

INMOCO releases new Celera Omni+ direct drive motor for robots

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Motion control and automation supplier INMOCO is offering Celera Motion's new Omni+ to the UK OEM market. The Omni+ is a larger, higher power version of Celera's advanced, direct drive motor family. Designed for surgical robots and robot exoskeleton integration, the characteristics of the Omni+ are also ideal to drive AGVs and AMRs. The large aperture offers a through-hole rotor diameter up to 78mm to enhance design integration, while motor performance includes high torque density and smooth motion.

The new Omni+ frameless motor range enables simple integration for geared robotic joints, direct drive rotary stages, and actuator applications. The rotor to stator size ratio achieves a thin cross-section that optimises design integration. Four size options, ranging from a 60mm outside diameter stator up to 130mm, provide expansive through-hole diameters, ranging from 31mm up to 78mm. This gives efficient and straightforward installation of components such as optics, as well as cabling. Minimised external dimensions also help to achieve a compact overall footprint, enabling installation within space-constrained locations.

Combined with compact dimensions, Omni+ has been designed to provide high torque density in a thermally efficient package. Torque generation spans from 0.45Nm continuous up to 0.9Nm maximum for the 60mm model, weighing from just 190g, while the 130mm version generates 12.5Nm continuous torque up to a maximum of 41.2Nm, weighing 2.73kg. High torque is achieved with an extended pole count,

ranging between 14 and 26 poles, while this performance is reached with low power dissipation, giving high thermal efficiency.

The Omni+ motor's torque is smoothly delivered, providing the exacting motion demanded for applications including robotic surgery. Just 1% cogging torque as a ratio with the motor's continuous torque rating means ultra-low cogging. Smooth torque delivery is achieved thanks to the high pole count and a specialised winding design. Celera's frameless motor technology also gives dynamic performance, generating high speed up to 6,700rpm with rapid acceleration, combining superior mechanical stiffness and reduced settling times.

Standard diameters and stack lengths are designed for easy pairing with strain wave gears, while motor windings pair with drive current ratings. This makes all models of the Omni+ compatible with a wide range of motor drives. INMOCO's engineers can specify a range of compatible drives, controls, and feedback devices to optimise robot design. The UK motion specialist can also specify custom windings and form factors with OEM design teams, ready for bespoke development by Celera.

Image Captions:



Image 1: Celera Motion's new Omni+

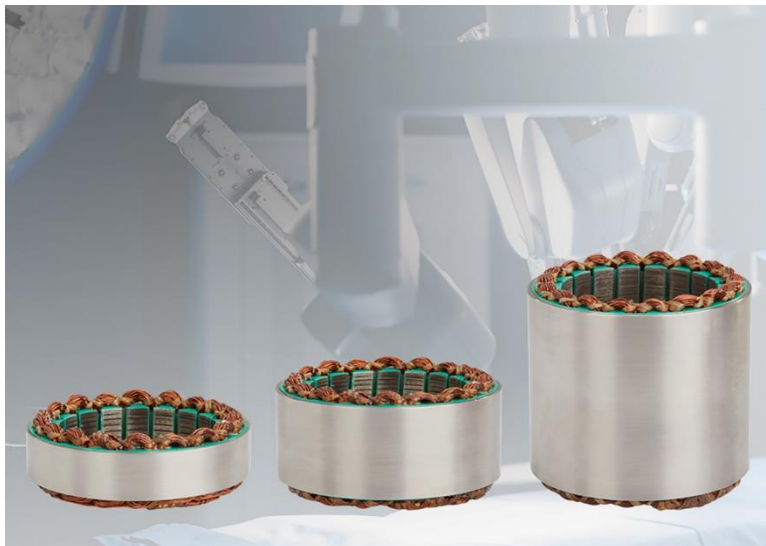


Image 2: Celera Motion's new Omni+

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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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