EcoStruxure™
Innovation At Every Level

Innovative energy-efficient solutions to power containerships owned by Hamburg Süd

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Customer profile

Hamburg Süd is a premium carrier with 116 container ships, a slot capacity of some 590,000 TEU, and around 50 liner services.

As a market leader in global North-South trade routes, Hamburg Süd was awarded the title of “Best Green Shipping Line” in 2017.

Project context

As one of the top five providers of refrigerated transportation in the world, Hamburg Süd leverages its entire spectrum of expertise to ensure that cargo arrives at its destination in the desired condition.

Four times 3800TEU reefer cargos, built by Yangzi Jiang Shipyard in China, are equipped with highly advanced reefers which require safe, reliable, efficient, and sustainable power solutions.

Schneider Electric, the global specialist in energy management and automation with over 90 years of experience in the marine industry, successfully delivered an innovative solution to ensure an unbroken cold supply chain to maintain quality of temperature-sensitive goods while optimising energy consumption.

Our solutions

- Variable Frequency Drives (VFD) control system for Engine Room Cooling
  (2x sea water pumps and 4x engine room fans per vessel)

- Variable Frequency Drives(VFD) control system for Cargo Hold Fans
  (55x Cargo Hold Fans per vessel)

Solution breakdown

1. Engine Room Cooling

- Accurate temperature and pressure PID control for sea water pumps and engine room fans through PLC, VFD and sensors

- Local or/and remote monitoring and control solution through HMI

- Management of various scenarios (seagoing, cargo handling etc.)

2. Cargo Hold Fans

- Safety control through CO_2 sensors and dangerous goods information from loading computer

- Accurate temperature PID control for cargo hold fans through PLC, VFD, sensors and reefer position read from loading computer

Energy savings:

30%-40%

Customer benefits

Innovation

- First ship in the world equipped with Cargo Hold Fan Variable Frequency Drives (VFD) control system

Digitalisation

- Easy control
- Comprehensive data monitoring and recording

Safety

- Control of CO_2 levels
- Dangerous goods interlock

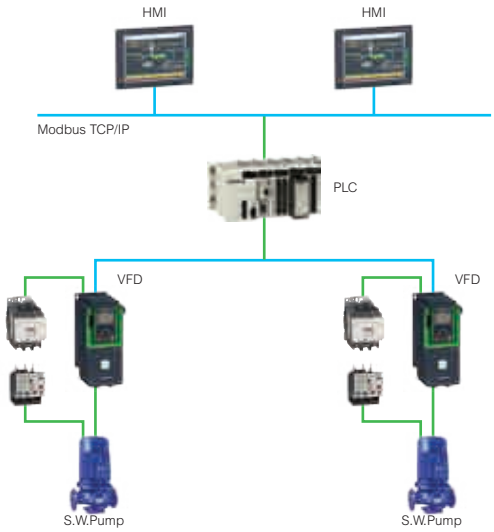
Energy Optimisation

- Optimised investments with quick ROI (<2 years)

Architecture

1.Engine Room Cooling VFD Control System

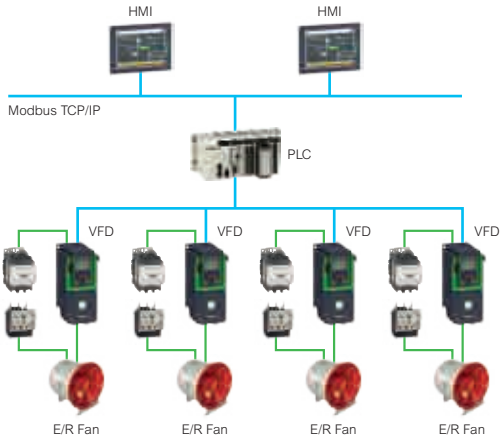
- Sea Water Pumps VFD Control System



Main Features:

- Precise control according to temperature and pressure requirements via PID loop.
- High availability of the sea water pump thanks to the bypass contactor.
- All main devices supplied by Schneider Electric, with high reliability, integrated Modbus TCP/IP communication.

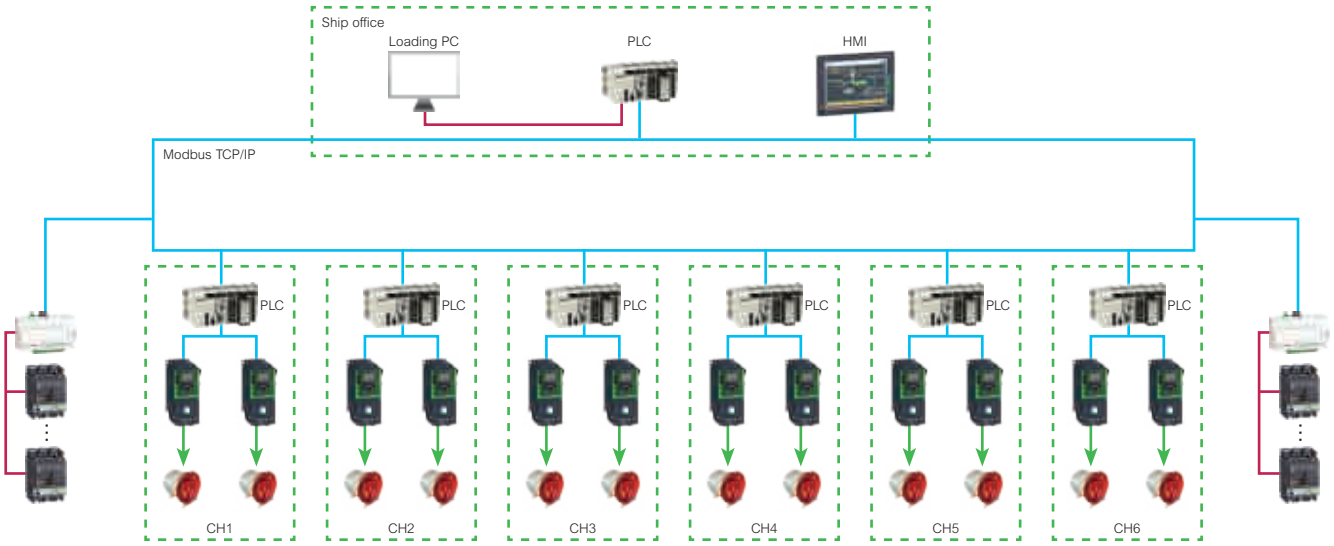
- Engine Room Fans VFD Control System



Main Features:

- Precise control according to M/E & A/E Load, E/R temperature and pressure requirements via PID loop.
- High availability of the engine room fans thanks to the bypass contactor.
- All main devices supplied by Schneider Electric, with high reliability, integrated Modbus TCP/IP communication.

2. Cargo Hold Fan VFD Control System



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