

DRIVE ACADEMY®



SEW
EURODRIVE



DriveAcademy® Training Program

DriveAcademy® Training Program

As one of the leading specialists in the areas of drive technology and drive automation, SEW-EURODRIVE offers its customers first-class drive solutions, accompanied by various services that make the perfect addition to the comprehensive product portfolio. These include, among others, the practice-oriented product training programs at DriveAcademy®, SEW-EURODRIVE's central training institute.

Qualification is and remains a crucial component in successfully getting ahead of the competition. Development periods are getting shorter and shorter, especially in technical fields, making continuous learning an increasingly important factor in

future success. In order to keep you ahead of the game in regard to drive engineering expertise, DriveAcademy® offers various opportunities for further education and, in doing so, creates ideal basic conditions for the practical application of modern drive technology. Our training programs are unique in that they apply the latest methods for achieving the best learning results, provide customer orientation for greater training efficiency and demonstrate practical relevance using multifunctional training models.

See for yourself what our diverse range of training programs has to offer.

We look forward to seeing you.

Your DriveAcademy® team

Training for Drive

We promise to give you practice-oriented and demand-specific seminars with state of the art equipment in an excellent learning environment. Our trainers have hands-on experience and know how to hold motivating training sessions.

Place your trust in this seal of quality:

Training made by SEW-EURODRIVE



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Technical Training Programs

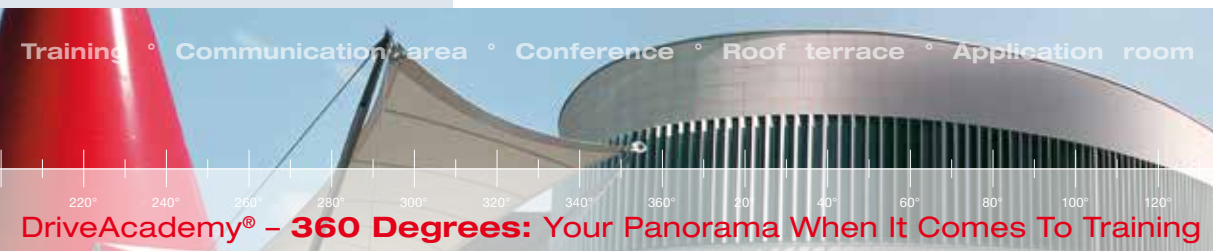
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Would you like to get a personal look into DriveAcademy® and the features of the training program in advance? Then we invite you to take your own personal, virtual tour through DriveAcademy®. At www.driveacademy.sew-eurodrive.de, you can explore our central training institute and all its facilities at your own pace.

DriveAcademy® – 360 Degrees: we look forward to seeing you there.

More Knowledge with One Click

At www.seminare.sew-eurodrive.de, the online seminar catalog provides detailed information about the training programs presented in this brochure. The user-friendly structure based on products or product categories will guide you easily and directly to the right training program for you.

The traffic light system will inform you right away whether the training you are interested in is still available. If there are still openings, you can register easily clicking the Register button. If there are no more available openings, you can make a reservation for the next seminar.

Your contact



Franziska Klemm

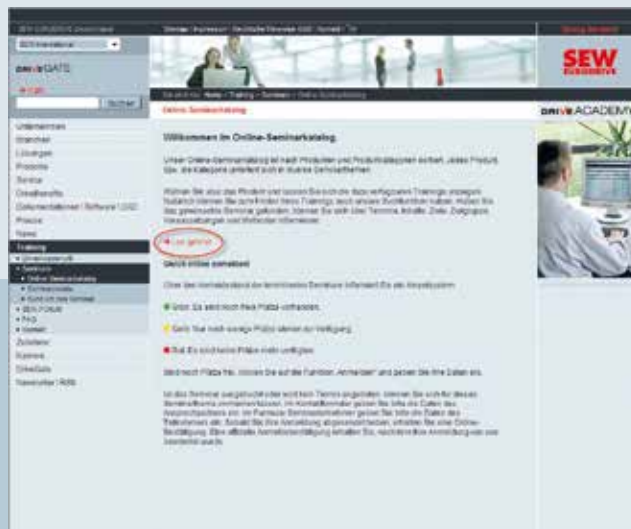
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Feel free to contact me by e-mail or over the phone with any questions or requests!

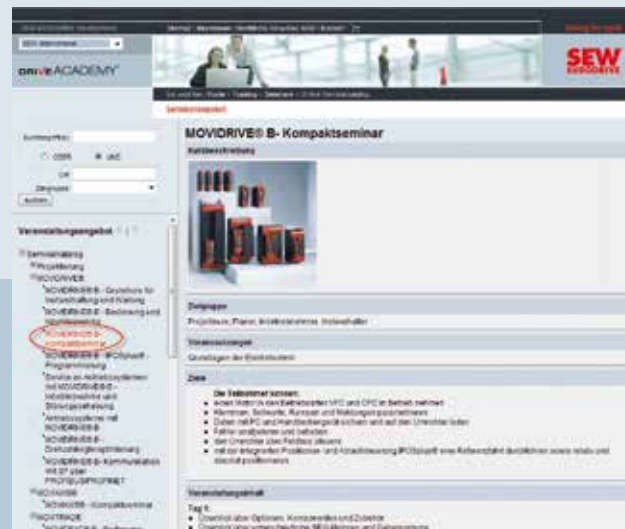
Online Registration at a Glance

www.seminare.sew-eurodrive.de

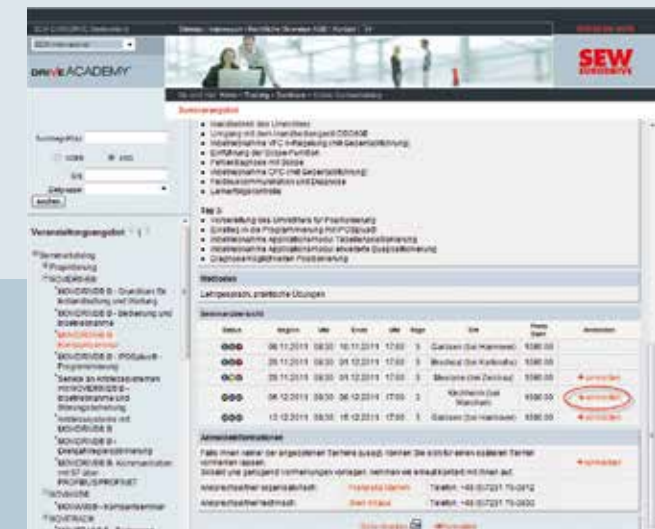
Step 1: Open the seminar catalog



Step 2: Select the training program



Step 3: Register



Training made by SEW-EURODRIVE

DriveAcademy® prepares your employees in the best possible way for the tasks and problems they will face during any given work day with training programs that contain basic theoretical principles along with many practical exercises. Training on and using modern training models ensures the necessary practical relevance for participants. Currently, DriveAcademy® uses three types of training models: mobile models, multifunctional models and the training facility.

Training facility in Bruchsal

Designed to encompass all aspects of materials handling technology, the training facility, with its wide variety of technology and applications, replicates processes as they are implemented in the industry across all sectors. Thus, it provides the training participants with an unparalleled realistic practical training ground.



Technology at the facility

- Linear motor technology
- Safety technology
- Control technology
- Decentralized installation
- Communication
- Control cabinet
- Controlled/non-controlled asynchronous motors
- Synchronous motors

Applications at the facility

- Scissor lift table with integrated conveyor belt
- Roller conveyors
- Strap conveyor
- Rotary tables with integrated conveyor belts
- Tilt carrying strap conveyors
- Two-axis gantry
- Gripper



Mobile training models

The mobile training models are selected by us based on the content of the training program. They are used when training programs are held at the customer's location. They consist of one inverter type and one motor type with or without encoder.

They can be used, for example, to test the connection to a fieldbus system, to set up communication between inverters or to teach about the handling and startup of various components.



Multifunctional training models

The multifunctional training models are only available for training purposes at the DriveAcademy® in Bruchsal. This model type is optimal for training participants in diverse tasks such as load simulation of gear units, synchronous operation with an

AC asynchronous motor and a synchronous servomotor, fault simulation as well as startup, operation and diagnostics with various inverters for different motor types.



Training – at your place or ours?

Training programs held at the DriveAcademy® or the facilities of our Drive Technology Center closest to you are easier on the bottom line than training programs held at your location. → **Effective cost savings of around 30%.** Comparing the two is worth it. You will find an overview of all training locations in Germany on page 46.

Drive Engineer – The Qualification Program Certified by the German Chamber of Industry and Commerce



Prerequisites: Training or further education to become a foreman, certified technician or certified engineer is preferred

General information:

- **Target group:** Technicians, foremen or engineers, maintenance and start-up personnel, service staff. Employees who also deal with project planning for systems.
- **Duration:** 20 days
- **Price:** EUR 3,800

Seminar contents

- Common drive systems and their control modes
- Mechanical and electrical components of a drive
- Gear units, motors, inverters
- Positioning systems
- Programming, startup, troubleshooting
- Special drive types
- Master/slave principles such as synchronous operation, electronic cam and synchronization
- Using diagnostic tools for fault analysis
- Testing the functionality of vital components
- Project planning for non-controlled and controlled drives; selection of all components using SEW-EURODRIVE standard documentation
- Project planning using the SEW-EURODRIVE Workbench project planning software

Seminar objectives

The participants...

- Are familiar with the latest drive systems and can start up and program them.
- Can perform fault analyses using diagnostic tools.
- Can test the functionality of the most important components.
- Know the relevant test procedures.
- Can assess a system according to EMC criteria.
- Can calculate and select frequency inverter controlled standard drives by hand.
- Can perform flashover calculations.
- Can calculate and select drives using the SEW-EURODRIVE Workbench project planning software.

The Seminars at a Glance

Seminar	Duration	Information about the seminar
Project Planning for Non-Controlled Drives	2 days	Page 10
Project Planning for Controlled Drives	3 days	Page 11
MOVIDRIVE® B – Servicing Drive Systems with MOVIDRIVE® B	4 days	Page 19
MOVIMOT® and MOVI-SWITCH® – Operation, Startup and Troubleshooting	1 day	Page 26
MOVIFIT® – Operation, Startup and Troubleshooting	1 day	Page 27
MOVIGEAR® – Operation, Startup and Troubleshooting	1 day	Page 28
MOVIPRO® SDC – Operation, Startup and Troubleshooting	1 day	Page 30
MOVI-PLC® – Compact Seminar	3 days	Page 32
Maintenance and Repair of SEW-EURODRIVE Gear Units	2 days	Page 37
Maintenance and Repair of SEW-EURODRIVE Brakemotors	1 day	Page 38
Drive Engineer Final Examination	1 day	
TOTAL DURATION	20 days	

Benefits for drive engineers

1) All drive engineers will receive a voucher to attend three days of seminar in Bruchsal's DriveAcademy® for free.*

2) Additionally, drive engineers can attend any other posted seminar day in Bruchsal's DriveAcademy® at a price of EUR 200 per seminar.*

* Both regulations apply for the duration of two years after successful completion of the final examination for drive engineers.

Project Planning for Non-Controlled Drives



Prerequisites: Basic knowledge of physics and electrical engineering

General information:

- **Target group:** Design engineers, project planners, planners
- **Additional information:**
You may bring your own calculator and your own laptop.
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|---|---|
| <p>Day 1 – Theoretical foundations for drive calculation</p> <ul style="list-style-type: none"> – Flashover calculations for materials handling and hoist applications – Tips & tricks for everyday project planning situations | <p>Day 2 – Detailed calculation of a materials handling application</p> <ul style="list-style-type: none"> – Manual selection of motor, gear unit and brake – Special aspects of project planning for non-controlled drives – Presentation of SEW-EURODRIVE Workbench project planning software based on previously calculated tasks |
|---|---|

Seminar objectives

The participants ...

- | | |
|--|---|
| <ul style="list-style-type: none"> – Can understand and use formulas for drive selection. – Can perform flashover calculations for various application types. – Are able to dimension a line operated gearmotor with brake. | <ul style="list-style-type: none"> – Can use the SEW-EURODRIVE documentation for gearmotors and the SEW-EURODRIVE Workbench project planning software. |
|--|---|

Project Planning for Controlled Drives



Prerequisites: Basic knowledge of physics and electrical engineering

General information:

- **Target group:** Design engineers, project planners, planners
- **Duration:** 3 days
- **Price:** EUR 1,080

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Introduction of the project planning procedure for controlled drives</p> <ul style="list-style-type: none"> – Detailed calculation of a trolley application – Manual selection of gearmotor, frequency inverter and components in regard to the advantages and disadvantages of operating at 87 Hz – Overview of the SEW-EURODRIVE Workbench project planning software <p>Day 2 – Overview of EMC basics and solution concepts</p> <ul style="list-style-type: none"> – Detailed calculation and selection of a hoist application with and without counterweight – SEW-EURODRIVE Workbench project planning software | <p>Day 3 – Detailed calculation and selection of a rotary application taking into account overhung load, axial load and bending moment</p> <ul style="list-style-type: none"> – SEW-EURODRIVE Workbench project planning software |
|--|--|

Seminar objectives

The participants ...

- | | |
|--|--|
| <ul style="list-style-type: none"> – Can manually calculate and select standard drives controlled by a frequency inverter, including trolleys, hoists and rotary applications. – Can perform flashover calculations. | <ul style="list-style-type: none"> – Can calculate and select drives using the SEW-EURODRIVE Workbench project planning software. |
|--|--|

Project Planning for Servo Drives



Prerequisites: Basic knowledge of physics and electrical engineering

General information:

- **Target group:** Design engineers, project planners, planners
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|---|---|
| <p>Day 1 – Basics of servo technology</p> <ul style="list-style-type: none"> – Presentation of characteristics of the SEW-EURODRIVE servo products and servo concepts that are related to project planning – Project planning guidelines for selecting servo applications | <p>Day 2 – Detailed calculation of “on-the-fly processing”</p> <ul style="list-style-type: none"> – Manual selection of motor, gear unit and inverter – Presentation of SEW-EURODRIVE Workbench project planning software based on the previously calculated task |
|---|---|

Seminar objectives

The participants ...

- | | |
|--|---|
| <ul style="list-style-type: none"> – Can understand and use formulas for drive selection. – Can select the appropriate servo products for specific applications. | <ul style="list-style-type: none"> – Can use the SEW-EURODRIVE documentation for servo products and the SEW-EURODRIVE Workbench project planning software. |
|--|---|

Project Planning for ATEX-Compliant Drives



Prerequisites: Participants must have attended the “Project Planning for Non-Controlled/Controlled Drives” seminar and must be familiar with the basics of the directives 1999/92/EC and 94/9/EC.

General information:

- **Target group:** Design engineers, project planners, planners
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Protection types for dust and gas explosion prevention in accordance with EN 50014 and EN 61241
- SEW-EURODRIVE products and their technical features:
 - AC asynchronous motors, brakes and accessories
 - (Stand-alone) gear units and components on the input side
 - Controlled MOVIMOT® gearmotors
 - AC asynchronous motors with frequency inverter
- Important points regarding project planning of ATEX-compliant gearmotors
- Selection of possible ATEX gearmotor combinations from the “Explosion-proof drives” catalog
- Maintenance and repair of gear units and motors in line with the 94/9/EC Directive

Seminar objectives

The participants ...

- Know the maintenance and repair specifications for SEW-EURODRIVE gear units and SEW-EURODRIVE motors.
- Can apply the directives 94/9/EC and 1999/92/EC to SEW-EURODRIVE products.
- Can select the correct drive and its accessories in compliance with ATEX based on project planning specifications.

Project Planning with the SEW-EURODRIVE Workbench



Prerequisites: Basics of project planning (calculations by hand), knowledge of SEW-EURODRIVE drives

General information:

- **Target group:** Design engineers, project planners, planners
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Project planning basics
- Structure of the program, operator interface
- Project planning and drive selection of controlled drives (focus)
- Project planning and drive selection for non-controlled drives
- Configuration and assessment of solution variants (optimizing costs, taking into account life cycle costs, etc.)
- Correcting errors during drive selection
- Creating documentation and parameter lists using the SEW-EURODRIVE Workbench project planning software
- Interfaces to other programs

Seminar objectives

The participants ...

- Can adapt the SEW-EURODRIVE Workbench project planning software to suit their requirements.
- Can solve drive tasks using the project planning programs.
- Can configure and assess solution variants (cost relevance, total cost of ownership).

MOVIDRIVE® B – Quick Start



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- MOVIDRIVE®, components and accessories
- MOVITOOLS® MotionStudio engineering software
- Startup without encoder
- Moving the drive in manual operation
- Display and diagnostic options
- Important parameters and their setting options
- Data backup
- Graphical analysis using the Scope function
- Fieldbus communication and diagnostics

Seminar objectives

The participants ...

- Can diagnose faults and eliminate them.
- Can start up the inverter without encoder.
- Can replace an inverter.

MOVIDRIVE® B – Operation and Startup



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group: Service engineers, startup engineers**
- **Duration: 2 days**
- **Price: EUR 720**

Seminar contents

- | | |
|---|---|
| <p>Day 1 – Basics of drive technology</p> <ul style="list-style-type: none"> – MOVIDRIVE®, components and accessories – MOVITOOLS® MotionStudio engineering software – Startup without encoder – Moving the drive in manual operation – Display and diagnostic options – Important parameters and their setting options | <p>Day 2 – Data backup</p> <ul style="list-style-type: none"> – Working with the keypad – Startup in various operating modes, with encoder – Graphical analysis using the Scope function – Fieldbus communication and diagnostics |
|---|---|

Seminar objectives

The participants ...

- | | |
|--|---|
| <ul style="list-style-type: none"> – Can start up the inverter in various operating modes. – Can set up and diagnose fieldbus communication. | <ul style="list-style-type: none"> – Can replace an inverter. – Can diagnose faults and eliminate them. |
|--|---|

MOVIDRIVE® B – Compact Seminar



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 3 days
- **Price:** EUR 1,080

Seminar contents

- Day 1 – Basics of drive technology
 - MOVIDRIVE®, components and accessories
 - MOVITOOLS® MotionStudio engineering software
 - Startup without encoder
 - Moving the drive in manual operation
 - Display and diagnostic options
 - Important parameters and their setting options
- Day 2 – Data backup
 - Working with the keypad
 - Startup in various operating modes, with encoder
 - Graphical analysis using the Scope function
 - Fieldbus communication and diagnostics
- Day 3 – Setting up the inverter for positioning mode
 - Introduction to programming using IPOS^{plus}®
 - Startup of various application modules
 - Diagnostic options for positioning control

Seminar objectives

The participants ...

- Can start up the inverter in various operating modes.
- Can parameterize the inverter for various applications.
- Can diagnose faults and eliminate them.
- Can replace an inverter.
- Can set up and diagnose fieldbus communication.
- Can position an object using the integrated positioning control and sequence control system.
- Can parameterize integrated application modules.

MOVIDRIVE® B – IPOS^{plus}® Programming



Prerequisites: Participants must have attended a MOVIDRIVE® seminar of at least 2 days

General information:

- **Target group:** Startup engineers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Introduction to programming using IPOS^{plus}®</p> <ul style="list-style-type: none"> – Setting up the inverter for positioning mode – Reference travel types – Program for relative value and absolute value positioning – Program enhancement using arithmetic commands | <p>Day 2 – Data backup</p> <ul style="list-style-type: none"> – Developing sample programs – Starting up the absolute encoder – Replacing the encoder – Startup of various application modules |
|--|--|

Seminar objectives

The participants ...

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|--|--|
| <ul style="list-style-type: none"> – Can parameterize the inverter for operation with IPOS^{plus}®. – Can create, run and test programs using IPOS^{plus}®. – Can save source text. | <ul style="list-style-type: none"> – Can parameterize integrated application modules. – Can start up the DIP option card. – Can replace an encoder. |
|--|--|

MOVIDRIVE® B – Servicing Drive Systems with MOVIDRIVE® B



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group: Service engineers, startup engineers**
- **Duration: 4 days**
- **Price: EUR 1,200**

Seminar contents

- Day 1 – Basics of drive technology
 - MOVIDRIVE®, components and accessories
 - MOVITOOLS® MotionStudio engineering software
 - Startup without encoder
 - Moving the drive in manual operation
 - Display and diagnostic options
 - Important parameters and their setting options
- Day 2 – Data backup
 - Working with the keypad
 - Startup in various operating modes, with encoder
 - Graphical analysis using the Scope function
 - Fieldbus communication and diagnostics
- Day 3 – Startup of servo (with HIPERFACE® encoder) on a realistic application with linear feed
 - Setting up the inverter for positioning mode
 - Introduction to programming using IPOS^{plus}®
 - Startup of various application modules
 - Diagnostic options for positioning control
- Day 4 – Troubleshooting on the training system
 - Startup and optimizations on the training system

Seminar objectives

The participants ...

- Can diagnose and eliminate system standstills and faults.
- Can start up the inverter in various operating modes.
- Can set up and diagnose fieldbus communication.
- Can position an object using the integrated positioning control and sequence control system.
- Can replace an inverter.

MOVIDRIVE® B – Intensive Course



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 5 days
- **Price:** EUR 1,800

Seminar contents

- | | |
|---|--|
| <p>Day 1 – Basics of drive technology</p> <ul style="list-style-type: none"> – MOVIDRIVE®, components and accessories – MOVITOOLS® MotionStudio engineering software – Startup without encoder – Moving the drive in manual operation – Display and diagnostic options – Important parameters and their setting options <p>Day 2 – Data backup</p> <ul style="list-style-type: none"> – Working with the keypad – Startup in various operating modes, with encoder – Graphical analysis using the Scope function – Fieldbus communication and diagnostics | <p>Day 3 – Startup of servo (with HIPERFACE® encoder) on a realistic application with linear feed</p> <ul style="list-style-type: none"> – Setting up the inverter for positioning mode – Introduction to programming using IPOS^{plus}® – Startup of various application modules – Diagnostic options for positioning control <p>Day 4 – Troubleshooting on the training system</p> <ul style="list-style-type: none"> – Startup and optimization on the training system <p>Day 5 – Presentation of the MOVI-PLC® control</p> <ul style="list-style-type: none"> – Setting up the inverter for MOVI-PLC® – Establishing communication between MOVI-PLC® and inverter – Parameterizing application modules – Diagnostic options |
|---|--|

Seminar objectives

The participants ...

- | | |
|---|---|
| <ul style="list-style-type: none"> – Can diagnose and eliminate system standstills and faults. – Can start up the inverter in various operating modes. – Can set up and diagnose fieldbus communication. – Can position an object using the integrated positioning control and sequence control system. | <ul style="list-style-type: none"> – Can replace an inverter. – Can parameterize the application modules of MOVI-PLC®/CCU. – Can control and monitor the inverter using MOVI-PLC®/CCU. |
|---|---|

MOVIDRIVE® B – Speed Controller Optimization



Prerequisites: Participants must have attended a MOVIDRIVE® seminar of at least 2 days

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

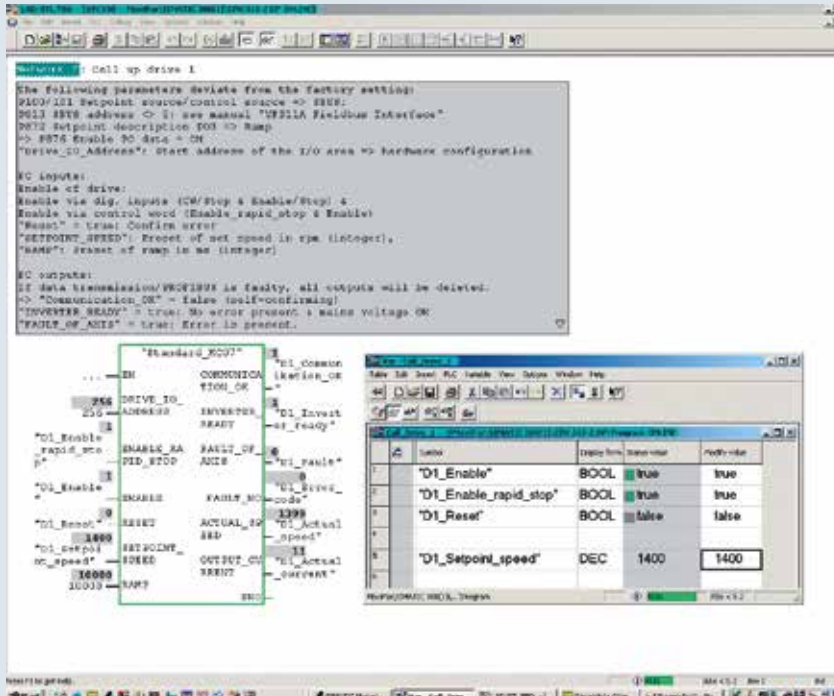
- Short overview of control technology
- Introduction of control parameters in MOVITOOLS® MotionStudio
- Startup of motor set (consisting of asynchronous motor and synchronous motor)
- Moving of various loads and analysis using Scope function
- Simulation of a hoist (especially startup behavior) and analysis using the Scope function
- System optimization
- Comparison of VFC-n and CFC

Seminar objectives

The participants ...

- Can start up a load set and analyze various operating states (regenerative, motoric).
- Know the differences between VFC-n and CFC.
- Are skilled in using the Scope startup tool and can optimize relevant parameters.

MOVIDRIVE® B – Communication with S7 via PROFIBUS/PROFINET



Prerequisites: Basic knowledge of MOVIDRIVE®, S7, PROFIBUS and PROFINET

General information:

- Target group: Service engineers, startup engineers
- Duration: 2 days
- Price: EUR 720

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Fieldbus and components</p> <ul style="list-style-type: none"> – Setting up MOVIDRIVE® for fieldbus communication – Using the fieldbus monitor – Integrating the drive unit into the PLC | <p>Day 2 – Controlling the inverter with the PLC via the fieldbus</p> <ul style="list-style-type: none"> – Diagnostics and troubleshooting of the control – Program examples – Startup of the “Extended positioning via bus” application module |
|--|--|

Seminar objectives

The participants ...

- Can connect, parameterize and diagnose the inverter and S7 control.
- Can integrate the function modules into the PLC.

MOVIAXIS® – Compact Seminar



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group: Service engineers, startup engineers**
- **Duration: 3 days**
- **Price: EUR 1,080**

Seminar contents

- | | |
|--|---|
| <p>Day 1 – Basics of drive technology</p> <ul style="list-style-type: none"> – Overview of options, components and accessories – Introduction to MOVITOOLS® MotionStudio engineering software – Establishing communication – Startup – Manual operation – Display and diagnostic options – Important parameters and their setting options | <p>Day 2 – PDO Editor as a parameter-setting and diagnostic tool</p> <ul style="list-style-type: none"> – Optimizing the speed controller and running diagnostics with the Scope function – User-defined units – Data management and project management – Learning assessment test – Controlling via fieldbus and options for connecting to a non-SEW-EURODRIVE control – “Single-axis positioning” technology function |
| <p>Day 3 – Setting up MOVI-PLC®</p> <ul style="list-style-type: none"> – Establishing communication between PC and control – Diagnostic options for and functions of MOVI-PLC® – Setting up MOVIAXIS® for controlling with MOVI-PLC® – MotionControl with MOVI-PLC® | |

Seminar objectives

The participants ...

- | | |
|---|---|
| <ul style="list-style-type: none"> – Can operate the MOVITOOLS® MotionStudio engineering software confidently. – Can perform startup and optimizations. – Can save and restore data. | <ul style="list-style-type: none"> – Can diagnose faults and eliminate them. – Can connect MOVIAXIS® to various controls. |
|---|---|

MOVITRAC® B – Operation, Startup and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Basics of drive technology
- MOVITRAC® B, components and accessories
- MOVITOOLS® MotionStudio engineering software
- Startup in various operating modes
- Display and diagnostic options
- Important parameters and their setting options
- Data backup
- Graphical analysis using the Scope function
- Offline configuration

Seminar objectives

The participants ...

- Can start up MOVITRAC® B in various operating modes.
- Can back up data.
- Can operate MOVITRAC® B.
- Can diagnose faults and eliminate them.

Introduction to Decentralized Drive Technology



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- System comparison between centralized and decentralized installation
- MOVIMOT® and MOVI-SWITCH® components with accessories
- MOVIFIT® components and accessories
- MOVIPRO® SDC/ADC components and accessories
- MOVIGEAR® components and accessories
- MOVITOOLS® MotionStudio engineering software

Seminar objectives

The participants ...

- Are familiar with the drive system for decentralized installation of SEW-EURODRIVE and its components.

MOVIMOT® and MOVI-SWITCH® – Operation, Startup and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents:

- Basics of drive technology
- MOVIMOT® and MOVI-SWITCH® components with accessories
- System comparison between centralized and decentralized installation
- MOVITOOLS® MotionStudio engineering software
- Startup in various operating modes
- Working with the keypad
- Display and diagnostic options
- Important parameters and their setting options
- Fieldbus communication and diagnostics
- Data backup
- Graphical analysis using the Scope function
- Closing discussion

Seminar objectives:

The participants ...

- Can start up the inverter in various operating modes.
- Can control and diagnose the inverter using the fieldbus monitor.
- Can diagnose faults and eliminate them.

MOVIFIT® – Operation, Startup and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Basics of drive technology
- MOVIFIT® components and accessories
- System comparison between centralized and decentralized installation
- MOVITOOLS® MotionStudio engineering software
- Startup in various operating modes
- Connecting to a PLC
- Display and diagnostic options
- Important parameters and their setting options
- Data backup
- Fault recognition and troubleshooting
- Offline configuration

Seminar objectives

The participants ...

- Can start up a MOVIFIT® in all variants.
- Can operate MOVIFIT®.
- Can back up data.
- Can diagnose faults and eliminate them.

MOVIGEAR® – Operation, Startup and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Basics of drive technology
- MOVIGEAR® components and accessories
- MOVITOOLS® MotionStudio engineering software
- Startup in various operating modes
- Display and diagnostic options
- Important parameters and their setting options
- Data backup
- Graphical analysis using the Scope function

Seminar objectives

The participants ...

- Can start up the inverter in various operating modes.
- Can replace an inverter.
- Can operate the mechatronic MOVIGEAR® drive system.
- Can diagnose faults and eliminate them.

MOVIMOT®, MOVIFIT®, MOVIGEAR® – Compact Seminar



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group: Service engineers, startup engineers**
- **Duration: 2 days**
- **Price: EUR 720**

Seminar contents

- | | |
|--|---|
| <p>Day 1 – Basics of drive technology</p> <ul style="list-style-type: none"> – MOVIMOT® and MOVI-SWITCH® components with accessories – System comparison between centralized and decentralized installation – MOVITOOLS® MotionStudio engineering software – Startup in various operating modes – Working with the keypad – Display and diagnostic options – Important parameters and their setting options – Fieldbus communication and diagnostics – Data backup – Graphical analysis using the Scope function | <p>Day 2 – MOVIFIT® components and accessories</p> <ul style="list-style-type: none"> – Startup in various operating modes – Connecting to a PLC – Display and diagnostic options – Important parameters and their setting options – Data backup – Fault recognition and troubleshooting – MOVIGEAR® components and accessories – Startup in various operating modes – Display and diagnostic options – Important parameters and their setting options – Data backup |
|--|---|

Seminar objectives

The participants ...

- | | |
|---|--|
| <ul style="list-style-type: none"> – Can start up the above-mentioned products in various operating modes. – Can control and diagnose MOVIMOT® and MOVIFIT® using the fieldbus monitor. | <ul style="list-style-type: none"> – Can operate the mechatronic MOVIGEAR® drive system. – Can diagnose faults and eliminate them. – Can replace an inverter. |
|---|--|

MOVIPRO® SDC – Operation, Startup and Troubleshooting



Prerequisites: Participants must have attended a MOVIDRIVE® seminar of at least 2 days

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- MOVIPRO® SDC components and accessories
- MOVITOOLS® MotionStudio engineering software
- Startup in various operating modes
- Startup of various application modules
- Data backup
- Type code
- Documentation
- Connecting to a PLC

Seminar objectives

The participants ...

- Can start up MOVIPRO® SDC in various operating modes.
- Know the design and the connections of MOVIPRO® SDC.
- Can replace a unit.
- Can diagnose faults and eliminate them.

CCU – Configurable Application Controller



Prerequisites: Basic knowledge of drive technology; no programming knowledge required

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Presentation of CCU application controller</p> <ul style="list-style-type: none"> – Introduction to MOVITOOLS® MotionStudio engineering software – Setting up the inverter for controlling with the CCU – Establishing communication with the controller – Data backup and control replacement – Configuration, operation and diagnostics of application modules, part 1 | <p>Day 2 – Diagnostic functions of the Application Configurator</p> <ul style="list-style-type: none"> – Configuration, operation and diagnostics of application modules, part 2 – Configuration of function modules – Final exercise, learning assessment test |
|--|--|

Seminar objectives

The participants ...

- | | |
|--|---|
| <ul style="list-style-type: none"> – Can operate the MOVITOOLS® MotionStudio engineering software confidently. – Can use the CCU confidently. – Can operate the Application Configurator. | <ul style="list-style-type: none"> – Can start up single-axis or multiple-axis applications. – Can save and restore data. – Can apply diagnostic functions to troubleshooting. |
|--|---|

MOVI-PLC® – Compact Seminar



Prerequisites: Basic knowledge of PLC programming and drive technology

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 3 days
- **Price:** EUR 1,080

Seminar contents

- Day 1 – Presentation of the MOVI-PLC® control
 - Introduction to MOVITOOLS® MotionStudio engineering software
 - Establishing communication with the control
 - Functions, diagnostic options and parameter settings for MOVI-PLC®
 - Data backup and control replacement
 - Introduction to the PLC Editor
 - Basics of programming according to IEC 61131
- Day 2 – Setting up the inverter for controlling with MOVI-PLC®
 - Establishing communication between MOVI-PLC® and inverter
 - Exercises with function modules of the motion libraries
- Day 3 – Setting up a motion control application with various operating modes
 - Connecting MOVI-PLC® to a higher-level remote control
- Day 3 – Presentation of the configurable MultiMotion motion platform
 - MultiMotion Editor for configuring an axis
 - MultiMotion diagnostic functions
 - Creating a user program for controlling the MultiMotion axis
 - Final exercise, learning assessment test

Seminar objectives

The participants ...

- Can operate the MOVITOOLS® MotionStudio engineering software confidently.
- Can handle the MOVI-PLC® confidently.
- Can use diagnostic tools.
- Can use the individual programming languages conforming to IEC 61131.
- Can save and restore data.
- Can connect MOVI-PLC® to a higher-level remote control.
- Can control and monitor the inverter using MOVI-PLC®.
- Can program and start up motion control applications.

MOVI-PLC® – Basics and Motion Control



Prerequisites: Basic knowledge of PLC programming and drive technology

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 4 days
- **Price:** EUR 1,440

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Presentation of the MOVI-PLC® control</p> <ul style="list-style-type: none"> – Introduction to MOVITOOLS® MotionStudio engineering software – Establishing communication with the control – Functions, diagnostic options and parameter settings for MOVI-PLC® – Data backup and control replacement – Introduction to the PLC Editor – Basics of programming according to IEC 61131 <p>Day 2 – Setting up the inverter for controlling with MOVI-PLC®</p> <ul style="list-style-type: none"> – Establishing communication between MOVI-PLC® and the inverter – Exercises with function modules of the motion libraries | <ul style="list-style-type: none"> – Setting up a motion control application with various operating modes – Connecting MOVI-PLC® to a higher-level remote control <p>Day 3 – Startup of the SEW-EURODRIVE AxisControl sample project</p> <ul style="list-style-type: none"> – Exercises and various program examples with AxisControl – Configurable drive solutions with the Application Configurator and CCU® <p>Day 4 – Presentation of the configurable MultiMotion motion platform</p> <ul style="list-style-type: none"> – MultiMotion Editor for configuring an axis – MultiMotion diagnostic functions – Creating a user program for controlling the MultiMotion axis |
|--|--|

Seminar objectives

The participants ...

- | | |
|--|--|
| <ul style="list-style-type: none"> – Can operate the MOVITOOLS® MotionStudio engineering software confidently. – Can handle the MOVI-PLC® confidently. – Can use diagnostic tools. – Can use the individual programming languages conforming to IEC 61131. | <ul style="list-style-type: none"> – Can save and restore data. – Can connect MOVI-PLC® to a higher-level remote control. – Can control and monitor the inverter using MOVI-PLC®. – Can parameterize and start up motion control applications. |
|--|--|

Safety Modules MOVISAFE® UCS..B Compact – Startup, Programming and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|---|--|
| <p>Day 1 – Safety and stop categories</p> <ul style="list-style-type: none"> – Wiring of safety modules MOVISAFE® UCS..B Compact and MOVIDRIVE® B on the training model – Startup of MOVISAFE® UCS..B Compact – Settings for MOVIDRIVE® B – Adjusting the position encoders | <p>Day 2 – Programming various functions, e.g. STO – safe torque off according to stop categories 0, 1 and 2; ramp monitoring; safe motion (safely reduced speed); monitoring of the direction of rotation; position monitoring</p> <ul style="list-style-type: none"> – Troubleshooting – Validating and documenting the started-up functions |
|---|--|

Seminar objectives

The participants ...

- | | |
|---|---|
| <ul style="list-style-type: none"> – Can connect MOVISAFE® UCS..B Compact according to the required safety category. – Can start up MOVISAFE® UCS..B Compact. | <ul style="list-style-type: none"> – Can program monitoring functions. – Can diagnose faults and eliminate them. – Can perform validation and documentation. |
|---|---|

MOVISAFE® DCS31B – Startup, Programming and Troubleshooting



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- | | |
|--|--|
| <p>Day 1 – Safety and stop categories</p> <ul style="list-style-type: none">– Wiring of MOVISAFE® and of MOVIDRIVE® B on the training model– Startup of MOVISAFE® DCS31B safety monitor– Settings for MOVIDRIVE® B– Adjusting the position encoders | <p>Day 2 – Programming various functions, e.g. STO – safe torque off, ramp monitoring, safe motion (safely reduced speed), monitoring of the direction of rotation, position monitoring</p> <ul style="list-style-type: none">– Fault analysis and fault elimination– Validating and documenting the started-up functions |
|--|--|

Seminar objectives

The participants ...

- | | |
|--|---|
| <ul style="list-style-type: none">– Can connect MOVISAFE® DCS31B according to the required safety category.– Can start up MOVISAFE® DCS31B. | <ul style="list-style-type: none">– Can program monitoring functions.– Can diagnose faults and eliminate them.– Can perform validation and documentation. |
|--|---|

Basic Knowledge in Mechanical Service



Prerequisites: Training as a mechanic, mechatronic engineer or electrician

General information:

- **Target group:** Service engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Overview of SEW-EURODRIVE gear units and modular gear unit system
- Structure, theory of operation and features of the various gear unit types
- Determining the cause of the damage
- Selecting the spare parts
- Special features, sealing of gear units
- Lubricants and their features
- Possible conversions, mounting position and speed change

Seminar objectives

The participants ...

- Receive an overview of SEW-EURODRIVE gear units and modular gear unit system.
- Obtain knowledge about the mechanical design of SEW-EURODRIVE gearmotors.
- Can identify a drive based on the nameplate.

Maintenance and Repair of SEW-EURODRIVE Gear Units



Prerequisites: Training as a mechanic or mechatronic engineer

General information:

- **Target group:** Service engineers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- Day 1 – SEW-EURODRIVE gear unit type code
 - Possible conversions, mounting position and speed change
 - Theory of operation and advantages of various gear unit types
- Day 2 – Proper disassembly and assembly of R..7 / F..7 / S..7 gear units
 - Determining the cause of the damage
 - Oil/grease lubrication
 - Spare part and repair handling

Seminar objectives

The participants ...

- Can identify SEW-EURODRIVE gear unit types.
- Can service and assemble SEW-EURODRIVE gear units.
- Can assess the causes of damage.

Maintenance and Repair of SEW-EURODRIVE Brakemotors



Prerequisites: Training as a mechanic, mechatronic engineer or electrician

General information:

- **Target group:** Service engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Disassembly and reassembly of motor and brake
- Performing adjustment work on motor and brake
- Brake controls with sample circuits
- Influence of the circuit type on the operating characteristics of the brake

Seminar objectives

The participants ...

- Know the theory of operation and possible applications for SEW-EURODRIVE motors and brake systems.
- Know the mechanical design of SEW-EURODRIVE motors and brakes.
- Can identify a drive based on the type code.

Maintenance and Repair of SEW-EURODRIVE Gearmotors and Brakemotors in Compliance with ATEX



Prerequisites: Practical experience in the repair of SEW-EURODRIVE gearmotors

General information:

- **Target group:** Service engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Notes on repairing gear units depending on the protection types for dust and gas explosion protection in line with European standards
- AC asynchronous motors, gear units, brakes and accessories
- Maintenance intervals of gear units and gearmotors

Seminar objectives

The participants ...

- Can professionally assemble and disassemble ATEX gearmotors with the R..7 / F..7 / S..7 gear unit design.
- Can select spare parts according to spare parts lists and use the operating and maintenance instructions.
- Can distinguish between standard gearmotors and ATEX-compliant gearmotors.

ATEX Basics



Prerequisites: None

General information:

- **Target group:** Service engineers, startup engineers, project planners, design engineers and planners
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Basics of explosion protection
- EU directives EN 94/9/EC and EN 1999/92/EC
- Protection types for dust and gas explosion protection
- Asynchronous motors, BC and BMG brakes as well as ATEX-complaint accessories
- Differences between standard drives and ATEX-compliant drives
- Type codes and nameplate data

Seminar objectives

The participants ...

- Know the differences between standard and ATEX drives.
- Know features of (BC) flameproof brakes.
- Know the specific parts on ATEX-complaint standard gear units.

EMC in Drive Engineering



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Service engineers, startup engineers
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- General theoretical basics of EMC
- EMC troubleshooting in the system
- EMC measurements on drive technology components
- Tips and tricks from people with experience

Seminar objectives

The participants ...

- Can plan and use EMC-complaint systems and components.
- Can recognize causes of faults.
- Can take measures to eliminate faults.

Lowering Energy Consumption with the Right Drive Technology



Prerequisites: Basic knowledge of drive technology

General information:

- **Target group:** Service engineers, startup engineers, design engineers, project planners, planners
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Basics of energy efficiency
- Analysis of main adjusting lever for saving energy
- Energy-saving features of individual SEW-EURODRIVE products
- Establishment of possible useful combinations of components; typical selection scenarios
- Group work: Practical exercise in finding an efficient drive solution
- Introduction of selected energy-saving solutions

Seminar objectives

The participants ...

- Can identify energy-saving potentials in various applications based on defined starting points/ adjusting levers.
- Can work out and evaluate specific approaches to solutions and possible solutions from identified potentials.

Condition Monitoring – Fault Diagnostics and Preventative Maintenance



Prerequisites: Basic knowledge of drive engineering

General information:

- **Target group:** Service engineers, startup engineers, design engineers, project planners and planners
- **Duration:** 1 day
- **Price:** EUR 360

Seminar contents

- Technical data, unit design and connection of the DUV vibration sensor, the DUO oil aging sensor and the DUB brake monitoring unit
- Operation and parameter setting using the parameterization software
- Interpretation of the damage progress
- Identifying the condition of the bearings
- Determination of the remaining service life
- Basics and application of thermograms
- Outlook: integration of Condition Monitoring into the CDM database
- Practical exercises using training models

Seminar objectives

The participants ...

- Can start up the DUV10 vibration sensor.
- Can run an evaluation using the parameterization software.
- Can interpret the displayed values.
- Can start up the DUO10 oil aging sensor.
- Can start up the DUB for function and wear monitoring.
- Can apply thermograms usefully.

Integration of Drive Engineering into Professional Training



Prerequisites: Basic knowledge of electrical engineering

General information:

- **Target group:** Trainers and teachers
- **Duration:** 2 days
- **Price:** EUR 720

Seminar contents

- Day 1 – Basics of drive technology
- Basic gearmotor concepts
 - Basics of frequency inverters

- Day 2 – EMC in drive engineering
- Practical exercises using models:
 - Frequency inverter startup
 - Knowledge of various operating modes and “developing a feel” for torques
 - Drive optimization and diagnostics

Seminar objectives

The participants ...

- Can demonstrate and explain the basics of drive technology.
- Can select and integrate drive components.
- Can start up various operating modes of the inverter.
- Can parameterize the inverter for various applications.



Training Locations at a Glance



Central Service Competence Center
Ernst-Blickle-Strasse 1
76676 Graben-Neudorf, Germany



Drive Technology Center – South
Domagkstrasse 5
85551 Kirchheim (near Munich), Germany



Drive Technology Center – North
Alte Ricklinger Strasse 40-42
30823 Garbsen (near Hanover), Germany



Drive Technology Center – West
Siemensstrasse 1
40764 Langenfeld (near Düsseldorf), Germany

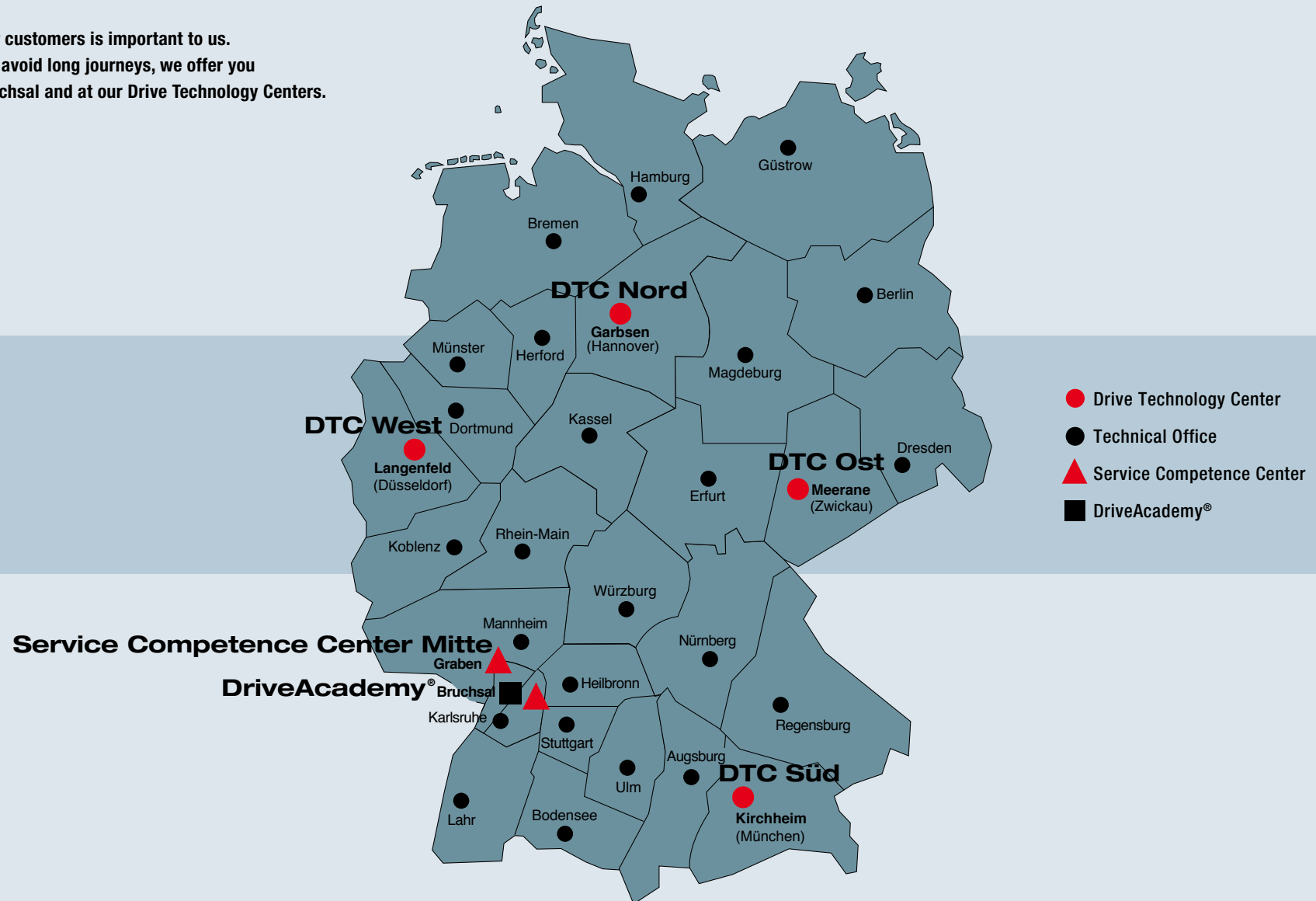


Drive Technology Center – East
Dänkritzter Weg 1
08393 Meerane (near Zwickau), Germany



DriveAcademy®
Ernst-Blickle-Strasse 42
76646 Bruchsal, Germany

Proximity to our customers is important to us.
So that you can avoid long journeys, we offer you
seminars in Bruchsal and at our Drive Technology Centers.



Training requirements

Registration

Please register early in writing. For training programs that have a limited number of participants, the date of receipt of registration is decisive. The sales and delivery terms and conditions of SEW-EURODRIVE GmbH & Co KG, Bruchsal are bindingly accepted upon registration. The reservation of hotel accommodations is a voluntary service from SEW-EURODRIVE. Liability for the reservation remains with the participant.

Cancellation

Cancellations must be submitted in writing. A confirmed registration can be cancelled free-of-charge up to four (4) weeks before the start of the training. Costs that arise due to the cancellation of a hotel reservation are not assumed by SEW-EURODRIVE.

Services

The services comprise the following:

- Execution of training courses
- Training documents
- Lunch, break snacks and drinks

Fee

The training fee is listed in the overview. This must be paid once the invoice has been received. SEW-EURODRIVE's general delivery and business terms and conditions apply to the payment of the training fee.

Discount

If two or more employees from the same company participate in training, we will give a 7% discount off the total price.

Exclusion of liability

In the training programs and in the training documents, we have provided technical information to the best of our knowledge and belief. However, we do not assume any liability for any mistakes in the technical information imparted verbally or in writing in the training or contained in the training documents provided. Equally, we cannot accept liability for any damage or follow-up damage resulting from mistakes. This exclusion of liability does not apply in cases of compulsory liability for intent or gross negligence.

Subject to change

We reserve the right to make the following changes:

- Training cancellations; we will not accept any claims for compensation or cancellation damages arising therefrom.
- Adjustment of the training content in line with the current state-of-the-art without prior notification. In individual cases, this may lead to deviations from the training descriptions.

Information

Training times

One-day 8:30 a.m. – 5:00 p.m.

Multiple-day 8:30 a.m. – 5:00 p.m.

The last day of training ends early at 4:00 p.m.

Exception: One-day seminars.

Participation in training

Full participation in the training is required to obtain a participation certificate. Absences due to vacation time are not permitted. Training programs that were missed due to illness must be repeated in order to obtain a participation certificate.

Requirements

Some training programs require that you attend other training programs. (These training programs are marked accordingly in the seminar catalog under “General Information”.)

We will check after you register to see whether you meet this requirement. If you do not meet the requirements, we will cancel your registration.

Safety regulations

The training participants are required to observe the safety and accident prevention regulations applicable on the SEW-EURODRIVE premises – especially during practical exercises. For training programs held at the customer's location, customer-specific safety and accident prevention regulations must be observed. Furthermore, the on-site safety briefing instructions are to be followed.

Copyright

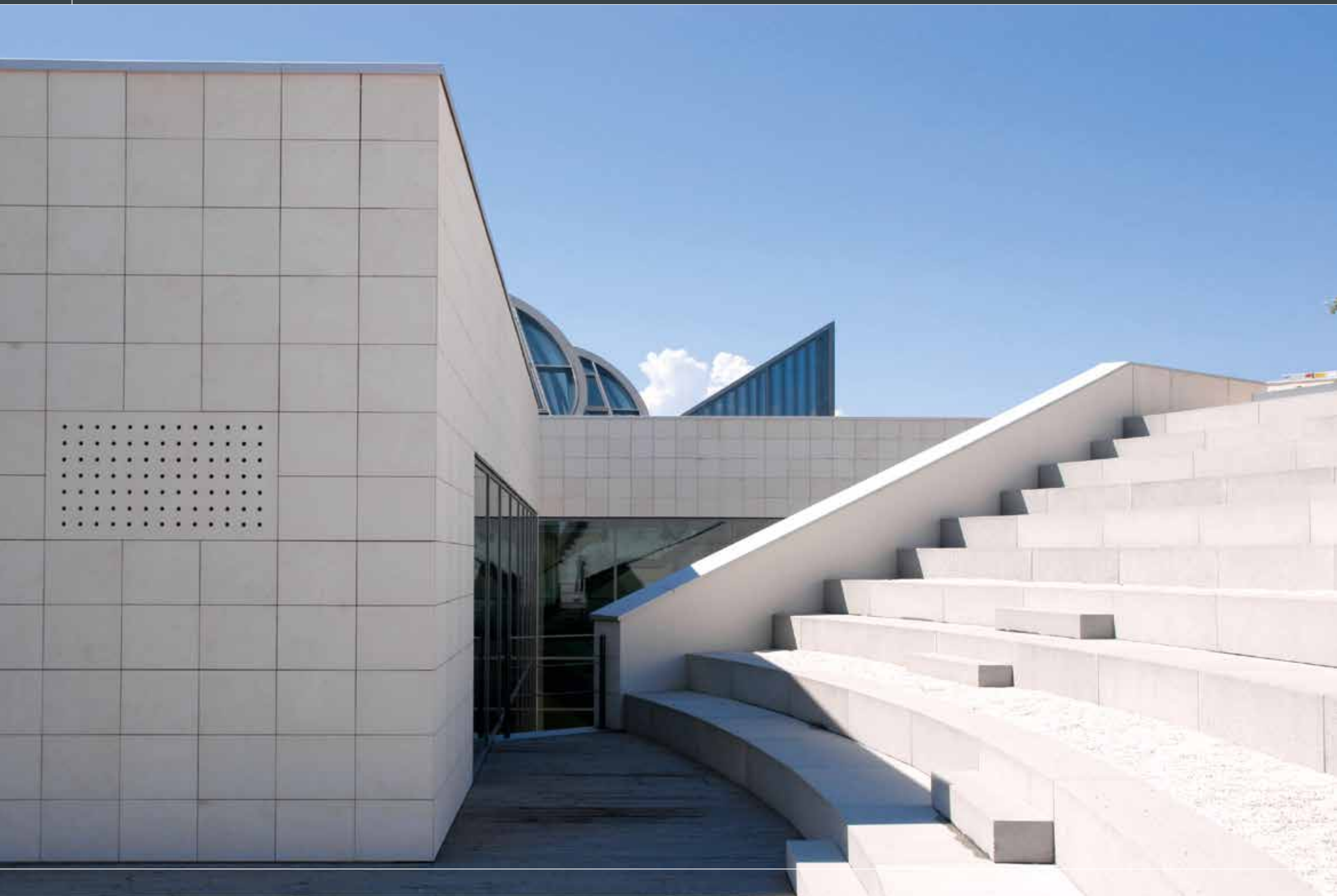
The reproduction of training documents for unauthorized purposes as well as the distribution, exploitation and communication of their content to third parties is not allowed. Infringements are subject to compensation. The software provided by SEW-EURODRIVE during the training programs for the purpose of exercises may not be removed, or copied in part or in whole, or used in any other unauthorized way.

Place of jurisdiction

The place of jurisdiction is Bruchsal.

Miscellaneous

Participants may bring their own laptop (personal or company laptop) to the DriveAcademy® training programs.



Seminar registration per fax (for each participant)



Registration online at
www.seminare.sew-eurodrive.de

Register online at www.seminare.sew-eurodrive.de, or fax us the following form:

Topic	1. _____		
	2. _____		
	3. _____		
Seminar period	1. _____	2. _____	3. _____
Location	<input type="checkbox"/> Bruchsal <input type="checkbox"/> Graben-Neudorf <input type="checkbox"/> Langenfeld <input type="checkbox"/> Garbsen <input type="checkbox"/> Kirchheim <input type="checkbox"/> Meerane		
Dates	1. _____	2. _____	3. _____
Participant	Last name _____ Title: <input type="checkbox"/> Project planning First name _____ <input type="checkbox"/> Servicing Department _____ <input type="checkbox"/> Startup <input type="checkbox"/> _____		
Your company address/	Company _____ Customer no. _____		
Billing address	Contact person(s) _____ E-mail address _____ Title _____ Street _____ Location _____ Phone / Fax _____		
Hotel reservation	<input type="checkbox"/> Yes, for _____ nights Arrival date: _____ <input type="checkbox"/> Single room <input type="checkbox"/> Double room Departure date: _____		
Date / location / signature			

seminar registration

(please copy, fill out and fax)

Fax +49 (0)7251 75-3919

Registration address

SEW-EURODRIVE GmbH & Co KG
 DriveAcademy® – Product training
 P.O.Box 30 23 · 76642 Bruchsal, Germany
 Phone +49 (0)7251 75-3912

Please read seminar terms and conditions.

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