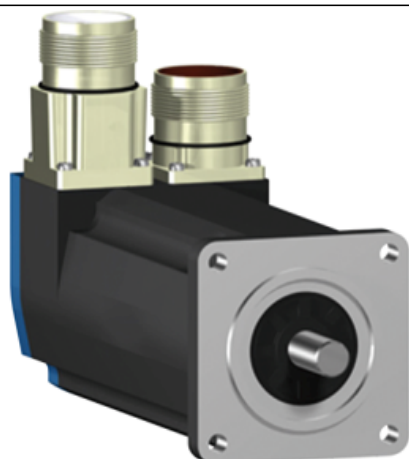


# BSH0553P31F1A

AC servo motor BSH - 1.3 N.m - 3000 rpm -  
keyed shaft - with brake - IP65



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maximum mechanical speed  | 9000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Continuous stall torque   | 1.05 N.m for LXM32.U60N4 at 1.5 A, 480 V, three phase<br>1.05 N.m for LXM32.U60N4 at 1.5 A, 400 V, three phase<br>1.3 N.m for LXM05AD10M2, 200...240 V, single phase<br>1.3 N.m for LXM05BD10M2, 200...240 V, single phase<br>1.3 N.m for LXM05CD10M2, 200...240 V, single phase<br>1.3 N.m for LXM05AD10M3X, 200...240 V, three phase<br>1.3 N.m for LXM05BD10M3X, 200...240 V, three phase<br>1.3 N.m for LXM05CD10M3X, 200...240 V, three phase<br>1.3 N.m for LXM15LD13M3, 230 V, single phase<br>1.3 N.m for LXM15LD13M3, 230 V, three phase<br>1.3 N.m for LXM15LD10N4, 400 V, three phase<br>1.3 N.m for LXM05AD14N4, 380...480 V, three phase<br>1.3 N.m for LXM05BD14N4, 380...480 V, three phase<br>1.3 N.m for LXM05CD14N4, 380...480 V, three phase         |
| Peak stall torque         | 3.5 N.m for LXM32.U60N4 at 1.5 A, 480 V, three phase<br>3.5 N.m for LXM32.U60N4 at 1.5 A, 400 V, three phase<br>2.7 N.m for LXM15LD13M3, 230 V, single phase<br>3.18 N.m for LXM05AD10M2, 200...240 V, single phase<br>3.18 N.m for LXM05BD10M2, 200...240 V, single phase<br>3.18 N.m for LXM05CD10M2, 200...240 V, single phase<br>2.7 N.m for LXM15LD13M3, 230 V, three phase<br>3.87 N.m for LXM15LD10N4, 400 V, three phase<br>3.18 N.m for LXM05AD10M3X, 200...240 V, three phase<br>3.87 N.m for LXM05AD14N4, 380...480 V, three phase<br>3.18 N.m for LXM05BD10M3X, 200...240 V, three phase<br>3.87 N.m for LXM05BD14N4, 380...480 V, three phase<br>3.18 N.m for LXM05CD10M3X, 200...240 V, three phase<br>3.87 N.m for LXM05CD14N4, 380...480 V, three phase |
| Nominal output power      | 400 W for LXM32.U60N4 at 1.5 A, 400 V, three phase<br>400 W for LXM32.U60N4 at 1.5 A, 480 V, three phase<br>340 W for LXM15LD13M3, 230 V, three phase<br>340 W for LXM15LD13M3, 230 V, single phase<br>350 W for LXM05AD10M2, 200...240 V, single phase<br>350 W for LXM05BD10M2, 200...240 V, single phase                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 350 W for LXM05CD10M2, 200...240 V, single phase<br>350 W for LXM05AD10M3X, 200...240 V, three phase<br>350 W for LXM05AD14N4, 380...480 V, three phase<br>350 W for LXM05BD10M3X, 200...240 V, three phase<br>350 W for LXM05BD14N4, 380...480 V, three phase<br>350 W for LXM05CD10M3X, 200...240 V, three phase<br>350 W for LXM05CD14N4, 380...480 V, three phase<br>670 W for LXM15LD10N4, 400 V, three phase                                                                                                                                                                                                                                                                                                                                                          |
| Nominal torque            | 0.65 N.m for LXM32.U60N4 at 1.5 A, 400 V, three phase<br>0.65 N.m for LXM32.U60N4 at 1.5 A, 480 V, three phase<br>1.08 N.m for LXM15LD13M3, 230 V, single phase<br>1.1 N.m for LXM05AD10M2, 200...240 V, single phase<br>1.1 N.m for LXM05BD10M2, 200...240 V, single phase<br>1.1 N.m for LXM05CD10M2, 200...240 V, single phase<br>0.8 N.m for LXM15LD10N4, 400 V, three phase<br>1.08 N.m for LXM15LD13M3, 230 V, three phase<br>1.1 N.m for LXM05AD10M3X, 200...240 V, three phase<br>1.1 N.m for LXM05AD14N4, 380...480 V, three phase<br>1.1 N.m for LXM05BD10M3X, 200...240 V, three phase<br>1.1 N.m for LXM05BD14N4, 380...480 V, three phase<br>1.1 N.m for LXM05CD10M3X, 200...240 V, three phase<br>1.1 N.m for LXM05CD14N4, 380...480 V, three phase           |
| Nominal speed             | 6000 rpm for LXM32.U60N4 at 1.5 A, 400 V, three phase<br>6000 rpm for LXM32.U60N4 at 1.5 A, 480 V, three phase<br>3000 rpm for LXM05AD10M2, 200...240 V, single phase<br>3000 rpm for LXM05BD10M2, 200...240 V, single phase<br>3000 rpm for LXM05CD10M2, 200...240 V, single phase<br>3000 rpm for LXM05AD10M3X, 200...240 V, three phase<br>3000 rpm for LXM05AD14N4, 380...480 V, three phase<br>3000 rpm for LXM05BD10M3X, 200...240 V, three phase<br>3000 rpm for LXM05BD14N4, 380...480 V, three phase<br>3000 rpm for LXM05CD10M3X, 200...240 V, three phase<br>3000 rpm for LXM05CD14N4, 380...480 V, three phase<br>3000 rpm for LXM15LD13M3, 230 V, single phase<br>3000 rpm for LXM15LD13M3, 230 V, three phase<br>8000 rpm for LXM15LD10N4, 400 V, three phase |
| Product compatibility     | LXM05AD10M2 at 200...240 V single phase<br>LXM05BD10M2 at 200...240 V single phase<br>LXM05CD10M2 at 200...240 V single phase<br>LXM15LD13M3 at 230 V single phase<br>LXM32.U60N4 at 400 V three phase<br>LXM32.U60N4 at 480 V three phase<br>LXM05AD10M3X at 200...240 V three phase<br>LXM05BD10M3X at 200...240 V three phase<br>LXM05CD10M3X at 200...240 V three phase<br>LXM15LD13M3 at 230 V three phase<br>LXM05AD14N4 at 380...480 V three phase<br>LXM05BD14N4 at 380...480 V three phase<br>LXM05CD14N4 at 380...480 V three phase<br>LXM15LD10N4 at 400 V three phase                                                                                                                                                                                           |
| Shaft end                 | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IP degree of protection   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Holding brake             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Electrical connection     | Straight 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 | 1.7 A                                          |
| Maximum continuous power | 0.97 W                                         |
| Maximum current Irms     | 8.7 A for LXM15LD13M3<br>8.7 A for LXM15LD10N4 |

|                                       |                                                                                                                                                                                                                                                         |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | 6.5 A for LXM05AD10M2<br>6.5 A for LXM05AD10M3X<br>6.5 A for LXM05AD14N4<br>6.5 A for LXM05BD10M2<br>6.5 A for LXM05BD10M3X<br>6.5 A for LXM05BD14N4<br>6.5 A for LXM05CD10M2<br>6.5 A for LXM05CD10M3X<br>6.5 A for LXM05CD14N4<br>6 A for LXM32.U60N4 |
| Maximum permanent current             | 6.5 A                                                                                                                                                                                                                                                   |
| Switching frequency                   | 8 kHz                                                                                                                                                                                                                                                   |
| Second shaft                          | Without second shaft end                                                                                                                                                                                                                                |
| Shaft diameter                        | 9 mm                                                                                                                                                                                                                                                    |
| Shaft length                          | 20 mm                                                                                                                                                                                                                                                   |
| Key width                             | 12 mm                                                                                                                                                                                                                                                   |
| Feedback type                         | Single turn SinCos Hiperface                                                                                                                                                                                                                            |
| Holding torque                        | 0.8 N.m holding brake                                                                                                                                                                                                                                   |
| Motor flange size                     | 55 mm                                                                                                                                                                                                                                                   |
| Number of motor stacks                | 3                                                                                                                                                                                                                                                       |
| Torque constant                       | 0.7 N.m/A at 120 °C                                                                                                                                                                                                                                     |
| Back emf constant                     | 41 V/krpm at 120 °C                                                                                                                                                                                                                                     |
| Number of motor poles                 | 6                                                                                                                                                                                                                                                       |
| Rotor inertia                         | 0.1553 kg.cm <sup>2</sup>                                                                                                                                                                                                                               |
| Stator resistance                     | 10.4 Ohm at 20 °C                                                                                                                                                                                                                                       |
| Stator inductance                     | 25 mH at 20 °C                                                                                                                                                                                                                                          |
| Stator electrical time constant       | 2.4 ms at 20 °C                                                                                                                                                                                                                                         |
| Maximum radial force Fr               | 190 N at 8000 rpm<br>200 N at 7000 rpm<br>210 N at 6000 rpm<br>230 N at 5000 rpm<br>240 N at 4000 rpm<br>270 N at 3000 rpm<br>310 N at 2000 rpm<br>390 N at 1000 rpm                                                                                    |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                                |
| Brake pull-in power                   | 10 W                                                                                                                                                                                                                                                    |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                                      |
| Length                                | 203 mm                                                                                                                                                                                                                                                  |
| Centring collar diameter              | 40 mm                                                                                                                                                                                                                                                   |
| Centring collar depth                 | 2 mm                                                                                                                                                                                                                                                    |
| Number of mounting holes              | 4                                                                                                                                                                                                                                                       |
| Mounting holes diameter               | 5.5 mm                                                                                                                                                                                                                                                  |
| Circle diameter of the mounting holes | 63 mm                                                                                                                                                                                                                                                   |
| Product weight                        | 1.9 kg                                                                                                                                                                                                                                                  |

### Offer Sustainability

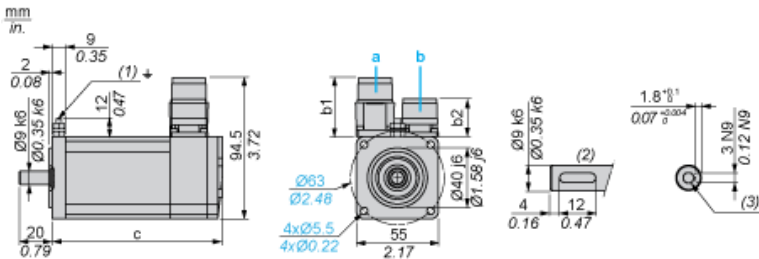
|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|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

Servo Motors Dimensions

Example with Straight Connectors



- a: Power supply for servo motor brake  
b: Power supply for servo motor encoder  
(1) M4 screw  
(2) Shaft end, keyed slot (optional)  
(3) For screw M3 x 9 mm/M3 x 0.35 in.

Dimensions in mm

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) |
|---------------------|------|-----------------------------|------|-------------------|----------------|
| b                   | b1   | b                           | b1   |                   |                |
| 39.5                | 25.5 | 39.5                        | 39.5 | 176.5             | 203            |

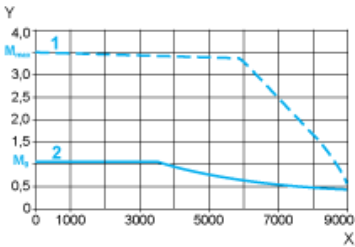
Dimensions in in.

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) |
|---------------------|------|-----------------------------|------|-------------------|----------------|
| b                   | b1   | b                           | b1   |                   |                |
| 1.55                | 1.00 | 1.55                        | 1.55 | 6.94              | 7.99           |

400 V 3-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•U60N4 servo drive



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

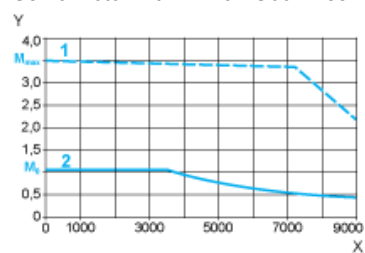
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480 V 3-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•U60N4 servo drive



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