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Celera Motion Introduces World's Smallest Servo Drives

The new Denali Series features ultra-compact, lightweight servo drives ideal for compact robot joints, industrial end-effectors, surgical robots, and lab automation applications

BEDFORD, Mass. (Jan 31, 2023) — Celera Motion, an [award-winning](#) business unit of Novanta Inc., today announced its launch of the world's smallest servo drives.

Named the [Denali Series](#), the new compact, ultra-fast servo drives are perfect for a variety of service robots, surgical robots, industrial grippers and lab automation applications. Denali is the latest addition to [Celera Motion's](#) line of premium-performance [Ingenia](#) servo drives.

"Robotics is a very competitive market, evolving rapidly, and requiring best-in-class servo drive technology", said Marc Vila, Business Director for Servo Drives. "Application-focused servo drives like Denali, where we have included features specifically required for the advanced robotic market segment, dramatically help engineers to accelerate their designs, be more competitive and keep the focus on their core business."

Denali offers an enhanced hardware architecture as well as optimized power management, with a minimum standby power consumption of down to 1.2 W. The servo drives work in the 250 W power range and are designed for surgical robotics, end-effectors, haptic devices, small joints, and other compact robotics applications.

The series features two versions:

- The Denali XCR is a miniature, ready-to-use version, enabling quick installation and system commissioning.
- Denali NET is an ultra-compact, high-power density version. The pluggable design is optimal for a carrier board, with single or multi-axis integration.



Both versions are available with EtherCAT and CANopen communication protocols, specially optimized for demanding multi-axis applications. Denali supports EtherCAT with a bus latency down to 1 cycle. This improves the cost-efficiency of embedding multiple axes into a single PCB.

Among its key features:

- Compact and miniature; the world's smallest servo drives, weighting only 8g
- Dual loop support for unparalleled precision
- Extremely fast servo loops for smooth operation
- PWM frequency up to 150 kHz for low inductance motors
- High efficiency and low standby power consumption (up to 99% efficiency)
- Cost-optimized (single PCB) for distributed-centralized multi-axis configurations

The Denali series offers versions that support multiple safety features for high-performance robotic applications where safety is paramount.

The Denali Series is the latest version of Ingenia's Summit Servo Drives Series. Others include the [Capitan Series](#) and the [Everest S Series](#).

To learn more about the Denali Series, visit <https://ingeniamc.com/denali-series/>.

About Celera Motion

Celera Motion, headquartered in Bedford, Massachusetts, is a market-leading provider of motion-control components and subsystems for OEMs serving a variety of medical and advanced industrial markets. Celera Motion offers precision encoders, motors, and customized mechatronic solutions that help customers solve challenging motion-control problems. For more information, visit www.celeramotion.com

About Novanta

Novanta is a trusted technology partner to OEMs in the medical and advanced industrial technology markets, with deep proprietary expertise in photonics, vision, and precision motion technologies. For more information, visit www.novanta.com.

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