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Bosch Rexroth continues to drive electrification with eLION

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With expanded portfolio for efficient electrification of driving and working functions now also in North America

- Scalable portfolio for a wide range of mobile applications
- Numerous machines equipped with eLION already in use as part of pilot projects
- Market launch now also in North America



Bosch Rexroth supports comprehensive electrification of mobile working machines: The portfolio of the modular and scalable eLION platform encompasses everything from motors, inverters, and gearboxes to software, accessories, and the necessary hydraulics. (Image source: Bosch Rexroth AG)

In 2021, Bosch Rexroth presented its portfolio for the electrification of mobile machinery under the name eLION. Numerous machines equipped with eLION are already in use as part of pilot projects. With a newly developed, single-phase onboard charger, Bosch Rexroth has now made its platform fully compatible with the North American charging infrastructure and is introducing its high-voltage solutions in this market. The broad range of motors, inverters, gearboxes, and software also includes a highly effective DC/DC converter.

Developed specifically for global off-highway applications, the eLION platform boasts a modular and scalable design. The nominal power range of the motors extends from 20 to 200 kW (with peak power of up to 400 kW) and covers the complete spectrum from compact to heavy-duty working machines. The eLION inverters for up to 300 A continuous current offer high overload capacity while also supporting DC link voltages of 270 to 850 V along with rapid CAN J1939 communication (CAN 2.0). Fully integrated functional safety according to ISO 13849 ensures maximum time savings in engineering. With their high power density, the eLION gearboxes support a wide range of compact hub and central drives. In addition, Bosch Rexroth provides BODAS software modules along with suitable hydraulic components, such as axial piston pumps, for the complete eLION platform.

Market-specific system components accelerate time to market

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To ensure that off-highway manufacturers can quickly find standardized solutions for different drive types (e.g. fully electric, hybrid, or diesel-electric), the eLION portfolio includes essential system components such as DC/DC converters, onboard chargers, and high-voltage cables. New additions to the range include two system components developed in collaboration with BRUSA HyPower:

The single-phase eLION onboard charger for 19 kW supply systems boasts a compact design for flexible integration in various vehicle types and achieves a maximum charging current of 36 A with 95 percent efficiency.

With a voltage range of 350 to 890 V, the eLION DC/DC converter supports a wide range of control functions, including fuel cell applications. Its high power density of 1.25 kW/l allows the component to achieve an efficiency level of more than 95 percent.

“We look forward to supporting more customers in the future, including in the North American market, with a comprehensive electrification portfolio,” states Matthias Kielbassa, Vice President Electrification at Bosch Rexroth. “Many machines equipped with eLION are already being used in numerous pilot projects. We are now ready to support the transition to series production.”

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 420,000 associates worldwide (as of December 31, 2022). According to preliminary figures, the company generated sales of 88.4 billion euros in 2022. 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 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

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for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 85,000 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