

Introducing Exlar's SLM Series Motors and SLG Series Integrated Gearmotors

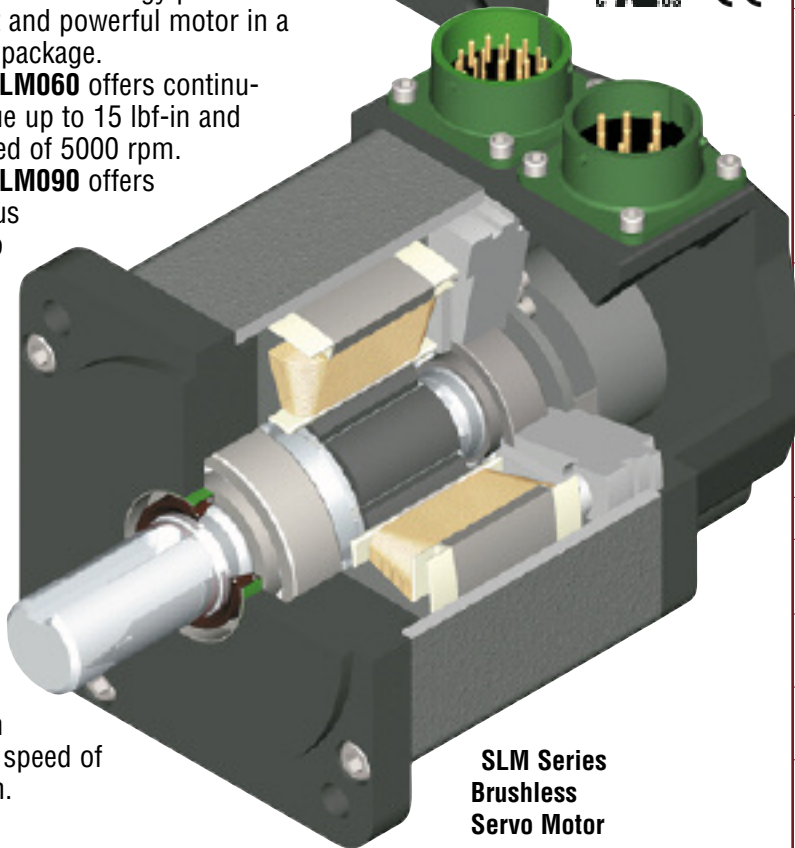
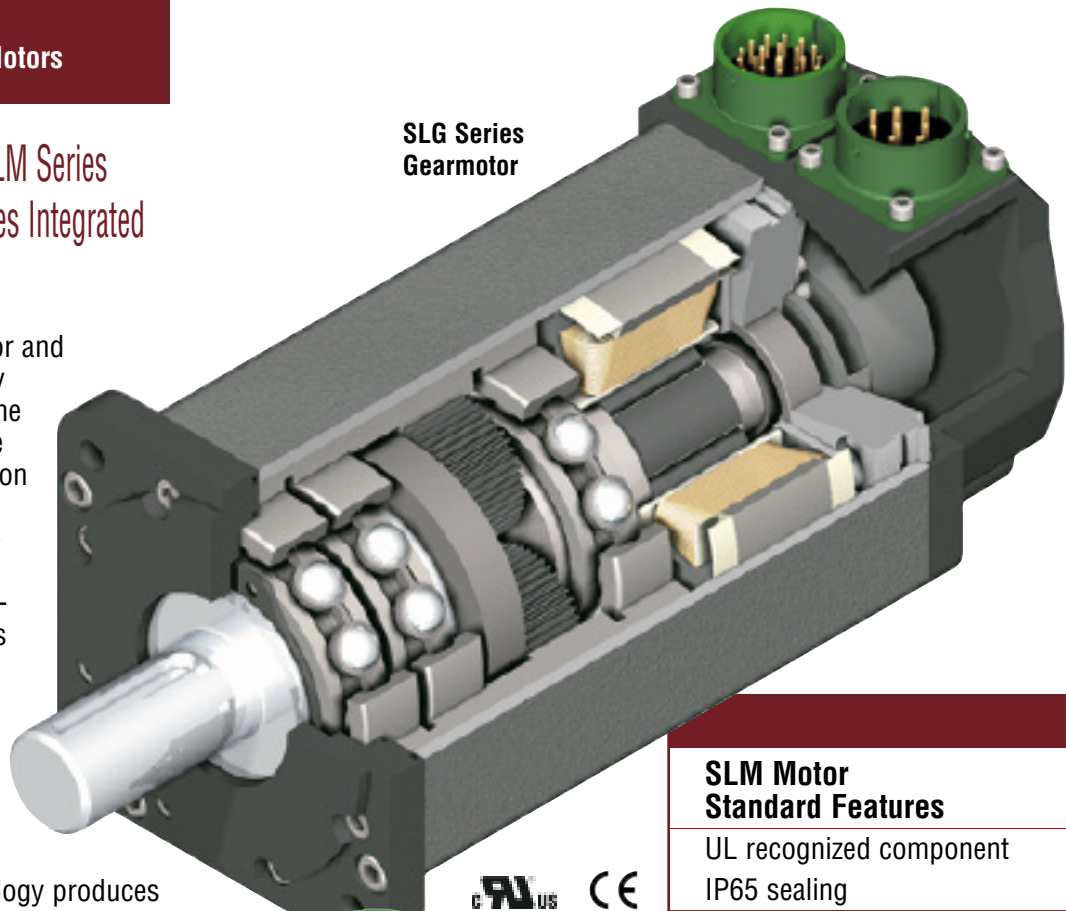
Brushless servo motor and gearmotor technology from Exlar provides the highest torque-to-size ratio available in motion control today. Small size, outstanding performance specifications, quality and customization capabilities offer you the solution you need for your motion control application.

Very High Torque Density

Exlar's T-LAM technology produces an efficient and powerful motor in a very small package.

- **60 mm SLM060** offers continuous torque up to 15 lbf-in and base speed of 5000 rpm.
- **90 mm SLM090** offers continuous torque up to 56 lbf-in and base speed of 4000 rpm.
- **115 mm SLM115** offers continuous torque up to 176 lbf-in and base speed of 3000 rpm.

SLG Series Gearmotor



SLM Series Brushless Servo Motor

SLM Motor Standard Features

UL recognized component
 IP65 sealing

MS connectors embedded leads, or embedded leads with cable plugs

Feedback configurations for nearly all servo amplifiers
 115, 230 or 460 Vrms motor voltages

Epoxy-coated housings
 Class 180H insulation system

SLG Gearmotor Standard Features

All features of SLM motor shown above plus . . .

High side load bearing design

Integrated armature and sun-gear

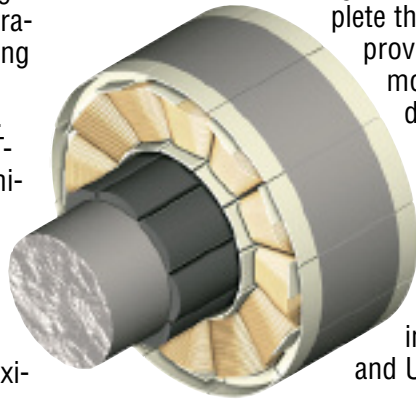
Higher stiffness than bolt-on gearhead and motor

10 arc minute standard backlash

Single and double reduction ratios: 4:1, 5:1, 10:1, 16:1, 20:1, 25:1, 40:1, 50:1, and 100:1

**Unique T-LAM™
Stator Design Advantage**

This innovative design offers several advantages over traditional motor winding for a more efficient and powerful motor. Built for durability, T-LAM segmented lamination stator technology consists of individual segments, each containing individual phase wiring for maxi-



mum motor performance. The robust insulation, high coercive strength magnets, and complete thermal potting all provide a more robust motor design -- a design yielding a 35 to 70% torque increase in the same package size! T-LAM motor designs have Class 180-H insulation systems and UL recognition.

Customization to Suit Your Requirements

Exlar Corporation has capabilities allowing custom motors to be manufactured to meet your OEM requirements. Whatever your special requirements are . . . custom shafts, custom mountings, custom stators, custom housing materials . . . please contact Exlar or your local sales representative to discuss your needs.

Typical Applications

SLM Series Motors and SLG Series Gearmotors are perfectly suited for applications in any industry.

EXLAR SLM & SLG SERIES MOTORS APPLICATIONS INCLUDE:

Semiconductor

Labeling

Automotive Assembly

Winding Machines

Web Feed

Packaging

Stage Positioning

Plastics Machinery

Machine Tools

Parts Handling

Glass Manufacturing

Fluid Handling

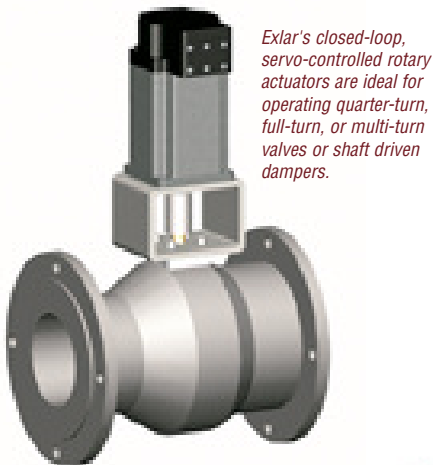
Conveyor Drives

Medical Applications

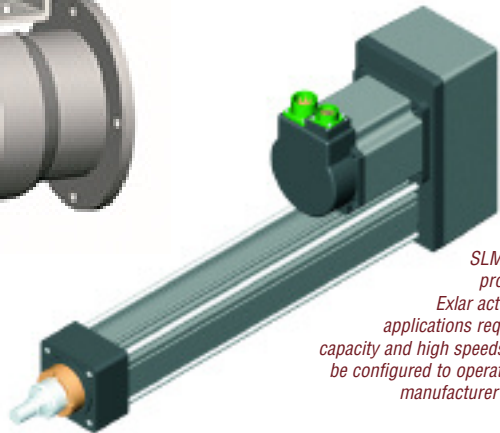
Tensioning

Simulation Robotics

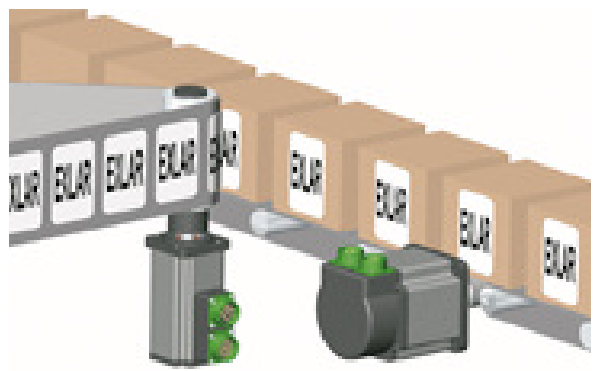
Screw Drives



Exlar's closed-loop, servo-controlled rotary actuators are ideal for operating quarter-turn, full-turn, or multi-turn valves or shaft driven dampers.



The FT Series combined with SLM/G Series motors provides a complete Exlar actuator solution for applications requiring heavy load capacity and high speeds. The motor can be configured to operate with nearly any manufacturer's servo amplifier.

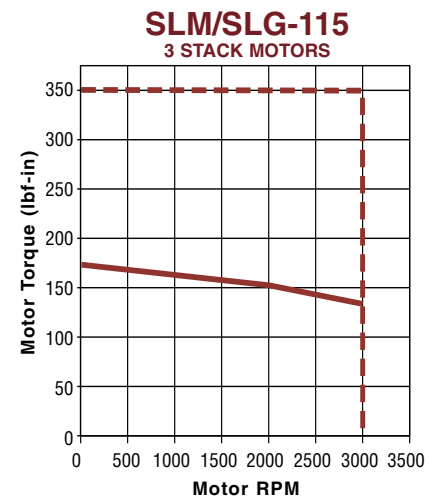
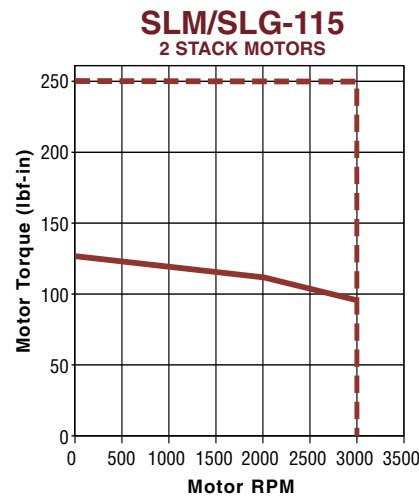
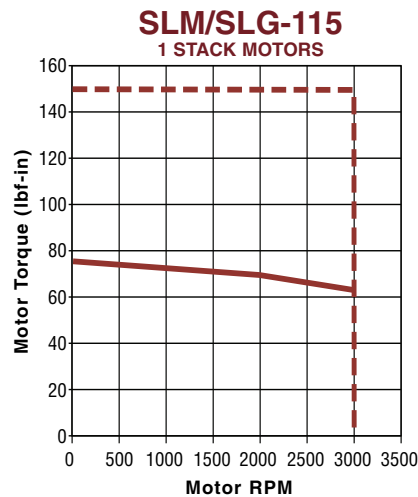
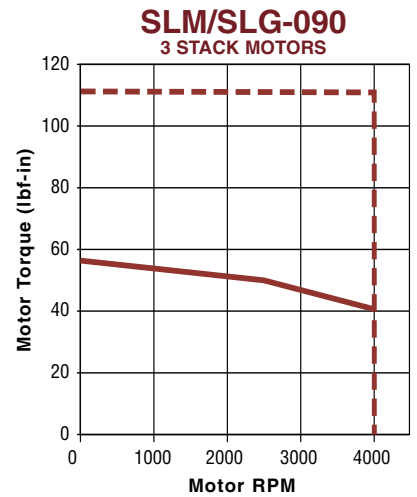
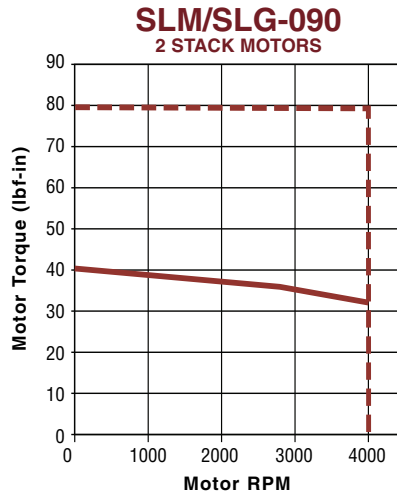
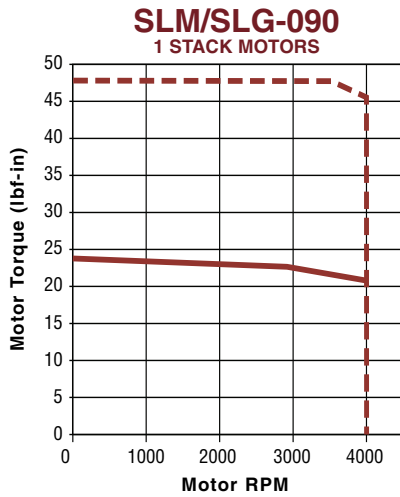
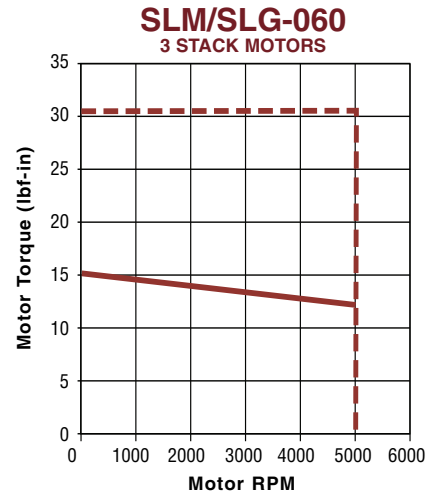
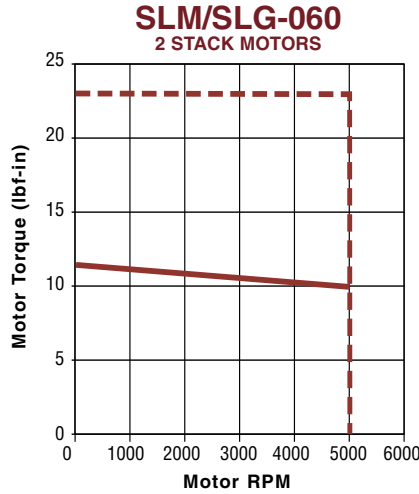
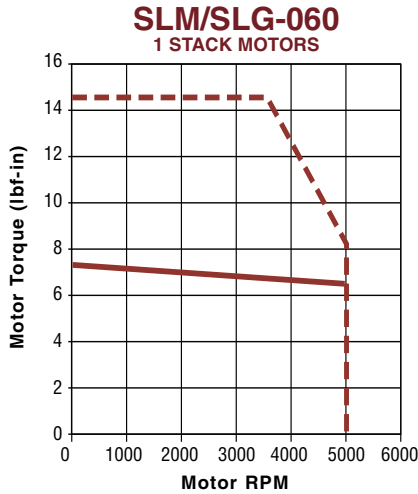


Exlar's brushless motors are the highest performance with very compact size. This makes them perfect for high-speed labeling and demanding conveyor drive applications.

SLM/SLG Series

SLM/SLG Speed/Torque Curves

--- Peak Torque
— Continuous Torque



SLM/SLG060 Electrical/Mechanical Specifications

SLM/G060 Stator Data		1 Stack Motor				2 Stack Motor				3 Stack Motor			
Sinusoidal Commutation Data		118	138	158	168	218	238	258	268	318	338	358	368
Continuous Motor Torque	lbf-in (Nm)	7.6 (0.86)	7.3 (0.83)	7.0 (0.79)	7.0 (0.79)	11.9 (1.35)	11.5 (1.30)	11.2 (1.27)	11.3 (1.28)	15.3 (1.73)	15.3 (1.73)	14.8 (1.67)	15.0 (1.69)
Peak Motor Torque	lbf-in (Nm)	15.3 (1.72)	14.7 (1.66)	14.0 (1.58)	14.0 (1.58)	23.8 (2.69)	23.0 (2.60)	22.5 (2.54)	22.6 (2.56)	30.7 (3.47)	30.7 (3.46)	29.6 (3.34)	29.9 (3.38)
Torque Constant (Kt)	lbf-in/A (Nm/A)	2.5 (0.28)	5.2 (0.6)	8.3 (0.9)	9.5 (1.1)	2.5 (0.3)	5.2 (0.6)	8.9 (1.0)	10.2 (1.1)	2.3 (0.3)	5.3 (0.6)	8.8 (1.0)	10.2 (1.1)
Continuous Current Rating	A	3.4	1.6	1.9	0.8	5.4	2.5	1.4	1.2	7.3	3.2	1.9	1.6
Peak Current Rating	A	6.9	3.1	3.8	1.6	10.8	4.9	2.8	2.5	14.6	6.5	3.8	3.3
Trapezoidal Commutation Data													
Continuous Motor Torque	lbf-in (Nm)	7.3 (0.82)	7.0 (0.79)	6.7 (0.76)	6.7 (0.76)	11.4 (1.29)	11.0 (1.24)	10.7 (1.21)	10.8 (1.22)	14.7 (1.66)	14.6 (1.65)	14.1 (1.6)	14.3 (1.61)
Peak Motor Torque	lbf-in (Nm)	14.6 (1.65)	14.0 (1.6)	13.4 (1.5)	13.4 (1.5)	22.8 (2.6)	22.0 (2.5)	21.5 (2.4)	21.6 (2.4)	29.3 (3.3)	29.3 (3.3)	28.3 (3.2)	28.6 (3.2)
Torque Constant (Kt)	lbf-in/A (Nm/A)	1.93 (0.22)	4.06 (0.46)	6.5 (0.73)	7.41 (0.84)	1.93 (0.22)	4.06 (0.46)	6.90 (0.78)	7.92 (0.89)	1.83 (0.21)	4.11 (0.46)	6.85 (0.77)	7.92 (0.89)
(+/- 10% @ 25°C)													
Continuous Current Rating	A	4.22	1.93	1.15	1.01	6.59	3.02	1.74	1.52	8.96	3.98	2.30	2.02
Peak Current Rating	A	8.44	3.86	2.3	2.02	13.18	6.04	3.47	3.04	17.92	7.96	4.61	4.04
Motor Data													
Voltage Constant (Ke)	Vpk/Krpm (+/- 10% @ 25°C)	23.9 16.9	50.3 35.6	80.5 56.9	91.8 64.9	23.9 16.9	50.3 35.6	85.5 60.5	98.1 69.4	22.6 16.0	50.9 36.0	84.9 60.0	98.1 69.4
Pole Configuration		8	8	8	8	8	8	8	8	8	8	8	8
Resistance (L-L)(+/- 5% @ 25°C)	Ohms	2.62	12.52	35.22	45.79	1.11	5.26	15.95	20.69	0.62	3.14	9.36	12.22
Inductance (L-L)(+/- 15%)	mH	3.1	13.7	35.0	45.5	1.5	6.6	19.0	25.0	0.9	4.4	12.3	16.5
SLM Armature Inertia	lb-in-sec ² (+/- 5%) (kg-cm ²)	0.000237 (0.268)				0.000413 (0.466)				0.000589 (0.665)			
Brake Inertia	lb-in-sec ² (kg-cm ²)	0.000120 (0.135)				0.000120 (0.135)				0.000120 (0.135)			
Brake Current @ 24 VDC	A	.33				.33				.33			
Brake Holding Torque	lbf-in (Nm)	18 (2.2)				18 (2.2)				18 (2.2)			
Brake Engage/Disengage Time	ms	14/28				14/28				14/28			
Mechanical Time Constant (tm)	ms	1.41	1.52	1.67	1.67	0.60	0.64	0.67	0.66	0.37	0.37	0.40	0.39
Electrical Time Constant (te)	ms	1.18	1.09	0.99	0.99	1.34	1.25	1.19	1.21	1.42	1.41	1.32	1.35
Damping Constant	lbf-in/krpm (N-m/krpm)	0.02 (0.002)	0.02 (0.002)	0.02 (0.002)	0.02 (0.002)	0.03 (0.003)	0.03 (0.003)	0.03 (0.003)	0.03 (0.003)	0.05 (0.006)	0.05 (0.006)	0.05 (0.006)	0.05 (0.006)
Friction Torque	lbf-in (Nm)	0.07 (0.008)	0.07 (0.008)	0.07 (0.008)	0.07 (0.008)	0.10 (0.011)	0.10 (0.011)	0.10 (0.011)	0.10 (0.011)	0.14 (0.016)	0.14 (0.016)	0.14 (0.016)	0.14 (0.016)
Voltage Rating	Vrms	115	230	400	460	115	230	400	460	115	230	400	460
Speed @ Bus Voltage	rpm	5000											
Stator Insulation System (Class)	C	180 (H)											
Insulation System Volt Rating	Vrms	460											
Thermal Switch, Case Temp.	C	100											
Environmental Rating		IP65											
Standard Connectors	Motor & Brake Feedback	MS-3112-E16-8P MS-3112-E16-23P											

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by .707 and peak current by 1.414.

SLG060 Gearmotor Data

		1 Stack Stator		2 Stack Stator		3 Stack Stator		
SLG Armature Inertia*	lbf-in-sec ² (kg-cm ²)	0.000226 (0.255)		0.000401 (0.453)		0.000576 (0.651)		
Gearing Reflected Inertia	Single Reduction				Double Reduction			
	Gear Stages	lbf-in-sec ²	(kg-cm ²)	Gear Stages	lbf-in-sec ²	(kg-cm ²)		
	4:1	0.0000132	(0.0149)	16:1	0.0000121	(0.0137)		
	5:1	0.0000087	(0.00984)	20:1, 25:1	0.0000080	(0.00906)		
	10:1	0.0000023	(0.00261)	40:1, 50:1, 100:1	0.0000021	(0.00242)		
Backlash at 1% rated torque:	10 Arc minutes		Efficiency: Single reduction 91%				Double Reduction: 86%	

*Add armature inertia to gearing inertia for total SLG system inertia

Test data derived using NEMA recommended aluminum heatsink 10" x 10" x 1/4"

SLM/G090 Electrical/Mechanical Specifications

SLM/SLG090 Stator Data		1 Stack Motor				2 Stack Motor				3 Stack Motor			
Sinusoidal Commutation Data		118	138	158	168	218	238	258	268	338	358	368	
Continuous Motor Torque	lbf-in (Nm)	23.8 (2.69)	24.0 (2.71)	23.7 (2.68)	24.0 (2.71)	39.6 (4.48)	40.0 (4.52)	39.6 (4.47)	40.0 (4.52)	55.8 (6.31)	55.5 (6.27)	55.8 (6.30)	
Peak Motor Torque	lbf-in (Nm)	47.6 (5.38)	48.0 (5.43)	47.4 (5.35)	48.0 (5.42)	79.2 (8.95)	80.1 (9.05)	79.1 (8.94)	80.0 (9.04)	111.6 (12.61)	111.0 (12.54)	111.6 (12.61)	
Torque Constant (Kt)	lbf-in/A (+/- 10% @ 25°C) (Nm/A)	3.2 (0.37)	6.6 (0.7)	11.6 (1.3)	13.3 (1.5)	3.2 (0.4)	6.6 (0.7)	11.6 (1.3)	13.3 (1.5)	6.6 (0.7)	11.6 (1.3)	13.1 (1.5)	
Continuous Current Rating	A	8.2	4.0	2.3	2.0	13.6	6.8	3.8	3.4	9.5	5.3	4.8	
Peak Current Rating	A	16.4	8.1	4.6	4.0	27.3	13.5	7.6	6.7	19.0	10.7	9.5	
Trapezoidal Commutation Data													
Continuous Motor Torque	lbf-in (Nm)	22.7 (2.57)	22.9 (2.59)	22.6 (2.56)	22.9 (2.59)	37.8 (4.27)	38.2 (4.32)	37.8 (4.27)	38.2 (4.31)	53.3 (6.02)	53.0 (5.99)	53.3 (6.02)	
Peak Motor Torque	lbf-in (Nm)	45.4 (5.13)	45.9 (5.2)	45.3 (5.1)	45.8 (5.2)	75.7 (8.5)	76.5 (8.6)	75.6 (8.5)	76.4 (8.6)	106.6 (12.0)	106.0 (12.0)	106.6 (12.0)	
Torque Constant (Kt)	lbf-in/A (+/- 10% @ 25°C) (Nm/A)	2.53 (0.29)	5.17 (0.58)	9.02 (1.02)	10.34 (1.17)	2.53 (0.29)	5.17 (0.58)	9.02 (1.02)	10.34 (1.17)	5.11 (0.58)	9.07 (1.03)	10.23 (1.16)	
Continuous Current Rating	A	10.04	4.96	2.80	2.48	16.71	8.27	4.68	4.13	11.65	6.53	5.82	
Peak Current Rating	A	20.08	9.92	5.61	4.96	33.42	16.54	9.36	8.26	23.30	13.05	11.64	
Motor Data													
Voltage Constant (Ke)	Vpk/Krpm (+/- 10% @ 25°C) Vrms/Krpm	31.3 22.2	64.0 45.3	7.90 111.7	128.1 90.6	31.3 22.2	64.0 45.3	79.0 111.7	128.1 90.6	63.4 44.8	79.5 112.4	126.7 89.6	
Pole Configuration		8	8	8	8	8	8	8	8	8	8	8	
Resistance (L-L) (+/- 5% @ 25°C)	Ohms	0.75	3.06	9.57	12.28	0.30	1.21	3.78	4.86	0.69	2.19	2.75	
Inductance (L-L) (+/- 15%)	mH	3.7	15.4	78.0	61.5	1.8	7.3	37.2	29.3	4.7	24.7	18.8	
SLM Armature Inertia	lb-in-sec ² (+/- 5%) (kg-cm ²)		0.00054 (0.609)					0.00097 (1.09)				0.00140 (1.58)	
Brake Inertia	lb-in-sec ² (kg-cm ²)		0.00096 (1.08)					0.00096 (1.08)				0.00096 (1.08)	
Brake Current @ 24 VDC	A		.67					.67				.67	
Brake Holding Torque	lbf-in (Nm)		97 (11)					97 (11)				97 (11)	
Brake Engage/Disengage Time	ms		20/29					20/29				20/29	
Mechanical Time Constant (tm)	ms	0.51	0.52	0.76	0.52	0.38	0.37	0.54	0.37	0.31	0.44	0.31	
Electrical Time Constant (te)	ms	5.14	5.02	8.14	5.01	5.93	6.06	9.85	6.04	6.86	11.30	6.86	
Damping Constant	lbf-in/krpm (N-m/krpm)	0.07 (0.008)	0.07 (0.008)	0.07 (0.008)	0.07 (0.008)	0.12 (0.014)	0.12 (0.014)	0.12 (0.014)	0.12 (0.014)	0.18 (0.020)	0.18 (0.020)	0.18 (0.020)	
Friction Torque	lbf-in (Nm)	0.20 (0.023)	0.20 (0.023)	0.20 (0.023)	0.20 (0.023)	0.35 (0.040)	0.35 (0.040)	0.35 (0.040)	0.35 (0.040)	0.50 (0.056)	0.50 (0.056)	0.50 (0.056)	
Voltage Rating	Vrms	115	230	400	460	115	230	400	460	230	400	460	
Speed @ Bus Voltage	rpm	4000											
Stator Insulation System (Class)	°C	180 (H)											
Insulation System Volt Rating	Vrms	460											
Thermal Switch, Case Temp.	°C	100											
Environmental Rating		IP65											
Standard Connectors	Motor & Brake Feedback	MS-3112-E16-8P MS-3112-E16-23P											

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by .707 and peak current by 1.414.

SLG090 Gearmotor Data

SLG Armature Inertia*		1 Stack Stator			2 Stack Stator			3 Stack Stator		
SLG Armature Inertia*	lbf-in-sec ² (kg-cm ²)	0.00114 (1.29)			0.00157 (1.77)			0.00200 (2.26)		
Gearing Reflected Inertia		Single Reduction			Double Reduction					
	Gear Stages	lbf-in-sec ²		(kg-cm ²)	Gear Stages		lbf-in-sec ²		(kg-cm ²)	
	4:1	0.000154		(0.174)	16:1		0.000115		(0.130)	
	5:1	0.000100		(0.113)	20:1, 25:1		0.0000756		(0.0854)	
	10:1	0.0000265		(0.0300)	40:1, 50:1, 100:1		0.0000203		(0.0230)	
Backlash at 1% rated torque:	10 Arc minutes	Efficiency: Single reduction 91%			Double Reduction: 86%					

*Add armature inertia to gearing inertia for total SLG system inertia

Test data derived using NEMA recommended aluminum heatsink 12" x 12" x 3/8"

SLM/SLG115 Electrical/Mechanical Specifications

SLM/SLG115 Stator Data		1 Stack Motor				2 Stack Motor			3 Stack Motor		
Sinusoidal Commutation Data		118	138	158	168	238	258	268	338	358	368
Continuous Motor Torque	lbf-in	75.8	74.2	74.4	74.2	123.8	121.6	123.8	174.2	173.1	177.1
	(Nm)	(8.57)	(8.39)	(8.41)	(8.38)	(13.99)	(13.74)	(13.99)	(19.68)	(19.56)	20.01)
Peak Motor Torque	lbf-in	151.7	148.5	148.9	148.4	247.6	243.2	247.6	348.4	346.2	354.2
	(Nm)	(17.14)	(16.77)	(16.82)	(16.77)	(27.98)	(27.48)	(27.98)	(39.36)	(39.11)	40.02)
Torque Constant (Kt)	lbf-in/A	4.5	8.7	15.7	17.4	8.7	15.9	17.4	8.5	15.9	17.6
(+/- 10% @ 25°C)	(Nm/A)	(0.51)	(1.0)	(1.8)	(2.0)	(1.0)	(1.8)	(2.0)	(1.0)	(1.8)	(2.0)
Continuous Current Rating	A	18.7	9.5	5.3	4.8	15.9	8.6	8.0	22.9	12.2	11.3
Peak Current Rating	A	37.4	19.1	10.6	9.5	31.8	17.1	15.9	45.8	24.4	22.5
Trapezoidal Commutation Data											
Continuous Motor Torque	lbf-in	72.4	70.9	71.1	70.9	118.2	116.1	118.2	166.4	165.3	169.1
	(Nm)	(8.18)	(8.01)	(8.03)	(8.01)	(13.36)	(13.12)	(13.36)	(18.8)	(18.67)	(19.11)
Peak Motor Torque	lbf-in	144.8	141.8	142.1	141.7	236.5	232.3	236.5	332.7	330.6	338.2
	(Nm)	(16.36)	(16.0)	(16.1)	(16.0)	(26.7)	(26.2)	(26.7)	(37.6)	(37.3)	(38.2)
Torque Constant (Kt)	lbf-in/A	3.53	6.78	12.22	13.55	6.78	12.37	13.55	6.63	12.37	13.7
(+/- 10% @ 25°C)	(Nm/A)	(0.40)	(0.77)	(1.38)	(1.53)	(0.77)	(1.40)	(1.53)	(0.75)	(1.40)	(1.55)
Continuous Current Rating	A	22.89	11.69	6.50	5.84	19.5	10.49	9.75	28.04	14.93	13.79
Peak Current Rating	A	45.78	23.38	12.99	11.68	39.0	20.98	19.18	55.24	29.85	27.18
Motor Data											
Voltage Constant (Ke)	Vpk/Krpm	43.8	83.9	151.4	167.9	83.9	153.3	167.9	82.1	153.3	169.7
(+/- 10% @ 25°C)	Vrms/Krpm	31.0	59.4	107.1	118.7	59.4	108.4	118.7	58.1	108.4	120
Pole Configuration		8	8	8	8	8	8	8	8	8	8
Resistance (L-L) (+/- 5% @ 25°C)	Ohms	0.21	0.80	2.60	3.21	0.34	1.17	1.35	0.20	0.69	0.81
Inductance (L-L) (+/- 15%)	mH	2.1	7.8	25.5	31.3	3.8	12.7	15.2	2.4	8.4	10.2
SLM Armature Inertia	lb-in-sec ²	0.00344				0.00623			0.00901		
(+/- 5%)	(kg-cm ²)	(3.89)				(7.036)			(10.181)		
Brake Inertia	lb-in-sec ²	0.00327				0.00327			0.00327		
	(kg-cm ²)	(3.70)				(3.70)			(3.70)		
Brake Current @ 24 VDC	A	.75				.75			.75		
Brake Holding Torque	lbf-in (Nm)	195 (22)				195 (22)			195 (22)		
Brake Engage/Disengage Time	ms	25/50				25/50			25/50		
Mechanical Time Constant (tm)	ms	0.49	0.51	0.51	0.51	0.39	0.40	0.39	0.34	0.34	0.33
Electrical Time Constant (te)	ms	10.18	9.76	9.81	9.75	11.23	10.84	11.23	12.11	12.11	12.69
Damping Constant	lbf-in/krpm	0.21	0.21	0.21	0.21	0.35	0.35	0.35	0.40	0.40	0.40
	(N-m/krpm)	(0.024)	(0.024)	(0.024)	(0.024)	(0.040)	(0.040)	(0.040)	(0.045)	(0.045)	(0.045)
Friction Torque	lbf-in	0.56	0.56	0.56	0.56	1.00	1.00	1.00	1.20	1.20	1.20
	(Nm)	(0.06)	(0.06)	(0.06)	(0.06)	(0.113)	(0.113)	(0.113)	(0.136)	(0.136)	(0.136)
Voltage Rating	Vrms	115	230	400	460	230	400	460	230	400	460
Speed @ Bus Voltage	rpm	3000					3000				
Stator Insulation System (Class)	°C	180 (H)					180 (H)				
Insulation System Volt Rating	Vrms	460					460				
Thermal Switch, Case Temp.	°C	100					100				
Environmental Rating		IP65					IP65				
Standard Connectors	Motor & Brake	MS-3102-E20-15P					MS-3102-E20-15P				
	Feedback	MS-3102-E20-23P					MS-3102-E20-23P				

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by .707 and peak current by 1.414.

SLG115 Gearmotor Data

SLG Armature Inertia* lbf-in-sec ² (kg-cm ²)		1 Stack Stator		2 Stack Stator		3 Stack Stator	
		0.00538 (6.08)		0.00816 (9.22)		0.0109 (12.37)	
Gearing Reflected Inertia		Single Reduction			Double Reduction		
	Gear Stages	lbf-in-sec ²	(kg-cm ²)	Gear Stages	lbf-in-sec ²	(kg-cm ²)	
	4:1	0.000635	(0.717)	16:1	0.000513	(0.580)	
	5:1	0.000428	(0.484)	20:1, 25:1	0.000350	(0.396)	
	10:1	0.000111	(0.125)	40:1, 50:1, 100:1	0.0000911	(0.103)	
Backlash at 1% rated torque:	10 Arc minutes	Efficiency: Single reduction 91%			Double Reduction: 86%		
*Add armature inertia to gearing inertia for total SLG system inertia							
Test data derived using NEMA recommended aluminum heatsink 12" x 12" x 1/2"							

SLG Series Gearmotor General Performance Specifications

Two torque ratings for the SLG Series Gearmotors are given in the table below. The left hand columns give the maximum (peak) allowable output torque for the indicated ratios of each size SLG Series Gearmotor. This IS NOT the rated output torque of the motor multiplied by the ratio of the reducer.

It is possible to select a configuration of the motor selection and gear ratio such that the rated motor torque, multiplied by the gear ratio exceeds these ratings. It is the responsibility of the user to ensure that the settings of the system, including the amplifier, do not allow these values to be exceeded.

The right hand columns give the output torque at the indicated speed which will result in 10,000 hour (L10). The setup of the system, including the amplifier, will determine the actual output torque and speed.

Output Torque Ratings - Mechanical

Maximum Allowable Output Torque - Set by User				Output Torque @ Speed for 10,000 Hour Life					
Model	Ratio	Output Torque		1000 RPM		3000 RPM		5000 RPM	
		lbf-in	(Nm)	lbf-in	(Nm)	lbf-in	(Nm)	lbf-in	(Nm)
SLG060	4:1	603	(68.1)	144	(16.2)	104	(11.7)	88	(9.9)
	5:1	522	(58.9)	170	(19.2)	125	(14.1)	105	(11.9)
	10:1	327	(36.9)	200	(22.6)	140	(15.8)	120	(13.6)
	16:1	603	(68.1)	224	(25.3)	160	(18.1)	136	(15.4)
	20:1	603	(68.1)	240	(27.1)	170	(19.2)	146	(16.5)
	25:1	522	(58.9)	275	(31.1)	200	(22.6)	180	(20.3)
	40:1	603	(68.1)	288	(32.5)	208	(23.5)	180	(20.3)
	50:1	522	(58.9)	340	(38.4)	245	(27.7)	210	(23.7)
	100:1	327	(36.9)	320	(36.1)	280	(31.6)	240	(27.1)
SLG090	4:1	2078	(234.8)	600	(67.8)	456	(51.5)	396	(44.7)
	5:1	1798	(203.1)	775	(87.6)	590	(66.7)	510	(57.6)
	10:1	1126	(127.2)	890	(100.6)	680	(76.8)	590	(66.7)
	16:1	2078	(234.8)	912	(103.4)	688	(77.7)	592	(66.9)
	20:1	2078	(234.8)	980	(110.7)	740	(83.6)	640	(72.3)
	25:1	1798	(203.1)	1250	(141.2)	950	(107.3)	825	(93.2)
	40:1	2078	(234.8)	1200	(135.6)	920	(103.9)	800	(90.4)
	50:1	1798	(203.1)	1550	(169.4)	1200	(135.6)	1000	(112.9)
	100:1	1126	(127.2)	1100	(124.3)	1100	(124.3)	1100	(124.3)
SLG115	4:1	4696	(530.4)	1392	(157.3)	1132	(127.9)	1000	(112.9)
	5:1	4066	(459.4)	1445	(163.3)	1175	(132.8)	1040	(117.5)
	10:1	2545	(287.5)	1660	(187.6)	1350	(152.6)	1200	(135.6)
	16:1	4696	(530.4)	2112	(238.6)	1714	(193.0)	1518	(171.0)
	20:1	4696	(530.4)	2240	(253.1)	1840	(207.9)	1620	(183.0)
	25:1	4066	(459.4)	2350	(265.5)	1900	(214.7)	1675	(189.2)
	40:1	4696	(530.4)	2800	(316.4)	2240	(253.1)	2000	(225.9)
	50:1	4066	(459.4)	2900	(327.7)	2350	(265.5)	2100	(237.3)
	100:1	2545	(287.5)	2500	(282.5)	2500	(282.5)	2400	(271.2)

Radial Load and Bearing Life

Side load ratings shown below are for 10,000 hour bearing life at 25mm from motor face at given rpm. Visit www.exlar.com for full details on radial load and bearing life.

	RPM	50	100	250	500	1000
SLG060	lbf (N)	195 (867)	155 (690)	114 (507)	90 (400)	72 (320)
SLG090	lbf (N)	389 (1730)	309 (1375)	227 (1010)	180 (801)	143 (636)
SLG115	lbf (N)	939 (4177)	745 (3314)	549 (2442)	435 (1935)	346 (1539)

Motor and Gearmotor Weight (lbs)

SLM/G060	Motor	1 Stage	2 Stage	SLM/G090	Motor	1 Stage	2 Stage	SLM/G115	Motor	1 Stage	2 Stage
1 Stack	3.0	7.5	9.3	1 Stack	5.4	12.8	14.8	1 Stack	14.2	28	34
2 Stack	4.1	8.6	10.4	2 Stack	7.8	15.2	17.2	2 Stack	22.0	35.8	41.8
3 Stack	5.2	9.7	11.5	3 Stack	10.2	17.6	19.6	3 Stack	29.8	43.6	49.6

SLM/G060 Brake 1.8

SLM/G090 Brake 2.7

SLM/G115 Brake 4.1

Cables For Motors With Exlar Standard “C/P” Connections			
Power Cables	Connector-ization	Description	Standard Exlar Power Cable
SLM060	C	Standard Power, Molded, Shielded	PC6-MC-xxx
SLG060	C	Standard Power, Anodized, Required If Using Brake Option	PC1-AC-xxx
	E	Standard Power, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	PC1-EC-xxx
SLM090	C	Standard Power, Molded, Shielded	PC6-MC-xxx
SLG090	C	Standard Power, Anodized, Required If Using Brake Option	PC1-AC-xxx
	E	Standard Power, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	PC1-EC-xxx
SLM115	C	Standard Power, Molded, Shielded	PC7-MC-xxx
SLG115	C	Standard Power, Anodized, Required If Using Brake Option	PC7-AC-xxx
	E	Standard Power, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	PC7-EC-xxx
Feedback Cables			Standard Exlar Power Cable
SLM060	C	Standard Resolver Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
SLG060	C	Standard Encoder Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
	E	Standard Resolver Feedback, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
	E	Standard Encoder Feedback, Anodized, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
SLM090	C	Standard Resolver Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
SLG090	C	Standard Encoder Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
	E	Standard Resolver Feedback, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
	E	Standard Encoder Feedback, Anodized, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
SLM115	C	Standard Resolver Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
SLG115	C	Standard Encoder Feedback, Anodized, Molded, Shielded	EC4-MC-xxx
	E	Standard Resolver Feedback, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
	E	Standard Encoder Feedback, Anodized, Electroless Nickel, Environmentally Sealed, EMI/RFI Shielded	EC4-EC-xxx
Brake Cables	All	Brake leads in power connector	NA

Standard cable lengths of 15', 25' and 50'

Specifications subject to change without notice.

**EXLAR
SLM & SLG Series Motors**

Cables For SLM/SLG Series Actuators With “M” Connectors

Exlar Actuator	Amplifier Manufacturer and Type	Exlar Feedback Callout	Power Cable Manufacturer	Power Cable Part Number	Feedback Cable Manufacturer	Feedback Cable Part Number
SLM060 SLG060	Allen Bradley Ultra 100/200	AB1	Exlar	PC6-MC-xxx	Allen Bradley	9101-1366-xxx
SLM090 SLG090	Allen Bradley Ultra 3000/5000	AB7*	Allen Bradley	2090-UXNPAMP-14Sxx	Allen Bradley	2090-UXNFBMP-Sxx
	Allen Bradley Ultra 3000/5000	AB4/AB5*	Allen Bradley	2090-UXNPAMP-14Sxx	Allen Bradley	2090-UXNFBMP-Sxx**
	Control Techniques En, Epsilon and MDS Series	EM2	Control Techniques	CMDS-xxx	Control Techniques	CFCS-xxx
	Kollmorgen Servo Star & Servo Star CD	KM1	Kollmorgen	CSSSRHA1H-xxx (set includes feedback cable)	Kollmorgen	CSSSRHA1H-xxx (set includes power cable)
	Kollmorgen Servo Star 600	KM5/KM2	Kollmorgen	CSSSRHG1H-xxx (set includes feedback cable)	Kollmorgen	CSSSRHG1H-xxx (set includes power cable)
	Kollmorgen Servo Star 600	KM3/KM4	Kollmorgen	CSSSS3HG2H-xxx set includes feedback cable)	Kollmorgen	CSSSS3HG2H-xxx (set includes power cable)
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN1	Bosch/Rexroth Indramat	IKG4077, IKG4017, IKG4009, IKG4008 depending on Indramat amplifier	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN2	Bosch/Rexroth Indramat	IKG4077, IKG4017, IKG4009, IKG4008 depending on Indramat amplifier	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN4/IN3	Bosch/Rexroth Indramat	IKG4009	Bosch/Rexroth Indramat	IKS4374
	Bosch/Rexroth Indramat DIA Series	IN1	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DIA Series	IN2	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DIA Series	IN3	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4374
	Parker Compumotor Gemini Series	PC3	Exlar	PC6-MC-xxx	Parker Compumotor	71-018308-XX
	Yaskawa Sigma II Series (3 inch and smaller motors 100/200VAC)	YS3	Yaskawa	B1E-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (3 inch and smaller motors 400VAC)	YS3	Yaskawa	BAE-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (4 inch and larger motors 100/200VAC)	YS2	Yaskawa	B1E-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (4 inch and larger motors 400VAC)	YS2	Yaskawa	BAE-xxA	Yaskawa	JZSP-CMP02-XX(B)
SLM115 SLG115	Allen Bradley Ultra 100/200	AB1	Exlar	PC7-MC-xxx	Allen Bradley	9101-1366-xxx
	Allen Bradley Ultra 3000/5000	AB7*	Allen Bradley	2090-UXNPAMP-14Sxx	Allen Bradley	2090-UXNFBMP-Sxx
	Allen Bradley Ultra 3000/5000	AB4/AB5*	Allen Bradley	2090-UXNPAMP-14Sxx	Allen Bradley	2090-UXNFBMP-Sxx**
	Control Techniques En, Epsilon and MDS Series	EM2	Control Techniques	CMMS-xxx	Control Techniques	CFCS-XXX
	Kollmorgen Servo Star & Servo Star CD	KM1	Kollmorgen	CSSSRHA2H-xxx (set includes feedback cable)	Kollmorgen	CSSSRHA2H-xxx (set includes power cable)
	Kollmorgen Servo Star 600	KM5/KM2	Kollmorgen	CSSSRHG2H-xxx (set includes feedback cable)	Kollmorgen	CSSSRHG2H-xxx (set includes power cable)
	Kollmorgen Servo Star 600	KM4/KM3	Kollmorgen	CSSSS3HG2H-xxx (set includes feedback cable)	Kollmorgen	CSSSS3HG2H-xxx (set includes power cable)
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN1	Bosch/Rexroth Indramat	IKG4009	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN2	Bosch/Rexroth Indramat	IKG4009	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DKC Series, ECO Drive	IN3/IN4	Bosch/Rexroth Indramat	IKG4009	Bosch/Rexroth Indramat	IKS4374
	Bosch/Rexroth Indramat DIA Series	IN1	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DIA Series	IN2	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4001
	Bosch/Rexroth Indramat DIA Series	IN3	Bosch/Rexroth Indramat	IKG4077	Bosch/Rexroth Indramat	IKS4374
	Parker Compumotor Gemini Series	PC3	Exlar	PC7-MC-xxx	Parker Compumotor	71-018308-XX
	Yaskawa Sigma II Series (3 inch and smaller motors 100/200VAC)	YS3	Yaskawa	B1E-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (3 inch and smaller motors 400VAC)	YS3	Yaskawa	BAE-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (4 inch and larger motors 100/200VAC)	YS2	Yaskawa	B1E-xxA	Yaskawa	JZSP-CMP02-XX(B)
	Yaskawa Sigma II Series (4 inch and larger motors 400VAC)	YS2	Yaskawa	BAE-xxA	Yaskawa	JZSP-CMP02-XX(B)

* Brake Cable AB4/AB5 and AB7, 2090-UXNPAMP-18Sxx

** Exlar Corporation uses absolute encoders for AB4 and AB5 configurations that are powered by 5 VDC. A customer not using Allen-Bradley's universal feedback cable referenced here, must make provisions such that the wiring scheme provides connectivity according to Allen-Bradley's wiring requirements for 5 VDC encoder power from the amplifier to the encoder.

Motor Speed Designators

All Exlar T-LAM motors and actuators carry a standard motor speed designator as defined below. This is representative of the standard base speed of the motor, for the selected bus voltage.

Designator	Base Speed	Motor Series
-50	5000 rpm	SLM/SLG060
-40	4000 rpm	SLM/SLG090
-30	3000 rpm	SLM/SLG115
01-99	Special Speed, Consult Exlar	

If the model number is created and the location for the motor speed designator is left blank, this is the base speed to which each motor will be manufactured. The model number can also be created including this standard speed designator.

Exlar also provides the flexibility to manufacture all of its "T-LAM" products with special base speeds to match the customer's exact application requirements. This may be a higher than standard speed motor, or lower base speed than standard which will allow the customer to get the required torque, at a speed optimized to their application, and use the minimum amount of current from their amplifier.

The call out for a special speed is configured in the model number by using a two digit code from 01-99. These numbers represent the number, in hundreds, of RPM that will be the base speed for the particular motor.

For example, an SLG-090-010-KCGS-AB1-138-40 motor that normally has a 4000 rpm standard winding, can be changed to a 3300 rpm winding by changing the -40, to a -33. It can be changed to a 5000 rpm winding by changing the -40 to a -50.

Changing this speed designator will change the ratings of the motor, and these must be obtained from Exlar applications engineers. Also, it is not possible to produce every possible speed from -01 to -99 for each motor at each voltage so please contact Exlar applications engineers for confirmation of the speed that is desired for the application.

Motor Options

SLM/SLG motor options are described with a 3 digit code. The first digit calls out the stack length, the second the rated bus voltage, and the third the number of poles of the motor. Refer to the mechanical/ electrical specifications for motor torque and actuator rated force.

118 = 1 stack,
115 Vrms, 8 Pole, Class 180 H

138 = 1 stack,
230 Vrms, 8 Pole, Class 180 H

158 = 1 stack,
400 Vrms, 8 Pole, Class 180 H

168 = 1 stack,
460 Vrms, 8 Pole, Class 180 H

218 = 2 stack,
115 Vrms, 8 Pole, Class 180 H

238 = 2 stack,
230 Vrms, 8 Pole, Class 180 H

258 = 2 stack,
400 Vrms, 8 Pole, Class 180 H

268 = 2 stack,
460 Vrms, 8 Pole, Class 180 H

318 = 3 stack,
115 Vrms, 8 Pole, Class 180 H

338 = 3 stack,
230 Vrms, 8 Pole, Class 180 H

358 = 3 stack,
400 Vrms, 8 Pole, Class 180 H

368 = 3 stack,
460 Vrms, 8 Pole, Class 180 H

Housing Options

FG = Food Grade Epoxy

This option provides for a motor coated with FDA approved white epoxy.

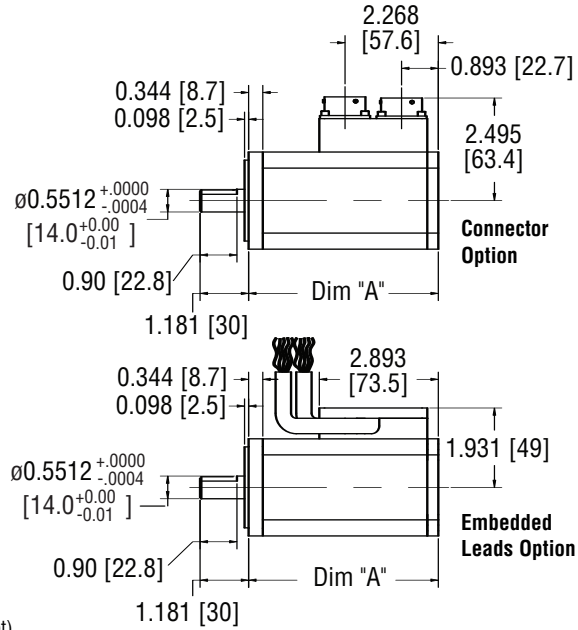
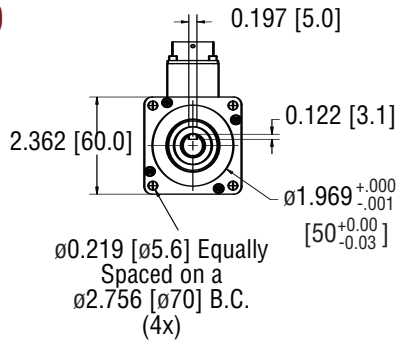
SS = Stainless Steel Housing

This option provides a motor with all stainless steel construction. Housing dimensions for this option are not equal to the standard housing. Please inquire with Exlar for dimensions.

XH = Special Housing Option

Any housing option that is not designated by the above codes should be listed as XH and described at time of order. All special options must be discussed with Exlar engineering.

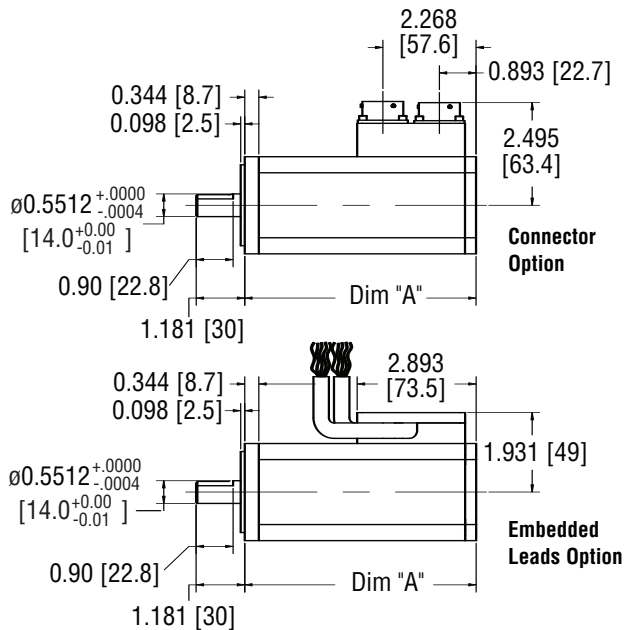
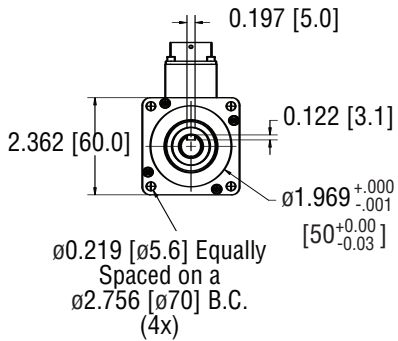
SLM060



Note: Dimension format = in. [mm]
 Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Motor	2 Stack Motor	3 Stack Motor	Dim	1 Stack Motor	2 Stack Motor	3 Stack Motor
A	4.612 [117]	5.862 [149]	7.112 [181]	A	4.612 [117]	5.862 [149]	7.112 [181]

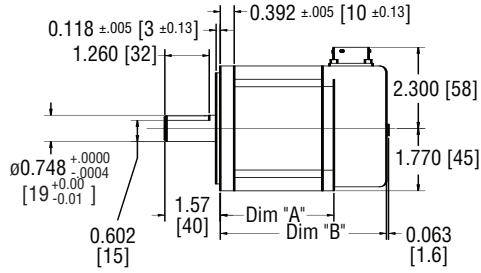
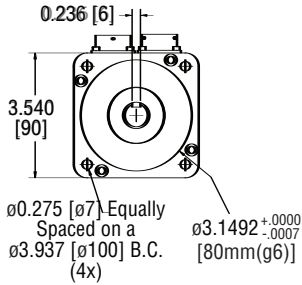
SLM060 With Brake Option



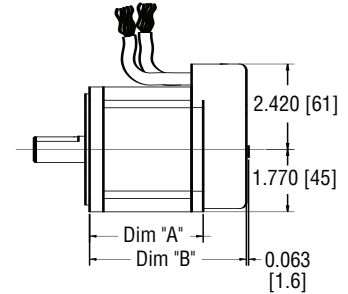
Connector Option				Embedded Leads Option			
Dim	1 Stack Motor	2 Stack Motor	3 Stack Motor	Dim	1 Stack Motor	2 Stack Motor	3 Stack Motor
A	5.627 [143]	6.877 [175]	8.127 [206]	A	5.627 [143]	6.877 [175]	8.127 [206]

Drawings subject to change. Consult Exlar for certified drawings.

SLM090



Connector Option

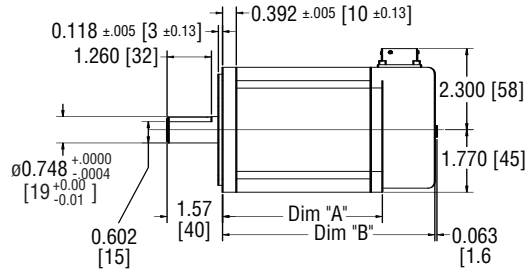
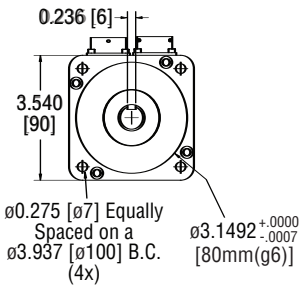


Embedded Leads Option

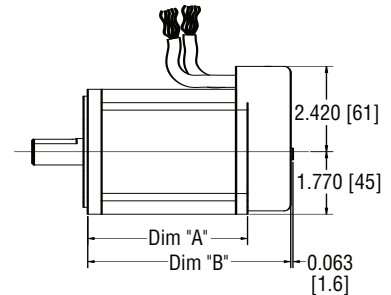
Note: Dimension format = in. [mm]
 Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator	Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator
A	3.225 [82]	4.225 [107]	5.225 [133]	A	3.225 [82]	4.225 [107]	5.225 [133]
B	4.650 [118]	5.650 [144]	6.650 [169]	B	4.450 [113]	5.450 [138]	6.450 [164]

SLM090 With Brake Option



Connector Option



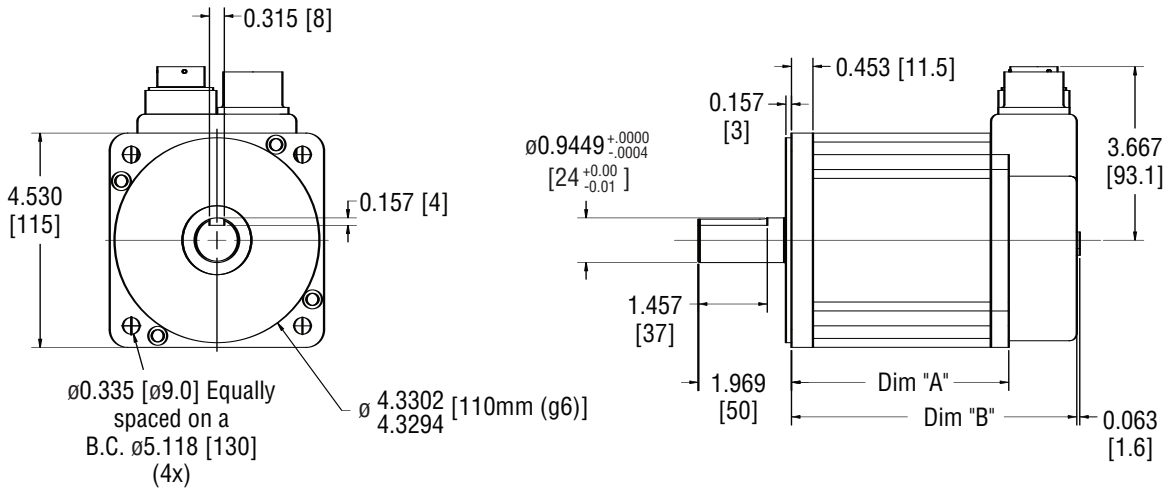
Embedded Leads Option

Note: Dimension format = in. [mm]
 Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator	Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator
A	4.535 [115]	5.535 [141]	6.535 [166]	A	4.535 [115]	5.535 [141]	6.535 [166]
B	5.960 [151]	6.960 [177]	7.960 [202]	B	5.760 [144]	6.976 [169]	7.760 [195]

Drawings subject to change. Consult Exlar for certified drawings.

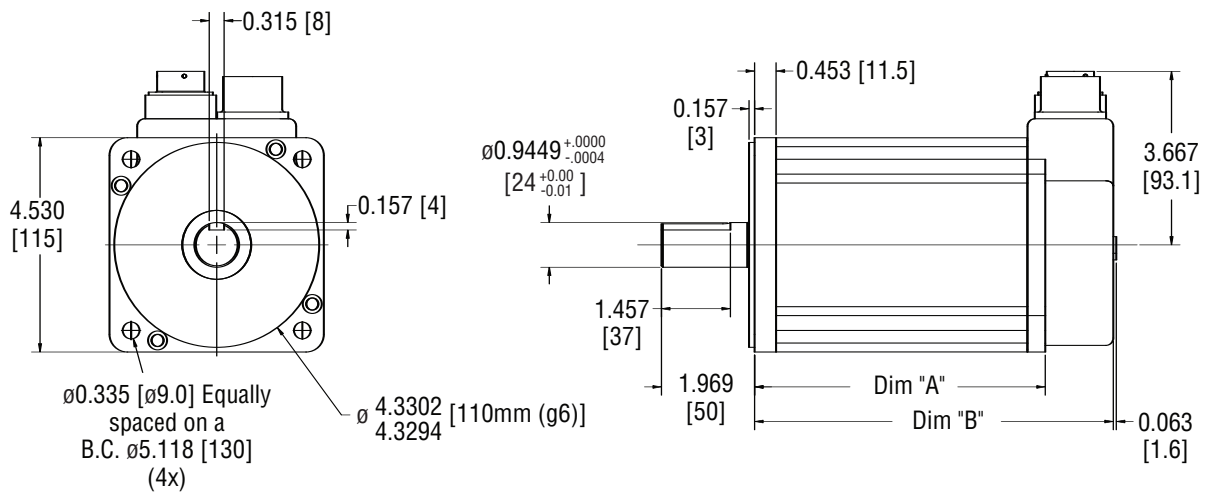
SLM115



Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator
A	4.593 [117]	6.593 [168]	8.593 [218]
B	6.031 [153]	8.031 [204]	10.031 [255]

SLM115 With Brake Option

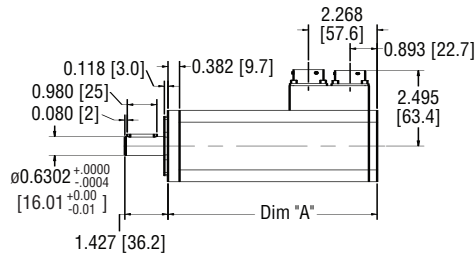
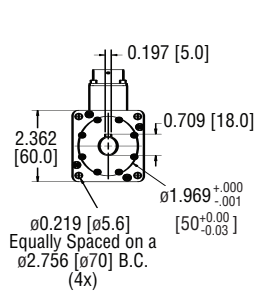


Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

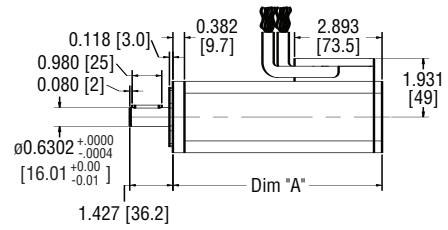
Dim	1 Stack Stator	2 Stack Stator	3 Stack Stator
A	6.143 [156]	8.143 [207]	10.143 [258]
B	7.581 [193]	9.581 [243]	11.581 [255]

Drawings subject to change. Consult Exlar for certified drawings.

SLG060



Connector Option

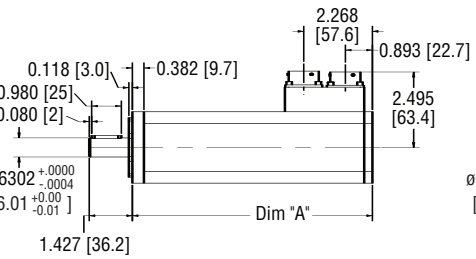
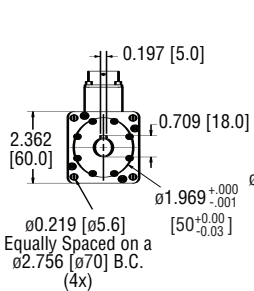


Embedded Leads Option

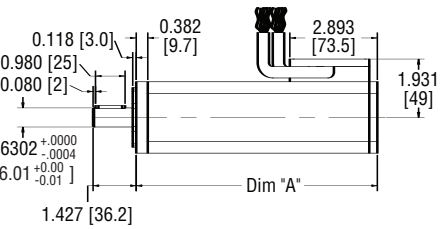
Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead
A	6.915 [176]	8.165 [207]	9.415 [239]	A	6.915 [176]	8.165 [207]	9.415 [239]
Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	7.960 [202]	9.210 [234]	10.460 [266]	A	7.960 [202]	9.210 [234]	10.460 [266]

SLG060 With Brake Option



Connector Option



Embedded Leads Option

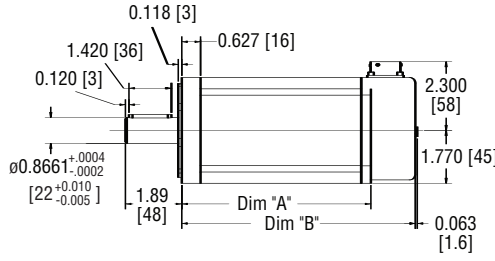
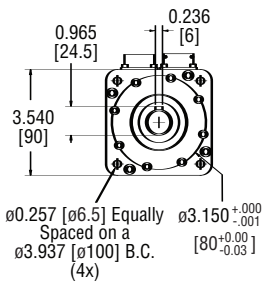
Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead
A	7.930 [201]	9.180 [233]	10.430 [265]	A	7.930 [201]	9.180 [233]	10.430 [265]
Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	8.975 [228]	10.225 [260]	11.475 [291]	A	8.975 [228]	10.225 [260]	11.475 [291]

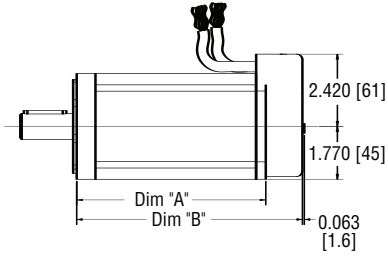
Drawings subject to change. Consult Exlar for certified drawings.

SLM/SLG Series

SLG090



Connector Option

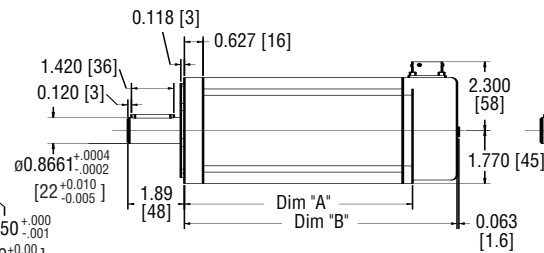
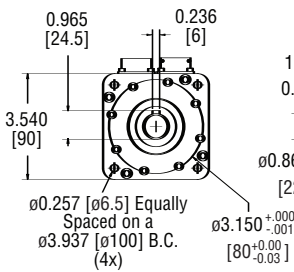


Embedded Leads Option

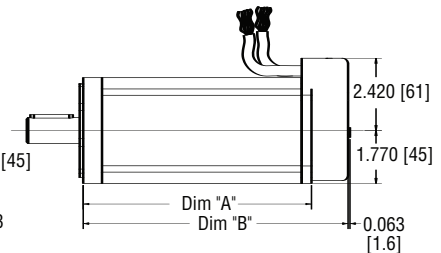
Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead
A	6.335 [161]	7.335 [186]	8.355 [212]	A	6.335 [161]	7.335 [186]	8.355 [212]
B	7.760 [197]	8.760 [223]	9.760 [248]	B	7.560 [192]	8.560 [217]	9.560 [243]
Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	7.600 [193]	8.600 [218]	9.600 [244]	A	7.600 [193]	8.600 [218]	9.600 [244]
B	9.025 [229]	10.025 [255]	11.025 [280]	B	8.825 [224]	9.825 [250]	10.825 [275]

SLG090 With Brake Option



Connector Option



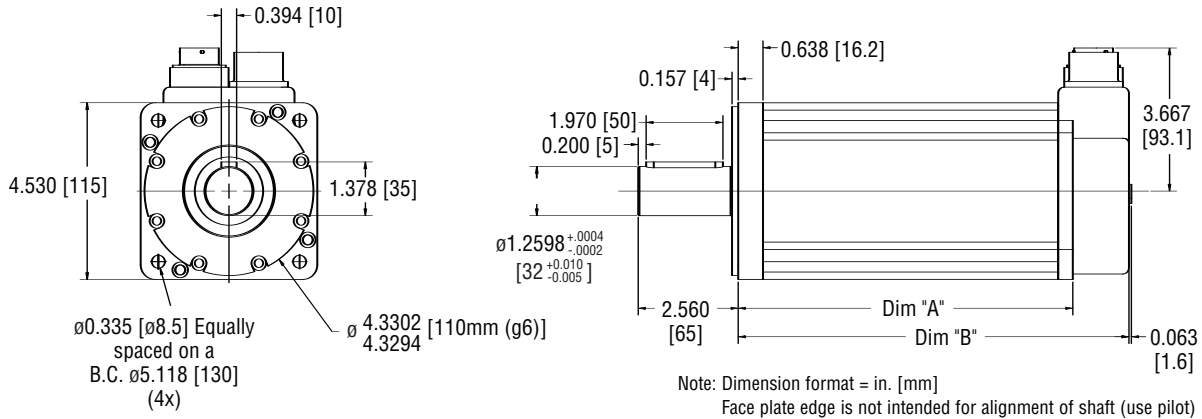
Embedded Leads Option

Note: Dimension format = in. [mm]
Face plate edge is not intended for alignment of shaft (use pilot)

Connector Option				Embedded Leads Option			
Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead
A	7.645 [194]	8.645 [220]	9.645 [245]	A	7.645 [194]	8.645 [220]	9.645 [245]
B	9.070 [230]	10.070 [256]	11.070 [281]	B	8.870 [225]	9.870 [251]	10.870 [276]
Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	8.910 [226]	9.910 [252]	10.910 [277]	A	8.910 [226]	9.910 [252]	10.910 [277]
B	10.335 [263]	11.335 [288]	12.335 [313]	B	10.135 [257]	11.135 [283]	12.135 [308]

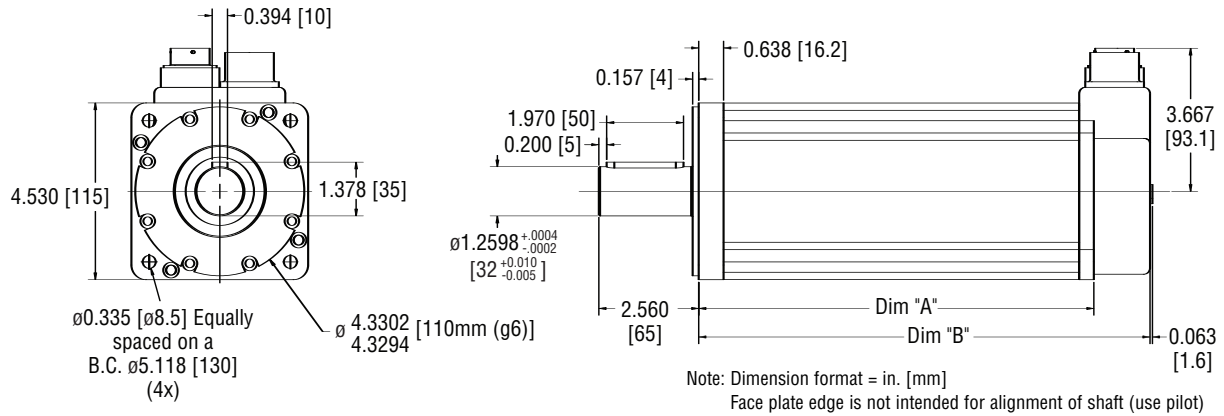
Drawings subject to change. Consult Exlar for certified drawings.

SLG115



Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	8.578 [218]	10.578 [269]	12.578 [319]	A	10.188 [259]	12.188 [310]	14.188 [360]
B	10.016 [254]	12.016 [305]	14.016 [356]	B	11.626 [295]	13.626 [346]	15.626 [397]

SLG115 With Brake Option



Dim	1 Stack Stator 1 Stage Gearhead	2 Stack Stator 1 Stage Gearhead	3 Stack Stator 1 Stage Gearhead	Dim	1 Stack Stator 2 Stage Gearhead	2 Stack Stator 2 Stage Gearhead	3 Stack Stator 2 Stage Gearhead
A	10.128 [257]	12.128 [308]	14.128 [359]	A	11.738 [298]	13.738 [349]	15.738 [400]
B	11.566 [294]	13.566 [345]	15.566 [395]	B	13.176 [335]	15.176 [385]	17.176 [436]

Drawings subject to change. Consult Exlar for certified drawings.

SLM/G - AAA - BBB - C - D - E - F - GGG - HHH - II - XX - #####

**SLM/SLG Series Motor
 Ordering Information**

SLM/G = Model Series

SLG = SLG Series Servo gear Motor
 SLM = SLM Series Servo Motor (No Gear Reduction)

AAA = Frame Size

060 = 60 mm
 090 = 90 mm
 115 = 115mm

BBB = Gear Reduction Ratio

Blank = SLM
Single reduction ratios
 004 = 4:1 005 = 5:1
 010 = 10:1
Double reduction ratios
 016 = 16:1 020 = 20:1
 025 = 25:1 040 = 40:1
 050 = 50:1 100 = 100:1

C = Shaft Type

K = Keyed
 R = Smooth/Round
 X = Special Shaft

D = Connector Options

B = Embedded Leads
 C = Standard MS Connectors
 I = Intercontec style (Exlar standard style connector)
 M = Manufacturer's Connectors³
 P = Embedded Leads with Standard MS Connector Cable Plugs
 X = Special Connectors

E = Coating Options²

G = Standard Gray E-Coat, Black Anodized⁷ Front/Rear Covers
 E = Electroless Nickel Plated
 F = Food Grade White
 X = Special Coating

F = Brake Options

B = Brake
 S = Standard No Brake

GGG = Brushless Amplifier (Please indicate the amplifier to be used to power the actuator)
 XX1 = Custom Feedback - purchaser must supply drawing of feedback device and desired wiring drawings
 001 = Standard Feedback Mount - actuator is supplied ready for size 15 resolver or encoder, includes .375 mm shaft
 002 = Same as above with 8mm shaft
If the Rockwell Allen-Bradley system that you are using is the Kinetix platform or SERCOS based, additional software and data files are required from Allen-Bradley. Please contact your Rockwell Allen-Bradley representative for support.
 AB1 = Allen-Bradley Ultra 100/200⁵ (std encoder, 2048 line, with commutation, 5 VDC)
 AB4 = Allen Bradley Ultra 3000 or 5000⁵ with single-turn (absolute encoder)
 AB5 = Allen Bradley Ultra 3000 or 5000⁵ with multi-turn (absolute encoder)
 AB6 = Allen Bradley 1394⁴ (resolver, type 2)(replaces AB2)
 AB7 = Allen Bradley Ultra 3000 or 5000⁵ (std encoder, 2048 line, with commutation, 5 VDC)
 AD1 = Advanced Digital "Simple Servo" (std encoder, 2048 line, with commutation, 5 VDC)
 AP1 = API resolver based (resolver, type 2)
 AP2 = API encoder based (std encoder, 2048 line, with commutation, 5 VDC)
 AM1 = Advanced Motion Controls (std encoder, 2048 line, with commutation, 5 VDC)
 AM2 = Advanced Motion Controls (std encoder, 1000 line, with commutation, 5 VDC)
 AM3 = Advanced Motion Controls (resolver, type 1)
 AM4 = Advanced Motion Controls BX Series default settings (std encoder, 2048 line, with commutation, 5 VDC)
 BD2 = Baldor Flex Series (resolver, type 1)(replaces BD1)
 BD3 = Baldor Flex Series (std encoder, 2048 line, with commutation, 5 VDC)
 B01 = Bosch (resolver, type 2)
 CC1 = Cleveland Machine Controls (resolver, type 1)
 CM1 = Comau (resolver, type 1)
 CO1 = Copley Controls (std encoder, 2048 line, with commutation, 5 VDC)
 CS1 = Parker (Custom Servo Motors) MPA, MPSTL (resolver, type 1)
 CS2 = Parker (Custom Servo Motors) Servo Flex (std encoder, 2048 line, with commutation, 5 VDC)
 EL1 = Elmo Motion Control (resolver, type 1)
 EL2 = Elmo CLA, SBA, FLU Series, (std encoder, 2048 line, with commutation, 5 VDC)
 EM2 = Emerson En, Epsilon, MDS Series and Uni-Drive⁵ (std encoder, 2048 line, with commutation, 5 VDC)
 EM3 = Emerson MX Series (resolver, type 2)
 EM4 = Emerson UniDrive SP (resolver, type 1)
 EU1 = Elau (absolute encoder, multi-turn, type 2)
 EX4 = Exlar SV Series (resolver, type 1) (replaces EX3)
 GL1 = Sheffield Automation (G&L) Smart Drive (standard encoder, 2048 line, with commutation, 5 VDC) If selecting the "M" connector option with GL1, the motor power and encoder connector configuration will be equivalent to that used on the Sheffield Automation HSM Series motors.
 GL2 = Sheffield Automation (G&L) Smart Drive (standard encoder, 2048 line, with commutation, 5 VDC) If selecting the "M" connector option with GL2, the motor power and encoder connector configuration will be equivalent to that used on the Sheffield Automation LSM/MSM Series motors.
 IN1 = Bosch-rexroth (Indramat) ECO Drive, (absolute, multi-turn Heidenhain encoder, type 2)
 IN2 = Bosch-rexroth (Indramat) ECO Drive, (absolute, single-turn Heidenhain encoder)
 IN4 = Bosch-rexroth (Indramat) ECO Drive, Standard resolver (resolver, type 1)(replaces IN3)
 KM1 = Kollmorgen ServoStar Series⁵ 230V (resolver, type 2)
 KM3 = Kollmorgen ServoStar600 Series⁵ (Absolute encoder, single turn, type 1)
 KM4 = Kollmorgen ServoStar600 Series⁵ (Absolute encoder, multi-turn, type 2)
 KM5 = Kollmorgen ServoStar600 Series⁵ and ServoStar CD (resolver, type 2)(replaces KM2)
 KM6 = Kollmorgen ServoStar300 Series⁵ (std encoder, 2048 line, with commutation, 5 VDC)
 LZ1 = Lenze 9300 Series (Multi-turn Absolute Encoder, type 2)
 LZ2 = Lenze 9300 Series (resolver, type 2)
 MD1 = Modicon (resolver, type 1)
 MX1 = Metronix ARS Series, Resolver type 1
 OR1 = Ormec (resolver, type 2)
 PC1 = Parker Compumotor Apex & Z Series (resolver, type 1)
 PC2 = Parker Compumotor TQ Series (std encoder, 2048 line, with commutation, 5 VDC)
 PC3 = Parker Compumotor Gemini Series (std encoder, 2048 line, with commutation, 5 VDC)
 PS2 = Pacific Scientific (std encoder, 2048 line, with commutation, 5 VDC)
 PS3 = Pacific Scientific SC900, 700 Series (resolver, type 1)(replaces PS1)
 SM2 = Siemens (resolver, type 1)
 SP2 = In Motion, PAM Series (resolver, type 1)
 WD1 = Whedco (GE-Fanuc)(resolver, type 1)
 YS2 = Yaskawa Sigma II Series for 4 inch and larger Exlar motors (multi-turn absolute encoder, type 1)
 YS3 = Yaskawa Sigma II Series for 3 inch and smaller Exlar actuators (multi-turn absolute encoder, type 1)

Consult Exlar's application engineering department regarding all special actuator components.

SLM/SLG Series Motor Ordering Information

HHH = Motor Stator, All 8 Pole^{1,6}

118 = 1 Stack, 115 Vrms

138 = 1 Stack, 230 Vrms

158 = 1 Stack, 400 Vrms

168 = 1 Stack, 460 Vrms

218 = 2 Stack, 115 Vrms

238 = 2 Stack, 230 Vrms

258 = 2 Stack, 400 Vrms

268 = 2 Stack, 460 Vrms

318 = 3 Stack, 115 Vrms

338 = 3 Stack, 230 Vrms

358 = 3 Stack, 400 Vrms

368 = 3 Stack, 460 Vrms

II = Optional Speed & Mechanical Designations

30 = 3000 rpm, SLM/G115

40 = 4000 rpm, SLM/G090

50 = 5000 rpm, SLM/G060

01-99 = Special Speed, Consult Exlar

XX = Part Number Designator for specials

SS = Stainless steel housing

XH = Special housing or mounting option

XM = Special motor options

XF = Special feedback option

XL = Special lubrication

FG = Food grade

= Part Number Designator for Specials

= Optional 5 digit assigned part number to designate unique model number for specials

Note: Any specials denoted by an X in the part number require definition and quotation from the factory.

1. Stator voltage and pole options allow for catalog rated performance at varying amplifier bus voltages and pole configuration requirements.
2. These housing options would typically be accompanied by the choice of the electroless nickel connectors if a connectorized unit were selected. This choice may also indicate a need for special material main rods or flanges. Please inquire with Exlar Eng.
3. Available with AB1, AB4/5, AB7, EM2, KM1, KM3, KM4, KM5, KM6, IN1, IN2, IN4, LZ1, LZ2, PC3, PS3, YS2 and YS3 feedback currently. This option allows the customer to use the standard cables supplied by their amplifier manufacturer.
4. Use of the Allen-Bradley 1394 requires assistance from Allen-Bradley to configure the axis for a custom motor.
5. Amps require motor data files for operation. See www.exlar.com or contact Exlar Engineering.
6. See page 88 for explanation of voltage, speed and stack options.
7. When selecting special housing options, use "G" in this model mask location.