Beckhoff — AL Linear Motors

AL2015-0001-0000



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The **AL2015-0001-0000** is a coil module manufactured by Beckhoff for the AL Linear Motors series. Acting as the primary mover in the linear servo motor range, this unit generates direct thrust along a magnet track so machine builders can position loads without mechanical gearboxes, belts, or screws. Its iron-core design fits into carriages that are 80 mm wide. The module is supplied without connectors, allowing the integrator to select suitable cabling and strain-relief hardware for the installation.

An operating air gap of **0.5 mm** establishes the required clearance between the coil face and the permanent-magnet secondary, balancing efficiency with collision protection. During continuous operation, the winding carries **10.75 A** and produces a steady force of **500 N**. The module dissipates **375 W** of power loss into the aluminum housing, while its conductive thermal path transfers heat into the machine frame without water cooling. For acceleration or other short operating bursts, the coil can accept a peak current of **32.7 A**. Fifteen coils interact with the magnet grid, and the module has a mass of 3.2 kg to help keep the moving load low and support responsive servo control.

The module provides a peak thrust of **1125 N** and supports a maximum translator velocity of **7 m/s**. Its voltage constant is 26.87 V/m/s, allowing the drive amplifier to account for generated voltage as translator speed increases. Magnetic attraction to the track reaches 2075 N, so the mechanical guidance system must support this preload while maintaining the required operating clearance. The motor constant is 950 N²/W, indicating the relationship between generated force and winding loss. A thermal time constant of 77 s and a thermal resistance of **0.19 °C/W**

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support calculations of temperature rise during changing duty cycles. The magnet arrangement uses a pole pitch of **24 mm**, which sets the repeating interval between adjacent magnetic poles along the track.

Specifications

Air Gap:	0.5 mm	**Coil Unit Weight:**	3.2 kg	**Connection:**	Without Connectors
Continuous Current:	10.75 A	**Continuous Force Air:**	500 N	**Continuous Power Loss:**	375 W
Magnetic Attraction Force:	2075 N	**Max Velocity:**	7 m/s	**Motor Constant:**	950 N²/W
Num. of Coils:	15	**Peak Current:**	32.7 A	**Peak Force:**	1125 N
Pole Pitch:	24 mm	**Product Range:**	Linear servo motors	**Thermal Resistance:**	0.19 °C/W
Thermal Time Constant:	77 s	**Voltage Constant:**	26.87 V/m/s	**Water Cooling:**	Without Water Cooling
Width:	80 mm	**Winding:**	Speed Winding	**Last Verified:**	11/22/2026 6:49 PM

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