N.B.: *Check for updates to the manual on the website www.caleffi.com, in accordance with the firmware version installed*

www.caleffi.com

Advanced electronic mixing valve - Digital regulator

6003 series LEGIOMIX® evo

Technical documentation:

PROGRAMMING MANUAL

CONTENTS

1 Initial loading

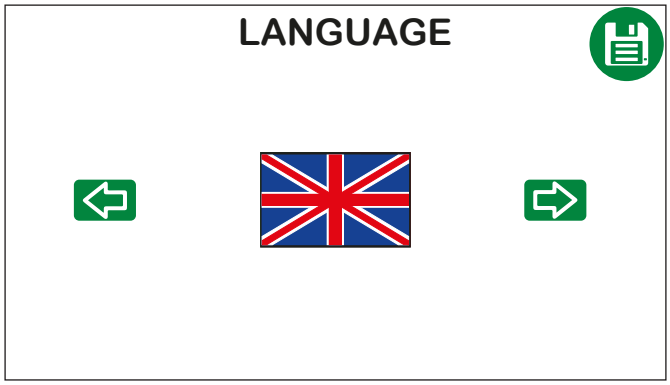
Every time the system is started, a loading page appears. At this time the system is initialising and you must wait for the procedure to finish. In versions with the Failsafe feature, actuator recharging takes place at this point. Once loading is complete, the **Home** screen appears automatically. In the case of **First start-up** or **Start-up following a power failure**, the special Wizard procedure will appear instead.

2 Wizard

2.1 First start-up

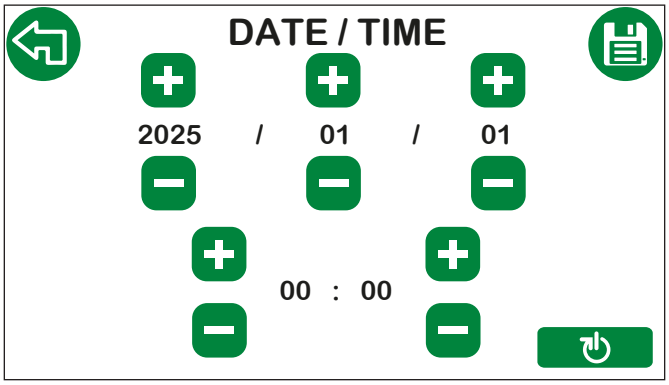
At the first start-up, information essential to basic configuration will be requested.

Language



- Set the language and save;
- Click to move to the next screen.

Date and time

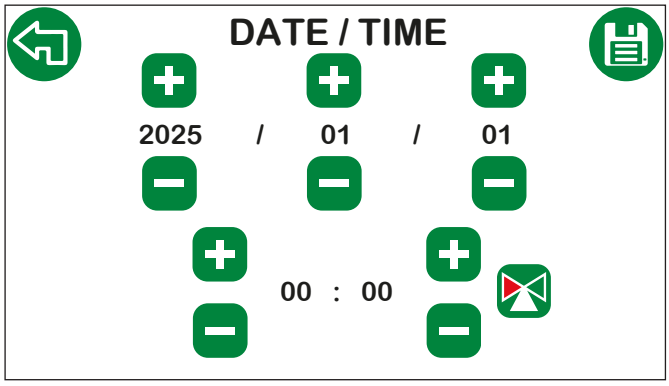


- Set the date/time and save;
- Restart the system to apply the settings.

After restarting, the **Initial loading** screen appears, followed by the **Home** screen.

2.2 Start-up following a power failure

If there is no electric supply, the regulator battery ensures the date and time are maintained for up to 15 days.
After this period, the date and time will be lost, meaning at the next power-on the following Wizard will appear so that this information can be set again. This is essential in order to re-enable the functions for which time-based scheduling is required. The settings relating to disinfection and anticlog are retained but not activated, as the regulator does not have a time reference. In this situation the regulator only has the mixing function enabled. On start-up, the following Wizard can be identified by the icon on the display.

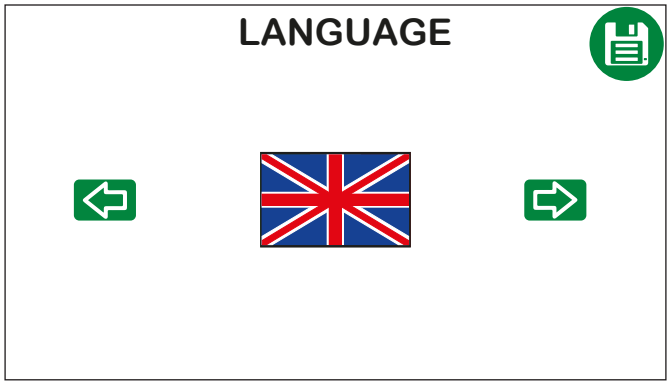


- Set the date and time and save;
- Click to return to the **Home** screen.

2.3 Replacement regulator start-up

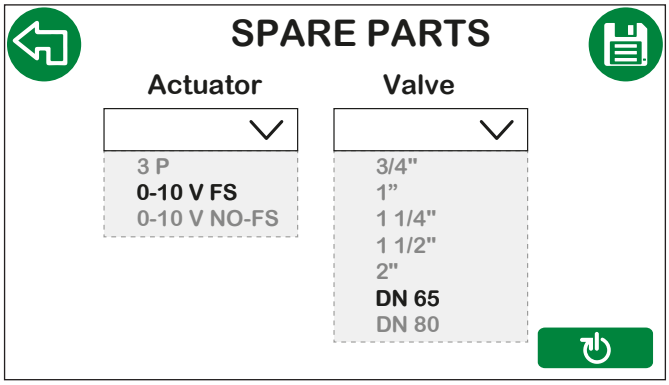
In the case of a replacement regulator, the procedure is launched, as it is required to identify the actuator used and the valve dimensions.

Language



- Set the language and save;
- Click to move to the next screen.

Valve selection

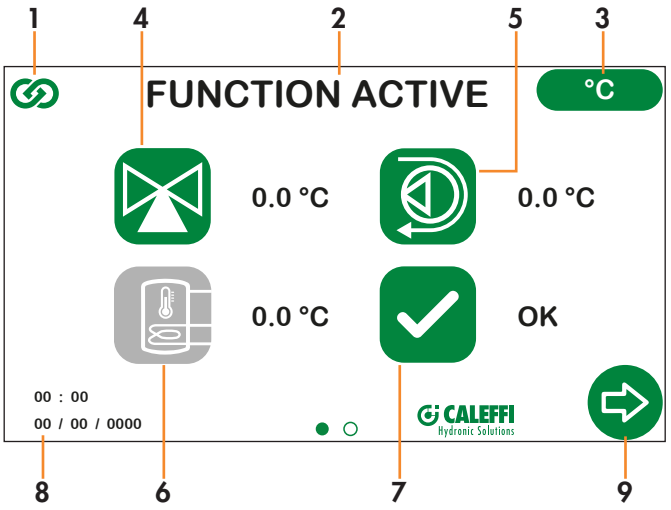


- Select the actuator and the valve size (connections) and save.

  N.B.: 3-Point actuator (3 P), versions 230 V and 24 V, 0-10 V FS actuator (Failsafe), 0-10 V NO-FS version 24 V only.
- Restart the system to apply the settings.

When this procedure is followed, the regulator is set to the selected valve and actuator, with all default parameters applied. At the end of this configuration procedure, the regulator restarts with the **First start-up** wizard.

3 Home



1. **Caleffi Cloud symbol:** this appears in colour when the device is connected to the Caleffi Cloud, and in grey when not connected;
2. **Status:** description of the function active at that moment (Mixing, Disinfection, Flushing, Anticlog, Shock, Safety valve);
3. **Unit of measurement:** touch the icon to change the unit of measurement for the temperature to degrees Centigrade (°C) or degrees Fahrenheit (°F);
4. **Temperature detected by the mixing probe:** the icon can turn the following colours:

   The mixing valve is opening the cold line to decrease the mixed temperature.

   The mixing valve is opening the hot line to increase the mixed temperature.

   The mixing valve is remaining still in its position as the temperature is stable at the setpoint value.

   The icon can be selected, and allows the mixing temperature to be set quickly. The setting procedure is described in the section **Setting the mixing temperature.**

5. **Temperature detected by the recirculation probe:** if the probe is connected and enabled, the icon will appear in green, otherwise it will be shown in grey;
6. **Temperature detected by the storage probe:** if the probe is connected and enabled, the icon will appear in green, otherwise it will be shown in grey;
7. **Alarm status:**

   No alarm.

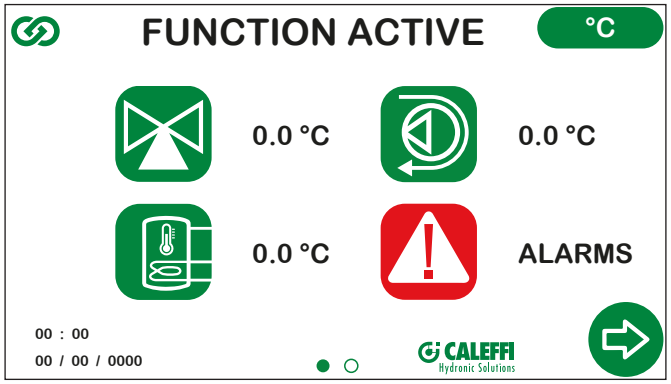
   Alarms present (in this case the icon can be selected and can be used to access the **Alarms** screen).

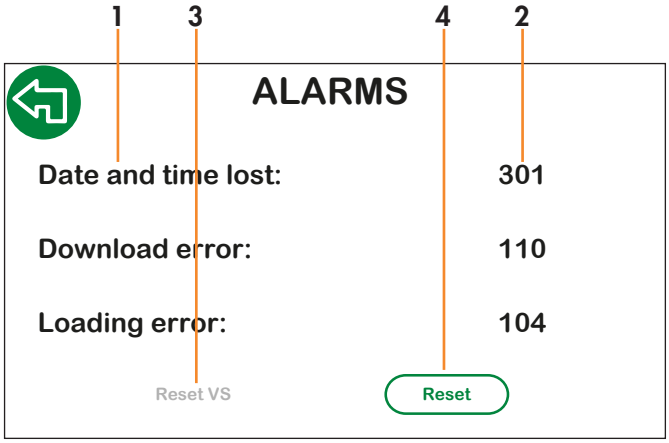
8. **Date and time:** show the date and time set on the device;
9. **Scroll arrow:** can be used to move on to the next screen (**Menu**).

N.B.: the display has an automatic shutdown function. After 15 minutes of inactivity, it shuts down automatically. A simple touch will reactivate it.

3.1 Alarms

If any alarms are present, the warning symbol will be shown. The icon can be selected and used to navigate to the **Alarms** screen.

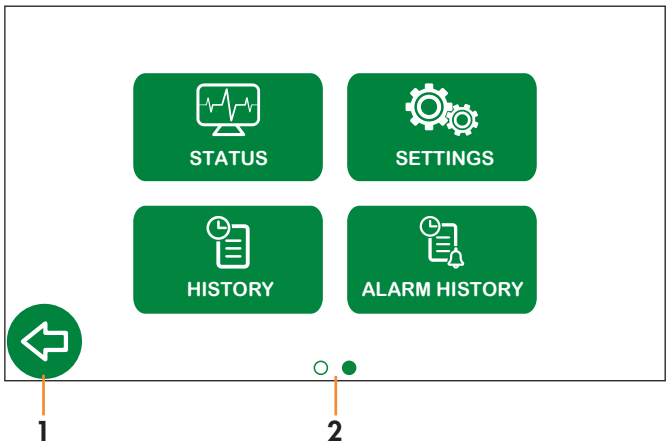


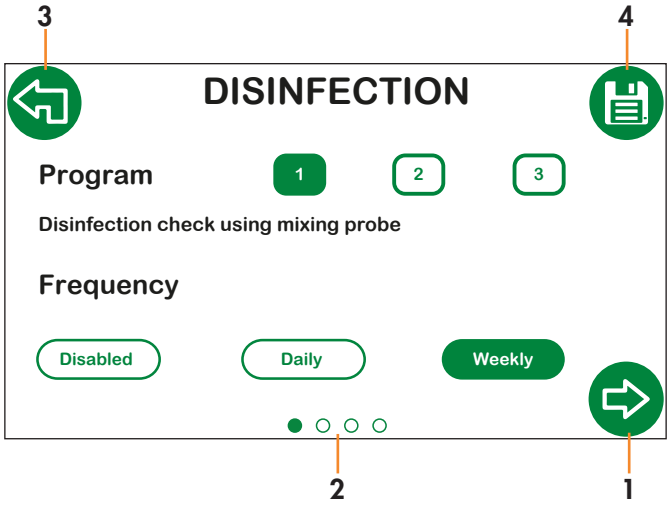


1. Description of alarms present;
2. Codes linked to the alarm (see section "**Regulator alarms**");
3. Safety valve reset:
   - no text if the safety valve function is not enabled or it has not intervened;
   - grey text if the safety valve has intervened but safe conditions for valve reset are not yet present;
   - green text if the safety valve has intervened and safe conditions for valve reset are present.
4. Reset alarms, clear alarms shown.

4 Menu

The menu can be used to access all system functions and settings.
Navigation keys function:





1. **Arrows for scrolling** between screens: used to move between screens at the same level;

2. **Position indicator:** indicates the position of the screen within the menus and submenus;

3. **"Back" arrow:** used to move up a level in the menu;

4. **Save:** used to save the changes made before proceeding to subsequent screens. The icon can assume the following statuses:

No changes made, the icon remains grey and cannot be selected;

Changes have been made; for them to be applied you **must** press the save key to validate them.

Legend:

System icons

Green: active and available for selection;

Grey: not active;

Function keys

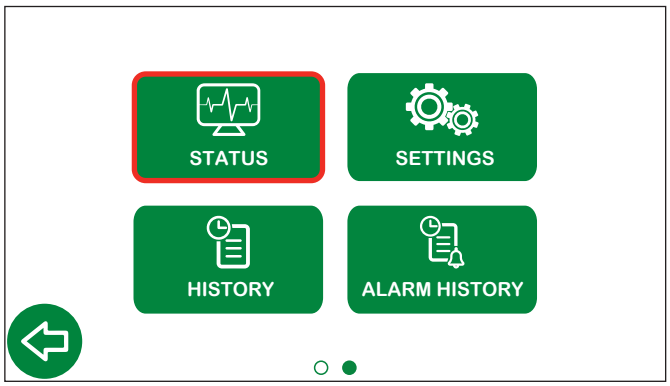
Grey: function not active;

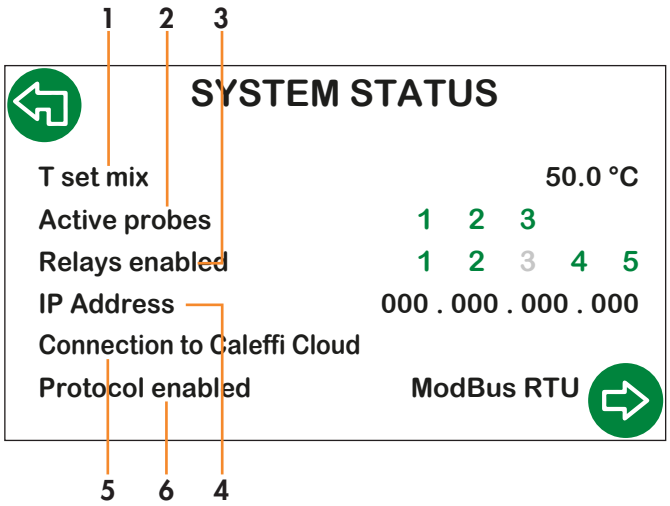
Disabled — White with green text: function active but not enabled;

Enabled — Green with white text: function active and enabled.

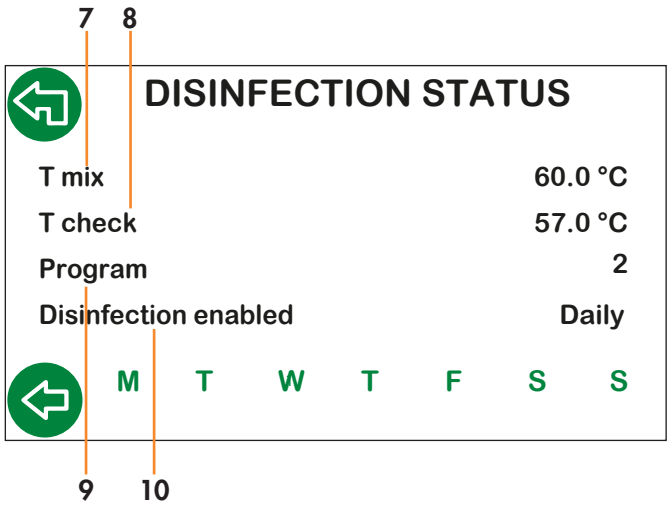
4.1 Status

You can view the system parameters and settings in the status section, but you **cannot make any changes.**





1. Temperature set during the water mixing function;
2. Probes active (see **temperature probes** section):
   - green if connected and enabled;
   - grey if inactive or disconnected.
3. Relays enabled (see **Relays** section):
   - green if active;
   - grey if deactivated.
4. IP Address;
5. Status of connection to Caleffi Cloud;
6. BACS communication protocol enabled.

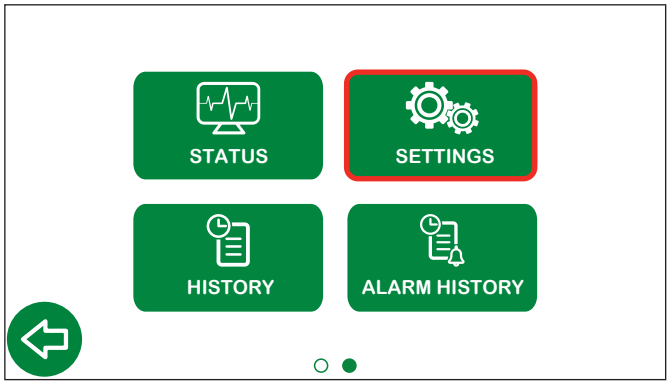


7. Temperature set for disinfection;
8. Disinfection check temperature;
9. Disinfection schedule enabled;
10. Disinfection days scheduling:
    - green for days selected;
    - grey for days not selected.

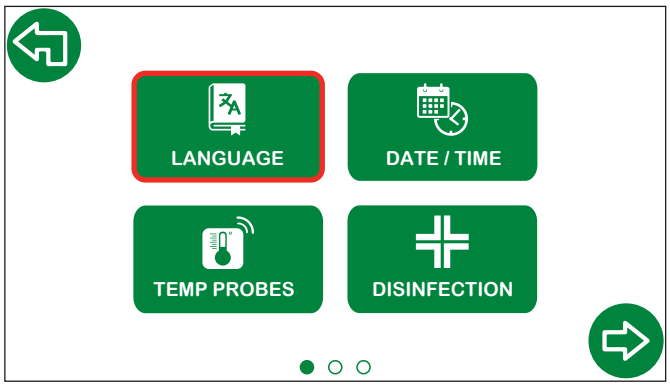
4.2 Settings

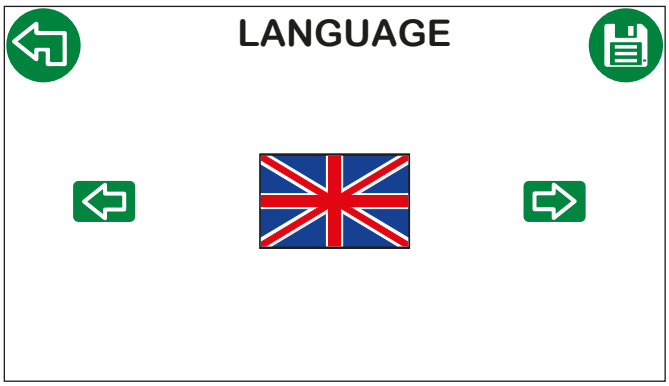
This section is used to access all system functions and settings.

N.B.: after every change, you must press the save button.
The change is validated and the button turns grey. If you do not press Save, changes will not be saved.

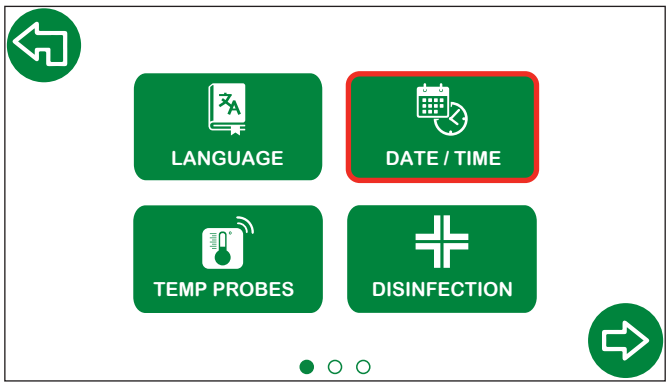


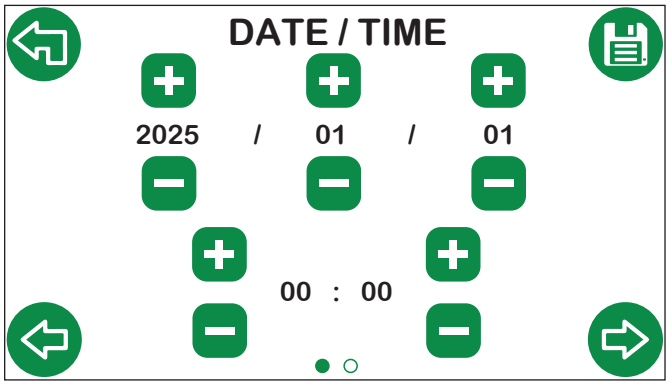
4.2.1 Language



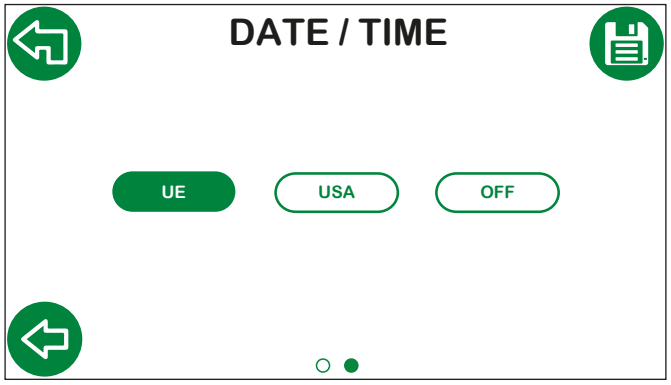


4.2.2 Date and time





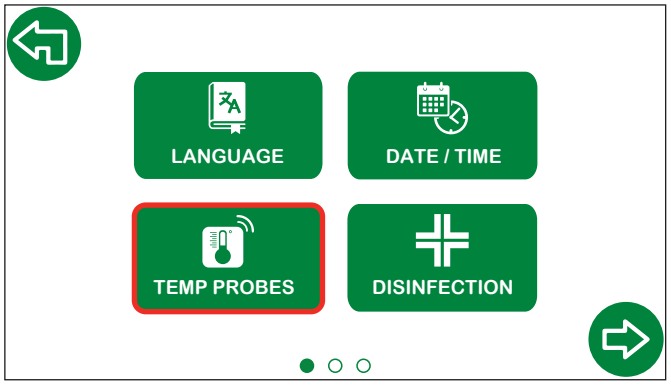
Buttons and can be used to change the date and time.

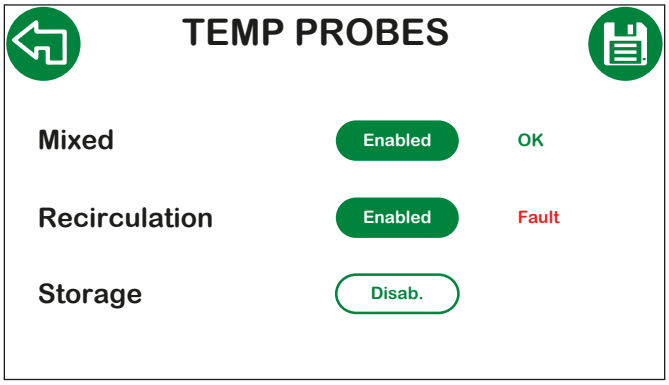


Pre-setting for daylight saving time changes
- EU daylight saving time changes made according to European regulations;
- USA daylight saving time changes made according to USA regulations;
- OFF daylight saving time changes are not applied.

For countries not in the EU or USA, select OFF and change the time manually.

4.2.3 Temperature probes

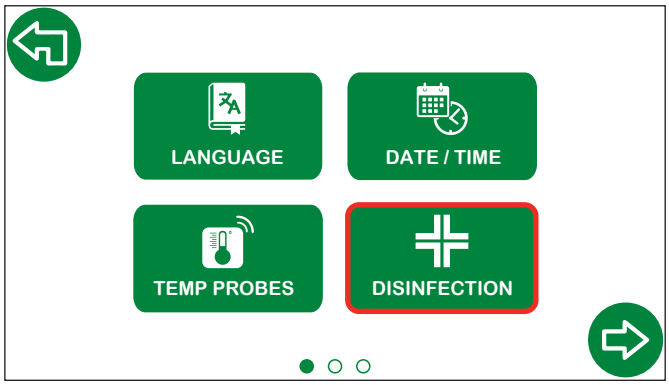


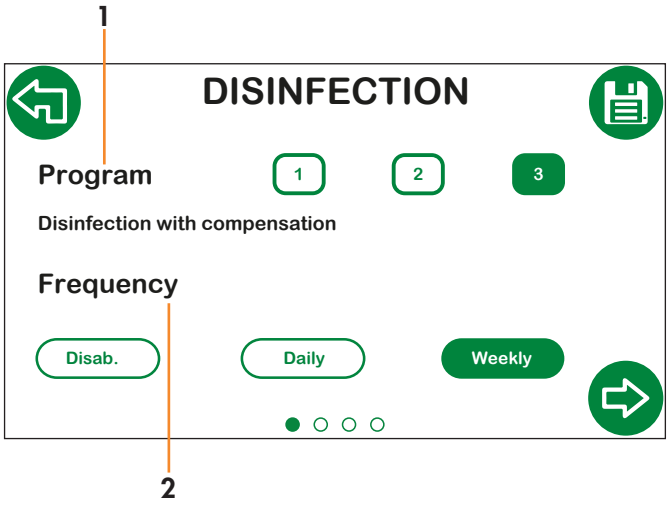


Enabled	Enable/disable probes key;
OK	probe enabled and working properly;
Fault	probe enabled but not working properly.

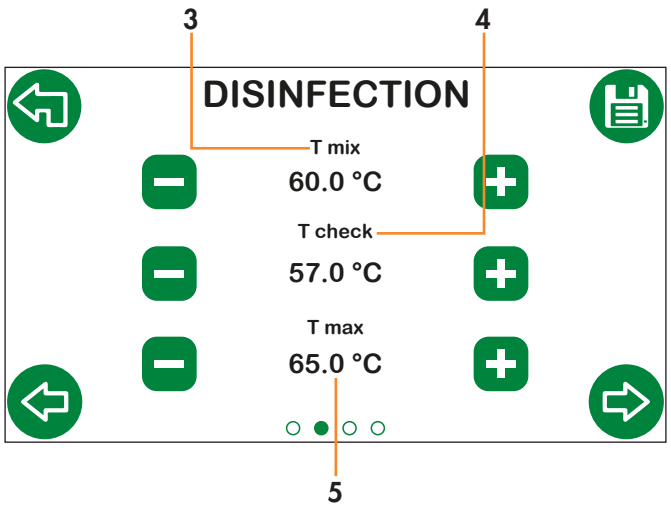
IMPORTANT: if disinfection programs 2 or 3 are selected, the recirculation probe is enabled automatically and cannot be disabled.

4.2.4 Thermal disinfection

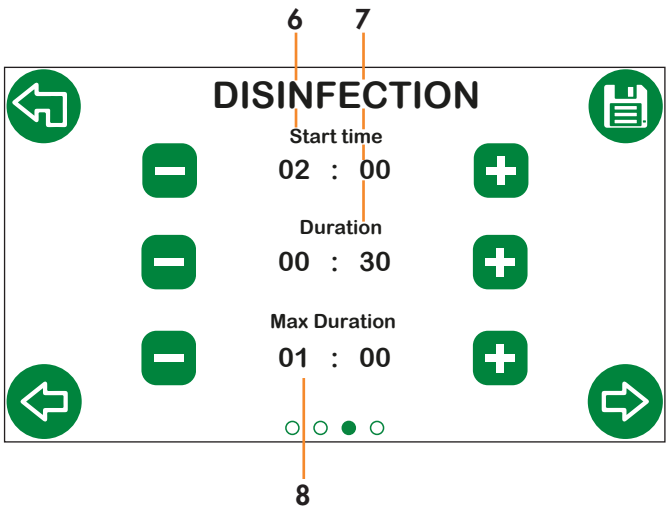




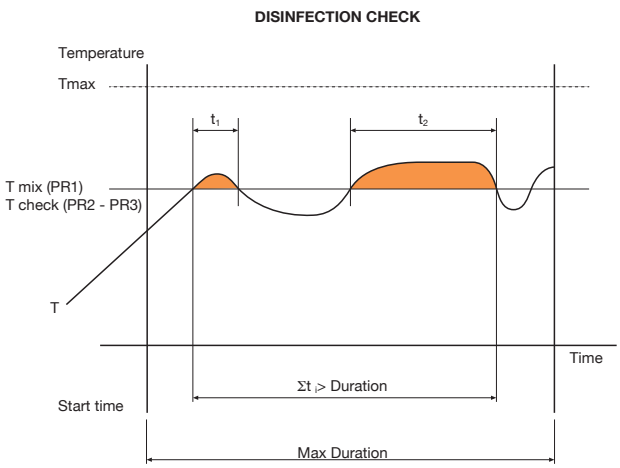
1. Select the desired programme. The icon will turn green. The disinfection temperature is checked, respectively:
   - 1 Via the mixed probe;
   - 2 Via the recirculation probe;
   - 3 Via the recirculation probe but with compensation of the mixed water temperature.
2. Select the disinfection frequency:
   - **Disabled:** disinfection can be disabled (in this case other screens will not be shown).
   - **Daily:** it is performed daily;
   - **Weekly:** it is carried out on selected days of the week;

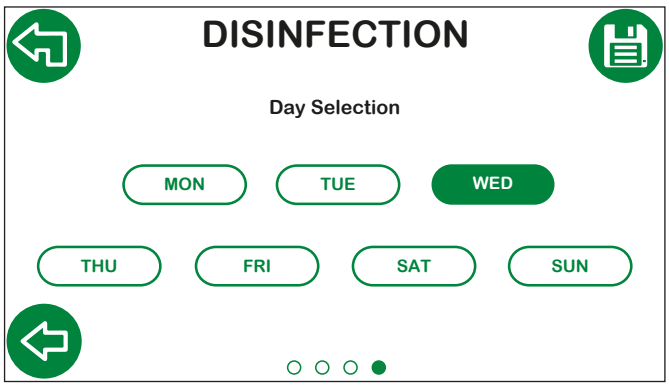


3. **T mix:** setpoint temperature set during disinfection *(if programme 1 is set, disinfection is checked on T mix)*;
4. **T check:** minimum temperature which should be maintained in order to achieve the correct disinfection level (*programs 2 and 3*);
5. **T max:** maximum temperature that can be reached during disinfection (*program 3*).



6. **Start time:** disinfection start time;
7. **Duration:** minimum duration of disinfection in order to consider it completed successfully;
8. **Max duration:** maximum duration of the disinfection function.

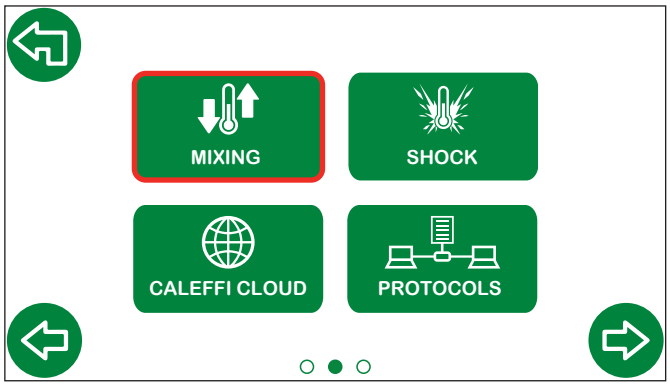


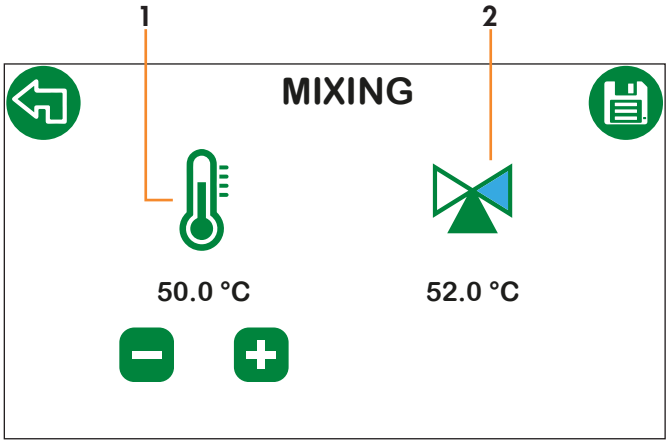


If you set **Weekly**, you can choose on which days disinfection will be enabled. Several days of the week can be selected.

4.2.5 Setting the mixing temperature

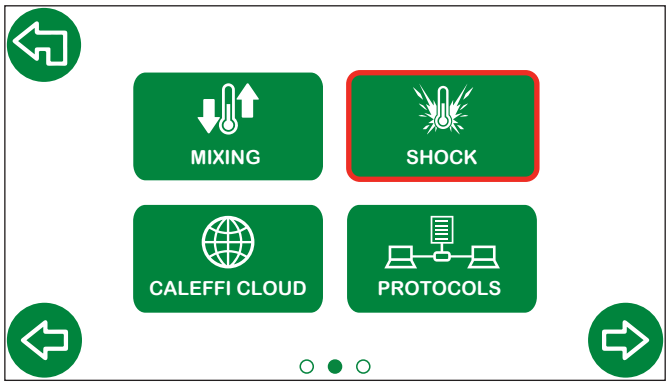
This function is accessed directly from the **Home** screen or from the **Settings menu**.

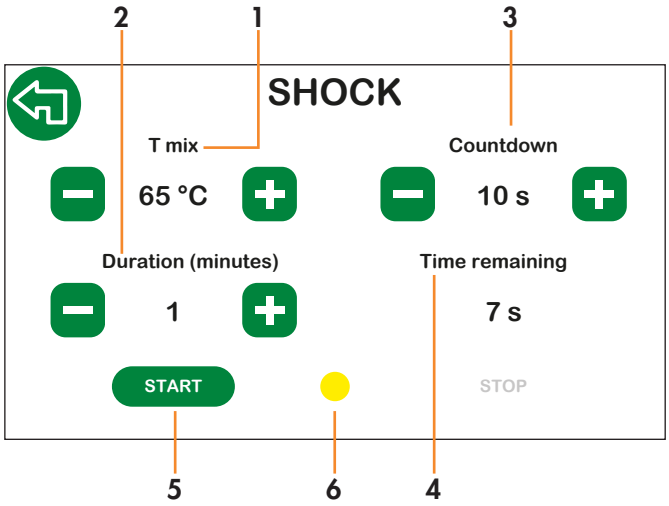




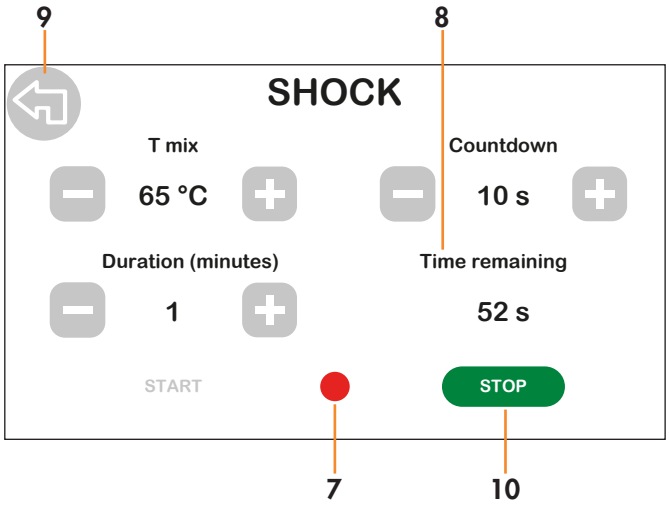
1. Mixing temperature setpoint;
2. Mixing temperature read and actuator direction indication.

4.2.6 Shock





1. Shock temperature setting;
2. Shock duration setting;
3. Countdown to shock launch;
4. Countdown time remaining;
5. Press start to launch the countdown;
6. During the Countdown the central indicator light flashes in yellow.



7. In the shock phase, the central indicator light flashes in red;
8. Once the shock phase has started, you can see the time remaining until the procedure is complete
9. The screen cannot be changed during thermal shock for safety reasons
10. The shock procedure can be stopped by pressing the stop button.

4.2.7 Network settings - Caleffi Cloud

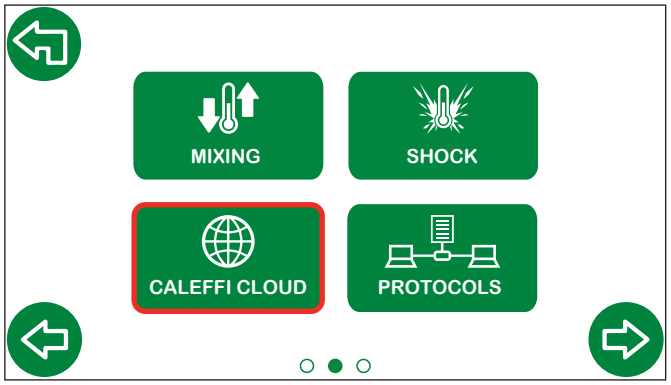
This section can be used to configure settings for connection to Caleffi Cloud. Connection allows remote control and management of the regulator operating parameters and settings.

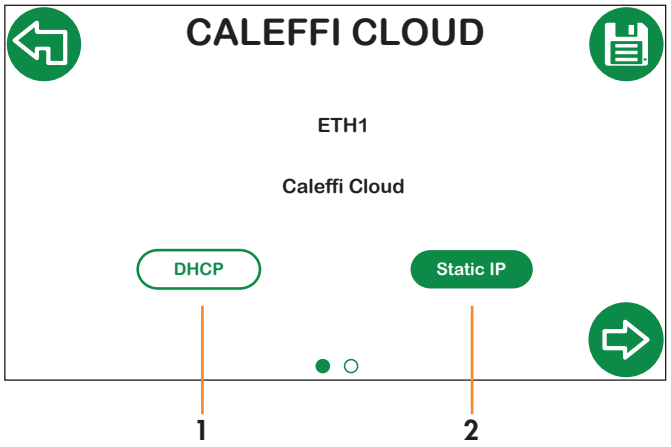
Procedures prior to regulator configuration

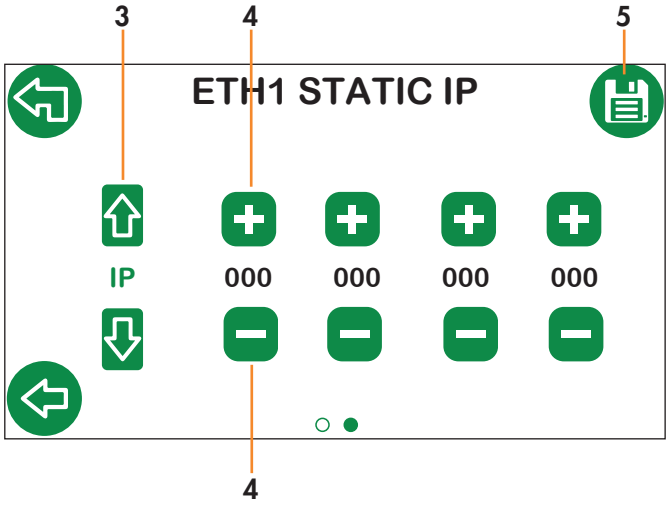
1. Make sure the wiring has been performed correctly;
2. Open ports **8883, 8443, 443, 80** on the internet network access device (e.g. router, not supplied).

Configuration on the regulator display

Select the dedicated **Caleffi Cloud** icon







Select the network IP address assignment type:

1. **DHCP:** the IP is assigned automatically by the DHCP server;
2. **Static IP:** manual IP assignment, enabling the next screen for the configuration of network parameters (IP, Gateway, Mask).

3. Select the **IP, Gateway, Mask** parameters using the vertical arrows;
4. Set the parameters using + and -;
5. Save.

Make sure that the Caleffi Cloud symbol appears in green on the Home screen (you may have to wait for a few minutes).

Caleffi Account access

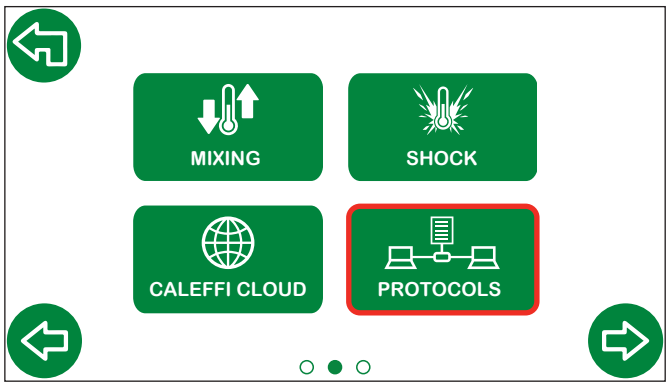
1. Download the Caleffi View App from these stores: Scarica su App Store DISPONIBILE SU Google Play
2. Follow the registration procedure. If you already have an account, log in with the credentials you usually use.
3. Follow the wizard on the app to create a building, users and branches and to add the LEGIOMIXevo(s).

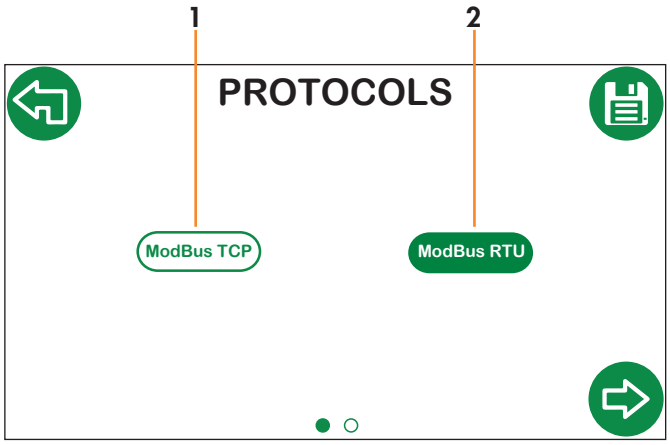
At this point you will be able to access the Caleffi View App to view the regulator operating parameters.
The same credentials can be used to access the Dashboard via the following link:
https://cloud.caleffi.com

As well as showing the operating parameters, the Dashboard can also be used to view detailed charts and tables and to manage regulator settings.

NOTE: To view the communication protocol logs and configuration parameters, scan the "Technical Documentation" QR Code at the beginning of this document.

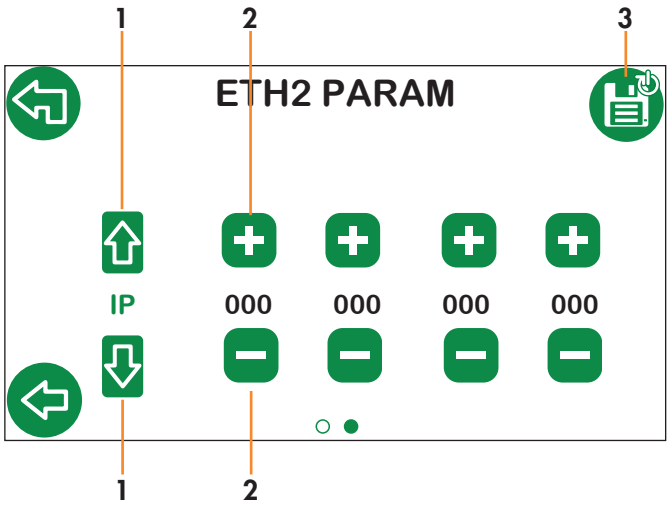
4.2.8 Communication protocols





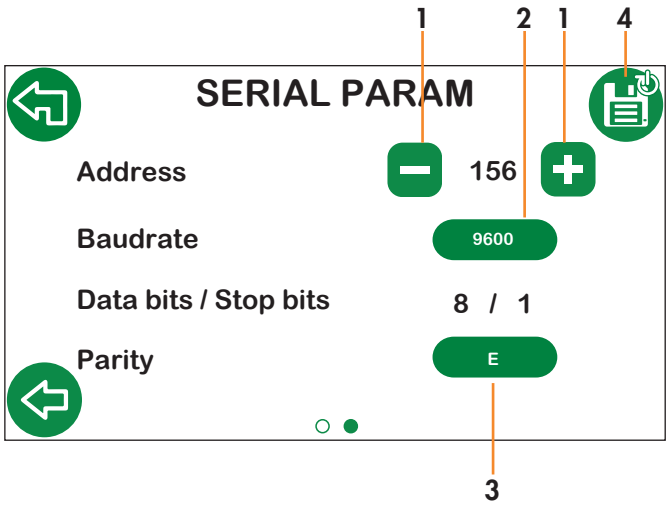
Select the desired communication protocol from:
1. ModBus TCP;
2. ModBus RTU.

1 For **ModBus TCP**, a second network parameter configuration screen is enabled (ETH2 PARAM).



1. Select the IP, Gateway, Mask parameters;
2. Set the values using + and -;
3. Save. The regulator restarts automatically in order to apply the set configurations properly.

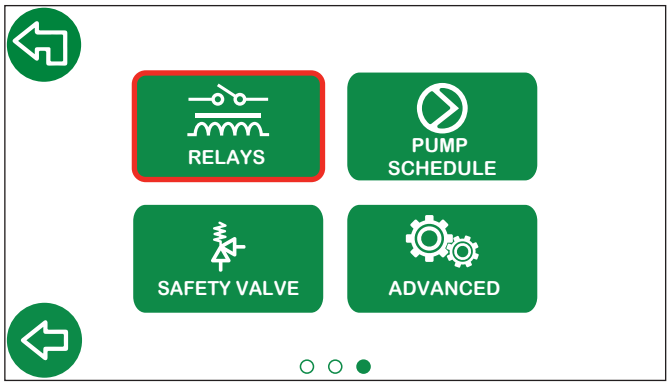
2 For **ModBus RTU**, a second serial parameter settings screen is enabled (SERIAL PARAM).

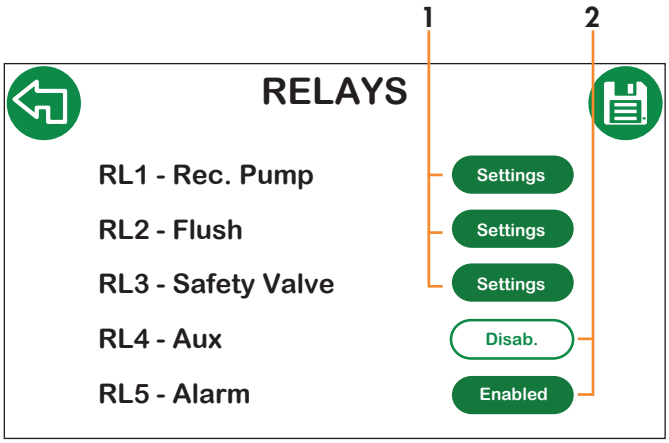


1. Set the address using + and -;
2. Select the Baudrate by choosing "**9600**" or "**19200**";
3. Select the Parity by choosing "**O**", "**E**" or "**N**";
4. Save. The regulator restarts automatically in order to apply the set configurations properly.

NOTE: o view the communication protocol logs and configuration parameters, scan the "Technical Documentation" QR Code at the beginning of this document.

4.2.9 Relays

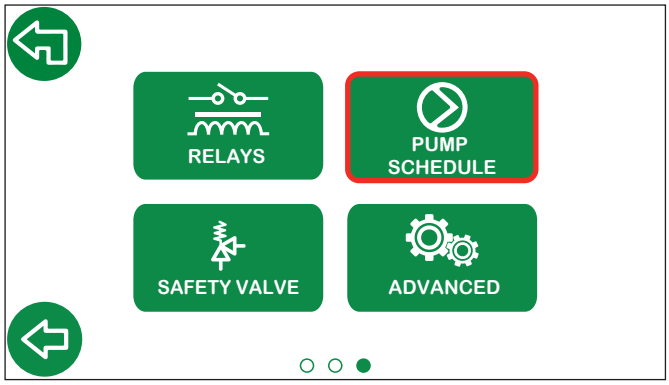


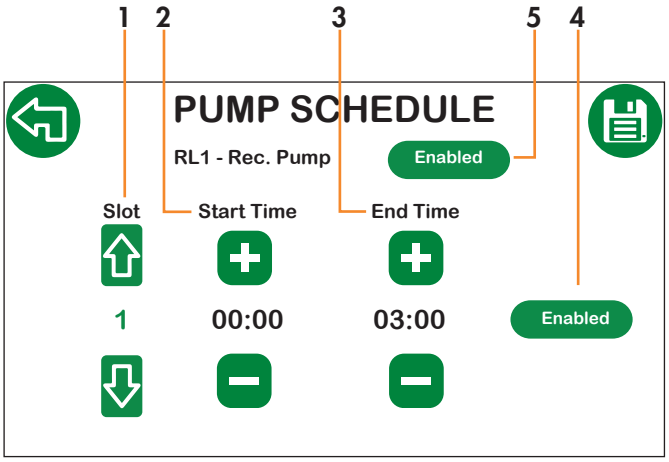


1. Redirects to the specific screen used to enable and set the individual function;
2. Enables individual relays.

4.2.10 Programming the recirculation pump schedule

This submenu is used to access recirculation pump schedule programming. Up to 3 pump activation slots can be set.

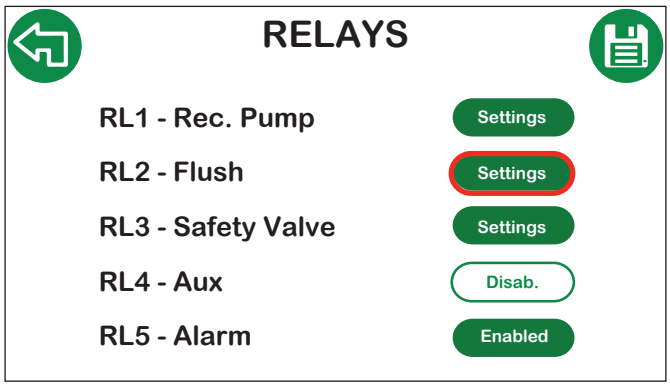


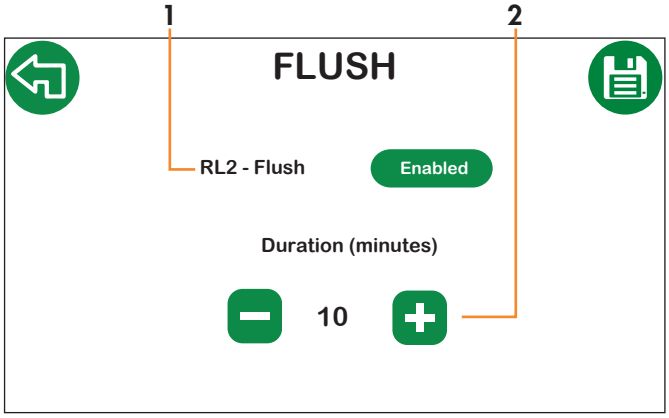


1. Active slot for editing;
2. Pump activation start time;
3. Pump activation end time;
4. Enable/Disable current slot;
5. Enable recirculation pump relay.

N.B.: for correct entry of activation time bands, you must always start from activation of the first slot. Once the first slot has been set and saved, you will be able to enable and edit the second slot. After this, you will be able to edit the third. Timings for the individual slots cannot overlap. The next slot has the end of the previous slot as its start time.

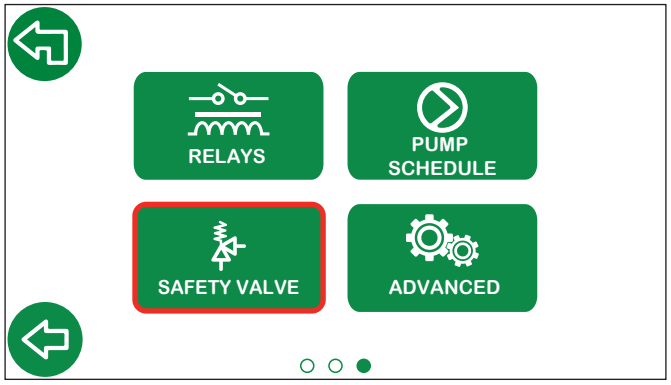
4.2.11 Flush

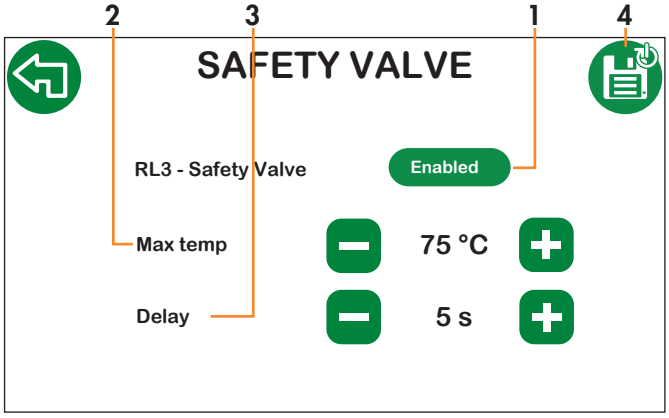




1. Enable flush relay;
2. Flush duration.

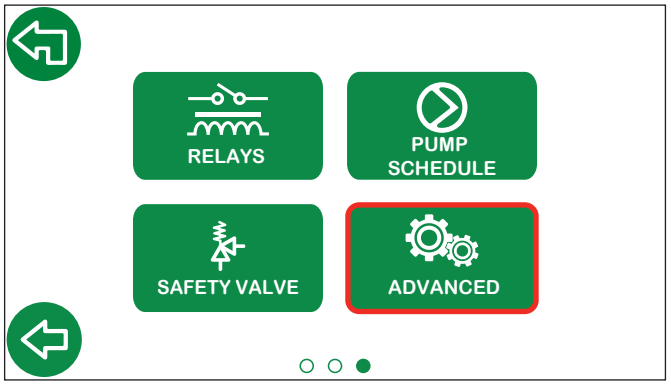
4.2.12 Safety valve settings

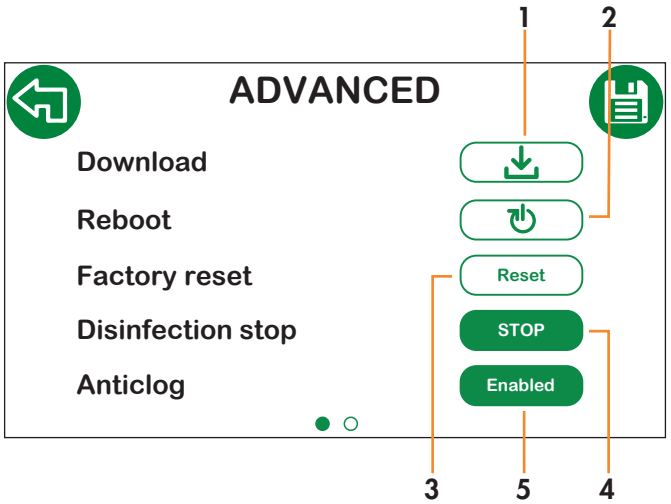


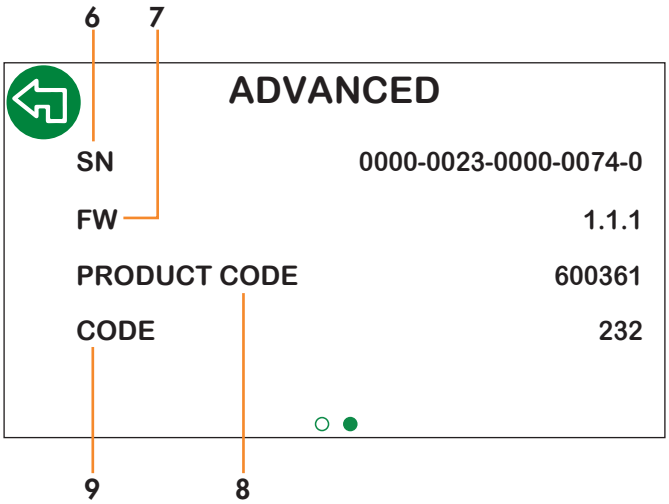


1. Enable safety valve relay;
2. Trip temperature setpoint;
3. Delay: minimum time temperature remains:
   - above Max temp for safety valve relay opening.
   - below Max temp - 5 °C for relay closure (condition required for manual reset of the safety valve);
4. Save. The regulator restarts automatically in order to apply the set configurations properly.

4.2.13 Advanced







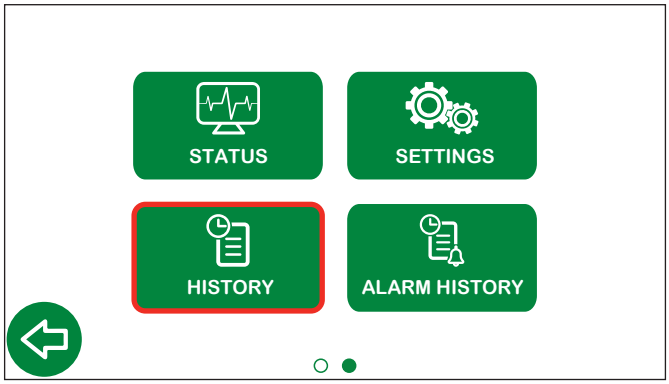
1. Data download via USB*. Carry out the following steps:
   b. Switch off the regulator and remove the cover;
   c. Insert the USB unit; (FAT 32)
   d. Re-fit the cover and switch the regulator back on;
   e. Go to **Advanced**, press Download and save in order to launch the download. Wait for the process to finish;
   f. Switch off the regulator and remove the cover;
   g. Remove the USB unit and connect it to the PC to view the *.csv* files;
   h. Re-fit the cover and switch the regulator back on.

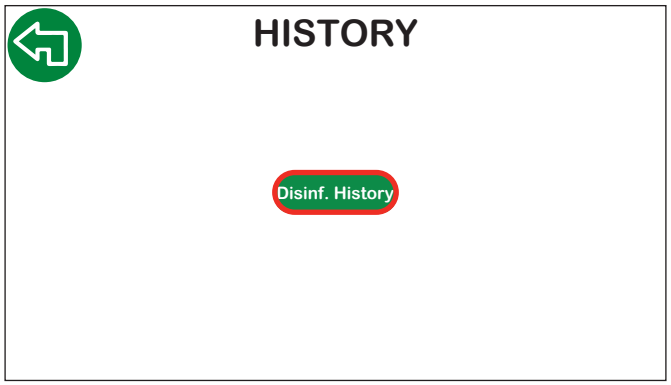
***IMPORTANT!** Under normal operating conditions, the regulator is live, meaning there is a risk of electric shock. Disconnect the electric supply before removing the regulator cover and performing procedures with the USB port. Failure to follow these instructions may result in injury of persons or damage to property and the electronics in use.

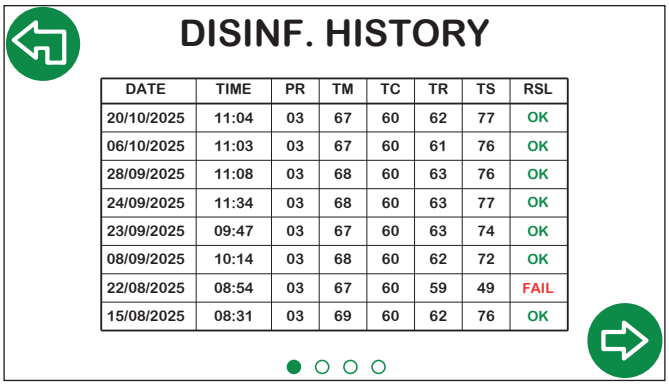
2. Restart the system (the saved settings will be retained);
3. Restore all settings to the default values (logs will be deleted). If the regulator is connected to Caleffi Cloud, the data in the cloud will be retained.
   N.B.: if necessary, download logs before restoring the factory settings.
4. Stop disinfection function while it is in progress;
5. Enable/disable Anticlog function: if enabled, this will be carried out after disinfection (if active) or in any case at 03:00.
   N.B.: disabling this function should be done with great care, because it increases the risk of the ball locking. We recommend disabling the function only when necessary.
6. Product serial number;
7. Firmware version;
8. Product code;
9. Configuration code.

4.3 Disinfection history

This section can be used to view the log of the last 32 disinfection cycles carried out.







DATE	TIME	PR	TM	TC	TR	TS	RSL
20/10/2025	11:04	03	67	60	62	77	OK
06/10/2025	11:03	03	67	60	61	76	OK
28/09/2025	11:08	03	68	60	63	76	OK
24/09/2025	11:34	03	68	60	63	77	OK
23/09/2025	09:47	03	67	60	63	74	OK
08/09/2025	10:14	03	68	60	62	72	OK
22/08/2025	08:54	03	67	60	59	49	FAIL
15/08/2025	08:31	03	69	60	62	76	OK

DATE: disinfection date

TIME: disinfection end time

PR: disinfection program

TM: mixed temperature

TC: control temperature

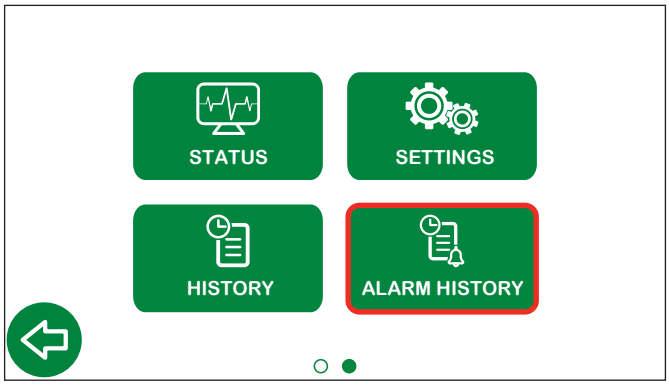
TR: return temperature

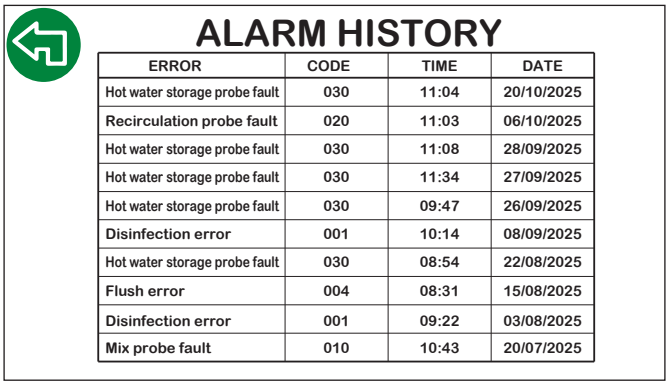
TS: hot water storage temperature

RSL: disinfection result

4.4 Alarm history

This section can be used to view the last 10 alarms that arose on the regulator.





ERROR	CODE	TIME	DATE
Hot water storage probe fault	030	11:04	20/10/2025
Recirculation probe fault	020	11:03	06/10/2025
Hot water storage probe fault	030	11:08	28/09/2025
Hot water storage probe fault	030	11:34	27/09/2025
Hot water storage probe fault	030	09:47	26/09/2025
Disinfection error	001	10:14	08/09/2025
Hot water storage probe fault	030	08:54	22/08/2025
Flush error	004	08:31	15/08/2025
Disinfection error	001	09:22	03/08/2025
Mix probe fault	010	10:43	20/07/2025

ERROR: error description;

CODE: error code;

TIME: time at which the error occurred;

DATE: date on which the error occurred.

5 Default settings

Parameters	Description	Adjustment range	Factory settings
BASIC CONFIGURATION			
Unit of measurement		°C - °F	°C
Language		IT - EN - EN(US) - FR - DE - ES - PT - BR - EN(CA) - FR(CA)	Italian
DATE / TIME			
Date			25/02/2020
Time			00:00
Date format			dd/mm/yyyy
Daylight saving	Daylight saving settings	EU-USA-OFF	EU
TEMPERATURE PROBES			
Mixed		Enabled - Disabled	Enabled
Recirculation		Enabled - Disabled	Enabled
Storage		Enabled - Disabled	Disabled
DISINFECTION			
Program	Program	1- 2- 3	3
Frequency	Frequency	Daily - Weekly - Disabled	Daily
T mix	Selected setpoint temperature value during disinfection	+40 °C - 85 °C	60 °C
T check	Minimum temperature which should be maintained in order to achieve the correct disinfection level	+40 °C - 85 °C	57 °C
T max	Maximum temperature that can be reached during disinfection	+50 °C - 90 °C	65 °C
Start time	Disinfection scheduled start time (hh:mm)	00:00-23:59	02:00
Duration	Minimum duration of disinfection in order to consider it completed successfully	0 - 180 min	30 min
Max Duration	Maximum duration of the disinfection function	0 - 360 min	60 min
MIXING			
T set mix	Set mixing temperature	+20 °C - 85 °C	50 °C
SHOCK			
T mix	Shock temperature	+50 °C - 85 °C	65 °C
Duration	Shock duration	1-4320 min (3 days as per guidelines)	5 min
Countdown	Countdown to launch	0-120 s	60 s
ETHERNET 1			
Use		Caleffi Cloud	Caleffi Cloud
IP address assignment		Static DHCP-IP	DHCP
PROTOCOLS			
Active protocol		ModBus TCP-ModBus RTU	ModBus RTU
ETHERNET 2			
IP			192.168.89.22
Gateway			192.168.89.1
Mask			255. 255. 255.0
RS 485			
Address		1-247	1
Baudrate		9600 or 19200	9600
Data bits / Stop bits			8 / 1
Parity		O or E or N	N
PUMP SCHEDULING			
Activation		Enabled - Disabled	Enabled
Slot	Slot	1 - 3	1
Start time	Start time (hh:mm)	00:00 - 23:00	00:00
End time	End time (hh:mm)	00:00 - 24:00	24:00

Parameters	Description	Adjustment range	Factory settings
RELAYS			
RL1 - Rec. Pump	Recirculation pump	Enabled - Disabled	Enabled
	Status		OPEN
RL2 - Flux	Flushing	Enabled - Disabled	Enabled
	Status		OPEN
	Duration	0 - 30 min	2 min
RL3 - Safety valve	Safety valve	Enabled - Disabled	Disabled
	Status		OPEN
RL4 - Aux	Auxiliary contact	Enabled - Disabled	Enabled
	Status		OPEN
RL5 - Alarm	Alarms	Enabled - Disabled	Enabled
	Status		CLOSED
SAFETY VALVE			
T set	Activation temperature for relay opening	+50 °C - 90 °C	75 °C
Trigger delay	Relay activation/deactivation delay	0 - 60 s	5 s
ACTUATORS			
Default positions		Cold side - hot side fully open	Cold side
ADVANCED			
Anticlog	Activation	Enabled - Disabled	Enabled
	Start time (hh:mm)	-	After disinfection / 03:00
T max system	Maximum limit temperature: system protection	Set (in all functions)	90 °C

6 Alarm encoding

6.1 Regulator alarms

Codes	Short description	Description
001	Disinfection error	General error during the disinfection procedure
004	Flushing execution error	Cannot perform the flushing function
010	Mixing probe fault	Probe not connected or not working properly
011	System protection (mixing probe)	The mixing probe is reading a value higher than the maximum temperature of the system
020	Recirculation probe fault	Probe not connected or not working properly
021	System protection (recirculation probe)	The recirculation probe is reading a value higher than the maximum temperature of the system
030	Hot water storage probe fault	Probe not connected or not working properly
031	System protection (hot water storage probe)	The hot water storage probe is reading a value higher than the maximum temperature of the system
055	Shock function launched	The shock function is in progress
066	Safety valve	The safety valve relay is active (relay open)
101	Initialising error	General error during the initialising/loading procedure
102	Operating system error	General error in running the operating system
103	Memory error	Cannot manage memory due to parameters and logged data
104	Loading error	Error while loading operating parameters
105	Reset error	Error during actuator reset (both 3-point and 0-10 V)
106	Anticlog function error	General error during the anticlog function
110	Download error	Error while downloading data
201	Disinfection fault	Disinfection launched correctly, but failed due to the temperature not being maintained for the minimum set time
204	Flush error	General error during the flushing function
205	Shock function error	General error during the shock function
301	Date and time lost	Date and time lost
401	OTA (Over The Air) fault	Error in updating firmware via OTA (Over The Air)

6.2 Actuator alarms

LED status			Meaning
R	V	Mode	
		Steady on	Start-up
		Quick simultaneous flashing	Initialising (failsafe)
		Quick red flashing	Fault
		Quick green flashing	Handling
		Slow red or green flashing	Waiting

Depends on version; not all actuators have indicator LEDs.

PACKAGING