

## Maintenance SIMOCRANE, SIMOTION/SINAMICS (CR-MAINT)

### Objectives

This practical course is guiding attendants to work on SINAMICS infeeders, inverters, motors and brakes of the actual rating as found on modern cranes.

Due to a special configuration of the training system 2 motors of original rating can be operated at full speed, voltage and current. For 1 motor typical loading will be simulated using the second motor as load simulator. A full-sized Bubenzer disk brake is installed to practice tuning of the drive for proper brake setting and - release.

Handling of infeed and inverter faults is practiced to the extend of component level repair and system recovery.

The SINAMICS infeed and inverters are controlled from a SIMATIC S7-400 via PROFIBUS just as on the real crane control system.

The SIMOCRANE Crane Management System is available on the training system.

### Target Group

Maintenance supervisors, maintenance technicians of container terminals, ports, steel mills.

Technical personnel from crane builders and service companies involved in crane control system service and maintenance.

### Content

This course contents is:

- SIMATIC S7-400 and S7-300

Setup communication to the SIMATIC S7 PLC and check the proper functioning of the PLC. Restore the original program to the PLC.

- PROFIBUS communication

Troubleshooting PROFIBUS communication, understanding how PROFIBUS is working and how it is implemented on a crane.

- DRIVE-CliQ communication

Check the DRIVE-CliQ connections, use the topology in SCOUT to do this. Understand the DRIVE-CliQ rules for cranes.

- Ethernet communication

Troubleshooting Ethernet communication, understanding how Ethernet is working and how it is implemented on a crane.

- SINAMICS control unit CU320-2

- SINAMICS infeed AIM and ALM

- SINAMICS motormodule, sensormodule, etc

- SIMOTION

Function of the module's. How to troubleshoot the modules. What to do in case of replacing a module.

- SIMOCRANE basic application

Functionality of SIMOCRANE, how to troubleshoot. How to use the software tools, STARTER tool, SCOUT, SIMATIC manager.

- SIMOCRANE - CMS (crane management system)

How to use the system.

- Ground fault detection in IT network with Bender sensing module

How to use and test the Bender sensing module.

- Simulation and monitoring realistic drive loading

- Exercises and trouble shooting on the real size system

- SINAMICS failure handling and repair

Use multimeter to diagnose. Replace components. (F.I: PowerPacks, Controllers, Sensor Module)

- Demo with SIMOSEC switchgear

### Prerequisites

prerequisites to this course is basic knowledge of SIMATIC S7 and cranes and drives.

### Type

Face-to-face training

### Duration

5 days

### Language

en

### Fee

2,570 EUR