

Model 7280 Series

Precision Potentiometer



Features:

- Lead-free
- RoHS 2 compliant
- 7/8" diameter
- 10 turn wirewound



Applications:

- Pedal position
- Joystick controls
- Valve control
- Wind vane
- Panel control
- Test and measurement
- Medical equipment
- Angular position

Model Styles Available

7281	1/8" shaft, 1/4" bushing
7283	1/8" shaft, servo
7284	6 mm shaft, 3/8" bushing
7286	1/4" shaft, 3/8" bushing
7288 (for heavy side load applications)	1/4" shaft, 3/8" bushing

Electrical

Resistance range	100 to 100K ohms
Standard resistance tolerance	±5%
Minimum practical resistance tolerance	±1%
Independent linearity	±0.25%
Minimum practical independent linearity	±0.15% (<300 ohms), ±0.075% (≥300 ohms)
Power rating	2.0 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	3600° +10° -0° (>100 ohms), 3600° +10° -5° (≤100 ohms)
End voltage	Maximum 0.25% of input voltage
Tap tolerance	±3°

General Note

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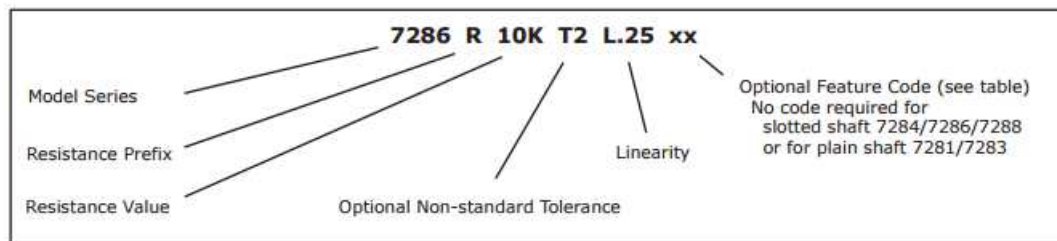
Mechanical

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 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, ES option adds 0.5 oz.-in.)	Maximum 0.8 oz.-in.	0.6 oz.-in.

Environmental

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 7288)	1M shaft revolutions + 900 hours at 2.0 Watts & 70°C, maximum 5% ΔR	
Ingress protection rating (IP Code)	IP50, IP66 available as option (feature code ES)	

Ordering Information



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Feature Codes

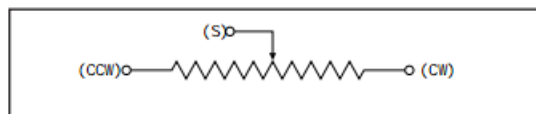
7281, 7283 plain shaft; 7284, 7286, 7288 slotted shaft	No code
Center tap	CT
Linearity tape	LT
Flatted shaft	FS
Slotted shaft (standard on single cup 7284, 7286 & 7288 without RS feature)	SS
Rear shaft extension (7281, 7286, 7288 single cup only)	RS
Shaft lock (7286 & 7288 only)	SL
High torque 2-6 oz.-in. (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).

Standard Resistance Values

Total Resistance (Ohms)	Theoretical Resolution (% nominal)	Tempco of Wire (ppm/°C)
100	0.059	±20
200	0.037	±20
500	0.030	±20
1K	0.024	±20
2K	0.020	±20
5K	0.018	±20
10K	0.017	±20
20K	0.016	±20
50K	0.010	±20
100K	0.008	±20

Circuit Diagram



Available Turns Counting Dials

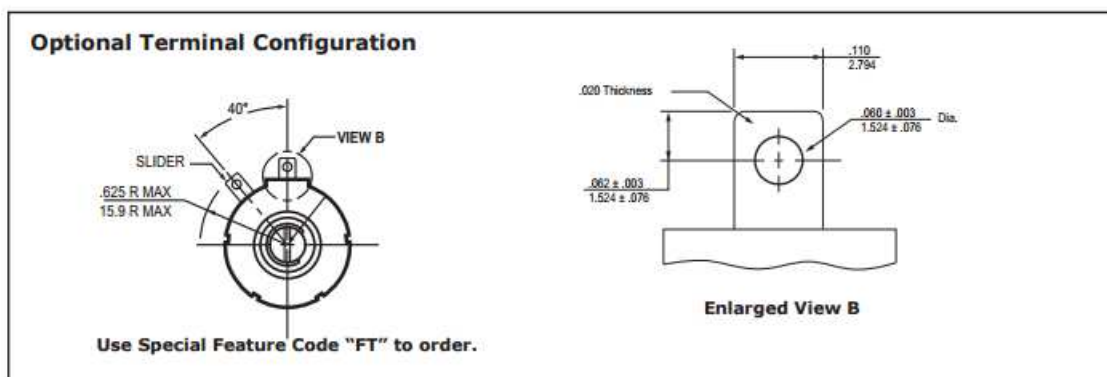
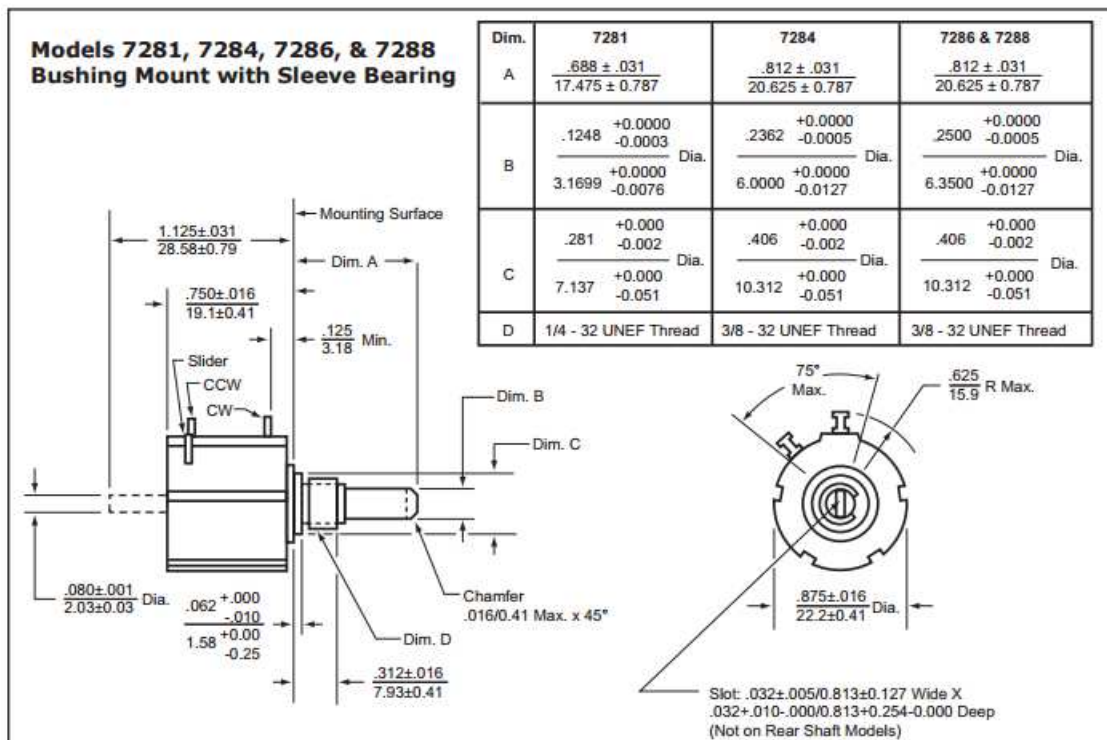
7281: RBJ, 2601, 2641

7286, 7288: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S

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Outline Drawing



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Model 7283
Servo Mount with Ball Bearing

Technical drawing showing the dimensions and features of the Model 7283 Servo Mount with Ball Bearing. The drawing includes a side view and two end views.

Side View Dimensions:

- Mounting Surface: $1.250 \pm .031$ (31.75 $\pm$ 0.79)
- Ball Bearing: $.375 \pm .031$ (9.53 $\pm$ 0.79)
- Servo Housing: $.875 \pm .016$ (22.2 $\pm$ 0.41)
- Servo Horn: $.781$ (19.8) Dia. Max.
- Slider: $.250$ (6.35) Min.
- CCW (Counter Clockwise) and CW (Clockwise) markings.
- Chamfer: $.016/0.406$ Max. x 45°
- Ball Bearing: $.625$ (15.9) R. Max.
- Mounting Surface: $.1248$ (+.0000, -.0003) Dia.
- Mounting Surface: 3.1699 (+0.0000, -.0076) Dia.
- Mounting Surface: $.625$ (+.000, -.001) Dia.
- Mounting Surface: $.875$ (+.005, -.010) Dia.
- Mounting Surface: $.15.875$ (-0.025) Dia.
- Mounting Surface: $.22.2$ (-0.25) Dia.
- Mounting Surface: $.080 \pm .001$ (2.03 $\pm$ 0.03) Dia.
- Mounting Surface: $.057$ (1.45) Min.
- Mounting Surface: $.062 \pm .005$ (1.58 $\pm$ 0.13)
- Mounting Surface: $.062 \pm .005$ (1.58 $\pm$ 0.13)

End View Dimensions:

- Clamp Ears: 105° Max.
- Clamp: $.922$ (23.4) Dia. Max.

Other Dimensions:

- Housing Dia.: $.875 \pm .016$ (22.2 $\pm$ 0.41)

Optional Terminal Configuration

The technical drawing illustrates the optional terminal configuration. The top view shows a circular component with a central pin and a terminal on the right. The terminal is labeled "VIEW B". The distance from the center to the terminal is 105° MAX. The terminal itself is 40° wide. The terminal is labeled "SLIDER" and has dimensions of .625 R MAX and 15.9 R MAX. The bottom view shows the component mounted on a base. The base has a width of .110 (2.794) and a height of .020 Thickness. The base has a central hole with a diameter of .062 ± .003 (1.524 ± .076). The terminal has a diameter of .060 ± .003 (1.524 ± .076).

105° MAX

40°

VIEW B

SLIDER

.625 R MAX

15.9 R MAX

.110
2.794

.020 Thickness

.062 ± .003
1.524 ± .076

.060 ± .003
1.524 ± .076 Dia.

Use Special Feature Code "FT" to order.

Enlarged View B

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