TCF106

HYBRID WALL MOUNTED BOILER (HEAT PUMP/GAS)

Experimental capabilities

- **Identifying the components of a hybrid wall-mounted boiler installation**
- **Commissioning of a hybrid boiler**
- **Adjustment of a wall-mounted boiler (combustion, regulation, efficiency .. -requires optional combustion analyzer, adjustment of heat pump and operating phases)**
- **Maintenance of a hybrid wall-mounted boiler (gas maintenance and maintenance of a heat pump)**
- **Thermal study of a wall-mounted boiler installation (balance sheets, heating production, ECS production)**
- **Hydraulic study of an ECS installation (law of mixtures, flow rates, temperatures, pressures...)**

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Operating principle

The TCF106 trainer allows the study of a hybrid wall-mounted boiler. The installation includes a heating start and a hot water production which is used on a sink located next to the boiler.
The hydraulic circuit includes all the classic components of a domestic heating circuit.
Students will begin by identifying the components of the circuit and drawing the hydraulic diagram. They will then proceed to the commissioning and adjustment of the system and will end up analyzing the operation by recording the parameters (temperature, flow, pressure).
Dissipation can be carried out by the various optional benches.
The robust design of this device makes it suitable for use in schools.
The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.
The manufacture of this equipment complies with the European standard for machinery manufacturing.
This equipment can be used alone or with other compatible equipment from our range (see last section of this document).

Illustrations

1. Hybrid wall-mounted boiler:
Gas heating power: 4.3 - 12 KW
Gas hot water power: 28KW
Heat output heat pump +7°C / +35°C - PCBT 2,96KW
COP heat pump +7°C / +35°C - PCBT - 4,34
Hot water micro accumulated - 1 direct heating loop
Condensing boiler
(indicative values)

2 . Gas supply line composed of the standard elements:
-pressure gauge 0-60mbars
-volumetric gas meter
-shut-off valves before and after meter

Technical details

3. Use of Domestic Hot Water (DHW) composed of:
-a stainless steel sink with siphon
-a mixer
-instrumentation: flow meter, thermometer and pressure gauge for each line (hot and cold water)

4. Heating loop.
-direct circuit comprising: a flow meter, two thermometers, a balancing valve on the return, a differential valve, two quick connections.

5 . Electrical power supply box including a general disconnector, circuit breakers, a white voltage presence light and a commissioning button.
A digital display giving the electrical power consumed by the boiler (Heat pump + boiler) and the temperatures at the characteristic points of the heat pump (I/O compressor, I/O regulator, I/O air ..)

6 . Water supply line comprising two shut-off valves, meter, filter, anti-pollution valve.

Services required

- Electrical supply : 230 Vac – 50 Hz – 16 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Water supply : 10 L/min – 2 bars
- Water drain : on the floor
- Smoke exhaust: diameter 60/100mm mm
- Fuel supply : natural gas
- Dimensions: (LxWxH mm): 2000 x 740 x 1950
- weight (Kg): 210

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
- Hydraulic diagram
- Certificate of conformity CE

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