

# BSH1401P21F2A

AC servo motor BSH - 11.1 N.m - 1500 rpm -  
untapped shaft - with brake - IP65



## 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<br>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                                                                                                                                                                                                            |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

7.63 N.m for LXM15MD28N4, 400 V, three phase  
7.63 N.m for LXM15MD40N4, 400 V, three phase  
9.1 N.m for LXM15LD28M3, 230 V, three phase  
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                 | Untapped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IP degree of protection   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Holding brake             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Electrical connection     | Rotatable right-angled 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                                                                                                                                                                              |
| Feedback type             | Single turn 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.cm²                                                                                                                                                                        |
| Stator resistance         | 1.41 Ohm at 20 °C                                                                                                                                                                  |
| Stator inductance         | 15.6 mH at 20 °C                                                                                                                                                                   |

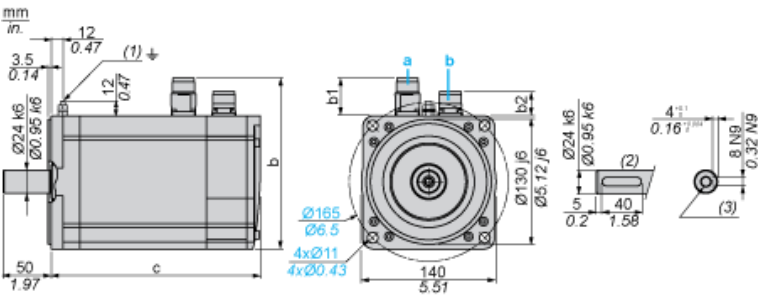
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|---------------------------------------|----------------------------------------------------------------|
| Stator electrical time constant       | 11.06 ms at 20 °C                                              |
| Maximum radial force Fr               | 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                                                          |

### 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          |

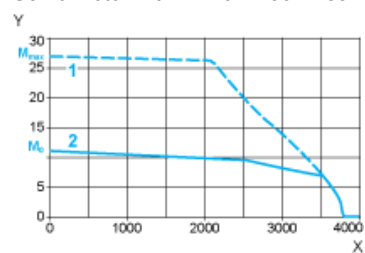
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400 V 3-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•D30N4 servo drive

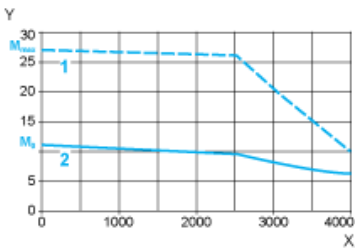


X Speed in rpm  
Y Torque in Nm  
1 Peak torque  
2 Continuous torque

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