

# BSH0553T01F1A

AC servo motor BSH, Lexium 05, 1.3N.m,  
3000rpm, untapped shaft, with brake, IP50





## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Product or Component Type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Maximum mechanical speed  | 9000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Continuous stall torque   | 10.6 Lbf.In (1.2 N.m) LXM32.U90M2 3 A, 230 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05AD17F1, 110...120 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05AD17M2, 200...240 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05BD17F1, 110...120 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05BD17M2, 200...240 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05CD17F1, 110...120 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05CD17M2, 200...240 V, single phase<br>10.6 Lbf.In (1.2 N.m) LXM32.D18M2 6 A, 115 V, single phase<br>11.5 Lbf.In (1.3 N.m) LXM05AD17M3X, 200...240 V, three phase<br>11.5 Lbf.In (1.3 N.m) LXM05BD17M3X, 200...240 V, three phase<br>11.5 lbf.in (1.3 N.m) LXM05CD17M3X, 200...240 V, three phase                 |
| Peak stall torque         | 26.6 Lbf.In (3 N.m) LXM32.U90M2 3 A, 230 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05AD17F1, 110...120 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05AD17M2, 200...240 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05BD17F1, 110...120 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05BD17M2, 200...240 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05CD17F1, 110...120 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05CD17M2, 200...240 V, single phase<br>29.2 Lbf.In (3.3 N.m) LXM32.D18M2 6 A, 115 V, single phase<br>29.30 Lbf.In (3.31 N.m) LXM05AD17M3X, 200...240 V, three phase<br>29.30 Lbf.In (3.31 N.m) LXM05BD17M3X, 200...240 V, three phase<br>29.30 lbf.in (3.31 N.m) LXM05CD17M3X, 200...240 V, three phase |
| Nominal output power      | 550 W LXM32.U90M2 3 A, 230 V, single phase<br>350 W LXM05AD17F1, 110...120 V, single phase<br>350 W LXM05AD17M2, 200...240 V, single phase<br>350 W LXM05BD17F1, 110...120 V, single phase<br>350 W LXM05BD17M2, 200...240 V, single phase<br>350 W LXM05CD17F1, 110...120 V, single phase<br>350 W LXM05CD17M2, 200...240 V, single phase<br>350 W LXM32.D18M2 6 A, 115 V, single phase<br>350 W LXM05AD17M3X, 200...240 V, three phase<br>350 W LXM05BD17M3X, 200...240 V, three phase<br>350 W LXM05CD17M3X, 200...240 V, three phase                                                                                                                                                                                                 |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal torque            | 7.43 Lbf.In (0.84 N.m) LXM32.U90M2 3 A, 230 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05AD17F1, 110...120 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05AD17M2, 200...240 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05BD17F1, 110...120 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05BD17M2, 200...240 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05CD17F1, 110...120 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05CD17M2, 200...240 V, single phase<br>10.09 Lbf.In (1.14 N.m) LXM32.D18M2 6 A, 115 V, single phase<br>9.7 Lbf.In (1.1 N.m) LXM05AD17M3X, 200...240 V, three phase<br>9.7 Lbf.In (1.1 N.m) LXM05BD17M3X, 200...240 V, three phase<br>9.7 lbf.in (1.1 N.m) LXM05CD17M3X, 200...240 V, three phase |
| Nominal speed             | 6000 rpm LXM32.U90M2 3 A, 230 V, single phase<br>3000 rpm LXM05AD17F1, 110...120 V, single phase<br>3000 rpm LXM05BD17F1, 110...120 V, single phase<br>3000 rpm LXM05CD17F1, 110...120 V, single phase<br>3000 rpm LXM05AD17M2, 200...240 V, single phase<br>3000 rpm LXM05BD17M2, 200...240 V, single phase<br>3000 rpm LXM05CD17M2, 200...240 V, single phase<br>3000 rpm LXM32.D18M2 6 A, 115 V, single phase<br>3000 rpm LXM05AD17M3X, 200...240 V, three phase<br>3000 rpm LXM05BD17M3X, 200...240 V, three phase<br>3000 rpm LXM05CD17M3X, 200...240 V, three phase                                                                                                                                          |
| Product compatibility     | LXM05AD17F1 110...120 V single phase<br>LXM05AD17M2 200...240 V single phase<br>LXM05BD17F1 110...120 V single phase<br>LXM05BD17M2 200...240 V single phase<br>LXM05CD17F1 110...120 V single phase<br>LXM05CD17M2 200...240 V single phase<br>LXM32.U90M2 230 V single phase<br>LXM32.D18M2 115 V single phase<br>LXM05AD17M3X 200...240 V three phase<br>LXM05BD17M3X 200...240 V three phase<br>LXM05CD17M3X 200...240 V three phase                                                                                                                                                                                                                                                                           |
| Shaft end                 | Untapped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| IP Degree of Protection   | IP50 standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Holding brake             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mounting Support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Electrical Connection     | Straight connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Complementary

|                          |                        |
|--------------------------|------------------------|
| Range Compatibility      | Lexium 32<br>Lexium 05 |
| Supply voltage max       | 480 V                  |
| Phase                    | Three phase            |
| Continuous stall current | 3.1 A                  |
| Maximum continuous power | 0.97 W                 |

|                                       |                                                                                                                                                                                                                                              |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum current Irms                  | 11.9 A LXM05AD17F1<br>11.9 A LXM05AD17M2<br>11.9 A LXM05AD17M3X<br>11.9 A LXM05BD17F1<br>11.9 A LXM05BD17M2<br>11.9 A LXM05BD17M3X<br>11.9 A LXM05CD17F1<br>11.9 A LXM05CD17M2<br>11.9 A LXM05CD17M3X<br>10 A LXM32.D18M2<br>9 A LXM32.U90M2 |
| Maximum permanent current             | 11.9 A                                                                                                                                                                                                                                       |
| Switching frequency                   | 8 kHz                                                                                                                                                                                                                                        |
| Second shaft                          | Without second shaft end                                                                                                                                                                                                                     |
| Shaft diameter                        | 0.4 in (9 mm)                                                                                                                                                                                                                                |
| Shaft length                          | 0.8 in (20 mm)                                                                                                                                                                                                                               |
| Feedback type                         | Single turn SinCos Hiperface                                                                                                                                                                                                                 |
| Holding torque                        | 7.08 lbf.in (0.8 N.m) holding brake                                                                                                                                                                                                          |
| Motor flange size                     | 2.2 in (55 mm)                                                                                                                                                                                                                               |
| Number of motor stacks                | 3                                                                                                                                                                                                                                            |
| Torque constant                       | 0.39 N.m/A 248.0000000000 °F (120 °C)                                                                                                                                                                                                        |
| Back emf constant                     | 22 V/krpm 248.0000000000 °F (120 °C)                                                                                                                                                                                                         |
| Number of motor poles                 | 6                                                                                                                                                                                                                                            |
| Rotor inertia                         | 0.1553 kg.cm <sup>2</sup>                                                                                                                                                                                                                    |
| Stator resistance                     | 3.1 Ohm 68.0000000000 °F (20 °C)                                                                                                                                                                                                             |
| Stator inductance                     | 7.4 mH 68.0000000000 °F (20 °C)                                                                                                                                                                                                              |
| Stator electrical time constant       | 2.39 ms 68.0000000000 °F (20 °C)                                                                                                                                                                                                             |
| Maximum radial force Fr               | 190 N 8000 rpm<br>200 N 7000 rpm<br>210 N 6000 rpm<br>230 N 5000 rpm<br>240 N 4000 rpm<br>270 N 3000 rpm<br>310 N 2000 rpm<br>390 N 1000 rpm                                                                                                 |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                     |
| Brake pull-in power                   | 10 W                                                                                                                                                                                                                                         |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                           |
| Length                                | 8.0 in (203 mm)                                                                                                                                                                                                                              |
| Centring collar diameter              | 1.6 in (40 mm)                                                                                                                                                                                                                               |
| Centring collar depth                 | 0.08 in (2 mm)                                                                                                                                                                                                                               |
| Number of mounting holes              | 4                                                                                                                                                                                                                                            |
| Mounting holes diameter               | 0.2 in (5.5 mm)                                                                                                                                                                                                                              |
| Circle diameter of the mounting holes | 2.5 in (63 mm)                                                                                                                                                                                                                               |
| Net Weight                            | 4.2 lb(US) (1.9 kg)                                                                                                                                                                                                                          |

### Ordering and shipping details

|                   |               |
|-------------------|---------------|
| Category          | US1PC5318282  |
| Discount Schedule | PC53          |
| GTIN              | 3389118159631 |
| Returnability     | No            |
| Country of origin | DE            |

### Packing Units

|                              |                       |
|------------------------------|-----------------------|
| Unit Type of Package 1       | PCE                   |
| Number of Units in Package 1 | 1                     |
| Package 1 Height             | 4.8 in (12.3 cm)      |
| Package 1 Width              | 5.04 in (12.8 cm)     |
| Package 1 Length             | 14.8 in (37.7 cm)     |
| Package 1 Weight             | 3.42 lb(US) (1.55 kg) |

## Offer Sustainability

|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                                                                                                                       |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| 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           |

## 115 V Single-Phase Supply Voltage

### Torque/Speed Curves

Servo motor with LXM32•D18M2 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