

### **METSTRADE: Bosch Engineering presents new plug-and-play complete solution for electrified drive systems**

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- ▶ Complete solution electric drive for marine applications (EDM), featuring an electric inboard motor as its core
- ▶ High power density of around 0.7 kW/kg sets a new performance class benchmark
- ▶ Compact dimensions and design simplify integration into an existing hull design or a drive retrofit
- ▶ High product quality thanks to the use of automotive components

Abstatt - The integration of an electric inboard motor into recreational boats or commercial vessels involves considerable engineering effort and requires a high level of understanding of the overall system. With a new complete system, the electric drive for marine applications (EDM), Bosch Engineering now allows shipbuilders, system integrators, and naval architects to quickly and easily implement the high-voltage electrification of boats and small ships. "The EDM is designed as a plug-and-play solution, for which we supply the complete electric inboard motor and additional system components from a single source. We thus provide a simple and efficient means of electrification using a clean, quiet, yet powerful drive," explains Philipp Kurek, who is responsible for off-highway and maritime solutions at Bosch Engineering.

Bosch Engineering delivers the EDM as a ready-to-install inboard motor, which combines the electric motor with gearbox, the inverter, the on-board charger, the heat exchanger, an E-box with control unit, and the necessary cooling pumps in a single compact unit. The scope of delivery of the system also includes the high- and low-voltage cabling, a charger inlet along with a display and control elements for the ship's cockpit. The EDM produces 160 hp (continuous) and weighs only around 180 kg. With the resulting high power density of around 0.7 kW/kg, it sets the benchmark for electric inboard motors in this performance class. For higher power requirements, two EDMs can also be coupled to form a twin drive system with two propellers.

The installation dimensions of the compact EDM unit are comparable to those of an inboard combustion engine with the same power output and offers great flexibility for

mechanical integration. This enables easy integration into an existing hull design or replacement of the drive as a retrofit solution. For applications with particularly limited space, a variant is also available with which the inboard components are delivered separately rather than preassembled, meaning that they can be positioned freely in the engine compartment.

As well as cooling the integrated drive components, the thermal management of the EDM also ensures effective temperature control of the high-voltage battery. The high-voltage battery is not included in the scope of delivery. Instead, Bosch Engineering will recommend suitable solutions, and the customer is free to choose according to their individual requirements and the available installation space. The standardized communication interface of the EDM ensures software compatibility with the various high-voltage batteries available on the market. This provides great flexibility in selecting the optimum configuration of the overall system. The battery is charged via the EDM's integrated charger. This greatly simplifies the integration of the charging function into the ship's E/E architecture. The EDM also provides drive-related information and travel data for visualization on the supplied display. Other safety-relevant and time-efficient features of the EDM include intelligent system responses to unplanned failures or faults, guided troubleshooting using a diagnostic device, as well as optional connectivity via the cellular network. The latter enables functions such as software updates and monitoring of selected drive parameters over-the-air (OTA).

Bosch Engineering supports EDM customers from the initial installation concept to the eventual commissioning of the drive. In doing so, the company combines its extensive, long-standing expertise in automotive electrification and the motorization of marine applications. The system components of the EDM are sourced from Bosch's production for the automotive sector and satisfy the high quality standards of the passenger car and commercial vehicle segments.

In addition to the EDM, Bosch Engineering also offers the electric drive system platform (EDSP) for the electrification of maritime applications. The EDSP is a modular solution with which the various drive components, such as the electric motor, gearbox, inverter, and control unit, can be individually combined to suit specific requirements. The components can also be supplied as separate modules for shipbuilders who wish to perform the electrification themselves.

To allow larger and heavier marine applications to be equipped with an electric inboard motor in the future, Bosch Engineering plans to expand the solution to include additional performance classes.

The electric drive for marine applications (EDM) will be presented for the first time at **METSTRADE, in Hall 7, Stand 07.218.**

Press photos and infocharts are available on the Bosch Media Service at [www.bosch-press.com](http://www.bosch-press.com).

**Contact person for press inquiries:**

Cornelia Dürr

Phone: +49 7062 911-1986

E-mail: [Cornelia.Duerr@de.bosch.com](mailto:Cornelia.Duerr@de.bosch.com)

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