ABB Marine Academy course description
H867 – PSR cycloconverter marine drive

Course goal

The participants will learn how to operate, maintain and troubleshoot the PSR Cycloconverter system. Also the participants will learn the functions between the propulsion control and the drive control units. In addition, the course will cover how to use the available programming and trouble-shooting tools, and will train the participants in operation and troubleshooting, with practical exercises.

Learning objectives

Upon completion of this course, the participants will be able to:

- Understand the safety requirements of medium voltage drive systems
- Understand the drive system topology
- Understand the function of propulsion and drive control
- Identify drive components and configure settings
- Operate the drive
- Run different test modes
- Understand the meaning of alarm and fault messages
- Troubleshoot and correct basic faults

Topics

- Safety procedures while working on the cycloconverter
- Overview of Cycloconverter operation principle
- Control system hardware
- Power system hardware
- High speed circuit breakers (operation and maintenance)
- Excitation system (brush/brushless)
- Operation and different drive modes
- Propulsion control software
- Cooling principle
- Software tools
- Hands on training
- Preventive maintenance
- Troubleshooting and repair
- Life cycle Information and upgrade solutions
- Getting support from ABB

Methods

Workshop with presentations and demonstrations held in the classroom.
Perform tests and measurements on an ACS6000c and PSR demonstration unit.
Visit to ABB MV drive factory assembly lines.

Student profile

Marine engineers and electro-technical personnel at operational and management level

Prerequisites

Marine power plant basic for technical staff in ABB propulsion and marine high voltage safety or similar knowledge is advisable

Duration

4 days

Venue

Turgi
Customer defined location

Additional information

Minimum 6, maximum 8 participants

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Course outline

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Day 1

- Course overview
- Safety around the drive
- Cycloncverter theory
- Drive components

Day 2

- High speed circuit breakers
- Cooling system
- PSR demo unit
- Visit to the MV-drives factory

Day 3

- Control SW
- Preventive maintenance
- Trouble shooting
- Changing power elements

Day 4

- General Information
- Life cycle
- Test and corrections
- Course conclusion and feedback