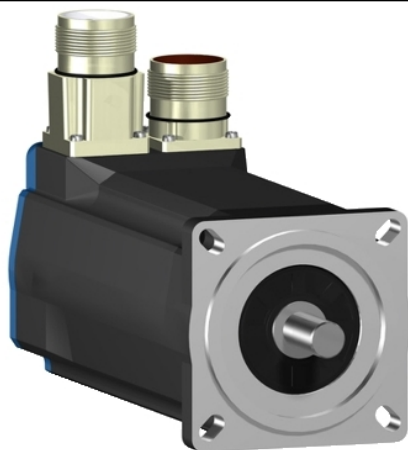


# BSH0703T31A2A

AC servo motor BSH, Lexium 05, 2.83N.m,  
6000rpm, keyed shaft, without brake, IP65





## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product or Component Type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Maximum mechanical speed  | 8000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Continuous stall torque   | 24.8 Lbf.In (2.8 N.m) LXM05AD28M2, 200...240 V, single phase<br>24.8 Lbf.In (2.8 N.m) LXM05BD28M2, 200...240 V, single phase<br>24.8 Lbf.In (2.8 N.m) LXM05CD28M2, 200...240 V, single phase<br>23.01 Lbf.In (2.6 N.m) LXM32.D18M2 6 A, 230 V, single phase<br>25.05 Lbf.In (2.83 N.m) LXM15LD28M3, 230 V, three phase<br>24.8 Lbf.In (2.8 N.m) LXM05AD28F1, 110...120 V, single phase<br>24.8 Lbf.In (2.8 N.m) LXM05AD42M3X, 200...240 V, three phase<br>24.8 Lbf.In (2.8 N.m) LXM05BD28F1, 110...120 V, single phase<br>24.8 Lbf.In (2.8 N.m) LXM05BD42M3X, 200...240 V, three phase<br>24.8 Lbf.In (2.8 N.m) LXM05CD28F1, 110...120 V, single phase<br>24.8 lbf.in (2.8 N.m) LXM05CD42M3X, 200...240 V, three phase                     |
| Peak stall torque         | 65.32 Lbf.In (7.38 N.m) LXM05AD28F1, 110...120 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM05AD28M2, 200...240 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM05BD28F1, 110...120 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM05BD28M2, 200...240 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM05CD28F1, 110...120 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM05CD28M2, 200...240 V, single phase<br>65.5 Lbf.In (7.4 N.m) LXM32.D18M2 6 A, 230 V, single phase<br>65.32 Lbf.In (7.38 N.m) LXM15LD28M3, 230 V, three phase<br>90.72 Lbf.In (10.25 N.m) LXM05AD42M3X, 200...240 V, three phase<br>90.72 Lbf.In (10.25 N.m) LXM05BD42M3X, 200...240 V, three phase<br>90.72 lbf.in (10.25 N.m) LXM05CD42M3X, 200...240 V, three phase |
| Nominal output power      | 750 W LXM05AD28M2, 200...240 V, single phase<br>750 W LXM05BD28M2, 200...240 V, single phase<br>750 W LXM05CD28M2, 200...240 V, single phase<br>750 W LXM05AD28F1, 110...120 V, single phase<br>750 W LXM05BD28F1, 110...120 V, single phase<br>750 W LXM05CD28F1, 110...120 V, single phase<br>900 W LXM32.D18M2 6 A, 230 V, single phase<br>1250 W LXM15LD28M3, 230 V, three phase<br>750 W LXM05AD42M3X, 200...240 V, three phase<br>750 W LXM05BD42M3X, 200...240 V, three phase<br>750 W LXM05CD42M3X, 200...240 V, three phase                                                                                                                                                                                                       |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal torque            | 21.2 Lbf.In (2.4 N.m) LXM05AD28M2, 200...240 V, single phase<br>21.2 Lbf.In (2.4 N.m) LXM05BD28M2, 200...240 V, single phase<br>21.2 Lbf.In (2.4 N.m) LXM05CD28M2, 200...240 V, single phase<br>21.2 Lbf.In (2.4 N.m) LXM05AD28F1, 110...120 V, single phase<br>21.2 Lbf.In (2.4 N.m) LXM05BD28F1, 110...120 V, single phase<br>21.2 Lbf.In (2.4 N.m) LXM05CD28F1, 110...120 V, single phase<br>18.6 Lbf.In (2.1 N.m) LXM32.D18M2 6 A, 230 V, single phase<br>17.7 Lbf.In (2 N.m) LXM15LD28M3, 230 V, three phase<br>21.2 Lbf.In (2.4 N.m) LXM05AD42M3X, 200...240 V, three phase<br>21.2 Lbf.In (2.4 N.m) LXM05BD42M3X, 200...240 V, three phase<br>21.2 Lbf.in (2.4 N.m) LXM05CD42M3X, 200...240 V, three phase |
| Nominal speed             | 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>3000 rpm LXM05AD28F1, 110...120 V, single phase<br>3000 rpm LXM05BD28F1, 110...120 V, single phase<br>3000 rpm LXM05CD28F1, 110...120 V, single phase<br>4000 rpm LXM32.D18M2 6 A, 230 V, single phase<br>6000 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.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                 | Keyed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IP Degree of Protection   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Holding brake             | Without                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 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 A                                 |
| Maximum continuous power | 1.7 W                               |

|                                       |                                                                                                                                                                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum current Irms                  | 18 A LXM32.D18M2<br>30.9 A LXM15LD28M3<br>29.2 A LXM05AD28F1<br>29.2 A LXM05AD28M2<br>29.2 A LXM05AD42M3X<br>29.2 A LXM05BD28F1<br>29.2 A LXM05BD28M2<br>29.2 A LXM05BD42M3X<br>29.2 A LXM05CD28F1<br>29.2 A LXM05CD28M2<br>29.2 A LXM05CD42M3X |
| Maximum permanent current             | 29.2 A                                                                                                                                                                                                                                          |
| Switching frequency                   | 8 kHz                                                                                                                                                                                                                                           |
| Second shaft                          | Without second shaft end                                                                                                                                                                                                                        |
| Shaft diameter                        | 0.6 in (14 mm)                                                                                                                                                                                                                                  |
| Shaft length                          | 1.2 in (30 mm)                                                                                                                                                                                                                                  |
| Key width                             | 0.8 in (20 mm)                                                                                                                                                                                                                                  |
| Feedback type                         | Single turn SinCos Hiperface                                                                                                                                                                                                                    |
| Motor flange size                     | 2.8 in (70 mm)                                                                                                                                                                                                                                  |
| Number of motor stacks                | 3                                                                                                                                                                                                                                               |
| Torque constant                       | 0.44 N.m/A 248.0000000000 °F (120 °C)                                                                                                                                                                                                           |
| Back emf constant                     | 29 V/krpm 248.0000000000 °F (120 °C)                                                                                                                                                                                                            |
| Number of motor poles                 | 6                                                                                                                                                                                                                                               |
| Rotor inertia                         | 0.58 kg.cm <sup>2</sup>                                                                                                                                                                                                                         |
| Stator resistance                     | 0.91 Ohm 68.0000000000 °F (20 °C)                                                                                                                                                                                                               |
| Stator inductance                     | 4.4 mH 68.0000000000 °F (20 °C)                                                                                                                                                                                                                 |
| Stator electrical time constant       | 4.84 ms 68.0000000000 °F (20 °C)                                                                                                                                                                                                                |
| Maximum radial force Fr               | 400 N 6000 rpm<br>430 N 5000 rpm<br>460 N 4000 rpm<br>510 N 3000 rpm<br>580 N 2000 rpm<br>730 N 1000 rpm                                                                                                                                        |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                        |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                              |
| Length                                | 8.7 in (220 mm)                                                                                                                                                                                                                                 |
| Centring collar diameter              | 2.4 in (60 mm)                                                                                                                                                                                                                                  |
| Centring collar depth                 | 0.10 in (2.5 mm)                                                                                                                                                                                                                                |
| Number of mounting holes              | 4                                                                                                                                                                                                                                               |
| Mounting holes diameter               | 0.2 in (5.5 mm)                                                                                                                                                                                                                                 |
| Circle diameter of the mounting holes | 3.2 in (82 mm)                                                                                                                                                                                                                                  |
| Net Weight                            | 7.98 lb(US) (3.62 kg)                                                                                                                                                                                                                           |

### Ordering and shipping details

|                   |               |
|-------------------|---------------|
| Category          | US1PC5318282  |
| Discount Schedule | PC53          |
| GTIN              | 3389118137691 |
| Returnability     | No            |
| Country of origin | DE            |

### Packing Units

|                              |                     |
|------------------------------|---------------------|
| Unit Type of Package 1       | PCE                 |
| Number of Units in Package 1 | 1                   |
| Package 1 Height             | 4.8 in (12.3 cm)    |
| Package 1 Width              | 5.04 in (12.8 cm)   |
| Package 1 Length             | 14.8 in (37.7 cm)   |
| Package 1 Weight             | 7.9 lb(US) (3.6 kg) |

## Offer Sustainability

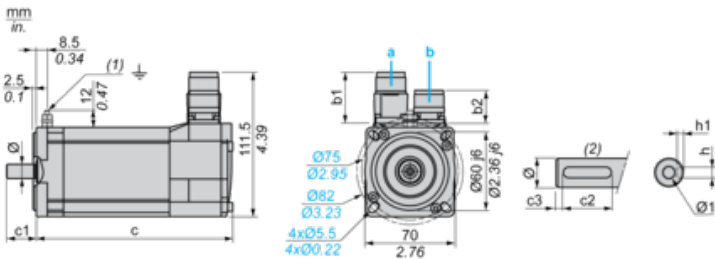
|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 | c3 | h    | h1           | Ø     | Ø1 for screws |
|---------------------|------|-----------------------------|------|-------------------|----------------|----|----|----|------|--------------|-------|---------------|
| b1                  | b2   | b1                          | b2   |                   |                |    |    |    |      |              |       |               |
| 39.5                | 25.5 | 39.5                        | 39.5 | 220               | 254            | 30 | 20 | 5  | 5 N9 | $3^{+0.1}_0$ | 14 k6 | M5 x 12.5     |

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 | 8.66              | 10.00          | 1.18 | 0.78 | 0.19 | 0.20 N9 | $0.12^{+0.004}_0$ | 0.55 k6 | M5 x 0.49     |

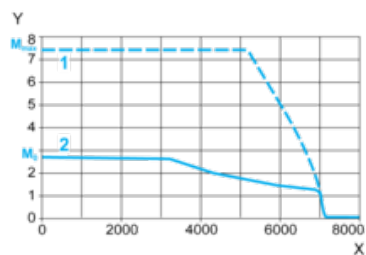
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230 V Single-Phase Supply Voltage

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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