Beckhoff — AL Linear Motors

AL2418-0000-0000



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The **AL2418-0000-0000** is a linear servo motor primary section from Beckhoff's AL Linear Motors series. It belongs to the manufacturer's linear servo motor product range and is intended for direct-drive positioning tasks in industrial automation, where sliding friction and mechanical gear stages are eliminated. By generating thrust along a flat iron-core stator, the module converts electrical input into linear motion for gantries, handling systems, and packaging machinery that demand high precision over short strokes.

This motor delivers a continuous thrust of **360 N** while drawing a continuous phase current of **4.56 A**; these ratings indicate the force available for steady-state moves without thermal derating. Its electrical behavior is characterized by a phase inductance of **46 mH** and a winding resistance of **7.2 ?**, which influence current rise time and copper losses during drive modulation. A power constant of **79 N/A** links the generated force directly to the drive current, facilitating controller tuning for a proportional response. Heat generated under rated load results in 296 W of continuous power loss and is dissipated by natural convection because the unit is supplied without water cooling. The motor has a thermal time constant of **75 s**, providing a window for intermittent overloads before the winding temperature reaches its limit.

Dynamic acceleration is supported by a peak thrust of **720 N** that can be applied for short intervals, and the moving carriage may reach linear speeds up to **4.5 m/s** when paired with a matching magnet track. Mechanical interaction between the coil set and the permanent magnets uses a pole pitch of **24 mm**, enabling fine position resolution when feedback scales are used. An air gap of 0.5 mm minimizes cogging while maintaining a magnetic attraction

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force of 1,300 N. The primary section contains 18 stator coils and has a body width of 50 mm. Its normal winding and lack of plug-in connectors support installation in compact multi-axis assemblies.

Specifications

Air Gap:	0.5 mm	**Attraction Force:**	1300 N	**Connection:**	Without Connectors
Continuous Current:	4.56 A	**Continuous Force:**	360 N	**Continuous Power Loss:**	296 W
Max Velocity:	4.5 m/s	**Num. of Coils:**	18	**Peak Current:**	12.30 A
Peak Force:	720 N	**Pole Pitch:**	24 mm	**Power Constant:**	79 N/A
Product Range:	Linear servo motors	**Thermal Time Constant:**	75 s	**Voltage Constant:**	45.96 V/m/s
Water Cooling:	Without Water Cooling	**Width:**	50 mm	**Winding:**	Normal Winding
Winding Inductance:	46 mH	**Winding Resistance:**	7.2 ?	**Last Verified:**	11/22/2026 5:24 AM

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