

# BSH1001T22F2A

AC servo motor BSH, Lexium 05, 3.39N.m,  
4000rpm, untapped shaft, with brake, IP65





## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Product or Component Type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Continuous stall torque   | 29.2 Lbf.In (3.3 N.m) LXM32.D30M2 10 A, 115 V, single phase<br>30.004 Lbf.In (3.39 N.m) LXM15LD28M3, 230 V, three phase<br>30.09 Lbf.In (3.4 N.m) LXM05AD28F1, 110...120 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05AD28M2, 200...240 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05AD42M3X, 200...240 V, three phase<br>30.09 Lbf.In (3.4 N.m) LXM05BD28F1, 110...120 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05BD28M2, 200...240 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05BD42M3X, 200...240 V, three phase<br>30.09 Lbf.In (3.4 N.m) LXM05CD28F1, 110...120 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05CD28M2, 200...240 V, single phase<br>30.09 Lbf.In (3.4 N.m) LXM05CD42M3X, 200...240 V, three phase<br>23.9 lbf.in (2.7 N.m) LXM32.D18M2 6 A, 230 V, single phase |
| Peak stall torque         | 55.8 Lbf.In (6.3 N.m) LXM32.D30M2 10 A, 115 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05AD28F1, 110...120 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05AD28M2, 200...240 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05BD28F1, 110...120 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05BD28M2, 200...240 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05CD28F1, 110...120 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM05CD28M2, 200...240 V, single phase<br>66.4 Lbf.In (7.5 N.m) LXM32.D18M2 6 A, 230 V, single phase<br>75.2 Lbf.In (8.5 N.m) LXM15LD28M3, 230 V, three phase<br>75.2 Lbf.In (8.5 N.m) LXM05AD42M3X, 200...240 V, three phase<br>75.2 Lbf.In (8.5 N.m) LXM05BD42M3X, 200...240 V, three phase<br>75.2 lbf.in (8.5 N.m) LXM05CD42M3X, 200...240 V, three phase             |
| Nominal output power      | 700 W LXM32.D30M2 10 A, 115 V, single phase<br>900 W LXM32.D18M2 6 A, 230 V, single phase<br>500 W LXM05AD28F1, 110...120 V, single phase<br>500 W LXM05BD28F1, 110...120 V, single phase<br>500 W LXM05CD28F1, 110...120 V, single phase<br>900 W LXM05AD28M2, 200...240 V, single phase<br>900 W LXM05BD28M2, 200...240 V, single phase<br>900 W LXM05CD28M2, 200...240 V, single phase<br>1150 W LXM15LD28M3, 230 V, three phase<br>900 W LXM05AD42M3X, 200...240 V, three phase<br>900 W LXM05BD42M3X, 200...240 V, three phase<br>900 W LXM05CD42M3X, 200...240 V, three phase                                                                                                                                                                                                            |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal torque            | 24.34 Lbf.In (2.75 N.m) LXM32.D30M2 10 A, 115 V, single phase<br>25.7 Lbf.In (2.9 N.m) LXM05AD28M2, 200...240 V, single phase<br>25.7 Lbf.In (2.9 N.m) LXM05BD28M2, 200...240 V, single phase<br>25.7 Lbf.In (2.9 N.m) LXM05CD28M2, 200...240 V, single phase<br>27.97 Lbf.In (3.16 N.m) LXM05AD28F1, 110...120 V, single phase<br>27.97 Lbf.In (3.16 N.m) LXM05BD28F1, 110...120 V, single phase<br>27.97 Lbf.In (3.16 N.m) LXM05CD28F1, 110...120 V, single phase<br>19.5 Lbf.In (2.2 N.m) LXM32.D18M2 6 A, 230 V, single phase<br>24.34 Lbf.In (2.75 N.m) LXM15LD28M3, 230 V, three phase<br>25.7 Lbf.In (2.9 N.m) LXM05AD42M3X, 200...240 V, three phase<br>25.7 Lbf.In (2.9 N.m) LXM05BD42M3X, 200...240 V, three phase<br>25.7 Lbf.in (2.9 N.m) LXM05CD42M3X, 200...240 V, three phase |
| Nominal speed             | 2500 rpm LXM32.D30M2 10 A, 115 V, single phase<br>3000 rpm LXM05AD28M2, 200...240 V, single phase<br>3000 rpm LXM05BD28M2, 200...240 V, single phase<br>3000 rpm LXM05CD28M2, 200...240 V, single phase<br>3000 rpm LXM05AD42M3X, 200...240 V, three phase<br>3000 rpm LXM05BD42M3X, 200...240 V, three phase<br>3000 rpm LXM05CD42M3X, 200...240 V, three phase<br>4000 rpm LXM32.D18M2 6 A, 230 V, single phase<br>1500 rpm LXM05AD28F1, 110...120 V, single phase<br>1500 rpm LXM05BD28F1, 110...120 V, single phase<br>1500 rpm LXM05CD28F1, 110...120 V, single phase<br>4000 rpm LXM15LD28M3, 230 V, three phase                                                                                                                                                                       |
| Product compatibility     | LXM05AD28F1 110...120 V single phase<br>LXM05AD28M2 200...240 V single phase<br>LXM05BD28F1 110...120 V single phase<br>LXM05BD28M2 200...240 V single phase<br>LXM05CD28F1 110...120 V single phase<br>LXM05CD28M2 200...240 V single phase<br>LXM32.D30M2 115 V single phase<br>LXM32.D18M2 230 V single phase<br>LXM05AD42M3X 200...240 V three phase<br>LXM05BD42M3X 200...240 V three phase<br>LXM05CD42M3X 200...240 V three phase<br>LXM15LD28M3 230 V three phase                                                                                                                                                                                                                                                                                                                    |
| Shaft end                 | Untapped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IP Degree of Protection   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 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 15<br>Lexium 32<br>Lexium 05 |
| Supply voltage max       | 480 V                               |
| Phase                    | Three phase                         |
| Continuous stall current | 7.3 A                               |
| Maximum continuous power | 1.6 W                               |

|                                       |                                                                                                                                                                                                                                                                               |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum current Irms                  | 18 A LXM32.D18M2 230 V<br>15 A LXM32.D30M2 115 V<br>23 A LXM15LD28M3<br>25.1 A LXM05AD28F1<br>25.1 A LXM05AD28M2<br>25.1 A LXM05AD42M3X<br>25.1 A LXM05BD28F1<br>25.1 A LXM05BD28M2<br>25.1 A LXM05BD42M3X<br>25.1 A LXM05CD28F1<br>25.1 A LXM05CD28M2<br>25.1 A LXM05CD42M3X |
| Maximum permanent current             | 25.1 A                                                                                                                                                                                                                                                                        |
| Switching frequency                   | 8 kHz                                                                                                                                                                                                                                                                         |
| Second shaft                          | Without second shaft end                                                                                                                                                                                                                                                      |
| Shaft diameter                        | 0.7 in (19 mm)                                                                                                                                                                                                                                                                |
| Shaft length                          | 1.6 in (40 mm)                                                                                                                                                                                                                                                                |
| Feedback type                         | Multiturn SinCos Hiperface                                                                                                                                                                                                                                                    |
| Holding torque                        | 79.7 lbf.in (9 N.m) holding brake                                                                                                                                                                                                                                             |
| Motor flange size                     | 3.9 in (100 mm)                                                                                                                                                                                                                                                               |
| Number of motor stacks                | 1                                                                                                                                                                                                                                                                             |
| Torque constant                       | 0.45 N.m/A 248.0000000000 °F (120 °C)                                                                                                                                                                                                                                         |
| Back emf constant                     | 29 V/krpm 248.0000000000 °F (120 °C)                                                                                                                                                                                                                                          |
| Number of motor poles                 | 8                                                                                                                                                                                                                                                                             |
| Rotor inertia                         | 2.018 kg.cm <sup>2</sup>                                                                                                                                                                                                                                                      |
| Stator resistance                     | 0.87 Ohm 68.0000000000 °F (20 °C)                                                                                                                                                                                                                                             |
| Stator inductance                     | 4 mH 68.0000000000 °F (20 °C)                                                                                                                                                                                                                                                 |
| Stator electrical time constant       | 4.6 ms 68.0000000000 °F (20 °C)                                                                                                                                                                                                                                               |
| Maximum radial force Fr               | 530 N 5000 rpm<br>570 N 4000 rpm<br>630 N 3000 rpm<br>720 N 2000 rpm<br>900 N 1000 rpm                                                                                                                                                                                        |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                                                      |
| Brake pull-in power                   | 18 W                                                                                                                                                                                                                                                                          |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                                                            |
| Length                                | 7.9 in (199.5 mm)                                                                                                                                                                                                                                                             |
| Centring collar diameter              | 3.7 in (95 mm)                                                                                                                                                                                                                                                                |
| Centring collar depth                 | 0.1 in (3.5 mm)                                                                                                                                                                                                                                                               |
| Number of mounting holes              | 4                                                                                                                                                                                                                                                                             |
| Mounting holes diameter               | 0.4 in (9 mm)                                                                                                                                                                                                                                                                 |
| Circle diameter of the mounting holes | 4.5 in (115 mm)                                                                                                                                                                                                                                                               |
| Net Weight                            | 10.6 lb(US) (4.8 kg)                                                                                                                                                                                                                                                          |

## Ordering and shipping details

|                   |               |
|-------------------|---------------|
| Category          | US1PC5318282  |
| Discount Schedule | PC53          |
| GTIN              | 3389118138643 |
| Returnability     | No            |
| Country of origin | DE            |

## Packing Units

|                              |                        |
|------------------------------|------------------------|
| Unit Type of Package 1       | PCE                    |
| Number of Units in Package 1 | 1                      |
| Package 1 Height             | 6.06 in (15.4 cm)      |
| Package 1 Width              | 6.4 in (16.3 cm)       |
| Package 1 Length             | 16.02 in (40.7 cm)     |
| Package 1 Weight             | 10.91 lb(US) (4.95 kg) |

## Offer Sustainability

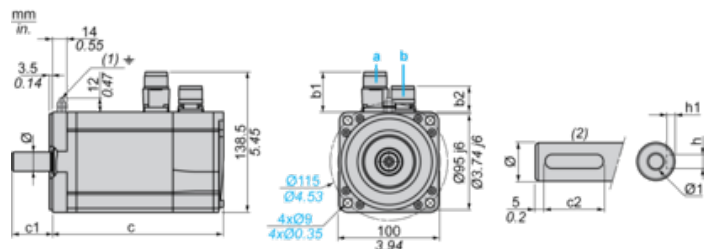
|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)

Dimensions in mm

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | c1 | c2 | h    | h1             | Ø     | Ø1 for screws |
|---------------------|------|-----------------------------|------|-------------------|----------------|----|----|------|----------------|-------|---------------|
| b1                  | b2   | b1                          | b2   |                   |                |    |    |      |                |       |               |
| 39.5                | 25.5 | 39.5                        | 39.5 | 169               | 200            | 40 | 30 | 6 N9 | $3.5^{+0.1}_0$ | 19 k6 | M6 x 16       |

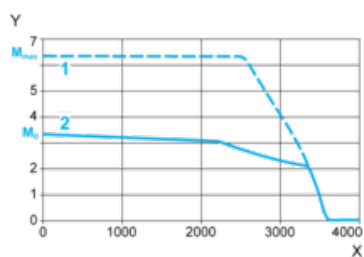
Dimensions in in.

| Straight connectors |      | Rotatable angled connectors |      | c (without brake) | c (with brake) | c1   | c2   | h       | h1              | Ø       | Ø1 for screws |
|---------------------|------|-----------------------------|------|-------------------|----------------|------|------|---------|-----------------|---------|---------------|
| b1                  | b2   | b1                          | b2   |                   |                |      |      |         |                 |         |               |
| 1.55                | 1.00 | 1.55                        | 1.55 | 6.65              | 7.87           | 1.57 | 1.18 | 0.24 N9 | $0.14^{+0.1}_0$ | 0.75 k6 | M6 x 0.63     |

## 115 V Single-Phase Supply Voltage

### Torque/Speed Curves

Servo motor with LXM32•D30M2 servo drive



X Speed in rpm

Y Torque in Nm

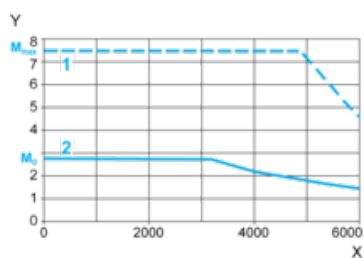
1 Peak torque

2 Continuous torque

## 230 V Single-Phase Supply Voltage

### Torque/Speed Curves

Servo motor with LXM32•D18M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque