



### Multi PLC Workbench has following features

- An integrated workbench consisting of instrument panel and working table suitable for students to learn and perform various experiments of PLC Workbench (9 Different Brands of PLC).
- Measuring Instruments are fitted in the panel such that necessary interfaces are easily accessible to user.
- PLC interfacing with different application modules.
- Structure of workbench is made up of 1.5 mm-2mm thick CRC Epoxy coated pipes with top made up of good quality 19 mm-22mm thick plywood and covered with 1.8 mm- 02 mm off white color mica.
- The bench working area is covered by 2 mm – 2.5 mm thick antistatic mat which help students to controls static discharge as static cause interference or damage to students, equipment and circuitry

### Workbench structure specifications

- The basic structure should be made up of minimum 38 x 38 x 1.5 mm CRC Epoxy coated pipes for sturdiness.
- The dimensions of Wooden base are Width: 1200-1300 mm; Depth: 762-850 mm
- M.S. drawers 03 -04 numbers with lock

### Multi PLC Workbench has Technical Specifications:

#### PLC 1: Schneider Electric

- Digital input: 14-16 nos.,
- Digital output: 10 -14 nos.,
- Programming software : Schneider TM200/ Eco Struxure
- Programming cable: USB

#### PLC 2: Mitsubishi

- Digital input: 16-18 nos.
- Digital output: 16-18 nos.
- Programming Software: GOC Tool kit
- Communication: Ethernet

#### PLC 3: Fatek

- Digital input: 8-10 nos.
- Digital output: 6-10 nos.
- Programming Software: WinProladder
- Communication: USB

#### PLC 4: Delta

- Delta Digital input: 24-28 nos.
- Digital output: 16 -18 nos. (relay)
- Programming Software: ISPSOft
- Programming cable: USB

#### PLC 5: ABB

- Digital inputs: 6 -10 nos.
- Digital output: 4 -09 nos.
- Analog Input: 2 nos
- Analog output: 1 no.
- Programming software: ABB automation builder
- Programming cable: Ethernet

#### PLC 6: Omron

- Digital input: 18 -21 nos.
- Digital output: 12-18 nos. (relay)
- Programming software: CX-One
- Programming cable: USB

#### PLC 7 Allen Bradley

- Digital input: 8 -12 nos.
- Digital output: 07-11 nos. (relay)
- Analog input: 04 -9 nos.
- Analog output: 01 -5 no.
- Programming software: Connected Component Workbench
- Programming cable: Ethernet

**PLC 8: Siemens**

1. Digital input: 8-11 nos.
2. Digital output: 04 -8 nos.
3. Analog input: 2-6 nos.
4. Analog output: 02-6 nos.
5. Programming Software: LOGO Soft Comfort
6. Programming cable: Ethernet

**PLC 9: Wecon**

1. Digital input: 8 -11 nos.
2. Digital output: 6-11 nos. (relay)
3. Programming Software: Wecon PLC Editor
4. Programming cable: USB

**AC Power Supply**

- a. Single Phase MCB  
Single Phase MCB 1 no
- b. Three Phase MCB  
Three Phase MCB 1 no

**DC Power Supply**

- ❖ DC Power Supply: +24VDC (6.5A) +12VDC (1A) +5VDC (3A)
- ❖ Potentiometer 2 nos

**Switches module**

1. Pushbutton switch: 4 -6 nos.
2. Push on push off switch: 4-6 nos.
3. PLC connection: 4mm sockets

**Sensor module**

1. Proximity sensor: 2 nos.
2. Photo sensor: 2 nos.
3. RTD: 2 nos.
4. PLC connection: 4mm sockets

**Relay control module**

1. Double pole/through relay: 4 -6 nos.
2. Relay operating voltage: 24VDC
3. PLC connection: 4mm sockets

**Indicators module**

1. Visual indicator: 4 -6 nos.
2. Operating voltage: 24VDC
3. Audio indicator: 2- 4 nos.
4. Operating voltage: +5V/+12VDC
5. PLC connection: 4mm sockets

**PLC Interactive Learning Software should have following Technical Specifications:.****1. The learning module covers following topics:**

- ❖ Industrial Automation and tools like PLC, SCADA, HMI, DCS.
- ❖ Role of PLC in Automation
- ❖ History of PLC
- ❖ Types of PLC like Mini, Micro & Rack
- ❖ Block diagram of PLC
- ❖ Working of PLC
- ❖ Sinking and Sourcing Concept
- ❖ PLC Program Cycle

**2. Input Devices:**

- ❖ Switches, Introduction, Switch State, Basic Switch Configuration, Toggle Switch, Slide Switch, Pushbutton, Rocker Switch, DIP Switch, Reed Switch, Limit Switch.
- ❖ Sensors, Actuators, State Relay
- ❖ Induction Motor
- ❖ Programming Concept: Normally Open and Normally, Close Contact, Set and Reset, Memory Bit, Types of Logic Gates, Timer, Counter, PWM, Compare, ADC, DAC Example Ladder Program
- ❖ Variable Frequency Drive (VFD)
- ❖ Introduction of HMI
- ❖ Introduction of SCADA

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