REEF FACTORY

Dosing pump

User manual

Dear customer, thank you for your purchase.

ENGLISH

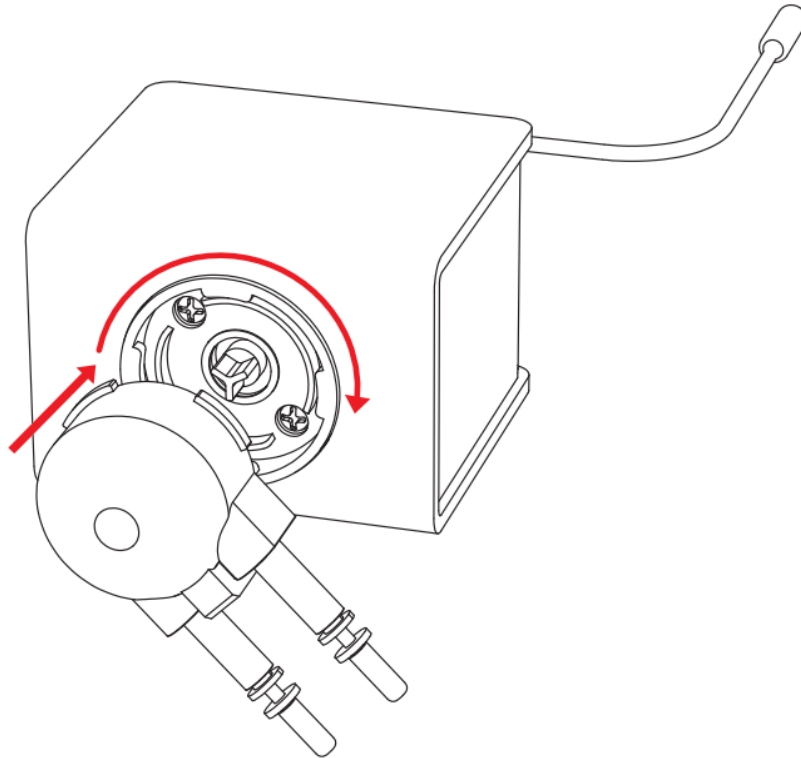www.reeffactory.com

Table of contents

> ⚠ **IMPORTANT!** Please read the entire user manual carefully before setting up and using the device. There may be slight differences in the content between what is presented on the device's screen and the manual's descriptions.

I. Initial setup

1. **Attach the pump head to your Dosing pump by rotating it clockwise**

2. **Prepare the hoses for dosing.**

   The Dosing pump set includes one long hose that should be cut into two separate ones:

   1. Hose leading from the dispensing fluid container to the pump
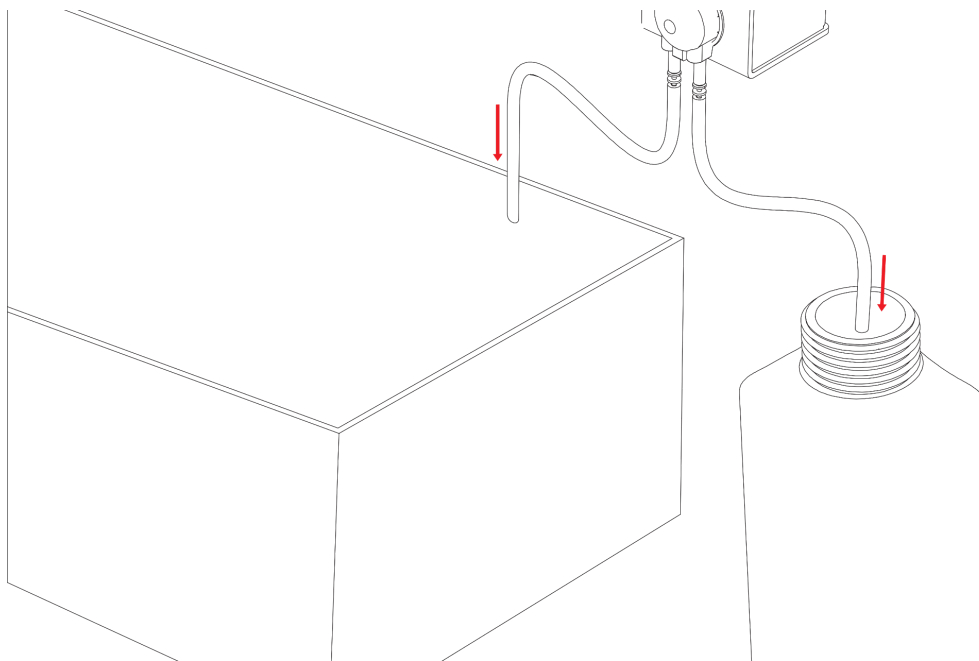   2. A hose leading from the pump to the aquarium.

   To ensure precise dosing, pay attention that the length of the hose should not exceed **2 meters** for devices: Dosing pump, Dosing pump Pro, Dosing pump x3, Dosing Pump x4

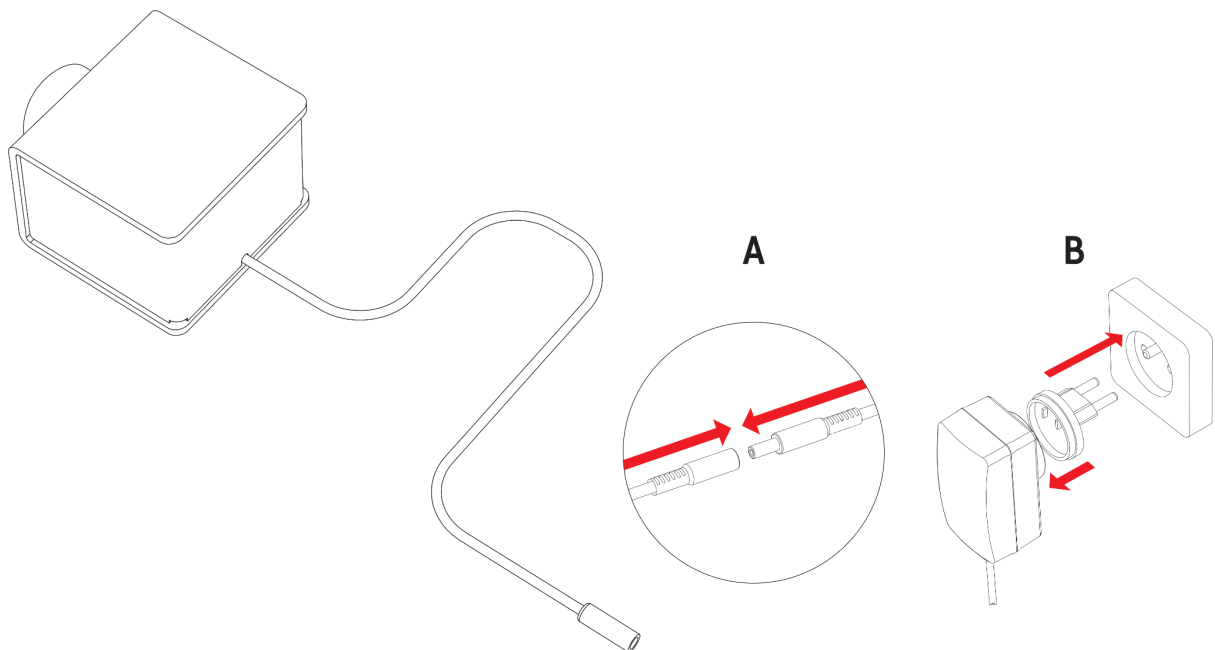3. **Remove the connector covers on the head and connect the hoses to the connectors**
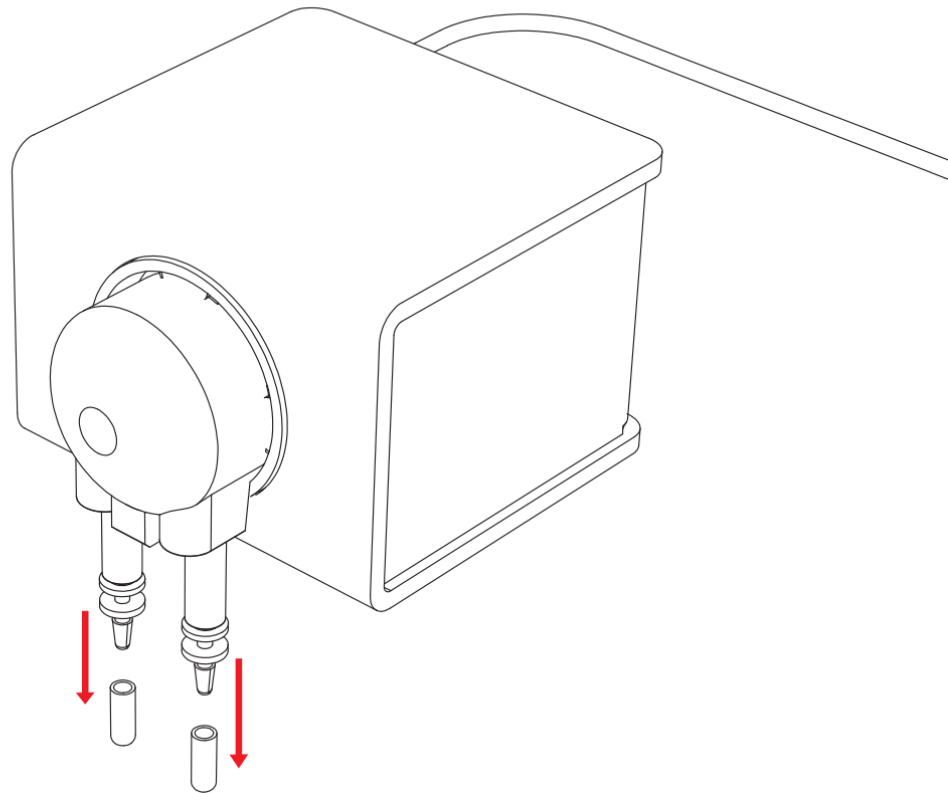
Place the ends of the hoses in the dosing liquid and aquarium tank:

4. Connect the device to power using the included AC adapter

Use the included power adapter to connect the device to an AC power outlet.

After completing these steps, you can proceed to **connect the device to the Smart Reef system.**

II. Adding the device to the Smart Reef app

1. open the Smart Reef app on your mobile device and log in.

If you do not already have a Smart Reef account,

select **"Create a free account".**

Enter the email address you want to use in the Smart Reef application

as well as the password, and then repeat it.

If you don't want to, log in every time you launch the application, check

"Keep me logged in".
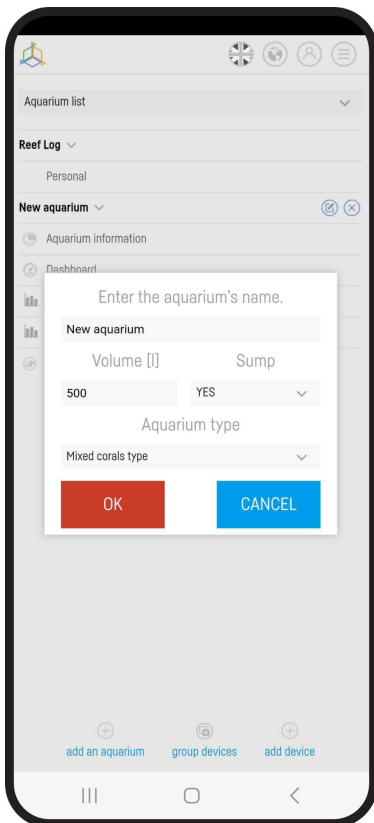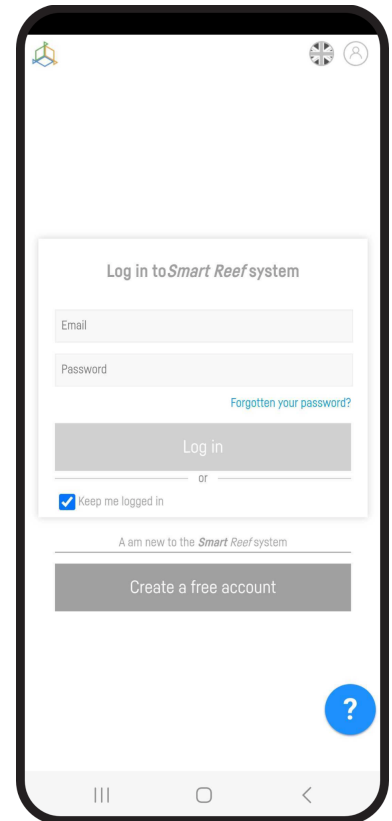
2. Create your aquarium in the Smart Reef app.

If you do not have your aquarium yet, use the option
"Add an aquarium" in the lower left corner of the screen and provide the
necessary information.

If you already have your aquarium in the Smart Reef app,
proceed to the next step.

3. Add the device to your Smart Reef account

From the list of aquariums or the list of devices
in the lower right corner of the screen,
select **"add device."**

Allow the app to use your exact location when
using the app. This allows the app to connect devices
to Wi-Fi networks more easily.
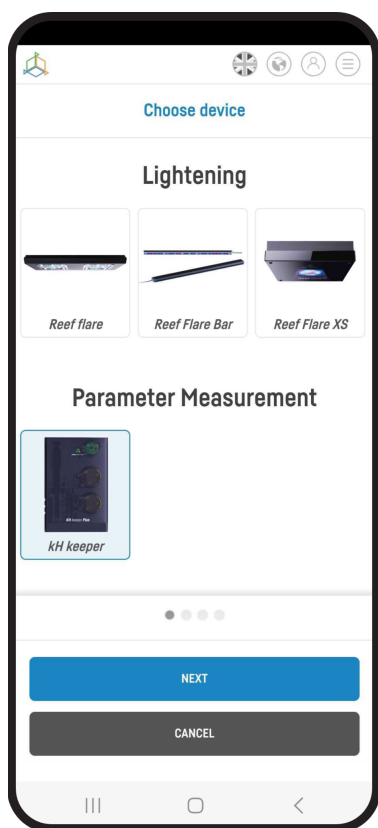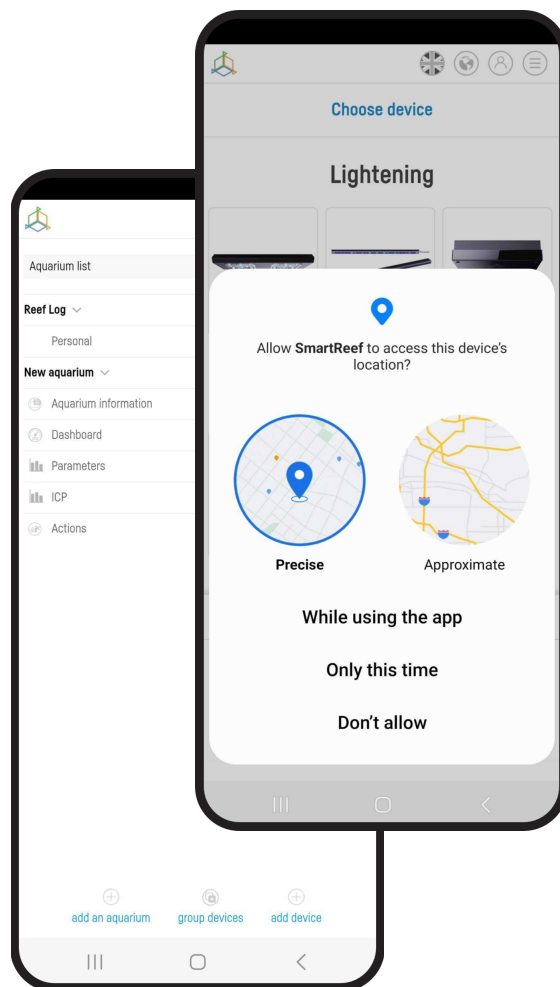
Select from the scrolling list the device you want to add to your

Smart Reef account and press **"NEXT"**.

4. Set up a Wi-Fi connection to your home router.

Enter the exact Wi-Fi network name of your home router.

Then enter the password for your home router, if required, and press **"NEXT".**

i Pay attention to uppercase and lowercase characters.
NOTE: Special characters may not be supported if the name or password for your router contains such characters, change them in your router's settings.

NOTE: Reef Factory devices only support the 2.4 GHz Wi-Fi network band. If your router generates 2.4 GHz and 5 GHz bands, indicate the name of the 2.4 GHz network.
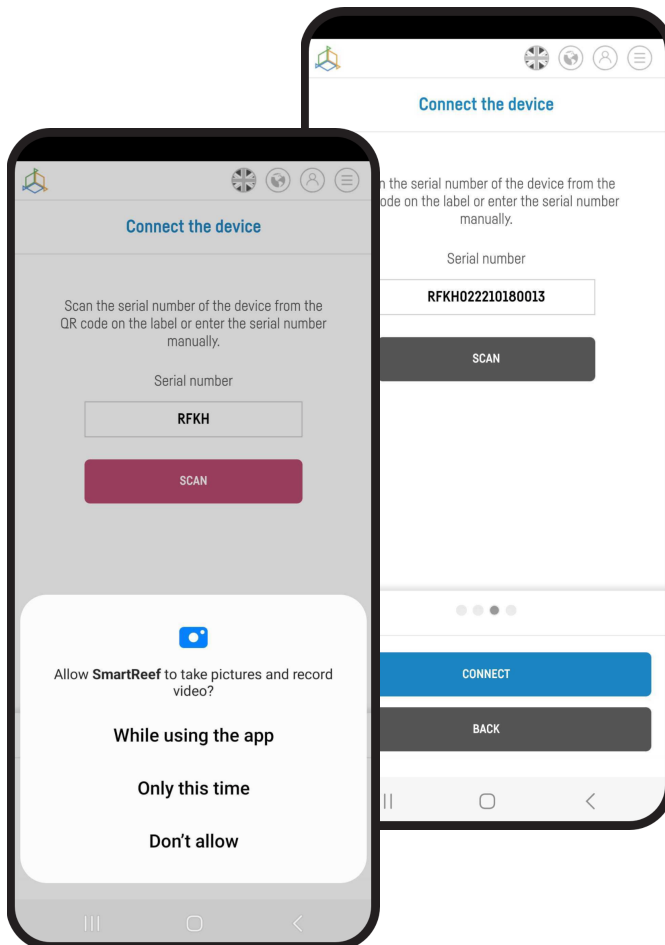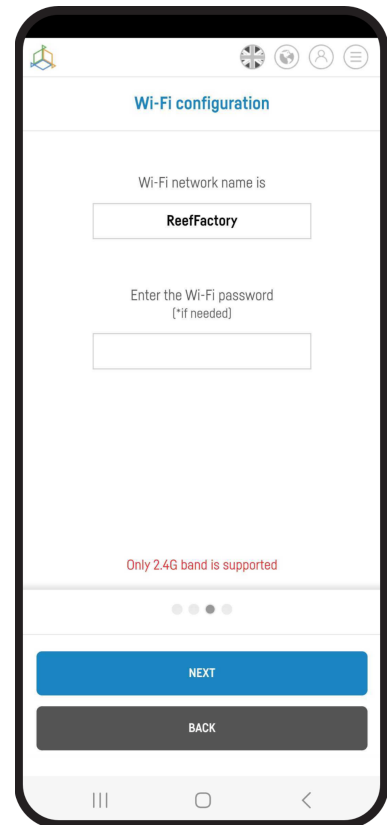
Select **"SCANNING"** to scan the QR code on the device, then allow the Smart Reef app to access the camera while using the app.

After pressing **"SCAN"**, hover your phone's camera over the QR code to scan it, or manually enter the device's serial number and select **"CONNECT"**.

i You can find the serial number on the device, on the packaging and as the generated Wi-Fi network.

The serial number starts with RF, an abbreviation of the device name, and a string of digits.

Allow the Smart Reef app, to temporarily connect
 to set up a Wi-Fi network.
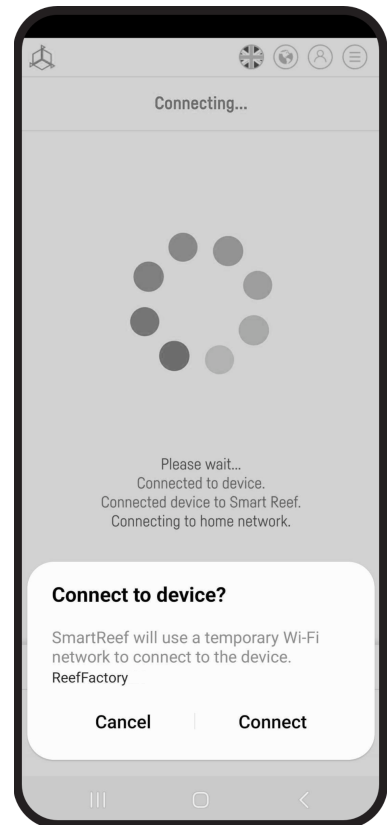
Congratulations! The device has been correctly added to your Smart
Reef account and will appear in the list of devices within 60 seconds.

III. Device configuration

If you have successfully connected to your Dosing pump, a list of devices will appear on the screen.

Select your Dosing pump to access the **control panel**:
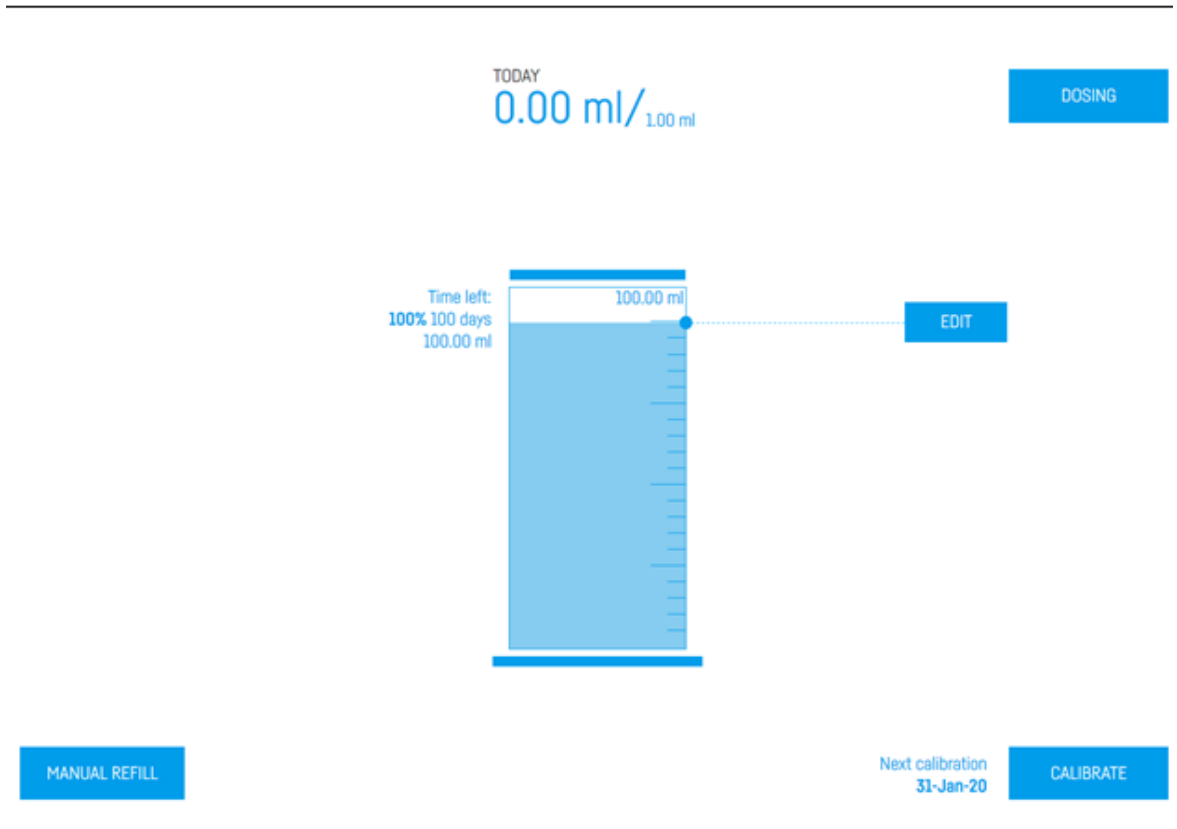
ⓘ The control panel differs for Dosing pump X3 and X4. When you select one of the dosing components, the control panel for each pump will appear.
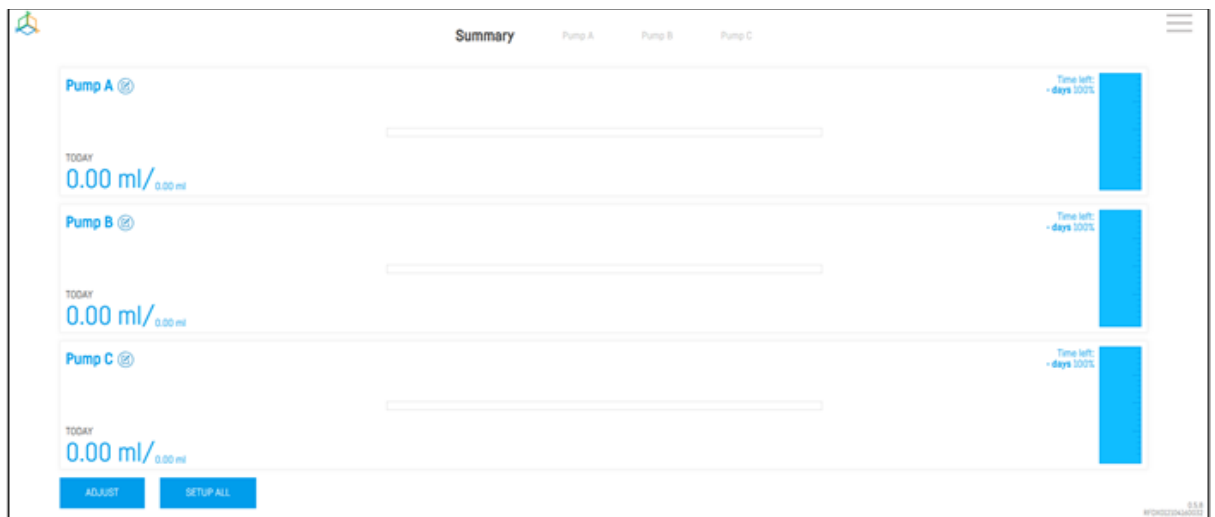
Editing the container

In the middle of the screen, you will find information about the liquid level in the container from which the liquid is being drawn.

Selecting the **"EDIT"** option allows you to manually set the size of the liquid container and the amount of liquid currently in it. The application will send a notification when the liquid level reaches 10%.
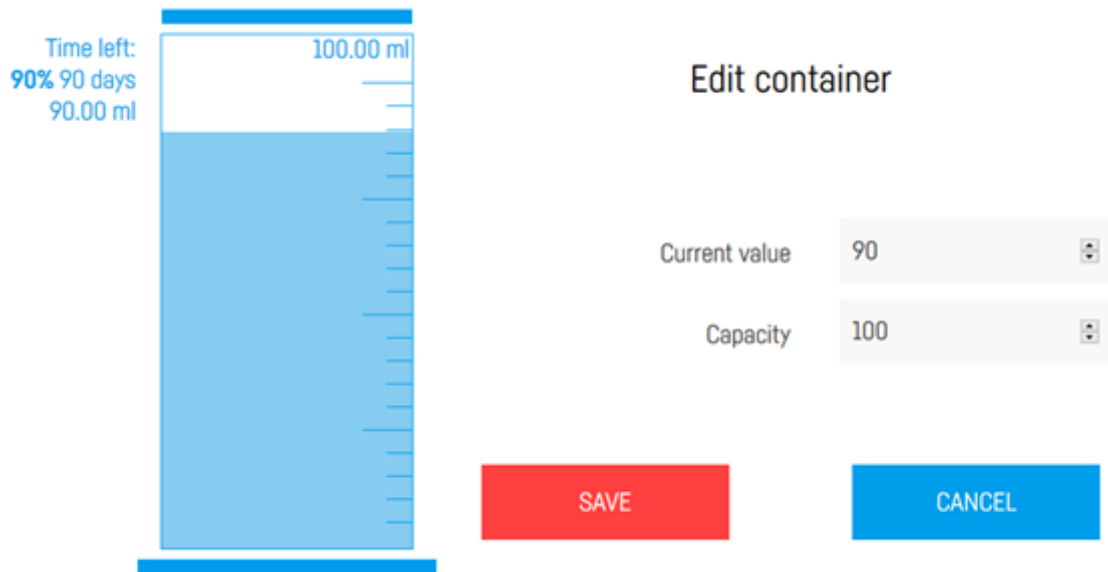
Dose configuration

The Dosing pump is an automatic dosing device that allows precise and accurate dosing of chemicals in a fully automated manner.

The user can program the pump to deliver a specific amount of substance at specific intervals. It is also possible to set individual parameters, such as the percentage of dosage amount and dosing time.

In the upper right corner of the control panel you will find the option **"DOSING"** which allows you to

- set the number and schedule doses
- skip the next dose
- Export and import settings.

When you select the **"EDIT"** option, the following screen will appear, allowing you to plan your dosage accurately.

| | Liquid amount: 27.00 ml | | | | ADJUST |
| | Number of doses: 5 | | | | ADD A DOSE |

Days: ☑ Mon ☑ Tue ☑ Wed ☑ Thu

☑ Fri ☑ Sat ☑ Sun

ID	Time	Value		Percent	
1	0:00	1	⬍	3.7%	⊗
2	4:48	13	⬍	48.15%	⊗
3	9:36	5	⬍	18.52%	⊗
4	14:24	7	⬍	25.93%	⊗
5	19:12	1	⬍	3.7%	⊗

SAVE   CANCEL

Using the **"ADJUST"** function, you can increase the amount or percentage of daily fluid administration.

i For safety reasons, Dosing pump X3 and Dosing pump X4 must additionally set the offset time between pumps, as they cannot be started simultaneously due to the danger of mixing dispensed fluids.

Dosing pump can dispense a maximum of **24 doses per day**.

The **"SKIP NEXT DOSE"** option allows you to decrease or skip the next scheduled dose. A value of 100% means skipping the next dose altogether.

Skip next dose

Enter how many percent of the next dose to skip.

| % | ⬍ |

| OK | CANCEL |

The **"EXPORT"** option allows you to export the configuration file, which can then be loaded using the **"IMPORT"** button.

Pump calibration

Calibration of the pump (or multiple pumps for Dosing pump X3 and Dosing pump X4) should be carried out after the device setup is complete. The calibration is necessary to guarantee correct operation of the pumps. If the device has several dosing heads, calibration should be performed for each of them separately.

To maintain dosing accuracy, **it is important to periodically perform calibration**.

1. In the bottom right corner of the screen, you will find a device calibration function.
2. Before starting the calibration process, the hose should be pulled out of the sump. Fill the hoses with liquid by selecting the **"FILL THE CIRCUIT"** option. There should be no air in any part of the hose on both sides (suction and discharge). Adjust the position of the hoses if necessary.
3. Before starting the calibration, prepare a container into which the liquid will be poured during the process. During calibration, the device will activate the pump for 60 seconds and then automatically turn it off.
4. Then, determine how much liquid was poured into the prepared container during this time. Use a precisely calibrated container or a scale and calculate how much liquid was poured. The volume of liquid depends on its density, and it should be taken into account when using the scale method.
5. Finally, specify the time after which the device should remind you to perform the next calibration.

You will receive a reminder in the form of a notification from the Smart Reef system.

IV. Additional functionality

Dosing history

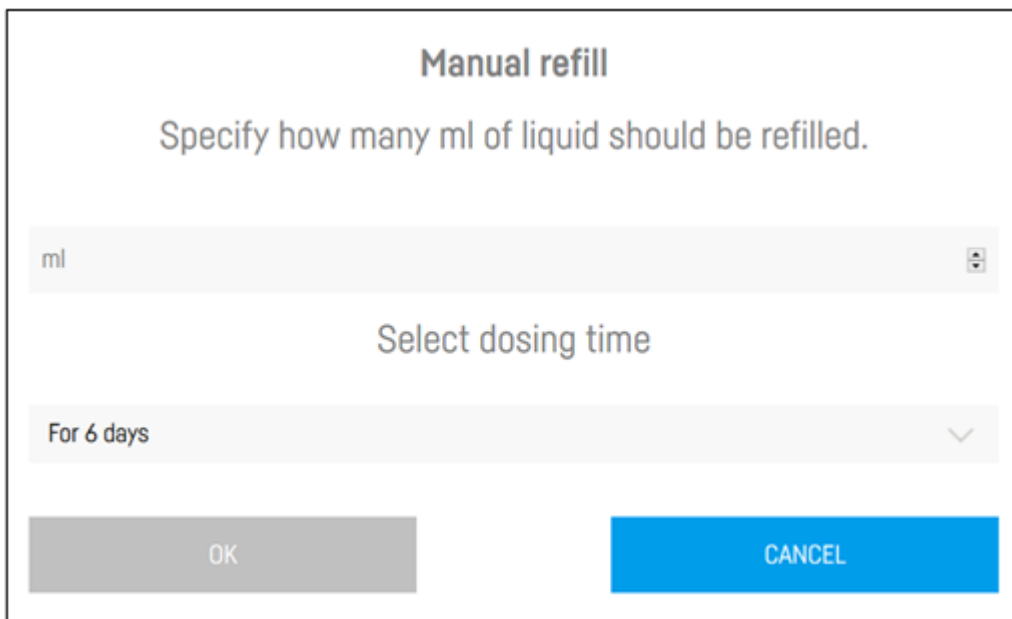By clicking the **"Show more..."** option you can view the dosage history.

The dosing history can also be observed in the **"Dashboard"** panel.

Manual dosing

In the bottom left corner of the screen, you will find a **manual dosing** function.

This function allows the user to increase or decrease the dosage of liquid either once (as an additional dose now) or multiple times (cyclically, over a specified number of days). Providing a positive value increases the amount of liquid, while providing a negative value decreases the daily dose. After activating the function described above, the amount of liquid that should be included in the dose and the number of days during which the indicated dose should be added must be specified. Such a solution allows for both a one-time dose application and a temporary modification of the schedule.

NOTE! If the device does not have a programmed schedule for manual dosing, choose the "now" or "delayed" option. Spreading an additional dose over time is based on modifying the existing schedule.

V. Actions

The Dosing pump offers **automatic action** functionality, allowing the pump to communicate with other Reef Factory devices.

For example, the Dosing pump can receive information about the KH level from the KH Keeper Plus and then adjust its action based on this information, i.e. change the amount of dosage in percentage or skip the dosage, in order to maintain the correct level of water hardness in the aquarium.

At this point, the actions for Dosing pump are supported by the devices: **KH Keeper** (software version 0.5.4 or more)**, KH Keeper Plus, Level Sensor** (software version 0.5.4 or more)**, pH meter** (software version 0.6.4 or more)**.**

To add a new action, you have to:

1. Locate your aquarium in the Smart Reef application.
2. Select the "Actions" tab.
3. Click on the **"ADD ACTION"** option.
4. In the "**When**" field, you should select the device that will control the given action.
5. In the **"Select Command"** field, you should choose the parameter on which the execution of the given action depends.
6. In the **"Then"** field, you should select the device that will perform the given action.
7. In the **"Select Command"** field, you should choose the action that the device will perform after meeting the above conditions.
8. The **"HISTORY"** option allows you to track the history of actions.

Automatic communication between the devices is very useful in maintaining constant and optimal conditions in the aquarium, and at the same time saves time and labor for the user, who does not have to manually adjust the parameters in the aquarium.

VI. Resetting the device

If your device is not working properly, you want to reconfigure it, or you can't connect to it despite several attempts, you can reset it to factory settings by applying a magnet (included in the package) to the device's case at the place marked RESET.

After resetting the device to factory settings, **it is necessary to reconfigure and calibrate** your Dosing pump. The dosing schedule **will be lost**. To avoid having to reconfigure the device, we recommend exporting the settings before the reset and importing them later.

VII. Updating the device

To update the device, log into Smart Reef on the mobile app or at www.reeffactory.com.

Then, press the **"Edit"** buttonred indicator next to it indicating that an update is available.

In the next one you will see a message about the availability of a new software version. Press "OK" to update the software.

Note that the device may need to be **reconfigured** or **calibrated** after some updates.
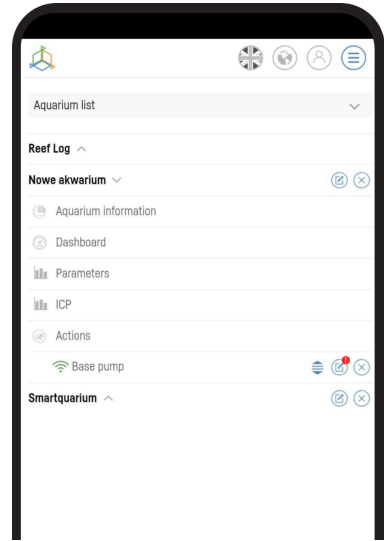
After pressing the "OK" button, the process of automatic updating of the device will take place.

Do not unplug the device during the update. If the update does not finish within 30 minutes, reset the device.

After the update, **check the settings** of the device. in some cases, the settings may change or return to factory settings.

VIII. Information and warnings

⚠️ **IMPORTANT INFORMATION!** The Reef Flare Pro is not completely waterproof. Avoid immersion, splashing and high humidity. Exposure to these factors may cause permanent damage to the device.

⚠️ **IMPORTANT INFORMATION!** The device operates under mains voltage - there is a risk of electric shock.

♻️ **IMPORTANT INFORMATION!** PACKAGING
The device was protected during transport by packaging. After unpacking the device, please dispose of the packaging in an environmentally friendly manner. All materials used for packaging are harmless to the environment and 100% recyclable. Packing materials (polyethylene bags, foams, bundle wires, etc.) should be kept away from children during unpacking. There is a risk of swallowing, aspiration and suffocation.

🗑️ **IMPORTANT INFORMATION!** WITHDRAWAL FROM OPERATION
The device is marked in accordance with the European Directive 2012/19/EU and the Polish Act on waste electrical and electronic equipment with the symbol of a crossed-out waste container. Such marking informs that after the period of its use, this equipment cannot be placed together with other household waste. The user is obliged to hand it over to the waste electrical and electronic equipment collection centers. The collectors, including local collection points, shops and communal units, create an appropriate system enabling the disposal of this equipment. Proper handling of waste electrical and electronic equipment contributes to avoiding consequences harmful to human health and the natural environment, resulting from the presence of hazardous components and improper storage and processing of such equipment.

1. The manufacturer of the devices described in this manual is:

Reef Factory Sp. z o. o.

ul. Bydgoska 94

86-032 Niemcz

Poland

Manufacturer's website: www.reeffactory.com

2. The manufacturer declares that the offered products comply with the following standards:

RoHS 2011/65/EU,

RoHS 2015/863,

RED 2014/53/EU.

3. Reef Factory hereby declares that the devices are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:
https://download.reeffactory.com/instructions/thermocontrol/ThermoControlCE.pdf

4. Devices manufactured by Reef Factory are intended only for home use or stores operating in the aquarium industry , they are not dedicated to industrial applications.

5. The devices are adapted to dispensing liquids that are not hazardous substances, such as corrosive substances, highly concentrated acids or flammable substances. In case of doubt whether a given substance can be dosed using our devices, please contact us.

6. FCC Compliance Statement:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. Any changes or modifications not expressly approved by Reef Factory could void the user's authority to operate the RF Module and/or the product that incorporates the RF Module. The user is cautioned to maintain a 20 cm (8 inch) spacing from the product to ensure compliance with FCC regulations.

This device contains RF Module:
Part Number: ESP12F
FCC ID: 2AHMR-ESP12F

IX. Warranty conditions

Reef Factory Sp. z o. o. does not warrant uninterrupted or error-free operation of this product. The warranty covers only technical hardware problems that occurred within the warranty period and under normal conditions of use.

1. Devices manufactured by Reef Factory are covered by a warranty for the period of:
   - 24 months for individual and business customers using consumer products.
   - 12 months for a business customer using demo products.
2. The accessories and spare parts for the devices are covered by a 6-month warranty.
3. The proof of the warranty for the product is the bill or invoice of purchase, on which the date of purchase and the name of the device are legibly marked.
4. Technical defects of the product revealed during the warranty period will be removed free of charge as soon as possible, not exceeding 14 days from the date of delivery of the device to the Authorized Service Center.
5. The User has the right to replace the product by the Guarantor with a new one, free from defects, in the event that:
   - Five repairs requiring replacement of components were made during the warranty period, and the product still shows defects, the
   - Authorized Service Center stated in writing that the defect is impossible to remove.
6. The condition for the warranty repair is:
   - Delivery of the product in the original factory packaging or other packaging protecting the device during transport to the Authorized Service Point.
   - Presentation of a copy of the original proof of purchase,
   - Description of the fault that occurs in the device.

7. warranty does not cover:
   - Normal wear and tear of materials and consumables (e.g. consumables such as probes, sensors, pump heads, hoses, etc.),
   - Mechanical damage and defects caused by it,
   - Damage caused by improper use or product storage,
   - Damage resulting from arbitrary repairs and alterations made by the Buyer or unauthorized persons,
   - Damage resulting from natural wear and tear, such as: scratches, dirt, abrasions, erasure of inscriptions, etc.
8. Employees of the Authorized Service Center are authorized to assess the causes of product defects.
9. The repair period may be extended in the event of disruptions caused by force majeure circumstances such as natural disasters, civil unrest, etc.
10. The warranty entitlements do not include the buyer's right to claim lost profits or losses incurred due to product defects.
11. The warranty period is extended by the time the device is in an authorized service center.
12. In matters not covered by the terms of this guarantee, the relevant provisions of the Civil Code shall apply.
13. The warranty does not exclude, limit or suspend the buyer's rights under the provisions on warranty for defects in the sold item.
14. A repaired or replaced product may contain new or refurbished components.
15. Please be advised that the repair or replacement of a product involves a significant risk of losing data stored in a given product (especially related to its configuration and history of measurements). Therefore, the Customer accepts that during the repair or replacement of the product, the data may be deleted.
16. The Guarantor is not responsible for the lack of full compatibility (compatibility) of the product in operation
with accessories or devices from other manufacturers used by the Customer. In particular, this applies to network devices whose configuration may limit the ability to connect and exchange data between the device and the server.
17. The customer delivers the device for repair to the Authorized Service Center at his own expense, while the service, after performing the warranty repair, sends the device back to the customer at his own expense.

18. The Authorized Service Point may repair/reconstruct the device at the Customer's expense (post-warranty repair), however, the Customer must accept this cost before repairing it.

19. The Authorized Service Point may refuse to repair or replace a device that, after testing in service conditions, does not show any defects for the product in terms of its use (confirmation of the device's full efficiency).

20. The Authorized Service Center may refuse to repair or replace a device that has a damaged or illegible serial number label.

21. The Guarantor is not liable for incidental or consequential damages caused by breach of warranty or conditions or any other theory of law, including but not limited to loss of usability; loss of income; loss of actual and perceived profits (including loss of profits from contracts); loss of business; loss of opportunities; impairment of the company's value; loss of reputation.

22. The Guarantor is not liable for direct or indirect damages caused as a result of a defect or failure of the device and for damages arising during the period of repairs or replacement of the device related to the inability to use the device.

X. Technical information

Device name	Device model	Dosage accuracy/ capacity	Operating temperature/humidity	Power supply	Dimensions (mm)	Weight
Dosing pump	RFDP01	+/- 0.1ml/ 25ml/min	10-50(°C) / 0 - 99(%)	dedicated power supply 12V 1A	55x70x100	210g
Dosing pump Pro	RFPP01	+/- 0.01 ml / 7ml/min	10-50(°C) / 0 - 99(%)	dedicated power supply 12V 1A	55x70x100	340g
Dosing pump Large	RFDL01	+/- 10 ml / 1000ml/min	10-50(°C) / 0 - 99(%)	dedicated power supply 12V 4A	125x100x150	1100g
Dosing pump X3	RFDX01	+/- 0.1 ml / 25ml/min	10-50(°C) / 0 - 99(%)	dedicated power supply 12V 1A	195x50x100	520g
Dosing pump X4	RFDZ01	+/- 0.1 ml / 25ml/min	10-50(°C) / 0 - 99(%)	dedicated power supply 12V 1A	255x50x100	760g

The device is manufactured with different versions of power cables and power outlets, depending on the country in which it will be used.

Need our help?
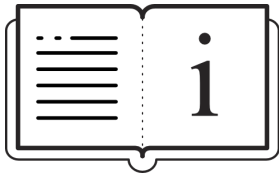
Check out our knowledge base!

www.reeffactory.com/support

Do you have more questions?

Use the form in the link above

or write us an email - support@reeffactory.com