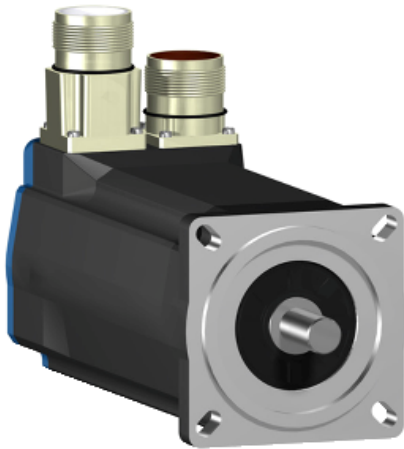


# BSH0703T31F2A

AC servo motor BSH - 2.83 N.m - 6000 rpm -  
keyed shaft - with brake - IP65



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum mechanical speed  | 8000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Continuous stall torque   | 2.8 N.m for LXM05AD28M2, 200...240 V, single phase<br>2.8 N.m for LXM05BD28M2, 200...240 V, single phase<br>2.8 N.m for LXM05CD28M2, 200...240 V, single phase<br>2.6 N.m for LXM32.D18M2 at 6 A, 230 V, single phase<br>2.83 N.m for LXM15LD28M3, 230 V, three phase<br>2.8 N.m for LXM05AD28F1, 110...120 V, single phase<br>2.8 N.m for LXM05AD42M3X, 200...240 V, three phase<br>2.8 N.m for LXM05BD28F1, 110...120 V, single phase<br>2.8 N.m for LXM05BD42M3X, 200...240 V, three phase<br>2.8 N.m for LXM05CD28F1, 110...120 V, single phase<br>2.8 N.m for LXM05CD42M3X, 200...240 V, three phase             |
| Peak stall torque         | 7.38 N.m for LXM05AD28F1, 110...120 V, single phase<br>7.38 N.m for LXM05AD28M2, 200...240 V, single phase<br>7.38 N.m for LXM05BD28F1, 110...120 V, single phase<br>7.38 N.m for LXM05BD28M2, 200...240 V, single phase<br>7.38 N.m for LXM05CD28F1, 110...120 V, single phase<br>7.38 N.m for LXM05CD28M2, 200...240 V, single phase<br>7.4 N.m for LXM32.D18M2 at 6 A, 230 V, single phase<br>7.38 N.m for LXM15LD28M3, 230 V, three phase<br>10.25 N.m for LXM05AD42M3X, 200...240 V, three phase<br>10.25 N.m for LXM05BD42M3X, 200...240 V, three phase<br>10.25 N.m for LXM05CD42M3X, 200...240 V, three phase |
| Nominal output power      | 750 W for LXM05AD28M2, 200...240 V, single phase<br>750 W for LXM05BD28M2, 200...240 V, single phase<br>750 W for LXM05CD28M2, 200...240 V, single phase<br>750 W for LXM05AD28F1, 110...120 V, single phase<br>750 W for LXM05BD28F1, 110...120 V, single phase<br>750 W for LXM05CD28F1, 110...120 V, single phase<br>900 W for LXM32.D18M2 at 6 A, 230 V, single phase<br>1250 W for LXM15LD28M3, 230 V, three phase<br>750 W for LXM05AD42M3X, 200...240 V, three phase<br>750 W for LXM05BD42M3X, 200...240 V, three phase<br>750 W for LXM05CD42M3X, 200...240 V, three phase                                   |
| Nominal torque            | 2.4 N.m for LXM05AD28M2, 200...240 V, single phase<br>2.4 N.m for LXM05BD28M2, 200...240 V, single phase<br>2.4 N.m for LXM05CD28M2, 200...240 V, single phase<br>2.4 N.m for LXM05AD28F1, 110...120 V, single phase<br>2.4 N.m for LXM05BD28F1, 110...120 V, single phase<br>2.4 N.m for LXM05CD28F1, 110...120 V, single phase<br>2.1 N.m for LXM32.D18M2 at 6 A, 230 V, single phase                                                                                                                                                                                                                               |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 2 N.m for LXM15LD28M3, 230 V, three phase<br>2.4 N.m for LXM05AD42M3X, 200...240 V, three phase<br>2.4 N.m for LXM05BD42M3X, 200...240 V, three phase<br>2.4 N.m for LXM05CD42M3X, 200...240 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nominal speed             | 3000 rpm for LXM05AD28M2, 200...240 V, single phase<br>3000 rpm for LXM05BD28M2, 200...240 V, single phase<br>3000 rpm for LXM05CD28M2, 200...240 V, single phase<br>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>3000 rpm for LXM05AD28F1, 110...120 V, single phase<br>3000 rpm for LXM05BD28F1, 110...120 V, single phase<br>3000 rpm for LXM05CD28F1, 110...120 V, single phase<br>4000 rpm for LXM32.D18M2 at 6 A, 230 V, single phase<br>6000 rpm for LXM15LD28M3, 230 V, three phase |
| Product compatibility     | LXM05AD28F1 at 110...120 V single phase<br>LXM05AD28M2 at 200...240 V single phase<br>LXM05BD28F1 at 110...120 V single phase<br>LXM05BD28M2 at 200...240 V single phase<br>LXM05CD28F1 at 110...120 V single phase<br>LXM05CD28M2 at 200...240 V single phase<br>LXM32.D18M2 at 230 V single phase<br>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   | IP65 standard<br>IP67 with IP67 kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Speed feedback resolution | 131072 points/turn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 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                                                                                                                                                                                                                                                                                       |
| Network number of phases  | Three phase                                                                                                                                                                                                                                                                                 |
| Continuous stall current  | 7 A                                                                                                                                                                                                                                                                                         |
| Maximum continuous power  | 1.7 W                                                                                                                                                                                                                                                                                       |
| Maximum current Irms      | 18 A for LXM32.D18M2<br>30.9 A for LXM15LD28M3<br>29.2 A for LXM05AD28F1<br>29.2 A for LXM05AD28M2<br>29.2 A for LXM05AD42M3X<br>29.2 A for LXM05BD28F1<br>29.2 A for LXM05BD28M2<br>29.2 A for LXM05BD42M3X<br>29.2 A for LXM05CD28F1<br>29.2 A for LXM05CD28M2<br>29.2 A for LXM05CD42M3X |
| Maximum permanent current | 29.2 A                                                                                                                                                                                                                                                                                      |
| Switching frequency       | 8 kHz                                                                                                                                                                                                                                                                                       |
| Second shaft              | Without second shaft end                                                                                                                                                                                                                                                                    |
| Shaft diameter            | 14 mm                                                                                                                                                                                                                                                                                       |
| Shaft length              | 30 mm                                                                                                                                                                                                                                                                                       |
| Key width                 | 20 mm                                                                                                                                                                                                                                                                                       |
| Feedback type             | Single turn SinCos Hiperface                                                                                                                                                                                                                                                                |
| Holding torque            | 3 N.m holding brake                                                                                                                                                                                                                                                                         |
| Motor flange size         | 70 mm                                                                                                                                                                                                                                                                                       |
| Number of motor stacks    | 3                                                                                                                                                                                                                                                                                           |

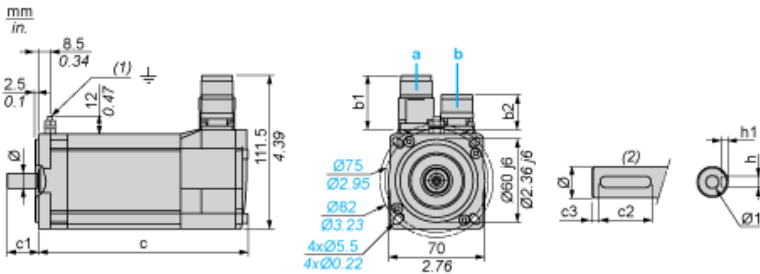
|                                       |                                                                                                                            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Torque constant                       | 0.44 N.m/A at 120 °C                                                                                                       |
| Back emf constant                     | 29 V/krpm at 120 °C                                                                                                        |
| Number of motor poles                 | 6                                                                                                                          |
| Rotor inertia                         | 0.81 kg.cm <sup>2</sup>                                                                                                    |
| Stator resistance                     | 0.91 Ohm at 20 °C                                                                                                          |
| Stator inductance                     | 4.4 mH at 20 °C                                                                                                            |
| Stator electrical time constant       | 4.84 ms at 20 °C                                                                                                           |
| Maximum radial force Fr               | 400 N at 6000 rpm<br>430 N at 5000 rpm<br>460 N at 4000 rpm<br>510 N at 3000 rpm<br>580 N at 2000 rpm<br>730 N at 1000 rpm |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                   |
| Brake pull-in power                   | 12 W                                                                                                                       |
| Type of cooling                       | Natural convection                                                                                                         |
| Length                                | 254 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                                                                                                                      |
| Product weight                        | 3.8 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 | 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 <sup>+0.1</sup> <sub>0</sub> | 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 <sup>+0.004</sup> <sub>0</sub> | 0.55 k6 | M5 x 0.49     |

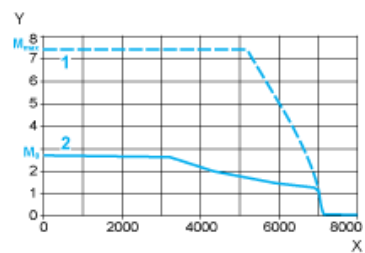
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230 V Single-Phase Supply Voltage

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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