

# BSH0551T12A1A

AC servo motor BSH, Lexium 05, 0.5N.m,  
8000rpm, keyed shaft, without brake, IP50





## Main

Product or Component Type	Servo motor
Device short name	BSH
Maximum mechanical speed	9000 rpm
Continuous stall torque	4.43 Lbf.In (0.5 N.m) LXM32.U90M2 3 A, 115 V, single phase 4.43 Lbf.In (0.5 N.m) LXM32.U45M2 1.5 A, 230 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05CU70M2, 200...240 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05AD10F1, 110...120 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05AD10M2, 200...240 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05BD10F1, 110...120 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05BD10M2, 200...240 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05CD10F1, 110...120 V, single phase 4.43 Lbf.In (0.5 N.m) LXM05CD10M2, 200...240 V, single phase 4.43 Lbf.In (0.5 N.m) LXM15LD13M3, 230 V, three phase 4.43 Lbf.In (0.5 N.m) LXM05AD10M3X, 200...240 V, three phase 4.43 Lbf.In (0.5 N.m) LXM05BD10M3X, 200...240 V, three phase 4.43 lbf.in (0.5 N.m) LXM05CD10M3X, 200...240 V, three phase
Peak stall torque	13.28 Lbf.In (1.5 N.m) LXM32.U90M2 3 A, 115 V, single phase 12.39 Lbf.In (1.4 N.m) LXM32.U45M2 1.5 A, 230 V, single phase 9.56 Lbf.In (1.08 N.m) LXM05CU70M2, 200...240 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05AD10F1, 110...120 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05AD10M2, 200...240 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05BD10F1, 110...120 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05BD10M2, 200...240 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05CD10F1, 110...120 V, single phase 12.39 Lbf.In (1.4 N.m) LXM05CD10M2, 200...240 V, single phase 10.97 Lbf.In (1.24 N.m) LXM15LD13M3, 230 V, three phase 12.39 Lbf.In (1.4 N.m) LXM05AD10M3X, 200...240 V, three phase 12.39 Lbf.In (1.4 N.m) LXM05BD10M3X, 200...240 V, three phase 12.39 lbf.in (1.4 N.m) LXM05CD10M3X, 200...240 V, three phase
Nominal output power	150 W LXM32.U90M2 3 A, 115 V, single phase 300 W LXM32.U45M2 1.5 A, 230 V, single phase 150 W LXM05AD10F1, 110...120 V, single phase 150 W LXM05BD10F1, 110...120 V, single phase 150 W LXM05CD10F1, 110...120 V, single phase 150 W LXM05CU70M2, 200...240 V, single phase 270 W LXM05AD10M2, 200...240 V, single phase 270 W LXM05BD10M2, 200...240 V, single phase 270 W LXM05CD10M2, 200...240 V, single phase 270 W LXM05AD10M3X, 200...240 V, three phase 270 W LXM05BD10M3X, 200...240 V, three phase 270 W LXM05CD10M3X, 200...240 V, three phase 340 W LXM15LD13M3, 230 V, three phase

Nominal torque	<p>4.34 Lbf.In (0.49 N.m) LXM32.U90M2 3 A, 115 V, single phase</p> <p>3.98 Lbf.In (0.45 N.m) LXM32.U45M2 1.5 A, 230 V, single phase</p> <p>3.81 Lbf.In (0.43 N.m) LXM05AD10M2, 200...240 V, single phase</p> <p>3.81 Lbf.In (0.43 N.m) LXM05BD10M2, 200...240 V, single phase</p> <p>3.81 Lbf.In (0.43 N.m) LXM05CD10M2, 200...240 V, single phase</p> <p>4.07 Lbf.In (0.46 N.m) LXM05AD10F1, 110...120 V, single phase</p> <p>4.07 Lbf.In (0.46 N.m) LXM05BD10F1, 110...120 V, single phase</p> <p>4.07 Lbf.In (0.46 N.m) LXM05CD10F1, 110...120 V, single phase</p> <p>4.07 Lbf.In (0.46 N.m) LXM05CU70M2, 200...240 V, single phase</p> <p>3.63 Lbf.In (0.41 N.m) LXM15LD13M3, 230 V, three phase</p> <p>3.81 Lbf.In (0.43 N.m) LXM05AD10M3X, 200...240 V, three phase</p> <p>3.81 Lbf.In (0.43 N.m) LXM05BD10M3X, 200...240 V, three phase</p> <p>3.81 lbf.in (0.43 N.m) LXM05CD10M3X, 200...240 V, three phase</p>
Nominal speed	<p>3000 rpm LXM32.U90M2 3 A, 115 V, single phase</p> <p>6000 rpm LXM32.U45M2 1.5 A, 230 V, single phase</p> <p>3000 rpm LXM05AD10F1, 110...120 V, single phase</p> <p>3000 rpm LXM05BD10F1, 110...120 V, single phase</p> <p>3000 rpm LXM05CD10F1, 110...120 V, single phase</p> <p>3000 rpm LXM05CU70M2, 200...240 V, single phase</p> <p>6000 rpm LXM05AD10M2, 200...240 V, single phase</p> <p>6000 rpm LXM05BD10M2, 200...240 V, single phase</p> <p>6000 rpm LXM05CD10M2, 200...240 V, single phase</p> <p>6000 rpm LXM05AD10M3X, 200...240 V, three phase</p> <p>6000 rpm LXM05BD10M3X, 200...240 V, three phase</p> <p>6000 rpm LXM05CD10M3X, 200...240 V, three phase</p> <p>8000 rpm LXM15LD13M3, 230 V, three phase</p>
Product compatibility	<p>LXM05AD10F1 110...120 V single phase</p> <p>LXM05AD10M2 200...240 V single phase</p> <p>LXM05BD10F1 110...120 V single phase</p> <p>LXM05BD10M2 200...240 V single phase</p> <p>LXM05CD10F1 110...120 V single phase</p> <p>LXM05CD10M2 200...240 V single phase</p> <p>LXM05CU70M2 200...240 V single phase</p> <p>LXM32.U90M2 115 V single phase</p> <p>LXM32.U45M2 230 V single phase</p> <p>LXM05AD10M3X 200...240 V three phase</p> <p>LXM05BD10M3X 200...240 V three phase</p> <p>LXM05CD10M3X 200...240 V three phase</p> <p>LXM15LD13M3 230 V three phase</p>
Shaft end	Keyed
IP Degree of Protection	IP50 standard
Speed feedback resolution	131072 points/turn x 4096 turns
Holding brake	Without
Mounting Support	International standard flange
Electrical Connection	Straight connectors

## Complementary

Range Compatibility	Lexium 05 Lexium 32 Lexium 15
Supply voltage max	480 V
Phase	Three phase
Continuous stall current	1.4 A
Maximum continuous power	0.45 W
Maximum current Irms	6.2 A LXM15LD13M3 5.4 A LXM05AD10F1 5.4 A LXM05CU70M2 5.4 A LXM05AD10M2 5.4 A LXM05AD10M3X 5.4 A LXM05BD10F1 5.4 A LXM05BD10M2 5.4 A LXM05BD10M3X 5.4 A LXM05CD10F1 5.4 A LXM05CD10M2 5.4 A LXM05CD10M3X 5.4 A LXM32.U90M2 4.5 A LXM32.U45M2
Maximum permanent current	5.4 A
Switching frequency	8 kHz
Second shaft	Without second shaft end
Shaft diameter	0.35 in (9 mm)
Shaft length	0.79 in (20 mm)
Key width	0.47 in (12 mm)
Feedback type	Multiturn SinCos Hiperface
Motor flange size	2.17 in (55 mm)
Number of motor stacks	1
Torque constant	0.36 N.m/A 248 °F (120 °C)
Back emf constant	22 V/krpm 248 °F (120 °C)
Number of motor poles	6
Rotor inertia	0.059 kg.cm <sup>2</sup>
Stator resistance	12.2 Ohm 68 °F (20 °C)
Stator inductance	20.8 mH 68 °F (20 °C)
Stator electrical time constant	1.7 ms 68 °F (20 °C)
Maximum radial force Fr	170 N 8000 rpm 180 N 7000 rpm 190 N 6000 rpm 200 N 5000 rpm 220 N 4000 rpm 240 N 3000 rpm 270 N 2000 rpm 340 N 1000 rpm
Maximum axial force Fa	0.2 x Fr
Type of cooling	Natural convection
Length	5.22 in (132.5 mm)
Centring collar diameter	1.57 in (40 mm)
Centring collar depth	0.08 in (2 mm)
Number of mounting holes	4
Mounting holes diameter	0.22 in (5.5 mm)
Circle diameter of the mounting holes	2.48 in (63 mm)
Net Weight	2.65 lb(US) (1.2 kg)

## Ordering and shipping details

Category	US1PC5318282
Discount Schedule	PC53
GTIN	3389118158344
Returnability	No
Country of origin	DE

## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	4.53 in (11.5 cm)
Package 1 Width	7.48 in (19.0 cm)
Package 1 Length	15.55 in (39.5 cm)
Package 1 Weight	28.22 oz (800.0 g)

## Offer Sustainability

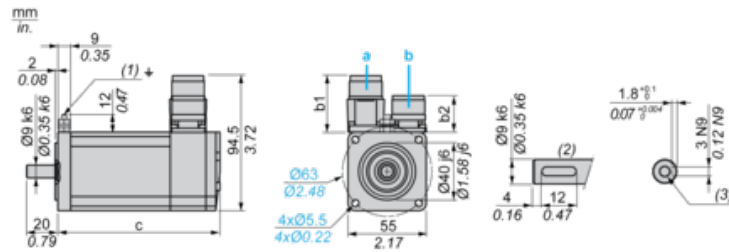
Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
REACH Regulation	<a href="#">REACH Declaration</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
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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)
- (3) For screw M3 x 9 mm/M3 x 0.35 in.

Dimensions in mm

Straight connectors		Rotatable angled connectors		c (without brake)	c (with brake)
b	b1	b	b1		
39.5	25.5	39.5	39.5	132.5	159

Dimensions in in.

Straight connectors		Rotatable angled connectors		c (without brake)	c (with brake)
b	b1	b	b1		
1.55	1.00	1.55	1.55	5.21	6.25

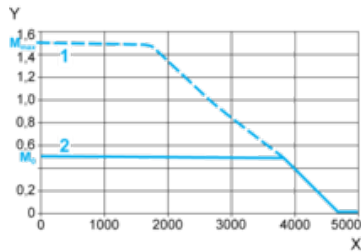
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115 V Single-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32-U90M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque

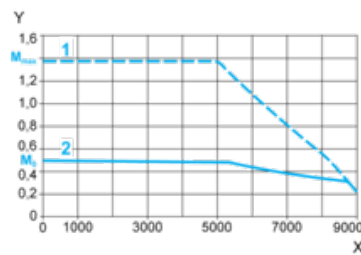
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230 V Single-Phase Supply Voltage

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Torque/Speed Curves

Servo motor with LXM32-U45M2 servo drive



X Speed in rpm

Y Torque in Nm

1 Peak torque

2 Continuous torque