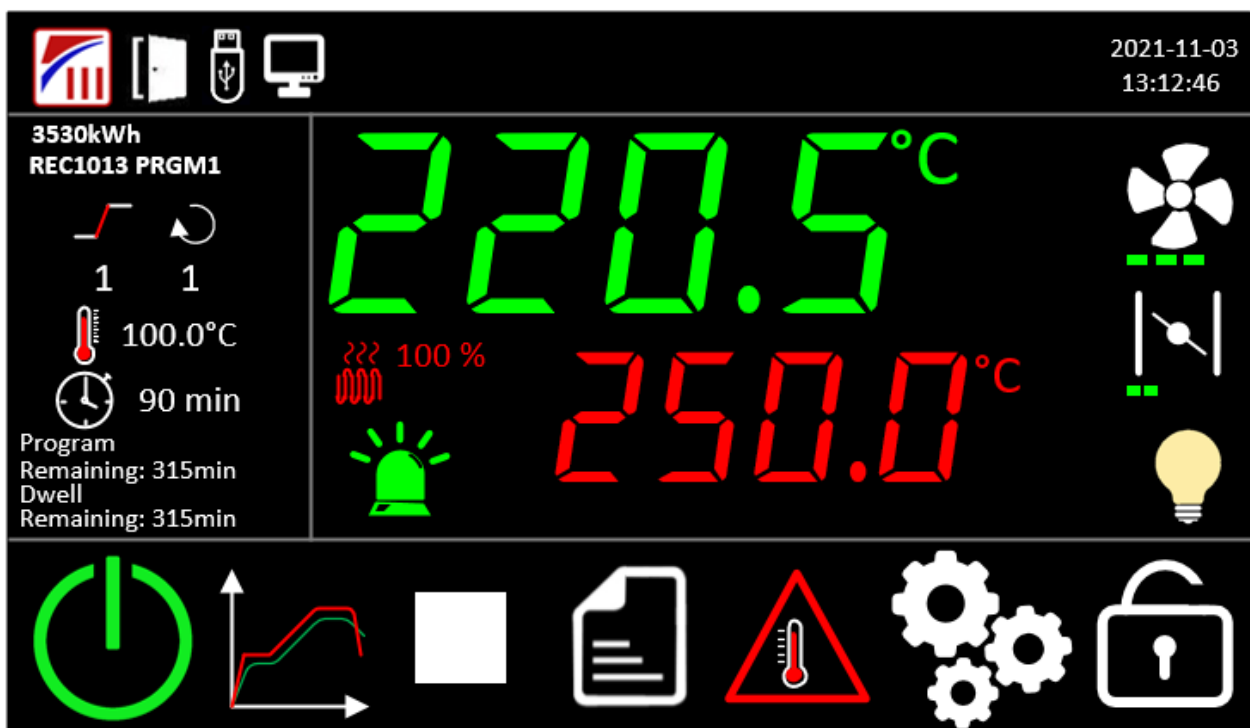


**Temperature controller C6000**

*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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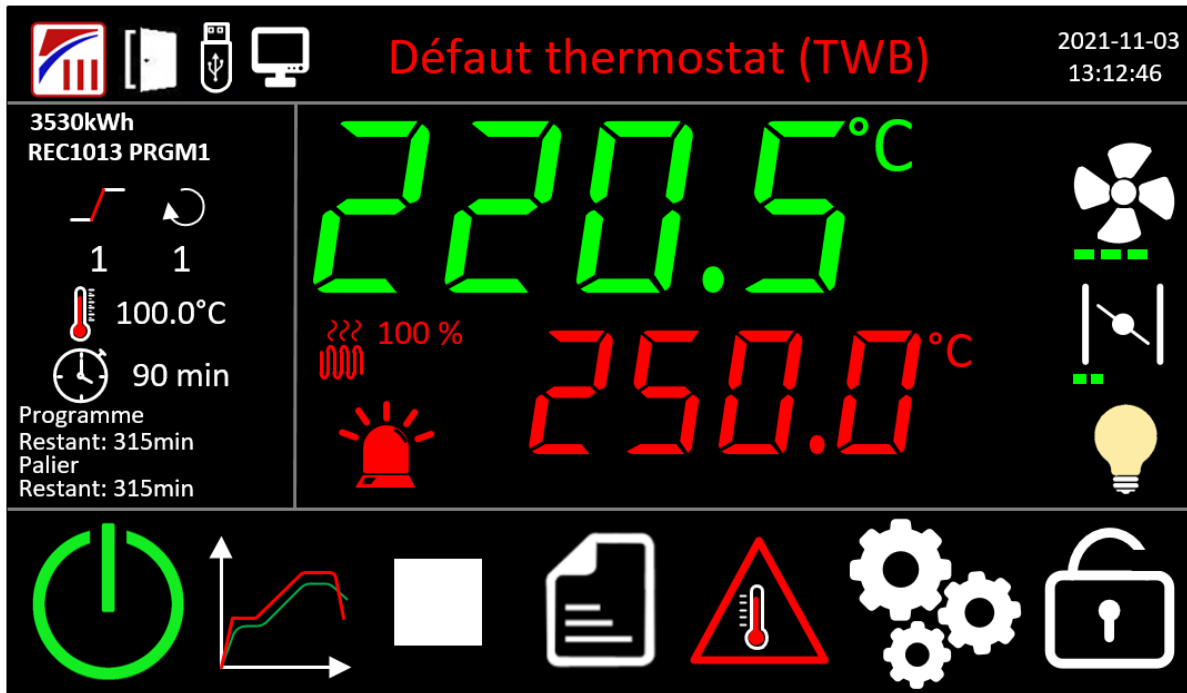
# 1. Introduction





## 1.1. Safety precautions to take when using and repairing the device

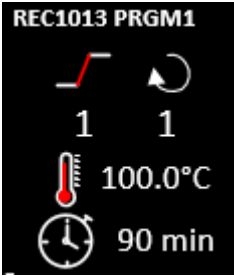






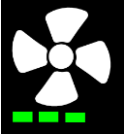

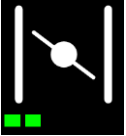













- The overheating protection must always be adjusted on the electronic thermostat before using the oven.
- Do not turn off the oven when the inside temperature is over 50°C
- The condition of the door gasket and internal fan must be strictly checked before starting the oven.
- The oven must be disconnected 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 skilled engineer.
- Engineers and users must wear the appropriate personal protection equipment (PPE).

## 1.2. Temperature controller description



Item	Description
	Button for manufacturer information pop-up
	Door open icon: appears when the door sensor is not triggered.
	USB stick icon: appears when an USB stick is connected to the controller.
	Remote system connection icon : appears when the controller communicates with an external computer system (PC, logic controller, cloud)
<b>Défaut thermostat (TWB)</b>	Appears when an error occurs and display the last error message. If the default is acknowledged, the message will be displayed in yellow. Clicking on the message open the alarm page.
<b>2021-11-03 13:12:46</b>	Current date and hour display. Hour format is 24h.
<b>3530kWh</b>	Energy consumed by the oven since commissioning.

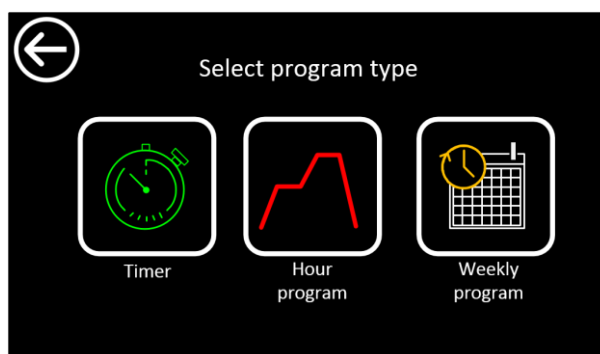
Item	Description
	<p>Information when running a program:</p> <p><b>REC1013 PRGM1</b> Record and program number</p> <p> <b>1</b> Step number and type (ramp or dwell)</p> <p> <b>1</b> Loop number</p> <p> <b>100.0°C</b> Temperature target setpoint (during a ramp, will be different from the current setpoint).</p> <p> <b>90 min</b> Program theoretical remaining time.</p>
<p><b>Program</b> Elapsed: 0min Remaining: 315min</p>	<p>Elapsed and remaining time program.</p>
<p><b>Dwell</b> Elapsed: 0min Remaining: 315min</p>	<p>Elapsed and remaining time dwell.</p>
	<p>Heating control panel display</p> <p>Indicates the measured temperature in green</p> <p>Indicates the setpoint in red, by pressing it you can modify the setpoint.</p> <p>Status of heating elements and instantaneous power.</p>
	<p>Alarm status icon, 3 colors:</p> <ul style="list-style-type: none"> <li>- green: no active fault</li> <li>- red: presence of a fault</li> <li>- yellow: presence of an acknowledged fault</li> </ul>
	<p>Fan status, by pressing it, a pop-up window opens allowing you to manually adjust the fan speed.</p> <p> Function available depending on the range and options of your oven.</p>
	<p>Status of the fresh air damper, by pressing it, a pop-up window opens allowing you to manually adjust the position of the damper.</p> <p> Function available depending on the range and options of your oven.</p>
	<p>Allows you to turn the oven lighting on or off</p>

Item	Description
 / 	On / Put the oven on standby
	Access to the graphs page
	Automatic mode selection page. Replaced with  to stop auto mode while it is running.
	Automatic modes editing page. Visible only when logged in.
	Thermostat configuration page.
	Oven configuration page. Visible only logged in as administrator.
	Login.


### 1.3. Choice of automatic mode


In order to launch an automatic mode, the oven must be running. Consult chapter [§2.1 Start-up](#).


Then press the home page icon  to access the page below



You must select from the 3 types of automatic mode :

-Timmer , simple program containing a ramp and a dwell. Consult chapter [§6 Operation in timer mode](#).

-Program , possibility of programming between 100 programs containing 16 ramps and 16 dwells each. Consult chapter [§7 Operation in program mode](#).

-Weekly clock , possibility of creating 100 scenarios. Consult chapter [§8 Operation in weekly clock mode](#).

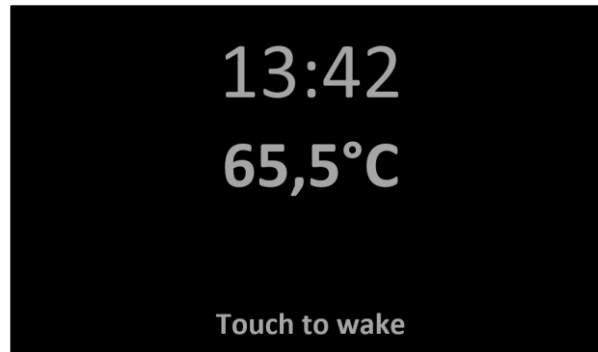


## 2. On / Off

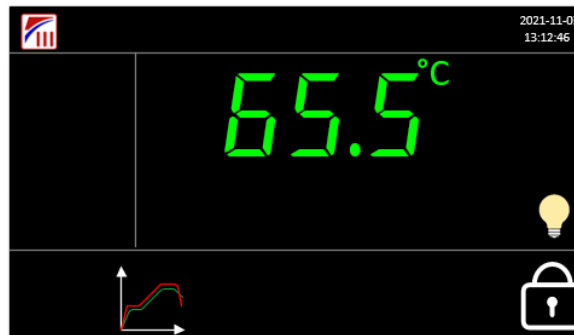
### 2.1. Start-up

When powered on, the C6000 returns to the previous state when powered off.

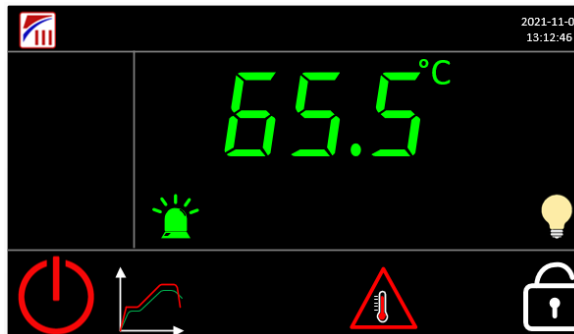
If the oven was in standby you will then see the standby screen below:



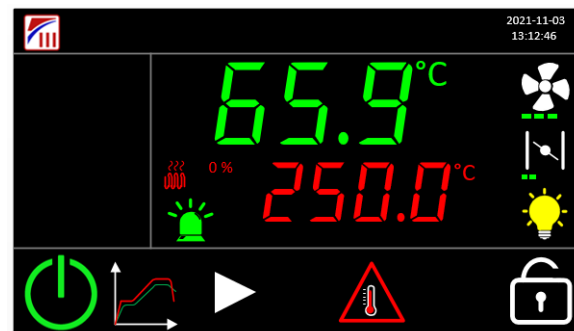
After pressing the screen, the screen displays the home page.



You must be logged in as an operator or administrator to continue. To do this, consult chapter [§3.Connection](#).




You can now press the power button . The oven then starts operating.



## 2.2.Stop

To stop the oven, it must not be in program and you must be logged in as operator or administrator. To do this, consult chapter [§3.Connection](#).

Press the button , the screen will then go to sleep. The heating is turned off and the fan continues to run until the interior temperature is below 80°C.

### 3. Connection

You can be connected to the oven as administrator or operator.

An operator can:

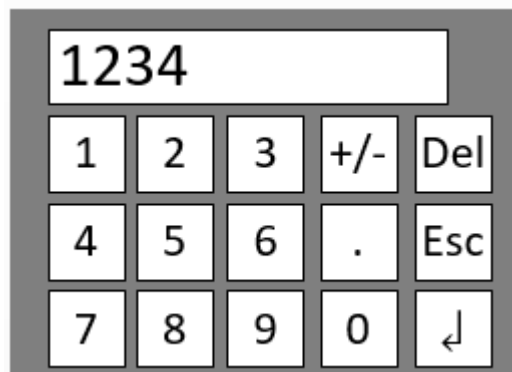
- Use the oven in simple regulation
- Launch programs
- Visualize the curves
- Export recordings

An administrator can also:

- Create/Edit programs
- Save/Restore programs
- Configure the oven parameters.




Press the icon , a window allowing you to enter the “password” with a numeric keyboard appears



Enter the password for the account you want to log in to, then press “OK”. The default password is “1234” for an operator and “4321” for an administrator. You can change these passwords in the password settings page [§11.7 Configuring Passwords](#).



The regulator now displays an icon: 

If the operator password is set to 0, then login is not required to access the operator level.

## 4. Electronic thermostat for protection against overheating



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

### 4.1. 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.

This thermostat also allows to monitor the difference between the measured temperature and the set point temperature with the **SDT** function: **Set point Deviation Tracking**. 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 the oven is not heating at the wanted temperature.

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 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)

		Alarm Reset	
		Thermostat limit	320°C
Temperature	149.9°C	Offset	0.0°C
Protection mode	TWB	lheat	15.0 A
Setpoint Deviation Tracking		Active	OFF
Tolerance	+ - 5.0°C	Alarm	OFF

Item	Description		
<table border="1"> <tr> <td>Temperature</td> <td>149.9°C</td> </tr> </table>	Temperature	149.9°C	- Temperature measured by the electronic thermostat inside the oven, in °C.
Temperature	149.9°C		
<table border="1"> <tr> <td>Protection mode</td> <td>TWB</td> </tr> </table>	Protection mode	TWB	Thermostat operation mode : - TWW : automatic reset after triggering. - TWB : manual reset after triggering.
Protection mode	TWB		
<table border="1"> <tr> <td>Alarme Reset</td> </tr> </table>	Alarme Reset	Button "Alarm Reset" for thermostat mode TWB	
Alarme Reset			
<table border="1"> <tr> <td>Thermostat limit</td> <td>320°C</td> </tr> </table>	Thermostat limit	320°C	Thermostat setpoint and thermostat activation temperature in TB mode.
Thermostat limit	320°C		
<table border="1"> <tr> <td>Offset</td> <td>0.0°C</td> </tr> </table>	Offset	0.0°C	Offset for the shelf thermostat temperature
Offset	0.0°C		
<table border="1"> <tr> <td>Max Temperature</td> <td>180°C</td> </tr> </table>	Max Temperature	180°C	Thermostat activation temperature in TWW or TWB mode.
Max Temperature	180°C		

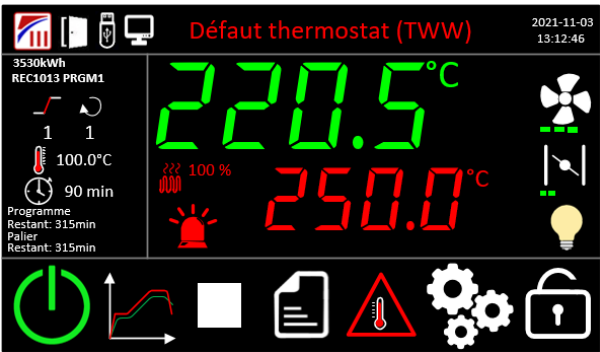
		To be set at least 10°C above the set temperature in simple regulation To set at least 10°C above the maximum temperature setpoint of the program you then wish to launch.
<b>lheat</b>	<b>15.0 A</b>	Current of heating elements
<b>Tolerance</b>	<b>+ - 5.0°C</b>	SDT alarm tolerance: maximum deviation allowed between the setpoint and the measured temperature once it has reached the setpoint value +/- the tolerance.
<b>Active</b>	<b>OFF</b>	Indicates the status of the Setpoint Deviation Tracking (SDT) alarm.
<b>Alarme</b>	<b>OFF</b>	

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

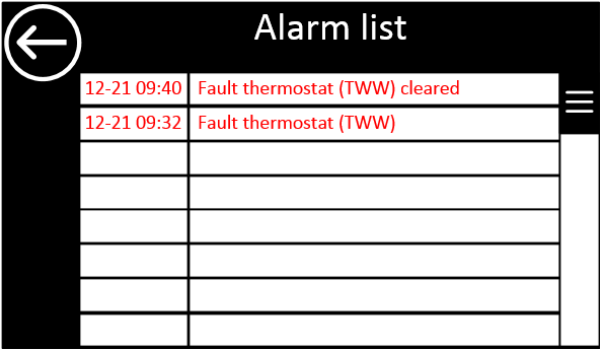
Protective device (TWW) cl. 3.1 of standard DIN 12880, with adjustable threshold.

When the set temperature is exceeded in TWW mode, **the thermostat cuts off the heating**, a **red message “Thermostat fault (TWW)”** appears and an **audible alarm** is triggered.

Example of triggering in TWW mode:



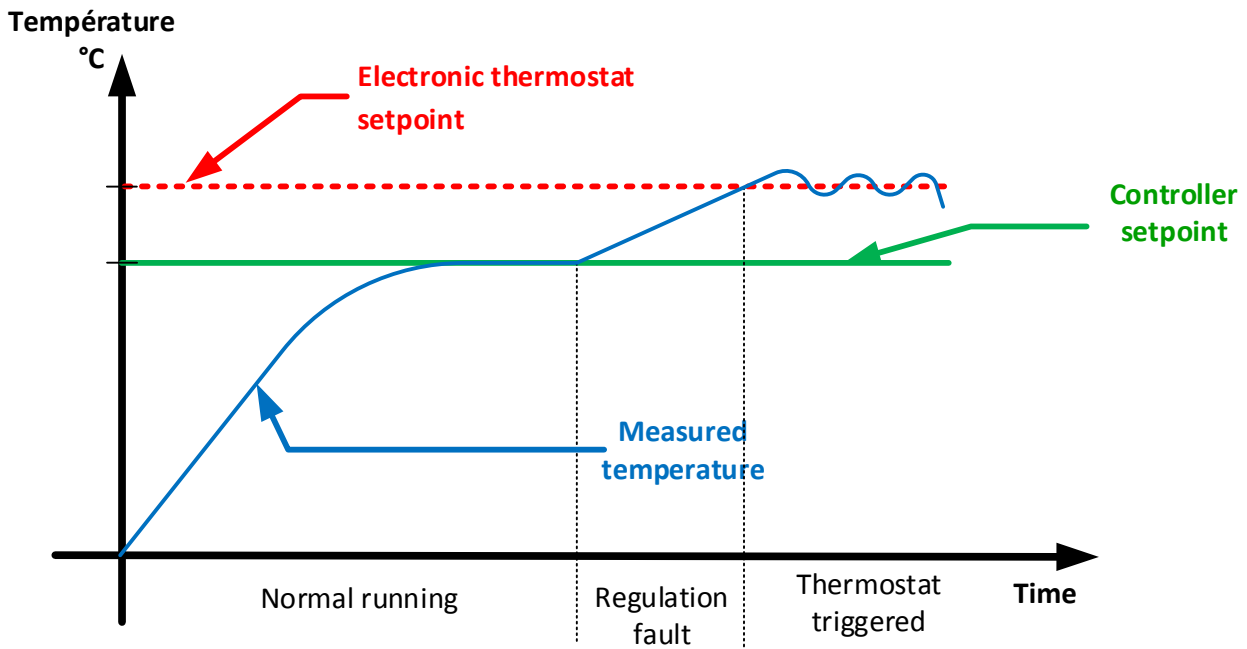
Press the fault text or the red tag to acknowledge the fault and display the list of alarms:



The fault is then acknowledged and the buzzer stops.  
The fault is still present but appears orange on the main page.

**When the fault disappears, heating can resume and all fault indications disappear.**

Principle of operation of the thermostat in TWW mode :

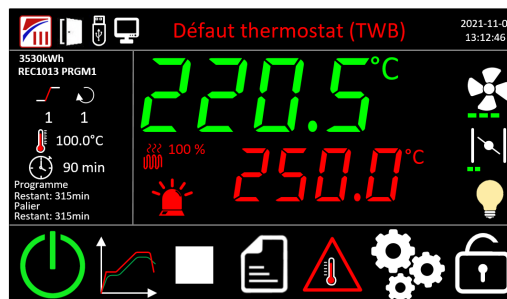


### 4.3. Operation of the electronic protection thermostat in TWB mode (manual reset)

Protective device (TWB) cl. 2 of DIN 12880, with adjustable threshold.

When the set temperature is exceeded in TWB mode, **the thermostat cuts off the heating**, a red message **“Thermostat fault (TWB)”** appears and **an audible alarm** is triggered

*Example of triggering in TWB mode:*



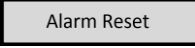

Pressing the “Thermostat fault (TWB)” fault stops the regulator’s audible alarm. But **heating can only resume after manual reset of the thermostat**, even if the temperature has dropped below the trigger value.

Resetting the electronic protection thermostat in TWB mode

*Note that the temperature must have fallen below the thermostat’s trigger threshold.*

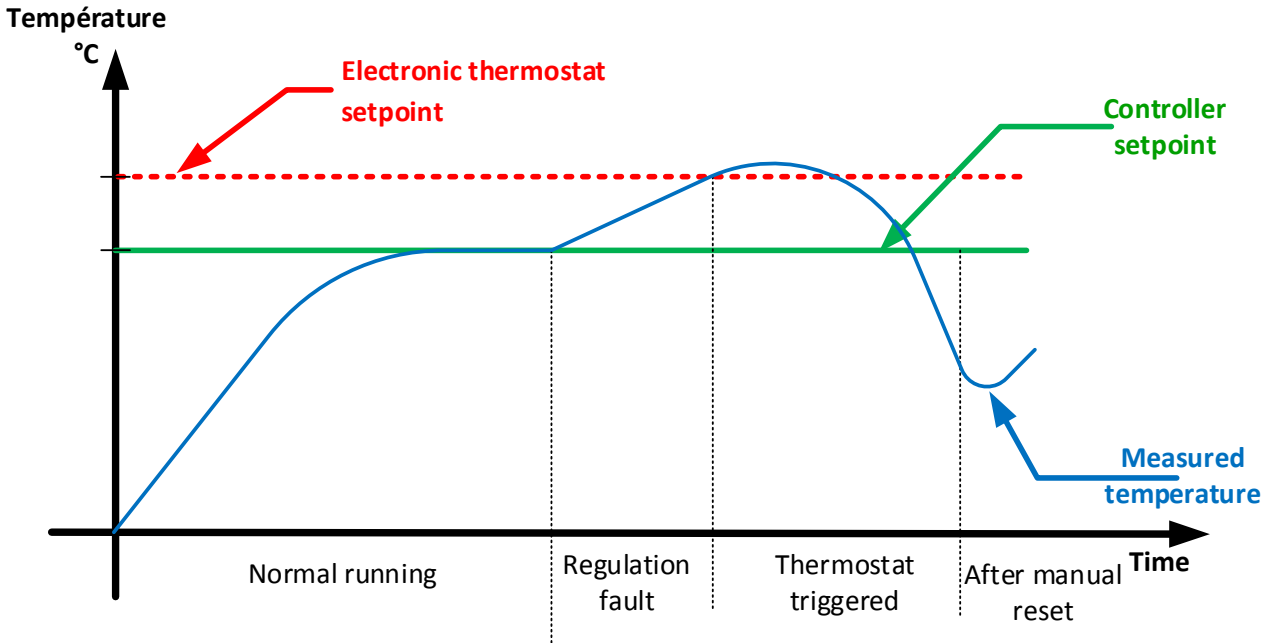
1	<p><b>Access to the “thermostat” menu:</b></p> <ul style="list-style-type: none"> <li>- It is required to be logged as operator</li> <li>- Once connected, press the key </li> </ul>	
---	--	--

**Resetting the thermostat:**

- Press the button  to reset the thermostat
- ⇒ The display disappears:  the thermostat is reset.

Alarm Reset			
Thermostat limit	320°C	Max Temperature	180°C
Temperature	149.9°C	Offset	0.0°C
Protection mode	TWB	Iheat	15.0 A
Setpoint Deviation Tracking	Active	OFF	OFF
Tolerance	+/- 5.0°C	Alarm	OFF

Operating principle of the thermostat in TWB mode:

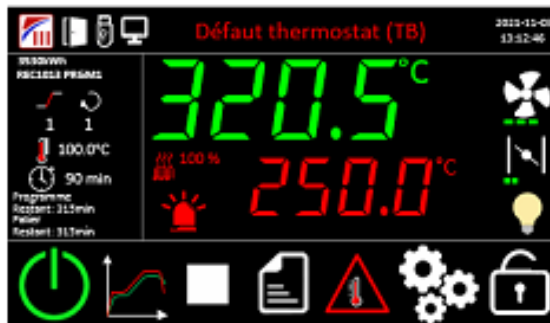


#### 4.4. Operation of the electronic temperature limiter in TB mode

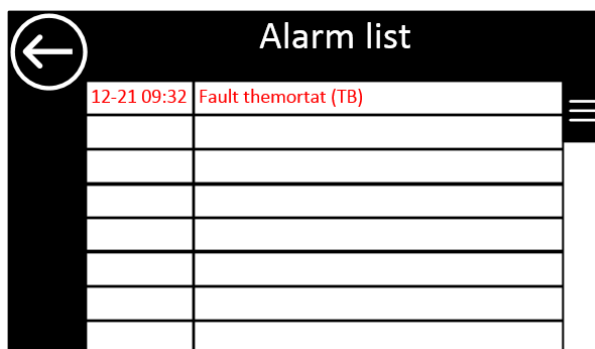
Class 1 TB electronic temperature limiter according to DIN 12880, with fixed threshold.

When the temperature exceeds the maximum temperature of the oven by 20°C (thermostat limit), the thermostat cuts off the heating, a red message “Thermostat fault (TB)” appears and an audible alarm is triggered.

Example of triggering in TB mode:



Press the fault text or the red tag to acknowledge the fault and display the list of alarms:



The fault is then acknowledged and the buzzer stops.  
The fault is still present but appears orange on the main page.

## 4.5. 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.

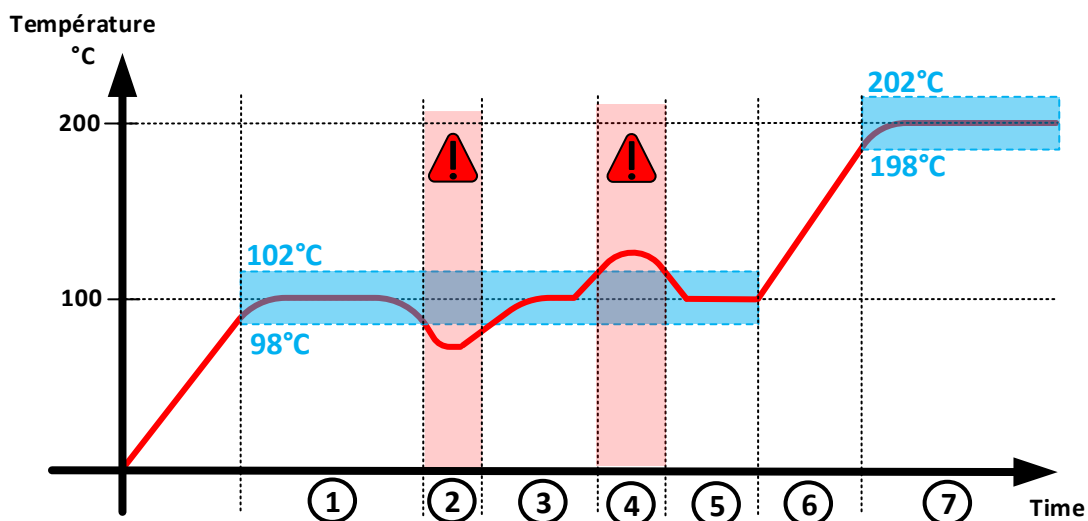
It's activated after the temperature has reached the setpoint plus or minus the tolerance. If the gap between the measured temperature and the setpoint is over the tolerance set, an alarm will be triggered to warn the user his oven is not heating at the wanted temperature.

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.

SDT temperature monitoring comes into operation once the temperature is within the tolerance band. If the measured temperature reaches a value outside this band, it is then displayed on a red background with the indication "SDT".

The red display and the "SDT" indication disappear when the measured temperature value is within the tolerance again.

*Operating principle of the SDT system:*



**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.


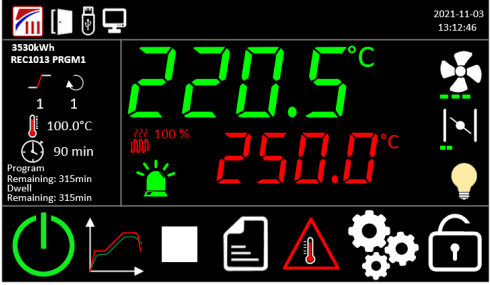
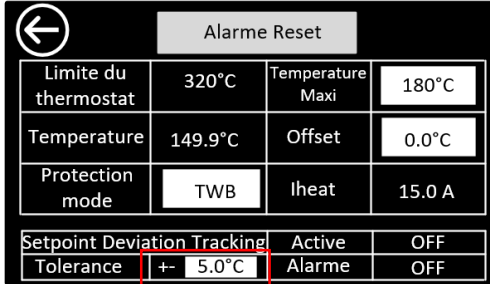
**3 and 5 :** The SDT alarm disappear when the measured temperature value goes back within the tolerance.

**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.



Setting :

1	<p><b>Access to the “thermostat” menu:</b></p> <ul style="list-style-type: none"> <li>- It is required to be logged as operator Once connected, press the key </li> </ul>																									
2	<p><b>« SDT » setting</b></p> <ul style="list-style-type: none"> <li>- In the “Setpoint Deviation Tracking” section, modify the “Tolerance” parameter by the desired value. If the tolerance is set to 0°C then the SDT is inactive.</li> </ul>	 <table border="1" data-bbox="914 589 1385 810"> <thead> <tr> <th colspan="4">Alarme Reset</th> </tr> </thead> <tbody> <tr> <td>Limite du thermostat</td> <td>320°C</td> <td>Temperature Maxi</td> <td>180°C</td> </tr> <tr> <td>Temperature</td> <td>149.9°C</td> <td>Offset</td> <td>0.0°C</td> </tr> <tr> <td>Protection mode</td> <td>TWB</td> <td>lheat</td> <td>15.0 A</td> </tr> <tr> <td colspan="2">Setpoint Deviation Tracking</td> <td>Active</td> <td>OFF</td> </tr> <tr> <td>Tolerance</td> <td>+/- 5.0°C</td> <td>Alarme</td> <td>OFF</td> </tr> </tbody> </table>	Alarme Reset				Limite du thermostat	320°C	Temperature Maxi	180°C	Temperature	149.9°C	Offset	0.0°C	Protection mode	TWB	lheat	15.0 A	Setpoint Deviation Tracking		Active	OFF	Tolerance	+/- 5.0°C	Alarme	OFF
Alarme Reset																										
Limite du thermostat	320°C	Temperature Maxi	180°C																							
Temperature	149.9°C	Offset	0.0°C																							
Protection mode	TWB	lheat	15.0 A																							
Setpoint Deviation Tracking		Active	OFF																							
Tolerance	+/- 5.0°C	Alarme	OFF																							

## 5. Manual regulation


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

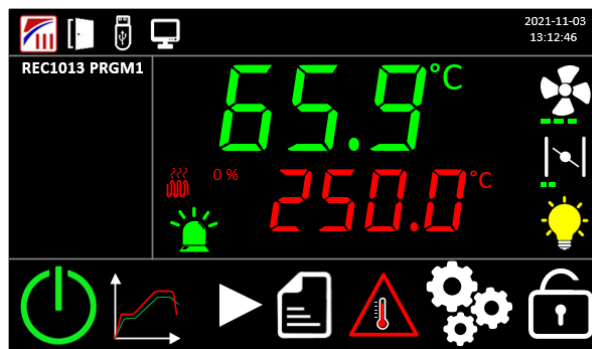
The main screen displays the measured temperature on the upper line (in green) and the temperature set point on the bottom line (in red).

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

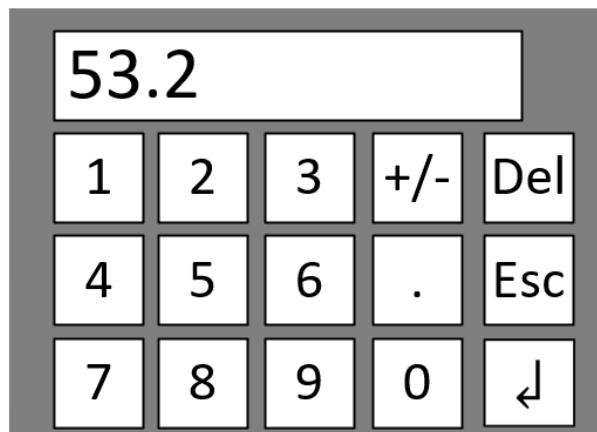
It is necessary to log in as an operator or administrator in order to use manual mode operation. Consult chapter 3. Connection.

### 5.1. Temperature regulation

To activate the heating in the oven, turn on the oven by pressing the icon  located at the bottom of the screen. The home page will then display:



After activating the heating, the temperature setpoint will appear in red. Press it to open the pop-up window relating to the temperature setpoint.



Enter the desired set temperature, in degrees Celsius.

Press on “” to validate the defined value.

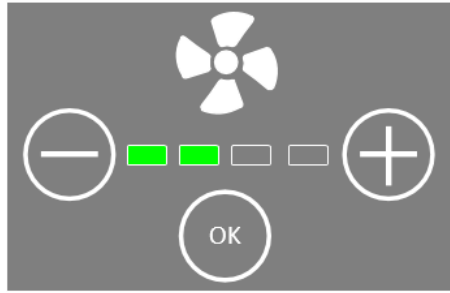
You can also press “Esc” to close the pop-up window while retaining the current temperature setpoint.

The oven will now reach the temperature value.

### 5.2. Fan speed

Depending on the oven model and options, it is also possible to adjust the fan speed and therefore the internal air ventilation speed.

On the home page, tap the fan icon  to open the fan speed pop-up window.



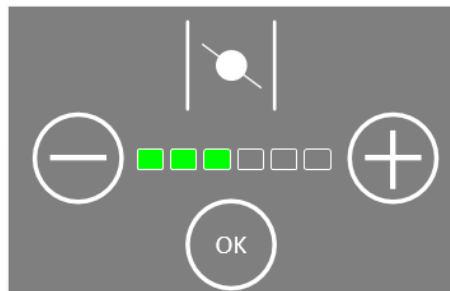
You can then modify the speed by pressing the “+” and “-” buttons and then validate by pressing “OK”.

### 5.3. Fresh air rate

Depending on the oven model and the options, it is also possible to adjust the fresh air rate, i.e. the opening of the air outlet flap. This allows, for example, humidity or fumes to be evacuated from the interior volume.



On the home page, press the flap icon  to open the pop-up window relating to fresh air.



You can then modify the fresh air rate by pressing the “+” and “-” buttons and then validate by pressing “OK”.

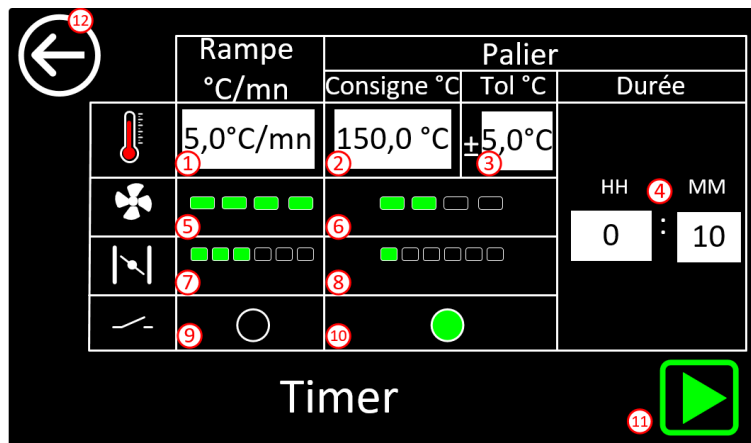
## 6. Operation in timer mode

The “Timer” mode allows you to do 1 step (a ramp and a dwell) very simply

### 6.1. Starting the timer

Before starting, you can change the timer settings.

Depending on the oven model and options, it is possible to adjust the fan speed and the fresh air rate.



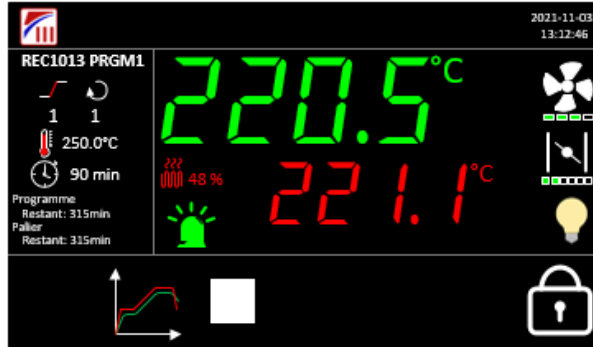
Item	Description
1	Temperature ramp parameters in °C/min. Adjust the temperature rise or fall slope according to your needs. You can set it to zero in order to make a setpoint jump and thus have the maximum ramp of your oven. The maximum ramp input is 20°C/min but the actual maximum ramp will depend on your oven model and its loading.
2	Temperature level setpoint in °C Defines the temperature setpoint value which will be maintained for the defined dwell duration.
3	Temperature tolerance in °C Defines the admissible difference between the measurement and the temperature setpoint. If the temperature is outside the range defined by the setpoint +/- the tolerance, the stage duration will not be counted. You can set it to zero to not take the temperature measurement into account for the dwell count.
4	Dwell duration: duration during which the temperature will be maintained at the previously defined set point. Format hh : mm. (maximum 99 hours, 99 minutes)
5	Fan speed during ramp. (depending on model and option)
6	Fan speed during dwell. (depending on model and option)
7	Fresh air rate during the ramp. (depending on model and option)
8	Fresh air rate during the dwell. (depending on model and option)
9	Activate or deactivate the event output on the ramp. The event output acts on a dry contact (Custom2) and allows you to connect a device up to 2A under 250VAC
10	Activate or deactivate the event output on the ramp.


11	Allows you to start the timer
12	Back to home page button.

After validation or modification of the parameters you can start the timer.

## 6.2. Stopping the timer

The timer can be stopped at any time.

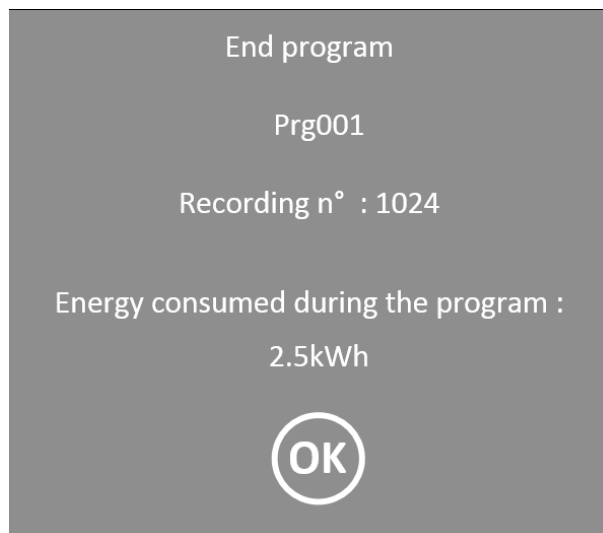


Item	Description
	Stopping the timer, a pop-up window will appear to confirm the stop.

NB- Stopping the timer requires being logged in (as an operator or administrator). To secure the stop of the timer, do not put 0 as the operator password.

## 6.3. End of timer

The end of the timer is signaled by a beep and a pop-up window.



## 6.4. Behavior of the timer in the event of a power outage

Behavior in the event of a power outage can be configured [§11.4 General program settings](#).

Hot restart:

When power is turned back on, the timer will automatically resume at the moment of power outage.

Cold restart:

When power is turned back on, the timer is stopped, a pop-up window appears signifying the end of the timer.

## 7. Operation in program mode

The C6000 regulator offers the possibility of programming 100 programs each comprising 16 steps (or 32 segments).

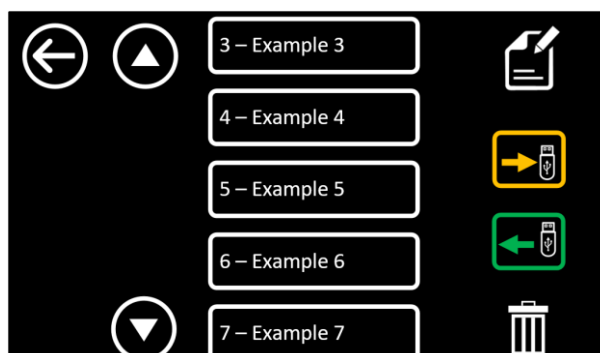
A **step** is composed of a temperature setpoint, a temperature ramp in °C per minute and a holding time for each of the steps.








Depending on the oven model and options, it is also possible to adjust the fan speed and the fresh air rate.

### 7.1. Edition des programmes

#### 7.1.1. Liste des programmes

This page is accessible by pressing the icon  from the home page then  to select the time programmer. You must be logged in to access this page






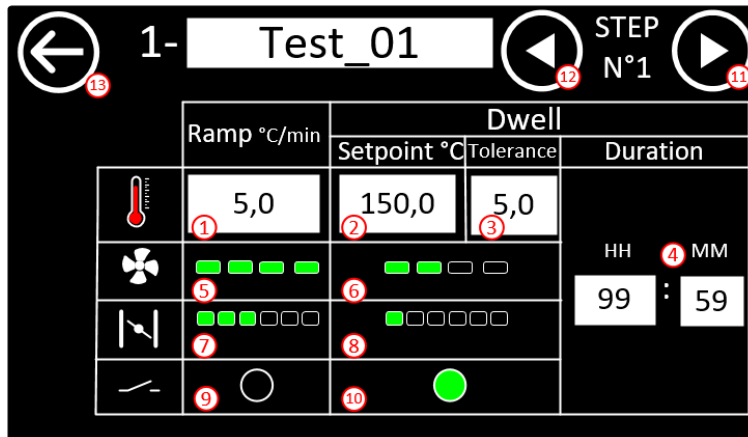
Item	Description
	Back to home page button.
	Program number and name.
	Shows previous programs.
	Shows the following programs.
	Editing or creating the program selected in the list (accessible only to administrators).
	Displayed only if a USB key is present. Save the program selected in the list to the USB stick.
	Displayed only if a key is present. Downloads the program selected in the list from a USB flash drive. <b>It will replace the program saved at that number.</b>



Deleting programs. (accessible only to administrators).

### 7.1.2. Editing steps


This page is accessible by pressing the icon  from the program management page, logged in as an administrator. First press the home page icon , then press the icon  next to the program number you want to create or modify.



Item	Description
1	Temperature ramp parameters in °C/min. Adjust the temperature increase or decrease limit according to your needs. You can set it to zero in order to make a setpoint jump and thus have the maximum ramp of your oven. The maximum ramp input is 20°C/min but the actual maximum ramp will depend on your oven model and its loading.
2	Temperature level setpoint in °C Defines the temperature setpoint value which will be maintained during the stage duration.
3	Temperature tolerance in °C Defines the admissible difference between the measurement and the temperature setpoint. If the temperature is outside the range defined by the setpoint +/- the tolerance, the stage duration will not be counted. You can set it to zero to not take the temperature measurement into account for the dwell count.
4	Dwell duration: duration during which the temperature will be maintained at the setpoint value defined previously. Format hh : mm. (maximum 99 hours 99 minutes)
5	Fan speed during the ramp. (depending on model and option)
6	Fan speed during the dwell. (depending on model and option)
7	Fresh air rate during the ramp. (depending on model and option)
8	Fresh air rate during the dwell. (depending on model and option)
9	Activate or deactivate the event output on the ramp.


	The event output acts on a dry contact (Custom2) which allows you to connect a device consuming up to 2A under 250VAC
10	Activate or deactivate the event output on the dwell.
11	Moving to the next step.
12	Return to previous step.
13	Return to previous screen

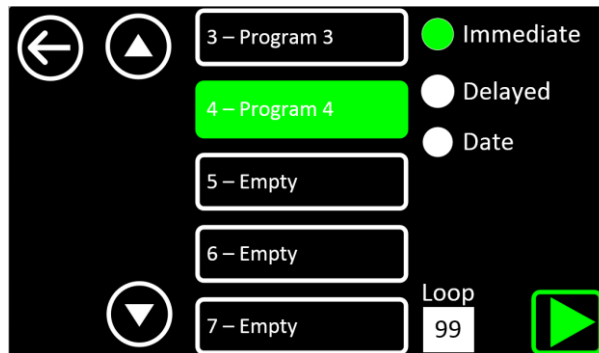
A program is made up of several steps with different setpoints.

To set the last step, press the icon  and leave all parameters for the next step at their default value.

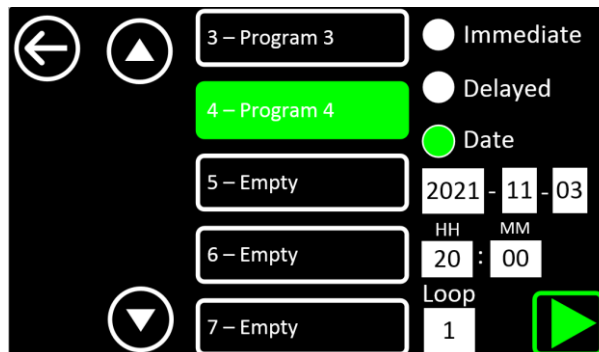
Then press the key  to return to the home screen

## 7.2. Starting a program

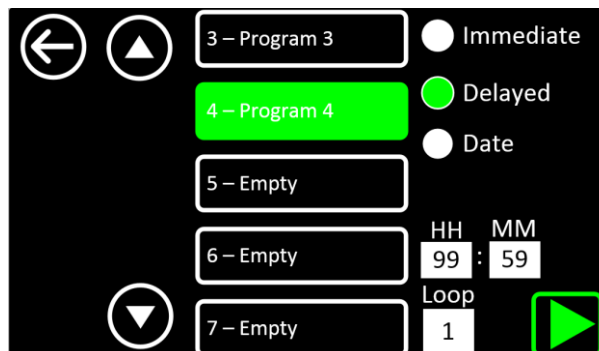
Select the "Program"  icon



Immediate  
 Delayed  
 Date  
 Loop: 99





Immediate  
 Delayed  
 Date  
 2021 - 11 - 03  
 HH MM  
 20 : 00  
 Loop: 1




Immediate  
 Delayed  
 Date  
 HH MM  
 99 : 59  
 Loop: 1



Press  or  to display previous or next programs. When a program is selected, it is highlighted in green as in the following illustration:

1 – Example 1

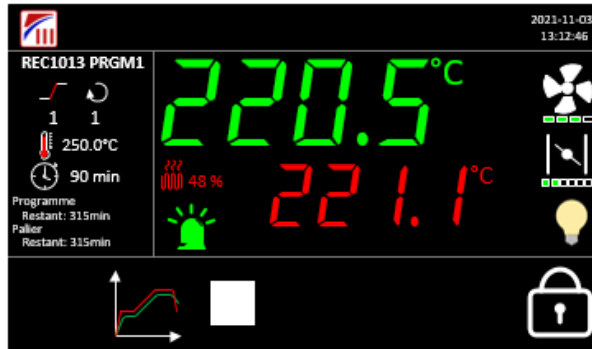
Once the program has been selected, you must choose its launch mode. You have 3 possibilities:


- **Immediate start** : The program starts just after pressing the icon .
- **Delayed start**: The program launches after a duration to be defined. A field appears when this mode is selected: enter the desired value in hh:mm format.
- **Scheduled start** : The program launches at a defined date and time. When this mode is selected, a field appears: configure the desired departure date and time in YYYY – MM – DD format for the date and hh-mm for the time (24h format). You can define the number of executions of the program via the “loop” field.

Then press the icon  to launch the program

### 7.3. Arrêt d'un programme

The current program can be stopped at any time.

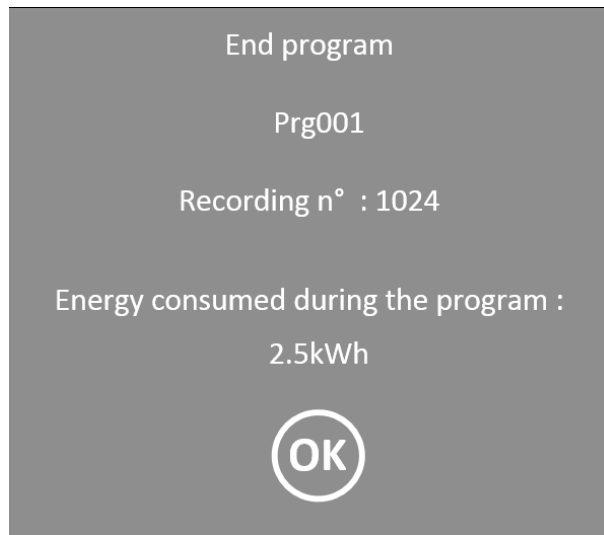


Item	Description
	Stopping the program, a pop-up window will appear to confirm the shutdown.

NB- Stopping a program requires you to be logged in (as operator or administrator), to secure the program stop, do not put 0 as the operator password.

### 7.4. End of a program

The end of a program is signaled by a beep and a pop-up window.



Confirm the end by pressing the OK key.

## 7.5. Behavior of a program in the event of a power outage

Behavior in the event of a power outage can be configured [§11.4 General program settings.](#)

Hot restart:

When the power is turned back on, the program will automatically resume at the current step at the time of the power cut.

Cold restart:

When power is turned back on, the program is stopped, a pop-up window appears signifying the end of the program.

## 8. Weekly clock mode operation



The C6000 controller offers the possibility of operating your oven according to different scenarios defined over 1 week.

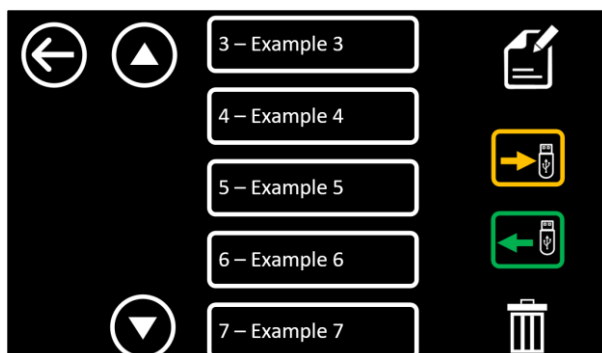
A scenario is made up of several “change points”, allowing you to define the parameters that your oven must apply throughout the week.









A change point is made up of a day, an hour, a temperature setpoint and an event output. Depending on the oven model, it is also possible to adjust the fan speed and the fresh air rate.

### 8.1. Edition of the weekly clock

#### 8.1.1. List of weekly scenarios

This page is accessible by pressing the icon  from the home page then  to select the different scenarios. You must be logged in to access this page. To do this, consult the paragraph [§3.Connection](#).

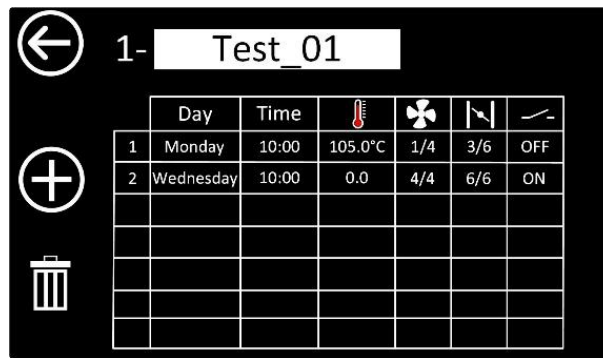


Item	Description
	Back to home page button.
	Scenario number and name.
	Shows previous scenarios.
	Shows the following scenarios.
	Editing or creating a scenario.
	Displayed only if a USB key is present. Saving a scenario on the USB key.
	Displayed only if a key is present. Download the scenario from the USB stick, <b>it will replace the scenario saved at this number.</b>
	Deleting a scenario.

### 8.1.2. Create/edit a scenario



From the weekly clock menu, select the scenario to create or edit then press the icon



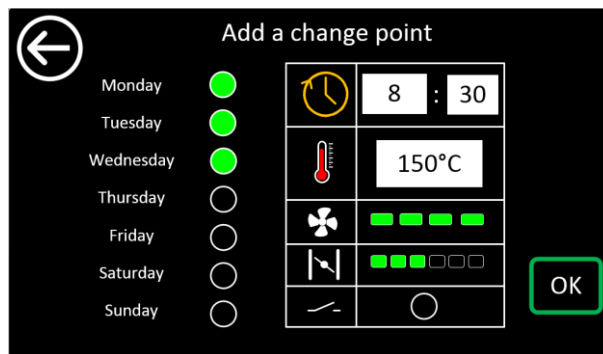
Item	Description
	Back to weekly clock menu button.
<b>1- Programme_01</b>	Scenario number and name.
	Add a change point to the scenario
	Delete pre-selected change point
Day Monday Wednesday	Indication of change point days.
Time 10:00 10:00	Indication of change point times.
 105.0°C 0.0	Indication of the temperature setpoint on the active days and hours line. Note : 0°C means the oven stops.
 1/4 4/4	Indication of the fan speed of the change points.
 3/6 6/6	Indication of the fresh air rate at the change points.
 OFF ON	Indication of event output of change points.


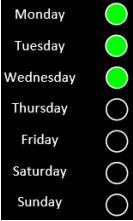






### 8.1.3. Creating a change point



This page is accessible on the program edition page then by pressing the icon

A new page then appears:





Item	Description
	Back to home page button.
	Selection of days on which the change point will be applied.
	Selecting the change point time.
	Temperature set Note : if you enter 0°C as the temperature setpoint, this means that the oven will go into standby at the change point.
	Fan speed adjustment change point.
	Adjusting the fresh air rate change point.
	Selection of the event output change point.
	Change point validation.


## 8.2. Launch of the weekly clock

Select icon  « Weekly clock »



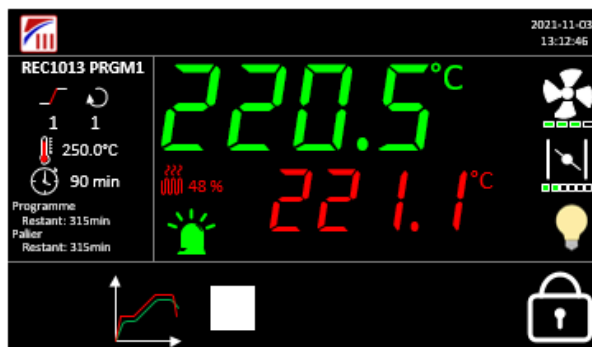
Select an already configured scenario (see chapter [7. Weekly clock](#)) or press  or  to display the previous or following scenarios. When a scenario is selected, it is highlighted in green as in the following illustration:




Finally launch the scenario by pressing the key  .

## 8.3. Stopping the weekly clock

The weekly clock can be stopped at any time.




Item	Description
	Stopping the weekly clock, a pop-up window will appear to confirm the stop.

NB- Stopping the weekly clock requires being logged in (as an operator or administrator), to secure stopping the weekly clock, do not put 0 as the operator password.

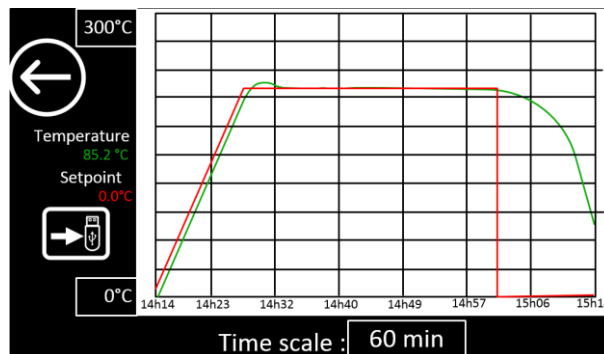
## 8.4. Behavior of the clock in the event of a power outage


When power is turned back on, the clock will automatically resume according to the scenario in progress at the time of the power outage.

## 9. Graphs page






This page is accessible by clicking on the icon  from the home page

### 9.1. Graphs




The graph is accessible from the home page by pressing the icon .


The visualization of the curves begins at the last power-up and is stored in memory for a maximum period of 25 hours.

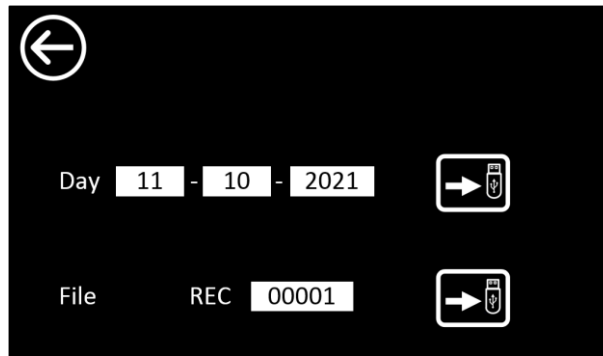
Item	Description
	Back to home page button
	Maximum of chart scale. Adjustable from 50°C to the maximum operating value of the oven + 20°C. Each background graduation is equivalent to 50°C.
	Minimum of chart scale. Configurable from 0°C to the maximum operating temperature of the oven.
	Time scale. Adjustable from 5 to 1500 minutes. Sets the total operating value displayed. For example, a setting of 60 min will display the last 60 minutes of oven operation.
	Opens the Save History pop-up window. Consult chapter <a href="#">§9.2. Exporting historical data</a>

### 9.2. Exporting historical data

Data is stored in the C6000 for the current month and the previous month, it can be exported in CSV format.


This screen is displayed after pressing the icon  from the graphs page

To access this screen, first press the icon  from the home page




### 9.3. Daily history.


The recorded data including temperature and vacuum measurements, instructions and powers are saved every day in a file. The “.csv” file is named with the following format: “YYYY-MM-DD.csv” with YYYY to define the year, MM for the month and DD for the day.

Enter the date you want to export history for. Then press  to transfer the “.csv” file to a USB key.

### 9.4. History generated after running a program or timer.


When a program is executed, a new “.csv” file is created. It is named “RECxxxxx” - xxxxx being the program execution number which is incremented each time the program is launched.

Enter the program execution number for which you want to export the history (by default, the number corresponding to the last execution is displayed). Then press the icon  to save the “.csv” file on a USB key









The button  allows you to return to the home page



## 10. Settings pages

This page is accessible, logged in as an administrator, by pressing the icon  from the home page.



Item	Description
	Temperature control parameter setting page.
	Page for adjusting offsets on temperature measurements. To compensate for the difference between the temperature measurements of the regulator and those of a standard.
	Language selection.
	Program settings.
	Communication settings.
	Setting the date and time.
	Setting passwords.
	General settings.
<b>Oven use time : 23 h</b>	Operating time of the oven (fan ON).

## 10.1. PID parameter



This page is accessible by pressing the icon from the parameters summary page.



**Changing the original PID settings of the oven is not recommended: this may degrade the performance of the oven.**

PID regulation calculates the power necessary to ensure a measured temperature as close as possible to the set point. The PID parameters will be involved in this calculation.

Item	Description
	Heating proportional band.
	Reaction time of the control loop in order to reduce the static error between the setpoint and the measurement.
	Determines the reaction time in response to a deviation.
	Authorization of integral action depending on the instruction.
	Proportional cold band. (depending on options)



The button allows you to return to the parameters summary page.

## 10.2. Temperature offset



This page is accessible by pressing the icon from the settings summary page.

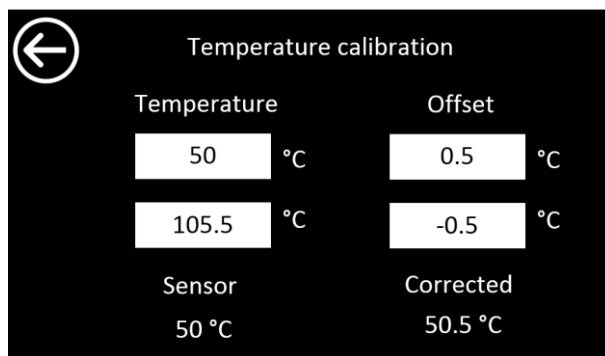


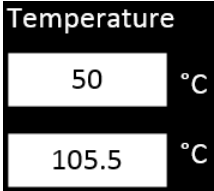
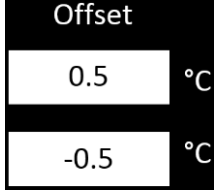
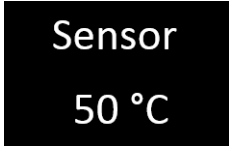
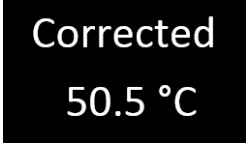
**Changing these parameters requires recalibrating the oven.**

The offset parameters allow compensation for the difference between the temperature measured by the controller and that measured by a standard. This compensation can be done at one or two reference temperatures.

The controller will then **correct the temperature measurement for regulation and display** with a calculation based on these values. Offsets can be adjusted between **-3.0°C and +3.0°C**.

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

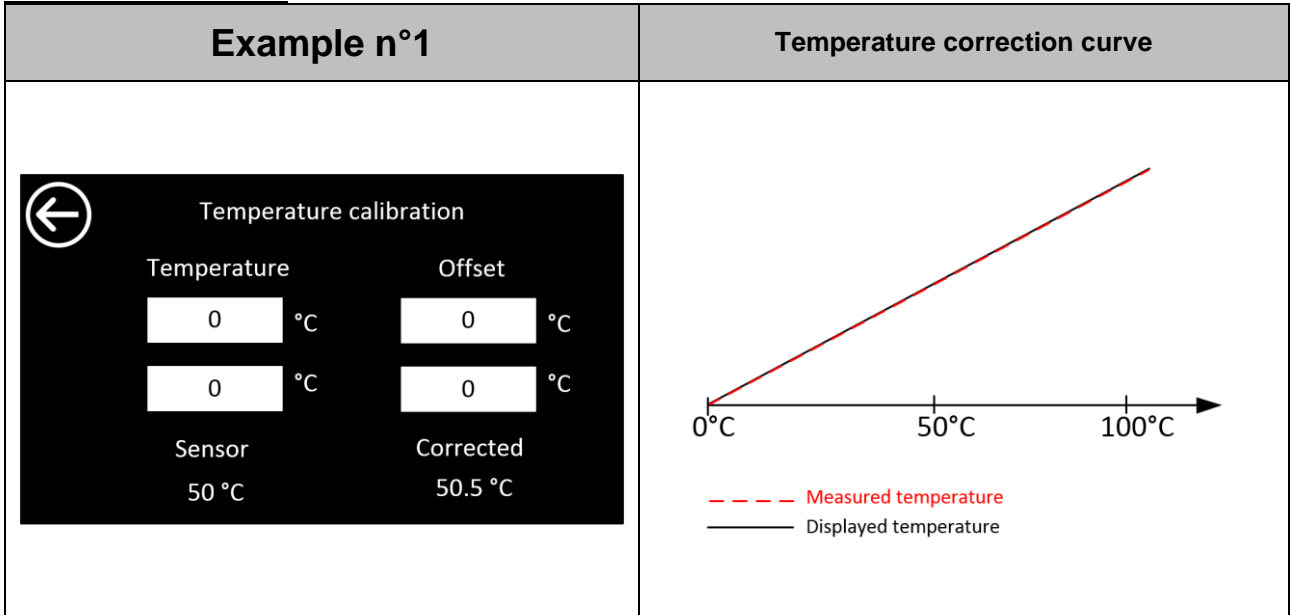


Item	Description
	Reference temperatures used to determine the difference between the regulator measurement and the standard.
	Compensation value for the difference between the measurement of the standard and that of the oven regulator. For each reference temperature. If the value '0' is left, no compensation will take place.
	Temperature before modification of offsets.
	Temperature after modification of offsets.



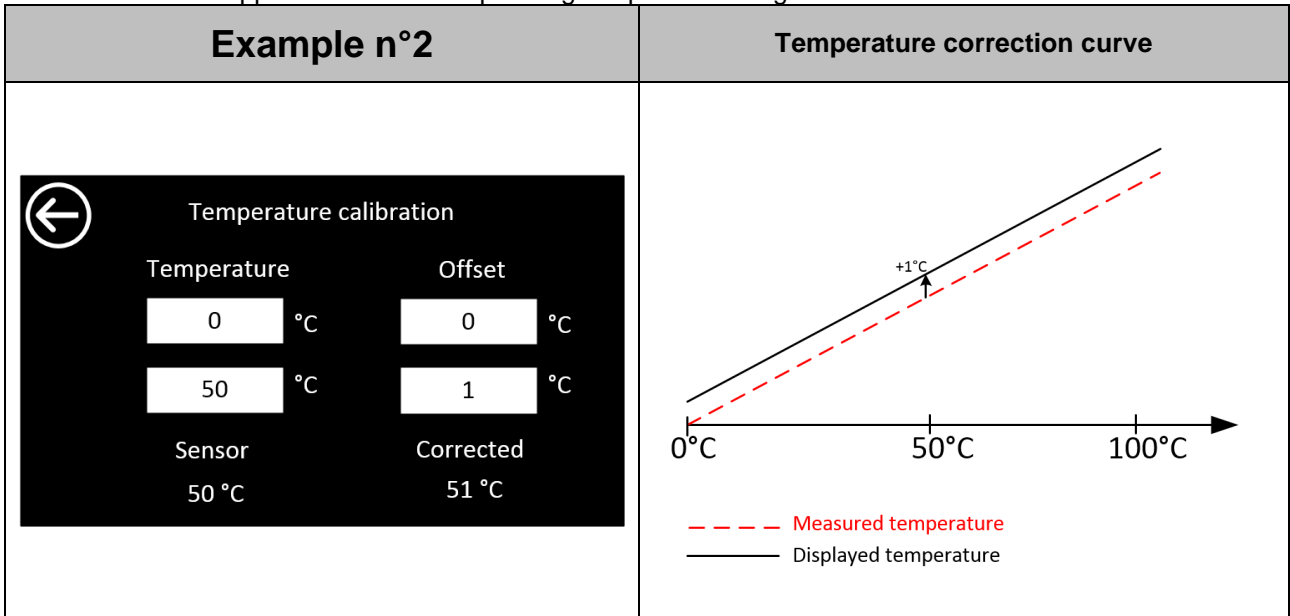
The button  allows you to return to the parameters summary page

Case n°1: No correction



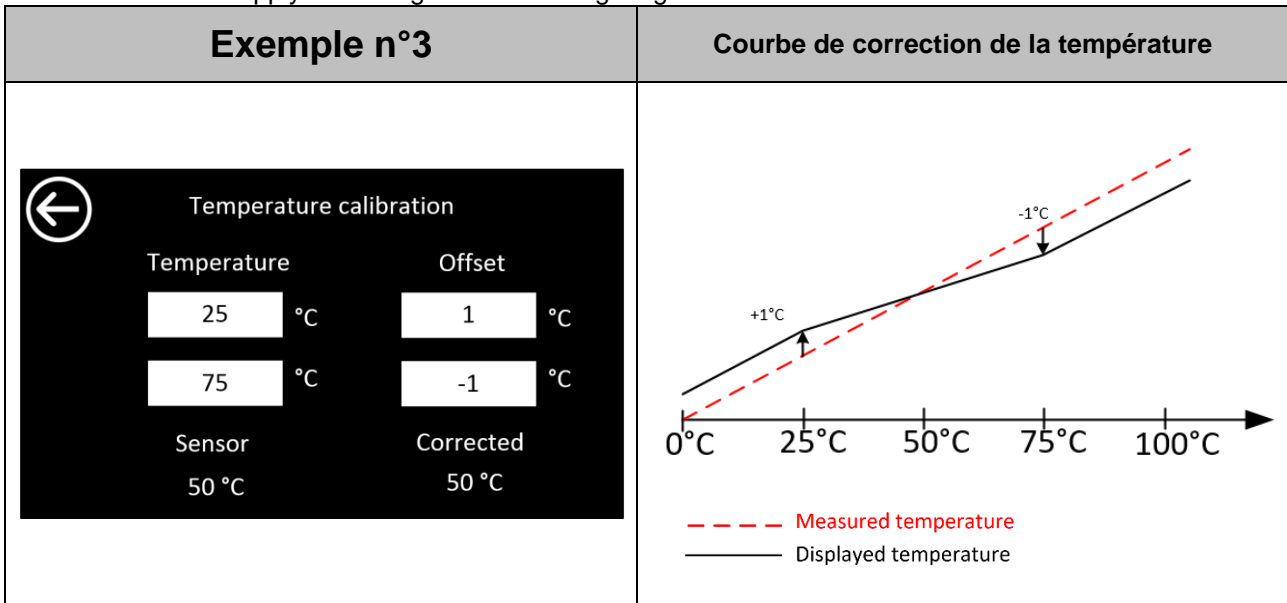
Case no. 2: 1 reference temperature for correction:

The defined offset applies to the entire operating temperature range of the oven.



Case no. 3: 2 reference temperatures for correction:

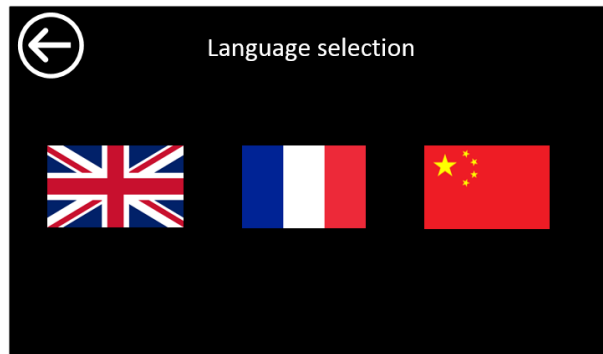
The defined offsets apply according to the following diagram:



### 10.3. Language selection



This page is accessible by pressing the icon from the parameters summary page



Select the desired language by pressing the corresponding flag.

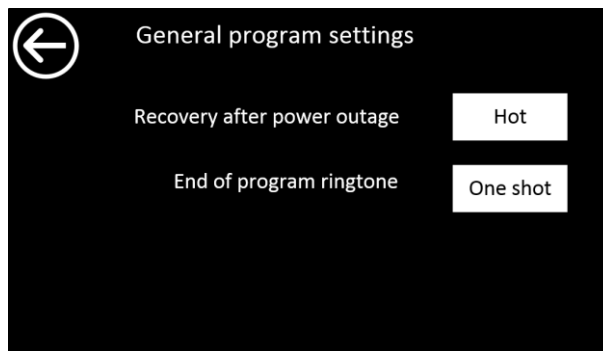


The button allows you to return to the parameters summary page

### 10.4. General program settings



This page is accessible by pressing the icon from the settings summary page.



Returning power after an outage can be done in 2 ways:

- Hot: the program resumes where it was before the power cut.

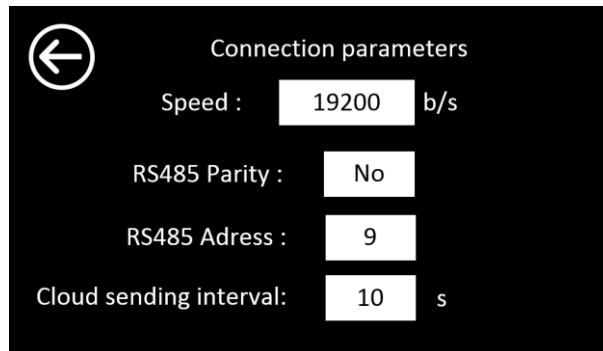
- Cold: the program is declared finished, the oven is waiting for operator action

The end of program ringtone can be configured in 3 different ways:

- One shot: the ringtone rings once at the end of the program then is deactivated.
- Cyclic: the bell rings intermittently until the end of the cycle is acknowledged.
- Continuous: the ringtone rings continuously until the end of the cycle is acknowledged.

## 10.5. Communication settings

This page is accessible by pressing the icon  from the parameters summary page



Item	Description
Speed : 19200 b/s	Speed of the RS485 slave link, in Baud/second. You can select one of the available standardized speeds from a drop-down menu. (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200)
RS485 Parity : No	Defines the parity type of the RS 485 link. -NO -> no parity -EVEN -> pair -ODD -> odd
RS485 Adress : 9	Slave address, from 0 to 255.
Cloud sending interval: 10 s	Frequency of sending to the Cloud. Please note sending is only possible if the oven is equipped with the option.

## 10.6. Date/Time settings page



This page is accessible by pressing the icon from the settings summary page.

Enter today's date (YYYY – MM – DD) and the current time in 24-hour format (hh: mm).



The button allows you to return to the parameters summary page.

## 10.7. Password settings page



This page is accessible by pressing the icon from the parameters summary page

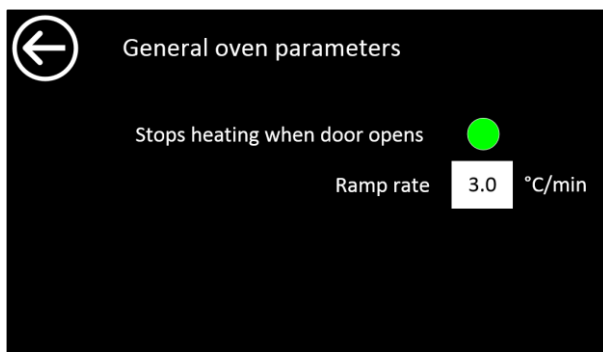
User	Password
Operator	1234
Administrator	4321



Item	Description
	<p>Setting administrator and operator passwords. To change the password, enter the new password in the corresponding field.</p> <p>By default:</p> <ul style="list-style-type: none"> <li>- Operator = 1234</li> <li>- Administrator = 4321</li> </ul> <p>If the Operator password is set to 0, then login is not required to access the operator level.</p>

## 10.8. General oven parameters



This page is accessible by pressing the icon from the parameters summary page



Objet	Description
	Enable or disable heating shutdown and stirring after door opening.
	Ramp rate in manual mode only, allows you to set a setpoint ramp, the ramp starts from the temperature measurement to reach the setpoint. If the ramp rate is set to 0°C/min, the ramp is inhibited.

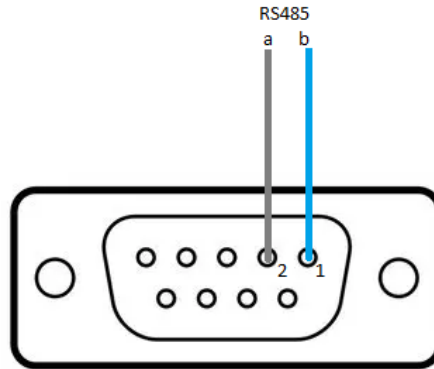


# 11. Remote oven control

The C6000 controller accepts remote communications using the Modbus protocol using an RS485 slave link (see paragraph [11.5 Communication parameters](#) for its configuration).

## 11.1. Pinout

RS485 communication is physically accessible using a female SUBD-9 connector located outside the oven. Its pinout is as follows:



## 11.2. Modbus protocol

### 11.2.1 Frame to send to the regulator

Here is the format of the frame to send to the regulator to read data:

Octet n°	Description
Octet 1	Regulator address (09 by default)
Octet 2	Function: 03-Read
Octet 3	Address of the first variable (see paragraph <a href="#">12.2.3. List of parameters available via Modbus communication</a> )
Octet 4	
Octet 5	Number of variable(s) to read
Octet 6	
Octet 7	CRC16: Cyclic Redundancy Check
Octet 8	

Here is the format of the frame to send to the regulator to write data:

Octet n°	Description
Octet 1	Regulator address
Octet 2	Function: 03-Read
Octet 3	Address of the variable (see paragraph 12.2.3. <a href="#">List of parameters available via Modbus communication</a> )
Octet 4	
Octet 5	Value to write to the variable
Octet 6	
Octet 7	CRC16: Cyclic Redundancy Check (calculated)
Octet 8	

### 11.2.2. Frame returned by the regulator

Here is the format of the frame returned by the regulator following a read request:

Octet n°	Description
Octet 1	Regulator address
Octet 2	Fonction : <b>03-Lecture</b>
Octet 3	Number of data bytes sent
Octet 4 to Octet n-2	Values of queried variables
Octet n-1	
Octet n	CRC16: Cyclic Redundancy Check

In the case of a write, the regulator sends back the frame it received.

### 11.2.3. List of parameters available via Modbus communication

RO = Read Only variable only available for reading

R/W = Read/Write variable available for reading and writing

Action	Variable	Address (hex)	Commentary
RO	Temperature measured	01	In 1/10 of °C <i>example : 1234 for 123.4°</i>
R/W	Temperature set	02	In 1/10 of °C
RO	Heating power	03	As a % of total power
RO	Condition of the oven	04	1 Standby 2 Manual mode 3 Delayed start program 4 Timer running 5 Program in execution 6 Weekly clock running 7 Program completed
RO	Program Status	05	1 ramp in progress 2 level in progress 3 ramp paused 4 level paused
RO	Remaining stage time	06	In minutes
RO	Time remaining before delayed start	07	In minutes
RO	Current loop number	08	Remaining loop number
RO	Current step number	09	Current step number
RO	Maximum temperature	0A	In 1/10 of °C
RO	Sensor type	0B	0 (PT100) or 1(TCJ)
RO	Oven range	0C	Indication of the oven range
RO	Presence of thermostat card	0D	1 (yes) or 0 (no)
RO	Type of motor	0E	Motor model for the fan
R/W	Fan speed	0F	0 stops 1 slow speed 2 medium speed 3 upper middle speed 4 maximum speed

Action	Variable	Adress (hex)	Commentary
RO	Thermostat temperature	10	Temperature measured by the thermostat card in 1/10°C
RO	Thermostat fault	11	0 No alarm 1 TWW alarm (See §4) 2 TWB alarm (See §4) 3 SDT alarm (See §4) 4 SSR alarm (See §13.2) 5 TB alarm (See §13.2)
RO	Thermostat mode	12	TWB or TWW (See §4)
RO	SDT tolerance	13	SDT Value in°C (See §4)
RO	Max thermostat temperature	14	Maximum possible setpoint on the protection thermostat, in °C
RO	Heating intensity (for XU ovens)	15	In 1/10 Amps

## 12. Troubleshooting

### 12.1. General safety instructions



**For any repair that does not require powering the oven, disconnect it from the electrical network.**

**Any repairs must be carried out in an oven at room temperature.**

**Any repairs must be carried out by authorized, trained and competent personnel.**

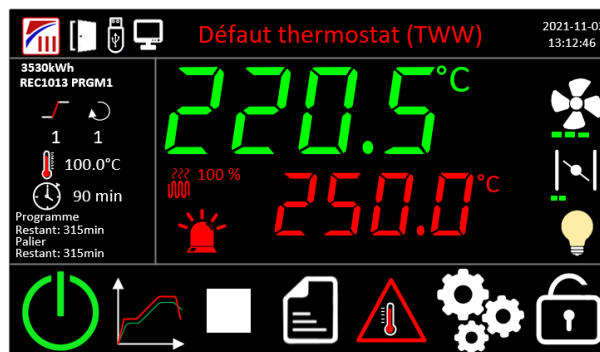
**The person in charge of troubleshooting must wear PPE (Personal Protective Equipment).**



## 12.2. Faults displayed

When a fault appears, an audible alarm is activated.

A brief description appears at the top of the screen.



You can open the history of audible faults by clicking on the message displayed or on the red tag, the fault will then be acknowledged and the audible alarm will turn off. The fault will continue to appear in yellow on the main page until it is resolved.

Fault displayed	Possible causes	Remedy*
<b>Thermostat fault (TWW)</b>	The overheating protection thermostat has been triggered. ⇒ The difference between the regulation setpoint and that of the thermostat is too low.	Increase the electronic thermostat setpoint or decrease that of the regulator.  (See 4. <a href="#">Electronic overheating protection thermostat</a> ) If the fault persists, contact After-Sales Service.
<b>Thermostat fault (TWB)</b>	The overheating protection thermostat has been triggered. ⇒ The difference between the regulation setpoint and that of the thermostat is too low.	Increase the electronic thermostat setting or decrease the regulator setting and reset the thermostat.  (See 4. <a href="#">Electronic overheating protection thermostat</a> ) If the fault persists, contact After-Sales Service.
<b>Deviation control alarm fault (SDT)</b>	Setpoint Deviation Tracking (SDT) alarm has been triggered ⇒ Insufficient SDT alarm tolerance or unexpected change in temperature (due to a fault in the vacuum, heating, an exothermic reaction, etc.)	Increase SDT alarm tolerance  (See 4. <a href="#">Electronic overheating protection thermostat</a> ) If the fault persists, contact After-Sales Service.
<b>Thermostat fault (TB)</b>	The measured temperature of the thermostat is higher than the thermostat limit	Check the connection of the probe to the thermostat and its condition, replace it if necessary. Contact After-Sales Service.
<b>Regulation probe fault</b>	C6000 temperature probe returns invalid value	Check the probe connection and its condition, replace it if necessary. Contact After-Sales Service.
<b>RST fault</b>	Heating resistor fault or SSR static relay fault.	Contact After-Sales Service.
<b>SSR fault</b>	Solid state relay short circuit	Replace the solid state relay Contact After-Sales Service.

<b>Comm fault THS card</b>	Communication fault between the thermostat card and the C6000.	Check the cable connection between the 2 cards. Check that the THS card is turned on. Contact After-Sales Service.
<b>Comm fault FAN card</b>	Communication fault between the fan card and the C6000.	Check the cable connection between the 2 cards. Check that the FAN card is turned on. Contact After-Sales Service.

\* These operations must be carried out by a trained and competent technician.

## 12.3. Breakdowns

In the event of a defect, in normal use, please consult the following table:

<b>Fault</b>	<b>Possible cause</b>	<b>Remedy *</b>
<b>The controller does not start</b> (the power switch is on)	No power supply to the oven	Check the connection of the oven to the electrical network. Refer to the oven manual. Contact After-Sales Service
	Regulator fault	Check the regulator power supply and its wiring. Contact After-Sales Service
<b>Controller displays inconsistent temperature reading</b> <i>Example: 999.9°C</i>	Tray temperature probe poorly connected or defective.	Check the condition of the temperature probe and its correct connection to the regulator. Contact After-Sales Service
<b>The protection thermostat is triggered immediately after starting the regulator</b>	Thermostat probe poorly connected or defective	Check the connection of the probe, its positioning and its condition, replace it if necessary. Contact After-Sales Service
<b>The oven does not heat</b>	The thermostat has been triggered	Check the reason for the thermostat tripping. See <a href="#">§3. Electronic thermostat.</a>
<b>The controller displays an incorrect date/time, and the configuration has been lost.</b>	The display battery is discharged.	Replace the screen battery. Contact After-Sales Service.

\* These operations must be carried out by a trained and competent technician.

## 13. Contacts and links

Service	Contact
<b>Ordering parts</b>	<a href="http://www.france-etuves.com/FR/store.php">www.france-etuves.com/FR/store.php</a>
	+33 (0)1 64 21 30 60
	sav@france-etuves.com
<b>After-sales service</b>	<a href="http://www.france-etuves.com/FR/sav.php">www.france-etuves.com/FR/sav.php</a>
	+33 (0)1 64 21 30 60
	sav@france-etuves.com
<b>Sales department</b>	<a href="http://www.france-etuves.com/FR/contact.php">www.france-etuves.com/FR/contact.php</a>
	+33 (0)1 64 21 30 60
	sales@france-etuves.com

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