Pathway to Technical Understanding of PLCs
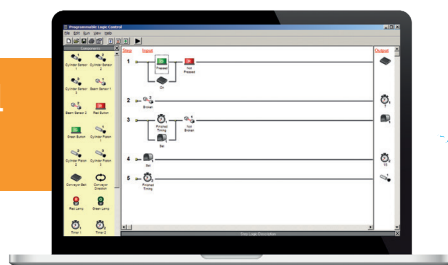
Designed to take every learner on a journey from beginner to industrial control expert!
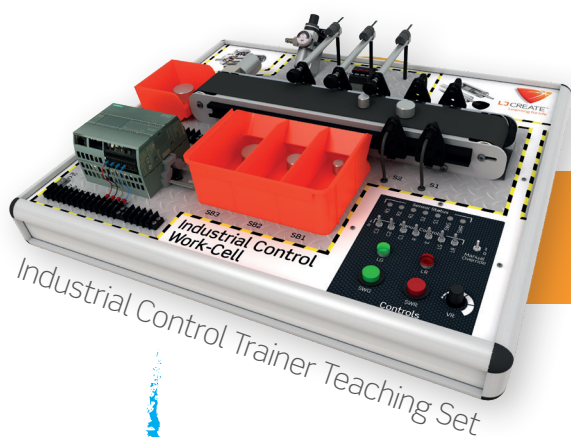
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Learning for life

1 Foundation of Control System/Ladder Logic

LMS (Ladder Logic App)
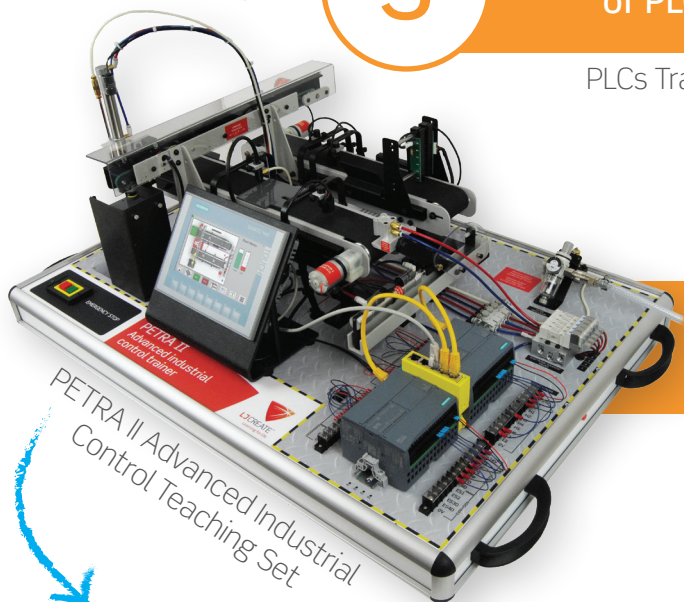
Industrial Control Trainer Teaching Set

2 Foundation of PLCs/ Siemens TIA Portal

3 Other Applications of PLCs

PLCs Trainer Teaching Set

4 Industrial Networks/ Cyber Security
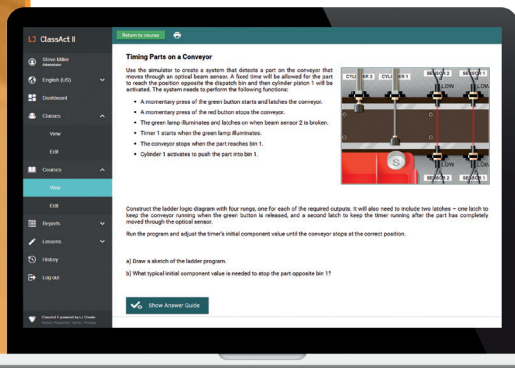
PETRA II Advanced Industrial Control Teaching Set

5 Students will acquire real-world skills to be workplace-ready

for more information, visit:
ljcreate.com

DIGITAL LIBRARY LESSONS - INDUSTRIAL CONTROL SYSTEMS AND PLCs

Number Systems

- Hexadecimal and Binary Number Systems

Programmable Logic Control

- Programmable Logic Controllers (PLCs)
- Components of a Sequence Control System
- PLC Programming
- Converting Logical Circuit to Functional Plan
- GRAFCET Sequence Control Systems
- Using GRAFCET Diagrams
- Basic Structure of a PLC
- Connecting a PLC

PLC Conveyor System Control

- Introduction to PLCs
- Construction and Function of a PLC
- Sequence Control System
- Identifying the Requirements
- Ladder Programming
- Create a STEP 7 Project
- Configure STEP 7 PLC Tags
- Enter a STEP 7 Ladder Program
- Run a STEP 7 Ladder Program
- Create a New Project
- Global Variables
- Enter a Ladder Program
- Run a Ladder Program
- Latches
- Flip-Flop Latches
- Latching an Airlock
- Counters
- Counting Parts
- Timers
- Memory Stores
- Analog Inputs
- Analog Outputs
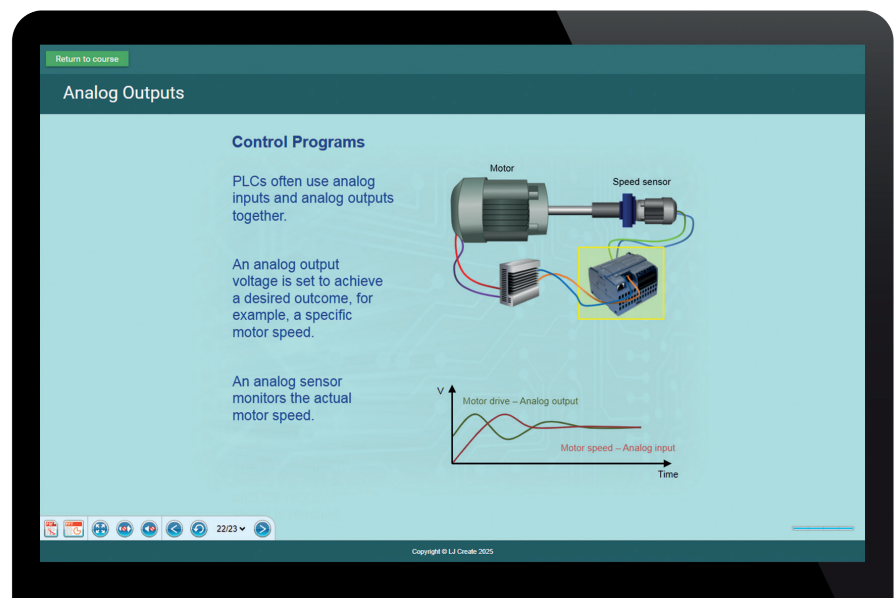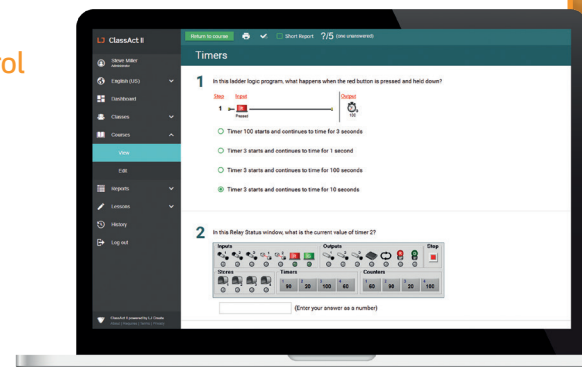- Sorting Parts

PLC Part Sorting Control

- Creating a STEP 7 Project
- Creating a New Project
- Configure STEP 7 PLC Tags
- Global Variables
- Enter a STEP 7 Ladder Program
- Enter a Ladder Program
- Run a STEP 7 Ladder Program
- Run a Ladder Program
- Flip-Flop Latches
- Counting Parts
- Timers
- Memory Stores
- Analog Inputs
- Analog Outputs
- The Rotary Encoder
- Sorting Parts
- Fieldbus Systems
- Introduction to Fieldbus
- The AS Interface
- Profibus DP

PLC Advanced Industrial Control

- Configure STEP 7 PLC Tags
- Programming the PETRA II Carriage
- Programming the PETRA II Transfer Arm
- Moving a Part Round the PETRA II
- Carrying Out Tests on the PETRA II Parts
- Complete PETRA II Control Program
- PETRA II Plant Control Program (Single PLC - Siemens)

Industrial Network Systems

- Introduction to SCADA
- Smart Sensors
- Industrial Networks
- Industrial Network Security
- HMI Interactions
- Introduction to a Siemens HMI Panel
- Networking Industrial Control Devices
- HMI Panel Real-time Data
- HMI Panel Process Control
- HMI Panel Sharing PLC Data
- HMI Panel Recipes
- HMI Panel Alarms
- HMI Panel Data Logging
- HMI Panel Trends
- HMI Panel Monitoring and Supervising
- HMI Panel Trend Analysis
- PETRA II Fault Finding - Worksheets
- PETRA II Plant Control Program (Dual PLC - Siemens)

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