

STE400



MECHANICAL VENTILATION WITH HEAT RECOVERY (MVHR)



Experimental capabilities

- Identification of the components of an installation of double flow ventilation
- Visualization of the implementation of components
- Power on, use and settings
- Measurement of different parameters (air flow rate, temperatures, humidity)
- Analysis of the energy efficiency of the system
- Basic maintenance operations (filter change)

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Dans le cadre de l'amélioration permanente de nos produits, ce descriptif technique est susceptible d'être modifié sans préavis
As part of the continuous improvement of our products, this technical specification may be modified without previous notifying

STE400



Operating principle

The STE400 bench allows the study of MVHR system.

The user proceeds to identifying the network components and to the commissioning. He must for that configure the double flow module and adjust the input and output flow rates.

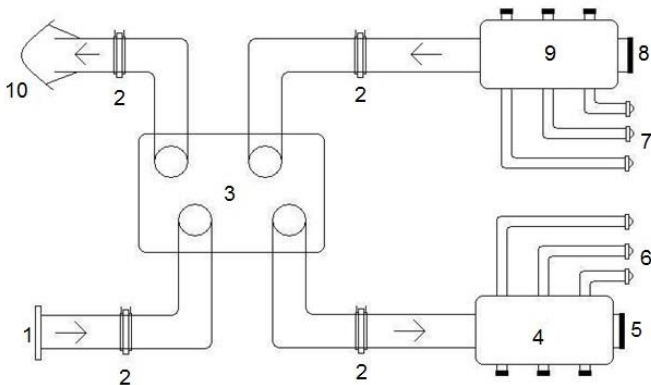
When the system is stable, he can then record the operating parameters (flow rates, temperatures, humidity) and calculate the energy efficiency of the exchanger.

The robust design of this equipment makes it perfectly suited for use in schools.

Its anodized aluminum frame with legs gives it great strength as well as great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive

This equipment can be used alone or with other compatible equipment in our range (see last section of this document).

Illustrations



1. Fresh outside air intake
2. Iris adjustment damper (setting and flow rate measurement by pressure difference),
3. Mechanical ventilation with heat recovery
Efficiency of the exchanger up to 92%
Maximum air flow rate: 325m³/h
Double filtration of the outside air ISO coarse 65% (G4) / ISO ePM10 50% (M5)
Filtration of rejected air ISO coarse 65% (G4)
Alarm when the filter is full
Bypass 100% automatique and manual
multi-fonction radio remote control (RD)
4. Blowing plenum
5. Blowing outlet vent diameter 125 for connection towards box STE410
6. Blowing adjustable outlet vents 80mm diameter (x3)
7. Recovery adjustable outlet vents 80mm diameter (x3)
8. Recovery outlet vents diameter 125 for connection from box STE410
9. Return plenum
10. Air exit outlet vent extracted with cap by rain.

Technical details

11. Programming console of the MVHR:

- Manual control for speeds selection.
 - Automatic control of the breakdown by measure of the air quality.
 - Summer ventilation mode by bypass of the air exchanger
 - Select the indoor temperature
 - Timer function: In manual mode, the device will operate at the maximum speed for 10, 20, 30 minutes or more and then will return to speed 1.
- The remote control displays the following values:
- Mode of operation: (Manual, Automatic, Summer).
 - Selected speed;
 - Timer function;
 - Average temperature, humidity and levels of CO²
 - Date and hour.

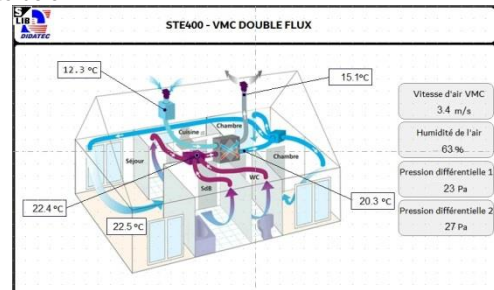
Instrumentation :

- 2 differential pressure sensors for measuring the pressure losses on the registers (flow rate measurement)
- 1 thermo-hygrometer with remote probe for measurements in different point of the system
- 1 hot wire anemometer for the measurement of the speed at different points of the installation
- 5 thermocouple temperature probes T spread over the air circuit

Electrical box of the installation:

The machine has an electrical box compliant with European standards. It contains at least:

- a general power disconnect
- a 30mA differential circuit breaker
- the necessary circuit breakers and relay circuitry for the operation
- the pushbuttons and indicator lights necessary for the operation
- an emergency stop button
- a 7 "touch screen for displaying measurements as shown in the photo below:



STE400

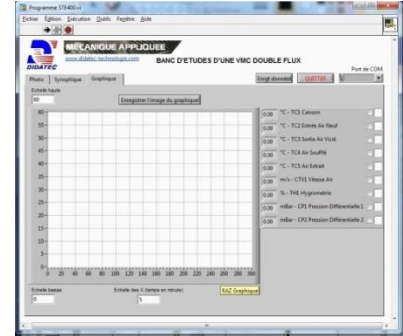
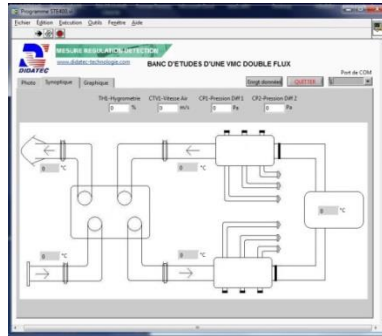


Data acquisition system

The bench includes a data acquisition system allowing to monitor in real time the evolution of the measures.

All measures described in the instrumentation section are connected to the acquisition system. The program includes the following sections:

- Synoptic diagram with display of the values
- Real-time graph with backup
- Recording data in Excel format



Services required

- Electrical supply : 230Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1600 x 800 x 1800
- weight (Kg): 100

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
- Configuration files
- Certificate of conformity CE

Options

- Simulation box for MVHR
- Simulation of external conditions by heat pump
- Ref : STE 410
- Ref : STE 405