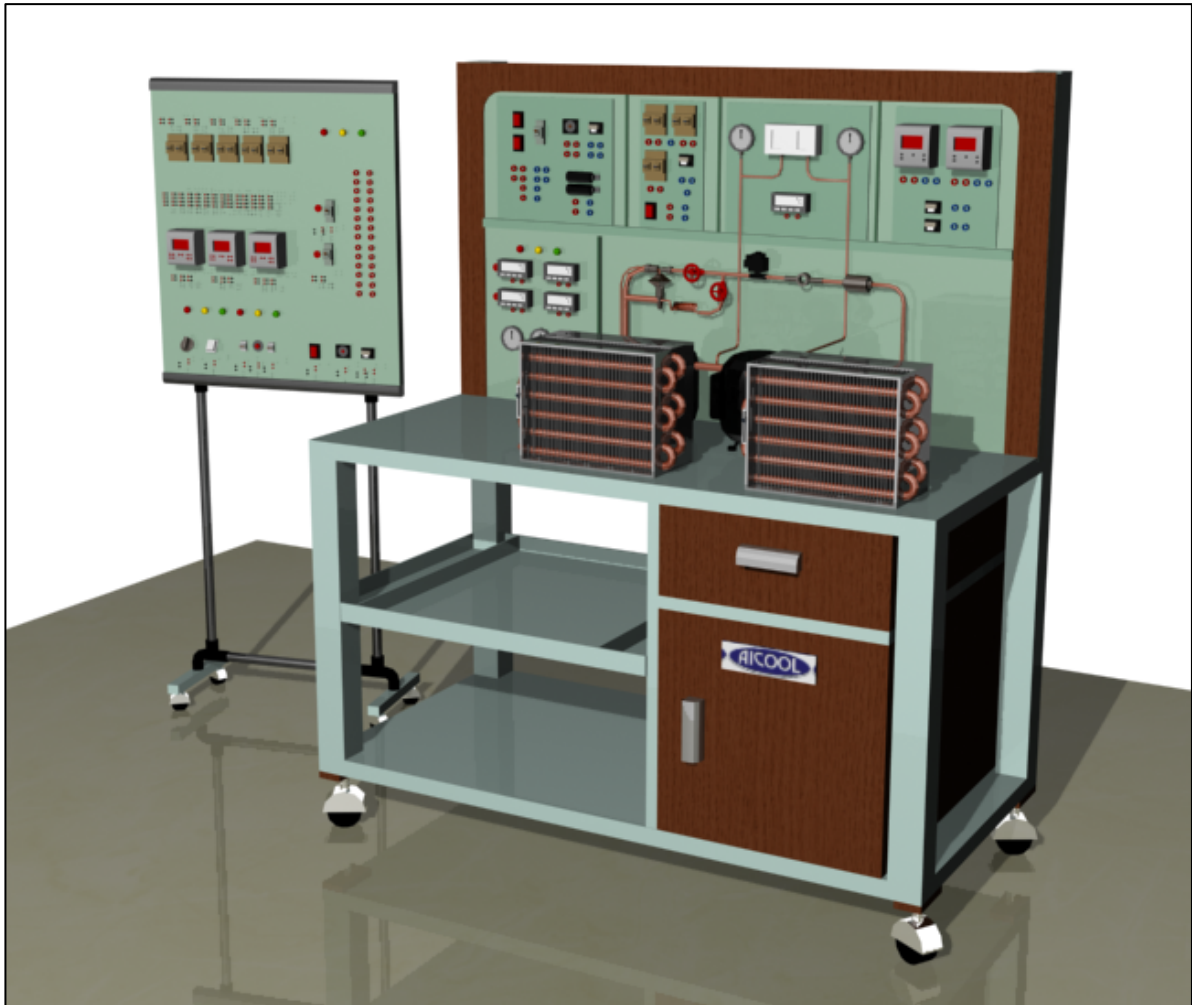


ACRPTK | Air Conditioning and Refrigeration PLC Training Kit



A. FEATURES

- 1. PLC experiment and training for the refrigeration and air conditioning industry should be possible by connecting with PLC experiments and training standard refrigeration system, defrost refrigeration apparatus, heat pump apparatus, brine refrigeration apparatus, binary refrigeration apparatus, monitoring of evaporation pressure parallel control system on diagram, displaying the P-H chart, setting interval for saving data starting operation and including 10 experimental textbooks.*
- 2. Explain air conditioning and refrigeration sequence, with air analysis program.*
- 3. Explain air conditioning and refrigeration in industrial field, with software program about basic refrigeration system, defrosting system, heat pump system, binary refrigeration system and brine.*

4. *Basic programming of PLC for refrigeration system including how to install program, tool editing and ladder diagram.*
5. *Program and sequence circuit in refrigeration system. Able to make operation program such as temperature and pressure control, pump down control, hot gas and defrost control.*
6. *Defrost control.*
7. *PLC program based on practical field exercise.*

B. TECHNICAL DATA

Automatic Control Device

1. *GLOFA G7M-DR30A*
 - *Operation process speed 0.11(0.5) μ s/step*
 - *Max control point: 75 – 85 point*
 - *Program capacity: 60 Kbyte*
 - *Function: PID, HSC, Position settlement, Cnet.*
2. *S.M.P.S : output 24V*
3. *N.F.B : 28-33A, single 220V*
4. *Relay : DC 24V, 8 pin*
5. *Relay base : DC 24V, 8 pin*
6. *Terminal block 1 : 20 pin*
7. *Terminal block 2 : 15 pin*
8. *AC indicator lamp*
9. *Fuse & Holder*
10. *Buzzer : DC 24 V*
11. *Indicator lamp: red, green, yellow, white.*
12. *Toggle Switch*
13. *Push button*
14. *Selector switch*
15. *Terminal*
16. *Banana jack connector 20 pin male type*
17. *Banana jack connector 15 pin male type*
18. *Banana jack connector block*

Case

- a. Aluminum case
- b. Grip
- c. Strap (detachable)
- d. Control board fixed aluminum plate
- e. Cover detachable.

Teaching Material

1. Able to perform basic circuit of PLC
2. PLC programming for emergency self holding circuit standard, refrigeration system for running self holding circuit, for low and high temperature control using a temperature switch for high and low pressure control, for high pressure cutting control (self return) using a pressure switch.
3. PLC programming for low temperature, pressure and parallel circuit in standard refrigeration system.
4. PLC programming for pump down control circuit in standard refrigeration system.
5. PLC programming for hot gas defrosting control circuit in refrigeration system.
6. PLC programming for electric defrosting control circuit in refrigeration system.

C. DATA ACQUISITION & PROGRAM MONITORING SYSTEM

- a. Monitoring the measured data of temperature and pressure, chart, graph and enthalpy of basic refrigeration system, defrost refrigeration system, heat pump system, brine refrigeration system, binary refrigeration system and evaporation pressure parallel control system in real time.
- b. Monitoring real-time factors such as refrigeration effect, compressor work, condensing heat in condenser, evaporating latent heat, amount of flash gas at expansion valve outlet, dry ratio at expansion valve outlet, humidity at expansion valve outlet, coefficient of performance (COP) in abstract with temperature and pressure data.
- c. Main page, display of temperature data, graph chart of temperature display of pressure data, graph chart of pressure.

d. Standard refrigeration system, defrost refrigeration apparatus, heat pump apparatus, brine refrigeration apparatus, binary refrigeration apparatus, monitoring of evaporation pressure parallel control system on diagram, display the P-H hart, setting for saving data, starting operation.

D. ACCESSORIES

- 1. Lead wire.*
- 2. PLC serial cable.*
- 3. LCD Projector : SVGA 800X600, Lumens 2000 ANSI, kontras ratio 2000.1, include white screen 178X178cm, w/ stand(1ea).*