Learning path
Drive technology – IndraDrive

**BASIC TRAINING**
- IndraDrive
  - EATG-1
    - Basic knowledge of electric drive technology
  - eEATG
    - Basic knowledge of electric drive technology (eLearning)

**INTERMEDIATE TRAINING**
- 1st Generation
  - EAT-ID-1
    - IndraDrive – Diagnostics and servicing
  - EAT-ID-Update
    - Transducer course V3 = V2
  - EAT-ID-Opt
    - IndraDrive drive optimization
- 2nd Generation
  - EAT-ID-2
    - IndraDrive – Diagnostics and servicing
  - EAT-ID-SI-IS
    - L3/S4/S5/SB Drive-Drive optimization
  - EAT-ID-Mi
    - IndraDrive MI – Commissioning and servicing
  - EAT-ID-Opt
    - IndraDrive drive optimization

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### eEATG
**Basic knowledge of electric drive technology**

This eLearning course deals with the functions and properties of selected drive components. It is recommended for anyone who plans to attend intermediate training courses. Here, you will learn the concepts of electric drive systems and gain insight into industrial drive technology.

**CONTENTS**
- Basic introduction to electric drive technology
- Electric motors, operating principles and properties
- Basics of encoder systems
- Drive controller and control procedures
- Gears in drive technology

**TARGET GROUP**
Operators, service engineers, programmers, planners/implementers, managers, trainers

**TRAINING TIME**
During the license term, the eLearning is available at any time. The license period is 12 months after activation.

**LEARNING TARGET**
- Getting an overview of electric drive technology
- Understanding drive system concepts
- Knowing about different drive components
- Being familiar with the different motor types (synchronous, asynchronous) and how they work
- Gaining insight into encoder systems and their functionality
- Being familiar with different drive controllers and control procedures
- Knowing about gears and how they work

**PRICE**
When you book the EATG-1 training course you will receive a 12-month single license for the eEATG eLearning course free of charge!

€66.00 (net) / €78.54 (gross) per year

**PREREQUISITE**
- Technical understanding
- PC with Internet access
- Email address for personal login

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Learning path
MPC/FTS

Basic Training
MPC_YM_Engineering MPC/FTS – Engineering

Special Topics
FTS_Service_Support FTS – Service & support

Contents
- Introduction to the MPC/YM automation system
- System operation, axis configuration and axis operation
- Host/PC application development using the C application interface

Target Group
Programmers, planners/application engineers

Date (German/English) Training Location
Dates and training locations available on request

Training Time
2 to 4 days:
Please contact us for the exact number of days and training times

Price
€590.00 (net) / €702.10 (gross)
(per day/participant)

Notice
You can find the current offer online at:
www.boschrexroth.com/training

In this practical training course, you will learn how to work with the MPC/YM platform, configure and optimize motion axes and program applications with the MPC software interface.

Target Group
Programmers, planners/application engineers

Date (German/English) Training Location
Dates and training locations available on request

Training Time
2 to 4 days:
Please contact us for the exact number of days and training times

Price
€590.00 (net) / €702.10 (gross)
(per day/participant)

Notice
You can find the current offer online at:
www.boschrexroth.com/training
Learning path
PLC – IndraWorks/IndraLogic

eESTG
Basic knowledge of electric control technology

This eLearning course deals with the functions and properties of electric control technology. It is recommended for anyone who plans to attend intermediate training courses. You will learn the concepts of electric control technology and gain an insight into industrial applications.

CONTENTS
- Basic introduction to electric control technology
- Programmable logic controls (PLC)
- Computer numerical controls (CNC)
- Motion controls (MC)
- Robot controls (RC)
- Sample application and programming
- Interfaces

TARGET GROUP
Operators, service engineers, programmers, planners/implementers, managers, trainers

TRAINING TIME
During the license term, the eLearning is available at any time. The licensing period is 12 months after activation.

Duration: approx. 3 to 4 hours

AVAILABLE LANGUAGES
German, English

PRICE
When you book the ESTG-SPS-2G training course you will receive a 12-month single license for the eESTG eLearning course free of charge!

€66.00 (net) / €78.54 (gross) per year

Price for multi-user licenses upon request

PREREQUISITE
- Technical understanding
- PC with Internet access
- Email address for personal login

1) When you book the STG-SPS-2G training course you will receive a 12-month single license for the eESTG eLearning course free of charge.
## Learning path
### XLC/MLC

#### BASIC TRAINING
- **For commissioning and project planning**
  - **ESTG** Basic knowledge of electric control technology (eLearning)
  - **EST-W/I/IL 2G-Prog** Programming with IndraWorks/IndraLogic 2G
  - **EST-ID-Kompakt** IndraDrive – Diagnostics and servicing

#### INTERMEDIATE TRAINING
- **For service personnel**
  - **EST-ID-I** IndraDrive – Diagnostics and servicing

- **For anyone who wants to learn about Open Core Interface**
  - **EST-XLC/MLC-OCI** Introduction to open core engineering

### TARGET GROUP
- **EST-MLC-IP**
- **Programmers, planners/application engineers**

### CONTENTS
- Introduction to the XLC/MLC automation system
- Engineering of the overall system using IndraWorks
- Sercos – The Automation Bus
- Motion programming with AxisInterface and IMC
- Backing up and restoring data
- Synchronous operating types
- Electronic cam discs and CamBuilder
- Generic Application Template

### LEARNING TARGET
- Getting to know the MLC system and its components
- Learning how to use IndraWorks for project planning and diagnostics
- Knowing about motion programming based on AxisInterface
- Being able to create drive and control cam discs with CamBuilder
- Knowing how to archive and restore project data in IndraWorks

### PREREQUISITE
- Basic knowledge of control technology
- Completion of the EAT-ID-Sercos and EST-IW/IL 2G-Prog training courses or comparable knowledge

### DATES (GERMAN)
- **TRAINING LOCATION**
  - February 10 - February 14, 2020 Erbach/Odenwald
  - May 11 - May 15, 2020 Erbach/Odenwald
  - August 24 - August 28, 2020 Erbach/Odenwald

### DATE (ENGLISH)
- **TRAINING LOCATION**
  - June 15 - June 19, 2020 Erbach/Odenwald
  - December 7 - December 11, 2020 Erbach/Odenwald

### TRAINING TIME
- **5 days:**
  - Day 1: 10:00 AM – 4:30 PM
  - Days 2 to 4: 8:00 AM – 4:30 PM
  - Day 5: 8:00 AM – 1:00 PM

### PRICE
- **€2,050.00 (net) / €2,439.50 (gross)**
Learning path
MTX CNC system

BASIC TRAINING

1) Service and maintenance personnel

- EST-MTX-BedProg
  Basic NC programming with Rexroth standard user interface
  p. 230

2) Operators and programmers

- EST-MTX-BedProg
  Basic NC programming with Rexroth standard user interface
  p. 230

- EST-MTX-Bed
  Operation with Rexroth standard user interface
  p. 230

BASIC TRAINING

1) Commissioning engineers and project engineers (with Sercos III, L65 – 2G = 2nd Generation)

- EST-MTX-BedProg
  Basic NC programming with Rexroth standard user interface
  p. 230

2) Optimizing and increasing availability

- EST-MTX-BedProg
  Basic NC programming with Rexroth standard user interface
  p. 230

- EST-MTX-CTA
  MTX Cycle Time Analyzer
  p. 240

- EST-MTX/EWB
  MTX efficiency Workbench
  p. 244

1) When you book the EATG-1 training course you will receive a 12-month single license for the eEATG eLearning course free of charge.

2) When you book the ESTG-SPS-2G training course you will receive a 12-month single license for the eESTG eLearning course free of charge.
MTX Training system

**PRODUCT DESCRIPTION**

This training system is ideal for getting acquainted with NC technology and for imparting practical knowledge in the field of NC technology and machine tools using components used in the industrial sector.

Module 1 consists of HMI (IndraControl VEP) and machine control panel (IndraControl VAM15.1).

Module 2 supplements the training system with the axis model, including three axes with the following components:
- Electric drives (IndraDrive Cs)
- Motors (IndraDyn MS2N)
- MTX performance L75 NC control

With this training system the project planning, commissioning, operation, programming and maintenance can be explained clearly.

Replacing the MTX firmware with the MLC firmware makes the training system suitable for MLC applications such as Robot Control.

Connection to Schuko safety sockets (AC 230 V ± 10 %, 16 A, 50-60 Hz)

Operation with an FI circuit breaker, however, is not possible!

1. Are you interested in our training systems?
   Please contact us, we would be happy to advise you!

**Material number**

R911342540  Complete device

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**Learning path**

**Motion logic (drive-based) – MLD**

**BASIC TRAINING**

1. ESTG-SPS-2G
   - Basic knowledge of PLC technology (2nd generation)
   - p. 216

2. EST-IW/IL 2G-Prog
   - Programming with IndraWorks/IndraLogic 2G
   - p. 220

**INTERMEDIATE TRAINING**

3. EST-ID-Kompakt
   - Application of the MTX training system
   - Commissioning and axis optimization V2 and safety technology
   - p. 248

4. EST-ID-Gateway
   - Application of the IoT gateway
   - p. 249

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1) When you book the ESTG-SPS-1G or ESTG-SPS-2G training course you will receive a 12-month single license for the eESTG eLearning course free of charge.