

# CRC 125

## Simulation of 25 failures Unit

### DESCRIPTION

- This unit is delivered complete with instrumentation and includes a technical and instruction manual.
- Designed and manufactured to industrial standards.
- This unit is suitable for different educational levels and various fields.
- Uses refrigerant R 134a as required by new regulations.



### SUGGESTED APPLICATIONS

Study of the basic concepts involved in a R 134a refrigeration installation.

Simulation of failures in the operation and regulation of the refrigeration circuit.

Study of different expansion methods and their failures.

Study of evaporator coupling in parallel

Calculation of heat exchanged at the condenser and evaporator and a comparison of theoretical and practical efficiencies.

Construction of the refrigeration cycle in a state diagram

# CRC 125



## ■ Semi sealed compressor

- Commercial type
- Refrigerating fluid : R 134 a (CH<sub>2</sub>F/CF<sub>3</sub>)
- Nominal power : ½ CV
- Refrigerating power : 1080 W
  - Condensing temperature : + 45°C
  - Evaporating temperature : - 5°C

## ■ Air condenser

- Forced convection
- Copper tube and aluminum blades
- Fan electric power : 80 W
- Air flow : 0,4 m<sup>3</sup>/sec.

## ■ Liquid tank

- Stainless steel, vertical
- Capacity : 3.1 dm<sup>3</sup>

## ■ Different expansion methods

- Capillary expansion
- Expansion by internal equalization thermostatic expansion valve
- Expansion by external equalization thermostatic expansion valve
- Expansion by calibrated orifice only

## ≡\*Evaporators

- Forced convection
- Copper tube and aluminum blades
- Fan electric power : 43 W
- Refrigerating power : 590 W
  - To=- 8°C / Dt=8 k

## ≡\*Other refrigerating components

- Oil separator
- Dehydrator
- Electromagnetic valves
- Manual valves, low pressure regulation valve
- Liquid-vapor exchanger
- Shock proof liquid bottle

## ≡\*Instruments

- Pressure switches, HP (high pressure) and BP (low pressure) manometers
- Rotameter
- Digital thermometer with Pt 100 Ω probe
- Remote control and relay p.c. board for the simulation of electric failures

## ≡\*Failures list

- Defect due to a lack of charge
- Defect due to an excess of charge
- Bad exchanges at the condenser (fouling up of the condenser)
- Bad exchanges at the evaporator (fouling up of the evaporator)
- Cloudy dehydrator
- Leakage of the electrovalve
- Bad functioning of the expansion valves
- Bad functioning of the constant pressure valve
- Over intensity on the compressor engine
- Cut of a phase on the compressor engine
- Stopping of the condenser fan
- Stopping of the evaporator fan
- Defect of the electrovalve coil
- Defect of the safety pressure switches (HP and BP)
- Defect of the mechanism designed for delaying the short cycle
- Defect of the regulation thermostat
- Defect of the defrosting safety (catch)
- Defect of the defrosting resistance
- Overheating of the compressor
- Adjustment of the static pressure
- Thermostatic adjustment
- Pump down
- Cut of two phases
- Overheating of the engine
- Defect of the compressor valve

## UTILITIES :

Electricity : 400 V three-phases - 50/60 Hz

## DIMENSIONS :

Length : 1500 mm  
Width : 700 mm  
Height : 1800 mm  
Weight : 220Kg

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