KR-115

REFRIGERATION CYCLE AND HEAT PUMP SYSTEM

Features

1. Isolated switch and indicator on the compressor clearly show the current condition of the compressor
2. Special 4-way valve enables switching between evaporator and condenser by adjusting cooling/heating and hand valve to do Heat Pump Experiment
3. Heat pump lamp to indicate the condition of the Heat Pump
4. The adjustment of four-range wind speed experiments the change of the system due to different heat exchange
5. Three solenoid valves provide 3 types of expansion, including Capillary, Thermal expansion valve and pressure expansion valve
6. Fully observe the change of the refrigerant with six sight glasses when running the whole system
7. Refrigerant receiver and by-pass circle is selectable for different functionalities and experiments purposes
8. High and low pressure protection to ensure the system safety and prolong the lifespan of the compressor
9. Service valve provides convenience in system processing and fault simulation.
10. Various selections such as expansion types, loads, etc. are available to train students to have expertise in refrigerator system and heat pump system
11. Students can use the data to calculate and perform the system optimisticly
12. Fault simulation and Trouble-shooting experiments to equip students with the related capacity

The System

1. Compressor : Danfoss 1HP 110/220V 60/50Hz
2. Refrigerants : R134a
3. High Pressure Gauge(0~500psig) and Low Pressure Gauge(0~250psig)
4. Capillary Tube
5. Pressure Expansion Valve
6. Thermal Expansion Valve (-40~+10˚C Cap. Tube 1.5m)
7. 4-Way Valve AC110V/220V Max 2.5Mpa Min 0.25Mpa Discharge 3/8" (9.525mm) Suction & Coils 1/2"(12.7mm)
8. High Pressure Switch 110~430psig with Manual Reset
9. Low Pressure Switch 0~80psig with Manual Reset
10. Refrigerant Receiver
11. Refrigeration Accumulator
12. 6 Sight Glasses
13. 5 Hand Valves
14. 4 Solenoid Valves
15. Forced Fan 110/220V 60/50Hz
16. Dimension 1600(W)x580(D)x1890(H)mm(±10%)

Electric Box

1. Breaker 110/220V 6KA
2. Ammeter 0~20A and Voltmeter 0~300V
3. 4 Way Switch
4. Condenser and Evaporator 4 Range Fan Switch
5. Solenoid Valve Switch
6. Compressor Power

Experiments

1. Knowing Basic Refrigerator Components
2. Components of Refrigerant Piping System Experiment
3. Theory of Refrigerator Operation
4. Reverse of Refrigerator System and Heat Pump System
5. Refrigerator System Experiment
   a. Capillary
   b. Pressure Expansion Valve
   c. Thermal Expansion Valve
6. Heat Pump System Experiment
7. Fault Simulation and Trouble-Shooting Experiment of Refrigerator System
8. Fault Simulation and Trouble-Shooting Experiment of Heat Pump System