

# Seamless Solutions for Ship Industry

Safe and Reliable – Truly Seaworthy

Regardless of whether they are highly modern freight ships, elegant cruise ships or grand luxury liners . the demand for new, specialized and highly complex ships is increasing. Speed, safety, reliability, and reduction in consumption and therefore in costs, are at the focus of the requirements.



Automation technology on ships must fulfill certain conditions that are primarily designed to ensure safe operation at sea. For this reason, only well-engineered and tested technology should be implemented and innovations should first be tested for practical suitability.

The automation system should have a competitive price, standard components, High communication capabilities, easy integration, simple installation and high availability on board.

## **PHOENIX CONTACT - A strong and reliable system partner**

With Phoenix Contact, you are in the right hands from the very beginning: We support you with tested and certified products, an overall system which is "seaworthy" in every regard, as well as an optimal range of training and service . worldwide across all oceans! Our solutions offer more . for mankind and the environment, as well as for ships and cargo.

Bureau Veritas (BV)  
Nippon Kaiji Kyokai (NK)  
Germanischer Lloyd (GL) (German Lloyd)  
American Bureau of Shipping (ABS)  
Det Norske Veritas (DNV)  
Lloyds Register (LR)

### **Important Element in Ship Integration**

An automation system is the brains of a ship's functions and vital to good operability of the vessel. Phoenix Contact offers a automation system, with modular architecture which enables efficient process handling. The system is capable to handle huge amounts of data at high speed.

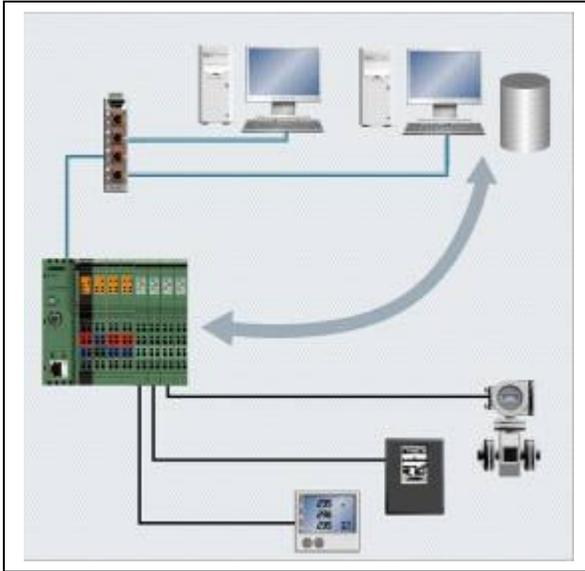
### **From the engine room to the bridge - all from one source**

Phoenix Contact delivers solutions with an extensive product range for every purpose. From garbage incineration to water treatment and from the engine room to the bridge, our system ensures smooth operation at all sites and all application areas. Regardless of whether cable-bound or wireless. And you're safe from surges, too . even in rough seas. **Find out for yourself !!!**



## Over all Ship Management

From the I/O level to the control level to the network level, all systems are controlled via the redundancy control by means of PROFINET technology and fiber optics. The Rapid Spanning Tree protocol (RSTP) and Fast Ring Detection (FRD) ensure short reconfiguration times in the event of a failure. Even if the controller fails, there is no danger: a second one takes over the control of the process.



## Condition Monitoring of the Engine room

Vibrations on board are comfort killers. Vibrations are dangerous to man, machine and ship. With products and solutions from Phoenix-Contact the reasons can be found in order to lead to adequate counter measures. Data collection is possible to have proven witness

## Energy Management System

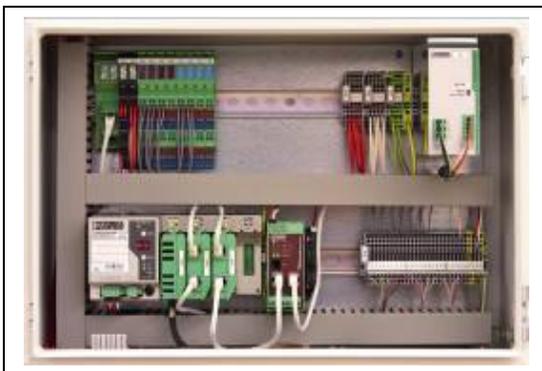
Energy management in of vital importance to ensure avoiding unnecessary use of fuel so voyaging ecological. Switching off boilers and using the produced heat in the furnaces. SQL to log evidenced the usage of fuel and using the information to advice the crew of the most economic sailing route. The IT Powered Automation

Solutions from Phoenix Contact ensures easy integration, maintenance and availability of data and system.

## Anti Heeling System

Concerning Anti-Heeling-Systems the main topic is a fast reaction of your Pump systems. Typical this can be solved by the use of I/O's from Phoenix Contact. A reliable network around the Autarkic operating single pump and valve application and the visualisation of it ,are secured by the use of Powerfull and highly communicative Control system from Phoenix Contact. Low installation cost and high avaiability of the system can be achieved by connecting the stations in a redundant Ethernet ring.

## Alarm and Monitoring



The first warning of any failure on-board a ship is given by the alarm and monitoring system. This gives the ship's officers all the basic information they need to maintain safe and efficient operation of the machinery and related equipment. But integrating the diverse monitoring groups, such as engine, thrusters, bilge, water, power, climate control, communications and entertainment, is a complex task. And solutions must be failure proof and operate seamlessly. Redundant Profinet is here the sollution from Phoenix Contact.

### **The optimal security for satellite communication**

Designed for use with all BGAN (Broadband Global Area Network) services, mGuard technology from Phoenix Contact is a superior and easy to use security solution, offering reliable firewall, VPN functionality, protection against viruses and performance enhancing proxy. The technology is based on Phoenix Contact's innovative "device attached security" concept, which eliminates the drawbacks associated with conventional security concepts – in a simple, reliable and cost-effective manner.

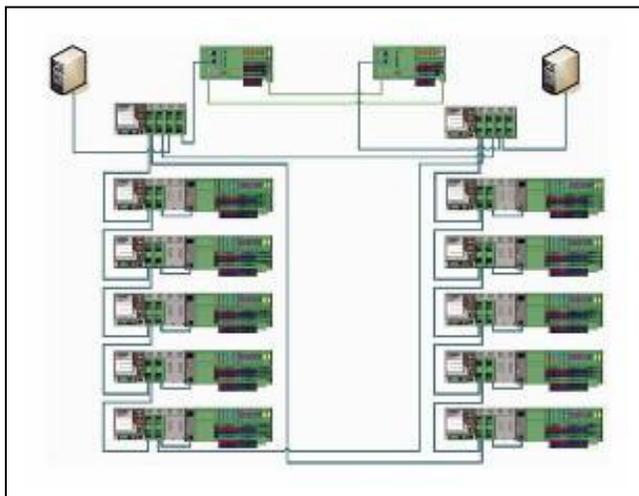
### **Onboard with Phoenix Contact**

Other than the major applications mentioned above Phoenix Contact also offers innovative solutions for on board applications like – Search light control, Window aiper control, Carne and Winch control, lighting control, Havac control and other utility automation requirements. The Major advantage with Phoenix Contact is the integration of the all the services seamlessly and costeffectively.

### **At Harbour with Phoenix Contact**

Automation requirrement at Ports and Harbours are as challenging as on Board. From Logistic systems at the to the ship handling systems, A highly reliable and Safe system is the need of the hour. Servicability of the system is of top most importance. Sailing on Profinet, Intebus and Wireless Ethernet technologies Phoenix Contact offers reliable and maintenance friendly solutions not only for making the ship afloat for its frist journey from the workshop but also eliminates the requirement of laying down of several hundred kilometer of cables by using the WLAN based networking of various cranes and utility systems.

### **Standard Hardware and Sotware**



System built on standard hardware and software, which means spare parts can be obtained quickly and the system can be easily upgraded whenever new functionalities or new versions become available. The flexibility of the system also enables low maintenance costs for the customer.

Control cabinet construction and products for the control cabinet are among the core competencies of Phoenix Contact. Whether power supply units, modular terminal blocks, compact controls, safety relays, MCR signal isolators, surge protection, Ethernet components or I/O systems . our

"modules" can be put together to save space on the DIN rail and ensure a clear and tidy control cabinet.