



ZM6116 Lyophilization Trainer

Note :

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



I Introduction

This trainer, specifically conceived for educational aims, allows to study the lyophilization process that is the best system for preserving perishable goods, it allows to determine the optimum cycle, for quality and cost, of any product by using vacuum to keep the temperature of the product itself lower than its eutectic temperature. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, flow, etc, they can be displayed on PC in real time, and can print report.

II Training Program

Plant starting and safety devices intervention checking 22

Determining the eutectic temperature of a substance

Control of product internal and surface temperature during the lyophilization process and determination of the optimum cycle for each product

Studying the operation of a thermostatic expansion valve and its calibration

ON/OFF control: the compressor thermostat

Analyzing the system behaviour versus the variation of:

- Thermostatic valve superheat
- Condenser fan intervention pressure
- Set vacuum degree
- Thermostat set-point temperature

Plotting the cycle in the refrigerant pressure-enthalpy diagram

Data acquisition and calculation of:

Heat balances corresponding to evaporator, condenser, compressor

Refrigerant mass flow

Volumetric compression efficiency

Supplied with:

English General Refrigeration Manual

English Theoretical Experimental Handbook