

Training description

K251

Synchronous machines training

Training goal

The goal of the training is to give the participants a general understanding of

- large electrical machines and their applications
- basic mechanical and electrical theory of electrical machines

Learning objectives

Upon completion of this training the participant will be able to

- explain the basics of large rotating electrical machines, electrically as well as mechanically
- describe how the machines are functioning in relation to control equipment
- present some motor and generator applications
- explain what the main features of machines from ABB Machines in Västerås are
- explain after sales service and maintenance issues with regards to these machines

Participant profile

This training is mainly intended for external customers but also for ABB employees and others with an interest in large electrical machines.

Prerequisites

Students should have basic electrical and mechanical knowledge.

Topics

- Overview of the BU Motors and Generators product portfolio
- Electrical Machines - Theory
- Electrical Machines - Mechanical design
- Hazardous Area Design
- Theory of Synchronous Machines
- Comparison Induction and Synchronous machines
- Commissioning
- Control Panels for Synchronous Machines
- Motor Starting
- Vibration in large AC Machines
- Electrical Insulation Theory
- Maintenance of Synchronous Machines
- Guided Workshop Tour
- Test room (3 stations x 30 min)

Training type and methods

This is an instructor led training with visits in the factory. The training material and lectures will be in English.

Duration

The duration is three days.

Course fee

The participant's fee is 1200 €. Travel and accommodation should also be covered by participant.

BU Motors and Generators Training

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Day 1 (09:30 – 16:00) Västerås

09:30 **Introduction and practical details**

09:45 **Overview of the BU Motors and Generators product portfolio**

10:05 *Coffee*

10:30 **Electrical Machines**
Theory

11:30 *Lunch*

12:30 **Electrical Machines**
Mechanical design

14:00 **Hazardous Area Design**

15:00 *Coffee*

15:20 **Theory of Synchronous Machines**

16:10 **End of day**

Day 2 (09:00 – 16:20) Västerås

09:00 **Comparison Induction and Synchronous Machines**

09:50 **Commissioning**

10:35 *Coffee*

11:00 **Control Panels for Synchronous Machines**

12:00 *Lunch*

13:00 **Guided Workshop Tour**

14:30 *Coffee*

14:50 **Motor Starting**

16:20 **End of day**

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Day 3 (09:00 – 15:10) Västerås

09:00 **Vibration in large AC Machines**

09:45 *Coffee*

10:00 **Electrical Insulation Theory**

11:05 **Maintenance of Synchronous Machines**

12:05 *Lunch*

13:00 **Test room**
(3 stations * 30 min)

14:40 **Summary**

15:10 **End of day**