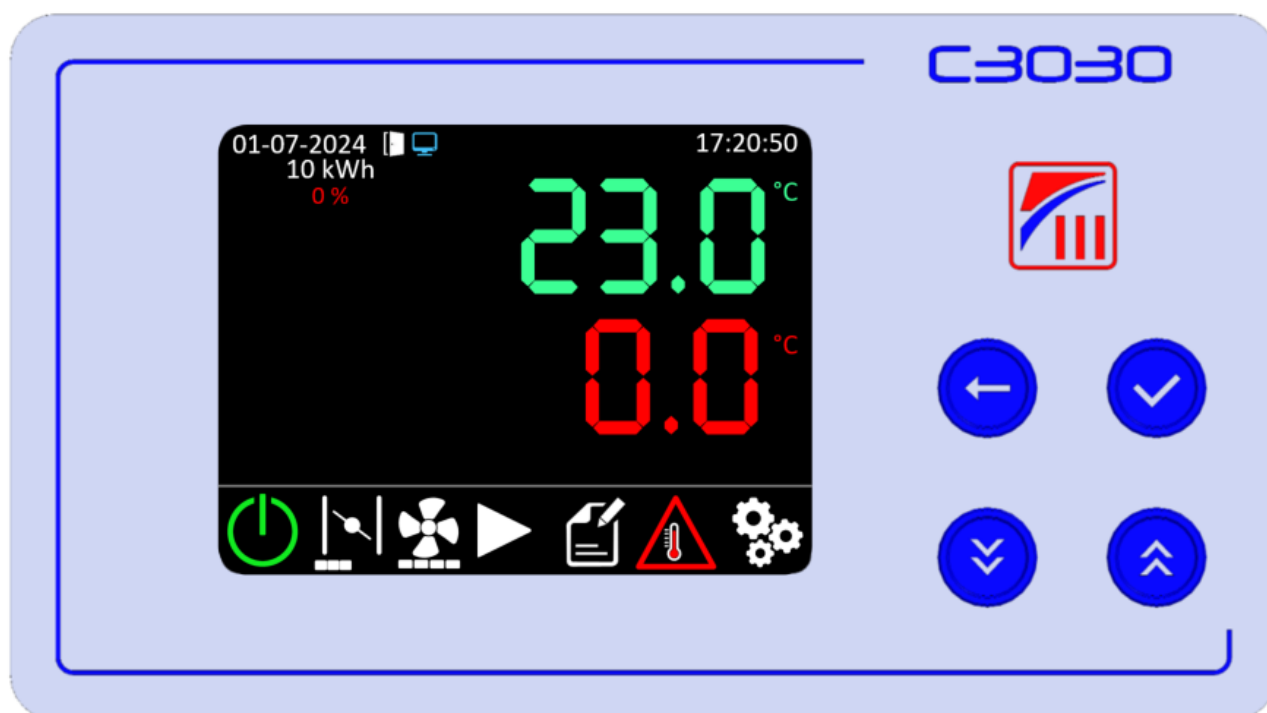


Temperature controller C3030



Original instructions

READ THIS MANUAL BEFORE SWITCHING ON THE DEVICE

Thank you for choosing a France Etuves product, we hope it will bring you complete satisfaction

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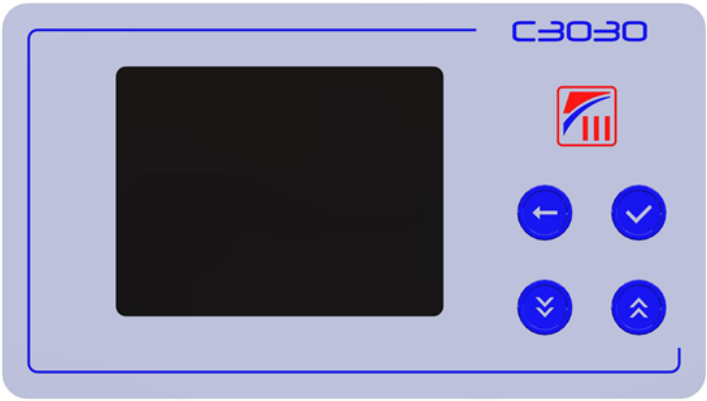
1 Introduction

1.1 Safety precautions to take when using and repairing the device



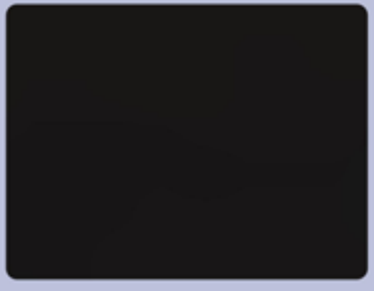
- The overheating protection must always be adjusted on the electronic thermostat before using the oven.
- Do not turn off the oven when the inside temperature is over 50°C.
- The condition of the door gasket and internal fan must be strictly checked before starting the oven.
- The oven must be disconnected from the electric grid for any intervention which doesn't need its power up.
- Any intervention must be realized with oven at room temperature
- Any intervention must be realized by a right skilled engineer.
- Engineers and users must be provided with the appropriate safety equipment.

1.2 Temperature controller description



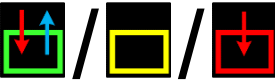
This manual is intended for use with the C3030 controller.

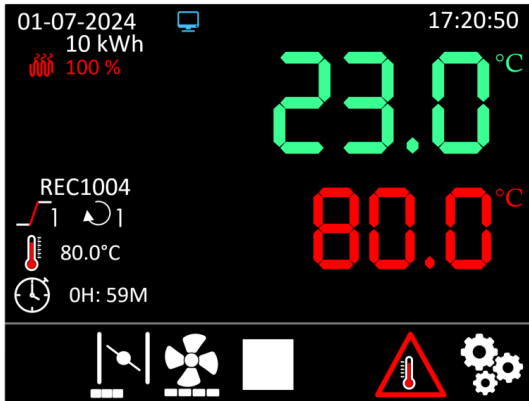
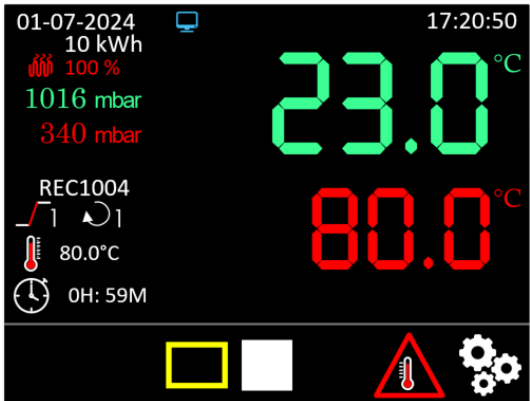
- Ventilated ovens: Model: XUE; XUELT; XUEHT ; XBE; XL; XXL, XDH ; XTOP ;XHT ;SP.
- Vacuum ovens: Model: XFE.

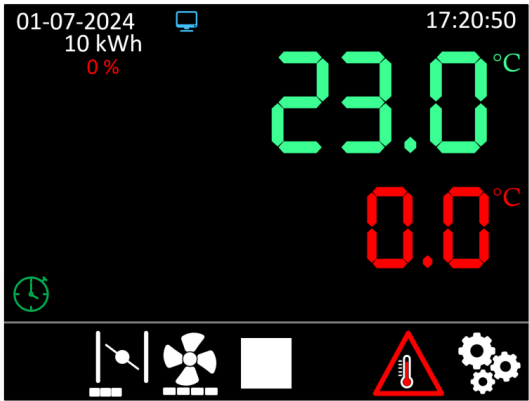
Objet		Description
		<u>Graphic display :</u> Displays the measured temperature, the set point temperature and other running parameters.
		<u>Backspace key :</u> Allows to return to the main screen
		<u>Validation key :</u> <u>On the main screen :</u> Allows to select successively different icons <u>In a page with several adjustable parameters :</u> Allows to confirm the parameter and proceed to the next parameter.
	Decrement  Increment 	<u>Increment / decrement keys :</u> <u>On the main screen :</u> Allows to increase or decrease the set point temperature in “manual regulation” mode, if no icon is selected <u>In the main menu :</u> Allows to enter in the selected icon display or increase / decrease the internal fan speed if the fan icon is selected. <u>In a display with editable parameters :</u> Allows to adjust the value of the selected parameter.

1.3 Graphic display presentation

Display at starting (manual regulation mode)	
Ventilated ovens	
	
Vacuum ovens	
	
Item	Description
	Date and time
	Door open symbol: appears when the door is opened.
	Oven's chamber measured temperature.
	Set Point temperature
	Power consumed by oven since it was put into service.
	Heating power (% of the total oven's power). If no heating, the following icon  is not displayed.

Item	Description
 / 	Oven On / Off. See 2. On / Off
	Select the type of program to start (timer program  OR weekly timer  “optional”)
	Programming display access See §6.Timer program
	Setting display access See §8. Controller Settings
	Electronic thermostat against overheating settings access. See §3 Electronic thermostat for protection against overheating
	icon for connection to a remote system: appears when the controller communicates with an external computer system (PC, PLC, Cloud).
Ventilated ovens	
	Inside fan speed dimmer To change the fan speed, select the  icon with  key. Then adjust the fan speed with  or  key.
	State of the air change valve, pressing it opens a pop-up window allowing you to manually adjust the position of the air renewal valve.  Function available depending on range and options of your oven.
Vacuum ovens	
	Measured vacuum level in mbar The measured vacuum level is displayed under the heating power.
	Set point vacuum level.
	“Vacuum control” / “Closed” / “Atmospheric pressure” See &5.2. Vacuum regulation (XFE)

Display when a timer program is running	
Ventilated ovens	Vacuum ovens
	
Item	Description
	Running program displays : REC1004 Allows each program launch to be associated with a unique registration number (Cloud option)  Temperature gradient number  Temperature target number  Number of loops remaining  Temperature set point for the next target.  Remaining step duration or delayed start duration
	Stop the timer program Depending on the action you made, the following messages can appear : Stop program ? : Program stop must be validated. If a delayed start has been set : Delay start : Wait before starting the program

Display when a weekly timer is running	
Ventilated ovens	Vacuum ovens
	
If the weekly timer is active and in the working period, the icon  disappears and the icon  flashes green. If outside of the defined working period, the icon  will flash red.	

Display when a timer program is running

V2-035-016 Y1016 
 Model: XUE IP:192.168.24.25
 MaxTemp:200.0 Motor:JAKEL V1002
 Sensor: PT100
 Energy: 1.188 kWh
 Oven use time: 6 hour
 FRANCE ETUVES
 65/67 rue Auguste Meunier
 77500 CHELLES FRANCE
 Telephone(fr):+33 (0)1 64 21 30 60
 Website: france-etuves.com

To access the oven information page, press  to return to display during startup and then simultaneously press the  and  keys.

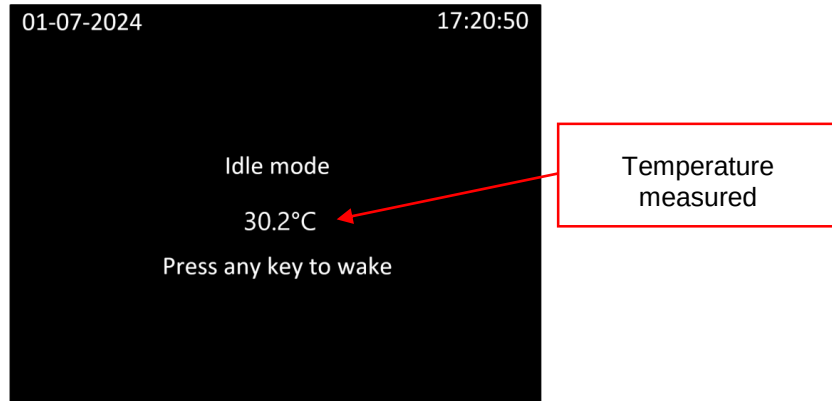
Item	Description
V2-035-016	Information on the C3030 firmware version
Y1016	Serial number of the oven
Model: XUE	Model of the oven
IP:192.168.24.25	The IP address of the oven
MaxTemp:200.0	Maximum temperature that the oven can reach. In°C
Motor:JAKEL	Type of ventilation motor.
V1002	Version of the 3in1 card
Sensor: PT100	Type of temperature sensor
Energy: 1.188 kWh	Energy consumption since implementation. In kWh
Oven use time: 6 hour	Time spent in oven in hours.
FRANCE ETUVES 65/67 rue Auguste Meunier 77500 CHELLES FRANCE Telephone(fr):+33 (0)1 64 21 30 60 Website: france-etuves.com	Information on the company France ETUVES.

2. On / Off

2.1. Start-up

When the power is turned on, the C3030 puts the oven back in the state before it is turned on and back to the state before it was turned off.

If the oven was on standby, you would see the screen saver below:



The oven displays the temperature measured in the oven in standby mode. After pressing a key, the screen displays the home page.



You can now press the on button . The oven will then start working.



2.2. Shutdown

You can stop the oven if it is not in program mode.

Press the button , the oven will then go to standby mode and display the temperature measured in the oven. The heater is turned off and the fan continues to turn until the indoor temperature is below 80°C.

3. Electronic thermostat for protection against overheating



The overheating protection by electronic thermostat must always be set before using the oven.

3.1. Protecting thermostat description

The thermostat turns off heating if the measured temperature exceed the thermostat set point temperature. It allows to protect the oven and its content against overheating.

In order to compensate the gap between the thermostat probe and the regulation probe, it is possible to define an **offset** parameter. This offset is used for the whole operating range of the oven.

The C3030 controller allows for **XUE; XUELT; XBE; XFE** range a DIN 12 880 compliant thermostat.

The thermostat is equipped with a thermal limiter (TB) which interrupts heating when the temperature exceeds the maximum permitted temperature for protection class 1, according to DIN 12 880.

The electronic thermostat can be used in 2 different ways

- TWW mode: with automatic reset (3.1. protection class according to the DIN 12 880 standard).
- TWB mode with manual reset (2.0 protection class according to the DIN 12 880 standard)

To access this menu, [see 1.3 Graphic display presentation](#)

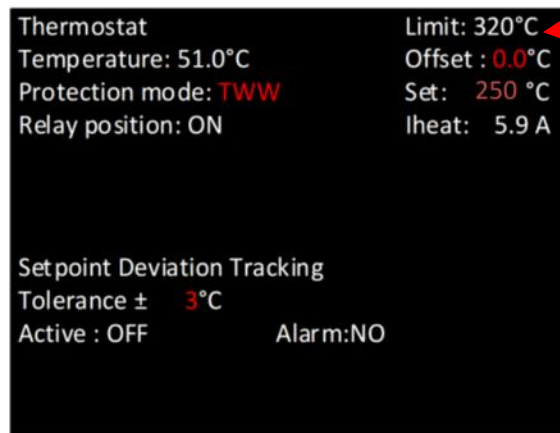
```
Thermostat          Limit: 320°C
Temperature: 51.0°C  Offset : 0.0°C
Protection mode: TWW Set: 250 °C
Relay position: ON   lheat: 5.9 A

Setpoint Deviation Tracking
Tolerance ± 3°C
Active : OFF      Alarm:NO
```

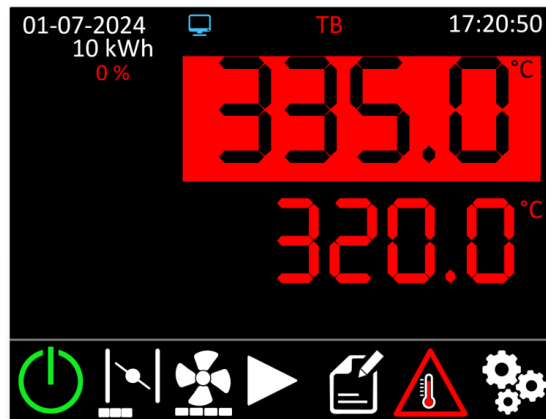
Item	Description
Thermostat	Thermostat parameters
Limit: 320°C	Thermostat setpoint limit indication. not editable
Temperature: 51.0°C	Measured temperature inside the oven indication, in Celsius.
Offset : 0.0°C	Thermostat offset: gap between the thermostats measured value and measure value given by a standard.
Protection mode: TWW	Electronic thermostat reset mode: reset automatic (TWW) or manual (TWB).
Set: 250 °C	Thermostat setpoint, in °C
Relay position: ON	Thermostat card relay status : ON or OFF
lheat: 5.9 A	Resistors current indication, in Amps

3.2. Thermal Limiter (TB)

When the measurement temperature exceeds the limit temperature, the thermostat turns off the heating the measured temperature is displayed on a red background, an indication «TB» appears and an audible alarm is triggered.



Example of TB mode trigger:

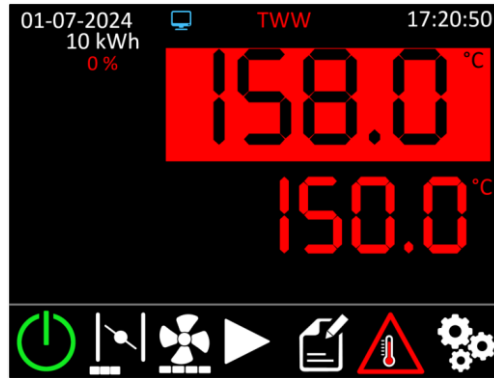


Pressing a key on the regulator will stop the audible alarm on the regulator. But **the heating cannot be resumed** even if the temperature has fallen below the trigger value.

3.3. Electronic protection thermostat function in TWW mode (automatic reset)

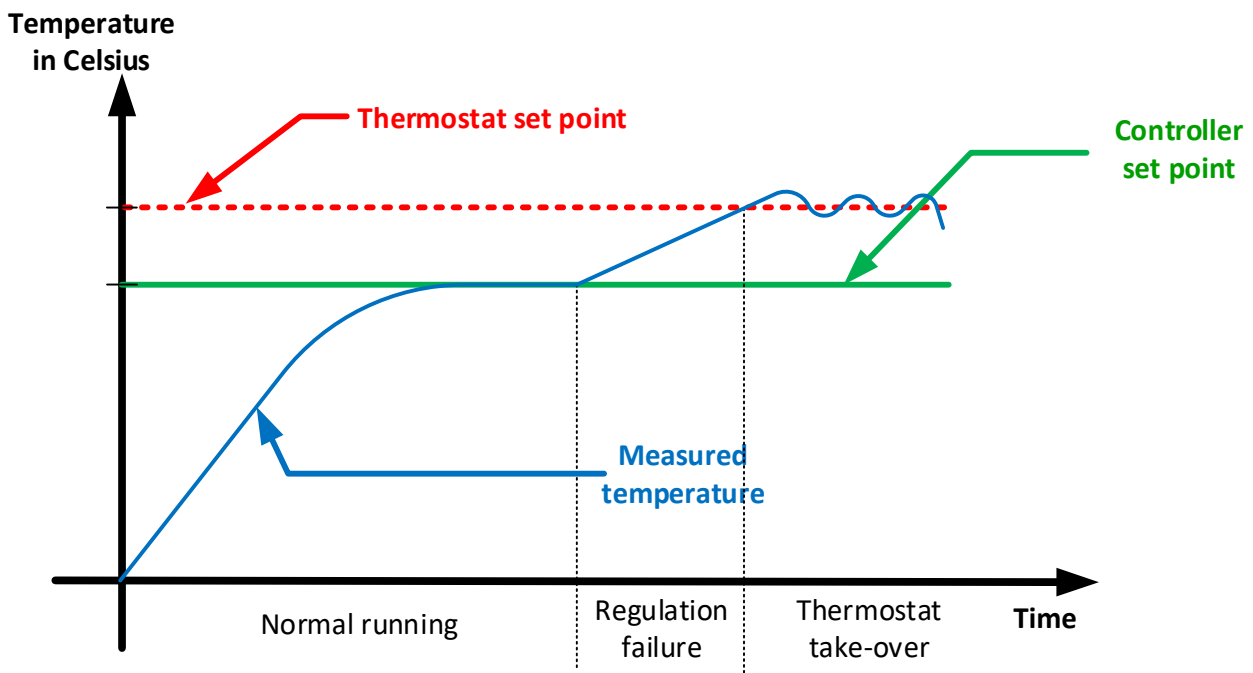
When the measured temperature is over the thermostat set point temperature, the thermostat stops the oven heating. The measured temperature is displayed on a **red background**, a “**TWW**” indication appears and an **audible alarm** is triggered.

TWW trigger example:



Press any key to disable the audible alarm. When the failure disappears, the heating can restart and all failure indications also disappear.

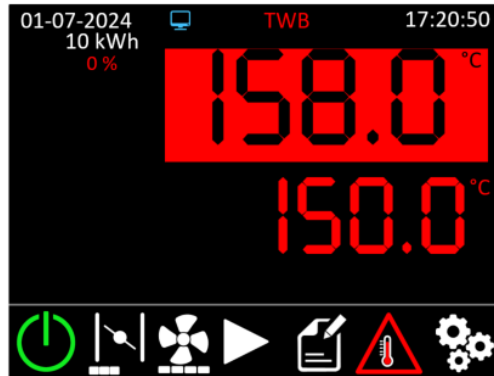
TWW protection working principle:



3.4. Electronic protection thermostat function in TWB mode (manual reset)

When the measured temperature is over the thermostat set point temperature, the thermostat stops the oven heating. The measured temperature is displayed on a **red background**, a “**TWB**” indication appears and an **audible alarm** is triggered.

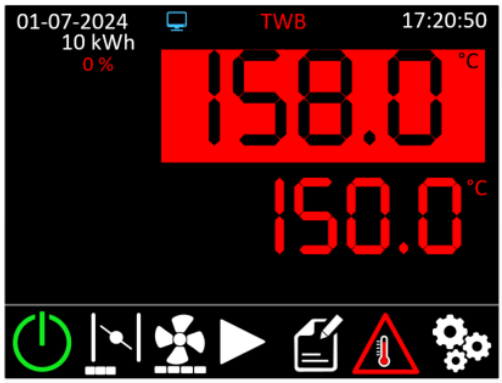
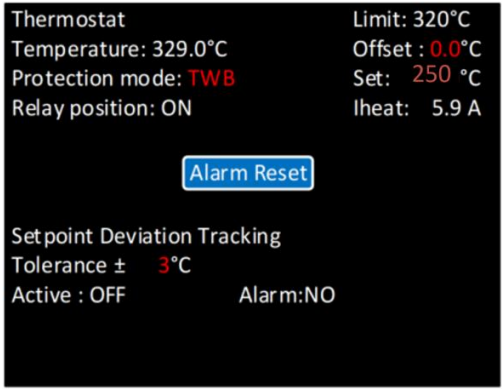
TWB trigger example:



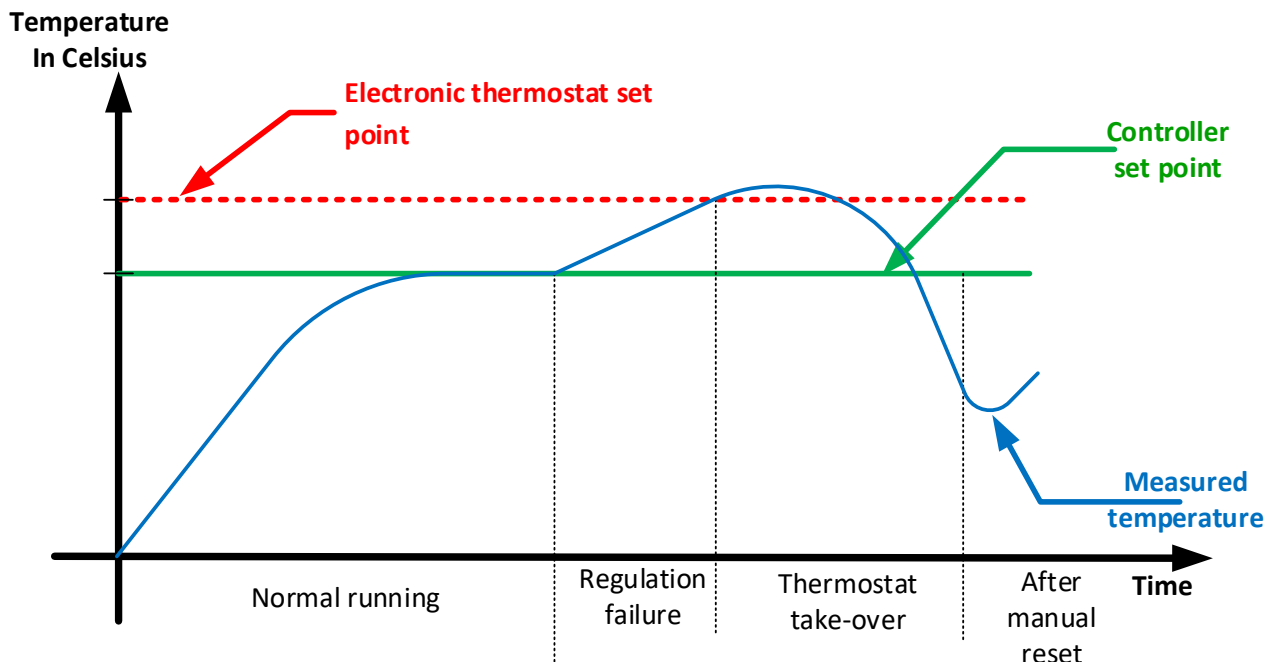
Press any key to stop the audible alarm. But the oven heating can restart **only after a manual reset**. Even if the measured temperature has gone under the thermostat trigger temperature.

3.5. TWB mode electronic thermostat reset

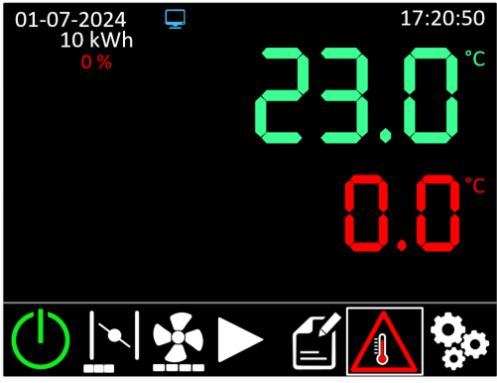
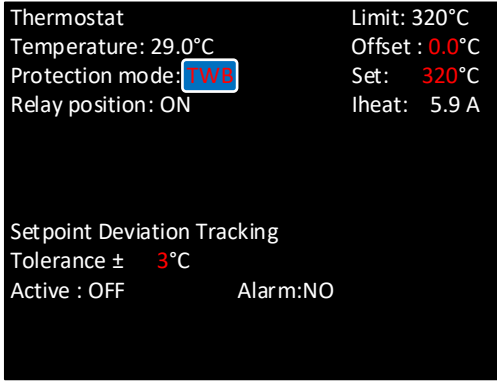
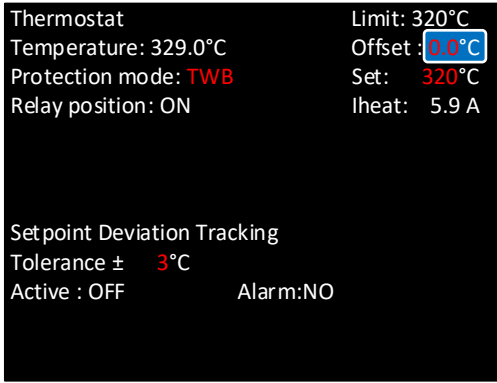
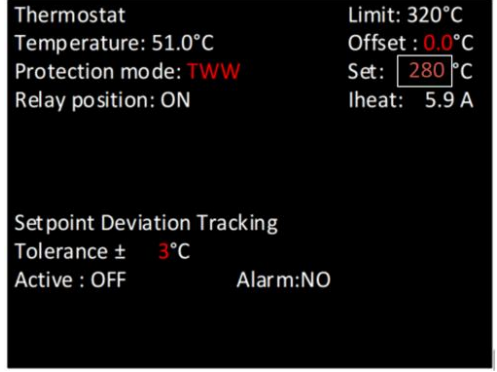
Note: The measured temperature must be under the thermostat trigger temperature.

1	<u>“Thermostat” display access :</u> - If a program is running, press the  key to select the  icon. Then press twice  or  key to stop the program. - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to enter the electronic thermostat settings display.	
2	<u>Thermostat reset :</u> - Press several times the  key to scroll the parameters until the « Alarm Reset » button is selected. - Press the  or  key to reset the thermostat. ⇒ The “Alarm Reset” disappears: the thermostat is reset. ⇒ Press the  key to return to the main display.	

TWB mode thermostat working principle:

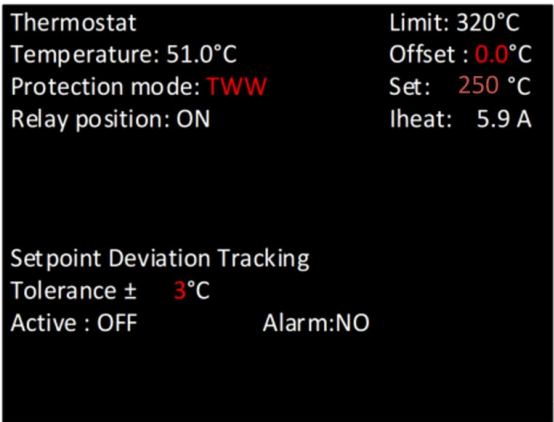


3.6. Overheating protection thermostat and SDT settings

1	<u>“Thermostat” display access :</u> - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to enter the electronic thermostat settings display.	 01-07-2024 17:20:50 10 kWh 0 % 23.0 °C 0.0 °C
2	<u>Protection mode :</u> - Change the « Protection Mode » parameter with the  or  key to define it in TWW (automatic reset) or TWB (manual reset) mode. - Confirm with the  key to proceed to the next parameter.	 Thermostat Temperature: 29.0°C Protection mode: TWB Relay position: ON Limit: 320°C Offset : 0.0°C Set: 320°C Iheat: 5.9 A Setpoint Deviation Tracking Tolerance ± 3°C Active : OFF Alarm:NO
3	<u>Thermostat offset :</u> The offset parameter compensates the gap between the thermostat measure and a standard measure. It's initially factory set. - Adjust the « Offset » parameter with  or  key. - Confirm with the  key. - Press the  key to return to the main display.	 Thermostat Temperature: 329.0°C Protection mode: TWB Relay position: ON Limit: 320°C Offset : 0.0°C Set: 320°C Iheat: 5.9 A Setpoint Deviation Tracking Tolerance ± 3°C Active : OFF Alarm:NO
4	<u>Temperature set :</u> - Adjust the « TemperatureMax » parameter with  or  key. - Confirm with the  key to proceed to the next parameter.	 Thermostat Temperature: 51.0°C Protection mode: TWW Relay position: ON Limit: 320°C Offset : 0.0°C Set: 280 °C Iheat: 5.9 A Setpoint Deviation Tracking Tolerance ± 3°C Active : OFF Alarm:NO

4. Alarm tracker

The C3030 also allows to monitor the difference between the measured temperature and the set point temperature with the **SDT** function: **S**et point **D**eviation **T**racking. It's activated after the temperature has reached the setpoint plus or minus the tolerance. If the gap between the measured temperature and the setpoint is over the tolerance set, an alarm will be triggered to warn the user his oven is not heating at the wanted temperature.



Objet	Description
Setpoint Deviation Tracking	SDT parameters
Tolerance ± 3°C	Temperature gap allowed for the SDT, in Celsius. Set to 0°C, SDT tracking disabled
Active : OFF	SDT activation status indication.
Alarm:NO	SDT status indication

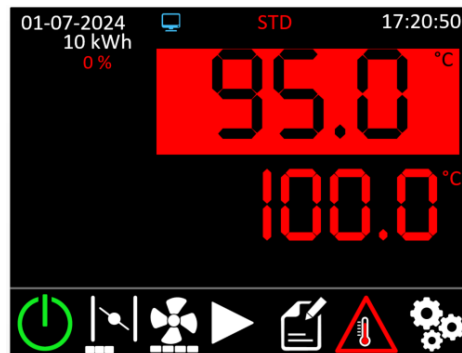
4.1 Setpoint Deviation Tracking (SDT) system working

The SDT monitoring allows to warn the oven user if the measured temperature has been out of the tolerance during a heating sequence.

It's activated after the temperature has reached the set point plus or minus the tolerance. If the gap between the measured temperature and the set point is over the tolerance set, an alarm will be triggered to warn the user his oven is not heating at the wanted temperature.

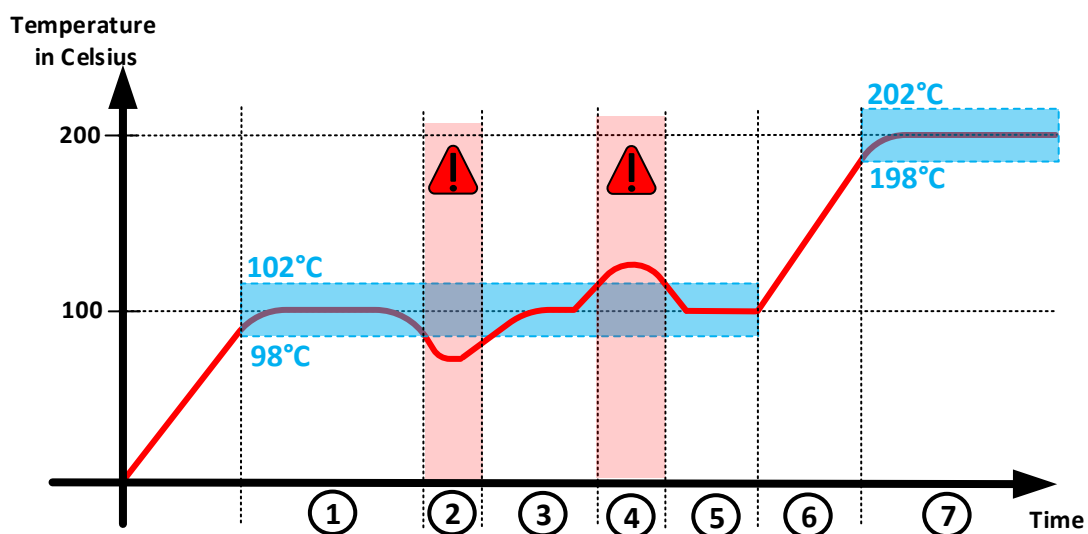
For example, for a 2°C tolerance and a set point of 100°C, the measured temperature must be situated between 98°C and 102 °C.

If the measured temperature exceed the tolerance, then temperature is displayed on a red background with a "STD" indication:



The red display and the "STD" indication disappear when the measured temperature value goes back within the tolerance.

SDT working principle:



1 : The SDT monitoring is enabled when the temperature measure reaches the target tolerance.

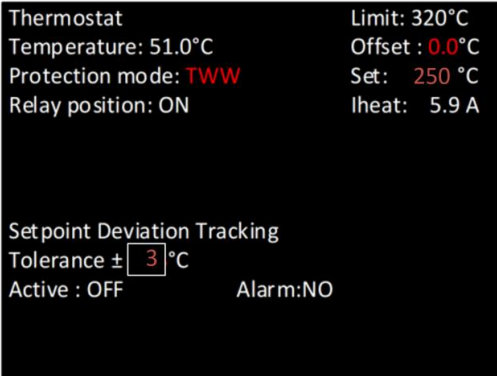
2 and 4 : The SDT alarm is triggered because the measured temperature value goes out of the tolerance.

3 and 5 : The SDT alarm disappear when the measured temperature value goes back within the tolerance.

6 : The SDT monitoring is disabled when the temperature set point is changed.

7 : The SDT monitoring is enabled anew when the measured temperature reaches the tolerance defined around the new set point temperature.

4.2 Setting up SDT Tolerance

1	<u>“Thermostat” display access :</u> - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to enter the electronic thermostat settings display.	
2	<u>SDT Tolerance :</u> - Adjust the « SDT Tolerance » parameter with  or  key. - Confirm with the  key to proceed to the next parameter If you don't want to use the SDT monitoring, set the tolerance to '0' °C.	

5. Regulation

5.1. Simple regulation (temperature)



Never switch off the oven if the oven chamber's temperature is above 50°C.

Manual regulation allows heating and maintaining the temperature in the oven at a constant value.

The main screen displays the measured temperature on the upper line (in green) and the temperature set point on the bottom line (in red).

When the oven is switched-on, the temperature controller turns on, and activates the latest temperature set point.

To define the set point temperature:

- Adjust the set point temperature (in Degree Celsius) with  or  key.
- ⇒ Set point value is automatically memorized.

It is advised to set to '0°C' the temperature set point, to make the oven cool down before switch it off.



5.2. Vacuum regulation (XFE)



Consult the user manual before switching on the pump.

Double check the characteristics of the pump to know to what temperature hot air pumping is tolerated.

It is advised to evacuate before heating the oven. Do not undersize the vacuum pump.

On the XFE range, The vacuum level in the oven is controlled by the temperature controller C3030.

When the oven is switched-on, the temperature controller turns on, and activates the latest vacuum level set point.

Chose vacuum control mode:

Press several times the  key to scroll the menu icons until ( ;  ; ) the icon is selected. Chose the vacuum mode with  or  key.



« Vacuum control » : The vacuum control is active, the setpoint vacuum level is displayed in red on the screen and editable, the C3030 acts on the vacuum and the air inlet solenoid valve to bring back the vacuum level at the setpoint.

En position « Contrôle du vide » la régulation du niveau de vide est activée, la consigne est affichée en rouge sur l'écran et modifiable, le régulateur C3030 agit sur les électrovannes de pompage et d'entrée d'air pour amener le niveau de vide à la consigne



« Closed » : The pumping and the air breaking solenoid valve are closed, blocking any evacuation or venting, the vacuum level is maintained.

En position « Fermé » les électrovannes sont fermées, le niveau de vide est simplement maintenu au niveau actuel



« Atmospheric pressure » : the air breaking is active, the air inlet solenoid valve is open to bring back the oven at the atmospheric pressure, the vacuum pumps is turned off.

En position « Pression atmosphérique » le cassage du vide est activé, l'électrovanne de cassage de vide s'ouvre afin de ramener l'étuve à la pression atmosphérique, la pompe est arrêtée

Adjust the vacuum level :

The main screen displays the measured vacuum level on the upper line (in green) and the set point level vacuum on the bottom line (in red).

Press several times the  key to scroll the menu icons until the set point vacuum level.

Adjust the set point vacuum (in mbar) with  or  key.



6. Timer program

The C3030 controller allows to program an automatic heating sequence from 1 to 4 steps.

Each **step** consists of a temperature ramp, A target duration defining the temperature target holding time and a temperature ramp in Degree Celsius per minute.

A cycle contains all the defined steps. The C3030 controller allows to repeat the cycle and to delay its start.

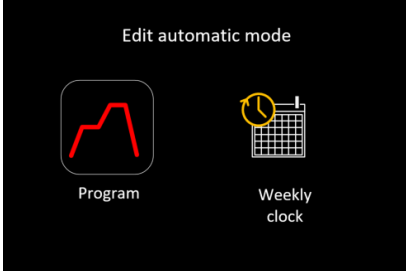
6.1 Timer program structure

Step	Ramp °C/min	Setpoint °C	Dwell Hour : min
1		---.-	---: --
2	--.-	---.-	---: --
3	--.-	---.-	---: --
4	--.-	---.-	---: --
Loop	1	Guaranteed Soak Band	2.0 °C
Start delay		---: --	

Item	Description
Step	Step number (between 1 and 4 max.)
Ramp °C/min	Temperature ramp in Degree Celsius per minute.
Setpoint °C	Temperature target in Degree Celsius
Dwell Hour : min	Target duration, in hour : minutes
Loop	Number of program iteration (default value : 1)
Guaranteed Soak Band	Guaranteed Soak Band for each target, in Degree Celsius
Start delay	Waiting duration before starting the program, in hour: minutes.

6.2 Timer program creation

6.2.1 Step setting

1	<u>“Program” display access :</u> - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to enter the program display.																													
2	<u>Access to the programming page:</u> Press the  key to select the symbol , then press  or  to access the programming page.  “Optional” see 7. Weekly timer (option)																													
3	<u>Temperature ramp :</u> - Let without any value (default setting) to get the fastest temperature increase. - To control the temperature increase, adjust the parameter with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><th>Step</th><th>Ramp °C/min</th><th>Setpoint °C</th><th>Dwell Hour : min</th></tr><tr><td>1</td><td>3.0</td><td>---</td><td>---: --</td></tr><tr><td>2</td><td>---</td><td>---</td><td>---: --</td></tr><tr><td>3</td><td>---</td><td>---</td><td>---: --</td></tr><tr><td>4</td><td>---</td><td>---</td><td>---: --</td></tr><tr><td>Loop</td><td>1</td><td>Guaranteed Soak Band</td><td>2.0 °C</td></tr><tr><td>Start delay</td><td colspan="3">---: --</td></tr></table>	Step	Ramp °C/min	Setpoint °C	Dwell Hour : min	1	3.0	---	---: --	2	---	---	---: --	3	---	---	---: --	4	---	---	---: --	Loop	1	Guaranteed Soak Band	2.0 °C	Start delay	---: --		
Step	Ramp °C/min	Setpoint °C	Dwell Hour : min																											
1	3.0	---	---: --																											
2	---	---	---: --																											
3	---	---	---: --																											
4	---	---	---: --																											
Loop	1	Guaranteed Soak Band	2.0 °C																											
Start delay	---: --																													
4	<u>Temperature set point :</u> - Define the temperature set point with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><th>Step</th><th>Ramp °C/min</th><th>Setpoint °C</th><th>Dwell Hour : min</th></tr><tr><td>1</td><td>3.0</td><td>200</td><td>---:--</td></tr><tr><td>2</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>3</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>4</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>Loop</td><td>1</td><td>Guaranteed Soak Band</td><td>2.0°C</td></tr><tr><td>Start delay</td><td colspan="3">---:--</td></tr></table>	Step	Ramp °C/min	Setpoint °C	Dwell Hour : min	1	3.0	200	---:--	2	---	---	---:--	3	---	---	---:--	4	---	---	---:--	Loop	1	Guaranteed Soak Band	2.0°C	Start delay	---:--		
Step	Ramp °C/min	Setpoint °C	Dwell Hour : min																											
1	3.0	200	---:--																											
2	---	---	---:--																											
3	---	---	---:--																											
4	---	---	---:--																											
Loop	1	Guaranteed Soak Band	2.0°C																											
Start delay	---:--																													
5	<u>Temperature target duration :</u> - First define the hour duration with the  or  key. - Confirm with the  key to proceed to the minute duration setting. - Define the minute duration with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><th>Step</th><th>Ramp °C/min</th><th>Setpoint °C</th><th>Dwell min</th></tr><tr><td>1</td><td>3.0</td><td>200.0</td><td>1:30</td></tr><tr><td>2</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>3</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>4</td><td>---</td><td>---</td><td>---:--</td></tr><tr><td>Loop</td><td>1</td><td>Guaranteed Soak Band</td><td>2.0°C</td></tr><tr><td>---:-- min</td><td>Delay start</td><td colspan="2">Start Now</td></tr></table>	Step	Ramp °C/min	Setpoint °C	Dwell min	1	3.0	200.0	1:30	2	---	---	---:--	3	---	---	---:--	4	---	---	---:--	Loop	1	Guaranteed Soak Band	2.0°C	---:-- min	Delay start	Start Now	
Step	Ramp °C/min	Setpoint °C	Dwell min																											
1	3.0	200.0	1:30																											
2	---	---	---:--																											
3	---	---	---:--																											
4	---	---	---:--																											
Loop	1	Guaranteed Soak Band	2.0°C																											
---:-- min	Delay start	Start Now																												

The first step is now defined.

- To set another step, repeat the instructions above to define **at least the target temperature set point**.

Step	Ramp °C/min	Setpoint °C	Dwell Hour : min
1	3.0	200.0	1:30
2	--.-	100.0	--:--
3	--.-	---.-	--:--
4	--.-	---.-	--:--
Loop	1	Guaranteed Soak Band	2.0°C
Start delay --:--			

- To end the program, let the default values of the next step. Confirm these empty values with the  key until the selection is on the loop parameter. The loop parameter is automatically selected if all the parameter of a step are empty.

6.2.2 Number of program iteration setting

The « **loop** » parameter allows to repeat the program several times.

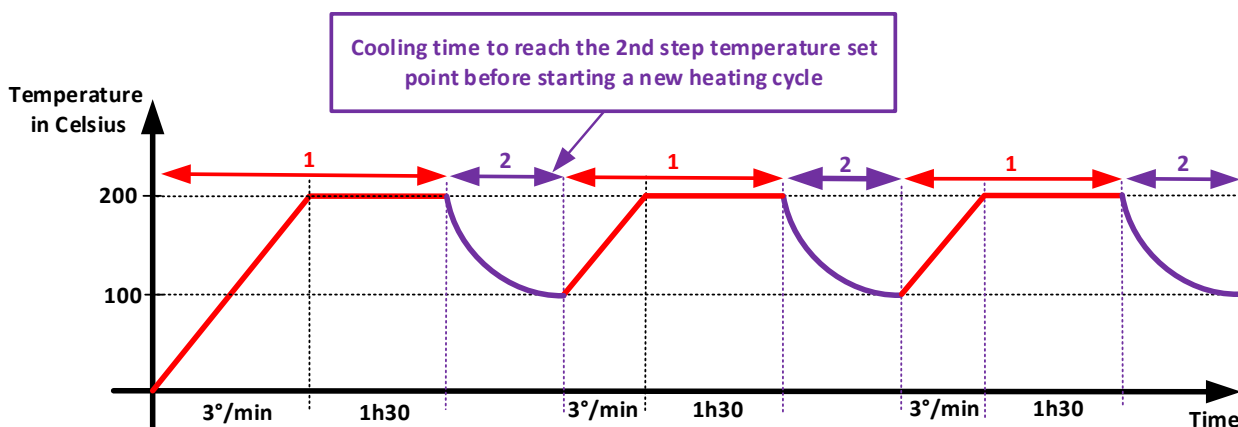
5

Number of program iterations :

- Define the number of loops with the  or  key.
- Confirm with the  key to proceed to the next parameter

Step	Ramp °C/min	Setpoint °C	Dwell Hour : min
1	3.0	200.0	1:30
2	--.-	100.0	--:--
3	--.-	---.-	--:--
4	--.-	---.-	--:--
Loop	3	Guaranteed Soak Band	2.0°C
Start delay		---:--	

Program example with repetition and cooling between 2 cycles:



Remark:

- If your program has only one step, it will only multiply the target duration by the number of loops. Indeed, the measured temperature has already reached the set point temperature at the end of the previous cycle.
- If you wish to decrease the oven temperature between 2 iterations, a new cooling step with a lower set point than the first step must be defined, in order to allow the oven to cool down.

6.2.3 Guaranteed Soak Band settings:

The Guaranteed Soak Band setting defines a gap between the set point and the measured temperature. The target duration countdown starts when the measured temperature reaches this soak band.

The Guaranteed Soak Band is applied to each step target of the program.

The 2°C factory set is suitable for most cases.

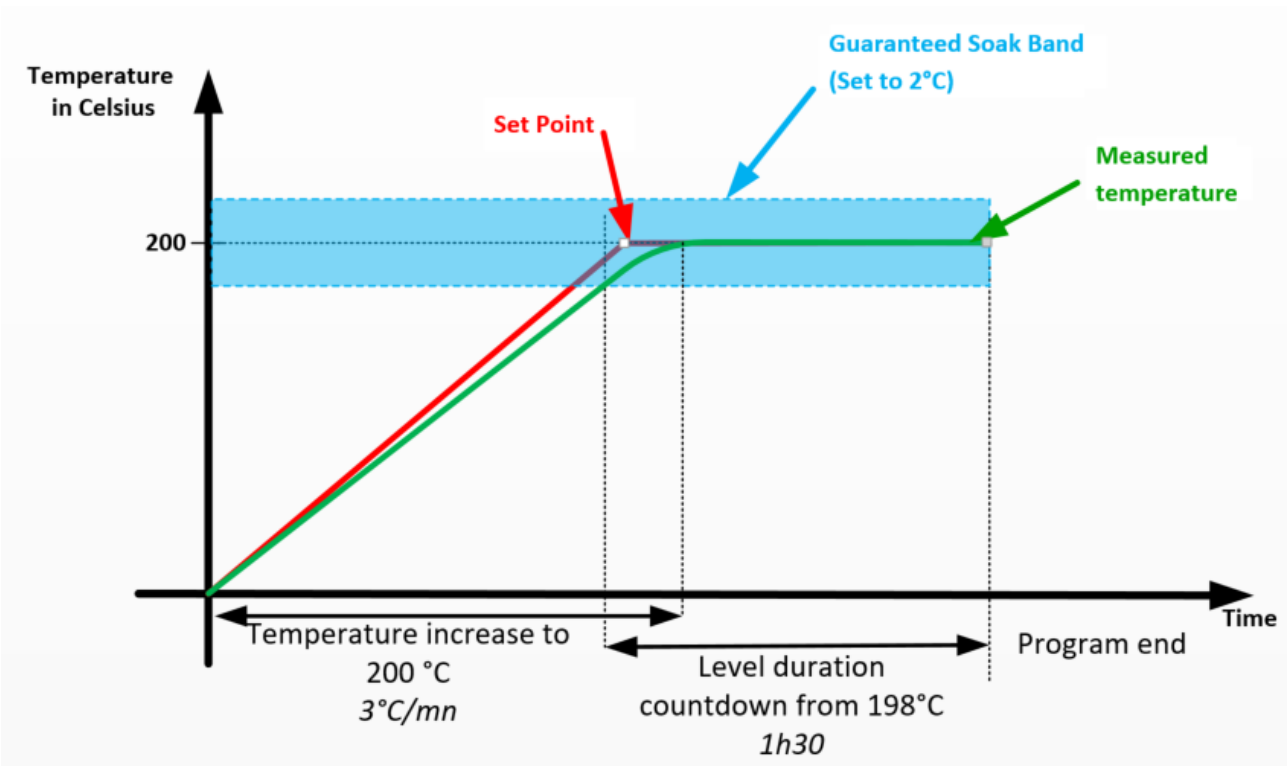
6

Guaranteed Soak Band :

- Define the number of loops with the  or  key.
- Confirm with the  key to proceed to the next parameter

Step	Ramp °C/min	Setpoint °C	Dwell min
1	3.0	200.0	1:30
2	--.-	---.-	--:--
3	--.-	---.-	--:--
4	--.-	---.-	--:--
Loop	1	Guaranteed Soak Band	
--:-- min	Delay start	Start Now	

Guaranteed Soak Band working principle:



6.2.4 Delayed start setting :

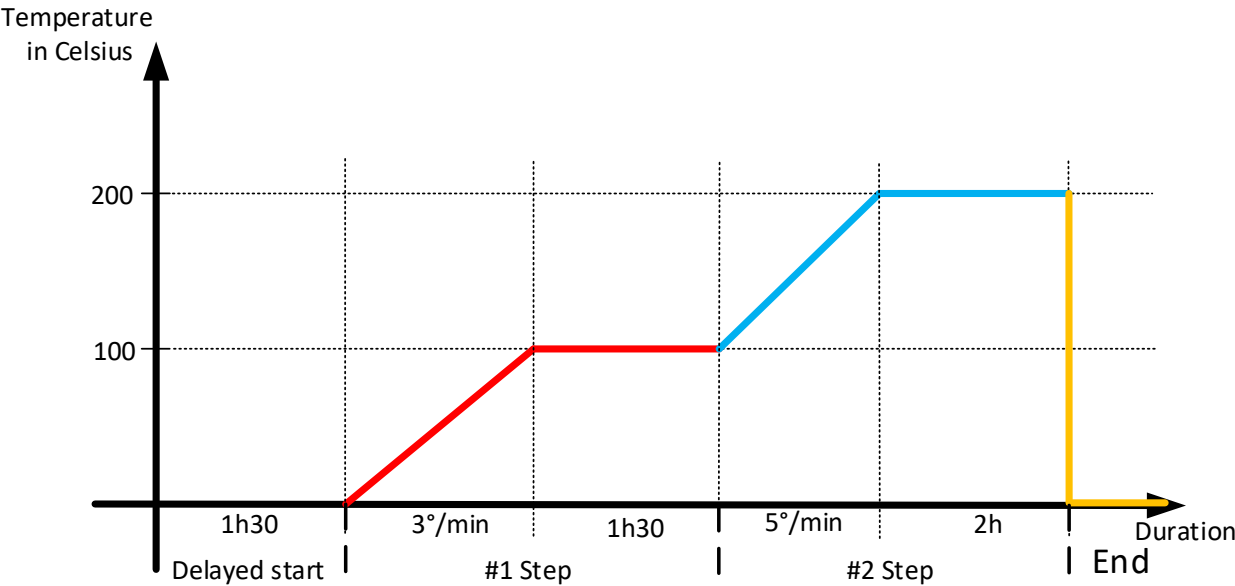
7	Delayed start setting :		
	- Define the number of loops with the  or  key. It is between -- :-- to 500 :59 - Confirm with the  key to proceed to the next parameter  - Press the  key to return to the main display.		
	Step	Ramp °C/min	Setpoint °C
	1	3.0	100.0
	2	5.0	200.0
	3	--,-	---,-
	4	--,-	---,-
Loop 1		Guaranteed Soak Band	2.0 °C
Start delay			

6.2.5 Timer program example

Settings:

Step	Ramp °C/min	Setpoint °C	Dwell Hour : min
1	3.0	100.0	1:30
2	5.0	200.0	2:00
3	--,-	---,-	---:--
4	--,-	---,-	---:--
Loop 1		Guaranteed Soak Band	2.0°C
Start delay		1 : 30	

Execution:



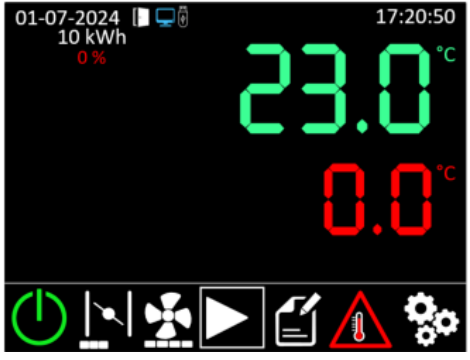
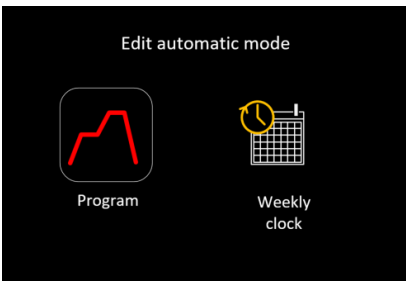
Delayed start: wait 1h30 min before starting cycle.

#1 step: Increasing temperature to 100°C with a 3°C/min ramp, then during stabilization for 1h30

#2 step: Increasing temperature to 200°C with a 5°C/min ramp, then during stabilization for 2h.

End: At the end of the program, the temperature set point is automatically set to 0°C.

6.3 Starting a program Clock

1	Timer program Start : - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to start the timer program	
2	Confirmation : Press the  key to select the symbol , then press  or  to access the programming page.  “Optional” see 7. Weekly timer (option) - Otherwise press the  key to cancel	

Example for an immediate start:



Example for a delayed start:

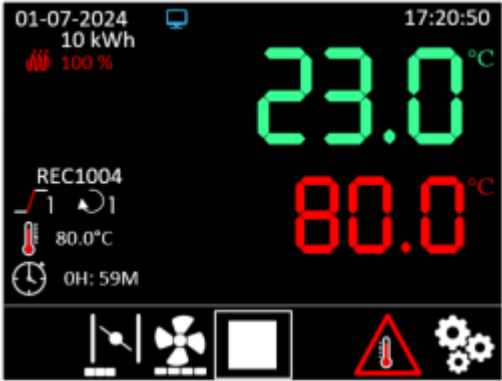
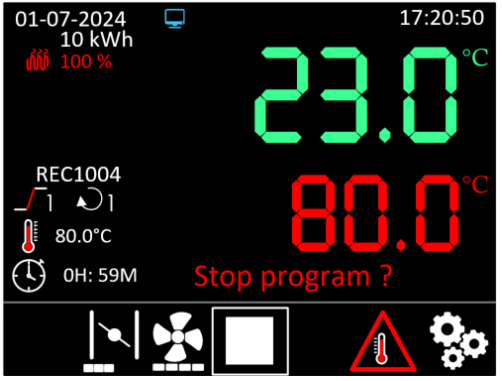
The delayed start of the program is displayed by the **Delay start** indication on the main display.

The remaining time before starting is displayed next to the  icon.



6.4 Stopping the Timer program

A timer program could be stopped while running or paused.
To stop a program:

1	- Press the  key to select the  icon.	
2	- Press the  or  key. ⇒ A Stop program ? indication appears. - Confirm by pressing the  or  key to stop the timer program. - Otherwise press the  key to cancel	

Once the timer program is stopped, the temperature set point is automatically set to 0°C.

6.5 Power failure controller reaction

When the oven is switched on again, the timer program will automatically restart at the running step when power failure occurred.

7. Weekly timer (option)

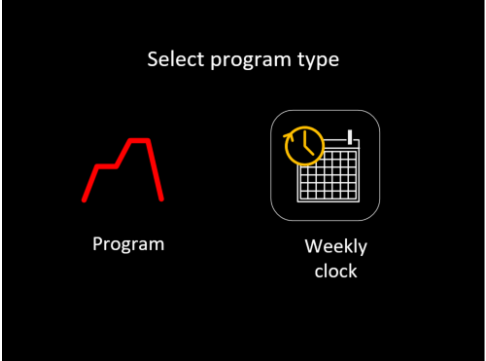
7.1 Working principle

The weekly timer (optional) allows to run your oven on pre-defined operating hours, for each day of the week. It works only for manual regulation. Before using your weekly timer, you should adjust your controller's date and time settings (see [§8.2.6 date and time](#)).

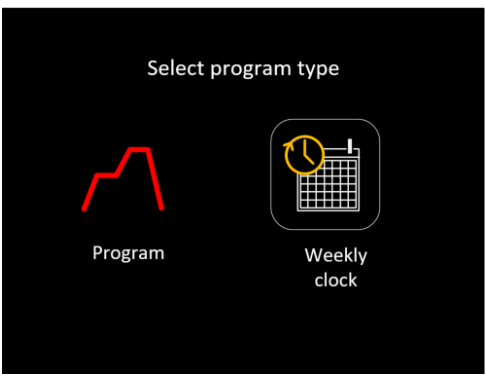
When the temperature controller current date and time will match with the operating hours, the oven's content will be heated to the setpoint temperature during all the defined period.

7.2 Setting and operation

To set the weekly timer:

1	Press the  key to select the symbol , then press  or  to access the page. "Select program type"																												
2	Press the  key to select the symbol , then press  or  to access the page. "Weekly timer"	<table><tr><th></th><th>Begin</th><th>End</th></tr><tr><td>Mon</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Tues</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Wed</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Thur</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Fri</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Sat</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Sun</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td></td><td></td><td></td></tr></table>		Begin	End	Mon	00H:00M	00H:00M	Tues	00H:00M	00H:00M	Wed	00H:00M	00H:00M	Thur	00H:00M	00H:00M	Fri	00H:00M	00H:00M	Sat	00H:00M	00H:00M	Sun	00H:00M	00H:00M			
	Begin	End																											
Mon	00H:00M	00H:00M																											
Tues	00H:00M	00H:00M																											
Wed	00H:00M	00H:00M																											
Thur	00H:00M	00H:00M																											
Fri	00H:00M	00H:00M																											
Sat	00H:00M	00H:00M																											
Sun	00H:00M	00H:00M																											
3	Press the  key to modify the first hour setting : it's the Monday oven starting. Set this starting hour  or  key, with 24h form. Then press again the  key to modify the next hour parameter : the Monday switch-off hour. Repeat the operation to define the operating hour of each day of the week. If you don't want to run the oven on a day, let the hour settings on "00:00".	<table><tr><th></th><th>Begin</th><th>End</th></tr><tr><td>Mon</td><td>08H:00M</td><td>14H:00M</td></tr><tr><td>Tues</td><td>08H:00M</td><td>14H:00M</td></tr><tr><td>Wed</td><td>08H:00M</td><td>14H:00M</td></tr><tr><td>Thur</td><td>08H:00M</td><td>14H:00M</td></tr><tr><td>Fri</td><td>08H:00M</td><td>14H:00M</td></tr><tr><td>Sat</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td>Sun</td><td>00H:00M</td><td>00H:00M</td></tr><tr><td></td><td></td><td></td></tr></table>		Begin	End	Mon	08H:00M	14H:00M	Tues	08H:00M	14H:00M	Wed	08H:00M	14H:00M	Thur	08H:00M	14H:00M	Fri	08H:00M	14H:00M	Sat	00H:00M	00H:00M	Sun	00H:00M	00H:00M			
	Begin	End																											
Mon	08H:00M	14H:00M																											
Tues	08H:00M	14H:00M																											
Wed	08H:00M	14H:00M																											
Thur	08H:00M	14H:00M																											
Fri	08H:00M	14H:00M																											
Sat	00H:00M	00H:00M																											
Sun	00H:00M	00H:00M																											

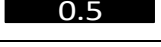
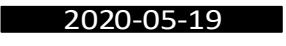
7.3 Start Weekly timer

Press the  key until the icon  is selected and then press  or  to go to the «Select program type» page. Press  to select  Press  or  to allow the clock to run: The oven only starts during the defined operating periods. The  icon will appear blinking in red or green on the screen: see paragraph 1.3	
---	--

8. Controller settings

8.1 Settings parameters description

Ventilated ovens				Vacuum ovens			
P.I.D.	P 10	I 68	D 20	P.I.D.	P 10	I 68	D 20
Temperature Correction	Temp 80.0	Offset 0.2		Temperature Correction	Temp 50.0	Offset -1.0	Coef 0.875
	130.0	0.5			150.0	2.0	
Date time	2020 - 05 - 19 15 : 44 : 32			Date time	2022 - 05 - 09 10:15:30		
RS485	Baud 19200	Parity No	Address 9	RS485	Baud 19200	Parity No	Address 9
Password	10	Beep	ON	Password	10	Buzzer	ON
Stop heating and fan when door is open			YES	Vacuum	Offset -1	DeadBand 3	

Group	Parameter	Description	Unit
P.I.D.		Proportional Band	Degree Celsius
		Reset time	Seconds
		Derivative time	Seconds
Temperature Correction		1 st offset temperature	Degree Celsius
		Offset applied to the 1 st temperature	Degree Celsius
		2 nd offset temperature	Degree Celsius
		Offset applied to the 2 nd temperature	Degree Celsius
Date time		Date	YYYY-MM-DD
		Time	HH:MM:SS

RS485	Baud 19200	Transmission speed : (1200, 2400, 4800, 9600, 19200, 38400, 43000, 57600, 76800, 115200, 128000, 230400, 256000, 460600, 921600)	Bauds
	Parity No	Parity No – Even-Odd	-
	Address 9	Modbus controllers address 1-255	-
Password	10	Settings page password	
Beep	ON / OFF	Beep emission when pressing the controller keys.	
Stop heating and fan when door is open	YES / NO	Fan and heating cut when opening the door.	
Vacuum	Offset -1	Offset applied to the measured vacuum	mbar
	DeadBand 3	Band around the setpoint in which the vacuum regulation is inhibited	mbar

8.2 Defining the parameters

There are two pages within the configuration menu. To move from the first page to the second page, press successively on the key  to scroll through the selection until the last parameter selection.

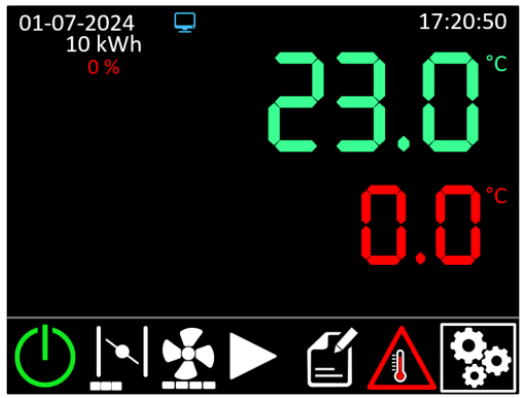
8.2.1: PID regulation



Modifying the P.I.D. factory settings is not recommended: it may degrade the oven performances.

The P.I.D. regulation calculates the needed power to ensure a measured temperature closest to the set point temperature, as quickly as possible. The P.I.D. parameters will intervene in this calculation.

The parameters are the **Proportional band** (P), the **Reset time** (I) and the **Derivative time** (D).

1	“Settings” display access : - Press several times the  key to scroll the menu icons until the  icon is selected - Press the  or  key to enter the settings display.	
---	--	--

2	<u>Logging :</u> - Enter the password value with the  or  key. - Confirm with the  key. The factory defined password is : “10”	PassWord 00																																							
3	<u>Proportional band setting :</u> - To change the proportional band, adjust the parameter with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><td>P.I.D.</td><td>P</td><td>I</td><td>D</td></tr><tr><td></td><td>10</td><td>68</td><td>20</td></tr><tr><td rowspan="2">Temperature Correction</td><td>Temp</td><td colspan="2">Offset</td></tr><tr><td>80.0</td><td colspan="2">0.2</td></tr><tr><td></td><td>130.0</td><td colspan="2">0.5</td></tr><tr><td>Date time</td><td colspan="3">2020 - 05 - 19 15 : 44 : 32</td></tr><tr><td>RS485</td><td>Baud</td><td>Parity</td><td>Address</td></tr><tr><td></td><td>19200</td><td>No</td><td>9</td></tr><tr><td>Password</td><td>10</td><td>Beep</td><td>ON</td></tr><tr><td colspan="3">Stop heating and fan when door is open</td><td>YES</td></tr></table>	P.I.D.	P	I	D		10	68	20	Temperature Correction	Temp	Offset		80.0	0.2			130.0	0.5		Date time	2020 - 05 - 19 15 : 44 : 32			RS485	Baud	Parity	Address		19200	No	9	Password	10	Beep	ON	Stop heating and fan when door is open			YES
P.I.D.	P	I	D																																						
	10	68	20																																						
Temperature Correction	Temp	Offset																																							
	80.0	0.2																																							
	130.0	0.5																																							
Date time	2020 - 05 - 19 15 : 44 : 32																																								
RS485	Baud	Parity	Address																																						
	19200	No	9																																						
Password	10	Beep	ON																																						
Stop heating and fan when door is open			YES																																						
4	<u>Reset time setting :</u> - To change the Reset time, adjust the parameter with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><td>P.I.D.</td><td>P</td><td>I</td><td>D</td></tr><tr><td></td><td>10</td><td>68</td><td>20</td></tr><tr><td rowspan="2">Temperature Correction</td><td>Temp</td><td colspan="2">Offset</td></tr><tr><td>80.0</td><td colspan="2">0.2</td></tr><tr><td></td><td>130.0</td><td colspan="2">0.5</td></tr><tr><td>Date time</td><td colspan="3">2020 - 05 - 19 15 : 44 : 32</td></tr><tr><td>RS485</td><td>Baud</td><td>Parity</td><td>Address</td></tr><tr><td></td><td>19200</td><td>No</td><td>9</td></tr><tr><td>Password</td><td>10</td><td>Beep</td><td>ON</td></tr><tr><td colspan="3">Stop heating and fan when door is open</td><td>YES</td></tr></table>	P.I.D.	P	I	D		10	68	20	Temperature Correction	Temp	Offset		80.0	0.2			130.0	0.5		Date time	2020 - 05 - 19 15 : 44 : 32			RS485	Baud	Parity	Address		19200	No	9	Password	10	Beep	ON	Stop heating and fan when door is open			YES
P.I.D.	P	I	D																																						
	10	68	20																																						
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RS485	Baud	Parity	Address																																						
	19200	No	9																																						
Password	10	Beep	ON																																						
Stop heating and fan when door is open			YES																																						
5	<u>Derivative time setting :</u> - To change the Derivative time, adjust the parameter with the  or  key. - Confirm with the  key to proceed to the next parameter	<table><tr><td>P.I.D.</td><td>P</td><td>I</td><td>D</td></tr><tr><td></td><td>10</td><td>68</td><td>20</td></tr><tr><td rowspan="2">Temperature Correction</td><td>Temp</td><td colspan="2">Offset</td></tr><tr><td>80.0</td><td colspan="2">0.2</td></tr><tr><td></td><td>130.0</td><td colspan="2">0.5</td></tr><tr><td>Date time</td><td colspan="3">2020 - 05 - 19 15 : 44 : 32</td></tr><tr><td>RS485</td><td>Baud</td><td>Parity</td><td>Address</td></tr><tr><td></td><td>19200</td><td>No</td><td>9</td></tr><tr><td>Password</td><td>10</td><td>Beep</td><td>ON</td></tr><tr><td colspan="3">Stop heating and fan when door is open</td><td>YES</td></tr></table>	P.I.D.	P	I	D		10	68	20	Temperature Correction	Temp	Offset		80.0	0.2			130.0	0.5		Date time	2020 - 05 - 19 15 : 44 : 32			RS485	Baud	Parity	Address		19200	No	9	Password	10	Beep	ON	Stop heating and fan when door is open			YES
P.I.D.	P	I	D																																						
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Temperature Correction	Temp	Offset																																							
	80.0	0.2																																							
	130.0	0.5																																							
Date time	2020 - 05 - 19 15 : 44 : 32																																								
RS485	Baud	Parity	Address																																						
	19200	No	9																																						
Password	10	Beep	ON																																						
Stop heating and fan when door is open			YES																																						

8.2.2 Temperature correction:



Modifying this parameters requires an oven calibration.

The offsets parameters allow to save the gap value for one or two defined temperatures between the measurement made by a reference probe and the controller's measurement.

Then the controller will **correct its temperature measurement for regulation and display** with a calculation based on these values. The offsets values could only be **adjusted between -3.0°C and +3.0°C**.

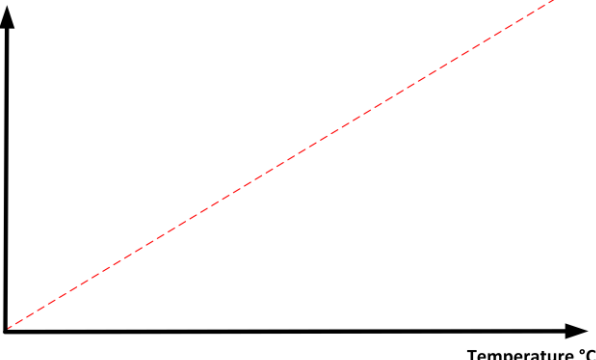
The regulation chain has been factory tested and calibrated. We advise you to calibrate and test your oven **at least once a year**.

Case n°1 : Temp.1 : ---.- and Temp.2 : ---.- : no correction applied to the measured value

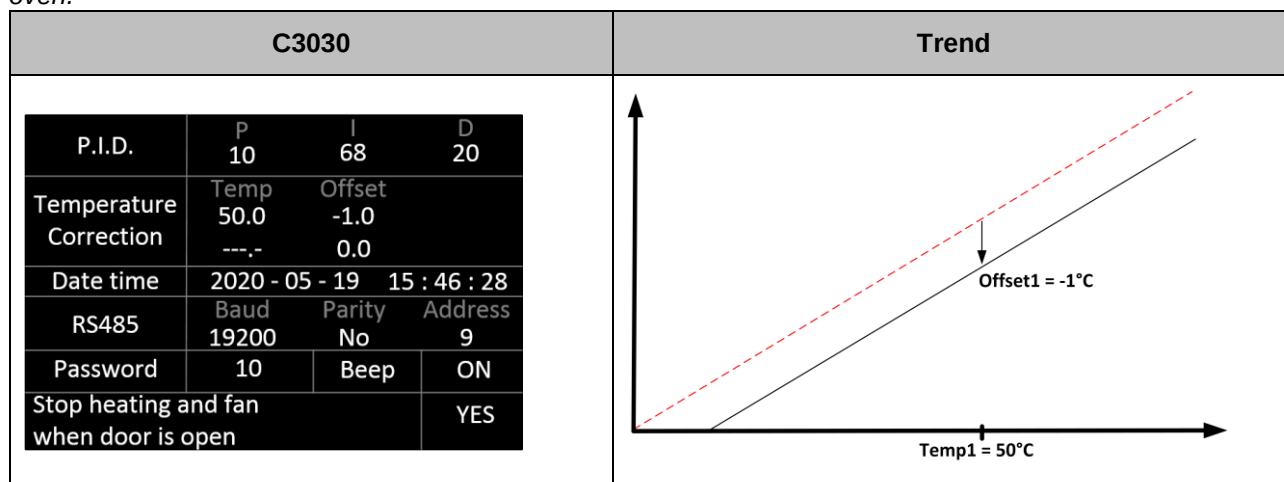
C3030

P.I.D.	P	I	D
	10	68	20
Temperature Correction	Temp	Offset	
	---.-	0.0	
	---.-	0.0	
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

Trend

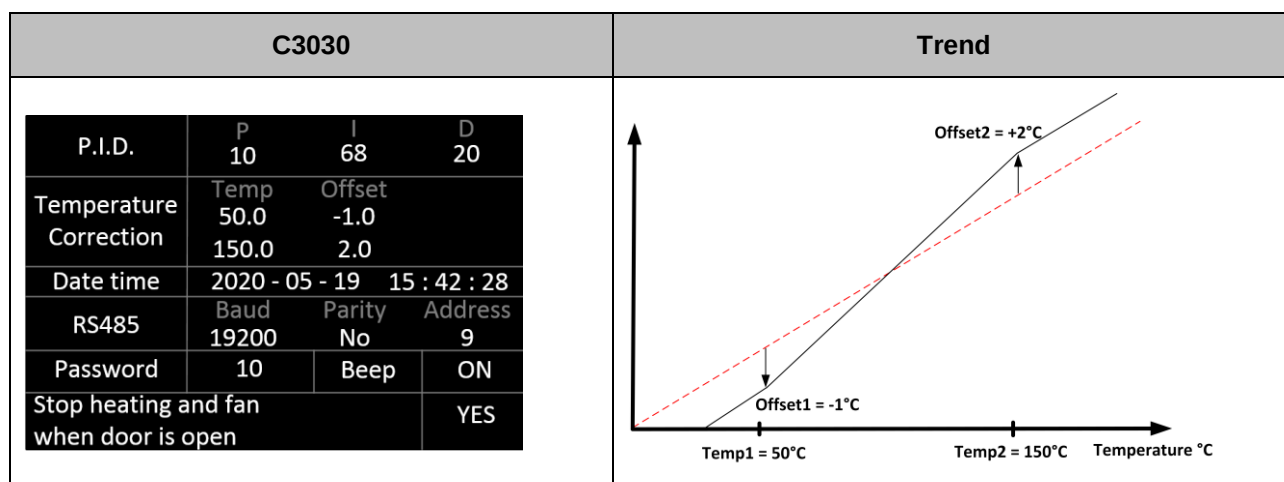


Case n°2 : Temp.1 : 50.0°C and Temp.2 : ---.- The first offset is applied to the whole operating range of the oven.



Case n° 3 :

Temp.1 : 50.0°C and Temp.2 : 150.0°C : The 2 offsets are applied according the following schematic :



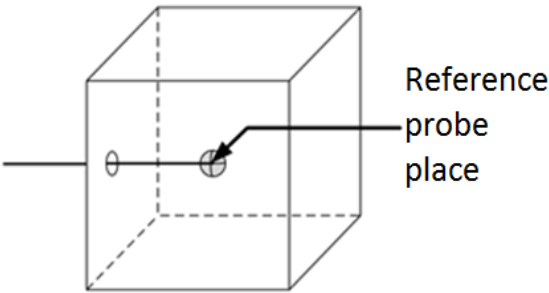
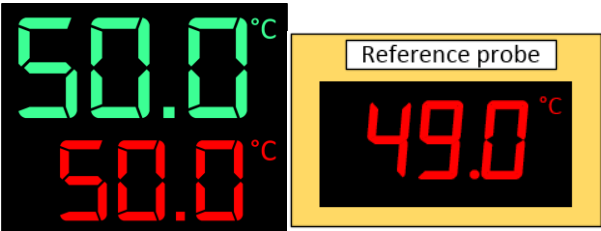
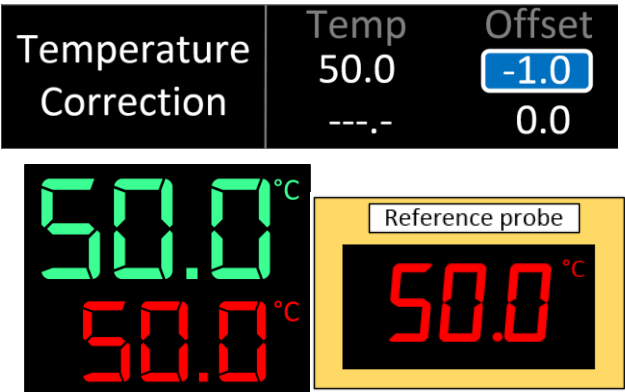
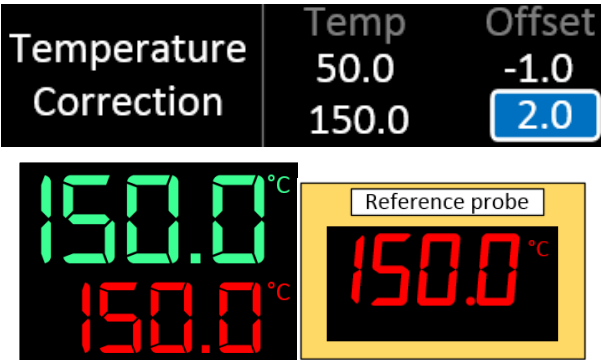
Procedure example to set a first offset at 50°C and a second at 150°C :

6

Initial offset settings :

- Adjust the first “Temp” parameter to 50°C with the or key.
- Confirm with the key to proceed to the next parameter
- Adjust the first “Offset” parameter to 0.0°C with the or key.
- Confirm with the key to proceed to the next parameter

P.I.D.	P 10	I 68	D 20
Temperature Correction	Temp	Offset	
	50.0	0.0	
	---,-	0.0	
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

7	<u>Reference probe installation :</u> - Insert the reference probe at the center of the oven's chamber	
8	<u>Temperature increase to 50°C :</u> - Press the  key to return to the main display. - Set a 50°C temperature set point. - When the measured temperature is stabilized to 50°C, calculate the difference between your controller's display and the reference probe. It's the offset value.	
9	<u>Offset value entry</u> - Go back to the first "Offset" parameter with the above procedure. Enter the last step's calculated value with the  or  key. - Confirm with the  key Now the temperature displayed by the controller and the reference probe must be the same.	
10	<u>Second offset setting :</u> - Repeat the operations described above with a different temperature. - Set the second "Offset" parameter to the newly calculated value.	

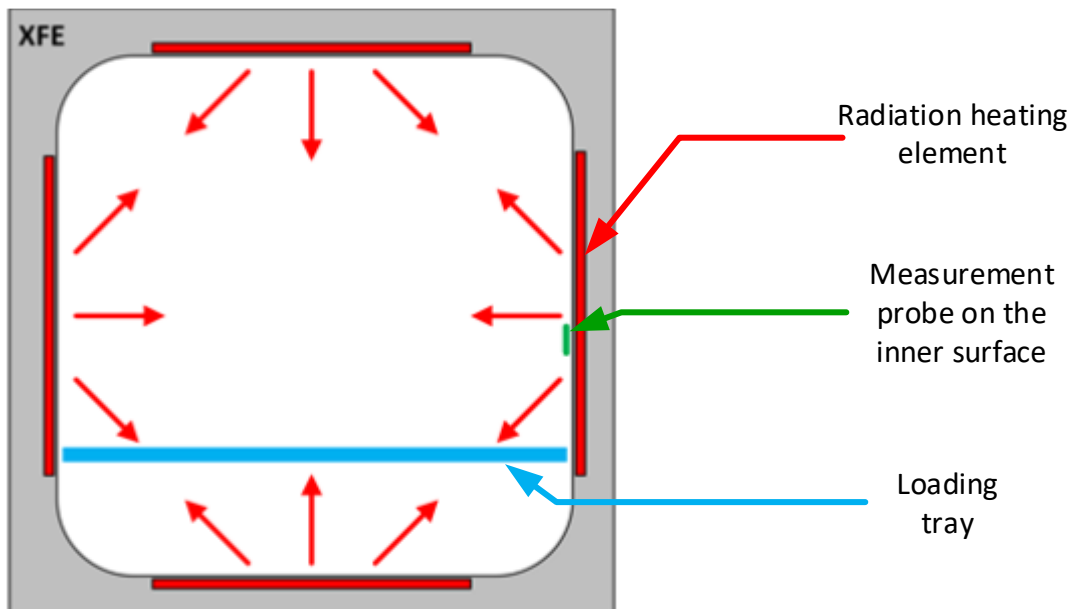
8.2.3 Temperature coefficient (for XFE range)



Modifying the “Temperature coefficient” factory setting is not recommended : it may degrade the oven performances.

8.2.4 XFE range working principle :

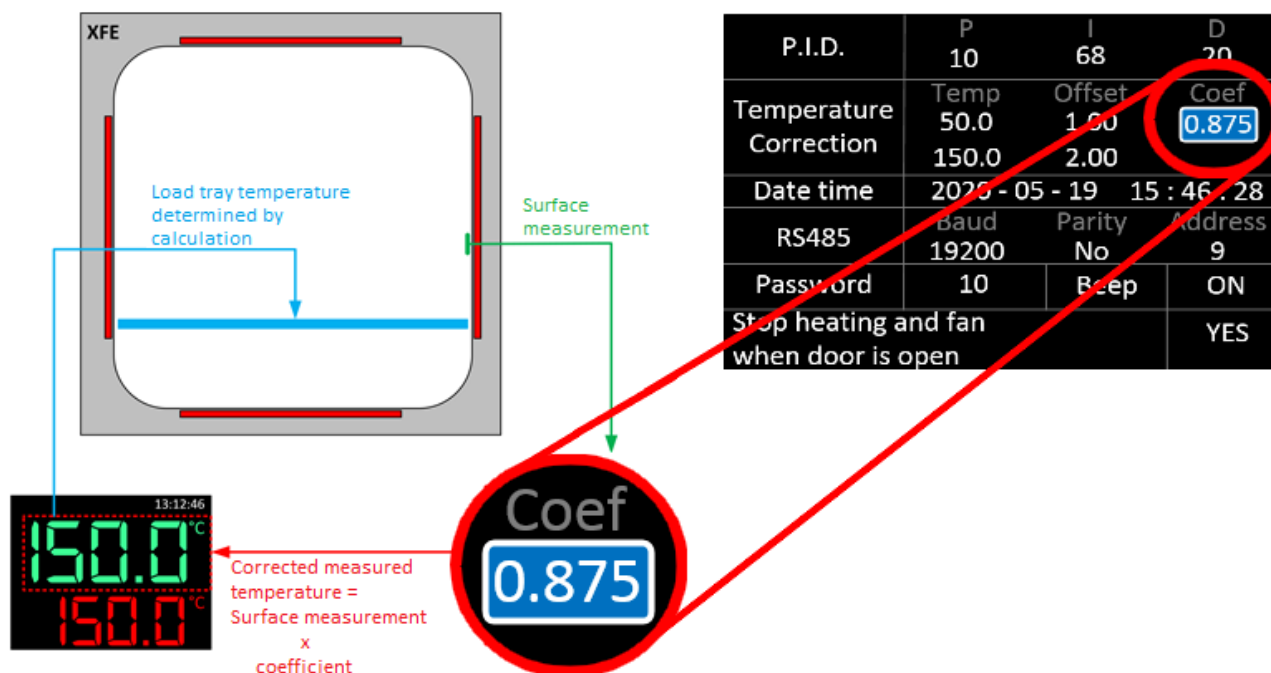
In XFE vacuum oven, the temperature measurement is taken on the inner surface of the chamber.



8.2.5 Temperature coefficient function working

The temperature coefficient function provides an estimation of the temperature in the loading tray center from the measurement made on the oven's surface. The calculated temperature is the **product of the measured temperature by the coefficient**.

Working principle :



Example :

The probe on the inner surface of the chamber measures 171°C.

The factory set coefficient for this oven model is 0.875.

The calculated temperature on the tray in Degree Celsius is equal to Temperature measurement x Coefficient = 171°C x 0.875 = 150 °C.

If the coefficient is set to '1', the displayed temperature value on the controller will be equal to the surface measured temperature.

8.2.6 Date and time

The date is entered in the Year / Month / Day form ; the time in the Hour : Minute : Seconds form.

P.I.D.	P 10	I 68	D 20
Temperature Correction	Temp 50.0 150.0	Offset -1.0 2.0	Coef 0.875
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud 19200	Parity No	Address 9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

8.2.7 RS 485 connection

The C3030 controller can be remote-controlled with a Modbus connection described in detail below in [§ 9.1 Modbus protocol](#)

The parameters of this link are : The baud rate, the parity bit activation and the Modbus controller address.

P.I.D.	P 10	I 68	D 20
Temperature Correction	Temp 50.0 150.0	Offset -1.0 2.0	Coef 0.875
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud 19200	Parity No	Address 9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

8.2.8 Password

This parameter allows definition of a password in order to access the controller settings (default value : '10').

P.I.D.	P 10	I 68	D 20
Temperature Correction	Temp 50.0 150.0	Offset -1.0 2.0	Coef 0.875
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud 19200	Parity No	Address 9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

8.2.9 Beep

The “Beep” parameter allows to enable or disable a beep emission when pressing the controller keys.

P.I.D.	P	I	D
	10	68	20
Temperature Correction	Temp	Offset	Coef
	50.0	-1.0	0.875
	150.0	2.0	
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Beep	ON
Stop heating and fan when door is open			YES

8.2.10 Heating and fan stop when door is open



Never open the door during an extended period if the inside temperature is above 80°C.

It could overheat the fan motor and definitely damage it.

The operator which load and empty the oven must wear the adequate protection equipment (protective helmet, safety footwear, gloves against heat and cut...)



The “Stop heating and fan when the door is open” parameter allows to enable or disable heating and internal fan shut-off once the door is open on **XUE/XUELT/XBE range**.

P.I.D.	P	I	D
	10	68	20
Temperature Correction	Temp	Offset	Coef
	50.0	-1.0	0.875
	150.0	2.0	
Date time	2020 - 05 - 19 15 : 42 : 28		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Beep	ON
Stop heating and fan when door is open			YES



When the door is open, the icon appears on the main screen.

8.2.11 Vacuum setup (XFE)

In the case of XFE range, a vacuum measure is displayed on the screen (refer to §1.3). The correction of this measure is made thanks to a parameters named "Vacum".

Vacuum measure correction (Offset)

This parameters expressed in millibars allows to bridge the gap between the ovens measure and a standard. It applies for all value measured.

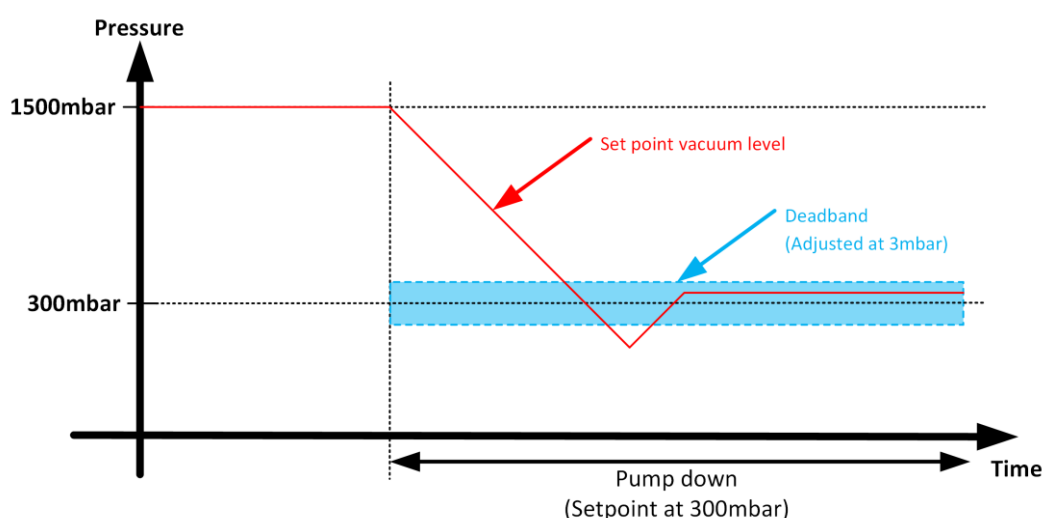
P.I.D.	P	I	D
	10	68	20
Temperature Correction	Temp	Offset	Coef
	50.0	-1.0	0.875
	150.0	2.0	
Date time	2022 - 05 - 09 10:15:30		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Buzzer	ON
Vacuum	Offset		DeadBand
	-1		3

8.2.12 DeadBand

This parameters, expressed in millibars, allows to define a difference between the set point and the measured vacuum level.

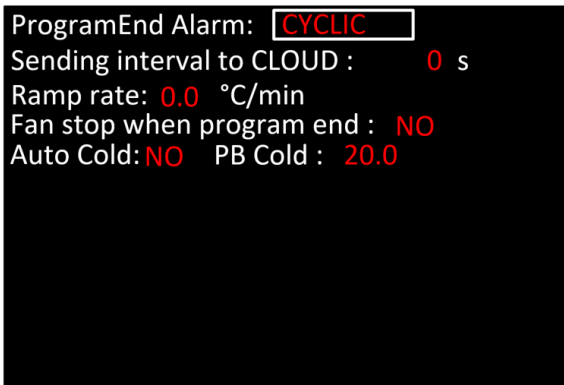
If the gap between the setpoint and the vacuum level is over the deadband, the air breaking or the pumping solenoid valve will activate until the measured vacuum level reaches the setpoint desired.

For example, for a 3mbar tolerance and a set point of 300mbar, the measured vacuum level must be situated between 297mbar and 303mbar.



P.I.D.	P	I	D
	10	68	20
Temperature Correction	Temp	Offset	Coef
	50.0	-1.0	0.875
	150.0	2.0	
Date time	2022 - 05 - 09 10:15:30		
RS485	Baud	Parity	Address
	19200	No	9
Password	10	Buzzer	ON
Vacuum	Offset		DeadBand
	-1		3

8.2.13 Program end alarm



ProgramEnd Alarm: **CYCLIC**
Sending interval to CLOUD : **0** s
Ramp rate: **0.0** °C/min
Fan stop when program end : **NO**
Auto Cold: **NO** PB Cold : **20.0**

To reach this page see paragraph 8.2.

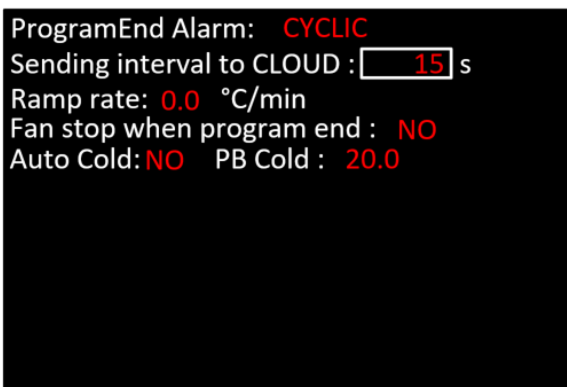
Three choices are possible for the end of program alarm

-ONE SHOT: the audible alarm goes off once and stops.

-CYCLIC: the audible alarm is triggered with a series of 3 beeps spaced 20 seconds apart

-CONTINUED: at the end of the program the audible alarm beeps continuously and only stops if the user presses a button.

8.2.13 Interval of sending to the CLOUD



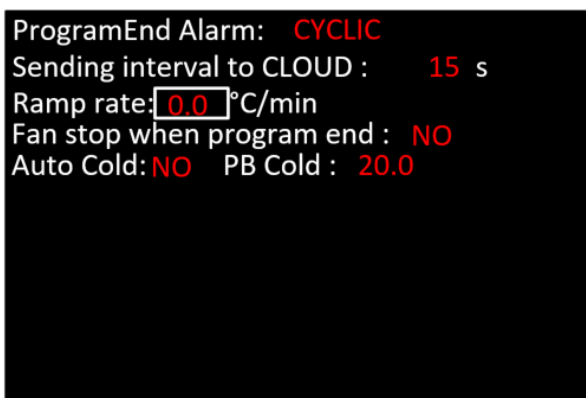
ProgramEnd Alarm: **CYCLIC**
Sending interval to CLOUD : **15** s
Ramp rate: **0.0** °C/min
Fan stop when program end : **NO**
Auto Cold: **NO** PB Cold : **20.0**

Adjust the “Sending interval to CLOUD” parameter with  or  keys.

This parameter determines the interval (in seconds) to send data to the CLOUD server

(PS: For a value of “0s” the C3030 does not send data)

8.2.14 Ramp rate



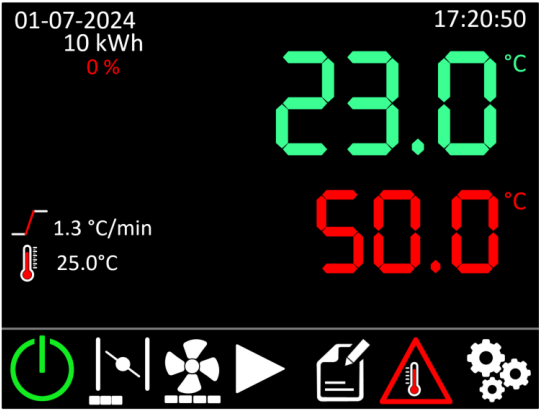
ProgramEnd Alarm: **CYCLIC**
Sending interval to CLOUD : **15** s
Ramp rate: **0.0** °C/min
Fan stop when program end : **NO**
Auto Cold: **NO** PB Cold : **20.0**

This parameter is used in simple regulation mode. See paragraph 5.1.

Allows you to define a ramp rate for the temperature setpoint. It is expressed in degrees per minute. Each time the setpoint value is modified (from the controller front panel or via communication), the working setpoint will follow a ramp starting from the temperature measurement and respecting the rate defined by this parameter. A value of 0.0°C/min disables the ramp.

Adjust the “Sending interval to CLOUD” parameter with  or  keys.

PS: In case the "Ramp rate" is not 0.0 °C/min, the start-up screen will display two additional details.



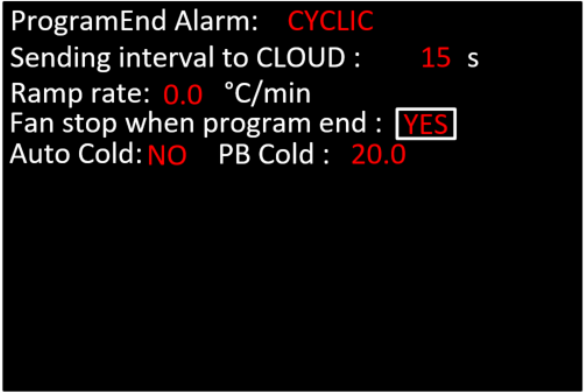
Objet	Description
 1.3°C/min	The manual ramp value
 25.0°C	Working setpoint which changes according to the ramp (starts with the temperature measured in the oven up to the setpoint temperature).

When the working setpoint reaches the manual setpoint, both values disappear from the start screen.

8.2.16 Fan stop at the end of program

To reduce power consumption, the “Fan Stop when program end” parameter allows you to turn off the ventilation at the end of the program.

PS: The heater is turned off and the fan continues to run if the temperature is above 80°C.



Adjust this parameter with  or  keys.

8.2.17 Automatic cooling and Proportional cold band. (depending on options)

These parameters are applicable only if the C3030 controls air renewal.

- If the option "Auto cold" is enabled, the C3030 will use air renewal to cool the oven.

- The PB Cold parameter is the proportional band dedicated to cooling that adjusts the air renewal opening according to the difference between the measured value and the set point.

Increase the value of PB Cold if the cooling temperature is unstable.

Decrease the value of PB Cold if the temperature takes time to reach the set

ProgramEnd Alarm: **CYCLIC**
Sending interval to CLOUD : **0 s**
Ramp rate: **0.0 °C/min**
Fan stop when program end : **YES**
Auto Cold: **YES** PB Cold : **20.0**

ProgramEnd Alarm: **CYCLIC**
Sending interval to CLOUD : **0 s**
Ramp rate: **0.0 °C/min**
Fan stop when program end : **YES**
Auto Cold: **YES** PB Cold : **20.0**

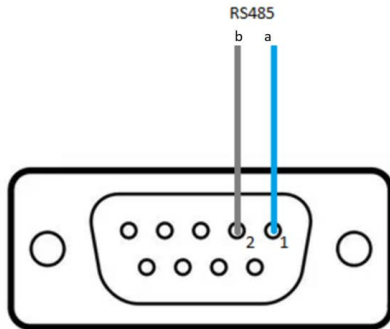
Adjust this parameter with  or  keys.

9. Remote oven control from a P.C.

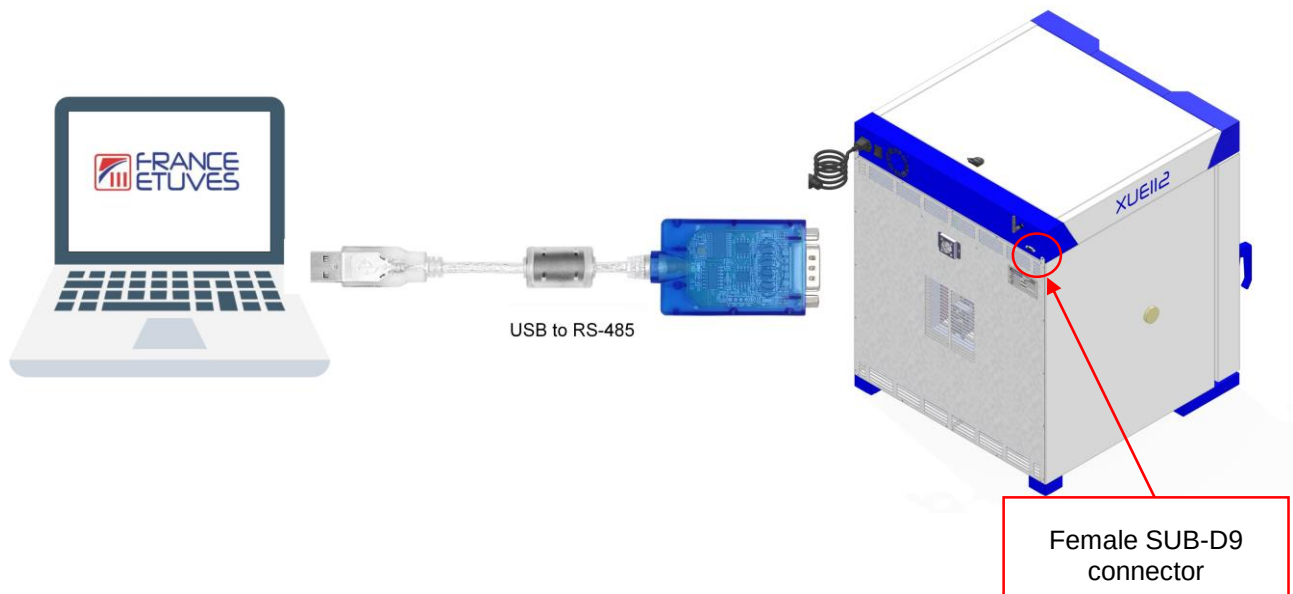
The C3030 controller allows a remote control with a Modbus protocol on a RS485 connection. (see [§ 8.2.7](#) for its setting).

9.1 Pinout

RS485 communication is possible using a SUB-D9 connector located back of the oven. It's pinout is as follows:



Example of connection:



NB: The USB to RS-485 cable is not supplied with the oven. To be ordered separately.

9.2. Modbus protocol

9.2.1 Data frame to send to the controller

Below, the layout of the data frame to send to the controller if you want to **read** data.

Byte number	Description
Byte 1	Controller address (<i>default : '09'</i>)
Byte 2	Function : 03-Reading
Byte 3	1 st variable address (see paragraph 9.3)
Byte 4	
Byte 5	Number of variable(s) to read
Byte 6	
Byte 7	CRC16 : Cyclic Redundancy Check
Byte 8	

Below, the layout of the data frame to send to the controller if you want to **write** data.

Byte number	Description
Byte 1	Controller address
Byte 2	Function : 06 - Writing
Byte 3	Variable address (see paragraph 9.3)
Byte 4	
Byte 5	Values to write in the variable
Byte 6	
Byte 7	CRC16 : Cyclic Redundancy Check (calculated)
Byte 8	

9.2.2 Controller-returned data frame

Below, the data frame sent back by the controller in case of reading:

Byte Number	Description
Byte 1	Controller address
Byte 2	Function : 03-Reading
Byte 3	Number of data bytes sent
Byte 4 to Byte n-2	Variables polled values
Byte n-1	CRC16 : Cyclic Redundancy Check
Byte n	

The data frame sent back by the controller in case of writing, is a copy of the received data frame
In case of error the controller returns an error code (contact service)

9.3. List of available parameters via Modbus communication

RO = Read Only variable available only for **reading**

R/W = Read/Write variable available for **reading or writing**

Action	Variable	Address (hex)	Comment
RO	Measured temperature	01	In decimal of Degree Celsius <i>example : 1234 for a 123.4°temperature</i>
R/W	Temperature set point	02	In decimal of Degree Celsius
RO	Heating power	03	In percent of total power
RO	Oven status	04	01 Standby 02 Manual mode 03 Delayed start 05 Running program 06 Weekly timer running 07 Program end
RO	Program status	05	01 First start 02 Ramp in progress 03 Dwell in progress 04 Ramp paused 05 Dwell paused
RO	Target duration left	06	In minutes
RO	Time before delayed start left	07	In minutes
RO	Running loop number	08	Running loop number (if a program is running)
RO	Step running number	09	00 Step number 1 01 Step number 2 02 Step number 3 03 Step number 4
RO	Maximal oven temperature	0A	In 0.1 °C
RO	Sensor type	0B	01 PT100 02 TCJ
RO	Oven model	0C	01 :XUE 02 :XUP 03 :XUELT 04 :XB 05 :XL 06 :XXL 07 :XAS 08 :XFL 09 :XFE 0A :XBR 0B :XUEHT 0C :XBE 0D :XDH 0E :XTOP 0F :XFP 10 :XHT 11 :XM 12 :XBELT 13 :SP

Action	Variable	Address (hex)	Comment
RO	Thermostat card availability	0D	00 N (no) 01 Y (yes) 02 "3IN1"
RO	Motor type	0E	Motor type for internal fan 00 for NONE 01 for JAKEL 02 for SANYUE 03 for EBM 04 for YUTIAN 05 for RELAY
R/W	Fan speed	0F	00 stop 01 slow speed 02 medium speed 03 upper-medium speed 04 maximal speed
RO	Temperature thermostat protection	10	Measured temperature by the thermostat card 0.1
RO	Thermostat failure	11	00 No alarm 01 TWW alarm (See §3.3) 02 TWB alarm (See §3.4) 03 SDT alarm (See §4.1) 05 TB alarm (See §3.2)
RO	Thermostat mode	12	TWB or TWW (See §3.1)
RO	SDT temperature	13	SDT value (See §4.2) en °C
RO	Thermal limiter	14	Maximal protection thermostat setpoint temperature en °C
RO	Heating current (pour XU oven)	15	In decimal of Amps
RO	Vacuum measure	16	0 to 1000 (mBar)
R/W	Vacuum setpoint	18	0 to 1000 (mBar)
RO	Intensity in the fan port	1A	Current value of the brewing motor in amps

Action	Variable	Address (hex)	Comment
R/W	Step 1 ramp	50	In decimal of Degree Celsius per minute
	Step 1 temperature set point	51	In decimal of Degree Celsius
	Step 1 target duration	52	In minutes
R/W	Step 2 ramp	53	In decimal of Degree Celsius per minute
	Step 2 temperature set point	54	In decimal of Degree Celsius
	Step 2 target duration	55	In minutes
R/W	Step 3 ramp	56	In decimal of Degree Celsius per minute
	Step 3 temperature set point	57	In decimal of Degree Celsius
	Step 3 target duration	58	In minutes
R/W	Step 4 ramp	59	In decimal of Degree Celsius per minute
	Step 4 temperature set point	5A	In decimal of Degree Celsius
	Step 4 target duration	5B	In minutes
R/W	Number of loops	5C	Between 1 and 999.
R/W	Guaranteed soak band	5D	In decimal of Degree Celsius
R/W	Delay start time	5E	In minutes
R/W	Program command	5F	0 Stop 1 Start 2 Pause 3 Delayed start

9.4. France-étuves remote control software

A remote control software for a Windows OS computer is available for downloading on this website:

[www.france-étuves.com](http://www.france-etuves.com)

10 Troubleshooting

10.1 General safety instructions



For any repairs which does not require the power on of the oven, disconnect the oven from the electrical network.

Any repairs must be realized oven at ambient temperature.

Any repairs must be realized by authorized, trained and skilled technicians.

The persons in charge of troubleshooting must protect themselves by wearing Personal Protective Equipment.

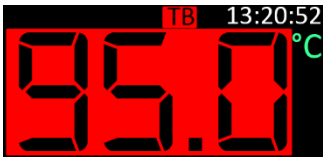


10.2 Failures displayed

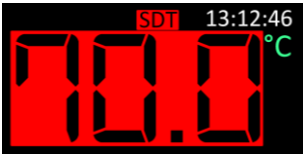
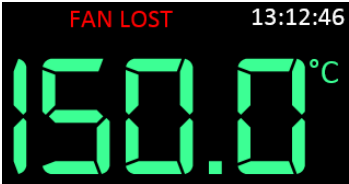
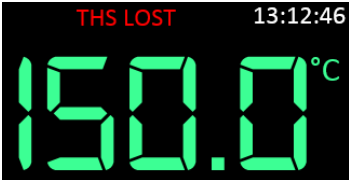
When a failure appears, an audible alarm is switched on intermittently and the graphic screen displays the failure type.

You can switch off the audible alarm by pressing any controller's key.

10.2.1. Electronic thermostat failures

Displayed failures	Possible causes	Repairs
TB alarm  Maximal thermostat available set point triggered	Protection thermostat triggered ⇒ The maximal available thermostat setpoint value has been exceeded	Check the proper running of the oven for a lower sepoint temperature. (See §3.2) If the failure remains, contact the after sales team .
TWW alarm  The electronic thermostat in TWW mode triggered	The protection thermostat triggered. ⇒ The gap between the regulator's and the thermostat's temperature set point is too small.	Increase the thermostat's temperature set point or decrease the regulator temperature set point. (See §3.3) If the failure remains, contact the after sales team .
TWB alarm  The electronic thermostat in TWB mode triggered	The protection thermostat triggered. ⇒ The gap between the regulator's and the thermostat's temperature set point is too small.	Increase the thermostat's temperature set point or decrease the regulator temperature set point. (See §3.4) If the failure remains, contact the after sales team .

10.2.2. Other failures

Displayed failures	Possible causes	Repairs*
SDT alarm 	SDT (Setpoint Deviation Tracking) monitoring triggered ⇒ SDT too small or sudden temperature change in the oven (door open while heating)	Increase the SDT tolerance (See §3.2) If the failure remains, contact the after sales team .
« FAN » indication 	Internal fan failure	Disconnect the oven from the electrical grid and check the wiring and the motor condition Contact the after sales team .
« RST » indication 	Heating element failure Solid State Relay failure	Disconnect the oven from the electrical grid and check the resistor value is different from zero. Contact the after sales team .
« SSR » indication 	Solid State Relay failure	Replace the solid state relay Contact the after sales team .
« FAN LOST » indication 	Communication failure between the thermostat card and the fan card.	Check the wiring between the electronic cards. Contact the after sales team .
«THS LOST » indication 	Communication failure between the temperature controller and the thermostat card.	Check the wiring between the electronic cards. Contact the after sales team .

* The operation must be realized by a trained, skilled and qualified technician

10.3 Breakdowns

In case of malfunction, under normal use, please consult the following table:

Troubles	Possible causes	Repairs *
The controller does not start (the main switch is switched on)	Disconnected or defective power supply cable	Check the wiring and the status of the power supply cable. Contact the after sales team .
	Defective temperature controller	Check the controller power supply and wiring Contact the after sales team .
The temperature controller displays incoherent values <i>Example: 999.9°C</i>	Controller's probe badly connected or defective	Check the probe wiring on the controller, and replace it if needed. Contact the after sales team .
	Controller's probe badly placed in the oven chamber.	Check the control probe is placed in front of the suction grid and maintained. Contact the after sales team .
The vacuum controller displays incoherent values <i>Example: 0mbar</i>	The vacuum probe badly connected or defective.	Check the probe wiring, and replace it if needed. Contact the after sales team
	Communication failure between the vacuum card and the temperature controller.	Check the wiring between the vacuum cards. Contact the after sales team
The electronic thermostat triggers as soon as the oven is switched on.	Thermostat's probe badly connected or defective	Check the probe wiring on the thermostat, and replace it if needed. Contact the after sales team .
The temperature controller displays an inconsistent time, no longer saving the configured parameters.	The controller battery is discharged.	Change the battery of the controller. Contact the after sales team .
The temperature controller don't increase the temperature in the oven	Weekly timer in operation and inactive.  displayed	Change the setting of the weekly timer or disable. See §7. Weekly timer (option)

* The operation must be realized by a trained, skilled and qualified technician.

11 Contacts et links

Service	Contact
Ordering parts	www.france-etuves.com/store
	+33 (0)1 64 21 30 60
	sav@france-etuves.com
After Sale Services	www.france-etuves.com/sav-support
	+33 (0)1 64 21 30 60
	sav@france-etuves.com
Sales department	www.france-etuves.com/contact
	+33 (0)1 64 21 30 60
	sales@france-etuves.com

FRANCE ETUVES

65/67 rue Auguste Meunier

77500 Chelles – FRANCE

Phone : +33 1 64 21 30 60

Fax : +33 1 64 21 30 86

Website: www.france-etuves.com