PRESS INFORMATION

New telematics units for off-highway use

Manuela Kessler | 21.08.2023 | Lohr am Main / Germany | PI 028/23

Bosch Rexroth presents a high-performance version of the Rexroth Connectivity Unit while also announcing an entry-level model

- A graduated range of telematics units to meet specific requirements
- Improved connectivity: CAN-FD and Automotive Ethernet (T1)
- Low-cost entry-level version RCU Lite to be launched at the end of 2023

High-performance design for demanding telematics tasks: With its Quadcore processors, the new RCU Series 20 offers off-highway players more computing power, memory and connectivity. (Image source: Bosch Rexroth AG)

Bosch Rexroth is driving the digital transformation of mobile machines and expanding its range of telematics devices by adding two new RCU (Rexroth Connectivity Unit) models. The high-performance version (Series 20) which is now available offers more computing power, memory and connectivity for demanding and complex telematics applications with a high level of cyber security. Just like the Series 10 models, the new Series 20 allows the quick and cost-effective setup of end-to-end connectivity solutions including user-friendly over-the-air management to remotely flash control units or displays for example. Another model, the RCU Lite, is due to be launched by the end of 2023. It will be the entry-level model below Series 10 products.

The particularly powerful RCU Series 20 is designed with IP67 protection and offers manufacturers of agricultural and construction machinery or forestry and municipal vehicles maximum flexibility and design freedom when it comes to the modular construction of individual telematics solutions.

The new telematics unit complements the established RCU Series 10. Both series have a microprocessor-based architecture with a Linux OS and a software architecture structured in layers. As a result, off-highway players can add and manage pre-configured Rexroth modules and their own software modules as necessary over the air. The software modules can also be easily ported later on.

When it comes to performance, the new RCU Series 20 impresses with a 1600 MHz Quadcore processor and 2 GB of DDR RAM as well as 1 GB of NAND and 8 GB of eMMC flash memory. As a result, manufacturers can use the RCU not only to collect data but also to provide individual control functions and replace specific devices.

With up to four fast CAN-FD buses and an Automotive Ethernet interface T1, the new RCU can collect and pre-process very large quantities of data in the vehicle in a very short time. These data are encrypted before being transferred to the cloud using a secure, bandwidth-optimized cellular connection. By allowing data to be exchanged wirelessly via WiFi and Bluetooth 5.0, Bosch Rexroth is laying the foundation for future application scenarios. This is particularly important as regards automation functions, which Bosch Rexroth also supports with the BODAS Ecosystem.

Thanks to various BOSCH security and data protection functions such as Secure Boot and TPM, the RCU is ready to meet future requirements imposed by the legislature as regards cyber security.

Entry-level RCU Lite version announced for the end of 2023

To complement the standard Series 10 model and the new high-performance Series 20, Bosch Rexroth has also announced an entry-level version for the end of 2023. The RCU Lite (Series 5) is based on a standard microcontroller with an embedded operating system and allows easy, wireless and future-proof access to off-highway vehicles via a secure wireless connection.

Just like the standard and high-performance devices in Series 10 and 20, the RCU Lite allows the development, use and operation of end-to-end IoT applications and digital services. These include not only fleet management, data collection (CAN sniffing) and certificate-based user authorizations but also over-the-air services or the preparation and provision of vehicle data for further processing in third-party systems such as ERP solutions.

About BODAS Connect and the RCU Connectivity Unit from Rexroth

The RCU (Rexroth Connectivity Unit) telematics unit is a key part of the modular BODAS Connect telematics system from Bosch Rexroth which meets the off-highway sector’s demands as regards scalability and future viability. This also includes the systematic separation of device and data management, which opens up two fundamentally new options for manufacturers:

In combination with the RCU, BODAS Device Connectivity offers maximum freedom when designing telematics applications – including scalable device management which automates recurrent processes and reduces administrative work on a permanent basis. Optional over-the-air services (OTA) for rolling out firmware and updating software modules (FOTA/SOTA) as well as for diagnostics and troubleshooting (DOTA) or for reading and setting parameters in control units (POTA) are also available.

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For the fastest possible market entry (including data management), Bosch Rexroth offers BODAS Connect All-in-One-Connectivity, an end-to-end complete solution which can be configured quickly and easily and customized according to individual requirements.

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 more than 32,000 associates generated sales revenue of around 7.0 billion euros in 2022.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 421,000 associates worldwide (as of December 31, 2022). The company generated sales of 88.2 billion euros in 2022. Its operations are divided into four business sectors: Mobility, 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 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. The basis for the company's future growth is its innovative strength. At 136 locations across the globe, Bosch employs some 85,500 associates in research and development, of which nearly 44,000 are software engineers.

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