NEW



HIGHLIGHTS

- Integrated ball screw
- 1,028 N peak force
- Closed loop with encoder
- 56 mm flange (NEMA 23)
- Long service life

LBSA56

Stepper motor linear actuators with ball screw

The LBSA56 series combines a powerful hybrid stepper motor with an integrated ball screw in a compact, robust unit with a 56 mm flange (NEMA 23). The ball screw converts the motor's rotary motion directly into precise, efficient linear motion. The actuators deliver peak forces ranging from 396 to 1,028 N and speeds of up to 169 mm/s. They can be operated in open loop or equipped with an optional encoder for closed-loop positioning.



LBSA56

Precise linear motion

Two ball screw options, 12 × 10 mm and 10 × 4 mm, allow the system to be configured for either higher speed or greater force. The 1.8° hybrid stepper motor delivers a resolution of 0.05 mm per full step with the 10 mm lead and 0.02 mm per full step with the 4 mm lead. The integrated design eliminates the need for additional mechanical components.

Easy integration

The actuator can be operated in open loop with a stepper motor controller for precise positioning without feedback. The double shaft allows optical or magnetic encoders to be added for closed-loop positioning. The LBSA56 features an aluminium housing with precision-machined mounting surfaces and a standard JST VH connector. It operates at ambient temperatures ranging from -20 to +50 °C.

Broad application range

The LBSA56 is designed for use in format adjustment and positioning systems, packaging and handling equipment, laboratory automation, medical technology, and semiconductor and electronics manufacturing. It is ideal for applications that require compact axes with precise, repeatable linear motion.

	Unit	LBSA56S20-B-1210-152	LBSA56M39-B-1210-152	LBSA56S20-B-1004-152
Motor type		Hybrid stepper motor, 1.8°	Hybrid stepper motor, 1.8°	Hybrid stepper motor, 1.8°
Frame size		56 mm (NEMA 23)	56 mm (NEMA 23)	56 mm (NEMA 23)
Ball screw (Ø × lead)	mm	12 × 10	12 × 10	10 × 4
Screw length	mm	152.4	152.4	152.4
Peak force	N	396	490	1,028
Speed	mm/s	169	169	66
Resolution per full step	mm	0.05	0.05	0.02
Current per winding	A	2	3.9	2
Resistance per winding	Ω	1.5	0.49	1.5
Inductance per winding	mH	4.3	2.18	4.3
Max. axial play	mm	0.2	0.2	0.4
Motor length	mm	50.3	56.3	50.3
Shaft end / Ø	mm	double / 6.35	double / 6.35	double / 6.35
Weight	kg	0.82	0.94	0.82

APPLICATION EXAMPLES

Lab automation:
Dosing and pipetting in analysers

- X/Y positioning of sample plates
- Z-axis control for precise pipette immersion depth
- Automated calibration and cleaning cycles

Benefits: Greater process reliability and fewer errors during sample processing.

Packaging:
Automatic adjustment of guide rails and stops

- Synchronized adjustment of side guides
- Height adjustment of tooling
- Automatic changeover between pack sizes

Benefits: Format changes without manual adjustment, consistent positioning and repeatability.

Specifications subject to change. Dimension drawings, STEP files and data sheets available on request.

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