

Distributed Control System Learning System – SIMATIC PCS neo

An Interactive, Connected Process Plant for Your Laboratory

FESTO



Highlights

- Turnkey training unit with hands-on course material
- Suitable for operator, technician, and engineer training
- Industrial components and software tools from leading manufacturers
- Dual-media system (liquid and gas)
- Remote access possible
- Supports standard industrial networks and integrates smart field devices

The digital, automated process industry demands DCS-ready graduates—but delivering DCS training is challenging due to complex topics, necessary curriculum updates, and lab constraints. Discover a practical, ready-to-use learning solution that seamlessly integrates DCS skills into your teaching.

Our solution

Get the tools to bring your courses and labs up to Industry 4.0 standards. The Distributed Control System (DCS) Learning System with SIMATIC PCS neo is a unique solution that enables seamless DCS training within your instrumentation and process control courses—from basic concepts to advanced practice—using modern, connected technologies and smart devices for hands-on, high-impact learning.

Your benefits

- Reflect current industry practices and technologies in the classroom to boost learners' employability and motivation.
- Build system thinking, process-dynamics expertise, and strong troubleshooting skills.
- Use the same system for multiple groups or classes, accommodating different learning needs and career pathways—maximizing your investment.



→ Video

Provide Engaging Learning Experiences for Real-World Skills.

Explore control strategies and loop interactions via a DCS.

The process control training system is built around a Distributed Control System (DCS) and features fully instrumented process loops using safe media such as water and air.

Learners gain hands-on experience with key process variables, including controlling water pressure, flow, and level; measuring water temperature; and controlling air pressure and flow.

The system supports single-loop, cascade, and batch control, as well as multivariable interactions, allowing learners to explore basic PID concepts, interacting loops, and stepwise process sequences. Disturbances can be introduced to simulate real-world variability.



+ Realistic troubleshooting

Teachers can introduce faults—calibration errors, broken wires, etc.—directly from the HMI or remotely, even while learners are working on the workstation. This allows learners to analyze alarms, diagnose issues, and apply corrective actions.

+ Made to last

The sturdy workstation features stainless steel piping and concealed wiring for durability. Each system is manufactured in our ISO-certified plant to ensure quality and repairability, with responsive support provided whenever needed.

+ An immersive OTS

The system also functions as an Operator Training System (OTS): learners operate a “real” plant that reacts to process changes and operator inputs, practice preprogrammed sequences, and refine their alarm-handling and decision-making skills.

+ Quick setup

Roll the unit into the lab and start immediately. All components are installed and wired. Software is preloaded. Preprogrammed flow paths and batch sequences, a fixed layout, and ready-to-run exercises make commissioning and lab sessions smooth and efficient.

+ Measurement mastery

Multiple technologies for the same variable (e.g., radar vs. differential pressure level) enable comparison and deeper understanding. With several pressure ports, a rotameter, and manometers, the system offers extensive instrumentation for monitoring and analysis.

+ Fluid mechanics

Two centrifugal pumps with variable-frequency drives let learners explore pump curves at different speeds, compare capacities, and analyze pressure losses across system components—providing practical insights into real-world pump behavior.

+ High industry relevance

With a curated selection of smart field devices, communication protocols, and the use of air and water as process media, the system prepares learners for fast-growing sectors—semiconductors, hydrogen, batteries, water technology, chemicals—where advanced automation and digitalization are standard.

Give Learners a Competitive Edge—Without Extra Strain on Your Workload.

Fast-track your way into real IIoT industrial workflows.



The learning system comes with a fully pre-configured, cloud-based DCS system, SIMATIC PCS neo from Siemens, with all components—controllers, field devices, communication networks, and operator interfaces—seamlessly integrated.

Working with PCS neo bridges the gap between textbook concepts and real-world process automation. It builds digital literacy, systems thinking, and analytical skills—all critical and in-demand competencies.

- Browser-based access: no software installation required
- User-friendly interfaces, even for beginners
- Remote system monitoring and operation
- Advanced data visualization tools

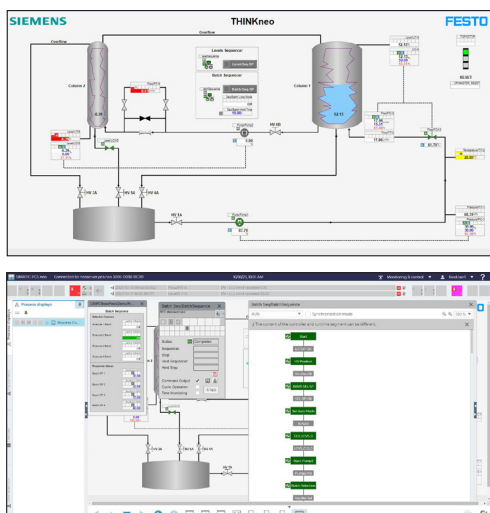
Level up your courses.



Ready-to-use teaching and learning material—available digitally on Festo LX or as workbooks—gives you clear guidance on essential topics, targeted skills, and relevant learning objectives. Select the theory and hands-on exercises that fit your class needs. Step-by-step instructions and embedded study and review questions guide students through practical experiments, reinforcing understanding.

Key learning objectives

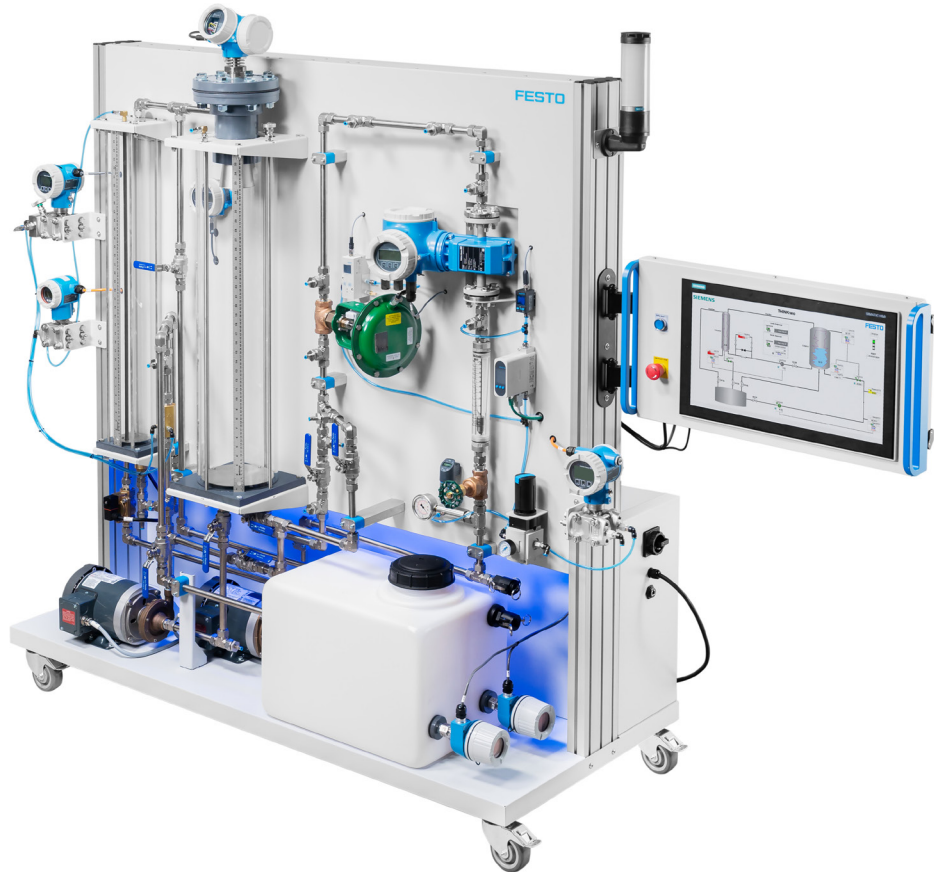
- Gain a solid understanding of key process variables and system dynamics.
- Explore centrifugal pumps and fluid mechanics basics.
- Identify and work with primary measuring devices and final control elements.
- Read and interpret Piping & Instrumentation Diagrams (P&IDs).
- Configure and calibrate smart field instrumentation.
- Set up industrial communication using common protocols.
- Tune and optimize process control loops.
- Manage alarms and troubleshoot the system.



DCS Learning System – SIMATIC PCS neo

A cutting-edge learning system with industrial components and technologies

The process workstation comes equipped for hands-on learning. It features a large touch panel display, stainless steel piping, a tank, two acrylic columns (one with a bubbler tube), two centrifugal pumps with variable-frequency drives, ball valves, a globe valve, a check valve, a pneumatic actuator globe valve, a proportional pressure control valve, a solenoid valve, an angle-seat control valve with a pneumatic actuator, and over 20 pressure ports. Additional instruments include a manometer and rotameter for monitoring flow and pressure. Electrical and control components are safely housed in a rear cabinet.



Smart instrumentation

- Pressure switch
- Differential pressure transmitter (high-range)
- Temperature transmitter (Pt100 RTD)
- Temperature transmitter (J-type thermocouple)
- Magnetic flow transmitter
- Radar level transmitter with remote display
- Differential pressure transmitter with 3-valve manifold (flow, Venturi)
- Differential pressure transmitter (level, low-range)

Industrial networks and communication technologies

- Heartbeat
- PROFINET
- PROFIBUS
- IO-Link
- HART
- WLAN
- Bluetooth
- Modbus TCP
- Ethernet-APL

Requirements

- Power supply: 120 V AC / 15 A or 230 V AC / 10 A, single-phase
- Compressed air: 28 L/min (1 SCFM) at 6.2 bar (90 PSI)

Overall dimensions (LxWxH)

Approx. 263 x 77 x 201 cm
(104 x 31 x 80 in)

Weight

Approx. 372 kg (820 lbs)

Interested?

Reach out to your sales representative to learn more about this DCS Learning System, order no. 8232217 (120 V, 60 Hz) or 8232218 (230 V, 50/60 Hz).