

PRESS INFORMATION

Efficient load-sensing with onboard electronics

Manuela Kessler | 24.02.2025 | Lohr am Main / Germany | PI 006/25

The modular valve platform RM Global from Bosch Rexroth simplifies the design of Off-Highway machines and increases energy efficiency

- Modular design with same flange pattern saves installation space & costs
- Up to 20 % less internal leakage compared to predecessor valve M4
- Higher energy efficiency thanks to flow-optimized channels
- More precision and efficiency with electronic pump control eOC



With the modular RM Global valve platform from Bosch Rexroth, load-sensing control valves for medium-weight Off-highway machines can be implemented flexibly and in an energy- and cost-efficient manner. (Image source: Bosch Rexroth AG)

Bosch Rexroth simplifies the load-sensing (LS) and flow management of hydraulic working functions with the modular RM Global valve platform. The flexible combination of RM10 and RM15 valve modules with a uniform flange pattern saves installation space and costs in a wide range of applications. Compared to the previous M4 series, the internal leakage has been reduced by up to 20 %. Reduced pressure losses and the maximum pressure of 420 bar reduce energy consumption and enable downsizing of cylinders and equipment parts. Machine manufacturers can achieve even greater precision and energy efficiency in combination with the electronic pump control eOC (electronic Open Circuit).

With the modular RM Global valve platform for LS control valves, Bosch Rexroth meets current market requirements in terms of the flexibility, precision, reliability and energy efficiency of mobile machinery. Construction vehicles, drilling equipment, forestry machines and telehandlers as well as mobile and truck-mounted loader cranes have a huge benefit.

The further development of LS and flow management in the RM Global modular system, which can be flanged onto the control valve elements in a modular design, opens a wide range of application scenarios. The uniform flange surface saves costs in engineering, purchasing and parts logistics.

The extended range of functions includes the Steering Priority driving safety function, which gives priority to the steering function over other hydraulic functions. Short-term power requirements of individual consumers can be provided in individual operation via the Flow Boost function.

In addition to the RM10 and RM15 valves elements, the RM Global platform currently includes an inlet element for the variable pump, a switchover axis for pump shutdown including safety function and various end plates. Bosch Rexroth simplifies the configuration of the new LS control valves with an online configurator that displays all components and options and provides technical documentation in addition to the 3D model.

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The new On-Board Electronic (OBE) EHS4 offers a sensor resolution of 5 µm in 12-volt and 24-volt vehicle electrical systems. The OBE supports a wide range of communication protocols, such as CANopen and J1939.

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 417,900 associates worldwide (as of December 31, 2024). According to preliminary figures, the company generated sales of 90.5 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 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 86,900 associates in research and development, of which nearly 48,000 are software engineers.

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