

# Multi-Turn Precision Potentiometer

## Model 7480 Series



### Features:

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



## Model Styles

7481	1/8" Shaft, 1/4" Bushing
7483	1/8" Shaft, Servo
7486	1/4" Shaft, 3/8" Bushing
7488 (for heavy side load applications)	1/4" Shaft, 3/8" Bushing

## Electrical

Resistance Range	100 to 50K ohms
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity <sup>2</sup>	±0.25%
Minimum Practical Independent Linearity	±0.25% (<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	1800° +10° -0° (>100 ohms), 1800° +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 7488)	500K 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

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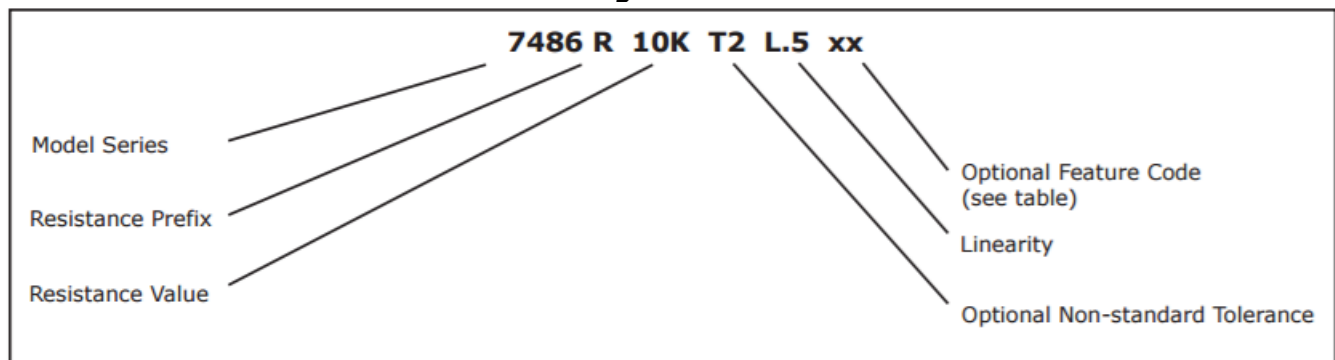
## Model 7480 Series



### Mechanical

Total Mechanical Travel		1800° +15° -0°
Number of Gangs		2 maximum
Weight (single gang)		0.75 oz. nominal
Backlash		1° maximum
	<b>7481, 7486</b>	<b>7483</b>
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 7486 without RS feature)	SS
Rear Shaft Extension (7481, 7486 single cup only)	RS
Shaft Lock (7486 only)	SL
High Torque 2-6 oz.-in. (7486 only)	HT
Additional Gang	2G
Gold Plated Solder Lug Terminals (see optional terminal configuration)	FT
Seal (IP66) 7486 or 7488 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

#### General Note

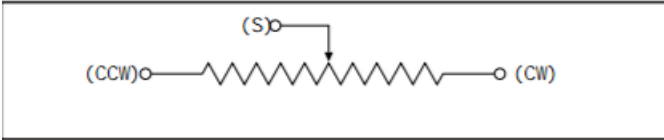
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### CIRCUIT DIAGRAM



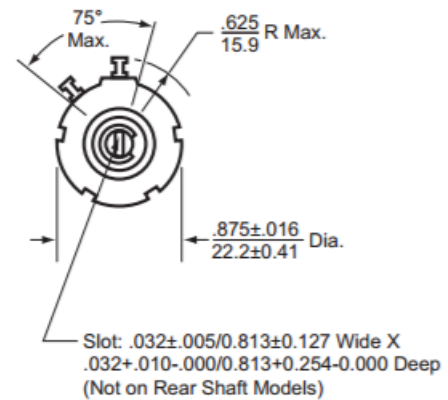
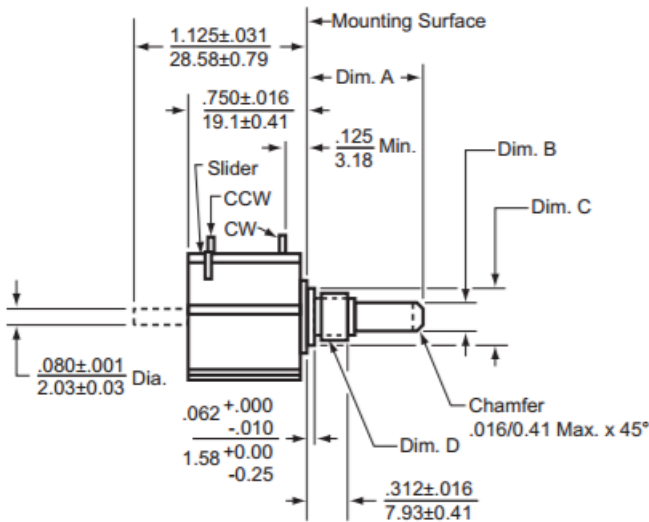
### MATCHING TURNS COUNTING DIALS

**7481: RBJ, 2601, 2641**

**7486: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S**

### Models 7481 & 7486 Bushing Mount with Sleeve Bearing

Dim.	7481	7486
A	$\frac{.688 \pm .013}{17.475 \pm 0.787}$	$\frac{.812 \pm .031}{20.625 \pm 0.787}$
B	$\frac{.1248 \begin{smallmatrix} +.0000 \\ -.0003 \end{smallmatrix}}{3.1699 \begin{smallmatrix} +0.0000 \\ -0.0076 \end{smallmatrix}}$ Dia.	$\frac{.2500 \begin{smallmatrix} +.0000 \\ -.0005 \end{smallmatrix}}{6.3500 \begin{smallmatrix} +0.0000 \\ -0.0127 \end{smallmatrix}}$ Dia.
C	$\frac{.281 \begin{smallmatrix} +.000 \\ -.002 \end{smallmatrix}}{7.137 \begin{smallmatrix} +0.000 \\ -0.051 \end{smallmatrix}}$ Dia.	$\frac{.406 \begin{smallmatrix} +.000 \\ -.002 \end{smallmatrix}}{10.312 \begin{smallmatrix} +0.000 \\ -0.051 \end{smallmatrix}}$ Dia.
D	1/4-32 UNEF Thread	3/8-32 UNEF Thread



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