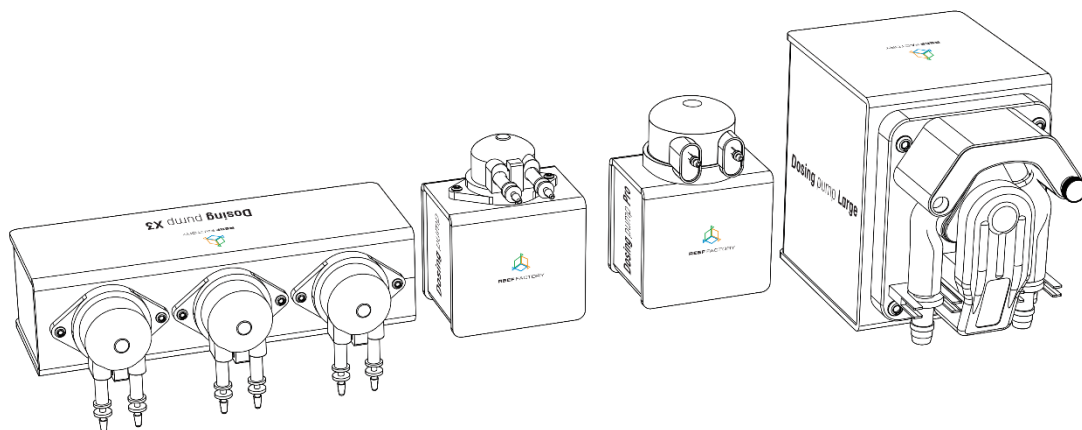**Manual**

ver. 1.0

REEF FACTORY

Dosing pump, Dosing pump Pro

Dosing pump x3, Dosing pump Large

Dear customer, **thank** you for your purchase.

ENGLISH

www.reeffactory.com

Table of contents

!   ATTENTION: The Dosing pump series of the device are not completely waterproof. Avoid submerging them in water as this may cause permanent damage to the device.

!   ATTENTION: Read the manual carefully before use. There might be slight differences between this manual and what is presented on the screen. This manual contains information about the device functions that operate with the latest firmware (0.5.5). Information about the firmware version installed on the device is always displayed in the lower right corner above the serial number. If the device version is older, please update the device firmware to get access to the latest features. Included with the device are: dedicated **power adaptor**, silicone tubing, magnet for reseting the device and quick start guide.

!   ATTENTION: Dosing pump / Dosing pump x3 / Dosing pump PRO / Dosing pump Large are similar in terms of functionality. However, they differ when it comes to accuracy of the dosing. Dosing pump and Dosing pump x3 have the accuracy of 0,1 ml, Dosing pump PRO accuracy is 0,01 ml and the Dosing pump Large is high performance pump designed for water refill purposes. The base unit for Dosing pump Large is liter.
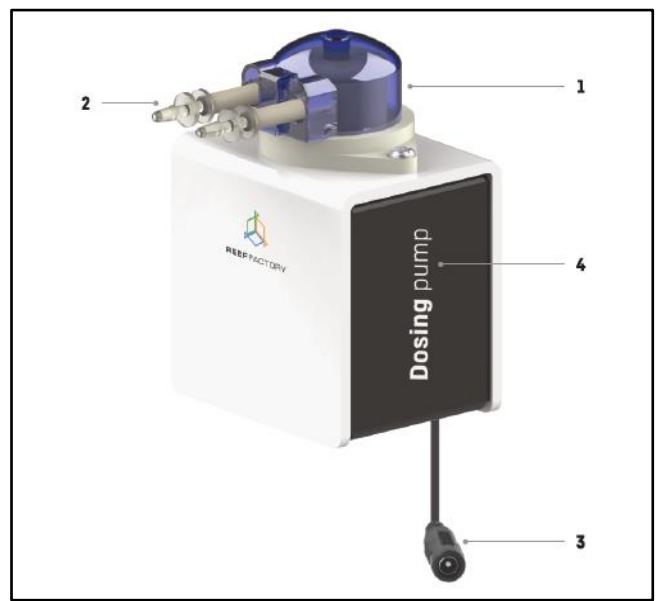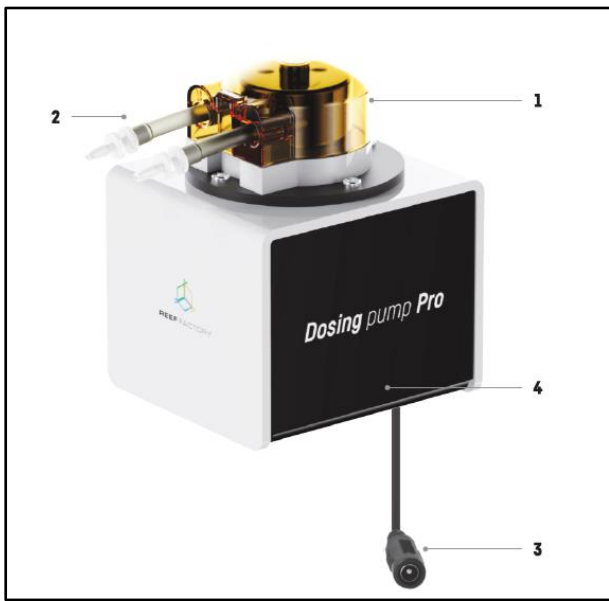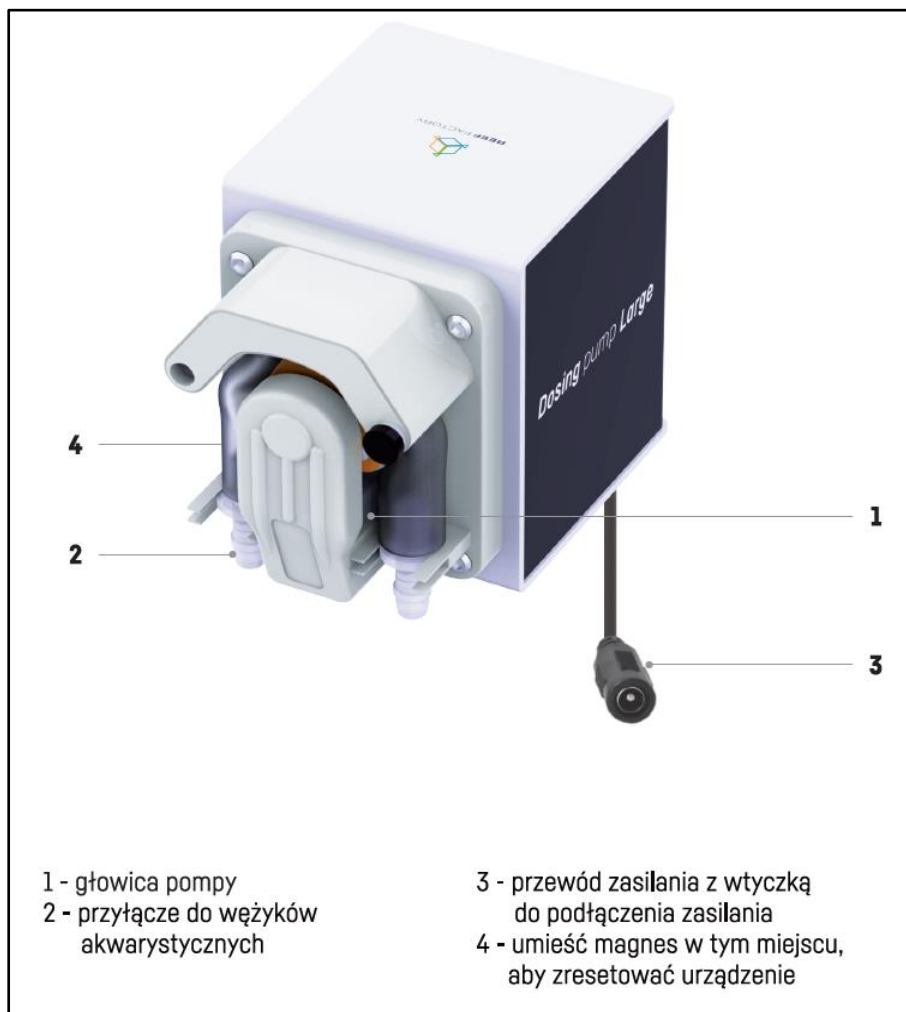
?   **support@reeffactory.com**

I.   Initial configuration

To configure the device properly, please follow the instructions below.

1. To properly install the Dosing pump / Dosing pump PRO / Dosing pump x3 / Dosing pump LARGE, familiarize yourself with the graphic below. Pay attention to the markings on each element to properly connect the device.

1 - głowica pompy
2 - przyłącze do wężyków
     akwarystycznych
3 - przewód zasilania z wtyczką
     do podłączenia zasilania
4 - umieść magnes w tym miejscu,
     aby zresetować urządzenie

2. Mount the pump head on the pump shaft, cut the silicone tubing to the desired length (remember that they shouldn't be longer than 2 meters as it may influence the dosing accuracy), remove the pump head connector covers and then connect the tubing to the pump heads. Put the other end of the tubing to the container and into the aquarium respectively.

3. After successfully connected all the tubing, place the pump in the safe and easy access spot. The pump can operate in every orientation. Connect 12V power adaptor.

> **!** ATTENTION: Check if the flow direction is correct. The liquid should be pumped from the container to the aquarium. When the pump is dosing white light indicator is on in the middle part of the housing.

4. Dosing pump Large can be equipped with tubing longer than 2 meters.

5. The device can be configured using a browser on your computer, laptop, tablet or smartphone. To do this, open the list of available Wi-Fi networks and find the network that name corresponds with serial number of the device, for example:

- for Dosing pump: **RFDPXXXXXXXXXXXX.**

- for Dosing pump Pro: **RFPPXXXXXXXXXXXX.**

- for Dosing pump x3:   **RFDXXXXXXXXXXXXX.**

- for Dosing pump Large: **RFDLXXXXXXXXXXX.**

Our device works with 2,4 GHz bandwidth. To log in use password: *reeffactory.*

6. When you are connected to the device's network open your browser and go to www.dosingpump.io. If you see the message below after you've entered the correct address in the address bar it means that you may be still connected to your home network (wired or wireless).

Ta domena służy do konfigurowania urządzenia **Smart Reef**.
Jeśli widzisz ten tekst oznacza to, że nie jesteś poprawnie zalogowany do Wi-Fi urządzenia.

Połącz się tylko z Wi-Fi urządzenia (hasło Wi-Fi to *reeffactory*) i odśwież tę stronę.

REEF FACTORY

Try to connect with the device one more and repeat the procedure

II.   Operation mode configuration

Configure the device in five simple steps.

Step one – chose language which you would like to use.

Step two – set the amount of liquid that the Dosing pump should be dose during 24h period, in how many doses and the start time of the dosing. The pump will automatically calculate the amount of liquid per dose and the start time of each single dose.

For the Dosing pump x3 you can configure all 3 dosing pumps at once.

Device setup

Dose configuration

Pump A liquid amount:	ml ⬍	ml
Pump B liquid amount:	ml ⬍	ml
Pump C liquid amount:	ml ⬍	ml
Number of doses:	1 ⬍	
Offset between pumps:	⬍	minutes
Start time:	0:00	

Days: ☑ Mon ☑ Tue ☑ Wed ☑ Thu
☑ Fri ☑ Sat ☑ Sun

BACK   STEP 2/5   NEXT

For the dosing pump x3 it is required for safety reasons, to set the delay between each head dosing cycle. It has to be set to prevent the dosing liquids from mixing. The pumps cannot be operating at this same time.

Step three - connect the device with you home Wi-Fi network. If the network is protected from unauthorized access please type in the password.
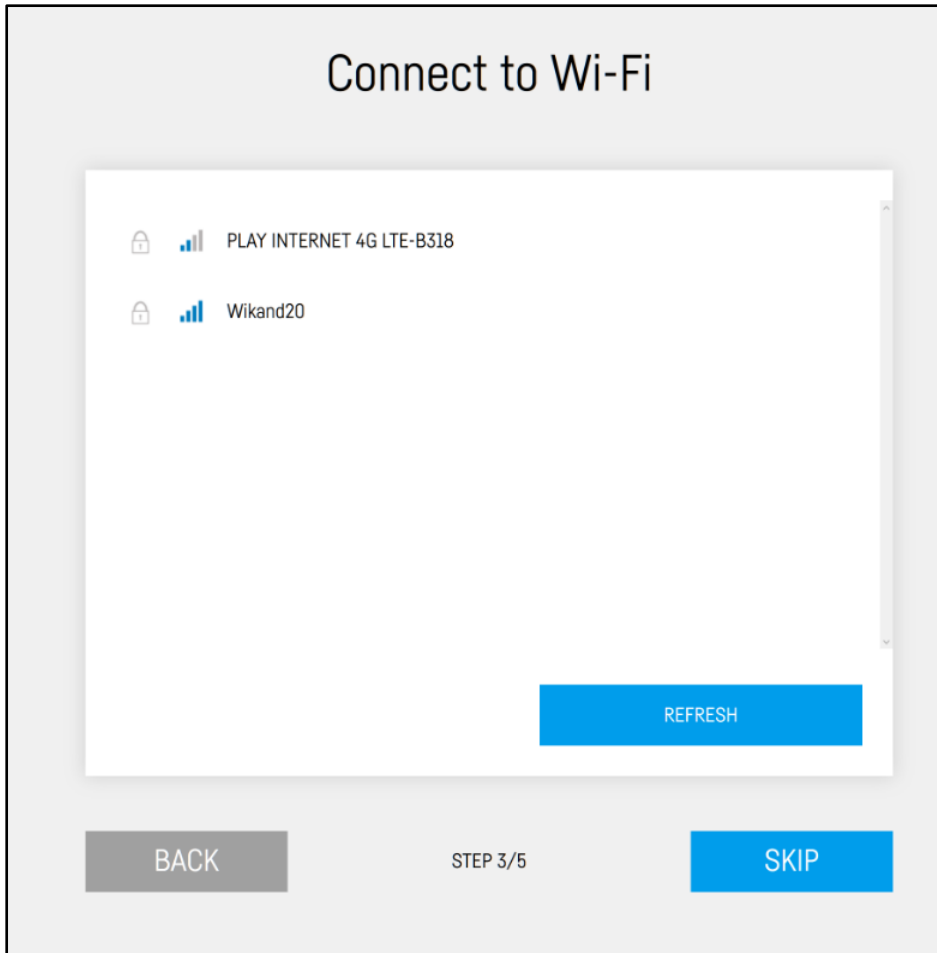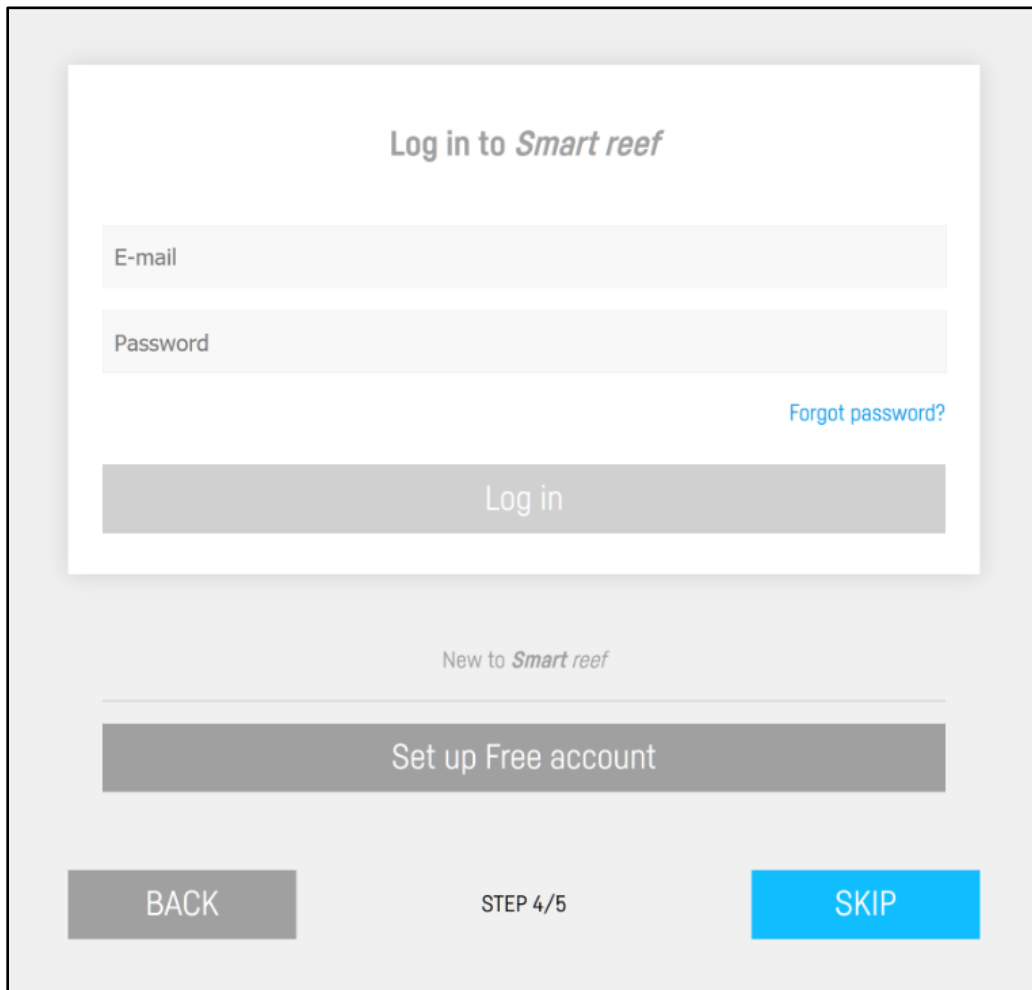

If the device won't connect with your home wireless network please repeat the connection process. The success of the connection depends on the routing device type and the producer. The signal strength should be as strong as possible. Remember, that the device which Dosing pump connects has to have access to the Internet to connect with the Smart reef system.

When the Dosing pump connects properly to the Wi-Fi network you should see IP address that has been assigned to your device. It means that the connection was successful.
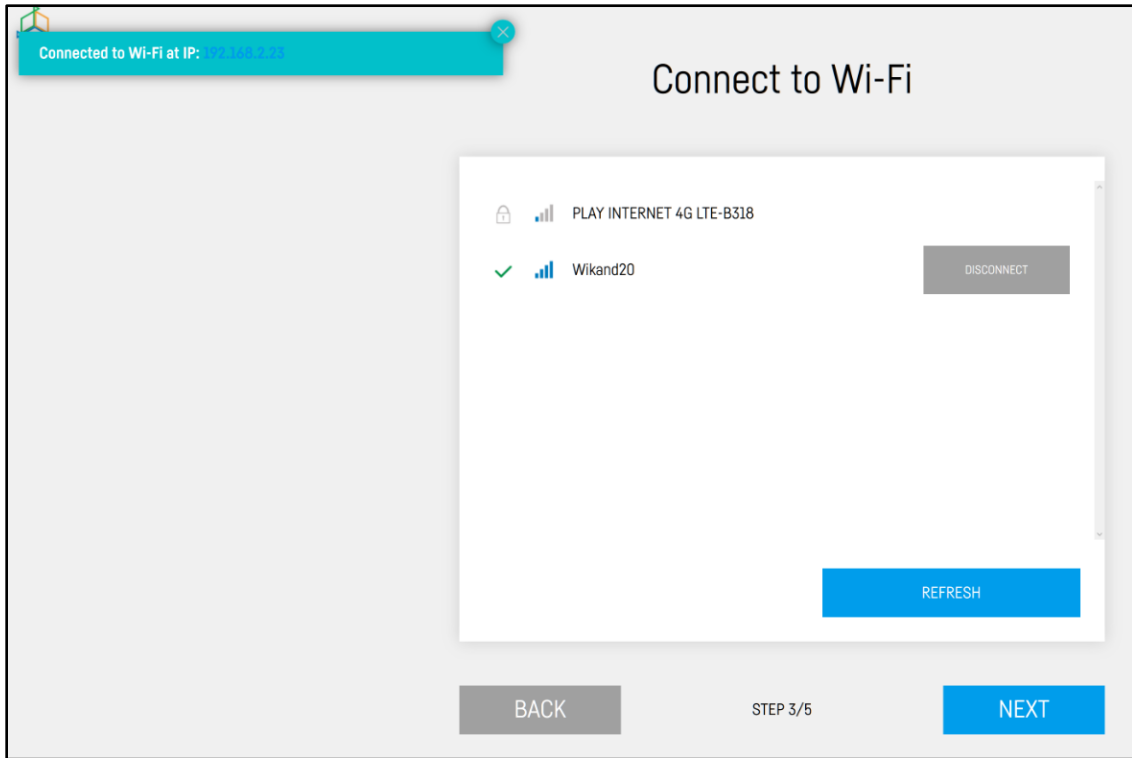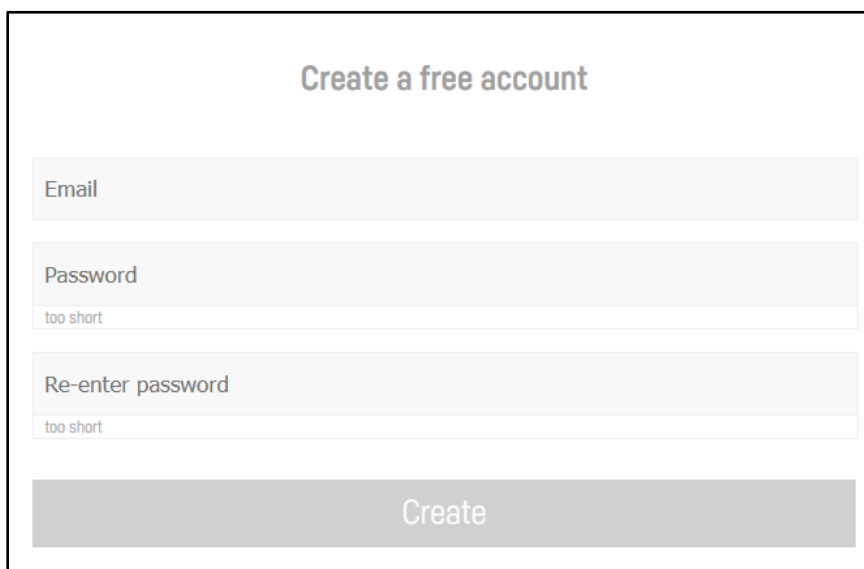
Step four – register free **Smart reef** account by pressing the "Create free account" button.

If you already have **Smart reef** account please provide the device with you login credentials to add it to you **Smart reef** system.

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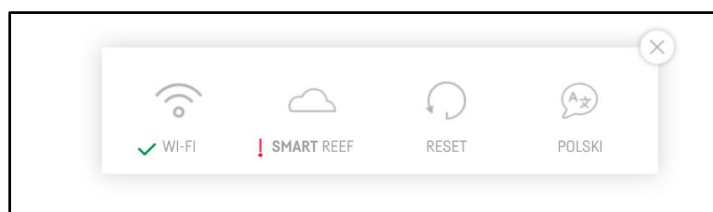> **!** **The password should be sufficiently complicated and hard to crack.**

Logging in the Smart reef system will allow you to remotely control the device and allow you to access additional functionality. You can skip this step if you don't want to control your device remotely, you will however loose many features and ability to update the device.

Step five – congratulation, the configuration process of the Dosing pump / Dosing pump PRO / Dosing pump X3 / Dosing pump Large has been finished. After the process is finished please press the "FINISH" button.
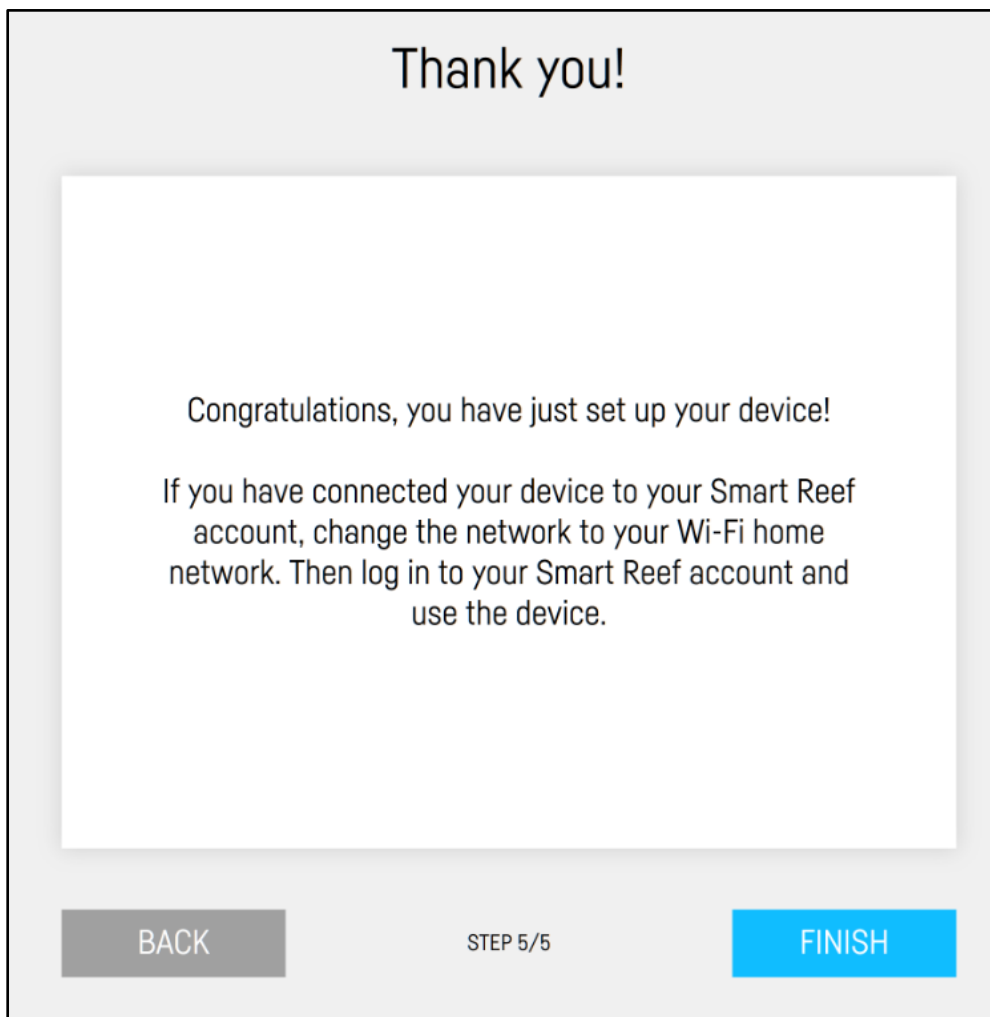
In the upper right corner you will find icons. They allow for language change, resetting the device to factory settings, logging in the Smart reef login credentials, changing the Wi-Fi network or changing the password to the device's Wi-Fi network.

✓ symbol means that the device is connected while ❗ means there is no connection.

TODAY
0.00 ml/_{1.00 ml}

DOSING

Time left:
100% 100 days
100.00 ml

100.00 ml

EDIT

MANUAL REFILL

Next calibration
31-Jan-20

CALIBRATE
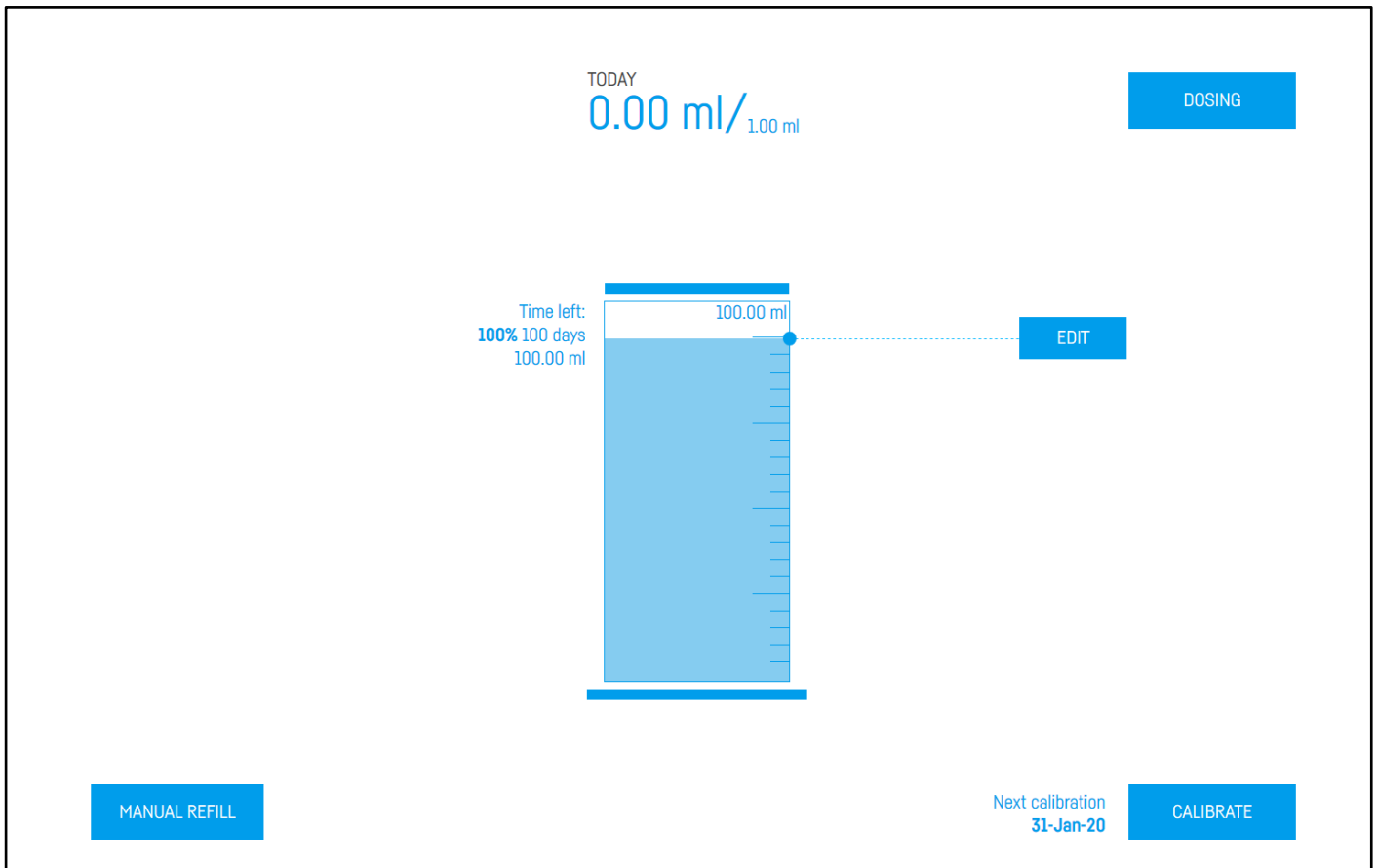
The status screen differs for the Dosing pump X3, that is why we are presenting it separately below. Functionality is this same to the other Dosing pumps. Selecting one of the pumps (A, B, C) will present detailed information about the pump.
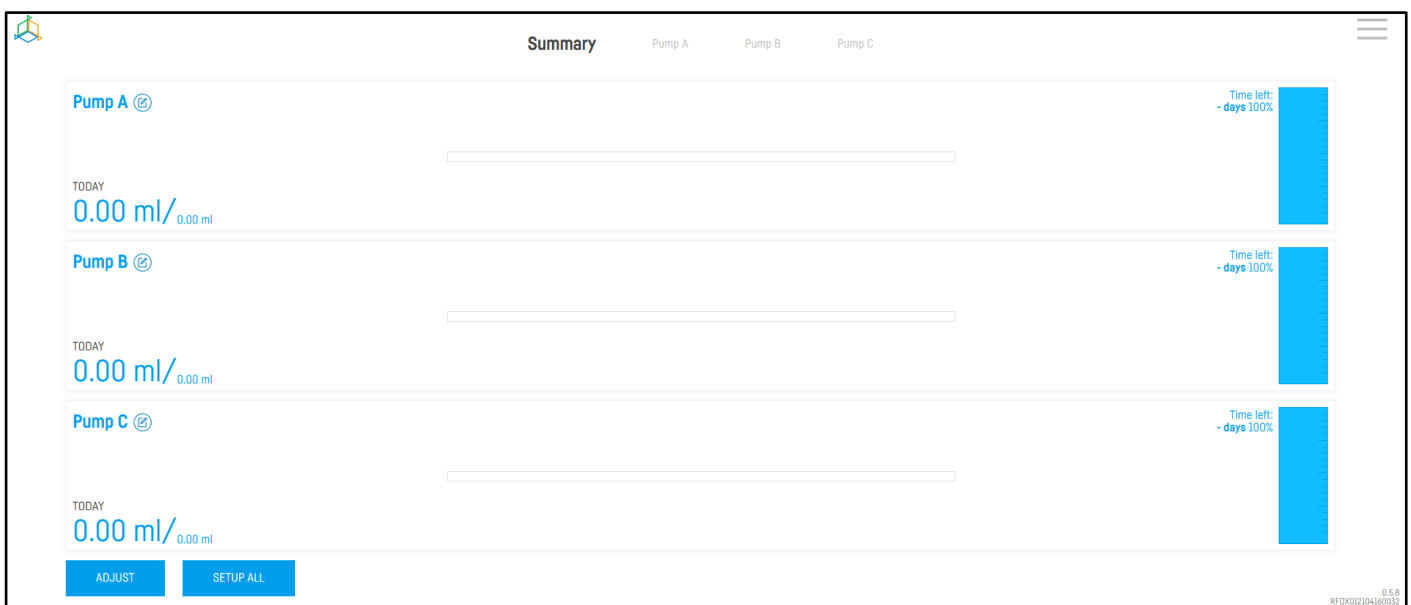
III.   Pump calibration

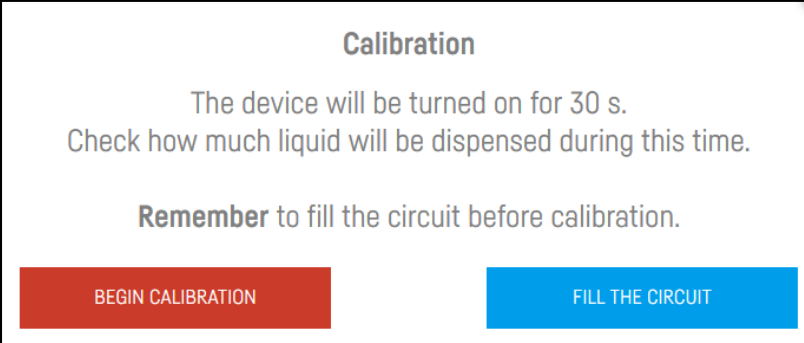1. In the lower right corner you can find the calibration function button. Performing the calibration of your new pump is very important step as it has direct impact on the pump accuracy. The device has to be calibrated according to the instructions displayed on the screen. The calibration screen allows for filling the pump's circuit. (FILL THE CIRCUIT button). When the circuit is filled with liquid you can start the calibration procedure.
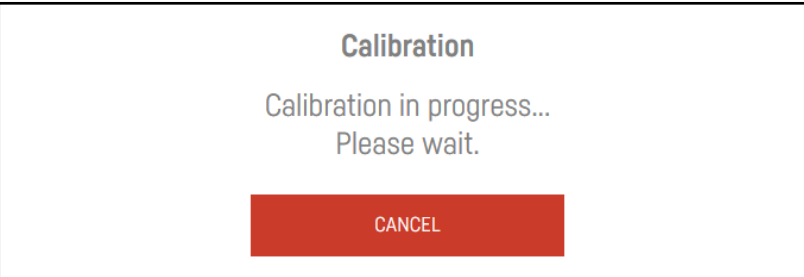
2. The calibration has to be performed right after the initial configuration of the device. Prepare the container that will allow you to measure the amount of liquid (you can use scale, but you might need to know the density of the liquid to calculate the volume). When you have exit of the pump inside the container you can start the calibration procedure. The pump will start operating for 60 seconds.
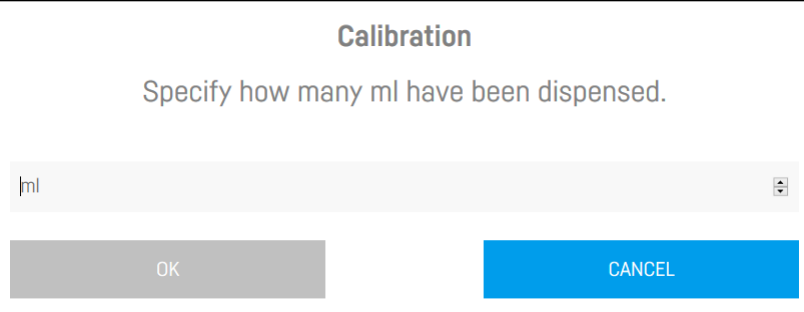
3. When it stops you will have to put the volume of the liquid in millilitres into the box on the screen.

4. In the next step you will be choosing the time period after which you would like to be reminded to calibrated the pump again. You will receive notification when there is time to calibrate your pump again.

5. The amount of liquid that has been added during the day is displayed on the top of the screen.
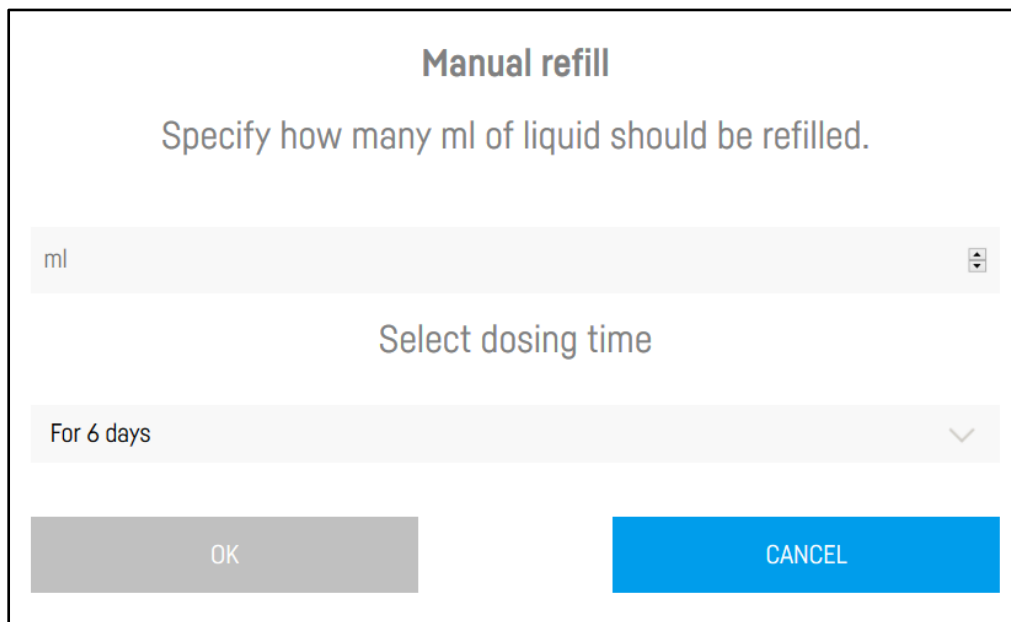
IV. Manual dosing

In the lower left corner you can find manual dosing function. This function allows the user to manually order the Dosing pump to dose certain amount of liquid. It can be either one time dose or it can be performed automatically for the selected period of time. Negative number reduces the amount of liquid that will be dosed during the day/days and the positive number will increase the dosage for that time.

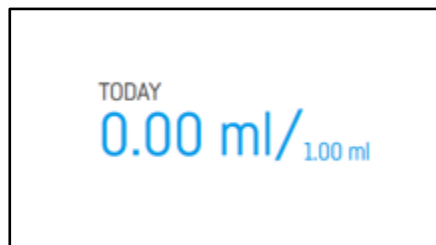EXAMPLE: You are dosing 6 ml of liquid every day with 6 doses 1 ml each and planning to increase/decrease the dosage by 3 ml:

- increasing the daily dosage by 3 ml will change the daily amount to 9 ml in 6 doses. This gives you 1,5 ml per single dose each day the manual dosing is active;

- decreasing the daily dosage by 3 ml will change the daily amount to 3 ml in 6 doses. This gives you 0,5 ml per single dose each day the manual dosing is active.

For the Dosing pump Large the amount of dosed liquid are respectively higher.

Select option "NOW" to execute the manual dosing right after you accept the settings.

Manual refill

1.67/5.00 ml of liquid added.

CANCEL

Manual refill

Manual refill completed.

OK
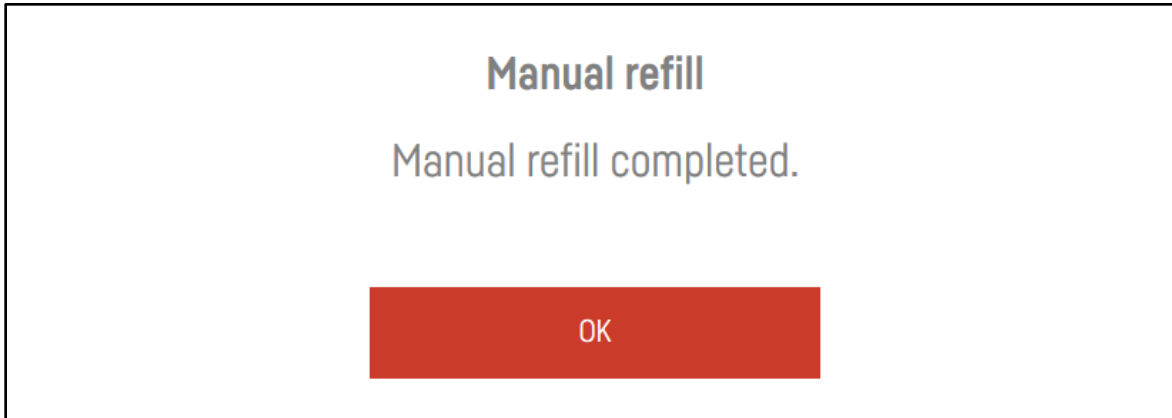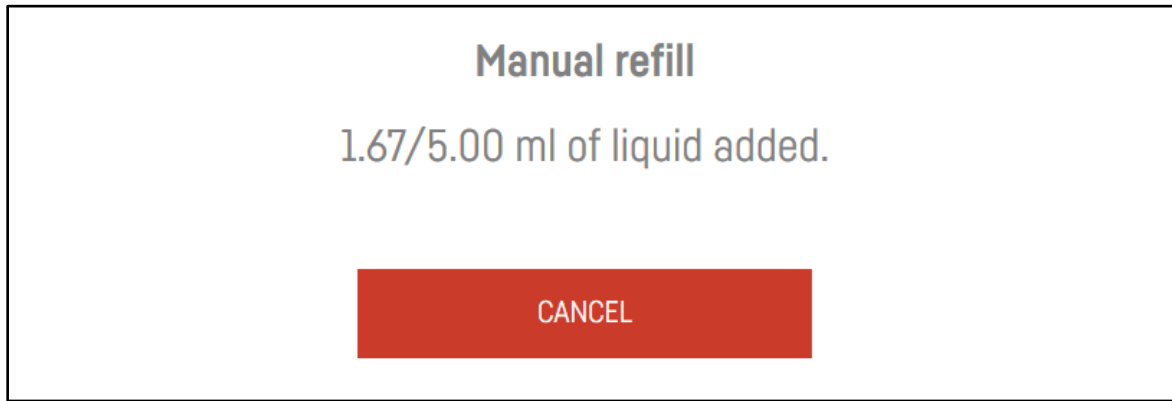
After the manual dosing period has ended, the pump will return to the unmodified schedule that was set before.

V. Additional functions

In the middle part of the screen you will find the information about the amount of liquid left in the container that pump is using. The user can monitor this value and refill the container if needed. The edit options allows for setting the container volume and the current liquid volume.
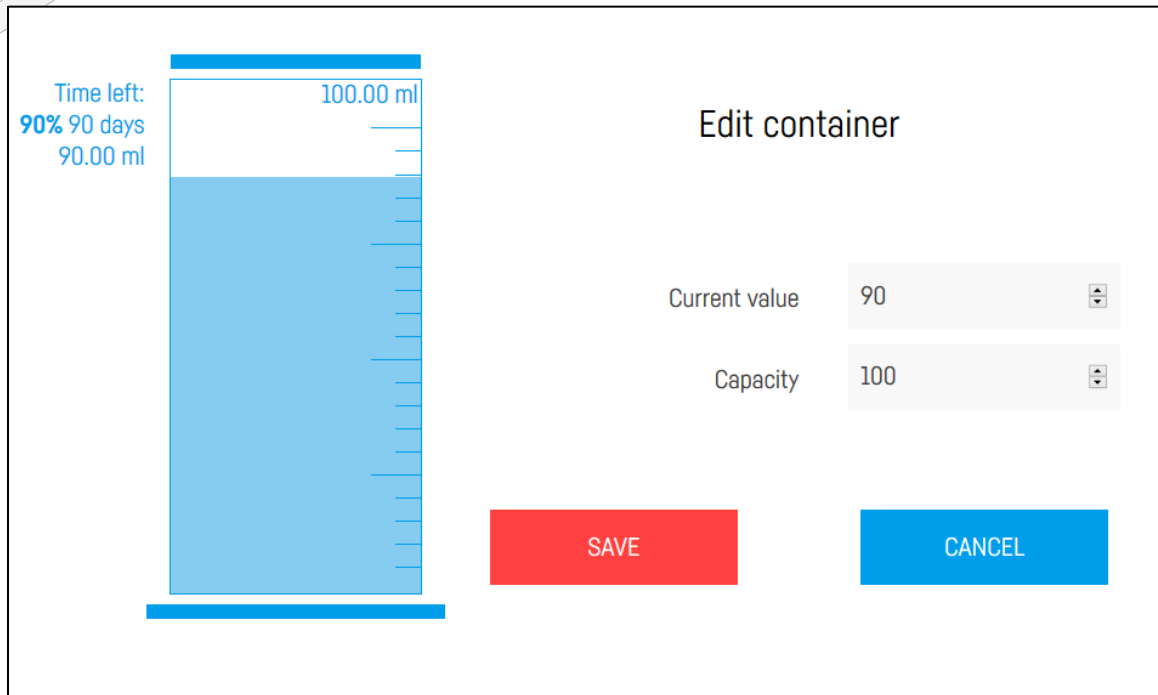
When the amount of liquid inside the container is lower than 10% the device will notify you about this. The notification will be send trough the Smart reef. You can then refill the container with fresh batch of liquid. The "Show more..." button allows for checking the detailed history of the dosing.
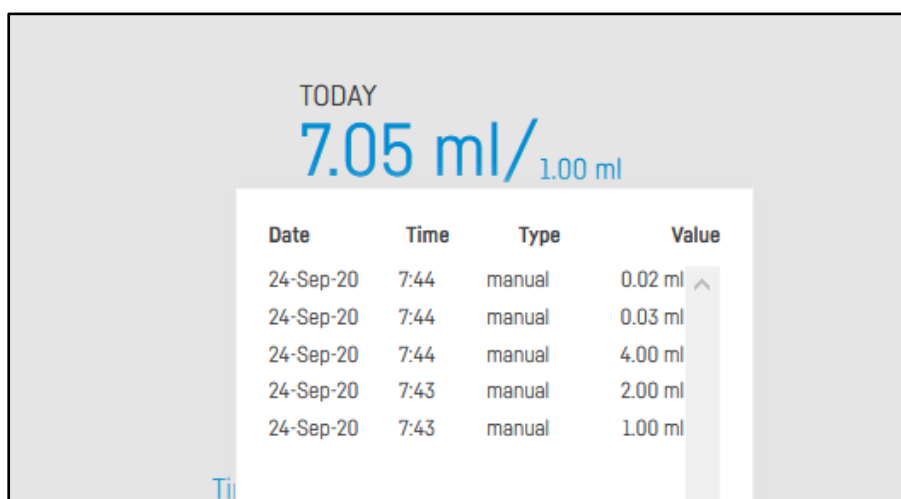
In the upper right corner of the screen you can find additional advanced dosing functions ("DOSING" button), that allows you to select the amount of doses or the amount of liquid dosed each day. The pump will automatically calculate and set the time of each dose. You will also see the percent value of the dose in reference to the daily amount. When you press the button you will see:

- **edit** – allows for changing (adding, removing, increasing or decreasing) scheduled dosing.

- **skip the next dose** – this function allows for skipping or decreasing the next scheduled dose. Put the percent value in the range from 1% to 100% to decrease the dose. 100% means that the next dose will be skipped completely. If you change your mind and don't want to skip the dose, select "DOSING" and in the menu select "delete skip next dose".

- **export** – exporting lets you save the dosing schedule to the file. You can keep this file in case of a need to reset the pump to factory settings or send it to other Dosing pump user.

- **import** – this allows you to upload previously saved schedule or schedule received from a different user to your Dosing pump without the need to configurating it manually.

The maximum daily amount of dosing cycles is 24 (for big aquarium system where there is a need for dosing large amounts of liquid). For standard tanks (up to 300l) we recommend the maximum of 10 dosing cycles per day. Adjust function allows you to increase the amount of liquid dosed during the day.

VI.   Resetting the device

If your device is not operating properly, you would like to do clean configuration or you can't connect with your device after many attempts you can bring it back to the factory settings put the magnet (included in the box) against the designated spot on the device housing.
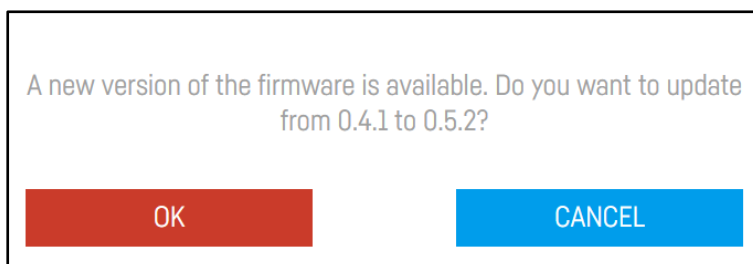
> ?   Put the magnet against the RESET sticker.
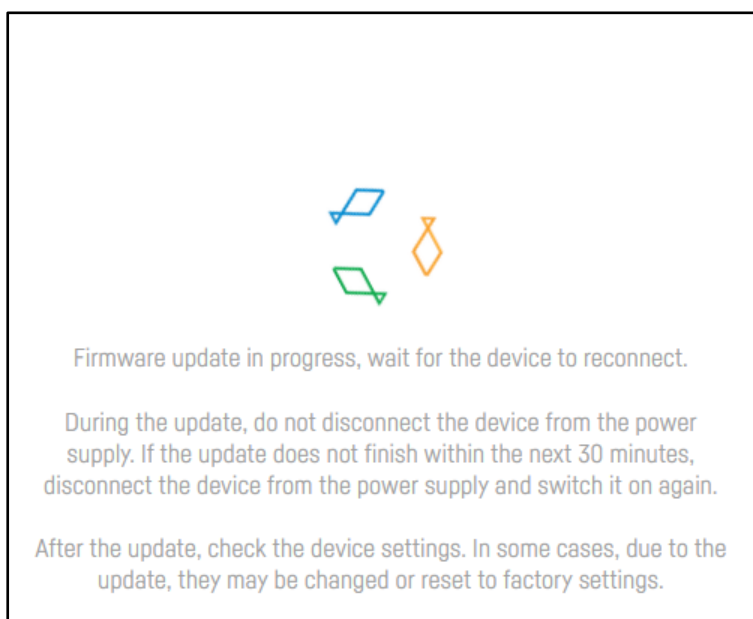
VII. Smart reef system

Connect to your home network with your computer or mobile device. Now go to www.reeffactory.com and log onto your **Smart reef** account. Check if the device was properly added to your device's list.

You can change the device's name and add it the aquarium system of your choice. In the lower right corner you can find your device's serial number and its firmware version.

Our devices are SMART and we are constantly developing and improving on them. Once in a while you will receive the information about the new update available for your device. This allows your device to work even better.

A new version of the firmware is available. Do you want to update from 0.4.1 to 0.5.2?

OK   CANCEL

By pressing OK button you will start the automatic update process.

Firmware update in progress, wait for the device to reconnect.

During the update, do not disconnect the device from the power supply. If the update does not finish within the next 30 minutes, disconnect the device from the power supply and switch it on again.

After the update, check the device settings. In some cases, due to the update, they may be changed or reset to factory settings.

?   You will always find additional and most up to date information about the device its use and configuration on our webpage www.reeffactory.com.

VIII. Technical problems and possible causes

The table below presents the typical problems that you can encounter when using the device and solution to these problems.

? Problem	! Cause	Solution
The device does not power on and does not broadcast Wi-Fi signal	No power	Check if the power cord is properly connected to the socket. Then, use the magnet to bring the device to the factory settings. Check if the problem has been resolved.
Can't log in to the device	No direct connection between the device and your phone/computer	Check if your computer or phone is connected to the device's network. Sometimes it automatically connects back to your home network. Check if the problem has been resolved.
The device is not visible in the Smart Reef	The device has not been properly connected to your home network or is not logged in to the Smart Reef	Log in to the device and check if the Smart Reef and Internet status icons are displaying that the device is properly connected. If they are not, please log in to your account or connect the device to your home network.
The device loses the connection to the Smart Reef	The range of your home network is not sufficient	Remember, that your home network can have different signal strength in different rooms. It could be too low in the vicinity of the device. Try to move the device closer to your router or use a repeater to extend your home network range in the area. Check if the problem has been resloved.
The device does not broadcast Wi-Fi or you can't log into the device.	The device may require a reset	Put the magnet against the designated spot on the housing, wait for 5 seconds. Open the list of available networks, connect with the device and perform configuration.
The pump is dosing the wrong amount of liquid	Calibration is required or the pump head has worn down	Perform the calibration of the Dosing pump. If the problem hasn't been resolved, replace the worn down pump head with a new one Check if the problem has been resolved.

! If the above solutions didn't help resolve your problem, please contact us at support@reeffactory.com and describe your problem. Additional and most recent information about the device, its service and configuration can always be found on our webpage www.reeffactory.com in the product tab.

REMEMBER. If you don't have the skills, knowledge and experience, never perform any repairs to the device on your own. The device is powered with a voltage of 110V-230V. Working with voltage may cause electric shock, loss of health and even loss of life. Servicing has to be done by qualified technicians.