


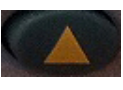


Profiler-recorder NANODAC Simple control / Programming

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1. Key's functionalities

The profiler-recorder NANODAC has 4 keys:

	Exit from a menu Exit from a parameter without validating it
	Enter in a parameter Validate a parameter
	Change display Decrement a parameter's value
	Change display Increment a parameter's value

2. Login / Log out


The profiler-recorder allows to log in as “operator”, “supervisor” or “engineer” or to log out. These access levels allow to access to different menus.

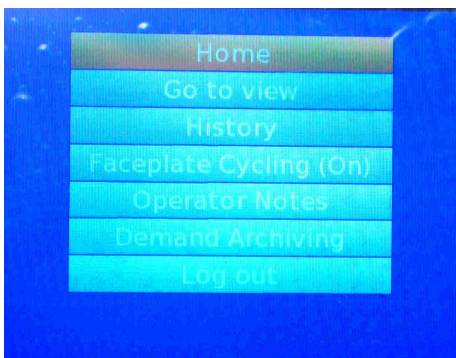
Consult the part “3.3.8 Login” of the manufacturer user guide of the profiler-recorder.



1. Switch on the oven.

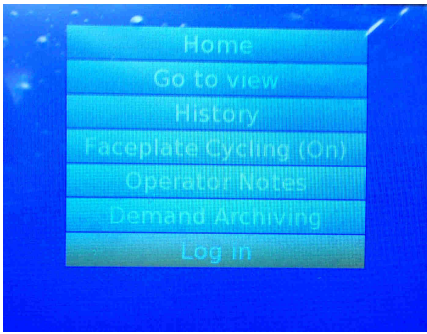
The controller displays a home screen.



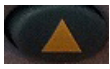


2. Press the key  to access to the top level menu.

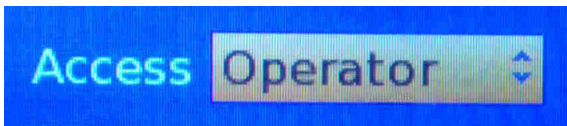


3. Press the key  until reaching «Log in» or «Log out» (last line) and validate by pressing the key .




You access to the log in / log out page.

4. Press the keys  or  to choose your access level then validate by pressing the key .



You are now connected with the selected access level or logged out. You return to the top level menu.

5. Press the key  to return to the home page.

3. Simple control

The simple control allows to control at only one set point temperature.

Setting the set point temperature:


1. Switch the oven on.

The controller displays a home screen.




2. Press the  or  keys to go to the screen “Loop 1”.





3. Press once the  key.
The "SP1" line yellow-highlights. "SP1" means set point temperature.




4. Press once the  key to be allowed to modify "SP1".
Up and down arrows appear on the "SP1" line.



5. Press the  or  key to set the set point temperature.



6. Validate your set point temperature by pressing the  key.



To return to the home screen, press three times the  key.

4. Programming

4.1. Parameters' description

Creating a program requires to set several parameters. The following table describes them:

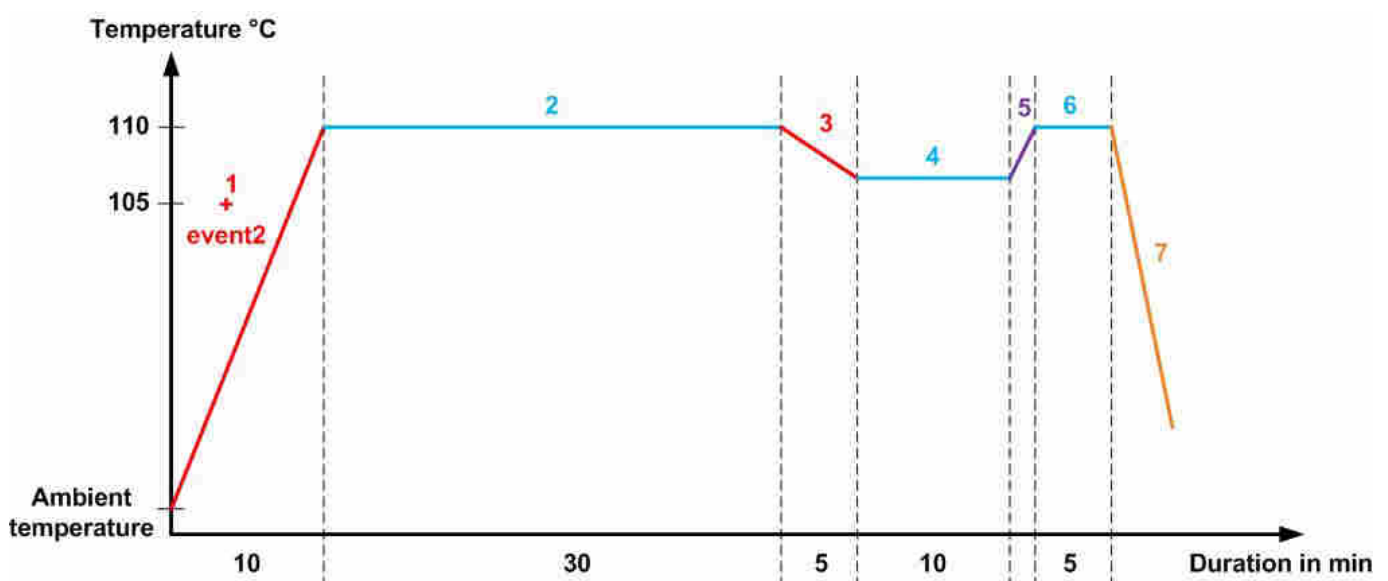
Parameter	Values	Description
General parameters of a program		
Operation	Load	Load a previously recorded program
	Store	Back up of a program which is being created
	Delete	Delete a previously recorded program
	Delete all	Delete all previously recorded programs
	Copy	Copy a program between the NANODAC and a USB stick
	Copy all	Copy all programs between the NANODAC and a USB stick
Status	/	Status of the program
Program	/	Name of the program Important: the name of the program must be composed as follow: <ul style="list-style-type: none"> - a two-digit number from 01 and 99 - the "underscore" sign - ... e.g.: 01_ drying
Holdback style		Type of hold band
	Per segment	Give the value of holdback per segment
	Program	Give the value of holdback for the whole program
Ramp style	Time	Target set point temperature and a time in which to achieve that set point temperature E.g.: achieve 200°C in 10 min
	Rate	Target set point temperature and the rate at which to ascend/descend to that set point temperature E.g.: achieve 200°C with 5°C/min
	The chosen ramp style will be applied to the whole program.	
Ch 1 Ramp units	Per hour	The ramp timing unit is in hour E.g. for a rate ramp: achieve 200°C with 50°C/h
	Per minute	The ramp timing unit is in minute E.g. for a rate ramp: achieve 200°C with 5°C/min
	Per second	The ramp timing unit is in second E.g. for a rate ramp: achieve 200°C with 0.1°C/sec
Parameters peculiar to the segment		
Segment number	/	Selection of the segment to edit/create
Segment name	/	Name given to the segment
Type	Dwell	Control at a temperature during a defined period of time <u>Duration</u> : period of time if temperature holdback <u>Ch 1 Holdback</u> : Off = no holdback / band = holdback above or below the set point temperature / high = holdback above the set point temperature / low =

	holdback below the set point temperature <u>Event 1 / Event 2</u> *: x = inactivated event / v = activated event
Ramp	Temperature increase or decrease in a defined period of time (ramp time) or according to the ratio °C/time unit (rate ramp) <u>Ch 1 TSP</u> : target set point temperature in °C <u>Ch 1 Time</u> : period of time to achieve the set point temperature if ramp time <u>Ch 1 Rate</u> : time unit for the ratio °C/time unit if rate ramp <u>Ch 1 Holdback</u> : Off = no holdback / band = holdback above or below the set point temperature / high = holdback above the set point temperature / low = holdback below the set point temperature <u>Event 1 / Event 2</u> *: x = inactivated event / v = activated event
Step	Achieve a set point temperature the quickest possible <u>Ch 1 TSP</u> : target set point temperature in °C <u>Ch 1 Holdback</u> : Off = no holdback / band = holdback above or below the set point temperature / high = holdback above the set point temperature / low = holdback below the set point temperature
Go back	Repetition of several segments <u>Go back to</u> : segment number from which there is repetition <u>Cycles</u> : number of repetitions
End	Compulsory segment of the end of the program Allows to stop correctly a program <u>End type</u> : dwell = program stopping followed by a simple control at the last set point temperature of the program / Reset = program stopping followed by a simple control at the last set point temperature set in simple control mode <u>Event 1 / Event 2</u> *: x = inactivated event / v = activated event

* Events must be activated only if it is necessary. Consult the user manual of the oven to know the number allocated to such event.

Note: to be logged as supervisor allows to create, edit and launch programs. To be logged as operator allows to launch programs only.

4.2. Example of program



1. Ramp time: achieve 110°C in 10 min
Activation of the event 2
Holdback: band at 3°C
2. Dwell: stabilization of the temperature for 30 min
3. Ramp time: achieve 105°C in 5 min
4. Dwell: stabilization of the temperature for 10 min
5. Step: achieve 110°C the quickest possible
6. Dwell: stabilization of the temperature for 5 min
7. END: **compulsory segment** – go back to the the last set point temperature set in simple control mode

Hold back style: per segment

Ramp style: time

Ch 1 ramp unit: per minute



The following parts explain how to create our program example.

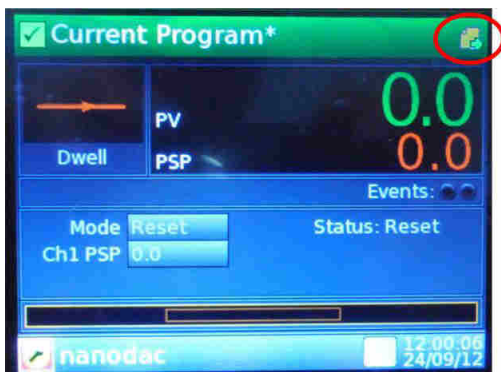
4.3. Creating the program

1. From the home screen, press the  and/or  keys until to reach the program display.




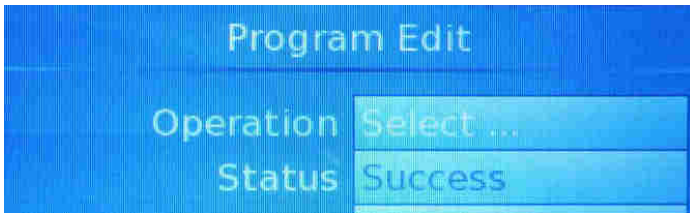
Here the program is named “Current program” because no program is recorded.

2. Press the  key to be allowed to enter in the program.
3. Press the  key to select the icon “page” at the top-right side.




NB: if the icon does not appear, you have to log in as “engineer” or “supervisor”.

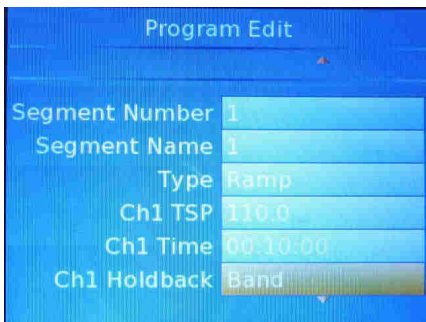
4. Press the  key to enter in the program edit page.



Setting the general parameters of the program:

For the field:	Choose:
Operation	"Store" and enter the name of the program Important: the name of the program must be composed as follow: <ul style="list-style-type: none"> - a two-digit number from 01 and 99 - the "underscore" sign - ... e.g.: 01_drying
Status	Success
Program	A name for your program - already chosen in the field "Operation"
Holdback style	Per segment
Ramp style	Time
Ch1 ramp unit	Per minute

Press the  key to go to the configuration of the segment 1.

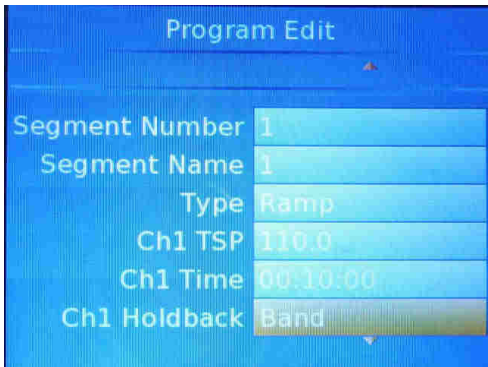


Setting the segment 1:

Our segment 1 is a ramp time. We need to achieve 110°C in 10 min.

For the field:	Choose:
Segment number	1
Segment name	A name for your segment 1
Type	Ramp
Ch 1 TSP	110.0°C
Ch 1 time	00 : 10 : 00

Ch 1 holdback	Band
Ch 1 holdback val	3.0°C
Event 1	Uncheck (x)
Event 2	Check (v)

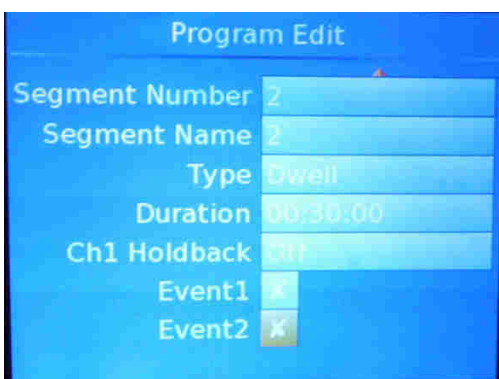


To go to the configuration of the segment 2, return to the field “Segment number”.

Setting the segment 2:

Our segment 2 is a dwell for 30 min at 110°C.

For the field:	Choose:
Segment number	2
Segment name	A name for your segment 2
Type	Dwell
Duration	00 : 30 : 00
Ch 1 holdback	Off
Event 1	Uncheck (x)
Event 2	Uncheck (x)

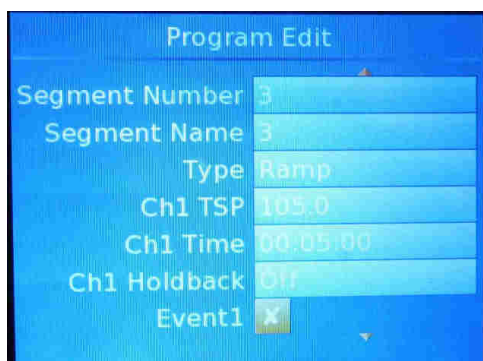


To go to the configuration of the segment 3, return to the field “Segment number”.

Setting the segment 3:

Our segment 3 is a ramp time. We need to achieve 105°C in 5 min.

For the field:	Choose:
Segment number	3
Segment name	A name for your segment 3
Type	Ramp
Ch 1 TSP	105.0°C
Ch 1 time	00 : 05 : 00
Ch 1 holdback	Off
Event 1	Uncheck (x)
Event 2	Uncheck (x)

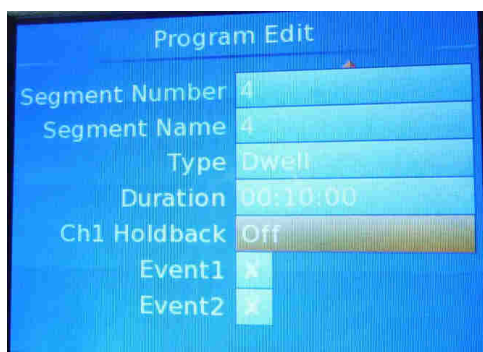


To go to the configuration of the segment 4, return to the field “Segment number”.

Setting the segment 4:

Our segment 4 is a dwell of 10 min at 105°C.

For the field:	Choose:
Segment number	4
Segment name	A name for your segment 4
Type	Dwell
Duration	00 : 10 : 00
Ch 1 holdback	Off
Event 1	Uncheck (x)
Event 2	Uncheck (x)



To go to the configuration of the segment 5, return to the field “Segment number”.

Setting the segment 5:

Our segment 5 is a step to 110°C.

For the field:	Choose:
Segment number	5
Segment name	A name for your segment 5
Type	Step
Ch 1 TSP	110.0°C
Ch 1 holdback	Off
Event 1	Uncheck (x)
Event 2	Uncheck (x)



To go to the configuration of the segment 6, return to the field "Segment number".

Setting the segment 6:

Our segment 6 is a dwell of 5 min at 110°C.

For the field:	Choose:
Segment number	6
Segment name	A name for your segment 6
Type	Dwell
Duration	00 : 05 : 00
Ch 1 holdback	Off
Event 1	Uncheck (x)
Event 2	Uncheck (x)



To go to the configuration of the segment 7, return to the field "Segment number".

Setting the segment 7:

Our segment 7 is an end segment.

For the field:	Choose:
Segment number	7
Segment name	A name for your segment 7
Type	End
End type	Reset



To return to the home screen, press the  key.


5. Launching a program

5.1. Loading a program




Before starting a program, you have to select it.

1. From the home screen, press the  and/or  keys until to reach the "Promote List" display.




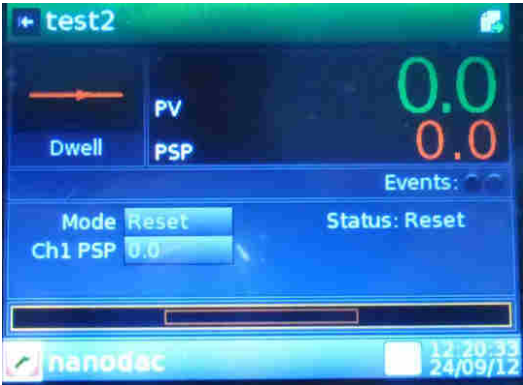
2. Press the  key to be allowed to enter in this display.




3. Press the  and/or  keys to select the number of the program to load.
4. Press the  key to validate.




5. Press the  key to return to the program display.



5.2. Starting a program

1. From the display of the selected program, press the  key to enter in the display. The field “Mode” is selected.



2. Press the  key to be allowed to modify the field “Mode”.

3. Select “Run” with the  and/or  keys then press the  key to validate.

Your program starts.

Beside the program name is displayed the number of the segment in progress.

5.3. Stopping a program in progress

Stopping a program in progress can require to be logged as “Supervisor” or “Engineer”.

Same stages than to start a program, but select “Reset” for the field “Mode”.




6. Downloading a program to the Nanodac

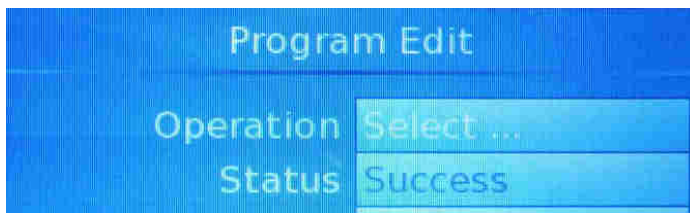
It is possible to create a program with a PC then to download it to the Nanodac controller.




Important: the storage capacity of the USB stick must not exceed 8 Go. Above, the USB stick will not be recognized by the recorder.

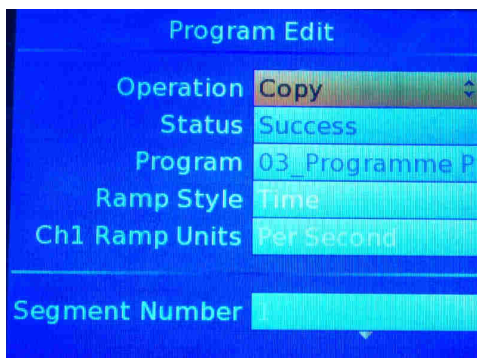
Note: you must be connected as engineer.




1. Connect your USB stick that contains the program created in the PC to the USB plug of the electrical cabinet.

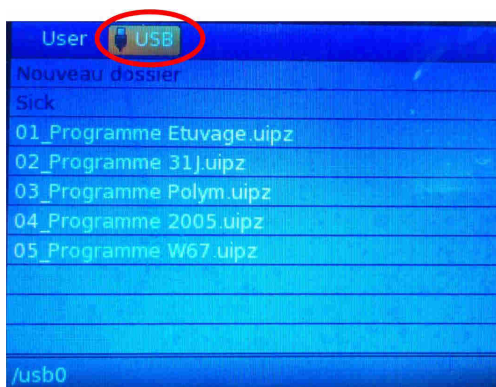
2. From the "Program Edit" page, press the key  to enter into the « Operation » field.





3. Press the key  and/or  to choose "Copy" en validate by pressing the key .

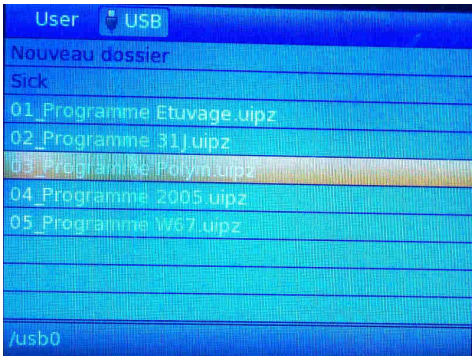



4. Press the key  and/or  to select "USB" and press the key .

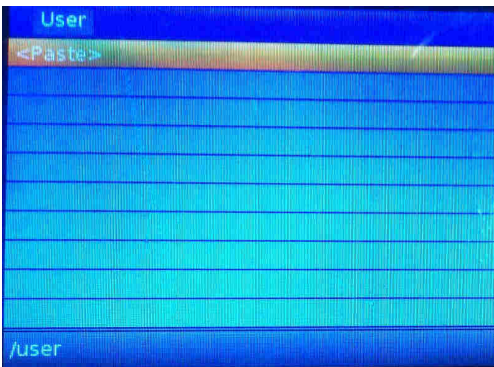



The list of programs contained in the USB stick appears.

5. Press the key  and/or  to select the program to download to the Nanodac.



6. Validate by pressing the key . "Paste" appears.



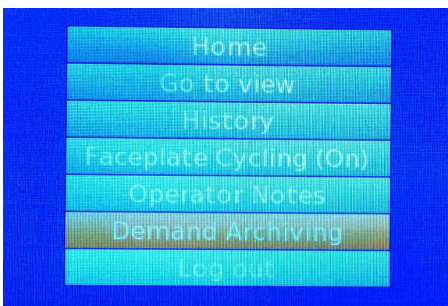
7. Press the key  to validate the download of the program to the Nanodac.


7. Retrieving stored data

Important: the storage capacity of the USB stick must not exceed 8 Go. Above, the USB stick will not be recognized by the recorder.



Note: you must be connected to retrieve data. Be disconnected does not allow the data retrieving.


1. Connect your USB stick to the USB port.
2. From the main screen, press the key .
3. Press the key  as many times as needed to select "Demand Archiving".



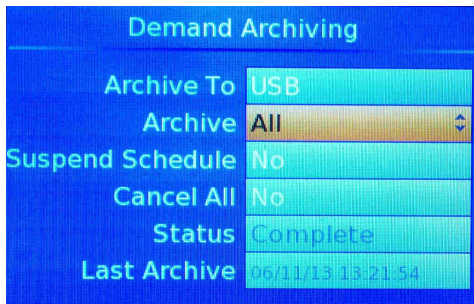
4. Press the key  to enter in the menu "Demand Archiving".




5. Press the key  as many times as needed to select the field "Archive" then press the key  to be allowed to choose data to retrieve.

6. Press the key  as many times as needed to choose data to retrieve (all, data of the last week, of the last month...).

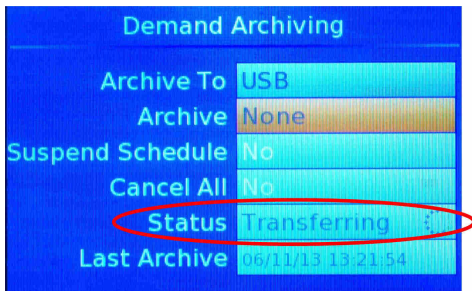
Note: "Bring to date" allows you to retrieve all data that are not yet in your USB stick.



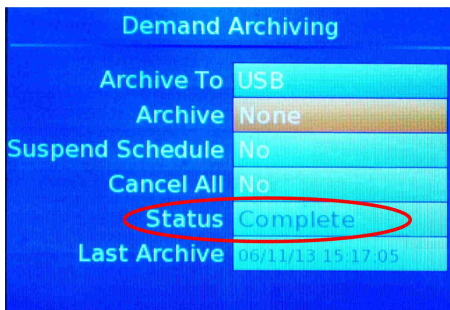
Here, we have chosen "All".

7. Press the key  to validate.

Data transfer is in progress.



Once the transfer is complete, the field "Status" displays "Complete". You can disconnect the USB stick from the USB port.



Data saved on the USB stick are available in two formats: **.uhh** for exploitation by the Itools software (see manual) or **.csv** for exploitation by spreadsheet.