearity is measured between 1% and 99% of input voltage.

# Model 7380

## ENVIRONMENTAL (MIL-PRF-12934)

|                                                |                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------|
| Operating Temperature Range                    | -40°C to +125°C dynamic, -55°C to +125°C static                       |
| Temperature Cycling                            | 5 cycles, -55°C to +125°C, maximum 5% ΔR                              |
| Shock                                          | 6 ms Saw-tooth, 100 G's, 0.1 ms maximum discontinuity                 |
| Vibration                                      | 15 G's, 10 to 2,000 Hz, maximum 5% ΔR, 0.1 ms maximum discontinuity   |
| Moisture Resistance                            | Five 24 hour cycles, maximum 3% ΔR                                    |
| High Temperature Exposure                      | 1,000 hours at 125°C, maximum 5% ΔR                                   |
| Rotational Load Life (1 lb side load for 7388) | 300K shaft revolutions + 900 hours at 1.5 Watts & 70°C, maximum 5% ΔR |
| Ingress Protection Rating (IP Code)            | IP40                                                                  |

## ORDERING INFORMATION



## FEATURE CODES

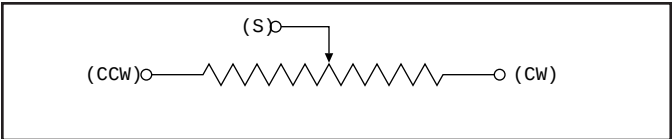
|                                                                        |    |
|------------------------------------------------------------------------|----|
| Center Tap                                                             | CT |
| Linearity Tape                                                         | LT |
| Flatted Shaft                                                          | FS |
| Slotted Shaft (standard on single cup 7386 without RS feature)         | SS |
| Rear Shaft Extension (7381, 7386 single cup only)                      | RS |
| Shaft Lock (7381, 7386 only)                                           | SL |
| High Torque 2-6 oz.-in. (7386 only)                                    | HT |
| Additional Gang                                                        | 2G |
| Gold Plated Solder Lug Terminals (see optional terminal configuration) | FT |

When multiple Feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

## STANDARD RESISTANCE VALUES

| Total Resistance (Ohms) | Theoretical Resolution (% nominal) | Tempco of wire (ppm/°C) |
|-------------------------|------------------------------------|-------------------------|
| 100                     | 0.059                              | ±20                     |
| 200                     | 0.037                              | ±20                     |
| 500                     | 0.030                              | ±20                     |
| 1K                      | 0.024                              | ±20                     |
| 2K                      | 0.020                              | ±20                     |
| 5K                      | 0.018                              | ±20                     |
| 10K                     | 0.017                              | ±20                     |
| 20K                     | 0.016                              | ±20                     |

## CIRCUIT DIAGRAM



# Model 7380

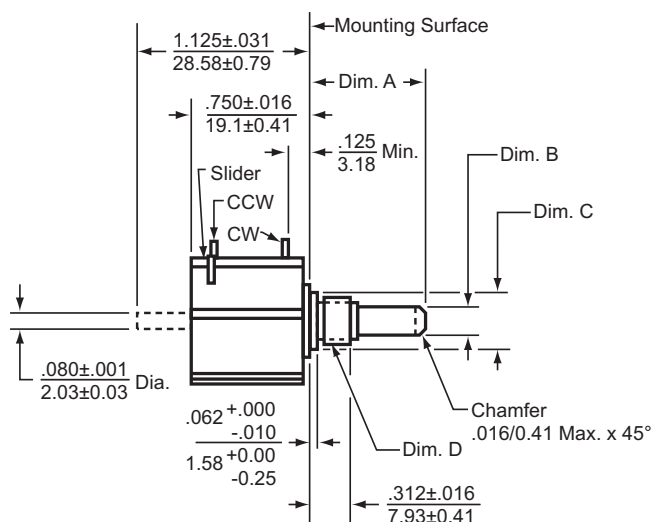
## MATCHING TURNS COUNTING DIALS

**7381: RBJ, 2601, 2641**

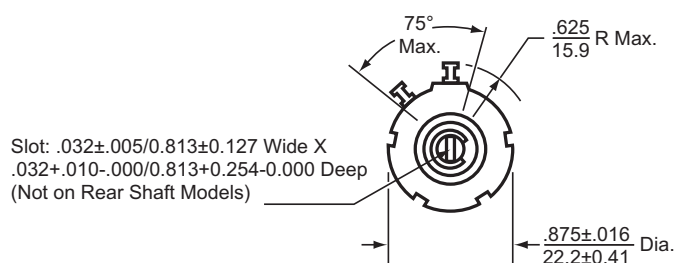
**7386: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S**

## OUTLINE DRAWINGS

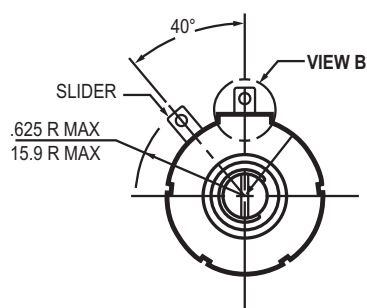
### Models 7381 & 7386 Bushings Mount with Sleeve Bearing



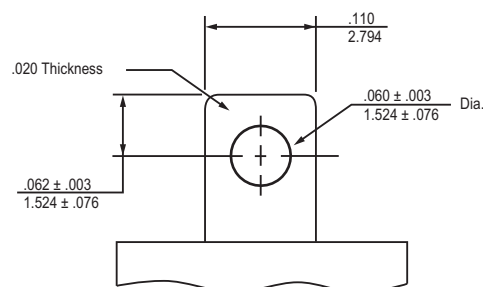
| Dim. | 7381                                                                | 7386                                                                |
|------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| A    | $.688 \pm .013$ / $17.475 \pm 0.787$                                | $.812 \pm .031$ / $20.625 \pm 0.787$                                |
| B    | $.1248 \pm .0000$ / $3.1699 \pm 0.0000$ / $-.0003$ / $-0.0076$ Dia. | $.2500 \pm .0000$ / $6.3500 \pm 0.0000$ / $-.0005$ / $-0.0127$ Dia. |
| C    | $.281 \pm .000$ / $7.137 \pm 0.000$ / $-.002$ / $-0.051$ Dia.       | $.406 \pm .000$ / $10.312 \pm 0.000$ / $-.002$ / $-0.051$ Dia.      |
| D    | 1/4-32 UNEF Thread                                                  | 3/8-32 UNEF Thread                                                  |



### Optional Terminal Configuration



Use Special Feature Code "FT" to order.



Enlarged View B

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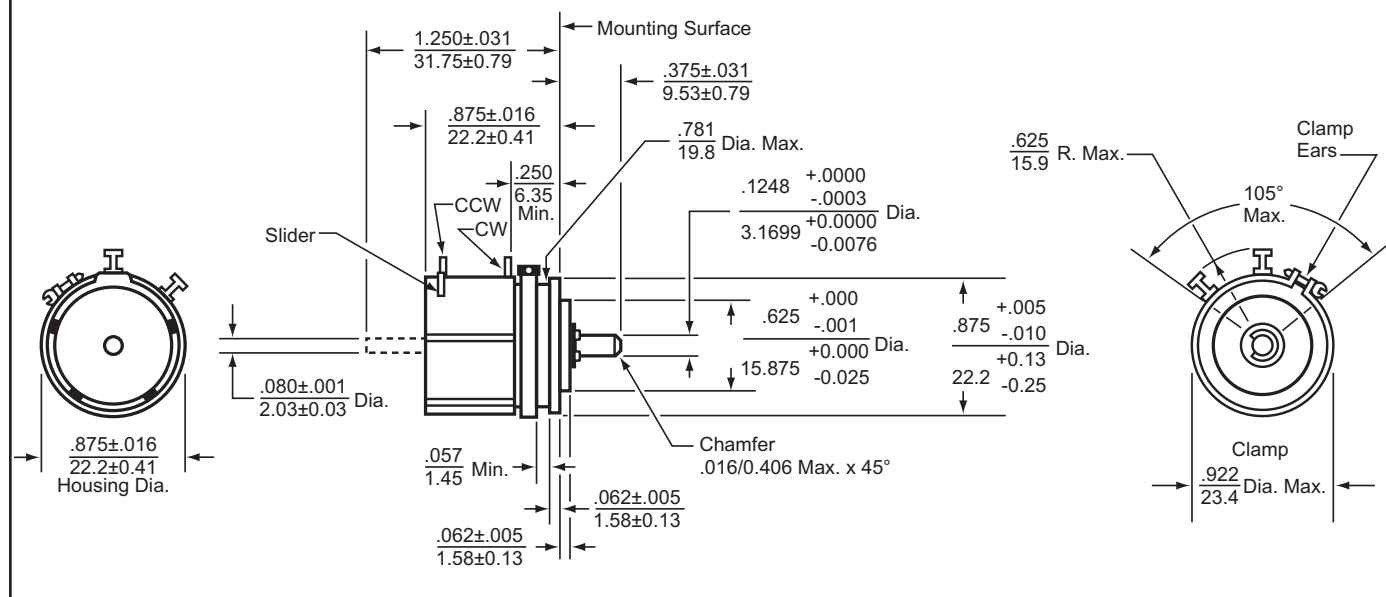
Model 7380 page 3 of 4

**TI electronics**  
BI Technologies

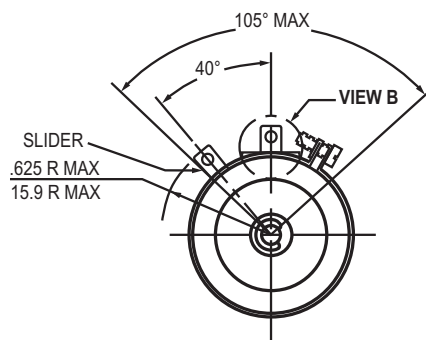
# Model 7380

## OUTLINE DRAWINGS (continued)

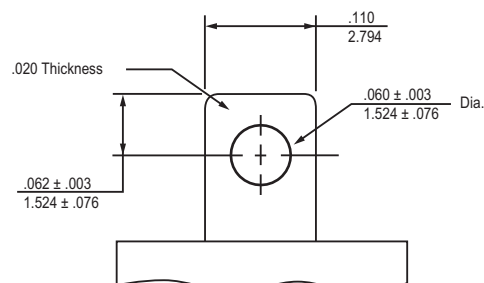
### Model 7383 Servo Mount with Ball Bearing



### Optional Terminal Configuration



Use Special Feature Code "FT" to order.



Enlarged View B