

## BSH0553P02A2A

servo motor BSH, Lexium 05, 1.3N.m,  
3000rpm, 55mm, untapped shaft, Sincos multi  
turn, without brake, 3 phases, IP50





## 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<br>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                 | Untapped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IP degree of protection   | IP50 standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Speed feedback resolution | 131072 points/turn x 4096 turns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Holding brake             | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Electrical connection     | Rotatable right-angled connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Complementary

|                                 |                                                                                                                                                                                                                                                                                                           |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility             | Lexium 15<br>Lexium 05<br>Lexium 32                                                                                                                                                                                                                                                                       |
| Supply voltage max              | 480 V                                                                                                                                                                                                                                                                                                     |
| Network number of phases        | Three phase                                                                                                                                                                                                                                                                                               |
| Continuous stall current        | 1.7 A                                                                                                                                                                                                                                                                                                     |
| Maximum continuous power        | 0.97 W                                                                                                                                                                                                                                                                                                    |
| Maximum current Irms            | 8.7 A for LXM15LD13M3<br>8.7 A for LXM15LD10N4<br>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                                                                                                                                                                                                                                                                                                     |
| Feedback type                   | Multiturn SinCos Hiperface                                                                                                                                                                                                                                                                                |
| 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                   | 0.134 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                                                                                                                                                                                                                                                                                                  |

|                                       |                    |
|---------------------------------------|--------------------|
| Type of cooling                       | Natural convection |
| Length                                | 176.5 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              |
| Net weight                            | 1.76 kg            |

### Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 12.3 cm |
| Package 1 Width              | 12.8 cm |
| Package 1 Length             | 37.7 cm |
| Package 1 Weight             | 1.4 kg  |

### Offer Sustainability

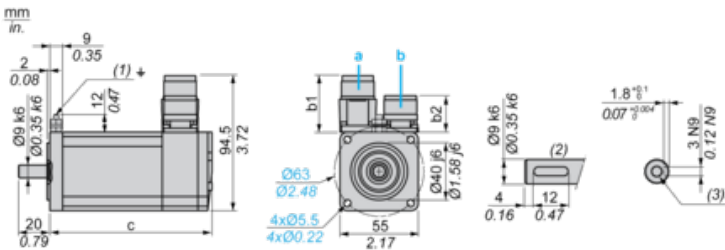
|                            |                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                        |
| 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 |
|----------|-----------|

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           |

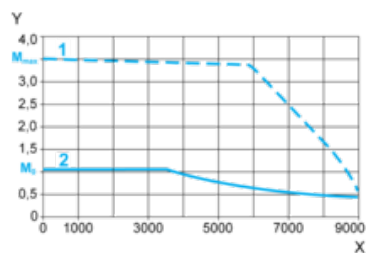
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### 400 V 3-Phase Supply Voltage

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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

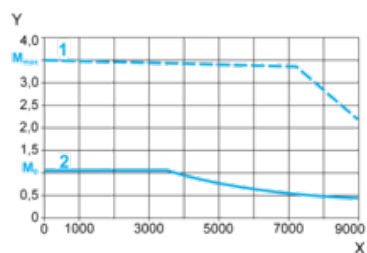
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### 480 V 3-Phase Supply Voltage

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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