

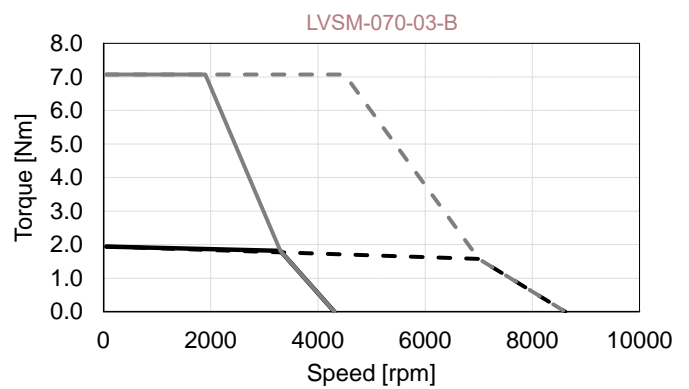
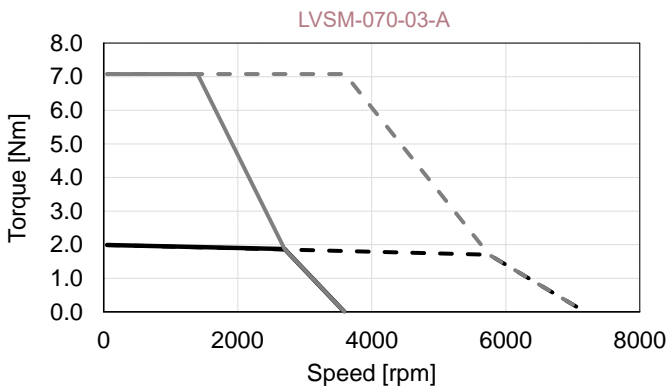
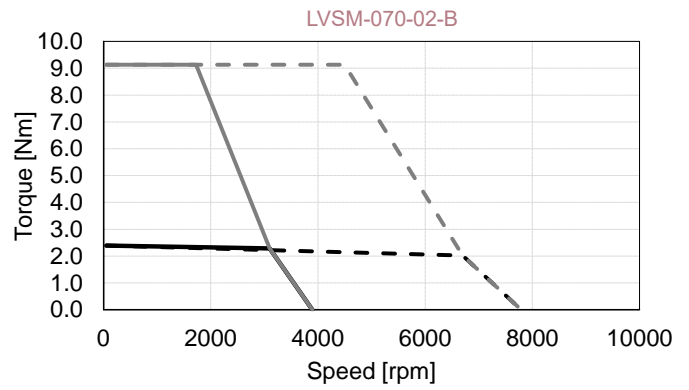
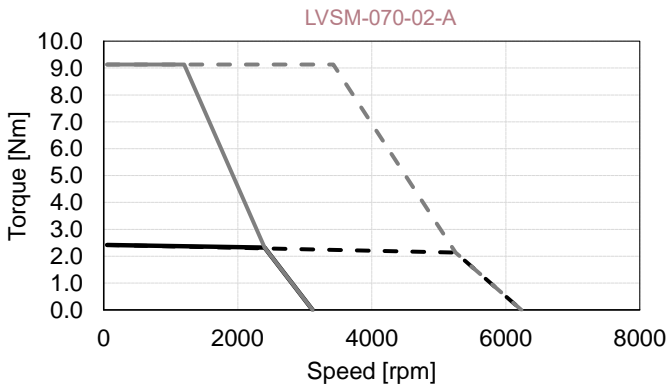
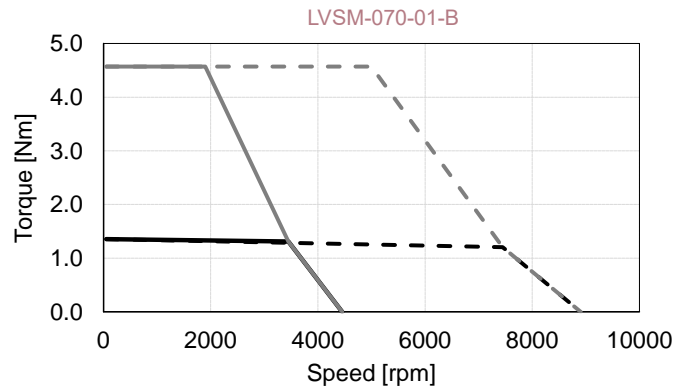
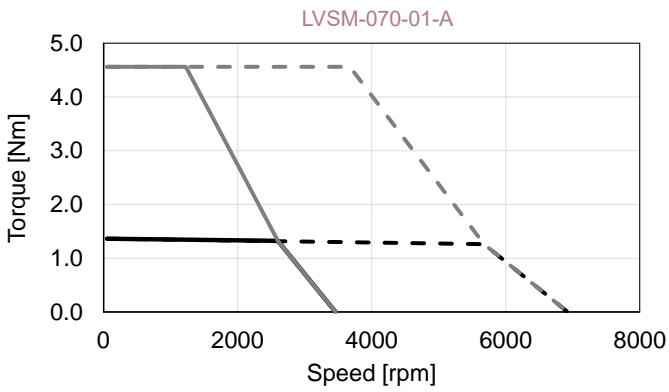
LVSM-070 Technical Information

| Motor Parameters | | | LVSM-070-01 | | | | LVSM-070-02 | | | | LVSM-070-03 | | | | |
|------------------|-----------------------------------|----------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Winding Type | Symbols | Units | A | | B | | A | | B | | A | | B | | |
| PERFORMANCE | DC Bus Voltage | V _{dc} | 24 | 48 | 24 | 48 | 24 | 48 | 24 | 48 | 24 | 48 | 24 | 48 | |
| | Rated Power | P _r | 0.36 | 0.75 | 0.47 | 0.94 | 0.58 | 1.18 | 0.74 | 1.42 | 0.65 | 1.36 | 0.78 | 1.52 | |
| | Stall Torque | T _s | 1.36 | 1.36 | 1.20 | 1.20 | 2.42 | 2.42 | 2.39 | 2.39 | 3.25 | 3.25 | 3.27 | 3.27 | |
| | Rated Torque | T _r | 1.32 | 1.26 | 1.31 | 1.21 | 2.32 | 2.14 | 2.28 | 2.02 | 3.10 | 2.94 | 3.13 | 2.84 | |
| | Peak Torque | T _p | 4.56 | 4.56 | 4.57 | 4.57 | 9.13 | 9.13 | 9.13 | 9.13 | 13.7 | 13.7 | 13.7 | 13.7 | |
| | Rated Speed | N _r | rpm | 2600 | 5675 | 3450 | 7450 | 2400 | 5250 | 3100 | 6700 | 2000 | 4400 | 2375 | 5100 |
| | No-Load Speed ⁽²⁾ | N _{no-load} | rpm | 3463 | 6926 | 4453 | 8905 | 3117 | 6234 | 3896 | 7792 | 2597 | 5195 | 2970 | 5941 |
| | Torque Constant | K _t | Nm/ A _{rms} | 0.08 | 0.08 | 0.06 | 0.06 | 0.09 | 0.09 | 0.07 | 0.07 | 0.11 | 0.11 | 0.09 | 0.09 |
| | Voltage Constant ⁽²⁾ | K _v | V _{rms} /krpm | 4.90 | 4.90 | 3.81 | 3.81 | 5.44 | 5.44 | 4.36 | 4.36 | 6.53 | 6.53 | 5.71 | 5.71 |
| ELECTRICAL | Stall Current | I _s | 16.9 | 16.9 | 19.1 | 19.1 | 26.9 | 26.9 | 33.1 | 33.1 | 30.1 | 30.1 | 34.6 | 34.6 | |
| | Rated Current | I _r | 16.6 | 16.0 | 21.2 | 19.8 | 26.1 | 24.4 | 32.1 | 28.8 | 29.2 | 27.8 | 33.6 | 30.7 | |
| | Peak Current | I _p | 57.9 | 57.9 | 74.3 | 74.3 | 104.0 | 104.0 | 130.0 | 130.0 | 130.0 | 130.0 | 149.0 | 149.0 | |
| | Line Resistance ⁽²⁾ | R _{LL} | mOhm | 108 (±20%) | 108 (±20%) | 74 (±20%) | 74 (±20%) | 60 (±20%) | 60 (±20%) | 40 (±20%) | 40 (±20%) | 56 (±20%) | 56 (±20%) | 41 (±20%) | 41 (±20%) |
| | Line Inductance ⁽²⁾ | L _{LL} | mH | 0.17 (±30%) | 0.17 (±30%) | 0.10 (±30%) | 0.10 (±30%) | 0.10 (±30%) | 0.10 (±30%) | 0.07 (±30%) | 0.07 (±30%) | 0.10 (±30%) | 0.10 (±30%) | 0.07 (±30%) | 0.07 (±30%) |
| | Inertia (without brake) | J | kg.cm ² | 0.035 | 0.035 | 0.035 | 0.035 | 0.69 | 0.69 | 0.69 | 0.69 | 0.93 | 0.93 | 0.93 | 0.93 |
| | Weight (without brake) | W | kg | 1.91 | 1.91 | 1.91 | 1.91 | 2.71 | 2.71 | 2.71 | 2.71 | 3.47 | 3.47 | 3.48 | 3.48 |
| | Thermal Resistance ⁽²⁾ | K _{therm} | C°/W | 2.09 | 1.77 | 1.80 | 1.47 | 1.48 | 1.26 | 1.39 | 1.12 | 1.27 | 1.13 | 1.27 | 1.07 |
| | Mech. Time Constant | K _{mech} | ms | 0.07 | 0.07 | 0.08 | 0.08 | 0.63 | 0.63 | 0.66 | 0.66 | 0.55 | 0.55 | 0.52 | 0.52 |
| | Motor Constant | K _m | Nm/VW | 0.20 | 0.21 | 0.17 | 0.18 | 0.31 | 0.33 | 0.30 | 0.34 | 0.38 | 0.40 | 0.39 | 0.43 |
| FEEDBACK | Pole Number | 2n | 10 | | | | | | | | | | | | |
| | Input Voltage | V _{rms} | 5 | | | | | | | | | | | | |
| | Frequency | kHz | 4.5 | | | | | | | | | | | | |
| | Input Current | mA | 58 | | | | | | | | | | | | |
| | Transformation Ratio | | 0.5±10% | | | | | | | | | | | | |
| | Null Voltage | mV _{max} | 30 | | | | | | | | | | | | |
| | Phase Shift | Deg | -15°±2° | | | | | | | | | | | | |

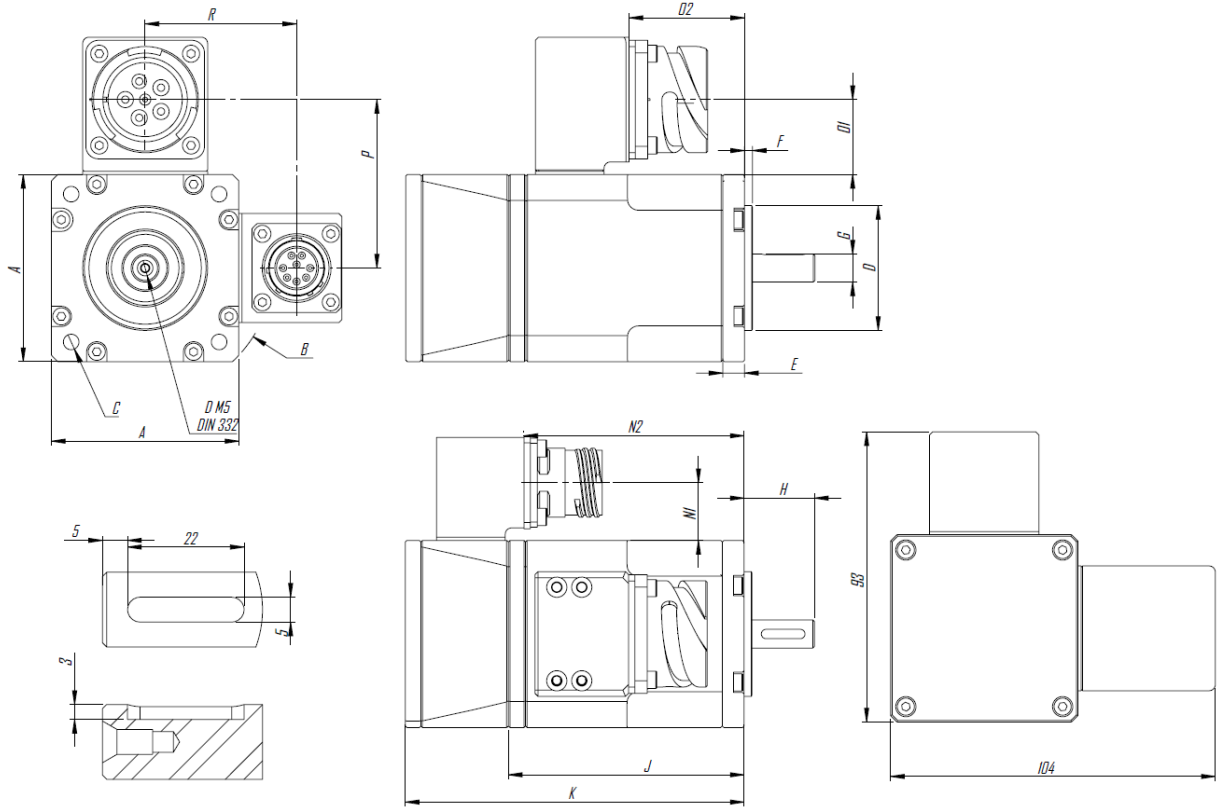
1. All performance and electrical specifications are obtained at 25°C ambient and may change ±10%. 2. Rated data with reference aluminum plate 250mm x 250mm x 6mm (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

LVSM-070 Torque-Speed Curves

Tr: Rated Torque — @Tr 24V - - - @Tr 48V
 Tp: Peak Torque — @Tp 24V - - - @Tp 48V



LVSM-070 Outline Drawing



| Symbols | Units | Frensiz | | | Frenli | | |
|---------|-------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | LVSM-070-01 | LVSM-070-02 | LVSM-070-03 | LVSM-070-01 | LVSM-070-02 | LVSM-070-03 |
| A | mm | 70 | 70 | 70 | 70 | 70 | 70 |
| B | mm | Ø94 | Ø94 | Ø94 | Ø94 | Ø94 | Ø94 |
| C | mm | Ø 6 on Ø75 | Ø 6 on Ø75 | Ø 6 on Ø75 | Ø 6 on Ø75 | Ø 6 on Ø75 | Ø 6 on Ø75 |
| D | mm | Ø60 | Ø60 | Ø60 | Ø60 | Ø60 | Ø60 |
| E | mm | 7 | 7 | 7 | 7 | 7 | 7 |
| F | mm | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| G | mm | Ø14 | Ø14 | Ø14 | Ø14 | Ø14 | Ø14 |
| J | mm | 84 | 118 | 151 | 84 | 118 | 151 |
| K | mm | 115 | 149 | 181 | 150 | 184 | 216 |
| L | mm | 103 | 103 | 103 | 103 | 103 | 103 |
| M | mm | 115 | 115 | 115 | 115 | 115 | 115 |
| N1 | mm | 19 | 19 | 19 | 19 | 19 | 19 |
| N2 | mm | 78 | 112 | 145 | 115 | 149 | 182 |
| O1 | mm | 25 | 25 | 25 | 25 | 25 | 25 |
| O2 | mm | 38 | 72 | 104 | 38 | 72 | 104 |
| P | mm | 60 | 60 | 60 | 60 | 60 | 60 |
| R | mm | 54 | 54 | 54 | 54 | 54 | 54 |

Power - Signal Connector

Power Connector (CB2-20-22-PC-FM)

| Pin | Function | Description |
|-----|----------|-------------|
| A | A | Phase A |
| B | - | - |
| C | C | Phase C |
| D | - | - |
| E | B | Phase B |
| F | GND | GND |

Signal Connector (D38999/20WC8PN)

| Pin | Function | Description |
|-----|----------|----------------|
| A | R1 | Ref (+) |
| B | R2 | Ref (-) |
| C | S1 | Cos (+) |
| D | S3 | Cos (-) |
| E | S2 | Sin (+) |
| F | S4 | Sin (-) |
| G | NTC | Thermal Sensor |
| H | NTC | Thermal Sensor |