PRESS INFORMATION

Concentrated e-power for agricultural machines

Manuela Kessler | 26.09.2023 | Lohr am Main / Germany | PI 034/23

With the EMP eLION motor series from Bosch Rexroth, off-highway manufacturers can build even more compact and powerful machines

- High power density saves space in the machine
- Optimized for travel drives, working hydraulics and generator operation
- Ideal for machines where space is limited

High power density for agricultural machines and other off-highway vehicles: The futuristic EMP eLION motor series from Bosch Rexroth saves space and increases performance. (Image source: Bosch Rexroth AG)

Bosch Rexroth has expanded its eLION electrification portfolio with the compact EMP series of high-torque motors. It allows greater precision and a high power density in self-propelled and towed agricultural machines as well as other off-highway vehicles. The new series of motors is suitable for electrifying travel drives, as a pump drive for the implement hydraulics or as a generator, e.g. in diesel-electric architectures. With high torques and various speeds, the EMP motors provide optimum support for all drive types including those with new power sources. Significantly reduced torque ripple also increases control efficiency and battery life by generating torque evenly.

In modern off-highway machines, motors and inverters are concentrated in the smallest of spaces. With the new EMP eLION electric motors, Bosch Rexroth supports highly optimized machines such as tractors, self-propelled machines and towed equipment by reducing the space required for the same power or by providing more power in the same space. Existing ranges can also be electrified with minimal changes to the vehicle chassis.

Like all components of the modular eLION platform, the new EMP motors meet all the requirements for off-highway use as regards mechanical resistance, service life and resistance to vibrations, dust or chemical substances.

The torque spectrum for the EMP series ranges from 160 to 880 Nm. Compared to the proven EMS series, the rated torque at lower speeds is up to 53 percent higher, and the maximum torque is up to 45 percent higher. At the same time, torque ripple has been reduced by over 30 percent. As a result, high torques are produced very evenly, even at low speeds, which allows better control of the electric drive and improves battery life. The high system efficiency and intelligent energy management also reduce electricity consumption and thus the operating costs too.

The EMP motor series is the latest development in the scalable eLION high-voltage electrification portfolio for driving and working functions. The modular platform includes other components too – not only inverters and gearboxes but also software and accessories along with tailored hydraulics. Fully integrated functional safety in accordance with ISO 13849 in all inverters helps to save time during engineering.

The new EMP series will be available from 2024 in five lengths and in the power range from 30 to over 200 kW.

The eLION portfolio is already used in numerous pilot applications, for example in the “Process Unit” (VTE) developed by the agricultural machine manufacturers KRONE and LEMKEN. The powerful drive ensures that the autonomous traction unit can easily cope with a wide range of work processes such as seedbed preparation, cultivating, hoeing, mowing, turning or swathing.

Bosch Rexroth at Agritechnica: Hall 16, Booth A08.

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.

Press Contact

Please get in touch with our Press Contact

Manuela Kessler
Spokesperson
technology topics
+49 9352 184145
Manuela.Kessler@boschrexroth.de