

## PRESS INFORMATION

# Maximum flexibility with digitalized hydraulic functions

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H4U software platform from Bosch Rexroth provides extensive control functions for hydraulics



With the H4U software platform, users can implement hydraulic functions easily and independently of hardware. (Image source: Bosch Rexroth AG)

**With the H4U (Hydraulics for You) software platform, Bosch Rexroth is driving forward the digital transformation of hydraulics at all levels of automation. Machine and system manufacturers can easily implement hydraulic functions with H4U.apps in their familiar automation environment. Bosch Rexroth's hydraulics expertise integrated into the software platform provides the broadest hydraulics functionality on the market. In addition to the basic functionalities, a growing number of application-specific H4U.apps reduce the engineering effort for OEMs.**

Operators use H4U.apps in their familiar engineering tools to implement hydraulic movement tasks. Machine manufacturers reduce costs and effort by implementing the apps on existing control hardware. The H4U.app pQ regulates pressure and volume flow. It is used to control fixed displacement and variable displacement pumps. The H4U.app xF controls the position and force of a hydraulic drive. In addition, the software platform now also includes software modules for the synchronization control of several hydraulic axles or the control of compressor drives for hydrogen filling stations. Bosch Rexroth is continuously developing the functional scope of the software platform with additional H4U.apps.

### Digital twins reduce time to market

The relocation of functionalities to the OEM's usual control system reduces engineering costs. OEMs remain in their automation environment and also use their familiar engineering tools for hydraulics. Bosch Rexroth also provides the technical data of the hydraulic components in a database. This means that operators can use complete digital twins for the hydraulics software and hardware in their simulation programs and, for example, virtually optimize and commission the hydraulic motion sequences in their machines. This reduces engineering costs and shortens the time to market. At the same time, the simulation increases the flexibility for production changeovers and the flexible production of smaller batch sizes in the company.

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In addition, the H4U software platform also enables the collection of operating data as a basis for condition monitoring and predictive maintenance strategies for permanently higher availability with lower service costs.

### 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 33,800 associates generated sales revenue of 7.6 billion euros in 2023.

### Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 429,000 associates worldwide (as of December 31, 2023). The company generated sales of 91.6 billion euros in 2023. 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 470 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 90,000 associates in research and development, of which nearly 48,000 are software engineers.

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