

## SINAMICS S120 - Parameterizing and Optimization (DR-S12-OPT)

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### Short Description

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In this course you learn to optimize control structure of the drive system SINAMICS 120. Therefore you gain the highest dynamics of the drive axis.

### Objectives

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You already know the control structure of the drive system SINAMICS 120 and use the automatic optimization as well as the trace function. In this course you learn how you reach the highest dynamics of the drive axis even at critical applications. After the course visit you understand the interplay of mechanics, motor and drive converter. You can examine the system by means of frequency analysis and parameterize filters against unwanted vibrations correctly. Also you achieve a stable load balancing of mechanical coupled axes.

### Target Group

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Commissioning engineers  
Engineering personnel

### Content

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Control system types overview  
System identification in time domain and frequency domain, Laplace transformation  
Frequency response, Nyquist and Bode diagram,  
Stability criteria  
Tuning methods of current, speed and position controller: Heuristic, gain optimum, symmetric optimum, linear optimum  
Reference model  
Controller adaptation and linearization  
Feed forward control, friction characteristic, symmetry filter  
Application examples for tuning of:  
▪ Two mass systems and multi mass systems  
▪ Load balancing of mechanically coupled drives  
Practical exercises at SINAMICS S120 with SIMOTICS synchronous motors

### Prerequisites

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Good knowledge of parameterization and commissioning of SINAMICS S120 in accordance with course DR-S12-PM (formerly DR-SNS-SI).

### Note

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none

### Type

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Face-to-face training

### Duration

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5 days

### Language

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