

CP Lab

The compact Industry 4.0 learning system that grows with your requirements

FESTO



Highlights

- Flexible layout
- Versatility
- Expandability
- Open interfaces
- Compact size
- Seamless transition to the CP Factory

The Cyber-Physical Lab is the professional and compact Industry 4.0 learning system from Festo Didactic. It includes the necessary technologies and components for communicating extensive knowledge of Industry 4.0.

The modular and flexible configuration has a range of learning scenarios that can be worked on, from individual pallet transfer systems with integrated control right up to a connected production system with cloud services.

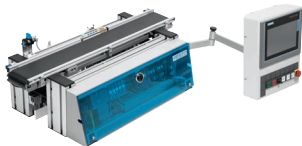
Training content (sample)

- Design and structure of flexible production plants
- Recording information using intelligent sensors
- Control using PLC
- Control using embedded controllers
- Communication based on open standards
- Identification systems
- Plug & produce: rapid changeover
- Cyber-physical systems
- MES: creating, managing, controlling and visualizing customer orders
- Using cloud technology
- Practical exercises

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Flexible and expandable

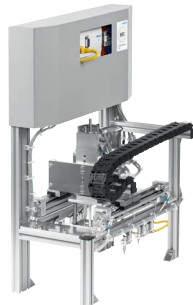


CP Lab pallet transfer system

The CP Lab grows with different, changing requirements and can be used flexibly. The CP Lab pallet transfer system is fitted with a PLC and all the necessary interfaces so that it can be expanded with application modules and can communicate with the MES.

Main components

- Controller S7
- Mono-belt transfer system
- Pallet stopper
- 3/2-way valve
- Inductive sensors
- Capacitive sensors at the start and the end of belt
- RFID read/write system
- BCD ID system
- Optical transmitter and receiver
- DC or AC motors
- Motor controller, bi-directional with 2 speed levels
- Incremental shaft encoder
- IO-Link master
- IO-Link device
- Analogue I/O using IO-Link
- Control panel with touch display



CP Lab application modules

The application modules are placed on the belts and, depending on the module type, are controlled via I/O, PROF-INET, TCP/IP, OPC UA or plug & produce interfaces.

This means they are ready for use in the shortest possible time. The application modules include a range of content and complexity levels, so the system is optimally matched to your requirements.

You can choose from the following application modules:

- Turning
- Pressing
- Pressing with force control using muscles
- Quality assurance with camera
- Tunnel furnace with temperature control
- Stacking magazine
- Drilling
- Analogue measuring
- Workpiece output
- Labelling
- Others available on request



Adaptability

The flexibility of the factory layout is one of the most important features of Industry 4.0. CP Lab ensures through:

Mobile robotics:

The CP Bridge add-on module serves as an interface for transferring workpiece carriers to the Robotino® mobile robot system or the CP Factory. The mobile robots also enable production machines, manual workstations, storage systems and 3D printers to be integrated into the overall concept.

MES4:

The service-oriented and educational MES4 is a data server that has been developed from an Industry 4.0 perspective. It provides excellent support for flexible and modular plant concepts and can be connected to a decentralized production network using cloud services.

Double the benefit:

The educational MES4 can also be used as an introduction for getting to know the MES structures through a simulation, leading to a better understanding of the processes within an Industry 4.0 plant.

Industry 4.0 topics

- RFID technology
- MES (Manufacturing Execution System)
- Energy monitoring
- Batch size 1
- Mobile robotics
- Plug & produce
- Internet of things (IoT)
- Push email
- Cloud
- Big data
- Data analysis
- Remote access
- IT security
- NFC
- Augmented reality
- Simulation
- ERP interface
- Mobile MES

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