

# Course Contents

## SINAMICS S120 Parameterization and Commissioning (DR-S12-PM) – 5 days

**HRDF CLAIMABLE**

\*Subject to Approval

### Requirements

This training course encompasses the basics of the SINAMICS S120 drive system. It provides the technical knowledge required for startup, parameterization, drive optimization, and troubleshooting. Practical exercises for reinforcing the knowledge gained are carried out on the SINAMICS S120 case.

This course is for commissioning and configuring engineers, and service personnel who are involved with drive applications. Persons with basic knowledge of electrical engineering can attend this course.

### Objectives

On completion of the course, you will be able to implement automation solutions with the SINAMICS S120. You can carry out startup and optimization of the SINAMICS S120 quickly and effectively with skillful use of the STARTER commissioning tool. In this way, you reduce engineering costs and minimize downtimes in your plant.

### Topics

After attending the course, you can do the following:

- SINAMICS System Overview
- Object Components and Topology & Configuration
- CU320 Control Components
- Power Components/ Principle of Operation
- Commissioning with STARTER
- Diagnostics
- Speed Set point Channel
- Configuration Drive Object Vector
- Types of Control/ Speed Control Loop
- Communication Via PROFIBUS
- Restart On-the-fly & Bypass
- Brake Control, Motor Changeover

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### Course Certificate

Certificate of participation will be awarded after the training.

### Contact Information

**SIEMENS MALAYSIA SDN. BHD. (93008-X)**  
**GST Reg No. 000956203008**

Digital Factory/ Process Industries & Drives  
Level 1, Reception, CP Tower, No. 11, Jalan 16/11,  
Pusat Dagang Seksyen 16, 46350 Petaling Jaya, Selangor.

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e-Pass: [siemens.asia/e-pass\\_v2/ASEAN](https://www.siemens.com/asia/e-pass_v2/ASEAN)

Website: [www.siemens.com.my/sitrain](http://www.siemens.com.my/sitrain)

### Bank Details

Bank Name: Deutsche Bank (M) Sdn Bhd

Bank Account Number : 0020768000

Bank Address : 18th – 20th Floor, Menara IMC 8,  
Jalan Sultan Ismail,  
50250, Kuala Lumpur

Bank Swift Code : DEUTMYKLXXX

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### Daywise Schedule

#### Day 1

1. SINAMICS System Overview
  - The system concept of SINAMICS drive
  - SINAMICS drive design
  - Tools available for engineering and commissioning
2. Object Components and Topology & Configuration of Servo Drives
  - Structure of components and objects
  - Software architecture
  - Internal communication link Drive-CliQ

#### Day 2

3. Control Components
  - Processor module CU320
  - Terminal modules
  - Extension boards
  - Sensor modules
4. Power Components/ Principle of Operation
  - Power components of modular design of device types book size and chassis/ cabinet module
  - Principle of operation of line-side and motor-side power components

#### Day 3

5. Commissioning with STARTER/ Control Words/
  - BiCO-Technology
  - Commissioning and parameterize the drive system SINAMICS using the tool STARTER
6. Diagnostics
  - Diagnostics via LEDs and AOP30
  - Interpretation of fault messages and alarm indications
  - Diagnosis via STARTER
  - Application of diagnostics functions

#### Day 4

7. Speed Setpoint Channel/ Configuration Drive Object Vector
  - Defining of a speed setpoint
  - Parameterize of speed setpoint channel and its functions
  - Interconnection of signals via STARTER
  - Configuration of the drive object "VECTOR"
8. Types of Control/ Speed Control Loop
  - Types of Control of SINAMICS S120
  - Principle of V/Hz-control and vector control with and without encoder

#### Day 5

9. Communication Via PROFIBUS
  - Possibilities of PROFIBUS communication according to PROFIdrive V4
  - Integrate SINAMICS slave into the S7 Hardware Configuration
  - Use Standard Telegrams and adapt the interface "wiring"
10. Additional Functions: Restart On The Fly, Bypass, Brake Control, Motor Changeover
  - Selected functions of the operating types "Servo" and "Vector"

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Day	Time	Topics
Day – 1	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Introduction to Sinamics STARTER Control Units Additional system components
Day – 2	09:00 Hrs – 10:30 Hrs 10:45 Hrs – 12:00 Hrs 13:00 Hrs – 15:30 Hrs 15:45 Hrs – 17:00 Hrs	Control word, Setpoint, Device trace & Topology Chassis power units and cabinet modules Closed-loop control structure, servo mode Practical exercise
Day – 3	09:00 Hrs – 10:30 Hrs 10:45 Hrs – 12:00 Hrs 13:00 Hrs – 15:30 Hrs 15:45 Hrs – 17:00 Hrs	Communication using STARTER Upreading and Downloading of Back-up file Operating Instruction - Parameterizing Practical exercise
Day – 4	09:00 Hrs – 10:30 Hrs 10:45 Hrs – 12:00 Hrs 13:00 Hrs – 15:30 Hrs 15:45 Hrs – 17:00 Hrs	Basic Positioner Drive-based Safety Functions Communication Practical exercise
Day – 5	09:00 Hrs – 10:30 Hrs 10:45 Hrs – 12:00 Hrs 13:00 Hrs – 15:30 Hrs 15:45 Hrs – 16:00 Hrs	Further Drives Functions Function Diagrams Practical exercise Q& A/ Feedback

### **Break Timings:**

10:30 Hrs – 10:45 Hrs	Morning Tea Break
12:00 Hrs – 13:00 Hrs	Lunch Break
15:30 Hrs – 15:45 Hrs	Afternoon Tea Break
17:00 Hrs – 17:15 Hrs	Recess & End of Day