

Series 7480
Models 7481, 7483, 7486, 7488
7/8" Diameter
5-Turn, Wirewound
Precision Potentiometer



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



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 Specifications¹

Resistance Range	100 to 50K ohms
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity ²	±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°

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

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 7488)	500K shaft revolutions + 900 hours at 1.5 Watts & 70°C, maximum 5% ΔR
Ingress Protection Rating (IP Code)	IP40

Series 7480 - Models 7481, 7483, 7486, 7488

Mechanical Specifications

Total Mechanical Travel	1800° +15° -0°	
Number of Gangs	2 maximum	
Weight (single gang)	0.75 oz. nominal	
Backlash	1° maximum	
	7481, 7486	7483
Static Stop Strength	maximum 60 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 7486 without RS feature)	SS
Rear Shaft Extension (7381, 7486 single cup only)	RS
Shaft Lock (7381, 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

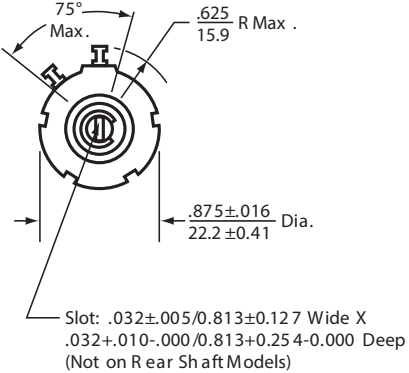
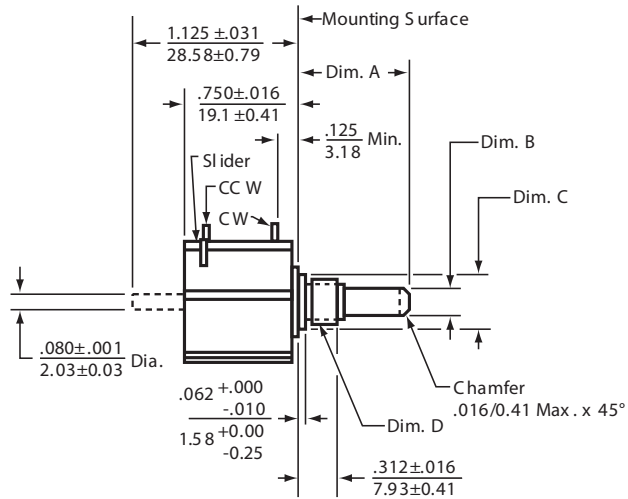
NOTE: When multiple Feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

Series 7480 - Models 7481, 7483, 7486, 7488

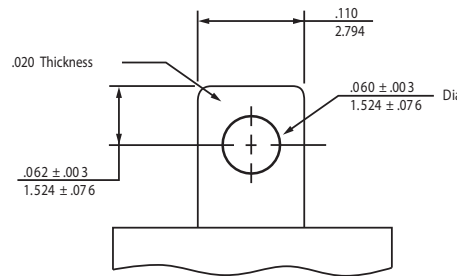
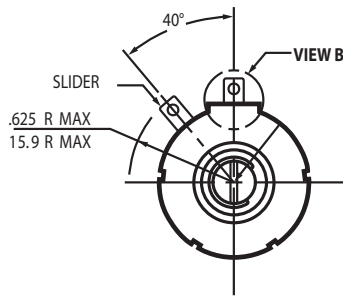
Outline Dimensions (Inch/mm)

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



Optional Terminal Configuration

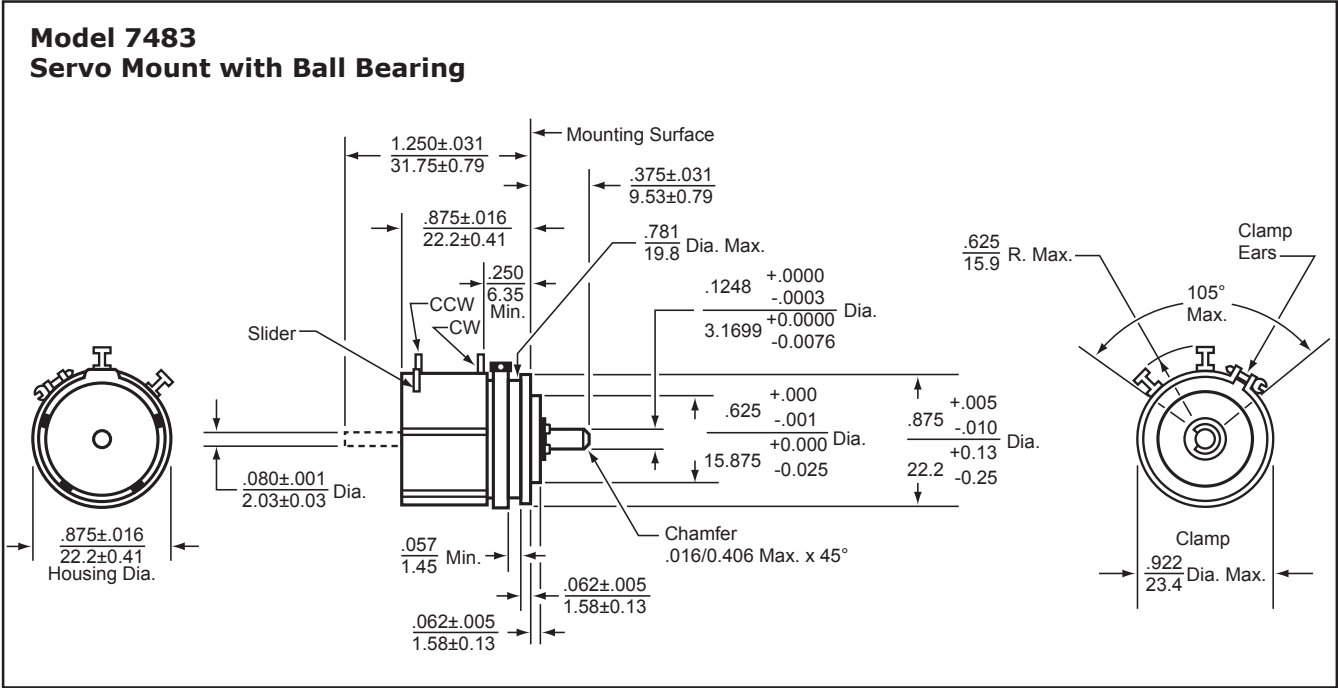


Enlarged View B

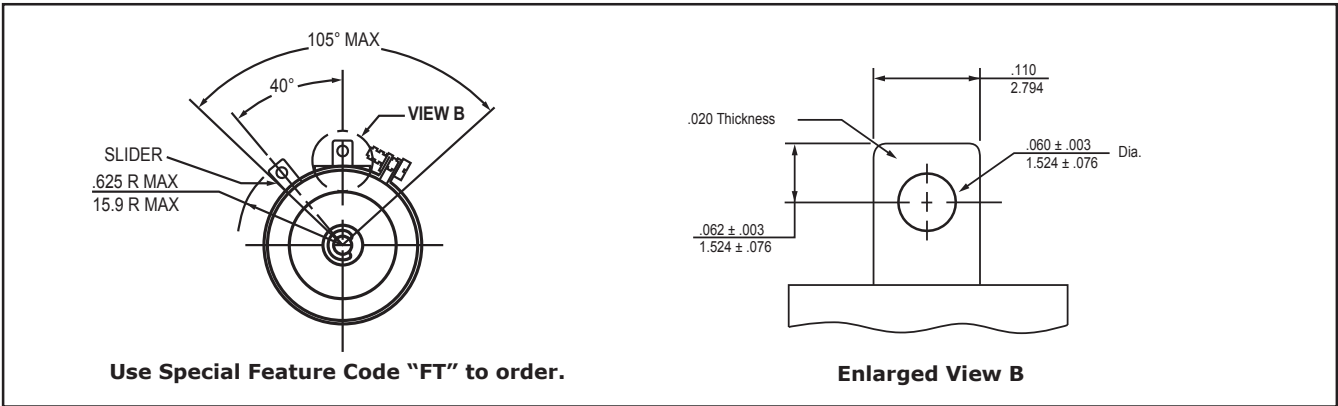
Use Special Feature Code "FT" to order.

Series 7480 - Models 7481, 7483, 7486, 7488

Outline Dimensions (Inch/mm)



Optional Terminal Configuration

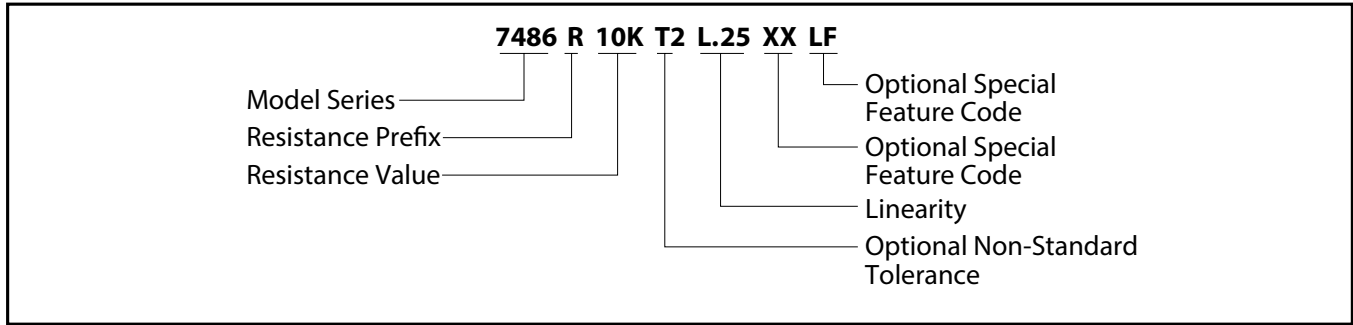


Metric Conversions

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

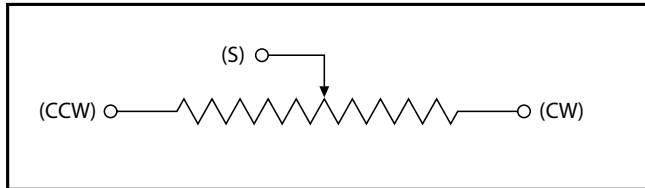


Matching Turns Counting Dials

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 = ± .01 inches

(.25mm)

Angular = ± 2 degrees

