Motion Competency Center USA

Training information and schedule for 2016

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Contents

Introduction .................................................................................................................................................... 4
Types of training............................................................................................................................................. 5

Training classes

Programming with SoMachine — Beginner.............................................................................................. 6
Programming with SoMachine — Intermediate ........................................................................................ 7
Programming with SoMachine — Advanced ............................................................................................. 8
PacDrive Basic Machines ........................................................................................................................ 9
PacDrive Advanced Machines ................................................................................................................. 10
PacDrive Basic and Advanced Service .................................................................................................. 11
On-site training ....................................................................................................................................... 12

Training cancellation policy ...................................................................................................................... 13
Registration form ...................................................................................................................................... 15
At Schneider Electric, we’re more than an equipment supplier. We’re your partner for a full range of technical and support solutions. Through our Motion Competency Center we offer you end-to-end manufacturing services with electrical design, co-design, joint marketing, testing, project management, and services resources. All designed to help give you a competitive advantage.

Our training will focus on a software platform based on the multifaceted CoDeSys development tool, giving you the flexibility to choose the level of functionality and intelligence you need for your machine. This flexibility and simplicity allows you to tailor a solution based on your needs, rather than on preset specifications. Instead of helping you overcome obstacles, we’ll help you build a machine that eliminates obstacles.

Through training, hands-on testing, and demonstration, our classes will equip you with the knowledge and skills necessary to simply and easily build and commission high-performance machines that reduce costs and time to market — all by the time you complete training.

Basic and advanced training will give you the opportunity to learn about OEM universal target-segment and motion solutions. On-demand training, which we schedule at your request, will allow you to customize a solution for your specific machine and application needs.

The Motion Competency Center for the U.S. is headquartered in Schaumburg, Illinois, 20 minutes from the O’Hare International Airport. The Schaumburg facility is home to our Service and Repair Center.

Our main training facility is headquartered in Raleigh, North Carolina. Raleigh is home to the Schneider Electric Innovation Center — a hands-on demonstration center where multidisciplined teams run live, working solutions that demonstrate their firsthand experience in solving automation and control challenges for our OEM customers in a variety of industries. While visiting us, you’ll have the opportunity to interact with these latest technologies and solutions.
Types of training

Currently, we offer four types of training classes in three target segments — packaging, conveying, and hoisting — to help you launch and deploy your machines, including:

**Basic training classes**
- E-learning classes that you can take at will, available 24/7
- Course program includes:
  - Introduction to targeted segments and machines
  - Introduction to machine architecture
  - Introduction to application function blocks (AFBs)

**Advanced training classes**
- Scheduled classes
- Course program includes:
  - Targeted machine details by segment
  - Building programming architecture
  - Detailed AFB
  - Simulation and testing of AFBs

**On-demand training**
- Classes scheduled at your request
- Course program is customized and specific to your machine/application needs, including:
  - Hands-on interaction with targeted machines
  - Hands-on architecture building
  - AFB programming and machine testing
  - Commissioning targeted machines

**Motion training**
- Basic service
- Advanced service
- Basic machines
- Advanced machines
- IEC basic programming
- Robotics
- ECAM-4
Programming with SoMachine — Beginner course

This course instructs attendees on the configuration, programming, and operation of the SoMachine controllers and on the use of the maintenance and diagnostic tools. The SoMachine software package is used for project development. This is an introductory course, open to both technical and sales personnel.

Target group

• Software engineers and commissioning staff
• Service and maintenance staff
• Sales force

Prerequisites

• Automation technology basics
• General programming knowledge is recommended but not necessary
• Vijeo™ Designer experience is helpful

Duration

• 2 days

Training location

• Raleigh, NC

Cost

• $1,200 per seat

Training classes

Programming with SoMachine — Beginner

Training objective: In the “Programming with SoMachine — Beginner” course, you’ll learn about the configuration, programming, and operation of SoMachine™-based controllers.

<table>
<thead>
<tr>
<th>Dates</th>
<th>System</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/21/2016 – 06/22/2016</td>
<td>SoMachine</td>
<td>Raleigh, NC</td>
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<tr>
<td>07/26/2016 – 07/27/2016</td>
<td>SoMachine</td>
<td>Raleigh, NC</td>
</tr>
<tr>
<td>11/15/2016 – 11/16/2016</td>
<td>SoMachine</td>
<td>Raleigh, NC</td>
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</tbody>
</table>

Note: Each class is limited to a maximum of 20 participants.
Programming with SoMachine — Intermediate

Training objective: In the “Programming with SoMachine — Intermediate” course, you’ll use the MachineStruxure™ demo hardware and SoMachine software to commission and test variable frequency drives and servos, both in single-axis and in non-synchronized multi-axes configurations.

Programming with SoMachine — Intermediate course

“Programming with SoMachine — Intermediate” is an introduction to SoMachine as a programming software for industrial automation. This course will introduce, among the other SoMachine functionalities, the PLCopen libraries and the use of structured variables. Students will use demo hardware including an LMC058 controller, an ATV312 VFD, and LXM32 servo drives to learn and apply basic programming methods by working through application examples.

Target group

• Software engineers and commissioning staff

Prerequisites (validated by admission assessment)

• General knowledge of automation
• Basic knowledge of the SoMachine software environment
• Experience with IEC 61131 programming

Duration

• 2 days

Training location

• Raleigh, NC

Cost

• $1,200 per seat

Note: Each class is limited to a maximum of 12 participants.
Programming with SoMachine — Advanced course

“Programming with SoMachine — Advanced” is an introduction to the LMC078 motion controller and Softmotion programming environment. This course will emphasize the PLCopen standard, Softmotion engine, structured variables, complex derived function blocks, state-machine programming techniques, and alarm handling. Students will make use of the LMC078 controller and LXM32S servo drives to apply the course topics by creating and operating a flying shear.

Note: We will be using Structured Text, Function Block Diagram, and Sequential Function Chart programming languages.

Target group

• Software engineers and commissioning staff

Prerequisites (validated by admission assessment)

• Working knowledge of single- and multi-axes motion control
• Thorough understanding of the SoMachine software environment
• Experience with IEC 61131 programming

Duration

• 2 days

Training location

• Raleigh, NC

Cost

• $1,200 per seat

Training objective: In the “Programming with SoMachine — Advanced” course, you’ll use MachineStruxure hardware and software tools to configure, program, and operate a synchronous, motion-centric machine.

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<tr>
<th>Dates</th>
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<th>Location</th>
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</thead>
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<tr>
<td>05/24/2016 – 05/25/2016</td>
<td>SoMachine</td>
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<tr>
<td>09/20/2016 – 09/21/2016</td>
<td>SoMachine</td>
<td>Raleigh, NC</td>
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Note: Each class is limited to a maximum of 12 participants.
**PacDrive Basic Machines**

**Training objective:** In the “PacDrive Basic Machines” course, you’ll learn efficient programming of the PacDrive™ system for implementing machines with simple topologies.

**PacDrive Basic Machines I and II courses**

During the first and second days of the seminar, you’ll become acquainted with the fundamental interactions of the system, including the most important system variables, the diagnosis concept, and the most important IEC 61131-based editors. During days 3 and 4, you’ll learn how to write sustainable data/program structures and will gain insight into basic motion concepts. You’ll apply this knowledge to implement a simple machine topology.

**Target group**

- Software engineers and commissioning staff (M*)
- Service and maintenance staff after completing the service module (R*)

*M = Mandatory, *R = Recommended

**Prior knowledge**

- Automation technology basics
- Basic programming knowledge

**Prerequisites**

- Basic and Advanced Service is recommended for all software engineers and commissioning staff
- Basic and Advanced Service is required for all service and maintenance staff

**Duration**

- 4 days (or 2 + 2 days)

**Training location**

- Raleigh, NC

**Cost**

- $2,000 per seat

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**Dates**

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<tr>
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<tr>
<td>08/16/2016 – 08/19/2016</td>
<td>PacDrive 3</td>
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<tr>
<td>09/20/2016 – 09/23/2016</td>
<td>PacDrive M</td>
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<td>10/18/2016 – 10/21/2016</td>
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<tr>
<td>11/15/2016 – 11/18/2016</td>
<td>PacDrive M</td>
<td>Raleigh, NC</td>
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Note: Each course must have a minimum of 4 registered participants for the course to be conducted. Each class is limited to a maximum of 8 participants. Additional courses will be scheduled as needed.
PacDrive Advanced Machines

Training objective: Participants will be able to program and to commission more complex machines with PacDrive on the basis of the PacDrive “Template” with various machine settings.

Individual targets
- Mapping of machine topologies onto template structures (V20)
- Integration of user-specific automation tasks on the basis of a valve control
- Handling of a master/slave system via an electronic master shaft
- Handling of functional exceptional conditions
- Error handling
- Principle of the integration of a technology module

Target group
- Software engineers (M*)
- Commissioning staff (R*)
*M = Mandatory, *R = Recommended

Prior knowledge
- Automation technology basics
- Intermediate programming knowledge

Prerequisites
- PacDrive basic machines I and II

Duration
- 3 days

Training location
- Raleigh, NC

Cost
- $2,000 per seat

Note: Each course must have a minimum of 4 registered participants for the course to be conducted. Each class is limited to a maximum of 8 participants.

Dates | System | Location
--- | --- | ---
On request – based on instructor availability

SERCOS 3 + Integrated safety

Other field buses: Profibus® DP, CANopen™, EtherNet/IP, Profinet® TM, modbus IT/COM Logic Motion

LX 62 Multi-axes servo drives + Power Supply + ILM 62 CM

Other field buses: Profibus® DP, CANopen™, EtherNet/IP, Profinet®, modbus IT/COM Logic Motion

LX 52 SH Safe Logic Controller SLC x00

Magelis™ HMI

Ethernet, TCP/IP, OPC, FTP, HTTP, SMS, SMTP

Life Is On
PacDrive Basic and Advanced Service

Training objective: In the “PacDrive Service” courses, you’ll learn about the skills and methods for providing effective service and proficient maintenance for packaging machines based on PacDrive.

PacDrive Basic Service course
After the first 1.5 days of training, you’ll be able to recognize and to quickly eliminate typical hardware failures in machines with PacDrive. This training module is based on the PacDrive Service Tools and PacDrive documentation.

PacDrive Advanced Service course
The remaining 1.5 days of training is based on the tools of the programming environment. You will learn to precisely diagnose and quickly eliminate typical application-specific errors in a hands-on project.

Target group
- Service and maintenance staff (M*)
- Software engineers and commissioning staff (R*)

*M = Mandatory, *R = Recommended

Prior knowledge
- General programming knowledge
- Automation technology basics

Prerequisites
- None

Duration
- 3.5 days (or 1.5 + 1.5 days)

Training location
- Raleigh, NC

Cost
- Basic and Advanced Service bundle — $2,000 per seat
- Basic and Advanced Service: Individual courses — $1,250 per seat

Dates

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<tr>
<th>System</th>
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<tbody>
<tr>
<td>PacDrive M</td>
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<tr>
<td>PacDrive 3</td>
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<tr>
<td>PacDrive M</td>
<td>Raleigh, NC</td>
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<tr>
<td>PacDrive 3</td>
<td>Raleigh, NC</td>
</tr>
<tr>
<td>PacDrive M</td>
<td>Raleigh, NC</td>
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</tbody>
</table>

Note: Each course must have a minimum of 4 registered participants for the course to be conducted. Each class is limited to a maximum of 8 participants.
On-site training

In addition to our listed courses, we offer our training on-site as well, utilizing the same equipment. Each participant works with a networked training test system with a laptop. These courses are based on our standard training documentation and can also be customized to your individual needs or application.

Target group
• All customer types

Courses
• All available courses

Duration
• As long as required (minimum of 3 days)

Training location
• At our customers’ locations throughout North America

Cost
• $4,000 per day, plus expenses

Note: Each course must have a minimum of 4 registered participants for the course to be conducted. Each class is limited to a maximum of 8 participants.
Training cancellation policy

The following cancellation policy shall apply to training offered by the Schneider Electric Motion Competency Center.

1. If a written notice is received at least ten (10) business days in advance of the class, the Customer is entitled to a refund of their payment. If the written notice is received at least five (5) business days in advance of the class, the Customer is entitled to a full class credit that must be used for another class offered by the Schneider Electric North American Motion Competency Center within three (3) months of the date of the original class. Customer is not entitled to a refund or class credit if less than five (5) business days advance written notice is given. Failure to provide written notice at least ten (10) business days in advance of the class obligates the Customer to make payment for the full price of the class. Enrollment cancelled within ten (10) business days of the scheduled delivery of any class is subject to a penalty fee, up to the fee charged for the class.

2. The Schneider Electric North American Motion Competency Center reserves the right to reschedule or cancel the date, time, and location of a Training class at any time, including replacing personnel who may be scheduled to deliver the Training. In the event a Training class is cancelled, the Customer is entitled to a full refund. Schneider Electric shall not be responsible for any other loss incurred by the Customer as a result of a cancellation or reschedule.

3. If a Training class is cancelled by the Motion Competency Center due to circumstances beyond its reasonable control (e.g., weather, natural disaster), the Customer is entitled to a full class credit which must be used within three (3) months of the date of the original class for similar class offered by the Motion Competency Center. If the Schneider Electric North American Motion Competency Center cancels a Training class for any other reason, the Customer is entitled to a full refund. Schneider Electric shall not be responsible for any other loss incurred by the Customer as a result of a cancellation or reschedule.
To request training, please visit http://q-r.to/bacVIs or scan the QR code.

For answers to any questions, please contact MotionTrainingUSA@schneider-electric.com

<table>
<thead>
<tr>
<th>Course names</th>
<th>Location</th>
<th>Course fees</th>
<th># of days</th>
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<tbody>
<tr>
<td>Programming with SoMachine — Beginner</td>
<td>Raleigh, NC</td>
<td>$1,200</td>
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<td>Programming with SoMachine — Intermediate</td>
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<td>Programming with SoMachine — Advanced</td>
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<td>$1,200</td>
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</tr>
<tr>
<td>PacDrive M Basic and Advanced Service</td>
<td>Raleigh, NC</td>
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<td>$1,250</td>
<td>2</td>
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<tr>
<td>PacDrive M Advanced Service</td>
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<td>PacDrive M Basic Machines</td>
<td>Raleigh, NC</td>
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<td>4</td>
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<tr>
<td>PacDrive 3 Basic and Advanced Service</td>
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<td>PacDrive 3 Advanced Service</td>
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<tr>
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<tr>
<td>On-site training</td>
<td>Customer’s Location</td>
<td>$4,000 per day</td>
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</tr>
</tbody>
</table>

Notes: All courses are on a per seat basis with the exception of the On-site Training. All courses must have a minimum of 4 registered attendees in order for the course to be scheduled and confirmed.