

## Wartung und Bedienung von 3WL und 3WA - Leistungsschaltern (LV-CBMAIN)

### Short Description

The course is primarily aimed at maintenance and operating supervision personnel. Participants will learn the design, functional principal and operation of the 3WL and 3WA circuit breakers as well as how to inspect and maintain it, identify faults and exchange spare parts if required. Basic knowledge of low-voltage protection technology and circuit-breaker communication are trained.

### Objectives

The course aims to give participants specialized knowledge about the maintenance and operation of 3WL and 3WA circuit breakers. The basic knowledge of low-voltage protection technology and circuit breaker communication is trained ready for use.

### Target Group

- Operation
- Maintenance personnel

### Content

- Introduction and basic principles of low-voltage controlgear, switching principles, applications
- Design, function and operation of 3WL and 3WA circuit breakers
- Differences and new features of the 3WA circuit-breaker, switchgear integration and retrofit
- Diagnosis of main contacts and arcing chutes
- Comprehensive practical part with inspection and maintenance performance, installation and de-installation of the available accessories according to the catalog (such as ETU, motor operator, shunt release), inspection and maintenance instructions
- Introduction in protection settings of circuit breakers (faults, characteristic curves, selectivity, back-up protection)
- Implementation of the protection settings on the ETUs of the 3WL and 3WA with practical training
- Firmware update and software upgrade of the ETU600 of the 3WA
- Test facilities of 3WL and 3WA circuit breakers (internal testing, manual tester, software-supported testing on the 3WA including documentation)
- Basics of communication (e.g. Ethernet, bus topologies)
- Presentation of the communicative components of the 3WL and 3WA circuit-breakers
- Presentation and practice with the powerconfig software tool
- Support available from Siemens (documents, website)

### Prerequisites

We recommend the following free WBTs to prepare for the classroom training:

Protection technology in low-voltage power distribution ([WT-LVAPS](#))

Open circuit breakers 3WL ([WT-LVA3WL](#))

Open circuit breakers 3WA ([WT-LV3WA](#))

### Note

Practical exercises on training systems (3WL and 3WA circuit breakers and demo case).

Please bring your own safety work shoes!

### Type

Face-to-face training

### Duration

3 days

### Language

de