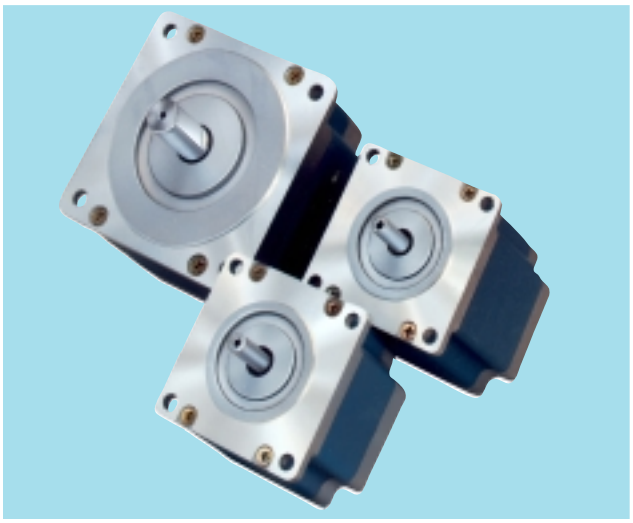
Superior Electric

SLO-SYN®
KM SERIES HIGH TORQUE STEP MOTORS

slo-syn® KM SERIES

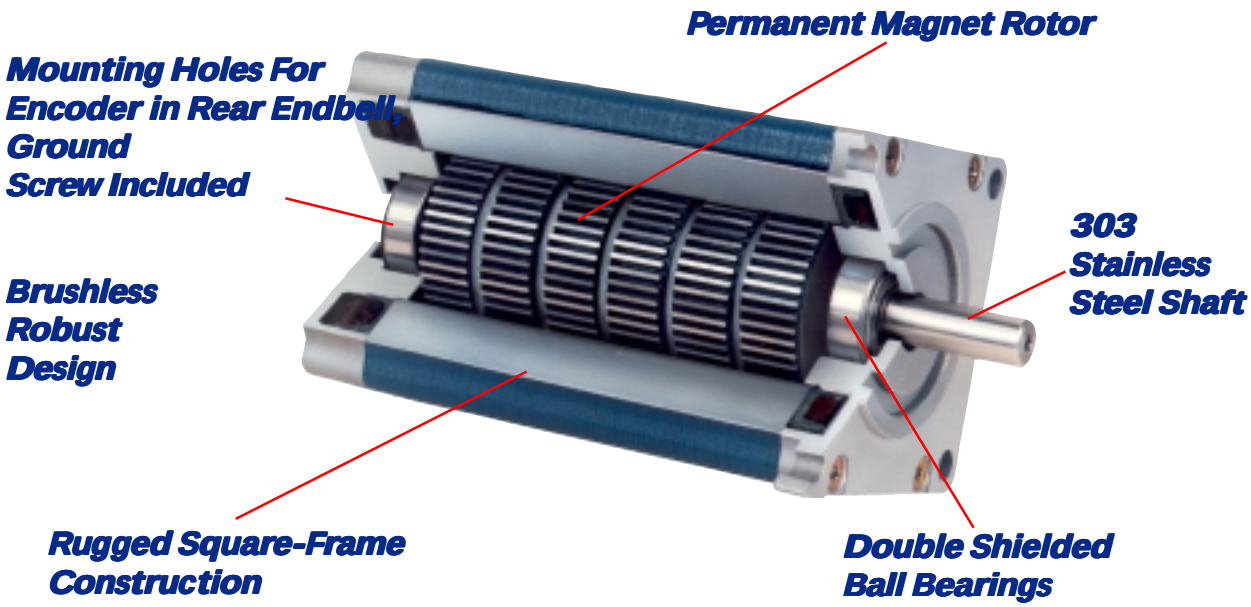
Superior Electric SLO-SYN — long recognized as the leader in step motor technology, has achieved new levels of performance with its high energy KM Series of stepping motors.

Utilizing the latest in design and magnetic technologies, KM Series motors produce double the torque of their predecessors. This achievement allows the user to reduce the size and weight of the motor, increase system performance, improve productivity and reduce cost.



The KM Series is available with a variety of windings and is compatible with nearly all available step motor drives. Specific winding configurations provide a perfect match to Superior's full, half, and micro step drive packages.

Produced in an ISO9001 environment, these high technology steppers are backed with the quality and reliability of a company known for performance and value since 1938.



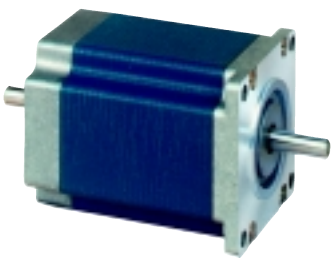
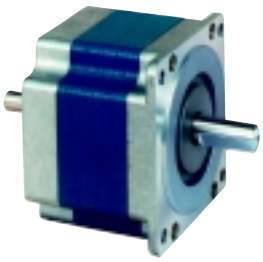
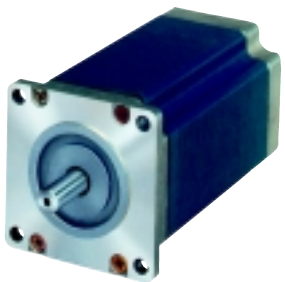
HIGH TORQUE STEP MOTORS

FEATURES

- 7 sizes with holding torque ratings from 68 to 1155 oz-in (48 to 816 Ncm)
- NEMA 23 and 34 frame sizes available
- ± 2% typical step accuracy
- Operate in full-step (1.8°) or half-step (0.9°) increments
- Can be microstepped to achieve increments as small as .0072°
- Can operate at rates to 20,000 steps per second (6000 rpm)
- UL and Canadian Recognized
- CE compliant motors available
- Up to 200% rated torque reserve capacity for peak performance (limited duty cycle)
- Can withstand over 2 times rated current without demagnetization
- Motors with double end shafts are provided with holes in rear end bell for encoder mounting
- Wide range of windings available with 4 or 6 connections for use with bipolar or unipolar drives
- Rugged construction to provide long life
- Standard terminal box, encoders, and precision gearheads available

SPECIFICATIONS

MOTOR TYPE	HOLDING TORQUE 2-ON AT RATED CURRENT (minimum) oz-in (Ncm)		ROTOR INERTIA oz-in-sec^2 (kg-cm^2)	MAXIMUM OVERHANG LOAD lbs (kg)	MAXIMUM THRUST LOAD lbs (kg)	RESIDUAL TORQUE (typical) oz-in (Ncm)	TYPICAL MOTOR WEIGHT lbs (kg)
	Unipolar	Bipolar					
KML060	54 (38)	68 (48)	.00154 (.108)	15 (6.81)	25 (11.35)	2 (1.41)	1.03 (.47)
KML061	128 (90.4)	170 (120)	.0034 (.24)	15 (6.81)	25 (11.35)	3 (2.11)	1.6 (0.73)
KML062	188 (134)	250 (177)	.0056 (.395)	15 (6.81)	25 (11.35)	6 (4.24)	2.3 (1.04)
KML063	263 (186)	350 (247)	.0084 (.593)	15 (6.81)	25 (11.35)	7 (4.94)	3.2 (1.45)
KML091	305 (215)	385 (272)	.016 (1.13)	25 (11.35)	50 (22.7)	10 (7.06)	3.8 (1.73)
KML092	610 (431)	770 (544)	.031 (2.19)	25 (11.35)	50 (22.7)	15 (10.6)	6.2 (2.82)
KML093	915 (646)	1155 (816)	.047 (3.32)	25 (11.35)	50 (22.7)	23 (16.2)	8.7 (3.95)

SPECIFICATIONS

Motor Type	No. of Leads	Current (amps)	Voltage (Vdc)	Resistance (ohms)	Inductance (mH)
KML060F02	4	1.05	3.76	3.58	15.8
KML060F05	4	2.7	1.71	.636	2.53
KML060F08	4	4.0	1.11	.277	1.0
KML060F11	4	5.3	0.986	.186	.632
KML060S03	6	1.48	2.85	1.93	3.95
KML060S08	6	3.8	1.28	.336	.632
KML061F02	4	1.05	5.19	4.94	30.1
KML061F03	4	1.4	4.19	3.0	15.5
KML061F05	4	2.7	2.3	.851	4.56
KML061F11	4	5.4	1.24	.23	1.14
KML061S02	6	1.0	6.44	6.44	17.45
KML061S04	6	2.06	3.0	1.46	3.50
KML061S08	6	3.8	1.74	.459	1.10
KML062F03	4	1.5	4.40	2.93	16.9
KML062F05	4	2.5	3.13	1.25	7.14
KML062F07	4	3.3	2.48	.75	3.38
KML062F13	4	6.6	1.33	.202	.847
KML062S04	6	2.12	3.11	1.47	4.22
KML062S06	6	3.0	2.81	.936	2.51
KML062S09	6	4.67	1.75	.375	.845
KML063F03	4	1.5	6.07	4.05	23.9
KML063F04	4	1.8	4.95	2.75	17.0
KML063F07	4	3.3	3.43	1.04	6.16
KML063F13	4	6.6	1.85	.280	1.54
KML063S04	6	2.12	4.28	2.02	5.97
KML063S09	6	4.67	2.52	.540	1.57
KML091F05	4	2.7	3.0	1.11	11.4
KML091F07	4	3.3	2.52	.764	7.52
KML091F13	4	6.6	1.26	.191	1.88
KML091S02	6	1.0	9.28	9.28	47.45
KML091S06	6	3.1	2.91	.94	4.70
KML091S08	6	3.8	2.1	.553	2.85
KML091S09	6	4.67	1.78	.382	1.88
KML092F07	4	3.25	3.48	1.07	11.2
KML092F13	4	6.5	1.74	.268	2.86
KML092S09	6	4.6	2.46	.535	2.80
KML093F07	4	3.4	4.9	1.44	17.9
KML093F08	4	4.0	3.95	.988	12.8
KML093F10	4	5.1	3.21	.629	8.31
KML093F14	4	6.8	2.45	.36	4.48
KML093S07	6	3.5	4.41	1.26	8.31
KML093S10	6	4.8	3.46	.72	4.48

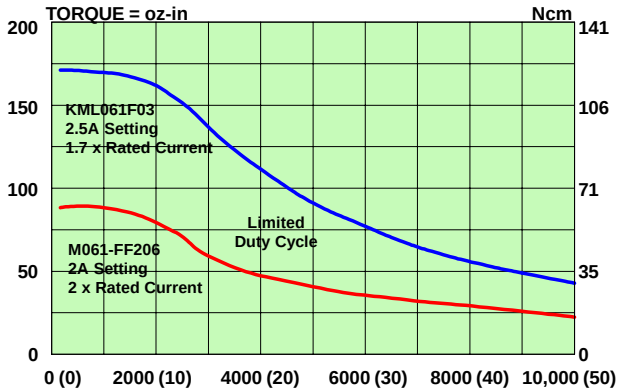
Temperature Rise: ..... 80°C (176°F) or less as measured by the change in resistance method when both phases are energized with constant rated current

Motor Case Temperature: ..... 100°C (212°F) max.

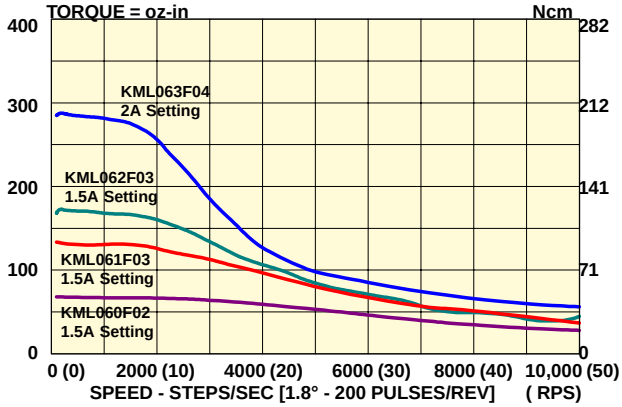
Ambient Temperature Range: ..... -40°C to +65°C (-40°F to +149°F)

Dielectric Strength: ..... Sufficient to withstand 500 Vrms, @60 Hz applied winding to winding and 1200 Vrms applied winding to frame for 1 second min.

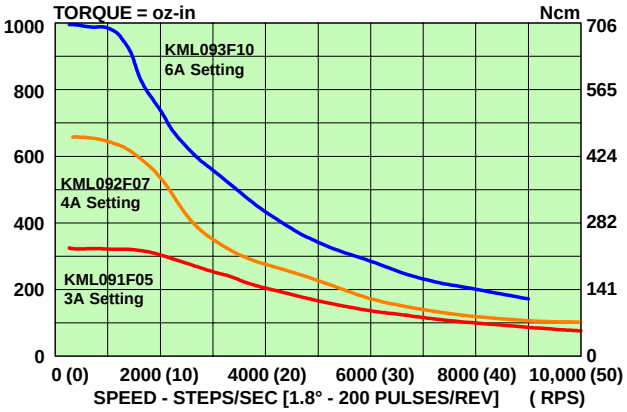
Insulation Resistance: ..... 100 megohms or more with 500 Vdc applied between the winding and frame.



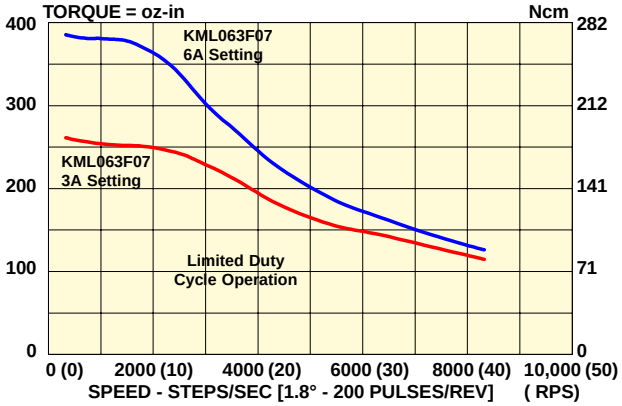
STANDARD M061 MOTOR vs KML061 MOTOR WITH SS2000D6 DRIVE



TYPICAL KML06x SERIES MOTORS WITH SS2000D6 DRIVE

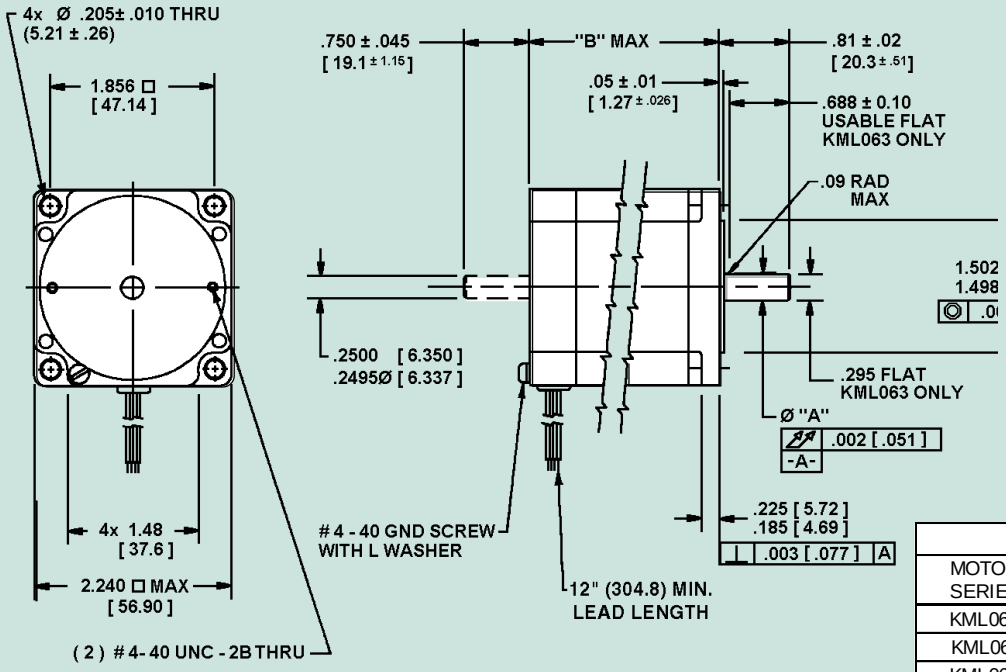


TYPICAL KML09X SERIES MOTOR WITH SS2000D6 DRIVE

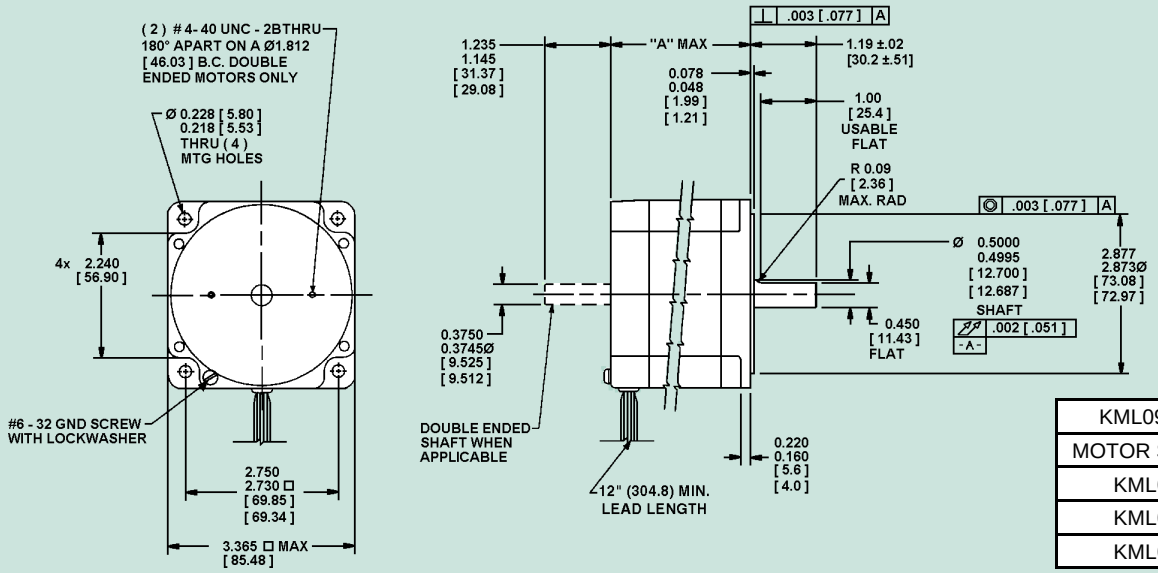


TYPICAL KML063F07 vs KML063F07 WITH 2X BOOST, SS2000D6 DRIVE

DIMENSIONAL DRAWINGS



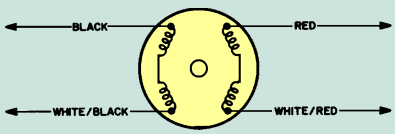
KML06 SERIES DIMENSIONS		
MOTOR SERIES	A (max)	B (max)
KML060	.2500/.2495 (6.350/6.337)	1.64 (44.7)
KML061	.2500/.2495 (6.350/6.337)	2.21 (56.2)
KML062	.2500/.2495 (6.350/6.337)	3.06 (77.8)
KML063	.3125/.3120 (7.938/7.924)	4.06 (103.2)



KML09 SERIES DIMENSIONS	
MOTOR SERIES	A (max)
KML091	2.57 (65.3)
KML092	3.77 (95.8)
KML093	4.97 (126.3)

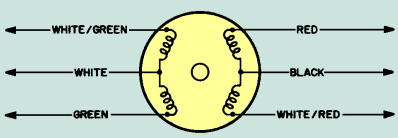
Dimensions in brackets are in millimeters.

WIRING DIAGRAMS



4-LEAD MOTORS - F STYLE

Bipolar Configuration



6 - LEAD MOTORS, S STYLE

Unipolar Configuration