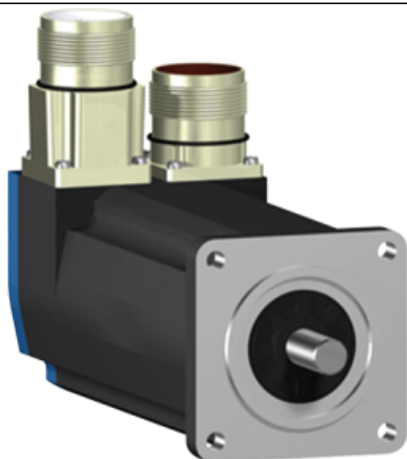


# BSH0553T31F1A

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



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maximum mechanical speed  | 9000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Continuous stall torque   | 1.2 N.m for LXM32.U90M2 at 3 A, 230 V, single phase<br>1.3 N.m for LXM05AD17F1, 110...120 V, single phase<br>1.3 N.m for LXM05AD17M2, 200...240 V, single phase<br>1.3 N.m for LXM05BD17F1, 110...120 V, single phase<br>1.3 N.m for LXM05BD17M2, 200...240 V, single phase<br>1.3 N.m for LXM05CD17F1, 110...120 V, single phase<br>1.3 N.m for LXM05CD17M2, 200...240 V, single phase<br>1.2 N.m for LXM32.D18M2 at 6 A, 115 V, single phase<br>1.3 N.m for LXM05AD17M3X, 200...240 V, three phase<br>1.3 N.m for LXM05BD17M3X, 200...240 V, three phase<br>1.3 N.m for LXM05CD17M3X, 200...240 V, three phase        |
| Peak stall torque         | 3 N.m for LXM32.U90M2 at 3 A, 230 V, single phase<br>3.31 N.m for LXM05AD17F1, 110...120 V, single phase<br>3.31 N.m for LXM05AD17M2, 200...240 V, single phase<br>3.31 N.m for LXM05BD17F1, 110...120 V, single phase<br>3.31 N.m for LXM05BD17M2, 200...240 V, single phase<br>3.31 N.m for LXM05CD17F1, 110...120 V, single phase<br>3.31 N.m for LXM05CD17M2, 200...240 V, single phase<br>3.3 N.m for LXM32.D18M2 at 6 A, 115 V, single phase<br>3.31 N.m for LXM05AD17M3X, 200...240 V, three phase<br>3.31 N.m for LXM05BD17M3X, 200...240 V, three phase<br>3.31 N.m for LXM05CD17M3X, 200...240 V, three phase |
| Nominal output power      | 550 W for LXM32.U90M2 at 3 A, 230 V, single phase<br>350 W for LXM05AD17F1, 110...120 V, single phase<br>350 W for LXM05AD17M2, 200...240 V, single phase<br>350 W for LXM05BD17F1, 110...120 V, single phase<br>350 W for LXM05BD17M2, 200...240 V, single phase<br>350 W for LXM05CD17F1, 110...120 V, single phase<br>350 W for LXM05CD17M2, 200...240 V, single phase<br>350 W for LXM32.D18M2 at 6 A, 115 V, single phase<br>350 W for LXM05AD17M3X, 200...240 V, three phase<br>350 W for LXM05BD17M3X, 200...240 V, three phase<br>350 W for LXM05CD17M3X, 200...240 V, three phase                              |
| Nominal torque            | 0.84 N.m for LXM32.U90M2 at 3 A, 230 V, single phase<br>1.1 N.m for LXM05AD17F1, 110...120 V, single phase<br>1.1 N.m for LXM05AD17M2, 200...240 V, single phase<br>1.1 N.m for LXM05BD17F1, 110...120 V, single phase<br>1.1 N.m for LXM05BD17M2, 200...240 V, single phase<br>1.1 N.m for LXM05CD17F1, 110...120 V, single phase<br>1.1 N.m for LXM05CD17M2, 200...240 V, single phase                                                                                                                                                                                                                                |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 1.14 N.m for LXM32.D18M2 at 6 A, 115 V, single phase<br>1.1 N.m for LXM05AD17M3X, 200...240 V, three phase<br>1.1 N.m for LXM05BD17M3X, 200...240 V, three phase<br>1.1 N.m for LXM05CD17M3X, 200...240 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nominal speed             | 6000 rpm for LXM32.U90M2 at 3 A, 230 V, single 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>3000 rpm for LXM05AD17M2, 200...240 V, single phase<br>3000 rpm for LXM05BD17M2, 200...240 V, single phase<br>3000 rpm for LXM05CD17M2, 200...240 V, single phase<br>3000 rpm for LXM32.D18M2 at 6 A, 115 V, single phase<br>3000 rpm for LXM05AD17M3X, 200...240 V, three phase<br>3000 rpm for LXM05BD17M3X, 200...240 V, three phase<br>3000 rpm for LXM05CD17M3X, 200...240 V, three phase |
| Product compatibility     | LXM05AD17F1 at 110...120 V single phase<br>LXM05AD17M2 at 200...240 V single phase<br>LXM05BD17F1 at 110...120 V single phase<br>LXM05BD17M2 at 200...240 V single phase<br>LXM05CD17F1 at 110...120 V single phase<br>LXM05CD17M2 at 200...240 V single phase<br>LXM32.U90M2 at 230 V single phase<br>LXM32.D18M2 at 115 V single phase<br>LXM05AD17M3X at 200...240 V three phase<br>LXM05BD17M3X at 200...240 V three phase<br>LXM05CD17M3X at 200...240 V three phase                                                                                                                                                   |
| Shaft end                 | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IP degree of protection   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Holding brake             | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mounting support          | International standard flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Electrical connection     | Straight connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Complementary

|                           |                                                                                                                                                                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility       | Lexium 32<br>Lexium 05                                                                                                                                                                                                                                                                   |
| Supply voltage max        | 480 V                                                                                                                                                                                                                                                                                    |
| Network number of phases  | Three phase                                                                                                                                                                                                                                                                              |
| Continuous stall current  | 3.1 A                                                                                                                                                                                                                                                                                    |
| Maximum continuous power  | 0.97 W                                                                                                                                                                                                                                                                                   |
| Maximum current Irms      | 11.9 A for LXM05AD17F1<br>11.9 A for LXM05AD17M2<br>11.9 A for LXM05AD17M3X<br>11.9 A for LXM05BD17F1<br>11.9 A for LXM05BD17M2<br>11.9 A for LXM05BD17M3X<br>11.9 A for LXM05CD17F1<br>11.9 A for LXM05CD17M2<br>11.9 A for LXM05CD17M3X<br>10 A for LXM32.D18M2<br>9 A for LXM32.U90M2 |
| Maximum permanent current | 11.9 A                                                                                                                                                                                                                                                                                   |
| Switching frequency       | 8 kHz                                                                                                                                                                                                                                                                                    |
| Second shaft              | Without second shaft end                                                                                                                                                                                                                                                                 |
| Shaft diameter            | 9 mm                                                                                                                                                                                                                                                                                     |
| Shaft length              | 20 mm                                                                                                                                                                                                                                                                                    |
| Key width                 | 12 mm                                                                                                                                                                                                                                                                                    |
| Feedback type             | Single turn SinCos Hiperface                                                                                                                                                                                                                                                             |
| Holding torque            | 0.8 N.m holding brake                                                                                                                                                                                                                                                                    |
| Motor flange size         | 55 mm                                                                                                                                                                                                                                                                                    |
| Number of motor stacks    | 3                                                                                                                                                                                                                                                                                        |
| Torque constant           | 0.39 N.m/A at 120 °C                                                                                                                                                                                                                                                                     |

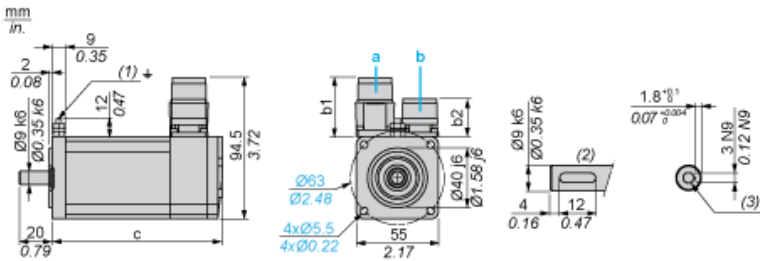
|                                       |                                                                                                                                                                      |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Back emf constant                     | 22 V/krpm at 120 °C                                                                                                                                                  |
| Number of motor poles                 | 6                                                                                                                                                                    |
| Rotor inertia                         | 0.1553 kg.cm <sup>2</sup>                                                                                                                                            |
| Stator resistance                     | 3.1 Ohm at 20 °C                                                                                                                                                     |
| Stator inductance                     | 7.4 mH at 20 °C                                                                                                                                                      |
| Stator electrical time constant       | 2.39 ms at 20 °C                                                                                                                                                     |
| Maximum radial force Fr               | 190 N at 8000 rpm<br>200 N at 7000 rpm<br>210 N at 6000 rpm<br>230 N at 5000 rpm<br>240 N at 4000 rpm<br>270 N at 3000 rpm<br>310 N at 2000 rpm<br>390 N at 1000 rpm |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                             |
| Brake pull-in power                   | 10 W                                                                                                                                                                 |
| Type of cooling                       | Natural convection                                                                                                                                                   |
| Length                                | 203 mm                                                                                                                                                               |
| Centring collar diameter              | 40 mm                                                                                                                                                                |
| Centring collar depth                 | 2 mm                                                                                                                                                                 |
| Number of mounting holes              | 4                                                                                                                                                                    |
| Mounting holes diameter               | 5.5 mm                                                                                                                                                               |
| Circle diameter of the mounting holes | 63 mm                                                                                                                                                                |
| Product weight                        | 1.9 kg                                                                                                                                                               |

### Contractual warranty

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

Servo Motors Dimensions

Example with Straight Connectors



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

Dimensions in mm

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

Dimensions in in.

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

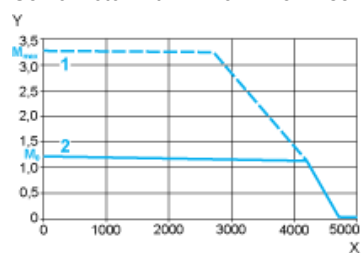
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115 V Single-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•D18M2 servo drive

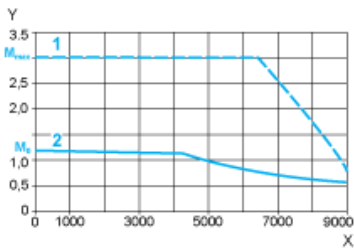


X Speed in rpm  
Y Torque in Nm  
1 Peak torque  
2 Continuous torque

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