



# AIR SCIENTIFIC

## Laboratory Ovens



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## ATTENTION: GENERAL INFORMATION AND SAFETY

It is necessary to strictly follow the instructions for use of this manual to ensure the proper functioning of the appliances or to exercise any warranty claims.

Using this manual:

- Read this manual carefully before starting the appliance.
- Follow the instructions of the manual.
- This manual is an integral part of the product. Keep this manual in a convenient place.
- If you need to transfer this product, do not forget to attach the manual.
- In case of loss, on request, we will provide another manual. You can download the manual from [www.froilabo.com](http://www.froilabo.com)

In this manual:



This warning sign is intended to draw your attention to information or an observation of great importance or potential danger.



This warning sign is intended to remind you to pay attention to the warm surface

Symbols on serial number plate:



CE conformity marking



Date of manufacture



Refer to instruction manual

# 1 Certificate of conformity

FROILABO SAS certifies that the appliance mentioned below:

## Air Scientific Laboratory Oven

Comply with the technical directives applying to them:

- RoHS Directive: 2011/65/EU
- Electromagnetic Compatibility Directive: 2014/30/EU
- Low Voltage Directive: 2014/35/EU

**Note:** *These appliances are not designed to operate in explosive environments (ATEX). Moreover they cannot be used to store flammable corrosive substances.*

# 2 Manufacturer

Froilabo  
8 RUE DE LAMIRAULT  
77090 COLLEGIEN FRANCE

# 3 Warranty

FROILABO SAS guarantees optimum operation of these appliances according to the installation and usage conditions indicated in this manual.

**The duration of the warranty is: 24 months.**

During this period, in the event of a malfunction of your appliance, the warranty is limited to an improvement in the operation, a repair free of charge or the replacement of equipment if it is evident that the malfunction or breakdown is caused by faulty material or workmanship.

**All other claims for compensation are excluded.**

# 4 General Information



**Make sure that persons using these appliances are trained for the work**

Persons using these appliances must be informed regularly of the possible dangers linked to their work and of the safety measures to be observed. Make sure that all persons installing, using or repairing these appliances are aware of the possible danger connected to their work; the safety measures to be followed and that they have understood the operating instructions.

**If you use hazardous substances, or ones that could become hazardous, only persons with perfect knowledge of these appliances can operate them. These persons should be able to**

assess the possible risks overall. If you have any questions about the use of the appliance or method of operation don't hesitate to contact us. FROILABO can in no circumstances be held responsible for the quality of the substances stored in the ovens.

## 5 Installation of Appliance

### 5.1 Delivery

Please check the delivery receipt :

AS – 60 Liters	AS – 120/240 Liters
1 electricity supply cable	
2 Shelf supports	4 Shelf supports
1 Shelf	2 Shelves

### 5.2 Transport



To move the appliance, you should always wear protective gloves!  
Two people are required to lift or carry the AS60L oven, three people for the AS120L oven & 4 people for the AS240L oven. Do not tip or place the oven horizontally.

### 5.3 Location

These appliances are designed for indoor use only. Set up the oven on an even & non-flammable surface, free from vibration. The altitude must not exceed 2000m. Place the appliances in a position where they are protected from the sun's rays and other heat sources, in a sufficiently ventilated place.

Room temperature should be between **+18°C and +32°C** with a permissible ambient humidity of 70% r.H. max & non-condensing.

Place the appliances in a location with minimal temperature fluctuations, as these can significantly affect their stability and accuracy.

When positioning against a wall ensure that there is a minimum of 160mm of space at the rear of the oven & a minimum of 100mm of space at the side of the oven. If ovens are being positioned side by side then a minimum distance of 250mm must be observed.

### 5.4 Installation notes



**When the product is removed from the packaging make sure that there is no evidence of water collection or damage. If there is do not power the product up & contact our After Sales Service department. (Contact details are in Section 12)**

Once the product has been removed from the packaging leave the unit in a location with an ambient temperature of at least 20°C for 48 hours before powering the unit up.



**During the drying-out process the equipment cannot be assumed to meet all the safety requirements of EN 61010-2-010.**

## 5.5 Technical Specifications

SPECIFICATIONS		Convection Ovens		
		AS60	AS120	AS240
Temperature range		Amb +10°C to 250°C		
Temperature Uniformity +/- (°C)*	at 70°C	0.7	0.6	0.7
	at 150°C	1.5	1.4	1.5
	at 250°C	5	5	5
Temperature stability (°C)		0.2	0.2	0.2
Time for temperature elevation (min)**	at 70°C	8	9	10
	at 150°C	20	30	24
	at 250°C	38	50	45
Recovery time after door opening of 30 sec (min)**	at 70°C	1.5	2	2
	at 150°C	2.5	3	3.5
	at 250°C	3.5	4	3.5
<b>ELECTRICAL SPECIFICATIONS</b>				
Power supply		230V+/-10% / 50/60Hz 10A		
Power (W)		1100	1100	2100
Pollution degree acc. IEC 61010-1		2	2	2

\* Not including measure uncertainties, FROILABO procedure: 9 points characterization according to NFX 15 140 norm

\*\* 98% of the value

Tests performed at an ambient temperature of 25°C and with a voltage supply variation of +/- 10%

EXTERNAL DIMENSIONS	Convection Ovens		
	AS60	AS120	AS240
Width (mm)	530	630	630
Depth (mm)	630	730	730
Height (mm)	740	850	1330
Side clearance (mm)	100	100	100
Height (mm) stackable kit	30	30	30
<b>INTERIOR DIMENSIONS</b>			
Actual volume (L)	58	118	230
Width (mm)	400	500	500
Depth (mm)	370	470	470
Height (mm)	390	500	980
Shelves standard/max	1/6	2/10	2/18
Weight per shelf/total allowable weight (kg)	20/50	20/70	20/90
Shelf dimensions WxD (mm)	380x320	480x430	480x430
Empty weight/Gross weight (kg)	44/58	58/74	84/102

## 5.6 Safety devices


These appliances are fitted with a Class II safety thermostat as defined in the European norm NF EN 61010-2-010 (equivalent to DIN 3.1). It protects the oven & it's contents from undesirable overheating.

## 5.7 Construction

The monobloc exterior bodywork is made from electro-galvanized steel and protected by epoxy paint. The inside tank is made from 304L stainless steel. The support racks, shelves and all the interior accessories are also made from 304L stainless steel. The shelf support brackets are made of 441 stainless steel.

## 5.8 Loading

To avoid any risk of damage to the structural parts and to guarantee the technical performance announced, it is important to respect the following instructions:

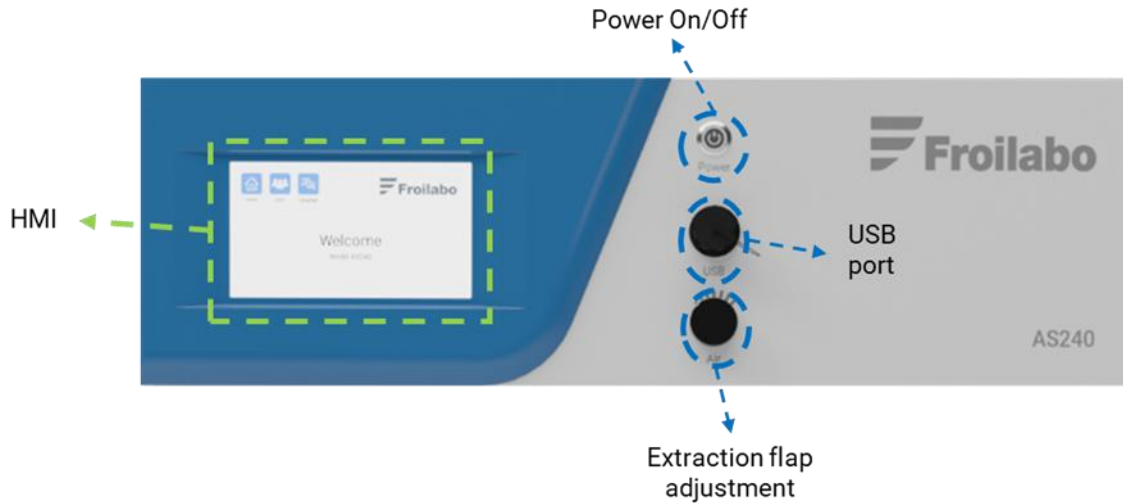
- Never place highly corrosive materials in the oven.
- Never place explosive or highly flammable materials in the oven.
- Never obstruct the whole surface of a shelf.
- Leave a minimum clearance of 5 cm along internal faces.
- Leave a minimum of 2cm between the products placed in the oven.
- Spread the load evenly.
-  Pay attention to the hot surface warning labels & always use thermal gloves when opening/closing the oven door.



These appliances are not explosion proof.

# 6 General Use

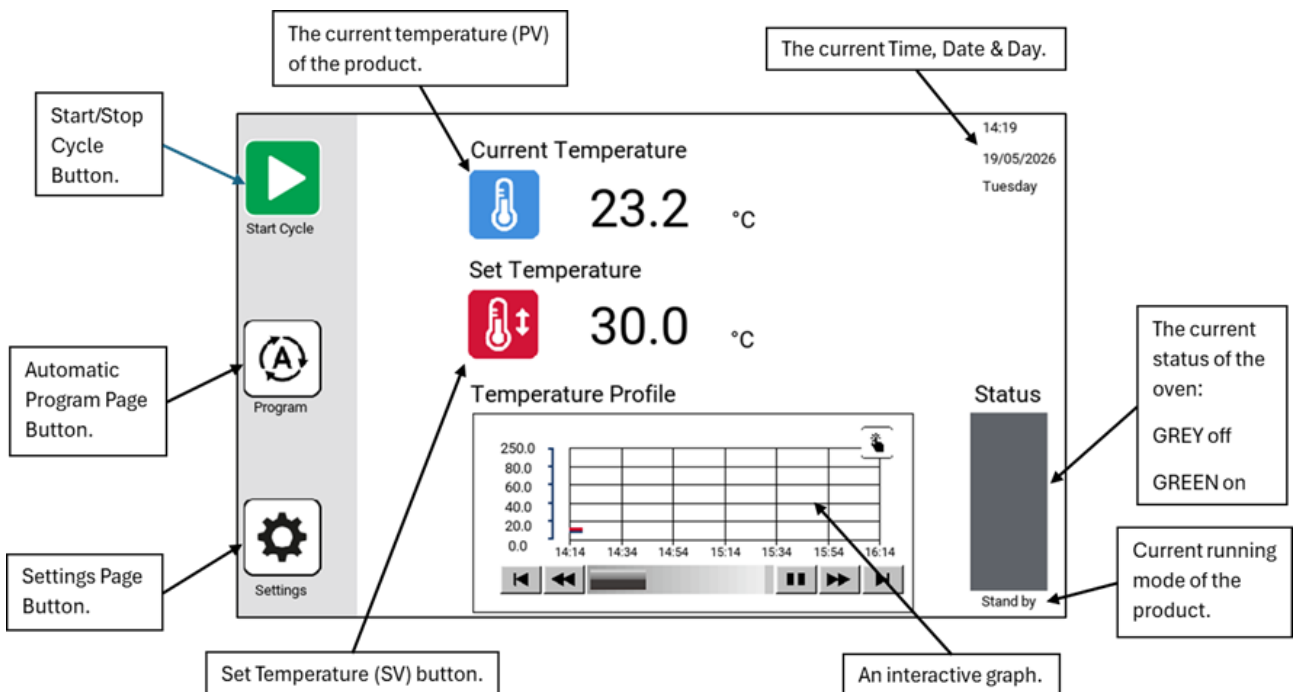
## 6.1 Control Panel



## 6.2 Main / Manual Page

### 6.2.1 Starting / Stopping a Manual program

1. Connect the appliance to a 230V+/-10%, 50/60Hz, 10A + Neutral + Earth supply protected by a 30mA differential circuit breaker using the mains cable supplied with the product.
2. Press the Power on/off switch
3. The unit is powered up & the HMI displays the Main / Manual page shown below.



4. On this page you can run a manual program by pressing the "Set Temperature" value & using the virtual keypad to set the desired temperature within the limits of ambient +10°C to 250°C.

- Once the Set temperature has been entered press the “Start/Stop Cycle” button to start the manual program. A pop-up box will appear asking for confirmation to start the manual program. Once pressed the Status bar changes to green & the running mode changes to Manual



- To stop the cycle press the “Stop Cycle” button & again a confirmation pop up box appears requesting confirmation to stop the cycle. Once pressed the Status bar changes to grey & the running mode changes to Stand by.

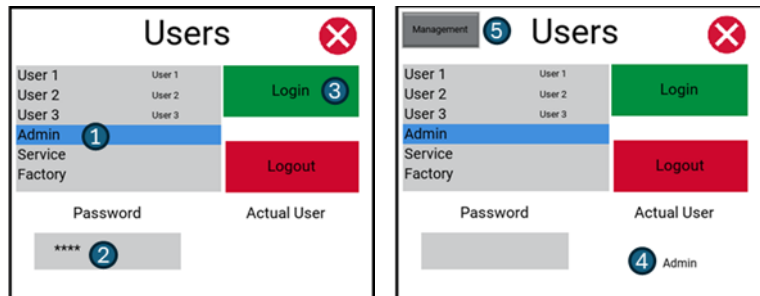


- To turn the unit off press the Power On/Off switch.
- Disconnect the appliance safely.

## 6.2.2 Accessing the Settings page – Login as Admin

From the Main / Manual page press the “Settings” button which opens the “Settings” page. Press on the User icon & Login as Admin by:

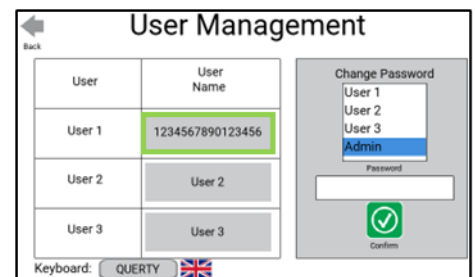
- Pressing on Admin.
- Enter the Admin password 4444.
- Press the Login button.
- The User logged in appears in the bottom right hand corner of the screen.



- This also provides access to the Management button which allows Admin to create a User name & change a User password.

### Changing User Name:

- Press on the User Name box that you want to change.
- Use either the QWERTY or AZERTY popup keyboard to enter the desired name.

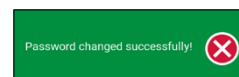
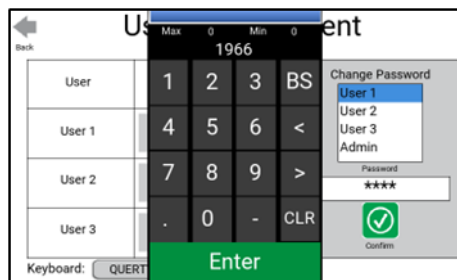


### Changing User password:

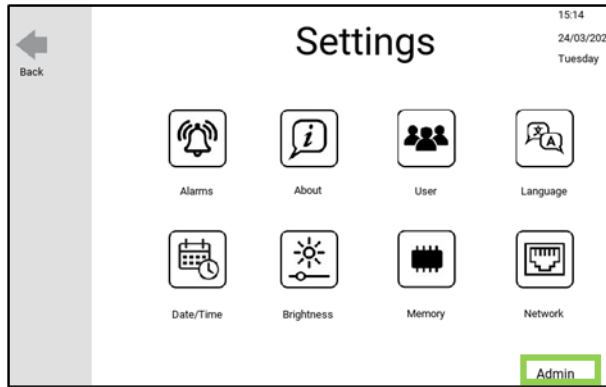
- Press on the User that you want change the password of.
- Use the popup keypad to enter the new password.
- Press the Confirm button.
- To continue press the X button on the popup information box.

The default passwords are:

- User 1: 1111
- User 2: 2222
- User 3: 3333



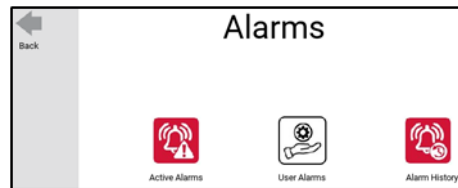
When logged in as Admin the Settings page shows this in the bottom right hand corner of the screen.



### 6.2.2.1 Alarms Page

When logged in as Admin you have access to:

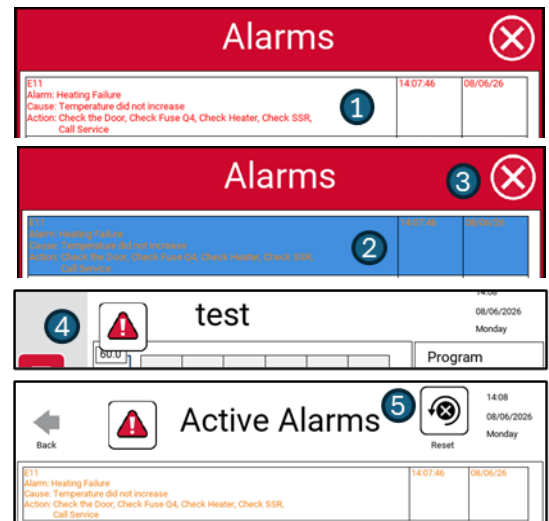
- a) Active Alarms page
- b) User Alarms Page
- c) Alarm History Page



#### 6.2.2.1.1 Active Alarms

When an Alarm is activated the buzzer is activated & a pop up box appears on the screen detailing the Alarm description, the cause for the alarm & the actions to take. It also shows the time & date that the Alarm became active.

When the pop up box appears press on the Alarm code box (1). This then changes the text from red to orange & the background colour to blue (2). This also turns the buzzer off. You then need to press the "X" button (3) which returns you to the previous screen where the Active Alarm (4) icon is displayed. At this point the product is in Stand by mode & you are not able to run either Automatic or Manual Programs until the Error has been rectified. Once the fault has been rectified you then must press the Reset button (5) which removes the Active Alarm icon & stores the deactivated alarm in the History file. The Active Alarm Page is now empty.



#### 6.2.2.1.2 User Alarms

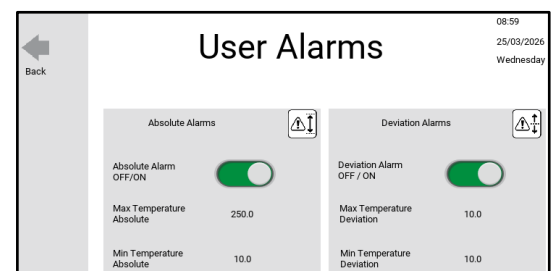
Pressing the User Alarms button takes you to the User Alarms page.

Here you have access to:

The Absolute Alarms with a range of 10°C to 250°C

The Deviation Alarms which are restricted to be within a minimum of 2 & a maximum of 10°C.

The limits are changed using the virtual keypad which appears when you press on the value.

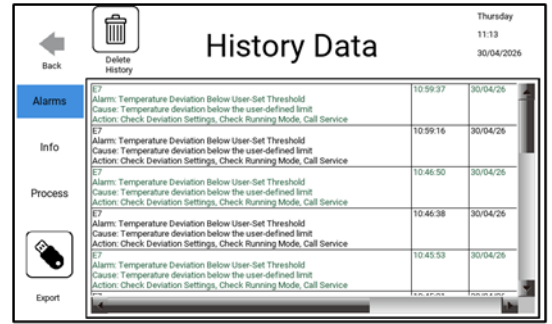


### 6.2.2.1.3 History Data

Pressing the History Data button takes you to the History Data page.

The **“Alarms”** page records all the **Critical Alarms**.

When an alarm is first activated it appears in black text detailing the time & date of Activation. Once it has been rectified it is then shown in green text again detailing the time & date that the fault was cleared.

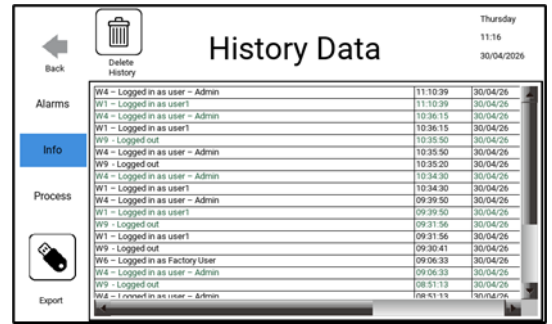


The list of Critical Alarms which will activate the buzzer & put the product in Stand by mode are shown in Appendix 1.

The **“Info”** page records all the **Warning messages**.

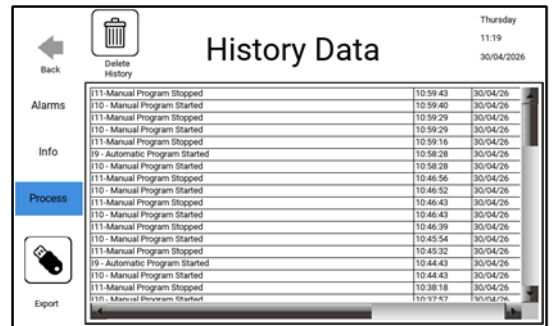
These are important issues where the product continues to function but some parameters can be affected.

The list of Warning messages are shown in Appendix 2.

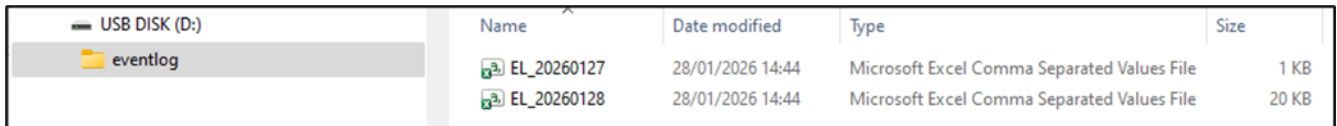


The **“Process”** page records all the **Process Information messages** relating to the steps in the equipment’s processes.

The list of Process Information messages are shown in Appendix 3.



On each page Admin can delete the Alarm History data to free up space in the HMI memory. However it is recommended that prior to performing this function the History data is first downloaded onto a USB stick that has a FAT32 format. The USB used can be either USB 2.0 or USB 3.0. On each page you can export the History data from the HMI to the USB stick in CSV format which can then be easily processed in Excel to generate the required information table. The CSV files are saved in the **“eventlog”** folder.



### 6.2.2.2 About Page

Pressing this button takes you to the About page. This details the Product Model, Serial Number, Fabrication date, the HMI & Regulator software version & also provides you with a QR code which can be scanned to retrieve the product User manual from the Froilabo website.



### 6.2.2.3 Language Page

Pressing this button opens the Language Management page. On this page you can select the language that meets your requirement. When the product is started, the language is English.



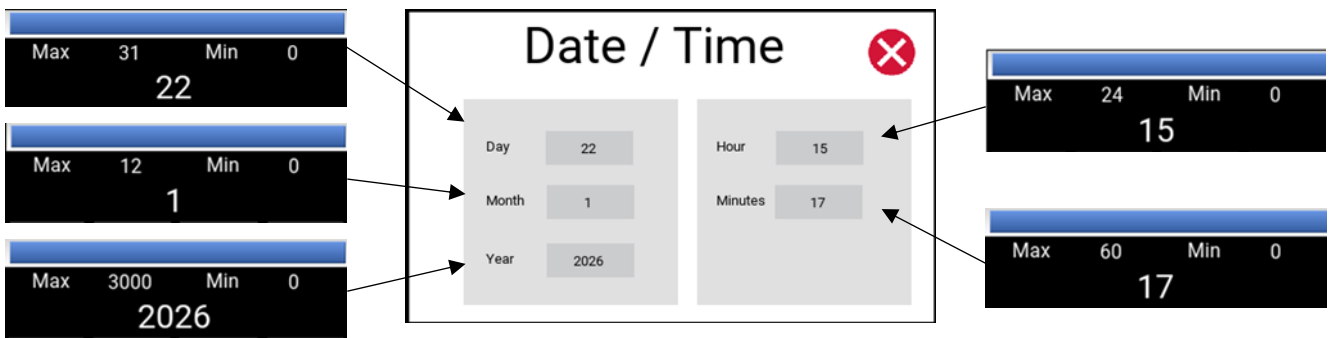
The product supports six languages, which are:

- English, French, Spanish, German, Chinese & Romanian

### 6.2.2.4 Date / Time Page

It is essential for the product to have the correct date & time, as it is used to schedule automatic programs. To adjust the date & time press on the Date/Time button.

1. A new page will appear where you can adjust the date and time parameters.
2. To modify a specific value (e.g., the date or time), press the value of the parameter you wish to change.
3. After pressing the parameter, a specific numeric keypad will appear dependent on the value you want to change.
4. Set the desired value using the numeric keypad, then press Enter to confirm the change



### 6.2.2.5 Brightness / Screensaver Page

This page allows you to adjust the brightness of the screen & the duration of the screen saver. The brightness level can be set between:

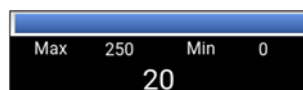
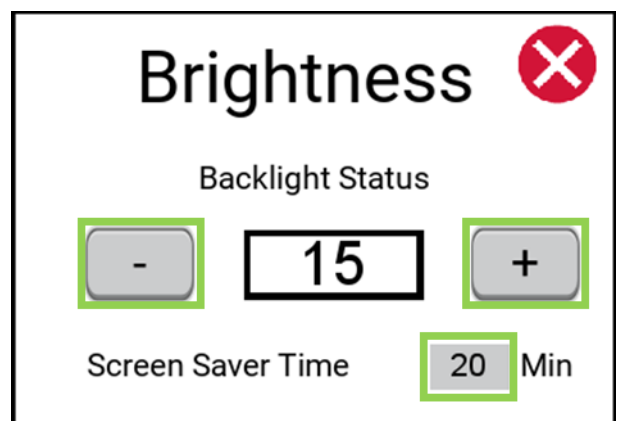
- 0 → Lowest brightness (most dark)
- 31 → Highest brightness (most bright)

Steps to Adjust Brightness:

1. Use the "+" (Increase) or "-" (Decrease) buttons to adjust the brightness level.
2. The screen brightness will change accordingly.

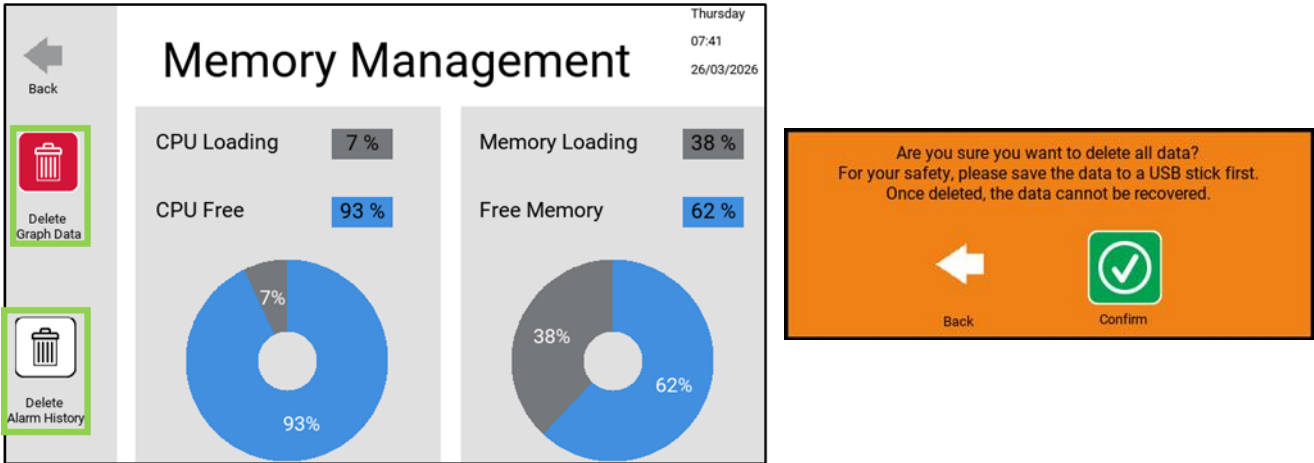
Setting the Screen Saver time:

1. Press on the Screen Saver Time box & use the pop up virtual keypad to enter the screen saver duration between the allowable limits of 0 & 250 minutes.



### 6.2.2.6 Memory Management Page

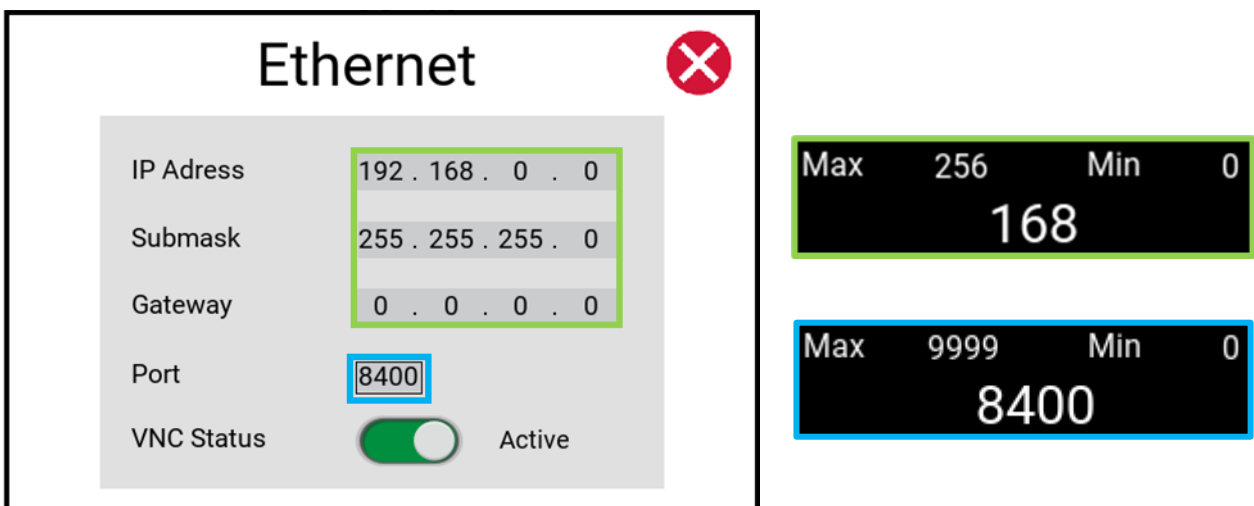
This page allows you to view the available memory on the HMI & provides the ability to delete the Graph Data & the Alarm History should the Low Data Memory Alarm E9 be activated. This alarm is activated when the memory loading reaches 90%. Prior to deleting these files you are prompted to make sure that you have downloaded the files prior to deletion.



### 6.2.2.7 Ethernet Page

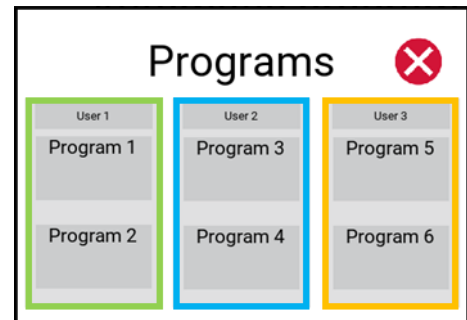
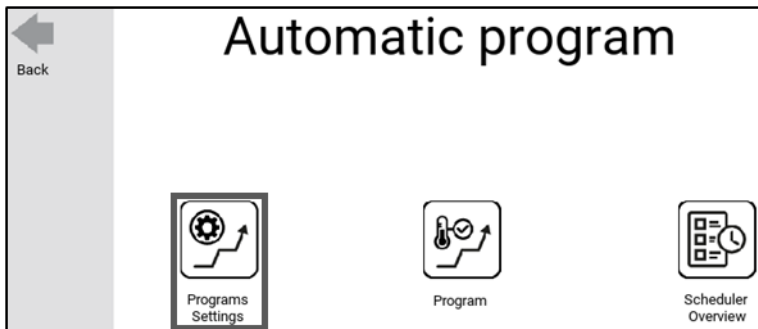
Pressing the Network icon opens up the Ethernet page. This page allows you to set up the ethernet address & assign the required communication Port to allow remote access via the ethernet connection. It also shows the status of the VNC connection.

- Press on the IP Address, Submask or Gateway value & a virtual keypad appears allowing you to enter the required value.
- Press on the Port value & a virtual keypad appears allowing you to enter the required port value.



## 6.2.3 Automatic Program Page

Pressing the Program icon opens up the Automatic program page. Pressing the Program settings button opens up the Programs page showing the 6 available programs that can be created.



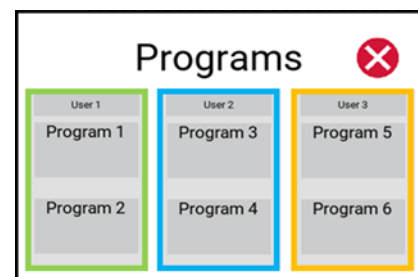
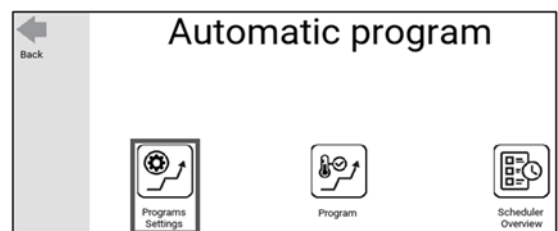
Program creation is dependent on who is logged into the unit as detailed below:

- Admin has full accessibility to create, modify & delete all 6 programs.
- User 1 can create & modify Programs 1 & 2
- User 2 can create & modify Programs 3 & 4
- User 3 can create & modify Programs 5 & 6

### 6.2.3.1 Creating an Automatic Program

To create an Automatic Program, follow these steps:

1. Select a Program
  - Press on the Programs Setting button
  - A window with two available programs per user will open.
  - The product can store up to six automatic programs, each with a maximum of 16 steps.
  - These programs are saved in memory and remain stored even after a power cycle.
  - Select the desired program (e.g., if logged in as User 1 Program No. 1).

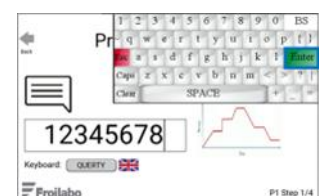


2. Programming the Steps

Each program has 4 steps

#### 2.1 Step 1 – Program name

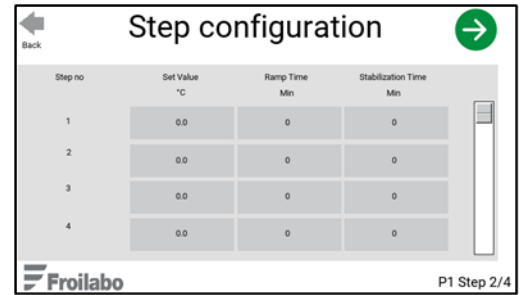
- After selecting a program, a new page opens, titled "Program Name".
- This page allows you to create a program name with a maximum of 8 digits using the pop-up "QUERTY" or "AZERTY" virtual keyboard.
  - Press on the name box & the virtual keyboard appears.
  - Enter the program name then press the "Enter" button on the keyboard.
  - To complete Step 1 press the step completed arrow.



## 2.2 Step 2 – Step configuration page

Each step includes the following parameters:

- **Set Value (°C):** The target temperature within the allowable limits.
- **Ramp Time (min):** The time required to transition between two consecutive temperatures.
  - If set to zero, the product will operate at maximum power to reach the next temperature. The limits are Max 60 / Min 0.
- **Stabilization Time (min):** The duration for which the step temperature is maintained.
  - If set to zero, the program skips the step. The limits are Max 5999 / Min 0.
- If the program requires more than four steps, press on the scroll bar.
- This will open a new page with the next four steps. A maximum of 16 Steps are allowed.
- Press the step completed arrow to continue.

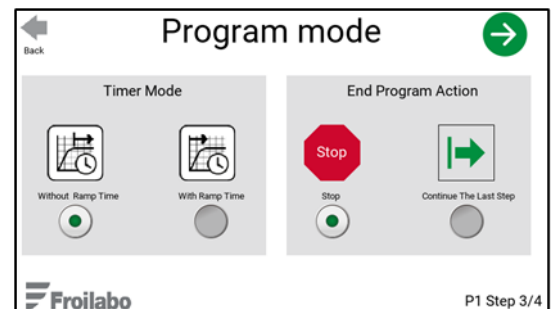


## 2.3 Step 3 – Program mode page

On this page you must define the Timer Mode & End of Program Action for the program.

The Timer Mode can be set in one of two ways.

- Without Ramp Time** – The duration time only starts to count when the actual temperature has reached the setpoint +/-1°C. This ensures the product is exposed to the correct temperature for the full duration (useful for accurate thermal testing).
- With Ramp Time** – Time starts counting immediately after the previous step ends, even if the target temperature hasn't been reached.



The End Program action can be set in one of two ways.

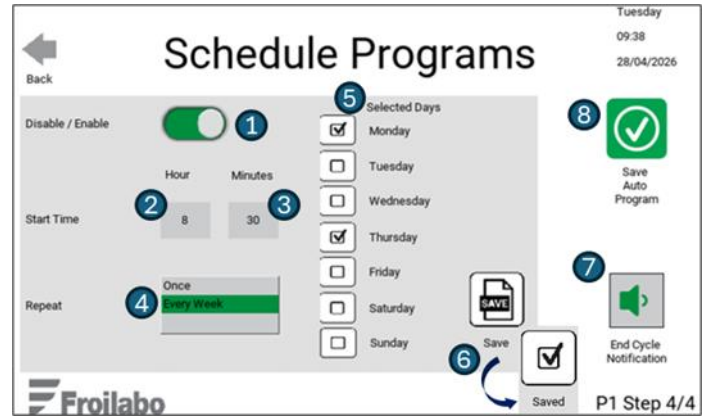
- Stop** – When the program is completed the product returns to Stand by mode.
- Continue The Last Step** – When the program is completed the product remains on & will run at the last defined temperature of the program. For example if the last step had a target temperature of 80°C the product will remain @ 80°C.

Once the preferred modes have been chosen you then press the continue to next page arrow.

## 2.4 Step 4 – Schedule Programs page

This page allows you to schedule a program to run at a specific time either **Once** or **Every Week**. To correctly configure a schedule, follow the steps detailed below.

1. Press the Disable / Enable button (this brings up the Save button in the bottom right of the screen).
2. Set Hour.
3. Set Minutes.
4. Set the Repeat mode (Once / Every Week).
5. Select the Active Days.
6. Press the Save button – the icon then changes to indicate that the schedule has been saved.
7. Either select the end of cycle buzzer to be on or off.
8. Press the Save Auto Program button.



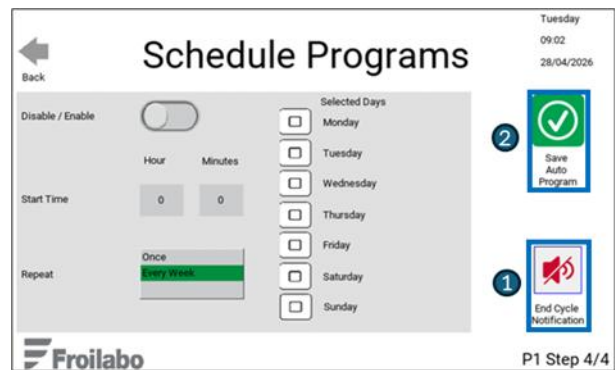
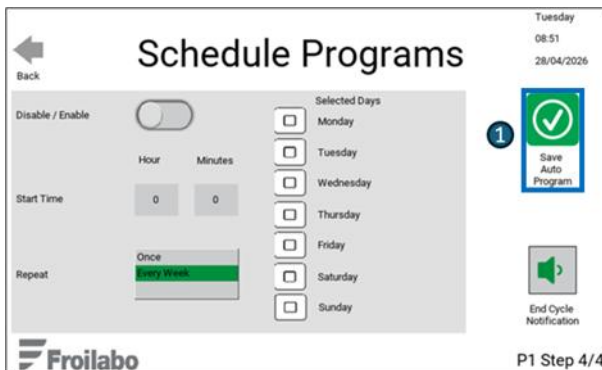
### Repeat Modes:

**Once:** The scheduler runs one time & then switches to OFF automatically.

**Every Week:** The scheduler remains ON and will repeat based on the configured schedule.

In the example shown this program is scheduled to run Every Week on a Monday & Thursday @ 8:30 a.m.

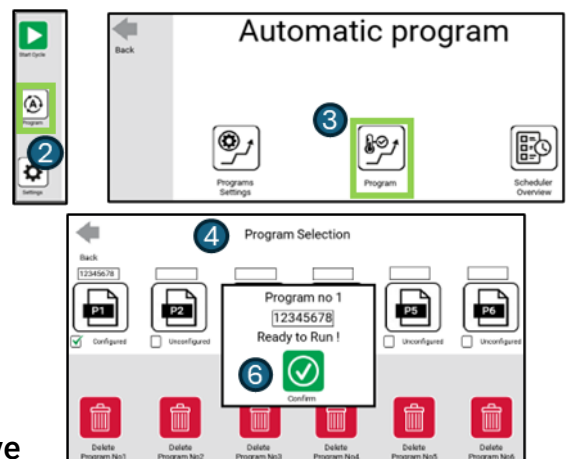
If you do not require to schedule an automatic program then in Step 4 either press the “Save Auto Program” button with the end of program buzzer still active or if you want the end of program button to be muted firstly press the “End Cycle Notification” button & then press the “Save Auto Program” button.



### 6.2.3.2 Start/Stop an Automatic Program

To start an automatic program, follow these steps:

1. Navigate to the Main Page.
2. Press the Program button which takes you to the Automatic program page.
3. Press the Program button.
4. You are now in the Program Selection Page where you can select any one of the 6 programs that have been created. (You must have



a configured automatic program stored in the product's memory)

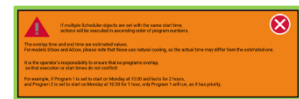
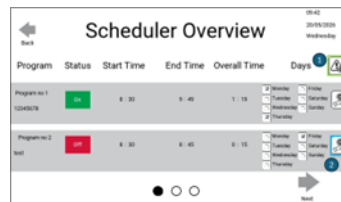
5. Press on the program that you want to run. (in this example Program "12345678" has been selected)
6. When you press on the program that you want to run a confirmation box appears requiring you to verify that you want to run the program. Press the confirmation tick mark.
7. This takes you to the Automatic program start page. Press the Start button. You are then prompted to confirm that you want to start the Automatic program. Press the confirm button. The screen then changes to show that the Program is running & the Automatic program icon appears in the bottom Right hand corner of the screen.
8. To stop the program press the Stop button. You are again prompted if you want to stop the program. Confirm by pressing the confirm button. This returns you to the Automatic program start page. You can return to the Manual page by pressing the grey back arrow.



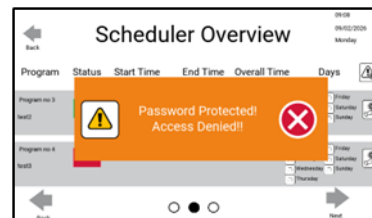
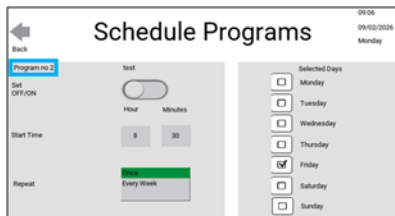
### 6.2.3.3 Scheduler Overview for Automatic Programs

All 3 Users have access to this page & have the ability to modify the scheduler for each of their 2 programs. Only Admin has the ability to modify the schedule for all 6 automatic programs.

1. Pressing on this button brings up a warning message detailing what will happen when 2 programs overlap.

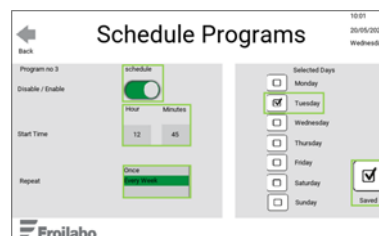


2. Pressing on this button takes you to the Schedule Programs Page for that specific program allowing you to modify as required. Pressing on the Program that you don't have access to informs you that access is password protected.



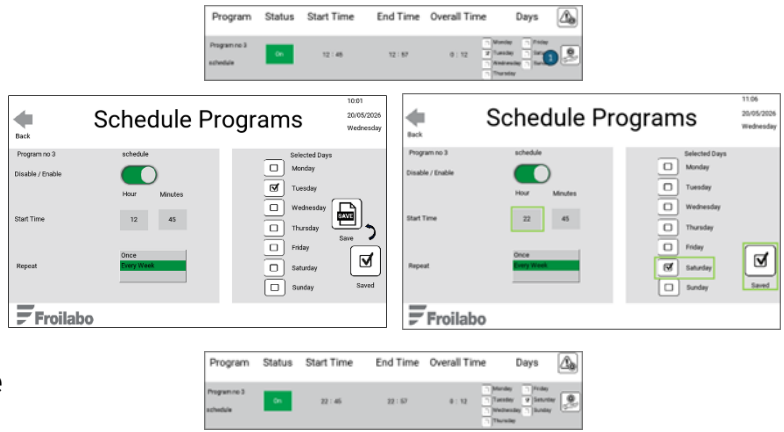
For a program that is not on a schedule follow these steps.

1. Press on this button.
2. Enable the program Schedule, enter the desired starting hour & minutes, select the frequency, choose the required day/days & then save the schedule.
3. When you return to the Scheduler Overview page the program schedule has been activated.



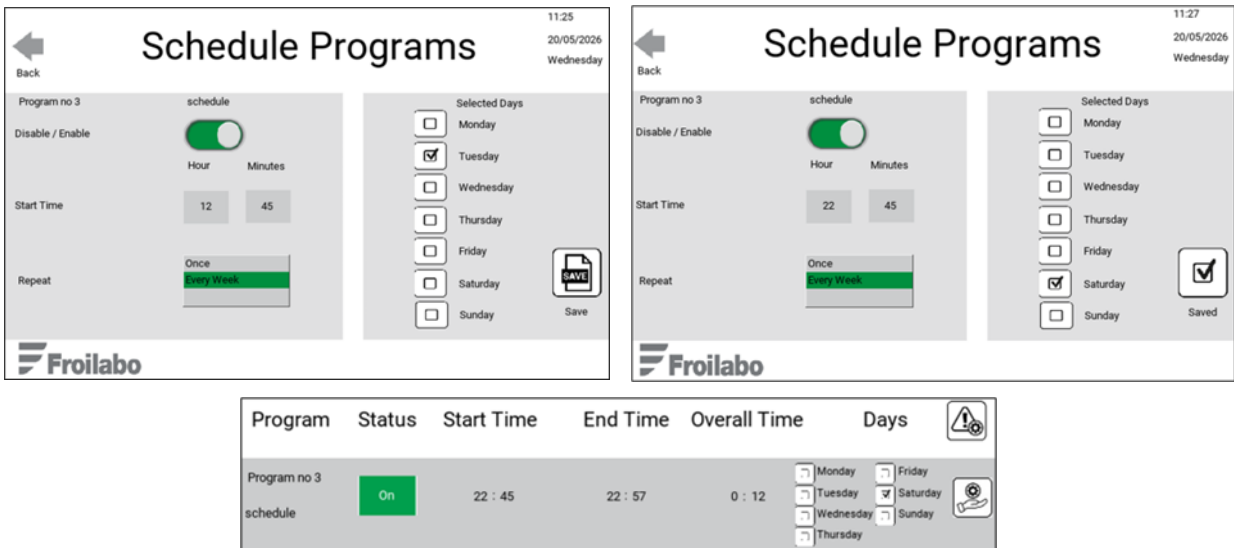
For a program that is on a schedule there are 2 ways of modifying them.

1. Press on this button.
2. Press on the Saved button to enable the Save option, make the desired modifications & then press the Save button.
3. When you return to the Scheduler Overview page the program schedule has been modified.



OR

Press on the Disable / Enable button to Disable the program then press on it again to Enable it, make your modifications as per previous instructions & then press the Save button. When you return to the Schedule Overview page the modifications have been made.



## 6.2.4 Graph Pages

There are 2 pages where you can edit the scale of the graph. In each case the:

- Blue Line: Represents the Temperature Process Value (PV).
- Red Line: Represents the Temperature Set Value (SV).

In each case the graph allows you to adjust the scaling window by modifying the Scale Max and Scale Min parameters using the virtual keypad

### 6.2.4.1 The Main/Manual Page

Press on the graph which opens up the "Temperature Profile page" which allows you to modify the graph scale & export the graph data to a CSV file.

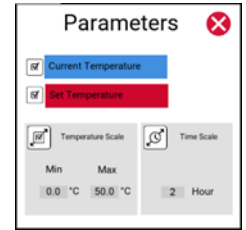


### 6.2.4.1.1 Adjusting the Scale

To adjust either the Maximum or Minimum value you can use 2 different methods.

You can press on either the High or Low limit value & use the virtual keypad to enter the desired value.

Or you can press on the Parameters button which allows you to change both the temperature & time scale.

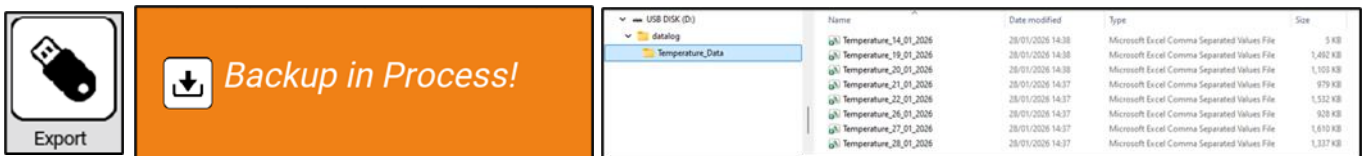


### 6.2.4.1.2 Exporting data to USB stick

The data from the graph is saved in the HMI in CSV format. To export this data to a USB stick, ensure that the USB is formatted in FAT32 format. It can be either USB 2.0 or USB 3.0.

- Insert the USB stick into the product
- Navigate to the graph page & press the Export button
- A window with the message “Backup in Process” will appear.
- Once the window disappears it indicates that the data export process has been completed
- You can then safely remove the USB stick.

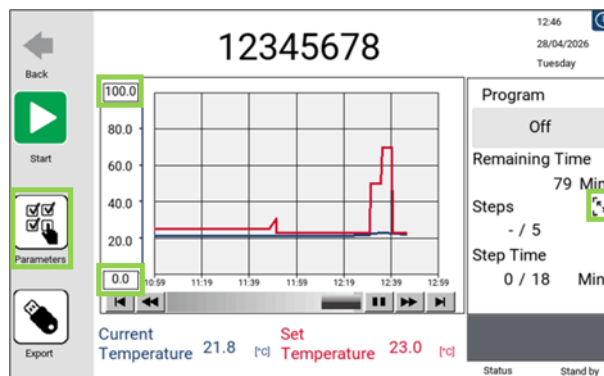
This will successfully export the graph data from the HMI to the USB stick in CSV format which can then be easily processed in Excel to generate the required graph. The CSV files are save in the “Temperature\_Data” folder.



### 6.2.4.2 The Automatic Program page

On this page there are 3 locations where the graph scale can be changed. Directly on the page by pressing either the Max or Min values, pressing on the Parameters button or by pressing the icon on the information box.

In each location the scale is changed as per previously explained for the Manual Page.



## 7 Adjustable AIR Renewal

### 7.1 Delivery

All Air Scientific Laboratory ovens are supplied with an inlet pipe.

## 7.2 Installation

The inlet pipe fits on the oven door. To do this:

1. Remove the inside and outside plugs.
2. Remove the cellular silicone plug in the insulation.
3. Insert the pipe in the hole on the outside of the door, while aligning the two lugs with corresponding notches.
4. Lock by turning  $\frac{1}{4}$  turn.



## 7.3 Operation

**Note:** operation in the air renewal mode degrades the oven performance.

Fresh air is introduced by the hole in the door. It is integrated into the internal convection and escapes by the outlet fitted with an adjustable flap at the rear of the appliance.

To adjust the air renewal rate, swivel the outlet flap:

- Flap closed: renewal rate close to 0.
- Flap fully open: maximum renewal rate.

Maximum renewal of the internal volume per hour: AE60: 50 times, AE120: 35 times, AE240: 35 times

**Note:** To reduce the temperature rise time when starting up the oven, close the extraction flap during the rise phase, and start the renewal once the oven has stabilized.

## 8 Cable Routing

A 40mm diameter cable passage is situated on the left of the appliance. It facilitates the routing of cables and sensors and hence the monitoring of the performance of the appliance and its qualification.

## 9 External communication

The Air Scientific Laboratory ovens have an Ethernet port (Rj45) at the rear of the product which allows external communication via a VNC software interface.

**NOTE:** ANY ETHERNET CABLE ATTACHED TO THE DEVICE MUST BE A MAXIMUM OF 3M IN LENGTH.



Please contact Froilabo (contact details on page 20) to get a procedure to connect your equipment on the network & allow remote access from a computer.

# 10 Maintenance performed by the user

## 10.1 Safety rules



Before doing any maintenance work. It is essential to switch off the appliances with the ON/OFF button and then disconnect the supply cable.

## 10.2 Cleaning

Clean the oven after each use to avoid potential corrosion damage by ingredients of the test material. Prior to renewed startup, allow the oven to completely dry after all cleaning and decontamination measures.

### 10.2.1 Cleaning exterior surfaces

Wipe the surfaces with a moistened towel.

In addition, you can use a standard commercial cleaning detergent free from acid or halides or a neutral cleaning agent. If these are used you must remove the cleaning agent with a moistened towel and then allow the surface to dry.

### 10.2.2 Cleaning interior surfaces



Never use disinfectant bleach, even heavily diluted. Never rub stainless steel with steel wool or any other abrasive. Take care over the risk of burns.

Ovens are fitted with removable shelf supports for easier maintenance. For these, follow these instructions :

1. Remove the shelf supports with a flat screwdriver.
2. Clean the whole of the tank with a soft cloth soaked in methylated spirit.
3. Refit the shelf supports taking care over their direction (if a shelf support is reversed all the screws cannot be refitted).
4. After cleaning leave the oven door open allowing the inner tank to dry.

**Any serious problem will require intervention by our Service Department, or diagnosis and help by telephone.**

Depending on the type of contract, FROILABO undertakes to intervene within predetermined times in the event of a breakdown.

# 11 Disposal

DISPOSAL :

In case the product is to be disposed of, the relevant legal regulations are to be observed. Information on the disposal of electrical and electronic devices in the European Community:

Within the European Community, the disposal of electrical devices is regulated by national regulations based on EU Directive 2002/96/EC pertaining to waste electrical and electronic equipment (WEEE). According to these regulations, any devices supplied after August 13, 2005, in

the business-to-business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste.

To document this, they have been marked with the following identification:



Because disposal regulations may differ from one country to another within the EU, please contact your supplier if necessary.

## 12 Manufacturers contact information

### Sales Department

Phone: +33 (0)4 78 04 75 75

Email: [commercial@froilabo.com](mailto:commercial@froilabo.com)

### After-sales service

Phone: +33 (0)4 78 04 75 75

Email: [service@froilabo.com](mailto:service@froilabo.com)

## 13 Maintenance Contract

To obtain a maintenance contract please print off the contract detailed in Appendix 4, fill it in, scan it & then email it to our Service Department at [service@froilabo.com](mailto:service@froilabo.com).

## Appendix 1 - Critical Alarms

- E1 Alarm: Maximum Temperature Limit Exceeded**  
Cause: Temperature above the allowed maximum limit  
Action: Check Heating Elements, Check Control System, Call Service
- E2 Alarm: Minimum Temperature Limit Exceeded**  
Cause: Temperature below the allowed minimum limit  
Action: Check Cooling Circuit, Check Control System, Call Service
- E3 Alarm: Temperature Probe Fault**  
Cause: Temperature probe broken or short circuit  
Action: Check Temperature Probe, Check Wiring, Call Service
- E4 Alarm: User-Set Temperature Threshold Exceeded**  
Cause: Temperature exceeded the user-defined limit  
Action: Check Set Temperature Limits, Check Running Mode, Call Service
- E5 Alarm: Temperature Dropped below User-Set Threshold**  
Cause: Temperature below the user-defined limit  
Action: Check Set Temperature Limits, Check Running Mode, Call Service
- E6 Alarm: User-Set Temperature Deviation Exceeded**  
Cause: Temperature deviation exceeded the user-defined limit  
Action: Check Deviation Settings, Check Running Mode, Call Service
- E7 Alarm: Temperature Deviation below User-Set Threshold**  
Cause: Temperature deviation below the user-defined limit  
Action: Check Deviation Settings, Check Running Mode, Call Service
- E8 Alarm: Wrong Fuji PXF Regulator Installed**  
Cause: Incorrect regulator type detected  
Action: Replace Regulator
- E9 Alarm: Low Data Memory**  
Cause: Data memory is almost full  
Action: Delete old data
- E11 Alarm: Heating Failure**  
Cause: Temperature did not increase  
Action: Check the Door, Check Fuse Q4, Check Heater, Check SSR, Call Service
- E12 Alarm: Cooling Failure**  
Cause: Temperature did not decrease  
Action: Check the Door, Check Fuse Q3, Check Cooling, Check Relay KA2, Call Service
- E13 Alarm: HMI Error**  
Cause: HMI turned off during operation  
Action: Check the HMI, 24V power supply and connections. Call service if the problem persists.

- E14 Alarm: Automatic program stopped during operation  
Cause: Product stopped due to a power failure  
Action: Check the power supply. Contact service if the problem persists.

## Appendix 2 – Warning messages

- W1 – Logged in as user1
- W2 – Logged in as user2
- W3 – Logged in as user3
- W4 – Logged in as user – Admin
- W5 – Logged in as user – Service
- W6 – Logged in as Factory User
- W7 – Data History Deleted
- W8 – History Alarms Deleted
- W9 – Logged out
- W10 – Autotune PID completed
- W11 – An automatic program tried to start at the scheduled time, but another program is already running.

## Appendix 3 – Process Information messages

- I1 – Automatic program completed
- I2 – Sterilisation cycle was started
- I3 – Sterilization cycle was stopped
- I4 – Automatic program No. 1 Deleted
- I5 – Automatic program No. 2 Deleted
- I6 – Automatic program No. 3 Deleted
- I7 – Automatic program No. 4 Deleted
- I8 – Automatic program No. 5 Deleted
- I9 – Automatic Program Started
- I10 – Manual Program Started
- I11 – Manual Program Stopped
- I12 – Automatic program No. 6 Deleted

## MAINTENANCE CONTRACT

### YOUR DETAILS:

Ms.  Miss  M  Name:.....

Company or institution: .....

Function: .....

Service: .....

Phone: .....

Email: .....

Address: .....

Post code:..... City:.....

### YOUR REQUEST:

Maintenance contract  Renewal  Number:.....

Type of device:.....

Temperature: .....

Brand: .....

For freezers:

Emergency LN<sub>2</sub> Yes  No  CO<sub>2</sub> Yes  No

Number of devices: .....

Desired number of visits per year:

You already have a maintenance contract FROILABO Yes  No

If so, contract number: .....