

PRESS INFORMATION

Bosch Rexroth breaks new ground with the planar system ctrlX FLOW6D

Manuela Kessler | 21.09.2022 | Lohr am Main / Germany | PI 047/22

Greater freedom and precision in the area of contactless high-performance transport and positioning

- 6D planar system added to the ctrlX AUTOMATION portfolio
- Movers move in six degrees of freedom, even where space is very limited
- Control system ctrlX CORE with apps for planar systems



The ctrlX FLOW6D planar system allows contactless high-performance transport and positioning in six dimensions.
(Image source: Bosch Rexroth AG)

Planar systems offer enormous potential for a variety of industry segments. With ctrlX FLOW6D, Bosch Rexroth has raised contactless high-performance transport and positioning to a new level. Free-floating transport platforms, so-called movers, are moved on a horizontal, vertical or overhead working surface. Each mover acts in six degrees of freedom at high speed and with great precision – without any friction or pollution. Integration into the automation toolkit ctrlX AUTOMATION results in an overall solution with a compact control system and apps to increase the range of functions.

A planar system serves as a contactless levitation system for the efficient and safe transport, positioning and handling of loads. On a working surface which can be adapted in a modular fashion, a number of differently shaped and sized movers can be controlled in six dimensions. Strong, specially arranged permanent magnets make this possible. Given their modularity and easily adaptable nature, planar systems can be used in numerous industrial sectors, for example in the semiconductor industry, the food sector, the pharmaceuticals industry or in assembly systems.

New planar system takes off

PRESS INFORMATION

ctrlX FLOW6D offers new room for maneuver and innovative concepts for production systems. Bosch Rexroth has given the system numerous properties to make it stand out from other well-known technologies. Much larger movement ranges, for example a floating height of 20 mm, a 10° tilting angle and endless rotation in any location set new standards. The six degrees of freedom of each mover can be combined with each other as required. For example, rotation and tilting are possible during travel. Vertical or overhead system operation is also possible.

The movers are connected: Power and data are available to users on the floating platform. A mover can be converted into an active agent by adding actuators, sensors and handling components.

This and other properties allow entirely new system concepts and workflows. For example, movers can be operated in a process chamber, transport and process tasks can be combined seamlessly and transport systems can be standardized. The additional degrees of freedom mean that fewer peripheral devices are needed. As a result, the system becomes more compact and cheaper.

“ctrlX FLOW6D forms the backbone of a flexible and efficient production facility. As an open system, it can interact seamlessly with various other systems. Software-controlled production allows it to be adapted to changing products or processes quickly,” explained Steffen Winkler, Vice President Sales, Business Unit Automation & Electrification Solutions at Bosch Rexroth.

By incorporating ctrlX FLOW6D into its automation world, Bosch Rexroth has created an integrated, agile system. “ctrlX AUTOMATION provides the software platform for design, simulation, engineering, operation and service. With ctrlX CORE, we offer a compact, high-performance control system which allows users to make optimum use of the new planar system technology. New functions can easily be added as apps available from the ctrlX Store. As a result, full use of the potential of levitation can be made,” said Steffen Winkler.

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 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 31,000 associates generated sales revenue of around 6.2 billion euros in 2021.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. 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

PRESS INFORMATION

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 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

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