Multi-Turn Precision Potentiometer

Model 7200 Series

Features:

- 7/8” diameter
- 10-turn
- Wirewound

Model Styles Available

7216, 7221	Bushing Mount, Sleeve Bearing
7223	Servo Mount, Ball Bearing

Electrical

Resistance Range, Ohms	10 to 125K
Standard Resistance Tolerance	±3%
Minimum Practical Resistance Tolerance	±1%
Independent Linearity	±0.25%
Minimum Practical Independent Linearity	±0.25%, ≤ 20 Ohms
	±0.15%, 21-49 Ohms
	±0.10%, 50-99 Ohms
	±0.075%, 100-999 Ohms
	±0.05%, ≥ 1K Ohms
Power Rating, Watts	2.0 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	3600° + 10° – 0°, > 25 Ohms
	3600° + 10° – 5°, ≤ 25 Ohms
Tap Tolerance	±5°, ≤20 Ohms
	±3°, 21-49 Ohms
	±2°, ≥50 Ohms
End Voltage, Maximum (% of input voltage)	0.5%, <100 Ohms
	0.25%, ≥100 Ohms

Specifications subject to change without notice.
Available in a Hybrid version – contact factory for details.

General Note
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Environmental

Operating Temperature Range	Static: –65°C to +125°C Dynamic: –40°C to +125°C
Temperature Cycling	5 cycles, –65°C to +125°C (5% ΔR)
Shock, 6ms Sawtooth	50G's (0.1ms discontinuity max.)
Vibration	15G's, 10 to 2,000 Hz (5% ΔR, 0.1ms discontinuity max.)
Moisture Resistance	Ten 24 hour cycles (3% ΔR)
High Temperature Exposure	1,000 hours at 125°C (5% ΔR)
Rotational Load Life	2 mil. shaft rev. + 900 hrs. at rated wattage at 70°C (5% ΔR)*

* Model 7216 - Rotational Load Life = 1 mil. shaft rev.+900 hrs. at rated wattage at 70°C (5% ΔR)

Mechanical

Total Mechanical Travel			3600° + 10° – 0°
Number of Gangs, Maximum			2
Weight, Nominal (single Gang)			1.25 oz.
Static Stop Strength			128 oz.-in.
Backlash, Maximum			1.5°
	7216	**7221**	**7223**
Panel Nut Tightening Torque, Maximum	25 lb.-in.	25 lb.-in.	N/A
Shaft End Play, Maximum	.0085"	.005"	.005"
Shaft Runout, T.I.R., Maximum	.001"	.001"	.001"
Pilot Diameter Runout, T.I.R., Maximum	.001"	.001"	.0015"
Lateral Runout, T.I.R., Maximum	.003"	.003"	.003"
Shaft Radial Play, Maximum	.003"	.003"	.002"
Start/Run Torque, Maximum (per Gang)			0.6 oz.-in / 0.5 oz.-in.

Special Features

Center Tap	CT
Linearity Tape	LT
Rear Shaft Extension	RS
Flatted Shaft	FS
Slotted Shaft	SS
Shaft Lock (7216, 7221 only)	SL
Additional Gangs	2G

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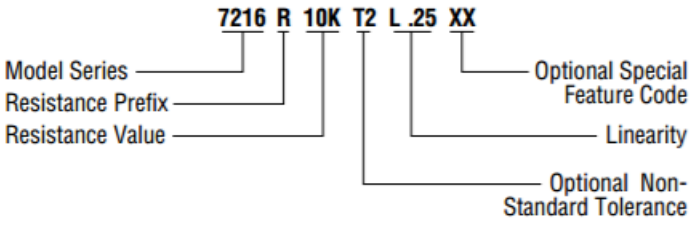
STANDARD RESISTANCE VALUES, OHMS

Total Resistance	Theoretical Resolution (% Nominal)	Tempco of Wire
10	0.083	+ 800 ppm/°C *
25	0.055	+ 800 ppm/°C *
50	0.048	+ 800 ppm/°C *
100	0.040	+ 800 ppm/°C *
200	0.033	+ 800 ppm/°C *
500	0.031	± 20 ppm/°C
1K	0.028	± 20 ppm/°C
2K	0.025	± 20 ppm/°C
5K	0.020	+ 130 ppm/°C *
10K	0.018	+ 130 ppm/°C *
20K	0.016	+ 130 ppm/°C *
50K	0.012	± 20 ppm/°C
100K	0.011	± 20 ppm/°C

* Lower tempco available as a special model.

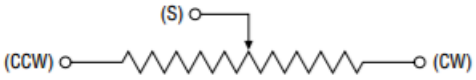
Ordering Information



MATCHING TURNS COUNTING DIALS

7216: 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S, RB
7221: RBJ, 2601, 2641

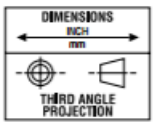
CIRCUIT DIAGRAM



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



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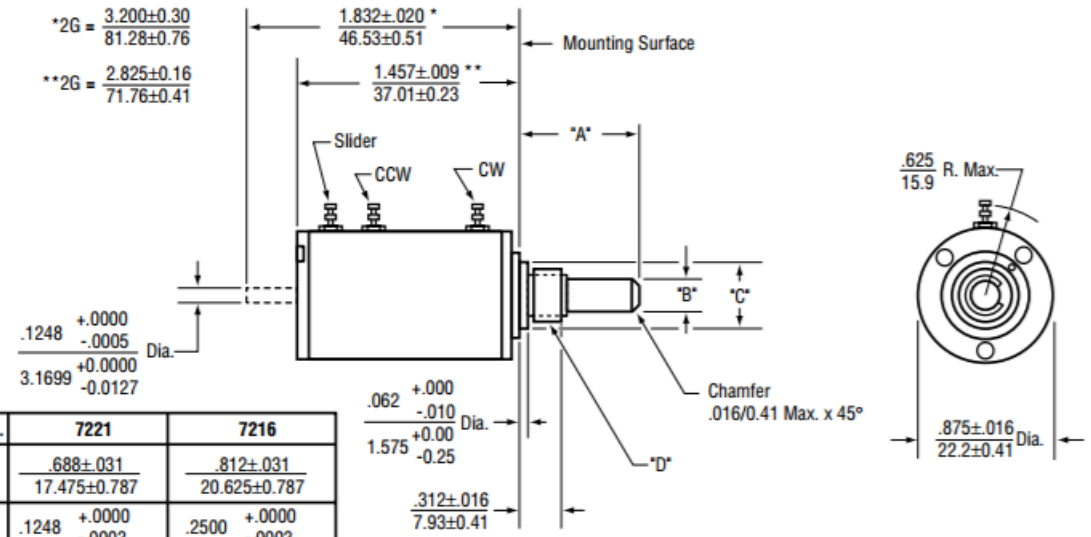
Outline Drawing

Model 7216 & 7221
Bushing Mount with Sleeve Bearing



Dim.	7221	7216
A	.688±.031 / 17.475±0.787	.812±.031 / 20.625±0.787
B	.1248 +.0000 -.0003 / 3.1699 +0.0000 -0.0076	.2500 +.0000 -.0003 / 6.3500 +0.0000 -0.0076
C	.281 +.000 -.002 / 7.137 +0.000 -0.051	.406 +.000 -.002 / 10.312 +0.000 -0.051
D	1/4-32 UNEF Thread	3/8-32 UNEF Thread

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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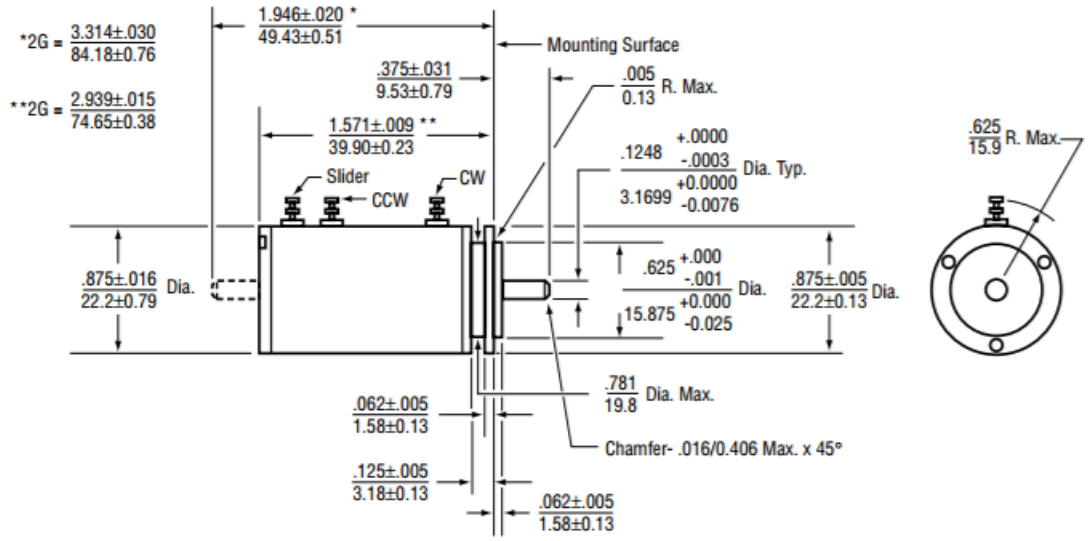
Outline Drawing

Model 7223
Servo Mount with Ball Bearing



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