

**High Precision Range**

- **Very High Resolution**
- **3 to 20 Turn Models**
- **±0.3% Standard Linearity**
- **0.5 to 500K Resistance Values**



The 46xx series is characterized by very high resolution and is available in 3 to 20 turns (25 and 30 turns optional) in a wide range of resistance values. Integral SPDT limit switches are optional. Single switch configuration activates at the beginning of travel and dual switch configuration activates at the beginning and end of travel. Robust construction makes this high power series suitable for a wide variety of automatic control applications.

Electrical Specifications	4603	4605	4610	4615	4620
Resistance Values (ohms)	0.5 - 50k	0.5 - 100k	0.5 - 200k	0.5 - 300k	0.5 - 500k
Resistance Tolerance (std.)	± 5%				
Resistance Tolerance (best)	± 1% (infinite resolution models = ±3%)				
Linearity Tolerance (std.)	± 0.3%				
Electrical Angle +5°, -0°	1080°	1800°	3600°	5400°	7200°
End Resistance	< 0.05%				
Insulation Resistance	1000 Mohms at 1000 VDC				
Dielectric Strength	1000 VAC, 1 minute				
Noise	<100 ohms E.N.R.				
Power @ +40°C (W)	2	2.5	5	7.5	10
Switch Type / Ratings	SPDT / 125 VAC (5A), 250 VAC (2.5A) - 2 million operations @ no load				
Mechanical Specifications					
Number of Turns	3	5	10	15	20
Mechanical Angle +10°, -0°	1080°	1800°	3600°	5400°	7200°
Starting Torque (Ncm)	1	1.1	1.2	1.5	2
Stopper Strength (Ncm)	60				
Max. Axial Play (mm)	0.3				
Max. Radial Play (mm)	0.1				
Typical Life (# of turns)	2 million (infinite resolution models = 1 million)				
Bearing	sleeve (2x, front and rear)				
Environmental Specifications					
Operating Temperature	-55°C to +105°C				
Vibration	15 g / 10Hz to 2,000 Hz				
Shock	50 g / 11ms				
IP Protection Grade	IP40 (IP54 optional)				
Standards	MIL-R-12934				

## Materials

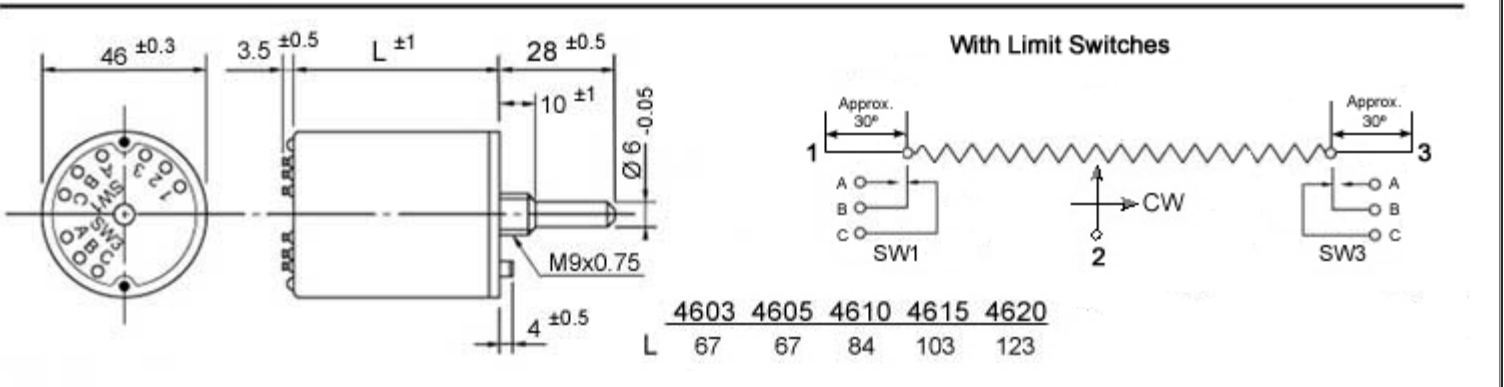
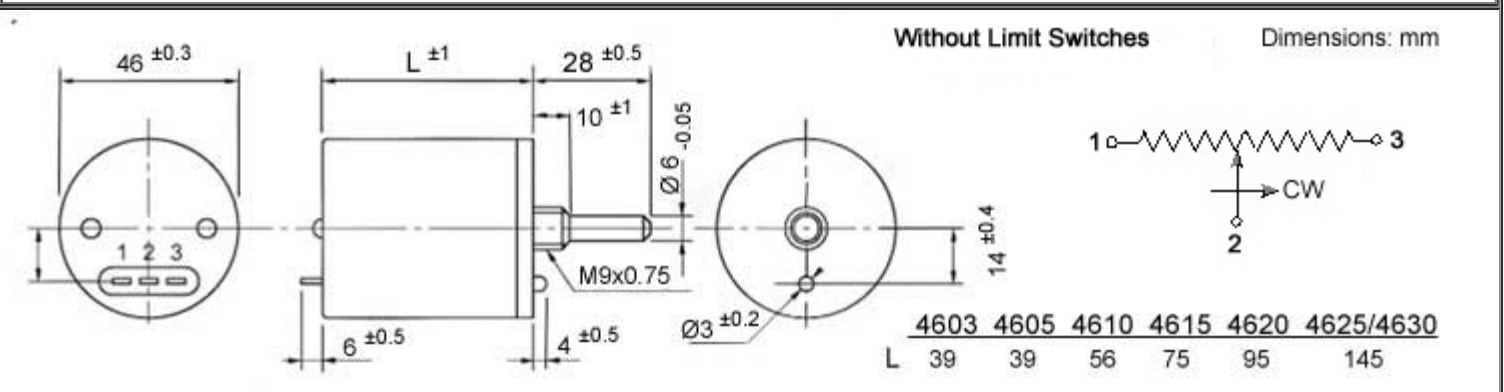
Housing	Aluminum
Bushing	Metal
Shaft	Stainless steel
Terminals	Gold plated

## Resolution Chart

Resistance (ohms)	Resolution (%)					V max across element (V)					I max through element (mA)**					Temp. Coefficient
	4603	4605	4610	4615	4620	4603	4605	4610	4615	4620	4603	4605	4610	4615	4620	
0.5	infinite					1	1.1	1.6	1.9	2.2	1000					80 (±...ppm/K)
1	infinite					1.4	1.5	2.2	2.7	3.1	1000					
2	infinite					2	2.7	3.1	3.8	4.4	1000	925	1000	1000	1000	
5	infinite					3	3.5	5	6.1	7	666	710	1000	1000	1000	
10	0.180	infinite				4.4	5	7	8.6	10	450	500	710	870	1000	
20	0.145	0.107	infinite			6	7	10	12	14	333	360	500	625	710	
50	0.105	0.078	0.050	0.039	0.033	10	11	16	19	22	200	230	310	390	450	
100	0.084	0.061	0.040	0.031	0.025	14	16	22	27	31	140	160	227	270	320	
200	0.066	0.048	0.031	0.024	0.019	20	22	31	38	44	100	113	161	197	227	
500	0.048	0.035	0.023	0.017	0.014	31	35	50	61	70	64	71	100	123	142	
1k	0.054	0.039	0.026	0.013	0.011	45	50	70	86	100	44	50	71	87	100	
2k	0.043	0.031	0.020	0.011	0.008	63	70	100	122	141	32	35	50	61	71	
5k	0.031	0.024	0.015	0.011	0.010	100	112	158	193	223	20	22	32	39	45	
10k	0.024	0.017	0.012	0.009	0.008	141	158	223	273	316	14	16	22	27	32	
20k	0.019	0.013	0.009	0.007	0.006	200	223	316	387	447	10	11	16	20	22	
30k	0.017	0.012	0.008	0.006	0.005	245	270	387	474	547	8	9	13	16	14	
50k	0.014	0.009	0.007	0.005	0.0042	316	316	500	612	707	6	8	10	12	11	
100k	-	0.008	0.005	0.004	0.0032	-	500	707	866	900*	-	5	7	9	10	
150k	-	-	0.0045	0.0030	0.0026	-	-	866	900*	900*	-	-	6	8	10	
200k	-	-	0.0040	0.0031	0.0026	-	-	900*	900*	900*	-	-	5	8	10	
300k	-	-	-	0.0027	0.0022	-	-	-	900*	900*	-	-	-	8	10	
500k	-	-	-	-	0.0018	-	-	-	-	900*	-	-	-	-	10	

\* Maximum wiper current is 80mA.

\*\* Maximum voltage across the element.



## Options

- Sealed housing (IP54)

- Bushing & Shaft Inch  
Dimensions

- Dual Ganged

- Rear Shaft Extension

- Servo Flange Mount

- Special Shaft Machining

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