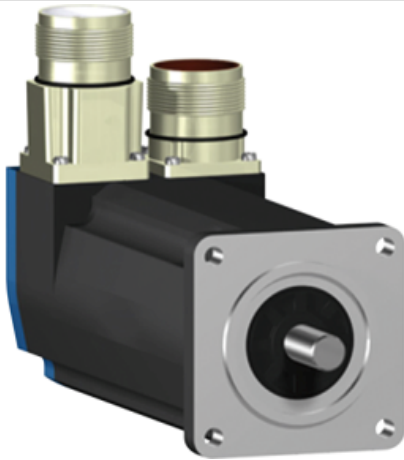


# BSH0552T31F1A

AC servo motor BSH - 0.9 N.m - 6000 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   | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 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   | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

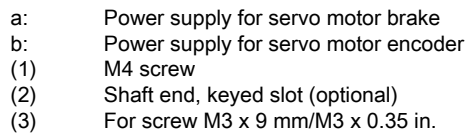
## Complementary

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range compatibility                   | Lexium 32<br>Lexium 05<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 Irms                  | 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                                                                                                                                                                                                                                                                                                                                                                                                     |
| Holding torque                        | 0.8 N.m holding brake                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                         | 0.1173 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                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Brake pull-in power                   | 10 W                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                                                                                                                                                                                                               |
| Length                                | 181 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                        | 1.6 kg                                                                                                                                                                                                                                                                                                                                                                                                                           |

Contractual warranty

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

### Example with Straight Connectors



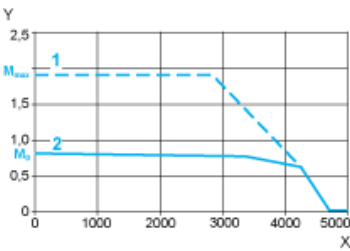
| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) |
|---------------------|------|-----------------------------|------|-------------------|----------------|
| b                   | b1   | b                           | b1   |                   |                |
| 39.5                | 25.5 | 39.5                        | 39.5 | 154.5             | 181            |

| 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

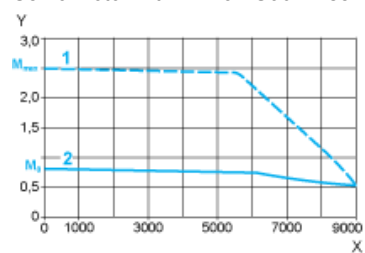
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230 V Single-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•U90M2 servo drive



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