

Online-Training - SIMOCRANE Crane Physics and Drive sizing (CR-BASICS)

Kurzbeschreibung

This course provides practical knowledge about the mechanical systems of crane installations and their electrical drive technology. The focus is on the interaction between mechanics, motors, and converters – with the goal of safely and efficiently designing complete drive systems for cranes.

Course costs EUR 750,00, but free of charge for Certified Solution Partners of Cranes.

[also available as Face-to-Face training](#)

Ziele

Participants will learn to:

- understand how mechanical requirements such as power, torque, speed, and acceleration relate to electrical drive systems,
- explain the functionality of AC motors and the role of frequency converters in crane applications,
- correctly design electrical drive systems for cranes – from selecting suitable motors to sizing power electronics,
- develop a fundamental understanding of the physical relationships between mechanics and electrics in crane installations,
- make informed technical decisions to create efficient and reliable drive solutions.

Zielgruppe

Sales engineers, Hardware and software engineers, business developers with a technical background.

Inhalte

Day 1 – Fundamentals of Crane Mechanics and Motors

- Introduction to crane types, market segments, and types of movement
- Mechanical basics: SI units, types of motion, rope guidance, gearboxes, inertia
- Torque/speed diagrams, static and dynamic torque calculation, duty cycles
- Introduction to AC motor theory: slip, number of pole pairs, frequency, torque behavior, derating at low speeds

Day 2 – Motor Selection and Converter Technology

- Crane motors: mounting types, cooling methods, protection classes, SIMOTICS motor portfolio
- Motor selection and sizing: selection processes, field weakening, practical examples
- Basics of voltage intermediate circuit converters: semiconductors, converter configurations, network effects, braking resistors
- Drive configurations for different crane types (e.g., STS, OHBC, retrofit)

Day 3 – SINAMICS Sizing and Practical Exercises

- SINAMICS S120 sizing example for STS cranes
- In-class exercise
- Solution of the sizing exercise
- Derating factors and their influence

Day 4 – Deepening and Q&A

- Practical sizing exercise using Excel: input values, motor data adjustment, current and torque calculation
- Application example to industrial cranes (e.g., OHBC)
- Open Q&A session with all trainers

Day 5 – Final Exam

- Multiple-choice test
- Practical test on drive sizing

Teilnahmevoraussetzung

A degree in electrical engineering and Basic knowledge of drive technology and physical principles is beneficial.

Hinweise

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Typ

Online-Training

Dauer

5 Tage

Sprache

en

Preis

750 EUR

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