Mechatronics Automation Technology

The ETS Automation Technology training system covers all the areas of industrial automation. Its modular structure allows tailoring the system to the requirements and desires of the customers. One practical application of automation technology can be studied with the ETS Mechatronic System. The combination of mechanics, automation, drive technology, sensor technology, safety technology etc. in this system provides utmost flexibility in training. Moreover, the system can continuously be adapted to meet the requirements of practice.
PLC technology
Customized Siemens S7 /300 PLCs form the main part of our Automation Technology training system. A great variety of components from all areas of automation are included in the training package Automation Technology.

Learning Objectives:

- Setup and configuration of a PLC
- Commissioning of an automation system
- Programming according to international standard IEC1131-3
- Connecting and commissioning of field bus systems
Operator Control and Monitoring
Human Machine Interface

Learning Objectives:

• Operating and visualizing processes with "WinCC flexible"
• Creating buttons and in- and output fields for the display of process parameters
• Configuring graphics for labelling buttons or as full-screen background images (selection of images from the PLC)
• Using bar graphs and trend curves for the graphic display of dynamic values
Operator Control and Monitoring
Human Machine Interface

70 314 Touch Panel Board with TP 177B

70 316 Operator Panel Board with OP 177B
Advanced PLC Training – Field bus systems

Learning Objectives:

- Bus systems
- Information flow in mechatronic systems
Advanced PLC Training – Field bus systems
"Totally Integrated Automation" in a laboratory
„Totally Integrated Automation“ in a laboratory
The Mechatronic System is a modular and extremely flexible system for training in mechatronics. Due to its modular structure it can be used in all fields of application.

Vital part of the system is a conveyor belt - the transfer system. The transfer system is the link between all the other modules.
Transfer system
Interchangeable Drives
Different motor types, which can be exchanged at any time, are available to serve as drive units.

Learning Objectives:
• Selection
• Integration
• Testing
• Commissioning of drive units

80 590 Transfer System with DC motor 24 V DC
80 591 Transfer System with AC motor 3 x 230/400 V
80 831 Transfer System with servo motor 80 830
Transfer system

Motor controls for DC drives
Motor controls for AC drives
Motor controls for servo drives

Depending on the type of the selected motor, different motor control units are available.

80 590 Transfer System with DC motor 24 V DC and DC control unit

40 016 PLC Board with LOGO!

Hand-operated switches and contactor circuits

70 020 Automation Board S7 / 300 with Siemens PLC S7-300
Transfer system

Motor controls for DC drives
Motor controls for AC drives
Motor controls for servo drives

80 591 Transfer System with AC motor 3 x 230/400 V

56 100 Motor Management Board (electronic load relay)

55 004 AC Drive Board with frequency converter
Transfer system

Motor controls for DC drives
Motor controls for AC drives
Motor controls for servo drives

80 591 Transfer System with servo motor

70 020 Automation Board S7 / 300 with Siemens PLC S7-300
Transfer system

Sensorics I

Learning Objectives:
• Types of sensors and how they work
• Testing and adjustment of sensors
• Applications of sensors
• Distance measurement and material detection

Sensors:
inductive
capacitive
optical:
- diffuse reflective sensor
- retro-reflective sensor
Sensorics II

Learning Objectives:

Inductive sensors
Capacitive sensors
Optical sensors
Laser reflection light scanner
Incremental distance measurement
Ultrasonic sensor
Inductive identification system
Transfer system Interfaces

Learning Objectives:
Bus systems, information flow in mechatronic systems

PROFIBUS
TCP/IP
PROFINET
Industrial Ethernet
INTERBUS
AS-i

80 590 Transfer System with standard M 12 interface
78 108 AS-i connecting module
70 893 PROFIBUS connecting module
Blended learning
Mechatronics
Automation Technology
80 590 Transfer System with DC motor 24 V DC and DC control unit
Assembly (Mounting)

Disassembly (Processing)

80 630 Pneumatic assembly machine
80 640 Pneumatic disassembly machine
80 590 Transfer System with DC motor 24 V DC and DC control unit
Automatic test station (Sensors)

80 680 – 80 689 Test Modules
80 590 Transfer System with DC motor 24 V DC and DC control unit
80 670 Station: Pallet store
80 671 Station: Pallet lift
80 590 Transfer System with DC motor 24 V DC
Handling

80 670 Station handling
80 621 Set of magazines
80 650 Station: Magazine work piece bottom parts
80 651 Station: Singling work piece bottom parts
80 652 Magazine for workpiece bottom parts
80 590 Transfer System with DC motor 24 V DC
Mechatronics
Automation Technology
Accessories, movable bases and frames

89 100 Project and test wagon
89 110 H-profile frame
89 115 Power distribution duct
80 999 Laboratory compressor
89 101 Underbench cabinet for project and test wagon
Safety technology

Learning Objectives:
- Safety technology with contactors
- Safety technology with safety relays
- Safety door monitoring
- Emergency-OFF monitoring
- Two-hand operation
- Safe time function
- Safety technology with optical systems
- Light curtain
- Muting
- 3D-Scanner
- Fail-safe PLC
- Fail-safe AS-i bus
- PROFIBUS or PROFINET with PROFIsafe

40 060 Light curtain
Safety technology
Fail-safe AS-i bus

40076
Fail-safe AS-i
EMERGENCY STOP

78139
AS-i signal
column

40072
AS-i safety monitor

40078
Fail-safe
AS-i slave

78140
adress tool
Manufacturing Execution System (MES)
International Cooperation
Network of
Distance Learning And Remote Control
DI LARC
Information and advice

We offer
- Help in choosing equipment to suit your training needs
- Comprehensive system determination
- Service-Center – we will call you back and support you in planning and project development
- Classroom layout
- Ergonomic workplace design
- Make offer together with you
- Information about our products / manuals

Project support from the start ...
We are looking forward to exchanging ideas with you.

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