

PRESS INFORMATION

Rexroth automation system enables rapid time to market for robotics manufacturers

Manuela Kessler | 04.06.2025 | Lohr am Main / Germany | PI 030/25

- Pressure to innovate and a high level of engineering work in industrial robotics
- Bosch Rexroth bundles hardware and software, as well as special apps for automating robots in a flexible solution package
- pssbl. Robotics relies on ctrlX AUTOMATION for its robots



Bosch Rexroth offers a comprehensive solution package for automating robots. (Image source: Bosch Rexroth AG, created with the help of AI)

The pressure for manufacturers of industrial robots to bring innovations to market in a short time is increasing. They have to be able to develop their own functions flexibly and quickly and set themselves apart from the competition with custom solutions. But rigid systems and a high level of engineering work are slowing down agility and time to market. Bosch Rexroth offers a solution package for automating robots, in which hardware, software, and apps work seamlessly together. As a result, industrial robots can be developed, customized, and integrated into modern production environments faster.

Nowadays, robots are used in many industries, such as automotive, packaging, and logistics – whether it's for welding, palletizing, dispensing, or handling. In these cases, they have to deliver more and more in increasingly dynamic industrial plant environments. Depending on the tasks, spatial conditions, and precision requirements, specialized robotic solutions are required to achieve the best results.

“Engineering departments for industrial robotics solutions must be able to design, test, and integrate complex systems quickly. At the same time, it is crucial that they set themselves apart from the competition with their own functions and custom solutions without being dependent on automation suppliers. Our automation offer for industrial robots solves all these challenges,” Steffen Winkler, Senior Vice President Sales Business Unit Automation & Electrification Solutions at Bosch Rexroth, explained.

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Comprehensive range of solutions for different types of robots

The compatible custom complete solutions from Bosch Rexroth – consisting of hardware, software, and special apps – are suitable for cartesian robots, Delta, 6-axis, or Scara solutions, and kinematic concepts adapted specifically to customer requirements.

At the center of the range of solutions, is the automation system ctrlX AUTOMATION that is designed to be open, modular, and scalable. The open control system ctrlX CORE with the operating system ctrlX OS is the heart of the hardware. The Linux operating system is open, secure from the ground up, certified, and ready to meet the requirements of the Cyber Resilience Act (CRA). For the drives, robotics manufacturers can choose between the compact system ctrlX DRIVE and Elmo drives from the Platinum series by Elmo Motion Control, a Bosch Rexroth company since 2022. The safety controller ctrlX SAFETY ensures maximum safety – it can be used as SafeMotion solution integrated in ctrlX DRIVE or as a complete safety controller ctrlX SAFETY.

The intuitive machine operation runs over ctrlX HMI, and the I/O portfolio ctrlX I/O ensures the connectivity between machines, systems, and operators. Efficient and secure connectivity is guaranteed by IoT solutions ctrlX IOT.

Users benefit from a motion app that is suitable for all applications. Robotics applications can be flexibly controlled by PLC, data layer, scripts, OPC UA or real-time apps. The motion, robotics, and CNC software guarantees precise linear and circular motions, as well as synchronization in different coordinate systems.

pssbl. Robotics relies on the openness of ctrlX AUTOMATION

The robotics start-up pssbl. Robotics pursues an open approach, for which ctrlX AUTOMATION is a perfect fit. Even with just one item, pssbl. enables its customers to adapt the robotics mechanics, control logic, and interfaces. This expands the range of uses and can at the same time considerably simplify the process design or make it more efficient. The software and control from pssbl. follow a largely open concept. Users can use their customized motion profiles within the pssbl. world and thus scale their expertise. pssbl. makes software from third-party providers, such as application software from vision systems and peripherals, available on a smart hub to which pssbl. customers have unrestricted access. The robotics provider successfully uses a bundle of the ctrlX CORE, ctrlX MOTION, and ctrlX DRIVE components. Thanks to the open motion core, the company can seamlessly integrate its own developments, such as specific kinematics and robotic functions adapted for customers. The control system enables flexible motion specifications through ctrlX PLC, ctrlX Data Layer or scripts. What's more, engineering is easy with the web-based low-code engineering and integrated graphic robot programming, which do not require any in-depth specific expertise.

The ctrlX MOTION app offers a centralized solution for all motion tasks. The system is also open for open-source technologies such as ROS, which provides a future-proof and extensible

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automation solution. In this respect, pssbl. offers clear value-added: users with little knowledge of robotics in particular benefit from the intuitive user guidance.

“The ctrlX MOTION app’s open interfaces are what convinced us. The solution has enabled us to significantly reduce our engineering work and shorten the time to market. At the same time, we can integrate our expertise very easily and respond to new requirements quickly with extensions and appropriate functions,” Tobias Frank, Managing Director at pssbl. Robotics GmbH, explained.

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 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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