

Case story | VLT® Marine

From **installer** to **contractor** to **shipyard** Danfoss **VLT® expertise** saves time and energy

M/V ISLAND PERFORMER Subsea Vessel from Ulstein Verft shipyard

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VLT® drives control the seawater cooling system, cargo delivery system and HVAC applications.

Photo: Ulstein Group/ Marius Beck Dahl

Ulstein Verft shipyard and AF Offshore Aeron AS chose Danfoss VLT® drives to control the seawater cooling system, cargo delivery system and HVAC applications in their state-of-the-art subsea vessel, 'Island Performer'. Danfoss were selected not just for the uncompromising quality, reliability and efficiency of their VLT® drives, but for their expertise during the installation and programming of the drives.

The height of technology for the ocean's depths

'Island Performer' is the next generation subsea vessel from Ulstein Verft shipyard, with large accommodation, storage and lifting capacities. Built to provide offshore installation and construction services for subsea umbilicals, risers and flowlines and to perform riserless light well intervention and inspection, maintenance and repair works, she is able to perform operations at depths down to 3,000 meters. Precision, safety and efficiency are obviously paramount in this extremely challenging working environment, but personnel comfort has also become increasingly important. The role of air-conditioning plays an increasingly important role.

A history of successful co-operation

Ulstein and AF Offshore Aeron AS have had a long term-relationship of more than 10 years and are extremely satisfied with the Danfoss products and technical support. Around 10 to 15 years ago, all motor were DOL driven. Ulstein were among the first to use drives for cargo pumps on PSV's - now they have started using drives for ballast water and seawater cooling systems. Danfoss drives have consistently delivered to specifications and expectations – and continue to be used in cutting edge vessels such as 'Island Performer'.

Danfoss VLT® drives save energy

By using Danfoss VLT® drives in the seawater cooling and air-conditioning systems, energy consumption on board is reduced. By reducing the speed of the seawater cooling pumps, cavitation in the cooling system is also reduced.

"Seawater cooling systems are normally designed for 32° C seawater temperatures. But for vessels such as 'Island Performer', which can frequently operate in cooler areas such as The North Sea, this is over-dimensioned when it comes to



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Project Director at AF Offshore Aeron AS



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cooling capacity," says Frank Brandal, Production Coordinator at Ulstein Verft.

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Air-conditioning improves productivity

'Island Performer' has been developed and built according to the latest international regulations in which comfort is a key issue. She carries the DNV GL class notation Comfort

Class and 'COMF-V1, which ensures that noise and vibrations are kept at minimum.

It is a known fact that a well dimensioned HVAC system is the key to a good indoor environment onboard a ship. Fresh air is vital to both personnel and machinery – feeling good improves productivity. By using small-footprint, Danfoss VLT® drives in their latest high-speed systems, AF Offshore Aeron AS meets the requirements for less space consumption onboard ships and eliminates noise and vibration problems.

"Danfoss VLT® drives are small and compact units which are easy to

install and programme. The Danfoss product range is excellent and price competitive," says Odd Willy Larsen, Project Director at AF Offshore Aeron AS.

Saves maintenance costs, reduces service

Danfoss VLT® drives have also been used in the "Island Performer's" cargo delivery systems, where their ability to optimise the flow or pressure to the capacity of the rig or vessel receiving the cargo. This is important, as the vessel's own cargo system has a potentially high capacity, while those of the receiver may be considerably smaller.

"We have not yet calculated how much energy we save, as circumstances vary from operation to operation and also where in the world the vessels operate. But what we can say for certain is that the maintenance costs for the ship owner have gone down and service intervals have increased," says Odd Willy Larsen.

Expert installation advice saves working hours

Correctly installing and programming the VLT® drives is vital to achieve maximum performance and energy savings. Danfoss Sales Engineer, Odd Roar Buttingsrud, spent a full day at the yard assisting Ulstein engineers to programme the drives, while guiding them on how to install the drives properly when it came to the grounding and shielding of motor cables.

Danfoss is well known among ship owners and well accepted on board vessels.

Odd Willy Larsen,
Project Director at AF Offshore Aeron AS

"This is of great value to us," says Frank Brandal, Production Coordinator at Ulstein Verft. "We are really able to save a lot of working hours when Danfoss teaches us how to programme the drives by using MCT 10 – and it's always easy to contact Danfoss if you need help or assistance by phone," he concludes.

For more information contact:

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Danfoss VLT® Drives

VLT® drives used aboard 'Island Performer'

- 21 VLT® AutomationDrive FC 302 in the power range 11 – 110 kW control the seawater cooling system and cargo delivering system
- 15 VLT® HVAC Drive FC 102 in the power range 2.2 – 37 kW control the HVAC applications aboard
- 20 VLT® dU/dt Filter MCC 102 IP 54



Photo: Ulstein Group
Marius Beck Dahle

About Island Performer

Length over all approx. 130.0 m
Breadth moulded 25.0 m
Dead weight w/tower mounted approx 7,300 tonnes
Trial speed 15.25 knots
Accommodation 130 persons

About AF Offshore Aeron AS

AF Offshore Aeron AS is a total contractor of Marine and industrial Heating, Ventilating and Air-conditioning HVAC systems. They are a leading supplier of complete HVAC systems to the global shipping industry. Aeron Marine HVAC systems ensure optimal climate solutions for people, cargo machinery and instruments onboard all types of ships. Their headquarters are in Norway.

About Ulstein Verft

Ulstein Verft builds a wide range of highly effective and sustainably efficient vessels that include offshore support, offshore construction, seismic and research vessels. Strong focus is placed on innovative technological solutions and methods. A collaborative approach and streamlined production processes result in a high level of flexibility and quality.

Danfoss products are **everywhere on the ship** – improving **efficiency, safety and reliability**

Working in the challenging world of the marine industry, you demand a supplier who contributes to improving efficiency, safety and reliability while reducing total cost of ownership. Danfoss is a single supplier who delivers on all these criteria – and more. For over 30 years we have been building and consolidating successful relationships with ship owner-

operators, shipyards, system integrators, OEMs, naval design engineers and architects to make the marine industry safer and more efficient. Represented in all major marine hubs with full marine certification and global service, Danfoss is committed to creating a sustainable, competitive future for the marine industry.

Cargo deck

- Firefighting systems
- VLT® drives
- Pressure & temperature sensors and controls



Engine room

- VLT® drives
- Pressure & temperature sensors and controls
- IXA emission sensors
- Fluid controls
- Firefighting systems

Accommodation

- Control valves for air-conditioning
- Firefighting systems
- VLT® drives



Utilities

- High pressure pumps
- VLT® drives
- Pressure & temperature sensors and controls
- Fluid controls
- Refrigeration controls
- Firefighting systems

Winches

- VLT® drives



Thrusters

- VLT® drives
- Pressure & temperature sensors and controls
- Firefighting systems

For further information please visit www.marine.danfoss.com