

## BSH1004P12A2A

AC servo motor BSH - 9.31 Nm - 6000 rpm -  
key shaft - without brake - IP50

---

## Main

| Product or component type | AC servo motors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component name            | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Continuous stall torque   | 9.31 N.m for LXM15MD28M3 at 230 V 3 phases<br>9.31 N.m for LXM15MD28N4 at 230 V 3 phases<br>9.31 N.m for LXM15MD28N4 at 400 V 3 phases<br>9.31 N.m for LXM15MD28N4 at 480 V 3 phases<br>9.31 N.m for LXM15MD40N4 at 230 V 3 phases<br>9.31 N.m for LXM15MD40N4 at 400 V 3 phases<br>9.31 N.m for LXM15MD40N4 at 480 V 3 phases<br>9.31 N.m for LXM05AD34N4 at 380...480 V 3 phases<br>9.31 N.m for LXM05AD42M3X at 200...240 V 3 phases<br>9.31 N.m for LXM05AD57N4 at 380...480 V 3 phases<br>9.31 N.m for LXM05BD34N4 at 380...480 V 3 phases<br>9.31 N.m for LXM05BD42M3X at 200...240 V 3 phases<br>9.31 N.m for LXM05BD57N4 at 380...480 V 3 phases<br>9.31 N.m for LXM05CD34N4 at 380...480 V 3 phases<br>9.31 N.m for LXM05CD42M3X at 200...240 V 3 phases<br>9.31 N.m for LXM05CD57N4 at 380...480 V 3 phases       |
| Peak stall torque         | 23.47 N.m for LXM05AD34N4 at 380...480 V 3 phases<br>23.47 N.m for LXM05BD34N4 at 380...480 V 3 phases<br>23.47 N.m for LXM05CD34N4 at 380...480 V 3 phases<br>25.7 N.m for LXM15MD28M3 at 230 V 3 phases<br>25.7 N.m for LXM15MD28N4 at 230 V 3 phases<br>25.7 N.m for LXM15MD28N4 at 400 V 3 phases<br>25.7 N.m for LXM15MD28N4 at 480 V 3 phases<br>33.83 N.m for LXM15MD40N4 at 230 V 3 phases<br>33.83 N.m for LXM15MD40N4 at 400 V 3 phases<br>33.83 N.m for LXM15MD40N4 at 480 V 3 phases<br>35.7 N.m for LXM05AD42M3X at 200...240 V 3 phases<br>35.7 N.m for LXM05AD57N4 at 380...480 V 3 phases<br>35.7 N.m for LXM05BD42M3X at 200...240 V 3 phases<br>35.7 N.m for LXM05BD57N4 at 380...480 V 3 phases<br>35.7 N.m for LXM05CD42M3X at 200...240 V 3 phases<br>35.7 N.m for LXM05CD57N4 at 380...480 V 3 phases |
| Nominal output power      | 1300 W for LXM15MD28M3 at 230 V 3 phases<br>1300 W for LXM15MD28N4 at 230 V 3 phases<br>1300 W for LXM15MD40N4 at 230 V 3 phases<br>1300 W for LXM05AD42M3X at 200...240 V 3 phases<br>1300 W for LXM05BD42M3X at 200...240 V 3 phases<br>1300 W for LXM05CD42M3X at 200...240 V 3 phases<br>2200 W for LXM15MD28N4 at 400 V 3 phases<br>2200 W for LXM05AD34N4 at 380...480 V 3 phases<br>2200 W for LXM05AD57N4 at 380...480 V 3 phases<br>2200 W for LXM05BD34N4 at 380...480 V 3 phases<br>2200 W for LXM05BD57N4 at 380...480 V 3 phases<br>2200 W for LXM05CD34N4 at 380...480 V 3 phases<br>2200 W for LXM05CD57N4 at 380...480 V 3 phases<br>2300 W for LXM15MD40N4 at 400 V 3 phases<br>2400 W for LXM15MD40N4 at 480 V 3 phases<br>2700 W for LXM15MD28N4 at 480 V 3 phases                                       |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal speed               | 1500 rpm for LXM15MD28M3 at 230 V 3 phases<br>1500 rpm for LXM15MD28N4 at 230 V 3 phases<br>1500 rpm for LXM15MD40N4 at 230 V 3 phases<br>1500 rpm for LXM05AD42M3X at 200...240 V 3 phases<br>1500 rpm for LXM05BD42M3X at 200...240 V 3 phases<br>1500 rpm for LXM05CD42M3X at 200...240 V 3 phases<br>3000 rpm for LXM15MD28N4 at 400 V 3 phases<br>3000 rpm for LXM15MD40N4 at 400 V 3 phases<br>3000 rpm for LXM05AD34N4 at 380...480 V 3 phases<br>3000 rpm for LXM05AD57N4 at 380...480 V 3 phases<br>3000 rpm for LXM05BD34N4 at 380...480 V 3 phases<br>3000 rpm for LXM05BD57N4 at 380...480 V 3 phases<br>3000 rpm for LXM05CD34N4 at 380...480 V 3 phases<br>3000 rpm for LXM05CD57N4 at 380...480 V 3 phases<br>3500 rpm for LXM15MD40N4 at 480 V 3 phases<br>4000 rpm for LXM15MD28N4 at 480 V 3 phases |
| Maximum mechanical speed    | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product compatibility       | LXM05AD34N4 at 380...480 V 3 phases<br>LXM05AD42M3X at 200...240 V 3 phases<br>LXM05AD57N4 at 380...480 V 3 phases<br>LXM05BD34N4 at 380...480 V 3 phases<br>LXM05BD42M3X at 200...240 V 3 phases<br>LXM05BD57N4 at 380...480 V 3 phases<br>LXM05CD34N4 at 380...480 V 3 phases<br>LXM05CD42M3X at 200...240 V 3 phases<br>LXM05CD57N4 at 380...480 V 3 phases<br>LXM15MD28M3 at 230 V 3 phases<br>LXM15MD28N4 at 230 V 3 phases<br>LXM15MD28N4 at 400 V 3 phases<br>LXM15MD28N4 at 480 V 3 phases<br>LXM15MD40N4 at 230 V 3 phases<br>LXM15MD40N4 at 400 V 3 phases<br>LXM15MD40N4 at 480 V 3 phases                                                                                                                                                                                                                 |
| Shaft end                   | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| IP degree of protection     | IP50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Encoder type                | Absolute multiturn SinCos Hiperface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Encoder feedback resolution | 131072 points/turn x 4096 turns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Holding brake               | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mounting support            | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Electrical connection       | Rotatable right-angled connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number of poles             | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## Complementary

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility                         | Lexium 05<br>Lexium 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nominal torque                              | 6.5 N.m for LXM15MD28N4 at 480 V 3 phases<br>6.69 N.m for LXM15MD40N4 at 480 V 3 phases<br>7 N.m for LXM15MD28N4 at 400 V 3 phases<br>7.1 N.m for LXM05AD34N4 at 380...480 V 3 phases<br>7.1 N.m for LXM05AD57N4 at 380...480 V 3 phases<br>7.1 N.m for LXM05BD34N4 at 380...480 V 3 phases<br>7.1 N.m for LXM05BD57N4 at 380...480 V 3 phases<br>7.1 N.m for LXM05CD34N4 at 380...480 V 3 phases<br>7.1 N.m for LXM05CD57N4 at 380...480 V 3 phases<br>7.17 N.m for LXM15MD40N4 at 400 V 3 phases<br>8.18 N.m for LXM15MD40N4 at 230 V 3 phases<br>8.22 N.m for LXM05BD42M3X at 200...240 V 3 phases<br>8.22 N.m for LXM05CD42M3X at 200...240 V 3 phases<br>8.22 N.m for LXM15LD28M3 at 230 V 3 phases<br>8.22 N.m for LXM15MD28N4 at 230 V 3 phases<br>8.22 N.m for LXM05AD42M3X at 200...240 V 3 phases |
| Maximum current I <sub>rms</sub>            | 32.3 A for LXM05AD42M3X<br>32.3 A for LXM05AD34N4<br>32.3 A for LXM05AD57N4<br>32.3 A for LXM05BD42M3X<br>32.3 A for LXM05BD34N4<br>32.3 A for LXM05BD57N4<br>32.3 A for LXM05CD42M3X<br>32.3 A for LXM05CD34N4<br>32.3 A for LXM05CD57N4<br>34.8 A for LXM15LD28M3<br>34.8 A for LXM15MD28N4<br>34.8 A for LXM15MD40N4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Switching frequency                         | 8 kHz for LEX05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Torque constant                             | 1.62 N.m/A rms at 120 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Back electromagnetical force (emf) constant | 103 V rms/krpm at 120 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rotor inertia                               | 4.22 kg.cm <sup>2</sup> without brake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Stator resistance                           | 1.81 Ohm at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Stator inductance                           | 11.8 mH at 20 °C<br>13 mH at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Stator electrical time constant             | 6.52 ms at 20 °C<br>7.18 ms at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Maximum radial force Fr                     | 740 N at 3000 rpm<br>850 N at 2000 rpm<br>1070 N at 1000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Maximum axial force Fa                      | 0.2 x Fr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Product weight                              | 9.5 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Environment

|                          |           |
|--------------------------|-----------|
| RoHS EUR conformity date | 0850      |
| RoHS EUR status          | Compliant |