

# Product datasheet

Specifications



## AC servo motor BSH - 0.5 N.m - 8000 rpm - untapped shaft - without brake - IP50

BSH0551T02A2A

⚠ Discontinued on: 9 Feb 2023

⚠ Discontinued

EAN Code: 3389118158313

### Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Maximum mechanical speed  | 9000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Continuous stall torque   | 0.5 N.m for LXM32.U90M2 at 3 A, 115 V, single phase<br>0.5 N.m for LXM32.U45M2 at 1.5 A, 230 V, single phase<br>0.5 N.m for LXM05CU70M2, 200...240 V, single phase<br>0.5 N.m for LXM05AD10F1, 110...120 V, single phase<br>0.5 N.m for LXM05AD10M2, 200...240 V, single phase<br>0.5 N.m for LXM05BD10F1 at 1.5 A, 110...120 V, single phase<br>0.5 N.m for LXM05BD10M2, 200...240 V, single phase<br>0.5 N.m for LXM05CD10F1, 110...120 V, single phase<br>0.5 N.m for LXM05CD10M2, 200...240 V, single phase<br>0.5 N.m for LXM15LD13M3, 230 V, three phase<br>0.5 N.m for LXM05AD10M3X, 200...240 V, three phase<br>0.5 N.m for LXM05BD10M3X, 200...240 V, three phase<br>0.5 N.m for LXM05CD10M3X, 200...240 V, three phase   |
| Peak stall torque         | 1.5 N.m for LXM32.U90M2 at 3 A, 115 V, single phase<br>1.4 N.m for LXM32.U45M2 at 1.5 A, 230 V, single phase<br>1.08 N.m for LXM05CU70M2, 200...240 V, single phase<br>1.4 N.m for LXM05AD10F1, 110...120 V, single phase<br>1.4 N.m for LXM05AD10M2, 200...240 V, single phase<br>1.4 N.m for LXM05BD10F1 at 1.5 A, 110...120 V, single phase<br>1.4 N.m for LXM05BD10M2, 200...240 V, single phase<br>1.4 N.m for LXM05CD10F1, 110...120 V, single phase<br>1.4 N.m for LXM05CD10M2, 200...240 V, single phase<br>1.24 N.m for LXM15LD13M3, 230 V, three phase<br>1.4 N.m for LXM05AD10M3X, 200...240 V, three phase<br>1.4 N.m for LXM05BD10M3X, 200...240 V, three phase<br>1.4 N.m for LXM05CD10M3X, 200...240 V, three phase |
| Nominal output power      | 150 W for LXM32.U90M2 at 3 A, 115 V, single phase<br>300 W for LXM32.U45M2 at 1.5 A, 230 V, single phase<br>150 W for LXM05AD10F1, 110...120 V, single phase<br>150 W for LXM05BD10F1, 110...120 V, single phase<br>150 W for LXM05CD10F1, 110...120 V, single phase<br>150 W for LXM05CU70M2 at 1.5 A, 200...240 V, single phase<br>270 W for LXM05AD10M2, 200...240 V, single phase<br>270 W for LXM05BD10M2, 200...240 V, single phase<br>270 W for LXM05CD10M2, 200...240 V, single phase<br>270 W for LXM05AD10M3X, 200...240 V, three phase<br>270 W for LXM05BD10M3X, 200...240 V, three phase<br>270 W for LXM05CD10M3X, 200...240 V, three phase<br>340 W for LXM15LD13M3, 230 V, three phase                             |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal torque            | 0.49 N.m for LXM32.U90M2 at 3 A, 115 V, single phase<br>0.45 N.m for LXM32.U45M2 at 1.5 A, 230 V, single phase<br>0.43 N.m for LXM05AD10M2, 200...240 V, single phase<br>0.43 N.m for LXM05BD10M2, 200...240 V, single phase<br>0.43 N.m for LXM05CD10M2, 200...240 V, single phase<br>0.46 N.m for LXM05AD10F1 at 1.5 A, 110...120 V, single phase<br>0.46 N.m for LXM05BD10F1, 110...120 V, single phase<br>0.46 N.m for LXM05CD10F1, 110...120 V, single phase<br>0.46 N.m for LXM05CU70M2, 200...240 V, single phase<br>0.41 N.m for LXM15LD13M3, 230 V, three phase<br>0.43 N.m for LXM05AD10M3X, 200...240 V, three phase<br>0.43 N.m for LXM05BD10M3X, 200...240 V, three phase<br>0.43 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.U45M2 at 1.5 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 at 1.5 A, 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 |
| Product compatibility     | LXM05AD10F1 at 110...120 V single phase<br>LXM05AD10M2 at 200...240 V single phase<br>LXM05BD10F1 at 110...120 V single phase<br>LXM05BD10M2 at 200...240 V single phase<br>LXM05CD10F1 at 110...120 V single phase<br>LXM05CD10M2 at 200...240 V single phase<br>LXM05CU70M2 at 200...240 V single phase<br>LXM32.U90M2 at 115 V single phase<br>LXM32.U45M2 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                 | 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 05<br>Lexium 15<br>Lexium 32 |
| supply voltage max       | 480 V                               |
| Network number of phases | Three phase                         |
| Continuous stall current | 1.4 A                               |
| maximum continuous power | 0.45 W                              |

|                                       |                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum current Irms                  | 6.2 A for LXM15LD13M3<br>5.4 A for LXM05AD10F1<br>5.4 A for LXM05CU70M2<br>5.4 A for LXM05AD10M2<br>5.4 A for LXM05AD10M3X<br>5.4 A for LXM05BD10F1<br>5.4 A for LXM05BD10M2<br>5.4 A for LXM05BD10M3X<br>5.4 A for LXM05CD10F1<br>5.4 A for LXM05CD10M2<br>5.4 A for LXM05CD10M3X<br>5.4 A for LXM32.U90M2<br>4.5 A for LXM32.U45M2 |
| Maximum permanent current             | 5.4 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                | 1                                                                                                                                                                                                                                                                                                                                    |
| Torque constant                       | 0.36 N.m/A at 120 °C                                                                                                                                                                                                                                                                                                                 |
| Back emf constant                     | 22 V/krpm at 120 °C                                                                                                                                                                                                                                                                                                                  |
| Number of motor poles                 | 3.0                                                                                                                                                                                                                                                                                                                                  |
| Rotor inertia                         | 0.059 kg.cm²                                                                                                                                                                                                                                                                                                                         |
| Stator resistance                     | 12.2 Ohm at 20 °C                                                                                                                                                                                                                                                                                                                    |
| Stator inductance                     | 10.85 mH at 20 °C                                                                                                                                                                                                                                                                                                                    |
| Stator electrical time constant       | 1.7 ms at 20 °C                                                                                                                                                                                                                                                                                                                      |
| Maximum radial force Fr               | 170 N at 8000 rpm<br>180 N at 7000 rpm<br>190 N at 6000 rpm<br>200 N at 5000 rpm<br>220 N at 4000 rpm<br>240 N at 3000 rpm<br>270 N at 2000 rpm<br>340 N at 1000 rpm                                                                                                                                                                 |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                                                                                                             |
| type of cooling                       | Natural convection                                                                                                                                                                                                                                                                                                                   |
| Length                                | 132.5 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                            | 1.2 kg                                                                                                                                                                                                                                                                                                                               |
| Sizing reference                      | BSH0551T                                                                                                                                                                                                                                                                                                                             |
| Network number of phases              | 3                                                                                                                                                                                                                                                                                                                                    |
| Accuracy error [angular]              | 1.4 °                                                                                                                                                                                                                                                                                                                                |
| Temperature copper hot                | 120 °C                                                                                                                                                                                                                                                                                                                               |
| Temperature magnet hot                | 100 °C                                                                                                                                                                                                                                                                                                                               |

|                       |       |
|-----------------------|-------|
| Temperature magnet rt | 20 °C |
|-----------------------|-------|

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 11.000 cm |
| Package 1 Width              | 19.000 cm |
| Package 1 Length             | 39.500 cm |
| Package 1 Weight             | 1.608 kg  |

## Logistical informations

|                   |    |
|-------------------|----|
| Country of origin | DE |
|-------------------|----|

## Contractual warranty

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

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

| Environmental footprint                               |                                               |
|-------------------------------------------------------|-----------------------------------------------|
| Carbon footprint (kg.eq.CO2 per CR, Total Life cycle) | 390                                           |
| Environmental Disclosure                              | <a href="#">Product Environmental Profile</a> |

Use Better

| Materials and Substances               |                                                            |
|----------------------------------------|------------------------------------------------------------|
| Packaging made with recycled cardboard | Yes                                                        |
| Packaging without single use plastic   | No                                                         |
| <a href="#">EU RoHS Directive</a>      | Pro-active compliance (Product out of EU RoHS legal scope) |
| SCIP Number                            | 8c11b0c9-e501-4810-83eb-05fc6605ede4                       |
| REACH Regulation                       | <a href="#">REACH Declaration</a>                          |
| PVC free                               | Yes                                                        |

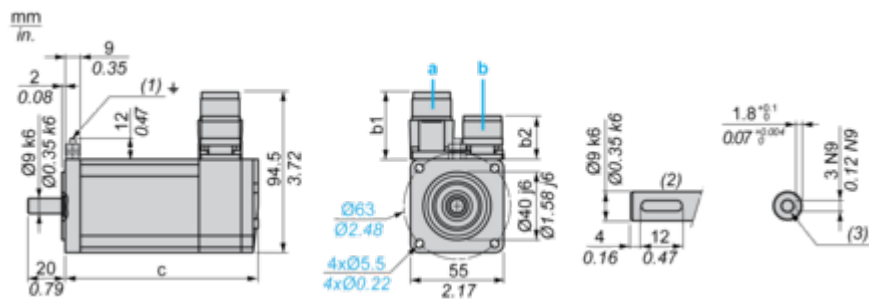
Use Again

| Repack and remanufacture |                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circularity Profile      | No need of specific recycling operations                                                                                                                                                                        |
| Take-back                | No                                                                                                                                                                                                              |
| WEEE                     |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

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.

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) |
|---------------------|------|-----------------------------|------|-------------------|----------------|
| b                   | b1   | b                           | b1   |                   |                |
| 39.5                | 25.5 | 39.5                        | 39.5 | 132.5             | 159            |

Dimensions in in.

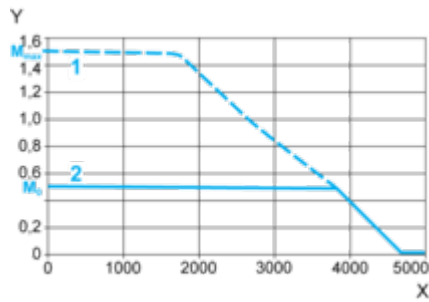
| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) |
|---------------------|------|-----------------------------|------|-------------------|----------------|
| b                   | b1   | b                           | b1   |                   |                |
| 1.55                | 1.00 | 1.55                        | 1.55 | 5.21              | 6.25           |

Performance Curves

115 V Single-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•U90M2 servo drive

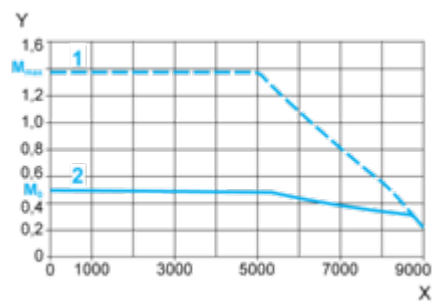


- X Speed in rpm
- Y Torque in Nm
- 1 Peak torque
- 2 Continuous torque

230 V Single-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•U45M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque