

**Product Name :** " CAPACITY CONTROL METHODS IN REFRIGERATION "  
**Product Code :** " R.A.C 28 "



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**Description :**

## **CAPACITY CONTROL METHODS IN REFRIGERATION:-**

### **AIM:-**

Refrigerant circuit with two evaporators  
- Effect of the compressor speed on the system cooling capacity  
- Various types of capacity regulation via temperature:  
+ mechanical  
+ electronic

### **INTRODUCTION:-**

The efficient control of the capacity and temperature in refrigeration systems is an important topic in refrigeration technology. With different methods of capacity control can be investigated.

The components of a refrigeration circuit with refrigeration and freezing chambers are arranged clearly in the trainer. Solenoid valves enable the separate or parallel operation of the evaporators in the two chambers. The circuit is equipped with a capacity controller, a start-up controller and a combined pressures switch for the delivery and intake sides of the compressor. One heat exchanger each in the inlet of the two evaporators enables the super cooling of the refrigerant to be investigated for the efficiency of the process. The refrigeration capacity of the two individual chambers is controlled by a thermostat. The refrigeration chamber also features an evaporation pressure controller.

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There are two defrosting methods for the freezing chamber: an electric defrost heater and a hot gas defrosting where hot refrigerant is fed directly from the compressor in the opposite direction through the evaporator.

## **TECHNICAL SPECIFICATION:-**

This unit demonstrates several possible ways of regulating the capacity. The cooling capacity of the system with 2 separate evaporators can be changed by adjusting the speed of the open compressor.

### **Specification**

1. Mobile system for capacity control in refrigeration engineering.
2. 2 insulated cooling chambers with electric heater and evaporator with 2 fans.
3. Chamber 1 with mechanical temperature control (intake pressure controller + thermostat), chamber 2 with electronic temperature control (case controller).
4. 1 evaporator with additional defrosting heater.
5. Compressor with fixed speed.
6. Refrigerant R134a, CFC-free.
7. 230V, 50/60Hz, 1 phase.
8. Condensing unit
  - refrigerating capacity
  - drive motor
9. Cooling chamber
  - heater
  - evaporator with 2 fans
10. Defrosting heater
11. Measuring ranges
  - temperature: -60...50°C
  - power: 0...10kW
  - pressure: -1...9bar / -1...24bar