Didactic Product Highlight
Welcome to Festo Didactic!

For several decades, Festo Didactic has been recognised worldwide for the development of high-quality, intuitive learning systems for technical education. We invite you to peruse these pages to learn about our most popular learning tools. You’ll find even more systems on our websites.

From fundamentals to complete training
From basic training and technology-specific courses to planning, control, and handling of complex systems, to fully-furnished learning centres – we have created a world of learning tailored to your needs for efficient study and guaranteed learning success.

Modular and future-proof
What characterises our learning systems is their high practical relevance achieved through the use of real industrial components combined with the intuitive teaching of the educational content. The systems are modular, allowing for expansion and flexibility, making your investment future-proof with no dead-ends.

Training and Consulting
One mission of Festo Didactic is to provide automation technology training for manufacturing employees and our industrial customers worldwide. Our Training and Consulting specialists provide this training on-site, at customer facilities, and at various Festo facilities throughout the world.

Many paths to successful learning
Festo Didactic is committed to developing innovative, engaging, and effective learning tools and content to meet the changing and challenging needs of students and educators.

Our comprehensive, competency-based curriculum integrates several types of media to accommodate different types of learners and to bring flexibility to the learning process.

Textbooks, workbooks, guides, work sheets, simulation programs, web-based training packages, and more, contribute to building knowledge, skills, and troubleshooting abilities in a diverse spectrum of subject areas.
You want expertise. You are looking for innovation. We are the specialists in your industry.

→ WE ARE THE ENGINEERS OF PRODUCTIVITY.
Festo: a partner in dialogue, a partner for maximum productivity

More than ever before, success in our networked world depends on having the right partners. Experts who make a valuable contribution to the achievement of your goals, who know your processes, quickly understand and resolve your challenges – and make you more productive.

To be able to truly respond to your needs, we have reviewed and examined how we can support you more effectively as a business partner. From the very first meeting to full modernisation of your machine or system, we will assist you in all your processes and help you during each and every phase – with services and support, training and good advice. Take advantage of our expertise whenever you want. Our experts are always at your disposal. They will accompany you on your journey to success with enthusiasm, vision and a strong sense of responsibility. That is the Festo you know, and that is simply the way we are.

Contributing to your success: your engineers of productivity.
Electro-pneumatics training package

The electro-pneumatic training packages are modular in structure and is used to teach the construction and function of electrical and pneumatic components used in automation.

Training contents

- Characteristics, functions and applications of cylinders
- Characteristics, functions and applications of solenoid operated directional control valves
- Characteristics, functions and applications of electrical switches, contacts and sensors
- Reading, designing and assembling electro-pneumatic circuits
- Designing circuits with logic functions
- Designing advanced electro-pneumatic circuits using the electrical stepper method
- Characteristics, functions and applications of electrical timers and counters

Pneumatics training package

The pneumatic training packages are modular in structure and is used to teach the construction and function of pneumatic components used in automation.

Training contents

- Characteristics, functions and applications of cylinders
- Characteristics, functions and applications of directional control valves
- Characteristics, functions and applications of other pneumatic valves
- Reading, designing and assembling pneumatic circuits
- Designing circuits with logic functions
- Designing advanced pneumatic circuits using the cascade control and shift register methods
- Characteristics, functions and applications of time delay and pressure valves
- Designing advanced pneumatic circuits with time delay functions

Sensors for object detection training package

The sensors for object detection training packages includes configuration, function, areas of application and the selection of sensors based on the requirements of an application.

Training contents

- Configuration, function and coefficients of the sensors
- Basic principles of connection and circuit technology
- Influence of shape, material, surface and colour of the object on the switching characteristics of sensors
- Terms which describe coefficients and functional behaviour
- Configuration of logic circuits
- Selecting appropriate sensors by taking into account certain parameters
Electro-hydraulics training package

The electro-hydraulic training packages are modular in structure and is used to teach the construction and function of electrical and hydraulic components used in industries.

Training contents
- Design, characteristics and function of a hydraulic power pack and its components
- Characteristics, functions and applications of hydraulic cylinders
- Characteristics, functions and applications of directional control valves
- Characteristics, functions and applications of solenoid operated directional control valves
- Characteristics, functions and applications of pressure control valves
- Characteristics, functions and applications of electrical switches, contacts and sensors
- Designing circuits with logic functions
- Designing circuits with sequence and counterbalancing conditions
- Designing advanced electro-hydraulic circuits with timer functions

Hydraulics training package

The hydraulic training packages are modular in structure and is used to teach the construction and function of hydraulic components used in industries.

Training contents
- Design, characteristics and function of a hydraulic power pack and its components
- Characteristics, functions and applications of hydraulic cylinders
- Characteristics, functions and applications of directional control valves
- Characteristics, functions and applications of pressure control valves
- Characteristics, functions and applications of flow control and non-return valves
- Reading, designing and assembling hydraulic circuits
- Designing circuits with logic functions
- Designing advanced hydraulic circuits with sequence and counterbalancing conditions
- Designing circuits with proportional control
- Designing circuits with load sensing
- Characteristics, functions and applications of mobile hydraulic valves
- Characteristics, functions and applications of the steering unit
- Characteristics, functions and applications of mobile systems

Mobile hydraulics training package

The mobile hydraulic training packages are modular in structure and is used to impart the knowledge and skills in controlling mobile hydraulic equipment and systems.

Training contents
- Design, characteristics and function of hydrostatic transmission and its related components
- Characteristics, functions and applications of closed hydraulic circuits
- Characteristics, functions and applications of mobile hydraulic valves
- Characteristics, functions and applications of the hydraulic joystick
- Characteristics, functions and applications of load sensing
- Reading, designing and assembling mobile hydraulic circuits
- Designing circuits with proportional control
- Characteristics, functions and applications of mobile systems
EduTrainer® Universal - for maximum flexibility

The EduTrainer® Universal units are built to suit various control systems. It combines them with the power supply unit and simulations with alternative connections for 4 mm and SysLink. You get exactly what you need as it is fully setup and configured to your own design.

**Training Contents**
- Characteristics, functions and applications of programmable logic controllers
- Characteristics and functions of input and output devices
- Characteristics and functions of the different programming languages
- Writing PLC software programs
- Writing programs with logic functions
- Testing and debugging the software program
- Simulating the software program

EduTrainer® Compact - integration into the workstation systems

The EduTrainer® Compact units fits into the ER mounting frame or be used as a tabletop device. Several control systems can be incorporated into the unit. Various connections such as the 4 mm sockets, simulation units and SysLink can be configured to the unit to suit your design.

**Training Contents**
- Characteristics, functions and applications of programmable logic controllers
- Characteristics and functions of input and output devices
- Characteristics and functions of the different programming languages
- Writing PLC software programs
- Writing programs with logic functions
- Testing and debugging the software program
- Simulating the software program

Stepper and servo motor training package

Modern servo drives have become indispensable for a wide variety of automation tasks thanks to their combination of high precision, dynamic response and torque. These motor training packages provide the basic knowledge of the components of stepper and servo motors and their areas of application.

**Training Contents**
- Characteristics, functions, components and design of a drive system
- Commissioning a stepper and servo motor system
- Controlling the motors using speed control
- Controlling the motors using torque control
- Controlling the motors using position control
- Writing a basic program to move the motors from homing to several positions with different speeds
- Simulating the program
MPS® – The modular production system: from module to learning factory

The modular production system MPS® sets the right challenges and provides appropriate learning environments for various requirements:

- Differentiated functions
- Individual and combined units
- Different drive technologies
- Material and information flow
- Modern and variable control concepts

Training Contents

- Characteristics, functions and applications of actuators
- Characteristics, functions and applications of pneumatic valves
- Characteristics, functions and applications of electrical switches, contacts and sensors
- Characteristics, functions and applications of programmable logic controllers
- Reading and understanding circuit diagrams
- Writing, testing and debugging PLC software programs for the stations
- Combining the different stations together to form a simple production line

MPS® - Transfer line

The transfer line is the basic component of the MPS® transfer system. It is made up of a belt, drive, controls and sensors and comes fully assembled. The transfer line can be used to transport workpieces or workpiece holders. The transfer line can be fitted with up to two mechatronic modules.

Training Contents

- Characteristics, functions and applications of drives
- Characteristics, functions and applications of sensors
- Characteristics, functions and applications of relays and reversing contactors and logic circuits
- How to parametrise and commission the various drive controllers

Modularity and integration in MPS®PA

The MPS® PA compact workstation with 4 integrated control loops is the perfect equipment for you if you have limited space.

The MPS® PA complete system consists of four individual stations; namely, filtering, mixing, reactor and bottling. Each of the station represents a closed process, which can be found in many industrial sectors.

Training Contents

- Setup, wiring and commissioning of a system for process technology
- Measurement of electrical and process engineering variables such as level, flow, pressure and temperature
- Setup and commissioning of control circuits
- Assessment of control response
- Networking of process engineering systems
- Process operation, monitoring and system management
- Analysis of controlled systems and control circuits
- Parameter setting and optimisation of P, PI or PID controllers
- Process operation and monitoring
- Inspection, maintenance and servicing
**FluidSIM®**

Leading circuit design and simulation program for pneumatics, hydraulics and electrical engineering

FluidSIM® is a comprehensive software for the creation, simulation, instruction and study of electro-pneumatic, electro-hydraulic, electrical, electronic and digital circuits.

All of the programme functions interact smoothly, combining different media forms and sources of knowledge in an easily accessible fashion. FluidSIM® unites an intuitive circuit diagram editor with detailed descriptions of all components, component photos, sectional view animations and video sequences.

**Training contents**
- Drawing of the fluid power circuits according to standards
- Simulation of the designed circuits
- Usage of the training materials provided such as slides, videos, sectional drawings, etc.
- Creating documents of the projects

**Professional training in virtual learning environments**

CIROS® is a 3D simulation software that provides preconfigured simulation models. The models represent the automated production process with different complexity.

**Training contents**
- Analysing the function and system structure of automated production environments
- Training and developing PLC and robot programming
- Adopting the right approach to troubleshooting and fault finding
- Understand the fundamentals of production planning and control

**Digital Training Programs**

Our training programmes covers a wide range of topics and are flexible. This allows the tutors to be creative and increase students’ motivation.

**Training features**
- Excellent Didactic and multimedia course topics
- Scope for self-study during classroom-based training
- Learning scenarios can be individually customised
- Varied programme functions, such as a glossary, search function, notes
- Can be used in conjunction with Classroom Manager
- Can be integrated into training concepts which use other media (Word, Excel, PDF, etc.)
- Participant guidance
Mobile robot platform for research and training
Just as industrial robots, mobile and service robots are also becoming more and more important. Robotino® forms the basis for research and training in these applications.

Training contents
• Characteristics, functions and applications of mobile robots
• Characteristics and functions of sensors, omni-drives and vision systems
• Characteristics and functions of the robot programming languages
• Writing the robot program
• Testing and debugging the robot program
• Running the robot program
• Integration of the mobile robot to work as an AGV

Your learning companion as the key to connected learning
Our Tec2Screen is the new device which connects the virtual and real world seamlessly. Unique in the world of technical education and training! This gives us connected learning, which is good for better learning and faster understanding.

Training features
• Excellent Didactic topics
• Virtual processes with hardware linkage
• Assembly, commission and measuring with the learning companion
• Analysing processes and characteristic curves with Tec2Screen
• Simulation of the processes

MPS® - Transfer factory
The transfer factory consists of flexible production cells with different functional modules incorporated. The cells are provided with two conveyor sections which represents the basis for a complete sub-system.

They can be used as an independent system or joined together to form production lines. There are hardly any limits on how the cells can be combined and possible layouts.

Training contents
As the factory consists of different cells, the training contents are huge and can cover:
• Application modules such as turning, drilling, vision inspection, etc
• Warehousing
• Robotics
• SCADA
• RFID
• Controlling the cells with Profibus or Profinet
8010-7 Renewable Energy

Home energy production training system 8010-7

The home energy production training system is an important contributor to the implementation of the smart grid, a concept of ever growing importance in today's electric power network.

Training contents
- Understanding and wiring DC circuits
- Storing of electrical energy in lead acid batteries
- Generating electrical energy through wind and solar power
- Understanding principles of grid-tied home energy production
- Familiarising with different power electronic devices
- Understanding the fundamentals of home energy production
- Learning to acquire data from different modules using data acquisition control interface

8010-9 Electromechanical

Electromechanical training system 8010-9

The electromechanical training system provides a sound knowledge of basic power technology commonly and less commonly used in today's modern applications.

Training contents
- Understanding and wiring DC circuits
- Understanding and wiring AC power circuits
- Learning to acquire data from different modules using data acquisition control interface
- Understanding and wiring of commonly and less commonly rotating machines
- Understanding transformer losses, efficiency and regulation

8010-A Power Electronics

Power electronics training system 8010-A

The power electronic training system, introduces the most common power electric components and devices used in numerous applications today.

Training contents
- Understanding of connection diagrams
- Learning to acquire data from different modules using data acquisition control interface
- Understanding the fundamentals of connections in DC and AC power electronics
- Familiarising with single and three phase PWM Inverter
- Familiarising with thyristor three phase rectifier
- Familiarising of three phase induction motor drives
**8036 Industrial Control**

The industrial controls training system offers unique training possibilities of teaching the theory and techniques of electric motor controllers.

**Training contents**
- Learning and troubleshooting of electrical circuits
- Learning and understanding of PLC circuits
- Connecting and troubleshooting DC circuits
- Performing and setup lockout tagout procedures
- Familiarising different industrial components
- Operating and troubleshooting of motors

---

**FACET 910xx Series**

FACET electronics training system offers a modular training with a wide range of 30 FACET boards to select from different topics.

**Training contents**
- Identifying of fault through troubleshooting with built-in fault feature
- Interactive learning with E-series Mindsight learning management system for better understanding
- Encompassing four topics:
  - Basic principle of electricity and electronics
  - Digital and microcontrollers
  - Industrial electronics
  - Communication

---

**353x Process Control**

Instrumentation and process control program which uses modern equipment and a complete curriculum to help students assimilate the theoretical and practical knowledge that is mandatory for work in the process control industry.

**Training contents**
- Controlling the system either using HART or FieldBus protocol which is widely used in industries
- Measuring and controlling process variables, such as pressure, flow, level, temperature, pH, and conductivity
- Creating complex processes by adding optional components or by modifying the control strategies
- Creating first and second order processes (interacting and noninteracting)
- Calibrating and set up the different transmitters and valves
- Developing the troubleshooting skills of the students by inserting faults into the system
Radar training system – 8096

The radar training system is the state of the art real radar training system which is suitable for indoor teaching, demonstrating the technical advancement achieved.

Training contents
- Familiarising the fundamentals of pulsed radar
- Familiarising and interacting with different essential parameters related to radar equations
- Understanding the operating principle of pulsed radar transmitter and receivers
- Troubleshooting of inserted faults
- Operating of moving target indication in analog pulsed radar
- Understanding and operating principle of moving target detection processing

Satellite training system – 8093

The satellite training platform is designed to teach modern telecommunications technologies in the classroom using a fully operational satellite link.

Training contents
- Discussing and practicing the concept of satellite communications
- Distinguishing pros and cons of satellite communications
- Understanding analog signal modulation and processing
- Understanding digital signal modulation and processing
- Understanding constellation diagrams
- Understanding concept of communication links characteristic and performances

Antenna training and measurement system – 8092

The antenna training and measurement system offers training and practical experimentation on antennas in the band of 1Ghz and 10Ghz.

Training contents
- Experimenting with different antenna systems
- Controlling antenna rotation and data acquisition, as well as for displaying measured antenna characteristics in the E and H planes
- Using software to the E and H plane characteristics to display tridimensional (3D) radiation patterns
- Practicing on software which includes algorithms for estimating beam width and antenna gain from measured characteristics
**346X HVAC-Trainer**

The new series of Heating, Ventilation, and Air Conditioning (HVAC) – Refrigeration 346X series are modular and teaches in four topics of HVAC-R.

**Training contents**
- Familiarising of residential, industrial and commercial devices during experiments
- Experiencing the concept of building energy management using the simulated environment
- Learning the fundamentals of HVAC-R electricity
- Experiencing the practical concept of multi-zone wireless control
- Understanding the characteristic of a building infrastructure (ducts, sensors, dampers, heater and more)
- Performing measurement and calculations
- Gaining troubleshooting skills with the inserted faults feature

**Solar / Wind energy training system – 46120**

The complete hybrid Solar/Wind energy training system demonstrates on wind turbine and solar cells operate in real world environment.

**Training contents**
- Understanding and identifying different types of energy sources
- Understanding energy conversion; transmitted and stored
- Performing the installation, operation, maintenance servicing of alternative energy systems
- Theory and practical experiment on solar module
- Theory and practical experiment on wind turbine module

**Mechanical training system – 46101**

The mechanical training system utilise industrial components for practical and hands-on task.

**Training contents**
- Introducing mechanical drive systems
- Experiencing different type of drives such as belts, chains and gears
- Performing alignment of couplings
- Performing lubrication on chains and pillow block bearings
- Familiarising and working with gaskets and seals
- Familiarising and assembly of ball screws, bearings and linear bearings
- Understanding of clutches and brakes mechanism
- Introducing vibration metering and analysis systems
Australia
Festo Pty. Ltd.
Head Office
Melbourne
179 – 187 Browns Road
Noble Park Nth VIC 3174, Australia
Call Toll Free: 1300 88 96 96
Call Toll Fax: 1300 88 95 95
Branch Offices
South Australia (Adelaide)
Queensland (Brisbane)
Western Australia (Perth)
New South Wales (Sydney)

China
Festo (China) Ltd.
Head Office
1156 Yun Qiao Road
Jinqiao Export Processing Zone
201206 Pudong, Shanghai,
P .R. China
Tel: 400 6565 293
Fax: +86 21 5854 0300
Branch Offices
Baoji
Beijing
Changchun
Changsha
Chengdu
Chongqing
Dalian
Dongguan
Fuzhou
Guangzhou
Hangzhou
Harbin
Hefei
Jinan
Jiaxing
Kunming
Kunshan
Lanzhou
Liuzhou
Nanchang
Nanjing
Ningbo
Qingdao
Shenyang
Shijiazhuang
Shenzhen
South Korea
Festo Korea Co., Ltd
Head Office
No. 1515-1516
Vanh Dai Dong Street
Ward An Phu, District 2
Ho Chi Minh City
Tel: +84 (8) 62814453-4454
Fax: +84 (8) 62814442
Branch Office
Hanoi

Brazil
Festo Didactic GmbH & Co. KG
Rechbergstr. 3
73770 Denkendorf
Germany
Tel: +49 (0) 711 346 70
Fax: +49 (0) 711 34 75 48 85 00

Hong Kong
Festo Ltd
Head Office
6/F New Timely Factory Building,
497 Castle Peak Road,
Kowloon, Hong Kong
Tel: +852 2743 8465
Fax: +852 2743 4192

Indonesia
PT Festo
Head Office
Jl. Tekno V Blok A/1 Sektor XI
Kawasan Industri BSD
Serpong - tangerang 15314
Banten - Indonesia
Contact Centre
Tel : 0804 1 2 FESTO (33786)
Fax: 0804 1 4 FESTO (33786)
Branch Offices
Bandung
Batu
Gloprodukt
Medan
Semarang
Surabaya

Festo Didactic GmbH & Co. KG
Rechbergstr. 3
73770 Denkendorf
Germany
Tel: +49 (0) 711 346 70
Fax: +49 (0) 711 34 75 48 85 00

Branch Office
Osaka

Malaysia
Festo Sdn Berhad
Head Office
10 Persiaran Industri
Bandar Sar Di Mansara
52200 Kuala Lumpur
Tel: +60 (3) 62 86 80 00
Fax: +60 (3) 62 75 64 11
Branch Offices
Penang
Ipoh
Johor Bahru
Malacca

New Zealand
Festo Ltd
Head Office
20 Fisher Crescent
Mount Wellington
Auckland
Tel: +64 (0) 574 10 94
Fax: +64 (0) 574 10 99

Branch Offices
Christchurch
Hamilton

Philippines
Festo Inc
Head Office
Festo Building
KM 18, West Service Road
South Super Highway
1700 Paranaque City
Metro Manila
Tel: 1 800 10 12 FESTO (33786)
Fax: 1 800 10 14 FESTO (33786)

Branch Offices
Bacolod/Iloilo
Baguio
Batangas
Cebu
Zamboanga
Cagayan de Oro
Davao
General Santos City
Iligan
Tarlac
Pampanga
Bataan
Subic

Singapore
Festo Pte Ltd.
6 Kian Teck Way
Singapore 628754
Tel: +65-62 64 01 52
Fax: +65-62 61 10 26

Branch Offices
Hanoi

South Korea
Festo Korea Co., Ltd.
Head Office
470-1 Gasan-dong
Geumcheon-gu
Seoul #153-803
Tel: +82 1666 0202
Fax:+82 (0) 2 864 7040

Branch Offices
Suwon
Cheonan
Yeongnam
Daeju
Daejeon
Gwangju
Ulsan

Taiwan
Festo Co.Ltd
Head Office
9 Kung 8th Road
Linkou 2nd Industrial Zone
Linkou Dist., New Taipei City
24450 Taiwan, R.O.C.
Tel: +886 2 2601 9281
Fax: +886 2 2601 9286-7

Branch Offices
Hsinchu
Taichung
Kaohsiung

Thailand
Festo Ltd.
Head Office
Viranuvat Building, 6th - 7th Floor.
1250 Bangna - Trad Road (Soi 34)
Bangna, Bangkok 10260
Tel: 1 800 290 477
Fax: 1 800 290 478

Branch Offices
Laemchabang/Chonburi
Saraburi

Vietnam
Festo Co., Ltd
(Cong Ty Tnhh Festo)
Head Office
No. 1515-1516
Vanh Dai Dong Street
Ward An Phu, District 2
Ho Chi Minh City
Tel: +84 (8) 62814453-4454
Fax: +84 (8) 62814442

Branch Office
Hanoi