

New energy for marine applications

The future of electrified
drive systems



The trend towards electrification

Bosch Engineering offers electric propulsion systems for recreational boats and yachts with which shipyards, boat manufacturers and system integrators can implement electrification quickly and easily.

In many regions of the world, new environmental laws for inland and recreational boats will come into force in the coming years. A trend not only among shipyards and many boat manufacturers. The increasing customer

demand for a more environmentally friendly and low-noise motorization is also driving the industry. With its electrification solutions, Bosch Engineering wants to play a decisive role in driving change in shipping. Boat manufacturers have drive components and system solutions at their disposal.

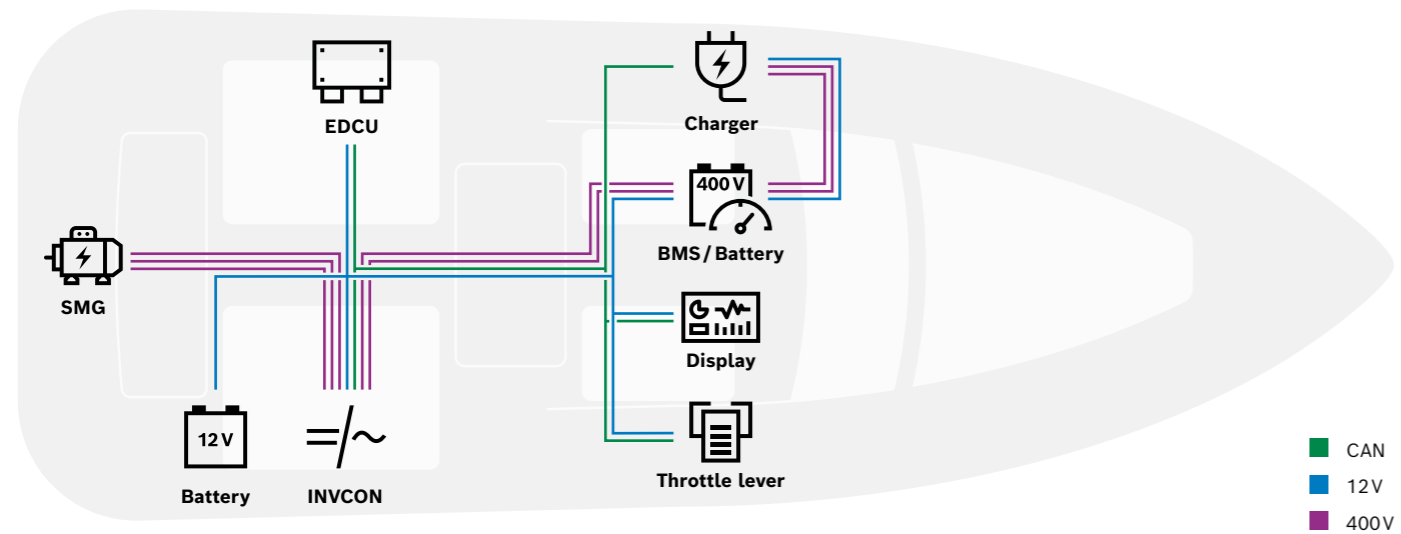
Electric Drive System Platform: Easy integration thanks to platform approach

With the Electric Drive System Platform (EDSP), Bosch Engineering offers boat manufacturers a solution for electric boat drives. This includes Bosch's own drive components such as electric motors, inverters and transmissions as well as all other relevant components such as high-voltage batteries, chargers and cable harnesses. Furthermore, users receive a description of all the core information required for integration into the boat. This includes a system manual, component specification, ECU software and a commissioning package. In addition, the EDSP approach significantly shortens the development time to series use.

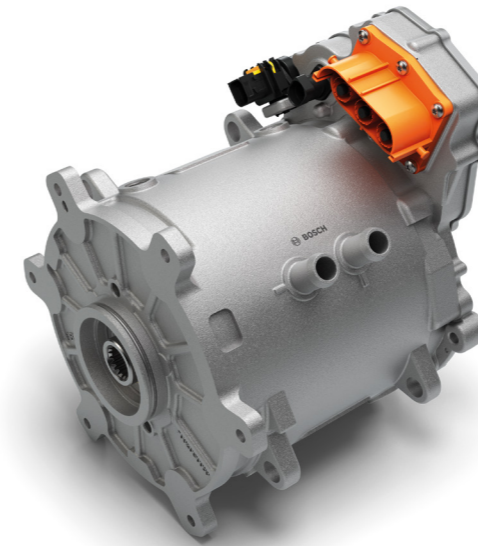
With the EDSP, boat manufacturers benefit from a predefined complete solution that can be easily, quickly and cost-effectively installed in sports boats or yachts.

The drive components are also available individually for independent integration. The motors are available in two power levels 90 and 140kW. The design of the 400V permanent magnet synchronous motor is characterized by a high power density and a very high efficiency. The inverter is equipped with a powerful DC/DC converter to supply the 12V consumers. The transmission impresses with its high efficiency and low-noise and low-maintenance operation.

The compact dimensions allow it to easily integrate the components even in confined spaces or to retrofit existing applications. Due to the low total weight of the components, the maximum range of the boat can be increased.

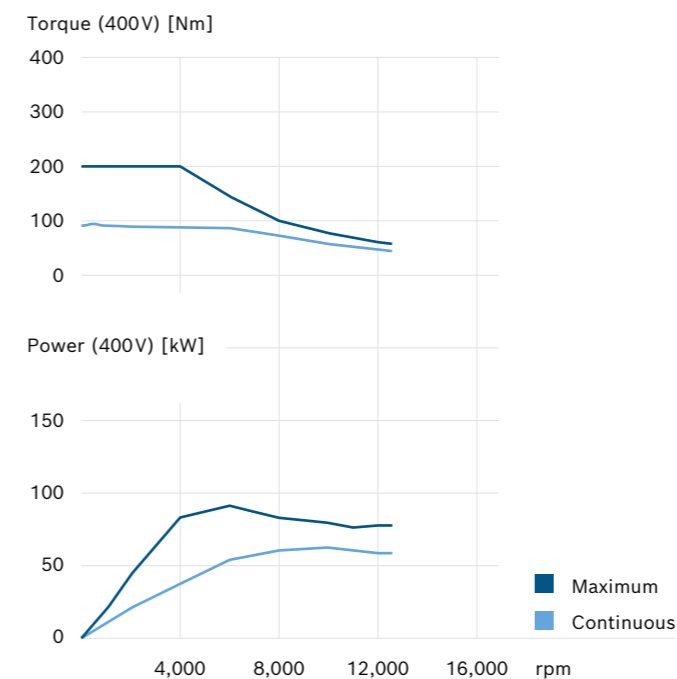


Short description technical data



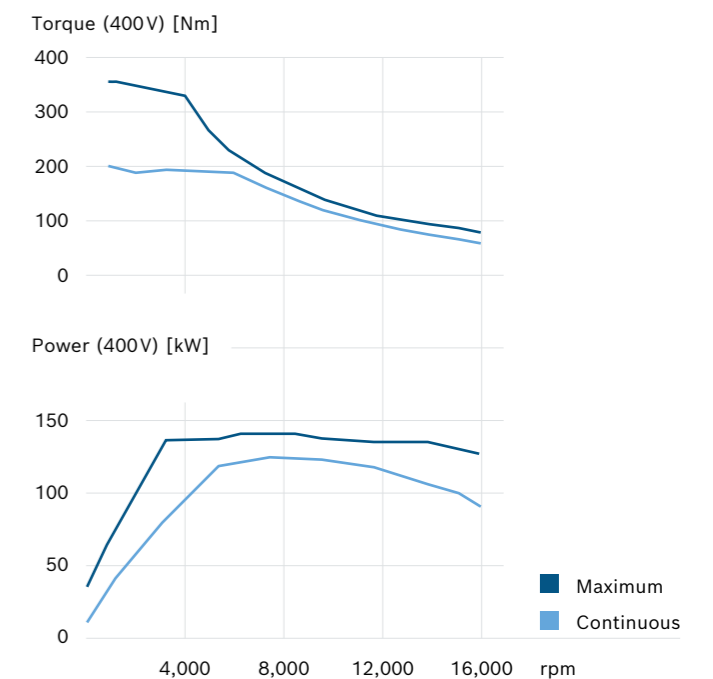
Separate-Motor-Generator 180
Off-Highway with optional gearbox
Innovative and powerful shaft drive with a top power of 90 kW

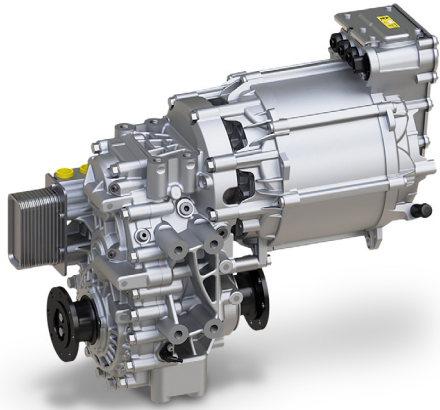
Nominal power	60 kW
Comparable performance	82 HP
Voltage	up to 430V DC
Torque	90 Nm
Rotational speed	12,800 rpm
Weight	30 kg



Separate-Motor-Generator 220
Off-Highway with optional gearbox
Permanent magnet water-cooled synchronous motor with high speed and highest power density

Nominal power	120 kW
Comparable performance	163 HP
Voltage	up to 430V DC
Torque	200 Nm
Rotational speed	16,000 rpm
Weight	60 kg

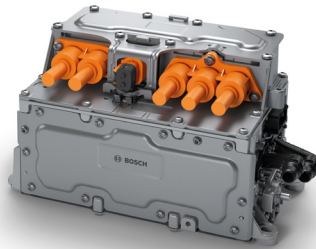




SMG220 with gear unit eGFZ9125

Gear unit compatible with Bosch SMG motors

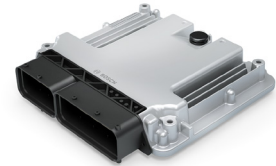
Type	1-speed gearbox
Max. output torque	3,800Nm
Ratio	4.0/4.6/5.0/6.0
Noise	NVH optimized for best noise reduction



Inverter INVCON3.3 Off-Highway

Power electronics with integrated DC/DC converter for Bosch electric drives

Voltage range high voltage	180 to 430VDC
Voltage range low voltage	10.6 to 15.0VDC
Maximum power	140kW
Communication interface	CAN 2.0A, 500 kbit/s
Size	327×191×192 mm
Weight	10 kg



Electric Drive Control Unit

Scalable hardware that allows the system to be tailored to the requirements of the application

Safety Functions	up to PL D
CPU	32-Bit Multi-Core
Signal Inputs	Configurable
Power Outputs	4A

At a Glance:

- ▶ With the Electric Drive System Platform (EDSP), Bosch Engineering offers a system solution for simple and fast integration in the boat
- ▶ Platform solution is based on proven, high-performance and compact components from the automotive sector
- ▶ Drive components can also be purchased individually and be integrated independently



Find more information on our website!

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