

UNIQUE ABILITY

ABB Ability™ System 800xA

ABB's Ability™ System 800xA integrates all onboard systems into one platform, empowering both crews and land-based organisations to operate vessels and fleets with enhanced intelligence, safety, efficiency and effectiveness.

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ABB Ability™ platform, developed in conjunction with Microsoft and launched in 2017, enables customers to securely integrate and aggregate data, applying big data and predictive analytics, and generating insights to help drive performance and productivity improvements. It builds on the company's deep domain expertise with network connectivity and the latest digital technologies and innovations to unite all digital solutions – solving real business problems, while creating tangible business opportunities. Within this portfolio sits the market leading ABB Ability™ System 800xA.

The system

ABB Ability™ System 800xA is an extended automation system capable of sensing, analysing and enabling users to drive greater efficiency. It gives vessel crews access to a fully integrated ship where all systems and equipment work seamlessly together. A single-screen user interface delivers easy and intuitive access to all the information needed to operate vessels more effectively and safely.

All automation modules are united with a similar look and feel, providing completely integrated automated control from the bridge right through to the propeller. The versatility and scalability of System 800xA for vessel management, propulsion control, power distribution management and cargo control make it possible to meet the unique needs of individual ship types.

Fleet benefits

Fleet managers have to deal with similar issues across many individual ships, which can make it challenging to see the bigger picture. However, if all the vessels can be connected, with intelligence from each ship delivering value for all, fleet wide efficiency, environmental performance, fuel costs, safety and effectiveness can be optimised. Ability™ System 800xA enables this, uniting not just systems but also ship- and crew-based teams, so each can benefit from the other's expertise.

ABB Ability™ solutions collect data from each ship's propulsion systems in real time, including variations in speed, draft, water depth, wind and waves. Then through the Industrial Internet of Things it analyses the data, drawing on ABB's expert knowledge of the marine industry, to provide recommendations that can be applied throughout the fleet.

Results can be jointly viewed and implemented quickly by the company, with information applied in real time, as opposed to traditional post-voyage analysis. Fleet managers can access data about fuel consumption, speed advice, propulsion power analysis and hull cleanliness, while recommendations can be made for current and future journeys. It is a unique fleet management, control and optimisation platform.

Unlocking potential

From immediate, real-time control to long-term optimal lifecycle management, Ability™ System 800xA provides the platform both crews and on-shore teams need to make the best decisions for their operations and businesses.

Enhanced energy efficiency is enabled through closely integrated systems and data capture and sharing. Simulation allows for optimised system design from the outset, while integration with advisory systems delivers optimal voyage execution and reporting processes.

Energy can be saved through intelligent loading of the power plant, while reduced cabling, thanks to fieldbus solutions, leads to the highest possible redundancy.

The uniform look and feel of all systems leads to a more intuitive user experience.

Project execution is also transformed with a common project management platform for power and control systems, less communication points and interfaces, faster commissioning time due to pre-testing, and complete control of documentation and interfaces. Integration of power systems can be handled by ABB in-house.

Ability™ System 800xA unlocks enhanced life cycle management through asset monitoring and modernisations, optimised maintenance and common spare parts, and ABB's established global marine service network, with a single service contact for all customers.

Integrating the industry

Together with the rest of ABB's Digital Solutions portfolio, Ability™ System 800xA forms a key part of what is the most comprehensive solution available within the maritime industry. The complete ABB suite provides seamless exchange of data, full integration of sensors, automation, ship software and cloud solutions.

The total offering consists of several important elements, providing decision support software for safety and comfort and energy efficient operations, and remote diagnostics technology that preventatively and continuously monitors critical equipment on board a ship.

The overall solution helps to optimise day-to-day shipping industry operations, whether it is increasing the efficiency, safety or workability of a ship, or helping shipowners to comply with increasing demands from environmental regulations, including the IMO Ship Energy Efficiency Management Plan (SEEMP) and future European Union Monitoring, Reporting and Verification (MRV) rules.

ABB's Ability™ platform is supported by Collaborative Operation Centers that enable next generation vessel and customer onshore operations. They deliver advanced analytics, portals, and value from digital twin technology, driving forwards the digitalisation of ship operations.

On board:

The system provides a comprehensive range of automation modules to simplify and enhance vessel operations. These encompass the following areas:

Power Management:

- Diesel Generator Monitoring System
- Power Management System
- Power & Energy Management System

Vessel Management:

- Alarm, Monitoring & Control
- Propulsion Control
- Remote Control System
- Intelligent Manoeuvring Interface

Process Control:

- LNG Cargo & Gas Management System
- Cargo Control System
- HVAC Control
- Drilling Drives Control System
- Propulsion/Thruster Drives Control System

Safety Systems:

- Fire & Gas System
- Emergency Shut Down System

Dynamic Positioning:

- DP integration