

# BSH1401P12F1A

AC servo motor BSH - 11.1 N.m - 1500 rpm -  
keyed shaft - with brake - IP50



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Maximum mechanical speed  | 4000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Continuous stall torque   | 11.1 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>11.1 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>11.1 N.m for LXM15MD28N4, 400 V, three phase<br>11.1 N.m for LXM15MD28N4, 480 V, three phase<br>11.1 N.m for LXM15MD28N4, 230 V, three phase<br>11.1 N.m for LXM15MD40N4, 400 V, three phase<br>11.1 N.m for LXM15MD40N4, 480 V, three phase<br>11.1 N.m for LXM15LD28M3, 230 V, three phase<br>11.4 N.m for LXM05AD34N4, 380...480 V, three phase<br>11.4 N.m for LXM05BD34N4, 380...480 V, three phase<br>11.4 N.m for LXM05CD34N4, 380...480 V, three phase     |
| Peak stall torque         | 27 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>27 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>23.33 N.m for LXM15MD28N4, 230 V, three phase<br>23.33 N.m for LXM15MD28N4, 400 V, three phase<br>23.33 N.m for LXM15MD28N4, 480 V, three phase<br>23.33 N.m for LXM15MD40N4, 400 V, three phase<br>23.33 N.m for LXM15MD40N4, 480 V, three phase<br>23.8 N.m for LXM15LD28M3, 230 V, three phase<br>23.33 N.m for LXM05AD34N4, 380...480 V, three phase<br>23.33 N.m for LXM05BD34N4, 380...480 V, three phase<br>23.33 N.m for LXM05CD34N4, 380...480 V, three phase |
| Nominal output power      | 2500 W for LXM32.D30N4 at 10 A, 400 V, three phase<br>3000 W for LXM32.D30N4 at 10 A, 480 V, three phase<br>2000 W for LXM15MD28N4, 400 V, three phase<br>2000 W for LXM15MD40N4, 400 V, three phase<br>2200 W for LXM05AD34N4, 380...480 V, three phase<br>2200 W for LXM05BD34N4, 380...480 V, three phase<br>2200 W for LXM05CD34N4, 380...480 V, three phase<br>1400 W for LXM15LD28M3, 230 V, three phase<br>1400 W for LXM15MD28N4, 230 V, three phase<br>2150 W for LXM15MD28N4, 480 V, three phase<br>2150 W for LXM15MD40N4, 480 V, three phase                           |
| Nominal torque            | 9.5 N.m for LXM32.D30N4 at 10 A, 400 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 9.5 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>6.8 N.m for LXM15MD28N4, 480 V, three phase<br>6.8 N.m for LXM15MD40N4, 480 V, three phase<br>6.9 N.m for LXM05AD34N4, 380...480 V, three phase<br>6.9 N.m for LXM05BD34N4, 380...480 V, three phase<br>6.9 N.m for LXM05CD34N4, 380...480 V, three phase<br>7.63 N.m for LXM15MD28N4, 400 V, three phase<br>7.63 N.m for LXM15MD40N4, 400 V, three phase<br>9.1 N.m for LXM15LD28M3, 230 V, three phase<br>9.1 N.m for LXM15MD28N4, 230 V, three phase                                                                 |
| Nominal speed             | 2500 rpm for LXM32.D30N4 at 10 A, 400 V, three phase<br>3000 rpm for LXM32.D30N4 at 10 A, 480 V, three phase<br>3000 rpm for LXM05AD34N4, 380...480 V, three phase<br>3000 rpm for LXM05BD34N4, 380...480 V, three phase<br>3000 rpm for LXM05CD34N4, 380...480 V, three phase<br>1500 rpm for LXM15MD28N4, 230 V, three phase<br>1500 rpm for LXM15LD28M3, 230 V, three phase<br>2500 rpm for LXM15MD28N4, 400 V, three phase<br>2500 rpm for LXM15MD40N4, 400 V, three phase<br>3000 rpm for LXM15MD28N4, 480 V, three phase<br>3000 rpm for LXM15MD40N4, 480 V, three phase |
| Product compatibility     | LXM15LD28M3 at 230 V three phase<br>LXM05AD34N4 at 380...480 V three phase<br>LXM05BD34N4 at 380...480 V three phase<br>LXM05CD34N4 at 380...480 V three phase<br>LXM15MD28N4 at 400 V three phase<br>LXM15MD28N4 at 480 V three phase<br>LXM15MD40N4 at 400 V three phase<br>LXM15MD40N4 at 480 V three phase<br>LXM15MD28N4 at 230 V three phase                                                                                                                                                                                                                             |
| Shaft end                 | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IP degree of protection   | IP50 standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Speed feedback resolution | 131072 points/turn x 4096 turns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Holding brake             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Electrical connection     | Straight connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Complementary

|                           |                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility       | Lexium 32<br>Lexium 05<br>Lexium 15                                                                                                                                                |
| Supply voltage max        | 480 V                                                                                                                                                                              |
| Network number of phases  | Three phase                                                                                                                                                                        |
| Continuous stall current  | 7.8 A                                                                                                                                                                              |
| Maximum continuous power  | 3.6 W                                                                                                                                                                              |
| Maximum current Irms      | 20.8 A for LXM15LD28M3<br>20.8 A for LXM15MD28N4<br>20.8 A for LXM15MD40N4<br>20.8 A for LXM05AD34N4<br>20.8 A for LXM05BD34N4<br>20.8 A for LXM05CD34N4<br>20.8 A for LXM32.D30N4 |
| Maximum permanent current | 20.8 A                                                                                                                                                                             |
| Switching frequency       | 8 kHz                                                                                                                                                                              |
| Second shaft              | Without second shaft end                                                                                                                                                           |
| Shaft diameter            | 24 mm                                                                                                                                                                              |
| Shaft length              | 50 mm                                                                                                                                                                              |
| Key width                 | 40 mm                                                                                                                                                                              |
| Feedback type             | Multiturn SinCos Hiperface                                                                                                                                                         |
| Holding torque            | 23 N.m holding brake                                                                                                                                                               |
| Motor flange size         | 140 mm                                                                                                                                                                             |
| Number of motor stacks    | 1                                                                                                                                                                                  |
| Torque constant           | 1.43 N.m/A at 120 °C                                                                                                                                                               |

|                                       |                                                                |
|---------------------------------------|----------------------------------------------------------------|
| Back emf constant                     | 100 V/krpm at 120 °C                                           |
| Number of motor poles                 | 10                                                             |
| Rotor inertia                         | 9.21 kg.cm <sup>2</sup>                                        |
| Stator resistance                     | 1.41 Ohm at 20 °C                                              |
| Stator inductance                     | 15.6 mH at 20 °C                                               |
| Stator electrical time constant       | 11.06 ms at 20 °C                                              |
| Maximum radial force Fr               | 1530 N at 3000 rpm<br>1760 N at 2000 rpm<br>2210 N at 1000 rpm |
| Maximum axial force Fa                | 0.2 x Fr                                                       |
| Brake pull-in power                   | 24 W                                                           |
| Type of cooling                       | Natural convection                                             |
| Length                                | 255.5 mm                                                       |
| Centring collar diameter              | 130 mm                                                         |
| Centring collar depth                 | 3.5 mm                                                         |
| Number of mounting holes              | 4                                                              |
| Mounting holes diameter               | 11 mm                                                          |
| Circle diameter of the mounting holes | 165 mm                                                         |
| Product weight                        | 13 kg                                                          |

### Offer Sustainability

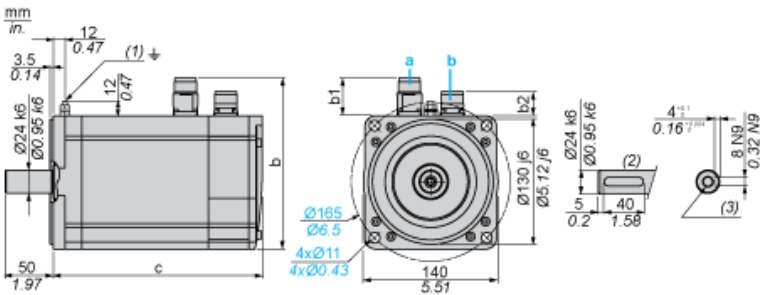
|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                           |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a>                           |
| Mercury free               | Yes                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>                                                                                      |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                               |
| Circularity Profile        | No need of specific recycling operations                                                                                    |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

### Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Servo Motors Dimensions

Example with Straight Connectors



- a: Power supply for servo motor brake  
b: Power supply for servo motor encoder  
(1) M4 screw  
(2) Shaft end, keyed slot (optional)  
(3) For screws M8 x 19 mm/M8 x 0.75 in.

Dimensions in mm

| Straight connectors |      |      | Rotatable angled connectors |      |      | c (without brake) | c (with brake) |
|---------------------|------|------|-----------------------------|------|------|-------------------|----------------|
| b                   | b1   | b2   | b                           | b1   | b2   |                   |                |
| 178                 | 39.5 | 25.5 | 178                         | 39.5 | 39.5 | 218               | 256            |

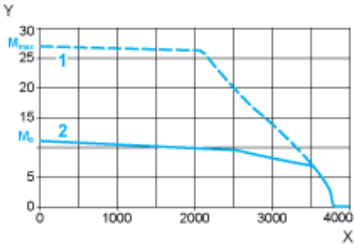
Dimensions in in.

| Straight connectors |      |      | Rotatable angled connectors |      |      | c (without brake) | c (with brake) |
|---------------------|------|------|-----------------------------|------|------|-------------------|----------------|
| b                   | b1   | b2   | b                           | b1   | b2   |                   |                |
| 7.00                | 1.55 | 1.00 | 7.00                        | 1.55 | 1.55 | 8.58              | 10.07          |

400 V 3-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•D30N4 servo drive

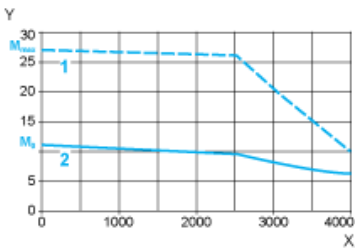


- X Speed in rpm
- Y Torque in Nm
- 1 Peak torque
- 2 Continuous torque

480 V 3-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•D30N4 servo drive



- X Speed in rpm
- Y Torque in Nm
- 1 Peak torque
- 2 Continuous torque