Course description

G300

ACS600 single drive, 1 kW – 3000 kW, Operation and maintenance

Course type
Classroom course

Course Duration
The course duration is 3 days.

Course Goal
The goal of this course is to teach students to install, start-up, adjust, operate, maintain, troubleshoot and repair ACS600 single drive, 1 kW-3000 kW.

Student Profile
This course is intended for electricians, technicians, and engineers who install, operate and service ACS600 single drives.

Prerequisites
- Basic knowledge of electronics
- Experience in using a Windows PC

Description
This course belongs to a learning path that may utilize blended learning. Please see the accompanying figure of possible learning paths.

Course Objectives
Upon completion of this course, students will be able to:
- Start-up of ACS600 single drives
- Trace and correct faults
- Operate and maintain ACS600 single drives
- Use the drive PC-tool
- Make parameter backups and restore

Main Topics
- Hardware and software overview
- Direct Torque Control (DTC) principle
- Component and board functions
- Reading and interpreting circuit diagrams
- ACS600 Standard Application Program
- Control panel functions
- Using application macros to set parameters
- Locating and identifying terminals, boards and other components
- ACS600 single drive start-up
- Fault tracing methods
- Communication alternatives
- Optional equipment overview
- DriveWindow commissioning and maintenance tool operations
- Operations and measurements of the supply sections
- Exercises with demo equipment
Agenda

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Day 1

09:00  Course information
09:10  Presentation of ACS600 product and DTC
10:00  Coffee break
10:15  Control panel functions and start-up procedure
  ▪ Exercise: Control panel, start-up
11:00  Inverter hardware
  ▪ Main circuit constructions (frame sizes)
  ▪ Main circuit diagrams
  ▪ Control boards
12:00  Lunch
13:00  Inverter hardware continues
14:15  Coffee break
14:30  Hardware
  ▪ Exercises with ACS601, ACS604, phase module etc.
16:00  End of day 1

Day 2

08:30  Diode supply section, DSU
  ▪ Construction
  ▪ Operation
  ▪ Diagrams
09:30  Coffee break
09:45  Thyristor supply section, TSU
  ▪ Construction
  ▪ Operation
11:00  DriveWindow 2.x
  ▪ Parameter settings, monitoring, backups
12:00  Lunch
13:00  Exercises
  ▪ DriveWindow 2.x
  ▪ Thyristor supply, TSU
14:15  Coffee break
14:30  Exercises continue
16:00  End of the day 2

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Day 3

08:30 Drive firmware
   ▪ Application macros
   ▪ Parameters: Control and scaling groups
   ▪ Communication alternatives overview
   ▪ Exercise

10:00 Coffee break

10:15 ACS600 Options
   ▪ IO Extensions
   ▪ Braking resistors
   ▪ Filters and chokes
   ▪ Communication alternatives overview

11:00 Fault tracing and IGBT upgrading

12:00 Lunch

13:00 Fault tracing and IGBT upgrading continues
   ▪ Exercise: checking of power stage, replacement of power plates, backups, IGBT upgrading

14:30 Coffee break

14:45 Exercises continue

15:30 Brief summary of the course
   ▪ Question and feedback
   ▪ Evaluation form

16:00 End of the course
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ACS600 Single Drive Learning Paths

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<tr>
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<th>Duration</th>
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<td>ACS600 single drive</td>
<td>3 days</td>
<td>G300</td>
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<tr>
<td>Preventive Maintenance</td>
<td>1.5 days</td>
<td>G304</td>
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<tr>
<td>LV AC Drives Maintenance Basics</td>
<td>0.5 days*</td>
<td>G106e</td>
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<tr>
<td>Operation and Maintenance</td>
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<td>G305</td>
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<td>1 kW-3000 kW</td>
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<tr>
<td>Operation and Maintenance</td>
<td>3 days</td>
<td>G305</td>
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<tr>
<td>Operation and Maintenance</td>
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<tr>
<td>ACS600 MotionControl Start-Up, Maintenance and Service</td>
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<td>1 kW-3000 kW</td>
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<td>G304</td>
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* The duration of the Internet courses depends on personal professional background and study pace

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