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Bosch Rexroth at SPS 2025: Openness meets security in automation

Manuela Kessler | 11.11.2025 | Lohr am Main / Germany | PI 054/25

- ctrlX AUTOMATION with comprehensive portfolio update and AI integration
- ctrlX OS with virtualized version and new variants
- High level of security: ctrlX OS is "secure by design" and CRA-ready
- ctrlX World grows to more than 110 partners and expands the solution space



Bosch Rexroth will be showcasing the latest innovations for its automation system ctrlX AUTOMATION at SPS in Nuremberg. (Image source: Bosch Rexroth AG)

Industrial automation is changing dramatically: systems must communicate across company and technology boundaries, exchange data in real time, and integrate more and more software intelligence directly into machines and processes. Openness is becoming a driver of innovation, while security is required to establish trust. At SPS 2025 – in hall 7, booth 450 – Bosch Rexroth will demonstrate how both can be combined in practice with its automation system ctrlX AUTOMATION and the operating system ctrlX OS.

Today, machine manufacturers face the challenge of simultaneously developing, integrating, and securing solutions for control, motion, safety, image processing, and data management. ctrlX AUTOMATION fundamentally simplifies automation. The modular system effectively combines hardware, software, apps, and digital services. This reduces project durations, minimizes integration risks, and shortens the path to value creation.

ctrlX AUTOMATION: more intelligence, more performance

At SPS, Bosch Rexroth will be presenting new developments from the ctrlX AUTOMATION portfolio. The control platform ctrlX COREplus is now available with AI functions on all performance levels. An optional AI module enables local data processing directly at the edge – for example, for predictive maintenance or quality control in real time. At the same time, high-performance Industrial PCs with NVIDIA GPUs expand computing and image processing capacity for demanding vision applications.

In the area of motion and drives, Bosch Rexroth is presenting compact, energy-efficient, and cabinet-free drives from the ctrlX DRIVE portfolio, which cover virtually all performance ranges. These are complemented by the Motion, CNC, and Robotics software ctrlX MOTION, which is ideal solution for automating production machines and systems.

A particular highlight is the new Safety PLC app, which enables functional safety without the need for special hardware. Previously, safety features required a second CPU to ensure redundancy. Now these functions can be integrated directly into existing control systems such as ctrlX CORE.

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"The software-based safety solution makes safety concepts simpler and more efficient," explains Steffen Winkler, Senior Vice President Sales, Business Unit Automation & Electrification Solutions at Bosch Rexroth. "Machine manufacturers require no additional hardware and can integrate safety functions directly into their control systems. This reduces effort and space requirements and creates new degrees of freedom."

In addition, the company will be presenting two enhancements to its innovative motion systems for intralogistics: the planar system ctrlX FLOW6D is receiving a smaller mover size, while a switch for specific topologies and arrangements is being added to the high-speed solution ctrlX FLOWHS. Both systems are fully integrated into the ctrlX AUTOMATION portfolio and benefit from its openness and security.

ctrlX OS: flexible, connected, secure

The Linux-based operating system ctrlX OS forms the software basis for all ctrlX AUTOMATION solutions and enables seamless communication between Operational Technology (OT) and IT. It runs independently of hardware – from the field level, to edge devices, through to the cloud – and thus creates a common digital basis for control, analysis, and management.

In the future, ctrlX OS will be available in three editions – Standard, Customized, and Premium – to cover diverse integration requirements, from a turnkey solution to customized systems.

In addition, a virtualized solution is now also available. "With the virtualization of ctrlX OS, we are breaking down the final boundaries between IT and OT," says Winkler. "Users can run their software in a completely flexible manner, wherever it provides the greatest benefit – be it in real time on the machine or centrally on the server."

Secure by design – ready for the Cyber Resilience Act

As the world becomes more and more connected, the demands on cybersecurity are also rising. With this in mind, Bosch Rexroth consistently implements the "secure by design" and "secure by default" principles. ctrlX OS is designed from the ground up with security in mind and meets the requirements of IEC 62443-4-2, Security Level 2. This means that it is already prepared for the Cyber Resilience Act (CRA).

The new Security Scanner app, available in the ctrlX OS Store, also enables a full, network-level inventory of machines and assessment of their security status. This allows operators to identify potential weaknesses at an early stage and take suitable countermeasures.

"In the future, it won't be enough for automation to be efficient; it will also have to be secure," emphasizes Winkler. "With ctrlX OS and our security concept, we are already laying the foundation for implementing the CRA today – without significant integration effort."

ctrlX World: open networking continues to grow

The open partner network ctrlX World, which expands the solution space around ctrlX AUTOMATION, is growing steadily. It now unites over 110 partner companies and 86 apps in the ctrlX OS Store, encompassing everything from motion and communication to IoT, security, and AI. This year, solutions from the following partners from across the ctrlX OS Ecosystem will be presented at the Bosch Rexroth booth: 36ZERO Vision GmbH, Advantech Co., Ltd., Balluff GmbH, Cognibotics AB, congatec GmbH, Eaton Automation GmbH, IXON B. V., SEW Eurodrive GmbH & Co KG, TXOne Networks B.V., and XITASO GmbH.

AI-powered services: knowledge on demand

With the new digital assistant Ask iXi, Bosch Rexroth is integrating generative AI directly into its service and engineering platforms. The assistant answers questions about products, functions, and documentation around the clock – both online and in the engineering tool ctrlX WORKS.

Live shows at SPS 2025

Visitors can experience the automation system ctrlX AUTOMATION in daily live demonstrations at 11:00 a.m. and 2:00 p.m. Presentations on cybersecurity and the challenges of the Cyber Resilience Act will take place at 12:00 p.m. and 3:00 p.m.

Basic Information Bosch Rexroth

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile and Industrial

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Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, around 32,600 associates generated sales revenue of 6.5 billion euros in 2024.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 418,000 associates worldwide (as of December 31, 2024). The company generated sales of 90.3 billion euros in 2024. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture user-friendly, sustainable products. With technology that is "Invented for life," Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 490 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. At 136 locations across the globe, Bosch employs some 87,000 associates in research and development.

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