



# Fan coil bench

*Design, connection and commissioning bench for fan coil units*

## Description of the support

The **Ventilator-Convactor Bench** is a didactic system composed of two industrial terminal units called ventilation blocks, which ensure the treatment of the ambient air. The bench is easily connected to a water network, which is itself coupled to a heat pump (PAC) or a boiler. It can be used to cool or heat a room in order to contribute to the thermal comfort of people.

The Fan Coil Bench provides energy conversion and fulfils the following technical functions:

- ✓ Heating
- ✓ Refreshment
- ✓ Ventilation with filtration (integrated filter)

The Fan Coil Bench is compatible with our hot water and/or chilled water production systems:

- ✓ Air / Water and Water / Water heat pumps
- ✓ Chiller
- ✓ Electric, Fuel, Gas and Wood Boilers

This system, designed to be connected to a production system, is accompanied by a technical file in digital format comprising :

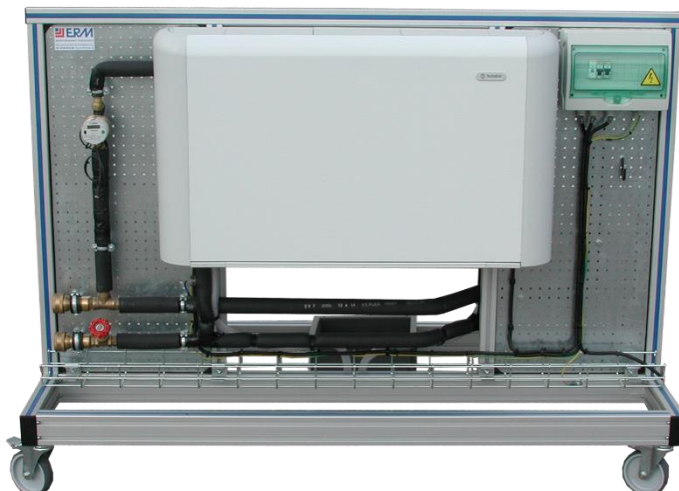
- ✓ Functional, electrical and fluidic diagrams, etc.
- ✓ Data sheet, operating instructions, adjustment procedures
- ✓ Manufacturer's documentation of components

The educational activities are supplied with the hot and/or chilled water production system.

**CAP Installer in Refrigeration and Air Conditioning, Sanitary, Thermal, Bac Pro TISEC, TFCA, TMSEC  
BTS FED, MS - IUT  
Universities - Engineering schools**

## Themes addressed

Heating, Ventilation,  
Air conditioning, sanitary facilities,  
Thermal energy, Hydraulics, Aeraulics,  
Regulation, Energy management



## Strong points of the Fan Coil Bench

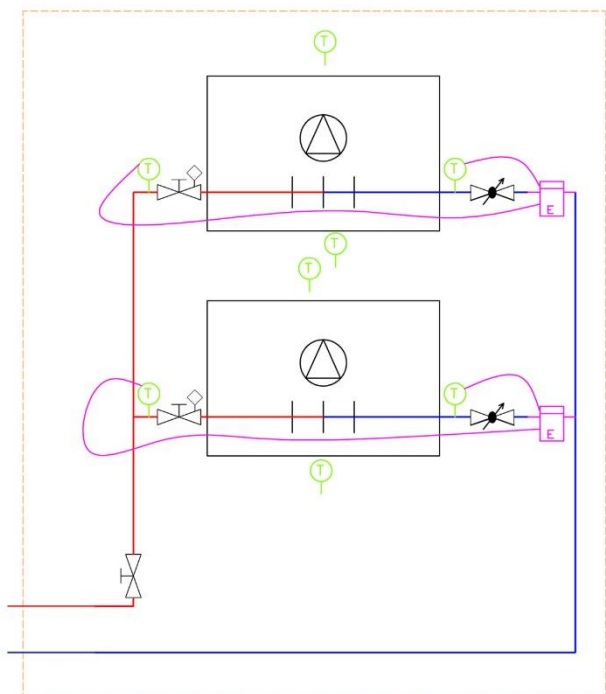
- ✓ Bench addressing the issues of forced air heating and cooling
- ✓ Easy connection to other benches in the range via quick couplers

## References

- ✓ **VC10**: Fan coil bench
- ✓ **VC11**: Energy Metering Option
- ✓ **VC12**: Balancing valve option
- ✓ **ME10** : Balancing case
- ✓ **PC22**: Multi-channel temperature recorder and sensor reader
- ✓ **PC21** : Data acquisition and supervision system for climatic installations

## Installation features

- ✓ Dimensions (LWD): 1650 x 780 x 1200 mm
- ✓ Weight: 100 kg
- ✓ Power supply: 230 V single phase
- ✓ Water connection with quick couplers



*Diagram of the installation with the energy metering option*



### Description Fan Coil Bench (VC10)

#### The bench consists of :

- ✓ An aluminium profile frame mounted on 4 castors
- ✓ Two 3 kW fan coils with speed control. One is mounted on the front and one on the rear
- ✓ Two Tès of adjustment
- ✓ An electrical protection box
- ✓ Two double shut-off quick couplers for easy connection to a heat generator (heat pump or boiler) using flexible hoses
- ✓ Gloves and brackets for the reception of PT1000 temperature sensors
- ✓ Two thermally insulated flexible pipes, length 5 m for interconnection with a cold or hot water source

### Energy Metering Option (VC11)

The Energy Meters option consists of two thermal energy meters with digital LCD display.

They are installed on each fan coil return to measure the power output.

They allow the measurement of :

- Flow
- Temperature (two temperature sensors supplied)
- Energy
- Power
- From energy day to statement day, ...

The meters are equipped with an M-Bus communication output that allows them to be connected to the central data acquisition and supervision unit of the climate system (PC21)

### Option Balancing valves (VC12)

This option consists of two balancing valves mounted on the return lines of the fan coils.

They are used for balancing fan coil units.

### Multi-channel temperature reader/recorder and sensors (PC22)

This option allows temperature measurements to be taken at key points in the refrigeration circuit. It consists of :

- ✓ **A multi-channel temperature reader/recorder** allowing the simultaneous recording of the evolution of 4 temperature probes. **The data can be exported to a PC for processing with the software supplied.**



- ✓ **Eight K thermocouple temperature sensors** that can be placed at different locations on the bench:

- Entrance to the bench
- Exit from the bench
- Fan coil inputs (2 inputs)
- Fan coil outputs (2 outputs)
- Fan coil air inlet
- Fan coil air outlet



Energy meters (optional)

Power supply box

Quick couplers

Fan coil unit 3 kW

