Beckhoff — AL Linear Motors

AL2015-0000-0000



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The **AL2015-0000-0000** is a coil segment from Beckhoff's AL Linear Motors series. As the moving primary component of a linear servo motor, it produces direct thrust along a magnetic track without requiring gears, belts, or other mechanical transmission components. This arrangement supports precise positioning in gantries, processing equipment, and automated motion stages. The noncontact operating principle also reduces mechanical wear during continuous industrial operation.

The coil delivers a continuous thrust of **500 N** when energized with its rated phase current of **4.46 A**. This force is maintained with an operating air gap of **0.5 mm** and a pole pitch of **24 mm**, which establish the magnetic flux pattern along the track. A power constant of **112 N/A** provides a predictable increase in linear force as phase current rises. The coil contains 15 normal windings with an inductance of 64 mH and a resistance of 8.6 ?, so the drive must provide sufficient voltage during rapid current changes. Continuous power loss is 375 W, and the assembly dissipates this heat through convection because it does not include water cooling. The motor constant is 950 N^2/W, while a thermal resistance of 0.19 °C/W governs the relationship between heat generation and temperature rise. A thermal time constant of 77 s indicates how quickly the winding temperature responds to changing loads.

Short acceleration intervals can use a maximum thrust of **1125 N** as long as the coil remains within its thermal limits. The winding inductance acts as a natural current filter during these brief high-force demands. The segment has a width of **80 mm**, allowing it to fit linear axes with limited installation space. Its overall weight is **3.2 kg**, which

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must be included when calculating the moving mass and acceleration requirements of the axis. Electrical connection is provided through a **one-meter unterminated cable** that leaves the housing without a connector. The normal winding configuration supports the standard drive parameters intended for this Beckhoff linear motor arrangement.

Specifications

Air Gap:	0.5 mm	**Coil Unit Weight:**	3.2 kg	**Connection:**	Without Connectors
Continuous Current:	4.46 A	**Continuous Force (air):**	500 N	**Continuous Power Loss:**	375 W
Motor Constant:	950 N²/W	**Num. of Coils:**	15	**Peak Force:**	1125 N
Pole Pitch:	24 mm	**Power Constant:**	112 N/A	**Product Range:**	Linear servo motors
Thermal Resistance:	0.19 °C/W	**Thermal Time Constant:**	77 s	**Unassembled Cable Length:**	1 m
Water Cooling:	Without Water Cooling	**Width:**	80 mm	**Winding:**	Normal Winding
Winding Inductance:	64 mH	**Winding Resistance:**	8.6 ?	**Last Verified:**	11/22/2026 8:37 PM

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