

# BSH1004P12F2A

AC servo motor BSH - 9.31 N.m - 1500 rpm -  
keyed shaft - with brake - IP50



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Continuous stall torque   | 8 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>8 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>9.31 N.m for LXM15MD40N4, 400 V, three phase<br>9.31 N.m for LXM15MD40N4, 480 V, three phase<br>9.31 N.m for LXM15MD28M3, 230 V, three phase<br>9.31 N.m for LXM15MD28N4, 230 V, three phase<br>9.31 N.m for LXM15MD28N4, 400 V, three phase<br>9.31 N.m for LXM15MD28N4, 480 V, three phase<br>9.31 N.m for LXM15MD40N4, 230 V, three phase<br>9.31 N.m for LXM05AD34N4, 380...480 V, three phase<br>9.31 N.m for LXM05AD42M3X, 200...240 V, three phase<br>9.31 N.m for LXM05AD57N4, 380...480 V, three phase<br>9.31 N.m for LXM05BD34N4, 380...480 V, three phase<br>9.31 N.m for LXM05BD42M3X, 200...240 V, three phase<br>9.31 N.m for LXM05BD57N4, 380...480 V, three phase<br>9.31 N.m for LXM05CD34N4, 380...480 V, three phase<br>9.31 N.m for LXM05CD42M3X, 200...240 V, three phase<br>9.31 N.m for LXM05CD57N4, 380...480 V, three phase |
| Peak stall torque         | 37.9 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>37.9 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>25.7 N.m for LXM15MD28M3, 230 V, three phase<br>25.7 N.m for LXM15MD28N4, 230 V, three phase<br>25.7 N.m for LXM15MD28N4, 400 V, three phase<br>25.7 N.m for LXM15MD28N4, 480 V, three phase<br>33.83 N.m for LXM15MD40N4, 230 V, three phase<br>33.83 N.m for LXM15MD40N4, 400 V, three phase<br>33.83 N.m for LXM15MD40N4, 480 V, three phase<br>23.47 N.m for LXM05AD34N4, 380...480 V, three phase<br>35.7 N.m for LXM05AD42M3X, 200...240 V, three phase<br>35.7 N.m for LXM05AD57N4, 380...480 V, three phase<br>23.47 N.m for LXM05BD34N4, 380...480 V, three phase<br>35.7 N.m for LXM05BD42M3X, 200...240 V, three phase<br>35.7 N.m for LXM05BD57N4, 380...480 V, three phase<br>23.47 N.m for LXM05CD34N4, 380...480 V, three phase<br>35.7 N.m for LXM05CD42M3X, 200...240 V, three phase                                           |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | 35.7 N.m for LXM05CD57N4, 380...480 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Nominal output power  | 2600 W for LXM32.D30N4 at 10 A, 480 V, three phase<br>2100 W for LXM32.D30N4 at 10 A, 400 V, three phase<br>1300 W for LXM05AD42M3X, 200...240 V, three phase<br>1300 W for LXM05BD42M3X, 200...240 V, three phase<br>1300 W for LXM05CD42M3X, 200...240 V, three phase<br>1300 W for LXM15MD28M3, 230 V, three phase<br>1300 W for LXM15MD28N4, 230 V, three phase<br>1300 W for LXM15MD40N4, 230 V, three phase<br>2200 W for LXM05AD34N4, 380...480 V, three phase<br>2200 W for LXM05AD57N4, 380...480 V, three phase<br>2200 W for LXM05BD34N4, 380...480 V, three phase<br>2200 W for LXM05BD57N4, 380...480 V, three phase<br>2200 W for LXM05CD34N4, 380...480 V, three phase<br>2200 W for LXM05CD57N4, 380...480 V, three phase<br>2200 W for LXM15MD28N4, 400 V, three phase<br>2300 W for LXM15MD40N4, 400 V, three phase<br>2400 W for LXM15MD40N4, 480 V, three phase<br>2700 W for LXM15MD28N4, 480 V, three phase                                     |
| Nominal torque        | 8.3 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>8.3 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>6.5 N.m for LXM15MD28N4, 480 V, three phase<br>6.69 N.m for LXM15MD40N4, 480 V, three phase<br>7 N.m for LXM15MD28N4, 400 V, three phase<br>7.1 N.m for LXM05AD34N4, 380...480 V, three phase<br>7.1 N.m for LXM05AD57N4, 380...480 V, three phase<br>7.1 N.m for LXM05BD34N4, 380...480 V, three phase<br>7.1 N.m for LXM05BD57N4, 380...480 V, three phase<br>7.1 N.m for LXM05CD34N4, 380...480 V, three phase<br>7.1 N.m for LXM05CD57N4, 380...480 V, three phase<br>7.17 N.m for LXM15MD40N4, 400 V, three phase<br>8.18 N.m for LXM15MD40N4, 230 V, three phase<br>8.22 N.m for LXM05AD42M3X, 200...240 V, three phase<br>8.22 N.m for LXM05BD42M3X, 200...240 V, three phase<br>8.22 N.m for LXM05CD42M3X, 200...240 V, three phase<br>8.22 N.m for LXM15LD28M3, 230 V, three phase<br>8.22 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>1500 rpm for LXM05AD42M3X, 200...240 V, three phase<br>1500 rpm for LXM05BD42M3X, 200...240 V, three phase<br>1500 rpm for LXM05CD42M3X, 200...240 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 LXM15MD28M3, 230 V, three phase<br>1500 rpm for LXM15MD28N4, 230 V, three phase<br>1500 rpm for LXM15MD40N4, 230 V, three phase<br>3000 rpm for LXM05AD57N4, 380...480 V, three phase<br>3000 rpm for LXM05BD57N4, 380...480 V, three phase<br>3000 rpm for LXM05CD57N4, 380...480 V, three phase<br>3000 rpm for LXM15MD28N4, 400 V, three phase<br>3000 rpm for LXM15MD40N4, 400 V, three phase<br>3500 rpm for LXM15MD40N4, 480 V, three phase<br>4000 rpm for LXM15MD28N4, 480 V, three phase |
| Product compatibility | LXM05AD42M3X at 200...240 V three phase<br>LXM05BD42M3X at 200...240 V three phase<br>LXM05CD42M3X at 200...240 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>LXM32.D30N4 at 400 V three phase<br>LXM32.D30N4 at 480 V three phase<br>LXM05AD57N4 at 380...480 V three phase<br>LXM05BD57N4 at 380...480 V three phase<br>LXM05CD57N4 at 380...480 V three phase<br>LXM15MD28M3 at 230 V three phase<br>LXM15MD28N4 at 230 V three phase<br>LXM15MD40N4 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     | Rotatable right-angled connectors |

## Complementary

|                                       |                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility                   | Lexium 15<br>Lexium 05<br>Lexium 32                                                                                                                                                                                                                                                                                                             |
| Supply voltage max                    | 480 V                                                                                                                                                                                                                                                                                                                                           |
| Network number of phases              | Three phase                                                                                                                                                                                                                                                                                                                                     |
| Continuous stall current              | 6.2 A                                                                                                                                                                                                                                                                                                                                           |
| Maximum continuous power              | 3.64 W                                                                                                                                                                                                                                                                                                                                          |
| Maximum current Irms                  | 34.8 A for LXM15LD28M3<br>34.8 A for LXM15MD28N4<br>34.8 A for LXM15MD40N4<br>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>30 A for LXM32.D30N4 |
| Maximum permanent current             | 32.3 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                        | 12 N.m holding brake                                                                                                                                                                                                                                                                                                                            |
| Motor flange size                     | 100 mm                                                                                                                                                                                                                                                                                                                                          |
| Number of motor stacks                | 4                                                                                                                                                                                                                                                                                                                                               |
| Torque constant                       | 1.62 N.m/A at 120 °C                                                                                                                                                                                                                                                                                                                            |
| Back emf constant                     | 103 V/krpm at 120 °C                                                                                                                                                                                                                                                                                                                            |
| Number of motor poles                 | 8                                                                                                                                                                                                                                                                                                                                               |
| Rotor inertia                         | 5.245 kg.cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                        |
| Stator resistance                     | 1.81 Ohm at 20 °C                                                                                                                                                                                                                                                                                                                               |
| Stator inductance                     | 11.8 mH at 20 °C                                                                                                                                                                                                                                                                                                                                |
| Stator electrical time constant       | 6.52 ms at 20 °C                                                                                                                                                                                                                                                                                                                                |
| Maximum radial force Fr               | 1070 N at 1000 rpm<br>740 N at 3000 rpm<br>850 N at 2000 rpm                                                                                                                                                                                                                                                                                    |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                                                                                                                        |
| Brake pull-in power                   | 17 W                                                                                                                                                                                                                                                                                                                                            |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                                                                                                                              |
| Length                                | 307.5 mm                                                                                                                                                                                                                                                                                                                                        |
| Centring collar diameter              | 95 mm                                                                                                                                                                                                                                                                                                                                           |
| Centring collar depth                 | 3.5 mm                                                                                                                                                                                                                                                                                                                                          |
| Number of mounting holes              | 4                                                                                                                                                                                                                                                                                                                                               |
| Mounting holes diameter               | 9 mm                                                                                                                                                                                                                                                                                                                                            |
| Circle diameter of the mounting holes | 115 mm                                                                                                                                                                                                                                                                                                                                          |
| Product weight                        | 9.9 kg                                                                                                                                                                                                                                                                                                                                          |

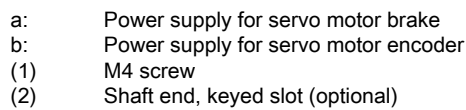
## Offer Sustainability

|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 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 |
|----------|-----------|

### Example with Straight Connectors



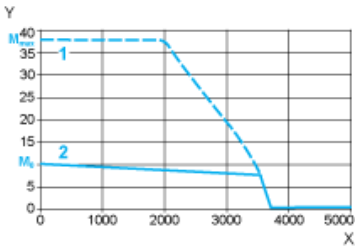
| Straight connectors |      | Rotatable angled connectors |      | c (without bracket) | c (with bracket) | c1 | c2 | h    | h1                             | Ø     | Ø1 for screws |
|---------------------|------|-----------------------------|------|---------------------|------------------|----|----|------|--------------------------------|-------|---------------|
| b1                  | b2   | b1                          | b2   |                     |                  |    |    |      |                                |       |               |
| 39.5                | 25.5 | 39.5                        | 39.5 | 277                 | 308              | 50 | 40 | 8 N9 | 4 <sup>+0.1</sup> <sub>0</sub> | 24 k6 | M8 x 19       |

| Straight connector |      | Rotatable angled connector |      | c (without bracket) | c (with bracket) | c1   | c2   | h       | h1                                | Ø       | Ø1 for screws |
|--------------------|------|----------------------------|------|---------------------|------------------|------|------|---------|-----------------------------------|---------|---------------|
| b1                 | b2   | b1                         | b2   |                     |                  |      |      |         |                                   |         |               |
| 1.55               | 1.00 | 1.55                       | 1.55 | 10.90               | 12.12            | 1.96 | 1.57 | 0.31 N9 | 0.16 <sup>+0.1</sup> <sub>0</sub> | 0.94 k6 | M8 x 0.75     |

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

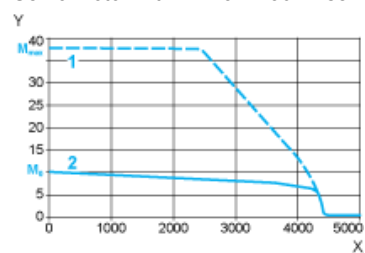
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480 V 3-Phase Supply Voltage

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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