

# MODEL 7480 SERIES

## 7/8" Diameter

## 5-Turn

## Wirewound

## Precision Potentiometer



2

### 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) NEW PRODUCT	1/4" Shaft, 3/8" Bushing

### ELECTRICAL

Resistance Range, Ohms	100 to 50K
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity	±0.25%
Minimum Practical Independent Linearity	±0.25%, < 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

### ENVIRONMENTAL (MIL-R-12934)

Operating Temperature Range	Static: -55°C to +125°C Dynamic: -40°C to +125°C
Thermal Shock	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	1 Million shaft rev. + 900 hrs. at rated wattage at 70°C (5% ΔR)
Rotational Life Model 7488 (1 pound Side Load)	1 Million shaft rev. + 900 hrs. at rated wattage at 70°C (5% ΔR)

Specifications subject to change without notice.

## MECHANICAL

Total Mechanical Travel	1800° + 15° – 0°	
Number of Gangs, Maximum	2	
Weight, Nominal (single gang)	0.75 oz.	
Backlash, Maximum	1°	
	<b>7481, 7486</b>	<b>7483</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.

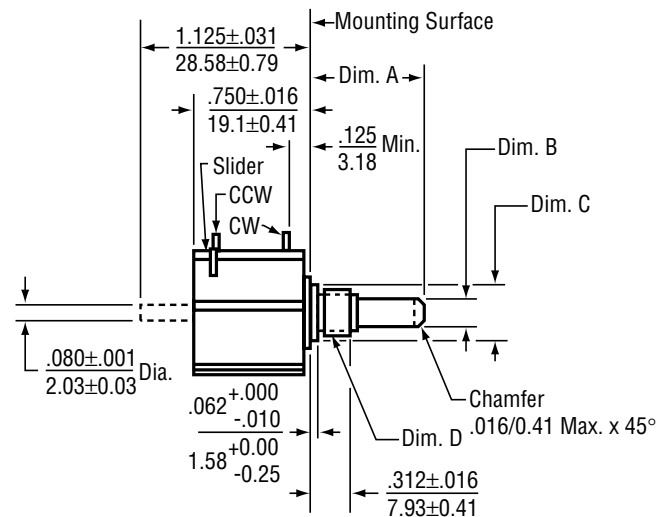
## STANDARD RESISTANCE VALUES, OHMS

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

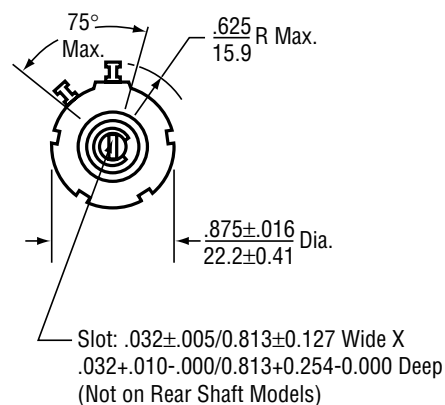
## OUTLINE DIMENSIONS (Inch/mm)

Models 7481 & 7486

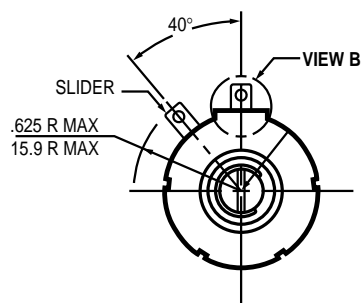
Bushing Mount with Sleeve Bearing



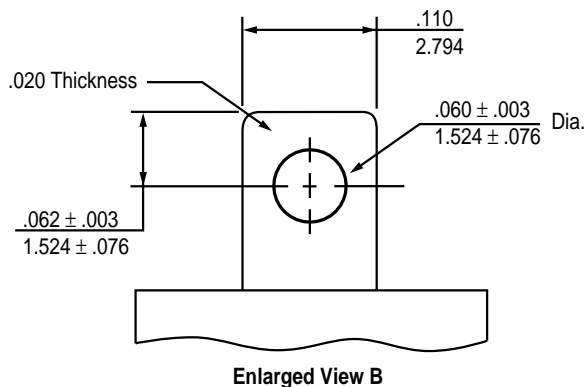
Dim.	7481	7486
A	$\frac{.688 \pm .013}{17.475 \pm 0.787}$	$\frac{.812 \pm .031}{20.625 \pm 0.787}$
B	$\frac{.1248 \begin{matrix} +.0000 \\ -.0003 \end{matrix}}{3.1699 \begin{matrix} +0.0000 \\ -0.0076 \end{matrix}}$ Dia.	$\frac{.2500 \begin{matrix} +.0000 \\ -.0005 \end{matrix}}{6.3500 \begin{matrix}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



## OPTIONAL TERMINAL CONFIGURATION



Use Special Feature Code "FT" to order.

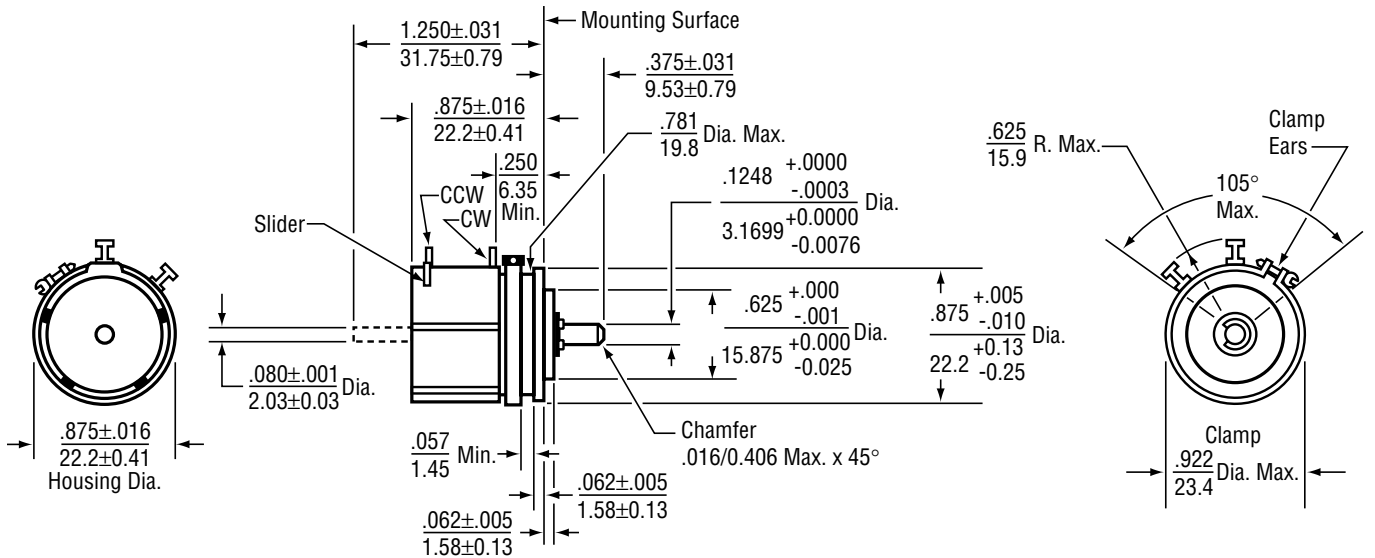


Enlarged View B

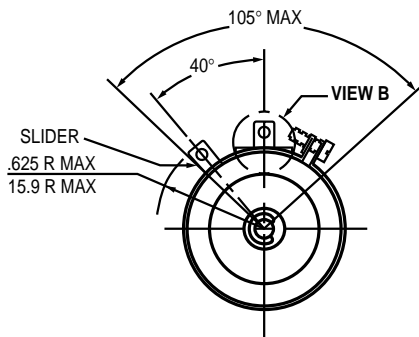
## OUTLINE DIMENSIONS (Inch/mm)

Model 7483

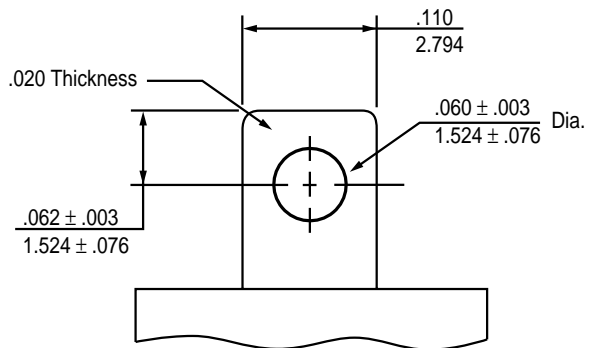
Servo Mount with Ball Bearing



## OPTIONAL TERMINAL CONFIGURATION



Use Special Feature Code "FT" to order.



Enlarged View B

## METRIC CONVERSIONS

1 in.	25.4 mm
1 oz.	28.4 gm

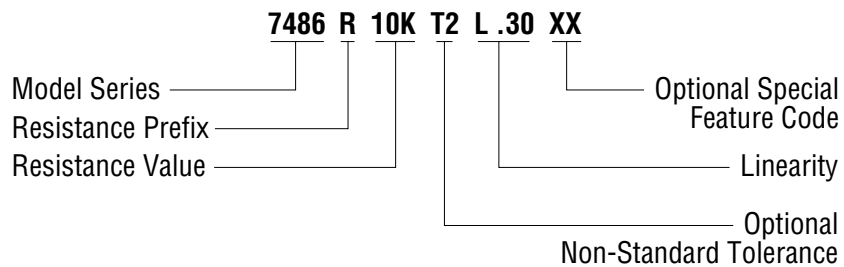
1 oz.-in.	0,007 N-m
1 lb.-in.	0,113 N-m

## SPECIAL FEATURES

Center Tap	CT
Linearity Tape	LT
Rear Shaft Extension	RS
Flatted Shaft	FS
Slotted Shaft (Standard on single gang 7486 without RS)	SS
Shaft Lock (7481, 7486 only)	SL
High Torque 2–6 oz.-in. (7486 only)	HT
Additional Gangs	2G
Gold plated solder lug terminals (See optional terminal configuration)	FT

2

## ORDERING INFORMATION

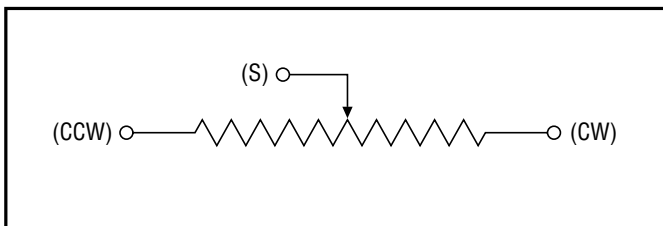


## MATCHING TURNS COUNTING DIALS

7481: RBJ, 2601, 2641

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

## 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 =  $\pm 2$  degrees

