

# BSH0701T22F2A

AC servo motor BSH, Lexium 05, 0.7N.m,  
8000rpm, untapped shaft, with brake, IP65





## Main

|                           |  |
|---------------------------|--|
| Product or component type | Servo motor  |
| Device short name         | BSH  |
| Maximum mechanical speed  | 8000 rpm   |
| Continuous stall torque   | <p>1.3 N.M for LXM32.U90M2 at 3 A, 230 V, single phase</p> <p>1.4 N.M for LXM05AD10M3X, 200...240 V, three phase</p> <p>1.4 N.M for LXM05BD10M3X, 200...240 V, three phase</p> <p>1.4 N.M for LXM05CD10M3X, 200...240 V, three phase</p> <p>1.4 N.M for LXM15LD13M3, 230 V, single phase</p> <p>1.4 N.M for LXM05AD10F1, 110...120 V, single phase</p> <p>1.4 N.M for LXM05AD17M2, 200...240 V, single phase</p> <p>1.4 N.M for LXM05BD10F1, 110...120 V, single phase</p> <p>1.4 N.M for LXM05BD17M2, 200...240 V, single phase</p> <p>1.4 N.M for LXM05CD10F1, 110...120 V, single phase</p> <p>1.4 N.M for LXM05CD17M2, 200...240 V, single phase</p> <p>1.4 N.M for LXM32.D18M2 at 6 A, 115 V, single phase</p> <p>0.7 N.M for LXM15LU60N4, 400 V, three phase</p> <p>0.7 N.M for LXM15LU60N4, 480 V, three phase</p> <p>0.91 N.M for LXM15LU60N4, 230 V, three phase</p> <p>1.4 N.M for LXM15LD10N4, 230 V, three phase</p> <p>1.4 N.M for LXM15LD10N4, 400 V, three phase</p> <p>1.4 N.M for LXM15LD10N4, 480 V, three phase</p> <p>1.4 N.M for LXM15LD13M3, 230 V, three phase</p> <p>1.4 N.M for LXM15LD21M3, 230 V, three phase</p> <p>1.4 N.M for LXM05AD17M3X, 200...240 V, three phase</p> <p>1.4 N.M for LXM05BD17M3X, 200...240 V, three phase</p> <p>1.4 N.m for LXM05CD17M3X, 200...240 V, three phase</p> |

|                      |   |
|----------------------|---|
| Peak stall torque    | <p>3.5 N.M for LXM32.U90M2 at 3 A, 230 V, single phase</p> <p>3.19 N.M for LXM15LD13M3, 230 V, single phase</p> <p>2.42 N.M for LXM05AD10F1, 110...120 V, single phase</p> <p>3.19 N.M for LXM05AD17M2, 200...240 V, single phase</p> <p>2.42 N.M for LXM05BD10F1, 110...120 V, single phase</p> <p>3.19 N.M for LXM05BD17M2, 200...240 V, single phase</p> <p>2.42 N.M for LXM05CD10F1, 110...120 V, single phase</p> <p>3.19 N.M for LXM05CD17M2, 200...240 V, single phase</p> <p>3.5 N.M for LXM32.D18M2 at 6 A, 115 V, single phase</p> <p>1.9 N.M for LXM15LU60N4, 400 V, three phase</p> <p>1.9 N.M for LXM15LU60N4, 480 V, three phase</p> <p>1.9 N.M for LXM15LU60N4, 230 V, three phase</p> <p>2.91 N.M for LXM15LD10N4, 230 V, three phase</p> <p>2.91 N.M for LXM15LD10N4, 400 V, three phase</p> <p>2.91 N.M for LXM15LD10N4, 480 V, three phase</p> <p>3.19 N.M for LXM15LD13M3, 230 V, three phase</p> <p>3.19 N.M for LXM15LD21M3, 230 V, three phase</p> <p>2.42 N.M for LXM05AD10M3X, 200...240 V, three phase</p> <p>3.19 N.M for LXM05AD17M3X, 200...240 V, three phase</p> <p>2.42 N.M for LXM05BD10M3X, 200...240 V, three phase</p> <p>3.19 N.M for LXM05BD17M3X, 200...240 V, three phase</p> <p>2.42 N.M for LXM05CD10M3X, 200...240 V, three phase</p> <p>3.19 N.m for LXM05CD17M3X, 200...240 V, three phase</p> |
| Nominal output power | <p>500 W for LXM32.U90M2 at 3 A, 230 V, single phase</p> <p>350 W for LXM32.D18M2 at 6 A, 115 V, single phase</p> <p>400 W for LXM05AD10M3X, 200...240 V, three phase</p> <p>400 W for LXM05BD10M3X, 200...240 V, three phase</p> <p>400 W for LXM05CD10M3X, 200...240 V, three phase</p> <p>380 W for LXM05AD10F1, 110...120 V, single phase</p> <p>380 W for LXM05BD10F1, 110...120 V, single phase</p> <p>380 W for LXM05CD10F1, 110...120 V, single phase</p> <p>400 W for LXM05AD17M2, 200...240 V, single phase</p> <p>400 W for LXM05BD17M2, 200...240 V, single phase</p> <p>400 W for LXM05CD17M2, 200...240 V, single phase</p> <p>654 W for LXM15LD13M3, 230 V, single phase</p> <p>1000 W for LXM15LD10N4, 400 V, three phase</p> <p>1000 W for LXM15LD10N4, 480 V, three phase</p> <p>400 W for LXM05AD17M3X, 200...240 V, three phase</p> <p>400 W for LXM05BD17M3X, 200...240 V, three phase</p> <p>400 W for LXM05CD17M3X, 200...240 V, three phase</p> <p>440 W for LXM15LU60N4, 230 V, three phase</p> <p>564 W for LXM15LD10N4, 230 V, three phase</p> <p>586 W for LXM15LU60N4, 400 V, three phase</p> <p>586 W for LXM15LU60N4, 480 V, three phase</p> <p>654 W for LXM15LD13M3, 230 V, three phase</p> <p>654 W for LXM15LD21M3, 230 V, three phase</p>   |

|                           |  |
|---------------------------|--|
| Nominal torque            | <p>0.94 N.M for LXM32.U90M2 at 3 A, 230 V, single phase</p> <p>1.25 N.M for LXM15LD13M3, 230 V, single phase</p> <p>1.36 N.M for LXM32.D18M2 at 6 A, 115 V, single phase</p> <p>0.7 N.M for LXM15LU60N4, 230 V, three phase</p> <p>0.7 N.M for LXM15LU60N4, 400 V, three phase</p> <p>0.7 N.M for LXM15LU60N4, 480 V, three phase</p> <p>1.23 N.M for LXM15LD10N4, 400 V, three phase</p> <p>1.23 N.M for LXM15LD10N4, 480 V, three phase</p> <p>1.25 N.M for LXM15LD10N4, 230 V, three phase</p> <p>1.25 N.M for LXM15LD13M3, 230 V, three phase</p> <p>1.25 N.m for LXM15LD21M3, 230 V, three phase</p>  |
| Nominal speed             | <p>5000 rpm for LXM32.U90M2 at 3 A, 230 V, single phase</p> <p>3000 rpm for LXM05AD10F1, 110...120 V, single phase</p> <p>3000 rpm for LXM05BD10F1, 110...120 V, single phase</p> <p>3000 rpm for LXM05CD10F1, 110...120 V, single phase</p> <p>3000 rpm for LXM05AD10M3X, 200...240 V, three phase</p> <p>3000 rpm for LXM05BD10M3X, 200...240 V, three phase</p> <p>3000 rpm for LXM05CD10M3X, 200...240 V, three phase</p> <p>8000 rpm for LXM15LD10N4, 400 V, three phase</p> <p>3000 rpm for LXM05AD17M2, 200...240 V, single phase</p> <p>3000 rpm for LXM05BD17M2, 200...240 V, single phase</p> <p>3000 rpm for LXM05CD17M2, 200...240 V, single phase</p> <p>3000 rpm for LXM05AD17M3X, 200...240 V, three phase</p> <p>3000 rpm for LXM05BD17M3X, 200...240 V, three phase</p> <p>3000 rpm for LXM05CD17M3X, 200...240 V, three phase</p> <p>5000 rpm for LXM15LD13M3, 230 V, single phase</p> <p>2500 rpm for LXM32.D18M2 at 6 A, 115 V, single phase</p> <p>5000 rpm for LXM15LD10N4, 230 V, three phase</p> <p>5000 rpm for LXM15LD13M3, 230 V, three phase</p> <p>5000 rpm for LXM15LD21M3, 230 V, three phase</p> <p>6000 rpm for LXM15LU60N4, 230 V, three phase</p> <p>8000 rpm for LXM15LD10N4, 480 V, three phase</p> <p>8000 rpm for LXM15LU60N4, 400 V, three phase</p> <p>8000 rpm for LXM15LU60N4, 480 V, three phase</p> |
| Product compatibility     | <p>LXM05AD10F1 at 110...120 V single phase</p> <p>LXM05AD17M2 at 200...240 V single phase</p> <p>LXM05BD10F1 at 110...120 V single phase</p> <p>LXM05BD17M2 at 200...240 V single phase</p> <p>LXM05CD10F1 at 110...120 V single phase</p> <p>LXM05CD17M2 at 200...240 V single phase</p> <p>LXM15LD13M3 at 230 V single phase</p> <p>LXM32.U90M2 at 230 V single phase</p> <p>LXM32.D18M2 at 115 V single phase</p> <p>LXM15LU60N4 at 230 V three phase</p> <p>LXM05AD10M3X at 200...240 V three phase</p> <p>LXM05BD10M3X at 200...240 V three phase</p> <p>LXM05CD10M3X at 200...240 V three phase</p> <p>LXM15LD13M3 at 230 V three phase</p> <p>LXM15LU60N4 at 400 V three phase</p> <p>LXM15LU60N4 at 480 V three phase</p> <p>LXM15LD10N4 at 400 V three phase</p> <p>LXM05AD17M3X at 200...240 V three phase</p> <p>LXM05BD17M3X at 200...240 V three phase</p> <p>LXM05CD17M3X at 200...240 V three phase</p> <p>LXM15LD10N4 at 230 V three phase</p> <p>LXM15LD10N4 at 480 V three phase</p> <p>LXM15LD21M3 at 230 V three phase</p>   |
| Shaft end                 | Untapped   |
| IP degree of protection   | <p>IP65 standard</p> <p>IP67 with IP67 kit</p>   |
| Speed feedback resolution | 131072 points/turn x 4096 turns  |

|                       |                                   |
|-----------------------|-----------------------------------|
| Holding brake         | With                              |
| Mounting support      | International standard flange     |
| Electrical connection | Rotatable right-angled connectors |

## Complementary

|                                       |   |
|---------------------------------------|---|
| Range compatibility                   | Lexium 05<br>Lexium 32<br>Lexium 15   |
| Supply voltage max                    | 480 V   |
| Network number of phases              | Three phase   |
| Continuous stall current              | 3.2 A   |
| Maximum continuous power              | 1.06 W  |
| Maximum current Irms                  | 10 A for LXM32.D18M2<br>9 A for LXM32.U90M2<br>9.9 A for LXM15LD13M3<br>9.9 A for LXM15LD21M3<br>9.9 A for LXM15LU60N4<br>9.9 A for LXM15LD10N4 |
| Maximum permanent current             | 10.1 A  |
| Switching frequency                   | 8 kHz   |
| Second shaft                          | Without second shaft end  |
| Shaft diameter                        | 11 mm   |
| Shaft length                          | 23 mm   |
| Feedback type                         | Multiturn SinCos Hiperface  |
| Holding torque                        | 2 N.m holding brake   |
| Motor flange size                     | 70 mm   |
| Number of motor stacks                | 1   |
| Torque constant                       | 0.44 N.m/A at 120 °C  |
| Back emf constant                     | 26 V/krpm at 120 °C   |
| Number of motor poles                 | 6   |
| Rotor inertia                         | 0.322 kg.cm <sup>2</sup>  |
| Stator resistance                     | 3.3 Ohm at 20 °C  |
| Stator inductance                     | 12.3 mH at 20 °C  |
| Stator electrical time constant       | 3.73 ms at 20 °C  |
| Maximum radial force Fr               | 360 N at 6000 rpm<br>380 N at 5000 rpm<br>410 N at 4000 rpm<br>460 N at 3000 rpm<br>520 N at 2000 rpm<br>660 N at 1000 rpm                      |
| Maximum axial force Fa                | 0.2 x Fr  |
| Brake pull-in power                   | 10 W  |
| Type of cooling                       | Natural convection  |
| Length                                | 179.5 mm  |
| Centring collar diameter              | 60 mm   |
| Centring collar depth                 | 2.5 mm  |
| Number of mounting holes              | 4   |
| Mounting holes diameter               | 5.5 mm  |
| Circle diameter of the mounting holes | 82 mm   |
| Net weight                            | 2.3 kg  |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 12.3 cm |
| Package 1 Width              | 12.8 cm |
| Package 1 Length             | 37.7 cm |
| Package 1 Weight             | 2.55 kg |

## Offer Sustainability

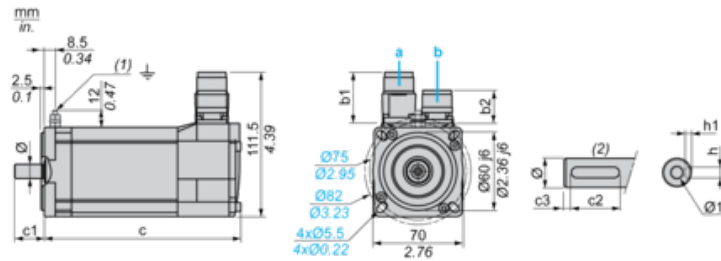
|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  |
| Mercury free               | Yes   |
| China RoHS Regulation      | <a href="#">China RoHS Declaration</a>  |
| RoHS exemption information | <a href="#">Yes</a>   |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | No need of specific recycling operations  |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| PVC free                   | Yes   |

## Contractual warranty

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

Servo Motors Dimensions

Example with Straight Connectors



- a: Power supply for servo motor brake
- b: Power supply for servo motor encoder
- (1) M4 screw
- (2) Shaft end, keyed slot (optional)

Dimensions in mm

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | c1 | c2 | c3  | h    | h1                               | Ø     | Ø1 for screws |
|---------------------|------|-----------------------------|------|-------------------|----------------|----|----|-----|------|----------------------------------|-------|---------------|
| b1                  | b2   | b1                          | b2   |                   |                |    |    |     |      |                                  |       |               |
| 39.5                | 25.5 | 39.5                        | 39.5 | 154               | 180            | 23 | 18 | 2.5 | 4 N9 | 2.5 <sup>+0.1</sup> <sub>0</sub> | 11 k6 | M4 x 10       |

Dimensions in in.

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | c1   | c2   | c3   | h       | h1                                  | Ø       | Ø1 for screws |
|---------------------|------|-----------------------------|------|-------------------|----------------|------|------|------|---------|-------------------------------------|---------|---------------|
| b1                  | b2   | b1                          | b2   |                   |                |      |      |      |         |                                     |         |               |
| 1.55                | 1.00 | 1.55                        | 1.55 | 6.06              | 7.08           | 0.90 | 0.70 | 0.09 | 0.16 N9 | 0.01 <sup>+0.004</sup> <sub>0</sub> | 0.43 k6 | M4 x 0.39     |



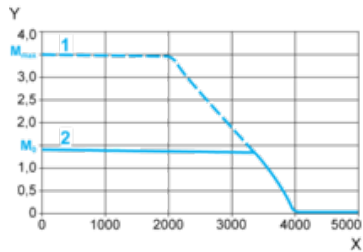
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115 V Single-Phase Supply Voltage

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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

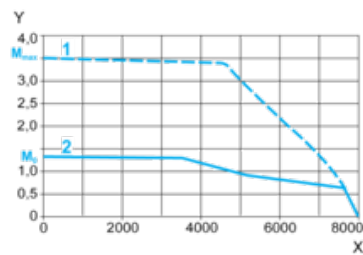
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230 V Single-Phase Supply Voltage

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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