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Press Release

Functional safety built into FIO Drive Control

Kendrion unveils SIL 3/PL e-certified STO integrated directly into its modular FIO drive solution for the first time

Kendrion introduces the FIO Drive Control STO, marking its first integration of a SIL 3/PL e-certified Safe Torque Off (STO) function into the modular FIO drive solution. This compact 4-quadrant servo drive for stepper and BLDC motors incorporates the dual-channel STO directly into the module, allowing safe torque shutdown without needing an extra STO module, all within a mere 25 millimeters of width.

Functional safety can quickly hinge on available installation space, especially in compact, decentralized machine architectures. At the same time, drives used in applications such as small-scale robotics, handling systems, automated guided vehicles, and medical and laboratory equipment must stop reliably in hazardous situations without additional safety modules and without causing lengthy restart times. This is precisely where Kendrion's FIO Drive Control STO comes in.

The module, measuring only 25 × 120 × 90 millimeters, can be compactly mounted on a DIN rail. In the event of a safety trigger, the output power is safely cut off within a few milliseconds through two independent channels. EtherCAT communication and logic power remain operational, maintaining position and communication status. After the safety circuit is released, the drive can restart immediately without rebooting or rehomings, reducing restart times after a safety stop and minimizing machine downtime.

Safety and drive control in a single module

Besides the certified STO function, the FIO Drive Control STO offers extra features for compact drive systems. It includes an integrated power output that allows direct control of holding magnets, locking mechanisms, or parking brakes, minimizing the need for additional electronics. Depending on the application, the drive can function sensorlessly or employ standard encoder interfaces for applications requiring higher positioning accuracy.

"Our goal was not to treat functional safety as an add-on module alongside the drive, but to integrate it directly into the drive solution. This makes it easier to implement compact machine concepts with less additional hardware," says Mirko Lepeschka, Application Engineer for Industrial Control Systems at Kendrion.

Over 50 years of experience in control and drive technology

Kendrion draws on more than 50 years of experience in control and drive technology to develop compact solutions for safe and precise motion in machines and systems. The new drive controller will debut to a wider specialist audience at SPS in Nuremberg from November 24 to 26, 2026. Visitors can locate

Kendrion in Hall 4, Booth 418. Samples for machine design are anticipated to be available starting January 2027.

(2,822 characters incl. spaces)

Images (attachment available with and without branding)



FIO-Drive-Control-STO_Functional-Safety.png: Kendrion's FIO Drive Control STO integrates a SIL 3/PL e-certified Safe Torque Off function directly into a compact 4-quadrant servo drive for stepper and BLDC motors. At just 25 millimeters wide, the module combines motion control and functional safety in a space-saving design.

Image: *Kendrion*



FIO-Drive-Control-STO_Product.png: The FIO Drive Control STO combines drive control and certified Safe Torque Off functionality in a module just 25 millimeters wide for DIN-rail mounting.

Image: *Kendrion*

About Kendrion

Innovative solutions for tomorrow - built on precision, safety, and motion.

Kendrion is shaping the future with high-precision brakes, electromagnetic components, fluid technology, control systems, and embedded systems. Our solutions offer precise control, maximum safety, and smooth motion across a wide range of applications – from machinery and robotics to high-end technology, automation, medical and energy sectors, mobility, and process industries.

With a broad portfolio of off-the-shelf products and a project-based approach, we work closely with our customers to deliver customized solutions tailored to their needs. By leveraging our deep technical expertise across multiple technologies and the flexibility to integrate them intelligently, we provide systems that are ready for tomorrow's challenges. Kendrion's deep engineering knowledge and cross-technology capabilities make us a trusted partner for creating innovative and reliable solutions across industries.

Rooted in Germany, headquartered in the Netherlands, and listed on Euronext Amsterdam, Kendrion's expertise spans Europe, the Americas, and Asia. For more than a century, we've engineered precision parts for the world's leading innovators in industrial applications, making us a trusted partner for creating reliable, cutting-edge solutions across industries.

<https://www.kendrion.com/en/>

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Deeplinks:

<https://www.kendrion.com/en/products-services/industrial-control-systems/ethercat-i/o-and-control-systems>

Meta-Title:

FIO Drive Control STO: EtherCAT drive controller | Kendrion

Meta-Description:

The FIO Drive Control STO integrates certified functional safety directly into a compact EtherCAT drive controller for stepper and BLDC motors.

Download-Area: www.koehler-partner.de/pressezentrum/kendrion

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