

# BSH0702P21F2A

AC servo motor BSH - 2.2 N.m - 3000 rpm -  
untapped shaft - with brake - IP65



## Main

Product or component type	Servo motor
Device short name	BSH
Maximum mechanical speed	8000 rpm
Continuous stall torque	<p>2.2 N.m for LXM32.D12N4 at 3 A, 400 V, three phase</p> <p>2.2 N.m for LXM32.D12N4 at 3 A, 480 V, three phase</p> <p>2.12 N.m for LXM05AD10M2, 200...240 V, single phase</p> <p>2.12 N.m for LXM05AD10M3X, 200...240 V, three phase</p> <p>2.12 N.m for LXM05BD10M2, 200...240 V, single phase</p> <p>2.12 N.m for LXM05BD10M3X, 200...240 V, three phase</p> <p>2.12 N.m for LXM05CD10M2, 200...240 V, single phase</p> <p>2.12 N.m for LXM05CD10M3X, 200...240 V, three phase</p> <p>2.2 N.m for LXM15LD13M3, 230 V, single phase</p> <p>2.12 N.m for LXM05AD17M2, 200...240 V, single phase</p> <p>2.12 N.m for LXM05BD17M2, 200...240 V, single phase</p> <p>2.12 N.m for LXM05CD17M2, 200...240 V, single phase</p> <p>2.2 N.m for LXM15LD10N4, 480 V, three phase</p> <p>2.12 N.m for LXM05AD17M3X, 200...240 V, three phase</p> <p>2.12 N.m for LXM05AD14N4, 380...480 V, three phase</p> <p>2.12 N.m for LXM05BD17M3X, 200...240 V, three phase</p> <p>2.12 N.m for LXM05BD14N4, 380...480 V, three phase</p> <p>2.12 N.m for LXM05CD17M3X, 200...240 V, three phase</p> <p>2.12 N.m for LXM05CD14N4, 380...480 V, three phase</p> <p>2.2 N.m for LXM15LD10N4, 230 V, three phase</p> <p>2.2 N.m for LXM15LD10N4, 400 V, three phase</p>
Peak stall torque	<p>7.6 N.m for LXM32.D12N4 at 3 A, 400 V, three phase</p> <p>7.6 N.m for LXM32.D12N4 at 3 A, 480 V, three phase</p> <p>5.63 N.m for LXM15LD13M3, 230 V, single phase</p> <p>4.57 N.m for LXM05AD10M2, 200...240 V, single phase</p> <p>5.63 N.m for LXM05AD17M2, 200...240 V, single phase</p> <p>4.57 N.m for LXM05BD10M2, 200...240 V, single phase</p> <p>5.63 N.m for LXM05BD17M2, 200...240 V, single phase</p> <p>4.57 N.m for LXM05CD10M2, 200...240 V, single phase</p> <p>5.63 N.m for LXM05CD17M2, 200...240 V, single phase</p> <p>4.85 N.m for LXM15LD10N4, 230 V, three phase</p> <p>4.85 N.m for LXM15LD10N4, 400 V, three phase</p> <p>4.85 N.m for LXM15LD10N4, 480 V, three phase</p> <p>4.57 N.m for LXM05AD10M3X, 200...240 V, three phase</p> <p>5.63 N.m for LXM05AD17M3X, 200...240 V, three phase</p>

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	<p>5.63 N.m for LXM05AD14N4, 380...480 V, three phase  4.57 N.m for LXM05BD10M3X, 200...240 V, three phase  5.63 N.m for LXM05BD17M3X, 200...240 V, three phase  5.63 N.m for LXM05BD14N4, 380...480 V, three phase  4.57 N.m for LXM05CD10M3X, 200...240 V, three phase  5.63 N.m for LXM05CD17M3X, 200...240 V, three phase  5.63 N.m for LXM05CD14N4, 380...480 V, three phase</p>
Nominal output power	<p>850 W for LXM32.D12N4 at 3 A, 400 V, three phase  850 W for LXM32.D12N4 at 3 A, 480 V, three phase  1000 W for LXM15LD10N4, 400 V, three phase  597 W for LXM15LD13M3, 230 V, single phase  600 W for LXM05AD10M2, 200...240 V, single phase  600 W for LXM05AD17M2, 200...240 V, single phase  600 W for LXM05BD10M2, 200...240 V, single phase  600 W for LXM05BD17M2, 200...240 V, single phase  600 W for LXM05CD10M2, 200...240 V, single phase  600 W for LXM05CD17M2, 200...240 V, single phase  1300 W for LXM15LD10N4, 480 V, three phase  597 W for LXM15LD10N4, 230 V, three phase  600 W for LXM05AD10M3X, 200...240 V, three phase  600 W for LXM05AD14N4, 380...480 V, three phase  600 W for LXM05AD17M3X, 200...240 V, three phase  600 W for LXM05BD10M3X, 200...240 V, three phase  600 W for LXM05BD14N4, 380...480 V, three phase  600 W for LXM05BD17M3X, 200...240 V, three phase  600 W for LXM05CD10M3X, 200...240 V, three phase  600 W for LXM05CD14N4, 380...480 V, three phase  600 W for LXM05CD17M3X, 200...240 V, three phase</p>
Nominal torque	<p>1.64 N.m for LXM32.D12N4 at 3 A, 400 V, three phase  1.64 N.m for LXM32.D12N4 at 3 A, 480 V, three phase  1.9 N.m for LXM05AD10M2, 200...240 V, single phase  1.9 N.m for LXM05AD17M2, 200...240 V, single phase  1.9 N.m for LXM05BD10M2, 200...240 V, single phase  1.9 N.m for LXM05BD17M2, 200...240 V, single phase  1.9 N.m for LXM05CD10M2, 200...240 V, single phase  1.9 N.m for LXM05CD17M2, 200...240 V, single phase  1.9 N.m for LXM15LD13M3, 230 V, single phase  1.55 N.m for LXM15LD10N4, 480 V, three phase  1.65 N.m for LXM15LD10N4, 400 V, three phase  1.9 N.m for LXM05AD10M3X, 200...240 V, three phase  1.9 N.m for LXM05AD14N4, 380...480 V, three phase  1.9 N.m for LXM05AD17M3X, 200...240 V, three phase  1.9 N.m for LXM05BD10M3X, 200...240 V, three phase  1.9 N.m for LXM05BD14N4, 380...480 V, three phase  1.9 N.m for LXM05BD17M3X, 200...240 V, three phase  1.9 N.m for LXM05CD10M3X, 200...240 V, three phase  1.9 N.m for LXM05CD14N4, 380...480 V, three phase  1.9 N.m for LXM05CD17M3X, 200...240 V, three phase  1.9 N.m for LXM15LD10N4, 230 V, three phase</p>
Nominal speed	<p>5000 rpm for LXM32.D12N4 at 3 A, 400 V, three phase  5000 rpm for LXM32.D12N4 at 3 A, 480 V, three phase  3000 rpm for LXM05AD10M2, 200...240 V, single phase  3000 rpm for LXM05BD10M2, 200...240 V, single phase  3000 rpm for LXM05CD10M2, 200...240 V, single phase  3000 rpm for LXM05AD10M3X, 200...240 V, three phase  3000 rpm for LXM05AD14N4, 380...480 V, three phase  3000 rpm for LXM05BD10M3X, 200...240 V, three phase  3000 rpm for LXM05BD14N4, 380...480 V, three phase  3000 rpm for LXM05CD10M3X, 200...240 V, three phase  3000 rpm for LXM05CD14N4, 380...480 V, three phase  3000 rpm for LXM15LD13M3, 230 V, single phase  3000 rpm for LXM05AD17M2, 200...240 V, single phase  3000 rpm for LXM05BD17M2, 200...240 V, single phase  3000 rpm for LXM05CD17M2, 200...240 V, single phase  3000 rpm for LXM05AD17M3X, 200...240 V, three phase  3000 rpm for LXM05BD17M3X, 200...240 V, three phase  3000 rpm for LXM05CD17M3X, 200...240 V, three phase  8000 rpm for LXM15LD10N4, 480 V, three phase  3000 rpm for LXM15LD10N4, 230 V, three phase  6000 rpm for LXM15LD10N4, 400 V, three phase</p>
Product compatibility	<p>LXM05AD10M2 at 200...240 V single phase  LXM05AD17M2 at 200...240 V single phase  LXM05BD10M2 at 200...240 V single phase  LXM05BD17M2 at 200...240 V single phase</p>

LXM05CD10M2 at 200...240 V single phase  
 LXM05CD17M2 at 200...240 V single phase  
 LXM15LD13M3 at 230 V single phase  
 LXM05AD10M3X at 200...240 V three phase  
 LXM05BD10M3X at 200...240 V three phase  
 LXM05CD10M3X at 200...240 V three phase  
 LXM05AD14N4 at 380...480 V three phase  
 LXM05BD14N4 at 380...480 V three phase  
 LXM05CD14N4 at 380...480 V three phase  
 LXM15LD10N4 at 400 V three phase  
 LXM05AD17M3X at 200...240 V three phase  
 LXM05BD17M3X at 200...240 V three phase  
 LXM05CD17M3X at 200...240 V three phase  
 LXM32.D12N4 at 400 V three phase  
 LXM32.D12N4 at 480 V three phase  
 LXM15LD10N4 at 230 V three phase  
 LXM15LD10N4 at 480 V three phase

Shaft end	Untapped
IP degree of protection	IP65 standard 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 05 Lexium 32 Lexium 15
Supply voltage max	480 V
Network number of phases	Three phase
Continuous stall current	2.9 A
Maximum continuous power	1.51 W
Maximum current Irms	11.8 A for LXM15LD13M3 11.8 A for LXM15LD10N4 11.8 A for LXM05AD10M2 11.8 A for LXM05AD17M2 11.8 A for LXM05AD10M3X 11.8 A for LXM05AD17M3X 11.8 A for LXM05AD14N4 11.8 A for LXM05BD10M2 11.8 A for LXM05BD17M2 11.8 A for LXM05BD10M3X 11.8 A for LXM05BD17M3X 11.8 A for LXM05BD14N4 11.8 A for LXM05CD10M2 11.8 A for LXM05CD17M2 11.8 A for LXM05CD10M3X 11.8 A for LXM05CD17M3X 11.8 A for LXM05CD14N4 11.8 A for LXM32.D12N4
Maximum permanent current	11.8 A
Switching frequency	8 kHz
Second shaft	Without second shaft end
Shaft diameter	11 mm
Shaft length	23 mm
Feedback type	Single turn SinCos Hiperface
Holding torque	2 N.m holding brake
Motor flange size	70 mm
Number of motor stacks	2
Torque constant	0.77 N.m/A at 120 °C
Back emf constant	48 V/krpm at 120 °C
Number of motor poles	6

Rotor inertia	0.482 kg.cm <sup>2</sup>
Stator resistance	4.2 Ohm at 20 °C
Stator inductance	19 mH at 20 °C
Stator electrical time constant	4.52 ms at 20 °C
Maximum radial force Fr	390 N at 6000 rpm 410 N at 5000 rpm 450 N at 4000 rpm 490 N at 3000 rpm 560 N at 2000 rpm 710 N at 1000 rpm
Maximum axial force Fa	0.2 x Fr
Brake pull-in power	10 W
Type of cooling	Natural convection
Length	212.5 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 kg

### Offer Sustainability

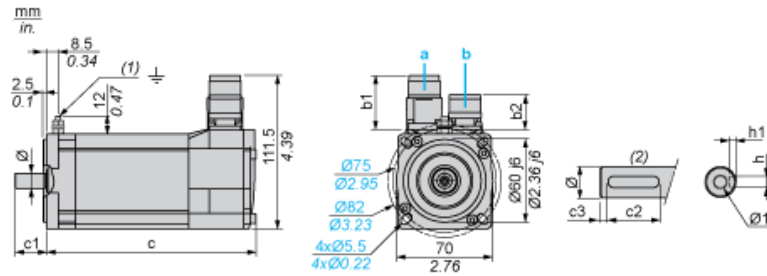
Sustainable offer status	Green Premium product
REACH Regulation	<a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
China RoHS Regulation	<a href="#">China RoHS declaration</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

### Contractual warranty

Warranty	18 months
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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		c (without brak	c (with brak	c1	c2	c3	h	h1	Ø	Ø1 for screws
b1	b2	b1	b2									
39.5	25.5	39.5	39.5	187	213	23	18	2.5	4 N9	2.5 <sup>+0.1</sup> <sub>0</sub>	11 k6	M4 x 10

Dimensions in in.

Straight connect		Rotatable angled		c (without br	c (with br	c1	c2	c3	h	h1	Ø	Ø1 for screws
b1	b2	b1	b2									
1.55	1.00	1.55	1.55	7.36	8.38	0.90	0.70	0.09	0.16 N9	0.01 <sup>+0.004</sup> <sub>0</sub>	0.43 k6	M4 x 0.39

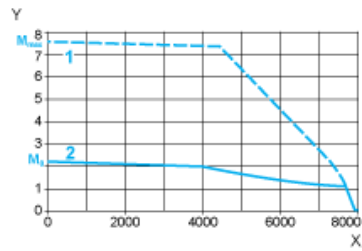
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400 V 3-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32-D12N4 servo drive



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

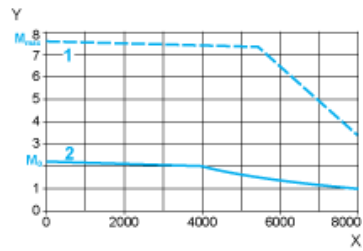
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480 V 3-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32•D12N4 servo drive



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