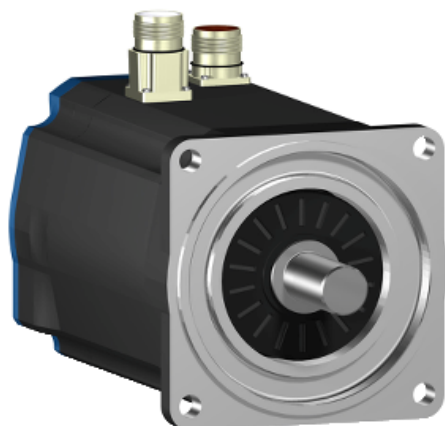


# BSH1001P21A1A

AC servo motor BSH - 2.7 N.m - 3000 rpm -  
untapped shaft - without brake - IP65



## Main

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product or component type | Servo motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Device short name         | BSH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Maximum mechanical speed  | 6000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Continuous stall torque   | 3.39 N.m for LXM15LD21M3, 230 V, single phase<br>2.7 N.m for LXM15LD10N4, 230 V, three phase<br>3.39 N.m for LXM15LD10N4, 400 V, three phase<br>3.39 N.m for LXM15LD10N4, 480 V, three phase<br>3.39 N.m for LXM15LD21M3, 230 V, three phase<br>3.39 N.m for LXM15LD17N4, 230 V, three phase<br>3.39 N.m for LXM15LD17N4, 400 V, three phase<br>3.39 N.m for LXM15LD17N4, 480 V, three phase<br>3.4 N.m for LXM05AD17M3X, 200...240 V, three phase<br>3.4 N.m for LXM05AD22N4, 380...480 V, three phase<br>3.4 N.m for LXM05BD17M3X, 200...240 V, three phase<br>3.4 N.m for LXM05BD22N4, 380...480 V, three phase<br>3.4 N.m for LXM05CD17M3X, 200...240 V, three phase<br>3.4 N.m for LXM05CD22N4, 380...480 V, three phase<br>3.3 N.m for LXM32.D18N4 at 6 A, 400 V, three phase<br>3.3 N.m for LXM32.D18N4 at 6 A, 480 V, three phase  |
| Peak stall torque         | 7.08 N.m for LXM15LD21M3, 230 V, single phase<br>6.19 N.m for LXM15LD10N4, 230 V, three phase<br>6.19 N.m for LXM15LD10N4, 400 V, three phase<br>6.19 N.m for LXM15LD10N4, 480 V, three phase<br>7.08 N.m for LXM15LD21M3, 230 V, three phase<br>7.08 N.m for LXM15LD17N4, 230 V, three phase<br>7.08 N.m for LXM15LD17N4, 400 V, three phase<br>7.08 N.m for LXM15LD17N4, 480 V, three phase<br>7.1 N.m for LXM05AD17M3X, 200...240 V, three phase<br>7.1 N.m for LXM05AD22N4, 380...480 V, three phase<br>7.1 N.m for LXM05BD17M3X, 200...240 V, three phase<br>7.1 N.m for LXM05BD22N4, 380...480 V, three phase<br>7.1 N.m for LXM05CD17M3X, 200...240 V, three phase<br>7.1 N.m for LXM05CD22N4, 380...480 V, three phase<br>9.6 N.m for LXM32.D18N4 at 6 A, 400 V, three phase<br>9.6 N.m for LXM32.D18N4 at 6 A, 480 V, three phase |
| Nominal output power      | 1300 W for LXM15LD17N4, 400 V, three phase<br>1500 W for LXM15LD10N4, 480 V, three phase<br>950 W for LXM15LD21M3, 230 V, single phase<br>1300 W for LXM15LD10N4, 400 V, three phase<br>1500 W for LXM15LD17N4, 480 V, three phase<br>500 W for LXM05AD17M3X, 200...240 V, three phase<br>500 W for LXM05BD17M3X, 200...240 V, three phase<br>500 W for LXM05CD17M3X, 200...240 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | 850 W for LXM15LD10N4, 230 V, three phase<br>900 W for LXM05AD22N4, 380...480 V, three phase<br>900 W for LXM05BD22N4, 380...480 V, three phase<br>900 W for LXM05CD22N4, 380...480 V, three phase<br>950 W for LXM15LD17N4, 230 V, three phase<br>950 W for LXM15LD21M3, 230 V, three phase<br>1100 W for LXM32.D18N4 at 6 A, 400 V, three phase<br>1100 W for LXM32.D18N4 at 6 A, 480 V, three phase                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nominal torque            | 3 N.m for LXM15LD21M3, 230 V, single phase<br>2.5 N.m for LXM15LD10N4, 480 V, three phase<br>2.5 N.m for LXM15LD17N4, 480 V, three phase<br>2.7 N.m for LXM15LD10N4, 230 V, three phase<br>2.7 N.m for LXM15LD10N4, 400 V, three phase<br>2.7 N.m for LXM15LD17N4, 400 V, three phase<br>2.92 N.m for LXM05AD22N4, 380...480 V, three phase<br>2.92 N.m for LXM05BD22N4, 380...480 V, three phase<br>2.92 N.m for LXM05CD22N4, 380...480 V, three phase<br>3 N.m for LXM15LD17N4, 230 V, three phase<br>3 N.m for LXM15LD21M3, 230 V, three phase<br>3.16 N.m for LXM05AD17M3X, 200...240 V, three phase<br>3.16 N.m for LXM05BD17M3X, 200...240 V, three phase<br>3.16 N.m for LXM05CD17M3X, 200...240 V, three phase<br>2.7 N.m for LXM32.D18N4 at 6 A, 400 V, three phase<br>2.7 N.m for LXM32.D18N4 at 6 A, 480 V, three phase                 |
| Nominal speed             | 3000 rpm for LXM15LD10N4, 230 V, three phase<br>3000 rpm for LXM15LD21M3, 230 V, single phase<br>3000 rpm for LXM05AD22N4, 380...480 V, three phase<br>3000 rpm for LXM05BD22N4, 380...480 V, three phase<br>3000 rpm for LXM05CD22N4, 380...480 V, three phase<br>3000 rpm for LXM15LD17N4, 230 V, three phase<br>3000 rpm for LXM15LD21M3, 230 V, three phase<br>1500 rpm for LXM05AD17M3X, 200...240 V, three phase<br>1500 rpm for LXM05BD17M3X, 200...240 V, three phase<br>1500 rpm for LXM05CD17M3X, 200...240 V, three phase<br>4500 rpm for LXM15LD10N4, 400 V, three phase<br>4500 rpm for LXM15LD17N4, 400 V, three phase<br>6000 rpm for LXM15LD10N4, 480 V, three phase<br>6000 rpm for LXM15LD17N4, 480 V, three phase<br>4000 rpm for LXM32.D18N4 at 6 A, 400 V, three phase<br>4000 rpm for LXM32.D18N4 at 6 A, 480 V, three phase |
| Product compatibility     | LXM15LD21M3 at 230 V single phase<br>LXM15LD10N4 at 400 V three phase<br>LXM05AD17M3X at 200...240 V three phase<br>LXM05BD17M3X at 200...240 V three phase<br>LXM05CD17M3X at 200...240 V three phase<br>LXM15LD10N4 at 230 V three phase<br>LXM15LD10N4 at 480 V three phase<br>LXM15LD21M3 at 230 V three phase<br>LXM15LD17N4 at 230 V three phase<br>LXM05AD22N4 at 380...480 V three phase<br>LXM05BD22N4 at 380...480 V three phase<br>LXM05CD22N4 at 380...480 V three phase<br>LXM15LD17N4 at 400 V three phase<br>LXM15LD17N4 at 480 V three phase<br>LXM32.D18N4 at 400 V three phase<br>LXM32.D18N4 at 480 V three phase                                                                                                                                                                                                               |
| Shaft end                 | Untapped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 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     | Straight connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Complementary

|                     |                                     |
|---------------------|-------------------------------------|
| Range compatibility | Lexium 32<br>Lexium 05<br>Lexium 15 |
| Supply voltage max  | 480 V                               |

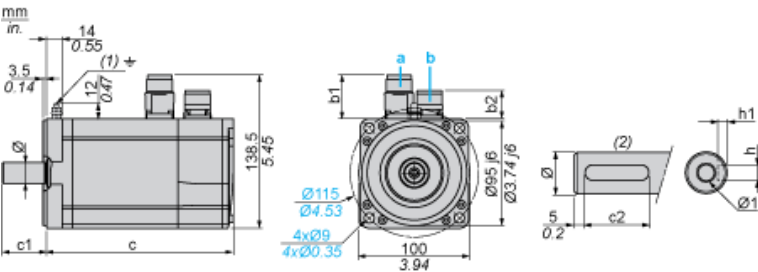
|                                       |                                                                                                                                                                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network number of phases              | Three phase                                                                                                                                                                                                                                     |
| Continuous stall current              | 3.5 A                                                                                                                                                                                                                                           |
| Maximum continuous power              | 1.6 W                                                                                                                                                                                                                                           |
| Maximum current Irms                  | 12 A for LXM15LD21M3<br>12 A for LXM15LD10N4<br>12 A for LXM15LD17N4<br>12 A for LXM05AD17M3X<br>12 A for LXM05AD22N4<br>12 A for LXM05BD17M3X<br>12 A for LXM05BD22N4<br>12 A for LXM05CD17M3X<br>12 A for LXM05CD22N4<br>12 A for LXM32.D18N4 |
| Maximum permanent current             | 12 A                                                                                                                                                                                                                                            |
| Switching frequency                   | 8 kHz                                                                                                                                                                                                                                           |
| Second shaft                          | Without second shaft end                                                                                                                                                                                                                        |
| Shaft diameter                        | 19 mm                                                                                                                                                                                                                                           |
| Shaft length                          | 40 mm                                                                                                                                                                                                                                           |
| Feedback type                         | Single turn SinCos Hiperface                                                                                                                                                                                                                    |
| Motor flange size                     | 100 mm                                                                                                                                                                                                                                          |
| Number of motor stacks                | 1                                                                                                                                                                                                                                               |
| Torque constant                       | 0.89 N.m/A at 120 °C                                                                                                                                                                                                                            |
| Back emf constant                     | 60 V/krpm at 120 °C                                                                                                                                                                                                                             |
| Number of motor poles                 | 8                                                                                                                                                                                                                                               |
| Rotor inertia                         | 1.4 kg.cm <sup>2</sup>                                                                                                                                                                                                                          |
| Stator resistance                     | 3.8 Ohm at 20 °C                                                                                                                                                                                                                                |
| Stator inductance                     | 17.6 mH at 20 °C                                                                                                                                                                                                                                |
| Stator electrical time constant       | 4.63 ms at 20 °C                                                                                                                                                                                                                                |
| Maximum radial force Fr               | 530 N at 5000 rpm<br>570 N at 4000 rpm<br>630 N at 3000 rpm<br>720 N at 2000 rpm<br>900 N at 1000 rpm                                                                                                                                           |
| Maximum axial force Fa                | 0.2 x Fr                                                                                                                                                                                                                                        |
| Type of cooling                       | Natural convection                                                                                                                                                                                                                              |
| Length                                | 168.5 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                        | 4.2 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 | 169               | 200            | 40 | 30 | 6 N9 | 3.5 <sup>+0.1</sup> <sub>0</sub> | 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 | 6.65              | 7.87           | 1.57 | 1.18 | 0.24 N9 | 0.14 <sup>+0.1</sup> <sub>0</sub> | 0.75 k6 | M6 x 0.63     |

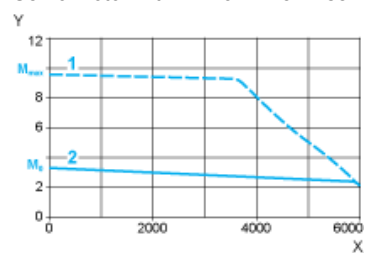
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400 V 3-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•D18N4 servo drive

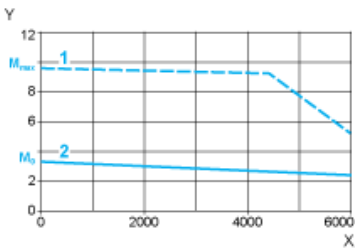


X Speed in rpm  
Y Torque in Nm  
1 Peak torque  
2 Continuous torque

480 V 3-Phase Supply Voltage

Torque/Speed Curves

Servo motor with LXM32•D18N4 servo drive



- X Speed in rpm
- Y Torque in Nm
- 1 Peak torque
- 2 Continuous torque