
K251

Synchronous machines training

COURSE DESCRIPTION

Course goal

The goal of the course 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 course, students 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.

Course fee

The participant's fee is 1500,-€. Travel and accommodation should also be covered by the participant.

Topics

- Overview of Motors and Generators product portfolio
- Electrical machines – theory
- Electrical machines – mechanical design
- Hazardous area design
- Theory of synchronous machines
- Comparison of Induction and synchronous machines
- Commissioning
- Control panels for synchronous machines
- Motor starting
- Vibration in large AC machines
- Electrical insulation theory
- Life cycle management
- Guided workshop tour
- Test room (3 stations x 30 min)

Training type and methods

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

Course duration

The duration is 3 days.

Motion Academy

[ABB Training - ABB Service for Motors and Generators](#)

Agenda

Day 1	Date
9:30	Introduction and practical details
9:45	Overview of 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	Date
9:00	Comparison induction and synchronous machines
9:50	Commissioning
10:35	Coffee
11:00	Control panels for synchronous machines
12:00	Lunch
13:00	Guided workshop tour
14:30	Coffee
15:50	Motor starting
16:20	End of day
Day 3	Date
9:00	Vibration in large AC machines
9:45	Coffee
10:00	Electrical insulation theory
11:05	Life cycle management
12:05	Lunch
13:00	Test room (3 stations x 30 min)
14:40	Summary
15:10	End of day