
COURSE DESCRIPTION

G820 MEGADRIVE-LCI with AC 800PEC Operation & Maintenance

Course goal

Load Commutated Inverters (MEGADRIVE-LCI) or in other terms Static Frequency Converters (SFC) are used together with large synchronous motors as an adjustable speed drive or to start large gas turbines without high inrush current on the power supply. These systems are available in a power range from 1MW up to 100MW.

Main learning objectives

The course goal is to teach students to operate, maintain and troubleshoot a MEGADRIVE-LCI controlled by AC800PEC.

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

- know the function of a MEGADRIVE-LCI
- know the different modes of operation
- are able to operate and maintain a MEGADRIVE-LCI
- are able to localize faults and replace defective parts

Participant profile

Operating personnel
Maintenance personnel

Prerequisites

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

Topics

Power electronics in general

- The function of rectifiers and inverters

Static Frequency Converter

- Principal function
- Configuration for various applications
- Regulation circuits
- Characteristic curves
- Limitations, monitoring and protection

Operation

- Operating modes
- Annunciation
- Safety in relation to MEGADRIVE-LCI

Documentation

- Project documentation
- How to read the Hardware schematics
- Hardware components
- Functions, settings
- Interfaces to peripherals
- Water cooling / Air cooling
- Maintenance and Trouble shooting
- Replacement of Thyristors
- Software tools:
 - LCI Control Terminal
 - (Transient Recorder)
- Test programs overview

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

4 days

To register:Please apply online ([signup](#) required):
[ABB MyLearning/G820](#)

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	DAY 4
<ul style="list-style-type: none"> — Course overview — Basic LCI-Theorie <ul style="list-style-type: none"> - overview - rectifier - mode of operation - blockdiagram - on/off sequences - protection — Characteristic curves 	<ul style="list-style-type: none"> — Operator Training <ul style="list-style-type: none"> - Converter - Safety - Operation - Fault handling — Users manual operation — Maintenance Training <ul style="list-style-type: none"> - Safety instruction - Converter overview - Documentation - How to read hardware drawing — Factory tour 	<ul style="list-style-type: none"> — Maintenance Training (cont.) <ul style="list-style-type: none"> - Preventive maintenance - Corrective maintenance — Overview Hardware component <ul style="list-style-type: none"> - signal flow - setting 	<ul style="list-style-type: none"> — Maintenance Training (cont.) <ul style="list-style-type: none"> - Testprograms overview - User's manual - Troubleshooting



Classroom training



Hands-on training

COURSE DESCRIPTION ADD-ON FOR G820

G820b MEGADRIVE LCI Operation & Maintenance

G820vc MEGADRIVE LCI 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 *G820 - MEGADRIVE LCI 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

- 3 full days of classroom training with training equipment (instead of 4 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
- 3 days hands-on training in our Learning Center

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
- Preventive maintenance hands-on
- 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

4 days Virtual Classroom training

To register

Please apply online (log in to MyLearning first): [ABB MyLearning/G820](#)

Recommended follow-up: Hands-on training

- Hands-on training in our training center can be booked separately at a later date.
- Up to 3 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