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Simatic PCS7 System

Course content:

- System overview and architecture: subsystems for automation, operation, communication and engineering.
- Configuration concept: from the field level up to the HMI level.
- Network and hardware configuration.
- Process Object View as a plant based structure of the project.
- Standardising by library and block concept, process tag types, models.
- Automation solutions by graphical configuration with CFC and SFC.
- Monitoring and controlling.
- Distributed engineering (Multi Project).
- HMI configuration: graphics, trending, alarming, reports.
- Configuration of client/server and server redundancy.

Designed for:

Engineering level course predominantly for personnel involved in the design and implementation of PCS7 process control system: control engineers, technicians, consultants. Also recommended for the operations and maintenance personnel requiring more in-depth knowledge of the system. e.g. for system modification tasks.

Course description:

As a user of the Process Control System SIMATIC PCS 7, you will learn how to apply the engineering features in a structured and efficient way. Supported by examples and exercises, demonstrating that the process automation of a plant is realised from the field level up to the HMI level. The key aspects of SIMATIC PCS 7 are covered, e.g. its system-wide consistency, plant oriented configuring, data and project management and the co-operation between the various components and tools.

Pre-requisite

Basic understanding of process control systems.

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</table>
Simatic PCS7 Service

Course content:

— Overview of Process Control Systems Architecture - I/O, field communications, controllers, Operator Station-Automation Station communications, Operator Station (OS) service, OS client/server communications, OS client/multi-client
— Operations level Hardware and Software diagnostics - viewing and interpreting OS system alarm messages (Alarm Journal)
— Engineering level Hardware and Software diagnostics
— Replacing hardware component: I/O module, communications card, CPU, etc - what to do, what to watch for, compatibility of parts, etc
— Restoring PLC program, restoring OS application from backup

Designed for:

Operations and maintenance personnel involved in corrective and preventive maintenance of all items in the system, with emphasis on locating and correcting problems by replacement at the hardware level. The training course will include instructions on the use of diagnostics tools available in the PCS 7 system.

Course description:

As a maintenance person for Process Control System SIMATIC PCS7, you will get general familiarisation with the system overall: hardware, system software and application software. You will also learn how to apply system monitoring and diagnostic features in an efficient way. Supported by a variety of examples and hands-on exercises.

Pre-requisite

Basic understanding of process control systems.

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</table>
S5 Programming and Troubleshooting

Course content:
- S5 system overview, including program structure and basis.
- Principles of S5 operations using Ladder Diagram, Statement List and Control System Flowchart languages.
- Memory, Counter and Timer operations are covered, as well as basic logic operations.
Also included are conversion functions using system function blocks.
- S5 software functions for testing, diagnostics and troubleshooting.
- PLC configuration and addressing of analogue modules.
- Exercises are applied in a practical way using a fully equipped PLC to drive a model conveyor system.

Designed for:
- Engineers, technicians, consultants, electricians.

Course description:
- Identify the components and performance characteristics of SIMATIC S5.
- Make use of the various types of addressing and understand the program structure.
- Create, document, and test simple programs and be able to troubleshoot software and hardware problems.
- Understand the nature of minor program modifications to identify and overcome operational problems.
- Conduct monitoring and test functions to identify process status.

Pre-requisite
- Pre-requisite knowledge should include a basic understanding of PLC and concepts.
- Some knowledge of computer operations is essential.

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S7 Distributed Safety Configuration and Programming

Course content:
This course is aimed at everyone who wants to learn the handling, fault diagnosis, engineering and commissioning of the SIMATIC S7-300F fail safe automation system as well as the philosophy of failsafe controllers, the diagnosis and fault handling /correction.

Designed for:
Engineers, technicians, consultants, electricians.

Course description:
— Overview of the standards and guidelines.
— Configuring Distributed Safety: system parameterisation, programming, system handling, fault diagnosis, documentation, and acceptance.
— Fail safe peripherals with Distributed Safety.
— Diagnosis (CPU-Diagnosis, Peripheries-Diagnosis, further diagnosis tools).
— Programming: emergency stop, protective door, safety-oriented tripping, passivation, programming features.

Pre-requisite
— Basic knowledge of control and PLC concepts.
— An understanding and experience with STEP 7 Software or completion of the Programming and Troubleshooting Course.

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S7 PLC Classic

Totally Integrated Automation Training Course for Programming and Service Personnel

Course content:
— The course focused on the concept of both programming and fault finding for hardware and software with a practical hands-on approach.
— Topics covered include Totally Integrated Automation (TIA), incorporating the PLC, HMI and Networking.
— All topics are backed up with practical exercises using a conveyor model and simulator with ET200s, TP170B HMI and Micromaster VSD.

Designed for:
Engineers, technicians, consultants, electricians.

Course description:
— Using Simatic Classic software, recognise and evaluate software and hardware faults in a S7 TIA system
— Understanding the role of Functions (FC's) and Function Blocks (FB's)
— Storing process data in Data Blocks (DB's)
— Configuring and application of Organisation Blocks (OB's)
— Analogue value processing
— Integrate devices on a Profibus DP network
— Use Simatic WinCC Flex to configure HMI devices

Pre-requisite
Basic knowledge of control and PLC concepts with the ability to use a Microsoft Windows PC

Booking details:

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Simatic TIA Portal Programming (TIA-PRO1)

Course content:
- Overview and significant performance characteristics of the SIMATIC S7 system family
- The components of the TIA Portal: STEP 7, WinCC, communication
- Program execution in automation systems
- STEP 7 block types and program structuring
- Binary and digital operations in the function block diagram (FBD)
- Programming of reusable blocks in PC's and FB's
- Data management with data blocks
- Programming organisational blocks
- Test tools for system information, troubleshooting, and diagnostics
- Hardware Configuration and parameterization of the S7 1500 PLC, a PROFINET IO System with ET200SP and a Comfort Touch Panel
- Program documentation and saving
- Deeper understanding of contents through practical exercises on TIA system model

Designed for:
Engineers, technicians, consultants, plant maintenance personnel

Course description:
- The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC
- In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge standard PLC programming. You also receive an overview of HMI, PROFINET IO, and connecting drives.
- You can deepen your theoretical knowledge with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7 automation system, ET200 distributed I/O, Touchpanel, drive and a belt model.
- After attending the course, you can do the following:
  - Understand the fundamentals of interaction of the TIA components
  - Solve simple programming tasks using elementary STEP 7 instructions
  - Reliably operate the “TIA Portal” engineering platform
  - Program simple plant functions with basic STEP 7 instructions in the ladder diagram (LAD) or function block diagram (FBD)
  - Perform simple commissioning of TIA components

Pre-requisite
Basic knowledge of automation technology

Booking details:

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WinCC SCADA
Basic Configuration

Course content:
— The WinCC basic configuration course covers all aspects required for basic project configuration
— The course begins with the basic program structure and emphasis is given to practical exercises covering relevant topics

Designed for:
Engineers, technicians, consultants, electricians

Course description:
— WinCC System overview
— Creating a project and configuring internal and external tags
— Develop configuration techniques using the Graphics Designer
— Creating picture windows and customised objects
— Using the user administrator, alarm and tag logging
— Configuring reports using the Report Designer

Pre-requisite
— Basic knowledge of control and PLC concepts
— PC and Windows experience is essential

Booking details:

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Email sitrain.au@siemens.com
SINAMICS GH180 Operator and Maintenance
(Perfect Harmony)

Course content:
— Overview of drive and motor
— Personal safety aspects
— Design and function of the SINAMICS PERFECT HARMONY GH180 drive system
— System Topology: multi winding transformer, pre-charging circuit, power cells, cell bypass, actual value monitoring, hardware identification and circuit diagrams
— Application, function and interaction of control boards
— Fault log: Analysing alarm and fault messages
— Parameter assignment, diagnosis and data backup (via integral control panel, via TOOL SUITE PC program)
— Extensive lab work on setting parameters and analysing the drive’s functions (via integral control panel, via TOOL SUITE PC program)

Designed for:
Project, service, maintenance and operating personnel who are exposed to Sinamics GH180 (Perfect Harmony) drive systems and are involved in first line trouble shooting.

Course description:
This training course covers operating and servicing of SINAMICS PERFECT HARMONY GH180 drives. You will understand the functional concept and the control structures. You will diagnose its status and analyse its function using the integral cabinet control panel, the TOOL SUITE PC tool and the DEBUG tool.

Pre-requisite
Basic knowledge of electrical engineering.

Booking details:
Course Code: DR-GH180-IH
Duration: 2 days
Delivery: Training locations in major capitals.
On-site training is available (please contact us for pricing)
Investment: $3,000.00 + $300.00 GST (Prices may change without notice)
Phone: Siemens Service – Training 1 300 369 515 or our Training Coordinator on +61 0(3) 9721 2766
Email: sitrain.au@siemens.com
SINAMICS GM150 Operator and Maintenance

Course content:
- Design and function of components used within SINAMICS GM150
- Power Topology: pre-charging, line- and motor-side inverter, actual value monitoring, hardware identification and circuit diagrams
- Drive CLIQ-topology, objects and components
- Parameter assignment, diagnosis and data backup via operator panel AOP30 and PC-Tool STARTER
- Functionality and analysis of "set point channel" and "control"
- Analysing alarm and fault messages
- Configuring and analysing the PROFIBUS communication "SINAMICS GM150 - SIMATIC S7"
- Personnel Safety on working with Variable Speed Drives.

Designed for:

Project, service, maintenance and operating personnel who are exposed to Sinamics GM150 drive systems and are involved in first line trouble shooting.

Course description:

This training course covers operation and servicing of SINAMICS GM150 drives. You will understand the functional concept and the control structures. You will parameterize the drive, diagnose its status and analyse its function and faults using the operator panel AOP30 and the tool STARTER.

Pre-requisite

Basic knowledge of electrical engineering.

Additional Comments

The course combines theory and practical work. This will include a GM150 system overview and the functional description of system components. Sinamics control system exercises will be carried out on a Sinamics GM150 desk simulator that shares the control essentials with the GM150. The simulator is executed as a Sinamics low voltage drive system running on 240V supply including motor for closest real life feedback in a safe manner. Identification and handling of power components can be done on a customer full size production unit if safe access is made available during the duration of this course.

Booking details:

Course Code: DR-GM150-IH
Duration: 3 days
Delivery: Training locations in major capitals.
On-site training is available (please contact us for pricing)
Investment: $3,500.00 + $350.00 GST (Prices may change without notice)
Phone: Siemens Service – Training 1 300 369 515
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Email: sitrain.au@siemens.com
SINAMICS GL150 Operator and Maintenance

Course content:

- Design and function of components used within SINAMICS GL150
- Power Topology: pre-charging, line- and motor-side inverter, actual value monitoring, hardware identification and circuit diagrams
- Drive CLIQ-topology, objects and components
- Parameter assignment, diagnosis and data backup via operator panel AOP30 and PC-Tool STARTER
- Functionality and analysis of "set point channel" and "control"
- Analysing alarm and fault messages
- Configuring and analysing the PROFIBUS communication "SINAMICS GL150 - SIMATIC S7"
- Personnel Safety on working with Variable Speed Drives.

Designed for:

Project, service, maintenance and operating personnel who are exposed to Sinamics GL150 drive systems and are involved in first line trouble shooting.

Course description:

This training provides you with the basics for understanding operation and maintenance of the drive system SINAMICS GL150. You know the control structure and the communication interface. You are able to diagnose the state of the drive and to analyse faults. For this purpose you use the operator panel AOP30 and the PC-Tool STARTER.

Pre-requisite

Basic knowledge of electrical engineering.

Additional Comments

The course is split in equal parts into "theory" (classroom presentation) and "lab work. Lab work is carried out on Sinamics GL150 desk simulator that shares the control essentials with the GL150. The simulator is executed as a Sinamics low voltage drive system running on 240V supply including motor for closest real life feedback in a safe manner. Identification and handling of power components can be done on a customer full size production unit if safe access is made available during the duration of this course.

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SINAMICS G150 Operator and Maintenance

Course content:
- Drive system structure and documentation/service overview
- Basic commissioning, servicing, and diagnosis with AOP30 and the STARTER tool
- Hardware functions, circuit overview and function diagrams
- Setup, electrical connection, EMC
- Using the memory card: Structure and data backup
- Setting up an online connection between PC and SINAMICS S120 via PROFIBUS/Ethernet
- Data backup using the STARTER commissioning tool
- Structure of a STARTER project: Drive objects, components and DRIVE-CLiQ topology
- Test mode with STARTER: Operator panel, measuring functions.
- Recording signals with the trace function, long-term trace, triggers on bit patterns
- Procedures for replacing control units, power modules and motors
- Analysis of enabling signals and alarms
- Practical exercises using training devices

Designed for:

Project, service, maintenance and operating personnel who are exposed to Sinamics G150 drive systems and are involved in first line trouble shooting.

Course description:

This course provides you with the technical knowledge required for basic commissioning and service activities on SINAMICS chassis and cabinet G150 versions.

Practical exercises to identify faulty modules with outline of fault rectification utilising to replace user replaceable spares.

After the course you know how to commission and optimise a basic drive system, apply spare parts and monitor drive system using the AOP30 operator panel and STARTER tool.

An introduction to PROFIBUS communication is also provided.

This maintenance training is designed to increase the fault finding knowledge of technical personnel aiding in the diagnosis of possible drive operational issues

Pre-requisite

Basic knowledge of electrical engineering.

Booking details:

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SINAMICS S120
Diagnostic Chassis & Cabinet

Course content:

- Design and circuit diagrams of SINAMICS S120 chassis units
- Design and circuit diagrams of the SINAMICS S120 CM cabinet units
- Working with the AOP30 Advanced Operator Panel
  - Access to parameters and interfaces
  - Diagnostics, data backup and recommissioning
- Working with the Starter PC Software tool
  - Access to parameters and interfaces
  - Diagnostics, data backup and recommissioning
- Drive Diagnostics with
  - LED Indications
  - AOP Faults and Alarms (Fault Alarm history)
  - Starter Software Fault/Alarm buffer
  - Control Word/Status word and Missing enables
  - Using of trace function for signal recording (Oscilloscope function)
- Working on the converter when service is required:
  - Power unit diagnostics using the Multimeter
  - Replacing electronic modules and installing replacement parts
  - Replacing the Power Block

Designed for:

Service personnel and/or maintenance personnel.

Course description:

This course is specifically designed for personnel supporting SINAMICS S120 drive systems installations with power ratings exceeding 100 kW. The course will cover the various modules in a typical cubicle installation and their function. The focus is on understanding the Sinamics drive systems components in order to undertake first level targeted trouble shooting utilising block diagrams, the Starter Software and the AOP30 operator panel. This will include the replacement of major system modules. You will be able to back up data and recommission the drive system.

Pre-requisite

General knowledge about drive technology.

Booking details:

Course Code: DR-S12-CHA
Duration: 2 days
Delivery: Training locations in major capitals. On-site training is available (please call for separate pricing)
Investment: $2,500.00 + $250.00 GST (Prices may change without notice)
Phone: Siemens Service – Training 1 300 369 515
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SINAMICS G120
Commissioning and Service

Course content:
- Design of the SINAMICS G120 drive system
- Commissioning and parameterization with the STARTER commissioning tool
- Converter functions (flying restart, brake, closed-loop control)
- Data maintenance
- Flexible signal switching with BICO technology
- Safety Integrated functions
- Diagnostics and troubleshooting
- Practical exercises using the training case

Designed for:
Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics G120 drive systems and are involved in first line trouble shooting.

Course description:
In this course, we teach the know-how required for configuring and initial start-up of the SINAMICS G120 drive system. Practical exercises using a SINAMICS G120 Training Case are an important component. On completion of the course, you will have mastered safe handling of the STARTER commissioning tool. This allows you to effectively use different converter functions, optimize closed-loop controls, and thus achieve the greatest possible familiarisation when working with SINAMICS G120 systems.

Pre-requisite
Basic knowledge of electrical engineering.

Booking details:

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SINAMICS S120 Commissioning and Service

Course content:
- Design of the drive system and overview of documentation and service
- Start-up and parameterization with the STARTER commissioning tool
- Diagnostics and troubleshooting
- Fundamentals of communication via PROFIBUS
- Software functions, closed-loop control and optimization of SERVO and VECTOR drives
- Start-up of the integral basic positioner (EPOS)
- Practical exercises on the Training Kit

Designed for:
Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics S120 drive systems and are involved in first line trouble shooting.

Course description:
This training course encompasses the basics of the SINAMICS S120 drive system. It provides the technical knowledge required for start-up, parameterization, drive optimization, and troubleshooting.

Practical exercises for reinforcing the knowledge gained are carried out on the SINAMICS S120 Training Case. On completion of the course, you will be able to implement automation solutions with the SINAMICS S120. You can carry out start-up and optimization of the SINAMICS S120 quickly and effectively with skilful use of the STARTER commissioning tool. Trained staff has the potential to increase the availability of S120 systems in your plant.

You can gain advanced knowledge of communication with PROFIBUS in the DR-SN-COM Advanced Course.

Pre-requisite
Basic knowledge of electrical engineering.

Booking details:

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<tr>
<th>Course Code</th>
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<td>Duration</td>
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<td>Delivery</td>
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<td>Investment</td>
<td>$4,250.00 + $425.00 GST (Prices may change without notice)</td>
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<tr>
<td>Phone</td>
<td>Siemens Service – Training 1 300 369 515 or our Training Coordinator on +61 0(3) 9721 2766</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:sitrain.au@siemens.com">sitrain.au@siemens.com</a></td>
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</tbody>
</table>
SINAMICS S120 Maintenance

Course content:
- Principles and overview of the SINAMICS S120
- Motors and encoders for the SINAMICS S120
- Diagnostics by visual check and use of LED displays and multimeters
- Using the memory card: Structure and data backup
- Setting up an online connection between PC and SINAMICS S120 via PROFIBUS /Ethernet
- Data backup using the STARTER commissioning tool
- Structure of a STARTER project: Drive objects, components and DRIVE-CLiQ topology
- Test mode with STARTER: Operator panel, measuring functions, self-optimization
- Recording signals with the trace function, long-term trace, triggers on bit patterns
- Procedures for replacing control units, power modules and motors
- Motor defects: Diagnostic possibilities on site
- Encoder defects: Diagnostics, replacement and adjustment
- Overview of parameters for service purposes
- Analysis of enabling signals and alarms
- Practical exercises using training devices

Designed for:
Service and maintenance personnel who are exposed to Sinamics S120 drive systems and are involved in first line trouble shooting.

Course description:
Unplanned stoppages of production machines can cost a lot of money. In this course, you learn the proper way to handle a SINAMICS S120 drive system when a fault occurs. You will be able to rectify faults more quickly, and make minor adaptations to the parameter assignment. That will save time and money. The practical exercises are conducted on a booksize SINAMICS S120 converter system with synchronous and asynchronous motors.

Pre-requisite
Basic knowledge of electrical engineering.

Booking details:

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</table>
SIMOTION with SINAMICS S120 Maintenance

Course content:
- Overview of SIMOTION and SINAMICS S120 components
- Engineering system SCOUT and the integrated commissioning tool STARTER
- Structure of a SIMOTION project
- Setting up online connections via PROFIBUS and PROFINET
- Drive objects, components and topology
- Handling the CF-card: structure and backing up files
- Diagnoses with SCOUT and the SIMOTION IT Web browser
- Parameter overview for service purposes
- Service relevant changes to executable control programs
- Diagnosing and replacing of modules, motors, encoders, cables, and HMI
- Analysis of enabling signals and alarms
- Service functions: trace, measurement functions
- Practical exercises on training devices

Designed for:
Service and maintenance personnel who are exposed to Simotion/Sinamics S120 drive systems and are involved in first line trouble shooting.

Course description:
Unplanned downtimes of production machines can be very costly. This course shows you how to diagnose a SIMOTION D automation system and SINAMICS S120 drive system confidently should operational issues occur. You have the potential to rectify faults more quickly and make adjustments to the control program to suit changed operational conditions.

Practical exercises are carried out on a system installed with SIMOTION D, SINAMICS S120 in frame size: "book size".

Pre-requisite
Basic knowledge of automation and drive engineering.

Booking details:
Course Code          MC-SMO-IH
Duration             4 days
Delivery             Training locations in major capitals.
                      On-site training is available (please contact us for pricing)
Investment           $4,250.00 + $425.00 GST
                      (Prices may change without notice)
Phone                Siemens Service – Training 1 300 369 515
                      or our Training Coordinator on +61 0(3) 9721 2766
Email                sitrain.au@siemens.com
SINAMICS DCM
Commissioning and Service

Course content:

- Structure and functional principles of the SINAMICS DC MASTER converter: Control Unit CUD, Power Module, excitation circuit, interfaces
- Commissioning and parameterization activities using the BOP20 and AOP30 operator panels as well as the STARTER PC program
- Using CompactFlash cards: Structure and data backups
- Optimizing current regulation and closed-loop speed control, automatic optimization
- Function block diagrams: Setpoint channel, inputs/outputs, free function blocks
- Information on Drive Control Charts (DCC)
- Drive-end interface to PROFIBUS / PROFINET
- Expansions with Terminal Modules and Sensor Modules via DRIVE-CLiQ
- Parallel connections and peer-to-peer interfaces
- Operating states, alarms, and fault codes
- Service functions: Trace, measurement functions, diagnostic memories
- Practical exercises with the AOP30 and STARTER on training equipment

Designed for:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics DCM drive systems and are involved in first line trouble shooting.

Course description:

This training course shows you how to adapt the parameter settings for the converter in line with the application and DC motor. It also gives you the opportunity to broaden your theoretical knowledge by means of exercises carried out on special training equipment. Once you have completed the course, you will be familiar with the functions of a converter and the respective interfaces. You will also be able to commission a converter quickly and reliably. Routine fault diagnosis and rectification help save time and optimize the availability of your plant.

Pre-requisite

Basic knowledge of electrical engineering.

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Booking details:

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SINAMICS G180 (Dynavert T)
Commissioning and Service

Course content:
- Overview of SINAMICS G180 family.
- Introduction to converter technology.
- Operation of the drive with internal display and remotely via terminal inputs
- How to use WinIMS software. (parameter upload/download)
- Configuration of the drive including operating modes and drive functions
- Troubleshooting of drive system. (Fault analysis, Signal tracing, Oscilloscope functions)
- Documentation possibilities.
- Maintenance schedule.
- Practical exercises to strengthen the theoretical knowledge.
- Additional topics related to communication possibilities

Designed for:
Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics G180 drive systems and are involved in first line trouble shooting.

Course description:
The SINAMICS G180 drives are found, above all, in the oil and gas, chemical, power generation sectors, frequently also in conjunction with explosion-proof motors. In this course, you learn the commissioning of this drives and the proper setting of parameters according to the requirements of the application. Learning targets include the interpretation of alarm messages and tracing of circuit diagrams to identify potentially faulty customer replaceable modules.

Pre-requisite
General knowledge about drive technology.

Booking details:

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SIMOREG DC Master Maintenance

Course content:
— Principle of operation structure and function of a DC Motor
  • DC Shunt Motor
  • Thyristor Power Controller
  • Binector Configuration
  • Software Structure control and regulation
— Troubleshooting
  • Faults due to overloading
  • Faults in drive control
  • Interpretation of device internal fault messages
  • Localize faults with diagnose tool drive monitor.
  • Measures for motor replacement
  • Procedure for the exchange of a processor and printed circuit board. (CUD)
  • Check correct functioning
— Compiling and evaluating fault information
— Preventive measures against future failures – Cause analysis, possible preventative measures

Designed for:
Project, commissioning, service, maintenance and operating personnel who are exposed to Simoreg DC Master drive systems and are involved in first line trouble shooting.

Course description:
As a maintenance engineer you gain an understanding of the principles of operation and function of a DC drive control system and learn to efficiently detect and localise faults in the a DC Master system in particular. The learning targets include the ability to check for the correct operation of the drive system.

Pre-requisite
General knowledge about drive technology.

Booking details:

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</table>
SIMOVERT MasterDrives (product discontinued)

Maintenance

Course content:

- Principle of operation and function of AC-drives.
- Basic functions of converter, inverter, motor and control
- Hardware structure of converters for selected power classes
- Software structure: Set points, control and control circuits
- Troubleshooting practical training.
  - Interpretation of internal fault messages
  - Functional diagnostics of rectifier, inverter power supply and internal interface modules.
  - Device-internal hardware tests.
  - Measures for motor replacement, i.e. data comparison, re-optimisation
  - Intensive application of the tools Drive Monitor for the analysis of faults and signals
  - Procedure for the replacement of processor boards
  - Operational check
  - Gathering and evaluating fault information

Designed for:

Service, maintenance and operating personnel who are maintaining aging Simovert MasterDrive drive systems and are involved in first line trouble shooting.

Course description:

As a maintenance engineer you learn to be able to quickly detect and localize faults in AC-drives (SIMOVERT MasterDrives VC, MC) and check the central functions of an AC-drive system. You will be able to localise the cause of a fault within the drive system (converter, motor) and to rectify faults to the extent possible with user replaceable spares. The course is run on request for customers having an installed base with the potential utilising in part their production units for demonstrational purposes during the course.

Pre-requisite

General knowledge about drive technology.

Booking details:

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<td>(Prices may change without notice, minimum 6 participants)</td>
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<tr>
<td>Phone</td>
<td>Siemens Service – Training 1 300 369 515</td>
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Booking form

Fax: 1800 060 773 (Attn: The Training Coordinator)
Phone: + 61 (0)3 9721 2766
Email: sitrain.au@siemens.com

I would like to register for the following course/s (please fill in the document below)
please visit our website for the training schedule www.siemens.com.au/sitrain

Sender

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<tr>
<th>Title</th>
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Participants
(if different from person who is registering)

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<tr>
<th>Title</th>
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Payment Details:

- We have an account with Siemens. A purchase order will accompany this booking form
- We would like to open an account, please send a credit application form
- We would like to pay by credit card, card details are below:

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<th>Card Type (please circle)</th>
<th>Visa / Master Card / American Express (3% surcharge on Amex)</th>
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<td>Cardholder Signature</td>
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Conditions for Supply of Training Services by Siemens (Version 20072404-1 Legal) applies.
About Siemens
Siemens commenced operations in Australia in 1872 and is now one of the country’s most reliable and trusted brands. With well-established businesses in both Australia and New Zealand, Siemens is a diversified technology based solutions provider specialising in the areas of water, energy, environment, healthcare, productivity, mobility, safety and security.

Through these eight solution areas, Siemens is meeting the demands placed on businesses by the four global megatrends – climate change, demographic change, globalisation and urbanisation. Siemens in Australia and New Zealand is part of the Siemens global network of innovation which operates in 190 countries throughout the world.

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