

# BSH1002T12F1A

AC servo motor BSH - 5.5 N.m - 4000 rpm -  
keyed shaft - with brake - IP50



## Main

|                           |                                                                                                                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                       |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                          |
| Continuous stall torque   | 5.5 N.m for LXM15LD28M3, 230 V, three phase<br>5.5 N.m for LXM05AD42M3X, 200...240 V, three phase<br>5.5 N.m for LXM05BD42M3X, 200...240 V, three phase<br>5.5 N.m for LXM05CD42M3X, 200...240 V, three phase     |
| Peak stall torque         | 11.59 N.m for LXM15LD28M3, 230 V, three phase<br>16 N.m for LXM05AD42M3X, 200...240 V, three phase<br>16 N.m for LXM05BD42M3X, 200...240 V, three phase<br>16 N.m for LXM05CD42M3X, 200...240 V, three phase      |
| Nominal output power      | 1400 W for LXM05AD42M3X, 200...240 V, three phase<br>1400 W for LXM05BD42M3X, 200...240 V, three phase<br>1400 W for LXM05CD42M3X, 200...240 V, three phase<br>1700 W for LXM15LD28M3, 230 V, three phase         |
| Nominal torque            | 4 N.m for LXM15LD28M3, 230 V, three phase<br>4.4 N.m for LXM05AD42M3X, 200...240 V, three phase<br>4.4 N.m for LXM05BD42M3X, 200...240 V, three phase<br>4.4 N.m for LXM05CD42M3X, 200...240 V, three phase       |
| Nominal speed             | 3000 rpm for LXM05AD42M3X, 200...240 V, three phase<br>3000 rpm for LXM05BD42M3X, 200...240 V, three phase<br>3000 rpm for LXM05CD42M3X, 200...240 V, three phase<br>4000 rpm for LXM15LD28M3, 230 V, three phase |
| Product compatibility     | LXM05AD42M3X at 200...240 V three phase<br>LXM05BD42M3X at 200...240 V three phase<br>LXM05CD42M3X at 200...240 V three phase<br>LXM15LD28M3 at 230 V three phase                                                 |
| Shaft end                 | Keyed                                                                                                                                                                                                             |
| IP degree of protection   | IP50 standard                                                                                                                                                                                                     |
| Speed feedback resolution | 131072 points/turn x 4096 turns                                                                                                                                                                                   |
| Holding brake             | With                                                                                                                                                                                                              |
| Mounting support          | International standard flange                                                                                                                                                                                     |
| Electrical connection     | Straight connectors                                                                                                                                                                                               |

## Complementary

|                     |                        |
|---------------------|------------------------|
| Range compatibility | Lexium 05<br>Lexium 15 |
| Supply voltage max  | 480 V                  |

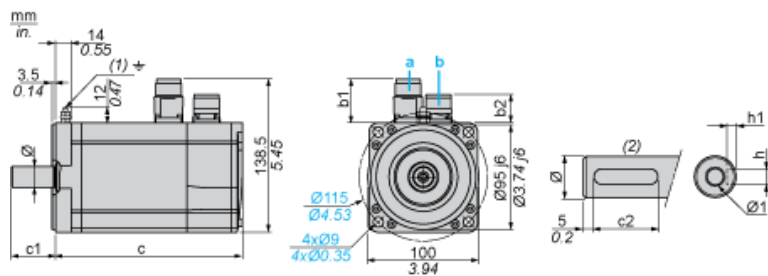
|                                       |                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------|
| Network number of phases              | Three phase                                                                      |
| Continuous stall current              | 9.9 A                                                                            |
| Maximum continuous power              | 2.51 W                                                                           |
| Maximum permanent current             | 35.4 A                                                                           |
| Second shaft                          | Without second shaft end                                                         |
| Shaft diameter                        | 19 mm                                                                            |
| Shaft length                          | 40 mm                                                                            |
| Key width                             | 30 mm                                                                            |
| Feedback type                         | Multiturn SinCos Hiperface                                                       |
| Holding torque                        | 9 N.m holding brake                                                              |
| Motor flange size                     | 100 mm                                                                           |
| Number of motor stacks                | 2                                                                                |
| Torque constant                       | 0.59 N.m/A at 120 °C<br>0.64 N.m/A at 120 °C                                     |
| Back emf constant                     | 37 V/krpm at 120 °C<br>33 V/krpm at 120 °C                                       |
| Number of motor poles                 | 8                                                                                |
| Rotor inertia                         | 2.928 kg.cm <sup>2</sup>                                                         |
| Stator resistance                     | 0.56 Ohm at 20 °C<br>0.6 Ohm at 20 °C                                            |
| Stator inductance                     | 2.9 mH at 20 °C<br>3 mH at 20 °C                                                 |
| Stator electrical time constant       | 4.83 ms at 20 °C<br>5.26 ms at 20 °C                                             |
| Maximum radial force Fr               | 620 N at 4000 rpm<br>690 N at 3000 rpm<br>790 N at 2000 rpm<br>990 N at 1000 rpm |
| Maximum axial force Fa                | 0.2 x Fr                                                                         |
| Brake pull-in power                   | 18 W                                                                             |
| Type of cooling                       | Natural convection                                                               |
| Length                                | 235.5 mm                                                                         |
| Centring collar diameter              | 95 mm                                                                            |
| Centring collar depth                 | 3.5 mm                                                                           |
| Number of mounting holes              | 4                                                                                |
| Mounting holes diameter               | 9 mm                                                                             |
| Circle diameter of the mounting holes | 115 mm                                                                           |
| Product weight                        | 6.3 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)

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 | 205               | 236            | 40 | 30 | 6 N9 | $3.5^{+0.1}_0$ | 19 k6 | M6 x 16       |

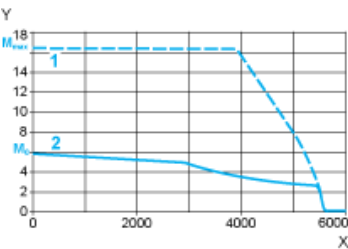
Dimensions in in.

| Straight connector |      | Rotatable angled connector |      | 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 | 8.07              | 9.29           | 1.57 | 1.18 | 0.24 N9 | $0.14^{+0.1}_0$ | 0.75 k6 | M6 x 0.63     |

230 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