



ELECTRICAL AND ELECTRONIC TRAINING EQUIPMENT

"CWWK-LABS" EDUCATIONAL
EQUIPMENT MANUFACTURED IN
FERGANA POLYTECHNIC INSTITUTE

VIEW OF MODERN WORLD WITH A DIGITAL LOOK



Electric skills and technologies learning device

P.N.: CWWKET-1001

Picture for reference:



Technical parameters:

Size: 1500mm × 700mm × 1700mm

Power supply: 3 faza, AC~380V/50Hz

Weight: 150kg

Description

It is used for testing electrical skills and technology training, circuit design, electrical components, wiring, installation commissioning, fault detection and maintenance.

Product composition

No	Name	Specs	QTY
1	Training bench		1pcs
2	Experimental table		1pcs
3	AC contactor	CJX0910 380V	3pcs
4	Auxiliary contactor	F4-22	2pcs
5	Thermal relay	JR36-20 1A-2A	1pcs
6	Button switch box	LA10-2H	2pcs
7	Terminal block	TD1510	1pcs
8	Reverse switch	KO3-15	1pcs
9	Low Voltage Circuit Breaker	DZ47-63 3P C16	1 pcs
10	Rail type fuse	RT18-32X 3A	5 pcs
11	Travel switch	LX19—001	2 pcs
12	Single-phase watt-hour meter		1 pcs
13	Voice-activated switch		1 pcs
14	Plastic clamp		200 pcs
15	Screw		1 set

16	Fluorescent lamp holder	18W	1 pcs
17	Starter and starter holder		1 pcs
18	Ballasts	18W	1 pcs
19	Incandescent lamp holder		2 pcs
20	Double control wall switch		2 pcs
21	Ming box	86	2 pcs
22	Incandescent bulb	220V 40W	1 pcs
23	Travel switch	LX19—222	2 pcs
24	Touch delay switch		1 pcs
25	1*32 wire		1 pcs
26	Pistol plug wire	50CM	10 pcs
27	Pistol plug wire	80CM	10 pcs
28	Pistol plug wire	30CM	3 pcs
29	Three-phase motor	180W	1 pcs
30	Fluorescent tube	18W	1 pcs
31	Wire groove	60CM	2 pcs
32	Wire groove	50CM	2 pcs
33	C45 Terminal rail	50cm	1 pcs
34	Tools		1 set

Training courses

1. Lighting circuit
2. Fluorescent lamp circuit
3. Single-phase watt-hour meter circuit
4. Sound and light control street light circuit
5. Touch delay street light circuit
6. Double control staircase light circuit
7. Knife switch forward rotation control circuit
8. Contactor point control circuit
9. Self-locking forward rotation control circuit
10. Forward rotation control circuit with overload protection
11. Reversing switch control motor reversing circuit
12. Contactor interlock motor reversing control circuit
13. Button interlocked reversing control circuit
14. Contactors and buttons double interlock control circuit
15. Automatic round trip control circuit
16. Manual Y / Δ reduced voltage starting control circuit
17. Contactor switch Y / Δ starter control circuit

Electric drive and automation training device

P.N.: CWWKET-1002

Picture for reference:



Technical parameter

Dimension : About 1670mm×760mm×1730mm

Power supply : Three-phase, AC~380V/50Hz

Weight : about 200kg

Product description

This training device is suitable for subjects training of electrician, electrical, electrical control technology, electric drive control circuit and skills, electronic training and related experimental and educational subjects

Product composition

No.	Name	Specification	QTY
1	Training bench		1
2	Experimental table		1
3	Component box	DG04	1
4	Relay control experiment hanging box 1	DT01	1
5	Relay control experiment hanging box 2	DT02	1
6	PLC/Frequency converter hanging box	PLC01	1
7	Touch screen hanging box	CMP01	1
8	PLC module 1	PLC02	1
9	PLC module 2	PLC03	1
10	PLC module 3	PLC04	1
11	PLC Programming Line		1
12	Needle-nose pliers		1

13	Screwdriver		1
14	Self-locking wire		50
15	Pistol plug wire	50CM	16
16	Pistol plug wire	80CM	10
17	Watt-hour meter		1
18	Single - Chip Microcomputer experimental box		1
19	Velocimeter		1
20	Touch Screen Printer Line		1
21	Former deputy coil		1
22	IC Fittings		1
23	Motor (with Centrifugal switch)		1
24	Motor		1

Training courses

Part 1: Electric drive:

- 1: Three phase asynchronous motor point and self lock control
- 2: Three phase asynchronous motor reversing control
- 3: Sequence control
- 4: Control at two positions
- 5: Three phase squirrel cage induction motor reduced voltage starting
- 6: Three phase asynchronous motor brake control
- 7: Electrical control of lathe C620

Part 2: PLC/inverter/touch screen

- 1: Programming Practice of Basic Instruction.
 - (I) And or Invert Logic Function Experiment
 - (II) Timer/Counter Function Experiment
- 2: Simulation of Water Level Simulation Control of Water Tower
- 3: Control Simulation of Light of Sky Tower
- 4: Simulation of Automatic Loading Control
- 5: Simulation of Liquid Mix Device Simulation Control.
- 6: Simulation of Crossroad Traffic Light.
- 7: Automatic Control Forming Machine Simulation Control
- 8: Simulation of Mail Sorting Machine Simulation Control
- 9: Simulation of Full-Automatic Washing Machine Control
- 10: Simulation of Electroplating Production Line Control.
- 11: LED Digital Display Control.
- 12: Simulation of Manipulator Action.
- 13: Simulation of Five-phase Step Motor Control
- 14: Simulation of Assembly Line Control
- 15: Simulation of Four Section Conveyor Belt
- 16: Simulation of Rolling Mill Simulation Control.
- 17: PLC reversing control of Three-phase Asynchronous Motor
- 18: PLC Y- Δ Start Control of Three-phase Asynchronous Motor

Electronic technology experimental device

P.N.: CWWKET-1003

Picture for reference:



Technical parameter

Dimension: 1500x600x1700mm

Power supply : Three phase, AC380V/50Hz

Weight: About 150kg

Product description

The experimental device uses hanging box which makes it easy to carry out the experiment. It is an idea device for the training of analog circuit and digital circuit technology.

Product composition

No.	Name	Specs.	QTY
1	Training bench		1
2	Training table		1
3	Analog electronic hanging box	DZ01	1
4	Digital electronic hanging box	DZ02	1
5	Electrician basic hanging box 1	DG01	1
6	Electrician basic hanging box 2	DG02	1
7	Electrician basic hanging box 3	DG03	1
8	Component box	DG04	1
9	Relay control hanging box 1	DT01	1
10	Relay control hanging box 2	DT02	1
11	Pistol plug wire	50CM	16
12	Pistol plug wire	80CM	10
13	Motor with Centrifugal switch		1
14	Self-locking wire		50

15	Former deputy coil		1
16	IC Fittings		1
17	Watt-hour meter		1

No.	Item	Remarks
1	Experimental table	Wood and steel structure, iron spray, wear fire panel, with drawers and cabinets used to store tools, accessories
2	Power control panel	Contains post DC digital voltage and current power factor meter, two DC regulated power supply; constant current source, signal source, three-phase AC power supply, single-phase power and AC low voltage power supply
3	Experimental hanging box	Electrical Engineering Laboratory hanging box × 4set, analog electronic experimental hanging box × 1set, digital electronic experiments box × 1set, electric drive experiments box × 1set
4	180-watt three-phase asynchronous motor	Star / delta connection; aluminum alloy shell
5	Others	1 set of test leads, experiment instructions manual

Training courses

Basic experiments:

1. Use of basic electrical instrumentation and calculation of measurement error
2. Methods of reducing errors of instrument measurement
3. Surveying and mapping of Volt-ampere characteristics of circuit elements
4. Measurement of potential and voltage and drawing of circuit potential
5. Validation of Kirchhoff's Law
6. Verification of superposition principle
7. Equivalent transform of voltage source and current source
8. Verification of Thevenin's theorem and Norton theorems
9. Determination of maximum power transfer conditions
10. Experimental study of controlled source VCVS, VCCS, CCVS, CCCS
11. Observation and measurement of the typical electric signal
12. Response test of first-order RC circuit
13. Study the response of second-order dynamic circuits
14. Impedance characteristics measurement of R, L, C element
15. Measuring circuit equivalent parameters by Three-meter Method
16. Phasor research of Sinusoidal steady state AC circuit
17. Characteristic test for RC frequency selective network
18. Research of R, L, C series resonant circuit
19. Two-port network testing
20. Negative impedance converter

21. Gyrator
22. Observation of mutual inductance circuit
23. Characteristics test of Single-phase transformer core
24. Voltage & current measurement of Three-phase AC circuit
25. Power measurement of Three-phase circuit
26. Calibration of single-phase meter
27. Measurement of power factor and phase sequence

Analog circuit experiment:

1. Common emitter transistor single-tube amplifier
2. FET amplifier
3. Negative feedback amplifier
4. Emitter follower
5. Differential amplifier
6. Integrated operational amplifier index test
7. The basic application integrated operational amplifier(I)
8. The basic application integrated operational amplifier(II)
9. The basic application integrated operational amplifier(III)
10. The basic application integrated operational amplifier(IV)
11. Low Frequency Power Amplifier(I)
12. Low Frequency Power Amplifier(II)
13. RC Sinusoidal oscillator
14. LC Sinusoidal oscillator
15. Assembly and debugging of Function Generator
16. Voltage-frequency conversation circuit
17. Regulated DC power supply(I)
18. Regulated DC power supply(II)
19. Thyristor Controlled Rectifier

Digital circuit experiment:

1. Integrated logic circuit connections and drive
2. Experimental analysis of combinational logic circuits
3. Design and test of combinational logic circuits
4. Decoder and Its Applications
5. Triggers and its application
6. The shift register and its application
7. Pulse distributor and Its Applications
8. Using gate circuit to generate a pulse signal
9. Monostable multivibrator and Schmitt trigger
10. 555 Time base circuit and its application
11. D/A, A/D Converters

Electrical measurement training device

P.N.: CWWKET-1004

Picture for reference:



Technical parameter

Dimension: 1600x700x1800mm

Power supply : Three phase, AC380V/50Hz

Weight: About 150kg

Product description

This integrated system is designed in accordance with electrical measurement and casters to undergraduate course and vocational education. It is applied in the teaching and training for the application of electronics and instruments, the experiments covers the contents of electrical measurement, and involves parts of the connection and application of household circuit.

Product composition

No.	Item	Specs
1	Experimental bench	Experiment bench, T frame, Control panel
2	Experiment Module	Incandescent lamp
		Three-phase switch
		Analog meter 1
		Digital meter 1
		Analog meter 2
		Analog meter 3
		Digital meter 2
		Universal circuit experiments module
		Floor scent lamp
		Watt-hour meter 1
		Watt-hour meter 2

		Watt-hour meter 3
		Capacitor module
		Kelvin Bridge
		Wheatstone Bridge
		Multimeter
3	Accessories	Connecting lead, U-type connector, User manual, Training manual

Training courses

1. Meter measuring precision& errors and electrical common symbols
2. Meter used in practice & calculation of measuring errors
3. Range expanded experiment of electromotive DC voltmeter & ammeter
4. Usage of power meter
5. Measurement of power factor meter
6. Measurement of three-phase power meter
7. Increase of fluorescent lamp & power factor
8. Measurement of resistance
9. Resistance measurement by Wheatstone Bridge method
10. Resistance measurement by Kelvin Bridge method
11. Capacitance measurement by the AC Bridge method
12. Induction measurement by the AC Bridge method
13. Calibration of single-phase Watt-hour meter
14. Calibration of induction type three-phase Watt-hour meter
15. Calibration of electric three-phase Watt-hour meter

Electrical safety training device

P.N.: CWWKET-1005

Picture for reference:



Technical parameter

Dimension: 1500mm × 700mm × 1900mm

Power supply : Single phase, AC 220V/50Hz

Weight : about 120kg

Product description

Modular structure: Consisting of 22 independent teaching module, suitable for the training of electrical safety engineering and the safe use of electricity.

Product composition

No.	Item	QTY	Remarks
1	Training platform	1 set	Made of high quality aluminum alloy spray, wear-resistant fireproofing veneer, high density board and with a drawer inside.
2	Power supply module	1 set	Training screen is provided with a power switch, socket, instrumentation and the training box is set up by aluminum alloy
3	Hanging training box module	21 pcs	

Training courses

1. Human body resistance measurement
2. Test of the DC power supply do harm to body
3. Test about more than 20Hz frequency current do harm to body
4. Safe contact voltage
5. Safe operation of electrical equipment
6. Accident and emergency
7. Power supply network
8. Basic protection measures
9. Direct and indirect electric shock
10. Specifications of electric conductor and relay protection

Electrical and electronic skills assessment training device

P.N.: CWWKET-1006

Picture for reference:



Technical parameter

Dimension: About 1680mm × 800mm × 1720mm

Power supply : Three phase, AC380V/50Hz

Weight: About 150kg

Product description

This training device is suitable for the training of electrician, electrical, electronic, electrical control technology, electric drive control circuit and skills, etc.

Product composition

No.	Name	Specs.	QTY
1	Training bench (with mesh plate, Fluorescent lamp		1
2	Training table		1
3	Electric iron		1
4	Megohmmeter		1
5	Clamp ammeter		1
6	Incandescent lamp	25W	1
7	Single-phase watt-hour meter		1
8	Three-phase watt-hour meter		1
9	Indicator lamps(yellow, green, red)	220V	4
10	Pointer Multimeter	MF-50	1
11	Digital Multimeter		1
12	Plastic clamp		100
13	Starter		1
14	Ballasts		1
15	Fuse	RT18-32X	3

16	Ming box		2
17	Stripping pliers		5
18	Iron flame		1
19	Infrared sensor switch		1
20	Touch delay switch		1
21	Current Transformer	10~5	3
22	Miniature circuit breaker 3-phase		1
23	Miniature circuit breaker single phase		1
24	Auxiliary contact	F4-22	3
25	Time relay	220	2
26	Intermediate relay	220	1
27	Button switch box	2H	2
28	Indicator lamps box		1
29	Single-phase motor speed control switch		1
30	Hacksaw frame		1
31	Needle-nose pliers		1
32	Wire cutter		1
33	Two-way tumbler switch		2
34	Forceps		1
35	Thermal relay	JR36-20 1A-2A	2
36	AC contactor	CJX2-0910 220V	4
37	Travel switch	LX19-001	4
38	Eight - way Responder		1
39	LOOPL		1
40	Hypnosis device		1
41	Music doorbell		1
42	Three-phase motor	With speed relay	1
43	Three-phase motor		1
44	Screw		
45	Handle		2
46	Start capacitor	1UF/450V	1
47	Terminal block	TD1510	1
48	Wrench		1
49	Pistol plug wire	50CM	10
50	Pistol plug wire	80CM	10
51	Pistol plug wire	30CM	3
52	Conducting wire	1*32	1

53	Energy consumption braking transformer	380	1
54	Single-phase motor		1
55	Wire groove	60CM	2
56	Wire groove	50CM	2
57	G type rail		1
58	DC motor		1

Training courses

- 1: Fluorescent Lamp Circuit
- 2: Control the Same Lamp at two position
- 3: Incandescent lamp with infrared delay Switch
- 4: Incandescent Lamp with touch delay switch
- 5: Installation of common instruments and current transformer
- 6: The Installation of Single-Phase watt hour meter
- 7: Installation of Three-phase Watt Hour Meter
- 8: Measurement of Three-Phase Voltage
- 9: Single-phase motor speed control
- 10: Point Control of Three-Phase Asynchronous Motor
- 11: Self-Locking Start and Stop of Three-Phase Asynchronous Motor
- 12: Two position Control of Three-phase Asynchronous Motor
- 13: Contactor Interlock reversing control of Three-phase Asynchronous Motor
- 14: Electrical and Mechanical Dual Interlock reversing Control of Three-phase Asynchronous Motor
- 15: Time relay reversing control of three-Phase Asynchronous Motor
- 16: Manual sequence start and stop Control of Dual-motor
- 17: Automatic sequence start and stop Control of Dual-motor
- 18: Time Delay Starting and Stopping Control of Three-Phase Asynchronous Motor
- 19: Manual Y/ Δ Starting of Three-Phase Asynchronous Motor
- 20: Automatic Y/ Δ Starting of Three-Phase Asynchronous Motor
- 21: Dynamic Braking Control of Three-Phase Asynchronous Motor
- 22: Bi-Directional Dynamic Reversing Braking Control of Three-Phase Asynchronous Motor
- 23: Anti connection braking Control of Three-Phase Asynchronous Motor
- 24: Automatic Returning Control of Three-Phase Asynchronous Motor
- 25: Point reversing control of Three-Phase Asynchronous Motor
- 26: Serial-Resistance Reduction Voltage Starting of Three-Phase Asynchronous Motor
- 27: Serial-Resistance Reduction Voltage Starting anti connection braking control of the Motor
- 28: Reversing control of the Motor by Universal Change-Over Switch
- 29: Electrical Control of the Electric hoist
- 30: Control Circuit of C620 Lathe

Electrical lighting skills assessment training device

P.N.: CWWKET-1007

Picture for reference:



Technical parameter

Dimension: 1640×660×1630mm

Power supply : Three phase, AC380V/50Hz

Weight: About 100kg

Product description

It can be used as electrical instrumentation and lighting circuits operating training device .

And it can also be used in Labor Occupational Skill Testing departments, colleges, vocational school, technical school.

Product composition

No.	Name	Specs.	QTY
1	Training bench		1
2	Training table		1
3	Instrument lighting training module 1	Hanging box	1
4	Instrument lighting training module 2	Hanging box	1
5	Instrument lighting training module 3	Hanging box	1
6	Instrument lighting training module 4	Hanging box	1
7	Instrument lighting training module 5	Hanging box	1
8	Experimental wire	1*32	
9	Pistol plug wire	80CM	10
10	Light bulb	E14	2
11	Fluorescent lamp		1

Training courses

1. Direct connection of single-phase watt-hour meter
2. Three-phase meter wiring users
3. Three-phase meter wiring with transformer
4. Three current transformers, three current meter for measuring a star wiring
5. Two current transformers, three current meter for measuring V-shaped wiring
6. Installation of outdoor lighting
7. Installation of lighting on the three-phase three-wire line
8. Installation and wiring of fluorescent lamp
9. Double switch control a lighting circuit connection
10. DC voltmeter and direct way of measuring meter
11. Using a voltmeter to measure the voltage
12. Three-phase four wire shunt with three wiring leakage protection switch

Primary electrical skills assessment training device

P.N.: CWWKET-1008

Picture for reference:



Technical parameter

Dimension: 1700×660×1700mm

Power supply : Three phase, AC380V/50Hz

Weight: About 150kg

Product description

This device is equipped with a variety of electrical lighting circuits and electrical control low-voltage , and comes with multiple motors and can support for a variety of experimental.

Product composition

No.	Name	Specs.	QTY
1	Training bench		1
2	Experimental table		1
3	Maintenance electrician training module 1	WD01	1
4	Maintenance electrician training module 2	WD02	1
5	Maintenance electrician training module 3	WD03	1
6	Pistol plug wire		16
7	Motor with Centrifugal switch		1
8	Wire	1*32	1

Training courses

- 1: Direct Starting Control of Three-Phase Asynchronous Motor
- 2: Contactor point Control Circuit of Three-Phase Asynchronous Motor
- 3: One-way Start and Stop Control Circuit / Self-Locking Control circuit of Asynchronous Motor
- 4: One-Way point and Start Control Circuit of Asynchronous Motor
- 5: Interlock reversing control circuit of Synchronous Motor Interlocking
- 6: Reversing point starting control circuit
- 7: Reverse brake control Circuit of Asynchronous Motor
- 8: Star and Triangle Control Circuit of Asynchronous Motor
- 9: Manual Sequence Starting
- 10: Automatic Sequence Control Circuit
- 11: Two position Control Circuit of Asynchronous Motor
- 12: Manual Control of Series-Resistance Reduction Voltage Starting of Three-Phase Asynchronous Motor
- 13: Automatic Control of Series-Resistance Reduction Voltage Starting of Three-Phase Asynchronous Motor
- 14: One-way Reduction Voltage Starting and reverse Braking Control
- 15: Energy consumption brake control Circuit of Three-Phase Asynchronous Motor
- 16: Automatic round trip Control Circuit
- 17: Automatic Returning with point Control Circuit

Advanced electrician skill assessment training device

P.N.: CWWKET-1009

Picture for reference:



Technical parameter

Dimension: 1700×660×1700mm

Power supply : Three phase, AC380V/50Hz

Weight: About 150kg

Product description

The device is equipped with PLC, inverter, touch screen and other training module, which combined with multiple motors. And it can complete the PLC, inverter, touch screen control training on motor and skills assessment.

Product composition

No.	Name	Specs.	QTY
1	Training bench		1
2	Experimental table		1
3	Maintenance electrician training module 1	WD01	1
4	Maintenance electrician training module 2	WD02	1
5	Maintenance electrician training module 3	WD03	1
6	PLC hanging box	WD04	1
7	Touch screen hanging box	WD05	1

8	Inverter hanging box	WD06	1
7	PLC programming line		1
8	Pistol plug wire	80CM	4
9	Pistol plug wire	50CM	10
10	Motor		1

Training courses

- 1: Direct Starting Control of Three-Phase Asynchronous Motor
- 2: Contactor point Control Circuit of Three-Phase Asynchronous Motor
- 3: One-way Start and Stop Control Circuit / Self-Locking Control circuit of Asynchronous Motor
- 4: One-Way point and Start Control Circuit of Asynchronous Motor
- 5: Interlock reversing control circuit of Synchronous Motor Interlocking
- 6: Reversing point starting control circuit
- 7: Reverse brake control Circuit of Asynchronous Motor
- 8: Star and Triangle Control Circuit of Asynchronous Motor
- 9: Manual Sequence Starting
- 10: Automatic Sequence Control Circuit
- 11: Two position Control Circuit of Asynchronous Motor
- 12: Manual Control of Series-Resistance Reduction Voltage Starting of Three-Phase Asynchronous Motor
- 13: Automatic Control of Series-Resistance Reduction Voltage Starting of Three-Phase Asynchronous Motor
- 14: One-way Reduction Voltage Starting and reverse Braking Control
- 15: Energy consumption brake control Circuit of Three-Phase Asynchronous Motor
- 16: Automatic round trip Control Circuit
- 17: Automatic Returning with point Control Circuit
18. The basic operating instructions of the programmable controller
19. LED digital display control
20. Light-day control tower simulation
21. Analog crossroads traffic lights
22. Simulated robot action
23. Simulation of four conveyor belt
24. Simulation of assembly line control
25. Simulation of five phase stepper motor control
26. Simulation of the water level analog control
27. Analog quasi-liquid mixing index analog control
28. Simulation of analog mail sorting machine control
29. Simulation of rolling steel machine analog control
30. Simulation of automatic molding machine control
31. Simulation of automatic Feeding loading control
32. Simulation of automatic washing machine control
33. Simulation of plating production line control

- 34. PLC controlled three-phase asynchronous motor reversing control
- 35. PLC controlled three-phase asynchronous motor starting control
- 36. PLC controlled three-phase asynchronous electric start control buck
- 37. PLC-controlled three-phase asynchronous electric brake control energy consumption
- 38. The installation and operation of the converter function parameters
- 39. Inverter alarm and protection function
- 40. Multi speed selection of variable frequency speed governing
- 41. The external terminals of electric control
- 42. Reversing motor control motion control
- 43. Running time motor control operation
- 44. Momentary power inverter parameter settings
- 45. External voltage frequency control
- 46. External current inverter
- 47. The frequency of the three-phase asynchronous motor open loop speed control
- 48. PLC control inverter

General electrical and electronic technology experiment device

P.N.: CWWKET-1010

Picture for reference:



Technical parameter

Power supply: Three-phase, AC380V/50Hz

Size: 1600×700×1500mm

Weight: About 100kg

Product description

It can finish the experiment of electrical engineering, electrical principles, circuit analysis, analog electronic technology, digital circuit, electrical control equipment and so on.

Product composition

No.	Name	Specs	QTY
1	Training bench		1
2	Training table		1
3	Production of three-terminal integrated voltage DC power supply		1
4	Assembly and test of the low-frequency signal voltage amplifier		1
5	Production and test of amplifier circuit with negative feedback signal		1
6	Wen bridge oscillator welding and debugging		1
7	Production and test of battery voltage monitor circuit		1
8	Production of hypnotize electronic circuit		1
9	Production and training of analog "cicada" electronic circuit		1
10	Production and training of practical voice control, light control energy-saving lights		1
11	Production and training of voice alarm horn		1
12	Production and test of logic tester		1

13	Production and test of positive and negative pulse signal		1
14	Production of quiz Responder		1
15	Production of water level alarm circuit		1
16	Production of mini flash lights		1
17	Light control music doorbell		1
18	Production of practical simulation of natural wind controller		1
19	Table lamp dimming circuit		1
20	Practical touch lock and key CMOS circuit		1
21	Production of automatic charge		1
22	Transistor radio assembly and debugging		1

Training courses

- 1: Installation and debug of RC bridge sine wave oscillator
- 2: DC regulated power supply
- 3: CD4017+NE555 water light
- 4: Eight-way responder
- 5: Mobile phone universal charger
- 6: Integration of dc regulated power supply assembly and debugging
- 7: Voice and light controlled light
- 8: Low frequency signal amplifier
- 9: Multi-function burglar alarm
- 10: Digital voltmeter and digital thermometer
- 11: Water level controller
- 12: Touch delay energy saving switch
- 13: The sound of cicada simulation circuit
- 14: Lamp dimming circuit
- 15: NE555 raindrops sound simulation circuits
- 16: Light controlled music doorbell circuit
- 17: Negative feedback signal amplifier
- 18: Logic tester
- 19: Natural wind simulation controller
- 20: NE555 adjustable pulse square wave signal generator

Electrical motor disassembly and maintenance skills training device

P.N.: CWWKET-1011

Picture for reference:



Technical parameter

Dimension: About 1600mm × 700mm × 1700mm

Weight: About 150kg

Power supply: Three phase, AC380V/50Hz, less than 3kVA

Product description

The training device includes professional basic knowledge, process preparation, processing and assembly, testing work and other knowledge and skills of assembling and disassembling of electrical machine, which is suitable for teaching and skills training of related majors in vocational colleges, colleges and secondary vocational colleges.

Product composition

No.	Item	QTY
1	AC/DC Meter Load Unit	1 set
2	3-Phase (Star-Delta) Load Unit	1 set
3	Variable R,L.C Load Unit	1 set
4	AC/DC Power Supply	1 set
5	AC volt/Ampere meter	1 set
6	DC volt/ Ampere meter	1 set
7	DC Ammeter	1 set
8	AC/DC Machine Field Frame	2 sets
9	Auto Driving Unit	1 set
10	Pole Changing Controller Unit	1 set
11	DC Machine Board	1 set
12	Three-phase Machine Board	1 set
13	Rotary convertor Board	1 set

14	Compound motor Board	1 set
15	Motor Speed cont. Board	1 set
16	Repulsion motor Board	1 set
17	Split-Phase motor Board	1 set
18	Disk Slot-A Rotor with coil	1 pcs
19	Disk Slot-B Rotor with Short Ring	1 pcs
20	Two Pole Rotor	1 pcs
21	Three Pole Rotor	1 pcs
22	Wound Rotor	1 pcs
23	Cage Rotor	1 pcs
24	Magnetic Needle/Compass	1 pcs
25	Permanent Magnets	2 pcs
26	Wide Pole Piece for Coils	5 pcs
27	Narrow Pole Piece for Coils	6 pcs
28	Split Pole Piece for Coils	2 pcs
29	Field Coil 300 Turns	6 pcs
30	Field Coil 700 Turns	2 pcs
31	Field Coil 1700 Turns	2 pcs
32	A type Brush Holder	1 set
33	B type Brush Holder	1 set
34	C type Brush Holder	1 set
35	Incandescent Lamp 3/6/12v	5 pcs/Kind
36	Shaft of Pole	10 pcs
37	Locking Bolt	10 pcs
38	Drive Belt	10 pcs
39	8mm Spanner	1 pcs
40	Bar Type Permanent Magnet	1 pcs
41	Training bench	1 pcs
42	Circuit Connecting Cord	1 set
43	AC Power Cord	4 pcs
44	Digital Tacho Meter	2 sets

Training courses

1. Understanding of different motor structures
2. Understanding of working principles of different motors
3. Practical operation training for assembly and disassembly of different motors
4. Practical operation of making motor winding

Safety electricity training device

P.N.: CWWKET-1012

Picture for reference:



Technical parameter

Dimensions: 1670 × 700 × 1600mm

Power supply : Three phase, AC380V/50Hz

Weight: About 100kg

Product description

The main body of the test bench is a hanging box structure, and different hanging boxes can be selected according to different experimental items.

Product composition

No.	Name	Specs	QTY
1	Training bench		1
2	Training table		1
3	Power supply module		1
4	Experiment hanging box		5
5	Accessories		1 set
6	Tools		1 set

Training courses

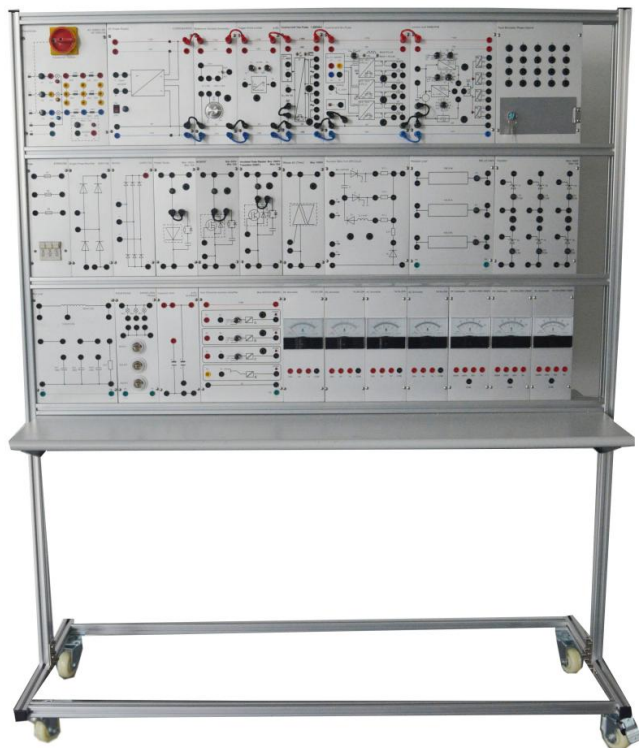
1. Use of megaohmmeter
2. Use of grounding resistance tester
3. Current sensing experiment
4. Simulated body impedance experiment

5. Simulated human body step voltage electric experiment
6. IT system insulation monitoring simulation experiment
7. Cognitive experiment of extra low safety voltage
8. Safety isolation transformer understanding and safety principle experiment
9. Grid IT system simulation experiment
10. Grid TT system simulation experiment
11. TN system simulation experiment
12. TN system grid grounding part zero-connection hazard simulation
13. TN system neutral line and leakage simulation
14. Neutral and unbalanced load simulation of TN system
15. Equipotential bonding simulation experiment
16. Leakage protector principle simulation experiment
17. Indoor lighting circuit leakage experiment
18. Fluorescent lamp circuit fault experiment
19. Single-phase power supply leakage protection experiment
20. The use of insulating rods
21. The use of safety belt
22. The awareness of safety signs

Power electronics training device

P.N.: CWWKET-1013

Picture for reference:



Technical parameter

Dimension: About 1510mm × 610mm × 1810mm

Power supply : Three phase, AC380V/50Hz

Weigh: About 100kg

Product description

The Power Electronics Training device has been designed to control of electrical energy With the greatest efficiency possible. In fact, it allows the implementation of theoretical practical courses, for the study of power electronics.

Product composition

No.	Name	Specs	QTY
1	Transformer	Output: AC: 3 x 90V/1.5A with 3 center taps 45V DC: 220V/1 A Input: AC380V, 50Hz 3-Phase	1
2	Control unit six pulse	Single pulse or pulse train operation Phase shift can be set for various natural commutating points: 0°, 30°, 60° Output: Synchronize Voltage: 1-440VAC Control Voltage: 0-+10VDC Input: ±15VDC	1

3	Four channels isolation amplifier	Channels can be switched on or off individually Frequency Range: DC...80kHz Voltage: Max 620VDC/440VAC Overdrive indication with LEDs 4mm Safety Sockets Input: AC 240V, 50Hz 1-Phase	1
4	Fault simulation phase control	A total of 20 faults from the following categories can be switched on: Interruption/Short-circuit/Faulty assembly/ Faulty components/Input: AC 240V, 50Hz 1-Phase	1
5	Control unit two pulse	Single pulse or pulse train operation Phase shift can be set for various natural commutating points: 0°, 30° Output: Synchronize Voltage: 1...250VAC Control Voltage: 0...+10VDC Input: ±15VDC	1
6	Thyristor with turn off circuit	Main Thyristor and Turn-off Thyristor: VDRM: Max 800V IT AV: Max 13A TQ: 35µs Free-wheeling Diode: VRRM: Max 1000V IT AV: Max 8A Shunts: 4 x 0.1 ohm, 1% Turn-off Capacitor: 4pF, 450V Ring-around reactor: 1 m H	1
7	Control unit PWM/PFM	Operation can be selected with the following control modes: Pulse Width Modulation (PWM) and Pulse Frequency Modulation (PFM) Control voltage: 0...+10VDC Pulse Width Modulator: Frequency Ranges: 20...200Hz / 0.2...2kHz/2...20kHz Pulse Duty Factor : 0...0.95 Pulse Frequency Modulator: Pulse Duration Ranges: 5...50µs / 50...500µs / 0.5...5ms Frequency: 20Hz...20kHz Output Amplifier: Sustained short-circuit proof	1

		Indication of switching state via 2 LEDs INHIBIT input Input: $\pm 15\text{VDC}$	
8	Reference variable generator	Output: (selectable using bridging plug) $0 \dots +10\text{VDC}$ $-10\text{VDC} \dots +10\text{VDC}$ Input: $\pm 15\text{VDC}$	1
9	Trigger point limiter	LED indication for overlap Rectifier Stability Limit: $0^\circ \dots 180^\circ$ Inverter Stability Limit: $180^\circ \dots 0^\circ$ Input: $\pm 15\text{VDC}$	1
10	IGBT	Insulated gate bipolar max 1000V Transistor max 10A	1
11	Single phase rectifier	Periodic Repetitive Peak Reverse Voltage: 500V On-State Current: 10A Protection: Fast Acting Fuse With R-C-D suppressor circuit	1
12	Fuse	Rated voltage: 415VAC Protection Fuse 2A x 3 units	1
13	Power diode	Max 1000V ; Max 10A	1
14	Triac	Max 800V	1
15	Capacitor unit	Nominal Capacitance: $2 \times 1000\mu\text{F}$ Nominal Voltage: 415V	1
16	Rectifier	Nominal Voltage: $3 \times 400\text{V}$ Nominal Current: 10A Surge Forward Current: 300A	1
17	MOSFET	Max 500V; Max 10A; 0.6Ω	4
18	BULB socket	Incandescent Lamp x 3 units Input: AC 240V, 50Hz 1-Phase	1
19	Resistor load	Resistor 100Ω x 3 units Protection Fuse 1 A x 3 units	
20	DC power supply	Two red LED (Voltage monitor) 4 mm Sockets Output: 115VDC & +SVDC Input: AC 240V, 50Hz 1-Phase	1
21	Thyristor	Thyristor x 6 units Protection Fuse 1.5A x 6 units Max 1000V; Max 12A	1

22	AC voltmeter	Measurement Mode: AC Voltage Ranges: 5V,50V,250V,1000V	2
23	AC ammeter	Measurement Mode: AC Current Ranges:1 A, 5A, 25A	2
24	DC voltmeter	Measurement Mode: DC Voltage Ranges: 5V,50V,250V,1000V	2
25	DC ammeter	Measurement Mode: DC Current Ranges:1 A,5A, 25A	2
26	RLC load	Resistor 1K Ω Inductor 50m H 2.5A with tap at 12.5m H Capacitors 4/8/16 μ F, 450VAC	1

Training courses

1. Single-Phase Half-Wave Half Controlled Rectifier Circuit
2. Single-Phase Full-Wave Controlled Rectifier Circuit
3. Single-Phase Bridge-Type Controlled Rectifier Circuit
4. Single-Phase AC Booster Circuit
5. Three-Phase Bridge-Type Controlled Rectifier Circuit
6. Quenching Circuit Step-Down DC Chopper Module
7. MOSFET Step-Down DC Chopper Circuit
8. IGBT Step-Down DC Chopper Circuit
9. Passive Inverter Circuit
10. Fault Simulator
11. Connection Diagram

Electrical measuring & testing device

P.N.: CWWKET-1014

Picture for reference:



Technical parameter

Dimension: About 1410mm × 710mm × 1740mm

Power supply : Single phase, AC 220V/50Hz

Weight: About 155kg

Product description

This training device uses hanging module which is easy for installing and remove electrical modules for the training of motor control experiment.

Product composition

No.	Name	Specs	QTY 1
	MCB	16A	1
2	ELCB	30mA	1
3	Single-phase outlet socket LN and LNE		1
4	Single-phase and three-phase industrial outlet socket		1
5	Digital AVO meter		1
6	Digital clamp meter		1
7	Earth resistance tester		1
8	Insulation tester		1

Training courses

1. Three phase asynchronous motor button control positive reversing line
2. Three phase asynchronous motor contactor interlocking positive reversing circuit
3. Three phase asynchronous motor contactor interlocking point dynamic positive reversal line
4. Three phase asynchronous motor button interlocking positive reversing line
5. Electrical training circuit

Mobile electrical workbench

P.N.: CWWKET-1015

Picture for reference:



Technical parameter

Dimension: About 1400mm × 710mm × 1720mm

Power supply : Single phase, AC 220V/50Hz

Weight: About 100kg

Product description

This mobile electrical workbench uses hanging module which is easy for installing and remove electrical modules for the electrical training experiment.

Product composition

No.	Name	Specs	QTY
1	Power meter (single-phase)		1
2	Single-phase(2×10A & 2×16A)MCB		4
3	Double pole MCB		1
4	One way switch		2
5	Intermediate switch		2
6	Two-way switch(stair case)		2
7	Two pole gange switch		2
8	Push button switch		2
9	Dimmer switch		2
10	Socket outlets(L.N)		2
11	Power socket outlets(L.N.E)		2
12	28mm lamp holders		2

13	Fluorescent lamp unit		1
14	Stair case timer		1
15	Color video door phone		1
16	Buzzer 12 volt AC with transformer 240/12V		1
17	Bell 240VAC		2
18	Bell 12VDC		1
19	4mm insulated male banana leads different color (20,40,60,80,100)cm 20pcs for each length		1
20	Drawers to contain modules of practical exercises		1

Training courses

1. A dimming switch of the incandescent lamp
2. A button switch of the incandescent lamp
3. Unidirectional switch
4. Intermediate switch
5. Control a lamp with a double circuit switch
6. The staircase box timer controls a lamp
7. The connection of the socket
8. Speed regulating switch control a fan
9. The doorbell switch controls the AC12V buzzer
10. Unidirectional switch control fluorescent lamp
11. The doorbell switch controls the AC240V doorbell
12. Single phase power meter controls two light bulbs
13. Color visual dialogue doorbell

Low voltage power supply and distribution training system

P.N.: CWWKET-1017

Picture for reference:



Technical parameter

Power supply : Three phase, AC380V/50Hz;

Dimension: High voltage cabinet:1170×970×2360

Low voltage cabinet:890×960×2350

Analog transformer:1120×610×1250

Weight: About 900kg;

Product description

This training device is adopts high voltage and low voltage cabinet, it is suitable for the training of low voltage power supply and distribution training.

Product composition

No.	Name	Specs	Qty
1	High voltage cabinet		1 set
2	Low voltage cabinet		1 set
3	Analog transformer		1 set
4	High and voltage switchgear analog indicate wall		1 set

Training courses

1. High voltage cabinet JSXGN mechanical locking operation instruction
2. Low voltage cabinet reactive power automatic compensation controller operation instruction
3. High voltage cabinet closing and energy storage operation instruction
4. Low voltage distribution output operation instruction
5. High voltage analog wall wiring operation instruction
6. Power compensation operating instruction

Low voltage electrical design training device

P.N.: CWWKET-1018

Picture for reference:



Technical parameter

Supply voltage: Three-phase 380V AC

Dimension: 1630x 660 x 2200mm

Weight: About 500kg

Product composition and function

This equipment is mainly composed of analog high voltage cabinet, low voltage cabinet, voltmeter, ammeter and inactivity automatic compensation controller. The system describes the working principle of the power distribution cabinet. By using this device, students can gain deep understanding of how the power distribution cabinet works.

Product composition

No.	Item	Specs	Qty
1	High voltage cabinet		1 set
2	Low voltage cabinet		1 set

Training courses

1. System wiring
2. Power-on operation for high voltage cabinet
3. Power-on operation for low voltage cabinet
4. Usage method of reactive power automatic compensation controller of low voltage cabinet

Domestic and industrial electrical wiring fault training device

P.N.: CWWKET-1019

Picture for reference:



Technical parameter

Power supply : Three phase, AC380V/50Hz

Dimension: 1600×700×2000mm

Weight: About 100kg

Product description

This training device adopts modular design, each module can be installed on the frame for doing different experiment, it is suitable for learning of connection circuit and finding fault points system of fluorescent lamp, mercury lamp, short circuit connection, ELCB and MCB.

Product composition

No.	Name	Specs	Qty
1	Training bench		1 set
2	Storage cabinet		1 set
3	Hanging box		18 pcs

Training courses

1. Fluorescent 18W, preheat lamp
2. Compact fluorescent lamp 18W, rapid start
3. Fluorescent 18W, ballast electronics
4. Mercury lamp 16-W, (without ballast)
5. Dimmer circuit for incandescent lamp
6. Dimmer circuit for fluorescent lamp

7. Photo switch
8. One-way switch
9. Two-way switch
10. Mixed light
11. Incandescent lamp
12. Kilowatt hour meter
13. ELCB
14. MCB
15. Transformer and service line connection
16. Protection:
 - ELCB 2P 25 A i F30 Ma
 - MCB 2P 10A 6k A
17. Lamps:
 - Fluorescent 20W
 - Rapid start type 20W
 - Incandescent Lamp 100 W
 - Mixed-Light 160W
 - Mercury Vapour 125W
18. Control switch:
 - Photo Switch, Dimmer Switch
 - Latching Relay 220 Vac, Push Button
 - One way switch, Two way switch
 - Intermediate switch
19. Ballast: 18W ballast / Electronic ballast
20. Measurement: Kilowatt hour meter

Electric machine training system

P.N.: CWWKET-1020

Picture for reference:



Technical parameter

Power supply : Three phase, AC380V/50Hz

Dimension: 1500*660*1800mm

Weight: About 150kg

Product description

The electric machines training system is suitable for experiments and testing in skills development and training of electrical machine.

Product composition

No.	Name	Specs	Qty
1	DC Compound Motor	Power: 300 W, Voltage: 220VDC, Speed: 1500 rpm	1 set
2	Single Phase Synchronous Generator	Power: 300 W, Voltage: 220VAC, Speed: 1500 rpm	1 set
3	Permanent Split Capacitor Motor	Power : 250 W, Voltage: 220VAC, Speed: 1500 rpm	1 pcs
4	Three Phase Induction Motor	Power: 370W, Voltage: 380VAC, Speed: 1500 rpm, Connection: Δ & Y	1 set
5	Three Phase Synchronous Generator	Power: 300W, Voltage: 380VAC, Speed: 1500 rpm, Connection: Y	1 set
6	DC Separately Excited Motor	Power: 250W, Voltage: 220VDC, Speed: 1500 rpm	1 pcs
7	AC Measurement Module	Voltmeter Range: 0~500VAC, Ammeter Range: 0~2A,	1 set
8	DC Measurement Module	Voltmeter Range: 0~500VDC, Ammeter Range: 0~2A, Output: 220~250VDC	1 set
9	Indication Bulbs Module	Input : AC 220V, 50Hz; single-phase, 4	1 pcs

		incandescent lamp	
10	Thermal Overload Relay Module	Rated Voltage : 220VAC, Rated Current : 1.0 A- 22 A	1 set
11	Limit Switch Module	Rated Voltage : 220VAC, 2-off limit switch	1 set
12	Simulate Switch Board	Rated voltage : 220VAC, 2 push button	1 pcs
13	Fault Current Circuit Breaker	3-off protection fuse; 2 A , Pilot lamps L1 , L2 & L3, Fault current circuit breaker 3-Poles Input: AC 380V/50Hz 3-Phase	1 pcs
14	Three Phase Contactor	Rated Voltage : 380VAC, Rated Current : 10 A Max. Coil Voltage: 220VAC	1 pcs
15	Rheostat	2 Protection Fuse; 2 A, Excitation Resistor: 0~1k Ω , Armature Resistor: 0~100 Ω	1 pcs
16	Y-Delta Timer Relay	Coil Voltage: 220VAC, Contact: Normally open (N.O.) & Normally closed (N.C.) Time : 0~60 seconds	1 pcs
17	DC Motor Control Unit	Output: 0~240VDC, Fixed 250VDC, Input: AC 220V, 50Hz single-phase	1 pcs
18	Tachometer	RPM Range: 0~9999rpm, Input: AC 220V	1 pcs
19	Tacho-Generator Module	Speed: 1500 rpm, Output: Max. 20 VDC	1 pcs
20	Stepper Motor Unit	Frequency Ranges: 5Hz,50Hz, 100Hz, 500Hz, 1k Hz and 5k Hz Counter reset function, Direction: CW or CCW	1 pcs
21	Rotate Speed Sensor Module	Used with DC motor control unit / Tachometer	1 pcs
22	Connecting cable	For connecting junction point 4 mm	1 set

Training courses

The equipment covers the learning objectives via experiment includes:

1. Starting control
2. Self-Lock control
3. First connection for contactor (KM)
4. Second connection for contactor (KM)
5. Third connection for contactor (KM)
6. Fourth connection for contactor (KM)
7. The working principles of forward and reverse rotation control circuits of switch interconnects
8. Forward and reverse rotate control circuits of contactor interconnect (1)
9. Forward and reverse rotate control circuits of contactor interconnect (2)
10. Auto stop control by travel switch
11. The connection of changing star to delta
12. Operates the DC motor & DC generator
13. DC Motor & DC generator usage

Power transmission and distribution experiment system

P.N.: CWWKET-1021

Picture for reference:



Technical parameter

Power supply : Three phase, AC380V/50Hz

Dimension: 1500*660*1800mm

Weight: About 150kg

Product description

This device is possible to assemble an power transmission system.

Various experiments can be are carried out on this power transmission system, no load operation with natural load, asymmetrical and asymmetrical short circuit, parallel and series compensation of the transmission line as well as neutral-point connection.

Product composition

No.	Name	Specs	Qty
1	Three Phase Induction Motor	Power: 370W, Voltage: 380VAC, Speed: 1500 rpm, Connection: Δ & Y	1 pcs
2	Three Phase Synchronous Generator	Power: 300W, Voltage: 415VAC, Speed: 1500 rpm, Connection: Y	1 pcs
3	Single Phase Synchronization Generator Module	Power: 300W, Voltage: 220~240VAC, Speed: 1500 rpm	1 pcs
4	Three Phase Transformer Module	Transformer for feeding the transmission line model 415V. Scale factor 1:600 for secondary current and voltage. Nominal Power: 600~800VA Primary: 3 x 400 V winding with tapping at 220~240V, can be switched to star or delta connection delta stabilizing winding can be	1 pcs

		connected. Secondary: 3 x 380 V winding with tap-pings at +5%, -5%, -10%, -15% in star connection, various star point connections possible	
5	Transmission Line Module	Measuring steady state operating conditions. Quad bundle 4 x 240/40, with surge impedance 220~240 and natural load 300 MW, length 250 km. Resistance: 15 Ohm, 10 Ohm, 5 Ohm Inductance: 200 m H, 125 m H, 75 m H Open Capacity: 5 μ F, 3 μ F, 2 μ F	1 pcs
6	Inverter Module	3 phase asynchronous motor speed control by PWM technique. The Torque and Speed are able to be constant via the unit to easy control in testing operation during loads change. Input Voltage: 380V/50Hz, Output Voltage: 380V, Out Frequency: 1-300Hz, Power: 1.5 Kw	1 pcs
7	Three Phase Power Supply Module	Fixed and variable AC supplies. Provided with start stop/stop push bottom EMO. Three Phase AC Adjustable Output: 3x 380V: 6A Three Phase AC Fixed Output: 220/380V: 10A Power Requirement: 220/380V, 50Hz	1 pcs
8	Resistive Load Module	Compose of three resistances with possibility to connect in star/delta or parallel. Controlled by three switches with 7 steps variable per phase. Power: 1000 watt Voltage: 380/220Volt (Star/Delta)	1 pcs
9	Inductive Load Module	Compose of three inductances with possibility to connect in start / delta or parallel. Controlled by three switches with 7 steps variable per phase. Power: 800VAR Voltage: 380/220Volt (Star/Delta)	1 pcs
10	Power Circuit Breaker Module	3-phase ON-OFF switch with auxiliary contact (NC) for transmission line. Module can be controlled manually using ON/OFF pushbutton or externally via switching contact, 4 mm sockets.	1 pcs
11	Earth Fault Compensation Module	Inductance with 20 tapping's for earth fault compensation in the transmission line module (Petersen coil).	1 pcs

		Inductance L: 0.05~2 H Rated voltage: 220V, 50 Hz Rated current: 1 A	
12	Capacitive Load Module	Compose of three capacitances with possibility to connect in star/delta or parallel. Controlled by three switches with 7 steps variable per phase. Max Power: 800 VAR Voltage : 380/220Volt (Star/Delta)	1 pcs
13	Transmission Line Capacitor Module	3-phase in star connection, 2.5 μ F each, corresponds to 50 % of the operating capacitance of transmission line module.	1 pcs
14	Excitation Voltage Controller Module	DC power supply unit suitable to supply 0-240VDC, 0-2A adjustable for excitation voltage in synchronous as generator operation.	1 pcs
15	Three Phase Contactor With Overload Relay Module	Voltage: 380VAC Range: 0-2 A Coil: 220VAC	1 pcs
16	Electrical Meter	Measurement: V, KV, Hz, A, KA, S, KW, KVAR, KVA, KWH, KVRH	1 pcs
17	Kilowatt Hour Meter	Speed: 1200 turn/1k W/Hour, Accuracy : Class 1.5 or latest	1 pcs
18	Simulate Switch Board Module	Rated voltage: 220VAC, off Push Button	1 pcs
19	AC Voltmeter & AC Ammeter	Voltage Ranges : 5V, 50V, 250V, 1000V Current Ranges : 1A, 5A, 25A	1 pcs
20	Pulley And Rubber Coupling	Come with synthetic rubber coupling 12-teeths coupling Suitable for all model of electric machine module	1 pcs
21	Connecting cable	For connecting junction point 4 mm	1 set

Training courses

The equipment covers the learning objectives via experiment such as:

1. Symmetrical load and unsymmetrical load connection
2. Voltage and frequency control by inverter unit
3. Characteristic of transformer feeder
4. RL circuits in transmission line
5. RC circuits in transmission line
6. RLC circuits in transmission line
7. Earth fault compensation and its characteristic
8. Excitation voltage controller with motor generator
9. Characteristic of generating voltage
10. Measuring power in each line

Fire alarm system training kit

P.N.: CWWKET-1022

Picture for reference:



Technical parameter

Power supply : Single phase, AC220V/50Hz

Dimension: 1500*660*1800mm

Weight: About 100kg

Product description

This is a standard 2-zone fire alarm system training unit. Components such as controls, detectors, warning devices and etc. Is clearly displayed and systematically arranged on a study panel. It is an excel lent unit for students to study typical fire alarm and component parts as well as providing facilities for fault simulations and practical experience in troubleshooting.

Product composition

No.	Name	Specs	Qty
1	System control and indicators	Solid State Control Station, Ammeter, Voltmeter, 25 x LED Monitor Lights, 5 x Push Buttons 2 x Panel Fuses, 4 x Toggle Switches	1 pcs
2	System connecting points/terminals	32 x Terminal posts / sockets 4mm, 1 Set of connecting leads both ends fitted with 4mm stacking jack	1 set
3	2 Zone Indications	2 LED + 2 Toggle switches	1 pcs
4	Smoke Detector		2 pcs
5	Heat Detector		2 pcs

6	Flashing Lights		1 pcs
7	Bell & Buzzer		1 set
8	Panic Glass Break Emergency Switches		2 pcs
9	Toggle Switches,		6 pcs
10	Battery Charger		1 pcs
11	Standby Battery Set		1 pcs
12	Line resistor		2 pcs

Training courses

1. System equipment understanding and wiring operation
2. Connection of alarm controller, short circuit isolator and linkage interface module
3. Connection and use of fire display panel
4. Connection of various fire detectors
5. Connection of intelligent input and output module, audible and visual alarm and alarm button
6. Element address coding settings
7. Management operation of the system
8. Data query operation of the system
9. Equipment start stop operation
10. Single point operation
11. Linkage programming
12. Judgment and treatment of line fault

Electrical installation training system

P.N.: CWWKET-1023

Picture for reference:



Technical parameter

Power supply:: Three-phase 380V/AC/50Hz

Dimension:2040X1250X2330mm

Weight: approx. 200 KG

Product description

This device is uses the design, layout, wiring, programming, commissioning, operation, fault repair and other operations of the electrical system, students can master the comprehensive ability of electrical equipment installation, commissioning, operation and maintenance.

Product composition

No.	Name	Specs	QTY
1	Watt-hour meter	3 phase, 5A,	1
2	Watt-hour meter	Single phase, 5A,	
3	Isolating switch	3P, 30A	1
4	Leakage type air switch	3P+N	1
5	Air switch	3P	1
6	Leakage type air switch	1P+N	1
7	Power indicator	Yellow, green, red	3
8	Distribution box	450mm×520mm×220mm	1
9	Fluorescent lamp	T5	1
10	Energy saving light	9W	2
11	Sodium lamp	110W	1

12	Screw lamp socket	E27	2
13	Voice switch	86 type	1
14	1 position socket	118 type	2
15	2-position socket	118 type	1
16	1 position switch	118 type	1
17	2-position switch	86 type	2
18	4-position switch	86 type	2
19	Ceiling lamp	21W	1
20	Touch switch	86 type	1
21	Molded case switch	NM1-63S/3200 20A	2
22	Contactor	CJX2-0910/220V	5
23	Auxiliary contactor	F4-22	3
24	PLC	H2U-1616MT	1
25	Inverter	MD330T1.5KW	1
26	Expansion module	H2U-0016ERN	1
27	Time relay	ST3PF-2 30S AC220V	1
28	Time relay	ST3P C-A 30S AC220V	1
29	Thermal relay	JRS1D-25	1
30	Temperature controller	E5CZ-C2MT	3
31	Switching power supply	DC24V 2A	1
32	Touch screen		1
33	Installation guide	C45	1
34	Power indicator	AD58B-22D	5
35	Button switch	LA68B-EA35	10
36	Emergency stop switch	LA68D-11ZS	1
37	Knob switch		1
38	Control box	500mm×700mm×230mm	1
39	Three phase AC asynchronous motor	(Y- Δ), with base	1
40	Three phase AC asynchronous motor	(Y- Δ), with base and Centrifugal switch	1
41	Three phase AC asynchronous motor	2/4 two speed, with base (two speed 60W)	1
42	Other excited DC motor	DC110V/50w	1
43	Stepper motor	With driver and base	1
44	AC servo motor	With driver and base	1
45	Travel switch		4
46	Capacitive sensor		1
47	Inductive sensor		1
48	Photoelectric sensor		1
49	Temperature sensor	(thermal resistance, thermocouple)	1
50	PVC tube	∅ 16	1

51	PVC straight through	∅ 16	1
52	PVC wall sparse	∅ 16	1
53	Ties	3*100mm	1
54	M4 * 20 screw with cap	200pcs	1
55	Trunking	3025	1
56	Insulated conductor	BVR1.5mm2	1
57	PVC trunking	5025	1
58	PVC trunking rack	50*50	1
59	Special type number tube		1
60	Cold press fork		1
61	Twining tape		1
62	Needle nose plier	125mm	1
63	Wire stripper		1
64	Crimping plier		1
65	Electrician plier	200mm	1
66	Screwdriver	∅ 4*100mm	1
67	Cross screwdriver	∅ 4*100mm	1
68	Test pencil	500v	1
69	Aluminum alloy herringbone ladder	1.5m	1
70	Flat file	200mm	1
71	Steel tape	3m	1
72	Electric knife	105mm	1
73	Steel ruler	300mm	1
74	Adjustable wrench	150mm	1
75	Hexagon wrench		1
76	Fuse	15A	1
77	Handsaw bow		1
78	Hand saw blade		1
79	Bender		1
80	Megger	500V	1
81	Angle grinder	∅ 70	1
82	Grinding wheel cutting machine	200mm	1
83	Electric hand drill		1

Training courses

1. Wiring training of watt hour meter
2. Installation training of distribution box
3. Installation training of control box
4. Installation training of fluorescent lamp
5. Installation training of incandescent lamp
6. Installation training of ceiling lamp
7. Installation news of energy saving lamp

8. Power distribution wiring training of distribution box
9. Wiring and debugging training of control circuit
10. Wiring and debugging training of PLC control circuit
11. PLC basic instruction programming (including the application of some special instructions) training
12. Training on basic parameter setting of frequency converter
13. Multi speed control training of frequency converter
14. Basic interface setting and application training of touch screen
15. Training on wiring and parameter setting of stepping motor and driver
16. Training on wiring and parameter setting of servo motor and driver
17. Training on wiring and parameter setting of thermocouple and temperature control device
18. Wiring and debugging training of various sensors
19. Use training of analog module
20. Use of common electrical tools
21. DC motor control and speed regulation training
22. Training on PVC pipe treatment and layout
23. Training on PVC pipe threading
24. Installation training of switch and socket
25. Installation training of junction box
26. Basic design of line distribution
27. Learning and training of construction specifications
28. Learning and training of safety construction requirements
29. Training on controlling one lamp in two places
30. Trunking wiring construction training
31. Construction training of concealed works

Residential and building intelligent control training system

P.N.: CWWKET-1024

Picture for reference:



Technical parameter

Power supply: Single phase 220V AC, 50Hz

Dimension: 1030 x 830 x 1940mm

Weight: About 70kg

Product description

The system describes HDL technology, and by using this equipment, students can deeply understand and master HDL technology.

Product composition

No.	Name	Specs	QTY
1	Power module	Single-phase 220V	1
2	Control panel module		1
3	Infrared ultrasonic double detection sensor		1
4	Infrared sensor		1

5	Timer module		1
6	Relay module		1
7	Gateway module		3
8	Router		1
9	Incandescent lamp module		1
7	Wiring panel		3
8	Fan		1
9	Socket module		1

Training courses

1. Panel module control socket
2. Infrared ultrasonic double detection sensor controls incandescent lamps
3. Infrared human body sensor fan
4. Dimming light experiment
5. Automatic curtain operation

Digital and analog electronic training device

P.N.: CWWKET-1025

Picture for reference:



Technical parameter

Power supply: Single phase 220V AC, 50Hz

Dimension: 1600x810x1340mm m

Weight: About 100kg

Product description

This training device contains analog and digital circuit module, which is suitable for the training of basic analog and digital circuit technology.

Product composition

No.	Name	Specs	QTY
1	Training bench		1
2	Analog circuit module		1
3	Digital circuit module		1
4	Power supply module	Single phase, AC220V, 50Hz	1
5	Storage cabinet		1 set

Training courses

Part 1: Analog circuit

Experiment 1 The use of common electronic instruments

Experiment 2 Simple test of diode

Experiment 3 Transistor common emitter single tube amplifier

Experiment 4 Negative feedback amplifier circuit experiment

Experiment 5 .Emitter follower

Experiment 6 Differential amplifier circuit

Experiment 7 FET amplifier
Experiment 8 Integrated Operational Amplifier Proportional Summation Circuit
Experiment 9 Integral and differential circuit
Experiment 10 .Voltage comparator
Experiment 11 .Waveform generating circuit
Experiment 12 Active filter
Experiment 13 Low frequency OTL power amplifier
Experiment 14 Integrated voltage regulator
Experiment 15 Series voltage regulator circuit

Part 2: Digital Circuit

Experiment 1 Gate circuit
Experiment 2 Study of three-state gate and OC gate
Experiment 4 Data selector
Experiment 5 Shift Register
Experiment 6 Conversion experiment
Experiment 7 Design and debugging of combinatorial logic circuit (1)
Experiment 8 Design and debugging of combinatorial logic circuit (2)
Experiment 9 Integrated trigger
Experiment 10 The design of counter (1)
Experiment 11 The design of counter (2)
Experiment 12 Design of multivibrator and monostable trigger
Experiment 13 D / A converter
Experiment 14 Oscillation, counting, decoding, display circuit

Electronics/electric and electrical drive training device

P.N.: CWWKET-1026

Picture for reference:



Technical parameter

Power supply: Three-phase four-wire 380V $\pm 10\%$, 50Hz

Dimension: 1600x 750 x 1580mm

Weight: About 200kg

Product description

This training device contains electric, electronic and electric drive modules which is suitable for the training of basic electric, electronic and electric drive technology.

Product composition

No.	Name	Specs	QTY
1	Training bench		1
2	Power supply module	Single phase, AC220V, 50Hz	1
3	Watt-hour meter module		1
4	Lamp module		1
5	Switch module		1
6	Relay module		1
7	Three phase motor module		1

Training courses

1. Socket and one switch to control one lamp
2. Wiring of fluorescent lamp circuit
3. Voice-activated switch controls incandescent lamp circuit
4. Single-phase watt-hour meter direct wiring circuit
5. Controlling one lamp in two places
6. Three-phase motor direct start control
7. Three-phase motor jog control
8. Three-phase motor self-locking operation control
9. Jog and continuous operation control with ammeter
10. One-way operation reverse brake control
11. Time relay control motor Y/ Δ step-down start control
12. Workbench automatic round trip switch control

Electronics assembly skill training device

P.N.: CWWKET-1027

Picture for reference:



Technical parameter

Power supply: Single phase, AC220V±10%, 50HZ

Dimension: 1500 x 1500 x 1960mm

Weight: About

Product description

This training is double side designed for two work station which is suitable for the practice training of basic electronic assembly skills.

Product composition

No.	Name	Specs	QTY
1	Training bench	Double work station	1
2	Power supply module	Single phase, AC220V, 50Hz	2
3	Lamp		2
4	Exhaust fan		2
5	Storage cabinet		2

Training courses

Chapter 1 Welding practice

1. Soldering technology
2. Introduction to the use of multimeter
3. Welding practice - five steps
4. Wire welding
5. Welding skills
6. Welding technology comprehensive training (welding assessment)

Chapter 2 Practice products

1. Recognition and measurement of resistor
3. Recognition and measurement of diode
4. Measurement of the speaker
5. Recognition and detection of triode

Triangle star departure simulators

P.N.: CWWKET-1028

Picture for reference:



Technical parameter

Power supply: Three phase, AC380V/50Hz

Size: 600*600*1500mm

Weight: About 50kg

Product description

The training bench mainly controls the start and stop of the system through buttons. After the system is started, it will automatically switch between star and three-phase startup. The changes of voltage and current on meters can display the working voltage and current of the system in real time.

Product composition

Training courses

1. Start and stop the three phase AC motor through triangle connection
2. Start and stop the three phase AC motor through star connection

Didactic bench with frequency inverter

P.N.: CWWKET-1029

Picture for reference:



Technical parameter

Power supply: Three phase, AC380V/50Hz

Size: 600*600*1500mm

Weight: About 50kg

Product description

This didactic bench is composed of frequency converter assembly, leakage circuit breaker and three-phase motor.

This training platform leads the control port of frequency inverter to the experimental panel, which is convenient for human-computer interaction and enables learners to better understand and master the working principle of frequency inverter.

Product composition

No.	Name	Specs	QTY
1	Three phase inverter	1.1kw	1PCS
2	Three phase motor		1PCS
3	Leakage circuit breaker		1PCS
4	Work bench		1PCS

Training courses

1. Forward and reverse control a three phase motor.
2. Adjust the motor speed through frequency inverter.



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