COURSE DESCRIPTION

G781 ACS2000
Service & Commissioning training

Course goal
The goal of this course is to introduce the ACS2000 Variable Frequency Drive to the field service engineers and to teach them in a safe and instructive environment the techniques required to carry out the correct procedure in commissioning, servicing and maintaining this drive.

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

- Understand the drive system topology
- Carry out basic commissioning, service and maintenance work as well as fault-tracing
- Verify and modify drive parameters
- Locate and replace faulty hardware components
- Using MV Drive Portal database to update the knowledge of the drive, get familiar with spare parts and warranty issues handling
- Start the certification program for commissioning; after completion of the certification program the participants are allowed to commission the medium voltage drive system

- Successful completion of the e-learning course (G781e)
- The participant will be enrolled automatically into the e-learning course (G781e) by applying for the G781 course.

E-learning topics
Generalities

- ABB medium voltage drives family overview
- Five-level inverter topology, DTC control
- Options and typical applications

Control Hardware description

- Component and PCB functions
- Main circuit diagrams
- PCB settings and configuration

Hardware description

- 6 kV versions, Active Front End (AFE) and Diode Front End (DFE) versions
- 4 kV AFE version

Protection concept

- Fault classes
- Protective reactions

Classroom topics
Generalities

Participant profile
Commissioning, field service, testing and maintenance personnel of ABB or certified technical partners.

Prerequisites

- Good engineering knowledge of AC drives and motors
- Personal computer knowledge
- Laptop with DriveDebug and DriveWindow loaded, fiber optic programming tool (RUSB-02)

ABB Switzerland Ltd
Learning Center MV Drives
Austrasse
CH-5300 Turgi

E-mail: ch-learningcenter-mwdrives@abb.com
Visit our page mylearning.abb.com
- MV database instruction
- Software compatibility and downloading sequence
- How to use software tools
- How to give a short customer training after commissioning

**Demonstration drives**
- Component recognition and location
- Starting/stopping procedures
- Motor runs and tuning

**Drive commissioning**
- System requirements, preconditions for commissioning
- Commissioning procedure, application configuration
- Using DriveStartup for reporting and commissioning

**Software description**
- Software structure, parameter’s description
- Pass codes, service parameters

**Fault-tracing and troubleshooting**
- Alarm and fault indications
- Measuring and replacing PCB’s and power components

**Methods**
- e-Learning, internet based course
- Lectures and demonstrations
- Practical exercises with training equipment

**Follow-up training**
- ACS2000 Expert Days

**Duration**
Ca. 2 days e-learning
4 days classroom training
Max. 8 participants

**To register:**
Please apply online (signup required):
ABB MyLearning/G781
Custom-tailored training courses or standard training at additional course dates are available on request.
Please note: The course is only carried out if at least 4 participants have been booked.

**Course outline**

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>DAY 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV database instruction</td>
<td>Commissioning manual</td>
<td>First energizes the Drive</td>
<td>Preventive maintenance</td>
</tr>
<tr>
<td>Component recognition and location</td>
<td>Cold commissioning procedure with Drivestartup</td>
<td>First start the motor</td>
<td>Checking/exchanging semiconductors</td>
</tr>
<tr>
<td>Software downloading</td>
<td>Passcode, service parameters</td>
<td>Motor model test and optimization</td>
<td>Troubleshooting procedure</td>
</tr>
<tr>
<td>Drive system specifications</td>
<td>Replacing the phase modules</td>
<td>Common Problems during commissioning</td>
<td>Troubleshooting exercises</td>
</tr>
</tbody>
</table>

**Classroom training**

**Hands-on training**

---

ABB Switzerland Ltd
Learning Center MV Drives
Austrasse
CH-5300 Turgi

E-mail: ch-learningcenter-mvdrives@abb.com
Visit our page
mylearning.abb.com
COURSE DESCRIPTION **ADD-ON FOR G781**

**G781vc ACS2000 Service & Commissioning**

**Virtual Classroom**

**Preface**
Due to travel restrictions in connection with COVID-19, the access to normal classroom trainings is limited. Therefore, we offer the course also as Virtual Classroom version. Certain parts of the course can be taught through web tools, but some hands-on exercises cannot be covered through web. Therefore, special prerequisites and certification limitations apply.

**Main learning objectives and topics**
The objectives and topics are the same as for the regular classroom course (see course description **G781 – ACS2000 Service & Commissioning**), except hands-on training requiring power hardware.

**Participant profile**
Same as for regular classroom course

**Prerequisites**
- On-site service Basic certificate of another ACS MV Drive
- Successful completion of the preparation tasks

**Methods**
- In the mornings: Approx. 3h instructor-led Virtual Classroom training (e.g. via MS Teams)
- Interactive training with state-of-the-art online tools in small classes of 5 – 10 participants.
- In the afternoons: Self-learning tasks on training equipment accessed over web, self-study and self-assessments; trainer available for support

**Limitations**
The following topics cannot be covered to the same degree as in the regular classroom training:
- Operation of demo unit
- Phase module replacement
- Semiconductor check
- Fault finding exercises on demo unit
Those topics are taught as good as possible using videos, demonstrations, case studies, etc.
But the practical skills have to be acquired through other means in order to achieve the certificate.
The certificate can be acquired by a self-declaration followed by an assessment.

**Duration**
- Up to 15 hours e-learnings and preparation tasks
- 4 days Virtual Classroom training

**To register**
Please apply online (log in to MyLearning first): ABB MyLearning/G781vc