

Kollmorgen's iron core direct drive linear motors now rated for 480V

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Kollmorgen has expanded the voltage rating of its iron core direct drive linear (IC DDL) motor range to 480V. Extending beyond 230V, Kollmorgen's IC DDL motors can now be used in 400/480V systems, increasing integration potential across wider industrial applications. The frameless motor range achieves high torque density for compact application design, combined with direct drive performance characterised by precision and dynamism.

The motor range's iron core enhances torque density by reinforcing the strength of the magnetic field. The design features coils wound on silicon steel laminations to maximise generated force, while a single-sided magnet way reducing size and cost. As a result, the new motor range achieves a continuous force up to 8,211N and peak force up to 13,448N.

High torque density

Kollmorgen's IC DDL motors feature a low cogging design, providing smooth and controlled performance. Optimising rated force per size, the motor also achieves a high motor constant for low thermal losses. In addition to the iron core design, Kollmorgen presents its DDL motors in an ironless format that removes cogging.

Based on a permanent magnet, three phase, brushless servo motor design, the direct drive motors achieve a broad speed range. Application speeds of more than 5m/s can be reached, down to speed controlled at less than 1µm/s. This is combined with dynamic acceleration, with 3-5G achievable for larger motors in the range, and as high as 10G possible for the smaller motors in the IC DDL family.

When powered at higher bus voltages up to 400/480V, the motor is also capable of delivering its rated force at higher speeds. This capability makes it ideal for applications including machine tools, semiconductor manufacturing, battery production, and industrial automation, which require rapid and precise movement of heavy loads. The 230-480V rating covers global power supplies for a broad range of applications across the UK, Europe, North America, and Asia, and the motor range is also RoHS, REACH, UL and CE certified.

400/480V systems

In environments with a 400 or 480V supply, the IC DDL could also remove the need for a transformer to reduce the voltage for a motor with a lower rating. As a motor operating at a higher voltage can perform at a lower current, this enables the use of a smaller drive amplifier and a lighter cable set. To optimise a compact cabinet set up or machine design, the IC DDL motor is also available in a water-cooled option that increases continuous force output by up to 60%, potentially allowing specification of a smaller size motor.

Kollmorgen's IC DDL range is distributed in the UK by INMOCO, who can also supply accompanying servo drives. Kollmorgen's AKD or AKD2G servo drives enhance precision, while the brand's AKD2G dual-axis servo drives can synchronise two motors, ideal for applications such as an x/y table.

About Kollmorgen

[Kollmorgen](#) has more than 100 years of motion experience, proven in the industry's highest-performing, most reliable motors, drives, linear actuators, gearheads, AGV control solutions and automation platforms. Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability, and ease of use, giving machine builders an irrefutable marketplace advantage.

Image Captions:



Image 1: Kollmorgen's IC DDL motors can now be used in 400/480V systems, increasing integration potential across wider industrial applications.

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About INMOCO

Established in 1987, INMOCO now offers an extensive range of motion control equipment including: compact servo amplifiers, position controllers, stepper motors, PLC controllers, linear motors, sensors, electric actuators and gearheads. INMOCO's product portfolio is supported by extensive applications and technical expertise, in addition to customer-specified electro-mechanical development and sub-assembly services; including calibrating and testing in a class 10,000 clean room facility.

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