

ABB Marine Academy course description

H899 - DEGO II and III electronic governor systems

Course goal

The goal of this course is to train the participants in safe operation, troubleshooting, tuning and basic repairs of DEGO II and III electronic governor systems and ASAC actuators.

Learning objectives

Upon completion of this course, students will be able to understand and identify abnormal behaviour of the DEGO systems, locate faults in the different units, repair by replacement, perform calibrations and make fine tunings. They will also be able to perform basic maintenance and repairs on ASAC actuators.

Contents

- Basic theory of electronic governors
- Generator application
- ASAC actuators
- ABB DEGO II and III governor concept
- Trouble shooting techniques and repair
- Practical exercises

Methods

Lectures with demonstration on our simulator systems
Practical exercises on our simulator systems
Practical exercises in operating the PC based tool
DEGO III Aid

Student profile

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

Prerequisites

Marine power plant basic for technical staff in ABB propulsion is advisable. Basic electrical knowledge is required.

Duration

H899 DEGO II and III combined 5 days
H897 DEGO II 2 or 3 days*
H898 DEGO III 2 or 3 days*
*Depending on application

Venue

Rotterdam

Additional information

Minimum 4, maximum 6 participants
Propulsion application on request



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Course outline for generator application cruise vessel

Course outline

Day 1

DEGO II Theoretical Training

- Difference between QHFD552 and QHFD552A
- Basics overview, symbols & components:
- ASAC70 / QHFD420 / Fuel servo loop QHFD122S

DEGO II Practical Training

- Fuel servo loop adjustments:
- Speed control loop checking

Day 2

DEGO II Theoretical Training

- Control loops overview: Closed loop versus open loop
- Average load line
- Logical levels QHFD552(A)
- Power measurement principles
- Harmonics and filtering

DEGO II Theoretical Training

- Adjusting of the QHFD112S
- Speed droop value adjustment
- Testing/adjusting the:
 - QHFD500 / QHFD570 / QHFD571
 - QHFD574 / DSSX156

Day 3

DEGO II Practical Training

- Fuel adjustments to be made for the QHFD552
- Average load line testing
- Fault tracing

DEGO III Technical Training

- QHFQ552 & QHFQ420
- Hardware platform
- Analogue average load line
- Software handling
- LCD information
- Power measurement
- DEGO III Aid tool

Day 4

DEGO III Practical Training

- Adjusting/checking of the average load line
- Fuel servo loop adjustments
- Step response and speed loop checking
- Start fuel adjustment/check
- Speed droop value adjustment set
- PID adjustments with the built-in recorder

DEGO III Practical training

- Fault tracing

Day 5

DEGO III Practical training

- Theoretical back-up/review/questions
 - Motor/tacho inspection and test
 - Feedback adjustment
 - Limit switches adjustment
 - Feedback rod adjustment
 - Bearing inspection
- Exam and evaluation