PRECISION ROTARY SENSORS

Duncan Electronics' Precision Rotary Sensors are classified by type of resistive technology — wirewound coil, hybrid coils and conductive plastic (thick-film) elements. Sensor type significantly influences circuit efficiency and determines performance, reliability and cost effectiveness.

WIREWOUND

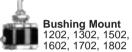
Wirewound Potentiometric Sensors remain one of the most cost effective solutions for handling high power dissipation levels, hostile environments and elevated temperatures. The wiper contact has the best capability for drawing current.

However, wirewound type sensors display finite voltage resolution (.003

to .3%), a limited effective life (2 x 10⁶ shaft resolutions), and will experience undesirable quadrature voltage characteristics in high frequency AC circuits. Additionally, Wirewound Potentiometric Sensors are the most suitable sensors for low-load impedance circuits and as low-power rheostats. The temperature coefficient of resistance is low and contact resistance is very low.







WIREWOUND SINGLE-TURN

Servo Mount - 1201, 1301, 1501, 1601, 1701, 1801 Bushing Mount - 1202, 1302, 1502, 1602, 1702, 180

Bushing Mount - 1202, 1302, 1502, 1602, 1702, 1802										
Model	1201/1202	1301/1302	1501/1502	1601/1602	1701/1702	1801/1802				
Specifications										
Actual Electrical Travel	354° ±2°	354° ±2°	354° ±2°	354° ±1°	356° ±1°	358°±1°				
Diameter ±.005	0.875	1.062	1.437	1.75	2	3				
Shaft Diameter +0/0003	0.1248	0.1248	0.2497	0.2497	0.2497	0.2497				
Resistance Range (ohms)	100Ω to 25K	100 Ω to 30K	100 Ω to 50K	100Ω to 60K	100 Ω to 75K	100Ω to 100K				
Extended Resistance Range	15K to 75K	25Ω to 100K	25Ω to 125K	25 Ω to 150K	25Ω to 200K	25Ω to 250K				
Resistance Tolerance: Standard %	±3	±3	±3	±3	±3	±3				
Linearity, Independent ±%	±0.5	±0.4	±0.3	±0.25	±0.2	±0.15				
Best Practical ±%	±0.2	±0.15	±0.12	±0.09	±0.08	±0.05				

ALL MODELS are manufactured to meet or exceed applicable characteristics of MIL-R-12934.







Bushng Mount 3205, 3206, 3605, 3705, 3208, 3209, 3202, 3203, 3602, 3702

Multi-Turn

WIREWOUND MULTI-TURN

		3-Turn		5-1	urn	10-Turn		
Model	3204	3504	3704	3207	3507	3201	3501	3701
Specifications								
Actual Electrical Travel	1080° +4° -0°	1080° +1° -0°	1080° +1° -0°	1800° +4° -0°	1800° +1° -0°	3600° +4° -0°	3600° +1° -0°	3600° +1° -0°
Diameter ±.005	0.875	1.437	2	0.875	1.437	0.875	1.437	2
Shaft Diameter +0/0003	0.1248	0.2497	0.2497	0.1248	0.2497	0.1248	0.2497	0.2497
Resistance Range (1)	50 Ω to 30K	50Ω to 50K	50Ω to 100K	50Ω to 50K	50Ω to 100K	100Ω to 100K	100Ω to 200K	100Ω to 300K
Extended Resistance Range	5Ω to 75K	5Ω to 150K	5Ω to 250K	5Ω to 125K	5Ω to 250K	10Ω to 250K	10Ω to 500K	10Ω to 830K
Resistance Tolerance: Standard %	±3	±3	±3	±3	±3	±3	±3	±3
Linearity, Independent ±%	±0.5	±0.25	±0.2	±0.35	±0.2	±0.25	±0.15	±0.1
Best Practical ±%	±0.1	±0.05	±0.04	±0.07	±0.04	±0.05	±0.03	±0.02

Bushing Mount	- 3205,	3206,	3605,	3705,	3208,	3209,	3202,	3203,	3602,	3702

		3-Turn		5-Turn		10-Turn	
Model	3205/3206	3605	3705	3208/3209	3202/3203	3602	3702
Specifications							
Actual Electrical Travel	1080° +4° -0°	1080° +4° -0°	1080° +1° -0°	1800° +4° -0°	3600° +4° -0°	3600° +4° -0°	3600° +1° -0°
Diameter ±.005	0.875	0.175	1.75	0.875	0.875	1.75	1.75
Shaft Diameter +0/0003	.1248/.2497	0.2497	0.2497	0.1248/.2497	0.1248/.2497	0.2497	0.2497
Resistance Range (1)	50Ω to 30K	50Ω to 100K	50Ω to 100K	50Ω to 50K	100Ω to 100K	100Ω to 300K	100Ω to 300K
Extended Resistance Range	3 Ω to 75K	5 Ω to 180K	5Ω to 250K	5Ω to 125K	10Ω to 250K	10Ω to 600K	10Ω to 830K
Resistance Tolerance: Standard %	±3	±3	±3	±3	±3	±3	±3
Linearity, Independent ±%	±0.5	±0.35	±0.2	±0.35	±0.25	±0.25	±0.1
Best Practical ±%	±0.1	±0.1	±0.04	±0.07	±0.05	±0.05	±0.02

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