

## Course description

# A290

## Advant Controller 400 and Safeguard 400 Series Maintenance "Brush Up" & Safeguard Handling

### Course goal

The course goal is to teach students how to handle a Safeguard system without releasing an unwanted "shut down". The course is a refreshment course regarding maintenance and repair of AC400 systems.

### Learning objectives

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

- Describe functionality and operation of AC400 Series Controllers
- Be able to interact in a live Safeguard System without releasing an unwanted "shut down"
- General use of OnLine Builder for maintenance
- Use the OnLine Builder to signal trace in hardware and software
- Use and understand the status presentation of the system.
- Maintain "live" AC400 systems and replace hardware

### Participant profile

This training is targeted to maintenance personnel

### Prerequisites

General knowledge of control systems. Earlier experience with AC400 systems is a benefit.



### Topics

- General maintenance of a AC400 system
- Handling of a Dual Safeguard 400 series safety system
- Isolation of one node in a Dual Safety System
- MasterVote 3000 output stage
- Commissioning and fault localisation/corrections are carried out during the course.
- Course binder in English. Course language is English.

### Course type and methods

This is an instructor led course with interactive classroom discussions and associated lab exercises. Approximately 50% of the course is hands-on lab activities.

### Duration

The duration is 4 days.

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### Course outline

Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none"><li>■ Course overview</li><li>■ Signalflow</li><li>■ I/O and Hardware</li><li>■ System status</li><li>■ Application programs</li><li>■ AMPL logic</li></ul>	<ul style="list-style-type: none"><li>■ Review - Q/A session</li><li>■ OnLine Builder</li><li>■ OnLine Builder commands for maintenance</li><li>■ Fault tracing, maintenance and repair</li></ul>	<ul style="list-style-type: none"><li>■ Safeguard overview</li><li>■ Loading application and start up</li><li>■ System Status</li><li>■ Isolation</li><li>■ Master Vote 3000 output stage</li><li>■ Handling of a Dual System</li></ul>	<ul style="list-style-type: none"><li>■ Review - Q/A session</li><li>■ Loop monitored digital inputs</li><li>■ Modifications in a "live" system</li><li>■ Safety Backups</li></ul>

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