Beckhoff — AL Linear Motors

AL2018-0000-0001



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The **AL2018-0000-0001** coil unit is produced by Beckhoff as part of the AL Linear Motors series within the company's linear servo motor product range. It forms the moving section of a direct-drive axis, creating thrust against a permanent-magnet track to position tooling, gantries, and pick-and-place heads in automated machinery. The unit uses a standard winding and operates without water cooling, relying on ambient air and an integrated **PTC 1 k? plus KTY83-122 temperature sensor** to protect the copper from overheating. With a coil mass of 3.8 kg, it can be attached to lightweight carriages without adding excessive inertia.

It sustains a continuous phase current of **6.45 A** in free air, generating a constant thrust of **600 N** for mid-duty motion profiles. During acceleration, the drive may supply up to **19.6 A**, which raises the output to a peak force of **1350 N** for short intervals. These force levels correspond to a force constant of **93 N/A**. The mover contains 18 coils arranged on a 24 mm pole pitch that complements the magnet track spacing. Its dimensions are 336 mm in length, 80 mm in width, and 40 mm in height, providing a compact envelope for multi-axis assemblies. Electrical power and Hall and temperature signals are routed through factory-installed M23 and D-Sub connectors, simplifying panel wiring.

The preassembled hybrid cable has a length of **0.5 m**, eliminating on-site crimping and providing consistent shielding. Installation must account for a magnetic attraction force of **2450 N** between the coil and the magnet rail when determining bearing preload and the required air gap. When driven at the nominal bus voltage, the unit can traverse the stator at a maximum speed of **3.5 m/s**, supporting rapid positioning over extended strokes.

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Specifications

Cable Length (assembled):	0.5 m	**Coil Unit Weight:**	3.8 kg	**Connection:**	With M23 and D-Sub Connectors
Continuous Current (air):	6.45 A (N)	**Continuous Force (air):**	600 N	**Force Constant:**	93 N/A (N)
Height:	40 mm	**Length:**	336 mm	**Magnetic Attraction Force:**	2450 N
Max Speed:	3.5 m/s (N)	**Num. of Coils:**	18	**Peak Current:**	19.6 A (N)
Peak Force:	1350 N	**Pole Pitch:**	24 mm	**Product Range:**	Linear servo motors
Temperature Sensor:	PTC 1 k? & KTY83-122	**Water Cooling:**	Without Water Cooling	**Width:**	80 mm
Winding:	Normal Winding	**Last Verified:**	11/23/2026 11:47 AM		

Contact Us

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