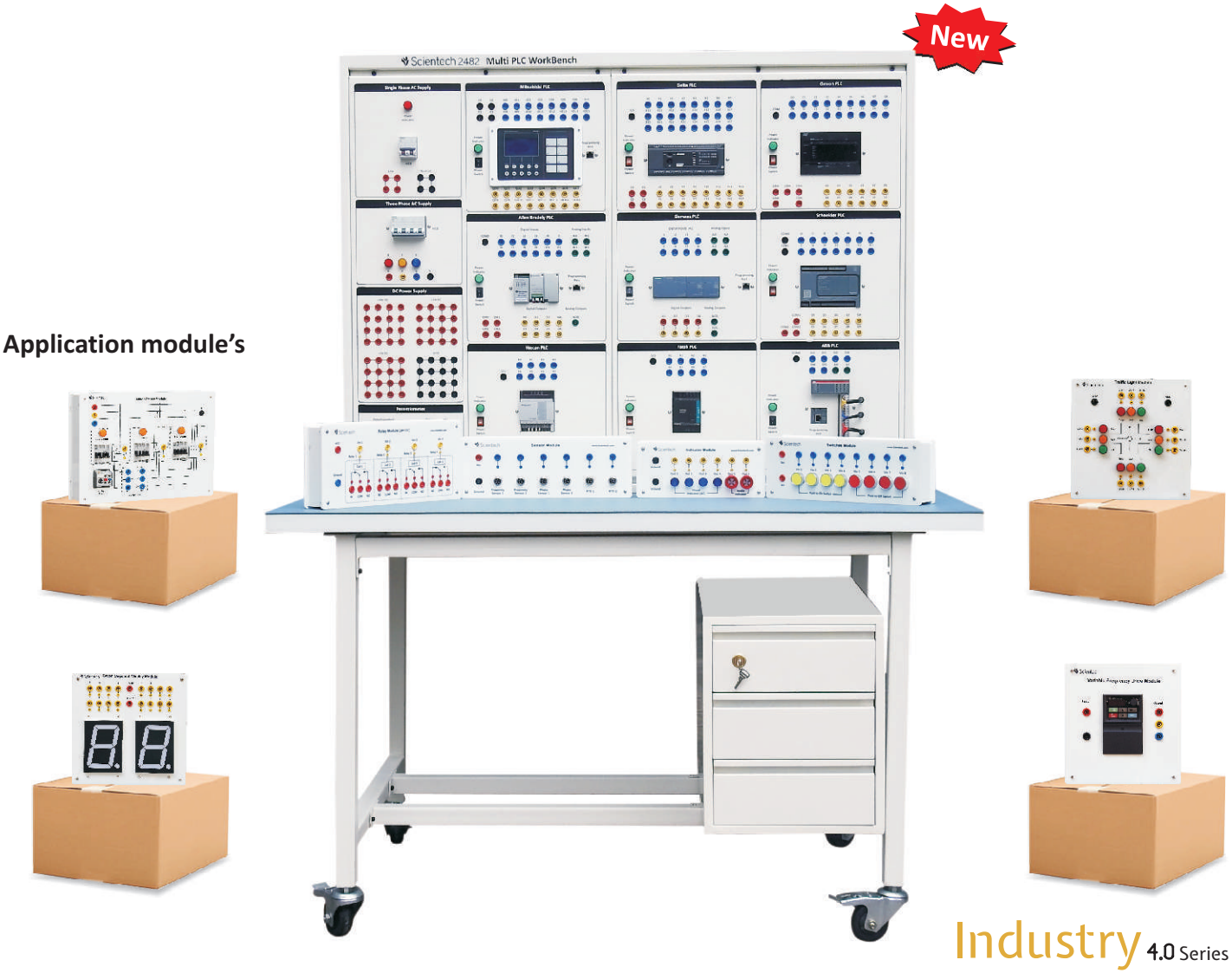
Scientech

Multi PLC WorkBench

Scientech 2482



Work on the new PLC WorkBench from Scientech that is an integral part of IIoT, Industry 4.0 and the "Smart factory".

Today, manufacturing processes have become a lot more efficient due to the Internet of Things (IoT), Intelligent Automation, Advanced Robotics and other Smart Factory initiatives. Despite rapid changes in technology, PLCs continue to play a vital role in manufacturing and act as a central processor for all real-time decisions. For instance, a PLC sends robust data, including sensor performance and other data that is integrated with cloud computing to give a more holistic picture, i.e. a collection of "big data." Analysis tools then help plant managers and others to better leverage resources, batch scheduling of jobs, logistics, supplier timing, and other functions that are critical to creating more efficient manufacturing processes.

PLCs have adapted well to modern manufacturing and automation systems. With no competitor on the horizon and solid fundamentals, PLCs and PLC programmers will continue to play an integral role in the manufacturing process.

Looking into Industry 4.0 career opportunities, Scientech has designed a unique Multiple Programmable Logic Controller (PLC) WorkBench. Scientech 2482 WorkBench includes PLCs from Siemens, Mitsubishi, Fatek, Delta, ABB, Allen Bradely, Omron, Schneider Electric, and Wecon.

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Features

- Nine PLC's from different makes - Siemens, Mitsubishi, Fatek, Delta, ABB, Allen Bradley, Omron, Schneider Electric, and Wecon.
- Open platform to explore a wide range of PLC applications.
- Industrial look and feel.
- PC based programming.
- Rich applications, Learn both basic and advanced applications using powerful PLC's.
- Several sample ladder programs.
- Extremely easy and student friendly software to develop different programs.
- PLC interfacing with different application modules.
- Easy downloading of programs.
- Practice troubleshooting skills.
- Robust construction.
- Experiments configurable through patch board.
- MCB provided with AC supply for safety purpose.
- The ergonomically designed WorkBench systems provide the perfect training environment for training in automation technology.
- Drawers for patch cords, module, and other accessories for storage, easy identification and access.
- Academic and vocational study for process control engineers and plant technicians.
- Castor wheels (with Locking mechanism).
- Online Product Tutorial.
- PC/Laptop (optional).

  Note : For PLC Programming PC/Laptop is required.

Scope of Learning

- Exposure to technology of Programmable Logic Controller (PLC) and understanding the importance of automation in industries.
- Learners will be familiarized with a variety of ladder logic instruction to create complete PLC program from scratch.
- Study the difference between digital and analog signals and how to bring them into a PLC, process them and send them back out.

PLC hardware

- PLC configuration.
- Source and sink concept.
- PLC history.
- Input/output configuration.
- Installation.
- Switches and sensor interfacing.
- Actuator interfacing.

PLC operation

- Sequence of operation.
- Program scans cycle.
- Addressing example.
- Upload/download/monitoring.

Installation

- Wiring and connection.
- Communication setup.
- Programming devices connection.

Program operation

- NO (normally open) and NC (normally closed) instruction.
- Types of logic gates.
- Set and reset bit.
- Types of timers.
- Types of counter.
- Types of compare instruction.
- Types of math function.
- Mov instruction.

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Technical Specifications

Programmable Logic Controller

PLC- 01

PLC	:	Schneider Electric
Digital input	:	14 nos.
Digital output	:	10 nos.
Programming software	:	Schneider TM200
Programming cable	:	USB

PLC- 02

PLC	:	Mitsubishi
Digital input	:	16 nos.
Digital output	:	16 nos. (transistor)
Programming Software	:	GOC Tool kit
Communication	:	USB

PLC- 03

PLC	:	Fatek
Digital input	:	8 nos.
Digital output	:	6 nos. (relay)
Programming Software	:	WinProladder
Communication	:	USB

PLC- 04

PLC	:	Delta
Digital input	:	24nos.
Digital output	:	16 nos. (relay)
Programming Software	:	ISPSoft
Programming cable	:	USB

PLC- 05

PLC	:	ABB
Digital inputs	:	6 nos.
Digital output	:	4 nos. (transistor)
Analog Input	:	2 nos
Analog output	:	1 no.
Programming software	:	ABB automation builder
Programming cable	:	USB

PLC- 06

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

PLC- 07

PLC	:	Allen Bradley
Digital input	:	8 nos.
Digital output	:	07 nos. (relay)
Analog input	:	04 nos.
Analog output	:	01 no.
Programming software	:	Connected component Workbench
Communication	:	Ethernet

PLC- 08

PLC	:	Siemens
Digital input	:	8 nos.
Analog input	:	2 nos.
Analog output	:	02 nos.
Digital output	:	04 nos.
Programming Software	:	LOGO Soft Comfort
Communication	:	Ethernet

PLC- 09

PLC	:	Wecon
Digital input	:	8 nos.
Digital output	:	6 nos. (relay)
Programming Software	:	Wecon PLC Editor
Programming cable	:	USB

General Specification

AC Power Supply

Single Phase MCB	:	1 no.
Three Phase MCB	:	1 no.
DC Power Supply	:	+24VDC (6.5A) +12VDC (1A) +5VDC (3A)
Potentiometer	:	2 nos.

Package contains

Software DVD	:	1 no.
PLC programming cable	:	1 no. for each type of PLC.
4mm patch cord (yellow)	:	25nos.
4mm patch cord (blue)	:	25nos.
4mm patch cord (red)	:	6 nos.
4mm patch cord (black)	:	6 nos.
Simtel PLC learning tutorial	:	1 CD.

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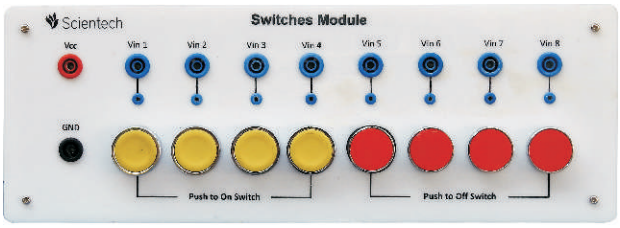
Application modules are (included)

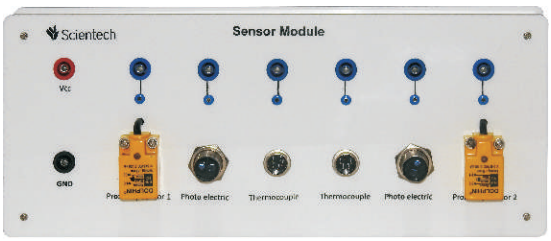
Switches module

Pushbutton switch	:	4 nos.
Push on push off switch	:	4 nos.
PLC connection	:	4mm sockets



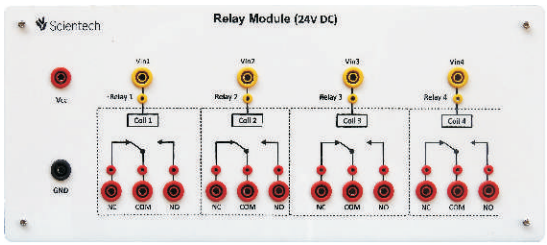
Sensor module

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



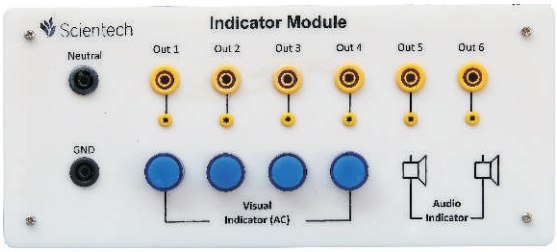
Relay control module

Double pole/through relay	:	4 nos.
Relay operating voltage	:	24VDC
PLC connection	:	4mm sockets



Indicators module

Visual indicator	:	4 nos.
Operating voltage	:	220VAC
Audio indicator	:	2 nos.
Operating voltage	:	+5V/+12VDC
PLC connection	:	4mm sockets



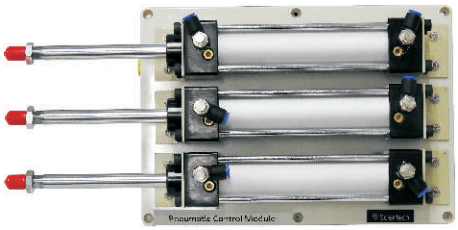
Optional application modules

Pneumatic solenoid valve module (PAM-1)

Pneumatic solenoid valve	:	3 nos.
Type	:	5/2 (5way and 2 position)
Operating pressure range	:	5 Psi to 150 Psi
PLC connection	:	4mm sockets

Pneumatic cylinder module (PAM-2)

Pneumatic cylinder	:	3 nos.
Type	:	Double acting
Stroke length	:	100mm
Operating pressure range	:	15 Psi to 150 Psi



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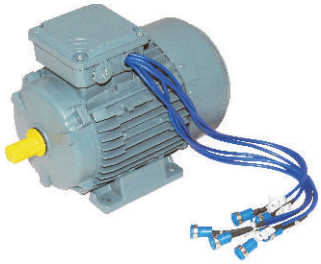
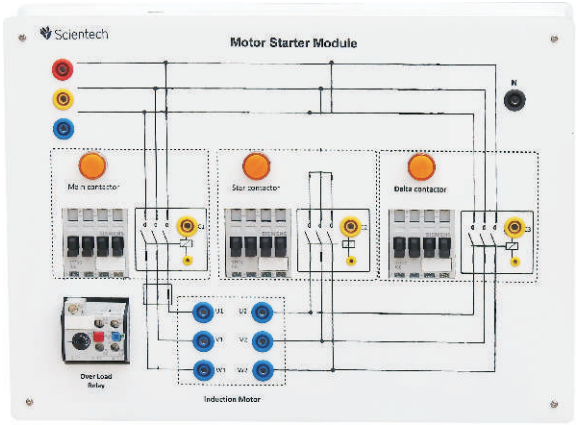
Three Phase Induction motor module (PAM-3)



Power	:	0.5HP
Type	:	Induction
Speed	:	1425 RPM
PLC connection	:	4mm sockets

Motor starter module (PAM-4)

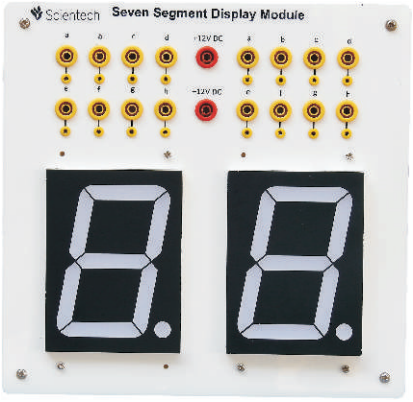


Star delta status	:	Indication facility
Operating voltage	:	220V~240VAC
PLC connection	:	4mm sockets

Variable Frequency Drive module (PAM-5)

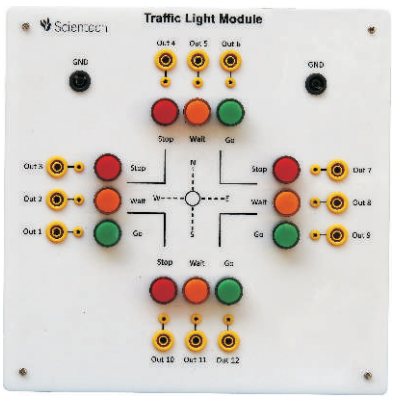
Input	:	Single phase
Output	:	Three phase
Operating voltage	:	220V~240VAC
PLC connection	:	4mm sockets

Seven segment display module (PAM-6)



Seven segment display	:	2 nos.
Input operating voltage	:	5V/12V
PLC connection	:	4mm sockets

Traffic light control module (PAM-7)



Built-in	:	Green, yellow, and red indicators for interfacing PLC
Operating voltage	:	24V
PLC connection	:	4mm sockets

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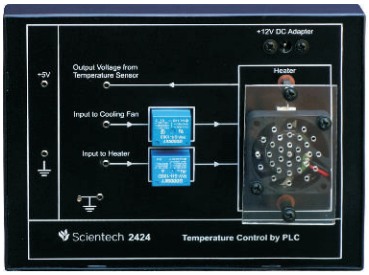
Stepper motor control module (PAM-8)

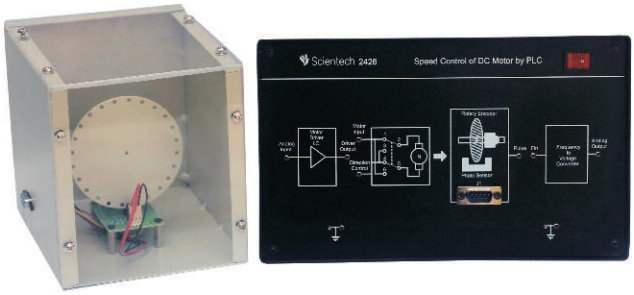
Stepper motor	:	2 nos.
Operating voltage	:	5V DC
PLC connection	:	4mm sockets

Scientech 2424 Temperature control by PLC



- Study of temperature control.
- Study and use of compare instruction.
- Study and use of temperature sensors and voltage to current convertor.
- Study and use of controlling a heater and fan.
- Temperature control by PLC through ladder program.

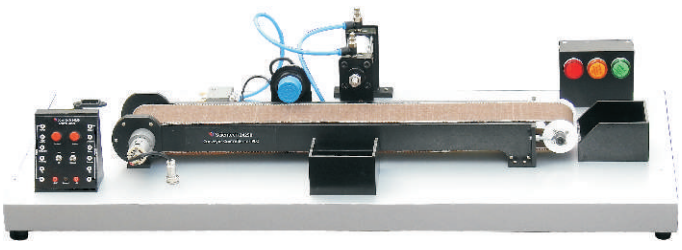
Scientech 2426 Speed Control of DC motor by PLC



- DC motor control by PLC through ladder program.
- Study and use of PWM (pulse width modulation) and voltage to frequency convertor.
- Learn to run DC motor in clockwise and anticlockwise direction.
- Learn to change the speed of DC motor.

Scientech 2425B Sorting system control by PLC

- Study and use of memory bit, timers, counters, compare instruction.
- Study and use of input device like proximity sensor, push to on switches and output device like DC motor, 5/2 solenoid valve and double acting cylinder.
- Conveyor control by PLC through ladder program.
- Ladder program for count metallic container using a proximity switch.
- Ladder program for run and control conveyor in manual and auto mode using a PLC.
- Ladder program for control direction a of DC motor.
- Ladder program for sorting of metallic object using double acting cylinder and PLC.



Subject to Change

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