

STUDY OF TEMPERATURE REGULATION BY PID - COMMUNICATING



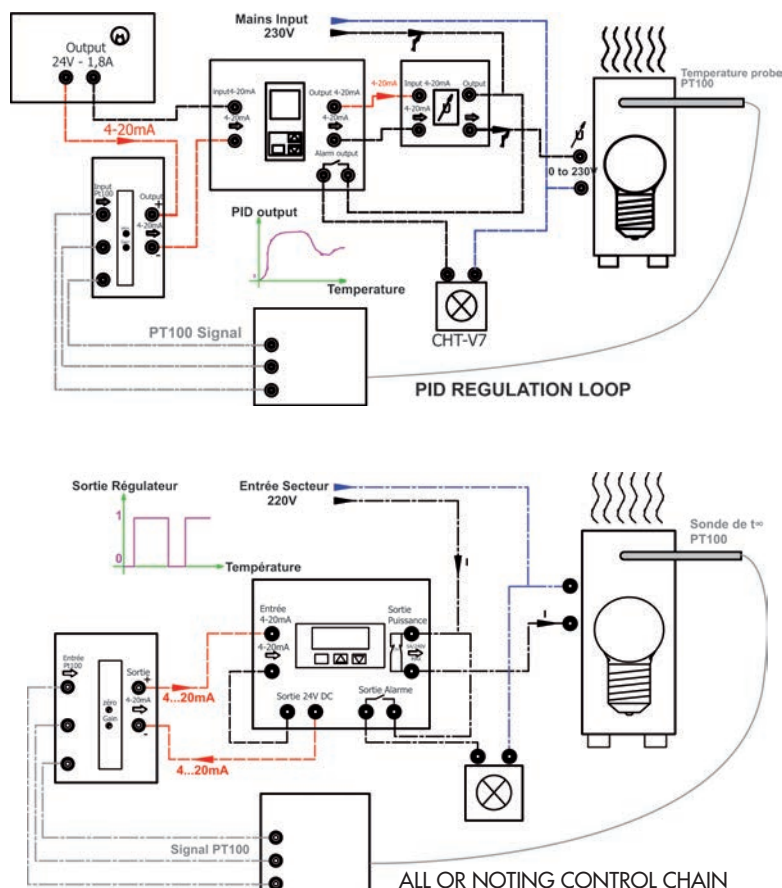
Modules (H-250mm). Frame : H610mm - L500mm. Weight 12kg

General power supply via 3m 230VAC mains cord.

ref. QUICK-REG with frame

ref. QUICK-REG-N without frame

TEACHING RESSOURCES STUDENT & TEACHER



Set of modules allowing the study of a PID temperature regulation.

The PID regulator controls the lighting of a heating lamp either via a 4-20mA power dimmer or by activating its relay. The measurement is carried out with a PT100 temperature probe coupled to a 4-20mA transducer. This temperature regulation solution is delivered with all the safety cords necessary for wiring, a technical manual for each component as well as the wiring diagrams.

A PID regulator is the corrective device inserted in a regulation loop, intended to control a process (boiler, compressor, pump, etc.).

It receives a signal from a sensor, an image of the quantity to be regulated (temperature, pressure, flow rate, etc.), compares it to the setpoint (previously programmed in the PID) and controls the process to reduce the "quantity to be regulated / setpoint" gap.

EDUCATIONAL OBJECTIVES

- Understand and wire a temperature control chain.
- Study, configure, control a PID regulator.
- Study a 4-20mA analog signal.
- Study a PT100 temperature probe signal.
- Use a 230V / 4-20mA dimmer.
- Study, compare a regulation with 4-20mA and TOR output control

Possible practical works

- Creation of the complete wiring diagram of the temperature control chain according to the 2 configurations.
- Configuration of the PID regulator according to the 2 configurations.
- Launch of temperature regulations according to several instructions.
- Configuration of alarms.
- Comparison of the 2 types of regulations.
- Visualization of measurement curves and instructions

Composition

- 1 continuous power supply module 230VAC / 24VDC
- 1 PID regulator module. Self-adjusting and manual. 4-digit display for the setpoint, configurable input and outputs (TOR, 0-10V and 4-20mA). TOR alarm output.
- USB cable and configuration and visualization software (in English only).
- 1 three-wire PT100 thermoprobe module + PT100 / 4-20mA signal converter.
- 1 230VAC indicator module
- 1 230VAC power dimmer module with 4-20mA control.
- 1 heating box module equipped with a 60W lamp powered by 230VAC. Thanks to two supports, the thermoprobe can be inserted into the box.
- 1 set of safety cords allowing the realization of the various practical exercises.

