ETEK
TOTAL AUTOMATION SOLUTIONS

CONTACT US:

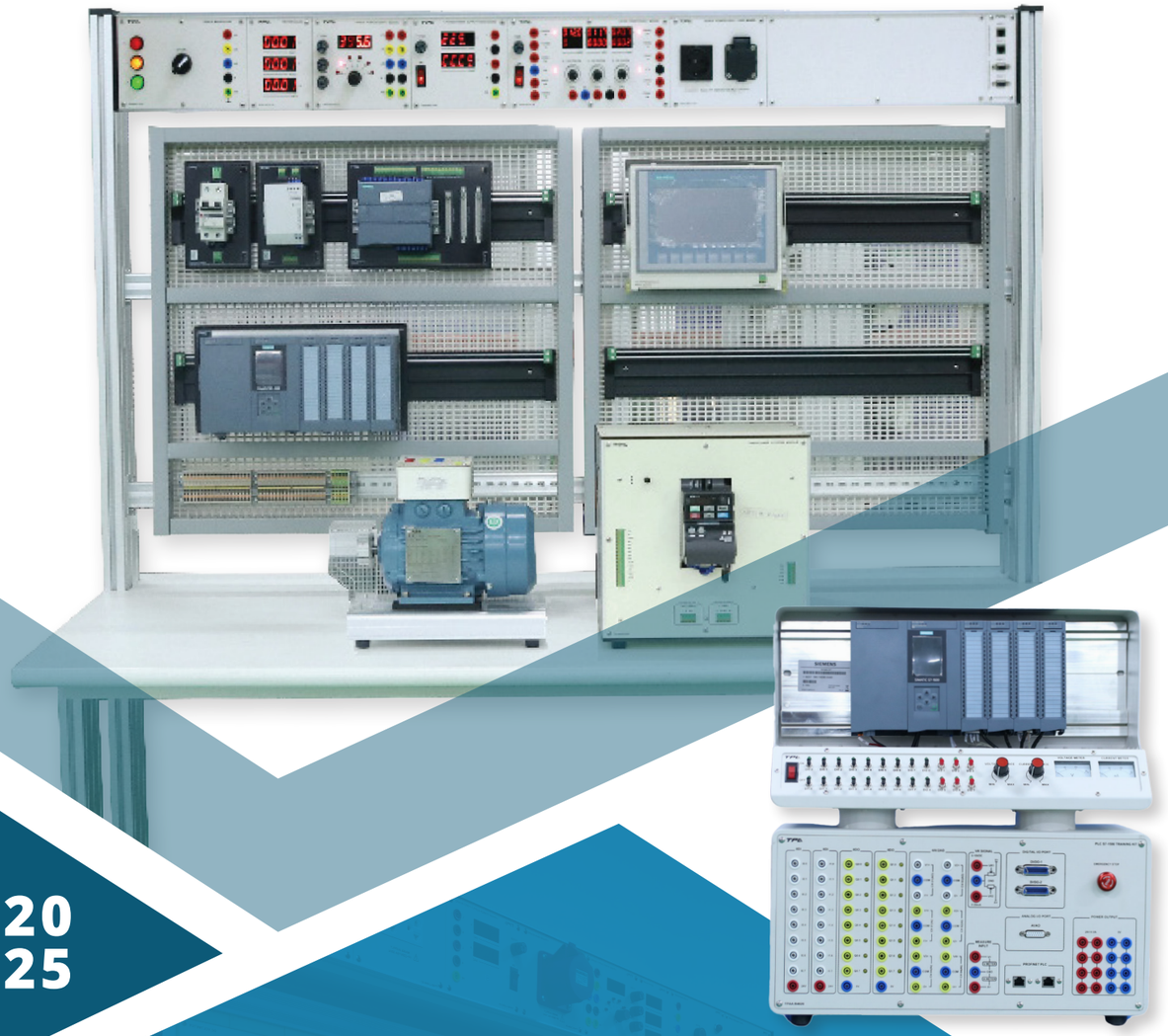
Hanoi Head Office: No. 189 Phan Trong Tue Street, Thanh Liet Commune,Hanoi City.

Ho Chi Minh City Branch: No. 1 Le Duc Tho, Tan Thoi Hiep Ward,Ho Chi Minh City.

Hotline: +84965 800 166 (Call, Zalo, Whatsap)

Email: info@etek.com.vn

ETEK
TOTAL AUTOMATION SOLUTIONS



2025

Training Equipment

ELECTRIC AUTOMATION

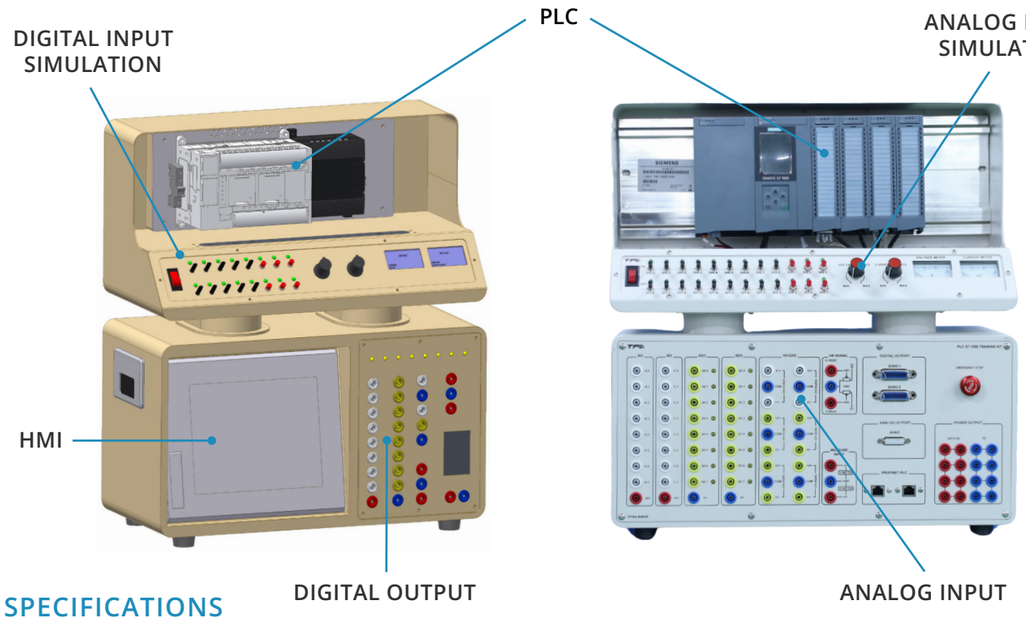
ETEK Automation Solutions

etek.edu.vn

TRAINING PRINCIPLES, PROGRAMMING

DESKTOP

DESIGN CONCEPT



SPECIFICATIONS

- Powder coated steel frame with milky white color is divided into 2 blocks.
- Overall dimensions: 440 x 471 x 200 mm (WxHxD)
- Upper block . Dimensions: 440 x 210 x 200 mm (WxHxD) . Contains CPU, expansion modules and input signal simulators . + The corners are designed with a 14.5 mm curved arc, aesthetic and safe to work . The input signal simulation panel is designed with a 50 degree tilt, easy to operate and observe
- Lower block . Dimensions: 440 x 230 x 200 mm (WxHxD) . Contains the screen, output signal simulators . The HMI screen mounting panel is designed with a 80 degree tilt, easy to operate and observe (HMI is optional)
- Connection pipe . Hollow bean shape used to connect electrical signals between 2 blocks
- Dimensions: 120 x 70 mm (LxW)
- Stainless steel book handle
- Anti-slip rubber feet
- 220VAC/50Hz power jack with fuse
- Instruction image printing type: Film printing on the module surface, ensuring the aesthetics as well as the life of the device.

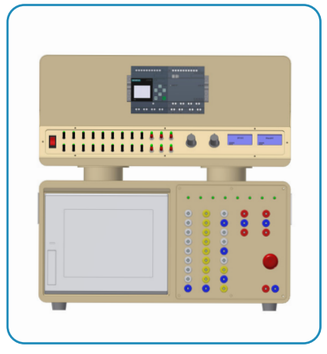
AUTOMATION TRAINING EQUIPMENT

TRAINING PRINCIPLES, PROGRAMMING

LIST OF PRACTICES

ST.AT.A0021

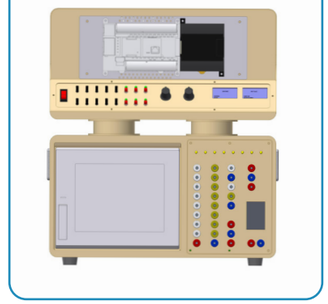
ST.AT.A0051



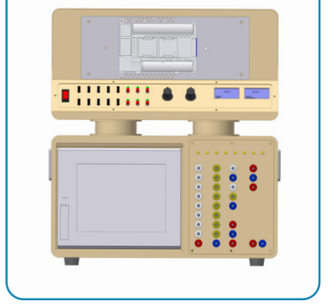
ST.AT.A0023

ST.AT.A0026

ST.AT.A0110



ST.AT.A0310



ST.AT.A0210

ST.AT.A0028

INFO@ETEK.COM.VN ETEK.EDU.VN

ST.AT.A0021 PLC PROGRAMMING TRAINING SET S7-1200

TRAINING CONTENT

- Learn about the hardware structure of PLC S7 1200, HMI
- Learn how to declare hardware and configure PLC, HMI
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison commands
- Practice programming basic math commands
- Practice programming using subroutines
- Practice programming interrupt handling
- Practice programming real-time controllers
- Practice programming analog input signal processing
- Practice programming analog output signal processing
- Practice programming HMI interface design
- Practice programming HMI and PLC communication

SKILLS ACQUIRED

- Know the hardware structure of CPU S7 1200, HMI
- Know how to program PLC and HMI monitoring control
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC S7 1200
- Know how to write programs for PLC S7-1200 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signals at analog input and output signal values to analog output.

ST.AT.A0051 PLC PROGRAMMING TRAINING SET S7-1500

TRAINING CONTENT

- Learn about the hardware structure of PLC S7 1500, HMI
- Learn how to declare hardware and configure PLC, HMI
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison commands
- Practice programming basic math commands
- Practice programming using subroutines
- Practice programming interrupt handling
- Practice programming real-time controllers
- Practice programming analog input signal processing
- Practice programming analog output signal processing
- Practice programming HMI interface design
- Practice programming HMI and PLC communication

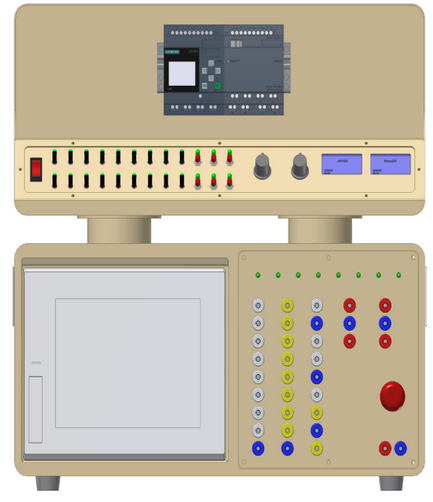
SKILLS ACQUIRED

- Know the hardware structure of CPU S7 1500, HMI
- Know how to program PLC and HMI monitoring control
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC S7 1500
- Know how to write programs for PLC S7-1500 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signals at analog input and output signal values to analog output.

ST.AT.A0023 PLC PROGRAMMING TRAINING SET LOGO

TRAINING CONTENT

- Connecting power cords and signal wires to PLC LOGO
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming analog input signal processing



SKILLS ACQUIRED

- Connecting power cables and signal wires to the LOGO PLC.
- Practicing programming basic logic instructions.
- Practicing programming with Timer and Counter instructions.
- Practicing programming to process analog input signals.

ST.AT.A0026 FX5U PLC PROGRAMMING TRAINER

TRAINING CONTENT

- Connecting power cords and signal wires to the FX5U PLC
- Practice programming basic logic commands
- Practice programming commands using Timer and Counter
- Practice programming comparison and arithmetic
- Learn and program the GS2107-WTBD HMI interface
- Programming control and monitoring between PLC

SKILLS ACQUIRED

- Connecting power cords, signal wires to PLC FX5U
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison and arithmetic commands
- Learn and program the HMI GS2107-WTBD interface
- Program control and monitoring between PLC and HMI

ST.AT.A0110 MITSUBISHI Q06 PLC PROGRAMMING TRAINING SET

TRAINING CONTENT

- Connecting power cords and signal wires to PLC Q06UDE
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison and arithmetic
- Learn and program the HMI GS2107-WTBD interface
- Programming control and monitoring between PLC and HM

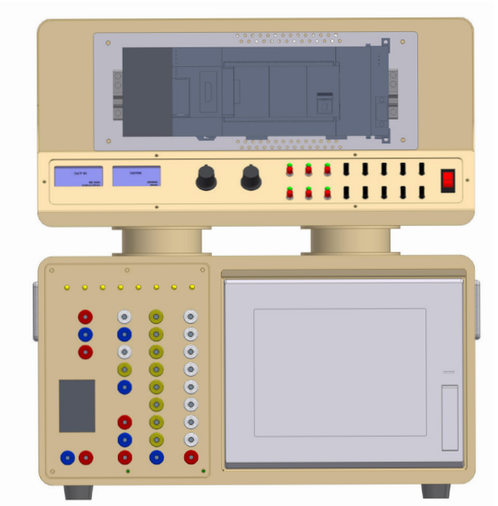
SKILLS ACQUIRED

- Know the hardware structure of the PLC Q06UDE programmer
- Know how to connect the power supply, digital input and output, analog input and output of PLC Q06UDE
- Know how to write programs for PLC Q06UDE with functions: logic, timer, counter, math
- Know how to create interfaces on HMI GS2107-WTBD
- Know how to program control and monitor between HMI and PLC

ST.AT.A0310 PLC CP1H PROGRAMMING TRAINING KIT

TRAINING CONTENT

- Learn about the hardware structure of Omron CP1H PLC,
- Learn how to declare hardware and configure PLC, HMI
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison commands
- Practice programming basic math commands
- Practice programming using subroutines
- Practice programming interrupt handling programming
- Practice programming real-time controllers
- Practice programming analog input signal processing
- Practice programming analog output signal processing
- Practice programming HMI interface design



SKILLS ACQUIRED

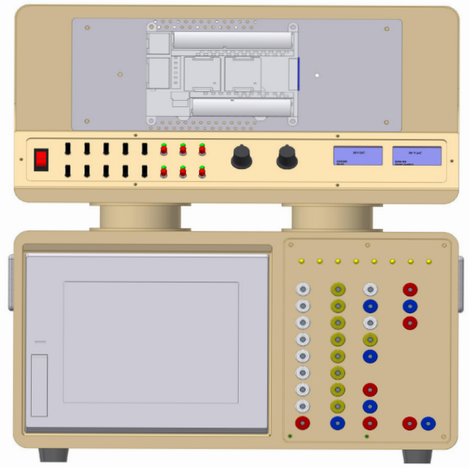
- Know the hardware structure of PLC CP1H, HMI
- Know how to program PLC and HMI monitoring control
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC CP1H
- Know how to write programs for PLC CP1H with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signals at analog input and output signal values to analog output.

AUTOMATION TRAINING EQUIPMENT

ST.AT.A0210 PLC M241 PROGRAMMING TRAINING KIT

TRAINING CONTENT

- Learn the hardware structure of PLC M241 Scheneider,
- Learn how to declare hardware and configure PLC, HMI
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison commands
- Practice programming basic math commands
- Practice programming using subroutines
- Practice programming interrupt handling programming
- Practice programming real-time controllers
- Practice programming analog input signal processing
- Practice programming analog output signal processing



SKILLS ACQUIRED

- Know the hardware structure of CPU M241, HMI
- Know how to program PLC and HMI monitoring control
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC M241
- Know how to write program for PLC M241 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signal at analog input and output signal value to analog output.

ST.AT.A0028 CTRX INDUSTRIAL CONTROL 4.0 TRAINING KIT

TRAINING CONTENT

- Controlling the speed of a 3-phase motor using a push button on the inverter face
- Controlling the speed of a 3-phase motor using a PLC via
- the inverter analog input and the control button
- Controlling the speed of a 3-phase motor using a PLC via
- the ethercat communication port
- Controlling the speed of a 3-phase motor using an HMI
- Controlling the speed of a 3-phase AC motor stably using
- the PID control method when using an AC Servo motor as
- a load by changing the torque value of the AC Servo motor

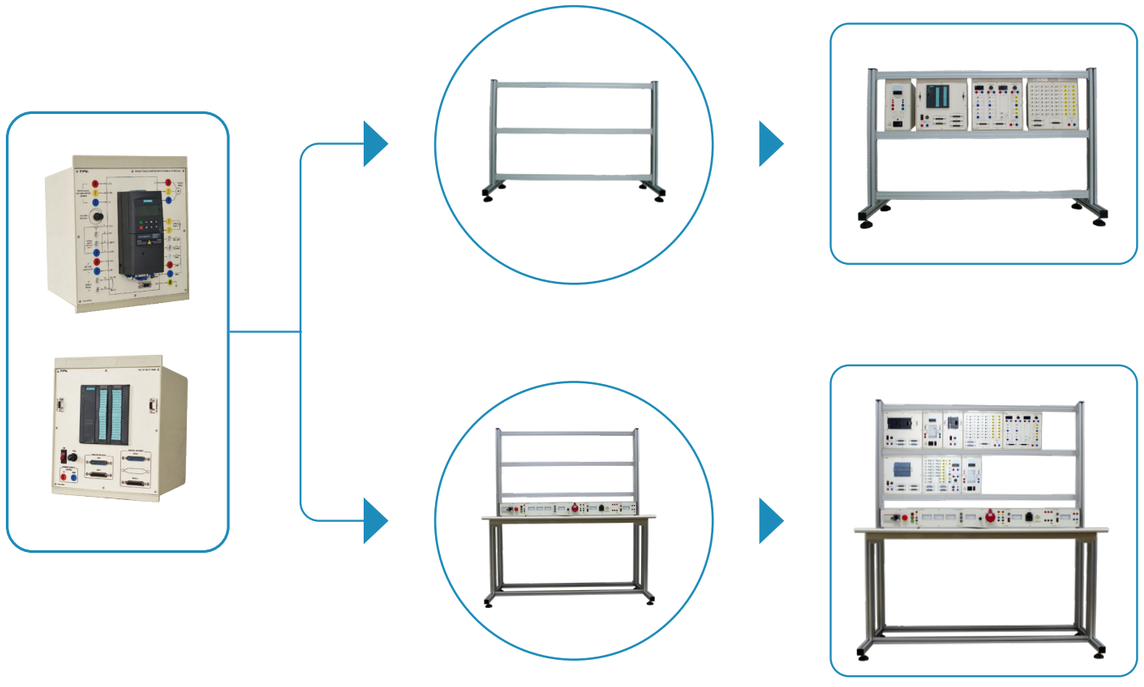
SKILLS ACQUIRED

- Understand and know how to configure the inverter parameter settings
- Configure and use commands to read/output digital analog signals
- Configure connection and use ethercat communication commands between PLC and inverter
- Configure connection and design HMI interface
- How to connect and configure communication between
- camera and PLC
- • Practice stabilizing pressure using PID method

PRINCIPLE TRAINING

A4 PLASTIC BOX

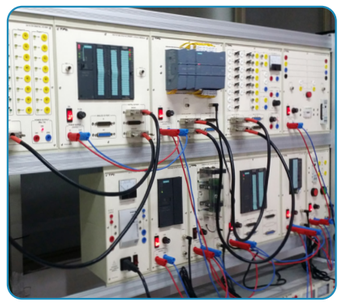
DESIGN CONCEPT



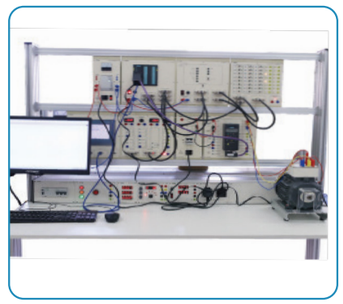
AUTOMATION TRAINING EQUIPMENT

PRINCIPLE TRAINING

LIST OF PRACTICES



ST.AT.A5000



ST.AT.A5010

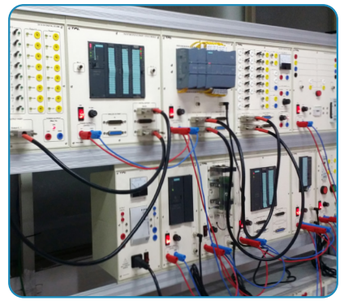
ST.AT.5020

ST.AT.A5030

ST.AT.A5040

ST.AT.A5050

ST.AT.A5060



ST.AT.A5070

ST.AT.A5080

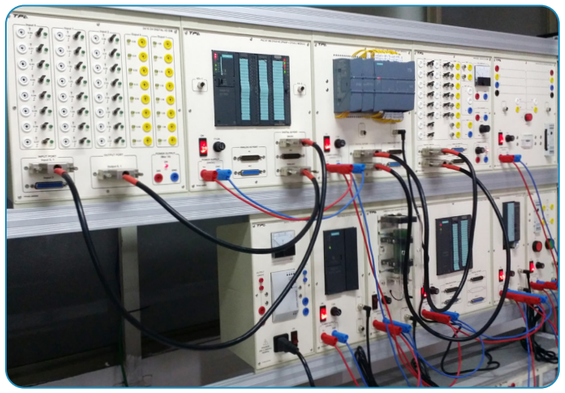
ST.PE.A0502

ST.IE.A4302

ST.PE.A0101

ST.AT.A5000 PROFINET/ETHERNET IP COMMUNICATION NETWORK TRAINING KIT

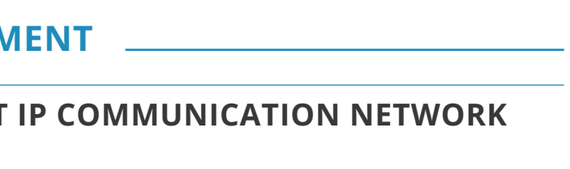
EQUIPMENT LIST

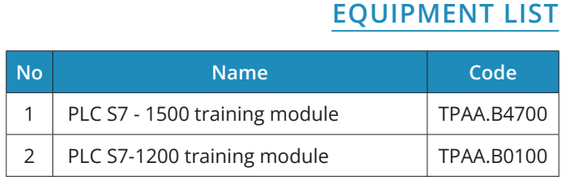


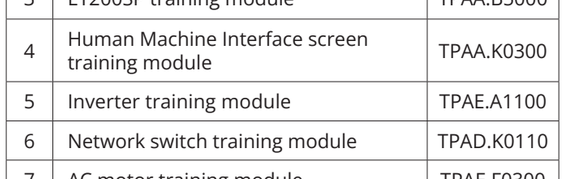
No	Name	Code
1	PLC S7 - 1500 training module	TPAA.B4700
2	PLC S7-1200 training module	TPAA.B0100
3	ET200SP training module	TPAA.B5000
4	Human Machine Interface screen training module	TPAA.K0300
5	Inverter training module	TPAE.A1100
6	Network switch training module	TPAD.K0110
7	AC motor training module	TPAE.F0300
8	AC power source training module	TPAC.A2100
9	DC power source module name	TPAC.A4600
10	Push button training module	TPAC.F4000

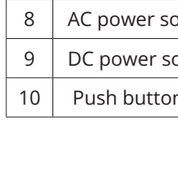
TRAINING CONTENT

- Practice connecting devices in Profinet/Ethernet communication network
- Practice configuring on Profinet/Ethernet communication network
- Practice managing data exchange in Profinet/Ethernet communication network
- Practice programming PLC S7-1500, S7-1200
- Practice programming distributed IO control
- Practice programming control interface for HMI screen
- Practice programming SCADA monitoring interface on PC
- Practice configuring inverter manually or via software
- Practice monitoring motor control via communication







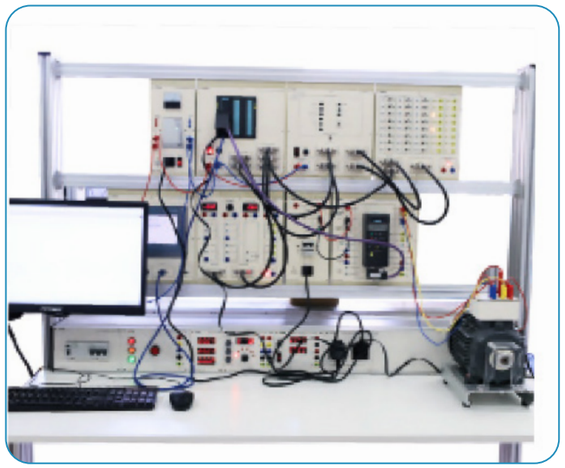


SKILLS ACQUIRED

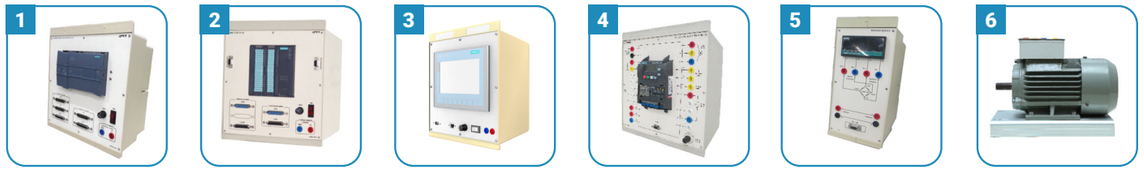
- Know the hardware structure of Profinet/Ethernet communication network
- Students are able to apply Profinet/Ethernet communication network to different transmission line models
- Know how to program for PLC S7-1500, S7-1200
- Access the ability to control distributed IO on ET200SP
- Know how to build control interface on HMI and monitor on SCADA

ST.AT.A5010 PROFIBUS COMMUNICATION NETWORK TRAINING KIT

EQUIPMENT LIST



No	Name	Code
1	PLC S7-1200 training module	TPAA.B1710
2	ET200M training module	TPAA.B5010
3	Human Machine Interface screen training module	TPAA.K0310
4	Inverter training module	TPAB.E0500
5	PA Communication Temperature Sensor Training Module	TPAS.D8100
6	AC motor training module	TPAE.F0300
7	AC power source training module	TPAC.A2100
8	DC power source module	TPAC.A4600
9	Push button training module	TPAC.F4000



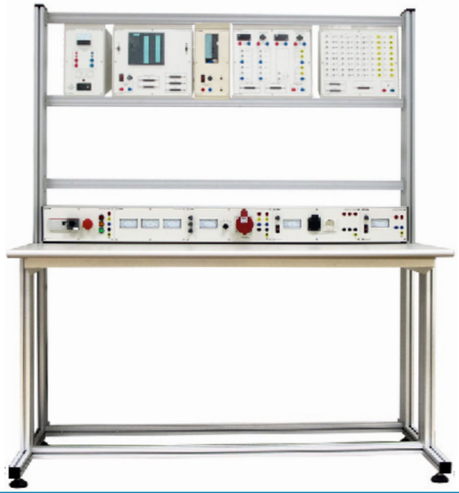
TRAINING CONTENT

- Practice connecting devices in the Profibus communication network
- Practice configuring on the Profibus communication network
- Practice managing data exchange in the Profibus communication network
- Practice programming PLC S7-1200
- Practice programming distributed IO control with Profibus
- Practice programming the HMI screen control interface
- Practice programming the SCADA monitoring interface on PC
- Practice configuring the inverter manually or via software
- Practice monitoring motor control via communication
- Practice configuring DP/PA communication
- Practice monitoring sensors via the Profibus PA communication network

SKILLS ACQUIRED

- Know the hardware structure of Profibus communication network
- Students are able to apply Profibus communication network to different transmission line models
- Know how to program for PLC S7-1200
- Access the ability to control distributed IO on ET200M
- Know how to build control interface on HMI and monitor on SCADA

ST.AT.A5020 ASI COMMUNICATION NETWORK TRAINING KIT



EQUIPMENT LIST

No	Name	Code
1	AS-I power module	TPAA.P0600
2	S7-1200 PLC training module	TPAA.B1720
3	DC power module	TPAC.A4600
4	Contactor training module combined with ASI communication	TPAA.P0700
5	Push button training module combined with ASI communication	TPAC.F2000
6	AC power module	TPAC.A2100
7	AS-I Slave Training Module	TPAA.P0500

TRAINING CONTENT

- Help students understand the structure of an AS-Interface communication network
- Practice connecting devices in an AS-Interface communication network
- Practice configuring on an AS-Interface communication network
- Practice managing data exchange in an AS-Interface communication network
- Practice programming PLC S7-1200

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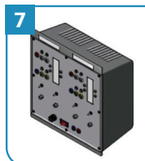
SKILLS ACQUIRED

- Know the hardware structure of AS-Interface communication network
- Students are able to apply AS-Interface communication network to different transmission line models
- Know how to program for PLC S7-1200
- Know the data transmission principle of AS-Interface network

7 

ST.AT.A5030 CC-LINK COMMUNICATION NETWORK TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	FX-3U PLC training module	TPAA.B5100
2	Digital input training module (CC-Link communication)	TPAA.D5000
3	Digital output training module (CC-Link communication)	TPAA.D5100
4	DC power module	TPAC.A4600
5	AC power module	TPAC.A2100
6	Inverter training module	TPAE.A1110
7	AC motor training module	TPAE.F0300
8	01 Computer connection programming cable	
9	01 Practice accessory set	
10	01 Technical document set	

TRAINING CONTENT

- Help students understand the structure of a CC-link communication network
- Practice connecting devices in a CC-link communication network
- Practice configuring on a CC-link communication network
- Practice programming a CC-link communication program
- Practice programming a FX-3U PLC

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SKILLS ACQUIRED

- Know the hardware structure of CC-link communication network
- Students are able to apply CC-link communication network to different transmission line models
- Know how to program for FX-3U PLC
- Know the data transmission principle of CC-link network

7 

ST.AT.A5040 CC-LINK IE COMMUNICATION NETWORK TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	FX-5U PLC training module	TPAA.B5200
2	QCPU PLC training module	TPAA.B5300
3	Inverter training module	TPAE.A1120
4	Human-Machine interface screen training module	TPAA.K4000
5	DC power module	TPAC.A4600
6	AC power module	TPAC.A2100
7	AC motor training module	TPAE.F0300

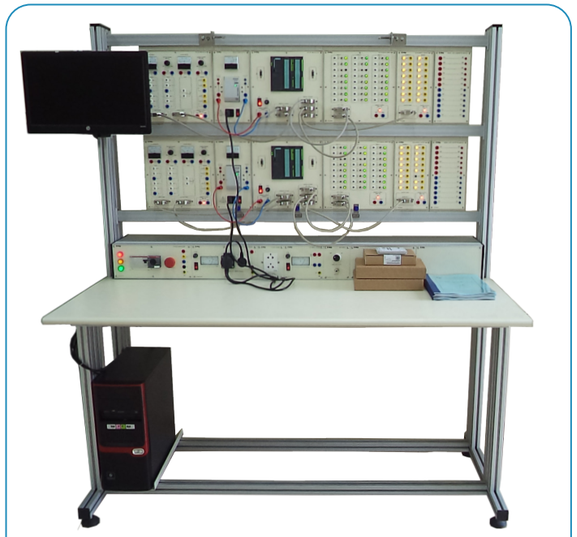
TRAINING CONTENT

- Help students understand the structure of a CC-link IE communication network
- Practice connecting devices in a CC-link IE communication network
- Practice configuring on a CC-link IE communication
- Practice programming CC-link IE communication
- Practice programming PLC FX-5U, QCPU
- Practice building a CC-Link IE communication network according to requirements

SKILLS ACQUIRED

- Know the hardware structure of CC-link IE communication network
- Know the communication characteristics, advantages and disadvantages of CC-Link IE
- Students are able to apply CC-link IE communication network to different transmission line models
- Know programming for PLC FX-5U, QCPU
- Know the data transmission principle of CC-link IE network

ST.AT.A5050 DEVICENET COMMUNICATION NETWORK TRAINING KIT



EQUIPMENT LIST

No	Name	Code
1	Omron PLC training module	TPAA.C0900
2	Digital input training module (Devicenet communication)	TPAA.C7000
3	Digital output training module (Devicenet communication)	TPAA.C7100
4	Inverter training module	TPAE.A1130
5	DC power module	TPAC.A4600
6	AC power module	TPAC.A2100
7	AC motor training module	TPAE.F0300

TRAINING CONTENT

- Help students understand the structure of a DeviceNet communication network
- Practice connecting devices in a DeviceNet communication network
- Practice configuring on a DeviceNet communication network
- Practice programming a DeviceNet communication program
- Practice programming a PLC

SKILLS ACQUIRED

- Know the hardware structure of the DeviceNet communication network
- Know the communication characteristics, advantages and disadvantages of DeviceNet
- Students are able to apply the DeviceNet communication network to different transmission line models
- Know how to program for PLC
- Know the data transmission principle of the DeviceNet network

ST.AT.A5060 ETHERCAT COMMUNICATION NETWORK TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	1. Omron PLC training module	TPAA.C0810
2	2. Human Machine Interface (HMI) screen training module	TPAA.K4100
3	3. Inverter training module	TPAE.A1140
4	4. AC SERVO motor control training module	TPAE.D3110
5	5. AC SERVO motor training module	TPAE.I0800
6	6. DC power module	TPAC.A4600
7	7. AC power module	TPAC.A2100
8	8. AC motor training module	TPAE.F0300

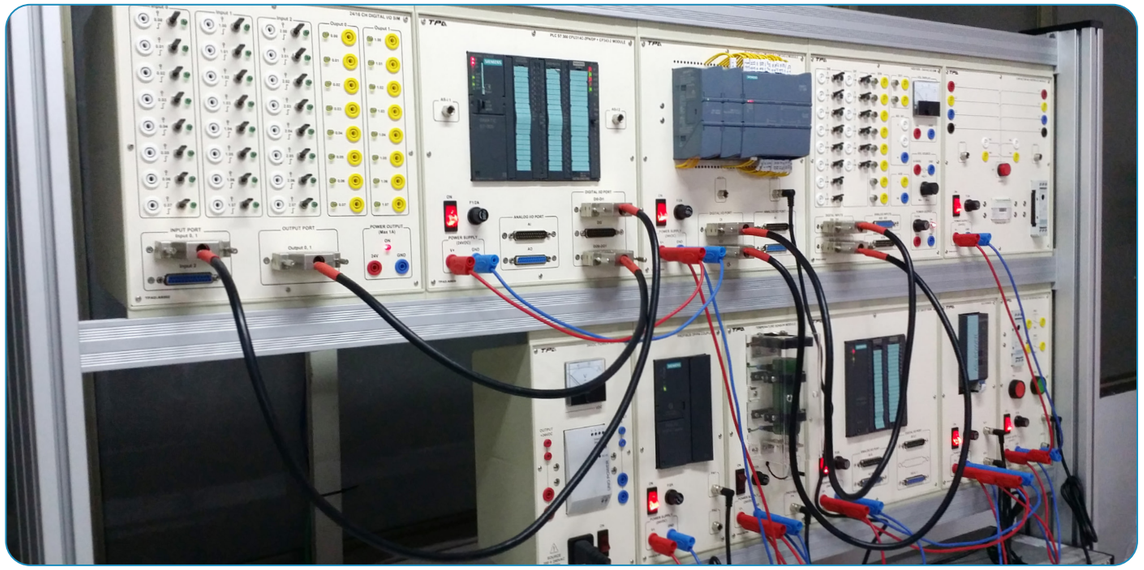
TRAINING CONTENT

- Help students understand the structure of an EtherCAT communication network
- Practice connecting devices in the EtherCAT communication network
- Practice configuring on the EtherCAT communication network
- Practice programming the DeviceNet communication program
- Practice programming the NX1P2 PLC
- Practice writing the interface for the HMI screen
- Practice controlling the speed of a 3-phase motor using an inverter connected directly via I/O
- Practice Ethercat communication to control the speed of a 3-phase motor using an inverter
- Practice controlling an AC servo motor connected directly via I/O
- Practice Ethercat communication to control an AC servo motor

SKILLS ACQUIRED

- Know the hardware structure of the EtherCAT communication network
- Students are able to apply the EtherCATt communication network to different transmission line models
- Know how to program for PLC
- Know the data transmission principle of the EtherCAT network

ST.AT.A5070 HART COMMUNICATION NETWORK TRAINING KIT



EQUIPMENT LIST

No	Name	Code
1	PLC S7-1200 training module	TPAA.B1730
2	HART Input training module	TPAA.Q1000
3	Temperature sensor training module (HART communication)	TPAS.D8200
4	HART Configuration Training Module	TPAA.Q2000
5	DC power module	TPAC.A4600

TRAINING CONTENT

- Help students understand the structure of a HART communication network
- Practice connecting devices in a HART communication network
- Practice configuring on a HART communication network
- Practice programming PLC S7-1200

SKILLS ACQUIRED

- Know the hardware structure of the HART communication network
- Know the communication characteristics, advantages and disadvantages of HART
- Students are able to apply the HART communication network to different transmission line models
- Know how to program for PLC

ST.AT.A5080 MODBUS COMMUNICATION NETWORK TRAINING KIT

TRAINING CONTENT

- Help students understand the structure of a Modbus communication network
- Practice connecting devices in a Modbus communication network
- Practice configuring on a Modbus communication network
- Practice programming DeviceNet communication programs
- Practice programming Schneider PLCs
- Practice writing interfaces for HMI screens
- Practice Modbus communication to control the speed of a 3-phase motor using an inverter

EQUIPMENT LIST

No	Name	Code
1	PLC S7 1200 training module	TPAA.B1750
2	Inverter training module	TPAE.A1150
3	Temperature controller training module	TPAI.P0001
4	DC power module	TPAC.A4600
5	AC power module	TPAC.A2100
6	AC motor training module	TPAE.F0300

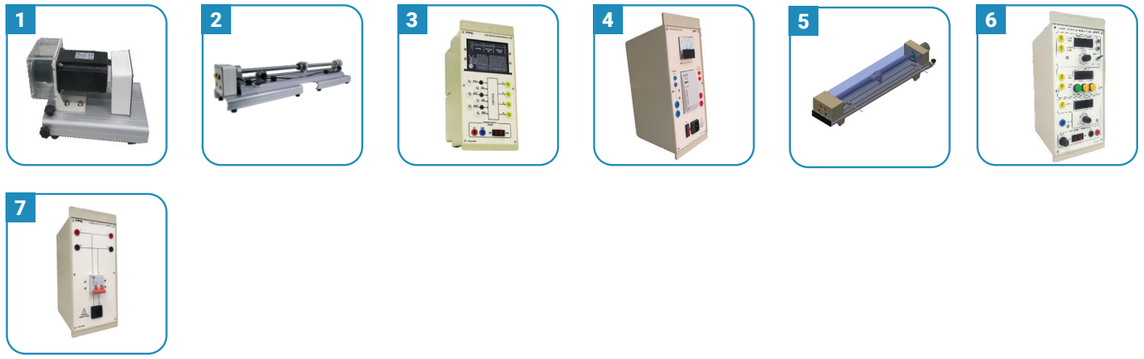
SKILLS ACQUIRED

- Know the hardware structure of the Modbus communication network
- Know the communication characteristics, advantages and disadvantages of Modbus
- Students are able to apply the Modbus communication network to different transmission line models
- Know how to program for PLC
- Know the data transmission principle of the Modbus network

ST.PE.A0502 STEPPER MOTOR EXPERIMENT KIT

EQUIPMENT LIST

No	Name	Code
1	01 Stepper motor training module (Half step)	TPAD.E1821
2	01 Stepper motor training module (Full Step)	TPAD.E1830
3	01 Stepper motor control training module	TPAD.B1250
4	01 DC power supply module	TPAD.E5103
5	Motor Load Training Module	TPAB.D8000
6	01 SERVO motor and stepper motor control pulse generator module	TPAD.P1031
7	AC power module	TPAC.A2100



TRAINING CONTENT

- General introduction to the features of the practice set for practical applications, features of each module in the practice set
- Survey of the power supply for the stepper motor
- Survey of the hardware and operating principles of the stepper motor
- Practice wiring experiments with the accompanying modules.
- Practice controlling the stepper motor: 1 step, half step, micro step.
- Practice controlling the speed of the stepper motor.
- Practice controlling the position using the stepper motor to the required position.

SKILLS ACQUIRED

- Understand the control principle of the stepper motor controller.
- Have the skills to set the parameters of the stepper motor driver to serve a specific problem.
- Know the driver control method.
- Connect the circuit and signal to the device.
- Understand the shape and components of the stepper motor controller in practice.
- Ability to operate the device.

ST.IE.A4302 DC SERVO MOTOR EXPERIMENT KIT

EQUIPMENT LIST

No	Name	Code
1	01 DC Servo Motor Control Training Module	TPAD.E3102
2	01 DC Motor Training Module (DC Servo type)	TPAD.E6503

1

2

TRAINING CONTENT

- General introduction to the features of the practice set for practical applications, features of each module in the practice set
- Survey of the power supply for the DC servo motor
- Survey of the hardware and operating principles of the DC servo motor
- Learn the principle of PID control
- Practice wiring experiments with the accompanying modules.
- Practice controlling the speed of an open-loop DC servo motor
- Practice controlling the speed of a closed-loop DC servo motor
- Practice controlling the rotation angle position of a DC servo motor

SKILLS ACQUIRED

- Understand the control principle of the DC Servo controller
- Have the skills to set DC servo driver parameters to serve specific problems.
- Calculate the PID coefficient for the system.
- Equipment operation skills.

ST.PE.A0101 AC SERVO MOTOR CONTROL TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	01 AC SERVO motor training module	TPAD.E6504
2	01 AC SERVO motor control training module	TPAD.E3110
3	AC SERVO driver input and output signal training module	TPAE.D3700
4	01 Motor load training module	TPAD.B1250
5	01 SERVO motor and stepper motor control pulse generator module	TPAD.P1031
6	01 AC power module	TPAD.E6101

1

2

TRAINING CONTENT

- General introduction to the features of the practice set for practical applications, features of each module in the practice set
- Survey of the power supply for the AC servo motor
- Survey of the hardware and operating principles of the AC servo motor
- Practice wiring experiments with the accompanying modules.
- Practice controlling the position using the AC servo motor to the required position

2

4

5

6

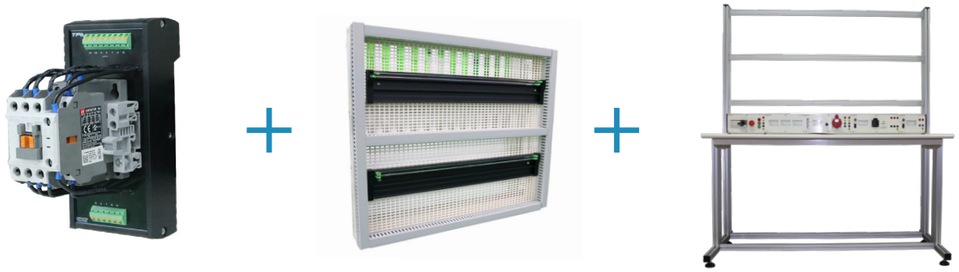
SKILLS ACQUIRED

- Understand the control principle of AC servo unit.
- Have the ability to set Servo driver parameters to serve specific problems.
- Know the method of controlling servo driver.
- Connect circuits and signals to the device.
- Understand the shape and components of the servo unit in practice.
- Ability to operate the device.

INSTALLATION AND WIRING SKILLS TRAINING

ALUMINUM BOX

DESIGN CONCEPT



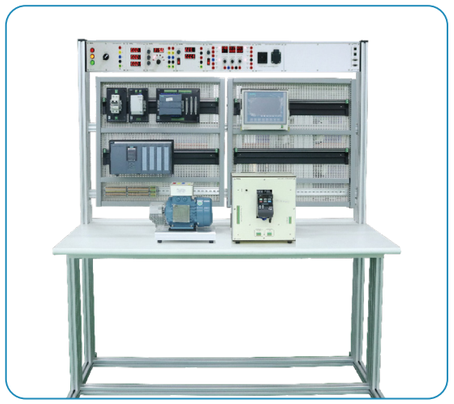
AUTOMATION TRAINING EQUIPMENT

INSTALLATION AND WIRING SKILLS TRAINING

LIST OF PRACTICES

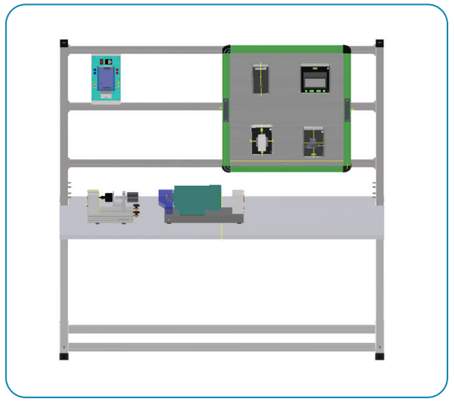
AT.A0010

AT.A0010



ST.AT.A5000

ST.IE.A0730



ST.IE.A0740

ST.IE.A0780

AT.A0010 PLC S7-1200 WIRING TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	PLC S7 - 1200 Training Module	TPAJ.A1300
2	Digital I/O Simulation Module	TPAJ.A9600
3	Analog I/O Simulation Module	TPAJ.A9700
4	DC Power Supply Module	TPAJ.E1600
5	Single Phase Circuit Breaker Training Module	TPAJ.C0700
6	AC Motor Training Module	TPAE.F0920
7	Contactor Training Module	TPAJ.C2300
8	3 Phase Circuit Breaker Training Module	TPAJ.C1220
9	Push Button Training Module	TPAJ.D0400
10	24VDC intermediate relay training module	TPAJ.C5200
11	Inductive Sensor Training Module	TPAJ.S0300

TRAINING CONTENT

- Practice programming PLC S7-1500
- Practice programming PLC S7-1200
- Practice writing interface for HMI screen
- Practice Ethernet network communication using HMI, S7-1500, ET200SP and S7-1200
- Practice AS-I communication network using ET200SP, AS-I slave and push button, contactor
- Practice Modbus communication network using: S7-1200 to control inverter
- Practice mixed communication network
- Practice combining multi-level communication network
- Build SCADA application

SKILLS ACQUIRED

- Know the hardware structure of CPU S7 1200
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC S7 1200
- Know how to write program for PLC S7-1200 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signal at analog input and output signal value to analog output.

AUTOMATION TRAINING EQUIPMENT

AT.A0010 PLC FX5U WIRING TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	Mitsubishi PLC training module	TPAJ.A2100
2	Digital input and output simulation module	TPAJ.A9600
3	Analog input and output simulation module	TPAJ.A9700
4	DC power module	TPAJ.E1600
5	Single phase circuit breaker training module	TPAJ.C0700
6	AC motor training module	TPAE.F0920
7	Contactor training module	TPAJ.C2300
8	Three phase circuit breaker training module	TPAJ.C1220
9	Push button training module	TPAJ.D0400
10	24VDC intermediate relay training module	TPAJ.C5200
11	Magnetic sensor training module	TPAJ.S0300

TRAINING CONTENT

- Classification of industrial sensors
- Construction principles and measurement principles of industrial sensors
- Experiments with the working spectrum of sensors
- Sensor experiments with a variety of receiving objects
- Connecting sensors
- Adjusting sensor sensitivity
- Experiments with sensor response frequency
- Experiments with sensor response frequency
- Practices related to simulating sensor applications in practice

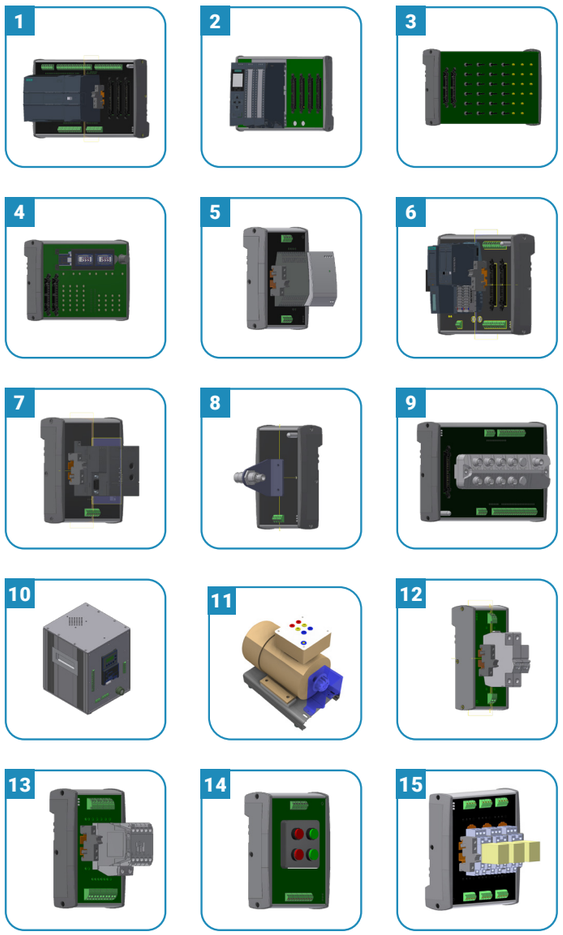
SKILLS ACQUIRED

- Know the hardware structure of the PLC FX3U programmer
- Know how to connect the power supply, digital input and output, analog input and output of the PLC FX3U
- Know how to write programs for the PLC FX3U with functions: logic, timer, counter, arithmetic operations

ST.AT.A5000 PLC AND INDUSTRIAL COMMUNICATION NETWORK WIRING TRAINING KIT

EQUIPMENT LIST

No	Name	Code
1	S7-1500 PLC Training Module (Profibus DP combined)	TPAN.A1030
2	S7 1200 PLC Training Module (Modbus RTU combined)	TPAN.A0200
3	Digital Input/Output Simulation Module	TPAJ.A9600
4	Analog Input/Output Simulation Module	TPAJ.A9700
5	DC Power Supply Module	TPAJ.E1600
6	ET-200SP Profibus Communication Module (IO-Link combined)	TPAN.A7110
7	Profibus DP to Profinet Communication Conversion Module	TPAJ.A1010
8	Proximity Sensor Training Module (IO - Link)	TPAN.S7000
9	IO - Link Interface IO Expansion Training Module	TPAN.A1800
10	Inverter Training Module (Modbus Interface)	TPAJ.E0100
11	AC Motor Training Module	TPAE.F0300
12	1-Phase Circuit Breaker Training Module	TPAJ.C0810
13	Contactor Training Module	TPAJ.C2300
14	Push Button Training Module	TPAJ.D0400
15	24VDC Intermediate Relay Training Module	TPAJ.C5200



TRAINING CONTENT

- Learn about the hardware structure of PLC S7 1200
- Learn how to declare hardware and configure PLC
- Practice programming basic logic commands
- Practice programming commands using Timer, Counter
- Practice programming comparison commands
- Practice programming basic math commands
- Practice programming using subroutines
- Practice programming interrupt handling programming
- Practice programming real-time controllers

SKILLS ACQUIRED

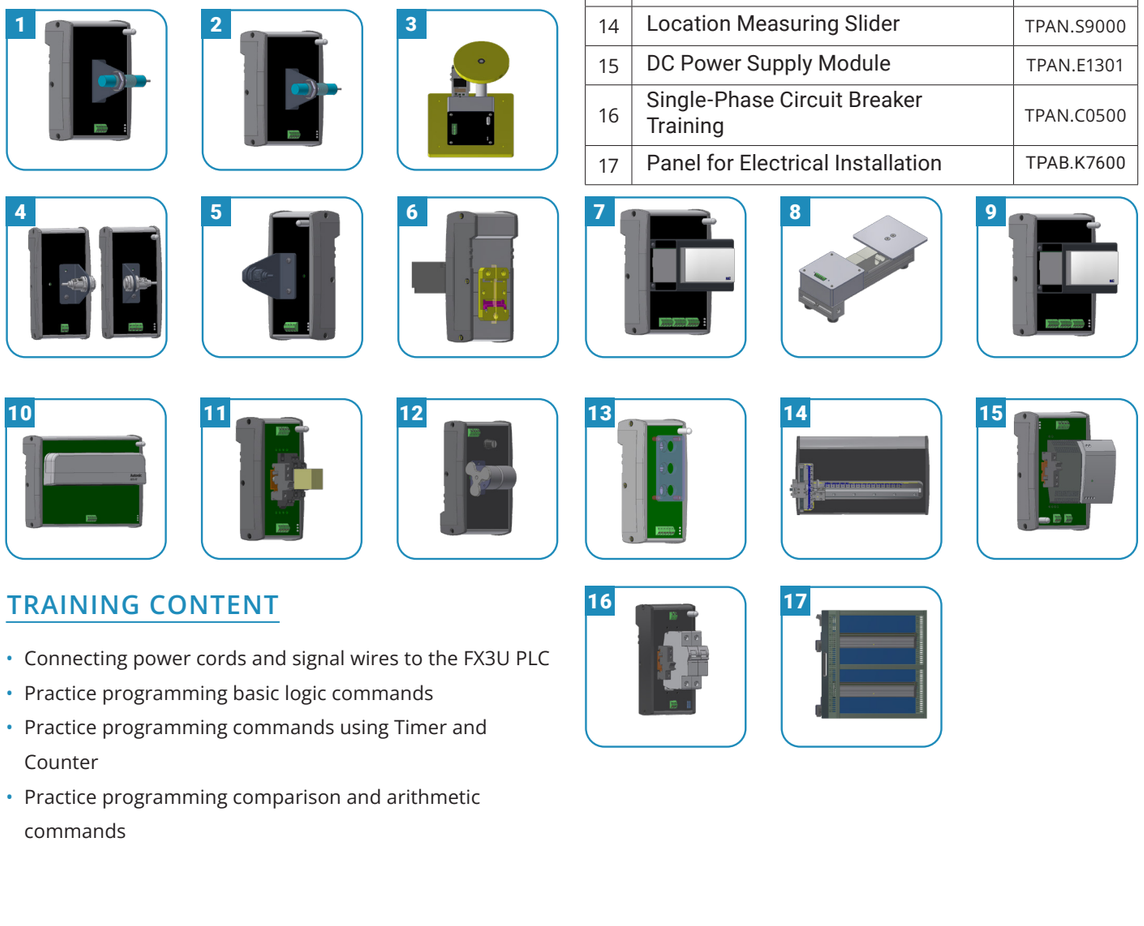
- Know the hardware structure of CPU S7 1200
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC S7 1200
- Know how to write program for PLC S7-1200 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signal at analog input and output signal value to analog output.

AUTOMATION TRAINING EQUIPMENT

ST.IE.A0730 SENSOR TRAINING KIT

EQUIPMENT LIST

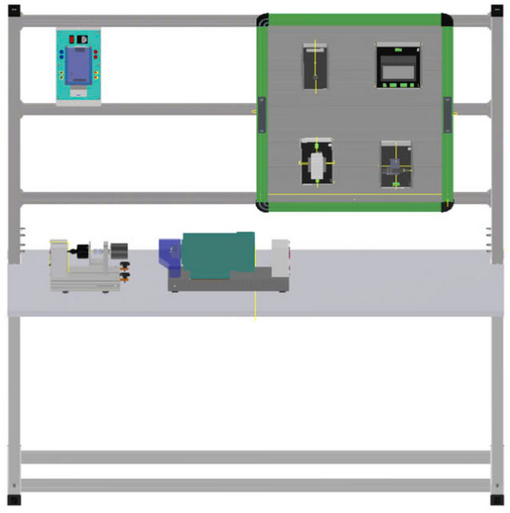
No	Name	Code
1	Magnetic Sensor Training Module	TPAN.S0101
2	Capacitive Sensor Training Module	TPAN.S1001
3	Pressure Sensor Training Module	TPAN.S2001
4	Optical Sensor Training Module	TPAN.S2101
5	Optical Sensor Training Module	TPAN.S2201
6	Reflector Set	TPAN.S2300
7	Optical Sensor Training Module	TPAN.S2401
8	Weight Sensor Training Module	TPANS.4000
9	Weight Display Clock Training Module	TPAN.S4101
10	Infrared Sensor Training Module	TPAN.S6001
11	Intermediate Relay Training Module	TPAN.C5101
12	DC Motor Training Module	TPAE.G8000
13	Indicator Light Training Module	TPAN.D5001
14	Location Measuring Slider	TPAN.S9000
15	DC Power Supply Module	TPAN.E1301
16	Single-Phase Circuit Breaker Training	TPAN.C0500
17	Panel for Electrical Installation	TPAB.K7600



TRAINING CONTENT

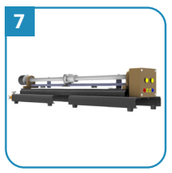
- Connecting power cords and signal wires to the FX3U PLC
- Practice programming basic logic commands
- Practice programming commands using Timer and Counter
- Practice programming comparison and arithmetic commands

ST.IE.A0740 DISTANCE AND DISPLACEMENT SENSOR EXPERIMENT KIT



EQUIPMENT LIST

No	Name	Code
1	DC power module	TPAN.E1301
2	Ultrasonic sensor training module	TPAN.S7000
3	Magnetic sensor training module (analog output)	TPAN.S0200
4	Distance display clock training module	TPAJ.I2200
5	Position measuring slide set	TPAN.S9000
6	Encoder training module	TPAI.M0300
7	Position control training module	TPAB.D8000
8	DC motor training module	TPAE.G0900
9	Motor speed control training module	TPAJ.E7400
10	Speed meter training module (digital)	TPAN.I5000
11	Single-phase circuit breaker training module	TPAN.C0501



TRAINING CONTENT

- Learn the structure and operating principles of different types of sensors
- Practice measuring distance with ultrasonic sensors
- Practice measuring distance with analog output sensors
- Practice measuring speed and displacement distance with encoders

SKILLS ACQUIRED

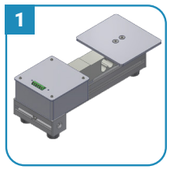
- Learn the operating principles of sensors
- Know how to connect sensors to other hardware devices
- Program sensor signal processing on software
- Simulate sensors on software

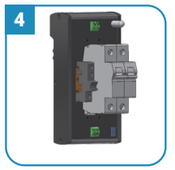
AUTOMATION TRAINING EQUIPMENT

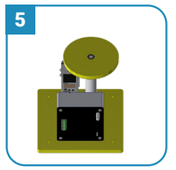
ST.IE.A0750 FORCE AND PRESSURE SENSOR EXPERIMENT KIT

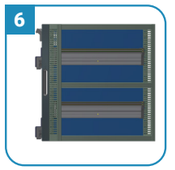
EQUIPMENT LIST

No	Name	Code
1	01 Weight Sensor Training Module	TPAD.S0902
2	01 Weight Display Clock Training Module	TPAD.I6702
3	01 DC Power Supply Module	TPAD.E5103
4	01 Single Phase Circuit Breaker Training Module	TPAN.C0501
5	01 Pressure Sensor Training Module	TPAD.S1102
6	01 Specialized Panel for Electrical Installation	TPAB.K7600









TRAINING CONTENT

- Collect data from devices via wifi Mesh wireless network
- Ethernet, Wifi network connection to computer
- OPC server - client communication
- Connectivity: Up to 30 practice sets
- Automatic hardware recognition: Through QRcode scanning
- Ability to connect to Automation Studio software to practice dragging and dropping, connecting and simulating electrical circuits
- Ability to connect to Automation Studio software to interact with simulated devices on the software with actual hardware devices via OPC
- The on/off status of the device and the measured values from the actual electrical circuit can be synchronized to the software.
- Measurement values, operation on the software in the form of simulation with experimental conditions.
- Distinguish devices on each different practice table

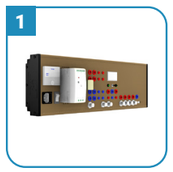
SKILLS ACQUIRED

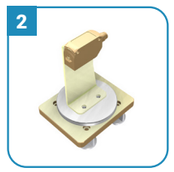
- Learn the principle of pressure sensors, measuring range and pressure measurement units.
- Practice setting sensor parameters
- Practice measuring pressure values according to different loads
- Practice setting pressure warning threshold on pressure gauge

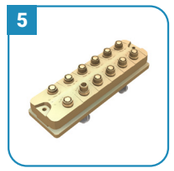
ST.IE.A0780 SMART SENSORS IN INDUSTRY 4.0 PRACTICE KIT

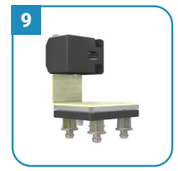
EQUIPMENT LIST

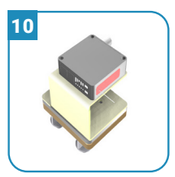
No	Name	Code
1	Sensor Practice Station	TPAK.F7900
2	Diffuse Photoelectric Sensor with IO-Link	TPAK.F2500
3	Ultrasonic Sensor with IO-Link	TPAK.F6000
4	8-Port IO-Link Module	TPAK.Q2000
5	Test Objects	TPAB.K8000
6	IO-Link Bluetooth Interface	TPAK.F3000
7	RFID Sensor with IO-Link	TPAK.F7000
8	Distance-Based Laser Sensor with IO-Link	TPAK.F7100
9	Temperature Sensor with IO-Link	TPAK.F2600
10	Code Reader with Ethernet	TPAK.F8000
11	Flow Sensor with IO-Link	TPAK.F9000
12	Pressure Sensor with IO-Link	TPAK.F4600

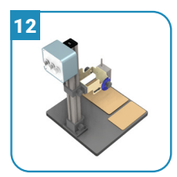


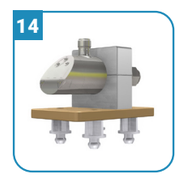












TRAINING CONTENT

- Understand the benefits of smart sensors in Industry 4.0
- Sensor selection, parameterization, monitoring and tuning
- Implement IO-Link® communication
- Integrate sensors into different production communication layers
- Perform maintenance
- Automatically replace individual

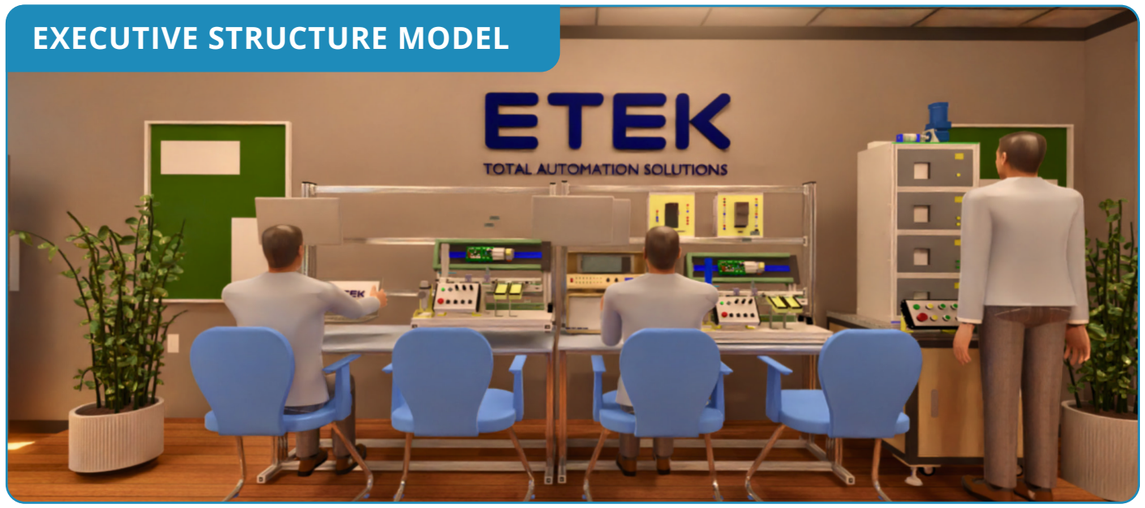
SKILLS ACQUIRED

- Learn the operating principles of sensors
- Know how to connect sensors to other hardware devices
- Program sensor signal processing on software
- Simulate sensors on software

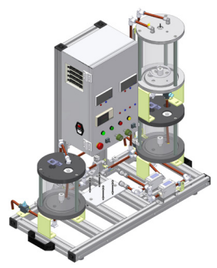
AUTOMATION TRAINING EQUIPMENT

INSTALLATION AND WIRING SKILLS TRAINING

EXECUTIVE STRUCTURE MODEL



DESIGN CONCEPT



EXPERIMENTAL MODEL

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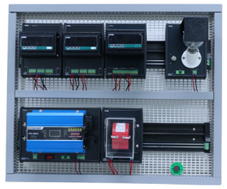

CONTROL PANEL

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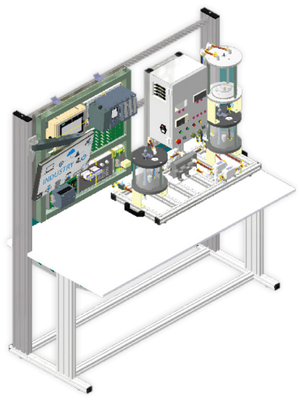
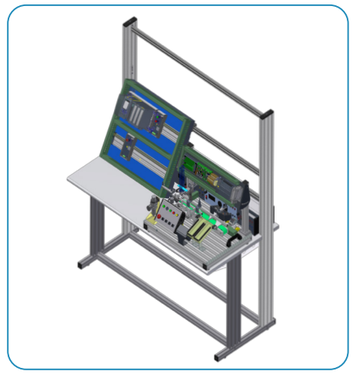
PRACTICE TABLE



INSTALLATION AND WIRING SKILLS TRAINING

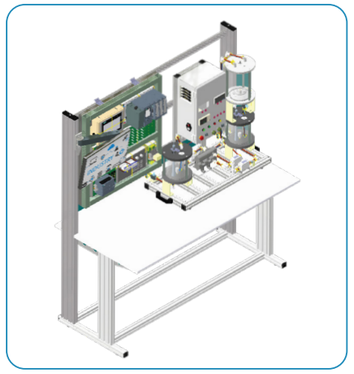
LIST OF PRACTICES

ST.ME.A8010



ST.ME.A8020

ST.ME.A6010



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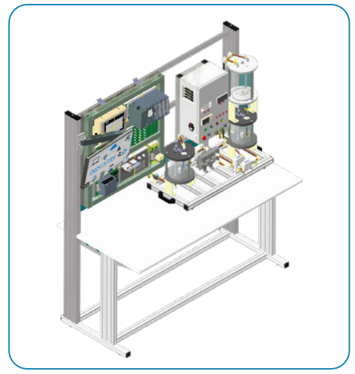

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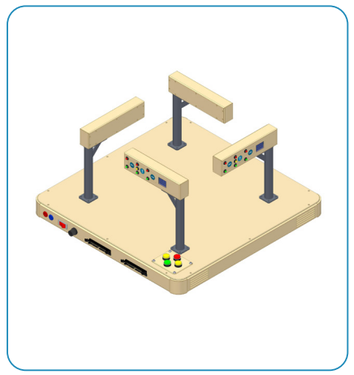

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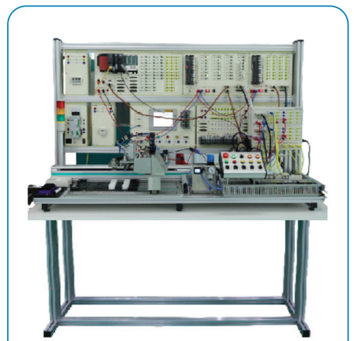


ST.ME.A1002

ST.ME.A8010 CONVEYOR ACTUATOR MODEL (24 VDC MOTOR)

TRAINING CONTENT

- Install and align mechanical parts
- Align industrial sensors in the model
- Connect pneumatics
- Connect conveyor control cabinet circuit
- Check I/O signals
- Program PLC to control conveyor, control the system to run in cycles
- Weigh to check weight and classify products

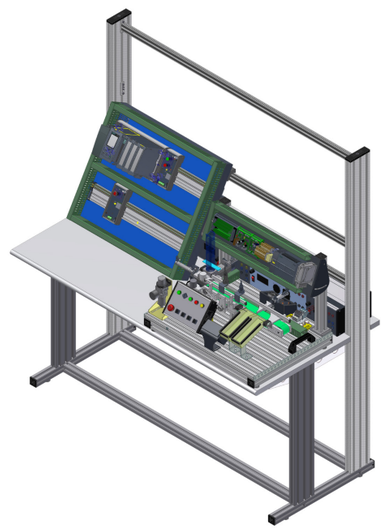
SKILLS ACQUIRED

- Read drawings, prepare tools for machine installation
- Mechanical inspection skills, alignment for mechanical repair
- Skills for installation, connection and wiring of electrical and air lines of the machine
- I/O testing skills
- System control connection skills run in cycles

ST.ME.A8020 CONVEYOR ACTUATOR MODEL (380V THREE-PHASE MOTOR)

TRAINING CONTENT

- Install and align mechanical parts
- Align industrial sensors in the model
- Connect pneumatics
- Connect conveyor control cabinet circuit
- Check I/O signals
- Program PLC to control conveyor, control the system to run in cycles
- Weigh to check weight and classify products



SKILLS ACQUIRED

- Know the hardware structure of CPU S7 1500, HMI
- Know how to program PLC and HMI monitoring control
- Know how to connect power supply, I/O signal
- Know how to declare hardware and configure PLC S7 1500
- Know how to write programs for PLC S7-1500 with functions: logic, Timer, Counter, basic math commands, interrupt handling, real-time programming, identify input signals at analog input and output signal values to analog

ST.ME.A6010 HEATER ACTUATOR MODEL

TRAINING CONTENT

- Model: TPAB.A7000
- Manufacturer: ETEK
- Origin: Vietnam
- Purpose of use:
- The thermal furnace training module helps students to actually recognize the devices in the thermal furnace model.
- Learn the schematic diagram of the operating principle of the thermal furnace.
- Learn the functions and parameter settings for the thermometer.

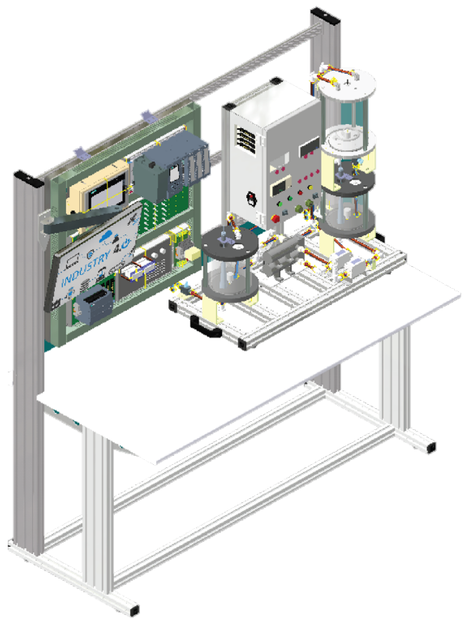
SKILLS ACQUIRED

- Learn the principles of hardware devices in the model
- Know how to connect sensors to the controller
- Learn how to program and control

ST.ME.A6020 MIXING TANK ACTUATOR MODEL

TRAINING CONTENT

- The model is used to simulate, study the operating principles and control modes of chemical tanks in industry.
- Learn about the structure and operating principles of sensors: ultrasonic sensors, level sensors, flow sensors, temperature sensors.



SKILLS ACQUIRED

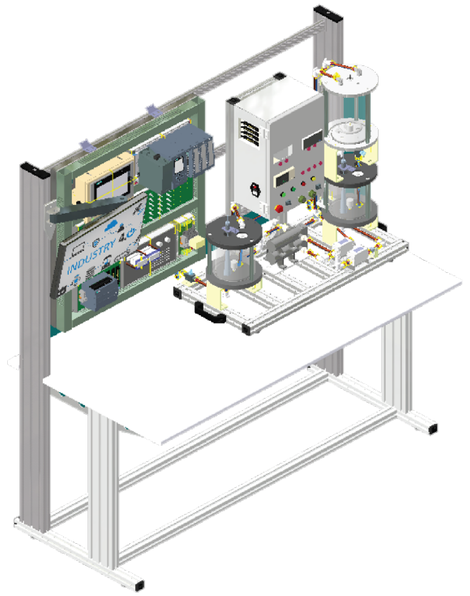
- Learn the principles of hardware devices in the model
- Learn how to operate and apply the mixing tank in practice
- Know how to connect sensors to the controller
- Learn how to program and control

AUTOMATION TRAINING EQUIPMENT

ST.ME.A6030 FLOW LEVEL CONTROL ACTUATOR MODEL

TRAINING CONTENT

- The model is used to simulate, study the operating principles and control modes of chemical tanks in industry.
- Learn about the structure and operating principles of sensors: Flow sensors, level sensors.
- Can be connected to PLC in programming flow control, level using closed loop, open loop, PID control algorithms.



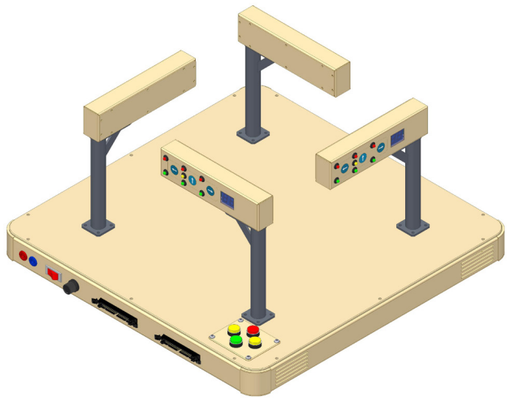
SKILLS ACQUIRED

- Learn the principles of hardware devices in the model
- Learn the operation and application of level flow mechanisms
- Know how to connect sensors to the controller
- Learn how to program and control

ST.ME.A6040 TRAFFIC LIGHT CONTROL ACTUATOR MODEL

TRAINING CONTENT

- Basic Training Practice
- Traffic Light Simulation Control Practice
- Hardware Programming Practice with PLC
- Traffic Light Simulation Practice on Software



SKILLS ACQUIRED

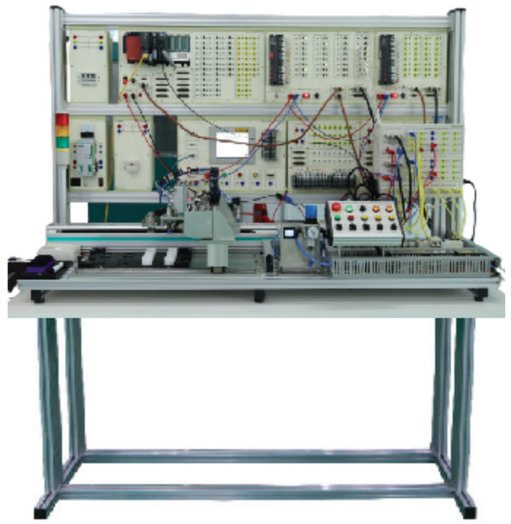
- Learn the principles of hardware devices in the model
- Learn how to operate and apply traffic lights in practice
- Know how to connect sensor devices to the controller
- Learn how to program and control

AUTOMATION TRAINING EQUIPMENT

ST.ME.A1002 POSITION CONTROL ACTUATOR MODEL

TRAINING CONTENT

Install, mechanically align the equipment clusters in the model
Wiring, connecting and checking the electrical control system
Operate, test the system
Practice PLC programming to coordinate 2-axis servo control in applications:
+ Pick & Plate
+ Write, draw



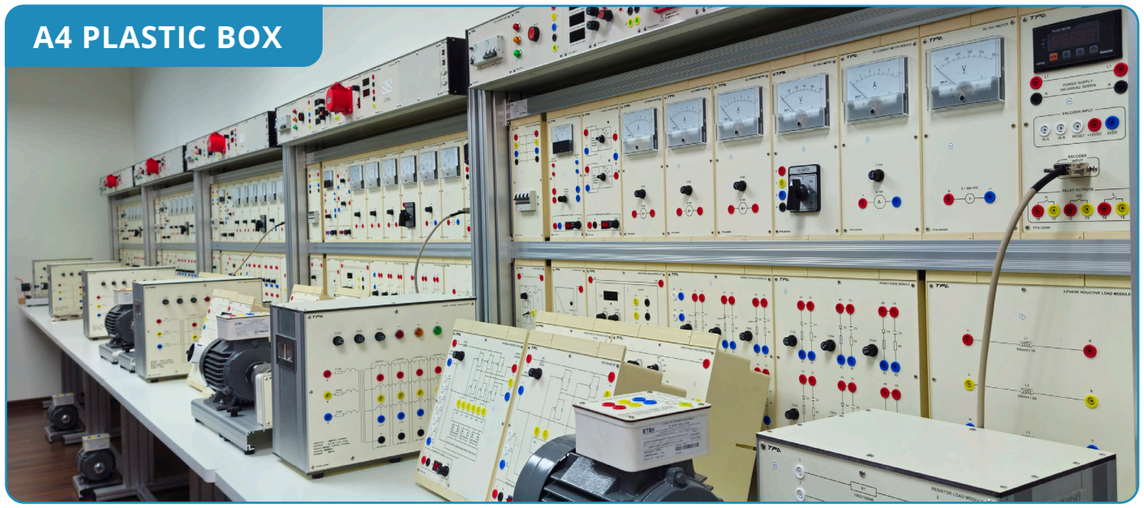
SKILLS ACQUIRED

- Know the structure of robot clusters
- Programming to control 2-axis robots

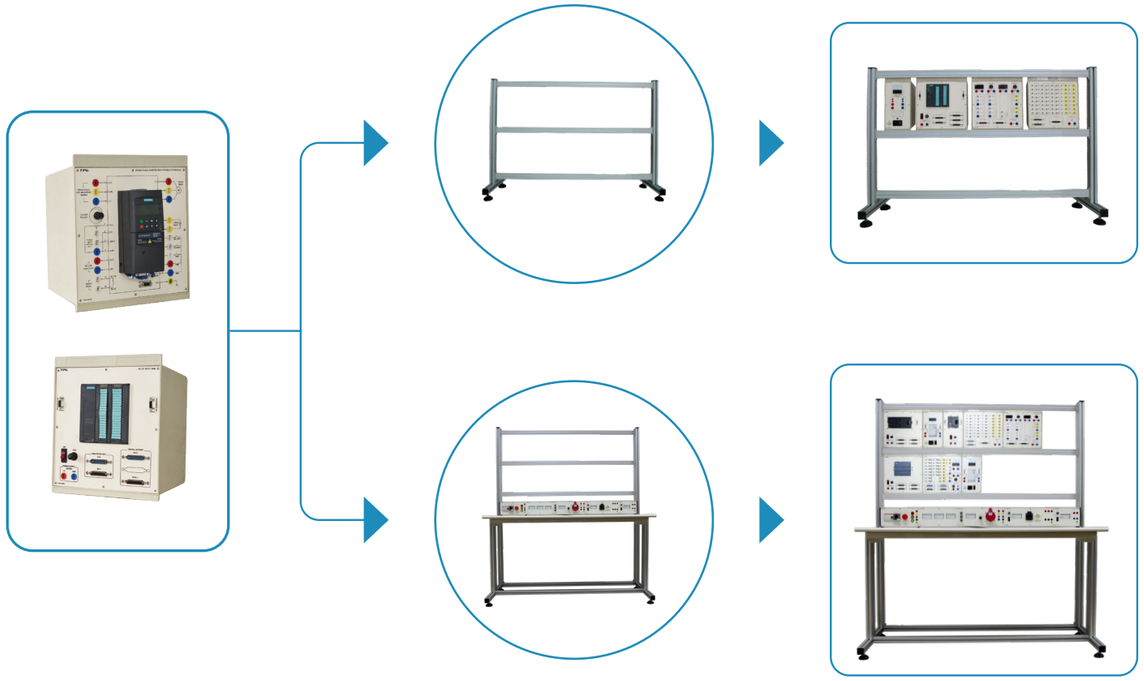
ELECTRICAL ENGINEERING TRAINING

PRINCIPLE TRAINING

A4 PLASTIC BOX



DESIGN CONCEPT



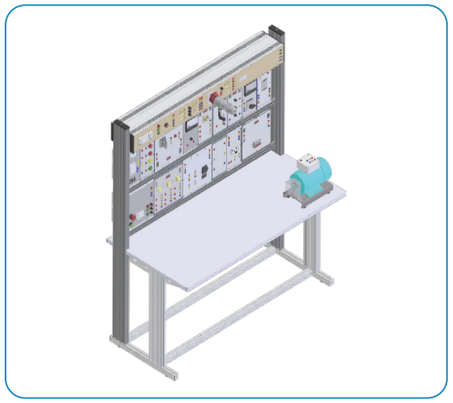
PRINCIPLE TRAINING

LIST OF PRACTICES

ST.IE.A2000

ST.IE.A2100

ST.IE.A6001



ST.IE.A3000

ST.PE.B0060

ST.IE.A2000 DC ELECTRICITY PRACTICE KIT

EQUIPMENT LIST

No	Name	Code
1	DC power supply module	TPAC.A5900
2	DC current meter training module	TPAI.A6310
3	DC voltage meter training module	TPAI.B6310
4	Resistor training module	TPAB.A5600
5	Potentiometer training module	TPAB.A0801
6	Fuse training module	TPAC.I0100

TRAINING CONTENT

- DC Voltage Measurement Practice
- DC Current Measurement Practice
- Resistive Circuit Practice
- Practice with Parallel Resistors
- Practice with Series Resistors
- Voltage Divider Circuit Experiment
- Ohm's Law Experiment
- Kirchoff's Laws 1 and 2 Experiment

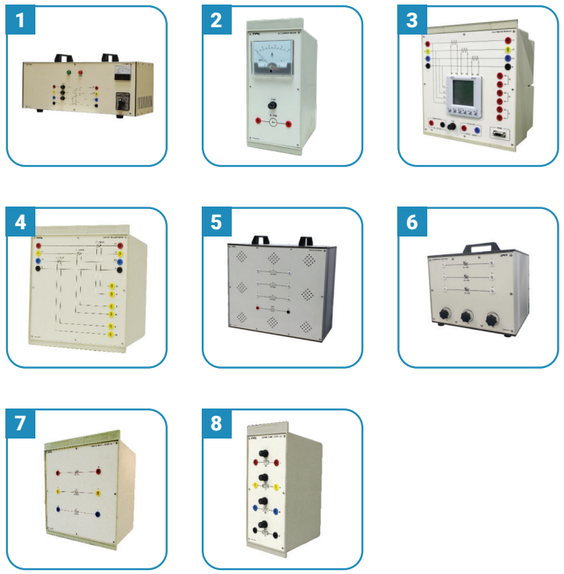
SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

ST.IE.A2100 AC ELECTRICITY PRACTICE KIT

EQUIPMENT LIST

No	Name	Code
1	AC power module	TPAC.A7100
2	AC current meter training module (digital indication)	TPAI.A2100
3	AC voltage meter training module (digital indication)	TPAI.B2010
4	Switch training module	TPAC.G0100
5	Fuse training module	TPAC.I0100
6	Three-phase resistive load training module	TPAN.E3000
7	Inductive load training module	TPAN.E3101
8	Capacitive load training module	TPAN.E3201



TRAINING CONTENT

- Current and voltage characteristics of alternating current
- Characteristics of pure resistive, pure inductive, pure capacitive loads in alternating current circuits
- Calculating the power of single-phase and three-phase alternating current circuits
- Inductance and R-L circuits
- Series and parallel inductors
- Capacitance and R-C circuits
- L-C circuits and resonance

SKILLS ACQUIRED

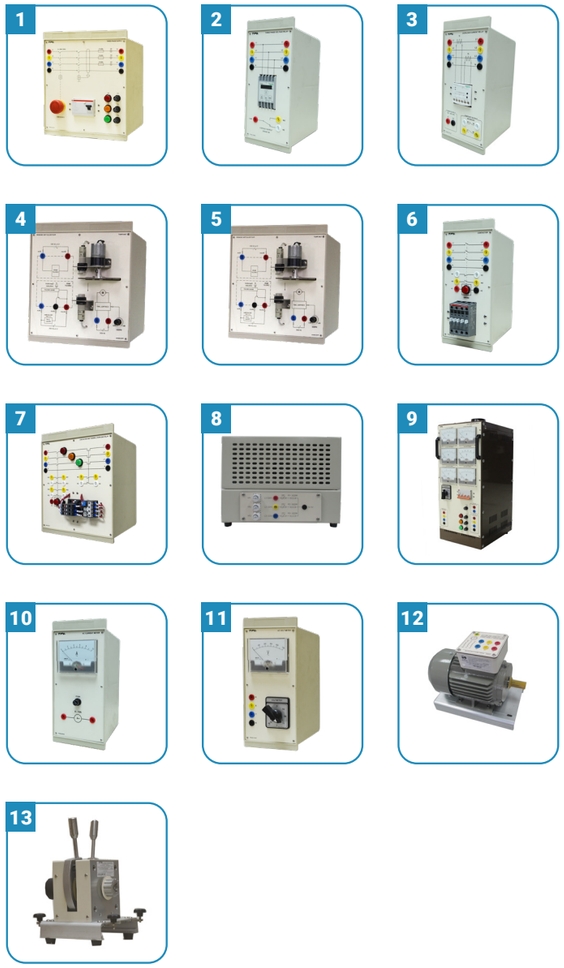
- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

ELECTRICAL ENGINEERING TRAINING

ST.IE.A6001 PROTECTIVE RELAY EXPERIMENT KIT

EQUIPMENT LIST

No	Name	Code
1	01 AC power module	TPAD.C0101
2	01 Voltage relay training module	TPAD.C3503
3	01 Current relay training module	TPAD.C3714
4	01 Ground fault relay installation training module	TPAD.C3503
5	01 Leakage current generation training module	TPAD.C3715
6	01 Contactor training module	TPAD.C2120
7	01 Contactor starter training module	TPAD.C2611
8	01 Adjustable power load training module	TPAD.B0804
9	01 Transformer training module (3-phase stepless transformer)	TPAD.E5711
10	01 AC current meter training module	TPAD.I0101
11	01 AC voltage meter training module	TPAD.I1101
12	01 AC motor training module	TPAD.E6101
13	01 Load module for motor practice	TPAD.B0104



TRAINING CONTENT

- Install phase loss protection circuit
- Install phase sequence protection circuit
- Install overvoltage protection circuit
- Install low voltage protection circuit
- Install overcurrent protection circuit

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

ST.IE.A3000 ELECTRICAL MEASUREMENT PRACTICE KIT

TRAINING CONTENT

- DC Voltage Measurement Practice
- DC Current Measurement Practice
- AC Voltage Measurement Practice
- AC Current Measurement Practice
- Resistive Circuit Practice
- Variable Voltage Circuit Practice
- Single Phase Power Measurement Practice
- Three Phase Power Measurement Practice
- Frequency Measurement Practice
- Power Factor Circuit Practice
- Single Phase Power Consumption Measurement Practice
- Three Phase Power Consumption Measurement Practice
- Multimeter Practice

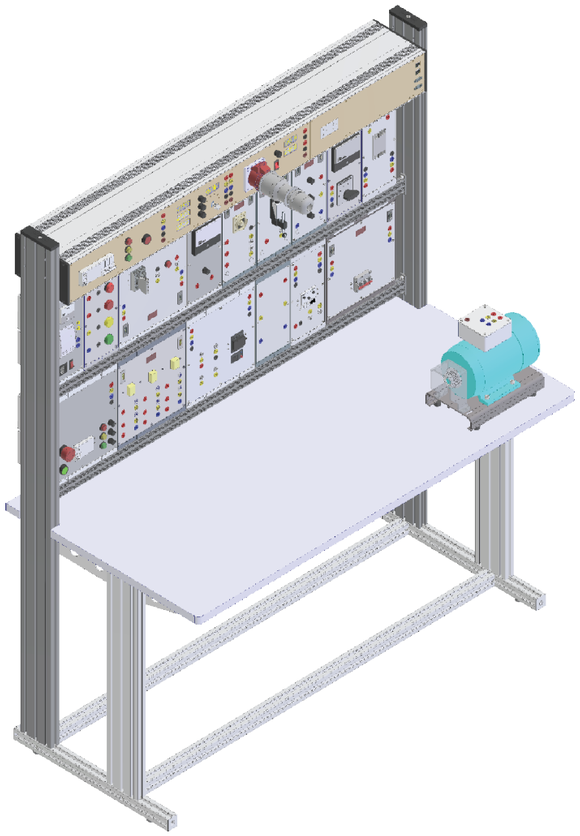
SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

EQUIPMENT LIST

No	Name	Code
1	1. AC current meter training module	TPAI.A0200
2	2. AC voltage meter training module	TPAI.B0100
3	3. DC voltage meter training module	TPAI.B4000
4	4. DC current meter training module	TPAI.A4000
5	5. Single-phase power meter training module	TPAI.C0100
6	6. Three-phase power meter training module	TPAI.C4000
7	7. Frequency meter training module	TPAI.E0100
8	8. Power factor meter training module	TPAI.D4000
9	9. AC motor training module (3-phase squirrel cage rotor)	TPAE.F0300
10	10. Load module for motor practice	TPAB.D2000
11	11. AC power supply module	TPAC.A0210
12	12. Transformer training module (single-phase stepless transformer)	TPAE.L300
13	13. Single-phase bridge rectifier module	TPAP.E1300
14	14. Three-phase resistive load training module	TPAN.E3000
15	15. Inductive load training module	TPAN.E3101
16	16. Capacitive load training module	TPAN.E3201
17	17. Single-phase meter training module	TPAI.K0500
18	18. Three-phase meter training module	TPAI.K3200

ST.PE.B0060 ELECTRICAL INSTRUMENT PRACTICE KIT



TRAINING CONTENT

- Learn the uses, structures and operating principles of electrical appliances
- Be able to select some common electrical appliances according to specific technical requirements (switches, fuses, CBs, contactors, ...) in simple cases.
- Install and operate common electrical appliances
- Install civil and industrial electrical circuits
- Learn and practice the skills of finding common faults of electrical appliances in electrical circuits by creating electronic faults for devices through software installed on the teacher's computer

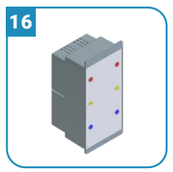
SKILLS ACQUIRED

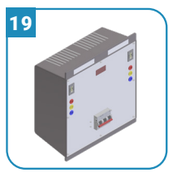
- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

ELECTRICAL ENGINEERING TRAINING

EQUIPMENT LIST

No	Name	Code
1	01 IE Software 01 Soft version 1.0	
2	01 Computer connection cable	
3	01 AC power module	TPAD.E4903
4	01 DC power module	TPAD.E4502
5	02 Contactor training module	C2110
6	01 Contactor training module	TPAD.C2611
7	01 Intermediate relay training module (24VDC)	TPAD.C3020
8	01 Time relay training module	TPAC.D0500
9	01 Voltage relay training module	TPAD.C3503
10	01 Push button training module	TPAD.C4606
11	01 Signal light, buzzer training module	TPAC.K0100
12	01 AC voltage meter training module	TPAD.I1101
13	01 AC current meter training module	TPAD.I0101
14	01 Current relay training module	TPAD.C3714
15	01 Fuse training module	TPAD.C6701
16	01 Resistive load training module	TPAD.B0221
17	01 AC motor training module	TPAD.E6101
18	01 Switch training module (travel)	TPAC.H9000
19	01 Three-phase circuit breaker training module	TPAC.B4000





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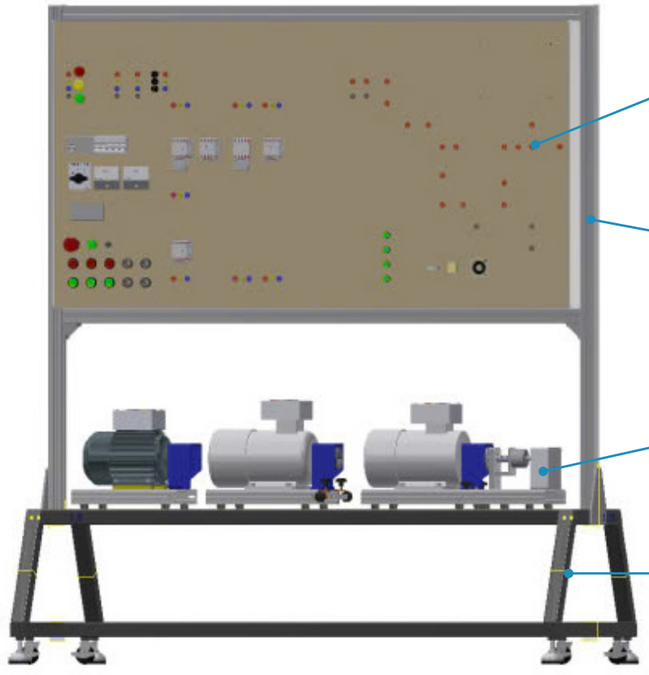
PRINCIPLE TRAINING

INTEGRATED MODEL

DESIGN CONCEPT



ELECTRICAL ENGINEERING TRAINING

PRINCIPLE TRAINING

LIST OF PRACTICES

ST.PE.B0010

ST.PE.B0020

ST.PE.B0030

ST.PE.B0040

ST.PE.B0050

ST.IE.A6112

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ST.PE.B0010 DRILLING MACHINE CIRCUIT INSTALLATION PRACTICE KIT (2A55)

EQUIPMENT LIST

No	Name	Code
1	AC motor training module (1-phase 0.3kW motor)	TPAE.E0500
2	AC motor training module (3P-0.75kW motor)	TPAE.F0300
3	AC motor training module (3P-0.55kW motor)	TPAE.F1210
4	Drilling machine circuit practice panel	TPAD.C0050

TRAINING CONTENT

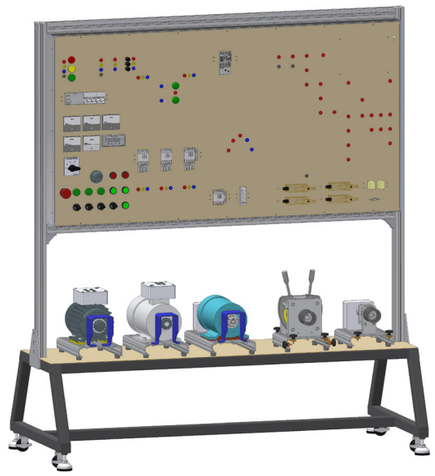
- Help students learn about the structure and operating principles of electrical equipment in the 2A55 drill
- Learn the control principles of the 2A55 drill in practice and learn how to measure, detect errors, and troubleshoot problems in the control circuit.

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Grasp knowledge about the structure and operating principles of electrical devices
- Grasp the measurement method to detect errors and handle problems in the control circuit.

ELECTRICAL ENGINEERING TRAINING

ST.PE.B0020 GRINDING MACHINE CIRCUIT INSTALLATION PRACTICE KIT (3A161)



EQUIPMENT LIST

No	Name	Code
1	AC motor training module (3P-0.37kW motor)	TPAE.F0400
2	AC motor training module (3P-0.75kW motor)	TPAE.F0300
3	DC motor training module (independent excitation)	TPAE.G0100
4	Encoder training module	TPAI.M0300
5	Motor load module, with brake (small type)	TPAB.D2000
6	3A161 grinding machine circuit practice panel spread	TPAD.C0060

TRAINING CONTENT

- Help students learn about the structure and operating principles of electrical equipment in the 3A161 grinder
- Practice installing circuits to control movements in the 3A161 grinder
- Practice installing the 3A161 grinder control circuit
- Learn the control principles of the 3A161 drill in practice and learn how to measure, detect errors, and troubleshoot problems in the control circuit.

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Grasp knowledge about the structure and operating principles of electrical devices
- Read the parameters on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate device for installation.
- Grasp the method of assembling and connecting electrical devices used in electrical circuits

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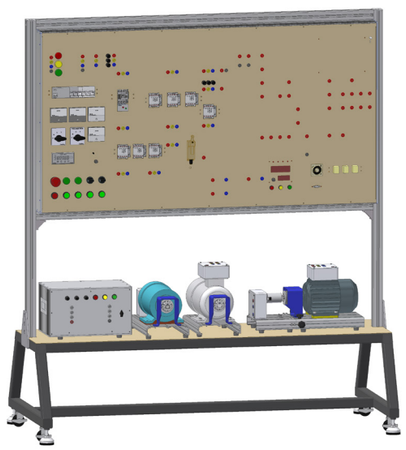
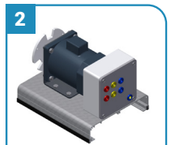
ST.PE.B0030 BORING MACHINE CIRCUIT INSTALLATION PRACTICE KIT (2620)



EQUIPMENT LIST

No	Name	Code
1	AC motor training module (3P-0.37kW motor)	TPAE.F0400
2	AC motor training module	TPAE.F0110
3	DC motor training module (independent excitation)	TPAE.G0100
4	Speed sensor training module	TPAS.E0100
5	Three-phase resistive load training module	TPAN.E3000
6	Encoder training module	TPAI.M0300
7	Spread boring machine circuit practice model	TPAD.C0070

1 

2 

3 

TRAINING CONTENT

- Help students learn about the structure and operating principles of electrical equipment in the 2620 boring machine
- Practice installing circuits to control movements in the 2620 boring machine
- Practice installing the control circuit of the 2620 boring machine
- Learn the control principles of the 2620 boring machine in practice and learn how to measure, detect errors, and troubleshoot problems in the control circuit.

4 

5 

6 

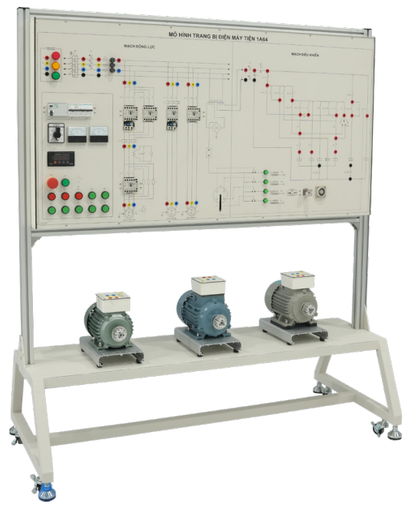
7 

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Grasp knowledge about the structure and operating principles of electrical devices
- Read the parameters on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate device for installation.
- Grasp the method of assembling and connecting electrical devices used in electrical circuits

ELECTRICAL ENGINEERING TRAINING

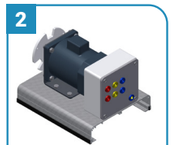
ST.PE.B0040 LATHE MACHINE CIRCUIT INSTALLATION PRACTICE KIT (1A64)



EQUIPMENT LIST

No	Name	Code
1	AC motor training module (3p-0.37kW motor)	TPAE.F0400
2	AC motor training module (3p-0.55kW motor)	TPAE.F1210
3	AC motor training module (3p-0.75kW motor)	TPAE.F0300
4	Encoder training module	TPAI.M0300
5	Spread lathe circuit practice panel	TPAD.C0080

1 

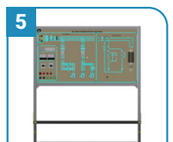
2 

3 

TRAINING CONTENT

- Help students learn about the structure and operating principles of electrical equipment in the 1A64 lathe
- Practice installing circuits to control movements in the 1A64 lathe
- Practice installing the 1A64 lathe control circuit
- Learn the control principles of the 1A64 lathe in practice and learn how to measure, detect errors, and troubleshoot problems in the control circuit.

4 

5 

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Grasp knowledge about the structure and operating principles of electrical devices
- Read the parameters on the labels of devices such as: Working voltage (U), capacity (P), device current limit (A), working temperature (t), insulation level. From there, choose the appropriate device for installation.Grasp the method of assembling and connecting electrical devices used in electrical circuits

ST.PE.B0050 MILLING MACHINE CIRCUIT INSTALLATION PRACTICE KIT (6H81)

EQUIPMENT LIST

No	Name	Code
1	AC motor training module (3P-0.37kW motor)	TPAE.F0400
2	AC motor training module (3P-0.55kW motor)	TPAE.F1210
3	AC motor training module (3P-0.75kW motor)	TPAE.F0300
4	Motor load module, with brake	TPAB.D2000
5	Lighting installation training module	TPAB.F2200
6	Milling machine circuit practice model	TPAD.C0080

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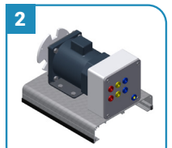

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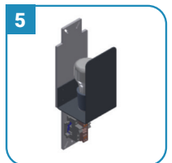

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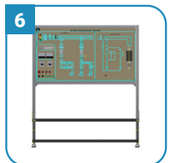

TRAINING CONTENT

- Help students learn about the structure and operating principles of electrical equipment in the 6H81 milling machine
- Practice installing circuits to control movements in the 6H81 milling machine
- Practice installing the 6H81 milling machine control circuit
- Learn the control principles of the 6H81 milling machine in practice and learn how to measure, detect errors, and troubleshoot problems in the control circuit.

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Grasp knowledge about the structure and operating principles of electrical devices
- Read the parameters on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate device for installation.
- Grasp the method of assembling and connecting electrical devices used in electrical circuits

ELECTRICAL ENGINEERING TRAINING

ST.IE.A6112 CRANE MODEL TRAINING SYSTEM

SPECIFICATIONS

- Crane frame:
- Material: I-shaped iron, powder coated.
- Dimensions: 1550x2020x1800mm (WxDxH)

A. Crane equipment

- 01 Electric winch:
- Y-axis motor and Z-axis winch
- Crane hook (maximum load 20kg).
- 1.8m travel cable.
- Electric winch switch
- - 01 3-phase X-stroke motor:
- 3-phase motor, minimum capacity 60W, 3 phase.
- Reducer gearbox.
- 04 2-axis switches
- 02 beams + longitudinal rails
- 04 longitudinal wheels
- 01 X-axis transmission rod
- 01 Chain drive for motor

TRAINING CONTENT

- Help students learn about the structure and operating principles of electrical equipment in cranes
- Practice installing control circuits for movements in cranes
- Learn the principles of controlling cranes in practice and learn how to measure, detect errors, and troubleshoot control circuits.

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, contactor, starter, push button
- Understand the function of each electrical device in the circuit
- Grasp the knowledge about the structure and operating principles of electrical devices
- Read the parameters on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate device for installation.
- Grasp the method of assembling and connecting electrical devices used in electrical circuits

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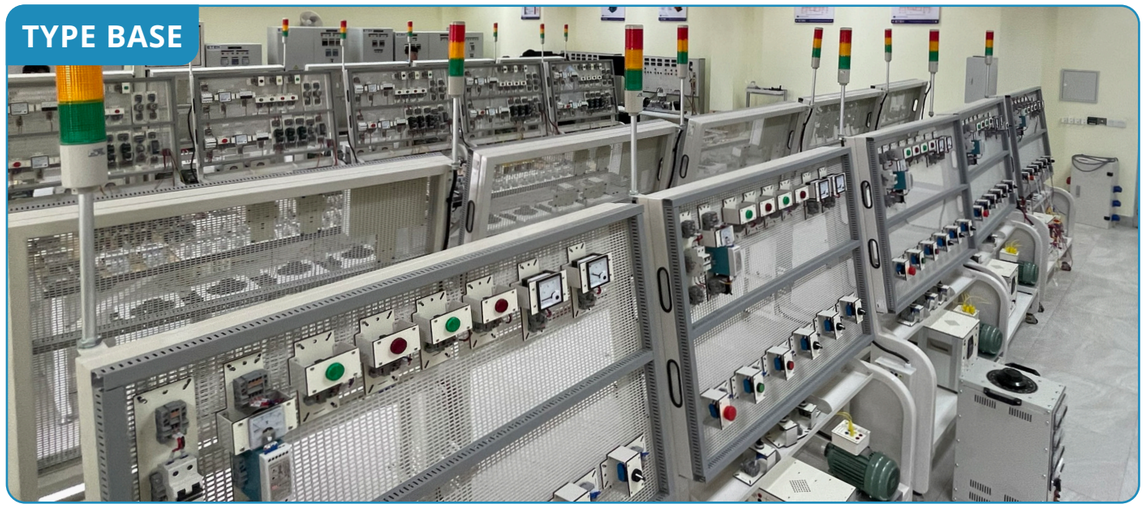
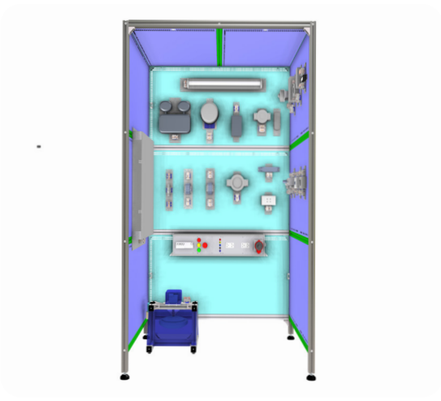
INSTALLATION AND WIRING SKILLS TRAINING



DESIGN CONCEPT

LIST OF PRACTICES

ST.AT.2010



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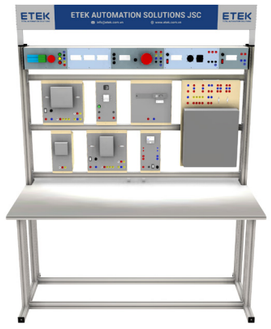
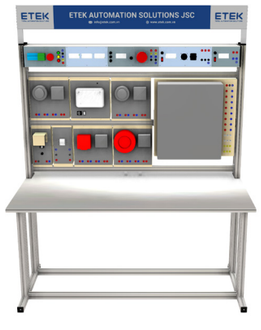


HE.A0600



HE.A0700

HE.A0300

ST.AT.A2010 INDUSTRIAL ELECTRICITY INSTALLATION SKILL PRACTICE KIT

TRAINING CONTENT

- A. Experiments with electrical instruments
- Controlling the motor at 2 positions
- Reversing the motor rotation direction
- Starting circuit of the Y/D asynchronous motor with 3-phase squirrel cage rotor controlled by time relay
- Starting circuit of the Y/D asynchronous motor with 3-phase squirrel cage rotor controlled by manual control
- Double starter circuit with push button
- Double starter circuit with 2-place control of 4-wire push button set
- Double starter circuit with 1-place control of 5-wire push button set with end of stroke control
- Double starter circuit with 2-place control of 5-wire push button set with end of stroke control
- Star-delta starter circuit
- B. Experiments with LOGO programmable device
- Controlling the motor on_off
- Controlling the motor in cycles.
- Reversible control circuit.
- Star-delta starter circuit
- Star-delta starter circuit with push button
- Controlling two motors in cycles

SKILLS ACQUIRED

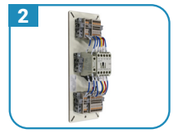
- Distinguish between electrical devices such as atomat, fuse, light bulbs, ceiling fans, electric meters, switches, sockets, timers
- Understand the functions of each electrical device (atomat, fuse, contactor, socket, switch, lighting, ceiling fans, electric meters, timers) in civil and industrial electrical circuits
- Understand the operating principles of some electrical circuits used in civil and industrial use: On/Off light circuit, light circuit with double switch, reversing circuit (used on stairs), high-voltage light circuit, call device circuit (electric bell)
- Understand the structure of each device commonly used in civil and industrial electricity: Atomat, circuit breaker, switches, sockets, lighting, electric meters
- Read the parameters written on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate equipment for installation.
- Understand the assembly and connection methods for electrical equipment used in civil and industrial electrical circuits
- Understand the structure of the equipment, the parameters of the equipment, the working principle, so that depending on each application in civil or industrial electricity, you can choose the appropriate equipment for installation.

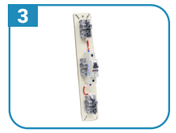
ELECTRICAL ENGINEERING TRAINING

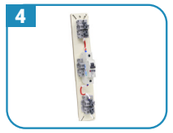
ST.AT.A2010 INDUSTRIAL ELECTRICITY INSTALLATION SKILL PRACTICE KIT

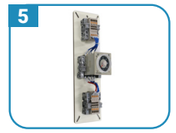
EQUIPMENT LIST

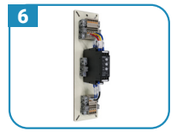
No	Name	Code
1	200 Specialized Plastic Clips for Installation	
2	2. Contactor Installation Training Module	TPAB.F0200
3	3. Thermal Relay Installation Training Module	TPAB.E3000
4	4. Intermediate Relay Installation Training Module	TPAB.E4200
5	- Standard:	TPAB.E5200
6	6. Voltage Relay Installation Training Module	TPAB.E7000
7	7. Push Button Installation Training Module (Red Release Push Button)	TPAB.G6000
8	8. Push Button Installation Training Module (Green Release Push Button)	TPAB.G6100
9	9. Push Button Installation Training Module (Green Illuminated Push Button)	TPAB.G6200
10	10. Push button installation training module (Red light push button)	TPAB.G6300
11	11. Indicator light installation training module	TPAB.G0400
12	12. Buzzer installation training module	TPAB.G0500
13	13. AC voltage meter installation training module	TPAB.H2100
14	14. AC current meter installation training module	TPAB.H0200
15	15. Frequency meter installation training module	TPAB.H5100
16	16. Cos phi meter installation training module	TPAB.H3100
17	17. Power meter installation training module	TPAB.H4200
18	18. Current transformer installation training module	TPAB.H5200
19	19. Current relay installation training module	TPAB.E6100
20	20. Adjustable power load training module (0 ~ 2KW)	TPAB.A9000
21	21. Switching training module (Volt switching)	TPAB.G6500
22	22. DC power supply installation training module	TPAB.G6900
23	23. Logo controller installation training module	6ED1052-1MD00-0BA6
24	24. AC motor training module	TPAE.F0310
25	25. Switch installation training module (limit switch type)	HY-LS807N
26	26. Push button installation training module (emergency stop button)	TPAB.G6400

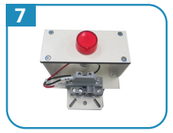


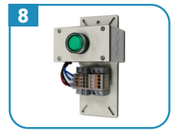


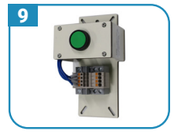


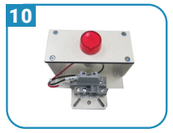


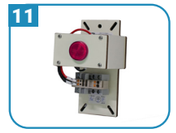


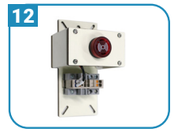


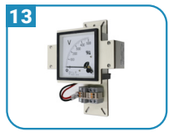


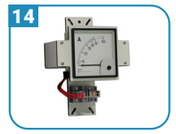


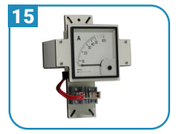


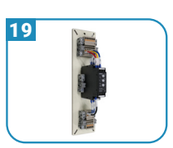


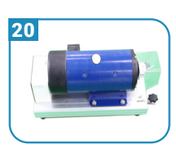


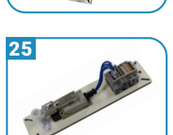












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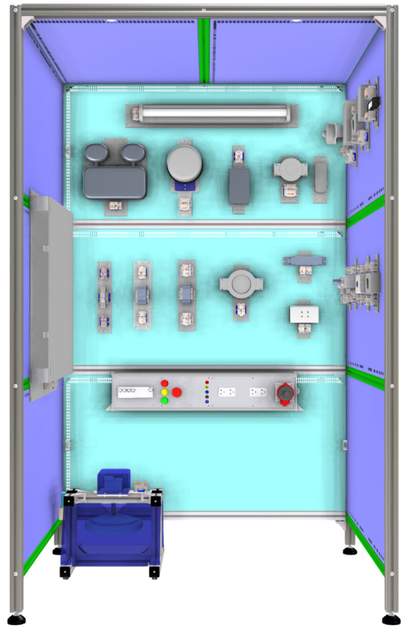
ST.AT.A2020 DOMESTIC ELECTRICITY INSTALLATION SKILL PRACTICE KIT



TRAINING CONTENT

- Simple light circuit (on/off light circuit)
- Light circuit with double switch
- Light circuit with changing brightness level
- Sequential circuit (light circuit set up in wine cellar)
- Reversing circuit (staircase light circuit)
- High voltage light circuit
- Automatic on/off light circuit
- Circuit with call device
- Circuit with digital timer
- Circuit with 4-button remote control switch
- 1-phase electric meter circuit, 1-phase circuit breaker
- 1-phase voltage circuit, light control, socket
- Circuit with a single switch controlling an LED bulb, a socket and a protective fuse
- 1-phase voltage circuit branching to floors

SKILLS ACQUIRED

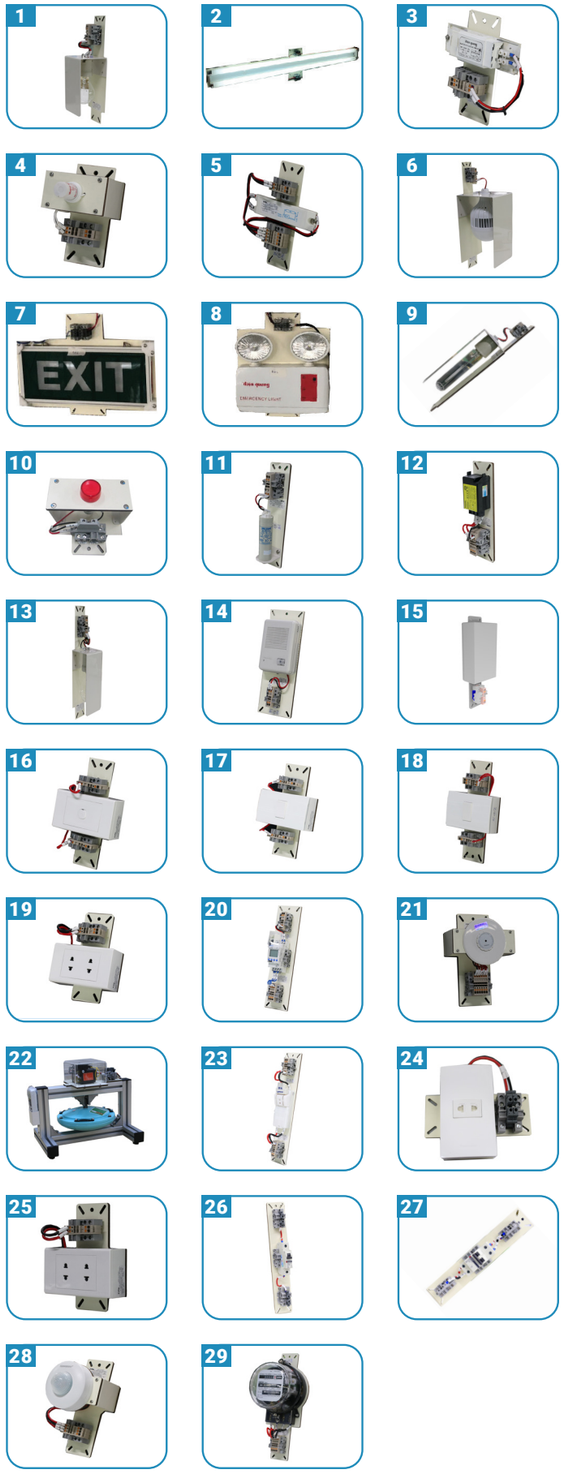
- Distinguish between electrical devices such as atomat, fuse, light bulbs, ceiling fans, electric meters, switches, sockets, timers
- Understand the functions of each electrical device (atomat, fuse, contactor, socket, switch, lighting, ceiling fans, electric meters, timers) in civil and industrial electrical circuits
- Understand the operating principles of some electrical circuits used in civil and industrial use: On/Off light circuit, light circuit with double switch, reversing circuit (used on stairs), high-voltage light circuit, call device circuit (electric bell)
- Understand the structure of each device commonly used in civil and industrial electricity: Atomat, circuit breaker, switches, sockets, lighting, electric meters
- Read the parameters written on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate equipment for installation.
- Understand the assembly and connection methods for electrical equipment used in civil and industrial electrical circuits
- Understand the structure of the equipment, the parameters of the equipment, the working principle, so that depending on each application in civil or industrial electricity, you can choose the appropriate equipment for installation.

ELECTRICAL ENGINEERING TRAINING

ST.AT.A2020 DOMESTIC ELECTRICITY INSTALLATION SKILL PRACTICE KIT

EQUIPMENT LIST

No	Name	Code
1	1. Incandescent lamp training module	TPAB.F2310
2	2. Lighting installation training module (fluorescent tube lamp)	TPAB.F1900
3	3. Ballast installation training module (Electromagnetic ballast)	TPAB.F3300
4	4. Fluorescent lamp mouse (starter) installation training module	TPAB.I0100
5	5. Ballast installation training module (electronic ballast)	TPAB.F3400
6	6. Lighting installation training module (LED lamp)	TPAB.F1820
7	7. Lighting installation training module (escape)	TPAB.I2100
8	8. Lighting installation training module (emergency)	TPAB.I2200
9	9. Lighting installation training module (250w high pressure lamp)	TPAB.F1400
10	10. High pressure lamp ballast installation training module	TPAB.I0200
11	11. High pressure lamp capacitor installation training module	TPAB.I0300
12	12. High-pressure lamp installation training module	TPAB.I0400
13	13. Halogen lighting installation training module	TPAB.F2700
14	14. Electric bell push button installation training module	TPAB.F8310
15	15. Electric bell installation training module	TPAB.F8410
16	16. Fuse installation training module	TPAB.F6300
17	17. Switch installation training module (2 pins)	TPAB.G2700
18	18. Switch installation training module (3 pins)	TPAB.G2800
19	19. Switch installation training module (4 poles)	TPAB.G2900
20	20. Switch installation training module (timer programming)	TPAB.G3000
21	21. Switch installation training module (4-button remote control)	TPAB.G3100
22	22. Ceiling fan installation training module (with remote control)	TPAB.H8100
23	23. Circuit breaker installation training module	TPAB.F7100
24	24. Socket installation training module (Single socket)	TPAB.F5200
25	25. Socket installation training module (Double socket)	TPAB.F5300
26	26. Circuit breaker installation training module (1 phase 1 pole 16A)	TPAB.E2100
27	27. Training module circuit breaker installation (1 phase 2 pole 32A)	TPAB.E2200
28	28. Switch installation training module (infrared sensor)	TPAB.G3200
29	29. Electricity meter installation training module	TPAB.H6100



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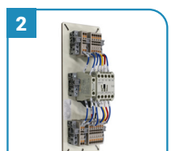
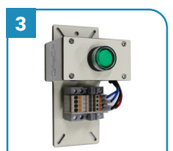
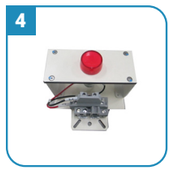
ST.HE.A3010 LIGHTNING PROTECTION SYSTEM INSTALLATION PRACTICE KIT

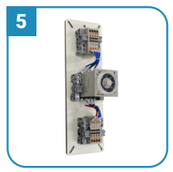
EQUIPMENT LIST

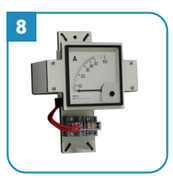
No	Name	Code
1	01 Circuit Breaker Installation Training Module	TPAB.E0900
2	01 Contactor Installation Training Module	TPAB.F0200
3	01 Green Push Button Installation Training Module	TPAB.G6100
4	01 Red Push Button Installation Training Module	TPAB.G6000
5	01 Time Relay Installation Training Module	TPAB.E5200
6	01 Fuse Installation Training Module	TPAB.F6300
7	01 AC Voltage Meter Installation Training Module	TPAB.H2100
8	01 AC Current Meter Installation Training Module (10 AAC)	TPAB.H0500
9	01 AC Current Meter Installation Training Module (1 AAC)	TPAB.H0600
10	1 Lightning Protection Training Module	TPAB.I1000
11	01 Resistor Training Module	TPAB.A0600

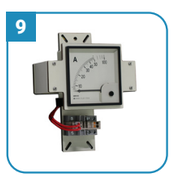


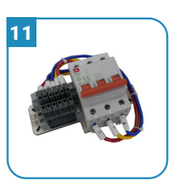












TRAINING CONTENT

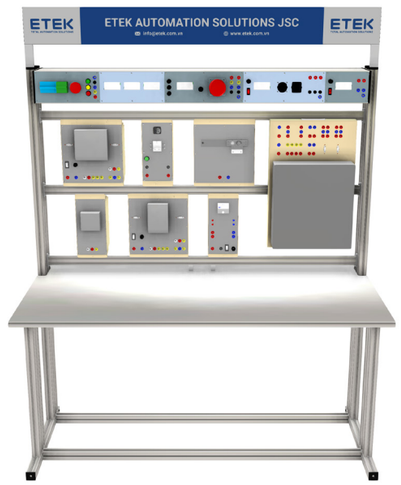
- The equipment set is designed as separate modules with standard sizes and the same connection standards, helping to flexibly connect devices during practice and easily upgrade products.
- Intermediate terminals for all input and output of power circuits as well as control circuits. Connecting through the terminal will prevent students from directly operating the equipment, helping to increase the life of the equipment.
- Identify the devices in the lightning protection system
- Connecting devices, practicing lightning protection

SKILLS ACQUIRED

- Distinguish between electrical devices such as atomat, fuse, contactor, starter, relay, push button
- Understand the function of each electrical device in the circuit
- Gain knowledge about the structure and operating principles of electrical devices
- Understand the methods of measuring, detecting errors, and troubleshooting in control circuits.

HE.A0600 ACCESS CONTROL SYSTEM INSTALLATION PRACTICE KIT

EQUIPMENT LIST



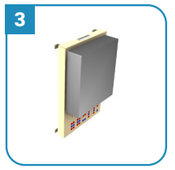
No	Name	Code
1	SINGLE-PHASE POWER TRAINING MODULE	TPAC.A2100
2	DC POWER TRAINING MODULE	TPAC.A5110
3	ACCESS CONTROL CENTER TRAINING MODULE	TPAH.D8300
4	RFID CARD READER TRAINING MODULE WITH DISPLAY	TPAH.D8400
5	FINGERPRINT READER TRAINING MODULE WITH DISPLAY	TPAH.D8500
6	DOOR LOCK TRAINING MODULE	TPAH.D8600
7	EXIT BUTTON TRAINING MODULE	TPAH.D6400
8	01 set of accessories	

TRAINING CONTENT

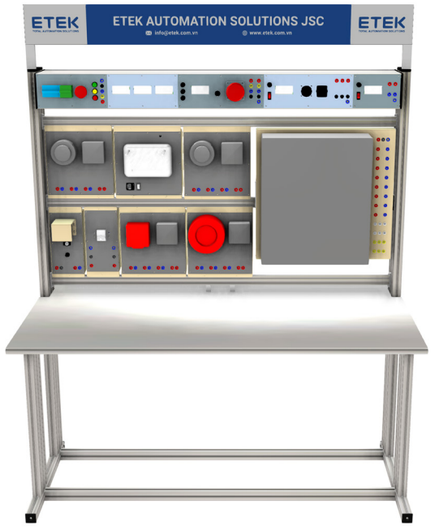
- Learn the function and role of the device in the access system
- Connect and configure the access device
- Practice direct access control using card reader or fingerprint reader
- Practice access control using central controller and WEIGAND communication
- Practice access control using central controller and RS485 communication

SKILLS ACQUIRED

- Understand the roles and components required in an access system
- Manage, monitor, and report access rights
- Detect and resolve incidents involving unauthorized access or access policy violations.
- Set up and configure devices and software using tools and technologies

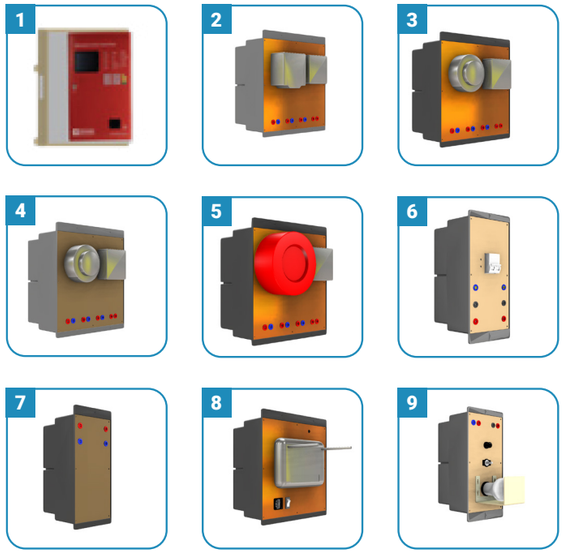


HE.A0700 FIRE ALARM SYSTEM INSTALLATION PRACTICE KIT



EQUIPMENT LIST

No	Name	Code
1	ADDRESSABLE FIRE ALARM CONTROL CENTER TRAINING MODULE	TPAH.D6800
2	ADDRESSABLE CALL POINT TRAINING MODULE	TPAH.D6900
3	ADDRESSABLE SMOKE DETECTOR TRAINING MODULE	TPAH.D7000
4	ADDRESSABLE HEAT DETECTOR TRAINING MODULE	TPAH.D7100
5	ADDRESSABLE ALARM BELL TRAINING MODULE	TPAH.D7200
6	SINGLE PHASE POWER TRAINING MODULE	TPAC.A2110
7	BATTERY TRAINING MODULE	TPAH.E8140
8	INSTALLATION TRAINING MODULE SET WIFI	TPAB.Y0200
9	INCANDET LAMP TRAINING MODULE	TPAB.A9700



TRAINING CONTENT

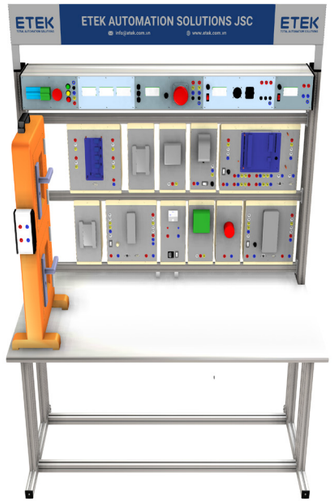
- Learn the functions and roles of devices in the fire alarm system
- Practice connecting and setting alarms with temperature sensors
- Practice connecting and setting alarms with smoke sensors
- Practice connecting and configuring addressable fire alarm systems and sending data to the cloud

SKILLS ACQUIRED

- Understand the operating principles and components required for an addressable fire alarm system
- Install and configure the system
- Design and calculate equipment and system installation location
- Check and maintain the system
- Analyze and identify fire alarm situations

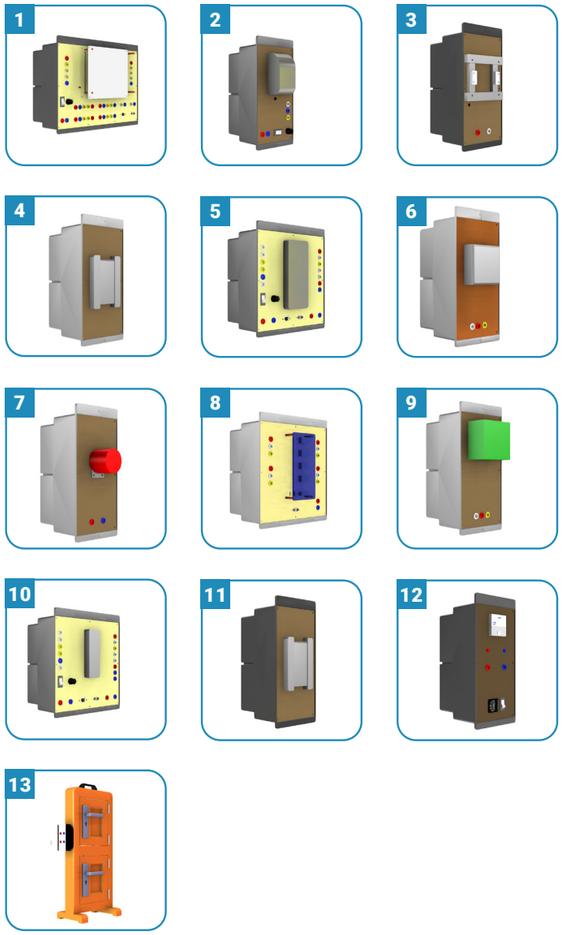
ELECTRICAL ENGINEERING TRAINING

HE.A0300 FIRE ALARM SYSTEM INSTALLATION PRACTICE KIT



EQUIPMENT LIST

No	Name	Code
1	CENTRAL CONTROL TRAINING MODULE	TPAH.D5800
2	MOTION SENSOR TRAINING MODULE	TPAH.D5900
3	DOOR SENSOR TRAINING MODULE	TPAH.D6000
4	RFID CARD READER TRAINING MODULE	TPAH.D6100
5	FACE RECOGNITION TRAINING MODULE	TPAH.D6200
6	EXIT BUTTON TRAINING MODULE	TPAH.D6400
7	ALARM TRAINING MODULE	TPAH.D6600
8	IO EXPANSION TRAINING MODULE	TPAH.D6700
9	EMERGENCY BUTTON TRAINING MODULE	TPAH.D6500
10	TIME ATTENDANCE MACHINE TRAINING MODULE	TPAH.D8800
11	RFID READER WRITE TRAINING MODULE	TPAH.D8900
12	DC POWER MODULE	TPAC.A5100
13	MAGNETIC LOCK TRAINING MODULE	TPAH.D6300



TRAINING CONTENT

- Know the hardware structure of the device in the security system
- Connecting the power supply to the device in the security system
- Know how to declare and configure the device.
- Practice setting alarm when moving people is detected.
- Practice opening the door with a push button and emergency button
- Practice opening the door with a face, fingerprint, rfid card,..

SKILLS ACQUIRED

- Understand the operating principles and equipment functions of the system
- Configuration and installation of the safety system
- Set up and manage users
- Connect and control the alarm system

HE.A0800 TELEPHONE EXCHANGE SYSTEM PRACTICE KIT

EQUIPMENT LIST

No	Name	Code
1	1. SWITCHBOARD CONTROL TRAINING MODULE	TPAH.D7300
2	2. WIRED DESKTOP PHONE TRAINING MODULE	TPAH.D7400
3	3. DSS CONTROL KEYBOARD TRAINING MODULE	TPAH.D7500
4	4. DOORPHONE TRAINING MODULE	TPAH.D7600
5	5. DOOR LOCK TRAINING MODULE	TPAH.D7700
6	6. Circuit breaker training module	TPAC.A2100
7	7. DOOR LOCK CONTROL MODULE	TPAH.D7610
8	8. NETWORK SWITCH TRAINING MODULE	TPAD.K0130
9	9. DC POWER MODULE	TPAC.A5110
10	01 set of accessories	

TRAINING CONTENT

- Introduction to IP PBX System
- Functions and Roles of Devices in the System
- System Configuration and Setup
- Practice Learning How to Configure and Communicate Internally
- Practice Collecting and Controlling Doorbells

SKILLS ACQUIRED

- Understand the operating principles and device functions of the system
- Configuration and installation of the switchboard system
- Set up and manage users
- Manage and monitor calls
- How to secure the system

INSTALLATION AND WIRING SKILLS TRAINING

ALUMINUM BOX

DESIGN CONCEPT

ST.IE.A1102E 1-PHASE AND 3-PHASE MOTOR ELECTRICAL INSTALLATION PRACTICE SET (INCLUDING AUTOMATION STUDIO AND INTER-ACTIVE SOFTWARE)

TRAINING CONTENT

- Calculate equipment selection, design and simulate electrical circuits on Automation Studio software
- Connect hardware devices, interact and collect hardware status synchronously on the software
- Practice installing the circuit to start and stop a 3-phase squirrel-cage rotor motor using a single contactor.
- Practice installing the circuit to start a 3-phase squirrel-cage rotor motor using the star-delta connection method (manual control)
- Practice installing the circuit to start a 3-phase squirrel-cage rotor motor using the star-delta connection method (automatic control).
- Practice installing the circuit to control a 3-phase squirrel-cage rotor motor combined with reversing rotation and starting the machine using the star-delta connection method.
- Practice installing the circuit to start a 3-phase squirrel-cage rotor motor via an inductor.
- Practice installing the starting circuit of a 3-phase squirrel-cage motor using a single-contact starter, with dynamic braking when stopping
- Practice installing the starting circuit of a 3-phase squirrel-cage motor using the star-delta connection method, with dynamic braking when stopping.
- Practice installing the control circuit of a 3-phase squirrel-cage motor rotating in two directions with overload and short-circuit protection.
- Practice installing the control circuit of a 3-phase squirrel-cage motor rotating in two directions with overload protection, phase loss protection, low voltage and overvoltage protection, overcurrent protection.
- Practice installing the control circuit of a 3-phase squirrel-cage motor rotating in two directions with time control

SKILLS ACQUIRED

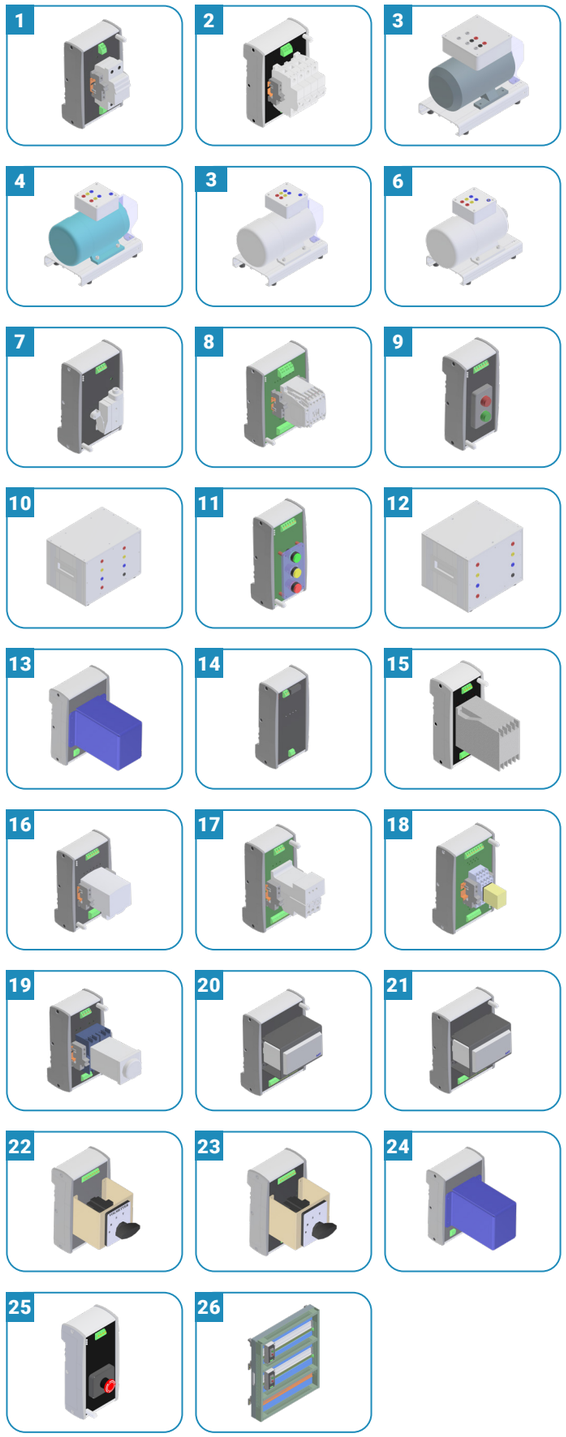
- Distinguish between electrical devices such as atomat, fuse, light bulbs, ceiling fans, electric meters, switches, sockets, timers
- Understand the functions of each electrical device (atomat, fuse, contactor, socket, switch, lighting, ceiling fans, electric meters, timers) in civil and industrial electrical circuits
- Understand the operating principles of some electrical circuits used in civil and industrial use: On/Off light circuit, light circuit with double switch, reversing circuit (used on stairs), high-voltage light circuit, call device circuit (electric bell)
- Understand the structure of each device commonly used in civil and industrial electricity: Atomat, circuit breaker, switches, sockets, lighting, electric meters
- Read the parameters written on the labels of devices such as: Working voltage (U), capacity (P), device limit current (A), working temperature (t), insulation level. From there, choose the appropriate equipment for installation.
- Understand the assembly and connection methods for electrical equipment used in civil and industrial electrical circuits
- Understand the structure of the equipment, the parameters of the equipment, the working principle, so that depending on each application in civil or industrial electricity, you can choose the appropriate equipment for installation.

ELECTRICAL ENGINEERING TRAINING

ST.IE.A1102E 1-PHASE AND 3-PHASE MOTOR ELECTRICAL INSTALLATION PRACTICE SET (INCLUDING AUTOMATION STUDIO AND INTER-ACTIVE SOFTWARE)

EQUIPMENT LIST

No	Name	Code
1	01 Single-phase Circuit Breaker Training Module	TPAN.C0101
2	01 Three-phase Circuit Breaker Training Module	TPAN.C1301
3	01 AC Motor Training Module (1-phase KDB type with squirrel cage rotor)	TPAE.E0200
4	01 AC Motor Training Module (3-phase KDB type with 2-speed squirrel cage rotor)	TPAE.F0100
5	01 AC Motor Training Module (3-phase KDB type with squirrel cage rotor Y/D - 380/220V)	TPAE.F0300
6	01 AC Motor Training Module (3-phase KDB type with squirrel cage rotor Y/D - 660/380V)	TPAE.F0920
7	02 Switch Training Module (stroke)	TPAN.D3001
8	06 Contactor Training Module	TPAN.C2001
9	02 Push Button Training Module	TPAN.D0101
10	01 Motor Starting Reactor Training Module	TPAB.B5600
11	01 Indicator Light Training Module	TPAN.D5001
12	01 3-brake resistor training module	TPAB.A5000
13	01 Transformer Training Module	TPAE.L1300
14	01 Bridge Rectifier Module (1-phase)	TPAJ.E3000
15	01 Voltage Relay Training Module	TPAN.C8200
16	01 Relay Training Module le dong dien	TPAN.C7300
17	02 Thermal relay training module	TPAN.C4200
18	02 Intermediate relay training module (220VAC)	TPAN.C5500
19	03 Time relay training module	TPAN.C6200
20	01 AC voltage meter training module (digital indicator)	TPAN.I1001
21	01 AC current meter training module (digital indicator)	TPAN.I0101
22	01 Switching training module (volt switching)	TPAJ.D2200
23	01 Switching training module (Ampere switching)	TPAJ.D2100
24	01 Push button installation training module (emergency stop button)	TPAI.L1200
25	02 Specialized panels for electrical installation	TPAN.D4001
26	01 Practice accessory set	TPAB.K7005
27	01 Technical documentation set	



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ST.HE.A1000X SMART HOME ELECTRICAL INSTALLATION KIT (KNX)

TRAINING CONTENT

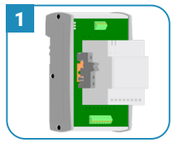
- Practice learning the structure and function of a single-phase AC motor with only a starting capacitor
- Practice configuring infrared sensors in a smart home system
- Practice controlling curtains with knx digital inputs
- Practice controlling curtains with knx conventional push buttons
- Practice configuring and connecting knx devices with software
- Practice linking devices between 2 rooms
- Practice controlling fluorescent light intensity with knx light sensors
- Practice controlling incandescent bulbs with knx smart push buttons
- Practice controlling curtains with knx smart push buttons

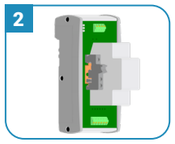
ELECTRICAL ENGINEERING TRAINING

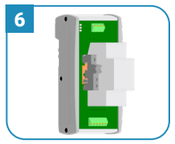
ST.HE.A1000X SMART HOME ELECTRICAL INSTALLATION KIT (KNX)

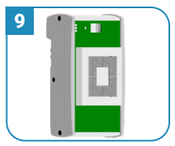
LIST OF PRACTICES

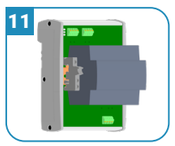
No	Name	Code
1	1. KNX control relay training module	TPAH.C3010
2	2. KNX curtain control training module	TPAH.C2010
3	3. KNX incandescent lamp control training module	TPAH.C4400
4	4. LED light control training module	TPAH.C4300
5	5. Touch screen training module	CHTF-5.0/15.3.21
6	6. KNX digital input training module	TPAH.C7810
7	7. Motion sensor (PIR) + light (lux) training module	CSB-PC-02/00.1
8	8. KNX line coupling training module	TPAH.C5200
9	9. KNX eight-key smart push button training module	TPAH.C0110
10	10. KNX/USB interface kit	BNUS-00/00.1
11	11. KNX power supply training module	TPAH.C1010
12	12. Internet control communication training module	BTAS-KNX/485.1
13	13. Incandescent lamp training module	TPAH.A0200
14	14. Signal light, siren training module	TPAJ.D5200
15	15. Curtain training module	TPAH.C8200
16	16. Circuit breaker training module	TPAJ.C0800
17	17. Led light training module	TPAH.C0700
18	18. DC power supply module	-
19	19. Wifi transmitter	-
20	20. Accessories set	-
21	21. Technical documentation set	-
22	22. Programming software KNX program	-

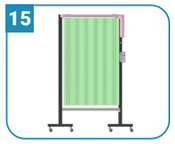


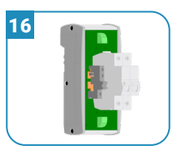












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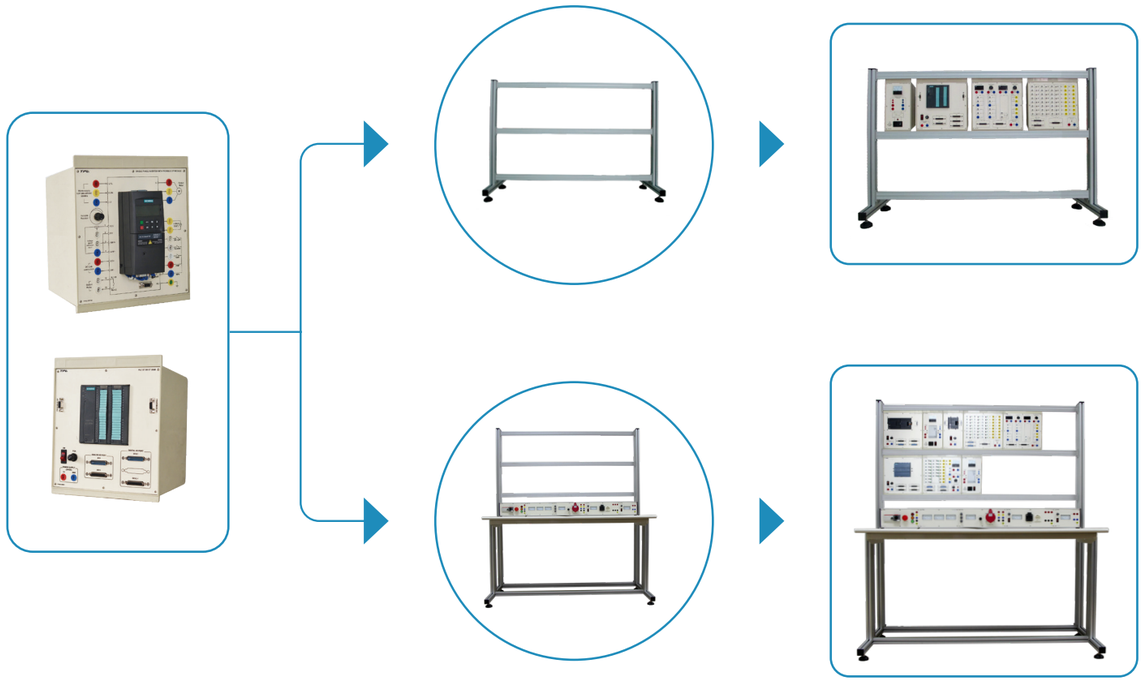
DESIGN CONCEPT



AUTOMATION TRAINING EQUIPMENT

LIST OF PRACTICES


ST.PE.A2001


ST.PE.A2010


ST.PE.A1010


ST.PE.A1020


ST.PE.A1030

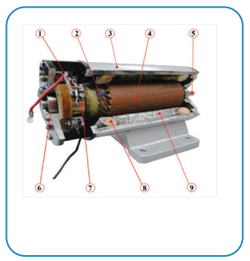

ST.PE.A1040

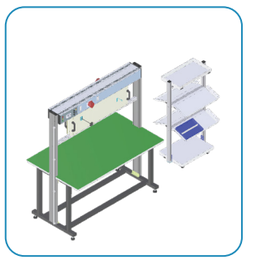

ST.PE.A0120


ST.PE.A0300


ST.PE.A0310


ST.PE.A0320


ST.IE.A6101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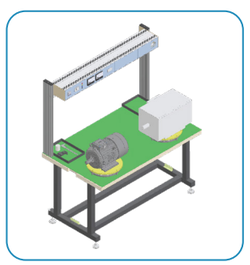

ST.PE.A0200


TPAB.L9220

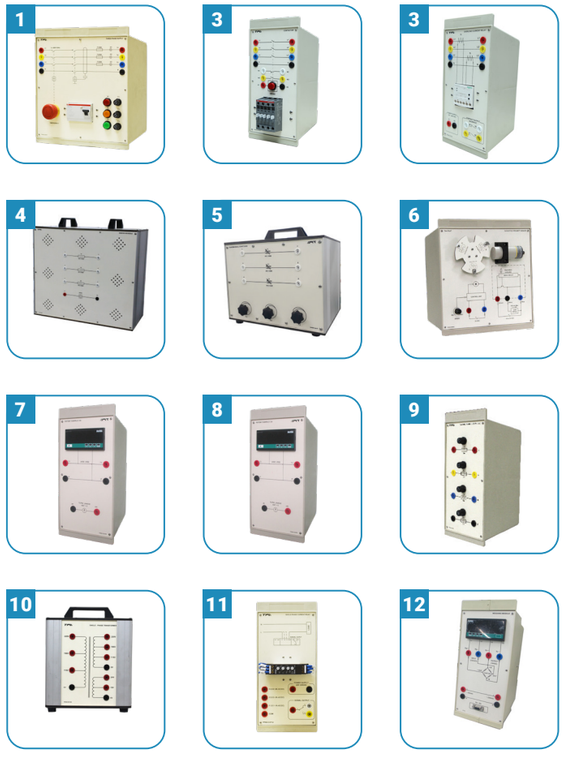
ST.PE.A2001 SINGLE PHASE TRANSFORMER PRACTICE SET

EQUIPMENT LIST

No	Name	Code
1	01 AC power module	TPAD.C0101
2	01 Contactor training module	TPAD.C2101
3	01 Current relay training module (3 phase)	TPAD.C3710
4	01 Three-phase resistive load training module	TPAD.B0221
5	01 Capacitive load training module	TPAD.B0421
6	01 Inductive load training module	TPAD.B050X
7	03 AC current meter training module (digital indicator)	TPAD.I0201
8	03 AC voltage meter training module (digital indicator)	TPAD.I1201
9	01 Fuse training module	TPAD.C6701
10	01 Transformer training module (1 phase)	TPAD.E4102
11	01 Current relay training module (1 phase)	TPAD.C3712

TRAINING CONTENT

- No-load state test of single-phase transformer
- Short-circuit state test of single-phase transformer.
- Resistive load characteristic test.
- Inductive load characteristic test.
- Capacitive load characteristic test.



SKILLS ACQUIRED

- Understand the working principle of single-phase and three-phase transformers. Uses of transformers.
- Understand the characteristics of the device when operating in no-load, loaded, and short-circuit modes.
- Calculate voltage and transformer capacity according to application problems.
- Know how to connect transformers in practice.
- Safety in industrial electrical circuits.

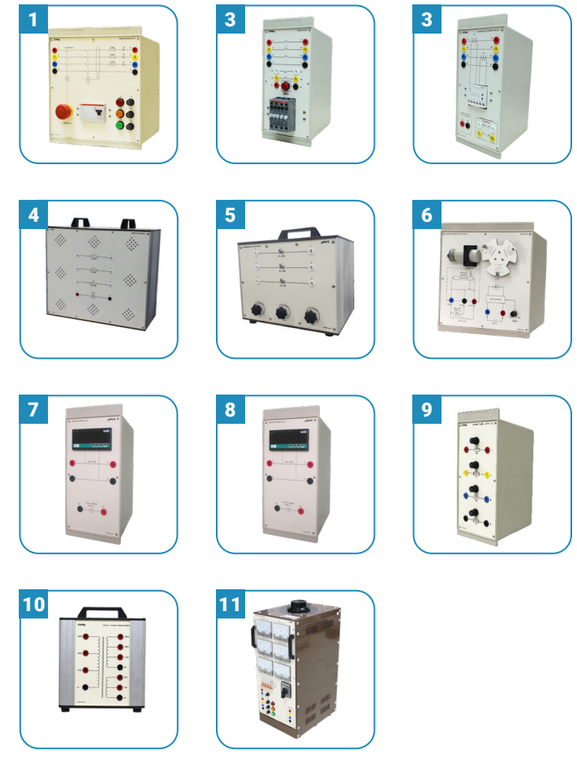
ST.PE.A2010 THREE PHASE TRANSFORMER EXERCISE SET

EQUIPMENT LIST

No	Name	Code
1	01 AC power module	TPAD.C0101
2	01 Contactor training module	TPAD.C2101
3	01 Current relay training module (3 phase)	TPAD.C3710
4	01 Three-phase resistive load training module	TPAD.B0221
5	01 Capacitive load training module	TPAD.B0421
6	01 Inductive load training module	TPAD.B050X
7	03 AC current meter training module (digital indicator)	TPAD.I0201
8	03 AC voltage meter training module (digital indicator)	TPAD.I1201
9	01 Fuse training module	TPAD.C6701
10	01 Transformer training module (3 phase)	TPAD.E4203
11	01 Transformer training module (3-phase stepless transformer)	TPAD.E5701

TRAINING CONTENT

- Transformer wiring test: star-star, star-delta, delta-star, delta-delta.
- Transformer polarity test.
- 3-phase transformer no-load test.
- 3-phase transformer short-circuit test.
- Resistive load characteristic test.
- Inductive load characteristic test.
- Capacitive load characteristic test.



SKILLS ACQUIRED

- Understand the working principle of single-phase and three-phase transformers. Uses of transformers.
- Understand the characteristics of the device when operating in no-load, loaded, and short-circuit modes.
- Calculate voltage and transformer capacity according to application problems.
- Know how to connect transformers in practice.
- Safety in industrial electrical circuits.

ST.PE.A1010 SINGLE PHASE MOTOR CONTROL PRACTICE SET

EQUIPMENT LIST

No	Name	Code
1	01 AC motor training module (single phase with only starting capacitor)	TPAD.E6402
2	01 AC motor training module (single phase with only running capacitor)	TPAD.E6001
3	01 AC motor training module (single phase with starting capacitor and running capacitor)	TPAD.E6101
4	01 AC power module	TPAD.C0101
5	01 Contactor training module	TPAD.C2110
6	01 Contactor training module	TPAD.C2610
7	01 Contactor training module	TPAD.C6701
8	01 Fuse training module	TPAD.I1201
9	01 AC current meter training module	TPAD.I1101
10	01 AC voltage meter training module	TPAD.I5205
11	01 Tachometer training module	TPAD.I6003
12	01 Encoder training module	TPAD.C4601
13	01 Push button training module	TPAD.B0104













TRAINING CONTENT

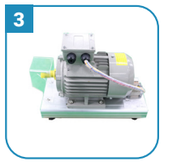
- Connecting a 1-phase AC motor
- Learning the principle of a 1-phase AC motor speed controller
- Assembling and aligning the motor
- Assembling and changing different types of gearboxes, advantages and disadvantages of different types of gearboxes and evaluating

ST.PE.A1020 3-PHASE SQUIRREL CAGE ROTOR MOTOR CONTROL PRACTICE SET

EQUIPMENT LIST

No	Name	Code
1	AC motor training module (three-phase squirrel cage rotor 0.75 kW)	TPAE.F0300
2	AC motor training module (3-phase squirrel cage rotor 2-speed type)	TPAE.F0100
3	AC motor training module (3-phase squirrel cage rotor Y/D type - 660/380V)	TPAE.F0920
4	AC power module	TPAC.A2200
5	Contactor training module	TPAC.C1000
6	Starter training module	TPAC.D0300
7	Motor starting reactor training module	TPAB.B5600
8	Fuse training module	TPAC.I0100
9	AC current meter training module	TPAI.B2300
10	AC voltage meter training module	TPAI.B2000
11	Switch training module (volt switching)	TPAC.G0100
12	Speed meter training module (digital)	TPAI.I2500
13	Encoder training module	TPAI.M0300
14	Push button training module	TPAC.F4000














TRAINING CONTENT

- Practice direct-on-line (DOL) motor starting circuit using a contactor
- Practice motor starting circuit through a reactor (autotransformer starting)
- Connect and control the rotation direction of a three-phase motor
- Practice star-delta (Y-Δ) motor starting circuit
- Practice two-speed motor control circuit
- Perform no-load testing
- Test torque, speed, and current characteristics

SKILLS ACQUIRED

- Understand the working principle of single-phase and three-phase transformers. Uses of transformers.
- Understand the characteristics of the device when operating in no-load, loaded, and short-circuit modes.
- Calculate voltage and transformer capacity according to application problems.
- Know how to connect transformers in practice.
- Safety in industrial electrical circuits.

ST.PE.A1030 3-PHASE MOTOR CONTROL PRACTICE SET WITH WOUND ROTOR

EQUIPMENT LIST

No	Name	Code
1	01 Motor starting resistance training module	TPAD.B0314
2	01 Motor starting resistance adjustment training module	TPAD.B0731
3	03 AC current meter training module	TPAD.I0107
4	01 AC motor training module (3-phase motor with 1.5kw wound rotor with brake)	TPAD.E6703
5	01 AC voltage meter training module	TPAD.I1101
6	01 Motor armature resistance adjust-ment training module	TPAD.B0730
7	01 Three-phase circuit breaker training module	TPAD.C1330

TRAINING CONTENT

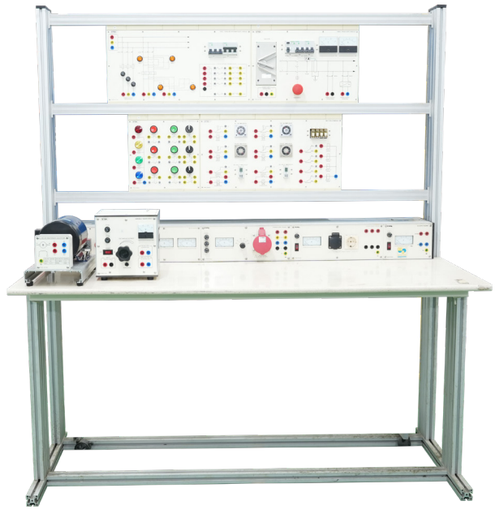
- Control circuit to start a 3-phase motor with wound rotor through 3 levels of manual auxiliary resistance.
- Practice adjusting the speed of a 3-phase motor with wound rotor by controlling the armature resistance

SKILLS ACQUIRED

- Understand the working principle of a 3-phase motor with a wound rotor.
- Understand the method of starting a motor using an auxiliary resistor.
- How to control the speed of a motor using an auxiliary

AUTOMATION TRAINING EQUIPMENT

ST.PE.A1040 DC MOTOR CONTROL PRACTICE SET



EQUIPMENT LIST

No	Name	Code
1	DC Motor Control Training Module	TPAE.D2100
2	DC Motor Training Module	TPAE.G6000

TRAINING CONTENT

- * Independently excited DC motor
- Connection and control of rotation direction
- Testing the torque-speed characteristics
- * Parallel-connected DC motor
- Connection and control of rotation direction
- Testing the torque-speed characteristics
- * Series-connected DC motor
- Connection and control of rotation direction
- Testing the torque-speed characteristics
- * Mixed-connected DC motor
- Connection and control of rotation direction of short-tap mixed-excited DC motor
- Connection and control of rotation direction of long-tap mixed-excited DC motor
- Testing the torque-speed characteristics of short-tap mixed-excited DC motor

SKILLS ACQUIRED

- Understand the working principle of DC generator.
- Principle of generator output voltage control.
- Effect of load on generator output.
- Measurement of system parameters
- Using measuring instruments.

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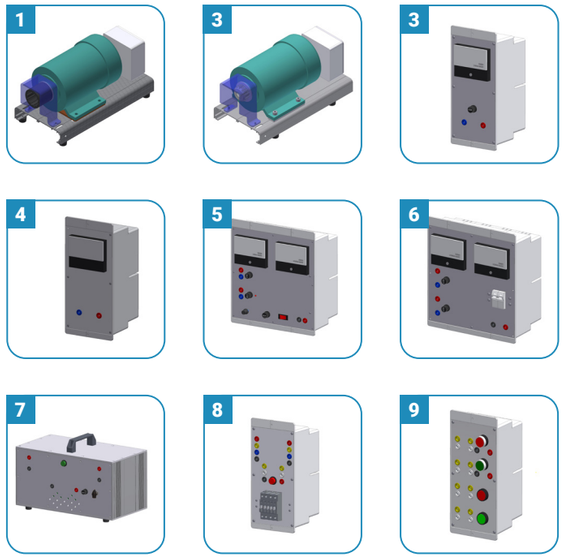
ST.PE.A0120 REVERSIBILITY TEST SET FOR ELECTRICAL MACHINES

EQUIPMENT LIST

No	Name	Code
1	01 DC motor training module (independent excitation)	TPAD.E6501
2	01 DC motor training module (compound excitation)	TPAD.E6508
3	01 DC current meter training module	TPAD.I0301
4	01 DC voltage meter training module	TPAD.I1301
5	01 DC power supply module (source type 0~200VDC/5A, 200VDC/2A)	TPAD.E5705
6	01 DC power supply module (2 output type 200VDC/5A)	TPAD.E5704
7	01 Single-phase resistive load training module	TPAD. B0324
8	01 Contactor training module	TPAD. C2110
9	01 Push button training module	TPAD. C4601
10	01 Accessory set	

TRAINING CONTENT

- Study the operating principle of DC machines in motor and generator modes
- Motor mode test:
- No-load characteristic test
- Load characteristic test
- Motor speed control test by changing armature voltage
- Motor reversing test
- Generator mode test:
- Short circuit test.
- Generator voltage control test.
- Load test (Resistive load)



SKILLS ACQUIRED

- Understand the working principle of a 3-phase motor with a wound rotor.
- Understand the method of starting a motor using an auxiliary resistor.
- How to control the speed of a motor using an auxiliary resistor.
- Skills in using electrical measuring instruments.

ST.PE.A0300 THREE-PHASE AC GENERATOR TEST KIT

EQUIPMENT LIST

No	Name	Code
1	01 AC Power Supply Module	TPAD.C0101
2	01 AC Generator Training Module	TPAD.E7731
3	01 Frequency Inverter Training Module	TPAD.E01XX
4	01 Excitation Control Training Module	TPAD.E5707
5	01 AC Voltage Meter Training Module	TPAD.I4301
6	03 AC Current Meter Training Module	TPAD.I0101
7	01 Frequency Meter Training Module	TPAD.I4203
8	01 Power Factor Meter Training Module	TPAD.I3301
9	01 Three-Phase Power Meter Training Module	TPAD.I230X
10	03 Three-Phase Resistive Load Training Module	TPAD.B0221
11	01 Inductive Load Training Module	TPAD.B0421
12	01 Capacitive Load Training Module	TPAD.B0509
13	03 Current Transformer Training Module	TPAD.C3710

TRAINING CONTENT

- Connecting the inverter to the motor-generator and Excitation
- Setting parameters on the inverter to match the motor
- Practice controlling the excitation of the generator manually or automatically
- Practice controlling the speed of the electric drive system
- Practice controlling and measuring the generator voltage
- Practice controlling and measuring the generator frequency
- Practice investigating the resistive load characteristics
- Practice investigating the inductive load characteristics
- Practice investigating the capacitive load characteristics
- Practice investigating the R-L-C load characteristics

ST.PE.A0310 SINGLE PHASE AC GENERATOR TEST SET

EQUIPMENT LIST

No	Name	Code
1	01 AC Power Supply Module	TPAD.C0520
2	01 AC Generator Training Module	TPAD.E7731
3	01 Inverter Training Module	TPAD.E01XX
4	01 Generator Excitation Control Training Module	TPAD.E5707
5	01 AC Voltage Meter Training Module	TPAD.I1104
6	01 AC Current Meter Training Module	TPAD.I0101
7	01 Frequency Meter Training Module	TPAD.I4102
8	01 Power Factor Meter Training Module	TPAD.I3201
9	01 Single Phase Resistive Load Training Module	TPAD.B0221
10	01 Inductive Load Training Module	TPAD.B0421
11	01 Capacitive Load Training Module	TPAD.B05XX

TRAINING CONTENT

- * Theory:
- Learn the operating principles of electrical instruments in the model
- Learn the methods of controlling the output voltage of the generator
- * Practice:
- Connecting the inverter to the motor-generator and Excitation
- Setting parameters on the inverter suitable for the motor
- Practice controlling the excitation of the generator manually or automatically
- Practice controlling the speed stability of the electric drive system
- Practice controlling and measuring the generator voltage
- Practice controlling and measuring the generator frequency
- Practice investigating the characteristics of resistive loads
- Practice investigating the characteristics of inductive loads
- Practice investigating the characteristics of capacitive loads

ST.PE.A0320 THREE-PHASE GENERATOR SYNCHRONIZATION MODEL

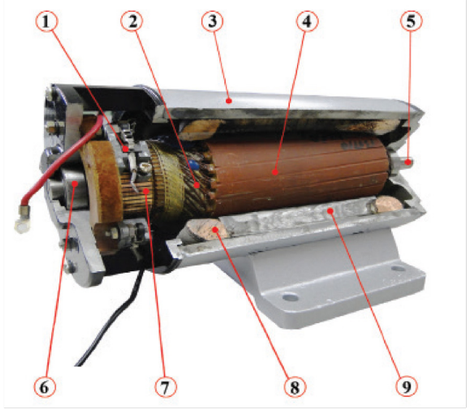
EQUIPMENT LIST

No	Name	Code
1	01 AC power module	TPAD.C0101
2	01 AC generator training module	TPAD.E7731
3	01 Generator excitation control training module	TPAD.E5707
4	01 Inverter training module	TPAD.E01XX
5	01 AC voltage meter training module (dual voltage display)	TPAD.I4301
6	01 Frequency meter training module (dual frequency measurement)	TPAD.I4203
7	01 Phase sequence display training module	TPAD.I6601
8	01 Synchronization control training module	TPAD.E7302
9	01 Grid connection switching module	TPAD.C2110
10	01 Overcurrent protection module	TPAD.C3710
11	01 Push button training module	TPAD.C4606
12	01 Switch training module (emergency stop)	TPAD.C2614
13	01 Rotating lamp synchronization training module	TPAD.B7310

TRAINING CONTENT

- Practice adjusting and measuring generator voltage
- Practice adjusting and measuring generator frequency
- Practice synchronizing generator with grid manually using rotating lamp method
- Practice semi-automatic synchronization
- Practice adjusting reactive power
- Practice adjusting active power.
- Generator overcurrent protection.

ST.IE.A6101 ENGINE CUT AWAY



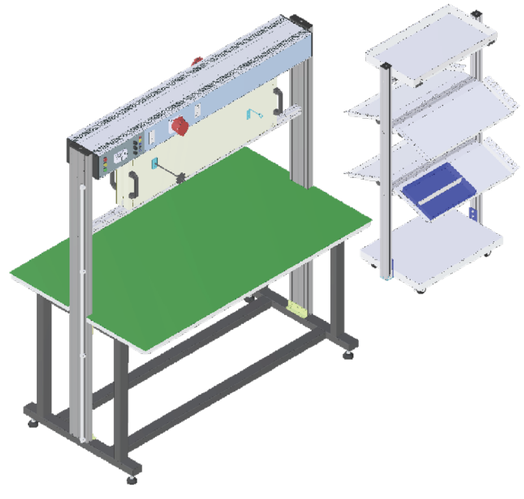
EQUIPMENT LIST

No	Name	Code
1	Operable single-phase AC motors	
2	Operate separately excited DC motors	
3	Operate compound excited DC motors	
4	Operate three-phase synchronous motors	
5	Operate three-phase wound rotor motors	
6	Operate three-phase squirrel cage rotor motors	
7	Symbolic generator sectioning model	

TRAINING CONTENT

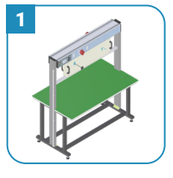
- The module is used in teaching theory and practice of electrical profession. Helps students understand the structure and operating principle of three-phase squirrel cage rotor motors.

ST.PE.A0110 ELECTRICAL MACHINE WINDING PRACTICE SET



EQUIPMENT LIST

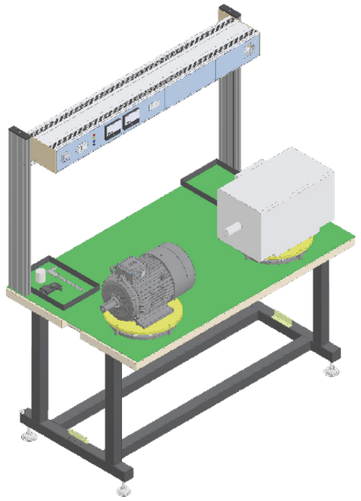
No	Name	Code
1	01 Electrical Machine Disassembly Practice Table	TPAB.L9010
2	04 Manual Wire Winding Machine	TPAB.K6400



TRAINING CONTENT

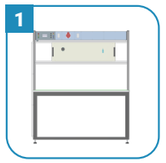
- The module is used in teaching theory and practice of electrical profession. Helps students understand the structure and operating principle of three-phase squirrel cage rotor motors.

ST.PE.A0200 EQUIPMENT SET FOR PRACTICAL REPAIR OF LARGE POWER ELECTRICAL MACHINES



EQUIPMENT LIST

No	Name	Code
1	Electric Machine Repair Disassembly Table	TPAB.L9022
2	Electrical Machine Set for Repair Practice	TPAD.G9000



TRAINING CONTENT

- Practice disassembling and assembling motors and transformers
- Find faults and repair mechanical and electrical faults of electrical machines
- Electrical machines are placed on a specialized disassembly table with a tray for repair tools
- Check the motor's appearance
- Check the housing, stator
- Check the connections
- Check the rotor
- Check the bearing, lubricate the bearing
- Check the bearing cover, oil leakage
- Check the heat level
- Clean the motor
- Disassemble and replace components
- Disassemble the motor housing
- Disassemble the rotor
- Disassemble the bearing

TPAB.L9220 ELECTRICAL MACHINE CHARACTERISTICS LABORATORY

EQUIPMENT LIST

No	Name	code
1	1. Electrical machine characteristics test bench	TPAB.L9220
2	2. 3-phase inverter training module	TPAE.L1700
3	3. 1-phase inverter training module	TPAE.L1310
4	4. 0.75kW squirrel-cage 3-phase AC motor training module	TPAE.F0310
5	5. 0.75kW squirrel-cage 1-phase AC motor training module	TPAE.E1220
6	6. 0.75kW 3-phase synchronous motor/generator training module	TPAE.F3700
7	7. 0.75kW independently excited DC motor training module	TPAE.G0110
8	8. Torque and speed sensor training module	TPAS.A4010
9	9. 1.5kW electromagnetic brake training module	TPAB.D6010
10	10. Software	
11	11. Practice accessories	
12	12. User manual, practice guide	

TRAINING CONTENT

- Connecting the inverter to the motor-generator and Excitation
- Setting parameters on the inverter to match the motor
- Practice controlling the excitation of the generator manually or automatically
- Practice controlling the speed of the electric drive system
- Practice controlling and measuring the generator voltage
- Practice controlling and measuring the generator frequency
- Practice investigating the resistive load characteristics
- Practice investigating the inductive load characteristics
- Practice investigating the capacitive load characteristics
- Practice investigating the R-L-C load characteristics