



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 feature high level of reliability, performance, speed and networking. The use of PLCs in automated production lines improves system reliability, product quality, information sharing, efficiency and flexibility and thus reduces costs. PLC-310 is a self-contained trainer which consists of a MITSUBISHI PLC main unit, I/O devices for simulation and I/O devices that are commonly used. It provides students with a thorough understanding of the theories and applications of programmable logic controllers. This trainer enables students to learn step by step the fundamentals of PLC and more advanced controls used in industry.

### Features

1. Input-simulation switches with level and pulse Input are functioning to meet the need of different input signal
2. Output Relay's installation helps to increase load current. Easy-to-use, windows-based development software
3. Assorted peripheral devices and other devices that can support external extensions, it particularly suits for laboratory experiment and project implementation.
4. Various simulations I/O devices to facilitate study and observe the results.
5. Using 4mm safety sockets on Input/Output terminals to ensure users' safety.
6. The suitcase-design makes it easy to carry, move and store.

### Specifications

1. AC power supply: 100V - 240V AC, 50/60 Hz
2. PLC main unit: MITSUBISHI FX 3UC-32MT
3. Digital input: 16
4. Digital output: 16
5. Support high-speed counters: 8 (total)
6. Support timers: 256 total timers; 4 timers(1ms); 46 timers(10ms); 206 timers(100ms)
7. Communication ports: RS-422
8. 4-digit 7-segment display
9. 4-digit thumbwheel switch
10. Module expansion port and DIO extension port
11. Traffic light control module
12. Tank-filling device module
13. Step motor
14. Encoder
15. 24V DC motor
16. Proximity sensor
17. Micro switch
18. Buzzer
19. 4x4 keypad
20. 24V DC expansion power
21. Windows-based programming software (GX-developer) allows the user to modify the program while running it

### Experiments

1. GX-developer Operations
  - 1.1 Editing Ladder Program
  - 1.2 Testing Ladder Program
  - 1.3 Monitoring Status
2. Basic Control Circuits
  - 2.1 Self-holding Circuit
  - 2.2 Flashing Control
  - 2.3 Inching Control
  - 2.4 Single-button Control

3. Light Control
  - 3.1 Simple Light Control
  - 3.2 Complex Light Control
4. Traffic Light Control
  - 4.1 Traffic Light Controller (step)
  - 4.2 Traffic Light Controller (conventional)
5. Digital Clock Control
  - 5.1 7-Segment Display Control
  - 5.2 Time Clock
6. Step Motor Control
  - 6.1 Speed and Direction Control
  - 6.2 Encoder Operation
  - 6.3 Step Motor and Encoder
  - 6.4 Step Display of Step Motor
7. Tank filling Device Control
  - 7.1 Tank Filling Control
  - 7.2 Tank Filling Control with Thumbwheel
8. Keypad Control
  - 8.1 Keypad Operation
  - 8.2 Digital Lock Control
9. DC Motor Control
  - 9.1 PWM Speed Controller
  - 9.2 Proximity and Micro Switches
  - 9.3 Automatic Speed Control

### System Requirements

- PC with Pentium II or better CPU
- Windows XP / VISTA / 7 / 10
- User's Manual (optional)
- GX-developer Software CD with E-manual (optional but necessary)

### Accessories

- Power Cord
- Experiment Manual
- Connecting Leads Set
- USB-422 Cable

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