

# BSH0552T11A2A

servo motor BSH, Lexium 05, 0.9N.m,  
6000rpm, 55mm, keyed shaft, Sincos single  
turn, without brake, IP50





## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Maximum mechanical speed  | 9000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Continuous stall torque   | 0.8 N.M for LXM32.U90M2 at 3 A, 115 V, single phase<br>0.8 N.M for LXM32.U90M2 at 3 A, 230 V, single phase<br>0.9 N.M for LXM05AD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05BD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05CD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05AD10M3X, 200...240 V, three phase<br>0.9 N.M for LXM05BD10M3X, 200...240 V, three phase<br>0.9 N.M for LXM05CD10M3X, 200...240 V, three phase<br>0.9 N.M for LXM15LD13M3, 230 V, single phase<br>0.9 N.M for LXM15LD13M3, 230 V, three phase<br>0.77 N.M for LXM05CU70M2, 200...240 V, single phase<br>0.9 N.M for LXM05AD10F1, 110...120 V, single phase<br>0.9 N.M for LXM05AD17F1, 110...120 V, single phase<br>0.9 N.M for LXM05BD10F1, 110...120 V, single phase<br>0.9 N.M for LXM05BD17F1, 110...120 V, single phase<br>0.9 N.M for LXM05CD10F1, 110...120 V, single phase<br>0.9 N.m for LXM05CD17F1, 110...120 V, single phase          |
| Peak stall torque         | 1.9 N.M for LXM32.U90M2 at 3 A, 115 V, single phase<br>2.5 N.M for LXM32.U90M2 at 3 A, 230 V, single phase<br>1.5 N.M for LXM15LD13M3, 230 V, single phase<br>1.31 N.M for LXM05CU70M2, 200...240 V, single phase<br>1.77 N.M for LXM05AD10F1, 110...120 V, single phase<br>1.77 N.M for LXM05AD10M2, 200...240 V, single phase<br>2.7 N.M for LXM05AD17F1, 110...120 V, single phase<br>1.77 N.M for LXM05BD10F1, 110...120 V, single phase<br>1.77 N.M for LXM05BD10M2, 200...240 V, single phase<br>2.7 N.M for LXM05BD17F1, 110...120 V, single phase<br>1.77 N.M for LXM05CD10F1, 110...120 V, single phase<br>1.77 N.M for LXM05CD10M2, 200...240 V, single phase<br>2.7 N.M for LXM05CD17F1, 110...120 V, single phase<br>1.5 N.M for LXM15LD13M3, 230 V, three phase<br>1.77 N.M for LXM05AD10M3X, 200...240 V, three phase<br>1.77 N.M for LXM05BD10M3X, 200...240 V, three phase<br>1.77 N.m for LXM05CD10M3X, 200...240 V, three phase |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal output power | 250 W for LXM32.U90M2 at 3 A, 115 V, single phase<br>450 W for LXM32.U90M2 at 3 A, 230 V, single phase<br>240 W for LXM05CU70M2, 200...240 V, single phase<br>250 W for LXM05AD10F1, 110...120 V, single phase<br>250 W for LXM05AD17F1, 110...120 V, single phase<br>250 W for LXM05BD10F1, 110...120 V, single phase<br>250 W for LXM05BD17F1, 110...120 V, single phase<br>250 W for LXM05CD10F1, 110...120 V, single phase<br>250 W for LXM05CD17F1, 110...120 V, single phase<br>450 W for LXM05AD10M2, 200...240 V, single phase<br>450 W for LXM05BD10M2, 200...240 V, single phase<br>450 W for LXM05CD10M2, 200...240 V, single phase<br>450 W for LXM15LD13M3, 230 V, single phase<br>450 W for LXM05AD10M3X, 200...240 V, three phase<br>450 W for LXM05BD10M3X, 200...240 V, three phase<br>450 W for LXM05CD10M3X, 200...240 V, three phase<br>570 W for LXM15LD13M3, 230 V, three phase                                        |
| Nominal torque       | 0.77 N.M for LXM32.U90M2 at 3 A, 115 V, single phase<br>0.74 N.M for LXM32.U90M2 at 3 A, 230 V, single phase<br>0.72 N.M for LXM15LD13M3, 230 V, single phase<br>0.77 N.M for LXM05CU70M2, 200...240 V, single phase<br>0.9 N.M for LXM05AD10F1, 110...120 V, single phase<br>0.9 N.M for LXM05AD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05AD17F1, 110...120 V, single phase<br>0.9 N.M for LXM05BD10F1, 110...120 V, single phase<br>0.9 N.M for LXM05BD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05BD17F1, 110...120 V, single phase<br>0.9 N.M for LXM05CD10F1, 110...120 V, single phase<br>0.9 N.M for LXM05CD10M2, 200...240 V, single phase<br>0.9 N.M for LXM05CD17F1, 110...120 V, single phase<br>0.68 N.M for LXM15LD13M3, 230 V, three phase<br>0.9 N.M for LXM05AD10M3X, 200...240 V, three phase<br>0.9 N.M for LXM05BD10M3X, 200...240 V, three phase<br>0.9 N.m for LXM05CD10M3X, 200...240 V, three phase |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal speed             | 3000 rpm for LXM32.U90M2 at 3 A, 115 V, single phase<br>6000 rpm for LXM32.U90M2 at 3 A, 230 V, single phase<br>3000 rpm for LXM05AD10F1, 110...120 V, single phase<br>3000 rpm for LXM05BD10F1, 110...120 V, single phase<br>3000 rpm for LXM05CD10F1, 110...120 V, single phase<br>3000 rpm for LXM05CU70M2, 200...240 V, single phase<br>6000 rpm for LXM05AD10M2, 200...240 V, single phase<br>6000 rpm for LXM05BD10M2, 200...240 V, single phase<br>6000 rpm for LXM05CD10M2, 200...240 V, single phase<br>6000 rpm for LXM05AD10M3X, 200...240 V, three phase<br>6000 rpm for LXM05BD10M3X, 200...240 V, three phase<br>6000 rpm for LXM05CD10M3X, 200...240 V, three phase<br>8000 rpm for LXM15LD13M3, 230 V, three phase<br>3000 rpm for LXM05AD17F1, 110...120 V, single phase<br>3000 rpm for LXM05BD17F1, 110...120 V, single phase<br>3000 rpm for LXM05CD17F1, 110...120 V, single phase<br>6000 rpm for LXM15LD13M3, 230 V, single phase |
| Product compatibility     | LXM05AD10F1 at 110...120 V single phase<br>LXM05AD10M2 at 200...240 V single phase<br>LXM05AD17F1 at 110...120 V single phase<br>LXM05BD10F1 at 110...120 V single phase<br>LXM05BD10M2 at 200...240 V single phase<br>LXM05BD17F1 at 110...120 V single phase<br>LXM05CD10F1 at 110...120 V single phase<br>LXM05CD10M2 at 200...240 V single phase<br>LXM05CD17F1 at 110...120 V single phase<br>LXM05CU70M2 at 200...240 V single phase<br>LXM15LD13M3 at 230 V single phase<br>LXM32.U90M2 at 115 V single phase<br>LXM32.U90M2 at 230 V single 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                                                                                                                                                                                                                           |
| Shaft end                 | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| IP degree of protection   | IP50 standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Holding brake             | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Electrical connection     | Rotatable right-angled connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Complementary

|                          |                                     |
|--------------------------|-------------------------------------|
| Range compatibility      | Lexium 05<br>Lexium 32<br>Lexium 15 |
| Supply voltage max       | 480 V                               |
| Network number of phases | Three phase                         |
| Continuous stall current | 2.2 A                               |
| Maximum continuous power | 0.67 W                              |

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum current I <sub>rms</sub>      | 6 A for LXM32.U90M2 at 115 V<br>8.8 A for LXM32.U90M2 at 230 V<br>10.3 A for LXM15LD13M3<br>8.8 A for LXM05AD10F1<br>8.8 A for LXM05AD17F1<br>8.8 A for LXM05CU70M2<br>8.8 A for LXM05AD10M2<br>8.8 A for LXM05AD10M3X<br>8.8 A for LXM05BD10F1<br>8.8 A for LXM05BD17F1<br>8.8 A for LXM05BD10M2<br>8.8 A for LXM05BD10M3X<br>8.8 A for LXM05CD10F1<br>8.8 A for LXM05CD17F1<br>8.8 A for LXM05CD10M2<br>8.8 A for LXM05CD10M3X |
| Maximum permanent current             | 8.8 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                                                                                                                                                                                                                                                                                                                                                                                                     |
| Motor flange size                     | 55 mm                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Number of motor stacks                | 2                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Torque constant                       | 0.36 N.m/A at 120 °C                                                                                                                                                                                                                                                                                                                                                                                                             |
| Back emf constant                     | 22 V/krpm at 120 °C                                                                                                                                                                                                                                                                                                                                                                                                              |
| Number of motor poles                 | 6                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Rotor inertia                         | 0.096 kg.cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                         |
| Stator resistance                     | 5.2 Ohm at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Stator inductance                     | 10.6 mH at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Stator electrical time constant       | 2.04 ms at 20 °C                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Maximum radial force Fr               | 190 N at 7000 rpm<br>190 N at 8000 rpm<br>200 N at 6000 rpm<br>220 N at 5000 rpm<br>230 N at 4000 rpm<br>260 N at 3000 rpm<br>290 N at 2000 rpm<br>370 N at 1000 rpm                                                                                                                                                                                                                                                             |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                                                                                                                                                                                                               |
| Length                                | 154.4 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                            | 1.5 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             | 1.1 kg  |

## Offer Sustainability

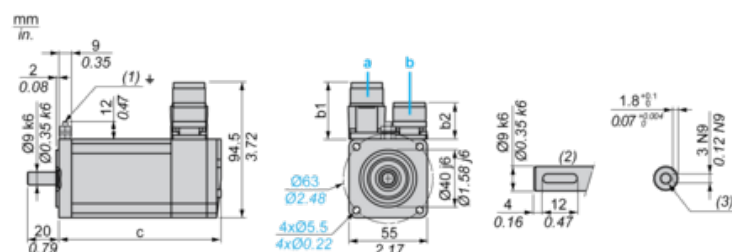
|                            |                                                                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 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 | 154.5             | 181            |

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 | 6.08              | 7.12           |

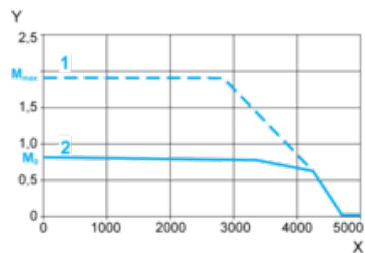
---

## 115 V Single-Phase Supply Voltage

---

### Torque/Speed Curves

Servo motor with LXM32•U90M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque

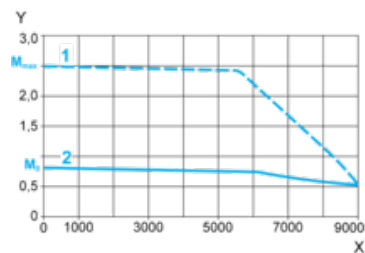
---

## 230 V Single-Phase Supply Voltage

---

### Torque/Speed Curves

Servo motor with LXM32•U90M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque