

ENGINEERING
TOMORROW

Danfoss

Case story | VACON® NXP series

Plain sailing: Danfoss drives technology **is set to drive three new multi-purpose ships** from the Federal Waterways and Shipping Administration

9,000 kW

main drive power
with Danfoss inverter
technology

In the event of incidents in the North Sea and Baltic Sea, the Federal Waterways and Shipping Administration (WSV) ships are ready for emergency towing and fighting oil, chemicals or fire within two hours at the latest. As a replacement for the tried-and-tested SCHARHÖRN, MELLUM and NEUWERK, the Federal Government has commissioned three new multi-purpose ships from the Abeking & Rasmussen Schiffs- und Yachtwerft SE (A&R) in Lemwerder.

Danfoss is a system supplier for the ships' electric drives systems.





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New generation of ships with environmentally friendly gas-electric drive concept

Like their predecessors, the new 90-meter-long WSV multi-purpose ships will ensure maritime safety in the North Sea and Baltic Sea. They will be suitable for use in hazardous environments and equipped with chemical tanks with a volume of around 1,000 cubic meters, an explosion-proof safety- and container-loading space, and oil collectors. The new generation of ships themselves are driven in an environmentally friendly manner with a gas-electric drive concept (LNG). Planning, conceptualizing, and tendering were carried out by the Federal Institute for Hydraulic Engineering (BAW),

Ship Technology Unit, which also manages the construction of the new-build vessels, which will be put into operation successively by 2025.

Danfoss drives technology will be used on the new ships. "The first multi-purpose ship will be delivered by Abeking & Rasmussen after an ambitious construction period of 39 months." To implement this technologically demanding project, the shipyard relies on Danfoss technology. "As a partner, we offer our many years of experience in equipping ships with electric drives systems," says Business Developer Marine Technology Dennis Gosch,

who has been overseeing the project from the start and was able to acquire A&R as a new customer for Danfoss. "Danfoss has impressed BAW and A&R as a system supplier for the electric drives system. In addition to various AC drives from the VACON® NXP series, Danfoss EDITRON PM motors are also used in the gas-electric drive system of the multi-purpose ships. From initial contact to engineering and commissioning, we are on-hand to support Abeking & Rasmussen."

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*- Dennis Gosch
Business Developer Marine Technology*





High degree of freedom in design and construction

The VACON® AC drives used give the shipyard a high degree of construction freedom and flexibility in the design of the drives system. This can be seen, for example, in the customer-specific design, with which the drive cabinets are optimally integrated into the ship design.

The following Danfoss components are installed in each multi-purpose ship:

- 2 x VACON® NXP AFE AC drives for main traction motors 4.5 MW
- 1 x VACON® NXP AFE AC drive for Bugjet drive 3.0 MW
- 1 x VACON® NXP AFE AC drive for cross jet drive 0.9 MW
- 1 x Danfoss EDITRON PM motor for Bugjet drive 3.0 MW
- Engineering and commissioning



ABEKING & RASMUSSEN

ABEKING & RASMUSSEN SCHIFFS- UND YACHTWERFT SE

Abeking & Rasmussen is a shipyard with many dimensions. At its core, it's still a family business, and the shipyard is constantly investing in new technologies to improve performance and sustainability. It was founded in 1907 by George Abeking and Henry Rasmussen. Nowadays, in addition to large sailing and motor yachts, it also builds other types of vessels such as marine ships, special ships or cruise ships. With a production facility in Lemwerder, the shipyard currently consists of environmentally friendly workshops, five production halls, office buildings, an inner port, and a Syncrolift® shiplift.

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