

Series 7380
Models 7381, 7383, 7386, 7388
7/8" Diameter
3-Turn, Wirewound
Precision Potentiometer



For more information about this product, visit our website at:
www.potentiometers.com

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 Specifications¹

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 (MIL-R-39023)

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)

¹ Specifications subject to change without notice.
² Linearity is measured between 1% and 99% of input voltage.

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Mechanical Specifications

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)	maximum 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

Special Features

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
Seal (IP66) 7386 or 7388 only	ES

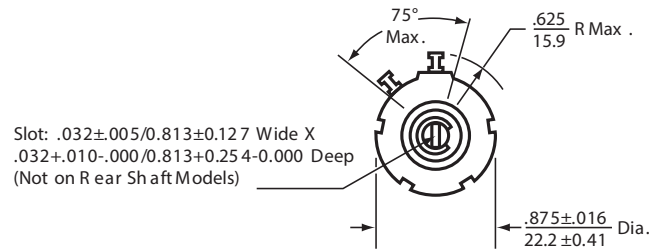
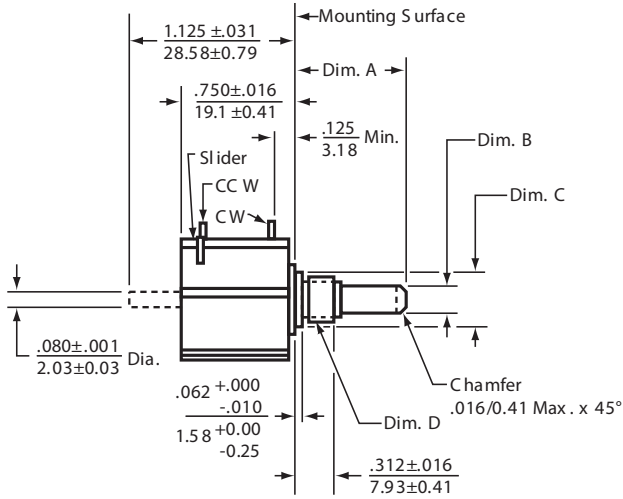
NOTE: When multiple Feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

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Outline Dimensions (Inch/mm)

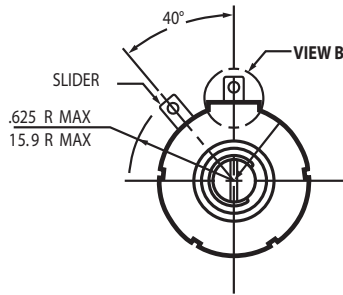
Models 7381 & 7386 Bushings Mount with Sleeve Bearing

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

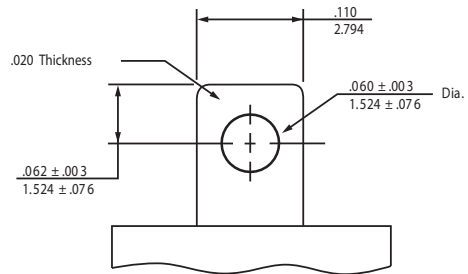


Optional Terminal Configuration

Optional Terminal Configuration



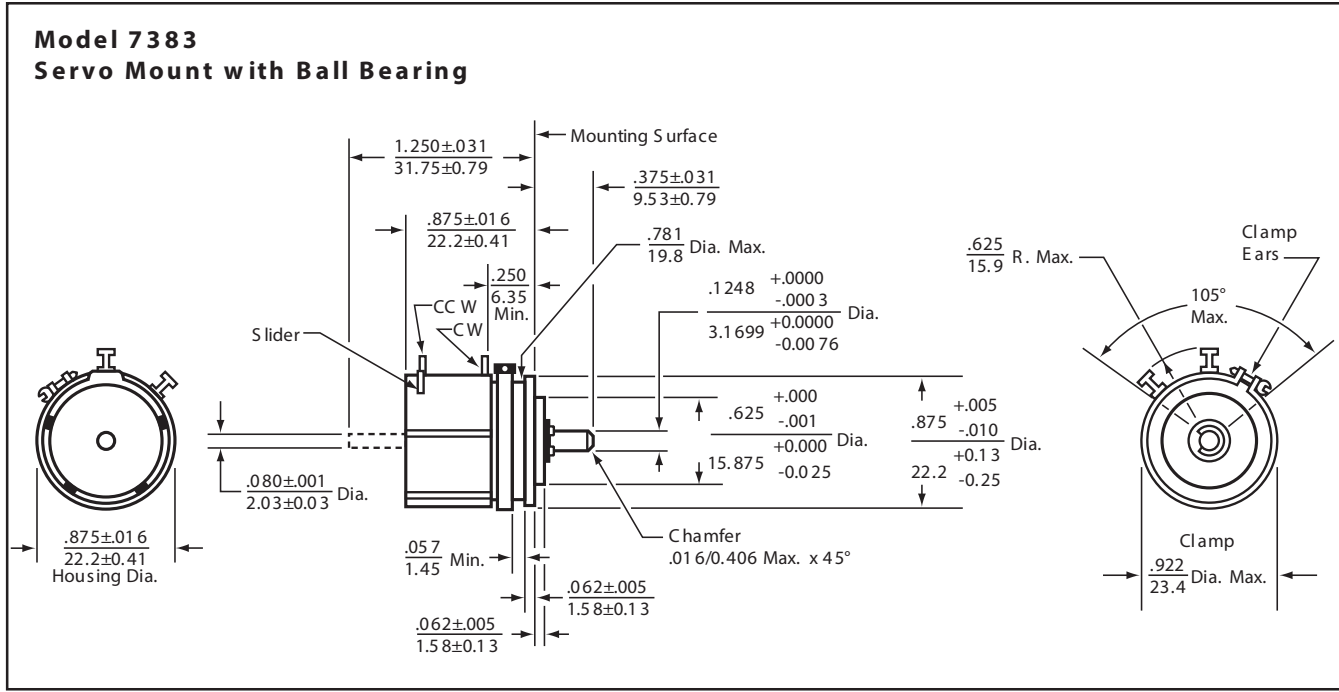
Use Special Feature Code "FT" to order.



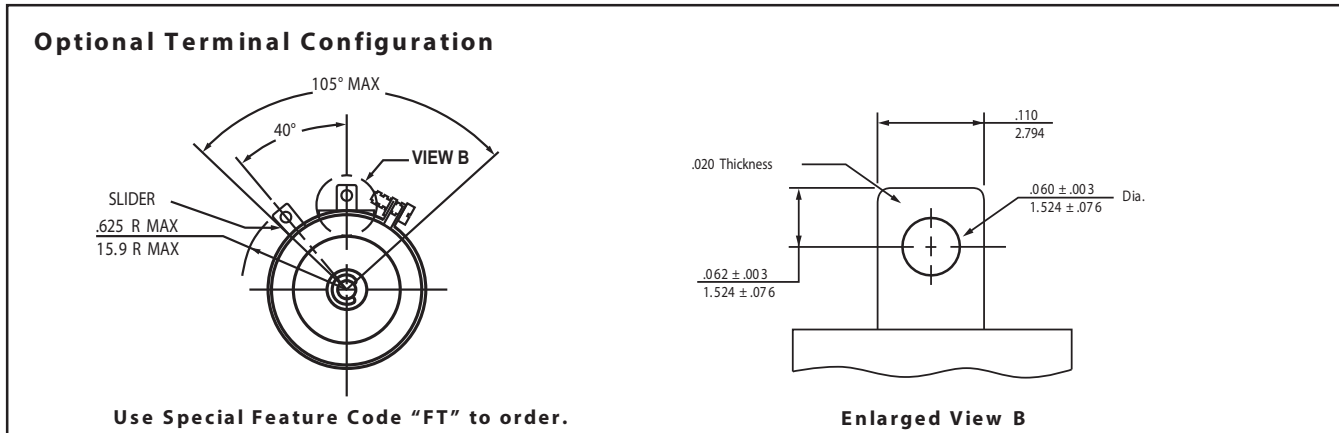
Enlarged View B

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Outline Dimensions (Inch/mm)



Optional Terminal Configuration

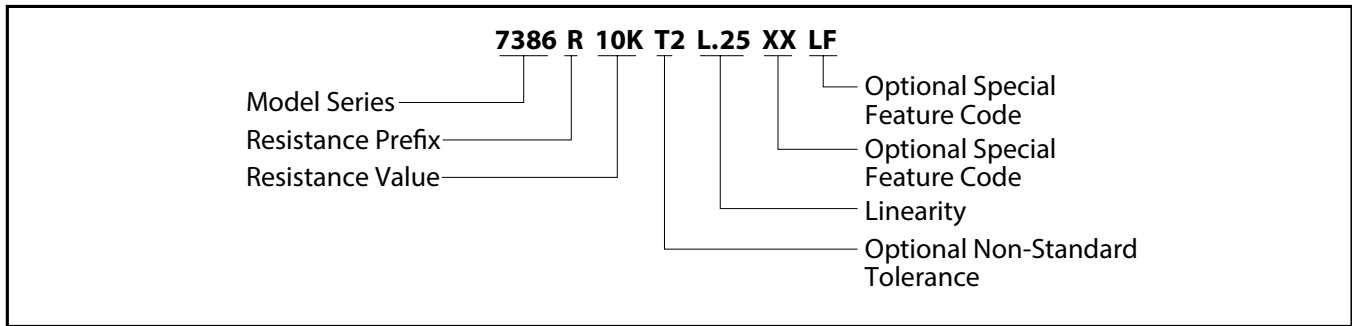


Metric Conversions

1 in.	25.4 mm	1 oz.-in.	0,007 N-m
1 oz.	28.4 gm	1 lb.-in.	0,113 N-m

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Ordering Information

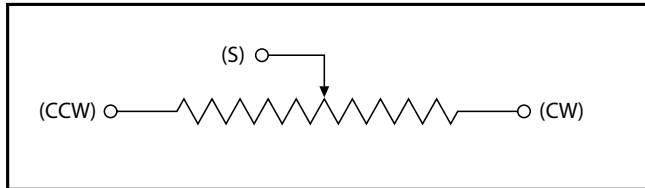


Matching Turns Counting Dials

7381: RBJ, 2601, 2641

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

Circuit Diagram



Notes

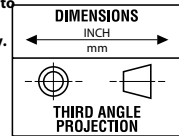
Metric equivalents, based on 1 inch = 25.4mm are rounded to the same number of significant figures as in the original English units and are provided for general information only.

Tolerances unless otherwise specified:

Linear = $\pm .01$ inches

(.25mm)

Angular = ± 2 degrees



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