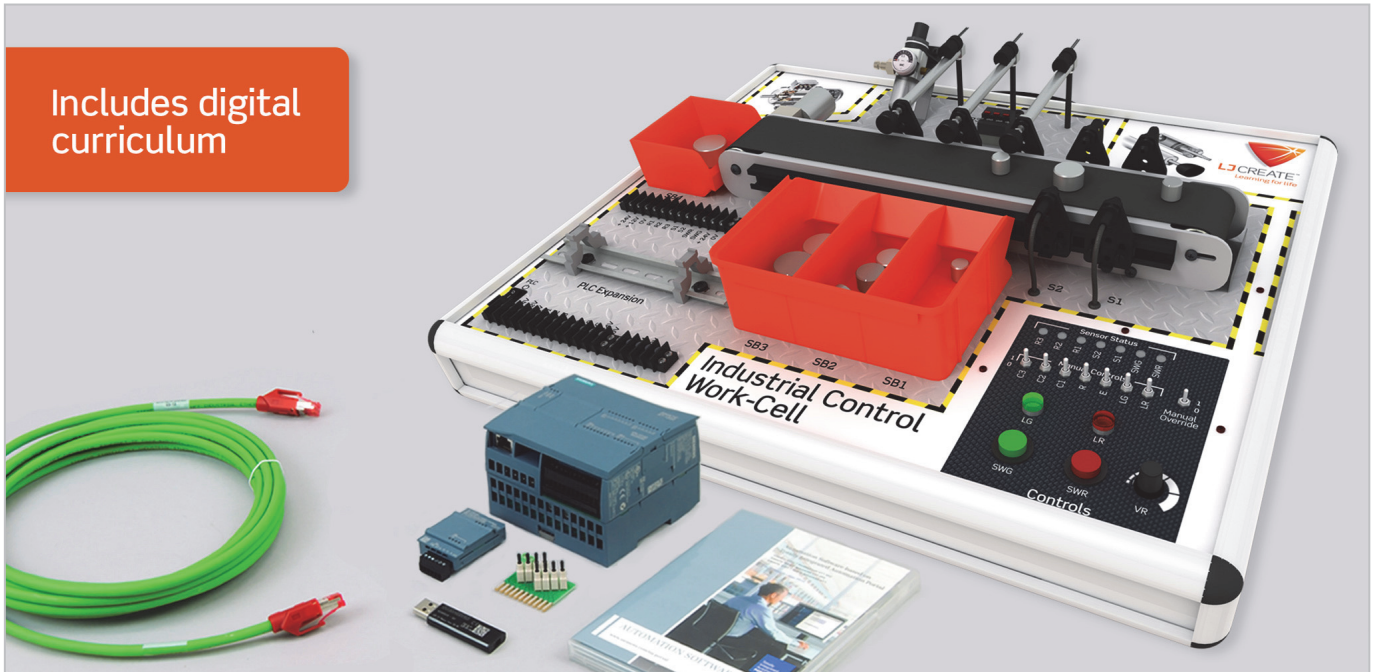# Product Information Sheet

Industrial Control Teaching Set (Siemens)

Includes digital curriculum

This training system offers a platform that enables students to perform a comprehensive range of PLC programming tasks using a Siemens controller and a conveyor belt/pneumatic sorting application.

We also include our unique software simulation of the Industrial Control Trainer in the package, to help introduce the basic concepts of PLCs and ladder logic at a fundamental level.

This enables the whole class to carry out simulated PLC control tasks and activities at the same time. Using this software, groups of students create ladder logic programs to control devices on the trainer using a graphical-based programmable logic control (PLC) editor.

These programs can be used to control either the hardware or the simulator. Used in this mode, only a simple USB connection is required to enable the ladder logic software to control the hardware unit. As students progress through the learning content they develop more complex programming skills, and step up a level to use the Siemens S71200 PLC and associated Step 7 programming software.

Sensors and Actuator Devices Include:
- Conveyor belt motor (speed and directional control)
- 2 Infrared beam sensors
- 3 Electro-pneumatic valves
- 3 Pneumatic single-acting cylinders
- 3 Pneumatic cylinder position sensors
- Analog input for conveyor speed control
- 2 Status indicator lamps
- 2 Start/stop buttons
- 7 Manual control input switches
- 4 Switched faults

Topic Areas Include
- Introduction to industrial control and manufacturing
- Industrial controllers
- Human versus machine
- Logic (AND, OR and NOT)
- Truth tables and step logic
- Latching actuators
- Counting parts
- Timing events
- Measuring part width
- Problem solving - sorting parts
- Using a Siemens industry-standard PLC to perform advanced control tasks

- Controlling the speed and direction of a DC motor-driven conveyor belt
- Analog control inputs and outputs
- Adapting a ladder logic program to give indication of the width of a part on a conveyor
- Creating a program that will automatically sort parts according to their width
- Debugging and running control programs on a remote Siemens PLC
- Troubleshooting an industrial control system
- Using the Siemens Step 7 remote programming software
- Downloading control programs to a remote Siemens PLC

Items Included:
- Industrial Control Trainer (290-01)
- Hand Operated Air Compressor
- 1 x Siemens PLC and 1 x Step 7 Software License (290-02/SI)
- Power Supply, USB Lead, and Ethernet Communication Lead
- Curriculum in Digital Format

General Information:
Dimensions: 660 x 600 x 170 mm (W, D, H)
Supply Voltage: 50-60Hz 110-240V AC
Packed Volume: 0.335 m^3
Packed Weight: 21 kg

Order Code: 290-00/SI

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