RTC206

AIR CONDITIONING CONTROL SYSTEM

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Experimental capabilities

General skills:

- **Prepare for the realization of an installation,**
- **Carry out the installation,**
- **Commissioning and adjusting the installation,**
- **Communicate.**

Equipment-specific skills:

- **Operate independently or connected to the air handling installation,**
- **The study of the regulation of an air handling unit,**
- **Installation of a regulator/programmer,**
- **The wiring of the inputs and outputs by safety plug,**
- **Simulation of temperature inputs and optimization of settings,**
- **Visualization of regulator/programmer actions,**
- **Vary the input parameters,**
- **Preventive and corrective maintenance of the installation.**

Operating principle

Stand-alone bench for the study of the programming of an air handling unit by simulating the inlets and visualizing the outlets on a color synoptic diagram representing a complete installation.
Bench that can be connected to an air handling unit (Ref. CRA 546) thus allowing the control to be studied on a real machine.
The control bench is designed to operate in two modes:
-simulation mode: the inputs and outputs of the regulator are connected to a synoptic diagram representing the processing unit (CRA546). The connection will either be made by the students via double well sockets or connect directly internally (choice of mode by a switch)
-real mode: the inlets and outlets of the regulator are connected to the air handling unit (CRA546). The connection will either be made by the students via double well sockets or connect directly internally (choice of mode by a switch)
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
This equipment can be used alone or in combination with other compatible equipment in our range (see last part of this document).

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Technical details

Structure - Screwed anodized aluminum profile with shutter seals - Directional casters with brake and non-marking tread. - The chassis includes a work table for students.	
Controller - sauter brand regulator with built-in web server - Simultaneous temperature and relative humidity control - Digital input and output - Inputs and outputs transferred to 4 mm banana socket	
Synoptic - Colored synoptic representing the air handling system described in item 1 - Relative temperatures and humidities must be simulated by potentiometer. - The 0 – 10 V signals of the actuators are displayed on digital indicators. - The T.O.R. signals of the actuators are displayed on colored LEDs - All signals are brought back to 4 mm banana socket	

Electrical box

- Overhead protection by 30 mA RCD
- Low voltage control and signaling (24 Vac)
- 1 RJ45 port for connecting a PC and/or connecting to a network, a WIFI module, a 230VAC socket

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Programming

The PLC allows a gradual evolution thanks to its 8 practical works:

- Practical work 1 to 4 control on the temperature, starting with the heating battery only, and then only for the cooling battery then integrate into a third Practical work both batteries (hot and cold). The fourth Practical work adds the mixture of air register.
- In TP5 to 7 we pass over a control temperature and relative humidity.
- The TP8 allows to work on the depression or a premises overpressure by varying the speed of the air blowing fan

	Temperature control			Humidity control	
	Air mixture register	Heating battery	Three-way valve chilled water group	humidifier	Three-way valve chilled water group
TP1		*			
TP2			*		
TP3		*	*		
TP4	*	*	*		
TP5		*	*	*	
TP6	*	*	*	*	
TP7	*	*	*	*	*

Summary of different achievable practical works

You can work on two modes of operation:

- Either on a temperature setpoint and blast air humidity
- On a setpoint temperature and return air humidity

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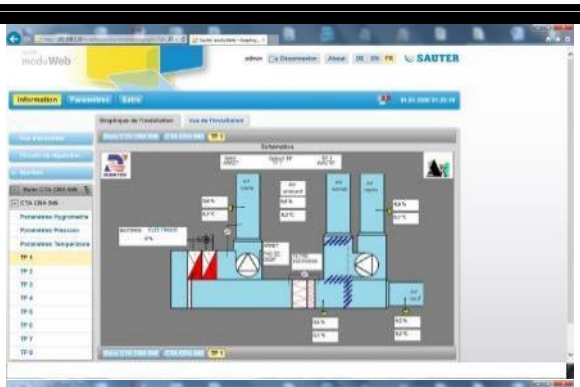
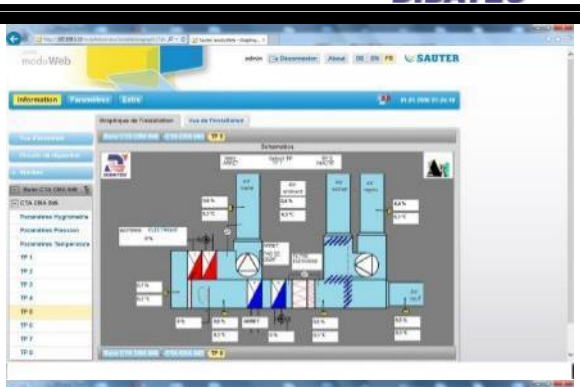





Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1760 x 770 x 1815
- weight (Kg): 70

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
- Lab exercises
- Configuration files (PLC, controller)
- Wiring diagram
- Technical documentation of the components
- Certificate of conformity CE

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