

→ Industry 4.0 HMI Panel and Principles of SCADA



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Learning for life

Teach the principles of **SCADA** using an HMI panel, our **PETRA II** twin-plant trainer, two PLC units and a PC programming station.

We provide the complete package with instructions, lessons, and STEP 7 programs - to ensure that teaching the use and application of an **HMI Panel** is simple, and can be completed quickly.



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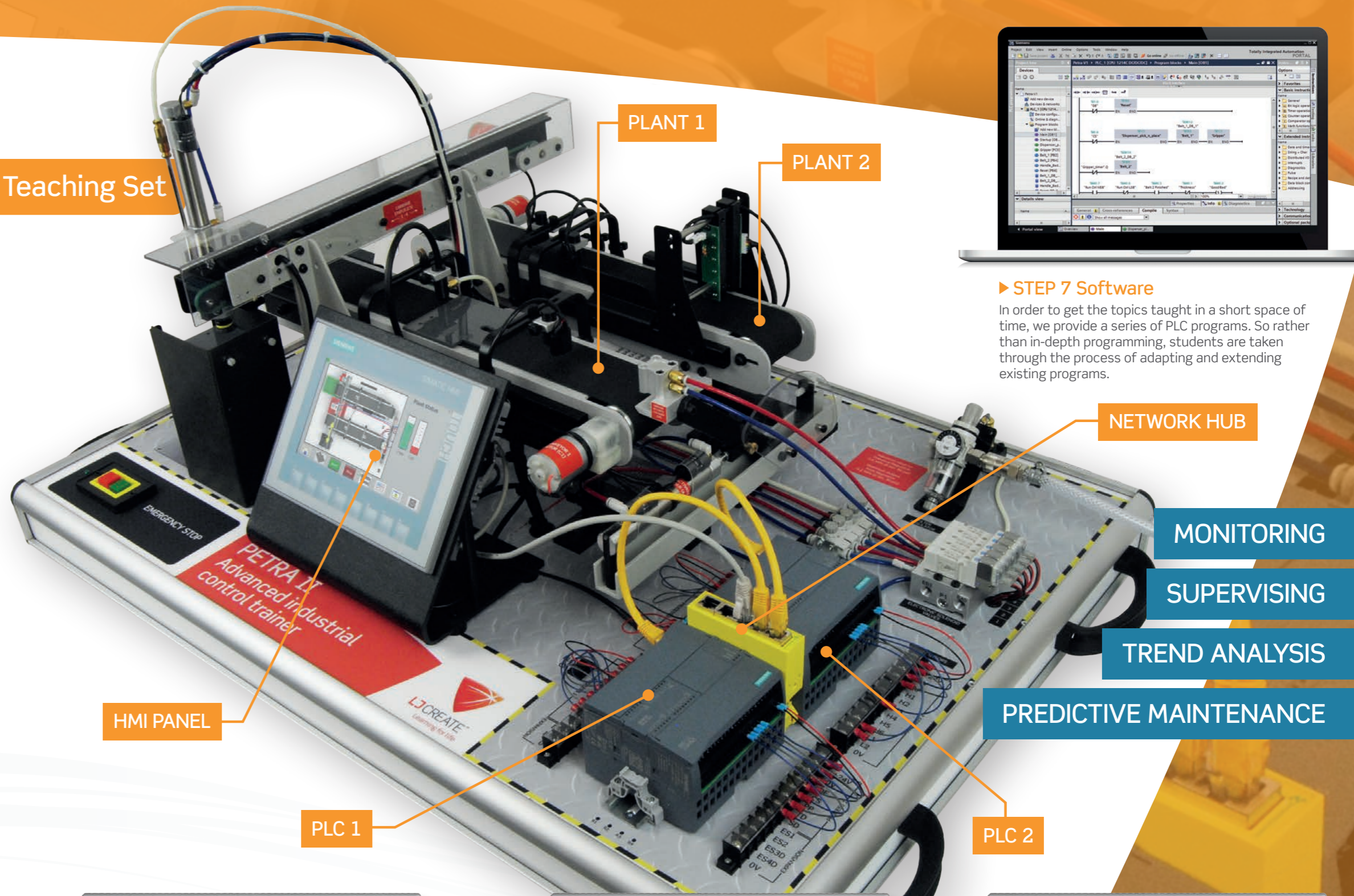
PETRA II

Advanced Industrial Control Teaching Set

PETRA II is designed to enable quick and easy instruction on the operation and application of an HMI panel, together with the principles of SCADA.

PETRA II is simple enough to explain and operate quickly, but contains enough process components to demonstrate the operation of an HMI Panel.

Intermittent fault insertion illustrates the need for SCADA and the HMI panel, for the efficient operation of a modern plant.



STEP 7 Software

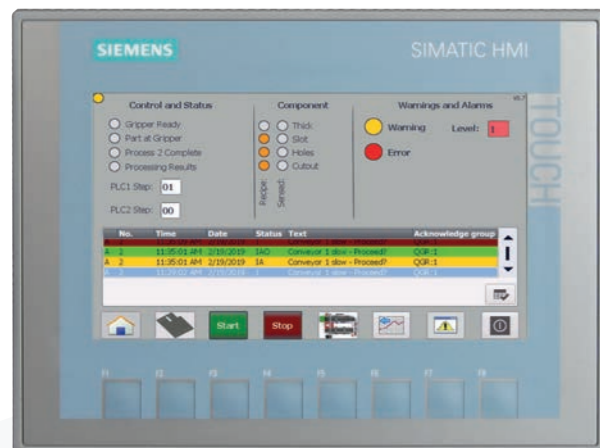
In order to get the topics taught in a short space of time, we provide a series of PLC programs. So rather than in-depth programming, students are taken through the process of adapting and extending existing programs.

MONITORING

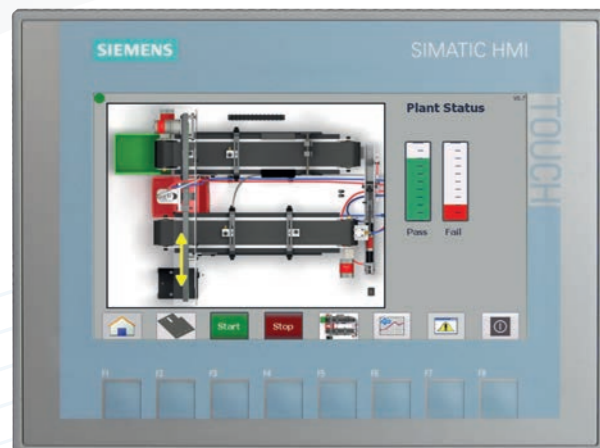
SUPERVISING

TREND ANALYSIS

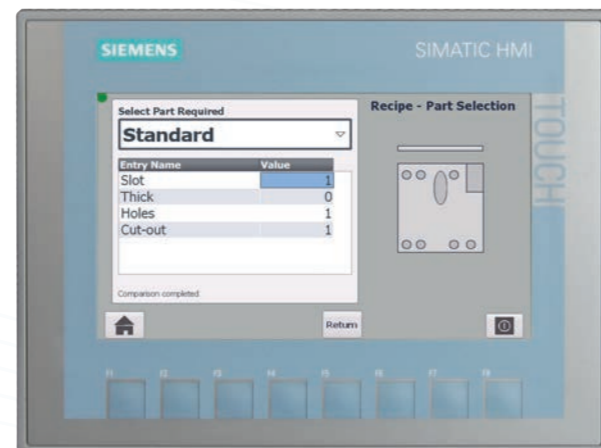
PREDICTIVE MAINTENANCE



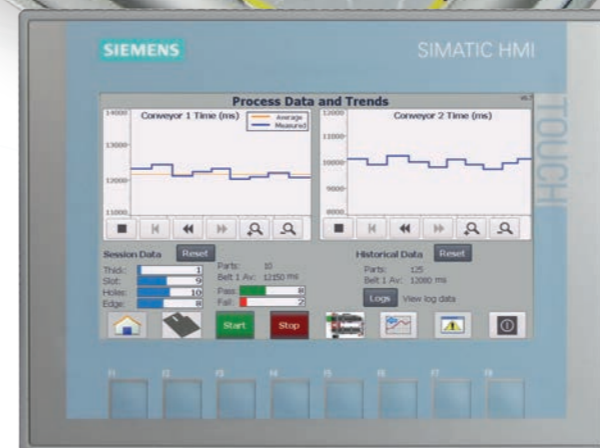
▶ Home Screen - Plant Control and Feedback



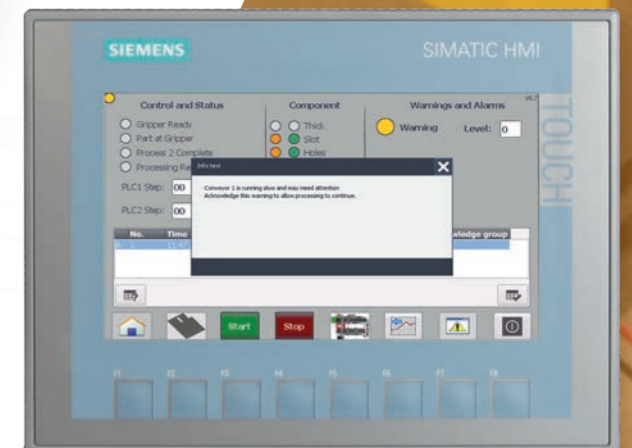
▶ Plant Simulation and Status Screen



▶ Recipes Screen



▶ Performance Tracking Screen



▶ Alarms Screen

PETRA II Curriculum

Our emphasis is on delivering training solutions that:

- Match curriculum requirements
- Can be taught within the unit times available
- Can be used by any student

The lessons we've developed to accompany this training set include the following topics:

THEORY TOPICS

Programmable Logic Control

- Programmable Logic Controllers (PLCs)
- Construction and Function of a PLC
- Connecting a PLC

Programming PLC Systems

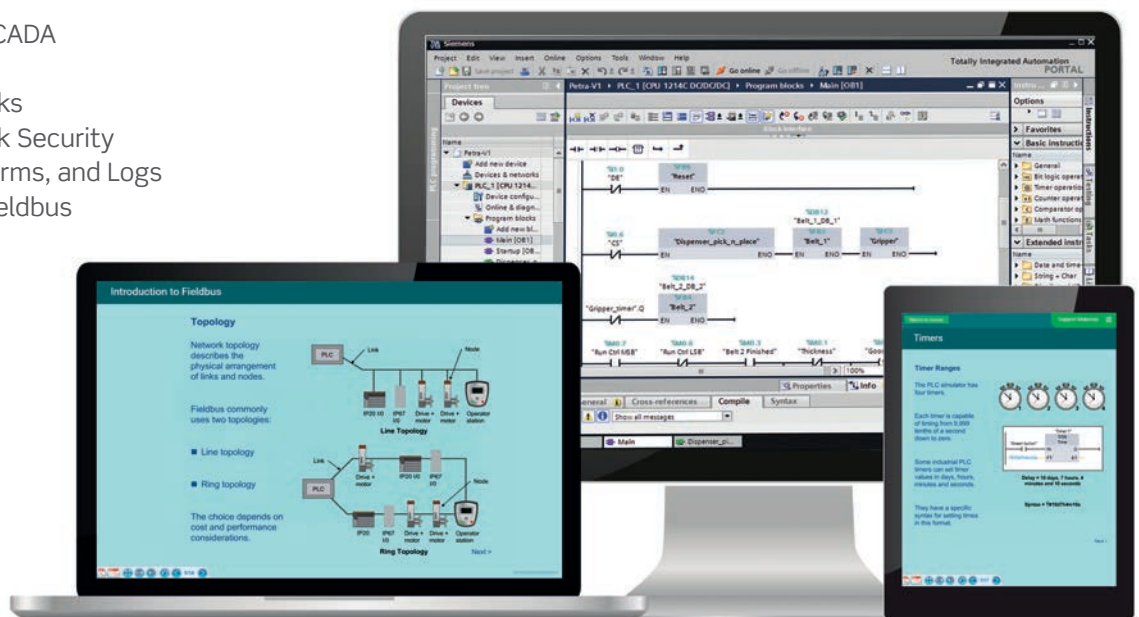
- Sequence Control System
- Converting Logical Circuit to Functional Plan
- GRAFCET Sequence Control Systems
- Using GRAFCET Diagrams
- Ladder Logic Programming
- PLC Programming
- Latches
- Counters
- Timers
- Memory Stores
- Analogue Inputs

SCADA Systems

- Introduction to SCADA
- Smart Sensors
- Industrial Networks
- Industrial Network Security
- HMI - Recipes, Alarms, and Logs
- Introduction to Fieldbus
- The AS Interface
- Profibus DP

PRACTICAL TOPICS

- Networking - Connecting Multiple Devices Together
- Displaying Real-Time Data on the HMI Panel
- Controlling Program Flow from the HMI
- Sharing Data Between 2 PLCs and HMI
- Programming a Recipe
- Programming an Alarm
- Showing a Trend
- Logging Detailed Data
- Identifying Faults and Maintenance Issues



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