CET010

DOMESTIC HOT WATER HEAT PUMP

Experimental capabilities

- **Identify the components of a thermodynamic water heater installation**
- **Visualization of the implementation of the system**
- **Starting, use and settings**
- **Measurement of different operating parameters (electrical consumption, air temperature, of the refrigerant and the water, pressures)**
- **Analysis of the energy efficiency of the system and draw the refrigeration cycle on enthalpy diagram.**

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version : FT-CET010-STD-C

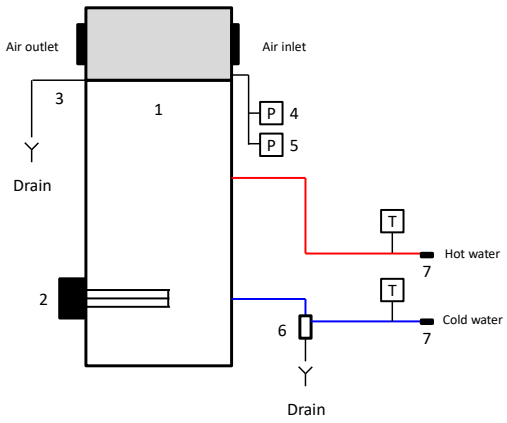
CET010

Operating principle

The CET010 bench allows the study of a domestic hot water heat pump.
The system is installed according to the requirements of the manufacturer and allows the user to see its implementation.
The user will have to commission the water heater and measure all the operating parameters in order to qualify it.
The bench must be connected to the ECS100 bench in order to dissipate the DHW produced.

The robust design of this equipment makes it perfectly suited for school use.
Its anodized aluminum structure on wheels makes it very robust and a great flexibility of integration into your premises.
The manufacture of this equipment meets European machine directive.
This equipment can be used alone or with other compatible devices in our range (see last section of this document).

Illustrations



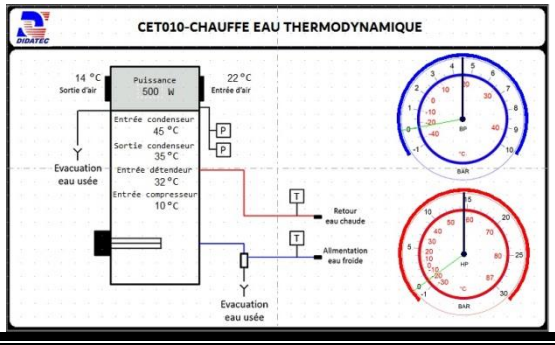
The bench is installed on an aluminum profile structure equipped with four directional brake castors.
It includes an electrical box with main power disconnector and 30mA differential circuit breaker.
1. Thermodynamic water heater
Capacity: 200L
Electrical power consumption total: 2450W
COP (air at 7 °C): 3.6
Duration of setting T °: 6h59
Refrigerating fluid: R134a
2. Backup electric resistance
Power: 1800W
3.Evacuation of condensates

Technical details

4. Low pressure sensor
5. High pressure sensor
6. Safety group with evacuation downwardly in case of overpressure and valve on feed
7. Quick connector sealing (connection towards the ECS100 bench)

Integrated instrumentation:
-low pressure sensor
-High pressure sensor
thermocouple temperature T (X6): -20 to + 100 ° C
Compressor inlet and outlet, condenser outlet, expansion valve inlet, air intake and air outlet.
-wattmeter power of the water heater: 0 to 3500W

The temperature and power measurements are displayed on a 7 "touchscreen:



Services required

- Power supply: 230 V - 50 Hz - 6 A
- Electrical supply Type: 1 phase (s) + Neutral + Earth.
- Water supply: connection on the bench ECS100
- Water disposal: at ground level
- Water capacity: 215 L
- Dimensions: (LxWxH mm): 1200 x 800 x 1875
- weight (Kg): 140

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

Documentation

- User's manual
- Technical documentation of the components
- Lab exercises
- Wiring diagram
- P&ID
- Certificate of conformity CE

Recommended equipment

- utilization of the dhw with faucet mixer
- Ref : ECS 100

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