User Manual

Froilabo
Precision for life

BIO REFRIGERATED SCIENTIFIC

Laboratory Refrigerated Incubators

Contents

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

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

On these devices, there are risks to consider:

Compressed Gas Hazard: Contains gas under pressure; may explode if heated **GHS04.**

Symbols on serial number plate:

CE conformity marking

Date of manufacture

Refer to instruction manual

ENVIRONMENT:
This device contains fluorinated greenhouse gas under the Kyoto Protocol.

Methods of disposal

Do not allow the product to be released into the environment.

Destruction / Disposal: Consult the manufacturer or the supplier for information on recovery or recycling. Companies performing the installation, maintenance, servicing, repair, startup of equipment containing refrigerant must have a certificate referred to in Article R543-76 code of the environment or an equivalent certificate issued in one of the member states of the European Union.

1 Certificate of conformity

FROILABO SAS certifies that the appliance mentioned below:

Bio Scientific Laboratory Refrigerated Incubator

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 incubators.

5 Installation of Appliance

5.1 Delivery

Please check the delivery receipt :

BRS – 60 Liters	BRS – 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!
Three people are required to lift or carry the BRS60L incubator, four people for the BRS120L incubator & 5 people for the BRS240L incubator. Do not tip or place the incubator horizontally.

5.3 Location

These appliances are designed for indoor use only. Set up the incubator 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 incubator & a minimum of 100mm of space at the side of the incubator. If incubators 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 11)

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 Precautions for use

- In the case of prolonged use at low temperature, it is highly recommended that regular defrosting cycles are carried out to ensure optimum operation of the refrigerated Incubator.
- In the case of prolonged use at high temperature, it is highly recommended that protective clothing be worn to prevent the risk of burns.

Pay attention to the hot surface warning labels & always use thermal gloves when opening/closing the incubator door.

5.6 Installation

External drainage of condensates

The refrigerated incubator is equipped with an external condensate drainage system at the rear of the unit. To ensure optimal operation, it is recommended to position the silicone tube as shown in the image.

- Be careful not to kink the silicone tube,
- Note the height of the water container: 15cm maximum.

5.7 Technical Specification

SPECIFICATIONS		Forced Convection Refrigerated Incubator (BRS)		
		60	120	240
Temperature range		0°C to 100°C***		
Temperature Uniformity +/- (°C)*	at 4°C	0.7	0.7	0.7
	at 37°C	0.5	0.5	0.5
	at 44°C	-	-	-
	at 60°C	1	1	1
Temperature stability (°C)	at 37°C	0.2	0.2	0.2
	at 44°C	0.2	0.2	0.2
Time for Temperature elevation (min)**	at 37°C	4.5	6	6
	at 44°C	6	7	7
	at 60°C	6	8	7.5
Recovery time after door opening of 30 sec (min)**	at 37°C	1	1	1
	at 44°C	1	1	1
ELECTRICAL SPECIFICATIONS				
Power Supply		230V+/-10% / 50/60Hz 10A		
Power (W)		1300	1300	2200
Pollution degree acc. IEC 61010-1		2	2	2

* Not including measure uncertainties, FROILABO procedure : 9 points characterization according to NFX15-140 norm
** 98% of the value
*** Set at 4°C (39°F) at the factory
Tests performed at an ambient temperature of 25°C and with a voltage supply variation of +/- 10%

EXTERNAL DIMENSIONS			
	BRS60	BRS120	BRS240
Width (mm)	526	626	626
Depth (mm	580	680	680
Height (mm)	1010	1120	1600
Side clearance (mm)	100	100	100
INTERIOR DIMENSIONS			
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)	76/85	93/99	119/137

5.8 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 incubator & it's contents from undesirable overheating.

5.9 Adjustable air outlet valve

Depending on the applications, it may be useful to adjust the opening of the air outlet situated at the back of the appliance. This adjustment is done by means of the knob on the incubator control panel.

In position 0 the valve is closed.
In maximum position valve is fully open.

Note: The temperature homogeneity and stability performance are given with the outlet valve closed.

5.10 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.

5.11Loading

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:

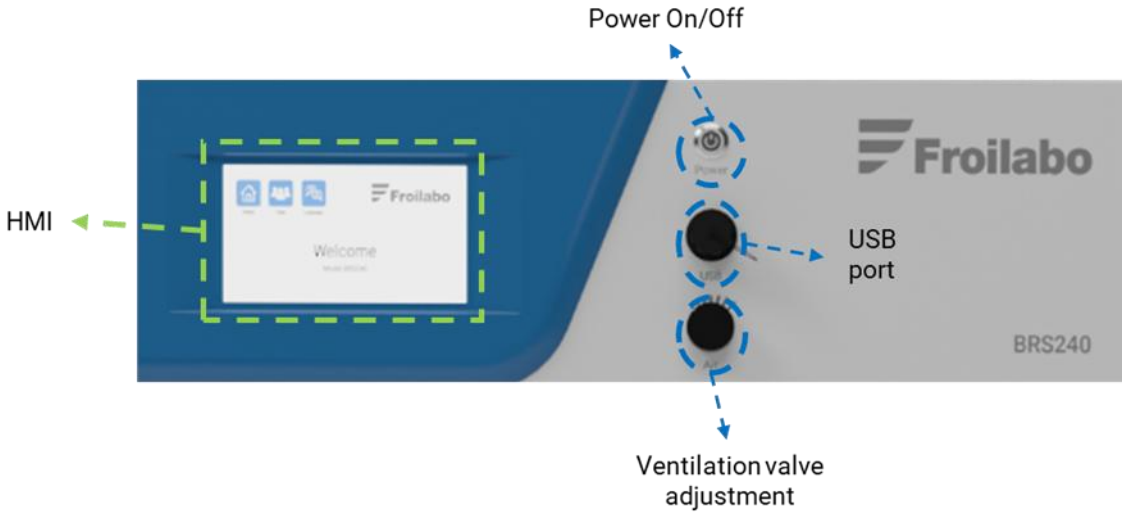
- Never place highly corrosive materials in the incubator.
- Never place explosive or highly flammable materials in the incubator.
- Never obstruct the whole surface of a shelf.
- Leave a minimum clearance of 5 cm along internal faces.

- Leave a minimum of 2cm between the products placed in the incubator.
- Spread the load evenly.
-  Pay attention to the hot surface warning labels & always use thermal gloves when opening/closing the incubator door

 These appliances are not explosion proof

6 General Use

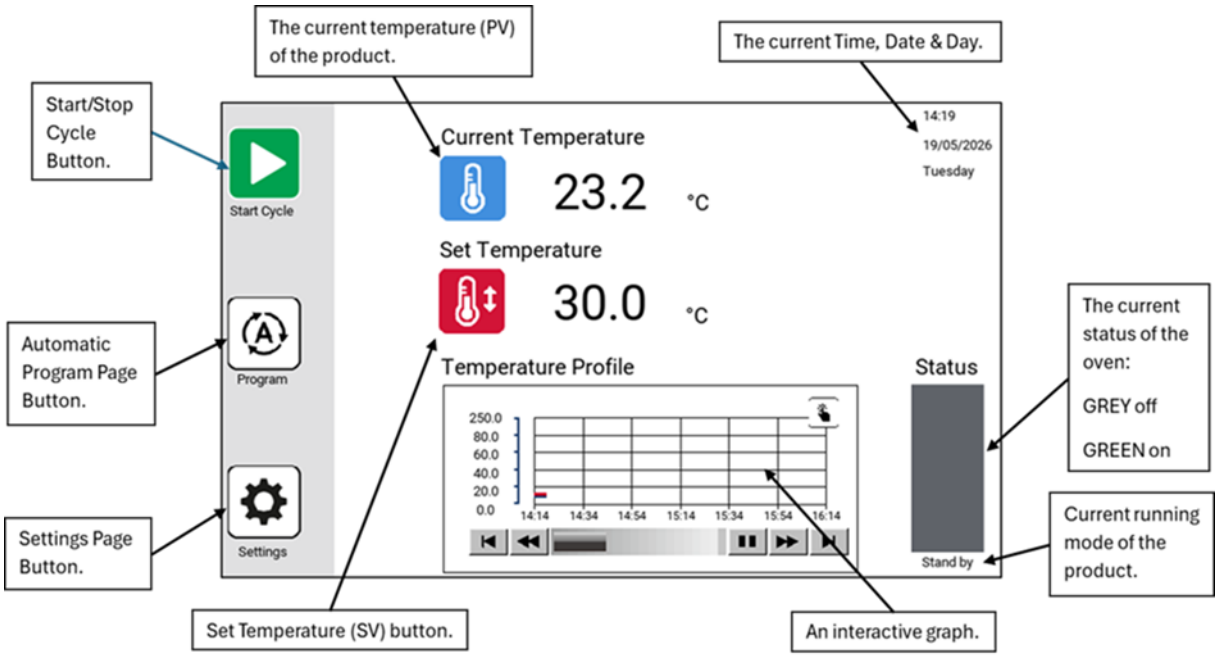
6.1 Control Panel



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 0°C to 100°C

5 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

6 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.

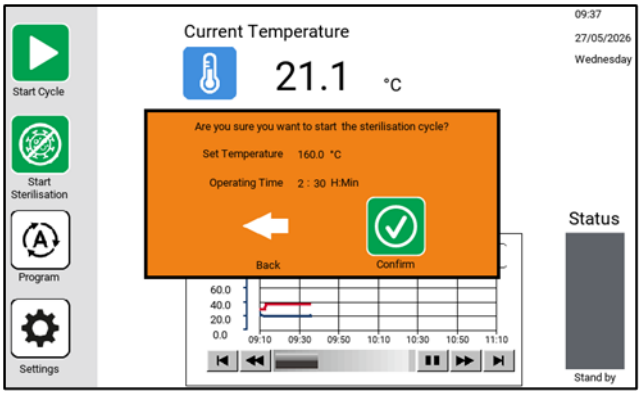
7 To turn the unit off press the Power On/Off switch.
8 Disconnect the appliance safely.

6.2.2 Performing a Sterilisation Cycle

To start this cycle, a dedicated "Start Sterilisation Cycle" button is available on the Main/Manual Program Page. Please Note that this can only be accessed when logged in as Admin when pressed by an unauthorised User the warning message shown below appears.

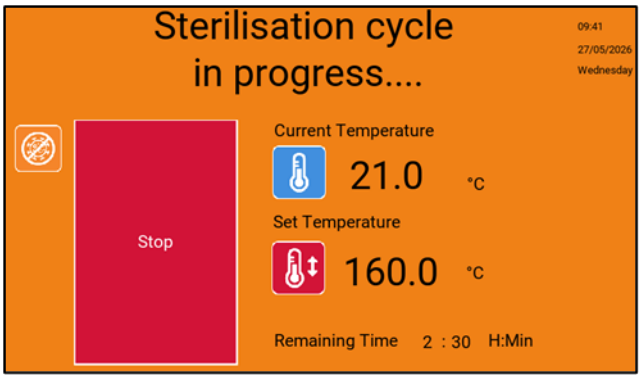
How the Sterilisation Cycle Works:

- The sterilisation cycle sets the temperature to 160°C for 2 hours and 30 minutes.
- After this time, the product automatically returns to the temperature set in Manual Mode.
- You cannot run repeat Sterilisation cycles. If you need to run another sterilisation cycle you can either:
    a) Leave the unit in stand by mode for 1 hour with the door closed.
    b) Open the door & leave the unit for 30 minutes.



Steps to Start the Sterilisation Cycle:

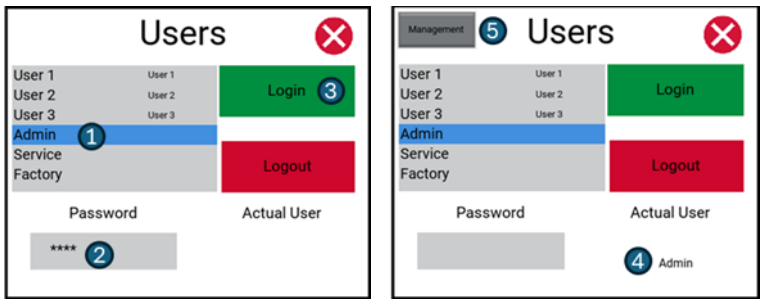
1. The product must be in Stand by Mode.
2. Press the "Start/Stop Sterilisation" button.
3. A confirmation message will appear: "Are you sure you want to start/stop the sterilisation cycle?"
4. Press "Start" to confirm and start the cycle.
5. The “Orange” Sterilisation screen appears with the message “Sterilisation cycle in progress” flashing at the top of the screen.



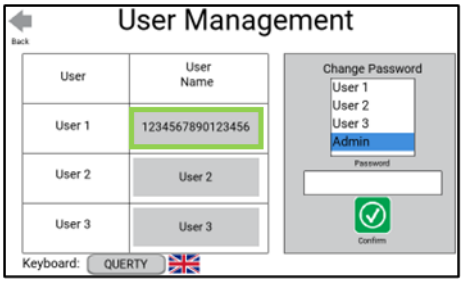
6. The unit then increases the temperature until it reaches the 160°C value.
7. Once this temperature is reached the sterilisation time then begins to decrease until the full 2 hours & 30 minutes has been completed.
8. Once the cycle is complete the product automatically switches back to the Manual page and runs in Stand by mode.

6.2.3 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:



1. Pressing on Admin.
2. Enter the Admin password 4444.
3. Press the Login button.
4. The User logged in appears in the bottom right hand corner of the screen.
5. This also provides access to the Management button which allows Admin to create a User name & change a User password.



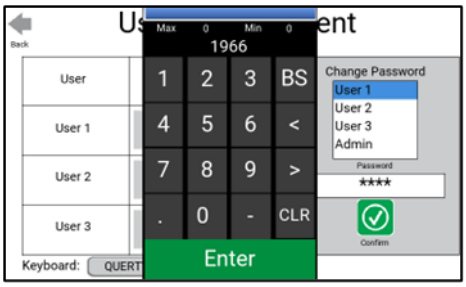
<u>Changing User Name:</u>

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

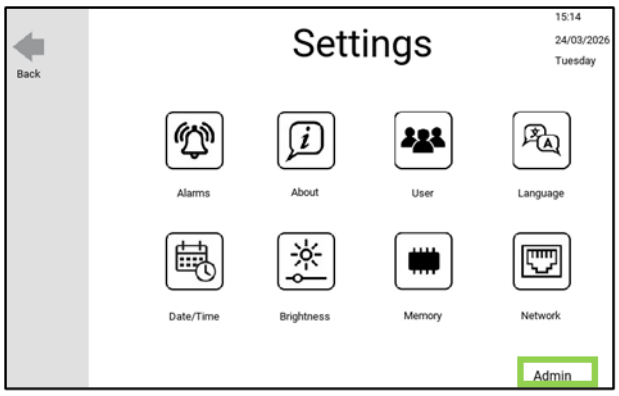
<u>Changing User password:</u>

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

The default passwords are:
User 1: 1111
User 2: 2222
User 3: 3333



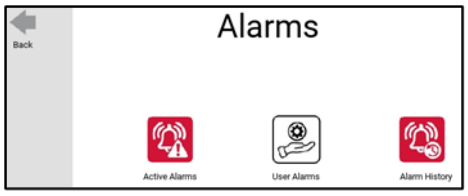
When logged in as Admin the Settings page shows this in the bottom right hand corner of the screen.



6.2.3.1 Alarms Page

When logged in as Admin you have access to:

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



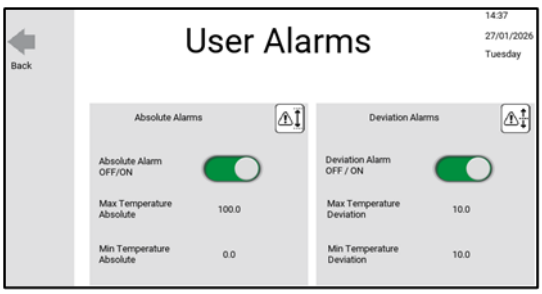
6.2.3.1.1 Active Alarms

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.

6.2.3.1.2 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 0°C to 100°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.

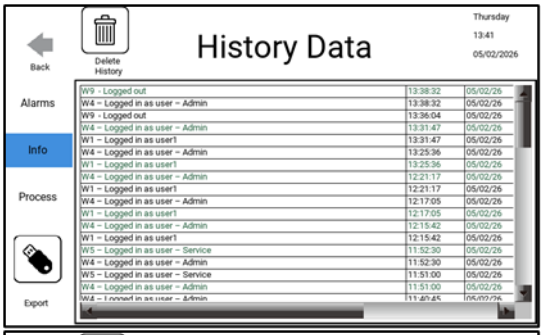


6.2.3.1.3 History Data

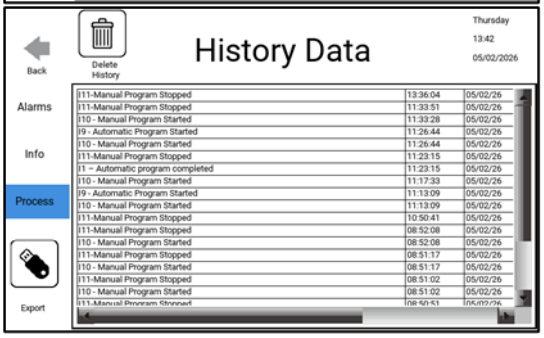
Pressing the History Data button takes you to the History Data page.
The "**Alarms**" page records all the **Critical Alarms**.
When an alarm is first activated it appears in black text detailing the time & date of Activation. Once it has been rectified it is then shown in green text again detailing 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.

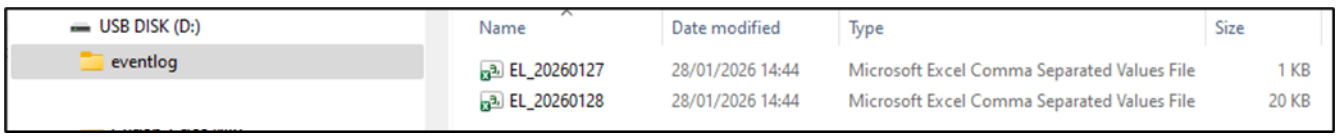
The "**Info**" page records all the **Warning messages**.
These are important issues where the product continues to function but some parameters can be affected.
The list of Warning messages are shown in Appendix 2.



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.

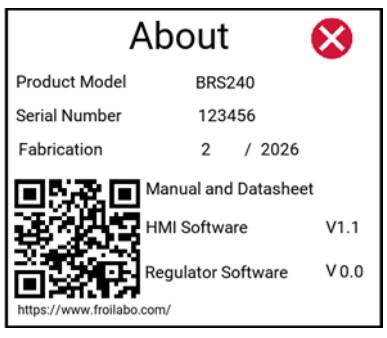


On each page Admin can delete the Alarm History data to free up space in the HMI memory. However it is recommended that prior to performing this function the History data is first downloaded onto a USB stick that has a FAT32 format. The USB used can be either USB 2.0 or USB 3.0. On each page you can 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.



6.2.3.2 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.



6.2.3.3 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.

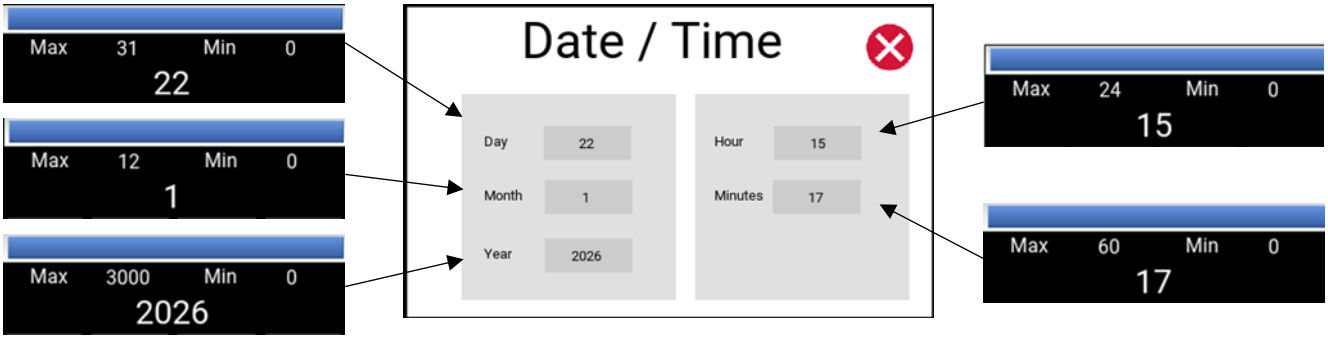
The product supports six languages, which are:

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

6.2.3.4 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.

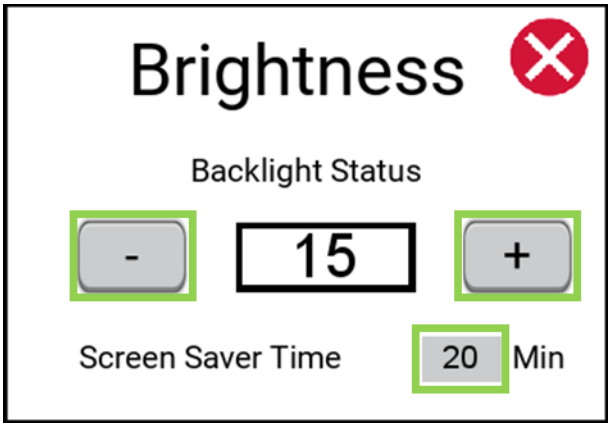
1. A new page will appear where you can adjust the date and time parameters.
2. To modify a specific value (e.g., the date or time), press the value of the parameter you wish to change.
3. After pressing the parameter, a specific numeric keypad will appear dependent on the value you want to change.
4.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



6.2.3.5 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)

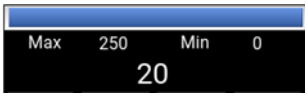


Steps to Adjust Brightness:

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

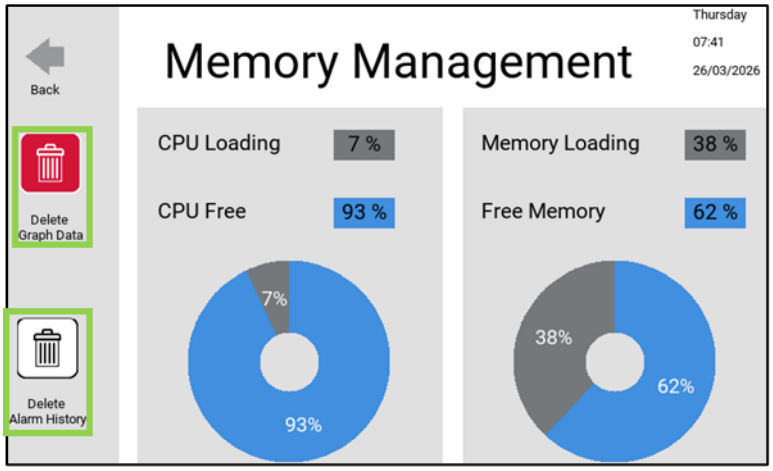
Setting the Screen Saver time:

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.



6.2.3.6 Memory Management Page

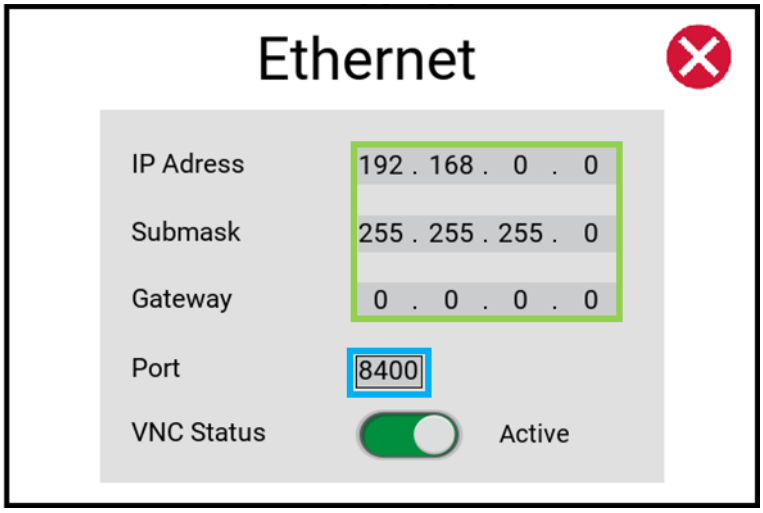
This page allows you to view the available memory on the HMI & provides the ability to delete the Graph Data & the Alarm History should the Low Data Memory Alarm E9 be activated. This alarm is activated when the memory loading reaches 90%. Prior to deleting these files you are prompted to make sure that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

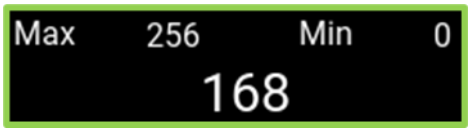


6.2.3.7 Ethernet Page

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.

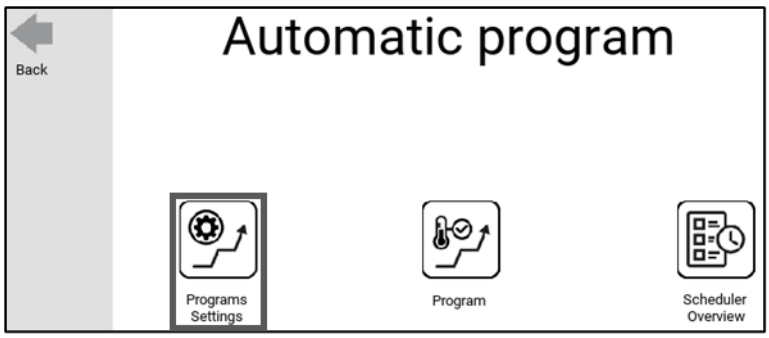
- Press on the IP Address, Submask or Gateway value & a virtual keypad appears allowing you to enter the required value.
- Press on the Port value & a virtual keypad appears allowing you to enter the required port value.

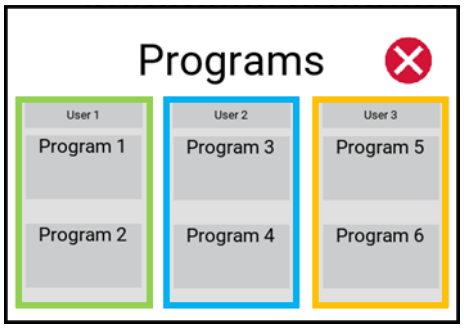




6.2.4 Automatic Program Page

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.

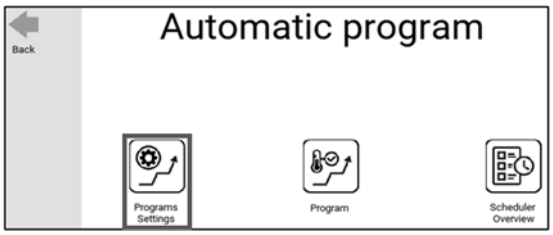


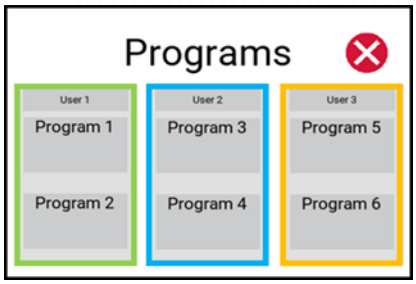


Program creation is dependent on who is logged into the unit as detailed below:

- 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

6.2.4.1 Creating an Automatic Program

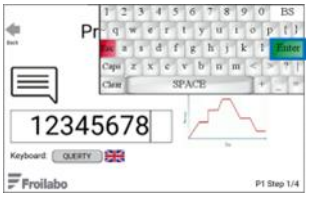




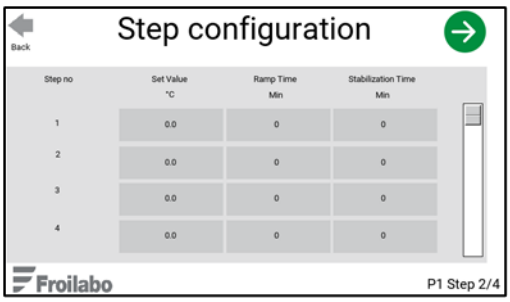
To create an Automatic Program, follow these steps:

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



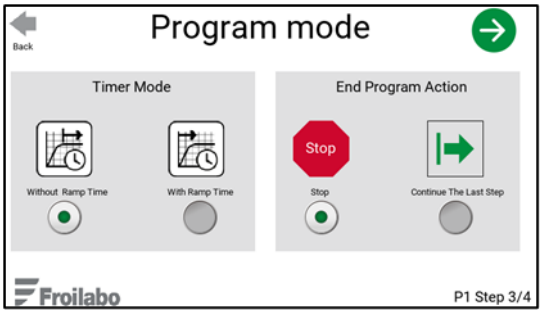
2.2 **Step 2** – Step configuration page
Each step includes the following parameters:



- 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.



a) **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).

b) **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.

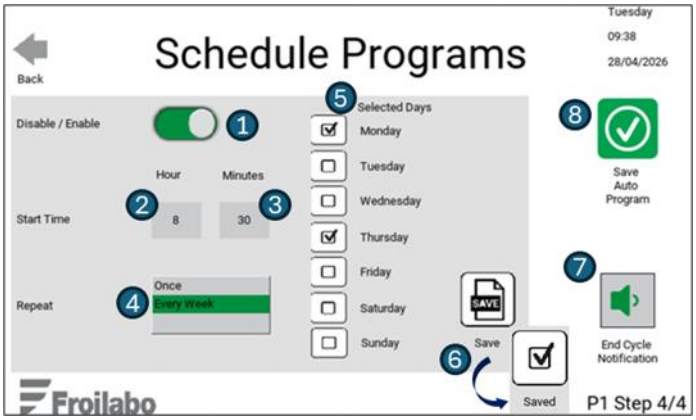
a) **Stop** – When the program is completed the product returns to Stand by mode.

b) **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.

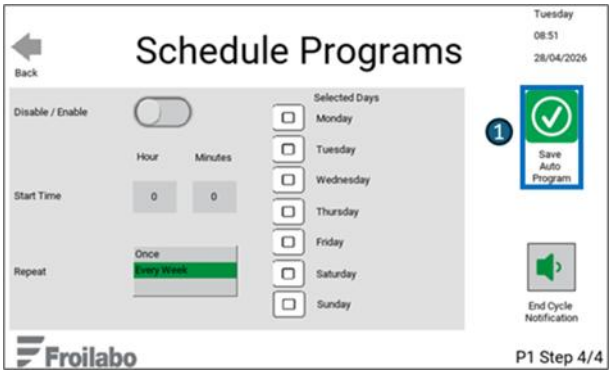


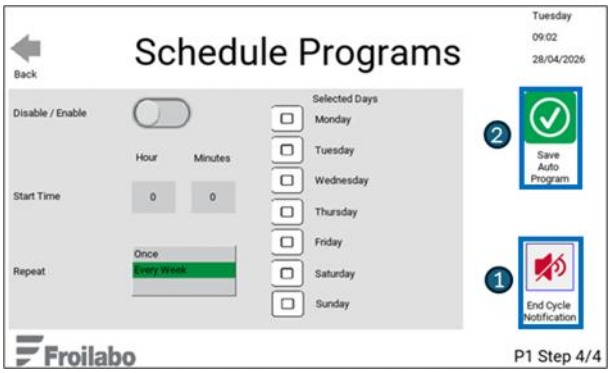
1. Press the Disable / Enable button (this brings up the Save button in the bottom right of the screen.
2. Set Hour
3. Set Minutes
4. Set the Repeat mode (Once / Evey Week)
5. Select the Active Days
6. Press the Save button – the icon then changes to indicate that the schedule has been saved
7. Either 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.

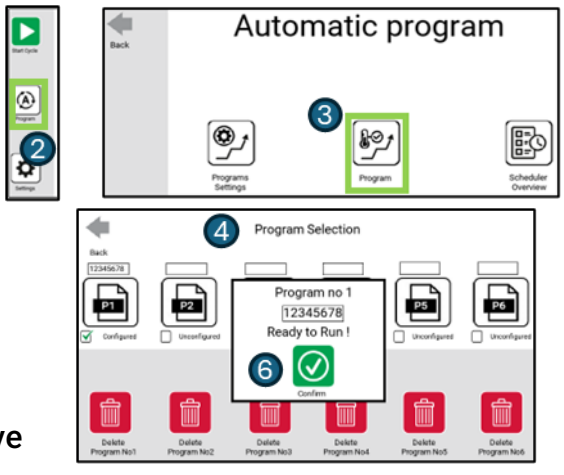
If you do not require to schedule an automatic program then in Step 4 either press the “Save Auto Program" button with the end of program buzzer still active or if you want the end of program button to be muted firstly press the “End Cycle Notification” button & then press the “Save Auto Program" button.





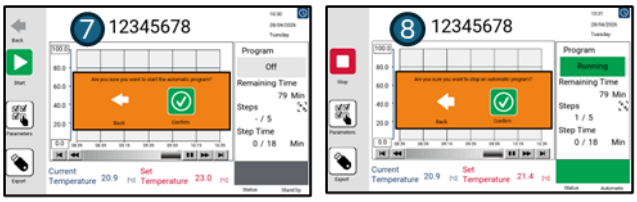
6.2.4.2 Start/Stop an Automatic Program

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)

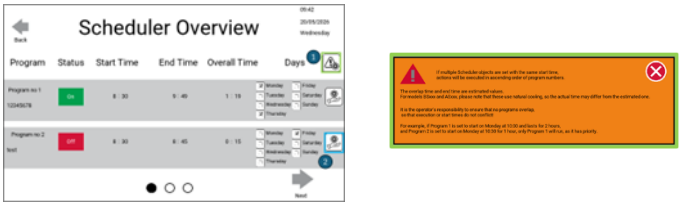


5. Press on the program that you want to run. (in this example Program "12345678"has been selected)
6. When you press on the program that you want to run a confirmation box appears requiring you to verify that you want to run the program. Press the confirmation tick mark.
7. This takes you to the Automatic 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.

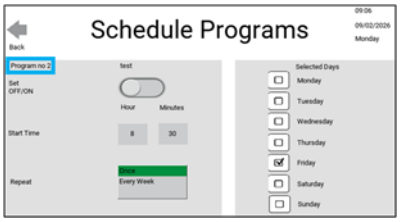
6.2.4.3 Scheduler Overview for Automatic Programs

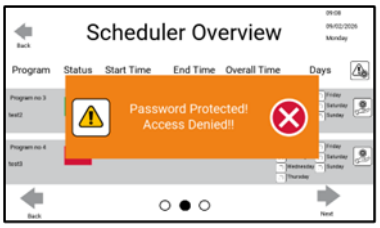
All 3 Users have access to this page & have the ability to modify the scheduler for each of their 2 programs only. Only Adim has the ability to modify the schedule for all 6 automatic programs.

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



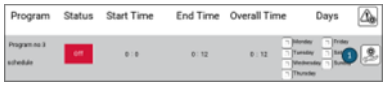
2. Pressing on this button takes you to the Schedule Programs Page for that specific program allowing you to modify as required. Pressing on the Program that you don't have access to informs you that access is password protected.



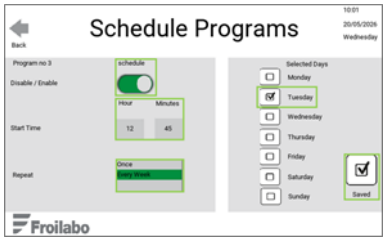


For a program that is not on a schedule follow these steps.

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.

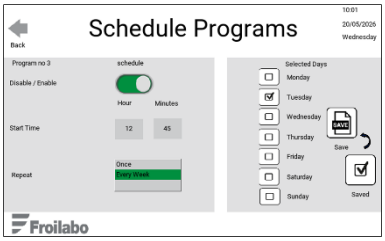


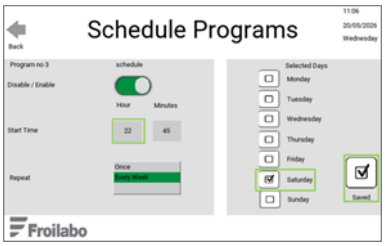
3. When you return to the Scheduler Overview page the program schedule has been activated.

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.

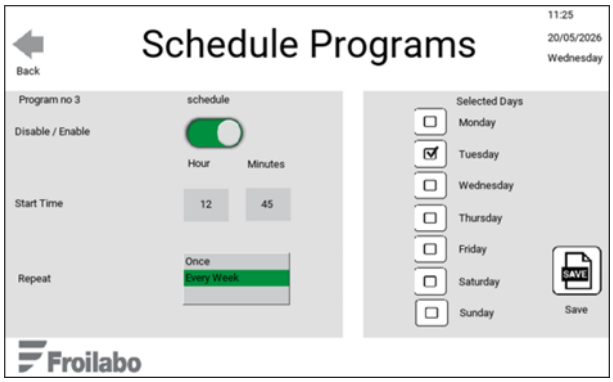


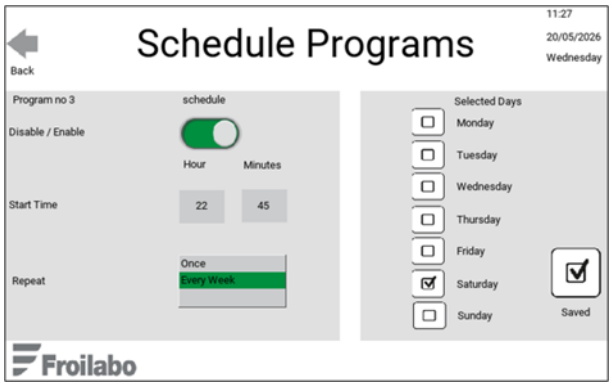


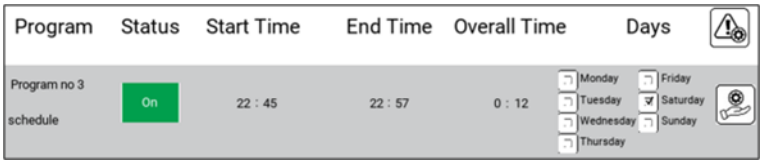
3. When you return to the Scheduler Overview page the program schedule has been modified.

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.







6.2.5 Graph Pages

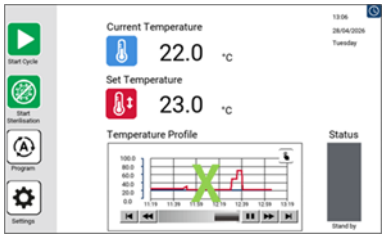
There are 2 pages where you can edit the scale of the graph. In each case the:

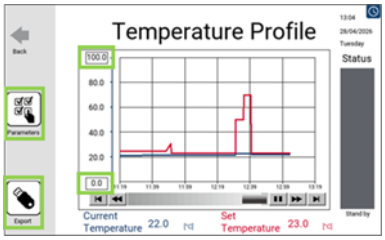
- Blue Line: Represents the Temperature Process Value (PV).
- Red Line: Represents the Temperature Set Value (SV).

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

6.2.5.1 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.

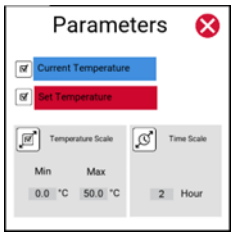




6.2.5.1.1 Adjusting the Scale

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.

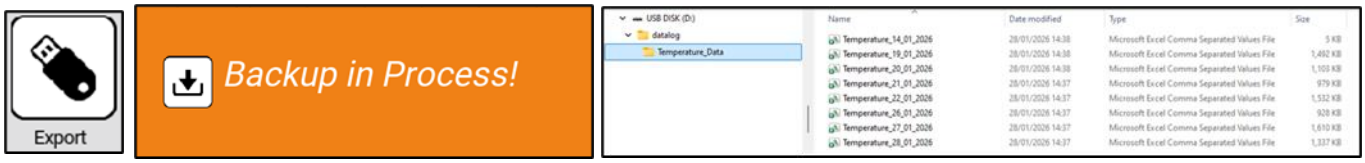


6.2.5.1.2 Exporting data to USB stick

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.

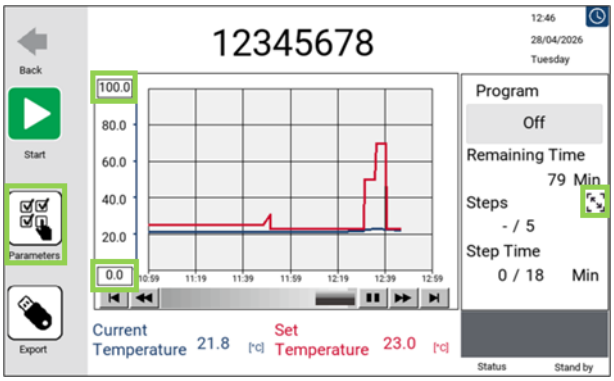
- Insert the USB stick into the product
- Navigate to the graph page & press the Export button
- A window with the message “Backup in Process” will appear.
- Once the window disappears it indicates that the data export process has been completed
- You can then safely remove the USB stick.

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.



6.2.5.2 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 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.

8 External communication

The Bio Scientific Laboratory Refrigerated Incubators 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 23) to get a procedure to connect your equipment on the network & allow remote access from a computer.

9 Maintenance performed by the user

9.1 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.

9.2 Cleaning

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

9.2.1 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.

9.2.2 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.

Incubators 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 incubator door open allowing the inner tank to dry.

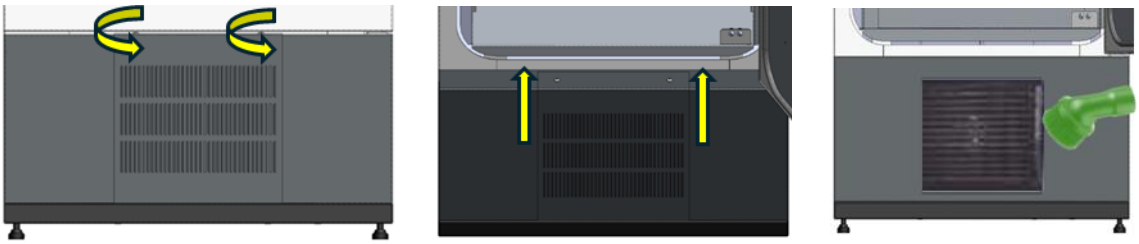
Any serious problem will require intervention by our Maintenance Department, or diagnosis and help by telephone.

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

9.3 Air condenser

To maintain the cooling performance of refrigerated Incubators and extend the life of the condenser units, a protective grille is placed in front of the condenser. It is recommended that dust is removed from the air condenser every two months. To do this, remove the protective grille and remove dust from the fins with a vacuum cleaner with a flexible, non-metallic brush. After cleaning, replace the protective grille in front of the air condenser.

Note: Refrigerated Incubators must not be run continuously without the protective grille.



9.4 Manual defrosting

Ice may form on the evaporator with prolonged use at low temperature (bottom of the tank) which may eventually affect the general operation of the equipment. It is therefore advisable to manually and regularly defrost refrigerated Incubators. To do this, simply increase the set point temperature so that only hot air is produced (40°C, for example).

10 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.

11 Manufacturers contact information

Sales Department

Phone: +33 (0)4 78 04 75 75
Email: commercial@froilabo.com

After-sales service

Phone: +33 (0)4 78 04 75 75
Email: service@froilabo.com

12 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.

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 – Sterilisation 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_2 Yes ☐ No ☐ CO_2 Yes ☐ No ☐
Number of devices:.....

Desired number of visits per year:

You already have a maintenance contract FROILABO Yes ☐ No ☐

If so, contract number:.....

Froilabo
Precision for life