



## ROTARY MOTION | PRECISION SENSOR

MODELS 4202 / 4203 / 4205 / 4206 / 4208 / 4209 / 4702 / 4705



### Features

- Servo Mount / Ball Bearing
- 7/8" to 2" Diameter Servo Mount
- Hybrid 3, 5 and 10-Turn Precision Potentiometers

### SPECIFICATIONS

#### Electrical

	4205 / 4206	4705	4208 / 4209	4202 / 4203	4702	4605	4232 / 4233	4602
<b>Theoretical Electrical Travel</b>	1080°		1800°	3600°		1080°	3600°	
<b>Normal Resistance Range</b>	750 Ω to 25K	2 to 40K	1K to 40K	2K to 80K	5K to 100K	2K to 40K	1K to 80K	5K to 100K
<b>Extended Resistance Range <sup>(1)</sup></b>	500Ω to 30K	1 to 75K	750Ω to 50K	1K to 100K	2.5K to 250K	1K to 75K	1K to 100K	2.5K to 250K
<b>Resistance Tolerance: Standard %</b>	±5							
<b>Best Practical %</b>	±3							
<b>Power Rating At 70°C, Derating to 0 At 125°C (Watts)</b>	1.5	5.0	2.0	2.5	7.0	5.0	2.5	7.0
<b>Linearity, Independent, Tolerance, Standard%</b>	±0.5	±0.2	±0.35	±0.25	±0.1	±0.35	±0.25	
<b>Best Practical%</b>	±0.15	±0.06	±0.01	±0.075	±0.03	±0.15	±0.1	±0.08
<b>Output Smoothness Max. (% Of Applied Voltage)</b>	0.5	0.2	0.35	0.25	0.1	0.35	0.25	
<b>End Voltage Max. (% Of Total Applied Voltage)</b>	0.25							
<b>Insulation Resistance At 500 VDC, Min. (Megohms)</b>	1000							
<b>Dialectric Withstanding Voltage (Volts RMS)</b>	1000							
<b>Max. Applied Voltage(Volts DC)<sup>(2)</sup></b>	1000							
<b>Temperature Coefficient Of Potentiometer, Max. % / C°</b>	±.007							
<b>Tap Spacing Minimum</b>	30°	13°	30°		13°	30°	13°	

## Mechanical

	4205 / 4206	4705	4208 / 4209	4202 / 4203	4702	4605	4232 / 4233	4602
<b>Total Mechanical Travel</b>	1080° +10°-0°			3600°+10°-0°		1080°+10°-0°	3600°+10°-0°	
<b>Mechanical Life Shaft Revolutions</b>	2 million							
<b>Ganged Cups, Max. (Number)</b>	3			2		3	2	
<b>Taps, Max., Excluding End Terminations</b>	10	52	22	46	135	52	46	135
<b>Moment Of Inertia, Per Cup (gm-cm<sup>2</sup>)</b>	0.25	7	0.3	0.4	12	7	0.4	12
<b>Weight:</b>								
<b>Single Cup (oz.)</b>	0.9	3.3	1.0	1.3	4.5	2.5	1.3	3.7
<b>Each Additional</b>	0.7	1.6	0.8	1.0	2.7	1.6	1.0	2.5
<b>Torque, Max. Per Cup (oz. in)</b>	0.5	1.5	0.5		1.5		0.6	1.5
<b>Pilot Diameter Runout, Max.</b>	.0015					.002		
<b>Lateral Runout, Max.</b>	.003	.0025	.003		.0025	.003	.005	.003
<b>Shaft Runout, Max.</b>	.001						.002	.001
<b>Shaft Radial, Max.</b>	.003	.002	.003		.002	.004	.003	
<b>Shaft End, Max.</b>	.005						.010	.005
<b>Dimension For Each Additional Cup</b>	.823±.002	.943±.002	.966±.002	1.323±.002	1.720±.002	.943±.005	1.323±.002	1.720±.005
<b>Stop Strength Static (oz.-in)</b>	128	1000	128	128	1000	750	100	750

## Environmental

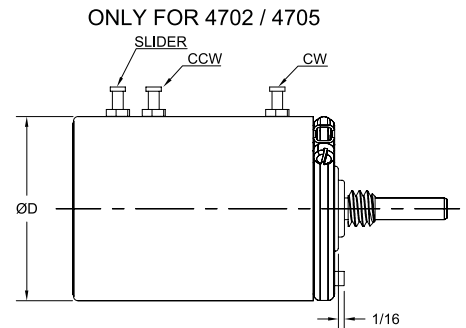
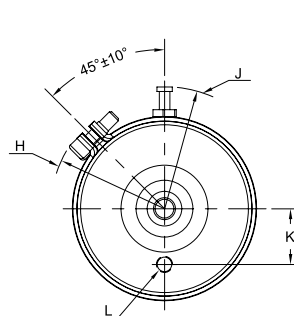
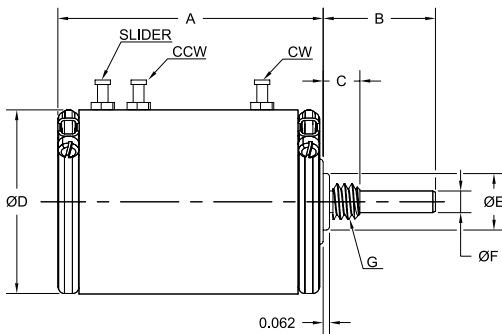
<b>Temperature Range (°C) Standard</b>	-55 to + 125
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THEORETICAL RESOLUTION- For typical coil characteristics by model number and resistance value, see Resolution Tables.  
 ALL MODELS are manufactured to meet or exceed applicable characteristics of MIL-R-12934. For MILITARY-APPROVED (QPL) Listings.



## DIMENSIONS

TOLERANCES UNLESS OTHERWISE SPECIFIED:  
 FRACTIONAL: ±1/64" DECIMAL: ±.005" ANGULAR: ±1°  
 Dimensions are in in[mm]

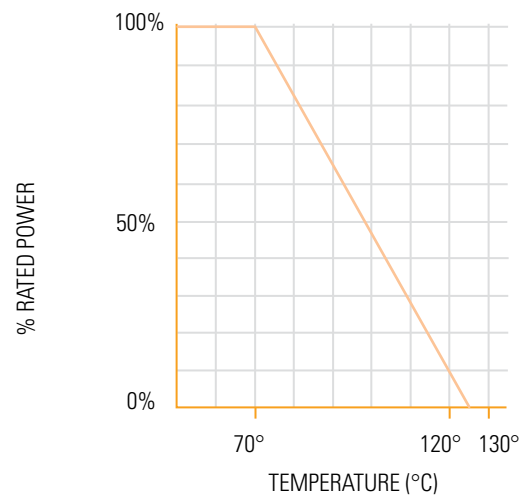


DIM / SERVO MODEL	4202	4203	4205	4206	4208	4209	4702	4705
<b>A</b>	1.460 ± 0.006		0.960 ± 0.006		1.103 ± 0.006		1.925 ± 0.007	1.148 ± 0.007
<b>B</b>	11/16 ± 1/32	13/16 ± 1/32	11/16 ± 1/32	13/16 ± 1/32	11/16 ± 1/32	13/16 ± 1/32		
<b>C</b>	5/16							
<b>D</b>	0.875						1.750	
<b>E</b>	0.281 ± 0.001	0.4062 ± 0.001	0.281 ± 0.001	0.4062 ± 0.001	0.281 ± 0.001	0.4062 ± 0.001		
<b>F</b>	0.1248 +0/-0.0003	0.2497 +0/-0.0003	0.1248 +0/-0.0003	0.2497 +0/-0.0003	0.1248 +0/-0.0003	0.2497 +0/-0.0003		
<b>G</b>	1/4-32 NEF-2A THD	3/8-32 UN-EF-2A THD	1/4-32 NEF-2A THD	3/8-32 UN-EF-2A THD	1/4-32 NEF-2A THD	3/8-32 UNEF-2A THD		
<b>H (Radius MAX)</b>	9/16						1-5/64	
<b>J (Radius MAX)</b>	5/8						1-1/16	
<b>K</b>	N/A						0.562	
<b>L</b>	N/A						0.125	

## Notes:

(1) All specifications listed apply to units with a total resistance within the normal resistance range. Higher or lower resistances may require some degradation of listed specifications because of resistance wire composition or size

(2) Not to exceed specified power rating.



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