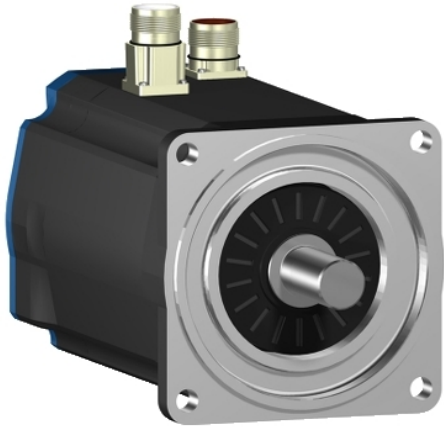


# BSH1003P12F1A

AC servo motor BSH, Lexium 05, 7.8N.m,  
2500rpm, keyed shaft, with brake, IP50





## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or Component Type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Continuous stall torque   | <p>70.81 Lbf.In (8 N.m) LXM32.D30N4 10 A, 400 V, three phase</p> <p>70.81 Lbf.In (8 N.m) LXM32.D30N4 10 A, 480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05CD28M2, 200...240 V, single phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05AD28M2, 200...240 V, single phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05BD28M2, 200...240 V, single phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05BD34N4, 380...480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05BD42M3X, 200...240 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05CD34N4, 380...480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05CD42M3X, 200...240 V, three phase</p> <p>59.30 Lbf.In (6.7 N.m) LXM15LD21M3, 230 V, three phase</p> <p>59.30 Lbf.In (6.7 N.m) LXM15LD17N4, 230 V, three phase</p> <p>59.30 Lbf.In (6.7 N.m) LXM15LD17N4, 400 V, three phase</p> <p>59.30 Lbf.In (6.7 N.m) LXM15LD17N4, 480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM15LD28M3, 230 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM15MD28N4, 400 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM15MD28N4, 480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM15MD40N4, 400 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM15MD40N4, 480 V, three phase</p> <p>69.04 Lbf.In (7.8 N.m) LXM05AD34N4, 380...480 V, three phase</p> <p>69.04 Lbf.in (7.8 N.m) LXM05AD42M3X, 200...240 V, three phase</p> |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Peak stall torque    | 250.48 Lbf.In (28.3 N.m) LXM32.D30N4 10 A, 400 V, three phase<br>250.48 Lbf.In (28.3 N.m) LXM32.D30N4 10 A, 480 V, three phase<br>174.27 Lbf.In (19.69 N.m) LXM05AD28M2, 200...240 V, single phase<br>174.27 Lbf.In (19.69 N.m) LXM05BD28M2, 200...240 V, single phase<br>174.27 Lbf.In (19.69 N.m) LXM05CD28M2, 200...240 V, single phase<br>137.19 Lbf.In (15.5 N.m) LXM15LD21M3, 230 V, three phase<br>110.63 Lbf.In (12.5 N.m) LXM15LD17N4, 230 V, three phase<br>110.63 Lbf.In (12.5 N.m) LXM15LD17N4, 400 V, three phase<br>110.63 Lbf.In (12.5 N.m) LXM15LD17N4, 480 V, three phase<br>174.27 Lbf.In (19.69 N.m) LXM15LD28M3, 230 V, three phase<br>174.27 Lbf.In (19.69 N.m) LXM15MD28N4, 400 V, three phase<br>174.27 Lbf.In (19.69 N.m) LXM15MD28N4, 480 V, three phase<br>205.07 Lbf.In (23.17 N.m) LXM15MD40N4, 400 V, three phase<br>205.07 Lbf.In (23.17 N.m) LXM15MD40N4, 480 V, three phase<br>203.66 Lbf.In (23.01 N.m) LXM05AD34N4, 380...480 V, three phase<br>205.07 Lbf.In (23.17 N.m) LXM05AD42M3X, 200...240 V, three phase<br>203.66 Lbf.In (23.01 N.m) LXM05BD34N4, 380...480 V, three phase<br>205.07 Lbf.In (23.17 N.m) LXM05BD42M3X, 200...240 V, three phase<br>203.66 Lbf.In (23.01 N.m) LXM05CD34N4, 380...480 V, three phase<br>205.07 Lbf.in (23.17 N.m) LXM05CD42M3X, 200...240 V, three phase |
| Nominal output power | 2000 W LXM32.D30N4 10 A, 400 V, three phase<br>2600 W LXM32.D30N4 10 A, 480 V, three phase<br>1100 W LXM05AD28M2, 200...240 V, single phase<br>1100 W LXM05BD28M2, 200...240 V, single phase<br>1100 W LXM05CD28M2, 200...240 V, single phase<br>1100 W LXM05AD42M3X, 200...240 V, three phase<br>1100 W LXM05BD42M3X, 200...240 V, three phase<br>1100 W LXM05CD42M3X, 200...240 V, three phase<br>1300 W LXM15LD28M3, 230 V, three phase<br>1700 W LXM15LD17N4, 230 V, three phase<br>1700 W LXM15LD21M3, 230 V, three phase<br>1800 W LXM05AD34N4, 380...480 V, three phase<br>1800 W LXM05BD34N4, 380...480 V, three phase<br>1800 W LXM05CD34N4, 380...480 V, three phase<br>2000 W LXM15MD28N4, 400 V, three phase<br>2000 W LXM15MD40N4, 400 V, three phase<br>2200 W LXM15LD17N4, 400 V, three phase<br>2200 W LXM15MD28N4, 480 V, three phase<br>2200 W LXM15MD40N4, 480 V, three phase<br>2300 W LXM15LD17N4, 480 V, three phase                                                                                                                                                                                                                                                                                                                                                                                       |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal torque | 55.76 Lbf.In (6.3 N.m) LXM32.D30N4 10 A, 400 V, three phase<br>55.76 Lbf.In (6.3 N.m) LXM32.D30N4 10 A, 480 V, three phase<br>32.75 Lbf.In (3.7 N.m) LXM15LD17N4, 480 V, three phase<br>59.57 Lbf.In (6.73 N.m) LXM05AD28M2, 200...240 V, single phase<br>59.57 Lbf.In (6.73 N.m) LXM05BD28M2, 200...240 V, single phase<br>59.57 Lbf.In (6.73 N.m) LXM05CD28M2, 200...240 V, single phase<br>40.71 Lbf.In (4.6 N.m) LXM15MD28N4, 480 V, three phase<br>40.71 Lbf.In (4.6 N.m) LXM15MD40N4, 480 V, three phase<br>41.60 Lbf.In (4.7 N.m) LXM15LD17N4, 400 V, three phase<br>44.25 Lbf.In (5 N.m) LXM15MD28N4, 400 V, three phase<br>44.25 Lbf.In (5 N.m) LXM15MD40N4, 400 V, three phase<br>50.45 Lbf.In (5.7 N.m) LXM05AD34N4, 380...480 V, three phase<br>50.45 Lbf.In (5.7 N.m) LXM05BD34N4, 380...480 V, three phase<br>50.45 Lbf.In (5.7 N.m) LXM05CD34N4, 380...480 V, three phase<br>53.10 Lbf.In (6 N.m) LXM15LD17N4, 230 V, three phase<br>53.10 Lbf.In (6 N.m) LXM15LD21M3, 230 V, three phase<br>55.76 Lbf.In (6.3 N.m) LXM15LD28M3, 230 V, three phase<br>59.57 Lbf.In (6.73 N.m) LXM05AD42M3X, 200...240 V, three phase<br>59.57 Lbf.In (6.73 N.m) LXM05BD42M3X, 200...240 V, three phase<br>59.57 lbf.in (6.73 N.m) LXM05CD42M3X, 200...240 V, three phase |
| Nominal speed  | 3000 rpm LXM32.D30N4 10 A, 400 V, three phase<br>4000 rpm LXM32.D30N4 10 A, 480 V, three phase<br>4500 rpm LXM15LD17N4, 400 V, three phase<br>6000 rpm LXM15LD17N4, 480 V, three phase<br>1500 rpm LXM05AD28M2, 200...240 V, single phase<br>1500 rpm LXM05BD28M2, 200...240 V, single phase<br>1500 rpm LXM05CD28M2, 200...240 V, single phase<br>1500 rpm LXM05AD42M3X, 200...240 V, three phase<br>1500 rpm LXM05BD42M3X, 200...240 V, three phase<br>1500 rpm LXM05CD42M3X, 200...240 V, three phase<br>2000 rpm LXM15LD28M3, 230 V, three phase<br>2500 rpm LXM15LD17N4, 230 V, three phase<br>2500 rpm LXM15LD21M3, 230 V, three phase<br>3000 rpm LXM05AD34N4, 380...480 V, three phase<br>3000 rpm LXM05BD34N4, 380...480 V, three phase<br>3000 rpm LXM05CD34N4, 380...480 V, three phase<br>4000 rpm LXM15MD28N4, 400 V, three phase<br>4000 rpm LXM15MD40N4, 400 V, three phase<br>4500 rpm LXM15MD28N4, 480 V, three phase<br>4500 rpm LXM15MD40N4, 480 V, three phase                                                                                                                                                                                                                                                                                       |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product compatibility     | LXM05AD28M2 200...240 V single phase<br>LXM05BD28M2 200...240 V single phase<br>LXM05CD28M2 200...240 V single phase<br>LXM15LD21M3 230 V three phase<br>LXM05AD42M3X 200...240 V three phase<br>LXM05BD42M3X 200...240 V three phase<br>LXM05CD42M3X 200...240 V three phase<br>LXM15LD17N4 230 V three phase<br>LXM15LD17N4 400 V three phase<br>LXM15LD17N4 480 V three phase<br>LXM15LD28M3 230 V three phase<br>LXM05AD34N4 380...480 V three phase<br>LXM05BD34N4 380...480 V three phase<br>LXM05CD34N4 380...480 V three phase<br>LXM15MD28N4 400 V three phase<br>LXM15MD28N4 480 V three phase<br>LXM15MD40N4 400 V three phase<br>LXM15MD40N4 480 V three phase<br>LXM32.D30N4 400 V three phase<br>LXM32.D30N4 480 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 05<br>Lexium 15<br>Lexium 32                                                                                                                                                                                                                                                                                                       |
| Supply voltage max        | 480 V                                                                                                                                                                                                                                                                                                                                     |
| Phase                     | Three phase                                                                                                                                                                                                                                                                                                                               |
| Continuous stall current  | 6.6 A                                                                                                                                                                                                                                                                                                                                     |
| Maximum continuous power  | 3.14 W                                                                                                                                                                                                                                                                                                                                    |
| Maximum current Irms      | 28.3 A LXM15LD21M3<br>28.3 A LXM15LD28M3<br>28.3 A LXM15LD17N4<br>28.3 A LXM15MD28N4<br>28.3 A LXM15MD40N4<br>28.3 A LXM05AD28M2<br>28.3 A LXM05AD42M3X<br>28.3 A LXM05AD34N4<br>28.3 A LXM05BD28M2<br>28.3 A LXM05BD42M3X<br>28.3 A LXM05BD34N4<br>28.3 A LXM05CD28M2<br>28.3 A LXM05CD42M3X<br>28.3 A LXM05CD34N4<br>28.3 A LXM32.D30N4 |
| Maximum permanent current | 28.3 A                                                                                                                                                                                                                                                                                                                                    |
| Switching frequency       | 8 kHz                                                                                                                                                                                                                                                                                                                                     |
| Second shaft              | Without second shaft end                                                                                                                                                                                                                                                                                                                  |
| Shaft diameter            | 0.75 in (19 mm)                                                                                                                                                                                                                                                                                                                           |
| Shaft length              | 1.57 in (40 mm)                                                                                                                                                                                                                                                                                                                           |
| Key width                 | 1.18 in (30 mm)                                                                                                                                                                                                                                                                                                                           |
| Feedback type             | Multiturn SinCos Hiperface                                                                                                                                                                                                                                                                                                                |
| Holding torque            | 79.66 lbf.in (9 N.m) holding brake                                                                                                                                                                                                                                                                                                        |
| Motor flange size         | 3.94 in (100 mm)                                                                                                                                                                                                                                                                                                                          |
| Number of motor stacks    | 3                                                                                                                                                                                                                                                                                                                                         |
| Torque constant           | 1.22 N.m/A 248 °F (120 °C)                                                                                                                                                                                                                                                                                                                |
| Back emf constant         | 77 V/krpm 248 °F (120 °C)                                                                                                                                                                                                                                                                                                                 |
| Number of motor poles     | 8                                                                                                                                                                                                                                                                                                                                         |
| Rotor inertia             | 3.838 kg.cm²                                                                                                                                                                                                                                                                                                                              |
| Stator resistance         | 1.43 Ohm 68 °F (20 °C)                                                                                                                                                                                                                                                                                                                    |
| Stator inductance         | 8.8 mH 68 °F (20 °C)                                                                                                                                                                                                                                                                                                                      |

|                                       |                                                                       |
|---------------------------------------|-----------------------------------------------------------------------|
| Stator electrical time constant       | 6.15 ms 68 °F (20 °C)                                                 |
| Maximum radial force Fr               | 1050 N 1000 rpm<br>660 N 4000 rpm<br>730 N 3000 rpm<br>830 N 2000 rpm |
| Maximum axial force Fa                | 0.2 x Fr                                                              |
| Brake pull-in power                   | 18 W                                                                  |
| Type of cooling                       | Natural convection                                                    |
| Length                                | 10.69 in (271.5 mm)                                                   |
| Centring collar diameter              | 3.74 in (95 mm)                                                       |
| Centring collar depth                 | 0.14 in (3.5 mm)                                                      |
| Number of mounting holes              | 4                                                                     |
| Mounting holes diameter               | 0.35 in (9 mm)                                                        |
| Circle diameter of the mounting holes | 4.53 in (115 mm)                                                      |
| Net Weight                            | 17.64 lb(US) (8 kg)                                                   |

### Ordering and shipping details

|                   |                        |
|-------------------|------------------------|
| Category          | 18282-LEXIUM 32 MOTORS |
| Discount Schedule | PC53                   |
| GTIN              | 3389118140271          |
| Returnability     | No                     |
| Country of origin | DE                     |

### Packing Units

|                              |                        |
|------------------------------|------------------------|
| Unit Type of Package 1       | PCE                    |
| Number of Units in Package 1 | 1                      |
| Package 1 Height             | 8.27 in (21.0 cm)      |
| Package 1 Width              | 7.09 in (18.0 cm)      |
| Package 1 Length             | 23.03 in (58.5 cm)     |
| Package 1 Weight             | 17.97 lb(US) (8.15 kg) |

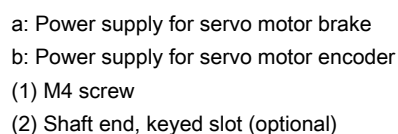
### Offer Sustainability

|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                                                                                                                       |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           |  <a href="#">REACH Declaration</a>                                                                                                                                                                       |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)                                                                                                                                                                                                                                  |
| Mercury free               | Yes                                                                                                                                                                                                                                                                                         |
| China RoHS Regulation      |  <a href="#">China RoHS Declaration</a>                                                                                                                                                                  |
| RoHS exemption information |  <a href="#">Yes</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.                                                                                                                                                                |
| PVC free                   | Yes                                                                                                                                                                                                                                                                                         |

### Contractual warranty

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

### Example with Straight Connectors



| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | 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 connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | 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     |



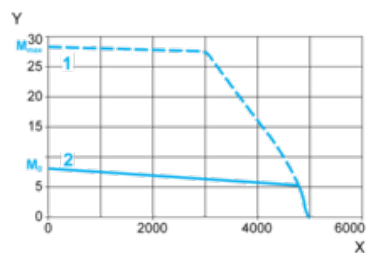
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### 400 V 3-Phase Supply Voltage

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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

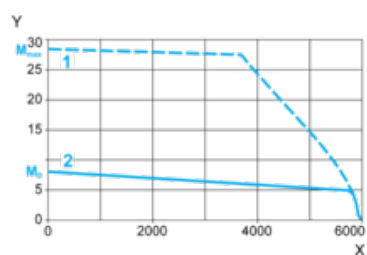
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### 480 V 3-Phase Supply Voltage

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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