COURSE DESCRIPTION

G731 ACS5000 Air Cooled Operation & Maintenance
Classroom training in Turgi, Switzerland

Course goal

The goal of this course is to train the participants in the safe operation, control, configuration, troubleshooting and maintenance of the air cooled ACS5000.

Main learning objectives

Upon completion of this course, the students will be able to locate the hardware components, to verify and replace drive's parts and to perform preventive maintenance. The use of the available programming and troubleshooting tools is trained by practical operating exercises.

Participant profile

Electricians, technicians and engineers who operate, maintain or troubleshoot the ACS5000 air cooled drive

Prerequisites

- Basic knowledge of AC motors and drives
- Basic knowledge using computers with Windows

Topics

Generalities

- ABB medium voltage drives family overview
- ACS5000 5-level inverter topology and DTC control

Hardware description (power electronics & control)

- Component and PCB functions
- Hardware schematics and electrical drawings
- PCB settings and configuration
- ACS5000 air cooled characteristics

Air cooling system

- Cooling circuit description
- Preventive maintenance

Operation

- Energize / de-energize, start-stop sequence
- Local operation with drive control panel and DriveWindow tool

Software introduction

- Software structure, parameters description
- Application configuration, parameter

Fault tracing and troubleshooting

- Alarm and fault indications
- Checking and replacing PCB's and components
- Using DriveWindow SW tool for configuration and troubleshooting
- Getting help from ABB

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Course type

This is a face to face class room training with maximum 8 participants.

Learning methods

- Lectures and demonstrations
- Practical exercises with training equipment
- Factory visit

Duration

3 days

To register:

Please apply online (signup required):
ABB MyLearning/G731
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

DAY 1	DAY 2	DAY 3
— Course overview — Product overview — Power part — Control part — Integrated transformer (Optional) — Excitation Unit (Optional)	— Hands-on: Checking/replacing semiconductors — Hands-on: Operation of the drive — Hands-on: SW tool DriveWindow — Preventive maintenance	— Drive system requirements — Application SW — Protection concept — Hands-on: Troubleshooting, fault finding exercises

Classroom training

Hands-on training

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COURSE DESCRIPTION **ADD-ON** FOR **G731**

G731b ACS5000A Operation & Maintenance
G731vc ACS5000A Operation & Care
Web-based alternatives

Preface
Due to travel restrictions in connection with COVID-19, the access to normal classroom trainings is limited. Therefore, we offer variants with contents delivered over web.

Main learning objectives and topics
The objectives and topics are the same as for the regular classroom course (see course description *G731 – ACS5000 Air Cooled Operation & Maintenance*), except some hands-on exercises in the Virtual Classroom variant.

Participant profile
Same as for regular course

Prerequisites
Same as for regular course

Option 1: Blended Learning

The training is split in 2 parts: Web-based training followed by the classroom hands-on session

Virtual Classroom part
- Content distributed over 3 days (experience has shown, that more than half a day virtual training at once is tiring and therefore not effective)
- In the mornings: Approx. 3h instructor-led virtual classroom training (e.g. via Skype)
- Interactive training with state-of-the-art online tools in small classes of 5 – 8 participants.
- In the afternoons: Approx. 1h self-learning tasks and self-assessments, trainer available for support

Hands-on part
- 2 full days of classroom training with training equipment (instead of 3 days)
- Focus on practical exercises, putting theory into practice

Advantages of Blended Learning
- Virtual classroom part is location independent; no travelling required
  → COVID-19 does not stop us from learning
- Participants have a common level of knowledge, when coming to the hands-on part
  → Time for practical exercises on the training equipment is maximized
- Combination of different learning methods is more effective
- Recalling information, which was learned earlier, strengthens the knowledge

Disadvantages of Blended Learning
- Virtual Classroom training is mainly limited to theoretical topics
  → This makes it more tiring
- No real hardware at hand during Virtual Classroom sessions
  → Makes it more difficult to visualize the knowledge
- The whole training is less compact, due to split over 2 weeks

Duration
- 3 days Virtual Classroom training
- 2 days hands-on training in our Learning Center

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Option 2: Virtual Classroom only

Methods
- In the mornings: Approx. 3h instructor-led Virtual Classroom training, e.g. via MS Teams. Experience has shown, that more than half a day virtual training at once is tiring and therefore not effective.
- 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
- Semiconductor check and replacement
- Fault finding exercises on demo unit

Those topics are taught as good as possible using videos, demonstrations, case studies, etc.

Duration
3 days Virtual Classroom training

To register
Please apply online (log in to MyLearning first): ABB MyLearning/G731

Recommended follow-up: Hands-on training
- Hands-on training in our training center can be booked separately at a later date.
- Up to 2 full days of classroom training with training equipment
- Focus on practical exercises, putting theory into practice
- Combinations with other trainings, Factory Acceptance Test, etc. possible

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