



Since PLC (Programmable Logic Controller) was firstly introduced in 1970, it has been widely applied to various industrial uses such as machine and process controls. Designed with the latest microprocessor and electronic circuitry, today's compact-size PLCs provide the feature of high level of reliability, performance, speed and networking. The use of PLCs in automated production lines enhances system reliability, product quality, information sharing, efficiency and flexibility and thus reduces costs.

PLC-220 is a self-contained trainer which consists of a SIEMENS PLC main unit and commonly used I/O devices for simulation. It offers students excellent theories and wide applications of programmable logic controllers. This trainer enables students to learn step by step from the fundamentals of PLC to more advanced controls used in industry.

### Features

- Input-simulation switches function as level and pulse Input for different input signal
- It is particularly suitable for installation of output relay helps to increase load current
- Easy-to-use, Windows-based development software
- Assorted peripheral devices and other devices that support external extensions, it particularly suits laboratory experiment and project implementation.
- Various simulations I/O devices for studying and observing the results
- Using 4mm safety sockets on Input/Output terminals to ensure users' safety
- The suitcase-design makes it easy to carry, move and store

### Specifications

1. AC adapter : Input AC 100~240V, Output DC 24V
2. PLC main unit : SIEMENS SIMATIC S7-1214C
3. Digital input : 14
4. Digital output : 10
5. Analog input : 2
6. Support high-speed counters : 6
7. Support PTO/PWM pulses : 4 (Total)
8. Support timers : limited by the amount of memory in the CPU
9. Communication ports : PROFINET
10. Module expansion port and DIO extension port
11. Traffic light control module
12. Tank-filling device module
13. 4-digit 7-segment display
14. 4-digit thumbwheel switch
15. Step motor
16. Encoder
17. 24V DC motor
18. Proximity sensor
19. Micro switch
20. Buzzer
21. 4x4 keypad
22. Analog input knob : DC 0~10V
23. 24V DC expansion power
24. Windows-based programming software (STEP 7 TIA Portal)

### Experiments

1. STEP 7 TIA portal operations
  - Editing ladder program
  - Testing ladder program
  - Monitoring status

2. Basic control circuits
  - Self-holding circuit
  - Flashing control
  - Inching control
  - Single button Control
3. Light control
  - Simple light control
  - Complex light control
4. Traffic light control
  - Traffic light controller (conventional)
  - Traffic light controller (code block)
5. Digital clock control
  - 7-segment display control
  - Time clock
6. Step motor control
  - Speed and direction control
  - Encoder operation
  - Step motor and encoder
  - Step motor's step display
7. Tank filling device control
  - Tank filling control
  - Thumbwheel device
  - Tank filling control with thumbwheel
8. Keypad control
  - Keypad operation
  - Digital lock control
9. DC motor control
  - Analog Input Controller
  - PWM speed controller
  - Proximity and micro switches
  - Automatic speed control

### System Requirements

1. PC : Intel® Core™ i5-3320M 3.3 GHz or better, 8 GB RAM, 10 GB on system drive C:\
2. OS : Windows 7 (64-bit) SP1 / Windows10 (64-bit) 1703

### Accessories

1. Power Cord
2. Experiment Manual
3. Connecting Leads Set
4. Industrial Ethernet cable, CAT 6, Length 6M
5. SIMATIC STEP 7 BASIC TIA Portal software DVD

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