

# MODEL 7380 SERIES

7/8" Diameter

3-Turn

Wirewound

Precision Potentiometer



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## MODEL STYLES

7381	1/8" Shaft, 1/4" Bushing
7383	1/8" Shaft, Servo
7386	1/4" Shaft, 3/8" Bushing

## ELECTRICAL

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

Specifications subject to change without notice.

**ENVIRONMENTAL (MIL-R-12934)**

Operating Temperature Range	Static: -55°C to +125°C Dynamic: -40°C to +125°C
Temperature Cycling	5 cycles, -55°C to +125°C (5% ΔR)
Shock, 6ms Sawtooth	100G's (0.1ms discontinuity max.)
Vibration	15G's, 10 to 2,000 Hz (5% ΔR, 0.1ms discontinuity max.)
Moisture Resistance	Five 24 hour cycles (3% ΔR)
High Temperature Exposure	1,000 hours at 125°C (5% ΔR)
Rotational Load Life	300K shaft rev. + 900 hrs. at rated wattage at 70°C (5% ΔR)

**MECHANICAL**

Total Mechanical Travel	1080° + 15° - 0°	
Number of Gangs, Maximum	2	
Weight, Nominal (single gang)	0.75 oz.	
Backlash, Maximum	1°	
	<b>7381, 7386</b>	<b>7383</b>
Static Stop Strength	60 oz.-in.	36 oz.-in.
Panel Nut Tightening Torque, Maximum	25 lb.-in.	N/A
Shaft End Play, Maximum	.010"	.005"
Shaft Runout, T.I.R., Maximum	.003"	.002"
Pilot Diameter Runout, T.I.R., Maximum	.004"	.002"
Lateral Runout, T.I.R., Maximum	.005"	.004"
Shaft Radial Play, Maximum	.003"	.002"
Start/Run Torque, Maximum (per gang)	1.2 oz.-in.	0.9 oz.-in.

**STANDARD RESISTANCE VALUES, OHMS**

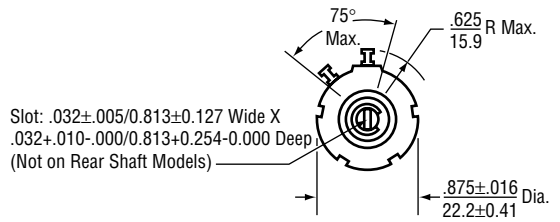
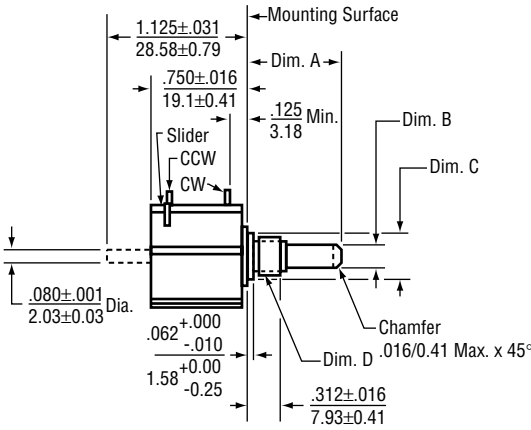
Total Resistance	Theoretical Resolution (% Nominal)	Tempco of Wire
100	0.059	±20 ppm/°C
200	0.037	±20 ppm/°C
500	0.030	±20 ppm/°C
1K	0.024	±20 ppm/°C
2K	0.020	±20 ppm/°C
5K	0.018	±20 ppm/°C
10K	0.017	±20 ppm/°C
20K	0.016	±20 ppm/°C

## OUTLINE DIMENSIONS (Inch/mm)

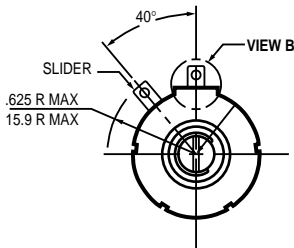
Models 7381 & 7386

Bushing Mount with Sleeve Bearing

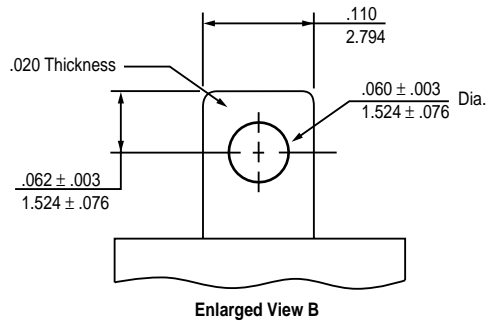
Dim.	7381	7386
A	$\frac{.688 \pm .013}{17.475 \pm 0.787}$	$\frac{.812 \pm .031}{20.625 \pm 0.787}$
B	$\frac{.1248 \begin{smallmatrix} +.0000 \\ -.0003 \end{smallmatrix} \text{ Dia.}}{3.1699 \begin{smallmatrix} +0.0000 \\ -0.0076 \end{smallmatrix}}$	$\frac{.2500 \begin{smallmatrix} +.0000 \\ -.0005 \end{smallmatrix}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



## OPTIONAL TERMINAL CONFIGURATION



Use Special Feature Code "FT" to order.



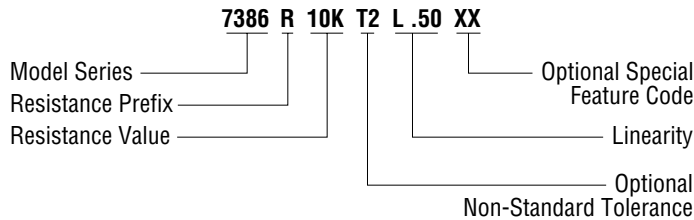


## SPECIAL FEATURES

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

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## ORDERING INFORMATION

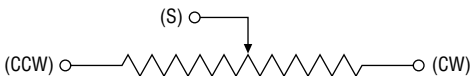


## MATCHING TURNS COUNTING DIALS

7381: RBJ, 2601, 2641

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

## 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

