

ELECTRICAL HOME HEATING SYSTEM WITH 2 RADIATORS



Experimental capabilities

Identify the components of a radiator heating system with a three-way valve control system

Know how to commission the installation:

- Safety instructions.
- Water filling.
- commissioning.
- Device settings
- Balancing.

Knowing how to maintain an installation:

- Shutdown of an installation and emptying.
- Disassembly and reassembly of equipment.
- Hydraulic and electrical wiring.

Study and measure the physical, hydraulic and electrical quantities of the installation:

- Temperature, pressure, flow rate, heating law.
- Study on the expansion of heat transfer fluids.
- Voltage, current, power absorbed.

Calculation of energy balances of the individual elements or the whole.

Study and parameterize a three-way valve control system

Operating principle

The ICP050 bench allows the study of an electric domestic heating system. The heat generator is a three-stage electric boiler. The hydraulic system includes the standard elements of a domestic installation, a filling and emptying line, a three-way control valve, a circulator, radiators with valve, adjustment tee and manual drain, automatic drains and a balancing valve on the return circuit. The bench also includes an electrical box with all protection and signalling elements as well as a heating regulator. The instrumentation used for the study of the system is at a fixed station on the circuits (dial thermometers, float flow meters, pressure gauges, etc.).

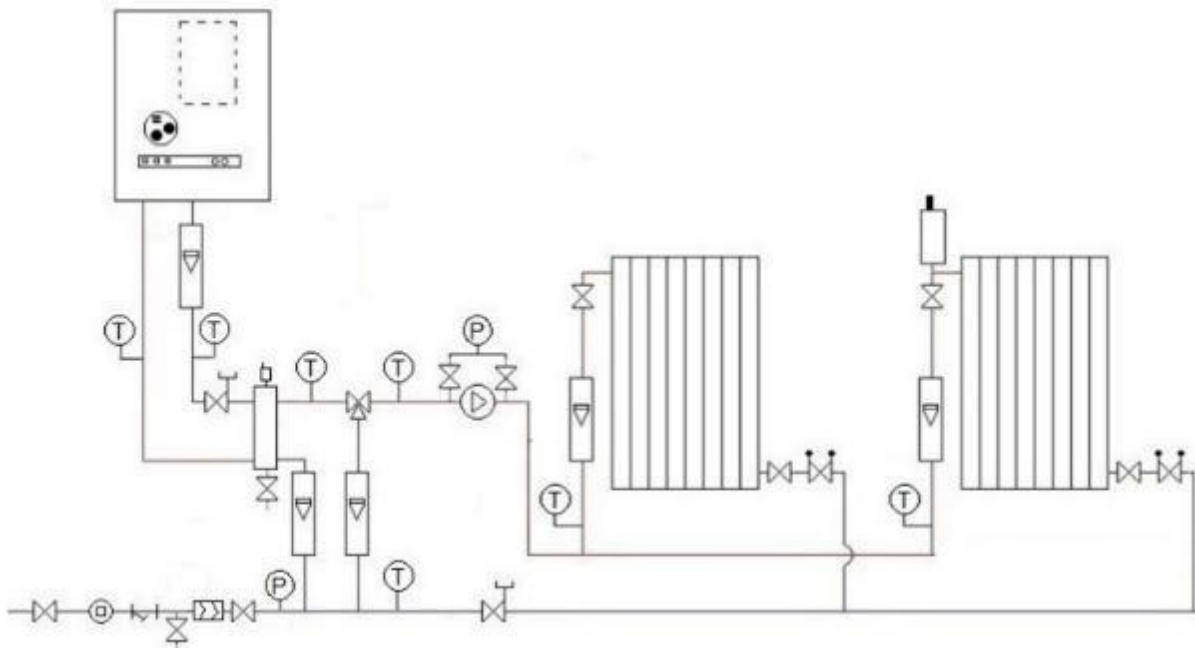
The students will first have to identify the networks and components of the installation and then carry out the commissioning. They will then be able to make the operating settings (flow rates, V3V parameters, etc.).

In another, they will carry out maintenance activities, emptying the installation and flushing, changing an element of the hydraulic or electrical circuit...

The rugged design of this equipment makes it perfectly suited for use in a school setting.

Its anodized aluminum structure on wheels gives it a very high robustness as well as great flexibility of integration into your premises. The manufacture of this equipment complies with the European Machinery Directive

Illustrations



Spécifications techniques

1. A supply line including shut-off valves, water meter, disconnector, filter, and pressure gauge
2. A three-stage, modulating single-phase electric boiler, adjustable to 2-4-6KW with digital temperature and pressure display.
3. The boiler circuit is equipped with a digital display flow meter and a balancing valve.
4. A heating circuit with decoupling bottle, three-way valve with electric servo motor, electronically variable circulator (constant P or D setting) with pressure gauge kit.
5. The heating circuit is equipped with three digital flow meters.
6. Two 60x70cm double-walled horizontal panel radiators with standard fittings
7. Each radiator is equipped with a tap, a control tee, a flow measurement element (type TA) for measurements through the balancing case, a float flow meter and two dial thermometers (inlet and outlet).
8. One purge lines with automatic bleeder
9. A glycol injection system with a set of valves
10. The hydraulic circuit is made of crimped copper, the pipes are sanded and varnished to maintain an aesthetic appearance over time.

ICP050



Services required

- Electrical supply : 230 Vac – 50 Hz – 20 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Water supply : water filling 3 bars
- Water drain : on the floor
- Dimensions: (LxWxH mm): 3000 x 800 x 1950
- weight (Kg): 320

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
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Wiring diagram
- Hydraulic diagram
- Certificate of conformity CE