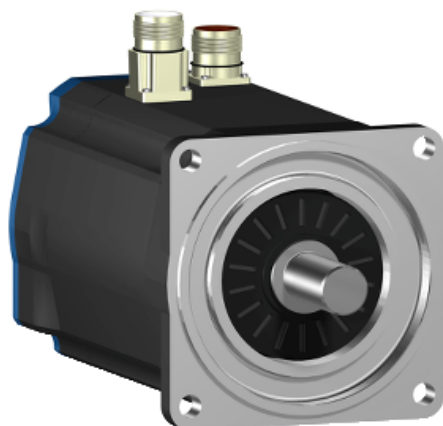


# BSH1003P22A1A

AC servo motor BSH - 7.8 N.m - 2500 rpm -  
untapped shaft - without brake - IP65



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Continuous stall torque   | <p>8 N.m for LXM32.D30N4 at 10 A, 400 V, three phase</p> <p>8 N.m for LXM32.D30N4 at 10 A, 480 V, three phase</p> <p>7.8 N.m for LXM05CD28M2, 200...240 V, single phase</p> <p>7.8 N.m for LXM05AD28M2, 200...240 V, single phase</p> <p>7.8 N.m for LXM05BD28M2, 200...240 V, single phase</p> <p>7.8 N.m for LXM05BD34N4, 380...480 V, three phase</p> <p>7.8 N.m for LXM05BD42M3X, 200...240 V, three phase</p> <p>7.8 N.m for LXM05CD34N4, 380...480 V, three phase</p> <p>7.8 N.m for LXM05CD42M3X, 200...240 V, three phase</p> <p>6.7 N.m for LXM15LD21M3, 230 V, three phase</p> <p>6.7 N.m for LXM15LD17N4, 230 V, three phase</p> <p>6.7 N.m for LXM15LD17N4, 400 V, three phase</p> <p>6.7 N.m for LXM15LD17N4, 480 V, three phase</p> <p>7.8 N.m for LXM15LD28M3, 230 V, three phase</p> <p>7.8 N.m for LXM15MD28N4, 400 V, three phase</p> <p>7.8 N.m for LXM15MD28N4, 480 V, three phase</p> <p>7.8 N.m for LXM15MD40N4, 400 V, three phase</p> <p>7.8 N.m for LXM15MD40N4, 480 V, three phase</p> <p>7.8 N.m for LXM05AD34N4, 380...480 V, three phase</p> <p>7.8 N.m for LXM05AD42M3X, 200...240 V, three phase</p> |
| Peak stall torque         | <p>28.3 N.m for LXM32.D30N4 at 10 A, 400 V, three phase</p> <p>28.3 N.m for LXM32.D30N4 at 10 A, 480 V, three phase</p> <p>19.69 N.m for LXM05AD28M2, 200...240 V, single phase</p> <p>19.69 N.m for LXM05BD28M2, 200...240 V, single phase</p> <p>19.69 N.m for LXM05CD28M2, 200...240 V, single phase</p> <p>15.5 N.m for LXM15LD21M3, 230 V, three phase</p> <p>12.5 N.m for LXM15LD17N4, 230 V, three phase</p> <p>12.5 N.m for LXM15LD17N4, 400 V, three phase</p> <p>12.5 N.m for LXM15LD17N4, 480 V, three phase</p> <p>19.69 N.m for LXM15LD28M3, 230 V, three phase</p> <p>19.69 N.m for LXM15MD28N4, 400 V, three phase</p> <p>19.69 N.m for LXM15MD28N4, 480 V, three phase</p> <p>23.17 N.m for LXM15MD40N4, 400 V, three phase</p> <p>23.17 N.m for LXM15MD40N4, 480 V, three phase</p> <p>23.01 N.m for LXM05AD34N4, 380...480 V, three phase</p>                                                                                                                                                                                                                                                                     |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | 23.17 N.m for LXM05AD42M3X, 200...240 V, three phase<br>23.01 N.m for LXM05BD34N4, 380...480 V, three phase<br>23.17 N.m for LXM05BD42M3X, 200...240 V, three phase<br>23.01 N.m for LXM05CD34N4, 380...480 V, three phase<br>23.17 N.m for LXM05CD42M3X, 200...240 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Nominal output power  | 2000 W for LXM32.D30N4 at 10 A, 400 V, three phase<br>2600 W for LXM32.D30N4 at 10 A, 480 V, three phase<br>1100 W for LXM05AD28M2, 200...240 V, single phase<br>1100 W for LXM05BD28M2, 200...240 V, single phase<br>1100 W for LXM05CD28M2, 200...240 V, single phase<br>1100 W for LXM05AD42M3X, 200...240 V, three phase<br>1100 W for LXM05BD42M3X, 200...240 V, three phase<br>1100 W for LXM05CD42M3X, 200...240 V, three phase<br>1300 W for LXM15LD28M3, 230 V, three phase<br>1700 W for LXM15LD17N4, 230 V, three phase<br>1700 W for LXM15LD21M3, 230 V, three phase<br>1800 W for LXM05AD34N4, 380...480 V, three phase<br>1800 W for LXM05BD34N4, 380...480 V, three phase<br>1800 W for LXM05CD34N4, 380...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 LXM15LD17N4, 400 V, three phase<br>2200 W for LXM15MD28N4, 480 V, three phase<br>2200 W for LXM15MD40N4, 480 V, three phase<br>2300 W for LXM15LD17N4, 480 V, three phase                                         |
| Nominal torque        | 6.3 N.m for LXM32.D30N4 at 10 A, 400 V, three phase<br>6.3 N.m for LXM32.D30N4 at 10 A, 480 V, three phase<br>3.7 N.m for LXM15LD17N4, 480 V, three phase<br>6.73 N.m for LXM05AD28M2, 200...240 V, single phase<br>6.73 N.m for LXM05BD28M2, 200...240 V, single phase<br>6.73 N.m for LXM05CD28M2, 200...240 V, single phase<br>4.6 N.m for LXM15MD28N4, 480 V, three phase<br>4.6 N.m for LXM15MD40N4, 480 V, three phase<br>4.7 N.m for LXM15LD17N4, 400 V, three phase<br>5 N.m for LXM15MD28N4, 400 V, three phase<br>5 N.m for LXM15MD40N4, 400 V, three phase<br>5.7 N.m for LXM05AD34N4, 380...480 V, three phase<br>5.7 N.m for LXM05BD34N4, 380...480 V, three phase<br>5.7 N.m for LXM05CD34N4, 380...480 V, three phase<br>6 N.m for LXM15LD17N4, 230 V, three phase<br>6 N.m for LXM15LD21M3, 230 V, three phase<br>6.3 N.m for LXM15LD28M3, 230 V, three phase<br>6.73 N.m for LXM05AD42M3X, 200...240 V, three phase<br>6.73 N.m for LXM05BD42M3X, 200...240 V, three phase<br>6.73 N.m for LXM05CD42M3X, 200...240 V, three phase                       |
| Nominal speed         | 3000 rpm for LXM32.D30N4 at 10 A, 400 V, three phase<br>4000 rpm for LXM32.D30N4 at 10 A, 480 V, three phase<br>4500 rpm for LXM15LD17N4, 400 V, three phase<br>6000 rpm for LXM15LD17N4, 480 V, three phase<br>1500 rpm for LXM05AD28M2, 200...240 V, single phase<br>1500 rpm for LXM05BD28M2, 200...240 V, single phase<br>1500 rpm for LXM05CD28M2, 200...240 V, single 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>2000 rpm for LXM15LD28M3, 230 V, three phase<br>2500 rpm for LXM15LD17N4, 230 V, three phase<br>2500 rpm for LXM15LD21M3, 230 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>4000 rpm for LXM15MD28N4, 400 V, three phase<br>4000 rpm for LXM15MD40N4, 400 V, three phase<br>4500 rpm for LXM15MD28N4, 480 V, three phase<br>4500 rpm for LXM15MD40N4, 480 V, three phase |
| Product compatibility | LXM05AD28M2 at 200...240 V single phase<br>LXM05BD28M2 at 200...240 V single phase<br>LXM05CD28M2 at 200...240 V single phase<br>LXM15LD21M3 at 230 V three phase<br>LXM05AD42M3X at 200...240 V three phase<br>LXM05BD42M3X at 200...240 V three phase<br>LXM05CD42M3X at 200...240 V three phase<br>LXM15LD17N4 at 230 V three phase<br>LXM15LD17N4 at 400 V three phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

LXM15LD17N4 at 480 V three phase  
 LXM15LD28M3 at 230 V three phase  
 LXM05AD34N4 at 380...480 V three phase  
 LXM05BD34N4 at 380...480 V three phase  
 LXM05CD34N4 at 380...480 V three phase  
 LXM15MD28N4 at 400 V three phase  
 LXM15MD28N4 at 480 V three phase  
 LXM15MD40N4 at 400 V three phase  
 LXM15MD40N4 at 480 V three phase  
 LXM32.D30N4 at 400 V three phase  
 LXM32.D30N4 at 480 V three phase

|                           |                                     |
|---------------------------|-------------------------------------|
| Shaft end                 | Untapped                            |
| IP degree of protection   | IP65 standard<br>IP67 with IP67 kit |
| Speed feedback resolution | 131072 points/turn x 4096 turns     |
| Holding brake             | Without                             |
| Mounting support          | International standard flange       |
| Electrical connection     | Straight connectors                 |

## Complementary

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility             | Lexium 05<br>Lexium 32<br>Lexium 15                                                                                                                                                                                                                                                                                                                                                                   |
| Supply voltage max              | 480 V                                                                                                                                                                                                                                                                                                                                                                                                 |
| Network number of phases        | Three phase                                                                                                                                                                                                                                                                                                                                                                                           |
| Continuous stall current        | 6.6 A                                                                                                                                                                                                                                                                                                                                                                                                 |
| Maximum continuous power        | 3.14 W                                                                                                                                                                                                                                                                                                                                                                                                |
| Maximum current Irms            | 28.3 A for LXM15LD21M3<br>28.3 A for LXM15LD28M3<br>28.3 A for LXM15LD17N4<br>28.3 A for LXM15MD28N4<br>28.3 A for LXM15MD40N4<br>28.3 A for LXM05AD28M2<br>28.3 A for LXM05AD42M3X<br>28.3 A for LXM05AD34N4<br>28.3 A for LXM05BD28M2<br>28.3 A for LXM05BD42M3X<br>28.3 A for LXM05BD34N4<br>28.3 A for LXM05CD28M2<br>28.3 A for LXM05CD42M3X<br>28.3 A for LXM05CD34N4<br>28.3 A for LXM32.D30N4 |
| Maximum permanent current       | 28.3 A                                                                                                                                                                                                                                                                                                                                                                                                |
| Switching frequency             | 8 kHz                                                                                                                                                                                                                                                                                                                                                                                                 |
| Second shaft                    | Without second shaft end                                                                                                                                                                                                                                                                                                                                                                              |
| Shaft diameter                  | 19 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Shaft length                    | 40 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Feedback type                   | Multiturn SinCos Hiperface                                                                                                                                                                                                                                                                                                                                                                            |
| Motor flange size               | 100 mm                                                                                                                                                                                                                                                                                                                                                                                                |
| Number of motor stacks          | 3                                                                                                                                                                                                                                                                                                                                                                                                     |
| Torque constant                 | 1.22 N.m/A at 120 °C                                                                                                                                                                                                                                                                                                                                                                                  |
| Back emf constant               | 77 V/krpm at 120 °C                                                                                                                                                                                                                                                                                                                                                                                   |
| Number of motor poles           | 8                                                                                                                                                                                                                                                                                                                                                                                                     |
| Rotor inertia                   | 3.22 kg.cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                               |
| Stator resistance               | 1.43 Ohm at 20 °C                                                                                                                                                                                                                                                                                                                                                                                     |
| Stator inductance               | 8.8 mH at 20 °C                                                                                                                                                                                                                                                                                                                                                                                       |
| Stator electrical time constant | 6.15 ms at 20 °C                                                                                                                                                                                                                                                                                                                                                                                      |
| Maximum radial force Fr         | 1050 N at 1000 rpm<br>660 N at 4000 rpm<br>730 N at 3000 rpm<br>830 N at 2000 rpm                                                                                                                                                                                                                                                                                                                     |
| Maximum axial force Fa          | 0.2 x Fr                                                                                                                                                                                                                                                                                                                                                                                              |

|                                       |                    |
|---------------------------------------|--------------------|
| Type of cooling                       | Natural convection |
| Length                                | 240.5 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                        | 7.4 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



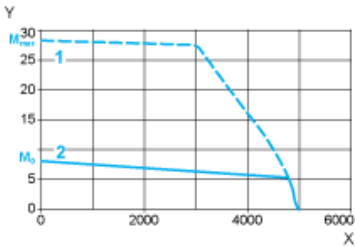
| Straight connectors |      | Rotatable angled connectors |      | c (without bracket) | c (with bracket) | c1 | c2 | h    | h1                               | Ø     | Ø1 for screws |
|---------------------|------|-----------------------------|------|---------------------|------------------|----|----|------|----------------------------------|-------|---------------|
| b1                  | b2   | b1                          | b2   |                     |                  |    |    |      |                                  |       |               |
| 39.5                | 25.5 | 39.5                        | 39.5 | 241                 | 272              | 40 | 30 | 6 N9 | 3.5 <sup>+0.1</sup> <sub>0</sub> | 19 k6 | M6 x 16       |

| 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 | 9.48                | 10.70            | 1.57 | 1.18 | 0.24 N9 | 0.14 <sup>+0.1</sup> <sub>0</sub> | 0.75 k6 | M6 x 0.63     |

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

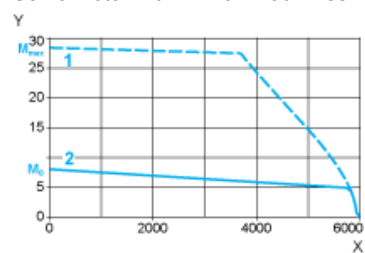
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480 V 3-Phase Supply Voltage

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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