



Training Center for
Automation Systems

TRAINING COURSES CATALOG



TRAINING INDEX

SIEMENS SIMATIC S7-300/400	4
S7 BASIC COURSE	4
S7 ADVANCED COURSE	5
S7 ADVANCED DIAGNOSTICS	6
S7 COMMUNICATION	7
S7 ETHERNET	8
S7 AS-I	9
S7 OPC	10
S7 PROFINET	11
S7 LOOP CONTROL	12
S7 GRAPH	13
S7 SCL	14
S7 DISTRIBUTED SAFETY	15
S7 MIGRATION TO TIA	16
S7-300/400 AND TIA BASIC COURSE	17
S7-300/400 AND TIA ADVANCED COURSE	18
SIEMENS SIMATIC S7-1200/1500	19
TIA INTRO	19
TIA BASIC COURSE	20
TIA ADVANCED COURSE	21
TIA SCL	22
TIA REGULATION AND MOTION CONTROL	23
TIA PROFINET	24
TIA SAFETY	25
SIEMENS SIMATIC S7-200	26
S7-200 BASIC COURSE	26
S7-200 ADVANCED COURSE	27
SIEMENS SIMATIC S5	28
S5 STARTER	28
S5 EXPERT	29
SIEMENS SIMATIC PCS 7	30
PCS7 BASIC COURSE	30
PCS7 ADVANCED COURSE	31
INDUSTRIAL LOOP CONTROL	32
LOOP CONTROL BASICS	32
SIEMENS SIMATIC HMI	33
OPERATOR PANELS AND WINCC TIA	33
OPERATOR PANELS AND WINCC FLEXIBLE	34
OPERATOR PANELS AND PROTOOL	35
WINCC SCADA TIA	36
WINCC SCADA BASIC COURSE	37
WINCC SCADA ADVANCED COURSE	38

GE HMI/SCADA IFIX	39
IFIX BASIC COURSE	39
IFIX ADVANCED COURSE	40
PROFIBUS	41
PROFIBUS DP WORKSHOP	41
PROFIBUS PA WORKSHOP	42
PROFIBUS TROUBLESHOOTING WORKSHOP	43
PROFIBUS DP TROUBLESHOOTING	44
PROFIBUS DP/PA TROUBLESHOOTING	45
CERTIFIED PROFIBUS INSTALLER	46
CERTIFIED PROFIBUS ENGINEER	47
CERTIFIED PROFIBUS PA ENGINEER	48
PROFINET	49
PROFINET WORKSHOP	49
CERTIFIED PROFINET ENGINEER	50
INDUSTRIAL ETHERNET	51
INDUSTRIAL ETHERNET WORKSHOP	51
INDUSTRIAL ETHERNET BASICS	52
WLAN NETWORKS	53
OPC	54
OPC WORKSHOP	54
OPC BASICS	55
SIEMENS IDENTIFICATION SYSTEMS	56
RF200/300 – S7 INTEGRATION	56
RF600 SYSTEM COURSE	57
IO-LINK	58
IO-LINK BASICS	58
SIEMENS DRIVE TECHNOLOGY	59
DRIVE TECHNOLOGY BASICS	59
SINAMICS S120 CONFIGURATION AND COMMISSIONING	60
SINAMICS G120 CONFIGURATION AND COMMISSIONING	61
MICROMASTER 4 CONFIGURATION AND COMMISSIONING	62
SIMOCODE CONFIGURATION AND COMMISSIONING	63
HYDRAULICS	64
HYDRAULICS BASICS	64
ELECTRO-HYDRAULICS	65
PROPORTIONAL HYDRAULICS	66



■ Training objective

First level training concerning the maintenance, programming and diagnostics of SIEMENS SIMATIC S7-300/400 PLCs. The participants learn to establish a connection with the PLC, make and restore a copy of the program, diagnose I/O and to write and start up simple LAD/FBD/STL programs in STEP7.

■ Duration: 35 hours / 5 days

■ Benefits

The most frequently chosen control systems training in Poland

With more than 6.000 participants so far the most frequently chosen control systems training in Poland. In our customer satisfaction surveys, conducted regularly on each INTEX training, this training with its exceptionally experienced trainers systematically achieves highest results.

Many practical exercises with the help of process models

Computer models simulate the behavior of real world plants and machines facilitating the implementation and testing of control algorithms.

Individual workstations for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

■ Content

- SIEMENS SIMATIC S7 PLC range overview
- Definition and management of a STEP7 project with the SIMATIC Manager
- Setting up and testing the communication between the programming device and the PLC
- Definition of the SIMATIC S7-300/400 hardware configuration
- Operating modes, interpretation of LEDs, available controls of the CPU
- Addressing memory and input/outputs in SIMATIC S7-300/400 PLC
- Components and structure of the control program
- Developing control programs in LAD/FBD with the use of logical, arithmetical, organizational operations as well as timers and counters
- Implementation of simple control programs in STL
- Basic tools for testing and monitoring the control program
- Archiving and transferring the project
- Using FlashEPROM and MMC memory cards

■ Participation information

The participant should be familiar with the basic concepts of automation technology.



■ Training objective

Second level training concerning the maintenance, programming and diagnostics of SIEMENS SIMATIC S7-300/400 PLCs. The participants will be able to parameterize and operate analog modules, write and analyze complex programs in STL and diagnose errors signaled by the CPU.

■ Duration: 35 hours / 5 days

■ Benefits

The proven choice!

Chosen by more than 4.000 participants up to date, after the S7 BASIC COURSE the S7 ADVANCED COURSE is on the second place among the most successful control systems trainings in Poland ever, what confirms it to be an exceptionally proven training.

Individual workstations for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Additional materials for self-study

Thanks to our free handbook STL exercises the participant may individually prepare for the training.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

■ Content

- Parameterization of the SIEMENS SIMATIC S7-300/400 CPU and signal modules
- Measuring current, voltage, temperature and controlling actuators with analog input/output modules
- Data management with data blocks DB
- Programming of parametrizable blocks FB and FC
- Tools for documenting and analyzing complex PLC programs (cross-references, program structure, memory assignment)
- Advanced programming exercises in STL including floating point arithmetic, jump, shift and rotation operations as well as indirect addressing
- Tools available for system information, program testing and diagnostics

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.

S7 ADVANCED DIAGNOSTICS



■ Training objective

The training is intended for the maintenance and service staff in order to consolidate and improve their skills regarding modification, starting up and debugging of existing projects for SIEMENS SIMATIC S7-300/400 PLCs.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

The training is conducted by specialists with many years of experience in starting up and maintenance of SIMATIC based automation systems.

Plenty of practical exercises based on existing projects

This allows the training to get as close as possible to maintenance staff reality.

Individual workstations for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Recommendations concerning the configuration as well as installation of SIEMENS SIMATIC S7-300/400 PLCs
- Starting up, debugging and extending existing projects
- Troubleshooting with the step-by-step program execution mode as well as variable forcing
- Identification of program errors and reasons for PLC cycle interruption using Module Information and Hardware Diagnostics
- Error handling with organization blocks
- Implementation of programs based on time-of-day, time-delay, cyclic and hardware alarms
- System functions for alarm and interrupt handling
- Program based parameterization and diagnostics of signal modules

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

The participants will get familiar with the principles of configuration, parameterization and diagnostics of MPI and PROFIBUS DP networks in the SIEMENS SIMATIC S7-300/400 environment.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks.

Individual workstation for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300/400 PLC equipped with PROFIBUS CP and several PROFIBUS DP Slaves from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

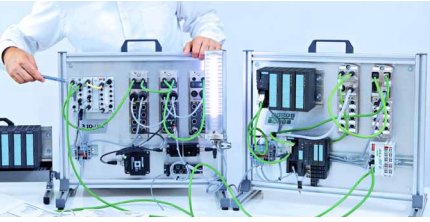
■ Content

- Principle of operation, basic parameters, infrastructure components and installation aspects of MPI and PROFIBUS networks
- Data exchange between SIEMENS SIMATIC S7 PLCs through the MPI interface
- Configuration and startup of a PROFIBUS DP network with the SIMATIC S7 as DP-Master
- Available system functions for the operation of DP-Slave units
- Diagnostic tools available in STEP7 (Hardware Diagnostics/DP-Slave Diagnostics)
- Reaction of the SIMATIC CPU to network errors
- Configuration, operation and diagnostics of the SIMATIC CP342-5 communication processor
- Establishing FDL connections

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.

S7 ETHERNET



■ Training objective

Introduction to the basics of ETHERNET and TCP/IP based networks, as well as the communication possibilities of the SIEMENS SIMATIC CP343-1/443-1 IT/Advanced communication processors and SIEMENS SIMATIC S7-300/400 CPUs equipped with an ETHERNET interface.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As industrial control & networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Individual workstation for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with CP343-1 IT/Advanced and industrial Ethernet switches (SCALANCE X and W).

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

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■ Content

- Principle of operation, basic parameters, infrastructure components and installation aspects of ETHERNET networks
- Practical exercises concerning the configuration of TCP/IP based networks including communication between networks and network diagnostics
- Establishing a Send-Receive communication with the SIEMENS SIMATIC CP343-1/443-1, diagnostic features
- Exercises making use of the FTP, HTTP, SMTP functionality available in the SIMATIC CP IT/Advanced
- Definition of user pages for web server integrated in CPU
- Use of Open Communication for data exchange between PLCs
- Network management, security and diagnostic functionality offered by the SNMP protocol
- Network monitoring with the protocol analyzer
- Device selection criteria, network planning and installation recommendations
- WLAN access point and client interface configuration

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

Principle of operation, configuration, parameterization and diagnostics of AS-i networks with the SIEMENS SIMATIC S7-300 as AS-I Master.

■ Duration: 11 hours / 2 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As industrial control & networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Fully equipped workstations

A maximum of two participants share one PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with CP343-2, PROFIBUS DP-AS-i Gateway and AS-i Slaves.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

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Highest quality standards

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Recognized industry standard

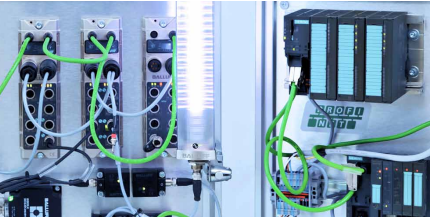
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■ Content

- Principle of operation, basic parameters, infrastructure components and installation aspects of AS-i networks
- Parameterization of AS-i Slave devices
- Configuration, operation and diagnostics of the SIEMENS SIMATIC CP343-2 master unit
- Network troubleshooting
- Integration of AS-i and PROFIBUS DP networks
- Safety at Work, analog signal processing

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.



■ Training objective

The participants will acquire practical skills concerning the implementation and modification of applications in accordance with OPC DA, A&E, HDA, XML-DA specifications using the SIEMENS SIMATIC NET OPC server.

■ Duration: 27 hours / 4 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Individual workstations for each participant

Every participant has access to a PC with STEP7/SOFTNET connected to a SIEMENS SIMATIC S7-300 PLC.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Existing OPC specifications, the role of the OPC Foundation, testing and certification procedures
- Access to current process data via the SIEMENS SIMATIC NET OPC server (OPC DA functionality)
- Implementation of OPC DA server redundancy
- Sharing messages and alarms through the SIMATIC NET server (OPC A&E)
- Configuration and use of the historical data server (OPC HDA)
- COM/DCOM basics and configuration
- Diagnostic and troubleshooting methods in practice
- Overriding DCOM configuration and security restrictions through tunneling
- Access to current process data via OPC XML-DA

■ Participation information

Knowledge on the level of the S7 BASIC COURSE is required. OPC BASICS is a vendor independent version of this training



■ Training objective

The participants will get familiar with the principles of configuration, parameterization and diagnostics of PROFINET networks in the SIEMENS SIMATIC S7-300/400 environment.

■ Duration: 31 hours / 4 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFINET networks.

Individual workstation for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with CP343-1 Advanced and several PROFINET IO devices from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Principle of operation, basic parameters, infrastructure components and installation aspects of PROFINET networks
- Exercises concerning the configuration and startup of a PROFINET network with the SIEMENS SIMATIC S7 as controller unit
- Integrating PROFIBUS DP with PROFINET networks through the IE/PB Link PN IO proxy
- PROFINET diagnostic features available in STEP7 (Hardware Diagnostics/DP-Slave Diagnostics)
- Reaction of the SIMATIC S7 CPU to PROFINET network errors
- Configuration, operation and diagnostics of the SIMATIC CP343-1 Advanced communication processor operating as IO controller
- PROFINET and real time: Isochronous RT (IRT), principle of operation, device requirements, configuration
- Using WLAN interfaces in PROFINET
- PROFINET network security

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.

S7 LOOP CONTROL



■ Training objective

The aim of the course is to provide solid knowledge concerning the possibilities of implementation and tuning of PID control loops available for the SIEMENS SIMATIC S7-300/400 PLCs.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Many practical exercises with the help of process visualization

Visualization of the behavior of the PID control loop simplifies object identification as well as tuning and evaluation of the quality of the regulation.

Individual workstations for each participant

Every participant has access to a PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC equipped with a FM355 module.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Structures and types of process control systems
- Practical implementation of 2- and 3-point controllers for SIEMENS SIMATIC S7-300/400 PLC
- Principle of operation, structure, parameters and different implementations of PID controllers, practical implementation of a software PID controller
- Exercises in using standard function blocks for process control available for the SIMATIC S7-300/400 (FB41, FB42, FB43)
- Structure, parameters and use of the dedicated temperature controller blocks (FB58/FB59)
- Practical identification and evaluation of the object individual controllability to regulation
- Controller tuning for static and astatic objects based on the knowledge of the step response as well as by using the Ziegler-Nichols method
- Methods for evaluation of control process quality
- Configuration, operation and diagnostics of the SIMATIC FM 355C/S controller

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills. LOOP CONTROL BASICS is a vendor independent version of this training.



■ Training objective

This three days training is meant for engineers that intend to plan, program and start up sequential controls with S7-GRAPH.

■ Duration: 23 hours / 3 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7/S7-GRAPH connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital and analog I/O modules as well as signal simulators.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Basic terms and application areas of sequential controls
- Creating the structure of a sequencer: rules, elements and possible structures
- The S7-GRAPH editor: user interface, application settings, editing and monitoring of the user program
- Programming of actions: standard and event-dependent actions, counters, timers and arithmetic operations
- Application of supervision and interlock conditions
- Programming of conditions with LAD and FBD
- S7-GRAPH FB call in the user program, definition and meaning of the parameter set

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

The participants learn to write, start up and test SCL programs with the S7-SCL editor.

■ Duration: 15 hours / 2 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7/S7-SCL connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital and analog I/O modules as well as signal simulators.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- The S7-SCL language - introduction, area of application
- The S7-SCL editor: available functions, usage of block, parameter and control structure templates, monitoring of the program execution
- Definition of program blocks (OB/FC/FB) and data blocks (DB) in S7-SCL
- The S7-SCL program structure: use of logical, arithmetic and comparison expressions
- The IF, CASE, FOR, WHILE, REPEAT control statements
- Structural programming in S7-SCL: calling of user blocks (FC/FB), system functions and library blocks
- Use of data blocks (DB) in S7-SCL
- Standard functions of the S7-SCL language: data type conversion, numeric and bit-string functions, functions for the processing of strings|

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

This training delivers the required knowhow to implement safety oriented functionality with the SIEMENS SIMATIC S7-300/400 F-type CPUs and modules and the software S7 Distributed Safety. It is intended for both - engineering as well as maintenance personnel.

■ Duration: 27 hours / 4 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7/Distributed Safety connected to a SIEMENS SIMATIC S7-300F PLC equipped with PROFIsafe conformant peripherals (drives, remote IOs).

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Standards and regulations overview
- Criteria for analysis and risk assessment, determining the performance level - EN, safety integrity level - SIL
- The SIEMENS SIMATIC S7-300/400F automation system (principle of operation, system configuration, peripherals)
- Configuration of Fail-Safe peripherals with Distributed Safety
- Creating of a safety oriented user program
- Failsafe communication with PROFIsafe (CPU-CPU, CPU-peripheral device)
- Diagnostic possibilities (CPU, peripherals)
- Exercises: peripherals configuration, communication, troubleshooting
- Programming examples (emergency stop, safety door, safety-oriented switch-off, passivation)
- Configuration and deployment of safety integrated functions for drive systems in accordance with the PROFIsafe for PROFIdrive profile

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.

S7 MIGRATION TO TIA



■ Training objective

The training is intended for users of classic STEP7 in the version 5.x. The participants learn to configure the SIEMENS SIMATIC S7-300/400 and the PROFIBUS DP network as well as to implement, start-up and diagnose the PLC application with STEP7 TIA Portal.

■ Duration: 23 hours / 3 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstations for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-300 PLC. They have also access to ET200M, ET200S and PROFIBUS DP Slaves from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

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Recognized industry standard

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■ Content

- The SIEMENS SIMATIC TIA Portal - integrated engineering platform, STEP7, WinCC - available versions, extensions
- First steps in TIA Portal - project definition, hardware configuration, variable definition, simple applications written in LAD
- Programming of SIMATIC S7-300/400 PLCs with the STEP7 TIA: structured programming, programming in FBD/STL, data blocks, testing using program status, monitoring and modifying variables
- Project documentation in TIA Portal
- Debugging user application: application information, online-offline comparison, testing in single-step mode
- Diagnostic tools: Online&Diagnostics, System Diagnostics, WWW server available in the PN/DP CPUs
- Configuration and diagnostics of PROFIBUS DP network: GSD file import, DP master configuration, start-up and system diagnostics with STEP7 TIA
- Project archiving
- Project migration from STEP7 V5.5 to STEP7 TIA

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

First level training concerning the maintenance, programming and diagnostics of the classic SIEMENS SIMATIC S7-300/400 PLCs with the TIA PORTAL engineering environment. The participants learn to establish a connection with the PLC, make and restore a copy of the program, diagnose I/O and to write and start up simple LAD/FBD/STL programs.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Many practical exercises with the help of process models

Computer models simulate the behavior of real world plants and machines facilitating the implementation and testing of control algorithms.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

■ Content

- SIEMENS SIMATIC S7 PLC range overview
- Definition and management of a STEP7 project with the TIA PORTAL
- Setting up and testing the communication between the programming device and the PLC
- Definition of the SIMATIC S7-300/400 hardware configuration
- Operating modes, interpretation of LEDs, available controls of the CPU
- Addressing memory and input/outputs in SIMATIC S7-300/400 PLC
- Components and structure of the control program
- Developing control programs in LAD/FBD with the use of logical, arithmetical, organizational operations as well as timers and counters
- Implementation of simple control programs in STL
- Basic tools for testing and monitoring the control program
- Archiving and transferring the project
- Using FlashEPROM and MMC memory cards

■ Participation information

The participant should be familiar with the basic concepts of automation technology. Potential participants who are experienced users of STEP7 may consider the S7 MIGRATION TO TIA training as an option.

S7-300/400 AND TIA ADVANCED COURSE



■ Training objective

After the S7-300/400 AND TIA BASIC COURSE the second level training concerning the maintenance, programming and diagnostics of the classic SIEMENS SIMATIC S7-300/400 PLCs with the TIA PORTAL engineering environment.

The participants will be able to parameterize and operate analog modules, write and analyze complex programs in STL and to diagnose errors signaled by the CPU.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-300 PLC equipped with digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Additional materials for self-study

Thanks to our free handbook STL exercises the participant may individually prepare for the training.

■ Content

- Parameterization of the SIEMENS SIMATIC S7-300/400 CPU and signal modules
- Measuring current, voltage, temperature and controlling actuators with analog input/output modules
- Data management with data blocks DB
- Programming of parametrizable blocks FB and FC
- Tools for documenting and analyzing complex PLC programs (cross-references, program structure, memory assignment)
- Advanced programming exercises in STL including floating point arithmetics, jump, shift and rotation operations as well as indirect addressing
- Tools available for system information, program testing and diagnostics

■ Participation information

You should have attended the S7-300/400 AND TIA BASIC COURSE or possess comparable skills.



■ Training objective

The TIA INTRO in one package delivers everything You need in order to build Your first SIEMENS SIMATIC S7-1200 application:

- two days of compact introduction to the SIEMENS SIMATIC S7-1200
- the programming environment SIMATIC STEP 7 BASIC V13
- one SIEMENS SIMATIC S7-1200 CPU 1212C (DC/DC/DC).

■ Duration: 15 hours / 2 days

■ Benefits

All-In-One

Introduction + Programming Environment + PLC: everything You need in order to build Your first SIEMENS SIMATIC S7-1200 application.

If You want to learn more ..

.. You may add three additional days of training, thus attending the complete TIA BASIC COURSE!

In accordance with INTEX training standards

TIA INTRO comes with all INTEX training features appreciated by our customers: competent trainers, comfortable training environment, additional hours of free training, comprehensive training documentation.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- SIEMENS SIMATIC S7-1200/1500 PLC range overview: available CPUs, communication and signal modules, dedicated operator panels
- TIA Portal, STEP7 and WinCC - functionality and operation of the TIA platform, setting up the communication with the CPU and the OP
- Hardware configuration of the S7-1200/1500, parameterization of the CPU and signal modules, configuration of the IP interface
- PG-PLC connection: available options, configuration of the PG interface, troubleshooting
- Memory access in the S7-1200/1500: process (inputs/outputs) and internal variables (tags), addressing principles
- Developing control programs in LAD/FBD: logical and arithmetical operations, timers

■ Participation information

The participant should be familiar with the basic concepts of automation technology.

TIA BASIC COURSE



■ Training objective

The participant learns to implement, test and start up user programs for the SIEMENS SIMATIC S7-1200/1500 using STEP7 TIA and projects for SIMATIC HMI Basic series operator panels with WinCC TIA Basic.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-1200/1500 PLC equipped with a KP/KTP operator panel and digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- SIEMENS SIMATIC S7-1200/1500 PLC range overview: available CPUs, communication and signal modules, dedicated operator panels
- TIA Portal, STEP7 and WinCC - functionality and operation of the TIA platform, managing and documenting of projects
- Hardware configuration, parameterization of the CPU and signal modules, configuration of the IP interface
- PG-PLC connection: available options, configuration of the PG interface, troubleshooting
- Process (inputs/outputs) and internal variables (tags), addressing principles
- Developing control programs in LAD/FBD: logical and arithmetical operations, timers and counters, data comparison and transfer functions
- Usage of data blocks (DB)
- Structured programming: OB/FC/FB blocks, block parameterization and usage in the control program
- Tools for monitoring the control program and CPU diagnostics
- Introduction to analogue signal processing
- Creating a process visualization with the Basic line (KP/KTP) panels

■ Participation information

The participant should be familiar with the basic concepts of automation technology.



■ Training objective

Continuation of the TIA BASIC COURSE. The participant will be able to read, modify and start up complex programs for the SIEMENS SIMATIC S7-1200/1500 implemented in LAD/FBD/SCL/STL.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-1200/1500 PLC equipped with a KP/KTP operator panel and digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

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■ Content

- Configuration of the SIEMENS SIMATIC S7-1200/1500 PLC
- Measuring current, voltage, temperature and controlling actuators with analog input/output modules
- Word logic, shift and rotate operations
- Data blocks - advanced operations
- Available jump operations
- Introduction to SCL in STEP7 TIA
- Usage of the global libraries
- Function blocks (FB)
- Implementation of programs based on time-of-day, time-delay, cyclic and hardware alarms
- Archiving of process values
- Capture and display process values with the Trace function
- STL in the SIMATIC S7-1500

■ Participation information

You should have attended the TIA BASIC COURSE or possess comparable skills.



■ Training objective

The participant learns to implement, test and start up SCL programs for the SIEMENS SIMATIC S7-300/400/1200/1500 using STEP7 TIA PORTAL.

■ Duration: 23 hours / 3 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC 1200/1500 or S7-300 PLC equipped with digital I/O modules as well as signal simulators.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Highest quality standards

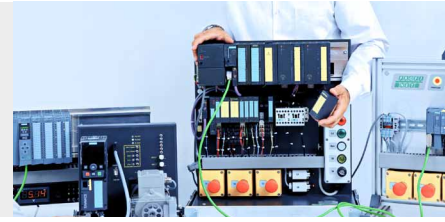
Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- The SCL language - introduction, area of application
- SCL editor: available functions, usage of block, parameter and control structure templates, monitoring of the program execution
- SCL program structure: use of logical, arithmetic and comparison expressions
- IF, CASE, FOR, WHILE, REPEAT control statements
- Structural programming in SCL: calling of user blocks (FC/FB), system functions and library blocks
- Use of data blocks in SCL
- Program testing
- Data type conversion, numeric and bit-string functions
- String operations

■ Participation information

You should have attended the TIA ADVANCED COURSE or possess comparable skills.



■ Training objective

Plenty of practical exercises allow the participants to understand application areas, configuration possibilities, commissioning and diagnostics procedures of high speed counters and pulse outputs, the CPU internal PID regulator and the motion control functionality available in the SIEMENS SIMATIC S7-1200/1500 PLCs.

■ Duration: 27 hours / 4 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-1200/1500 PLC equipped with an operator panel and digital and analog I/O modules as well as signal simulators and a SINAMICS G120 drive unit.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Configuration of CPU and signal modules of the SIEMENS SIMATIC S7-1200/1500 PLC
- Handling of cyclic, hardware, time delayed and diagnostic interrupts
- Pulse outputs: PWM configuration and activation, PWM control through the user application
- High speed counters: operation modes and control through the user application
- Drive control using pulse/direction mode with the Positioning Axis object: configuration, commissioning and control from the user program
- Introduction to PID control, usage of the available internal PID_Compact and PID_3Step controller
- Motion control technology objects used to control the drive with an encoder: configuration, commissioning and control from the user program

■ Participation information

You should have attended the TIA ADVANCED COURSE or possess comparable skills.



■ Training objective

The participants will get familiar with the principles of configuration, parameterization and diagnostics of PROFINET networks in the SIEMENS SIMATIC S7-1200/1500 and S7-300/400 environment, as well as the possibilities of data exchange offered by the build-in Ethernet interface available in the CPU.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

Our expert's unique competence and vast experience with SIEMENS based communication solutions has been confirmed by achieving the status of Approved Partner and SIEMENS training center for PROFIBUS, PROFINET, AS-i and OPC communication technologies.

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFINET networks.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7-1200 or S7-1500 equipped with several PROFINET IO devices from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training.

The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard.

The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Principle of operation, basic parameters, infrastructure components and installation aspects of PROFINET networks
- Exercises concerning the configuration and startup of a PROFINET network in the SIEMENS SIMATIC S7 environment
- Integrating PROFIBUS DP with PROFINET networks through the IE/PB Link PN IO proxy
- PROFINET diagnostic features available in STEP7 TIA
- Reaction of the SIMATIC S7 CPU to PROFINET network errors
- PROFINET and real time: Isochronous RT (IRT), principle of operation, device requirements, configuration
- Using WLAN interfaces in PROFINET
- PROFINET network security
- Building an own application with the internal webserver available in the CPU
- Data exchange between CPUs with the Open Communication protocol

■ Participation information

You should have attended the TIA ADVANCED COURSE or possess comparable skills.



■ Training objective

This training delivers the required knowhow in order to implement safety oriented functionality in the STEP7 Safety environment. The participant learns how to connect the safety devices to the IO modules and how to configure them. The process of configuring safety functionality in SINAMIC G120 drive units is discussed in detail. In the following the implementation and commissioning of the safety application based on the SIMATIC S7-1200/1500 and S7-300/400 F type controllers will be learned and extensively exercised.

■ Duration: 27 hours / 4 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA/Safety Advanced connected to a SIEMENS SIMATIC S7-1500F equipped with PROFIsafe conformant peripherals (drives, remote IOs).

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

■ Content

- Standards and regulations overview
- Criteria for analysis and risk assessment, determining the performance level - EN, safety integrity level - SIL
- The SIEMENS SIMATIC S7-1200F/1500F and S7-300F/400F automation systems (principle of operation, system configuration, peripherals)
- Configuration of Fail-Safe peripherals with STEP7 Safety Advanced
- SIEMENS SIMATIC S7-1200/1500F and S7-300/400F specific aspects related to safety application
- Creating of a safety oriented user program
- Failsafe communication with PROFIsafe (CPU-CPU, CPU-peripheral device)
- Diagnostic possibilities (CPU, peripherals)
- Exercises: peripherals configuration, communication, troubleshooting
- Programming examples (emergency stop, safety door, safety-oriented switch-off, passivation)
- Configuration and deployment of safety integrated functions for drive systems conforming to the *PROFIsafe for PROFIdrive* profile

■ Participation information

You should have attended the TIA ADVANCED COURSE or possess comparable skills.

S7-200 BASIC COURSE



■ Training objective

First level training concerning the maintenance, programming and diagnostics of SIEMENS SIMATIC S7-200 PLCs. The participants learn to establish a connection with the PLC, make and restore a copy of the program, diagnose I/O and to write and start up simple LAD/FBD programs in STEP7 Micro.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7 Micro connected to a SIEMENS SIMATIC S7-200 PLC equipped with an operator panel and digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

■ Content

- SIEMENS SIMATIC S7-200 PLC range overview
- Functionality and operation of STEP7 Micro
- Setting up and testing the communication between the programming device and the PLC
- Operating modes, interpretation of LEDs, available controls of the CPU
- Addressing memory and input/outputs in SIMATIC S7-200 PLC
- Components and structure of the control program
- Developing control programs in LAD/FBD with the use of logical, arithmetical, organizational operations as well as timers and counters
- Basic tools for testing and monitoring the control program
- Selection criteria and installation recommendations for SIMATIC S7-200 PLC
- Documenting a project

■ Participation information

The participant should be familiar with the basic concepts of automation technology.



■ Training objective

Continuation of the S7-200 BASIC COURSE. The participants will be able to configure and operate analog modules, the SIEMENS SIMATIC S7-200 operator panels, fast counter, pulse outputs and will get to know the S7-200 networking capabilities.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7 Micro connected to a SIEMENS SIMATIC S7-200 PLC equipped with an operator panel and digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

■ Content

- Developing programs in STL for SIEMENS SIMATIC S7-200 PLC
- Measuring current, voltage, temperature and controlling actuators with analog input/output modules
- Interrupt handling in the control program
- Pointer handling and indirect addressing
- Pulse outputs and high speed counters
- Introduction to PID control, parameterization of the PID controller available in the SIMATIC S7-200
- Configuration and operation of the TD400C operator panel
- Using of NETR/NETW for communication between SIMATIC S7-200 PLC

■ Participation information

You should have attended the S7-200 BASIC COURSE or possess comparable skills.

S5 STARTER



■ Training objective

First level training concerning the maintenance, programming and diagnostics of SIEMENS SIMATIC S5-90U up to 115U PLCs. The participants learn to establish a connection with the PLC, make and restore a copy of the program, diagnose I/O and to write and start up simple LAD/FBD/STL programs in STEP5.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP5 connected to a SIEMENS SIMATIC S5 PLC equipped with digital I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own - e.g. with the help of additional, completely documented exercises – or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

■ Content

- SIEMENS SIMATIC S5 PLC range overview
- Functionality and operation of STEP5
- Setting up and testing the communication between the programming device and the PLC
- Operating modes, interpretation of LEDs, available controls of the CPU
- Addressing memory and input/outputs in SIMATIC S5-90U, S5-95U and S5-100U PLC
- Components and structure of the control program
- Developing control programs in LAD/FBD with the use of logical, arithmetical, organizational operations as well as timers and counters
- Implementation of simple control programs in STL
- Basic tools for testing and monitoring the control program
- Using EPROM memory cards

■ Participation information

The participant should be familiar with the basic concepts of automation technology.



■ Training objective

Second level training concerning the maintenance, programming and diagnostics of SIEMENS SIMATIC S5-115U PLCs. The participants will be able to parameterize and operate analog modules, write and analyze complex programs in STL and use the available diagnostic and debugging functions.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Fully equipped workstations

A maximum of two participants share one PC with STEP5 connected to a SIEMENS SIMATIC S5 PLC equipped with digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. It also contains reference solutions for all practical exercises. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

■ Content

- SIEMENS SIMATIC S5-115U hardware configuration
- Operating modes, interpretation of LEDs, available controls of the CPU
- Addressing memory and input/outputs in SIMATIC S5-115U PLC
- Measuring current, voltage, temperature and controlling actuators with analog input/output modules
- Data management with data blocks DB
- Programming of parametrizable blocks FB
- Tools for documenting and analyzing complex PLC programs (cross-references, program structure, memory assignment)
- Advanced programming exercises in STL including jump and shift operations, indirect addressing, processing via formal operand (DI)
- Tools available for system information, program testing and diagnostics

■ Participation information

You should have attended the S5 STARTER or possess comparable skills.

PCS7 BASIC COURSE



■ Training objective

The INTEX basic course concerning the programming and diagnostics of the SIEMENS SIMATIC PCS 7 distributed control system.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

This training is conducted exclusively by specialists with an extraordinary rich experience in programming and commissioning of SIMATIC PCS 7 based automation systems gained in large installations all around the globe.

Individual workstation for each participant

Every participant has access to a workstation equipped with PCS7 v 8.1 SP1.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Introduction to the PCS 7 system: application range, possible configurations
- Project definition in PCS 7: multiproject, configuration of AS and OS stations
- Definition of the technological structure - plant hierarchy, area assignment of AS/OS stations
- Definition of an AS application in CFC: CFC editor, view/definition of the block runtime sequence, parametrization of CFC objects, compiling of the application
- Advanced Process Library - available blocks, practical use of selected blocks, related operator controls
- Usage of SCL in PCS 7: application syntax, basic operations, block and parameter attributes used within PCS 7
- Diagnostics and commissioning of the AS application
- Compiling of the OS project
- Editing of the OS project with WinCC

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills. Previous knowledge of the SIMATIC WinCC SCADA system is helpful.



■ Training objective

Second level training concerning advanced functionality of the SIEMENS SIMATIC PCS7 distributed control system.

■ Duration: 35 hours / 5 days

■ Benefits

Learn from the experts

This training is conducted exclusively by specialists with an extraordinary rich experience in programming and commissioning of SIMATIC PCS 7 based automation systems gained in large installations all around the globe.

Fully equipped workstations

A maximum of two participants share one workstation equipped with PCS7 v 8.1 SP1.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

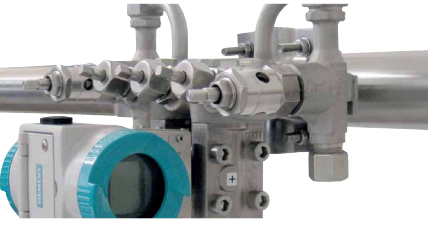
■ Content

- Project definition in PCS 7: configuration of AS and OS stations, definition of the plant hierarchy, use of the APL library
- Advanced system configurations: Client-Server architecture, redundancy, reference stations
- Use of SCL language in PCS7
- Programming of sequences with the SFC editor
- Process Object View: area of application and its use
- Multilanguage projects in PCS7, use of Text Library, Text Distributor
- Advanced alarm management, Smart Alarm Hiding
- Components of the PCS7 system - Process Historian, Information Server
- Advanced maintenance and diagnostic capabilities - Maintenance Station, SIMATIC PDM
- Basics of safety systems in PCS7: hardware configuration and programming

■ Participation information

You should have attended the PCS7 BASIC COURSE or possess comparable skills.

LOOP CONTROL BASICS



■ Training objective

The objective of the training is to provide solid basics concerning the possibilities of implementation and tuning of PID control loops. After attending this training the participant will be able to make efficient use of the PID controllers commonly available in the form of software or hardware modules.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Gain solid fundamentals

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Many practical exercises with the help of process visualization

Visualization of the behavior of the PID control loop simplifies object identification as well as tuning and evaluation of the quality of the regulation.

Individual workstations for each participant

Every participant has access to an individual workstation.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

■ Content

- Structures and types of process control systems
- Practical implementation of 2- and 3-point controllers: area of application, parameterization and implementation
- Principle of operation, structure, parameters and different implementations of PID controllers
- Implementation of continuous controller: characteristics, area of application, implementation, cascade control, use of pulse generator
- Step controller: characteristics, area of application, implementation
- Practical identification and evaluation of the object individual controllability
- Controller tuning for static and astatic objects based on the knowledge of the step response as well as by adoption of the Ziegler-Nichols method
- Methods for evaluation of control process quality
- MPC (Model Predictive Control) controllers: idea of predictive control, overview of MPC algorithms, adoption of a Predictive Functional Control controller in a heating process

■ Participation information

The participant should be familiar with the basic concepts of automation technology.

OPERATOR PANELS AND WINCC TIA



■ Training objective

The participants learn to modify and adapt visualization projects for SIEMENS operator panels to be configured with the SIMATIC WinCC TIA engineering tool.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 TIA connected to a SIEMENS SIMATIC S7 PLC equipped with an operator panel.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

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Highest quality standards

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■ Content

- Building and managing of projects for operator panels with SIEMENS SIMATIC WinCC TIA
- Connecting to the SIEMENS SIMATIC S7 PLC through MPI/PROFIBUS/ETHERNET, HMI variable definition
- Basics of graphic image creation for operator control and monitoring: elements, templates, screen hierarchy and navigation
- Multilanguage projects
- Implementation of area pointers in data exchange with the PLC
- User administration and access rights
- Alarm display, alarm logging, alarm configuration
- Backup and restoring of the panel configuration

■ Participation information

You should have attended the TIA BASIC COURSE or S7 MIGRATION TO TIA or possess comparable skills.

OPERATOR PANELS AND WINCC FLEXIBLE



■ Training objective

This training concerns the SIEMENS operator panels to be configured with WinCC flexible. Many practical exercises help to develop the skills required for modification and adaptation of the visualization project.

■ Duration: 35 hours / 5 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with STEP7 and WinCC flexible connected to a SIEMENS SIMATIC S7-300 PLC equipped with OP177/MP277 operator panel and digital and analog I/O modules as well as signal simulators.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Basic parameters, application range and comparison of the functionality offered by the SIEMENS SIMATIC HMI operator panels configurable with the WinCC flexible software
- Managing the visualization project with WinCC flexible
- Setting up the communication to the SIEMENS SIMATIC S7 PLC through the MPI/PROFIBUS/ETHERNET interface
- Developing visualization projects for panels with graphics display as well as PCs
- Defining trends and recipe management
- Signaling events through messages and alarms
- Implementation of scripts, access to variables through OPC, faceplates
- Restricting access to visualization components
- Implementation of multilingual visualization projects
- Creating a backup copy and restoring the panel content using the ProSave application

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

This training concerns the SIEMENS operator panels to be configured with ProTool/Pro. Many practical exercises help to develop the skills required for modification and adaptation of the visualization project.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with STEP7 and ProTool/Pro connected to a SIEMENS SIMATIC S7-300 PLC equipped with an OP7 operator panel and digital and analog I/O modules as well as signal simulators.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Basic parameters, application range and comparison of the functionality offered by the SIEMENS SIMATIC HMI operator panels configurable with the ProTool/Pro software
- Managing the visualization project with ProTool/Pro
- Setting up the communication to the SIEMENS SIMATIC S7 PLC through the MPI/PROFIBUS interface
- Developing visualization projects for panels with text-based or graphics display as well as PCs
- Defining trends and recipe management
- Signaling events through messages and alarms
- Restricting access to visualization components
- Implementation of multilingual visualization projects
- Creating a backup copy and restoring the panel content using the ProSave application

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

Everything You need to know in order to create, modify and start-up a complete visualization project on a single workstation with the SIEMENS SIMATIC WinCC Professional TIA system.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with WinCC with remote access to a SIEMENS SIMATIC S7-300 PLC. Eight additional hours of free training. From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Additional materials for self-study

Thanks to our free handbook Introduction to C-Scripts the participant may individually prepare for the training.

Recognized industry standard

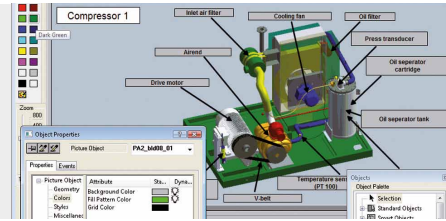
INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Components of the WinCC visualization system
- Setting up the communication to the automation systems (available communication channels)
- Developing visualization applications: definition of process screens, available elements and their features
- Using C scripts
- Project, computer properties
- Signaling events through messages and alarms
- Archiving of process variables
- Creating and configuring trends
- Restricting access to visualization components
- Implementation of multilingual visualization projects
- Creating reports

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems.



■ Training objective

Basic training concerning the SIEMENS SIMATIC HMI WinCC SCADA system

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstation for each participant

Every participant has access to a PC with WinCC with remote access to a SIEMENS SIMATIC S7-300 PLC.

Eight additional hours of free training

From Monday to Thursday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

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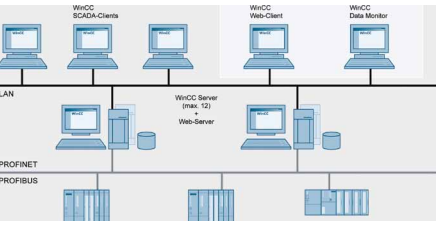
■ Content

- Components of the WinCC visualization system
- Setting up the communication to the automation systems (available communication channels)
- Developing visualization applications: definition of process screens, available elements and their features
- Using C scripts
- Project, computer properties
- Signaling events through messages and alarms
- Archiving of process variables
- Creating and configuring trends
- Restricting access to visualization components
- Implementation of multilingual visualization projects
- Creating reports

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems.

WINCC SCADA ADVANCED COURSE



■ Training objective

Continuation of the WINCC SCADA BASIC COURSE concerning the more advanced functionality of the SIEMENS SIMATIC HMI WinCC SCADA system.

■ Duration: 27 hours / 4 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Individual workstation for each participant

Every participant has access to a PC with WinCC with remote access to a SIEMENS SIMATIC S7-300 PLC.

Six additional hours of free training

From Monday to Wednesday from 16:00 to 18:00 the participants may additionally practice on their own or with the individual support of our trainer.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Highest quality standards

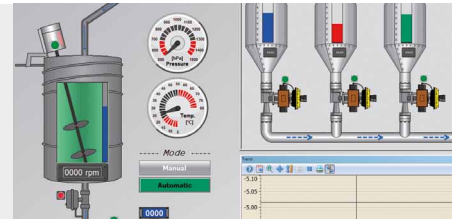
Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Introduction to Visual Basic Script and its use in the WinCC SCADA environment
- Building advanced visualization systems with WinCC SCADA
- Windows management, application optimization
- MS Windows configuration required by SIMATIC WinCC
- WinCC SCADA client-server architecture: available configurations and options
- Time synchronization in WinCC
- Access to the process visualizations with the WinCC Web-Option Web Navigator - configuration and use
- Usage of the WinCC/DataMonitor for visualization and data processing

■ Participation information

You should have attended the WINCC SCADA BASIC COURSE or possess comparable skills



■ Training objective

First level of our Proficy HMI/SCADA iFIX 5.0 trainings.

■ Duration: 31 hours / 4 days

■ Benefits

Learn from the experts

This training is conducted by a polish iFIX pioneer, who has not only been involved in the localization of the application, but is also the author of several iFIX user manuals. The outstanding practical expertise is the result of the participation in many medium to large size iFIX projects within almost three decades of professional activity.

Individual workstation for each participant

Every participant has access to a PC with iFIX 5.0 with remote access to a SIEMENS SIMATIC S7-300 PLC.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

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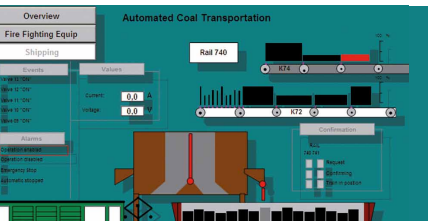
■ Content

- iFIX 5.0 system architecture
- Communication with the process data source: driver configuration
- Generation, management and diagnostics of the process value database
- Static and dynamic elements of process visualization screens
- Usage of VBA scripts in iFIX
- Management of the process visualization screens
- Archiving of process data, Proficy Historian
- Generation and configuration of real-time and historical trends
- Faceplates - templates for process visualization elements
- Scheduling in iFIX
- Access rights definition
- Event signalization through alarms
- iFIX in a multiuser environment, distributed systems
- Communication with iFIX through the DDE interface

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems.

IFIX ADVANCED COURSE



■ Training objective

Second level of our Proficiency HMI/SCADA iFIX 5.0 trainings.

■ Duration: 31 hours / 4 days

■ Benefits

Learn from the experts

This training is conducted by a polish iFIX pioneer, who has not only been involved in the localization of the application, but is also the author of several iFIX user manuals. The outstanding practical expertise is the result of the participation in many medium to large size iFIX projects within almost three decades of professional activity.

Individual workstation for each participant

Every participant has access to a PC with iFIX 5.0 with remote access to a SIEMENS SIMATIC S7-300 PLC.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

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Recognized industry standard

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■ Content

- Integration of the Windows and iFIX user administration
- Usage of the electronic signature in order to monitor and track user activity
- Introduction to Visual Basic for Applications (VBA)
- Recipe management in iFIX
- Creating of advanced visualization screens: trend groups, advanced graphical objects
- iFIX system diagnostics: available Windows tools, identification of errors in the user application
- Implementation of own visualization objects with ActiveX controls
- How to create multilanguage applications
- Data base access with VisiconX objects
- Alarm ODBC - archiving of alarms and messages in relational data bases
- Data access with the iFix OPC client interface
- Optimization of the visualization screen actualization
- Report generation with VBA
- Increasing of the iFIX system availability: server redundancy, terminal server

■ Participation information

You should have attended the IFIX BASIC COURSE or possess comparable skills.



■ Training objective

One-day, compact introduction to the PROFIBUS DP field bus technology.

■ Duration: 8 hours / 1 day

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Tailored to meet Your specific needs

This workshop we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Principle of operation and basic parameters
- Infrastructure components and installation aspects
- Configuring and starting up PROFIBUS DP networks
- Device description in GSD files
- In- and output synchronization (freeze/sync)
- Available diagnostic information in the DP-Slave (station, device, module, channel)
- Practical example of the configuration and start up of a PROFIBUS DP network

■ Participation information

The workshop consists of lectures and presentations. No specific previous knowledge is required.

PROFIBUS PA WORKSHOP



■ Training objective

One-day, compact introduction to the PROFIBUS PA field bus technology.

■ Duration: 6 hours / 1 day

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Tailored to meet Your specific needs

This workshop we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Recognized industry standard

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■ Content

- Principle of operation and basic parameters
- Infrastructure components and installation aspects
- Intrinsic safety fundamentals, the FISCO model
- Functionality of the PROFIBUS DP/PA segment coupler
- The DPV1 extension
- Available profiles for PROFIBUS PA devices
- Device parameterization with EDD and FDT/DTM
- Practical example of the configuration and startup of a PROFIBUS PA network

■ Participation information

The workshop consists of lectures and presentations.

Previous knowledge of the PROFIBUS DP fieldbus technology is recommended.

PROFIBUS TROUBLESHOOTING WORKSHOP



■ Training objective

One-day, compact introduction to PROFIBUS DP troubleshooting: typical installation problems and reasons for malfunctioning, available tools for effective troubleshooting and network monitoring, preventive maintenance actions and other measures to improve the network availability.

■ Duration: 7 hours / 1 day

■ Benefits

This workshop is a block buster!

3.000+ participants confirm the exceptional successful combination of a compact introduction to PROFIBUS fundamentals with a presentation of valuable auditing and troubleshooting expertise as well as available tools and solutions.

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Introduction to PROFIBUS troubleshooting, preparation of the installation, typical installation problems
- Troubleshooting on the physical and protocol level
- Preventive maintenance and installation auditing
- Possibilities of improving the network availability and susceptibility
- Permanent network monitoring

■ Participation information

The workshop consists of lectures and presentations. No specific previous knowledge is required.

PROFIBUS DP TROUBLESHOOTING



■ Training objective

This training is meant for maintenance and service personnel of PROFIBUS DP based plants and machines. The participant will learn essentials and methodology of troubleshooting on the physical and protocol level, as well as to monitor the quality and stability of a PROFIBUS DP installation.

■ Duration: 19 hours / 3 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Fully equipped workstations

A maximum of two participants share one workstation consisting of PROFIBUS master, Slave units, network analyzer, cable tester and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Make immediate use of Your new skills

For effective troubleshooting and preventive maintenance actions the dedicated tools used during the training are necessarily required. If they are not available at Your location, we may supply or lent them at preferential conditions.

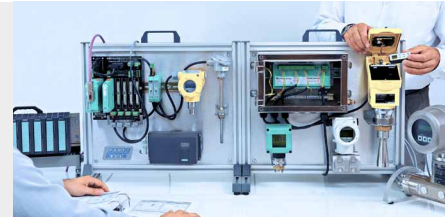
■ Content

- Principle of operation and basic parameters
- Infrastructure components and installation aspects
- Typical PROFIBUS DP network installation errors
- Visual inspection of the network
- Troubleshooting on the physical level with the help of dedicated testing tools
- Principle of operation of the PROFIBUS DP protocol: Master-Slave communication initialization, cyclic and acyclic communication, master coordination in multi-master systems
- PROFIBUS DP network configuration and parameterization
- Diagnostic information available in the DP-Slave (station, device, module, channel diagnostics)
- Troubleshooting on the protocol level with the network monitor: analyzing the network status, observation of the network traffic and interpretation of statistical data

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems. Participants being interested additionally in PROFIBUS PA fieldbus technology should attend the four days training PROFIBUS DP/PA TROUBLESHOOTING.

PROFIBUS DP/PA TROUBLESHOOTING



■ Training objective

This training is meant for maintenance and service personnel of PROFIBUS DP/PA based plants and machines. The participant will learn essentials and methodology of troubleshooting on the physical and protocol level, as well as to monitor the quality and stability of a PROFIBUS DP/PA installation.

■ Duration: 27 hours / 4 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Fully equipped workstations

A maximum of two participants share one workstation consisting of PROFIBUS master, segment coupler, Slave units, network analyzer, cable tester and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts. Each participant receives a certificate of attendance in English and Polish language.

Make immediate use of Your new skills

For effective troubleshooting and preventive maintenance actions the dedicated tools used during the training are necessarily required. If they are not available at Your location, we may supply or lent them at preferential conditions.

■ Content

- Principle of operation and basic parameters
- Infrastructure components and installation aspects
- Typical PROFIBUS DP/PA network installation errors
- Visual inspection of the network
- Troubleshooting on the physical level with the help of dedicated testing tools
- Principle of operation of the PROFIBUS DP protocol: Master-Slave communication initialization, cyclic and acyclic communication, master coordination in multi-master systems
- PROFIBUS DP/PA network configuration and parameterization
- Diagnostic information available in the DP-Slave (station, device, module, channel diagnostics)
- Troubleshooting on the protocol level with the network monitor: analyzing the network status, observation of the network traffic and interpretation of statistical data

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems. Participants not being interested in PROFIBUS PA fieldbus technology should attend the three days training PROFIBUS DP TROUBLESHOOTING.

CERTIFIED PROFIBUS INSTALLER



■ Training objective

The training is designed for PROFIBUS installers in accordance with the guidelines of PROFIBUS&PROFINET International. The participants will learn the principles of proper installation and verification of a PROFIBUS DP or PA network in order to install stable working PROFIBUS networks in complete accordance with the standard.

■ Duration: 17 hours / 2 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

International recognized certificate

This training according to the guidelines of PROFIBUS&PROFINET International ends with a theoretical and practical exam. After passing the exam the participant receives an international recognized certificate, is allowed to use the CERTIFIED EXPERT logo and can be added to the list of certified experts available at www.profibus.com.

Fully equipped workstations

A maximum of two participants share one workstation consisting of PROFIBUS master, segment coupler, Slave units, network analyzer, cable tester and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts.

■ Content

- Application areas for PROFIBUS DP and PROFIBUS PA
- PROFIBUS DP, RS485 – basics, principle of operation, infrastructure elements
- Network topology and installation of PROFIBUS DP networks
- PROFIBUS PA, MBP – basics, principle of operation, infrastructure elements
- Network topology and installation of PROFIBUS PA networks
- Visual inspection of the network, typical PROFIBUS DP/PA installation errors
- Troubleshooting on the physical level with the multimeter or a dedicated cable tester
- Signal observation with the oscilloscope
- Master and Slave Addressing
- The PROFIBUS DP protocol

■ Participation information

Basic knowledge concerning electrical installations and cabling is a prerequisite. If You plan to join the CERTIFIED PROFIBUS ENGINEER training attending this training is superfluous.



■ Training objective

The training is designed for PROFIBUS engineers in accordance with the guidelines of PROFIBUS&PROFINET International. All relevant aspects of the PROFIBUS DP field bus technology are covered: principle of operation and basics, planning and installation, startup and troubleshooting.

■ Duration: 31 hours / 4 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

International recognized certificate

This training according to the guidelines of PROFIBUS&PROFINET International ends with a theoretical and practical exam. After passing the exam the participant receives an international recognized certificate, is allowed to use the CERTIFIED EXPERT logo and can be added to the list of certified experts available at www.profibus.com.

Fully equipped workstations

A maximum of two participants share one workstation consisting of PROFIBUS master, Slave units, network analyzer, cable tester and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts.

■ Content

- Principle of operation and basic parameters
- Infrastructure components and installation aspects
- Typical PROFIBUS DP network installation errors
- Visual inspection of the network
- Troubleshooting on the physical level with the help of dedicated testing tools
- Principle of operation of the PROFIBUS DP protocol: Master-Slave communication initialization, cyclic and acyclic communication, Master coordination in multi-master systems
- Influence of the network parameters on the network performance
- Description of the DP-Slave functionality in GSD files: the most important parameters
- PROFIBUS DP network configuration and startup
- Diagnostic information available in the DP-Slave (station, device, module, channel diagnostics)
- Troubleshooting on the protocol level with the network monitor: analyzing the network status, observation of the network traffic and interpretation of statistical data

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems. If You are maintenance please consider our dedicated PROFIBUS TROUBLESHOOTING trainings as an option.

CERTIFIED PROFIBUS PA ENGINEER



■ Training objective

The training is designed for PROFIBUS engineers in accordance with the guidelines of PROFIBUS&PROFINET International. All aspects specific to the PROFIBUS PA field bus technology are covered, in particular the physical level as well as the possibilities of parameterizing process devices.

■ Duration: 19 hours / 3 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFIBUS networks. Additionally, we do offer support with components and consultancy when developing PROFIBUS device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

International recognized certificate

This training according to the guidelines of PROFIBUS&PROFINET International ends with a theoretical and practical exam. After passing the exam the participant receives an international recognized certificate, is allowed to use the CERTIFIED EXPERT logo and can be added to the list of certified experts available at www.profibus.com.

Fully equipped workstations

A maximum of two participants share one workstation consisting of PROFIBUS master, segment coupler, Slave units, network analyzer, cable tester and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts.

■ Content

- PROFIBUS in process automation
- Principle of operation, basic parameters, infrastructure components and installation aspects
- Functionality of the PROFIBUS DP/PA segment coupler
- Intelligent PROFIBUS DP/PA segment coupler (SK-2/SK3 und DP/DP-Link)
- Addressing of process devices with PROFIBUS interface
- Intrinsic safety fundamentals, the FISCO model
- Troubleshooting on the physical level with the help of dedicated testing tools
- Available profiles for PROFIBUS PA devices
- Device description in GSD files
- Device parameterization with EDD and FDT/DTM
- Troubleshooting on the protocol level with the network analyzer

■ Participation information

Participation requires to be CERTIFIED PROFIBUS ENGINEER.



■ Training objective

One-day, compact introduction to the PROFINET networking technology.

■ Duration: 7 hours / 1 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFINET networks. Additionally, we do offer support with components and consultancy when developing PROFINET device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Tailored to meet Your specific needs

This workshop we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Presentation of the PROFINET system, application areas, characteristics
- PROFINET network configuration: network parameters, controller und device definition
- Establishing the IO controller – device communication, PROFINET diagnostic capabilities
- Integration of PROFIBUS DP in PROFINET networks
- The RT and IRT functionality
- WLAN communication in PROFINET networks

■ Participation information

The workshop consists of lectures and presentations. No specific previous knowledge is required.

CERTIFIED PROFINET ENGINEER



■ Training objective

The training is designed for PROFINET engineers in accordance with the guidelines of PROFIBUS&PROFINET International. All relevant aspects of the PROFINET networking technology are covered: principle of operation and basics, planning and installation, startup and troubleshooting.

■ Duration: 23 hours / 3 days

■ Benefits

Learn from the experts

As fully accredited PROFIBUS&PROFINET INTERNATIONAL Competence and Training Center our certified experts day-by-day are engaged with the planning, auditing and troubleshooting of PROFINET networks. Additionally, we do offer support with components and consultancy when developing PROFINET device interfaces and in choosing and supplying network diagnostic tools and infrastructure elements.

International recognized certificate

This training according to the guidelines of PROFIBUS&PROFINET International ends with a theoretical and practical exam. After passing the exam the participant receives an international recognized certificate, is allowed to use the CERTIFIED EXPERT logo and can be added to the list of certified experts available at www.profibus.com.

Individual workstation for each participant

Every participant has access to a workstation allowing for the configuration of the PROFINET IO controller as well as access to several PROFINET IO devices from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created as well as get familiar with white papers and other source materials published by our experts.

■ Content

- Application areas, principle of operation and relevant parameters
- Infrastructure components and installation aspects
- Identification of network participants, device naming, IP address configuration and restoring factory defaults with DCP
- PROFINET network configuration: network parameters, controller und device definition
- Establishing the IO controller – device communication
- Diagnostic capabilities of PROFINET
- Exercises concerning the configuration and startup of a PROFINET network
- Troubleshooting on the protocol level, LLDP and SNMP
- WLAN communication in PROFINET networks
- PROFINET safety and access protection issues
- Integration of PROFIBUS DP in PROFINET networks
- RT and IRT: how it works, what it requires, example of configuration and startup

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems.

INDUSTRIAL ETHERNET WORKSHOP



■ Training objective

One-day introduction to opportunities and implications concerning the use of Ethernet in industrial applications.

■ Duration: 7 hours / 1 days

■ Benefits

Learn from the experts

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests.

All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard.

The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Principle of operation, basic parameters, infrastructure components of Ethernet networks
- Ethernet in industrial applications: particular requirements in comparison to office applications
- Selection criteria for IE components
- Safety risks and possible remedies
- Managing of infrastructure elements with SNMP
- Network redundancy
- Planning and installing IE networks
- Troubleshooting tools and issues

■ Participation information

The workshop consists of lectures and presentations. No specific previous knowledge is required.



■ Training objective

Industrial Ethernet is present almost everywhere in industrial environments. This training is meant to teach automation specialists the fundamentals they need in order to understand, make use of and operate an IE network infrastructure.

■ Duration: 27 hours / 4 days

■ Benefits

Learn from the experts

As industrial control & networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Individual workstation for each participant

Every participant has access to a workstation equipped with IE devices and infrastructure components from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Ideal training environment

In our modern training complex a hotel and a restaurant is available to our guests. All our trainings may be adapted to meet Your specific requirements and be held at Your premises.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Principle of operation, basic parameters
- Infrastructure components and installation aspects
- TCP/IP and internetwork communication: configuration and diagnostic possibilities
- Network protection with firewalls; NAT, NAPT, VPN functionality
- Remote configuration and diagnostics of infrastructure components with the SNMP protocol
- VLAN configuration and functionality
- Application range for the FTP, HTTP, SMTP protocols in industrial automation
- ETHERNET redundancy: functionality and configuration of RSTP and MRP
- Available WLAN standards, possible configurations, network security
- Locating cabling problems, topology detection with LLDP, troubleshooting with the protocol analyzer

■ Participation information

The participant should be familiar with the basic concepts of automation and IT technology.



■ Training objective

This training delivers solid fundamentals concerning the planning, startup and troubleshooting of WLAN networks in plant floor applications.

■ Duration: 15 hours / 2 days

■ Benefits

Learn from the experts

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Fully equipped workstations

A maximum of two participants share one workstation with WLAN devices from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Wireless signal transmission basics: propagation of electromagnetic waves, signal modulation, required elements
- The 801.11 standard: existing versions, differences, media access (DCF/PCF/HCF), the 802.11 protocol
- Planning and installing WLAN networks: definition of the system architecture, component selection
- Network configuration: ad-hoc and structural networks
- Safety risks and possible remedies
- Industrial WLAN components
- Troubleshooting and testing

■ Participation information

The participant should be familiar with the basic concepts of automation and IT technology.

OPC WORKSHOP



■ Training objective

One-day, compact introduction to the OPC technology.

■ Duration: 7 hours / 1 day

■ Benefits

Learn from the experts

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Compact introduction

This one-day workshop is meant as a compact introduction and consists of lectures and practical demonstrations.

Tailored to meet Your specific needs

This workshop we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Introduction to the OPC technology, typical application areas
- Existing OPC specifications, the role of the OPC Foundation, testing and certification procedures
- Presentation of the access to current process data with the OPC DA server
- Examples of the usage of OPC in order to access historical data
- OPC Unified Architecture

■ Participation information

The workshop consists of lectures and presentations. No specific previous knowledge is required.



■ Training objective

This training is the proper choice for IT and automation specialists coping with the startup, modification and maintenance of OPC DA, A&E, HDA, DX, XML-DA conformant applications. The acquired knowledge is manufacturer independent.

■ Duration: 19 hours / 3 days

■ Benefits

Learn from the experts

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Individual workstations for each participant

Every participant has access to an individual workstation with OPC conformant applications from different manufacturers.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- Existing OPC specifications, the role of the OPC Foundation, testing and certification procedures
- Access to current process data with the OPC DA server
- Data exchange between OPC servers through a dedicated application or the OPC DX interface
- Implementation of OPC DA server redundancy
- Sharing messages and alarms through the OPC A&E server
- Configuration and use of the OPC HDA historical data server
- COM/DCOM basics and configuration
- Diagnostic and troubleshooting methods in practice
- Overriding DCOM configuration and security restrictions through tunneling
- Access to current process data with OPC XML-DA

■ Participation information

The participant should be familiar with the basic concepts of automation and IT technology.

RF200/300 – S7 INTEGRATION



■ Training objective

Target group for this training are the users of SIEMENS SIMATIC RF200/300 identification systems with SIEMENS SIMATIC S7-300/400/1200 based control systems.

■ Duration: 15 hours / 2 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- Principle of operation and applicable standards in radio identification systems
- Comparison of the radio identification systems offered by SIEMENS
- Selection criteria for transponders, read-write heads and communication modules in SIMATIC RF200 and RF300 systems
- Communication possibilities with SIEMENS SIMATIC S7-300/400 and SIMATIC S7-1200 PLCs
- SIMATIC RF300 diagnostics - interpretation of error codes
- Sample applications - hardware and software configurations
- Available interfaces and function blocks for operation of RF200/RF300 with the SIMATIC S7-300/400

■ Participation information

You should have attended the S7 ADVANCED COURSE or possess comparable skills.



■ Training objective

Comprehensive training for the user or integrator of SIEMENS SIMATIC RF600 RFID systems: selection criteria, system configuration and integration possibilities with overlaying systems.

■ Duration: 11 hours / 2 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Highest quality standards

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Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

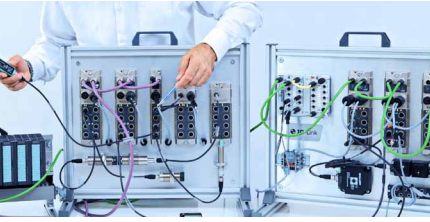
■ Content

- Principle of operation and applicable standards in radio identification systems
- Comparison of the radio identification systems offered by SIEMENS
- Selection criteria for transponders, read-write heads and communication modules in SIMATIC RF600 systems
- Integration possibilities with the host system
- Startup and system diagnostics with the RF-MANAGER Basic
- Configuring the antenna inputs, data sources, event management
- Usage of the binary in-/outputs
- Available error messages
- The XML interface, the RF Reader XML Demo application
- Implementing own applications, the ALE+ DataBridge application
- Creating simple applications with the RF-MANAGER 2008
- Application examples

■ Participation information

The participant should be familiar with the basic concepts of IT technology.

IO-LINK BASICS



■ Training objective

The participant learns to configure, startup and diagnose intelligent sensor systems with IO-Link interface. Many practical exercises with devices from different manufacturers.

■ Duration: 7 hours / 1 day

■ Benefits

Learn from the experts

As industrial control&networking specialists we do support our customers with a comprehensive training portfolio, consultancy, auditing and troubleshooting services and in choosing and supplying network diagnostic tools and infrastructure elements.

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Tailored to meet Your specific needs

This training we do offer exclusively on demand. Like all our trainings it may be adapted to meet Your specific requirements and be held at Your premises. In case of interest please contact us.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

■ Content

- IO-Link: Areas of application and benefits for the user
- Elements of the IO-Link Systems: master, device, engineering Tools
- The physical level: interfaces, cabling, possible configurations, limitations, installation recommendations
- Communication possibilities with IO-Link devices: process values, parameters, control and system information
- Available communication channels, communication between devices
- Device configuration with IODD and DTM
- Configuration of the master
- Access to process values with IO-Link
- Application examples in factory and process automation

■ Participation information

The participant should be familiar with the basic concepts of industrial control systems.



■ Training objective

Fundamentals, construction, properties and control methods of drive types most commonly used in industrial applications. The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

■ Duration: 23 hours / 3 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Fully equipped workstations

The hands-on part of the training takes place in a dedicated classroom for electrical drive technology. Plenty of samples and sections illustrate the construction of different motor types. Dedicated workstations allow to easily measure, observe and analyze significant electrical and mechanical values such as tensions, currents, rpm, torque simplifying the understanding of properties and control methods of drives

Manufacturer independent

The acquired knowledge concerns industry standards and is not based on proprietary, manufacturer dependent technology or solutions.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

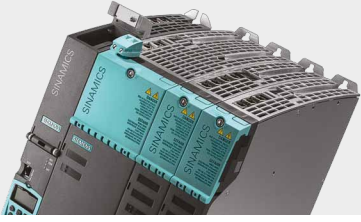
■ Content

- Structure of the drive system, open-loop and closed-loop control systems, motoring (driving) and generating (braking) operation of the machine
- Control systems of the electrical drives: quality criteria and methods for evaluating control loops, criteria and methods for tuning the control loops
- DC drives: starting, control and methods for speed control
- Drives with asynchronous motors: starting, braking and speed control of squirrel-cage asynchronous motors. Speed varying by using frequency converters, fundamentals of U/f and vector control
- Drives with synchronous motors: permanently excited machines: brushless DC machines (BLDC) and permanent magnet synchronous machines (PMSM)
- Servodrives: properties, applications, control systems, methods for position control, defining motion profiles and positioning control
- Influence of the electrical drive systems on power line operation, power factor of the converter drives and harmonic generation, methods for reactive power and harmonics reduction, passive and active filters

■ Participation information

The participant should be familiar with the basic concepts of automation technology.

SINAMICS S120 CONFIGURATION AND COMMISSIONING



■ Training objective

The participants learn how to configure, control, commission and diagnose SIEMENS SINAMICS S120 drives in both - the VECTOR and SERVO mode.

■ Duration: 35 hours / 5 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Fully equipped workstations

A maximum of two participants share one workstation consisting of a PC with STARTER/STEP7 connected to a SIEMENS SIMATIC S7-300 PLC and SINAMICS S120 drive.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- The SIEMENS SINAMICS drive family: overview of the available system components, line and motor modules, control units, application areas
- The STARTER commissioning tool - user interface, setting up of the communication with the drive, definition of the user project, diagnostic tools
- Basics of the scalar and vector control, characteristics of the servomotors
- Configuration of the VECTOR mode: motor identification, characteristic of the control loops, optimization of the speed control loop, speed setpoint channel
- Configuration of the SERVO mode: definition of system mechanics, position control loop, motion profile setting
- Communication of the PLC with SINAMICS S120 drive: PROFIBUS DP and PROFINET interfaces, description of PROFIdrive telegrams, diagnostics
- Local and remote (PLC) positioning: traversing blocks and direct input of the profile parameters (MDI)
- Additional functions: flying restart, DC link control, monitoring functions, torque control, sensorless control
- Safety functions integrated in the drive DCC: implementation of logic functions directly in the drive

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.

SINAMICS G120 CONFIGURATION AND COMMISSIONING



■ Training objective

The participants become familiar with the functionality, configuration and control of the popular SIEMENS SINAMICS G120 drive.

■ Duration: 23 hours / 3 days

■ Benefits

Tradition + Innovation

Since almost 25 years we are providing industrial control&networking training for professionals. Our continuous striving for training excellence results in an unsurpassed didactic expertise and the introduction of many training innovations that give our customers the certainty to effectively acquire required competences.

Fully equipped workstations

A maximum of two participants share one workstation consisting of a PC with STARTER/STEP7 connected to a SIEMENS SIMATIC S7-300 PLC and SINAMICS G120 drive.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- The SIEMENS SINAMICS G and S drive family - available CU units, application areas
- The STARTER application - user interface, setting up the communication with the drive, definition of the user project
- Configuring the drive with the aid of the STARTER application
- Controlling the drive with the digital inputs
- Speed control with the analog input
- Configuration and control of the drive with the aid of the drive control panel BOP
- Controlling the drive with the PROFIBUS DP interface
- Meaning and definition of the Drive Data Sets and Command Data Sets
- Free Function Blocks - available operations and usage
- Drive diagnostics with the STARTER application and the drive control panel BOP
- Parameterization and usage of the integrated safety functions STO, SLS, SS1

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.

MICROMASTER 4 CONFIGURATION AND COMMISSIONING



■ Training objective

The participants become familiar with the functionality, configuration and control of the popular SIEMENS MICROMASTER 4 drive.

■ Duration: 19 hours / 3 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Individual workstations for each participant

Every participant has access to a workstation consisting of a PC with STARTER/STEP7 connected to a SIEMENS SIMATIC S7-300 PLC and MICROMASTER 440 drive.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

■ Content

- The SIEMENS MICROMASTER 4xx drive family - application areas, available models and accessories
- The STARTER application - user interface, setting up the communication with the drive, definition of the user project
- Configuring the drive with the aid of the STARTER application
- Controlling the drive with the digital inputs
- Speed control with the analog input
- Configuration and control of the drive with the aid of the drive control panel BOP
- Controlling the drive with the PROFIBUS DP interface
- Meaning and definition of the Drive Data Sets and Command Data Sets
- Free Function Blocks - available operations and usage
- Drive diagnostics with the STARTER application and the drive control panel BOP

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.

SIMOCODE CONFIGURATION AND COMMISSIONING



■ Training objective

The participants learn how to configure and operate the modular SIEMENS SIMOCODE pro drive control and protection system.

■ Duration: 15 hours / 2 days

■ Benefits

Competent&Engaged

Our highly motivated team of carefully selected trainers combines exceptional technical qualifications and experience with didactic competence. In this way each single training attendance becomes a success story and no question remains unanswered.

Fully equipped workstations

A maximum of two participants share one PC with STEP7 connected to a SIEMENS SIMATIC S7-300 PLC and equipped with SIMOCODE ES, SIMOCODE pro, DM-F LOCAL.

Comprehensive training documentation

The complete training documentation contains all materials used or presented during the training. The participants may safely and easily download from www.intex.com.pl all projects they have created. Each participant receives a certificate of attendance in English and Polish language.

Highest quality standards

Thanks to our computer based Training Management System we are able to perform complex enquiries with each of our training participants. Among others, this enables us to monitor the learning progress and the customer satisfaction. In this way we are able to ensure the highest level of quality of our services - now and in the future.

Recognized industry standard

INTEX control systems and industrial communication trainings are a recognized industry standard. The exceptional high quality of our services has been confirmed by more than 25.000 training participants!

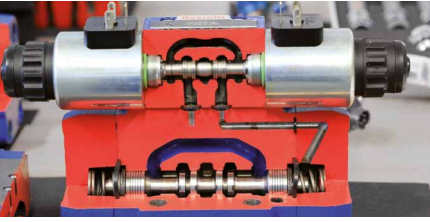
■ Content

- Drive technology basics: construction and operating principle of asynchronous drives, basic characteristics, methods of starting the drive, catalogue data
- The SIMOCODE pro family: system components, available functions and their use
- SIMOCODE pro configuration and diagnostics with SIMOCODE ES: user interface, definition of device functions, communication with the basic unit
- Typical applications for SIMOCODE pro: control functions, motor protection, monitoring and logical functions
- Communication with the PLC through PROFIBUS DP
- Safety technology in drive applications: legal requirements, components of a safety system, implementation of safety functions based on the safety relay
- Safety functions available in SIMOCODE pro - DM-F LOCAL and DM-F PROFIsafe digital modules

■ Participation information

You should have attended the S7 BASIC COURSE or possess comparable skills.

HYDRAULICS BASICS



■ Training objective

The participant will get familiar with the hydraulic basics starting with the physical principles of hydraulics, the construction and description of hydraulic systems as well as hydraulic systems control elements. This training we do provide in cooperation with the renowned hydraulic equipment manufacturer BOSCH REXROTH.

■ Duration: 23 hours / 3 days

■ Benefits

Learn from the experts

The training is held by a leading expert of BOSCH REXROTH. The unique combination of 25+ years of field and training experience ensures everyone a successful training attendance – from the newcomer to the crack.

Fully equipped workstations

BOSCH REXROTH is not only the leading manufacturer of hydraulic automation components. The portfolio includes a comprehensive spectrum of hydraulic training equipment up to complete workstations for the use in training centers and schools. Therefore, during the practical exercises our participants have access to proven didactical equipment based on industrial components.

Comprehensive training documentation

Every participant receives a copy of the *Hydraulics Vademecum, Volume 1* published by BOSCH REXROTH. Consisting of several, dedicated volumes dedicated to hydraulics fundamentals this compendium since many years is a valuable companion on the job for countless engineers and maintenance personnel. The training documentation includes a complete description of the practical exercises as well as a certificate of attendance issued by INTEX in English and Polish language.

Ideal training environment

This training takes place at the modern office premises of BOSCH REXROTH in Warsaw. Thus the participants have not only access to plenty of real-world samples and components, but may also during a visit to the service department get familiar with machinery and equipment used for production, inspection and maintenance of hydraulic devices and systems.

■ Content

- Physical principles of hydraulics: basic knowledge of fluid mechanics, hydraulic fluids, hydraulic losses and types of flow
- Construction and description of hydraulic systems - graphical symbols
- The hydraulic system as a control object and its components
- Control elements of the hydraulic drive system: basic types of hydraulic valves, operating principles, types of control and selection criteria
- Components of the hydraulic drive system: pumps and motors, hydraulic cylinders
- Accessories of hydraulic drive systems: hydraulic accumulators and filters
- Hydraulic drive and control systems diagnostics
- Safety rules regarding the operation of hydraulic drive and control systems

■ Participation information

The participant should be familiar with the basic concepts of automation technology.



■ Training objective

This two-days training comprehensively treats the electrical control capabilities of hydraulic components and systems. This training we do provide in cooperation with the renowned hydraulic equipment manufacturer BOSCH REXROTH.

■ Duration: 15 hours / 2 days

■ Benefits

Learn from the experts

The training is held by a leading expert of BOSCH REXROTH. The unique combination of 25+ years of field and training experience ensures everyone a successful training attendance – from the newcomer to the crack.

Fully equipped workstations

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Comprehensive training documentation

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Ideal training environment

This training takes place at the modern office premises of BOSCH REXROTH in Warsaw. Thus the participants have not only access to plenty of real-world samples and components, but may also during a visit to the service department get familiar with machinery and equipment used for production, inspection and maintenance of hydraulic devices and systems.

■ Content

- Electrical engineering fundamentals required to understand the operating principles of the electrohydraulic components
- Description of the hydraulic control system - graphical symbols
- Control of the hydrostatic systems: volumetric control, construction and tuning methods of the hydraulic units
- Control and electro-hydraulic control of the machines: pressure control valves, flow control valves, flow direction control valves
- Electrically operated directional control spool valves
- Logic elements in hydrostatic systems: construction and operating principle, logic elements for pressure or flow control, application examples
- Control of the proportional valve: introduction to the technology of the proportional valves, potentiometric direction and speed control of the piston movement

■ Participation information

You should have attended the HYDRAULICS BASICS training or possess comparable skills.

PROPORTIONAL HYDRAULICS



■ Training objective

Three-days training regarding proportional control loops in hydraulic systems. Plenty of practical exercises make sure that the participant will get a firm understanding of this technology. This training we do provide in cooperation with the renowned hydraulic equipment manufacturer BOSCH REXROTH.

■ Duration: 23 hours / 3 days

■ Benefits

Learn from the experts

The training is held by a leading expert of BOSCH REXROTH. The unique combination of 25+ years of field and training experience ensures everyone a successful training attendance – from the newcomer to the crack.

Fully equipped workstations

BOSCH REXROTH is not only the leading manufacturer of hydraulic automation components. The portfolio includes a comprehensive spectrum of hydraulic training equipment up to complete workstations for the use in training centers and schools. Therefore, during the practical exercises our participants have access to proven didactical equipment based on industrial components.

Comprehensive training documentation

Every participant receives a copy of the *Hydraulics Vademecum, Volume 2* published by BOSCH REXROTH. Consisting of several, dedicated volumes dedicated to hydraulics fundamentals this compendium since many years is a valuable companion on the job for countless engineers and maintenance personnel. The training documentation includes a complete description of the practical exercises as well as a certificate of attendance issued by INTEX in English and Polish language.

Ideal training environment

This training takes place at the modern office premises of BOSCH REXROTH in Warsaw. Thus the participants have not only access to plenty of real-world samples and components, but may also during a visit to the service department get familiar with machinery and equipment used for production, inspection and maintenance of hydraulic devices and systems.

■ Content

- Basic principles of operation of open and closed loop control circuits in hydraulic systems
- Open and closed loop control with throttle and flow control valves in hydraulic drive
- Serial open and closed loop control
- Parallel open and closed loop control
- Load sensing (L-S) system
- Control with proportional valves - introduction, construction and operation
- Control with servo valves - introduction, construction and operation
- Open and closed loop control of pumps: control of the displacement, pressure as well as control according to the principle of constant power

■ Participation information

You should have attended the HYDRAULICS BASICS training or possess comparable skills.







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