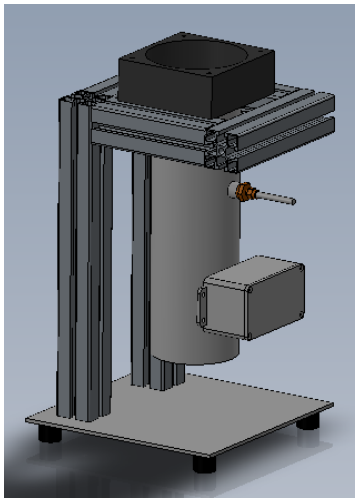
RCT010

BASIC TEMPERATURE CONTROL TRAINER



Exemple de réalisation

Experimental capabilities

- **Identification and study of sensors, regulator, actuator, disturbing element on the installation and on a synoptic diagram**
- **Study of a temperature regulation loop**
- **PID or auto adaptive parameters**
- **Controller configuration by computer interface**
- **Visualization of signals on supervision software**
- **Characteristic curves (setpoint, measurement, etc.)**

DIDATEC– Zone d'activité du parc – 42490 FRAISSES- FRANCE
Tél. +33(0)4.77.10.10.10 – Fax+33(0)4.77.61.56.49 – www.didatec-technologie.com
email : service_commercial@didatec-technologie.com

RCT010

Operating principle

The trainer is mounted on a frame and incorporates a PID type controller (Eurotherm 2216) wired and preconfigured so as to allow the regulation of the physical quantity considered (temperature).
This controller allows the measurement visualization (display) and its retransmission to a computer system.
It can operate either in automatic mode (autonomous regulation) or in manual mode with transmission of the command from a computer system to the actuator.
The link between the regulator and the computer system is WIFI.
The bench allows the study of air temperature regulation. For this, it is made up, at a minimum, of a heating body (oven), a heating resistance and a fan. The temperature is measured inside the oven and it will be regulated by a PID type regulator.

Technical details

1- Regulation furnace
Stainless steel tube diameter 100mm

2- Electric heating resistance
Finned resistance
Power 250W

3- Fan
Axial type fan
Adjustable speed

4- control box including
Two on / off switches fan and resistance
Electric power dimmer for controlling the resistance
A microprocessor P, PI or PID regulator with 4 / 20mA output
A WIFI output for supervision

5- Supervision software with recorder
Control and monitoring of the closed-loop control process with display of relevant data on a PC. Recording and memorization of changes over time

Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 600 x 350 x 550
- weight (Kg): 20

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
- Data acquisition and control software
- Certificate of conformity CE

DIDATEC– Zone d'activité du parc – 42490 FRAISSES- FRANCE
Tél. +33(0)4.77.10.10.10 – Fax+33(0)4.77.61.56.49 – www.didatec-technologie.com
email : service_commercial@didatec-technologie.com

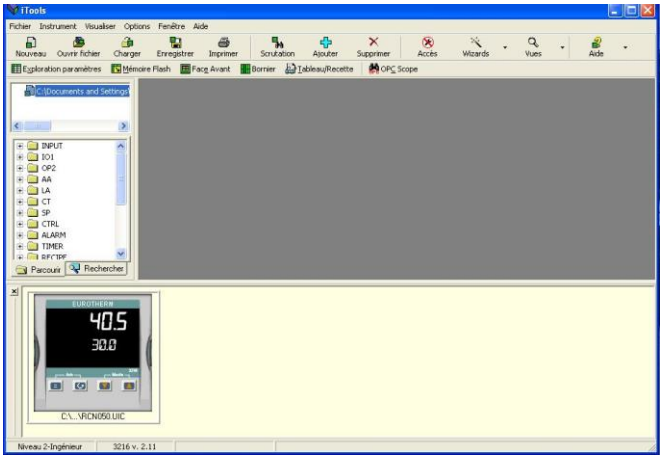
RCT010

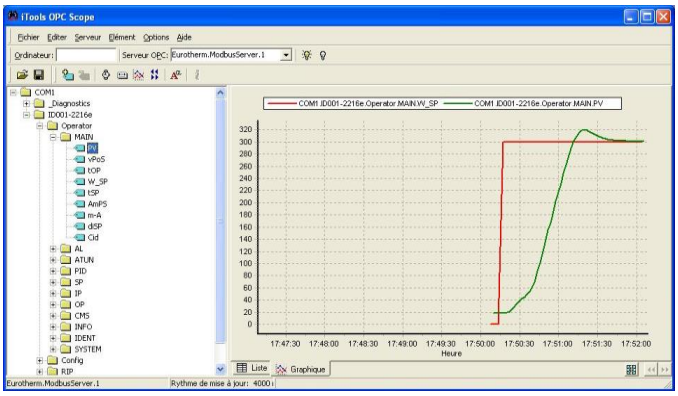
Supervision : Parameterization, Plot of curves

The unit is also fitted as standard with a monitoring software and parameterization. The connection to the PC is realized via a standard USB port. The software is divided into two parts :

PARAMETERIZATION :

This section provides access to the parameters display directly via a data browser similar to that of Windows.
The front panel of regulator is reproduced on the PC screen and the operator can actuate the buttons and controls as if he was on the pilot.
Parameterization of proportional gain, of integral gain and of derived gain.





PLOTTING OF CURVES:

This section allows you to draw the curves with the signals of the regulator. For example on this image below we visualize the setpoint and the real-time measurement, but it is possible to add other parameters such as the output signal.....
The data stored during the plot can then be saved in a file in Excel format.