



## Central Air Conditioning Training & Testing Equipment



### Equipment Overview

- This central air conditioning trainer adopts PLC as the main controller, the running control of complete air conditioning system is achieved by communication between computer and PLC. The running parameters can be gathered by sensors and transferred to PLC through A/D module.
- Both manual control and computer control are available on this trainer. The manual control can be conducted by using buttons on the panel of control cabinet, which are connected with related PLC input terminals.
- This system is composed of system control cabinet with control panel, system training objects, simulated room and measuring meters. The training objects consist of refrigerating unit, cooling water system, chilled water system and heat supply system. The control panel can be divided into five areas, they are main power operation control area, control button and working state indicating area, AC contactor control area, frequency control area and central control processor area.
- There are two frequency converters on frequency control area, which are used for the control of cooling water pump and chilled water pump, the PT100 temperature sensor can gather the inlet/outlet water temperature difference of chilled / cooling water and send the data through A/D module, PLC and D/A module, which will be processed to 4-20mA analog quantity signal for driving frequency converter to start adaptive control.
- Safety precautions: overvoltage, overcurrent, overload, electric leakage and ground connection protections, confirming to relevant national standards.

#### Note :

Due to keeping innovation, the specification and Machine pictures or color are subject to alteration without notice!



## Training Content

- Central air conditioning structure understanding training
- Central air conditioning starts and stops training
- Central air conditioning running and operation training
- Central air condition running condition and each running parameters detection training
- PLC advanced programming and PLC installation, wiring, debugging training
- Central air conditioning system electrical control circuit wiring and principle training
- Central air conditioning system fault setting and troubleshooting
- Different control modes of air conditioning system

## Technical Parameters

1. Power supply: Three phase five wire AC380V  $\pm 10\%$ , 50Hz
2. Rated power: 3800W(refrigerating), 2500W (heating)
3. Rated current: Three phase 1.8~5.8A (refrigerating), single phase 9.8A (heating)
4. Refrigerant: R22, 5kg
5. Circulating air volume: 350m<sup>3</sup>/h
6. Overall dimension: 4000mm×1200mm×2100mm
7. Noise: 35-40dB (A)
8. Safety protection: Overvoltage, overcurrent, overload, leakage, ground connection protection.

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## Simulated Room System



- (1) Wall mounted type water cooling fan coil
- (2) Head lamp, lamp switch and three-plug socket

## Pump Station

- (1) Chilled water pump
- (2) Heating pump
- (3) Cooling water pump



## Simulated Boiler Unit

- (1) Rated input power: 1500W
- (2) Rated pressure: 0.6MPa
- (3) Waterproofing grade: IP×4
- (4) Capacity: 60L
- (5) Temperature control range: 20°C~75°C
- (6) With electricity guard device, heating check valve, drain valve.



## Cooling Tower 3T



- (1) Height 960mm
- (2) Cooling motor

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## Refrigerating Unit



- (1) Compressor
- (2) Vacuum manometer
- (3) Pressure controller
- (4) Liquid receiver
- (5) Shell and tube type condenser
- (6) Shell and tube type evaporator
- (7) Colorized pipeline

## Electrical Control Cabinet

- (1) On door components
- (2) On metal guide rail components
- (3) PLC unit
- (4) Frequency converter unit
- (5) Fault setting area
- (6) 20xterminal block
- (7) Thermal overload relay
- (8) Wiring duct

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