

MULTIPLE PLC TRAINER

General Description

Multiple PLC Trainer (XPO-EDU PLC II) contain nine different reputed PLC where any two PLC does not use same, It have used seventeen (17) extra input/output module for interfacing Nine (9) different PLC. That's why students can be programming, interfacing with input and output load from nine different reputed brands PLC. As a result they are capable to control of machinery from industries where use of PLC.

XPO-EDU
PLC II



Specification

Experiment List:

- The construction of nine different categories PLC.
- Interfacing method of nine different categories PLC.
- Programming method of nine different categories PLC.
- Pick & Place using PLC & Pneumatic Air Suction method.
- Pick & Place using PLC & Pneumatic Gripper method.
- Water Pump Control using nine different categories PLC.
- Fire Indication System using nine different categories PLC.
- Traffic Light Control using nine different categories PLC.
- The construction of Pneumatic cylinder.
- Sequential control of three Pneumatic cylinder using nine different categories PLC.
- The construction of Pneumatic solenoid valve.
- Control of Pneumatic solenoid valve using PLC.
- Interfacing of PLC & Pneumatic solenoid valve.
- The method of Control Relay using PLC.
- The methods of three phase Induction Motor Starter using PLC.
- Forward-and-reverse operation methods of three phase Induction Motor.
- The method of interfacing PLC with Input Switch.
- The method of interfacing PLC with Input Sensor.
- Operating method of interfacing proximity sensor with PLC.
- Operating method of interfacing photo sensor with PLC.
- Use of Variable Frequency Drive with PLC.
- Programming method of Variable Frequency Drive with PLC.
- The construction of Three Phase Induction motor.
- Interfacing Method of Three Phase Induction motor with VFD & PLC.
- The construction of Stepper Motor.
- Interfacing Method of Stepper Motor with PLC.
- The construction Seven Segment Display.
- Interfacing Method of Seven Segment Display with PLC.
- Interfacing Power Supply with nine different categories PLC.

MULTIPLE PLC TRAINER

General Description

Technical Specification:

Main Voltage : 1 Phase 220V / 50/60Hz
 Working Table: 1EA
 Working Frame – 3 Step
 Module Storage Cabinet : 2EA
 Electric accessories Storage Cabinet : 1EA
 Ari Compressor : 1EA
 Air compressor (basic equipment minimal machine):
 power: AC 220V±10% 50Hz/60Hz,motor power: 600W
 Nominal volume Air compressor: 9L normal output
 voltage 0.7 MPa, noise degree: 66 dB
 Dimension :L x W x H (mm):1735 x 700 x 1660
 Connection facility 2mm & 4mm Safety Socket

XPO-EDU
PLC II



Specification

Module-M01:
 PLC:SIEMENS
 Part Number: 6ED1052-1MD00-0BA8
 Programming Language: Ladder, Functional Flow Chart Diagram
 Built in Ethernet communication
 PLC Power supply: (1 No.)
 PLC Digital Input: 08
 PLC Analog Input: 04 Nos
 PLC Analog Output: 02 Nos
 PLC Digital output: 04
 PLC Display Unit : YES
 PLC Input Voltage: 24VDC, 1Amp
 Permissible range, Lower limit(DC): 20.4V
 Permissible range, Upper limit(DC): 28.8V
 Programming Software: LOGO Soft Comfort
 Programming Cable: PLC to PC communication Cable
 Connection facility 2mm & 4mm Safety Socket
 Module Dimension :L x W x H (mm):295 x 225 x 45

Module-M02:
 PLC: Mitsubishi
 Parts:FX3U-16MR-DS
 Power Supply: 24VDC
 Input Types:24VDC
 Output Types: Relay
 Communication Options: RS-232 • RS-485, RS-422, USB
 CPU Functions: High speed counters, 32 bit floating point math
 Program Memory Byte (Step): 128 K max. (64,000)
 Ambient Temperature: 0-55° C (in operation) -20 ±70° C (in storage)
 Ambient Humidity: 5-95% RH, no condensation (in operation)
 Noise Immunity: 1000 Vpp noise voltage, 1 ?s pulse width at 30-100Hz
 Digital Input: 8 Digital Output :8 (Relay)
 Programming Software: Gx-Developer
 Programming Cable: SC-09
 Connection facility 2mm & 4mm Safety Socket
 Module Dimension :L x W x H (mm):295 x 225 x 45

PLC Category-03

PLC input: 8 points Digital

Triggering Power:24VDC

(2 points high speed 100KHz, 2 points medium speed 20KHz, 4 points medium speed total 5KHz);

PLC Output: 6 points relay

Communication Port:RS232/USB

Built-in power supply: SPW14-AC/D12/D24

Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-04

Power Supply=220VAC

Triggering Voltage:24VDC

Digital Input=18

Digital Output=12(Relay)

Programming Cable: PLC to PC communication Cable

Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-05

Power Supply=220VAC

Triggering Voltage:24VDC

Digital Input=06

Digital Output=04(Relay)

Programming Cable: PLC to PC communication Cable

Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-06

PLC Digital Input:12 Nos

PLC Digital Output:07 Nos

PLC Analog Input:04 Nos

PLC Analog Output:01No

20-point controllers

Provides embedded 0...10V non-isolated 4 channel analog input and 1 channel analog output for speed control of an AC drive

Provides embedded communications via non-isolated serial port (for RS-232 and RS-485 communications) and Ethernet port Communicates via EtherNet/IP

Provides embedded microSDTM slot for program transfer, datalog, and recipe management

Provides embedded support for up to four 10k thermistor temperature inputs

Supports program download through USB with an optional 3.5-in. Remote LCD

Supports up to two Micro800® Plug-in Modules

Programming Cable: PLC to PC communication Cable

Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-07
Power Supply=220 V AC
Digital Input =18
Digital Output=12(Relay)
Triggering Voltage:24VDC
Programming Cable: PLC to PC communication Cable
Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-08
Built in display : LCD
High-speed Operation
Number of control scheme lines
Maximum Number of I/O Points:0...500 with FBD programming,0...240 with ladder programming.
Cycle time : 6...90 ms
Backup time : 10 years at 25 °C
Checks : Program memory on each power up
Supply voltage limits : 19.2...30 V
Discrete input voltage : 24 V DC
Discrete input current : 4 mA
IP degree of protection : IP20 (terminal block) conforming to IEC 60529
Mechanical durability minimum: 10000000 cycles (relay output)
Output thermal current : 8 A for all 4 outputs (relay output)
Number of outputs : 4 relay output(s)
Discrete input number : 6 conforming to EN/IEC 61131-2 type 1
Programming Cable: PLC to PC communication Cable
Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Category-09
Power Supply=220VAC
Digital Input=8
Digital Output=6 (Relay)
Triggering Voltage:24VDC
Programming Cable: PLC to PC communication Cable
Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

PLC Pick & Place using Pneumatic Air Suction Module:
Base Plate: Aluminum Profile
Structure: Aluminum Profile
Function Indicator: Tower Type (Red, Green, Yellow)
Carry Function: Using Air suction method
Pneumatic cylinder: 02 Pcs
Optical Fiber Sensor:02 set
Solenoid Valve:3 pcs
Cabinet control circuit power supply: DC24V
Temperature: -10 ~ 40 ;

Part-C

PLC Pick & Place using Pneumatic Gripper Module:

Base Plate: Aluminum Profile

Structure: Aluminum Profile

Function Indicator: Tower Type (Red, Green, Yellow)

Carry Function: Using pneumatic gripper method

Pneumatic cylinder: 02 Pcs

Optical Fiber Sensor: 02 set

Solenoid Valve: 3 pcs

Cabinet control circuit power supply: DC24V

Temperature: -10 ~ 40 ; Humidity: ≤90% ;

Air pressure: 0.4 ~ 0.6Mpa

Input power : single-phase, three-wire AC 220V±10% 50Hz/60Hz

Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):599 x 459 x 19

Water Pump Control Module:

Base Plate: Aluminum Profile

Water Chamber: Upper And Lower

Water through: Solenoid Valve

Water Pump: 5W

Operating Voltage : 24VDC

PLC Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):599 x 459 x 19

Fire Indication System Module:

Smoke Sensor

Interfacing PLC and DC power supply Connection facility

Interfacing facility With water level control Module

Operating Voltage : 24V

PLC Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

Traffic Light Control Module:

Built-in ,Green, Yellow, Red Indicator for interface PLC and DC power supply Connection facility

Operating Voltage : 24V

PLC Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

Pneumatic Control Module:

Pneumatic cylinder: 3EA

Temperature: -10 ~ 40 ;

Humidity: ≤90% ;

Air pressure: 0.4 ~ 0.6Mpa

PLC Connection facility 2mm & 4mm Safety Socket

Module Dimension :L x W x H (mm):294 x 224 x 44

Pneumatic solenoid valve Module:

Pneumatic solenoid valve: 3EA
Operating Voltage : 24V
PLC connection point : 3EA
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44
Interfacing facility Pneumatic control Module

Relay Control Module:

Double pole Double Through Relay: 04 Set
Relay Operating Voltage:24V
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Motor Starter module:

Magnetic Contact switch:02 nos
Star Delta Status Indication facility
Relay Operating Voltage:220V~240VAC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Input Switch Module:

Pushbutton Switch:04 Nos
Push on Push Off Switch: 04 Nos
Relay Operating Voltage:24VDC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Sensor module:

Proximity Sensor:02 Nos
Photo Sensor:02 Nos
Thermocouplar:02 Nos
Operating Voltage:24VDC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Output Indicator Module:

Output Indicator:04 Nos
Operating Voltage:220V~240VAC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Variable Frequency Drive Module

Variable Frequency Drive:01 No
Input Three Phase/Single Phase
Output Three Phase 220VAC (PWM)
Capacity:400watts
Input Operating Voltage:220V~240VAC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Three Phase Induction motor Module:

Three Phase Induction Modeule:01 No
Connection system : Delta
Input Operating Voltage:220V~240VAC
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44

Stepper Motor Control Module
Unipolar Stepper Motor:01 No
Bipolar Stepper Motor:01 No
Input Operating Voltage:5V/12V
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44
Seven Segment Display module:
Seven Segment Display:02 no
Input Operating Voltage:5V/12V
PLC Connection facility 2mm & 4mm Safety Socket
Module Dimension :L x W x H (mm):294 x 224 x 44
Power Supply Module:
Input Operating Voltage:220V~240VAC
Output AC Voltage:220V,50Hz
Output DC Voltage:5V(1Amp),12V(1Amp),24V(1Amp)
PLC connection point facility 2mm/4mm Safety Socket
Fuse for Safety protection facility.
Accessories:
Air Compressor-01 no
Connecting jack 2mm/4mm : 01 Set
Power Cable: 01 no
PLC to PC Communication cable: 09 Sets
Simulation software for compatible PLC
English Manual & CD: 01 Set
Computer (Optional)