

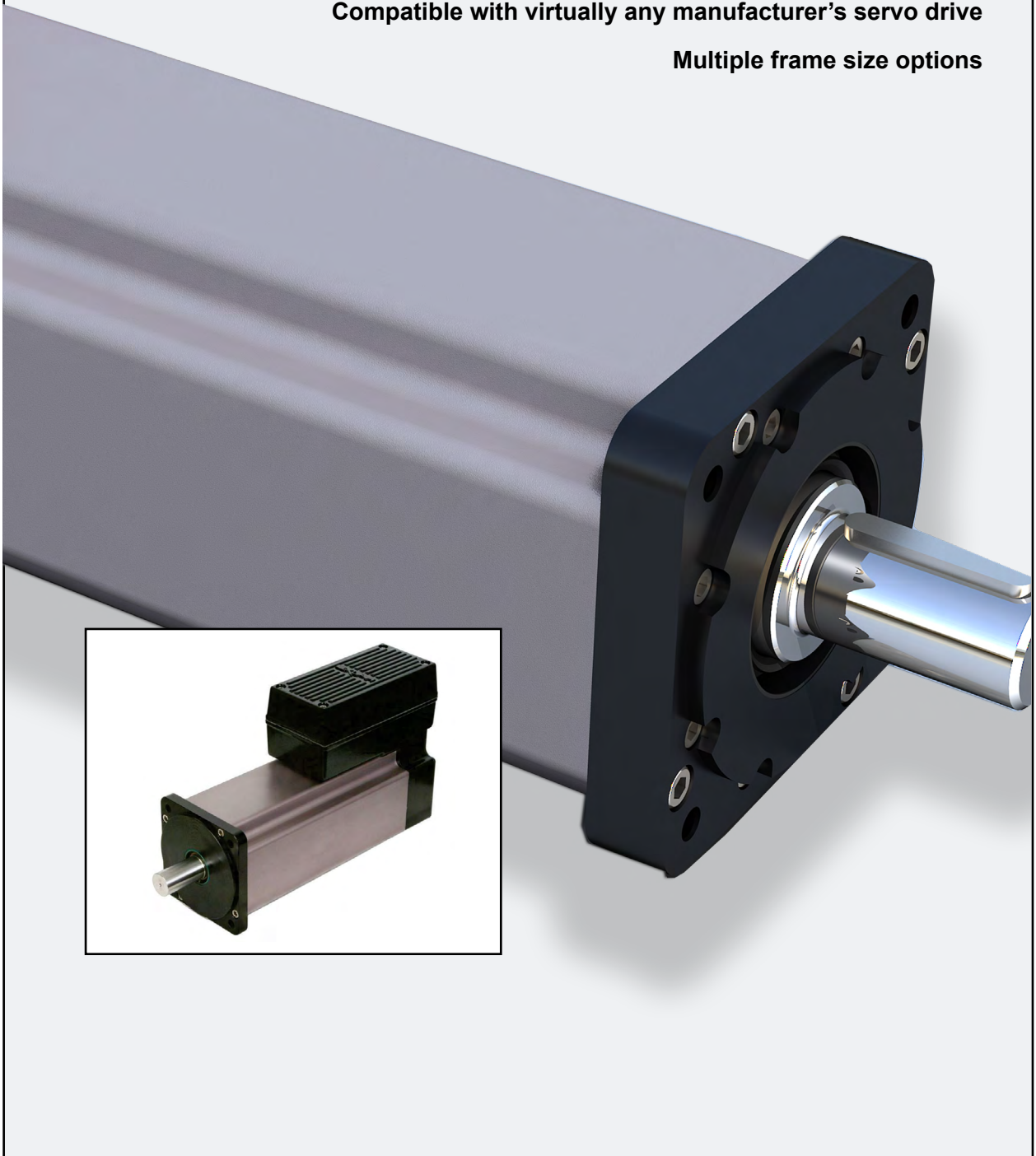
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SLM/SLG SERIES

BRUSHLESS AC OR DC SERVO MOTOR / INTEGRATED SERVO GEARMOTOR

Compatible with virtually any manufacturer's servo drive

Multiple frame size options



SLM Series Motors and SLG Series Integrated Gearmotors

Description

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

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 maximum motor performance. The robust insulation, high coercive strength magnets, and complete thermal potting 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 180H insulation systems and UL recognition.

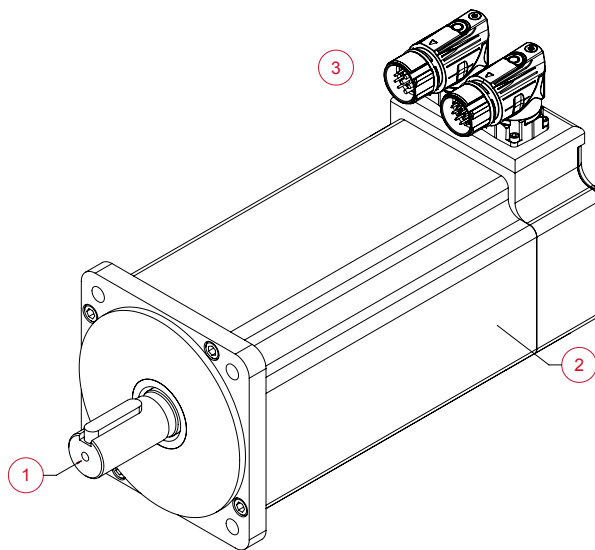
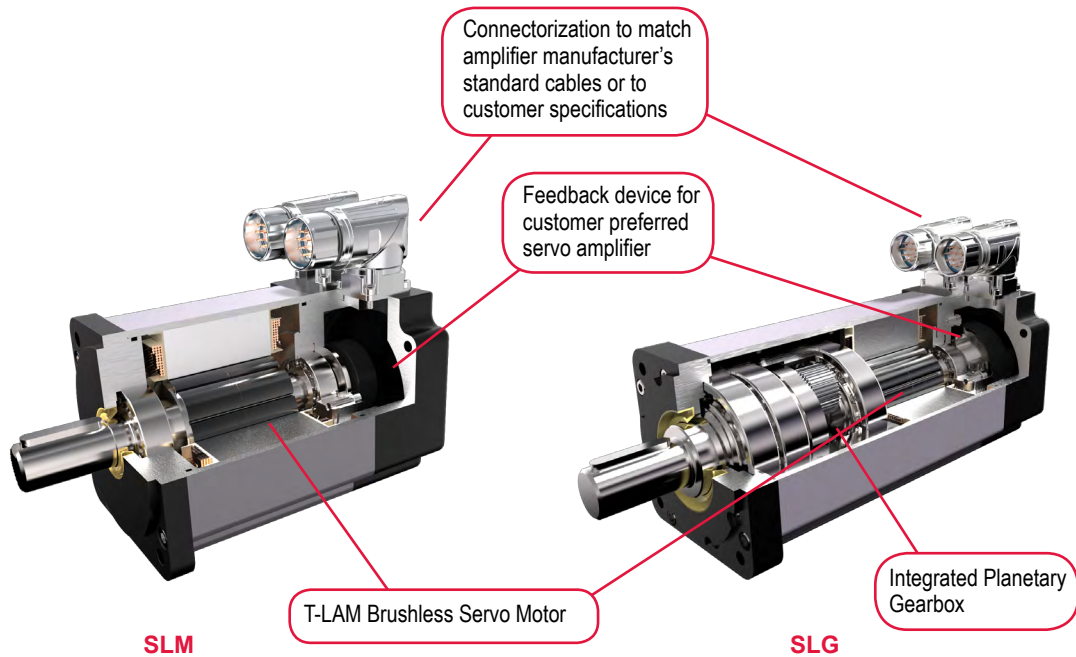
Very High Torque Density

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.
- **75 mm SLM075** offers continuous torque up to 36 lbf-in and base speed of 4000 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.
- **142 mm SLM142** offers continuous torque up to 237 lbf-in and base speed of 2400 rpm.
- **180 mm SLM180** offers continuous torque up to 612 lbf-in and base speed of 2400 rpm.

| Standard Features | |
|-------------------|--|
| SLM Motor | IP65S sealing |
| | Right angle rotatable connectors. |
| | Feedback configurations for nearly all servo amplifiers |
| | Anodized housings |
| | Class 180H insulation system |
| SLG Gearmotor | All features of SLM motor shown above plus... |
| | High side load bearing design |
| | Integrated armature and sungear |
| | Higher stiffness than bolt-on gearhead and motor |
| | 10 arc minute standard backlash, single stage; 13 arc minute standard backlash, dual stage |
| | Single and double reduction ratios: 4:1, 5:1, 10:1, 16:1, 20:1, 25:1, 40:1, 50:1, and 100:1 |

Product Features



- 1 - Keyed
- 2 - Rear Brake
- 3 - Exlar standard M23 style

SLM Series Motors/SLG Series Gearmotors

Electrical and Mechanical Specifications

SLM/SLG075

| Motor Stator | | 118 | 138 | 158 | 168 | 218 | 238 | 258 | 268 | 318 | 338 | 358 | 368 |
|---|----------------------------------|--------------|------|-------|-------|--------------|------|-------|-------|--------------|------|-------|-------|
| Voltage Rating | Vrms | 115 | 230 | 400 | 460 | 115 | 230 | 400 | 460 | 115 | 230 | 400 | 460 |
| Speed @ Bus Voltage | rpm | 4000 | | | | | | | | | | | |
| RMS SINUSOIDAL COMMUTATION | | | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 16.6 | 16.4 | 16.3 | 16.0 | 26.0 | 26.4 | 26.2 | 26.4 | 37.9 | 35.9 | 37.3 | 36.4 |
| | Nm | 1.88 | 1.85 | 1.84 | 1.81 | 2.94 | 2.89 | 2.96 | 2.98 | 4.29 | 4.05 | 4.21 | 4.12 |
| Peak Motor Torque | lbf-in | 33.3 | 32.8 | 32.6 | 32.1 | 52.0 | 52.7 | 52.4 | 52.8 | 75.9 | 71.7 | 74.6 | 72.9 |
| | Nm | 3.76 | 3.70 | 3.68 | 3.62 | 5.88 | 5.96 | 5.92 | 5.96 | 8.57 | 8.10 | 8.43 | 8.23 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 3.4 | 6.6 | 12.5 | 13.1 | 3.7 | 6.8 | 11.6 | 13.5 | 3.4 | 6.8 | 11.6 | 13.9 |
| | Nm/A | 0.4 | 0.7 | 1.4 | 1.5 | 0.4 | 0.8 | 1.3 | 1.5 | 0.4 | 0.8 | 1.3 | 1.6 |
| Continuous Current Rating | A | 5.5 | 2.8 | 1.5 | 1.4 | 7.9 | 4.4 | 2.5 | 2.2 | 12.5 | 5.9 | 3.6 | 2.9 |
| Peak Current Rating | A | 11.0 | 5.6 | 2.9 | 2.7 | 15.9 | 8.7 | 5.1 | 4.4 | 25.1 | 11.8 | 7.2 | 5.8 |
| O-PEAK SINUSOIDAL COMMUTATION | | | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 16.6 | 16.4 | 16.3 | 16.0 | 26.0 | 26.4 | 26.2 | 26.4 | 37.9 | 35.9 | 37.3 | 36.4 |
| | Nm | 1.88 | 1.85 | 1.84 | 1.81 | 2.94 | 2.98 | 2.96 | 2.98 | 4.29 | 4.05 | 4.21 | 4.12 |
| Peak Motor Torque | lbf-in | 33.3 | 32.8 | 32.6 | 32.1 | 52.0 | 52.7 | 52.4 | 52.8 | 75.9 | 71.7 | 74.6 | 72.9 |
| | Nm | 3.76 | 3.70 | 3.68 | 3.62 | 5.88 | 5.96 | 5.92 | 5.96 | 8.57 | 8.10 | 8.43 | 8.23 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 2.4 | 4.6 | 8.8 | 9.3 | 2.6 | 4.8 | 8.2 | 9.6 | 2.4 | 4.8 | 8.2 | 9.9 |
| | Nm/A | 0.3 | 0.5 | 1.0 | 1.0 | 0.3 | 0.5 | 0.9 | 1.1 | 0.3 | 0.5 | 0.9 | 1.1 |
| Continuous Current Rating | A | 7.8 | 4.0 | 2.1 | 1.9 | 11.2 | 6.2 | 3.6 | 3.1 | 17.7 | 8.4 | 5.1 | 4.1 |
| Peak Current Rating | A | 15.6 | 7.9 | 4.1 | 3.9 | 22.4 | 12.3 | 7.2 | 6.2 | 35.5 | 16.8 | 10.1 | 8.3 |
| MOTOR STATOR DATA | | | | | | | | | | | | | |
| Voltage Constant (Ke) (+/- 10% @ 25°C) | Vrms/Krpm | 23.1 | 44.7 | 85.2 | 89.5 | 25.0 | 46.2 | 78.9 | 92.4 | 23.1 | 46.2 | 79.4 | 95.3 |
| | Vpk/Krpm | 32.7 | 63.3 | 120.4 | 126.5 | 35.4 | 65.3 | 111.6 | 130.6 | 32.7 | 65.3 | 112.3 | 134.7 |
| Pole Configuration | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Resistance (L-L)(+/- 5% @ 25°C) | Ohms | 1.66 | 6.42 | 23.49 | 26.84 | 0.83 | 2.75 | 8.15 | 11.01 | 0.40 | 1.77 | 4.83 | 7.29 |
| Inductance (L-L)(+/- 15%) | mH | 4.6 | 17.3 | 62.6 | 69.2 | 2.6 | 8.8 | 25.7 | 35.2 | 1.4 | 5.8 | 17.0 | 24.5 |
| SLM Armature Inertia | lbf-in-sec ² (+/- 5%) | 0.00054 | | | | 0.00097 | | | | 0.00140 | | | |
| | Kg-cm ² | 0.616 | | | | 1.100 | | | | 1.583 | | | |
| Brake Inertia | lbf-in-sec ² | 0.000159 | | | | 0.000159 | | | | 0.000159 | | | |
| | Kg-cm ² | 0.18 | | | | 0.18 | | | | 0.18 | | | |
| Brake Current @ 25 VDC | A | 0.5 | | | | 0.5 | | | | 0.5 | | | |
| Brake Holding Torque | lbf-in | 40 | | | | 40 | | | | 40 | | | |
| | Nm | 4.5 | | | | 4.5 | | | | 4.5 | | | |
| Brake Engage/Disengage Time | ms | 9/35 | | | | 9/35 | | | | 9/35 | | | |
| Mechanical Time Constant (tm) | ms | 1.71 | 1.77 | 1.79 | 1.85 | 1.31 | 1.27 | 1.29 | 1.27 | 1.05 | 1.18 | 1.09 | 1.14 |
| Electrical Time Constant (te) | ms | 2.78 | 2.69 | 2.67 | 2.58 | 3.11 | 3.19 | 3.15 | 3.20 | 3.65 | 3.26 | 3.53 | 3.37 |
| Friction Torque | lbf-in (Nm) | 0.51 (0.058) | | | | 0.67 (0.075) | | | | 0.90 (0.101) | | | |
| Insulation Class | | 180 (H) | | | | | | | | | | | |
| Insulation System Volt Rating | Vrms | 460 | | | | | | | | | | | |
| Environmental Rating | | IP65S | | | | | | | | | | | |

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by 0.707 and current by 1.414.

Gearmotor Data

| | 1 Stack Motor | 2 Stack Motor | 3 Stack Motor |
|---|----------------------------------|-------------------------|-----------------------|
| SLG Armature Inertia* lbf-in-sec ² (Kg-cm ²) | 0.000660 (0.7450) | 0.001068 (1.2057) | 0.001494 (1.6868) |
| SLM Armature Inertia* lbf-in-sec ² (Kg-cm ²) | 0.000545 (0.6158) | 0.000973 (1.0996) | 0.001401 (1.5834) |
| GEARING REFLECTED INERTIA | | | |
| | SINGLE REDUCTION | | |
| | Gear Stages | lbf-in-sec ² | (Kg-cm ²) |
| | 4:1 | 0.0000947 | (0.1069) |
| | 5:1 | 0.0000617 | (0.0696) |
| | 10:1 | 0.0000165 | (0.0186) |
| Backlash at 1% rated torque | 10 Arc minutes | | |
| | Efficiency: Single reduction 91% | | |

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

Test data derived using NEMA recommended aluminum heatsink 10" x 10" x 3/8" at 25°C ambient

SLM Series Motors/SLG Series Gearmotors

SLM/SLG090

| Motor Stator | | 118 | 138 | 158 | 168 | 218 | 238 | 258 | 268 | 338 | 358 | 368 | |
|---|-------------------------|--------------|------|-------|-------|--------------|------|-------|-------|--------------|-------|-------|--|
| Voltage Rating | Vrms | 115 | 230 | 400 | 460 | 115 | 230 | 400 | 460 | 230 | 400 | 460 | |
| Speed @ Bus Voltage | rpm | 4000 | | | | | | | | | | | |
| RMS SINUSOIDAL COMMUTATION DATA | | | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 23.8 | 24.0 | 23.7 | 24.7 | 39.6 | 40.0 | 39.5 | 39.9 | 55.7 | 55.4 | 55.7 | |
| | Nm | 2.68 | 2.71 | 2.67 | 2.79 | 4.47 | 4.52 | 4.46 | 4.51 | 6.30 | 6.26 | 6.30 | |
| Peak Motor Torque | lbf-in | 47.5 | 48.0 | 47.3 | 49.4 | 79.1 | 80.0 | 79.0 | 79.9 | 111.5 | 110.9 | 111.5 | |
| | Nm | 5.37 | 5.42 | 5.35 | 5.58 | 8.94 | 9.04 | 8.93 | 9.02 | 12.59 | 12.52 | 12.59 | |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 3.2 | 6.6 | 11.6 | 13.2 | 3.2 | 6.6 | 11.6 | 13.2 | 6.6 | 11.6 | 13.1 | |
| | Nm/A | 0.37 | 0.7 | 1.3 | 1.5 | 0.4 | 0.7 | 1.3 | 1.5 | 0.7 | 1.3 | 1.5 | |
| Continuous Current Rating | A | 8.2 | 4.0 | 2.3 | 2.1 | 13.6 | 6.8 | 3.8 | 3.4 | 9.5 | 5.3 | 4.8 | |
| Peak Current Rating | A | 16.4 | 8.1 | 4.6 | 4.2 | 27.3 | 13.5 | 7.6 | 6.7 | 19.0 | 10.7 | 9.5 | |
| O-PK SINUSOIDAL COMMUTATION DATA | | | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 23.8 | 24.0 | 23.7 | 24.7 | 39.6 | 40.0 | 39.5 | 39.9 | 55.7 | 55.4 | 55.7 | |
| | Nm | 2.68 | 2.71 | 2.67 | 2.79 | 4.47 | 4.52 | 4.46 | 4.51 | 6.30 | 6.26 | 6.30 | |
| Peak Motor Torque | lbf-in | 47.5 | 48.0 | 47.3 | 49.4 | 79.1 | 80.0 | 79.0 | 79.9 | 111.5 | 110.9 | 111.5 | |
| | Nm | 5.37 | 5.42 | 5.35 | 5.58 | 8.94 | 9.04 | 8.93 | 9.02 | 12.59 | 12.52 | 12.59 | |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 2.3 | 4.7 | 8.2 | 9.4 | 2.3 | 4.7 | 8.2 | 9.4 | 4.6 | 8.2 | 9.3 | |
| | Nm/A | 0.26 | 0.5 | 0.9 | 1.1 | 0.3 | 0.5 | 0.9 | 1.1 | 0.5 | 0.9 | 1.0 | |
| Continuous Current Rating | A | 11.6 | 5.7 | 3.2 | 2.9 | 19.3 | 9.5 | 5.4 | 4.8 | 13.4 | 7.5 | 6.7 | |
| Peak Current Rating | A | 23.2 | 11.4 | 6.5 | 5.9 | 38.6 | 19.1 | 10.8 | 9.5 | 26.9 | 15.1 | 13.4 | |
| MOTOR DATA | | | | | | | | | | | | | |
| Voltage Constant (Ke) (+/- 10% @ 25°C) | Vrms/Krpm | 22.1 | 45.2 | 78.9 | 90.4 | 22.1 | 45.2 | 78.9 | 90.4 | 44.7 | 79.4 | 89.5 | |
| | Vpk/Krpm | 31.3 | 64.0 | 111.6 | 127.9 | 31.3 | 64.0 | 111.6 | 127.9 | 63.3 | 112.3 | 126.5 | |
| 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 | 11.55 | 0.30 | 1.21 | 3.78 | 4.86 | 0.69 | 2.19 | 2.75 | |
| Inductance (L-L)(+/- 15%) | mH | 6.1 | 25.6 | 78.0 | 88.6 | 2.9 | 10.5 | 37.2 | 43.1 | 6.6 | 24.7 | 31.4 | |
| SLM Armature Inertia (+/- 5%) | lbf-in-sec ² | 0.00054 | | | | 0.00097 | | | | 0.00140 | | | |
| | Kg-cm ² | 0.609 | | | | 1.09 | | | | 1.58 | | | |
| Brake Inertia | lbf-in-sec ² | 0.00096 | | | | 0.00096 | | | | 0.00096 | | | |
| | Kg-cm ² | 1.08 | | | | 1.08 | | | | 1.08 | | | |
| Brake Current @ 24 VDC | A | 0.67 | | | | 0.67 | | | | 0.67 | | | |
| 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 | 0.83 | 0.82 | 0.84 | 0.77 | 0.59 | 0.58 | 0.59 | 0.58 | 0.48 | 0.49 | 0.48 | |
| Electrical Time Constant (te) | ms | 8.21 | 7.31 | 8.14 | 7.67 | 9.88 | 8.66 | 9.85 | 8.88 | 9.57 | 11.30 | 11.43 | |
| Friction Torque | lbf-in (Nm) | 0.68 (0.077) | | | | 0.85 (0.095) | | | | 1.06 (0.119) | | | |
| Insulation Class | | 180 (H) | | | | | | | | | | | |
| Insulation System Volt Rating | Vrms | 460 | | | | | | | | | | | |
| Environmental Rating | | IP65S | | | | | | | | | | | |

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by 0.707 and current by 1.414.

Gearmotor Data

| | 1 Stack Motor | | 2 Stack Motor | | 3 Stack Motor | |
|---|--|-------------------------|-----------------------|-------------------|---|-----------------------|
| 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% | | | | 13 Arc minutes 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 3/8" at 25°C ambient

SLM Series Motors/SLG Series Gearmotors

SLM/SLG115

| Motor Stator | | 118 | 138 | 158 | 168 | 238 | 258 | 268 | 338 | 358 | 368 |
|---|-------------------------|-------------|-------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| Voltage Rating | Vrms | 115 | 230 | 400 | 460 | 230 | 400 | 460 | 230 | 400 | 460 |
| Speed @ Bus Voltage | rpm | 3000 | | | | | | | | | |
| RMS SINUSOIDAL COMMUTATION DATA | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 74.1 | 74.1 | 74.3 | 74.1 | 123.6 | 121.4 | 123.8 | 172.3 | 168.9 | 176.9 |
| | Nm | 8.37 | 8.37 | 8.39 | 8.37 | 13.96 | 13.72 | 13.96 | 19.46 | 19.09 | 19.98 |
| Peak Motor Torque | lbf-in | 148.2 | 148.2 | 148.6 | 148.1 | 247.2 | 242.8 | 247.2 | 344.5 | 337.8 | 353.7 |
| | Nm | 16.74 | 16.74 | 16.79 | 16.74 | 27.93 | 27.43 | 27.93 | 38.93 | 38.17 | 39.96 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 4.3 | 8.7 | 15.7 | 17.3 | 8.7 | 15.8 | 17.3 | 8.5 | 15.8 | 17.5 |
| | Nm/A | 0.49 | 1.0 | 1.8 | 2.0 | 1.0 | 1.8 | 2.0 | 1.0 | 1.8 | 2.0 |
| Continuous Current Rating | A | 19.1 | 9.5 | 5.3 | 4.8 | 15.9 | 8.6 | 8.0 | 22.7 | 11.9 | 11.3 |
| Peak Current Rating | A | 38.2 | 19.1 | 10.6 | 9.5 | 31.8 | 17.1 | 15.9 | 45.4 | 23.8 | 22.5 |
| O-PK SINUSOIDAL COMMUTATION DATA | | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 74.1 | 74.1 | 74.3 | 74.1 | 123.6 | 121.4 | 123.6 | 172.3 | 168.9 | 176.9 |
| | Nm | 8.37 | 8.37 | 8.39 | 8.37 | 13.96 | 13.72 | 13.96 | 19.46 | 19.09 | 19.98 |
| Peak Motor Torque | lbf-in | 148.2 | 148.2 | 148.6 | 148.1 | 247.2 | 242.8 | 247.2 | 344.5 | 337.8 | 353.7 |
| | Nm | 16.74 | 16.74 | 16.79 | 16.74 | 27.93 | 27.43 | 27.93 | 38.93 | 38.17 | 39.96 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 3.1 | 6.1 | 11.1 | 12.3 | 6.1 | 11.2 | 12.3 | 6.0 | 11.2 | 12.4 |
| | (Nm/A) | 0.35 | 0.7 | 1.3 | 1.4 | 0.7 | 1.3 | 1.4 | 0.7 | 1.3 | 1.4 |
| Continuous Current Rating | A | 27.0 | 13.5 | 7.5 | 6.7 | 22.5 | 12.1 | 11.3 | 32.1 | 16.9 | 15.9 |
| Peak Current Rating | A | 54.0 | 27.0 | 15.0 | 13.5 | 45.0 | 24.2 | 22.5 | 64.2 | 33.7 | 31.9 |
| MOTOR DATA | | | | | | | | | | | |
| Voltage Constant (Ke) (+/- 10% @ 25°C) | Vrms/Krpm | 29.6 | 59.2 | 106.9 | 118.5 | 59.2 | 108.2 | 118.5 | 58.0 | 108.2 | 119.8 |
| | Vpk/Krpm | 41.9 | 83.8 | 151.2 | 167.6 | 83.8 | 153.0 | 167.6 | 82.0 | 153.0 | 169.4 |
| Pole Configuration | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Resistance (L-L)(+/- 5% @ 25°C) | Ohms | 0.20 | 0.80 | 2.60 | 3.21 | 0.34 | 1.17 | 1.35 | 0.20 | 0.72 | 0.81 |
| Inductance (L-L)(+/- 15%) | mH | 3.3 | 13.0 | 42.4 | 52.1 | 5.9 | 21.1 | 25.3 | 4.0 | 13.1 | 17.1 |
| SLM Armature Inertia (+/- 5%) | lbf-in-sec ² | 0.00342 | | | | 0.00620 | | | 0.00899 | | |
| | Kg-cm ² | 3.86 | | | | 7.00 | | | 10.14 | | |
| Brake Inertia | lbf-in-sec ² | 0.00327 | | | | 0.00327 | | | 0.00327 | | |
| | Kg-cm ² | 3.70 | | | | 3.70 | | | 3.70 | | |
| Brake Current @ 24 VDC | A | 0.75 | | | | 0.75 | | | 0.75 | | |
| 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 | 0.80 | 0.80 | 0.79 | 0.80 | 0.61 | 0.63 | 0.61 | 0.54 | 0.56 | 0.51 |
| Electrical Time Constant (te) | ms | 16.26 | 16.26 | 16.34 | 16.25 | 17.6 | 18.06 | 18.72 | 18.5 | 18.14 | 21.16 |
| Friction Torque | lbf-in (Nm) | 1.43 (0.16) | | | | 1.81 (0.204) | | | 2.32 (0.262) | | |
| Insulation Class | | 180 (H) | | | | | | | | | |
| Insulation System Volt Rating | Vrms | 460 | | | | | | | | | |
| Environmental Rating | | IP65S | | | | | | | | | |

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by 0.707 and current by 1.414.

Gearmotor Data

| | 1 Stack Motor | | | 2 Stack Motor | | | 3 Stack Motor | | |
|---|--|-------------------------|-----------------------|-------------------|-------------------------|-----------------------|---|--|--|
| SLG Armature Inertia [*] lbf-in-sec ² (Kg-cm ²) | 0.00662 (7.47) | | | 0.00945 (10.67) | | | 0.01228 (13.86) | | |
| 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 | 0.000895 | (1.010) | 16:1 | 0.000513 | (0.579) | | | |
| | 5:1 | 0.000585 | (0.660) | 20:1, 25:1 | 0.000346 | (0.391) | | | |
| | 10:1 | 0.000152 | (0.172) | 40:1, 50:1, 100:1 | 0.000092 | (0.104) | | | |
| Backlash at 1% rated torque | 10 Arc minutes Efficiency: Single reduction 91% | | | | | | 13 Arc minutes 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" at 25°C ambient

SLM Series Motors/SLG Series Gearmotors

SLM142

| Motor Stator | | 118 | 138 | 158 | 168 | 238 | 258 | 268 | 358 | 368 |
|---|------------------------|--------------|-------|-------|-------|--------------|-------|-------|--------------|-------|
| Bus Voltage | Vrms | 115 | 230 | 400 | 460 | 230 | 400 | 460 | 400 | 460 |
| Speed @ Bus Voltage | RPM | 2400 | | | | | | | | |
| RMS SINUSOIDAL COMMUTATION DATA | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 108.5 | 107.2 | 104.8 | 109.4 | 179.9 | 178.8 | 177.8 | 237.2 | 238.3 |
| | Nm | 12.25 | 12.12 | 11.84 | 12.36 | 20.32 | 20.20 | 20.09 | 26.80 | 26.93 |
| Peak Motor Torque | lbf-in | 216.9 | 214.5 | 209.5 | 218.8 | 359.8 | 357.6 | 355.7 | 474.4 | 476.7 |
| | Nm | 24.51 | 24.23 | 23.67 | 24.72 | 40.65 | 40.40 | 40.19 | 53.60 | 53.85 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 5.9 | 11.8 | 20.2 | 23.6 | 11.8 | 20.2 | 23.6 | 20.2 | 24.0 |
| | Nm/A | 0.67 | 1.3 | 2.3 | 2.7 | 1.3 | 2.3 | 2.7 | 2.3 | 2.7 |
| Continuous Current Rating | A | 20.5 | 10.2 | 5.8 | 5.2 | 17.0 | 9.9 | 8.4 | 13.1 | 11.1 |
| Peak Current Rating | A | 41.1 | 20.3 | 11.6 | 10.4 | 34.1 | 19.8 | 16.8 | 26.2 | 22.2 |
| O-PK SINUSOIDAL COMMUTATION DATA | | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 108.5 | 107.2 | 104.8 | 109.4 | 179.9 | 178.8 | 177.8 | 237.2 | 238.3 |
| | Nm | 12.25 | 12.12 | 11.84 | 12.36 | 20.32 | 20.20 | 20.09 | 26.80 | 26.93 |
| Peak Motor Torque | lbf-in | 216.9 | 214.5 | 209.5 | 218.8 | 359.8 | 357.6 | 355.7 | 474.4 | 476.7 |
| | Nm | 24.51 | 24.23 | 23.67 | 24.72 | 40.65 | 40.40 | 40.19 | 53.60 | 53.85 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 4.2 | 8.3 | 14.3 | 16.7 | 8.3 | 14.3 | 16.7 | 14.3 | 17.0 |
| | Nm/A | 0.47 | 0.9 | 1.6 | 1.9 | 0.9 | 1.6 | 1.9 | 1.6 | 1.9 |
| Continuous Current Rating | A | 29.1 | 14.4 | 8.2 | 7.3 | 24.1 | 14.0 | 11.9 | 18.5 | 15.7 |
| Peak Current Rating | A | 58.1 | 28.7 | 16.4 | 14.7 | 48.2 | 27.9 | 23.8 | 37.1 | 31.4 |
| MOTOR DATA | | | | | | | | | | |
| Voltage Constant (Ke) (+/- 10% @ 25°C) | Vrms/Krpm | 40.3 | 80.6 | 138.1 | 161.1 | 80.6 | 138.1 | 161.1 | 138.1 | 164.0 |
| | Vpk/Krpm | 57.0 | 113.9 | 195.3 | 227.9 | 113.9 | 195.3 | 227.9 | 195.3 | 232.0 |
| Pole Configuration | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Resistance (L-L)(+/- 5% @ 25°C) | Ohms | 0.21 | 0.87 | 2.68 | 3.34 | 0.339 | 1.01 | 1.39 | 0.61 | 0.858 |
| Inductance (L-L)(+/- 15%) | mH | 5.4 | 21.7 | 63.9 | 78.3 | 10.4 | 27.6 | 41.5 | 20.0 | 28.2 |
| Armature Inertia (+/- 5%) | lb-in-sec ² | 0.00927 | | | | 0.01537 | | | 0.02146 | |
| | Kg-cm ² | 10.47 | | | | 17.363 | | | 24.249 | |
| Brake Inertia | lb-in-sec ² | 0.008408 | | | | 0.008408 | | | 0.008408 | |
| | Kg-cm ² | 9.5 | | | | 9.5 | | | 9.5 | |
| Brake Current @ 24 VDC | A | 1.0 | | | | 1.0 | | | 1.0 | |
| Brake Holding Torque | lbf-in (Nm) | 354 (39.99) | | | | 354 (39.99) | | | 354 (39.99) | |
| Brake Engage/Disengage Time | ms | 25/73 | | | | 25/73 | | | 25/73 | |
| Mechanical Time Constant (tm) | ms | 1.23 | 1.26 | 1.32 | 1.21 | 0.81 | 0.82 | 0.83 | 0.70 | 0.69 |
| Electrical Time Constant (te) | ms | 25.59 | 25.02 | 23.88 | 23.43 | 30.58 | 27.30 | 29.89 | 32.60 | 32.90 |
| Friction Torque | lbf-in (Nm) | 2.07 (0.234) | | | | 2.65 (0.299) | | | 3.32 (0.375) | |
| Insulation Class | | 180 (H) | | | | | | | | |
| Insulation System Volt Rating | Vrms | 460 | | | | | | | | |
| Environmental Rating | | IP65S | | | | | | | | |

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by 0.707 and current by 1.414.
Gearmotor not available on 142 frame motor.

Test data derived using NEMA recommended aluminum heatsink 12" x 12" x 1/2" at 25°C ambient

SLM Series Motors/SLG Series Gearmotors

SLM180

| Motor Stator | | 138 | 158 | 168 | 238 | 258 | 268 | 358 | 368 |
|---|------------------------|--------------|-------|-------|--------------|-------|-------|---------------|---------|
| Bus Voltage | Vrms | 230 | 400 | 460 | 230 | 400 | 460 | 400 | 460 |
| Speed @ Bus Voltage | RPM | 2400 | | | | | | | |
| RMS SINUSOIDAL COMMUTATION DATA | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 254.2 | 249.9 | 261.9 | 424.8 | 423.0 | 427.5 | 595.6 | 611.6 |
| | Nm | 28.72 | 28.23 | 29.59 | 47.99 | 47.79 | 48.30 | 67.29 | 69.10 |
| Peak Motor Torque | lbf-in | 508.4 | 499.8 | 523.8 | 849.6 | 846.0 | 855.1 | 1,191.2 | 1223.2 |
| | Nm | 57.44 | 56.47 | 59.18 | 95.99 | 95.59 | 96.61 | 134.58 | 138.19 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 12.6 | 21.8 | 25.2 | 12.6 | 21.8 | 25.2 | 21.4 | 25.2 |
| | Nm/A | 1.4 | 2.5 | 2.8 | 1.4 | 2.5 | 2.8 | 2.4 | 2.8 |
| Continuous Current Rating (IG) | A | 22.6 | 12.8 | 11.6 | 37.7 | 21.7 | 19.0 | 31.1 | 27.2 |
| Peak Current Rating | A | 45.2 | 25.6 | 23.3 | 75.5 | 43.4 | 38.0 | 62.2 | 54.3 |
| O-PK SINUSOIDAL COMMUTATION DATA | | | | | | | | | |
| Continuous Motor Torque | lbf-in | 254.2 | 249.9 | 261.9 | 424.8 | 423.0 | 427.5 | 595.6 | 611.6 |
| | Nm | 28.72 | 28.23 | 29.59 | 47.99 | 47.79 | 48.30 | 67.29 | 69.10 |
| Peak Motor Torque | lbf-in | 508.4 | 499.8 | 523.8 | 849.6 | 846.0 | 855.1 | 1,191.2 | 1,223.2 |
| | Nm | 57.44 | 56.47 | 59.18 | 95.99 | 95.59 | 96.61 | 134.58 | 138.19 |
| Torque Constant (Kt) (+/- 10% @ 25°C) | lbf-in/A | 8.9 | 15.4 | 17.8 | 8.9 | 15.4 | 17.8 | 15.1 | 17.8 |
| | Nm/A | 1.0 | 1.7 | 2.0 | 1.0 | 1.7 | 2.0 | 1.7 | 2.0 |
| Continuous Current Rating | A | 31.9 | 18.1 | 16.4 | 53.4 | 30.7 | 26.8 | 44.0 | 38.4 |
| Peak Current Rating | A | 63.9 | 36.2 | 32.9 | 106.7 | 61.3 | 53.7 | 88.0 | 76.8 |
| MOTOR STATOR DATA | | | | | | | | | |
| Voltage Constant (Ke) (+/- 10% @ 25°C) | Vrms/Krpm | 85.9 | 148.9 | 171.8 | 85.9 | 148.9 | 171.8 | 146.1 | 171.8 |
| | Vpk/Krpm | 121.5 | 210.6 | 243.0 | 121.5 | 210.6 | 243.0 | 206.6 | 243.0 |
| Pole Configuration | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Resistance (L-L)(+/- 5% @ 25°C) | Ohms | 0.325 | 1.010 | 1.224 | 0.134 | 0.407 | 0.530 | 0.233 | 0.306 |
| Inductance (L-L)(+/- 15%) | mH | 8.3 | 24.8 | 29.4 | 3.9 | 11.8 | 15.8 | 7.5 | 10.3 |
| Armature Inertia (+/- 5%) | lb-in-sec ² | 0.05051 | | | 0.08599 | | | 0.12147 | |
| | Kg-cm ² | 57.071 | | | 97.159 | | | 137.246 | |
| Brake Inertia | lb-in-sec ² | 0.02815 | | | | | | | |
| | Kg-cm ² | 31.8 | | | | | | | |
| Brake Current @ 24 VDC | A | 1.45 | | | | | | | |
| Brake Holding Torque | lbf-in (Nm) | 708 (80) | | | | | | | |
| Brake Engage/Disengage Time | ms | 53/97 | | | | | | | |
| Mechanical Time Constant (tm) | ms | 2.25 | 2.33 | 2.12 | 1.58 | 1.59 | 1.56 | 1.34 | 1.27 |
| Electrical Time Constant (te) | ms | 25.44 | 24.58 | 24.03 | 29.38 | 29.14 | 29.76 | 32.07 | 33.81 |
| Friction Torque | lbf-in (Nm) | 5.07 (0.573) | | | 7.80 (0.881) | | | 11.52 (1.302) | |
| Insulation Class | | 180 (H) | | | | | | | |
| Insulation System Volt Rating | Vrms | 460 | | | | | | | |
| Thermal Switch, Case Temp | deg C | 100 | | | | | | | |
| Environmental Rating | | IP65S | | | | | | | |

For amplifiers using peak sinusoidal ratings, multiply RMS sinusoidal Kt by 0.707 and current by 1.414.
Gearmotor not available on 180 frame.

Test data derived using NEMA recommended aluminum heatsink 16" x 16" x 1" at 25°C ambient

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.

SLM Radial Load

| RPM | 50 | 100 | 250 | 500 | 1000 | 3000 |
|-------------------|----------------|----------------|----------------|----------------|---------------|---------------|
| SLM060 lbf (N) | 250 (1112) | 198 (881) | 148 (658) | 116 (516) | 92 (409) | 64 (285) |
| SLM075 lbf (N) | 278 (1237) | 220 (979) | 162 (721) | 129 (574) | 102 (454) | 71 (316) |
| SLM090 lbf (N) | 427 (1899) | 340 (1512) | 250 (1112) | 198 (881) | 158 (703) | 109 (485) |
| SLM115 lbf (N) | 579 (2576) | 460 (2046) | 339 (1508) | 269 (1197) | 214 (952) | 148 (658) |
| SLM142 lbf (N) | 1367 (6081) | 1085 (4826) | 800 (3559) | 635 (2825) | 504 (2242) | 349 (1552) |
| SLM180 lbf (N) | 2237 (9951) | 1776 (7900) | 1308 (5818) | 1038 (4617) | 824 (3665) | 605 (2691) |

SLG Radial Load

| RPM | 50 | 100 | 250 | 500 | 1000 | 3000 |
|-------------------|---------------|---------------|---------------|---------------|---------------|--------------|
| SLG060 lbf (N) | 189 (841) | 150 (667) | 110 (489) | 88 (391) | 70 (311) | 48 (214) |
| SLG075 lbf (N) | 343 (1526) | 272 (1210) | 200 (890) | 159 (707) | 126 (560) | 88 (391) |
| SLG090 lbf (N) | 350 (1557) | 278 (1237) | 205 (912) | 163 (725) | 129 (574) | 89 (396) |
| SLG115 lbf (N) | 858 (3817) | 681 (3029) | 502 (2233) | 398 (1770) | 316 (1406) | 218 (970) |

Side load ratings shown above are for 10,000 hour bearing life at 25 mm from motor face at given rpm.

Motor and Gearmotor Weight

| | SLM/G060 | | | SLM/G075 | | SLM/G090 | | | SLM/G115 | | | SLM142 | SLM180 |
|------------------|-----------|-----------|------------|-----------|------------|------------|------------|------------|-------------|-------------|-------------|--|------------|
| | Motor | 1 Stage | 2 Stage | Motor | 1 Stage | Motor | 1 Stage | 2 Stage | Motor | 1 Stage | 2 Stage | (gear stages not available on SLM142 and SLM180) | |
| 1 Stack lbs (kg) | 3.0 (1.4) | 7.5 (3.4) | 9.3 (2.4) | 4.2 (1.9) | 6.6 (3.0) | 5.4 (2.4) | 12.8 (5.8) | 14.8 (6.7) | 14.2 (6.4) | 28 (12.7) | 34 (15.4) | 31 (14.0) | 60 (27.2) |
| 2 Stack lbs (kg) | 4.1 (1.9) | 8.6 (3.9) | 10.4 (4.7) | 6.0 (2.7) | 8.4 (3.8) | 7.8 (3.5) | 15.2 (6.9) | 17.2 (7.8) | 22.0 (9.9) | 35.8 (16.2) | 41.8 (18.9) | 39 (17.7) | 82 (37.2) |
| 3 Stack lbs (kg) | 5.2 (2.4) | 9.7 (4.4) | 11.5 (5.2) | 7.8 (3.5) | 10.2 (4.6) | 10.2 (4.6) | 17.6 (7.9) | 19.6 (8.9) | 29.8 (13.5) | 43.6 (19.8) | 49.6 (22.5) | 47 (21.3) | 104 (47.2) |
| Brake | 1.8 (0.8) | | | 0.8 (0.4) | | 2.7 (1.2) | | | 4.1 (1.9) | | | 6.0 (2.7) | |

Output Torque Ratings—Mechanical

| Model | Ratio | Maximum Allowable Output Torque Set by User- lbf-in (Nm) | Output Torque @ Speed for 10,000 Hour Life – lbf-in (Nm) | | |
|--------|-------|--|--|--------------|--------------|
| | | | 1000 RPM | 3000 RPM | 5000 RPM |
| 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) |
| | | | 1000 RPM | 2500 RPM | 4000 RPM |
| SLG075 | 4:1 | 1618 (182.3) | 384 (43.4) | 292 (32.9) | 254 (23.7) |
| | 5:1 | 1446 (163.4) | 395 (44.6) | 300 (33.9) | 260 (29.4) |
| | 10:1 | 700 (79.1) | 449 (50.7) | 341 (38.5) | 296 (33.4) |
| | | | 1000 RPM | 2500 RPM | 4000 RPM |
| SLG090 | 4:1 | 2078 (234.8) | 698 (78.9) | 530 (59.9) | 460 (51.9) |
| | 5:1 | 1798 (203.1) | 896 (101.2) | 680 (76.8) | 591 (66.8) |
| | 10:1 | 1126 (127.2) | 1043 (117.8) | 792 (89.5) | 688 (77.7) |
| | 16:1 | 2078 (234.8) | 1057 (119.4) | 803 (90.7) | 698 (78.9) |
| | 20:1 | 2078 (234.8) | 1131 (127.8) | 859 (97.1) | 746 (84.3) |
| | 25:1 | 1798 (203.1) | 1452 (164.1) | 1103 (124.6) | 958 (108.2) |
| | 40:1 | 2078 (234.8) | 1392 (157.3) | 1057 (119.4) | 918 (103.7) |
| | 50:1 | 1798 (203.1) | 1787 (201.9) | 1358 (153.4) | 1179 (133.2) |
| | 100:1 | 1126 (127.2) | 1100 (124.3) | 1100 (124.3) | 1100 (124.3) |
| | | | 1000 RPM | 2000 RPM | 3000 RPM |
| 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) |

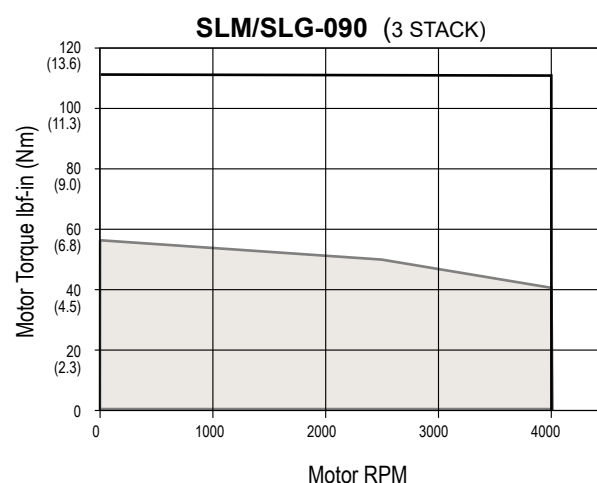
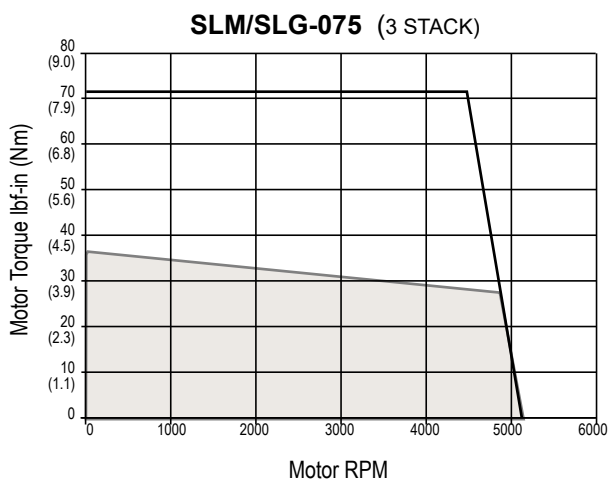
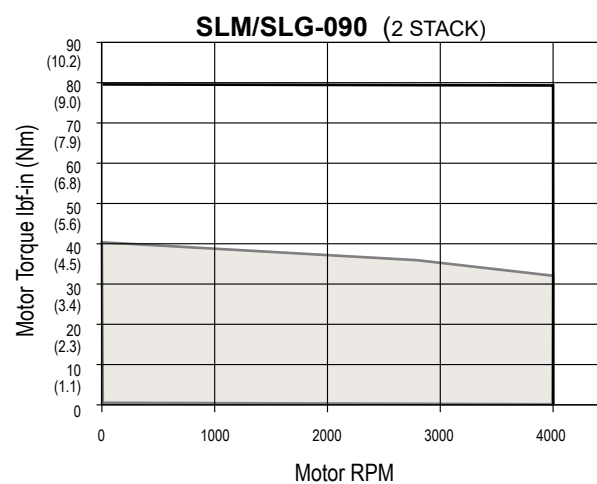
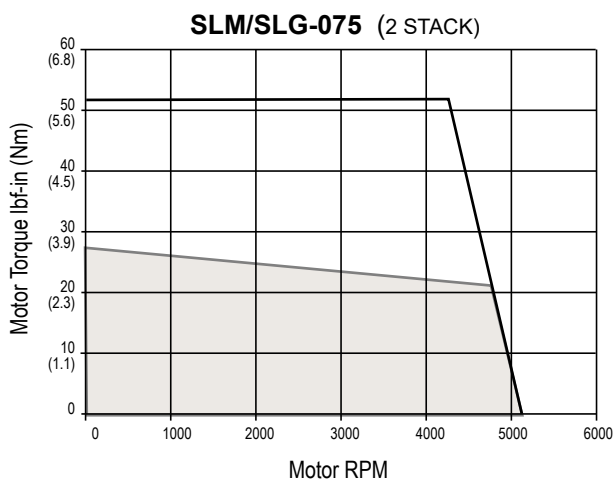
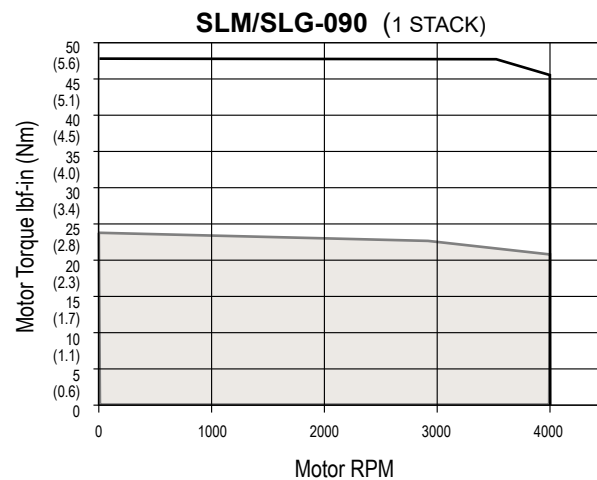
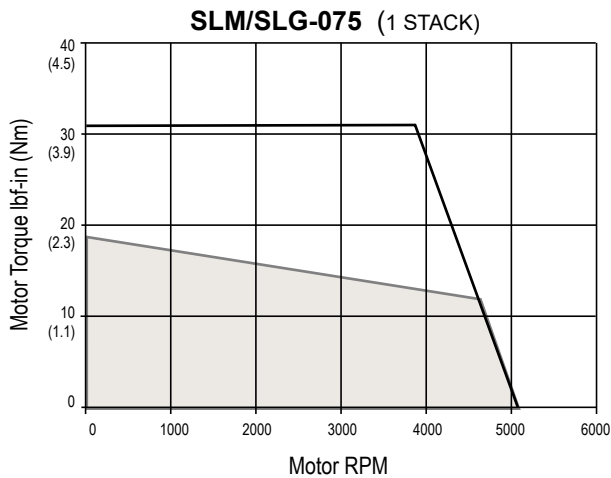
1 Stage 2 Stage

SLM Series Motors/SLG Series Gearmotors

Speed and Torque Curves

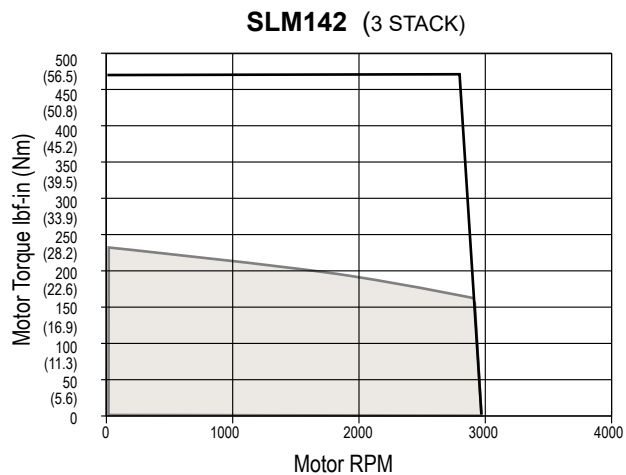
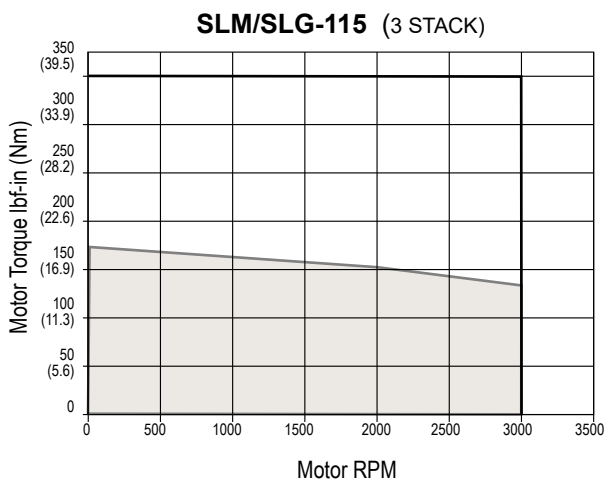
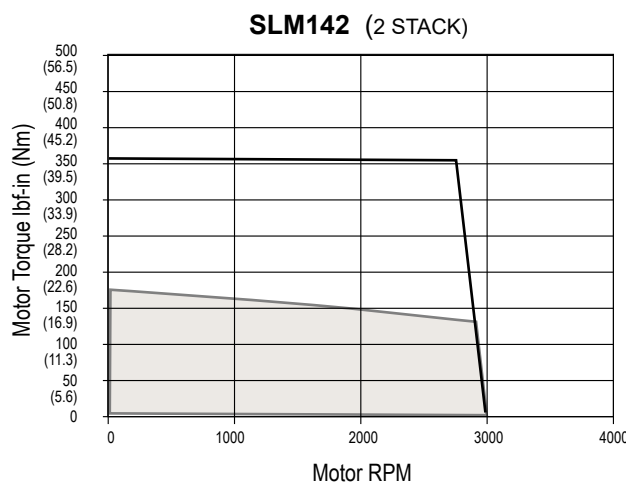
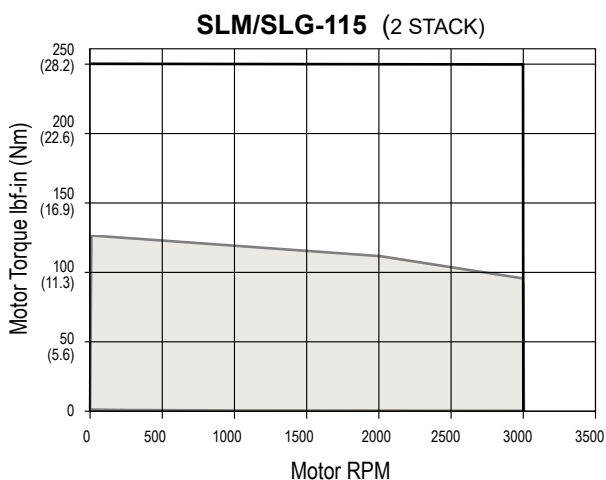
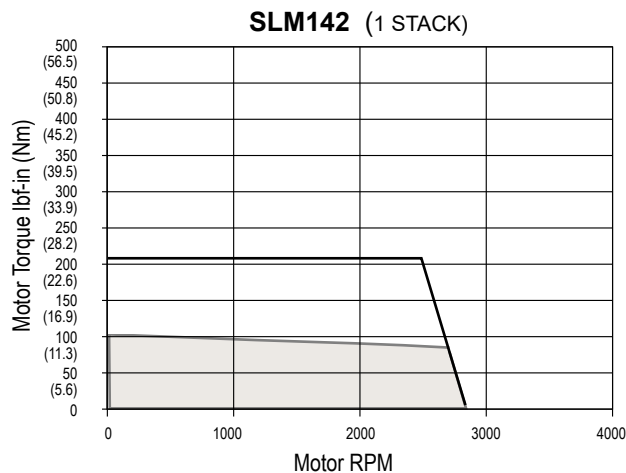
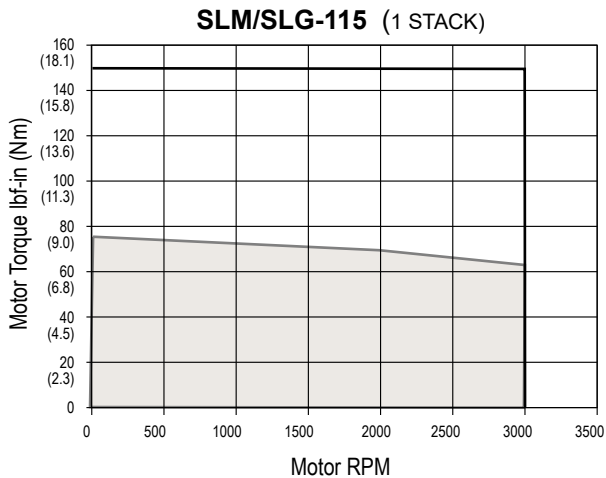
These speed vs. torque curves represent approximate continuous torque ratings at the indicated rpms. Different types of servo amplifiers offer varying motor torque.

— Peak Torque
 Continuous Torque





Test data derived using NEMA recommended aluminum heatsink 10" x 10" x 3/8" on SLM/SLG075 and 10" x 10" x 3/8" on SLM/SLG090 at 25° C ambient. For gearmotors, divide speed by gear ratio; multiply torque by gear ratio and efficiency. Efficiencies: 1 Stage = 0.91, 2 Stage = 0.86

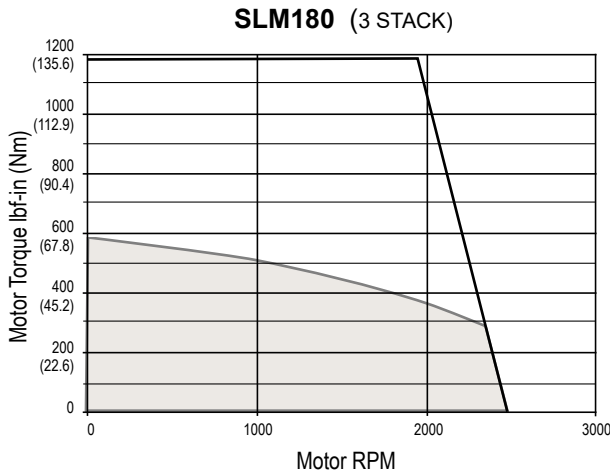
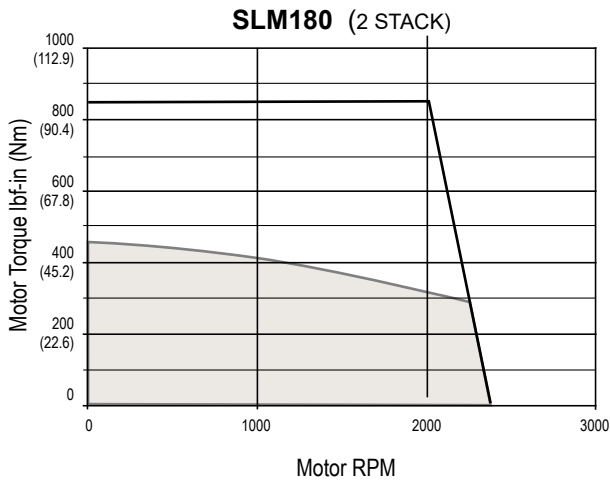
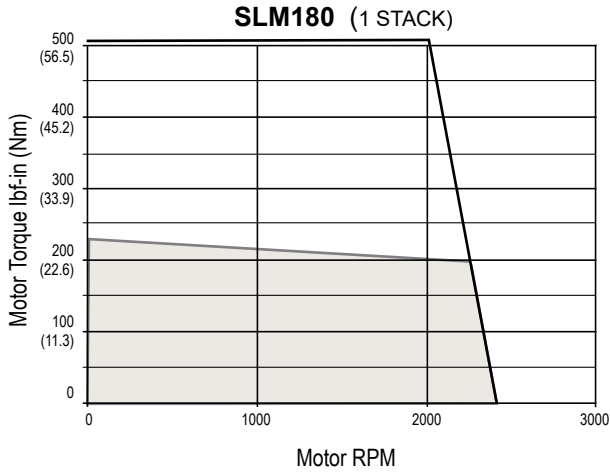
SLM Series Motors/SLG Series Gearmotors



Test data derived using NEMA recommended aluminum heatsink 12" x 12" x 1/2" on SLM/SLG115 and 12" x 12" x 1/2" on SLM142 at 25°C ambient. For gearmotors, divide speed by gear ratio; multiply torque by gear ratio and efficiency. Efficiencies: 1 Stage = 0.91, 2 Stage = 0.86

 Peak Torque
 Continuous Torque

SLM Series Motors/SLG Series Gearmotors



Test data derived using NEMA recommended aluminum heatsink 16" x 16" x 1" on SLM180 at 25°C ambient

Options

Motor Speed

All Exlar T-LAM motors and actuators carry a standard motor speed designator (see chart). This is representative of the standard base speed of the motor for the selected bus voltage.

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

| Designator | Base Speed | Motor Series |
|------------|------------|----------------|
| -50 | 5000 rpm | SLM/SLG060 |
| -40 | 4000 rpm | SLM/SLG075 |
| -40 | 4000 rpm | SLM/SLG090 |
| -30 | 3000 rpm | SLM/SLG115 |
| -24 | 2400 rpm | SLM142, SLM180 |

Motor Stators

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

8 Pole, Class 180 H

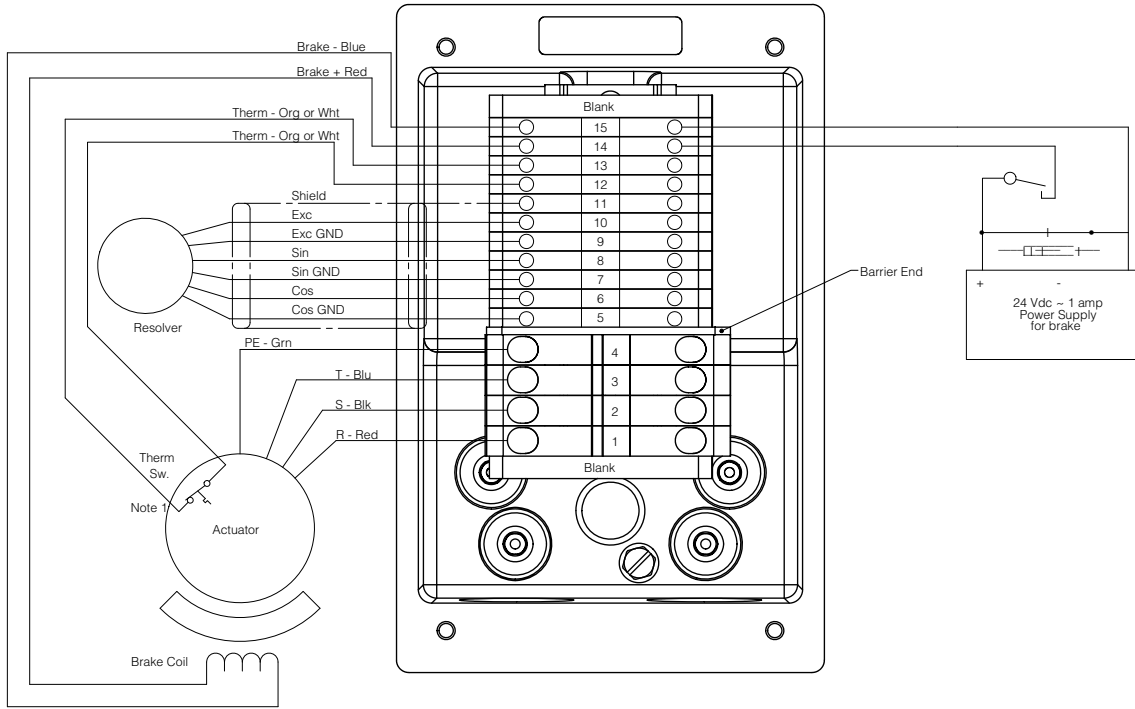
| 1 Stack | | 2 Stack | | 3 Stack | |
|---------|----------|---------|----------|---------|----------|
| 118 | 115 Vrms | 218 | 115 Vrms | 318 | 115 Vrms |
| 138 | 230 Vrms | 238 | 230 Vrms | 338 | 230 Vrms |
| 158 | 400 Vrms | 258 | 400 Vrms | 358 | 400 Vrms |
| 168 | 460 Vrms | 268 | 460 Vrms | 368 | 460 Vrms |

Options



SLM Series Motors/SLG Series Gearmotors

Terminal Box Wiring Diagram

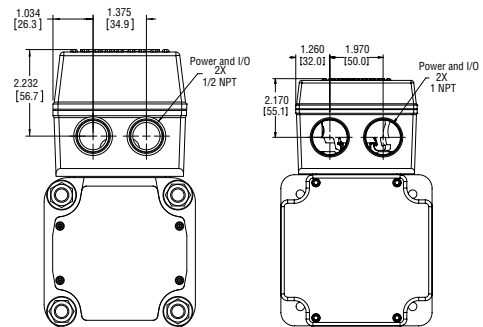


Note 1: Thermal switch normally closed; opens when stator temp exceeds 130 deg. C.

| Low Volt Terminal Block- Rockwell 1492-L3 | | Low Volt Terminal Block- Rockwell 1492-L6 | |
|--|------------|--|------------|
| Voltage Rating | 600 VAC/DC | Voltage Rating | 600 VAC/DC |
| Current Rating | 27 Amps | Current Rating | 50 Amps |
| Wire Gauge Range | 26-12 AWG | Wire Gauge Range | 20-8 AWG |

Terminal Box Dimensions

| |
|---------------------------------|
| Connections |
| T = Terminal box with NPT ports |
| Options |
| NI = Non-Incendive |

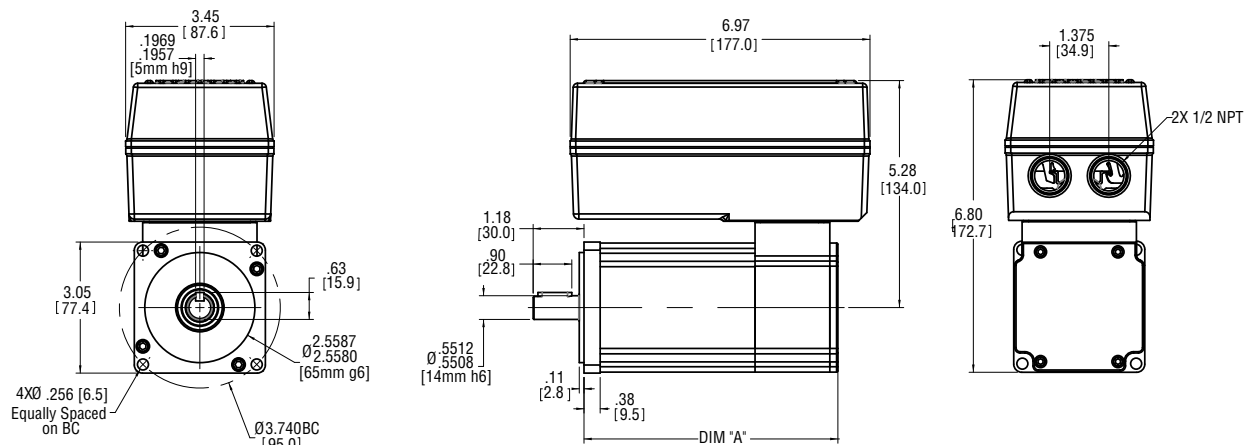


SLM/G090, SLM/G115*
*Applications with >20A rms will require the larger terminal box.

SLM142, SLM180

Dimensions

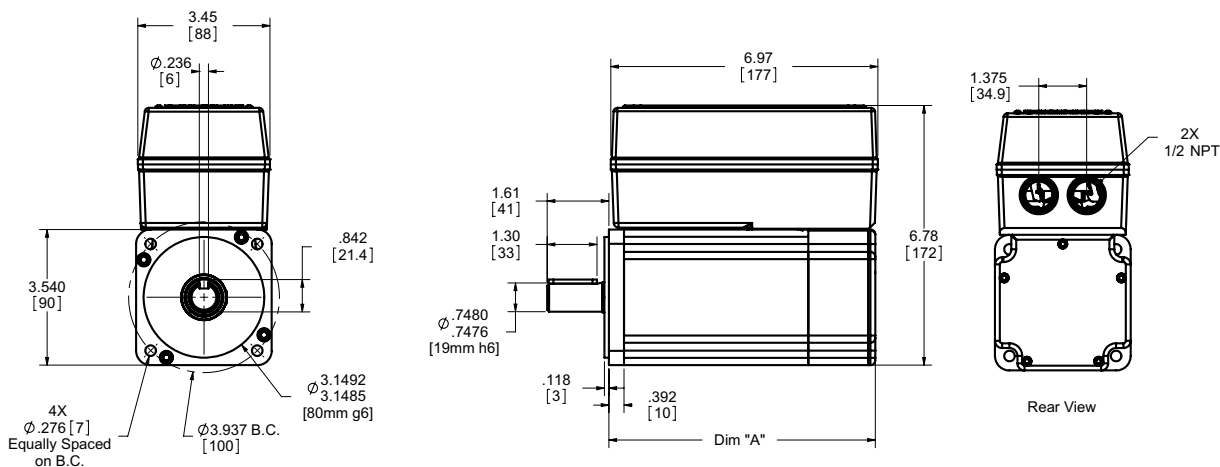
SLM075 Class 1 Division 2 Option



| SLM075 Dim. in (mm) | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|---------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| A | NA | 5.90 (149.9) | 6.90 (175.3) | 6.18 (157.0) | 7.18 (182.4) | 8.18 (207.8) |

Face plate edge is not intended for alignment of shaft (use pilot)
 *Electronics box extends past motor mount face.

SLM090 Class 1 Division 2 Option



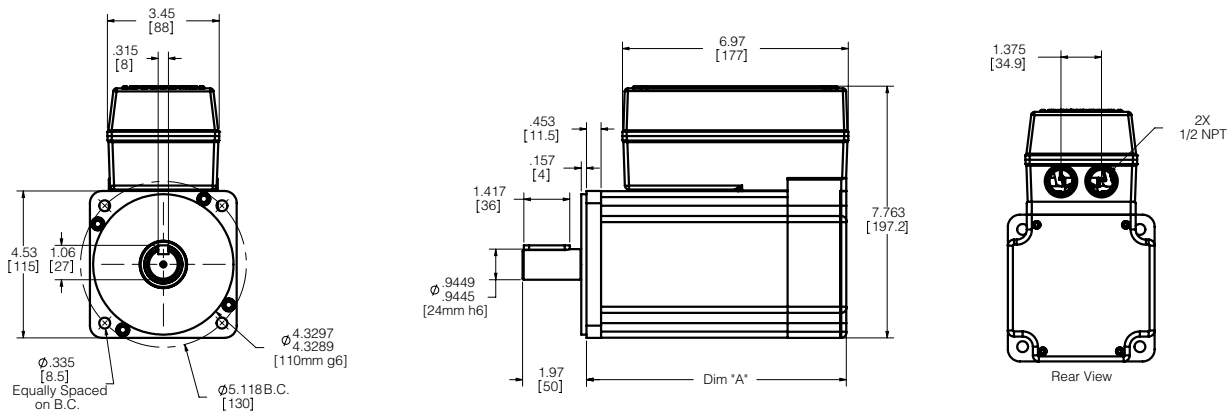
| SLM090 Dim. in (mm) | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|---------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| A | NA | 5.65 (144) | 6.65 (169) | 5.96 (151) | 6.96 (177) | 7.96 (202) |

Face plate edge is not intended for alignment of shaft (use pilot)
 Applications with >20A rms will require the larger terminal box.

Drawings subject to change. Consult Exlar for certified drawings.

SLM Series Motors/SLG Series Gearmotors

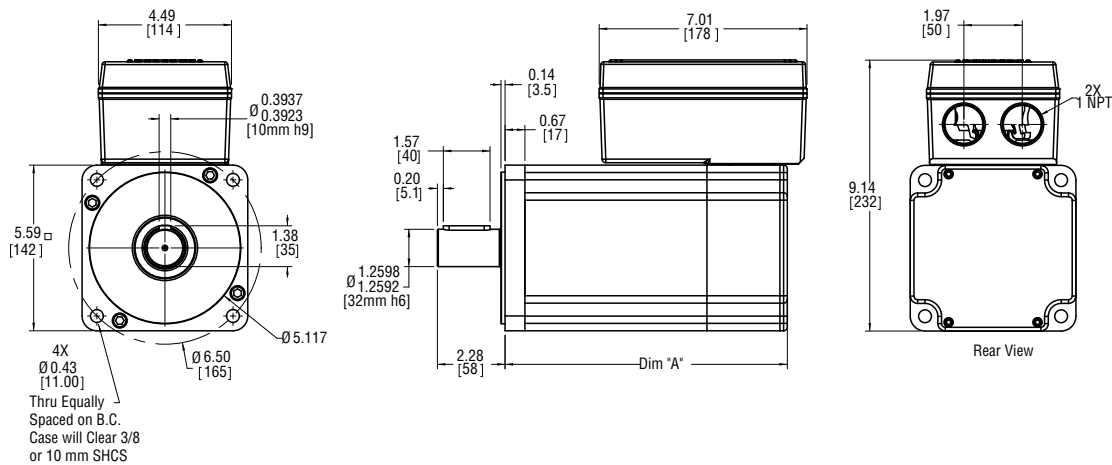
SLM115 Class 1 Division 2 Option



| SLM115 Dim in (mm) | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|--------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| A | 6.02 (153) | 8.02 (203.7) | 10.02 (254.5) | 7.75 (196.9) | 9.75 (247.7) | 11.75 (298.5) |

Face plate edge is not intended for alignment of shaft (use pilot)
Applications with >20A rms will require the larger terminal box.

SLM142 Class I Division 2 Option

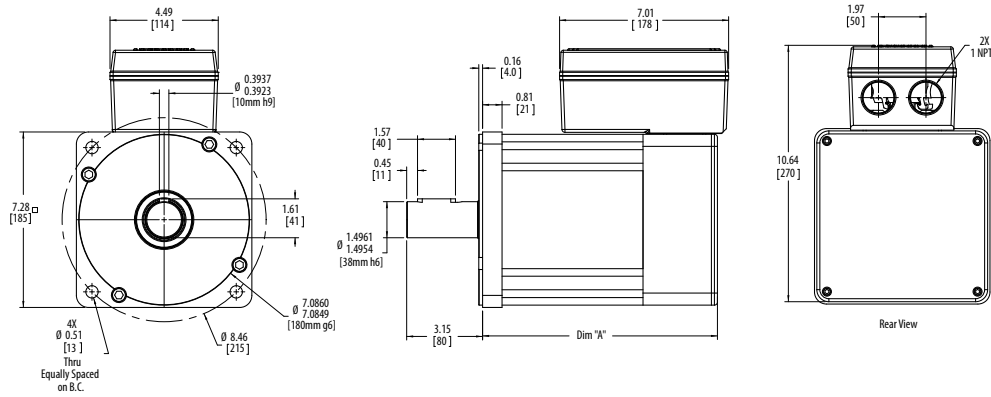


| SLM142 | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|---------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| Dim A in (mm) | 7.87 (199.8) | 9.62 (244.2) | 11.37 (288.7) | 9.53 (241.9) | 11.28 (286.4) | 13.03 (330.8) |

Face plate edge is not intended for alignment of shaft (use pilot)

Drawings subject to change. Consult Exlar for certified drawings.

SLM180 Class 1 Division 2 Option

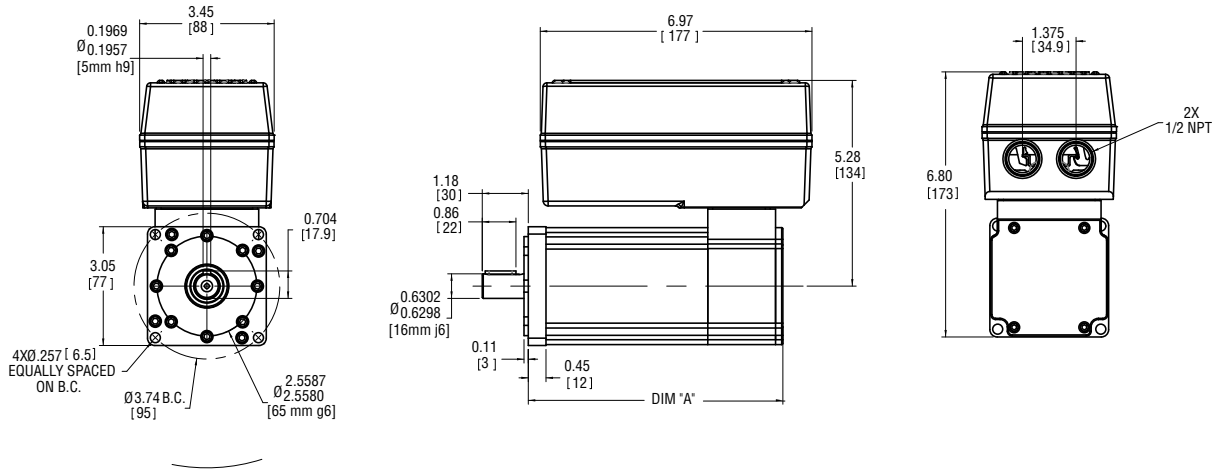


| SLM180 | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| Dim A in (mm) | 9.74 (247) | 12.24 (311) | 14.74 (374) | 11.64 (296) | 14.14 (359) | 16.64 (423) |

Face plate edge is not intended for alignment of shaft (use pilot)

SLM Series Motors/SLG Series Gearmotors

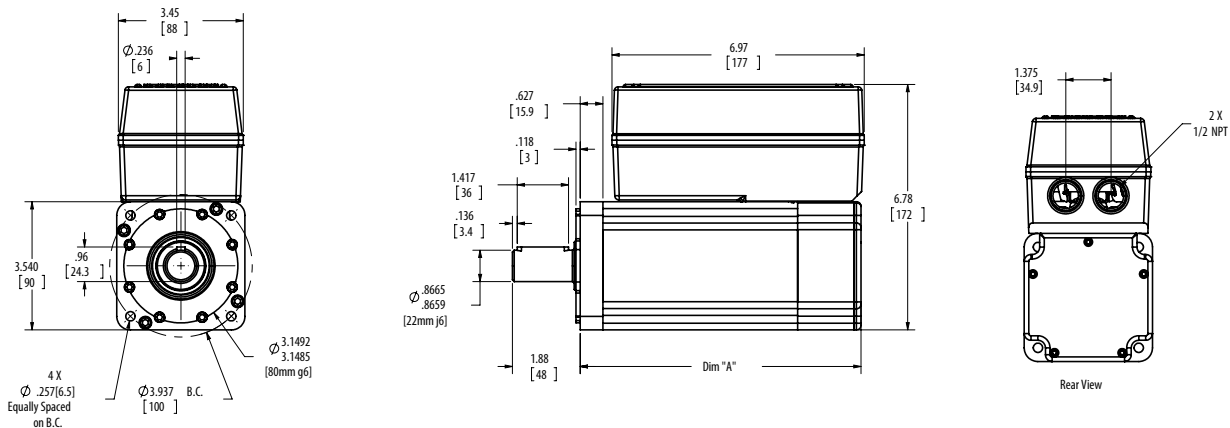
SLG075 Class 1 Division 2 Option



| SLG075 | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| Dim A in (mm) | 6.53 (166) | 7.53 (192) | 8.53 (217) | 7.81 (198) | 8.81 (224) | 9.81 (249) |

Face plate edge is not intended for alignment of shaft (use pilot)

SLG090 Class 1 Division 2 Option



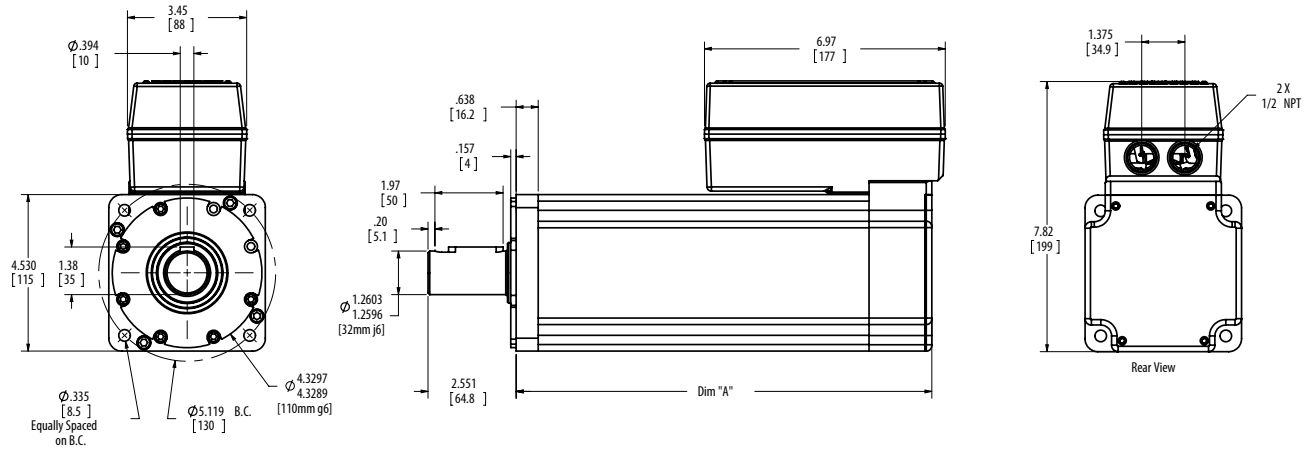
| SLG090 Dim. in (mm) | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|--------------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| A 1 Stage Gearhead | 7.76 (197) | 8.76 (223) | 9.96 (248) | 9.07 (230) | 10.07 (256) | 11.07 (281) |
| A 2 Stage Gearhead | 9.03 (229) | 10.03 (255) | 11.03 (280) | 10.34 (263) | 11.34 (288) | 12.34 (313) |

Face plate edge is not intended for alignment of shaft (use pilot)

Applications with >20A rms will require the larger terminal box.

Drawings subject to change. Consult Exlar for certified drawings.

SLG115 Class I Division 2 Option

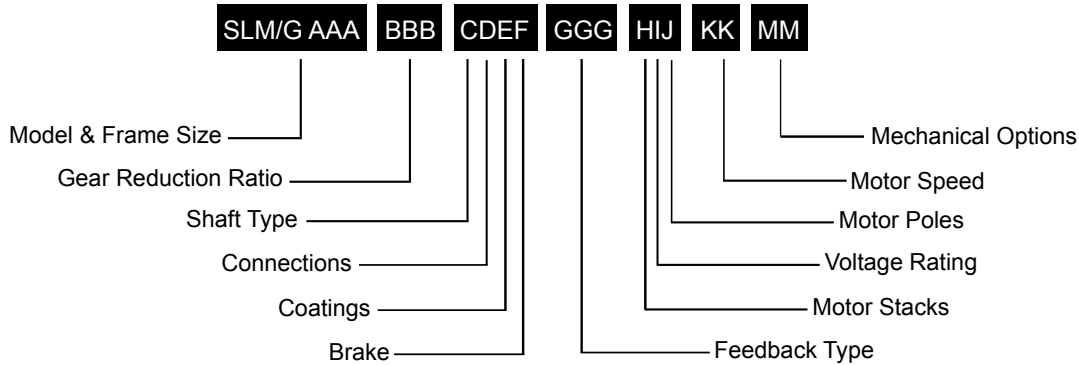


| SLG115 Dim. in (mm) | 1 Stack Stator | 2 Stack Stator | 3 Stack Stator | 1 Stack Stator with Brake | 2 Stack Stator with Brake | 3 Stack Stator with Brake |
|-----------------------|----------------|----------------|----------------|---------------------------|---------------------------|---------------------------|
| A 1 Stage Gearhead | 10.03 (254.8) | 12.03 (305.6) | 14.03 (356.4) | 11.58 (294.2) | 13.58 (345) | 15.58 (395.8) |
| A 2 Stage Gearhead | 11.64 (295.7) | 13.64 (346.5) | 15.64 (397.3) | 13.19 (335.1) | 15.19 (385.9) | 17.19 (436.7) |

Face plate edge is not intended for alignment of shaft (use pilot)
Applications with >20A rms will require the larger terminal box.

SLM Series Motors/SLG Series Gearmotors

Sample Product Number: SLG090-005-RTEB-PC7-2C8-30-SDXL
(Class 1, Division 2)



SLM/G = Model Series

SLG = SLG Series Servo Gearmotor
SLM = SLM Series Servo Motor
(no gear reduction)

AAA = Motor Frame Size

075 = 75 mm
090 = 90 mm
115 = 115 mm
142 = 142 mm (SLM only)
180 = 180 mm (SLM only)

BBB = Gear Reduction Ratio

(leave blank for SLM Motor)
Single reduction ratio
004 = 4:1 Single Reduction
005 = 5:1 Single Reduction
010 = 10:1 Single Reduction
Double reduction ratio (N/A on 075 mm)
016 = 16:1 Double Reduction
020 = 20:1 Double Reduction
025 = 25:1 Double Reduction
040 = 40:1 Double Reduction
050 = 50:1 Double Reduction
100 = 100:1 Double Reduction

C = Shaft Type

K = Keyed
R = Smooth/round

D = Connections

T = Terminal box with NPT ports

E = Coating Options¹

G = Exlar standard

F = Brake Options

B = Brake
S = Standard no brake

GGG = Feedback Type

See page 89 for more information

H = Motor Stacks

1 = 1 stack magnets
2 = 2 stack magnets²
3 = 3 stack magnets²

I = Voltage Rating

A = 24 Volt DC
B = 48 Volt DC
C = 120 Volt DC
1 = 115 Volt RMS
3 = 230 Volt RMS
5 = 400 Volt RMS
6 = 460 Volt RMS

J = Motor Poles

8 = 8 motor poles

KK = Motor Speed

24 = 2400 rpm, SLM142, SLM180
30 = 3000 rpm, SLM/G115
40 = 4000 rpm, SLM/G090
50 = 5000 rpm, SLM/G060

MM = Mechanical Options

NI = Non-incendive construction required for
Class 1, Division 2

NOTES:

1. These housing may indicate the need for special material main rods or mounting.
2. 115 Vrms is not available on a 2 or 3 stack SLM/G, or a 3 stack SLM/G090.



For options or specials not listed above or for extended temperature operation, please contact Exlar