

PRESS RELEASE

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Bosch Rexroth offers flexible communication architectures for the Factory of the Future

Third-party providers make communication solutions available via the ecosystem of the ctrlX AUTOMATION toolkit

- ▶ Integration of ctrlX AUTOMATION into 5G factory networks with Nokia
- ▶ Straightforward configuration and operation of IO-Link sensors with ifm
- ▶ I/O modules can be supplemented flexibly with WAGO



The new ctrlX World partners Nokia, ifm and WAGO at Bosch Rexroth in Ulm. (Image source: Bosch Rexroth AG)

Communication – for example from machine to machine – is crucial when it comes to Industry 4.0. Bosch Rexroth and third-party providers therefore make solutions available for communicating on all levels via ctrlX World, the partner network of the ctrlX AUTOMATION system. Nokia, ifm electronic GmbH and WAGO Kontakttechnik GmbH & Co. KG. are all new ctrlX World partners.

“Via the ctrlX World partner network, we provide solutions as apps which enable our customers to cope with complex automation tasks. When it comes to hardware, the high-performance, communicative industrial control system ctrlX CORE provides additional support. Thanks to its open, flexible

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architecture, this is designed to meet current and future requirements in modern factories,” explained Hans Michael Krause, Product Manager ctrlX World at Bosch Rexroth AG.

Developing 5G usage scenarios with Nokia and Bosch Rexroth

With ctrlX AUTOMATION, Ethernet communication on a factory level is possible as standard. Together with **Nokia**, Bosch Rexroth is also working to connect the automation system to private and factory-wide 5G campus networks and thus allow machines and driverless transport systems to communicate with each other via 5G.

Nokia’s 5G network is in operation in the new Model Factory at Bosch Rexroth’s Customer and Innovation Center in Ulm. In combination with ctrlX AUTOMATION, it allows the development of private wireless usage scenarios. In this Model Factory, “plug and produce” becomes reality. Components, modules, subsystems and system solutions identify themselves, recognize their tasks and are ready for use at the push of a button.

“4.9G and 5G will play a key role in enabling the Factory of the Future. The Nokia Digital Automation Cloud, Nokia’s industrial-grade campus solution, offers extremely low latencies and a high level of reliability with scalable capacities via standardized mobile communications technology. Nokia is a leading provider of private wireless campus solutions with over 380 customers, more than 70 of them with 5G, already using it today to accelerate their digital transformation,” explained Jochen Apel, Head of Digital Industries at Nokia.

ifm solutions for straightforward configuration and operation of IO-Link sensors

ifm electronic GmbH, a specialist for sensor technology, supports communication between machines in the smart factory too. “The growing number of sensors and actuators in machines leads to increasing demands as regards connectivity. In addition to EtherCAT as an automation bus, we

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together with ifm offer an easy way of parameterizing and operating IO-Link sensors,” explained Hans Michael Krause.

The IO-Link sensors and masters from ifm can be fully integrated into ctrlX AUTOMATION. They make commissioning for example easier. The ifm software is installed on the same engineering PC as ctrlX WORKS, the software and engineering toolbox from Bosch Rexroth.

Benno Kathan, CTO of the ifm group of companies, explained: “With the help of IO-Link, a number of process values can be transferred cyclically with just one sensor cable. This increases the effectiveness of the system and helps to reduce costs. The IO-Link communication with the sensors also provides excellent diagnostic and parameterizing options from a central point. Plug and play is particularly important for our customers during commissioning. Via the ctrlX World, we can make all of these benefits available to users.”

ctrlX I/O range complemented by I/O systems from WAGO

WAGO Kontakttechnik GmbH & Co. KG, a provider of connecting and automation technology as well as interface electronics, is another new ctrlX World partner. The company complements the ctrlX I/O range with tested I/O systems in the control cabinet and in the field of machine-related applications. During the first step, WAGO sets up the I/O systems for the various signal processing tasks and flexible sensor and actuator connections in ctrlX AUTOMATION. These WAGO systems support a wide range of industry-specific communication protocols, allowing applications which go beyond mechanical and plant engineering to be achieved. Customers benefit from scalable solutions for incorporating physical measured values as well as from applications and assets in areas such as building automation, energy management, shopfloor connectivity and much more.

“In the ctrlX World, we and Bosch Rexroth offer users the freedom they need for individual, adaptable solutions. As a result, they can react flexibly to the needs of their sector,” explained Marco Henkel, Vice President Technology Management at the WAGO Group.

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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 Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions 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 more than 29,600 associates generated sales revenue of around 5.2 billion euros in 2020.

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The Bosch Group is a leading global supplier of technology and services. It employs roughly 395,000 associates worldwide (as of December 31, 2020). The company generated sales of 71.5 billion euros in 2020. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 129 locations across the globe, Bosch employs some 73,000 associates in research and development, of which nearly 34,000 are software engineers.

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