General programming and communication instructions

SYCLOPE Electronique

Ref: DOC0700 Rev: 1

Part of the general documentation

Part 1: Installation and commissioning instructions
► Part 2: General programming and communication instructions

General information:

SYCLOPE Electronique 2024® Manual of 02/01/2024 Rev 1

Online Trichloramine analyser.
Product Line TrikloLive®

General programming and communication instructions (DOC0700)

Editor:

SYCLOPE Electronique S.A.S.
Z.I. Aéropole Pyrénées
Rue du Bruscos
64 230 SAUVAGNON - France –
Tel: (33) 05 59 33 70 36
Fax: (33) 05 59 33 70 37
Email: syclope@syclope.fr
Internet: http://www.syclope.fr

Contents

I. Generality

1) Scope

The **TrikloLive**® SYCLOPE analyser you have purchased is a high-tech electronic device for monitoring Trichloramine in air.

Designed to meet customer requirements, the **TrikloLive**® analyser is ideal for use in industrial environments such as public swimming pools (indoor pools, changing rooms, entrance halls, technical rooms, etc.) and the food industry (cleaning processes (CIP)).

TrikloLive® is a simple process that guarantees greater safety for bathers, employees, and operators, who can be informed in real time of the level of trichloramine in the air at the chosen sampling point.

The **TrikloLive**® analyser's simplicity of operation, user-friendliness and outstanding technical features ensure that you benefit from its many options, guaranteeing complete control and supervision of air quality

In the following instructions, you will find all the information you need to install, operate, and maintain your new equipment.

- Installation
- Technical specifications
- Operating instructions
- Safety advice

If you would like further information, or if you encounter any difficulties which have not been specified in this manual, please contact your usual retailer as soon as possible, or contact SYCLOPE Electronique S.A.S. sales department directly, either at your local branch or office, or at one of our technical/quality departments. We will do our utmost to help you and share our advice and know-how in the field of pool water measurement and treatment.

Contact: Service-technique@syclope.fr

2) FCC conformity

The **PROMINENT AirGuard®** controller complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference (2) this device must accept any interference received, including interference that may cause undesired operation FCC Regulations state that unauthorized changes or modifications to this equipment may void the user's authority to operate it.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect this equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Remark: To ensure compliance with the FCC regulations on electromagnetic interference for a class B device, use cables properly shielded and connected to the ground as recommended in this manual. The use of a cable that is not properly shielded or earthed for risk of violating the FCC rules.

Radio Frequency (RF) Exposure Compliance of Radiocommunication for mobile Apparatus To satisfy FCC RF Exposure requirements for mobile devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitte

3) How to use this document

Please read this entire document before installing, operating, or commissioning your device, to ensure the safety of processing, users, and equipment.

The information given in this document must be scrupulously followed. **SYCLOPE Electronique S.A.S** cannot be held responsible for any failure to comply with the instructions in this document.

To facilitate reading and understanding of this manual, the following symbols and pictograms will be used.

- Information
- ► Action to do
- ➢ Element of a list or enumeration

4) Signs and symbols

⎓ Identification of a continuous voltage or current


Risk of injury or accident. Identifies a warning of a potentially hazardous situation. Documentation must be consulted by the user whenever this symbol is notified. Failure to follow instructions may result in death, personal injury, or property damage.


Risk of malfunction or damage to the unit.


Special note or information.


Recyclable component

5) Storage and transport


Your SYCLOPE TrikloLive® must be stored and transported in its original packaging to prevent damage.

The package should also be stored in an environment protected from humidity and exposure to chemicals.

Environmental conditions for transport and storage:

Temperature: -10 °C to 70 °C
Air humidity: Maximum 90% non-condensing

6) Packaging


The device is delivered **without** power supply.

Included in the packaging:
- ✓ SYCLOPE **TrikloLive**® analyser
- ✓ Operating and programming instructions

7) Warranty

The warranty is governed by our general terms and conditions of sale and delivery, provided the following conditions are met:

- Use of the equipment in accordance with the instructions in this manual
- No modification of the equipment likely to alter its behaviour or improper handling
- Compliance with electrical safety requirements

Consumable equipment is no longer guaranteed as soon as it is put into service.

II. Safety and environmental instructions

Please:

- Read this manual carefully before unpacking, installing, or operating this equipment.
- Observe all warnings and precautions.

Failure to follow these procedures may result in serious injury to personnel or damage to the equipment.

1) Use of the equipment

SYCLOPE TrikloLive® analyzer is a device that generates all the functions needed to monitor air quality.

SYCLOPE TrikloLive® is intended for internal use ONLY.

SYCLOPE TrikloLive® may be used in damp locations.

All other uses are considered to be non-conforming and must therefore be forbidden. SYCLOPE Electronique S.A.S. will not be responsible in any case for any damage that result from such uses.

2) User obligations

The user undertakes to allow only those personnel to work with the SYCLOPE TrikloLive® equipment described in this manual who:

- are familiar with the basic rules governing work safety and accident prevention
- is trained in the use of the equipment and its environment
- have read and understood these instructions, warnings, and handling rules

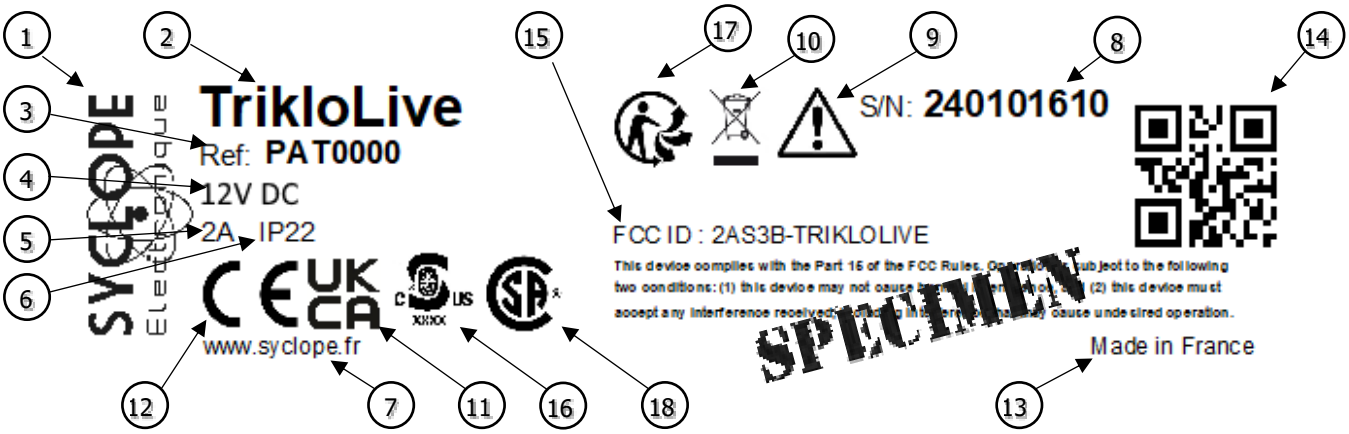
3) Risk prevention

Installation and connection of SYCLOPE **TrikloLive®** equipment must only be carried out by specialist personnel qualified for the task.
Installation must comply with current standards and safety regulations!

Always switch off the primary power supply before switching on the device or operating the relay outputs!
Never open an energized device!
Maintenance and repair work may only be carried out by authorized specialist personnel!

Make sure you choose the right place to install the equipment, depending on the environment!
The SYCLOPE **TrikloLive®** electronic box must not be installed in a hazardous environment, and must be protected from splashing water and chemicals. It must be installed in a dry, ventilated area, isolated from corrosive vapours.

4) Identification and location of nameplate



1	Manufacturer's label	10	Product which can be recycled
2	Model of the product	11	UKCA approved
3	Reference of the product	12	EC approved
4	Range of power supply	13	Identification of the manufacturer
5	Values of maximum current	14	Manufacturer square code
6	Class of protection	15	FCC ID
7	ProMinent website	16	cBVus approved
8	Serial number	17	Triman Logo
9	Particular risk. Read the manual	18	CSA approved

5) Disposal and conformity

Recyclable packaging for SYCLOPE **TrikloLive**® equipment must be disposed of in accordance with current regulations.

Items such as paper, cardboard, plastic, or any other recyclable material must be taken to a suitable sorting centre.

In accordance with European Directive 2012/19/EC, this symbol indicates that as of July 4, 2012, electrical appliances may no longer be disposed of in household or industrial waste. From this date, consumers in the European Union are required to return their old equipment to the manufacturer, who will dispose of it free of charge.

In compliance with the European directive 2011/65/EC, this symbol indicates that the SYCLOPE **TrikloLive**® device has been designed to limit the use of hazardous substances.

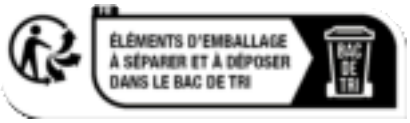
According to low-voltage directive (2014/35/UE) and the electromagnetic compatibility directive (2014/30/UE), this symbol means that the device has been designed in compliance with the previously cited directives.

In accordance with part 15 of the FCC regulation (Federal communications commission), this symbol indicates that the device was tested and approved under the respect and the conditions of the limits for a Class B digital device.

The product complies with the requirements of IEC 61326-1 relating to immunity and emissions concerning electromagnetic compatibility in a basic environment.

According to low-voltage directive (2014/35/UE) and the electromagnetic compatibility directive (2014/30/UE), this symbol means that the device has been designed in compliance with the previously cited directives.

In accordance with UL61010 and PART 15 class B computing device peripheral, this symbol indicates that the device has been designed in accordance with the above-mentioned directives.



In accordance with Decree no. 2021-835 of 29 June 2021 on consumer information on the waste sorting rule.

6) Radio technologies in equipment

Radio technologies			
Technologies	**Number of antenna**	**Radiated power**	**Frequency bands of use**
WIFI	1	< 20dBm	2400 MHz to 2483.5 MHz 2.4 GHz Band Exclusion Band: [2280 MHz – 2603.5 MHz]

III. Display mode and type

SYCLOPE **TrikloLive**® analysers feature a graphic color touch screen, so all programming actions are performed by pressing the screen. The touch screen technology is resistive, so you need to press firmly on the screen to validate the keys.

IV. Programming home screen

To open the programming screen, press the key  on the main display screen.

When an access code is entered to lock the "SETTINGS" menu, the button looks like this.

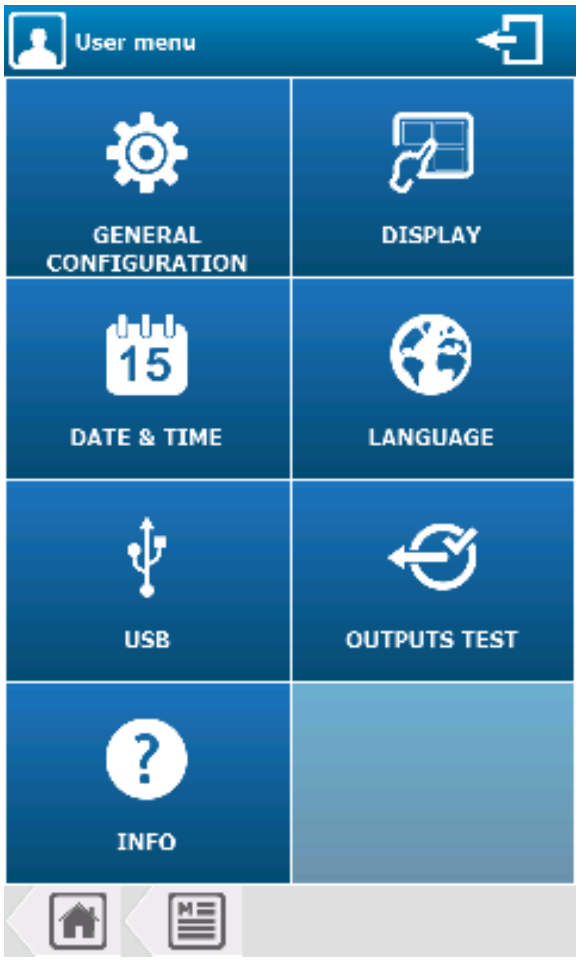
Press to open the password entry window.

Enter the four-digit code and confirm to unlock access to the "SETTINGS" menu.

V. "Users" programming screen

The "USERS" menu gives you access to your configuration settings.

Press to display the following screen.

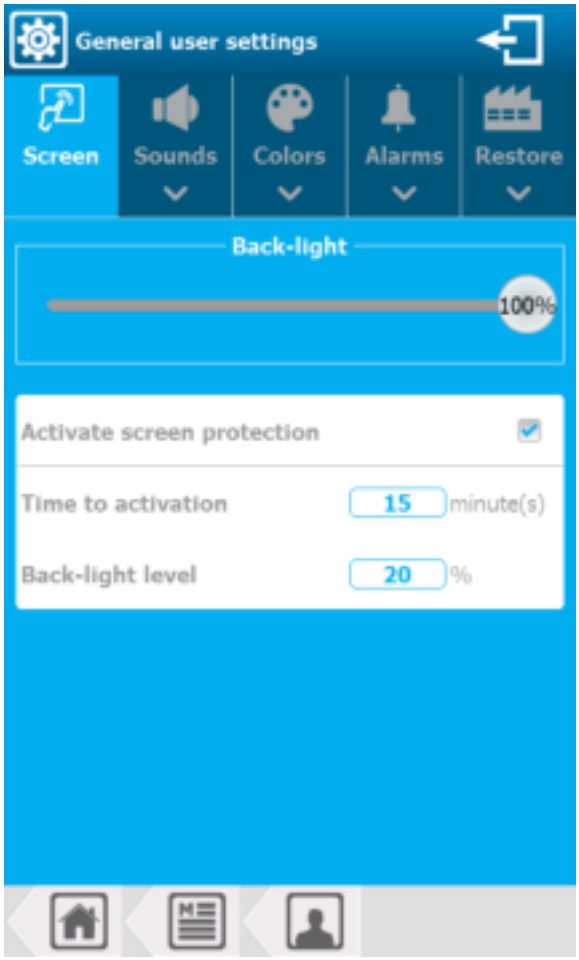


1) "User menu" - "GENERAL CONFIGURATION" menu

The "GENERAL CONFIGURATION" menu allows you to access the options available in the installation section.

Press to display the following screen.

a) Menu "GENERAL CONFIGURATION" - "SCREEN"



- **Back-lights**

Use the slider to adjust the backlight level as required.

- **Activate screen protection**

You must check this option to enable screen protection management. If you do not press the screen for the time entered, the backlight level will drop to the set value. Here, management is (**Active**).

- **Time to activation 15** minute(s)

Enter the delay value before screen protection is activated. Here, the delay is (**15**) minutes.

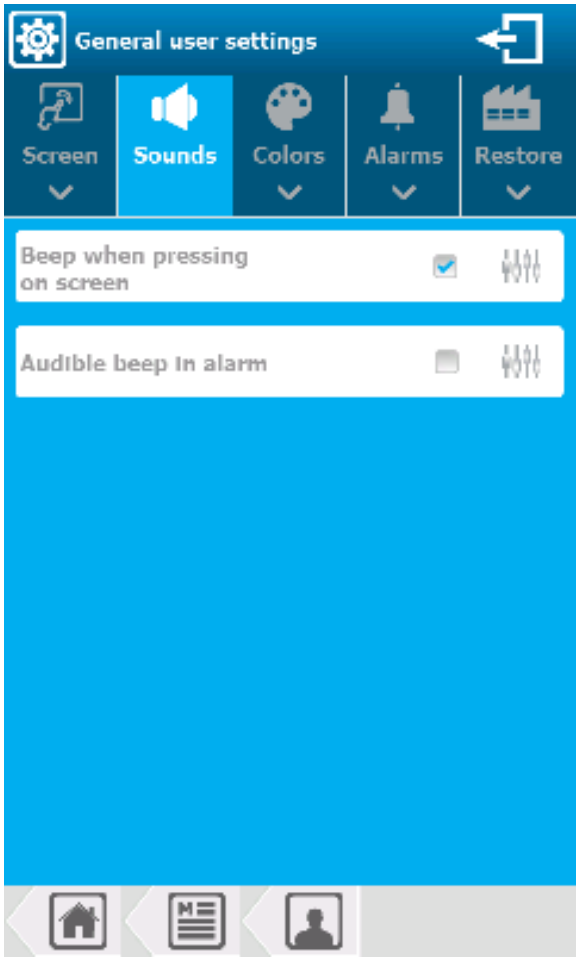
Press to open the numeric keypad and enter the desired value.

- **Back-light level**

Enter the backlight value during screen protection. Here, the value is (**20**) %.

Press to open the numeric keypad and enter the desired value.

b) "GENERAL CONFIGURATION" menu - "SOUNDS"



➢ **Beep when pressing on screen**

You need to check this option to enable beep management and each valid press on the screen. Here, the option is (**Active**).

➢ **Audible beep in alarm**

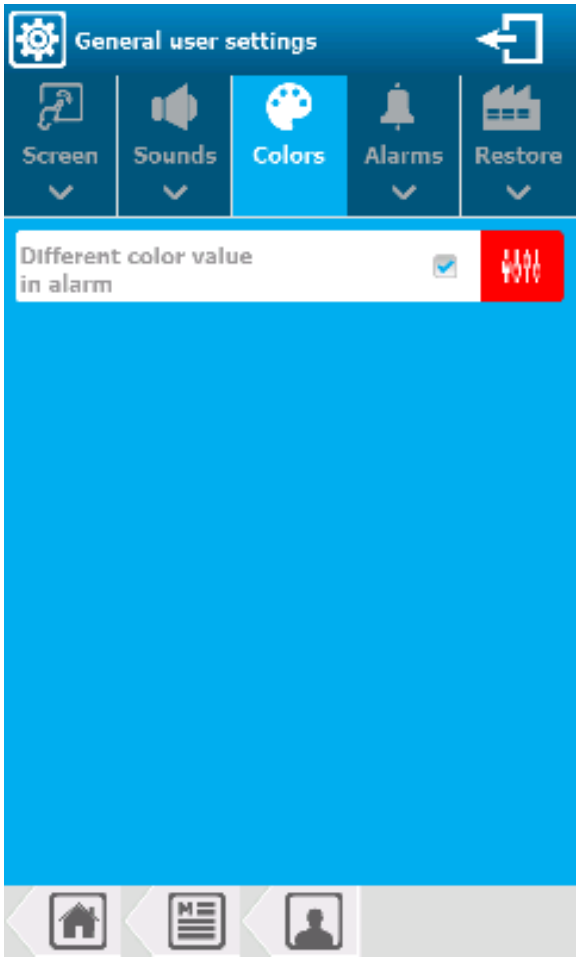
You need to check this option to enable management of a beep every second in the event of a "general" alarm. Here, the option is (**Disabled**).

➢ **Sound adjustment**

You can change the sound of each beep. By pressing the beep setting icon, you can change the frequency and duration of the beep.

Press and hold the cursors to change frequency and time values.

c) Menu "GENERAL CONFIGURATION" - "COLORS"

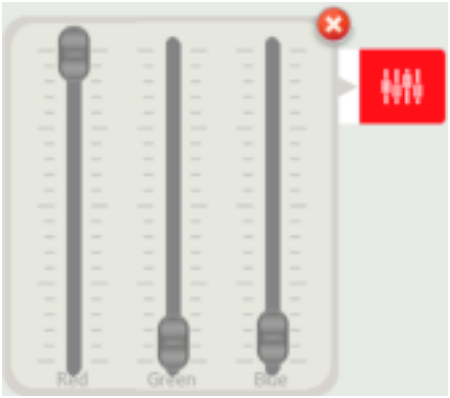


➢ **Different color value in alarm**

The measured value of each parameter displayed on the main screen thumbnails can be shown in a different color if the parameter is on alert. To do this, you need to check this option. Here, the option is (**Active**).

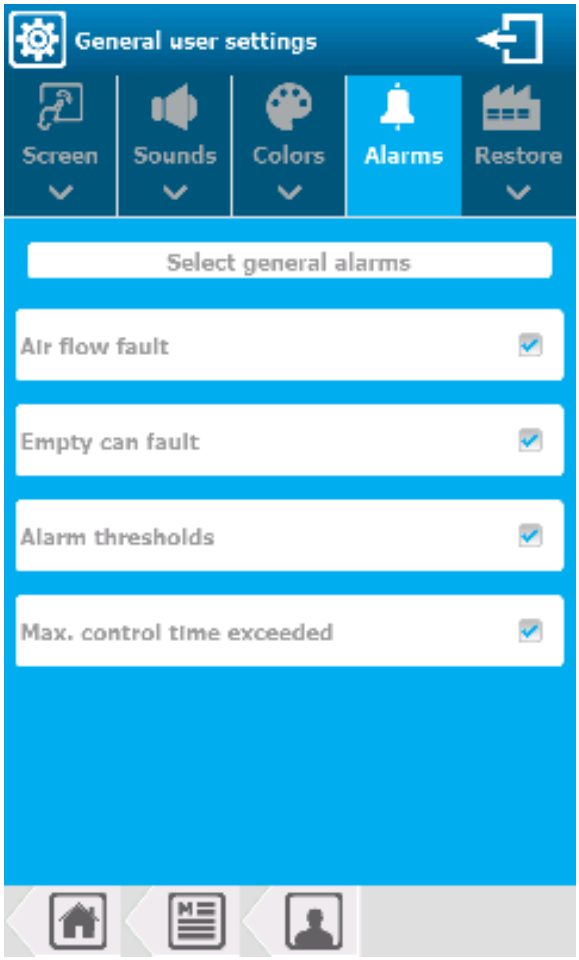
➢ **Color adjustment**

You can change the color by varying its components (RED - GREEN - BLUE). By pressing the color setting icon, you can change the setting to suit your needs.



Press and hold the cursors to change the Red / Green / Blue bases.

d) "GENERAL CONFIGURATION" menu - "ALARMS"



This alarm selection is used to activate the "Alarm beep" and to activate the color in alarm. The system groups the alarms of all active parameters before selecting the ones ticked below.

- **Air flow fault**

Selection of airflow fault (leak in circuit or blocked pipe). Here, this operating option is (**Active**).

- **Empty can fault**

Selection of empty can fault. Here the operating option is (**Active**).

- **Alarm thresholds**

Selection of parameter alarm thresholds (Low Alarm & High Alarm). Here the operating option is (**Active**).

- **Max. control time exceeded**

Selection of max. regulation time exceeded. Here the operating option is (**Active**).

e) Menu "CONFIGURATION GENERALE" - "RESTAURER"

Buttons are only activated if factory settings have been modified.

- **Screen configuration**

Restores the configuration options of the Screen section to factory settings.

- **Sounds configuration**

Restores configuration options in the Sounds section to factory settings.

- **Colours configuration**

Restores configuration options in the Colors section to factory settings.

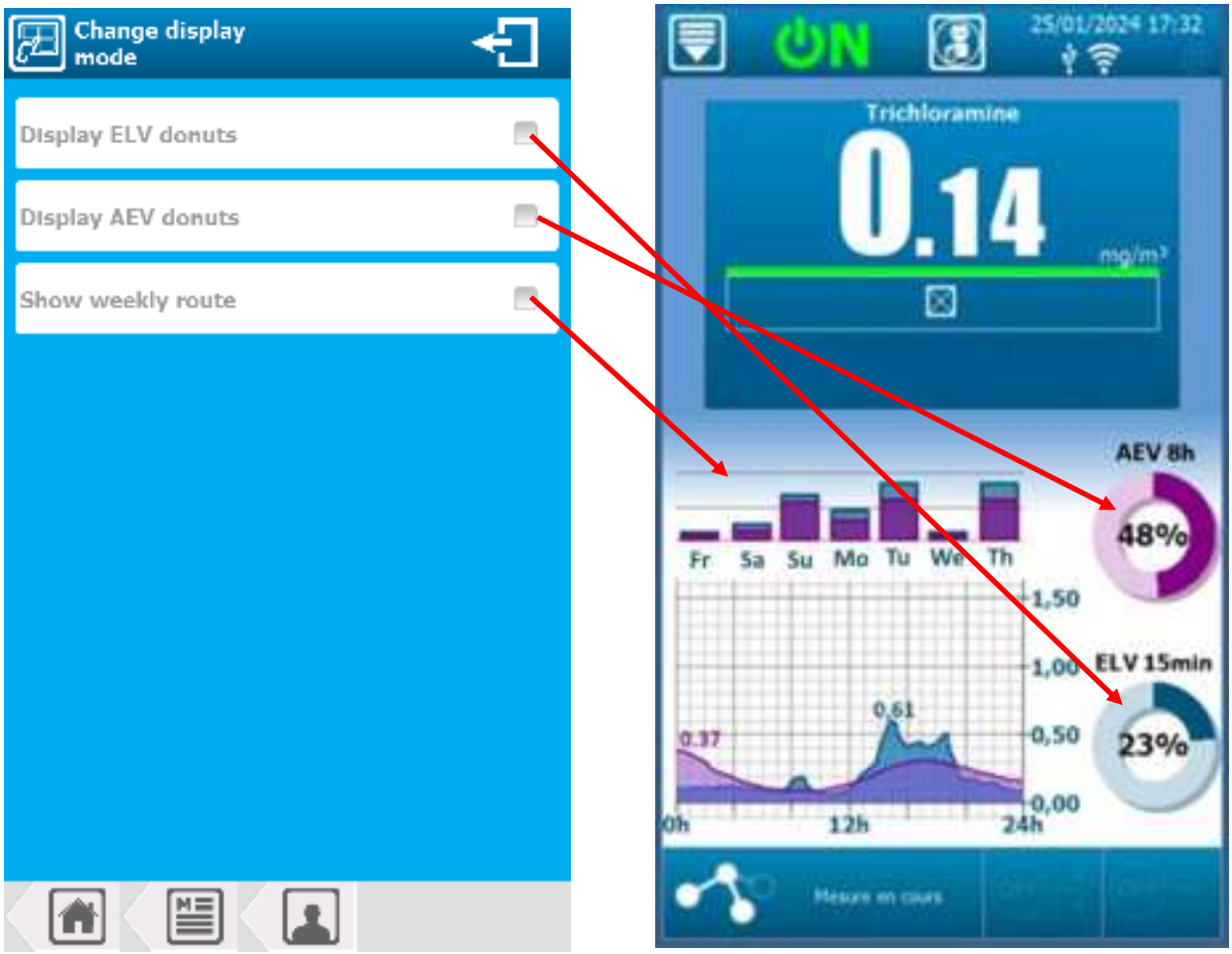
- **Alarms configuration**

Restores configuration options in the Alarms section to factory settings.

2) "User menu" - "DISPLAY" menu

The "DISPLAY" menu allows you to access the options available in the installation section.

Press to display the following screen.



- **Display ELV donuts**

You can display the ELV (Exposure Limit Value) value (exposure lasting a maximum of 15 minutes) by checking the box.

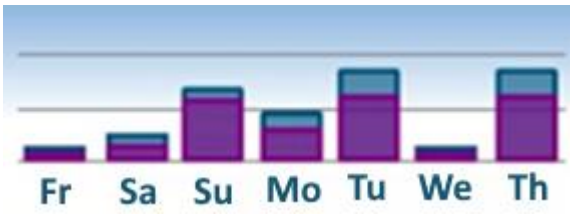
- **Display AEV donuts**

You can display the AEV (Average Exposure Value) value (exposure of up to 8 hours) by checking the box.

- **Show weekly route**

You can display the weekly plot of values on the graph of the main page.

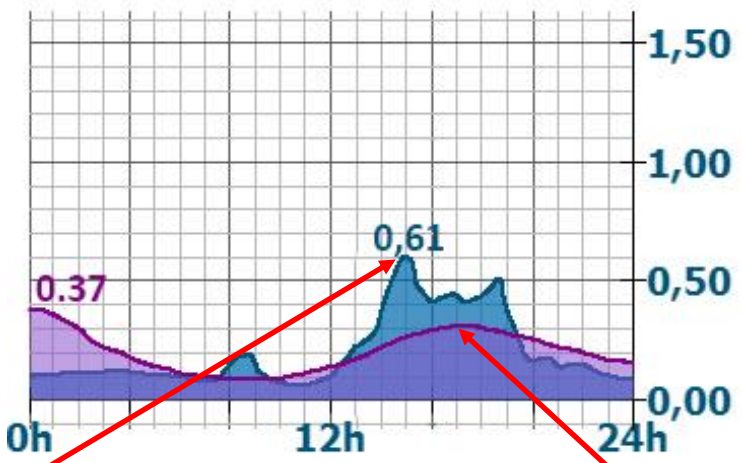
Weekly levels:



This bar graph shows the maximum ELV and AEV values recorded over the last 7 days.

Graph explanation:

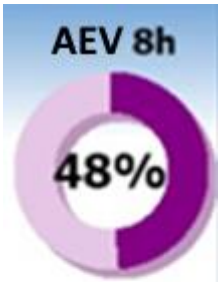
The maximum values for the current day are displayed on the graph..



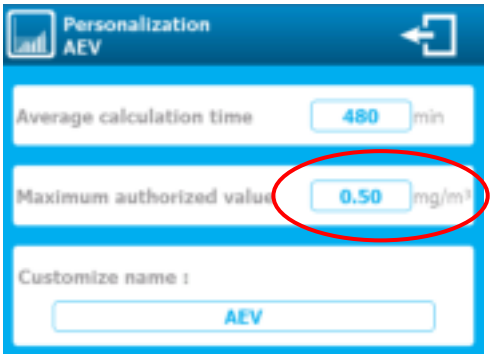
At 3pm, the ELV (i.e. the average of samples taken over the last 15 minutes) is 0.61mg/m3

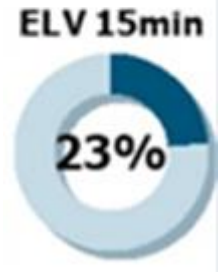
At 4pm, the AEV (i.e. the average of samples taken over the last 8 hours) is 0.3mg/m3

Explanation of ELV and AEV donuts:

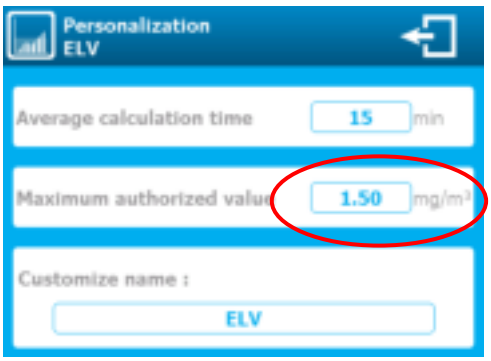


The AEV donut displays 48%, which corresponds to the ratio of the average of samples taken over the last 8 hours to the value configured in the "TWA Customization" menu.
In our case, this means we're at a AEV of: 48% of 0,50mg/m^3 = 0.24mg/m^3





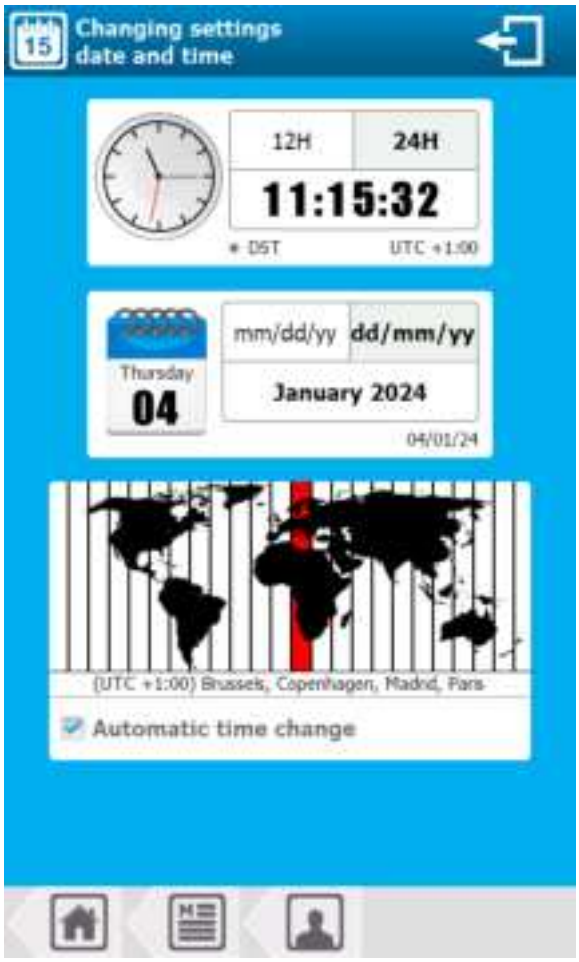
The ELV donut displays 23%, which corresponds to the ratio between the average of samples taken over the last 15 minutes and the value configured in the "Customize ELV" menu.
In our case, this means we're at a ELV of: 23% of 1.50mg/m^3 = 0.34mg/m^3.

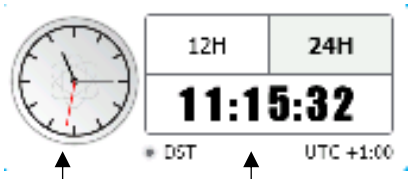


3) Menu "User menu" - "DATE & TIME"

The "DATE & TIME" menu allows you to access the options available in the installation section.

Press to display the following screen.



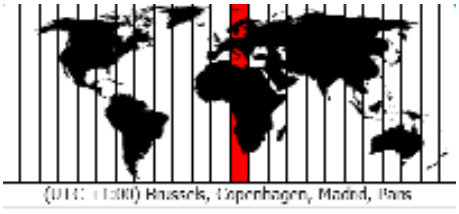


Press time to toggle 12H / 24H display mode

Press clock to change time

Press date to toggle display mode from mm/dd/yy to dd/mm/yy

Press the calendar to change the date



Press on the map to change the time zone

➢ **Automatic time change**

If the selected time zone has summer/winter time management, your controller will change time automatically. You can cancel this automatic time change by unchecking this box.

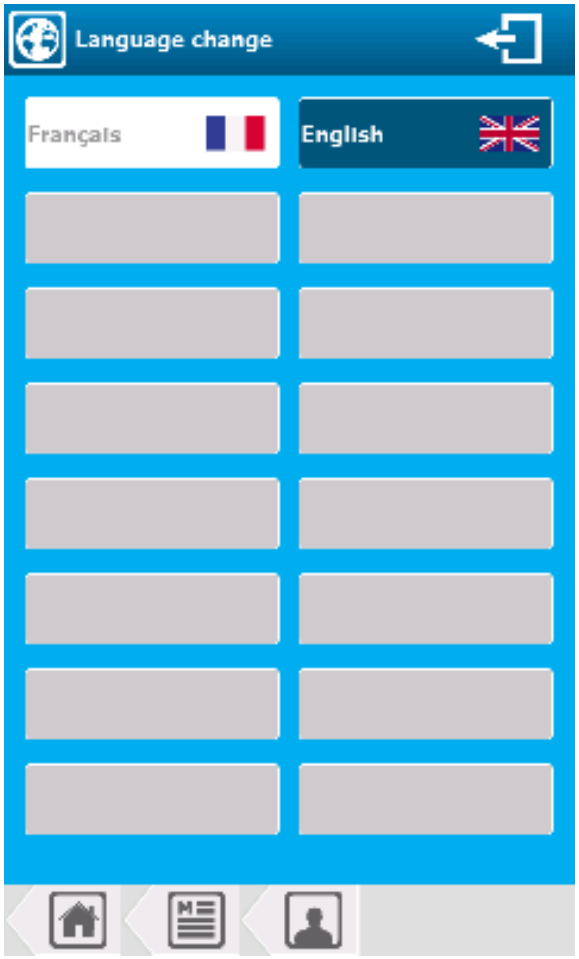
➢ **Time zone change**

Press on the time zone map
Scroll up or down the list, holding down the key until the desired time zone is in the middle of the selection.
Wait for automatic closing to take the new time zone into account.

4) "User menu" - "LANGUAGE" menu

The "LANGUAGE" menu allows you to access the options available in the installation section.

Press to display the following screen.



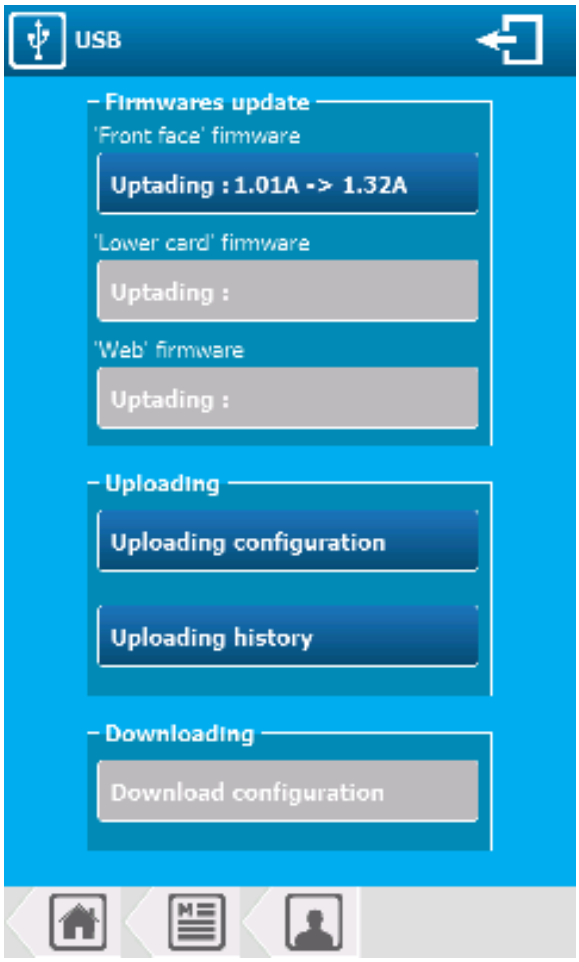
➢ **Change language**

Press the desired language to select it.

5) "User menu" - "USB" menu

The "USB" menu gives you access to the options available in the installation section.

Press to display the following screen.



- **"Front face" firmware**

When firmware for the front panel is available on the key, the corresponding update button is activated. To update, press the button.

- **"Lower card" firmware**

When firmware for the background is available on the key, the corresponding update button is activated. To update, press the button.

- **"Module" firmware**

When firmware for the module is available on the key, the corresponding update button is activated. To update, press the button.

- **"Web" firmware**

When firmware for the Web part is available on the key, the corresponding update button is activated. To update, press the button.

- **Export configuration**

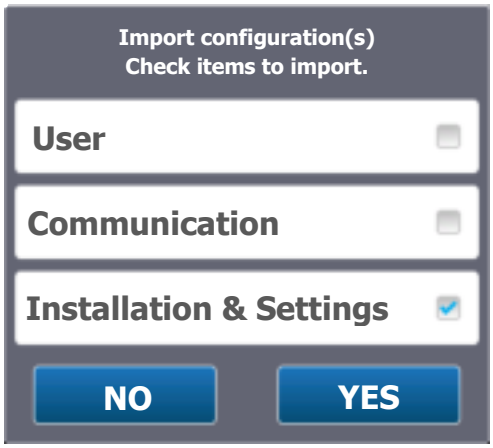
Allows you to export the complete machine configuration to a binary file on the USB key. To export, press the button.

- **Export history**

Allows you to export the machine's complete history to a CSV file on the USB key. To export, press the button.
In the CSV file, you'll find Trichloramine levels, high/low alarms, machine status and control information.

- **Import configuration**

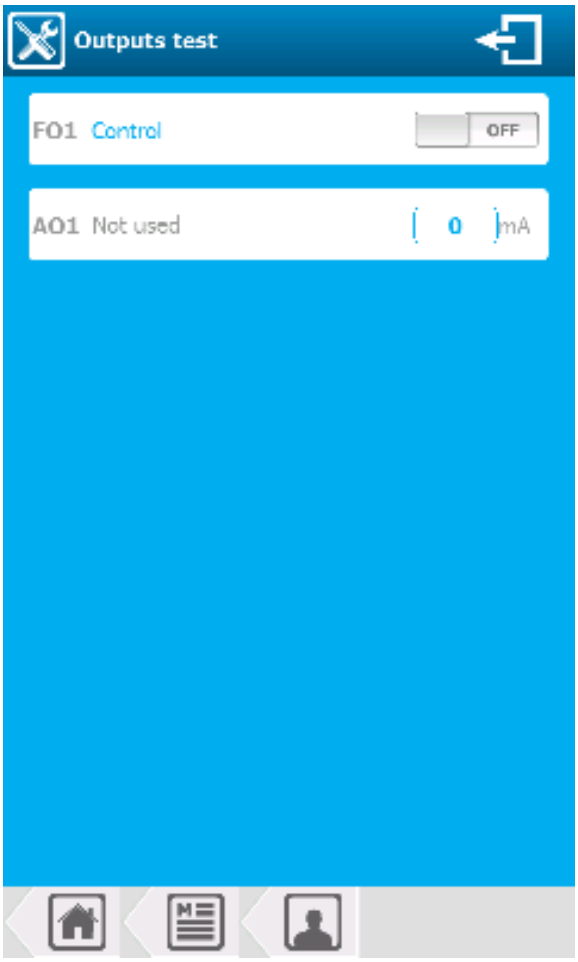
When a configuration file is available on the key, the button is activated. Press the "Import configuration" button, and you can choose whether or not to import the User and Communication configurations in addition to the Installation & Setup section.



6) "User menu" - "OUTPUT TEST" menu

The "OUTPUT TEST" menu gives you access to the options available in the installation section.

Press to display the following screen.



- **PO1** Control

Name of output and assigned function, press to switch relay ON/OFF.
Each press reverses the status.

Relay output inactive

Relay output active

- **AO1** Transfer

Output name and assigned function, press to open the numeric keypad, and enter the desired value.

Even unassigned outputs can be tested.

7) "User menu" menu - "INFO"

The "INFO" menu allows you to view the different versions of installed modules, and the device serial number.

Press to display the following screen.

- **Serial number**

The (unique) serial number of your device.

- **Software versions**

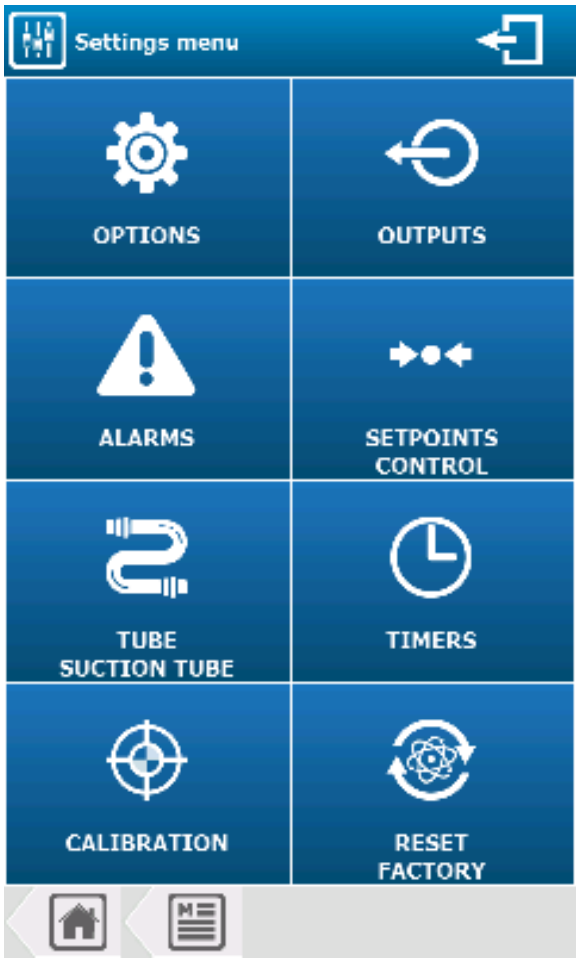
As the TrikloLive device is composed of several firmware modules, it is possible to view the installed modules and their versions on this screen.

If an item is greyed out, the function is not available.

VI. "Settings" programming screen

The "REGALGES" menu will give you access to your configuration parameters.

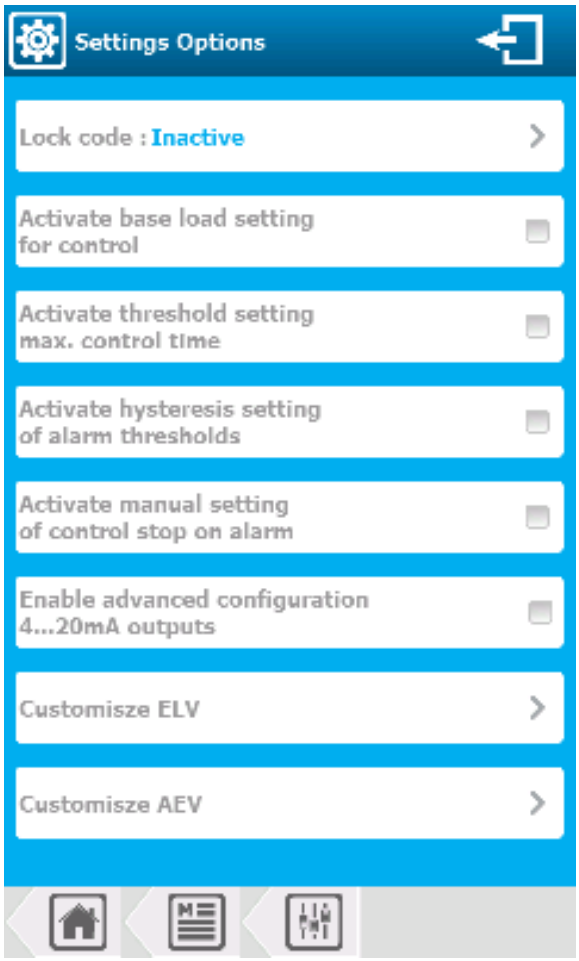
Press to display the following screen.



1) "Settings" menu - "OPTIONS"

The "OPTIONS" menu gives you access to the options available in the installation section.

Press to display the following screen.



- **Lock code**

Activate or deactivate security code to access "Settings" menu

- **Active base load setting for control**
  - Enables manual setting of base load for dosing.
- **Activate threshold setting max. control time**
  - Enables manual setting of dosing time count threshold.
- **Activate hysteresis setting of alarm thresholds**
  - Enables manual setting of alarm hysteresis thresholds.
- **Active manual setting of control stop on alarm**

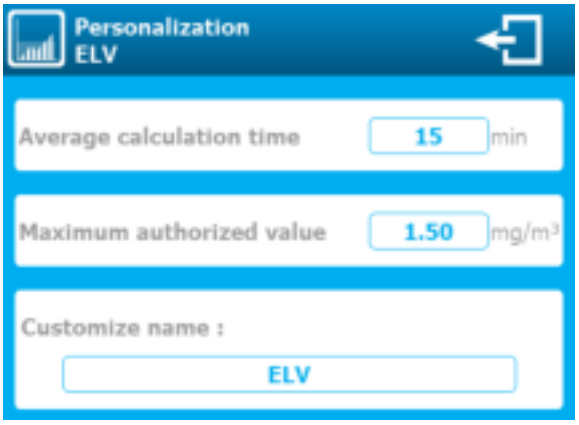
Allows complete manual setting of dosing stop on alarm.

- **Enable advanced configuration 4...20mA outputs**
  - When ticked, this option gives access to "special" current parameters. It is then possible to define the current generated in three cases:

- Inhibition mode:
  - None
  - 0 mA
  - Low range
  - 3.4 mA
- Default mode:
  - 0 mA
  - Low range
  - 2.6 mA
- Overrange mode:
  - Maximum
  - 20 mA
  - 20.8 mA

- **Customize ELV**

Click on it to open the following window.



- **Average calculation time**

  Click on it to open the numeric keypad and enter the calculation duration value. The default value is **15** minutes.

- **Maximum authorized value**

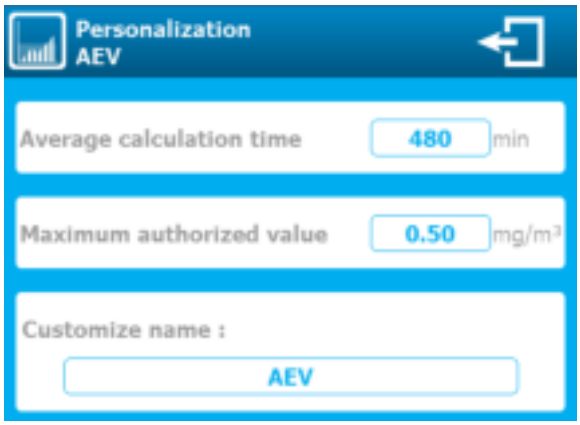
  Click on it to open the numeric keypad and enter the maximum permitted value. The default value is **1.50** mg/m³.

- **Customize name**

  Click on it to open the alphanumeric keyboard and enter the name you wish to give to the average (VLE).

- **Customize AEV**

Click on it to open the following window.



- **Average calculation time**

  Click on it to open the numeric keypad and enter the calculation duration value. The default value is **480** minutes.

- **Maximum authorized value**

  Click on it to open the numeric keypad and enter the maximum permitted value. The default value is **0.50** mg/m³.

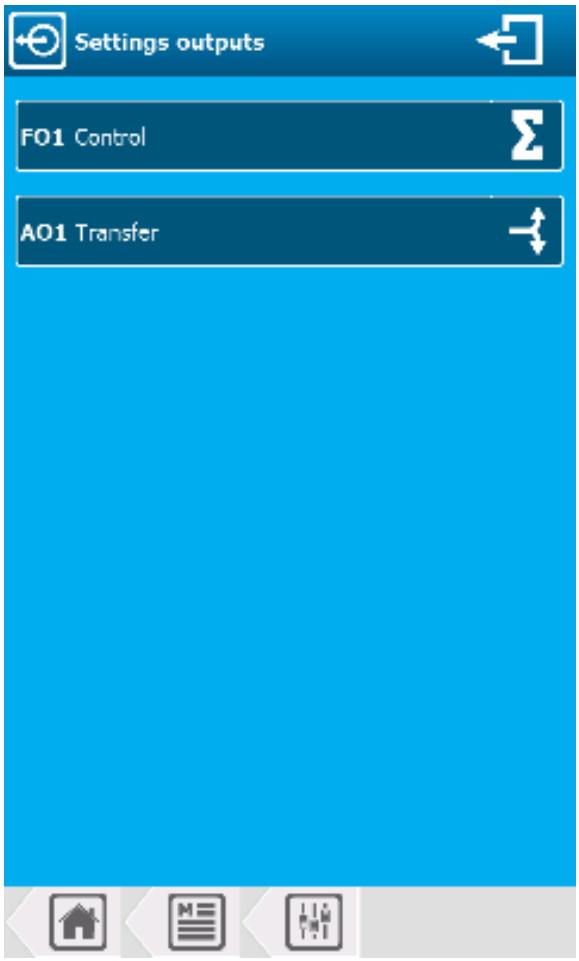
- **Customize name**

  Click on it to open the alphanumeric keyboard and enter the name you wish to give to the average (VME).

2) Settings" menu - "OUTPUTS"

The "OUTPUTS" menu lets you configure the relays and 4...20mA outputs to be used.

Press to display the following screen.



The screen shows which outputs are already configured and which are not in use. Pressing an output that is already set, you can modify its configuration, or pressing an unused output, you can configure its installation.

FO1 potential-free relay output CRT for Control, Alarm, Status.

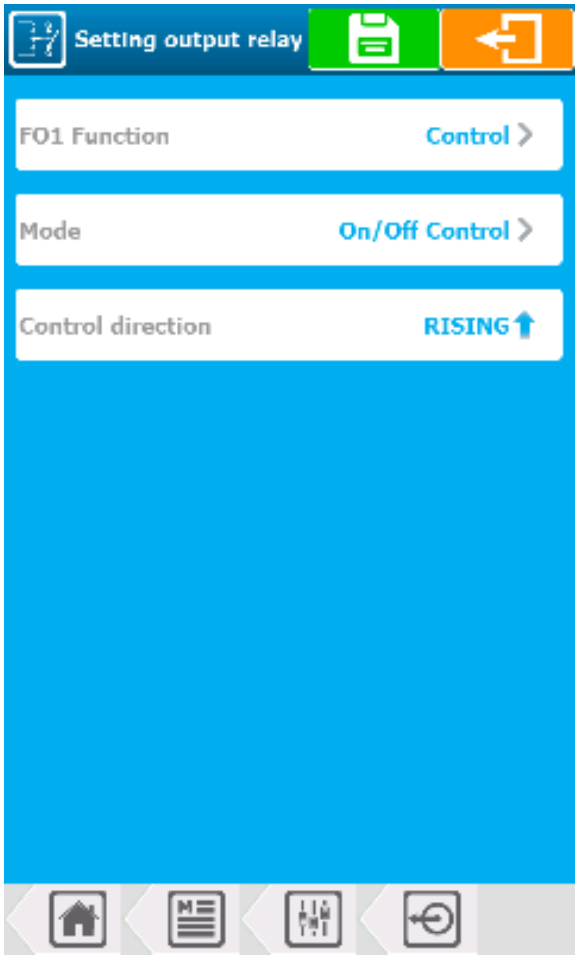
AO1 output used for transfer or dosing.

Output type already set.
Press to edit its configuration.

Output type not used.
Press to start configuration.

a) Relay output CRT FO1 "Dosing" function

Special case of "On/Off" mode



Special case of "PWM" mode

Special case of "PFM" mode

➢ **FO1 Function Control**

Selection of relay output operating mode, this selection button shows information on the output being modified (**FO1**) and the function currently selected (**Control**). Press to change it.

➢ **Operating mode On/Off Control**

- Operating mode selection, this button displays information on the selected operating mode (**On/Off Control**). Press it to change it.

➢ **Dosing direction RISING**

- Selection of dosing direction, on this selection button, we find the information of the selected dosing direction (**RISING**).
  Press to switch mode from **RISING** to **FALLING** and change dosing direction.

➢ **Cycle time: 20** second(s)

- Select the value corresponding to the complete duration of your pond treatment. Here, the current value is (**20**). Press to open the numeric keypad and enter the desired value.
  Possible setting from **10 to 1800** second(s)

➢ **Minimum duration: 3** second(s)

- Enter the value of the minimum time allowed for switching the dosing relay, to ensure longer relay life, as short switching times are not allowed. The time required will then be accumulated until this value is reached, here the value is (**3**).
  Press to open the numeric keypad and enter the desired value.
  Possible setting from **0 to 5** second(s)

➢ **Minimum 0** %

- Enter the Minimum value. Here the value is (**0**).
  Press to open the numeric keypad and enter the desired value.
  Possible setting from **0 to 100 %**

➢ **Maximum 100** %

- Enter the Maximum value. Here the value is (**100**).
  Press to open the numeric keypad and enter the desired value e.
  Possible setting from **0 to 100 %**

➢ **Keep active after**

- The box is automatically active and cannot be modified

b) CRT relay output FO1 "Alarm" function

➢ **FO1 Function Alarm**

Selection of relay output operating mode, this selection button shows information on the output being modified (**FO1**) and the function currently selected (**Alarm**). Press to change it.

➢ **Selection of alarms to be taken into account to activate this output:**

- Selection of alarm(s) to be taken into account. Multiple" selection type, press the desired alarms to select/deselect them.

Alarm list in icon order:
Threshold Low - Threshold High - Sensor out of order - Sensor unstable - Overdosing - Tank bottom


Alarm selected

Alarm not selected

Alarm not selectable

- **Relay idle state NO**
  - Choice of resting state to be taken into account: this checkbox shows the information currently selected (**NO**).
    Press to toggle between **NO** (Normally Open) and **NC** (Normally Closed).

- **Run (ON): 2** second(s)
  - Enter the value of the waiting time before the alarm is acknowledged. Here, the current value is (**2**).
    Press to open the numeric keypad and enter the desired value.
    Possible setting from **0 to 240** second(s).

- **Stop (OFF): 2** second(s)
  - Enter the value of the waiting time before the alarm disappears. The current value is (**2**).
    Press to open the numeric keypad and enter the desired value.
    Possible setting from **0 to 240** second(s).

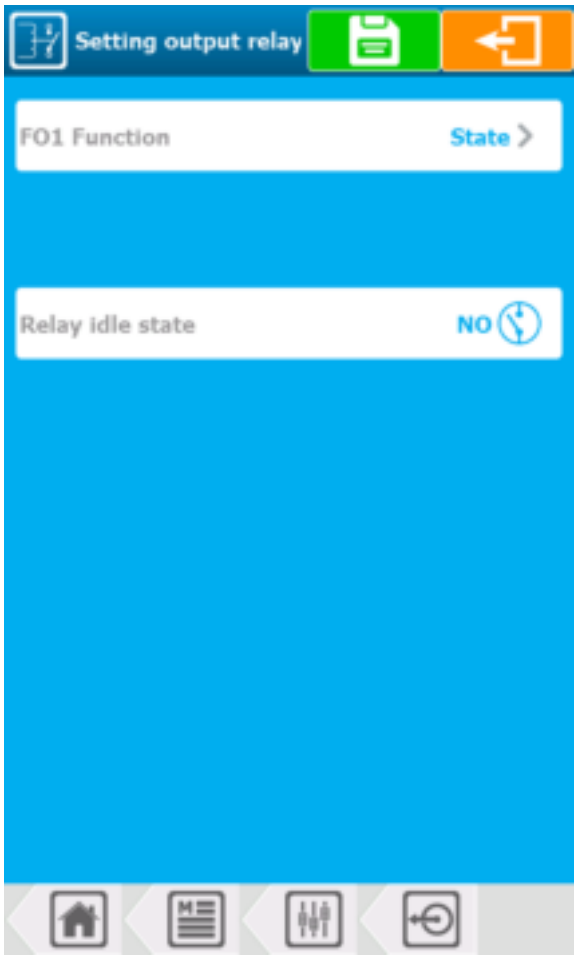
- **Active (ON): 0** second(s)
  - Enter the value of the time during which the relay will be active in the alarm time slot. Here, the current value is (**0**).
    Press to open the numeric keypad and enter the desired value.
    Possible setting from **0 to 240** second(s).

- **Inactive (OFF): 0** second(s)
  - Enter the value of the time during which the relay will be inactive in the alarm time slot. Here, the current value is (**0**).
    Press to open the numeric keypad and enter the desired value.
    Possible setting from **0 to 240** second(s).

Pulse mode duration:

This setting is used to generate pulses for the duration of the alarm. If, for example, the two values entered are 1 second, the relay will open 1 second and close 1 second repeatedly for the duration of the alarm.

c) CRT relay output FO1 "Status" function



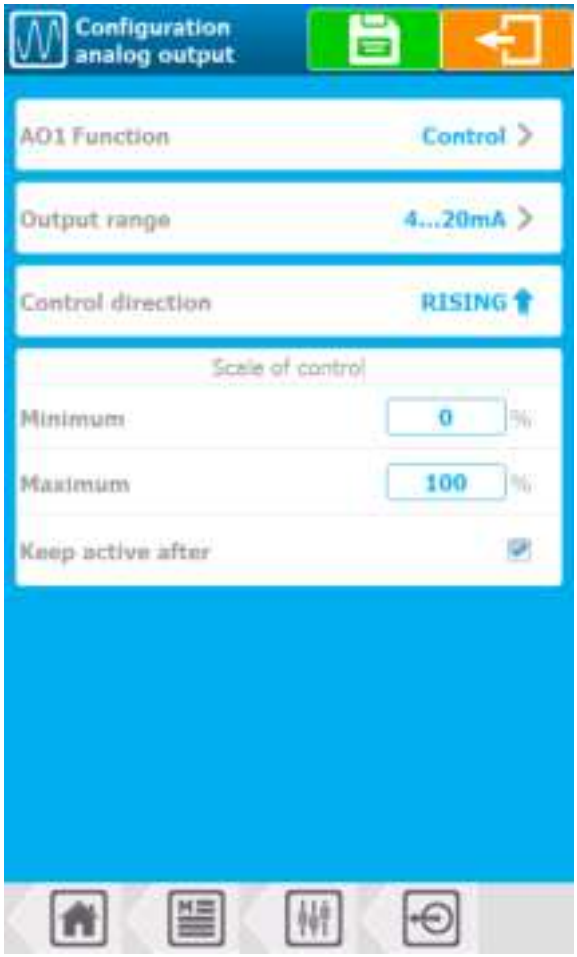
➢ **FO1 Function State**

Selection of relay output operating mode, this selection button shows information on the output being modified (**FO1**) and the function currently selected (**Sate**). Press to change it.

➢ **Relay idle state NO**

- Choice of resting state to be taken into account: this checkbox shows the information currently selected (**NO**).
  Press to toggle between **NO** (Normally Open) and **NC** (Normally Closed).

d) Outputs 4...20mA AO1 "Dosing" function



➢ **FO1 Function Control**

Selection of relay output operating mode, this selection button shows information on the output being modified (**AO1**) and the function currently selected (**Control**). Press to change it.

➢ **Output range 4...20mA**

- Selection of the current range generated in dosing mode; this selection button displays information on the selected range (**4...20mA**).
  Press to change it.

➢ **Control direction RISING**

- Choice of dosing direction: this selection button displays information on the selected dosing direction (**RISING**).
  Press to switch mode from **RISING** to **FALLING** and change dosing direction.

➢ **Minimum 0 %**

- Enter the Minimum value. Here the value is (**0**).
  Press to open the numeric keypad and enter the desired value.
  Possible setting from **0 to 100 %**

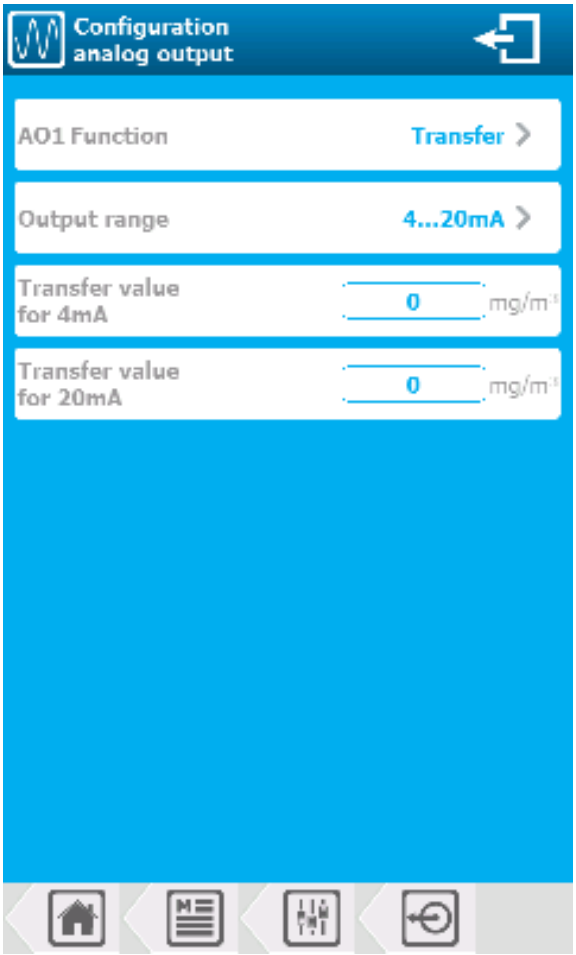
➢ **Maximum 100 %**

- Enter the Maximum value. Here the value is (**100**).
  Press to open the numeric keypad and enter the desired value.
  Possible setting from **0 to 100 %**

➢ **Keep active after**

The box is automatically active and cannot be modified.

e) Outputs 4...20mA AO1 "Transfer" function



- **FO1 Function Transfer**

Selection of relay output operating mode, this selection button shows information on the output being modified (**AO1**) and the function currently selected (**Transfer**). Press to change it.

- **Output range 4...20mA**
  - Selection of the current range generated in dosing mode; this selection button displays information on the selected range (**4...20mA**).
    Press to change it

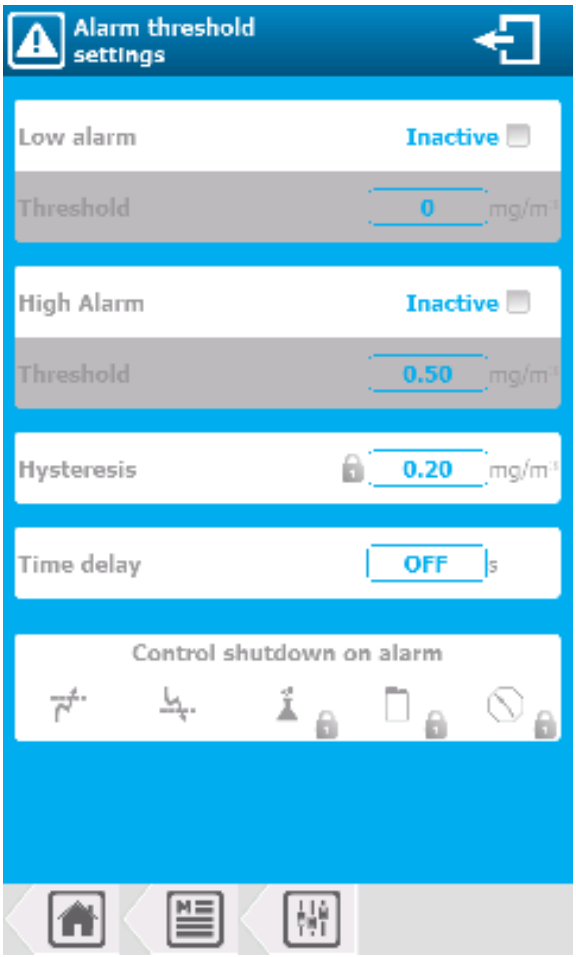
- **Transfer value for 4mA 0** mg/m³
  - Enter value for 4mA transfer output. Here the current value is (**0**)

- **Transfer value for 20mA 0** mg/m³
  - Enter value for 20mA transfer output. Here the current value is (**0**)

3) "Settings" menu - "ALARMS"

The "ALARMS" menu gives you access to alarm configuration.

Press to display the following screen.



- **Low alarm Inactive**
  - You must check this option to activate low alarm threshold management. Here management is (**Inactive**).
    If you activate a low alarm, it will appear as a vertical line on the live graph.
- **Threshold 0** mg/m³
  - Enter the low alarm threshold value. The current value is (**0**).
    Press to open the numeric keypad and enter the desired value.
- **High alarm Inactive**
  - You must check this option to activate high alarm threshold management. Here management is (**Inactive**).
    If you activate a high alarm, it will appear as a vertical line on the live graph.
- **Threshold 0.50** mg/m³
  - Enter high alarm threshold value. Here the current value is (**0.50**).
    Press to open the numeric keypad and enter the desired value.
- **Hysteresis 0.20** mg/m³
  - Enter hysteresis value for alarm thresholds. Here the current value is (**0.20**).
    Press to open the numeric keypad and enter the desired value.

This setting is only available if the unlock option is enabled in the setting options.

This value is used to define a delta value within which the alarm remains active. This ensures stable alarms when the measured value fluctuates around a threshold value.

➢ **Time delay OFF** s

- Enter the value of the alarm delay time. Here the delay is deactivated (**OFF**).
  Press to open the numeric keypad and enter the desired value.
  Possible setting from **0 to 240** s

➢ **Control shutdown on alarm**

Selection of alarm(s) to be considered, for the stop of the dosage. Selection type «multiple», tap on the alarms you want to associate.

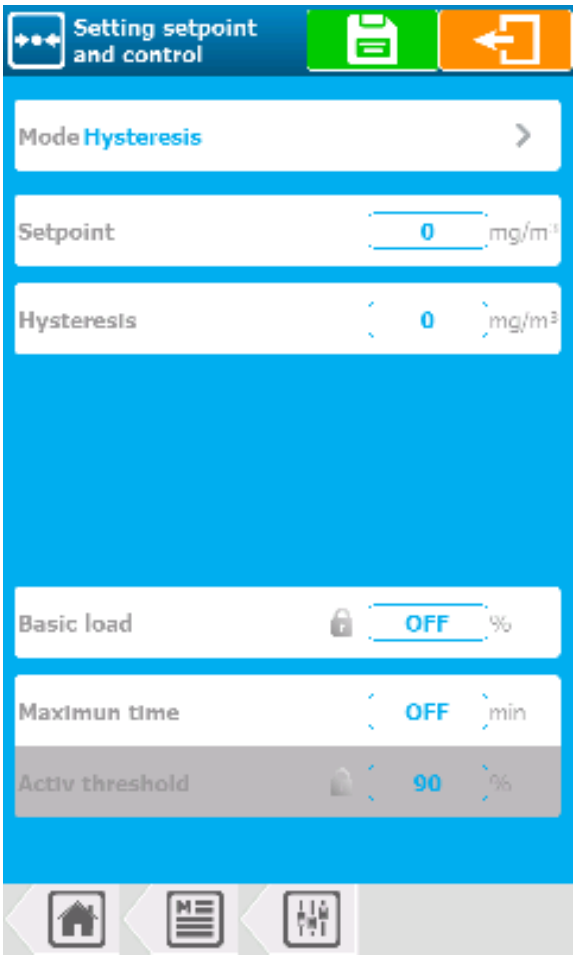
This setting is only available if the unlock option is enabled in the setting options.

4) "Settings" menu - "INSTRUCTIONS REGULATION"

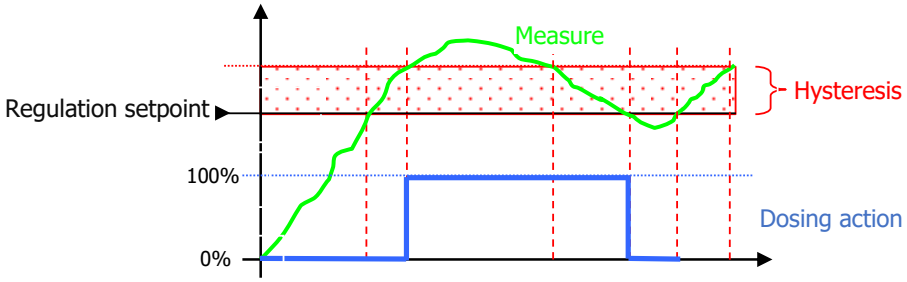
The «INSTRUCTIONS REGULATION» menu allows you to access the configuration of the dosing instructions.

Press to display the following screen.

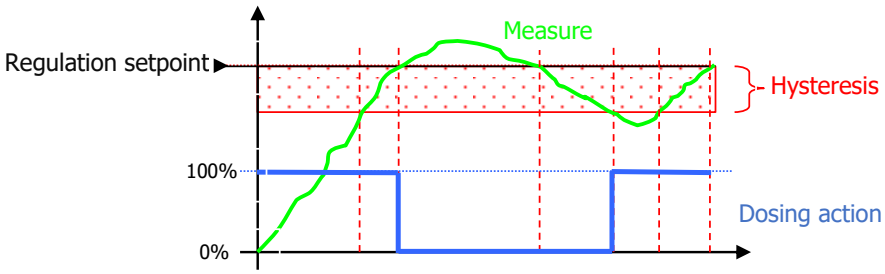
a) "REGULATORY INSTRUCTIONS" menu - "HYSTERESIS"



When the dosing direction of the channel is configured in descending mode, as soon as the error (measurement – setpoint) is greater than the hysteresis value the need for regulation is 100%.



When the dosing direction of the track is configured in ascending mode, as soon as the error (setpoint – measurement) is greater than the hysteresis value the need for regulation is 100%.



- **Mode Hysteresis**
  - Dose mode selection, this selection button contains the selected mode information (**Hysteresis**). Press to change it.

- **Setpoint 0** mg/m³
  - Enter the setpoint value. Here the current value is (**0**). Press to open the numeric keypad and enter the desired value.

- **Hysteresis 0** mg/m³
  - Enter the hysteresis value. Here the current value is (**0**). Press to open the numeric keypad and enter the desired value.

- **Basic load OFF** %
  - Enter the base load value. Here it is disabled, current value is (**OFF**). Press to open the numeric keypad and enter the desired value.

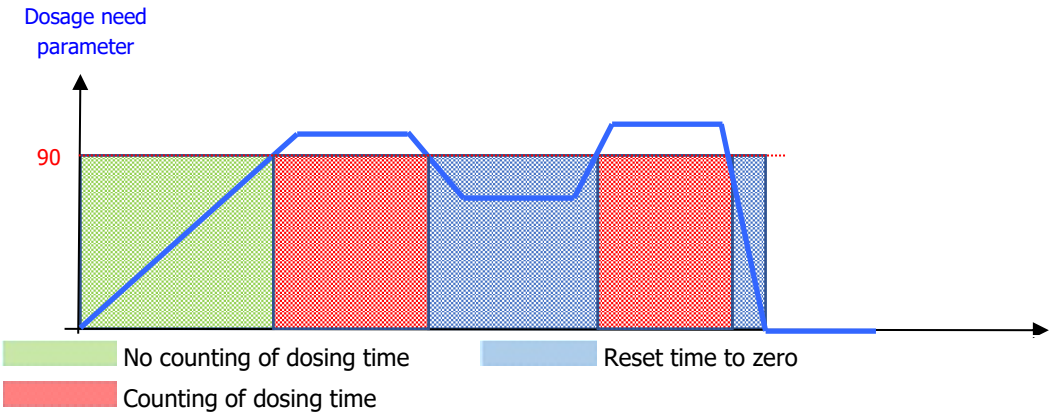
This setting is only available if the unlock option is enabled in the setting options.

Be careful, the base load is a permanent dosing power regardless of the need for dosing. This function is to be used with great care to avoid overdoses.

- **Maximum time OFF** min
  - Enter the maximum dosage time value. Here it is disabled, current value is (**OFF**). Press to open the numeric keypad and enter the desired value.

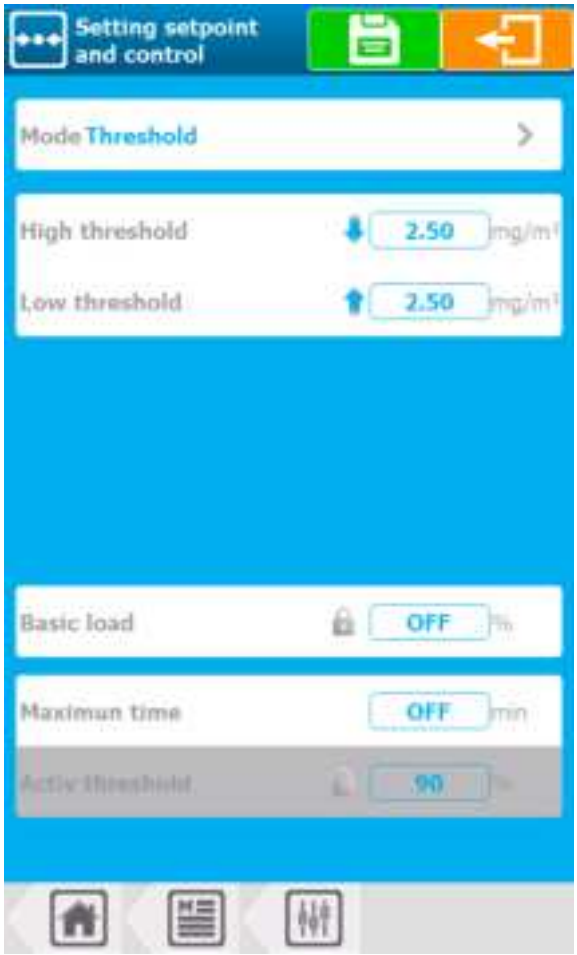
- **Activ threshold 90** %
  - Entering the dosing power from which the dosing time is counted. Here it is automatically adjusted according to the dosing mode to (**90**). Press to open the numeric keypad and enter the desired value.

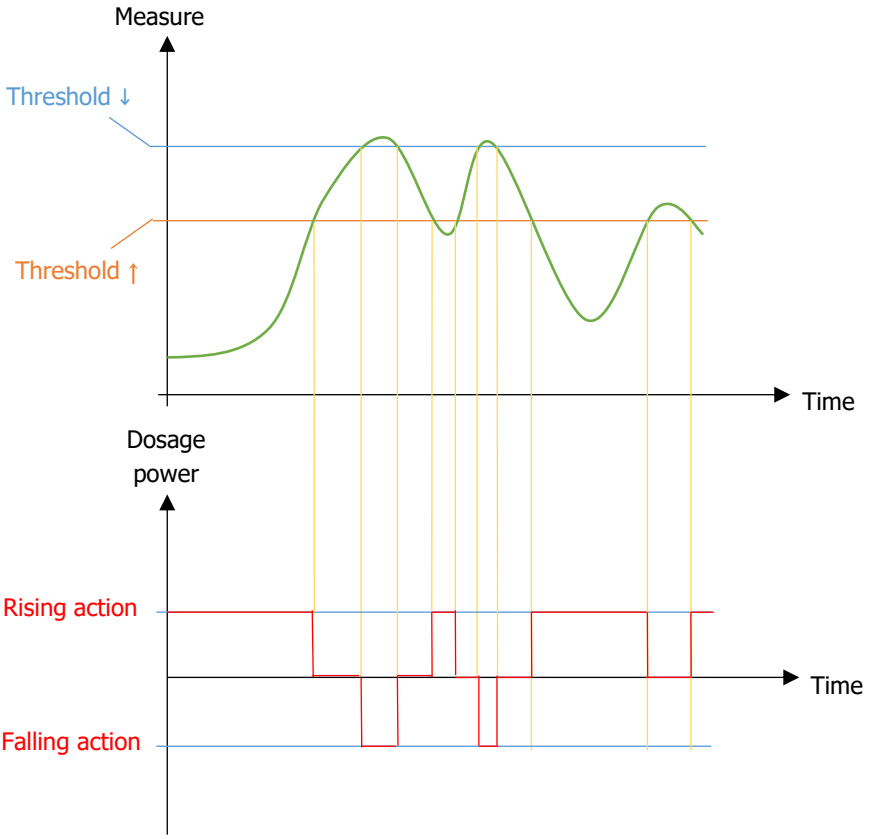
This setting is only available if the unlock option is enabled in the setting options.



Save:
When a change is made, the "Save" button appears (floppy icon), you must save your configuration by pressing it.

b) "INSTRUCTIONS REGULATION" - "THRESHOLD" menu





➢ **Mode Threshold**
- Dosage mode selection, on this selection button we find the selected mode information (**Threshold**). Press to change it.

➢ **High threshold 2.50** mg/m³
- Enter the low threshold value. Here the value is (**2.50**). Press to open the numeric keypad and enter the desired value.

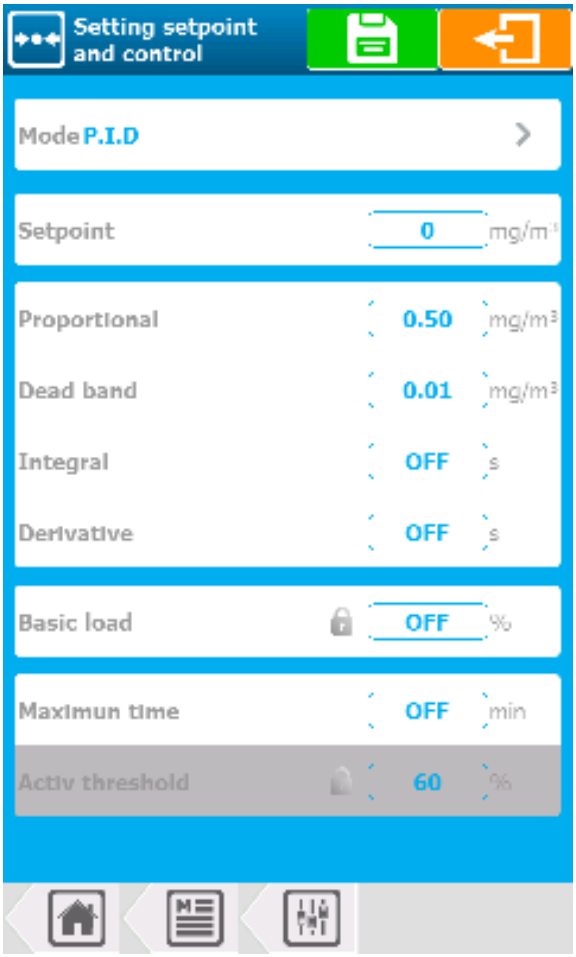
➢ **Low threshold 2.50** mg/m³
- Enter the high threshold value. Here the value is (**2.50**). Press to open the numeric keypad and enter the desired value.

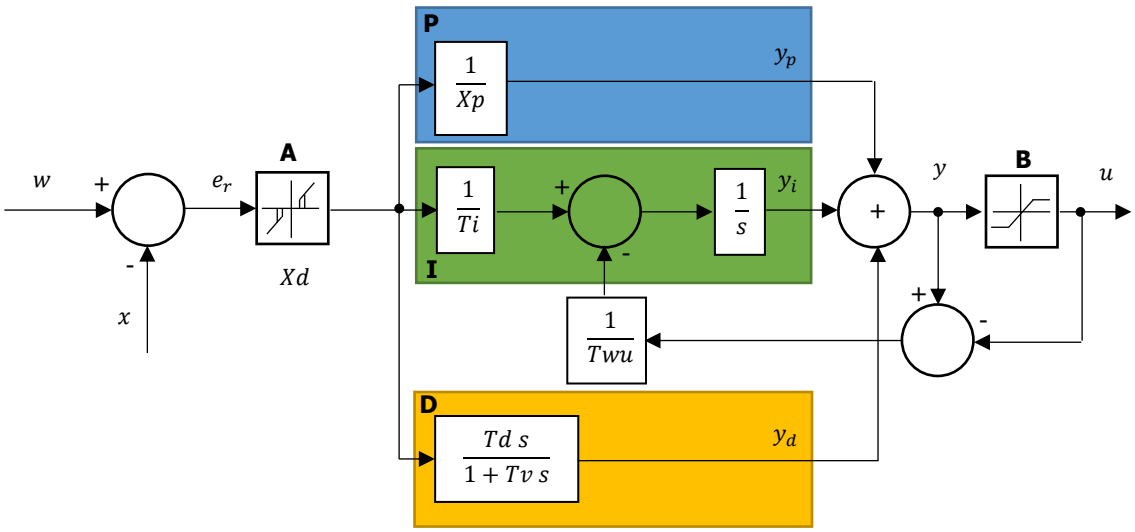
➢ **Basic load OFF** % **- Maximum time OFF** min **– Activ threshold 90** %
- See Hysteresis dosing mode.

Save:

When a change is made, the "SAVE" button appears (floppy icon), you must save your configuration by pressing it.

c) "INSTRUCTIONS REGULATION" - "P.I.D" menu





A	Dead band
B	Limitation of the output
P	Calculation of the proportion
I	Calculation of the integral
D	Calculation of the derivate
Xp	Reciprocal proportional value
Td	Time of the derivative
Tv	Filter constant
Twu	Anti-saturation

w	Setpoint of regulation
x	Measurement value
e	Regulation error
y	Need regulation
u	Dose control
Ti	Integral time
Xd	Dead band value around setpoint

The difference between the setpoint **w** and the measurement **x** corresponds to the regulation error, which is filter by a dead band.

Dead band **A** eliminates small regulation errors. The filtered control error is transmitted to the P.I.D calculator which consists of three components. Proportional **P**, Integral **I** and Derivative **D**. The integral (in green) also has an anti-saturation system for limiting the action of the integral.

The sum of the three components gives a need for regulation **Y** which is limited according to the actuators you use, **B** (-100% to 0% or 0% to +100% or -100% to +100%).

- **Mode P.I.D**
  - Dosage mode selection, on this selection button we find the selected mode information (**P.I.D**). Press to change it.

- **Setpoint 0** mg/m³
  - Enter the setpoint value. Here the value is (**0**).
    Press to open the numeric keypad and enter the desired value.

- **Proportional 0.50** mg/m³
  - Enter the proportional value. Here the current value is (**0.50**).
    Press to open the numeric keypad and enter the desired value

- **Dead band 0.01** mg/m³
  - Enter the dead band value. Here the current value is (**0.01**).
    Press to open the numeric keypad and enter the desired value.

- **Integral OFF** s
  - Enter the integral value. Here it's disabled, current value is (**OFF**).
    Press to open the numeric keypad and enter the desired value.

- **Derivate OFF** s
  - Enter the derivate value. Here it's disabled, current value is (**OFF**).
    Press to open the numeric keypad and enter the desired value.

When the integral and the derivate are OFF the dosing mode is **PROPORTIONAL**.
When only the derivate is on OFF the dosing mode is **PROPORTIONAL INTEGRAL**.
If all values are entered the dosing mode is **PROPOTIONAL INTEGRAL DERIVATE**.

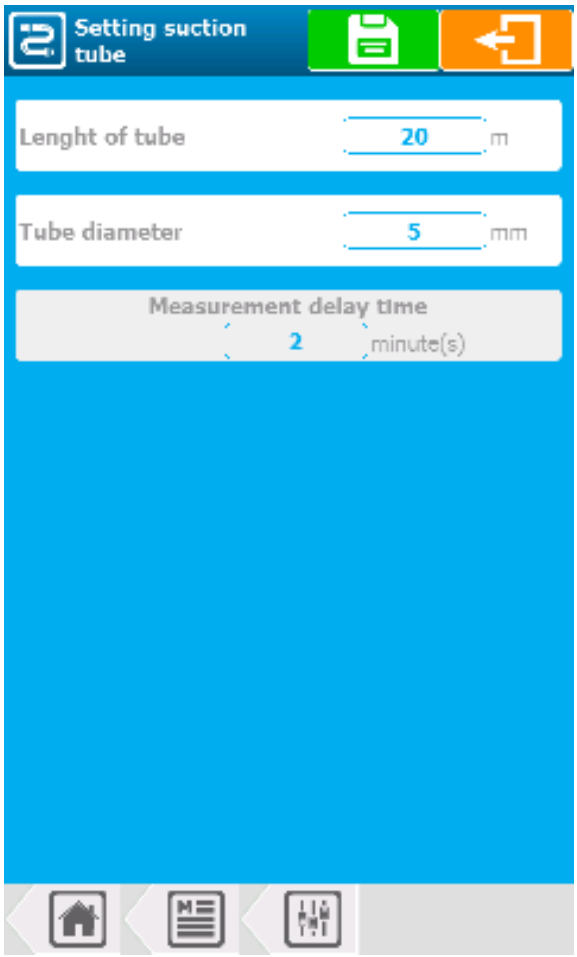
- **Basic load OFF** % **- Maximum time OFF** min **– Activ threshold 60** %
  - See Hysteresis dosing mode

Save:
When a change is made, the "SAVE" button appears (floppy icon), you must save your configuration by pressing it.

5) "Settings Menu" - "SUCTION TUBE"

The menu «SUCTION TUBE» allows you to access the settings of the suction tube.

Press to display the following screen.



- **Length of tube** **20** m
  - Tube length selection.
    Press to open the numeric keypad and select the desired length.

- **Tube diameter** **5** mm
  - Tube diameter selection.
    Press to open the numeric keypad and select the desired diameter.

- **Measurement delay time** **2** minute(s)
  - Display of the measurement delay time. This time is calculated based on the values you entered in the parameters above.
    It is completed automatically and cannot be modified.

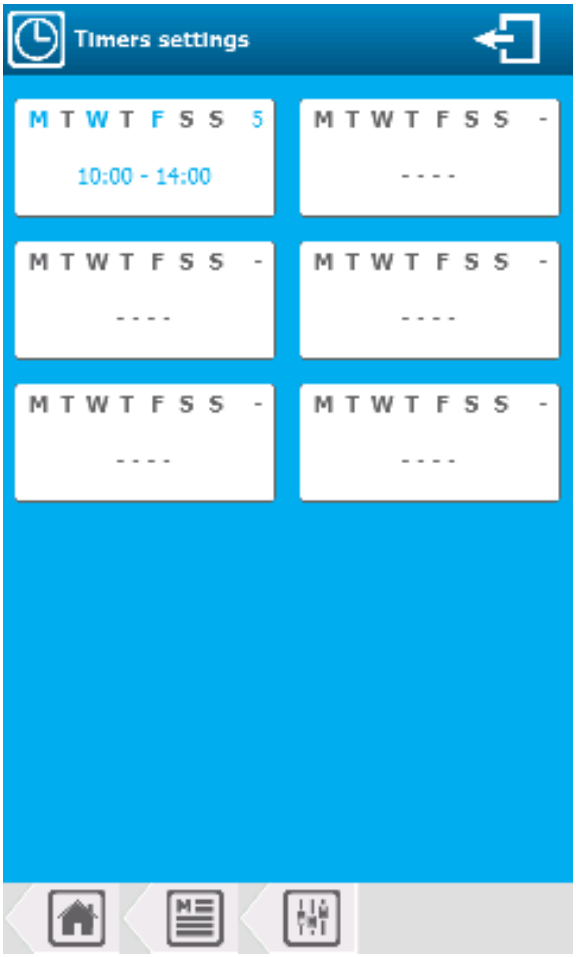
The delay time of the measurement means that the last value that appears on the live graph corresponds to the value taken a while ago (the delay time of the measurement).

Example: Here the delay time of the measurement is 2 minutes. This means that the last value displayed on the live graph corresponds to the measurement of trichloramine in the air of the sample taken 2 minutes ago.

6) "Settings Menu" - "CLOCKS"

The «CLOCKS» menu allows you to access the clock settings.

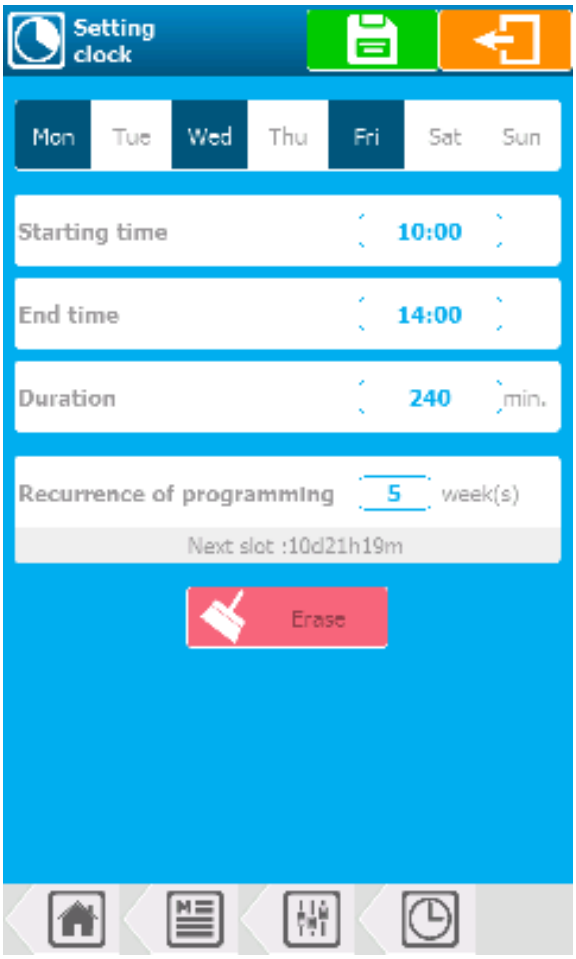
Press to display the following screen.



Clock already set.
Press to change the configuration.

Clock not set.
Press to set the clock.

Press it to open the next window.



- **Mon. – Tue. – Wed. – Thu. – Fri. – Sat. – Sun.**
  - Select the day(s) of the week the clock will be active. Multiple selection type, press the desired days to select/deselect. Here (**Mon. – Wed. – Fri.**) are selected.

- **Starting time 10:00 – End time 14:00 – Duration 240** min.
  - You have 2 possibilities:
    - Select Start time then End time and Duration will be automatically calculated.

    Select Start time then the Duration you want, and the End time will be automatically calculated.
    Press to open the numeric keypad and enter the desired time.

- **Recurrence of programming 1** week(s)

Weeks recurrence selection. Here the value entered is (**1**), timer active every week. Type 2 for 1 week/2, 3 for 1 week/3 etc. Adjustment possible from **1 to 52**

- **Erase**

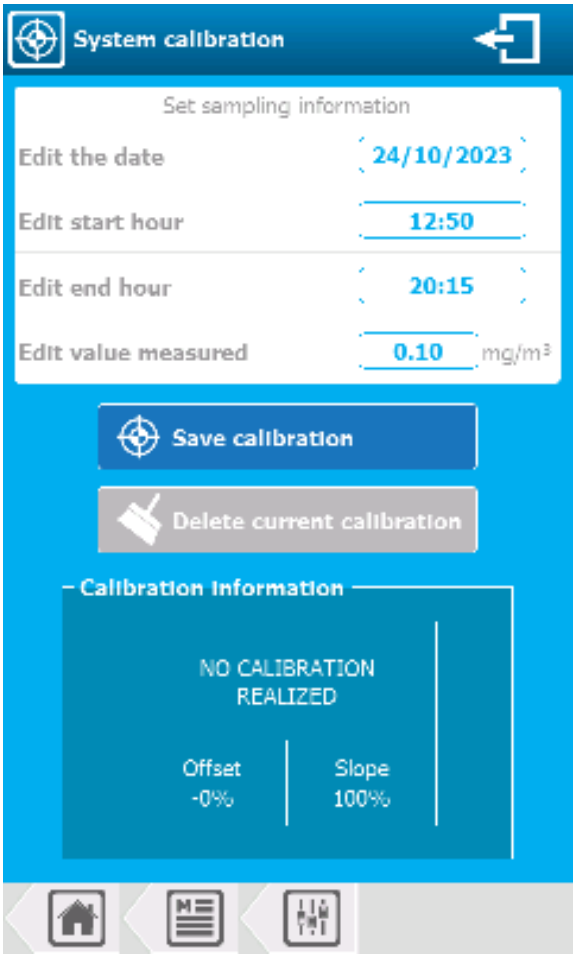
Clears the time slot configuration.

7) "Settings Menu" - "CALIBRATION"

The "CALIBRATION" menu allows you to access the calibration settings.

Press to display the following screen.

To calibrate the device a sample must be taken with a reference device.



- **Enter the date 24/10/2023**
  Enter the date of the sampling.
  Press to open the numeric keypad and select the desired date.

- **Enter the start time 12:50**
  - Enter the sampling start time.
    Press to open the numeric keypad and select the desired time.

- **Enter the end time 20:50**
  - Enter the sampling end time.
    Press to open the numeric keypad and select the desired time.

- **Edit value measured** mg/m³
  - Enter the Trichloramine value that was measured.
    Press to open the numeric keypad and select the desired value.

- **Save Calibration**

Once all information is entered, click this button to save the calibration.

- **Delete current calibration**

Click this button if you want to clear calibration and return to factory values.

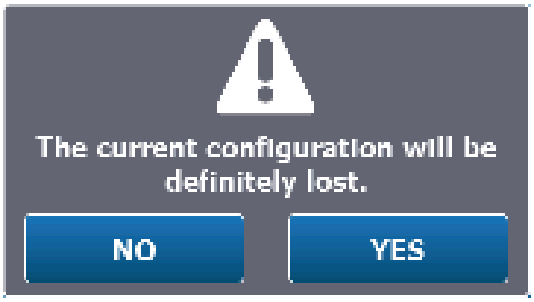
- **Calibration information**

Shows the saved calibration information against the factory values.

8) "Settings Menu" - "RESET FACTORY"

The menu "RESET FACTORY" will allow you to reset the analyser configuration.

- Press the "RESET FACTORY" button to display the following popup.



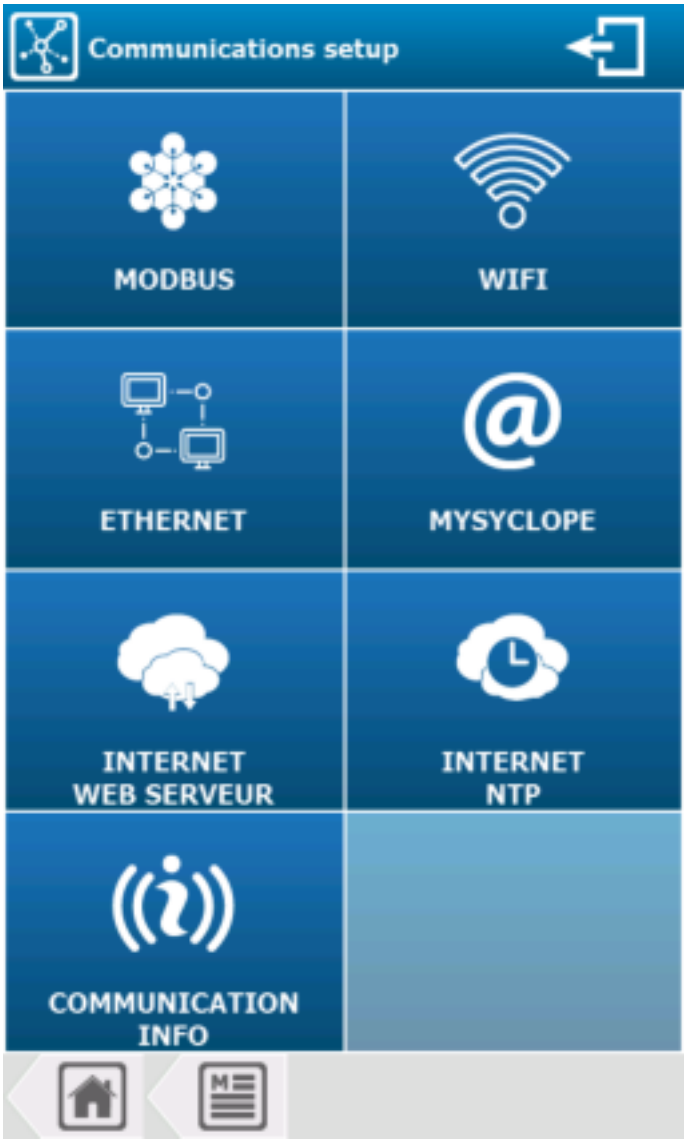
- You may or may not reset the "User" or "Communication" configurations in addition to the "Setup and Configuration" section.

It is also possible in case of need or request of technical support to reset only the communication or user part by checking only the box concerned.

VII. Programming screen "COMMUNICATION"

The "COMMUNICATION" menu will allow you to access the communication parameters.

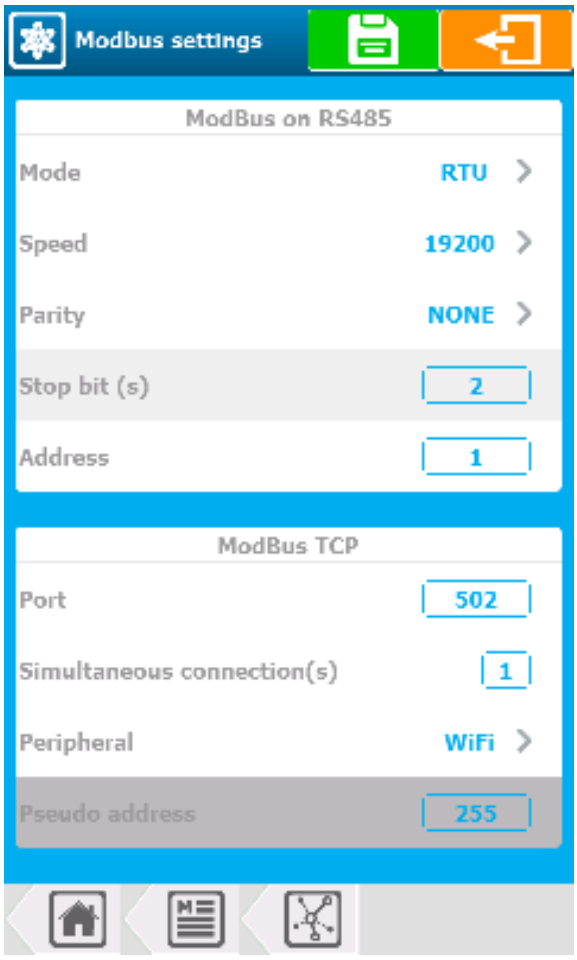
Press to display the following screen.



1) "COMMUNICATION" menu - "MODBUS"

The "MODBUS" menu will allow you to access the Modbus configuration.

Press to display the following screen.



Modbus sur RS485

- **Mode RTU**
  - Selection of the Modbus communication mode, on this selection button we find the information of the selected mode (**RTU**). Press to change it.
- **Speed 19200**
  - Selection of the Modbus communication speed, on this selection button we find the information of the selected speed (**19200**). Press to change it.
- **Parity NONE**
  - Selection of the Modbus communication parity, on this selection button we find the information of the selected parity (**NONE**). Press to change it.
- Stop bit(s) **2**
  - Information on the configuration of the number of stop bit(s). This option is not configurable, it adapts according to the parity configuration and here is just information to help you configure your connection.
- **Address 1**
  - Modbus address input of your regulator. Here the current value is (**1**).
    Press to open the numeric keypad and enter the desired value.
    Possible setting from **1 to 247**.

Modbus TCP

- **Port 520**
  - TCP port selection, on this selection button we find the information of the selected port (**520**). Press to change it.
- **Simultaneous connection(s) 1**
  - Selection of the number of simultaneous Modbus connection(s), on this selection button we find the number of simultaneous connection (**1**). Press to change it.
- **Peripheral WIFI**
  - Selection of the Modbus communication device, on this selection button we find the information of the selected device (**WIFI**). Press to change it.
- **Pseudo address 255**
  - Selection of the pseudo-Modbus communication address, on this selection button we find the information of the selected pseudo address (**255**). Press to change it.

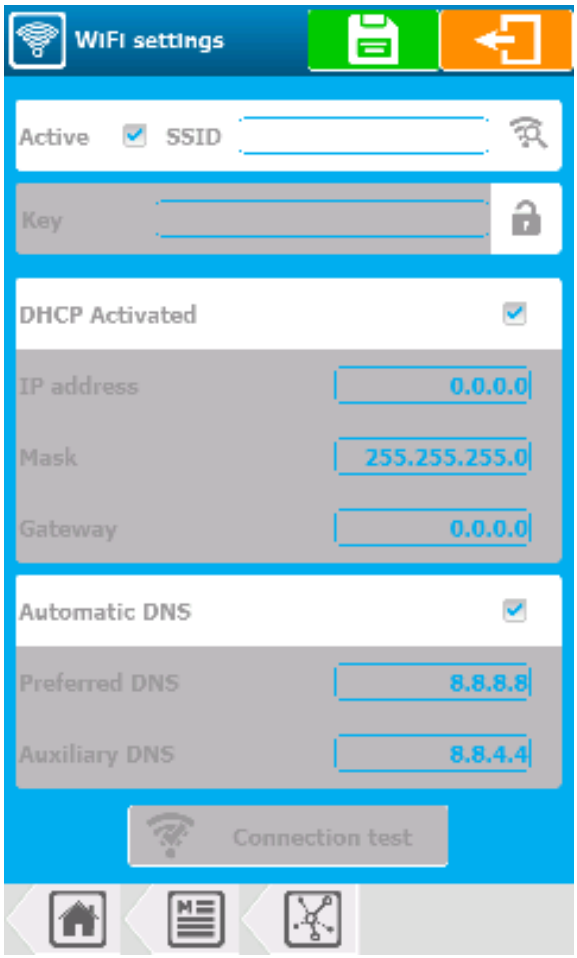
Do not forget to configure the WIFI parameters if the device associated with your Modbus is WIFI type.

Save:
When a modification is made press on to  save your configuration.

2) "COMMUNICATION" menu – "WIFI"

The "WIFI" menu will allow you to set the WIFI.

Press to display the following screen.



➢ **Active**

- Activation of the WIFI integrated in your regulator. When the box is checked the WIFI module is activated.
  Press it to change its state t.

➢ **SSID ----**

- Enter the name of the WIFI network on which you want to connect.
  Press to open the alphanumeric keyboard and enter the desired value.

➢ **Scan of available networks**

- By pressing this key, the search for networks is launched and a list with the networks found nearby is displayed.
- Press to open the list of networks.

Password-secure network with excellent signal level

Open network with low signal level

➢ **Security** 

- Selection of type of security key by your WIFI network.
Press to change it.

When selecting a network using the search window for available networks, the network security mode is automatically selected.

➢ **Key - - - -**

- If you have selected a security mode this option is activated and you must enter the security key of the WIFI network on which you want to connect.
Press it to open the alphanumeric keyboard and enter the desired value.

➢ **DHCP Active**

- Choice of the DHCP configuration of your network.
Press it to **ACTIVATE / DEACTIVATE** DHCP

➢ **IP address - - - -**

- If you disable DHCP you must enter the fixed IP address of your regulator.
Press it to open the numeric keyboard and enter the desired value.

➢ **Mask - - - -**

- If you disable DHCP you must enter the subnet mask of your network.
Press it to open the numeric keyboard and enter the desired value.

➢ **Gateway - - - -**

- If you disable DHCP you must enter the gateway of your network.
Press it to open the numeric keyboard and enter the desired value.

➢ **Automatic DNS**

- Choice of DNS configuration.
Press it to **ACTIVATE / DEACTIVATE** DNS

➢ **Preferred DNS 8.8.8.8**

- If the DNS management is not automatic, you must enter the IP address of the Primary DNS.
Press it to open the numeric keyboard and enter the desired value.

➢ **Auxiliary DNS 8.8.4.4**

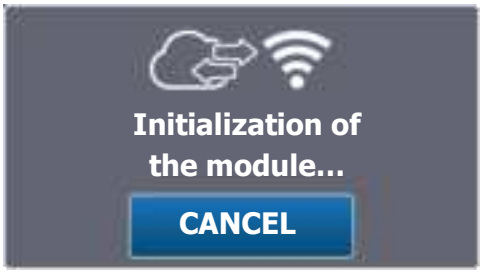
- If the DNS management is not automatic, you must enter the IP address of the Auxiliary DNS.
Press it to open the numeric keyboard and enter the desired value.

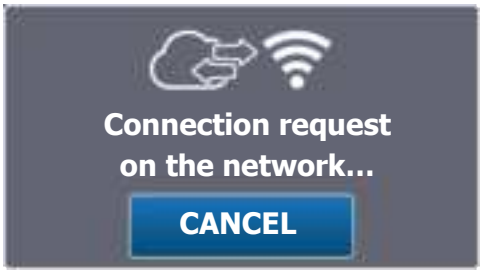
To save the modifications, press on 

➢ **WIFI configuration test**

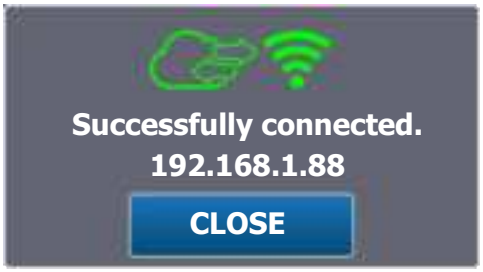
Press the button to open the test window

Connection phases, module initialization and connection request on the selected network.

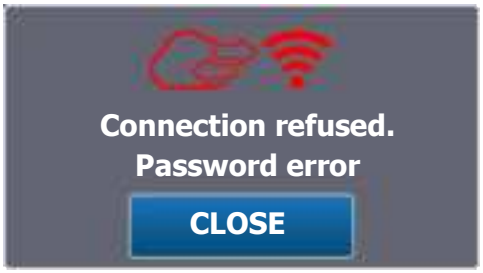




When the connection is successfully completed, the icon is displayed in green and the IP address assigned to the WIFI is displayed.



In the event of an error, the icon is displayed in red and a message corresponding to the type of error is displayed.



➢ **List of errors**

- « Password error » => Password is not correct
- « Timeout » => Connection failed within the limit time
- « Network not found » => SSID network was not found
- « Unknown error » => An unknown error has occurred

3) Menu « Menu communication » - « ETHERNET »

The 'ETHERNET' menu allows you to set the Ethernet parameters.

Press it to open the following screen.

➢ **DHCP Activated**

- Select the DHCP configuration for your network.
  Press to **ENABLE** / **DISABLE** DHCP.

If you uncheck 'DHCP Active' in order to fill in the information, 'Automatic DNS' will be unchecked automatically and you will have to fill in the preferred and auxiliary DNS.

➢ **IP address 0.0.0.0**

- If you disable DHCP, you must enter the fixed IP address for your controller.
  Press to open the numeric keypad and enter the required value.

➢ **Mask 255.255.255.0**

- If you disable DHCP, you need to enter the subnet mask for your network.
  Press to open the numeric keypad and enter the desired value.

➢ **Gateway 0.0.0.0**

- If you disable DHCP, you need to enter the gateway for your network.
  Press to open the numeric keypad and enter the desired value.

➢ **Automatic DNS**

- Choice of DNS configuration
  Press to **ENABLE** / **DISABLE** DNS.

➢ **Preferred DNS 8.8.8.8**

- If DNS management is not automatic, you need to enter the IP address of the main DNS.
  Press to open the numeric keypad and enter the desired value.

➢ **Auxiliary DNS 8.8.4.4**

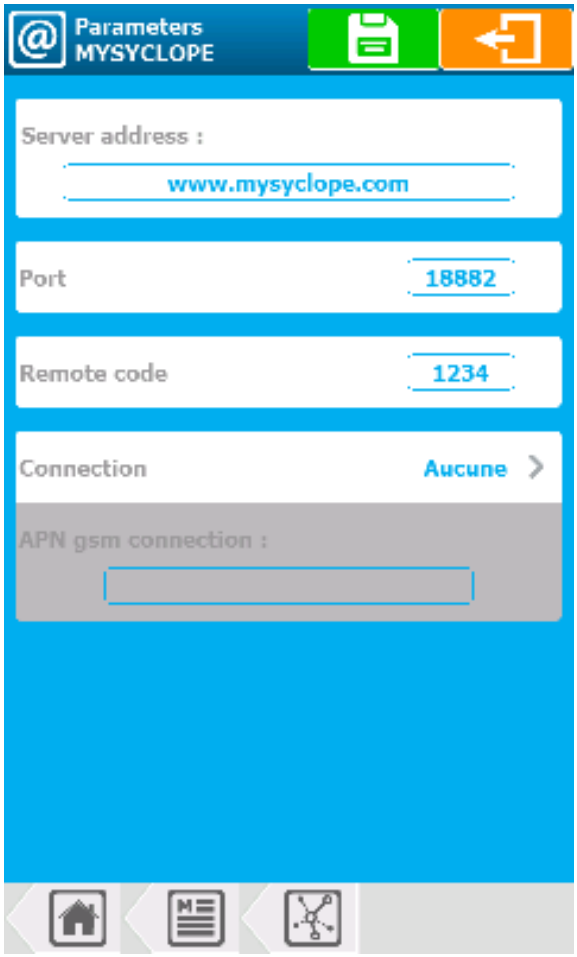
- If DNS management is not automatic, you must enter the IP address of the Auxiliary DNS.
  Press to open the numeric keypad and enter the desired value.

Save:
When a change has been made, the 'Save' button appears (floppy disk icon), and you need to save your configuration by pressing it.

4) "COMMUNICATION" menu – "MYSYCLOPE"

The "MYSYCLOPE" menu will allow you to configure MySyclope.

Press to display the following screen



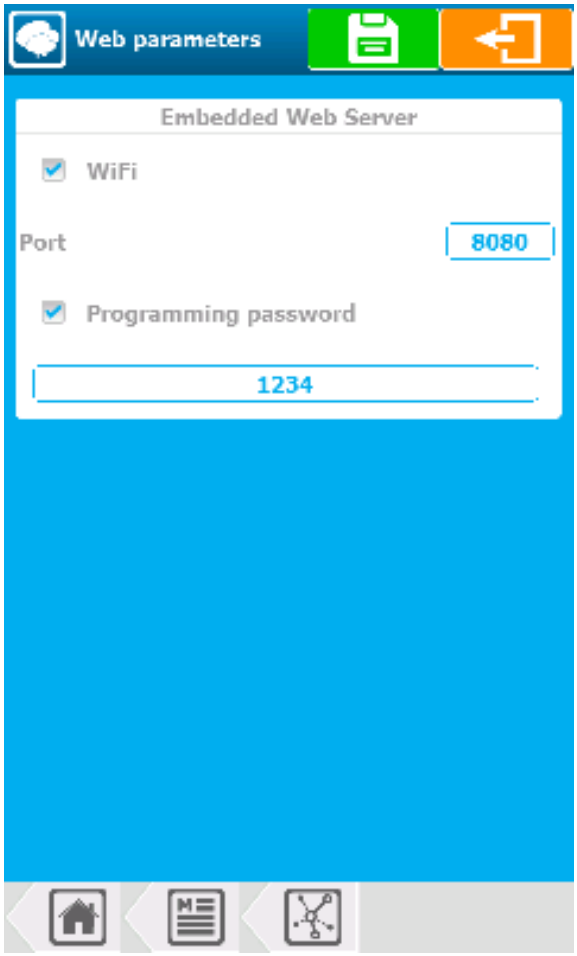
- **Server address www.mysyclope.com**
  - Enter the address of mysyclope web server. Here the address is (**www.mysyclope.com**).
    Press to open the alphanumeric keyboard and enter the desired value.
- **Port 18882**
  - Enter the TCP connection port to mysyclope site. Here the connection port is t (**18882**).
    Press to open the numeric keypad and enter the desired value.
- **Remote Code 1234**
  - Enter the remote connection code from mysyclope to your controller. Here the remote code is (**1234**).
    Press to open the numeric keypad and enter the desired value.
- **Connexion NONE**
  - Selection of the connection mode to mysyclope (type of modem), on this selection button we find the information of the selected mode (**NONE**).
    Press to change it.
- **APN GSM connection ---**
  - If you select a connection with a GSM modem you will have to enter the APN code of your data card here.
    Press to open the alphanumeric keyboard and enter the desired value.

Save:
When a modification is made, the « Save » button appears (floppy disk icon), you must press it to save your configuration.

5) "COMMUNICATION" menu – "INTERNET WEB SERVEUR"

The "INTERNET WEB SERVER" menu will allow you to configure the Web Server.

Press to display the following screen.



- **Embedded Web Server WIFI**

Check the « WIFI » box to activate the Embedded Web Server.

- **Port 8080**

  - If you activate the Embedded Web Server, you must enter the port number of your regulator.
    Press to open the numeric keypad and enter the desired value

- **Programming password 1234**

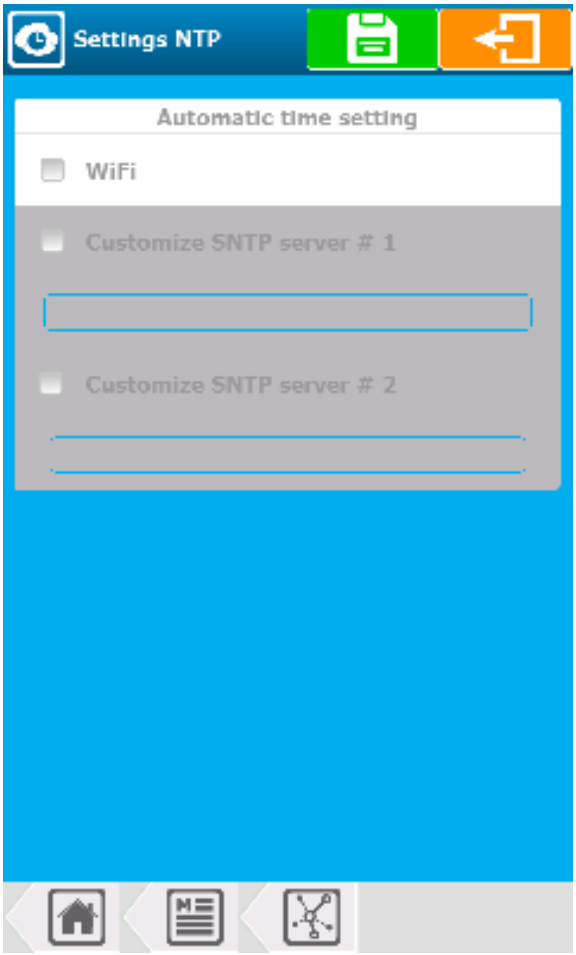
  - To be able to make changes on your regulator's webpage you had to activate the password and enter the desired password.
    Press the rectangle to open the alphanumeric keyboard and enter the desired value.

The editable values on the web page are the high and low alarms as well as the instructions if the latter are not «OFF».

6) "COMMUNICATION" menu – "INTERNET NTP"

The "INTERNET NTP" menu will allow you to configure the NTP.

Press to display the following screen



➢ **Automatic time setting WIFI**

- If this option is enabled (WIFI), your controller will regularly check the time on the internet using the SNTP protocol. To do this, your controller must be connected (in relation to the WIFI check box) and have access to the internet.

➢ **Customize SNTP server #1**

- Your regulator already has an SNTP server address. You can however customize the servers used for the setting and enter the first address here.

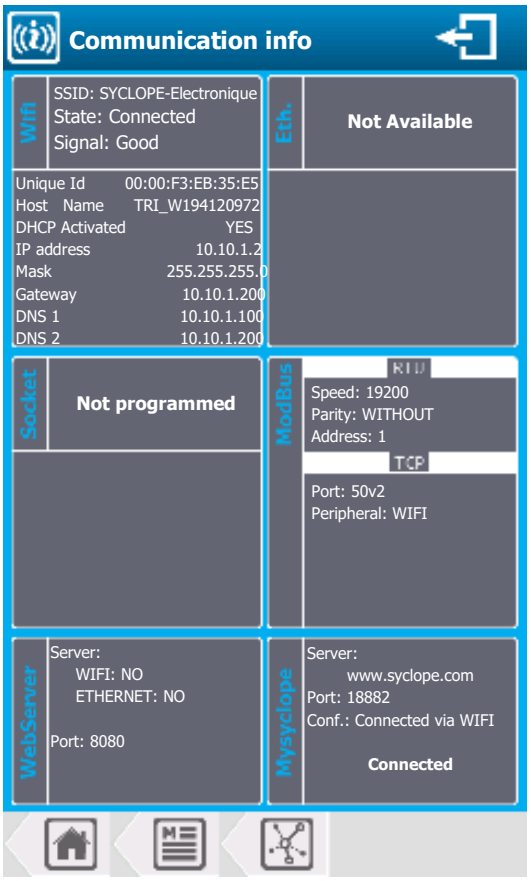
➢ **Customize SNTP server #2**

- When setting if server #1 cannot be reached, your regulator will try to this second server if the box is checked and the address is entered.

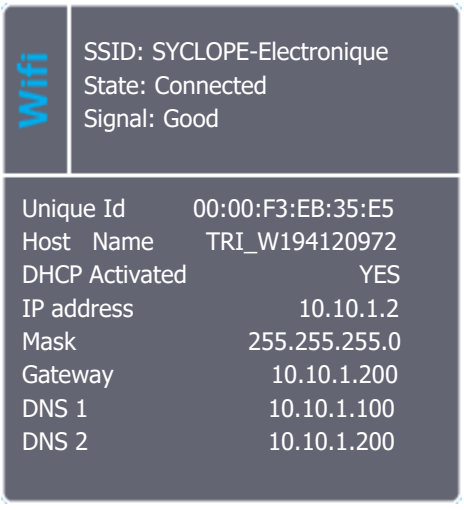
7) "COMMUNICATION" menu – "COMMUNICATION INFO"

The "INFO COMMUNICATION" menu will allow you to display the communication information.

Press to display the following screen



➢ **Wifi**



Name of the programmed SSID
Connection status
Signal level

Unique ID or MAC address of the WIFI chip
Identification name on the Ethernet network
DHCP configuration
WIFI module IP address *
Subnet mask *
Gateway *
DNS 1 *
DNS 2 *

* The values displayed correspond either to the values set in the case of DHCP mode disabled, or to the values received by DHCP from the network to which the module is connected.

➢ **ModBus**

- Modbus configuration reminder.

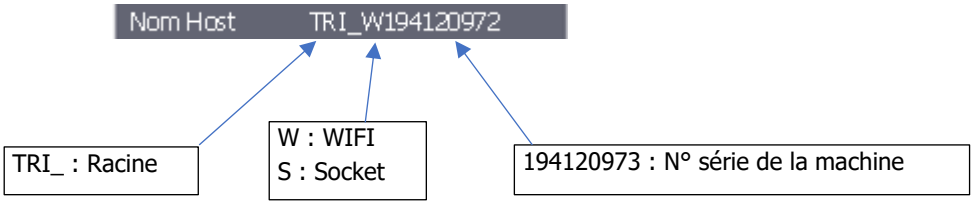
➢ **WebServer**

- WebServer configuration reminder.

➢ **Mysyclope**

- Configuration reminder and connection status.

Identification of the machine on the Ethernet network:



VIII. Service/Maintenance

1) Entretien

The device requires factory maintenance every year. This maintenance includes:

- Complete cleaning of the machine.
- Changing the suction filter
- Factory calibration.

ATTENTION :
The machine MUST be shipped in accordance with our packaging and transport conditions. Please contact our sales department.

Repairs may only be carried out by qualified technicians and must be carried out at our factory in SAUVAGNON.

Check that the appliance is in a safe condition after repair.

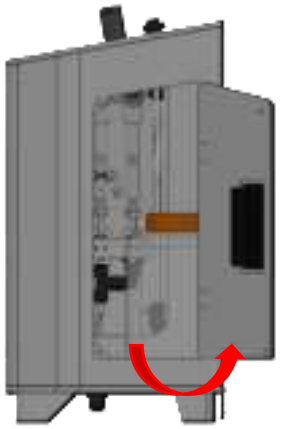
For any problems with your appliance or for advice on treatment, please do not hesitate to contact our after-sales service.

2) Droplet catcher draining

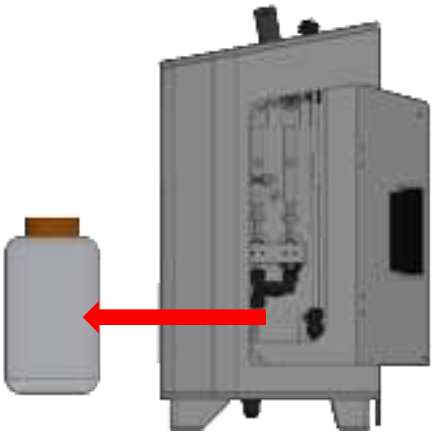
When the symbol  appears (every 14 days) it means that the droplet catcher is empty.

Here are the different steps to follow:

Step 1:
Appearance of the pop-up.



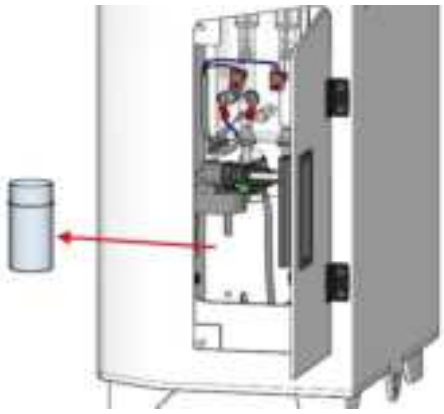
Step 2:
Open side door



Step 3:
Take out the bottle

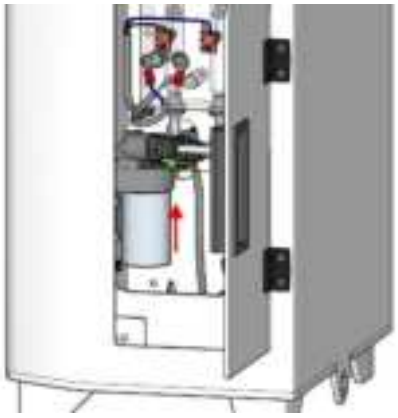
Step 4:
Unclip droplet catcher

Be careful not to touch the electronic cards with your fingers when handling them.

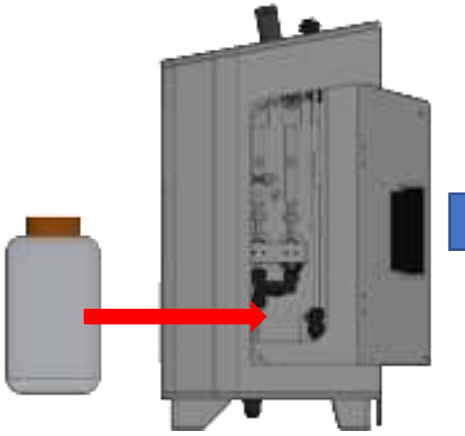


Step 5:
Take out the droplet catcher

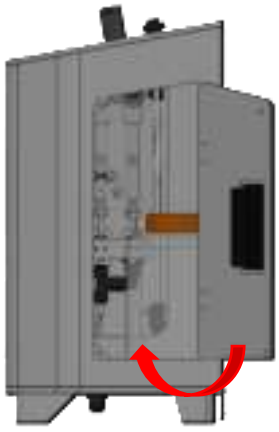
Step 6:
Drain the droplet catcher



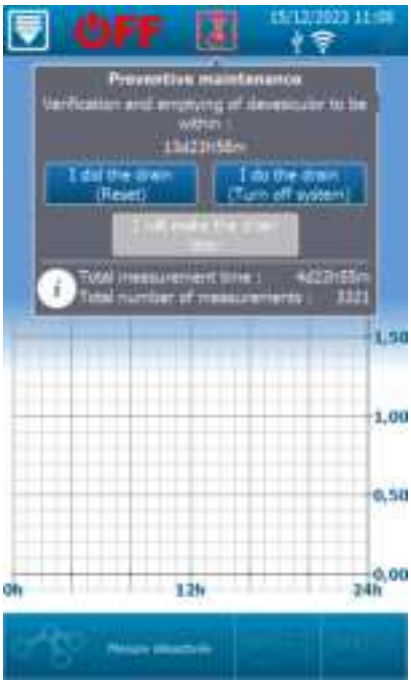
Step 7:
Replace the droplet catcher



Step 8:
Replace the bottle in the device.



Step 9:
Close the side door



Step 10:
Click on the red logo then click on «I did the emptying»

IX. Modbus communication register

1) Address of Modbus registers

The registers are numbered in accordance with the Modbus standard. These are "HOLDINGS REGISTER" on the range of registers from 40001 to 49999.

Some software and Modbus controllers use an address from 0 to 65535.

Modbus register 40001 therefore corresponds to Modbus address 0, register 40002 corresponds to address 1 and so on and so forth.

ModBus register	Number of registers	Name	Access	Format	Description
Relays					
1041	1	State_relay	r	BOOL	0=Rest / 1=Work
Outputs 4…20mA					
1056	2	Signal_out	R	REAL	Signal on 4/20 mA output [mA]
Calendar					
1076	1	State_calendar_T1	R	BOOL	0=Out of range / 1=In range (Schedule)
1077	1	State_calendar_T2	R	BOOL	0=Out of range / 1=In range (Schedule)
1078	1	State_calendar_T3	R	BOOL	0=Out of range / 1=In range (Schedule)
1079	1	State_calendar_T4	R	BOOL	0=Out of range / 1=In range (Schedule)
1080	1	State_calendar_T5	R	BOOL	0=Out of range / 1=In range (Schedule)
1081	1	State_calendar_T6	R	BOOL	0=Out of range / 1=In range (Schedule)
Interfaces					
1092	2	Timestamp Local	r	DWORD	Time since 1 January 1970 0h00 [s]
Values and states					
1101	1	Device state	rw	WORD	Bit 0: device running Bit 1: timer running Bit 2: device starting up Bit 3: device stopped due to timer
1351	2	param_TRICHLO_state	rw	DWORD	Cf. ParamState
1353	2	param_TRICHLO_value	r	REAL	Measured value [mg/m3]
1355	2	param_TRICHLO_control_w	rw	REAL	Regulation setpoint [mg/m3]
1357	2	param_TRICHLO_regul_u	r	REAL	Dosing control [1/1]
1359	2	param_TRICHLO_alarm_high	rw	REAL	High alarm value [unit of measure] (1) (2)
1361	2	param_TRICHLO_alarm_low	rw	REAL	Low alarm value [unit of measure] (1) (2)
Statistics					
1201	2	cycle counter	r	DWORD	Total operating cycle number [cycle]
1203	2	operating time	r	DWORD	Total operating time [s]
1205	2	time before maintenance event	r	DWORD	Time remaining before maintenance event [s]
1207	1	reset time maintenance	W	WORD	=1 : reset the remaining time before event
Device					
2051	14	device	r	STRUCT	States and value of the device
Relays					
2010	128	trichlo	r	STRUCT	States and value of relay
6301	60	relay	r	STRUCT	States and value of relay

Outputs 4…20mA					
7801	18	iout	r	STRUCT	Output states and value 4…20 mA
Calendar					
8051	14	Calendar_T1	r	STRUCT	Calendar states and value T1
8076	14	Calendar_T2	r	STRUCT	Calendar states and value T2
8101	14	Calendar_T3	r	STRUCT	Calendar states and value T3
8126	14	Calendar_T4	r	STRUCT	Calendar states and value T4
8151	14	Calendar_T5	r	STRUCT	Calendar states and value T5
8176	14	Calendar_T6	r	STRUCT	Calendar states and value T6

(1) : It is not possible to set a high alarm lower than a Low alarm and vice versa.
(2) : To disable a low or high alarm you must send a NaN.

2) Data formatting

BOOL

"bool" uses 1 register and can have two values 0 or 1.

Example:

Register 41041 is the state of the PO1relay.
REG(41041) = 0: open relay
REG(41041) = 1: close relay

REAL

"real" uses 2 registers and allows coding of floating-point values on 32bits.

Example:

Register 41303 is the measurement value of channel E03, the unit of this value is the unit selected in the measurement menu of the device.
For a measurement value of 1.94ppm, the hexadecimal encoding is 0x3FF851EC.
REG(41303) = 0x51EC
REG(41303) = 0x3FF8

WORD

"word" uses 1 register to encode a 16bit integer or a bit field.

Example (bits):

Register 41101 contains the device status indicators.
REG(41101) = b0000000000000101

REG(41101)(bit00) = 1: the device is running
REG(41101)(bit01) = 0: the timer is not running
REG(41101)(bit02) = 1: regulation and alarms of a least one measurement channel is being started
REG(41101)(bit03) = 0: there is no active timer
REG(41101)(bit04) - (bit15) = 0: not used

DWORD

"dword" uses 2 registers and allow to code a 32-bit integer or bit field.

Example:

Register 41092 contains the local time of the device, this time corresponds to the number of seconds since January 1, 1970.
April 27, 2015 at 3h35min19sec corresponds to 1430141719 seconds since the reference date, the hexadecimal value is 0x553E3B17.
REG(41092) = 0x3B17
REG(41092) = 0x553E

ParamState

"dword" uses 2 registers and allow to code a 32-bit integer or bit field.

Bit 00 = 1 : Parameter ON (Regulation and alarms)
Bit 01 = 1 : Associated sensor(s) in start-up phase (Active delay)
Bit 02 = 1 : Parameter paused
Bit 03 = 0 : Circulation contact or active flow meter (Ex : No water circulation in the room)
Bit 04 = 1 : Associated sensor(s) requiring maintenance ('Key' logo displayed)
Bit 05 = 1 : Parameter during dosing
Bit 06 = 1 : Parameter stop dosing on alarm
Bit 07 = 1 : Parameter in pause due to a timer
Bit 08 = 1 : Associated sensor(s) out of scale or disconnected
Bit 09 = 1 : Associated sensor(s) measuring low out of scale
Bit 10 = 1 : Associated sensor(s) measuring high out of scale
Bit 11 = 1 : Associated sensor(s) unstable measurement
Bit 12 = 1 : Low alarm active parameter (alarm threshold crossed)
Bit 13 = 1 : High alarm active parameter (alarm threshold crossed)
Bit 14 = 1 : Overdose parameter (maximum dosing time exceeded)
Bit 15 = 1 : Empty amount dosing tank
Bit 16 = 1 : Dosing tank empty
Bit 17 to 31 = X : Internal operating information, 'random' values

SYCLOPE Electronique S.A.S.
Z.I. Aéropole Pyrénées
64 230 SAUVAGNON
Tel: (33) 05 59 33 70 36
Fax: (33) 05 59 33 70 37
Email: contact@syclope.fr