



## ROTARY MOTION | PRECISION SENSOR

MODELS 4201 / 4204 / 4207 / 4501 / 4504 / 4507 / 4701 / 4704



### Features

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

## SPECIFICATIONS

### Electrical

	4204	4504	4704	4207	4507	4201	4501	4701
<b>Theoretical Electrical Travel</b>	1080°					3600°		
<b>Normal Resistance Range</b>	750Ω to 25K	1K to 30K	2KΩ to 40K	1K to 40K	2K to 50K	2K to 80K	3K to 100K	5K to 100K
<b>Extended Resistance Range <sup>(1)</sup></b>	500Ω to 30K	500Ω to 60K	1KΩ to 75K	750Ω to 50K	1K to 100K	1K to 100K	2K to 200K	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	3.0	5.0	2.0	4.0	2.5	5.0	7.0
<b>Linearity, Independent, Tolerance, Standard%</b>	±0.5	±0.25	±0.2	±0.35	±0.2	±0.25	±0.15	±0.1
<b>Best Practical%</b>	±0.15	±0.075	±0.06	±0.1	±0.06	±0.075	±0.05	±0.03
<b>Output Smoothness Max. (% Of Total Applied Voltage)</b>	0.5	0.25	0.2	0.35	0.2	0.25	0.15	0.1
<b>End Voltage Max. (% Of Total Applied Voltage)</b>	0.25							
<b>Insulation Resistance At 500 VDC, Min. (Megohms)</b>	1000							
<b>Dielectric 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°	16°	13°	30°	16°	30°	16°	13°

## Mechanical

	4204	4504	4704	4207	4507	4201	4501	4701
<b>Total Mechanical Travel</b>	1080° + 10° - 0°					3600° + 10° - 0°		
<b>Mechanical Life Shaft Revolutions</b>	5 million							
<b>Ganged Cups, Max. (Number)</b>	3					2		
<b>Taps, Max., Excluding End Terminations</b>	10	35	52	22	55	46	110	135
<b>Moment Of Inertia, Per Cup (gm-cm<sup>2</sup>)</b>	0.25	6.5	7	0.3	9	0.4	11	12
<b>Weight: Single Cup (oz.)</b>	0.9	3.0	3.3	1.0	3.3	1.3	4.0	4.5
<b>Each Additional Cup (oz.)</b>	0.7	1.9	1.6	0.8	2.1	1.0	2.5	2.7
<b>Torque, Max. Per Cup (oz. in)</b>	0.5	1.0	1.2	0.5	1.0	0.5	1.0	1.2
<b>Pilot Diameter Runout, Max.</b>	.0015	.001		.0015	.001	.0015	.001	
<b>Lateral Runout, Max.</b>	.002	.0015		.002	.0015	.002	.0015	
<b>Shaft Runout, Max.</b>	.001							
<b>Shaft Radial, Max.</b>	.002	.001		.002	.001	.002	.001	
<b>Shaft End, Max.</b>	.005		.004	.005				.004
<b>Dimension For Each Additional Cup</b>	.823±.002	.963±.002	.943±.005	.966±.002	1.185±.002	1.323±.002	1.740±.002	1.720±.005
<b>Stop Strength Static (oz.-in)</b>	128	750	1000	128	750	128	750	1000

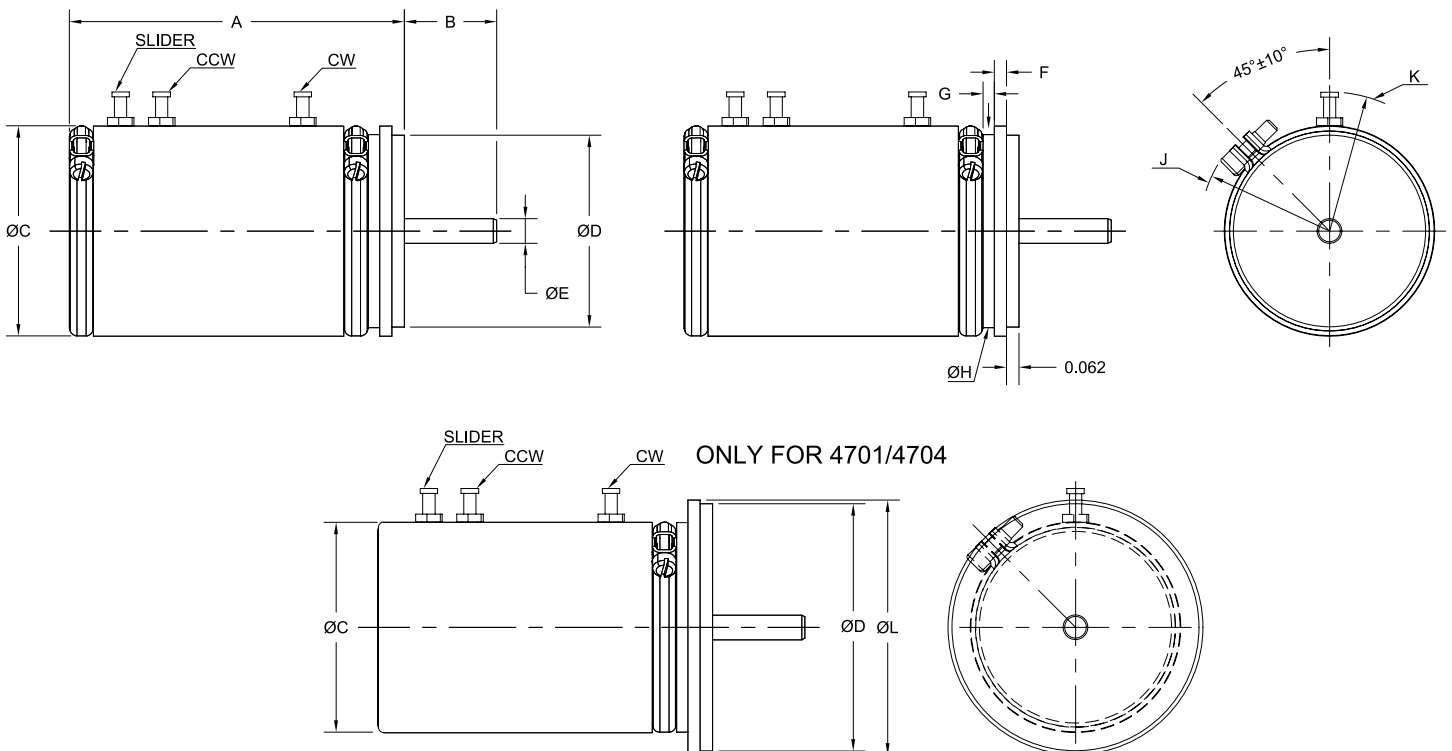
## Environmental

<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.

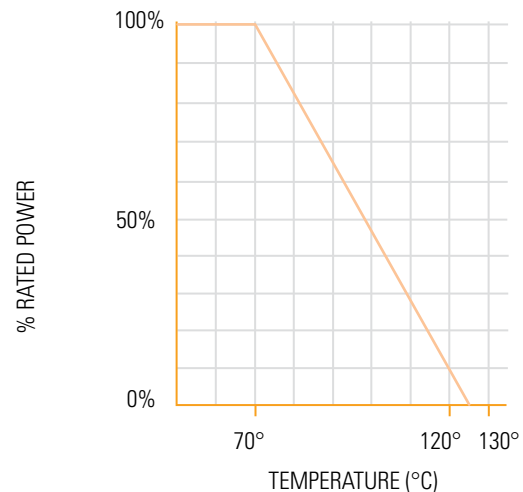
## DIMENSIONS



DIM / SERVO MODEL	4201	4204	4207	4501	4504	4507	4701	4704
<b>A</b>	1.570 ± 0.006	1.070 ± 0.006	1.213 ± 0.006	2.165 ± 0.007	1.388 ± 0.007	1.610 ± 0.007	2.008 ± 0.007	1.231 ± 0.007
<b>B</b>	3/8 ± 1/32			11/16 ± 1/32			5/8 ± 1/32	
<b>C</b>	0.875			1.437			1.750	
<b>D</b>	0.625 +0/-0.001			1.3125 +0/-0.0005			1.875 +0/-0.001	
<b>E</b>	0.1248 +0/-0.0003			0.2497 +0/-0.0003				
<b>F</b>	0.062			0.093				
<b>G</b>	0.062			0.073				
<b>H</b>	0.781			1.285			N/A	
<b>J (Radius MAX)</b>	9/16			59/64			1-5/64	
<b>K (Radius MAX)</b>	5/8			29/32			1-1/16	
<b>L</b>	N/A						2.000	

## 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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