

# BENCH FOR THE STUDY OF THE ELECTRONIC EXPANSION VALVE

## Mod. BDRCEEV/EV

## INTRODUCTION

The bench, properly designed for educational purposes, allows the student to deepen the knowledge of the operation of the electronic expansion valve as device used to regulate the refrigerant flow feeding the evaporator of a vapour compression refrigeration plant.

## TRAINING PROGRAM

- Study of the operation of a vapour compression refrigeration plant
- Study of the operation of the electronic valve as refrigerant fluid expansion device
- Plant starting and safety devices intervention checking
- Analysing the system behaviour versus the variation of the air flow at the evaporator and/or at the condenser
- Detection of pressures, temperatures, refrigerant flow rate with plant operating
- Determination of electronic valve superheat
- Drawing the refrigerant cycle in the pressure–enthalpy diagram of the refrigerant gas
- Determination of specific energy and power transferred at each plant component (evaporator, condenser, compressor)
- Determination of the volumetric efficiency of the compression
- Evaluation of theoretical and actual cycle E.E.R.

## TECHNICAL SPECIFICATIONS

- Steel structure painted and treated in the oven
- Hermetic compressor
- Forced air variable speed evaporator and condenser
- Electronic expansion valve complete with controlling driver (supplied with display), pressure transducer and temperature probe
- Liquid separator
- Dehydrating filter
- Sight glass
- Double pressure switch
- Service valve for plant gas charge and discharge
- Flowmeter
- 2 pressure gauges (high and low pressure)
- 2 digital thermometers with movable probes for temperature measurements along the hydraulic circuit
- Digital multimeter
- Thermomagnetic - earth leakage control button
- Run button
- Emergency push button



## SPECIAL VERSION ON DEMAND

Besides offering the characteristics of standard version, this version also includes:

- Removable transparent cover to insulate the evaporator from outside
- Electronic thermostat for compressor automatic operation management

**Power supply:** 230 Vac 50 Hz single-phase - 380 VA  
(Other voltage and frequency on request)

**Dimensions:** 90 x 45 x 76 cm

**Net weight:** 65 kg

## SUPPLIED WITH

**EXPERIMENTAL HANDBOOK**



## OPTIONAL (REF. ACCESS. AND INSTRUMENTS)

**PORTABLE VANE ANEMOMETER  
MOD. THAN**



**PORTABLE THERMOHYGROMETER  
WITH REMOVABLE PROBE  
MOD. THHY**