

Series 7280

Models 7281, 7283, 7284, 7286, 7288

7/8" Diameter

10-Turn, Wirewound

Precision Potentiometer



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

Model Styles

7281	1/8" Shaft, 1/4" Bushing
7283	1/8" Shaft, Servo
7284	6mm Shaft, 3/8" Bushing
7286	1/4" Shaft, 3/8" Bushing
7288 (for heavy side load applications)	1/4" Shaft, 3/8" Bushing

Electrical Specifications¹

Resistance Range, Ohms	100 to 100K ohms
Standard Resistance Tolerance	±5%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity ²	±0.25%
Minimum Practical Independent Linearity	±0.15% (<300 ohms), ±0.075% (≥300 ohms)
Power Rating, Watts	2.0 at 70°C derating to 0 at 125°C
Dielectric Strength	1,000V rms
Insulation Resistance	1,000 Megohms minimum
Noise	100 Ohms, maximum
Actual Electrical Travel	3600° + 10° - 0° (> 100 Ohms), 3600° + 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.

Series 7280: Models 7281, 7283, 7284, 7286, 7288

Mechanical Specifications

Total Mechanical Travel	3600° + 15° - 0°	
Number of Gangs	2 maximum	
Weight (single gang)	0.75 oz. nominal	
Backlash	1° maximum	
	7281, 7284, 7286, 7288	7283
Static Stop Strength	maximum 48 oz.-in.	36 oz.-in.
Panel Nut Tightening Torque	maximum 25 lb.-in.	N/A
Shaft End Play	maximum .010"	.005"
Shaft Runout	maximum T.I.R. .003"	.002"
Pilot Diameter Runout	maximum T.I.R. .004"	.002"
Lateral Runout	maximum T.I.R. .005"	.004"
Shaft Radial Play	maximum T.I.R. .003"	.002"
Start/Run Torque (per gang) ¹	maximum T.I.R. 0.8 oz.-in.	0.6 oz.-in..

1. ES option adds 0.5 oz.-in.

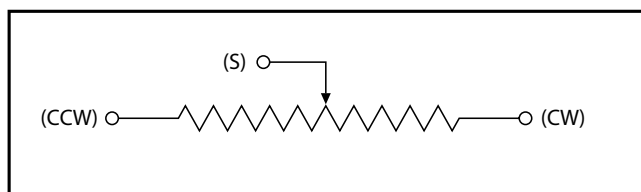
Environmental (MIL-PRF-12934)

Operating Temperature Range	-40°C to +125°C dynamic, -55°C to +125°C static
Temperature Cycling	5 cycles, -55°C to +125°C (5% ΔR)
Shock	6ms Sawtooth, 100G's (0.1ms discontinuity maximum)
Vibration	15G's, 10 to 2,000 Hz (5% ΔR, 0.1ms discontinuity maximum)
Moisture Resistance	Five 24 hour cycles, maximum 3% ΔR
High Temperature Exposure	1,000 hours at 125°C, maximum 5% ΔR
Rotational Life-7288 (1 lb. Side Load)	1M shaft rev. + 900 hrs. at 2.0 Watts at 70°C (5% ΔR)
Ingress Protection Rating (IP Code)	IP50, IP66 available as option (feature code ES)

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
50K	0.010	±20 ppm/°C
100K	0.008	±20 ppm/°C

Circuit Diagram

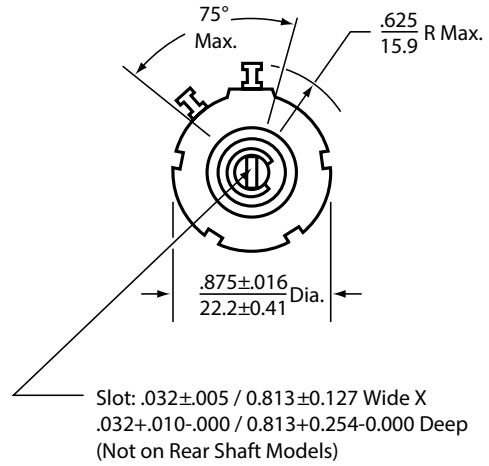
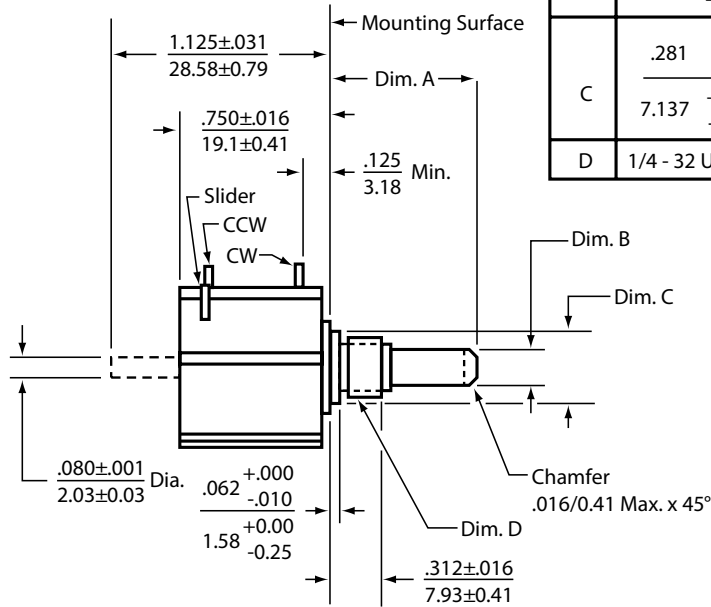


Series 7280: Models 7281, 7283, 7284, 7286, 7288

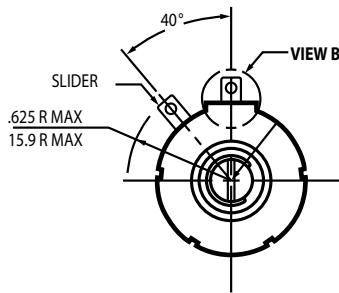
Outline Dimensions (Inch/mm)

Models 7281, 7284, 7286 & 7288
Bushings Mount with Sleeve Bearing

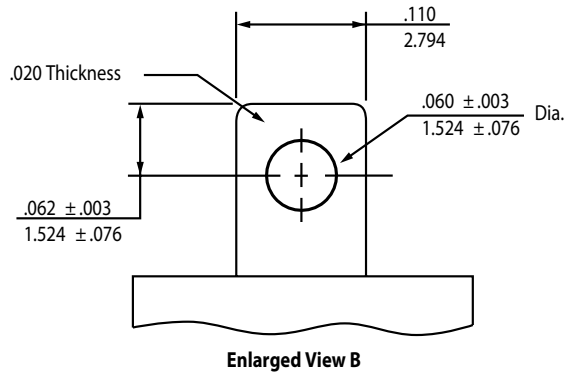
Dim.	7281	7284	7286 & 7288
A	$\frac{.688 \pm .031}{17.475 \pm 0.787}$	$\frac{.812 \pm .031}{20.625 \pm 0.787}$	$\frac{.812 \pm .031}{20.625 \pm 0.787}$
B	$\frac{.1248}{3.1699} \begin{matrix} +0.0000 \\ -0.0003 \end{matrix}$ Dia. $\frac{.750 \pm .016}{19.1 \pm 0.41}$	$\frac{.2362}{6.0000} \begin{matrix} +0.0000 \\ -0.0005 \end{matrix}$ Dia. $\frac{.812 \pm .031}{20.625 \pm 0.787}$	$\frac{.2500}{6.3500} \begin{matrix} +0.0000 \\ -0.0005 \end{matrix}$ Dia. $\frac{.812 \pm .031}{20.625 \pm 0.787}$
C	$\frac{.281}{7.137} \begin{matrix} +0.000 \\ -0.002 \end{matrix}$ Dia. $\frac{.080 \pm .001}{2.03 \pm 0.03}$ Dia.	$\frac{.406}{10.312} \begin{matrix} +0.000 \\ -0.002 \end{matrix}$ Dia. $\frac{.080 \pm .001}{2.03 \pm 0.03}$ Dia.	$\frac{.406}{10.312} \begin{matrix} +0.000 \\ -0.002 \end{matrix}$ Dia. $\frac{.080 \pm .001}{2.03 \pm 0.03}$ Dia.
D	1/4 - 32 UNEF Thread	3/8 - 32 UNEF Thread	3/8 - 32 UNEF Thread



Optional Terminal Configuration



Use Special Feature Code "FT" to order.

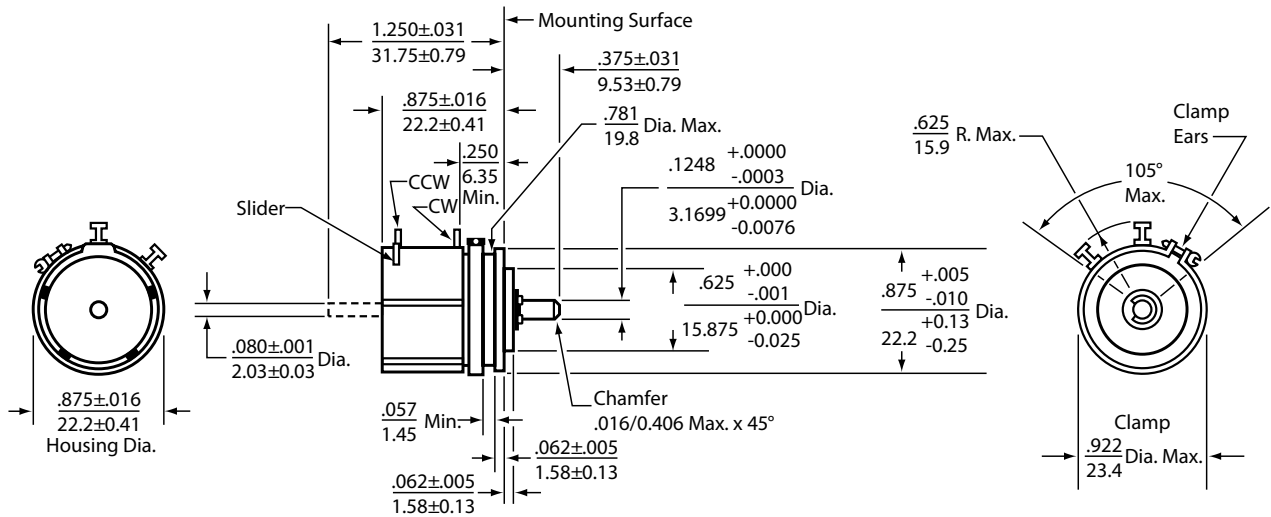


Series 7280: Models 7281, 7283, 7284, 7286, 7288

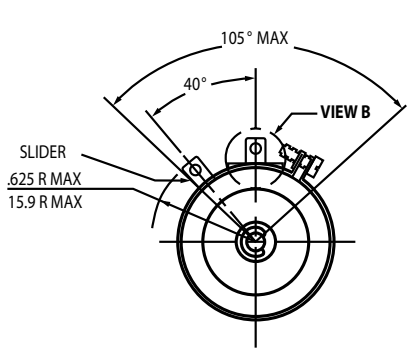
Outline Dimensions (Inch/mm)

Model 7283

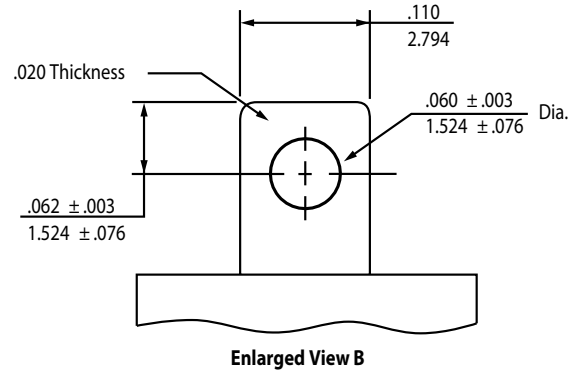
Servo Mount with Ball Bearing



Optional Terminal Configuration



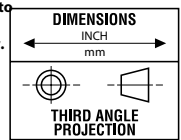
Use Special Feature Code "FT" to order.



Notes

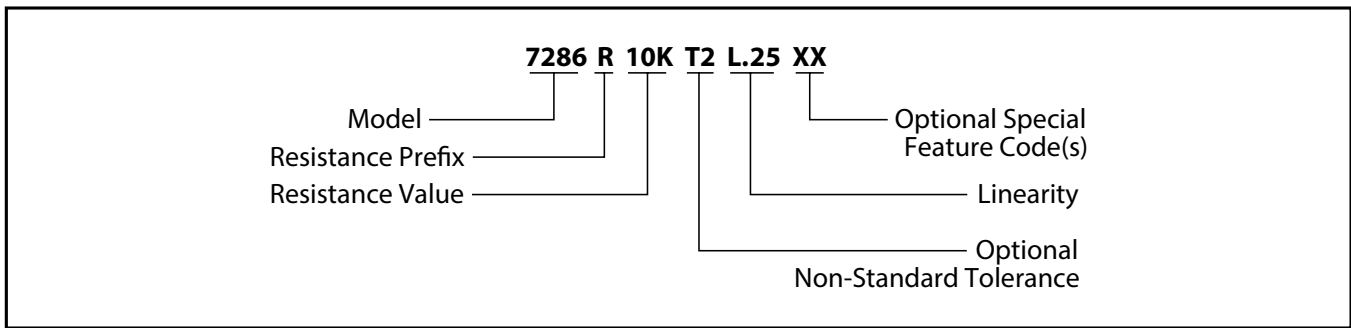
Metric equivalents, based on 1 inch = 25.4mm are rounded to the same number of significant figures as in the original English units and are provided for general information only.

Tolerances unless otherwise specified:
 Linear = ± .01 inches (.25mm)
 Angular = ± 2 degrees



Series 7280: Models 7281, 7283, 7284, 7286, 7288

Ordering Information



Feature Codes

7281, 7283 plain shaft	no code
7284, 7286, 7288 slotted shaft	code
Center Tap	CT
Linearity Tape	LT
Flatted Shaft	FS
Slotted Shaft (standard on single cup 7284, 7286 & 7288 without RS feature)	SS
Rear Shaft Extension (7281, 7286, 7288 single cup only)	RS
Shaft Lock (7286 & 7288 only)	SI
High Torque 2-6 oz.-in. (7286 & 7288 only)	HT
Additional Gang	2G
Gold Plated Solder Lug Terminals (see optional terminal configuration)	FT
Seal (IP66) 7284, 7286, or 7288 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).

Matching Turns Counting Dials

7281	RBJ, 2601, 2641
7286, 7288	RB, 2606, 2606S, 2607, 2607S, 2626, 2126, 2627, 2646, 2646S, 2647, 2647S

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

