

METSTRADE: powerful 800-volt electric drive from Bosch for applications on recreational and working boats

October 22, 2024
PI11894 BEG MBC/Cd

- ▶ 800-volt electric motor SMG 230 with continuous output of up to 200 kilowatts enables electrification of large boats and ships with a displacement of 20 to 30 tons
- ▶ Silicon carbide semiconductors in the inverter reduce losses and increase the overall efficiency of the electric drive
- ▶ Toolbox for the electrification of ship drives with 400- and 800-volt components covers a wide range of maritime applications

Abstatt – electric drives are becoming increasingly prevalent in the boat and ship sector. At METSTRADE, Bosch Engineering is unveiling a newly developed, high-performance electrification solution for electrical systems with voltages of up to 800 volts, which further extends the potential use cases of electric drives in maritime applications while also raising system efficiency. “With the latest generation of our electric motor and inverter with silicon carbide power modules, we offer a complete system that allows not only recreational boats but also larger sailing yachts and working boats to be operated with an efficient, quiet, yet still very powerful electric drive,” states Philip Kurek, who is responsible for off-highway and maritime solutions at Bosch Engineering.

The new electric motor SMG 230 is designed for system voltages of 400 to 800 volts. In an ideal voltage and temperature range, it offers a continuous power output of up to 200 kilowatts and around 250 newton meters of torque. Thanks to the 800-volt technology, the power density has also been increased significantly. The SMG 230 delivers 80 kilowatts more power than a comparable 400-volt machine with identical weight or, with the same level of performance, boasts more compact dimensions and a much lower weight.

The inverter with silicon carbide semiconductors, which is also designed for electrical voltages of up to 800 volts, is characterized by its impressive efficiency of more than 99 percent. The silicon carbide semiconductors in the power modules

enable faster switching operations, meaning that significantly less energy is lost in the form of heat.

Bosch's complete kit for the electrification of boat drives comprises electronic control units, inverters, electric motors, and transmissions for both 400- and 800-volt applications. This gives shipyards and system integrators maximum flexibility when adapting the electrification strategy to the respective requirements and allows them to integrate the relevant components quickly and easily into their ships. The system components are based on modern automotive technology and combine high robustness with utmost reliability. With its comprehensive kit for the electrification of ship drives, Bosch is making a crucial contribution to the ongoing reduction of greenhouse gas and noise emissions.

Press photos are available on the Bosch Media Service at www.bosch-press.com.

Contact person for press inquiries:

Cornelia Dürr

Telefon: +49 7062 911-1986

E-Mail: Cornelia.Duerr@de.bosch.com

About Bosch Engineering GmbH

Bosch Engineering GmbH is a wholly owned subsidiary of Robert Bosch GmbH and is headquartered in Abstatt, Germany. As a systems development partner to the automotive industry since 1999, the company with its more than 3,300 associates offers development services for powertrains, safety and convenience systems, and electrical and electronic systems – from the original concept to series production. Specialized in electronics and software, it draws on Bosch's proven large-scale series production technology to develop tailored solutions for a wide variety of applications in passenger cars, commercial vehicles, off-highway and recreational vehicles, and in rail applications, ships, and industry. Bosch Engineering GmbH also coordinates all the Bosch Group's motorsports activities. Additional information can be accessed at www.bosch-engineering.com.

Mobility is the largest Bosch Group business sector. In 2023, its sales came to 56.2 billion euros, or just under 60 percent of total Group sales. This makes the Bosch Group one of the leading mobility suppliers. Bosch Mobility pursues a vision of mobility that is safe, sustainable, and exciting. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are electrification, software and services, semiconductors and sensors, vehicle computers, advanced driver assistance systems, systems for vehicle dynamics control, repair-shop concepts, as well as technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

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.

Additional information is available online at www.bosch-press.com, www.bosch-mobility.com, www.bosch.com.