

A group of PLC Training System

YPLC-1000 / YPLC-2000 / YPLC-2100 / YPLC-2200 / YPLC-2300

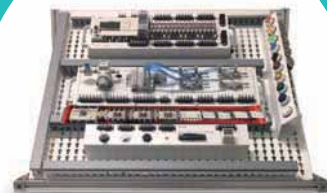
YPLC-TSJ-1000 / YPLC-TSJ-20000

Educational connection between the IoT and PLC.
For example, sequence, sensor, switch, pneumatic etc.
Exercise and education are available.

HMI Training System



PLC Training System



HMI Training System



YPLC-TSJ-2000

YPLC-2300

PLC with IoT Training System



YPLC-TSJ-1000

PLC Training System



YPLC-2000

YPLC-2200

PLC Training System



Basic PLC Training System



YPLC-1000

YPLC-2100

PLC Training System

Model: YPLC-1000

Features of YPLC-1000

1. Basic PLC trainer for electric and electronic students
2. Basic PLC training and application based on wiring as needed
3. Separate PLC application modules
4. Practice of temperature control, traffic signal control, level control, conveyer control and parking control
5. Application practice using HMI
6. A slop design with 10 degrees inclined toward students, providing a convenient test environment
7. A self-diagnosis program, facilitating equipment management

Functions of YPLC-1000

1. Basic understanding and practice of PLC
2. Application practice using LED Output
3. Application practice using sensors
4. Application practice using industrial instruments
5. Practice for understanding auto control mechanism
6. HMI control practice
7. Wiring as needed

Table of Contents

- Part 1. PLC Control Circuit
1. Basic Understanding of PLC
 2. Practice of PLC Program
- Part 2. Industrial Instrument Control Circuit (including various examples)
1. Application practice using LED Output
 2. Application practice using sensors
 3. Application practice using models
 4. Application practice using industrial instruments
 5. Practice for understanding auto control mechanism
- Part 3. HMI Control
1. HMI General
 2. HMI Control
- Part 4. Description of PLC Commands
1. Basic commands
 2. Application commands
- Part 5. Elements Required for System Manufacturing
1. Input elements
 2. Output elements
- Part 6. My Project
1. Project Format



YPLC-1000 Components

Component	Qty	Component	Qty
Power Cable	1	Wiring assemblies	300
Input & Output Unit	1	Touch Screen Module	1
PLC Download Cable	1	Textbook	1
PLC Unit	5		

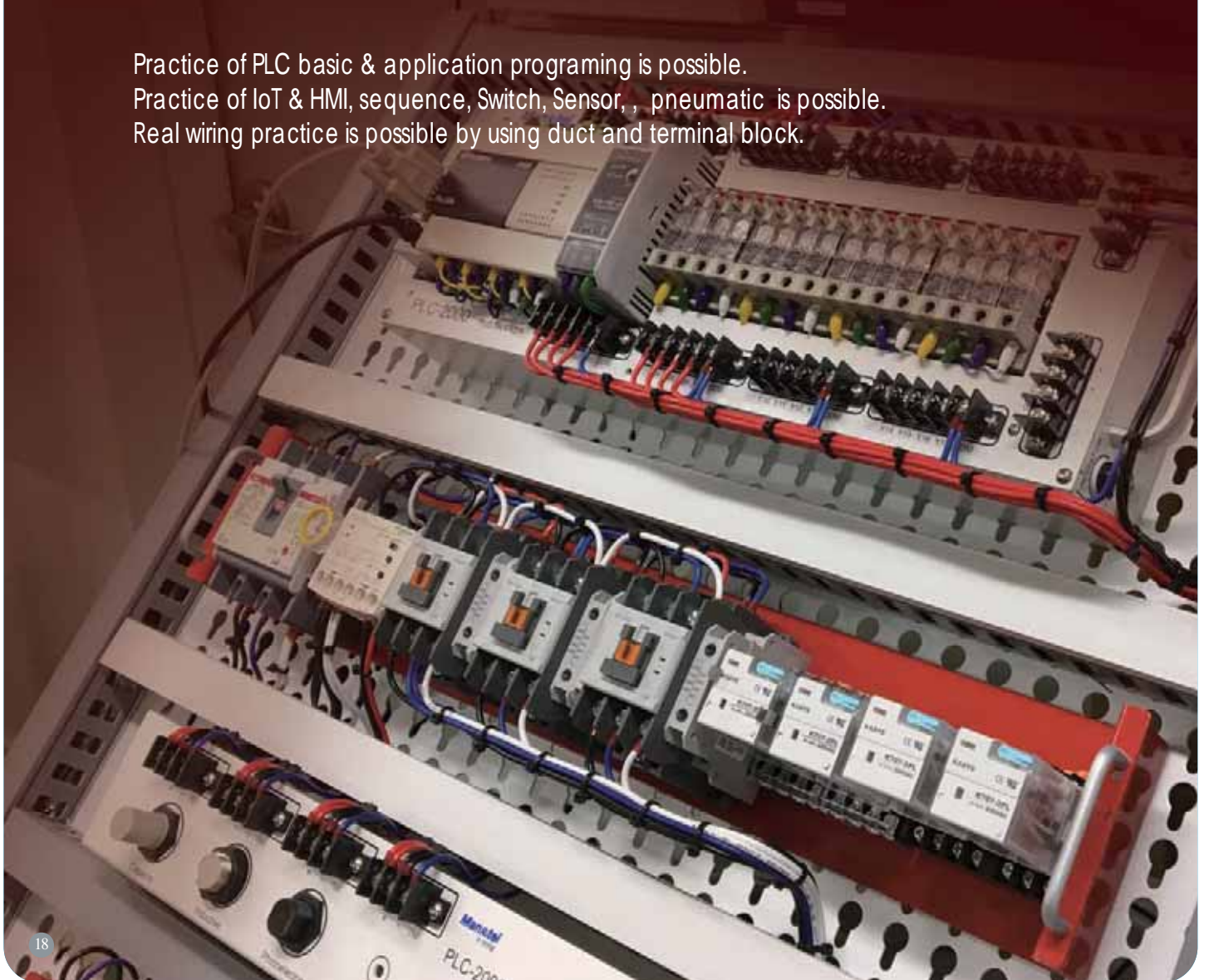
YPLC-1000 Specifications

Component	Specification
PLC Trainer Body	DC Output : 0 ~ 24V / 0 ~ 5A, 0 ~ 12V / 0 ~ 5A
PLC Unit	CPU Base Power Module Input Module Output Module
Input & Output Unit	Buzzer: 1 Ea Tower Lamp: 1 Ea Output Terminal : 60 Ea Case
Temperature Control Unit	Case: Insulated plastic injection case Digital temperature display Built-in over-heat protection device
Traffic Control Unit	Case: Insulated plastic injection case Practice control of various crossroad signals
Level Control Unit	Case: Insulated plastic injection case Enclosed water-proof structure Safety accident preventative structure Embedded controller
Conveyer Control Unit	Multi-step control (5 steps or more) Sample materials: 10 types or more Material loading to inlet (5 types or more) Sample material (MC or acetel) Conveyer driving motor (Serial roller connection) Conveyer belt self-aligning capability
Parting Area Control Unit	Various sensor covers Material deposit warehouse Parking capacity: 4 cars or more Cross bar auto up/down control with a 3-step control sensor detecting motion of model cars Check-in/Check-out counter and display Parking and full sign
Touch Screen Module	Touch Screen LCD : 7 inch Input Power : DC 24V Case : Aluminum case Front panel: Aluminum 2t Terminal: TOOL, USB, LAN, RS232/422/485 1 Ea Power : DC 24V
Available Wiring Assemblies	300 Ea

PLC with IoT Training System

Model: YPLC-2000

Practice of PLC basic & application programming is possible.
Practice of IoT & HMI, sequence, Switch, Sensor, , pneumatic is possible.
Real wiring practice is possible by using duct and terminal block.



PLC with IoT Training System Model: YPLC-2000

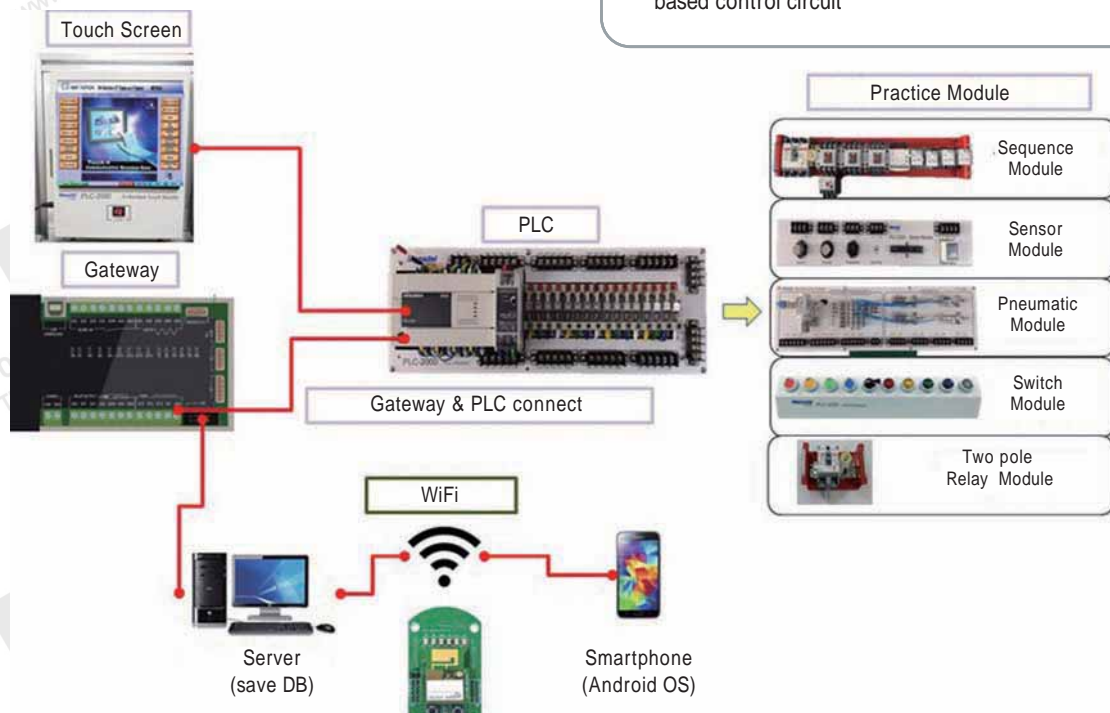


YPLC - 2000 features

1. IoT based MITSUBISHI FX3u - 32MR PLC
2. Control practice utilizing IoT Internet of Things WiFi communication
3. Experimental practice of basic programming command and various application program command
4. MITSUBISHI FX - PLC program and Operation experimental practice
5. Practice applied with Sequence module
6. Practice applied with switch module
7. Practice applied with sensor module
8. Practice applied with pneumatic module
9. Practice control applied with touch screen drawing

YPLC - 2000 functions

1. Understanding and practice relay circuit
2. Understanding and practice full voltage starting circuit
3. Understanding and practice timer and counter circuit
4. Understanding and practice motor control circuit
5. Understanding and practice control circuit using switch module
6. Understanding and practice inductive, capacitive, fiber, pressure sensor
7. Understanding and practice single- acting and double - acting cylinder
8. HMI drawing practice
9. Understanding and practice IoT Internet of Things based control circuit



PLC with IoT Training System

Model: YPLC-2000



YPLC -2000 specification

Items	Spec
PLC Unit	- Power : AC100~240V - Input : 16 ea (DC 24V sink/source input) - Output : 16ea (relay) : 2A/1ea(8A/4ea) below AC250V DC30V
Switch Module Unit	- Switch : Ø25 (Red, Yellow, Green, Blue) - Lamp : Ø25, 4ea(Red, Yellow, Green, Blue), 25VDC - Buzzer: Ø25, 24VDC, 65dB(distance 1m),
Sensor Module Unit	Capacitive - power supply voltage : DC12~24V(DC10~30V) - Detection distance: 8mm ± 10% Inductive - Power supply voltage : 12~24VDC - Detection distance: 5mm ± 10% Photoelectricity - power supply voltage : 10~30VDC - detection distance : 100mm - flood lamp spot diameter: 40 x 45mm fiber - operating temperature: - 40 ~ 70 °C - sensing distance : 7.5cm Pressure Sensor - power supply voltage : 12~24VDC ± 10% - rated pressure range : - 0.100 ~ +1.000MPa
Sequence Module Unit	Molded case circuit breaker - rated voltage : AC460V - rated short circuit : 2.5KA - rated current : 30A - outer size : 75x96x60mm Electronic overcurrent relay - current setting : 3.0 ~ 30A - operating voltage : 24~240V AC/DC (50/60Hz) Electromagnetic contactor - rated current : 32, 40A - rated operational voltage : 690V - rated insulation voltage : 1000V 1) contact specification - Rated current : 10A 30VDC / 10A 250VAC - Max. switching voltage : 250VAC/10A, 2.5VDC/1.5A 2) Coil specification - voltage specification : 12VDC, 24VDC, 100/110VDC, 12VAC 50/60Hz, 24VAC 50/60Hz - Max. cut - off voltage : DC : 10% of rated voltage AC: 30% of rated voltage - Max. Voltage : 110% of rated voltage
Pneumatic Module Unit	Single - acting cylinder - Max. pressure : 1.5MPa/102PSI Bore : 10mm/0.39in Stroke : 15mm/0.6in Road Diameter : 4mm/0.16in Weight : 30[g] Double - acting cylinder - Max. pressure : 1.5MPa/102PSI Bore : 10mm/0.39in Stroke : 15mm/0.6in Road Diameter : 4mm/0.16in Weight : 30[g]
Dipolar Rely Module Unit	Rated voltage : AC460V Rated short circuit : 2.5KA Rated current : 30A Outer size : 50x96x60mm
WiFi Communication Module Unit	Power source : DC3.3V WLAN standard : IEEE 802.11 b / g / n 1MB Flash Memory, 128KB SRAM, 1MB Serial Flash
IoT Communication Module Unit	Power source : DC24V PWM(D/A) : 4points communication : TTL232/RS232/SPI/I2C Outer size : 128.5 x 77.5mm
AC In- /output DC Output	220V 0~24V

Y PLC -2000 Textbook

- Contents of YPLC -2000
- Chapter 1. PLC summary
 - Chapter 2. PLC structure
 - Chapter 3. PLC wiring and command
 - Chapter 4. FX -PLC composition
 - Chapter 5. GX Developer operating
 - Chapter 6. PLC basic command
 - Chapter 7. PLC numerical data
 - Chapter 8. Application command and programming
 - Chapter 9. programming learning
 - Chapter 11. Sensor module control practice
 - Chapter 12. Pneumatic module control practice
 - Chapter 13. HMI drawing design and control test
 - Chapter 14. IoT summary and Hardware structure
 - Chapter 15. IoT Internet of Things based control practice
 - Chapter 16. PLC application control practice

YPLC -2000 composition

Items	Q'ty
PLC Trainer	1
modules (sequence, sensor, pneumatic, sequence switch, pneumatic switch, dipolar relay)	1set
Terminal block	1
Monitor	1
Cradle	1
Cable duct	1set
3 stage- storage box for module and tool crimping tool	1set
Terminal and wiring cable	1se
Text book	1

Basic PLC Training System

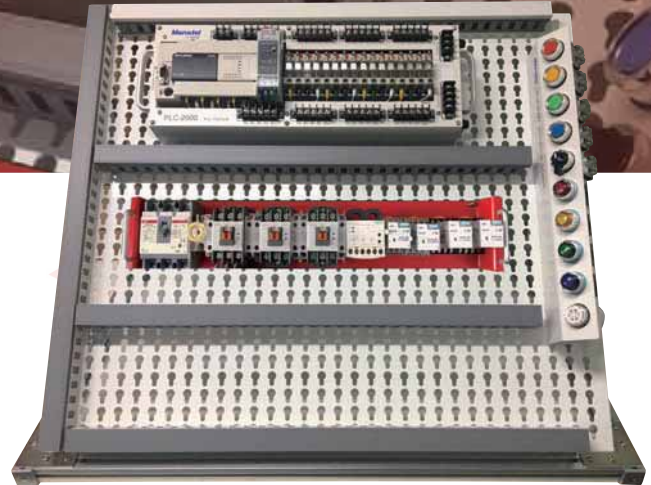
Model: YPLC-2100

YPLC-2100 features

1. MITSUBISHI PLC Experiment and Practice Equipment
2. Basic program command and various application program command experiment and practice
3. MITSUBISHI FX-PLC Program and Operation Experiment and Practice
4. Practice using Sequence module
5. Practice using switch module

YPLC-2100 Textbook

- Chapter 1. Outline of PLC
- Chapter 2. Structure of PLC
- Chapter 3. PLC wiring and command
- Chapter 4. Composition of FX-PLC
- Chapter 5. Operation of GX Developer
- Chapter 6. Basic command of PLC
- Chapter 7. Numerical data of PLC
- Chapter 8. Application command and programming
- Chapter 9. Learning programming
- Chapter 10. Sequence control practice
- Chapter 11. PLC application control practice



YPLC-2100 functions

1. Understanding and practice of relay circuit
2. Understanding and practice of full-voltage-starting circuit
3. Understanding and practice of timer and counter circuit
4. Understanding and practice of motor control circuit
5. Understanding and practice of control circuit using switch module

YPLC-2100 specification

Items	Spec
PLC Unit	- Power : AC100~240V - Input : 16 ea (DC 24V sink/source input) - Output : 16ea (relay) : 2A/1ea(8A/4ea) below AC250V DC30V
Switch Module Unit	- Switch : Ø25 (Red, Yellow, Green, Blue) - Lamp : Ø25, 4ea(Red, Yellow, Green, Blue) , 24VDC - Buzzer : Ø25 , 24VDC, 65dB(distance 1m),
Sequence Module Unit	Molded case circuit breaker - rated voltage : AC460V - rated short circuit: 2.5KA - rated current : 30A - Outer size: 75x96x60mm Electronic overcurrent relay - current setting: 3.0 ~ 30A - operation voltage: 24~240V AC/DC (50/60Hz) Electromagnetic contactor - rated current : 32, 40A - rated operational voltage : 690V - rated insulation voltage: 1000V
Relay	1) contact specification - rated current : 10A 30VDC / 10A 250VAC - max. switching voltage: 250VAC/10A, 2.5VDC/1.5A 2) coil specification - voltage specification: 12VDC, 24VDC, 100/110VDC, 12VAC 50/60Hz, 24VAC 50/60Hz - Max. cut-off voltage: DC: 10% of rated voltage AC: 30% of rated voltage - Max. Voltage : 110% of rated voltage
AC In -/output	220V
DC Output	24V

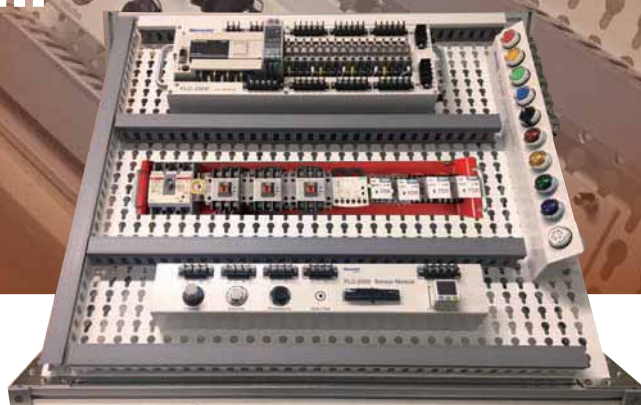
YPLC-2100 composition

Items	Q ty
PLC Trainer	1
Module(sequence, switch for sequence)	1set
Terminal block	1
Cradle	1
Cable duct	1set
Crimping tool	1set
Pen Hole terminal & wiring cable	1set
Textbook	1



PLC Training System

Model: YPLC-2200



YPLC-2200 features

1. MITSUBISHI PLC Experiment Practice Equipment
2. Basic Program Command and Diversified Application Program Command Experiment and Practice
3. MITSUBISHI FX-PLC Program and Operation Experiment Practice
4. Practice applying Sequence module
5. Practice applying switch module
6. Practice applying sensor module

YPLC-2200 Textbook

- Chapter 1. Summary of PLC
- Chapter 2. PLC Structure
- Chapter 3. Wiring and command of PLC
- Chapter 4. Composition of FX-PLC
- Chapter 5. GX Developer Operation
- Chapter 6. Basic Command of PLC
- Chapter 7. PLC Numerical data
- Chapter 8. Application Command and Programming
- Chapter 9. Learning Programming
- Chapter 10. Sequence control practice
- Chapter 11. Sensor module control practice
- Chapter 12. PLC Application Control Practice

YPLC-2200 functions

1. Understanding and practice of relay circuit
2. Understanding and practice of full voltage starting circuit
3. Understanding and practice of timer and counter circuit
4. Understanding and practice of motor control circuit
5. Understanding and practice of control circuit using switch module
6. Understanding and practice of inductive, capacitive, fiber and pressure sensor

YPLC-2200 specification

Items	Spec
PLC Unit	- Power : AC100~240V - Input : 16 ea (DC 24V sink/source input) - Output : 16ea (relay) : 2A/1ea(8A/4ea) below AC250V DC30V
Switch Module Unit	- Switch : Ø25 (Red, Yellow, Green, Blue) - Lamp : Ø25, 4ea(Red, Yellow, Green, Blue), 24VDC - Buzzer : Ø25 , 24VDC, 65dB(distance 1m),
Sensor Module Unit	Capacitive - power supply voltage : DC12~24V(DC10~30V) - Detection distance : 8mm ± 10% Inductive - Power supply voltage : 12~24VDC - Detection distance : 5mm ± 10% Photoelectricity - power supply voltage : 10~30VDC - detection distance : 100mm - flood lamp spot diameter: 40 x 45mm fiber - operating temperature: -40 ~ 70 °C - sensing distance : 7.5cm Pressure Sensor - power supply voltage : 12~24VDC ± 10% - rated pressure range : - 0.100 ~ +1.000MPa
Sequence Module Unit	Molded case circuit breaker - rated voltage : AC460V - rated short circuit : 2.5KA - rated current : 30A - outer size : 75x96x60mm Electronic overcurrent relay - current setting : 3.0 ~ 30A - operating voltage : 24~240V AC/DC (50/60Hz) Electromagnetic contactor - rated current : 32, 40A - rated operational voltage : 690V - rated insulation voltage : 1000V
	1) contact specification - Rated current : 10A 30VDC / 10A 250VAC - Max. switching voltage : 250VAC/10A, 2.5VDC/1.5A 2) Coil specification - voltage specification : 12VDC, 24VDC, 100/110VDC, 12VAC 50/60Hz, 24VAC 50/60Hz - Max . cut - off voltage : DC : 10% of rated voltage AC: 30% of rated voltage - Max. Voltage : 110% of rated voltage
AC In /output	220V
DC Output	24V



YPLC-2200 composition

Items	Q ty
PLC Trainer	1
Module (Sequence, Sensor, Switch for sequence)	1set
Terminal block	1
Cradle	1
Cable Conduct	1set
Crimping tool	1set
Pen Hole terminal & wiring cable	1set
Textbook	1

PLC Training System

Model: YPLC-2300

YPLC-2300 features

1. MITSUBISHI PLC Experiment Practice Equipment
2. Basic Program Command and Diversified Application Program Command Experiment Practice
3. MITSUBISHI FX-PLC Program and Operation Experiment Practice
4. Practice applying Sequence Module
5. Practice applying Switch Module
6. Practice applying Sensor Module
7. Practice applying Pneumatic Module.

YPLC-2300 functions

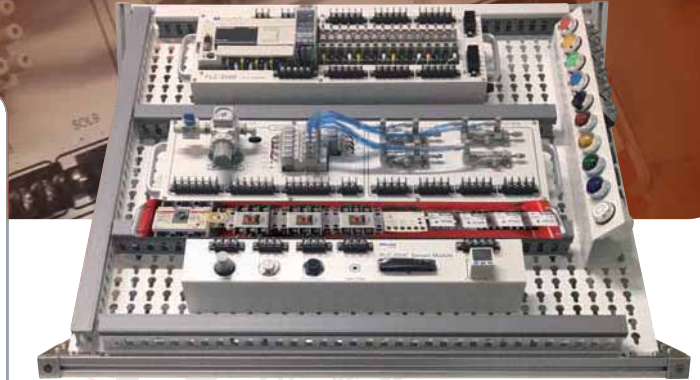
1. Understanding and practice of relay circuit
2. Understanding and practice of full voltage starting circuit
3. Understanding and practice of timer and counter circuit
4. Understanding and practice of motor control circuit
5. Understanding and practice of control circuit using switch module
6. Understanding and practice of inductive, capacitive, fiber and pressure sensor
7. Understanding and practice single- acting and double - acting cylinder

YPLC-2300 Textbook

- Chapter 1. Summary of PLC
- Chapter 2. PLC Structure
- Chapter 3. PLC Wiring and Command
- Chapter 4. Composition of FX-PLC
- Chapter 5. GX Developer Operation
- Chapter 6. PLC Basic Command
- Chapter 7. PLC Numerical Data
- Chapter 8. Application Command and Programming
- Chapter 9. Learning Programming
- Chapter 10. Sequence Control Practice
- Chapter 11. Sensor Module Control Practice
- Chapter 12. Pneumatic Module Control Practice
- Chapter 13. PLC Application Control Practice

YPLC-2300 composition

Items	Q'ty
PLC Trainer	1
Module (Sequence, Sensor, Sequence switch, Pneumatic, Pneumatic switch)	1set
Terminal block	1
Cradle	1
Cable Duct	1set
Crimping tool	1set
Pen Hole terminal & wiring cable	1set
Textbook	1



YPLC-2300 specification

Items	Spec
PLC Unit	- Power : AC100~240V - Input : 16 ea (DC 24V sink/source input) - Output : 16ea (relay) : 2A/1ea(8A/4ea) below AC250V DC30V
Switch Module Unit	- Switch : Ø25 (Red, Yellow, Green, Blue) - Lamp : Ø25, 4ea(Red, Yellow, Green, Blue), 24VDC - Buzzer : Ø25, 24VDC, 65dB(distance 1m),
Sensor Module Unit	Capacitive - power supply voltage : DC12~24V(DC10~30V) - Detection distance: 8mm ± 10% Inductive - Power supply voltage : 12~24VDC - Detection distance: 5mm ± 10% Photoelectricity - power supply voltage : 10~30VDC - detection distance : 100mm - flood lamp spot diameter: 40 x 45mm fiber - operating temperature: - 40 ~ 70 °C - sensing distance : 7.5cm Pressure Sensor - power supply voltage : 12~24VDC ± 10% - rated pressure range : - 0.100 ~ +1.000MPa
Sequence Module Unit	Molded case circuit breaker - rated voltage : AC460V - rated short circuit : 2.5KA - rated current : 30A - outer size : 75x96x60mm Electronic overcurrent relay - current setting : 3.0 ~ 30A - operating voltage : 24~240V AC/DC (50/60Hz) Electromagnetic contactor - rated current : 32, 40A - rated operational voltage : 690V - rated insulation voltage : 1000V 1) contact specification - Rated current : 10A 30VDC / 10A 250VAC - Max. switching voltage : 250VAC/10A, 2.5VDC/1.5A 2) Coil specification - voltage specification : 12VDC, 24VDC, 100/110VDC, 12VAC 50/60Hz, 24VAC 50/60Hz - Max. cut - off voltage : DC : 10% of rated voltage AC: 30% of rated voltage - Max. Voltage : 110% of rated voltage
Pneumatic Module Unit	Single - acting cylinder - Max. pressure : 1.5MPa/102PSI Bore : 10mm/0.39in Stroke : 15mm/0.6in Road Diameter : 4mm/0.16in Weight : 30[g] Double - acting cylinder - Max. pressure : 1.5MPa/102PSI Bore : 10mm/0.39in Stroke : 15mm/0.6in Road Diameter : 4mm/0.16in Weight : 30[g]
AC In - /output	220V
DC Output	24V

HMI Training System

Model: YPLC-TSO-1000

YPLC-TSO-1000 features

1. Rigid aluminum hard case
2. Various communication port built-in (Serial, USB, Ethernet)
3. Supplying high pixel 7.0", 65536 Color
4. LED backlight TFT LCD
5. Max. 120[MB] screen data saving
6. Able to create simple animation
7. Adopted in the manufacturing plant such as SAMSUNG and LG Electronics and etc.

YPLC-TSO-1000 Textbook

- Chapter 1. To install Omron Touch Screen
- Chapter 2. How to use Omron Touch Screen
- Chapter 3. Omron Touch Screen drawing practice
- Chapter 4. Drawing practice applied with PLC Trainer and sequence
- Chapter 5. Drawing practice applied with PLC Trainer, sequence module and switch module
- Chapter 6. Drawing practice applied with PLC Trainer, sequence module and switch. sensor module
- Chapter 7. Drawing practice applied with PLC Trainer, sequence module, sensor, pneumatic module
- Chapter 8. PLC application control drawing practice

YPLC-TSO-1000 composition

Items	Q ty
Touch Screen	1
NB Designer software program	1
DC 24V Adapter	1
textbook	1



YPLC-TSO-1000 functions

1. Relay circuit practice using drawing
2. Full-voltage-starting circuit using drawing
3. Timer, counter circuit practice using drawing
4. Motor control circuit practice using drawing
5. Sensor module circuit practice using drawing
6. Pneumatic module circuit practice using drawing

YPLC-TSO-1000 specification

HMI	Display unit : 7" wide, color TFT LCD resolution : 800x480 (WVGA) color : 65,536
	Power source : DC24V ± 10%
	Internal memory : 128MB
	External memory : USB
	Serial communication 1) COM1 : RS - 232C 2) COM2 : RS - 232C/422A/485
	Ethernet communication : 10BASE - T/100BASE - TX

HMI Training System

Model: YPLC-TSP-2000

Y PLC-TSP-2000 features

1. Rigid aluminum hard case
2. Various communication port built-in (Serial, USB, Ethernet)
3. Supplying high pixel 7.5", 65536 Color
4. LED backlight TFT LCD
5. Max. 32[MB] screen data saving
6. Able to create simple animation
7. Economic price

Y PLC-TSP-2000 Textbook

- Chapter 1. To install Pro-face Touch Screen
- Chapter 2. How to use Pro-face Touch Screen
- Chapter 3. Pro-face Touch Screen drawing practice
- Chapter 4. Drawing practice applied with PLC Trainer and sequence
- Chapter 5. Drawing practice applied with PLC Trainer, sequence module and switch module
- Chapter 6. Drawing practice applied with PLC Trainer, sequence module and switch. sensor module
- Chapter 7. Drawing practice applied with PLC Trainer, sequence module, sensor. pneumatic module
- Chapter 8. PLC application control drawing practice

Y PLC-TSP-2000 composition

Items	Q'ty
Touch Screen	1
GP-PRO EX software program	1
DC 24V Adapter	1
textbook	1



Y PLC-TSP-2000 functions

1. Relay circuit practice using drawing
2. Full-voltage-starting circuit using drawing
3. Timer, counter circuit practice using drawing
4. Motor control circuit practice using drawing
5. Sensor module circuit practice using drawing
6. Pneumatic module circuit practice using drawing

Y PLC-TSP-2000 specification

HMI	Display: 7.5" wide color TFT LCD
	Resolution : 640x480 (VGA)
	Color: 65,536
	Power: DC24V ± 10%
	Internal memory: 32MB
	External memory: USB
	Serial communication 1) COM1 : RS-232C
	2) COM2 : RS-422/485
	Ethernet communication : IEEE802.3/IEEE802.3u, 10BASE-T/100BASE-TX