

Multi-Turn Precision Potentiometer

Model 7380 Series



Features:

- 7/8" diameter
- 3-turn
- Wirewound



Model Styles

| | |
|---|--------------------------|
| 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

| | |
|---|--|
| Resistance Range | 100 to 30K ohms |
| Standard Resistance Tolerance | ±5% |
| Minimum Practical Resistance Tolerance | ±1% |
| Independent Linearity ² | ±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° |

Environmental

| | |
|--|---|
| 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) | IP50, IP66 available as option (feature code ES) |

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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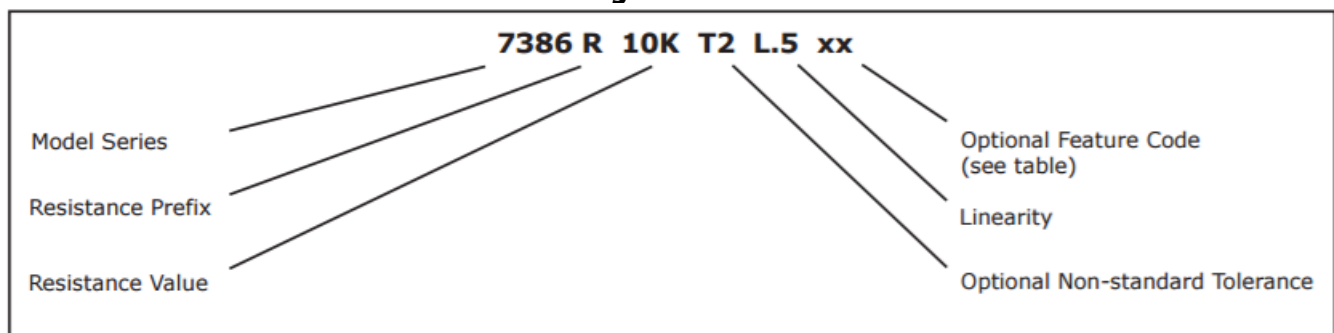
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Mechanical

| | | |
|---|-------------------|---------------------------|
| Total Mechanical Travel | | 1080° +15° -0° |
| Number of Gangs | | 2 maximum |
| Weight (single gang) | | 0.75 oz. nominal |
| Backlash | | 1° maximum |
| | 7381, 7386 | 7383 |
| Static Stop Strength | maximum | 48 oz.-in. / 36 oz.-in. |
| Panel Nut Tightening Torque | maximum | 25 lb.-in. / n/a |
| Shaft End Play | maximum | 0.010" / 0.005" |
| Shaft Runout | maximum T.I.R. | 0.003" / 0.002" |
| Pilot Diameter Runout | maximum T.I.R. | 0.004" / 0.002" |
| Lateral Runout | maximum T.I.R. | 0.005" / 0.004" |
| Shaft Radial Play | maximum | 0.003" / 0.002" |
| Start/Run Torque (per gang, ES option adds 0.5 oz.-in.) | maximum | 1.2 oz.-in. / 0.9 oz.-in. |

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 (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 |
| Seal (IP66) 7386 or 7388 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).

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 |

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CIRCUIT DIAGRAM



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
Bushing Mount with Sleeve Bearing

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

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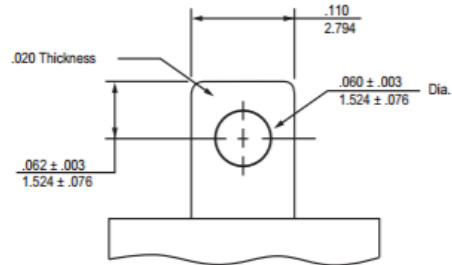
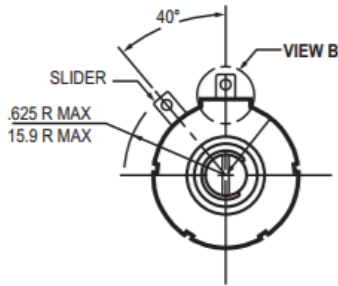
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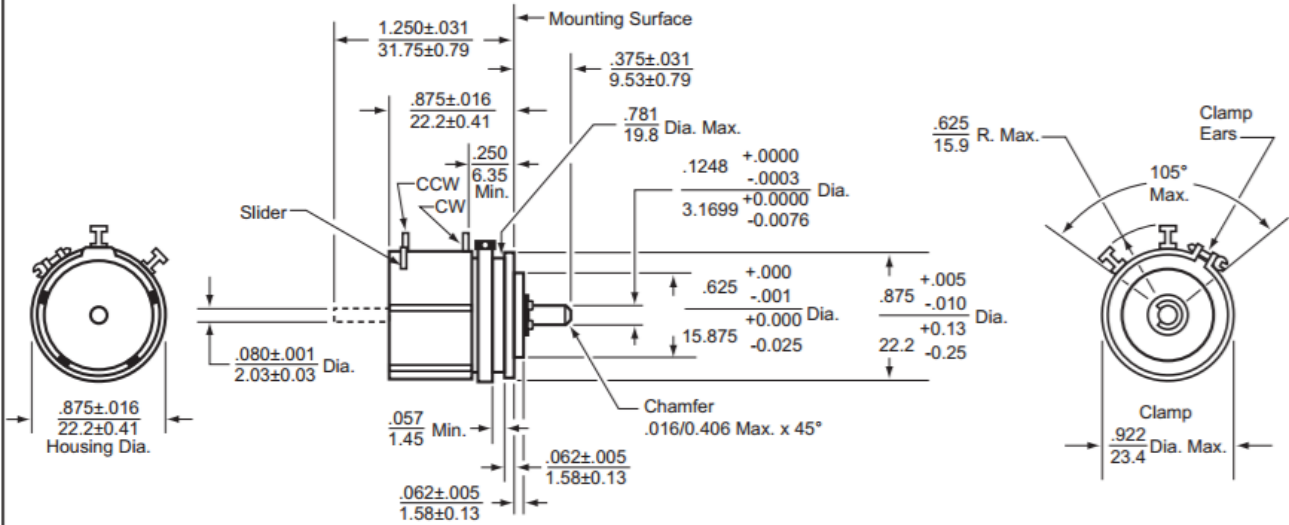
Optional Terminal Configuration



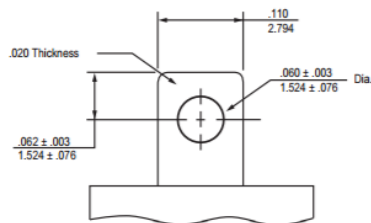
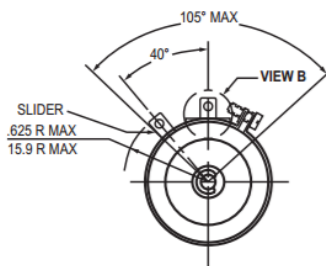
Enlarged View B

Use Special Feature Code "FT" to order.

Model 7383 Servo Mount with Ball Bearing



Optional Terminal Configuration



Enlarged View B

Use Special Feature Code "FT" to order.

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