

Sciencetech 2400ATS PLC Controlled Electro Pneumatic Training System with sensors and pneumatic components is a setup designed to provide hands-on training in industrial automation using Programmable Logic Controllers (PLCs), sensors, and pneumatic systems. This system allows students or trainees to gain practical experience in designing, programming, and troubleshooting PLC-based automation systems.

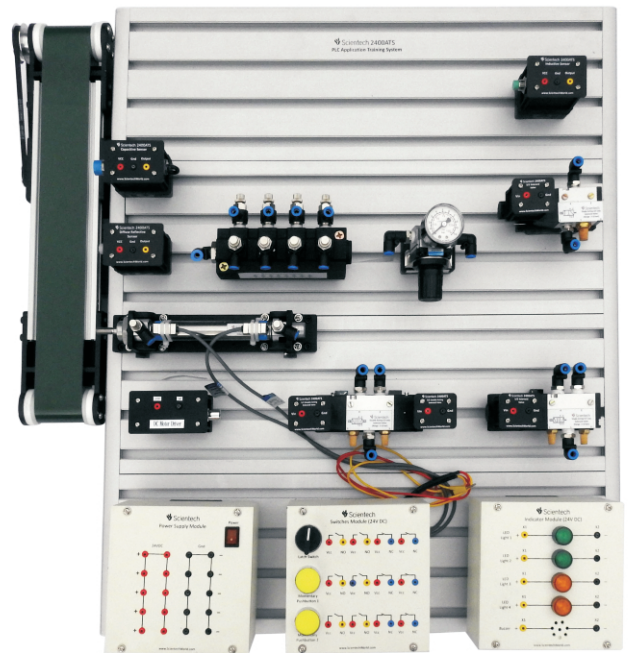
Features

- PLC with 8 digital inputs and 6 digital outputs with USB port with programming and simulation software.
- PLC operated electro pneumatic system.
- All components have spring-latch mechanism to hold on to the training platform.
- The pneumatic components are fitted with D4 one-push fitting and all the component's position can be adjusted and secured by means of latch mechanism.
- The electrical connection has compatible banana connector socket.
- Electrical component switch module contain 2 momentary pushbutton and latch switch with NO and NC contact, sensor module contain cylindrical inductive sensor unshielded, cylindrical diffuse reflective sensor and cylindrical capacitive sensor and power distribution module (24VDC).
- Anodized aluminum profile base structure.
- Pneumatic component double acting cylinder are provided with reed switch, double acting 5/2 solenoid valve, single acting 5/2 solenoid valve, single acting 3/2 solenoid valve with spring-latch mechanism to hold on to the training board.
- Flat belt conveyor with dc geared motor and speed controller.
- Industrial look & feel.
- Function and identification of Pneumatic components.
- Practice troubleshooting skills.
- Pneumatic safety awareness.
- Robust construction.
- Experiment configurable through 2mm patch cord.

Scope of Learning

Study and use of:

- Double acting cylinder, single acting cylinder, double acting 5/2 solenoid valve, single acting 5/2 solenoid valve, single acting 3/2 solenoid valve, magnetic reed switch, inductive proximity sensor, capacitive proximity sensor, diffuse reflective sensor, pressure regulator, manifold and air compressor.
- Normally open (NO) and normally closed (NC) contact using PLC.
- Types of logic gate:
NOT, AND, OR, NAND, NOR, XOR & XNOR gate using PLC.
- Set and reset bit using PLC.
- Memory bit using PLC.
- Timer instruction using PLC.
- Counter instruction using PLC.
- Compare instruction using PLC.
- Arithmetic (addition) instruction using PLC.
- Move instruction using PLC.



Control of :

- Double acting cylinder (DAC) using double acting 5/2 solenoid valve using PLC.
- Double acting cylinder (DAC) using single acting 5/2 solenoid valve using PLC.
- Single acting cylinder using 3/2 solenoid valve.
- Sorting of object using double acting cylinder, 5/2 solenoid valve, proximity sensor using PLC.

Sequencing of :

- (A+A-) control of double acting cylinder by 5/2 solenoid valve using PLC.

Counting of:

- Double acting cylinder piston forward and reverser movement using reed switch using PLC.
- Counting of metallic object using inductive proximity sensor and PLC.
- Counting of non metallic object using capacitive proximity sensor and PLC.
- Counting of metallic object using diffuse reflective sensor and PLC.

Technical Specifications

Double acting 5/2 solenoid valve : 1 no.

Working pressure : 2 to 10 bar

Line size : ¼"

Operating voltage : 24V DC

Single acting 5/2 solenoid valve : 1 no.

Working pressure : 2 to 10 bar

Line size : ¼"

Operating voltage : 24V DC

Single acting 3/2 solenoid valve : 1 no.

Working pressure : 2 to 10 bar

Line size : ¼"

Operating voltage : 24V DC

Double acting cylinder : 1 no.

Diameter : 20mm

Stroke : 100mm

Medium : Air

Working pressure : 0.5 to 10 bar

Line size : ¼"

Single acting cylinder : 1 no.

Diameter : 25mm

Stroke : 75mm

Medium : Air

Working pressure : 0.5 to 10 bar

Line size : ¼"

Reed switch : 2 nos.

Type : 3 wire

Supply : 24VDC

Cylindrical inductive sensor unshielded : 1 no.

Type : PNP NO

Sensing range : 4mm

Voltage supply : 6-36VDC

Sensing range : 10mm

Cylindrical diffuse reflective sensor : 1 no.

Type : PNP NO

Sensing range : 10mm

Voltage supply : 6-36VDC

Sensing range : 10mm

Cylindrical capacitive proximity sensor : 1 no.

Type : PNP NO

Sensing range : 10mm

Voltage Supply : 10-35VDC

Pressure regulator : 1 no.

Maximum pressure range : 15bar

Set pressure range : 0.5 to 10 bar

Line size : ¼"

Switches module : 1no.

Momentary push button : 2 nos.

Latch switch : 1 no.

Supply : 24VDC

Indicator module : 1 no.

Green indicator : 2 nos.

Yellow indicator : 2 nos.

Buzzer : 1 no.

Supply : 24VDC

Power supply module : 1 no.

Input Supply : 230V

Output voltage : 24V

Current rating : 2A

Conveyor module : 1 no.

DC motor RPM : 100

DC motor controller : 1 no.

PLC

Digital input : 6 nos.

Digital outputs : 4 nos.

Programming port : USB

List of Accessories

- PLC programming cable : 1 no.
- 16" 2mm red patch cord : 10 nos.
- 16" 2mm black patch cord : 8 nos.
- 16" 2mm yellow patch cord: 15 nos.
- Air compressor : 1 no.
- PU tube : 6 meter
- Tube cutter : 1 no.