REEF FACTORY | **User manual**
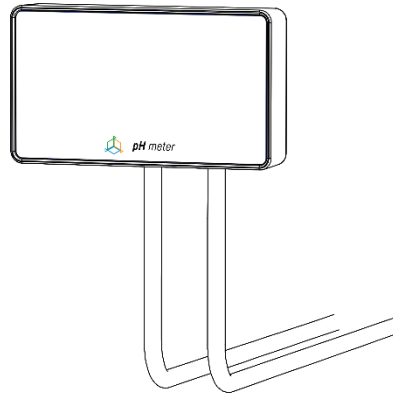
ver. 1.3

PH meter

Dear customer, thank you for your purchase.

ENGLISH

www.reeffactory.com

Table of contents

> **!**   **ATTENTION: PH meter is not waterproof. Avoid submerging the device in water. Submerging the device's display in water 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. 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, sensor holder, pH probe, magnet for reseting the device and quick start guide.**

> **?**   **Do you need our help? Write to <u>support@reeffactory.com</u>**

> **!**   ATTENTION: RECOMMENDATION FOR PH PROBE
> Before first use of the device or after long break in use it is necessary to submerge the pH probe head in aquarium water (saltwater) for at least 30 minutes and then proceed with calibration.

ATTENTION: UNPACKING

During transportation, protective packaging was used to protect the appliance against any damage. After unpacking, please dispose of all elements of packaging in a way that will not cause damage to the environment. All materials used for packaging the appliance are environmentally friendly; they are 100% recyclable and are marked with the appropriate symbol. Caution! During unpacking, the packaging materials (polythene bags, polystyrene pieces, etc.) should be kept out of reach of children.
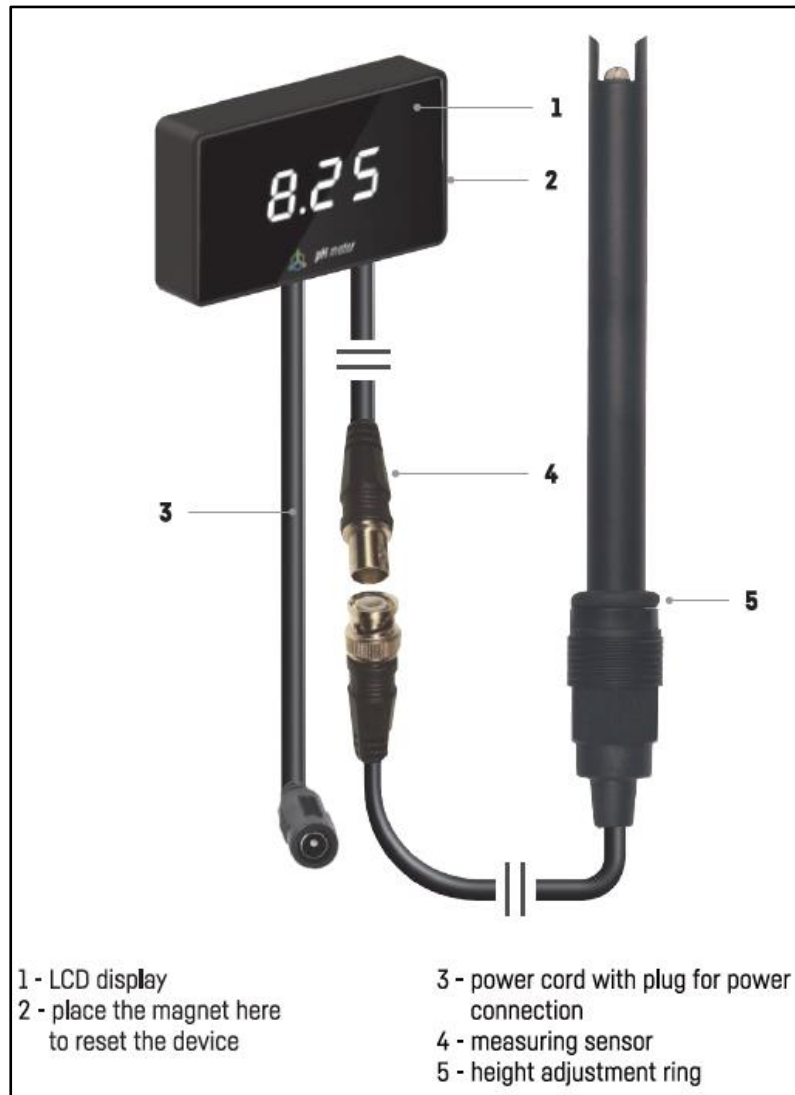
ATTENTION: DISPOSAL OF THE APPLIANCE

Old appliances should not simply be disposed of with normal household waste, but should be delivered to a collection and recycling centre for electric and electronic equipment. A symbol shown on the product, the instruction manual or the packaging shows that it is suitable for recycling. Materials used inside the appliance are recyclable and are labelled with information concerning this. By recycling materials or other parts from used devices you are making a significant contribution to the protection of our environment. Information on appropriate disposal centres for used devices can be provided by your local authority

I.   Initial configuration

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

1. Install the pH probe in the tank in a way that allows for accurate pH measurement. Make sure that the sensor is not in close proximity to dosing pump outlets.

2. To properly install the device familiarize yourself with the graphic below.

1 - LCD display
2 - place the magnet here
    to reset the device

3 - power cord with plug for power
    connection
4 - measuring sensor
5 - height adjustment ring

3. Before you turn on the device, connect the pH probe and remove the cap (containing protective liquid), install the pH probe in your tank and then connect the device to power. The electrode has to be submerged in water between 7cm and 12cm measured from the tip of the probe. The length of the whole pH probe is 16cm. The pH probe should be mounted vertically but it is possible at an angle according to the graphic below. The blue line marks the maximum water level. Submerging whole pH probe can cause permanent damage which is not covered by warranty.
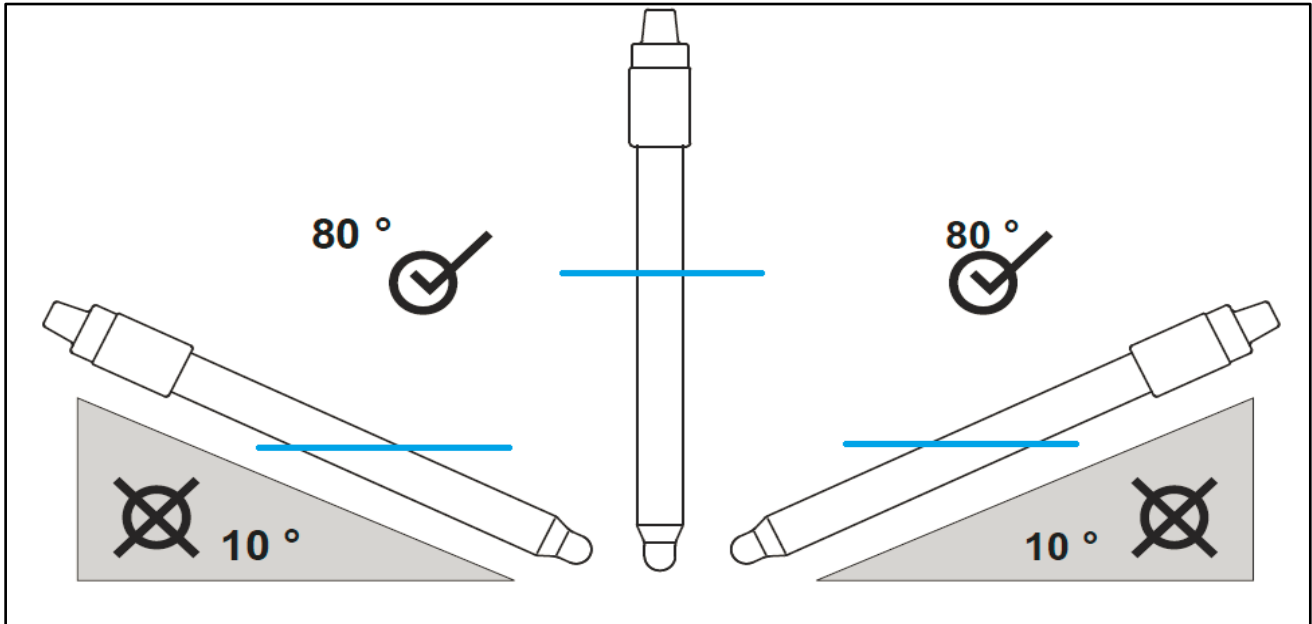
4. After the PH meter has been properly installed, connect the device to power using power adapter included in the box.

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

6. Open the Internet browser on this same device and in the address box type in: **www.phmeter.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).

This domain is used to configure **Smart Reef** device.
If you see this text it means that you are not logged properly into device Wi-Fi.

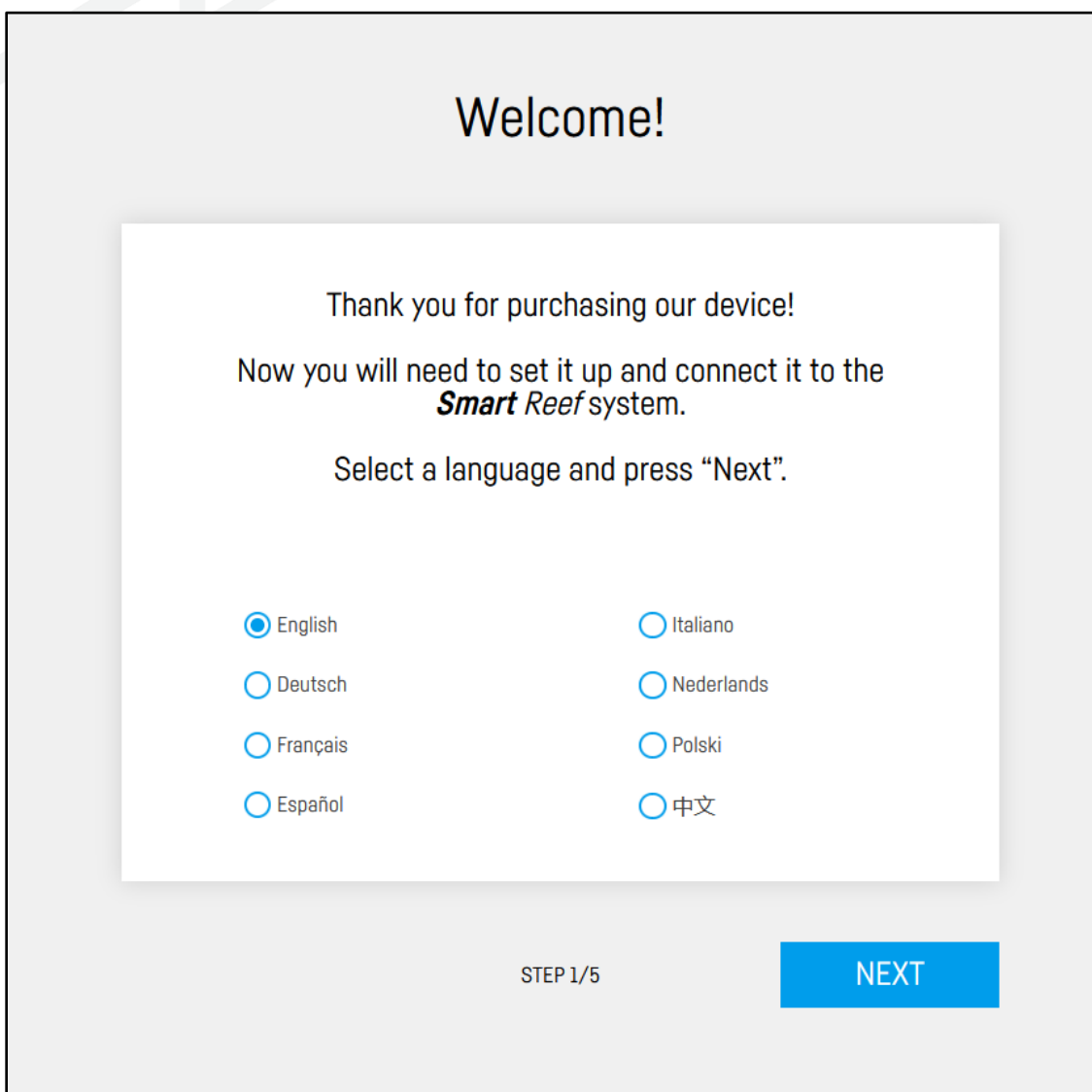Please connect to the Wi-Fi device only (Wi-Fi password is *reeffactory*) and refresh this page.

REEF FACTORY

Try to connect with the device one more time 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 pH limits for your tank. To set the desired limits „grab" with your cursor or your finger and slide it to the desired position on the scale.
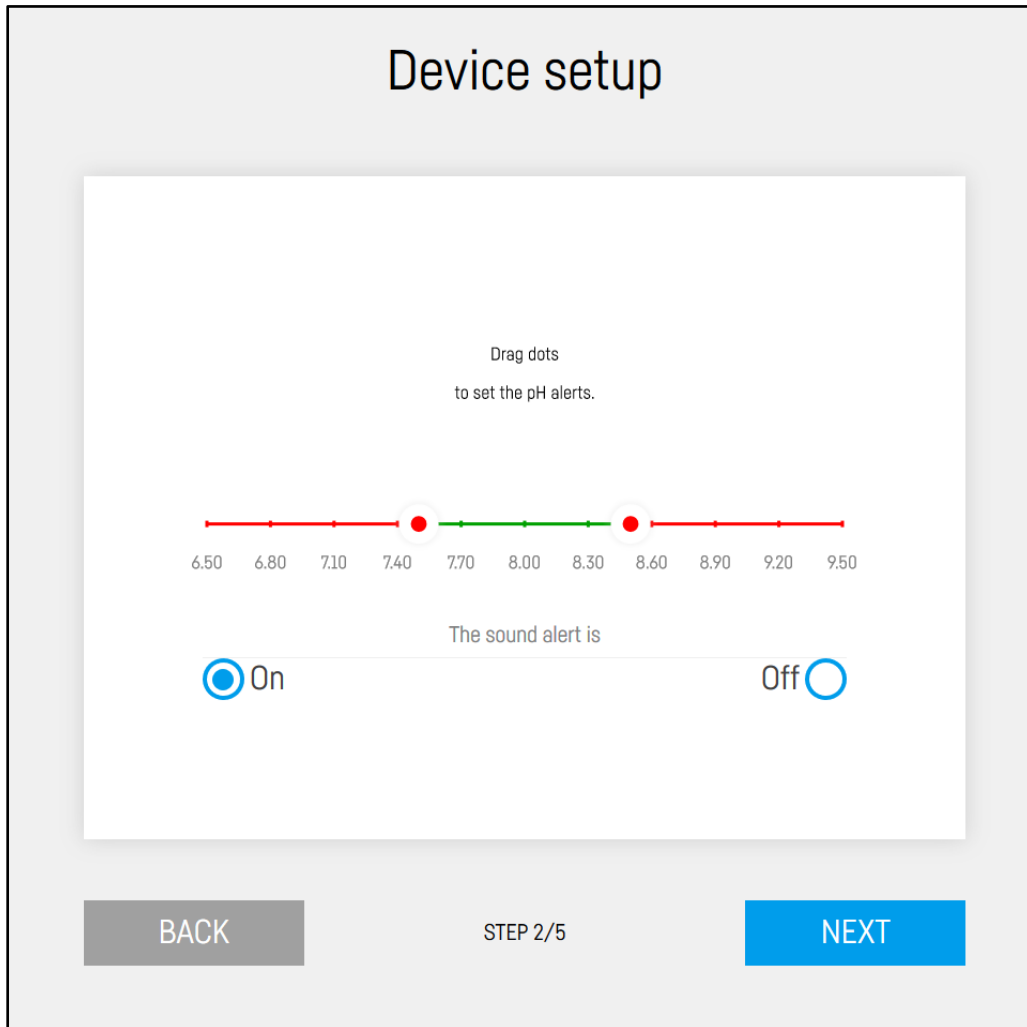
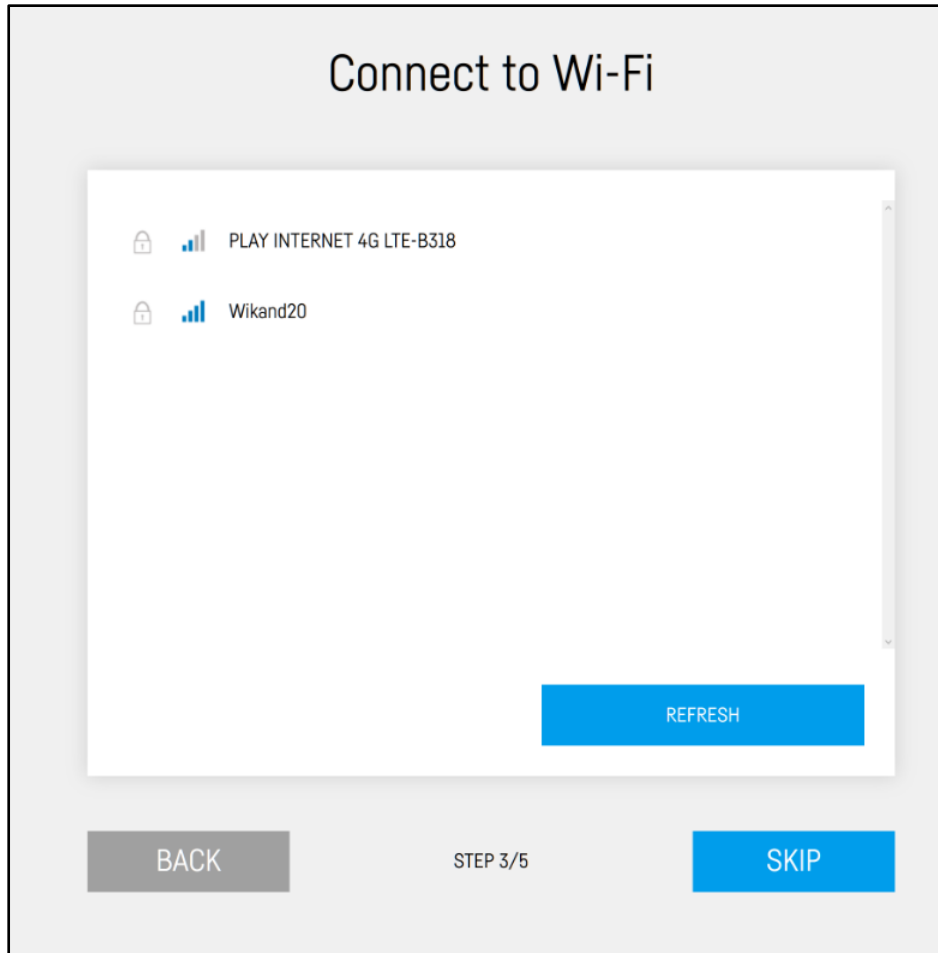The default limits are 7,5 and 8,5. You can also set the sound alarm to be triggered when the maximum or minim value is exceeded.

Step three - connect the device with you home Wi-Fi network. If the network is protected from unauthorized access please type in the password.
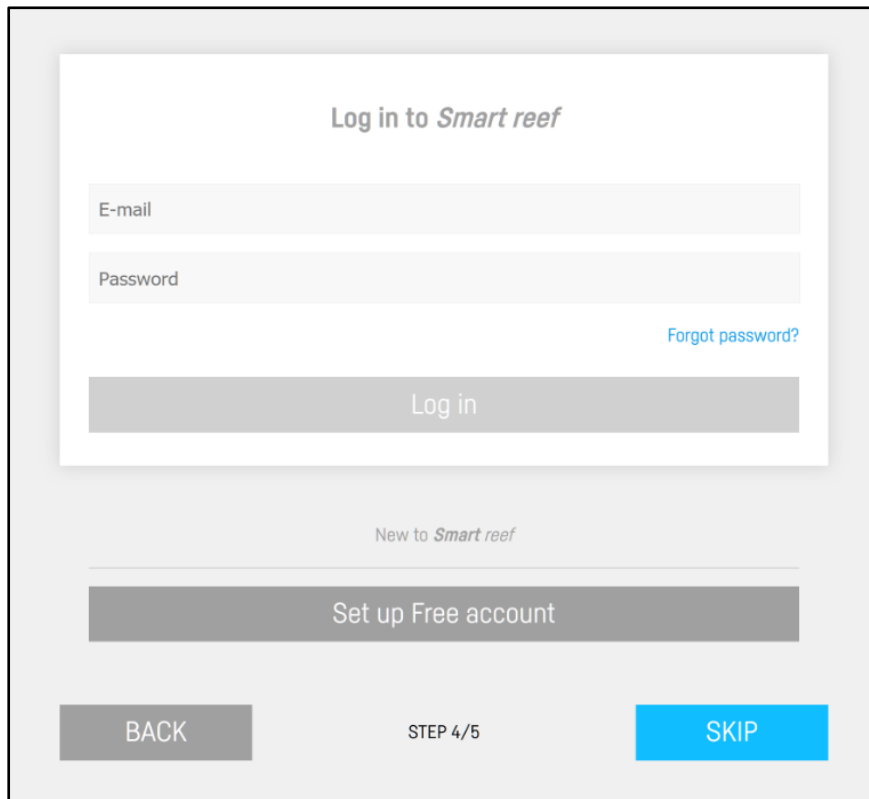
If the device won't connect with your home wireless network please repeat the connection process. The success of the connection depends on the routing device type and the producer. The signal strength should be as strong as possible. Remember, that the device which PH meter connects has to have access to the Internet to connect with the **Smart reef** system.

When the PH meter 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.
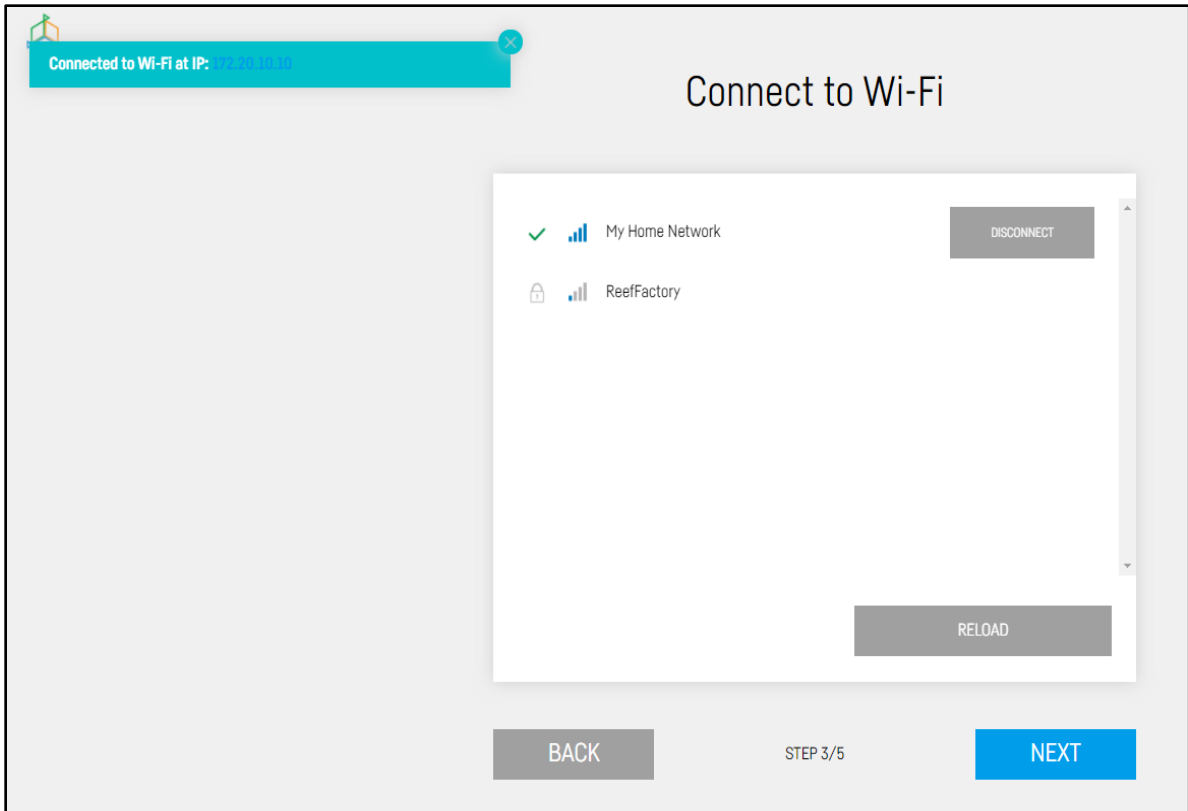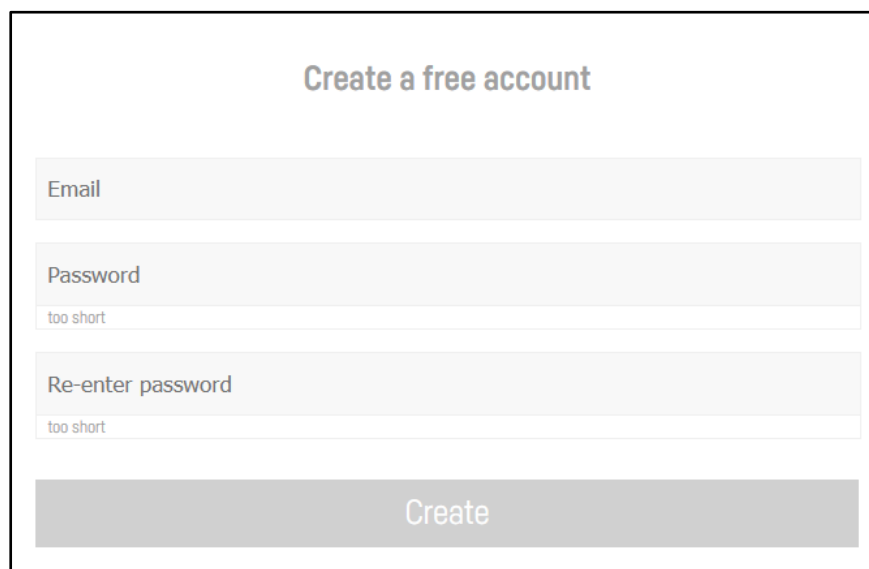
Step four – register free Smart reef account by pressing the "Create free account" button.

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

! **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 PH meter has been finished. After the process is finished please press the "END" button.
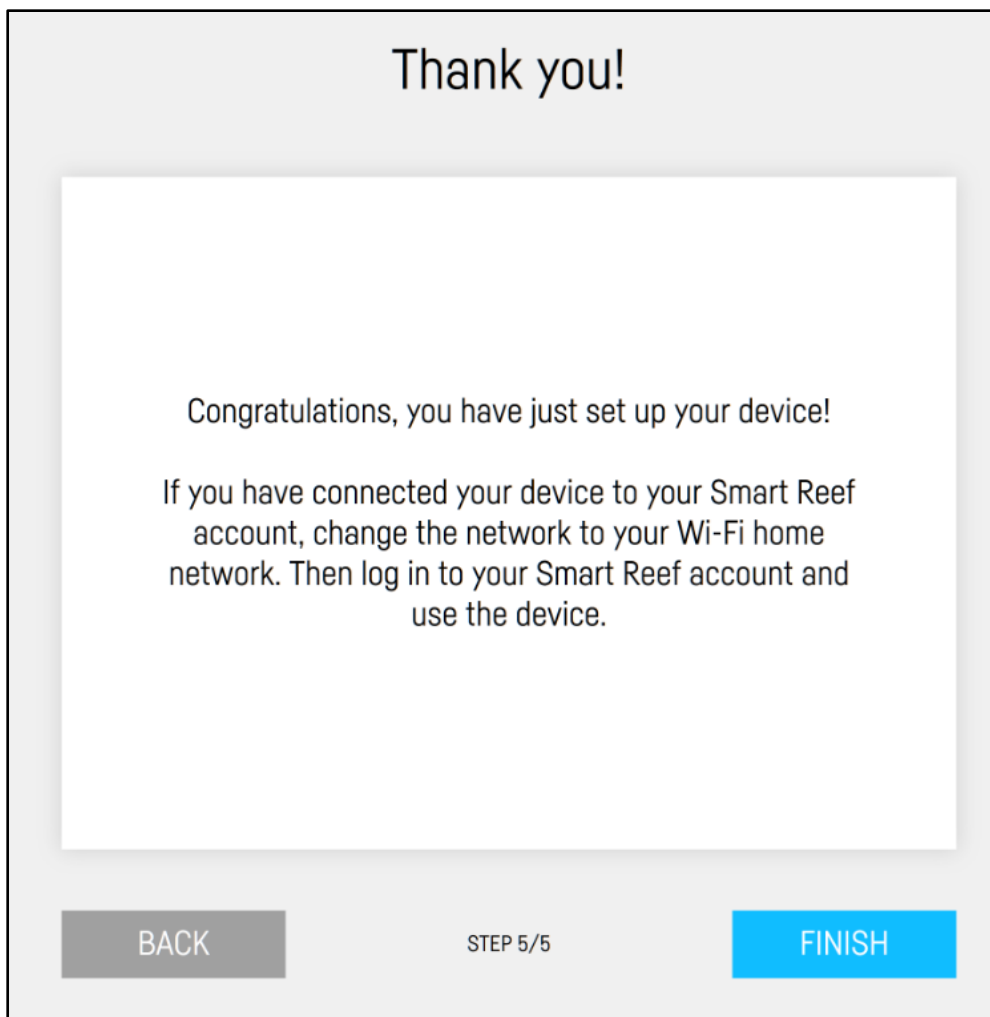
In the upper right corner you will find icons. They allow for language change, resetting the device to factory settings, logging in the Smart reef login credentials, changing the Wi-Fi network or changing the password to the device's Wi-Fi network.
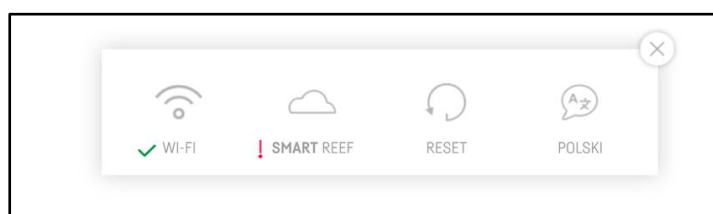
✓ symbol means that the device is connected while ❗ means there is no connection.

After the setup procedure is finished (after pressing the "FINISH" button), the screen will display the current status of your device as well as additional options.
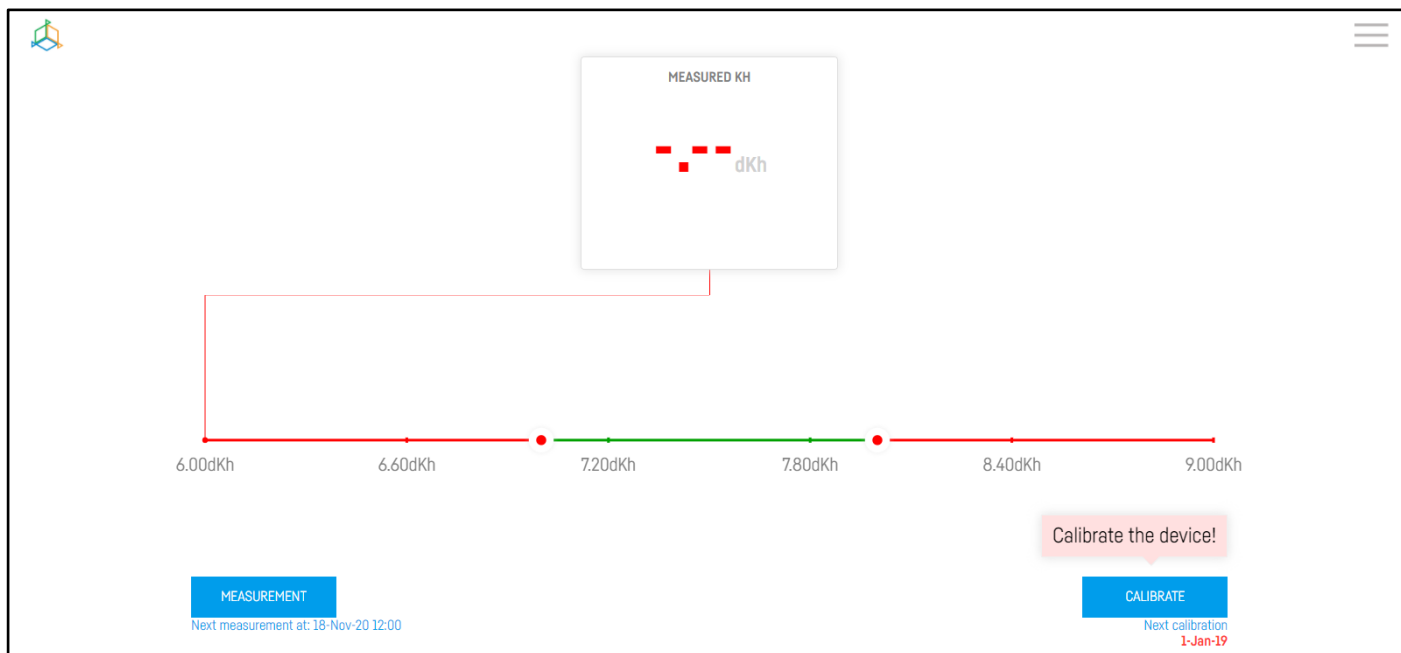
The accuracy of the measurement is 0,01 in the 4,00-9,00 pH values range.

III.   Device calibration

To ensure accurate measure it is required to perform the calibration of the pH meter upon the first start of the device. You need buffer solution pH4 and pH9 to perform the calibration. We recommend calibrating the device every month.

Calibration process – step by step:

- rinse the probe with deionized water and pat dry with soft cloth,

- submerge probe in the pH4 buffer solution and press OK button,

- after 30 seconds confirm the calibration in the pH4 solution and press OK button,

- rinse the probe with deionized water and pat dry with soft cloth,

- submerge probe in the pH7 buffer solution and press OK button,

- after 30 seconds confirm the calibration in the pH7 solution and press OK button ,

- the calibration process is completed.
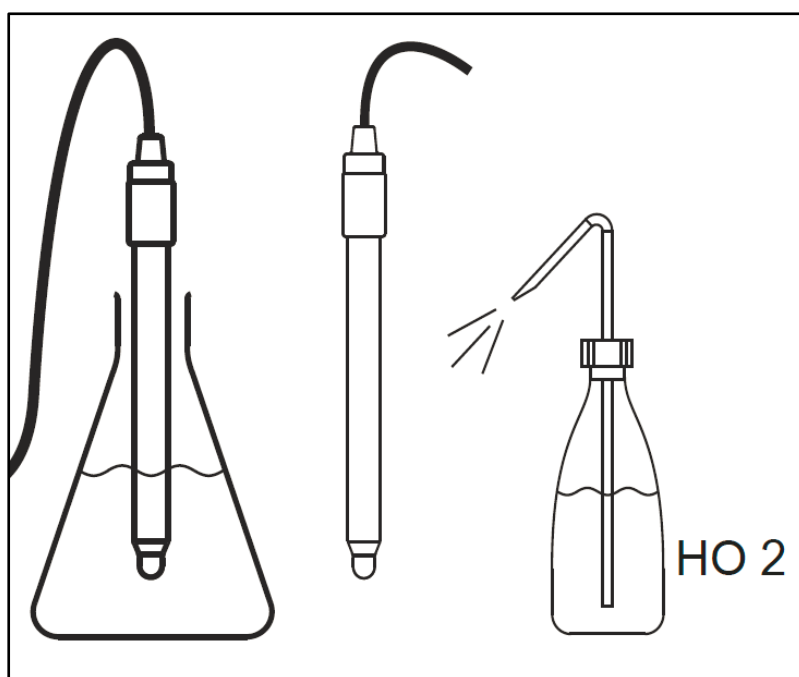
You can see the calibration screen below.
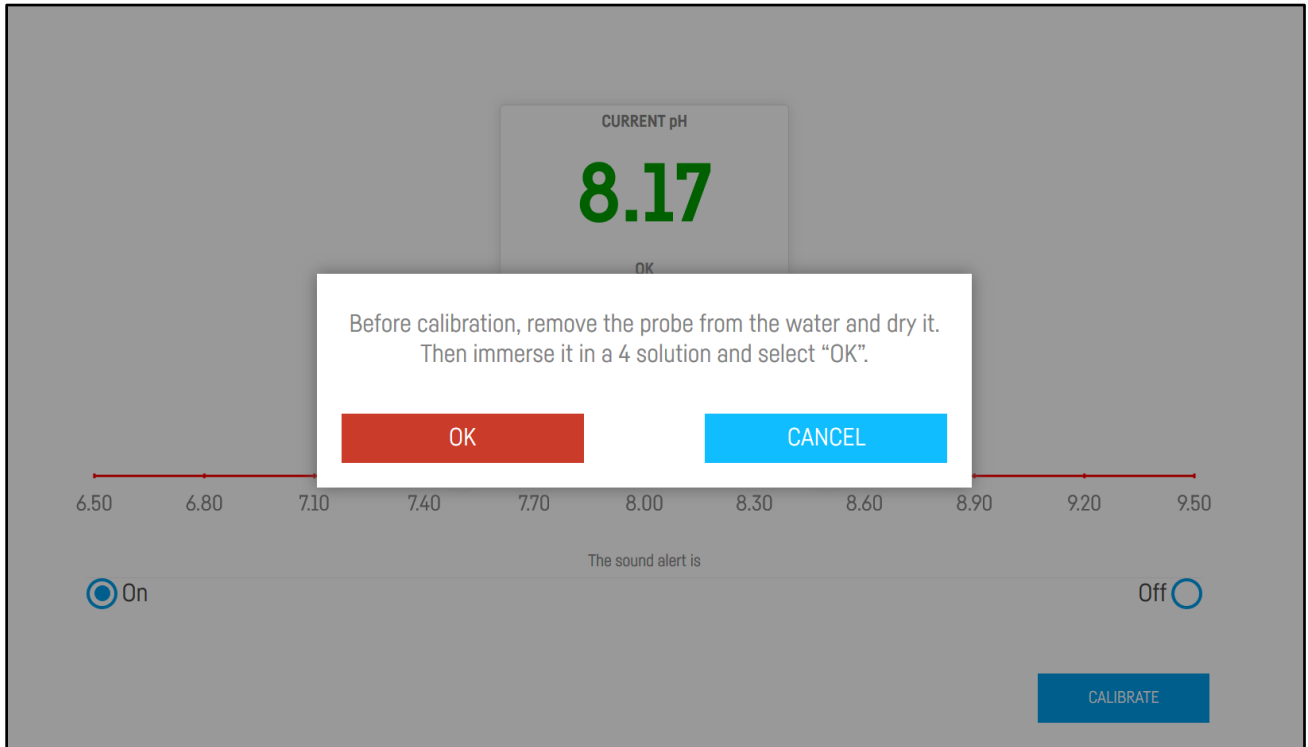
IV.   Resetting the device

If your device does not work properly, or you want to repeat the setup procedure, or you cannot connect to it despite several attempts, you may restore it to its default settings by placing a magnet (included in the package) on the housing in the place shown in the picture at the beginning of this manual.

> **?**   Place the magnet in the indicated place near the **Reset** sticker.

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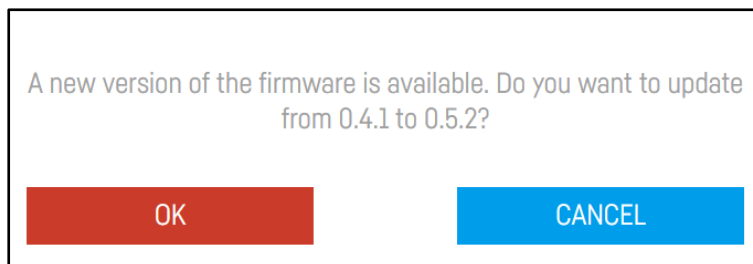
By pressing OK button you will start the automatic update process.

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.**

VI. 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.
Err message displayed on the screen	pH probe failure	pH probe is damaged or worn out and has to be replaced.
PH measure is unstable or changes rapidly	pH probe failure	pH probe is damaged or worn out and has to be replaced.
PH measure is constant and does not change	PH probe is missing or it is not properly connected	Check if the pH probe is properly connected and the BNC plug is locked. Disconnect the pH probe and connect it again. 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.
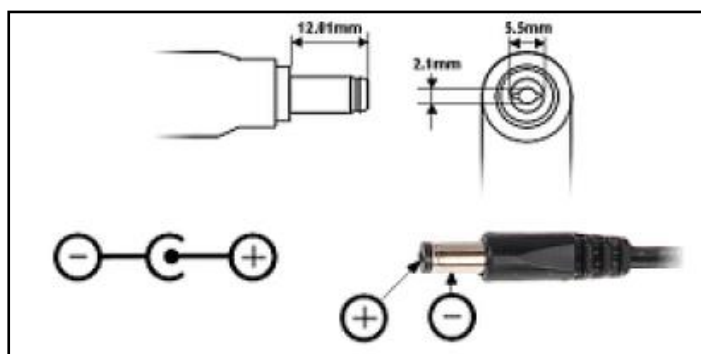
VII. Dedicated power adapter - user guide

1. Make sure to connect the power adapter first to the device and next to power supply.

2. The power adapter is supplied from the grid. There is a risk of electric shock. Do not remove the power adapter housing yourself!

3. There is a risk of fire or electric shock. Leave the power adapter vents exposed to enable natural air circulation and protect the device from foreign objects or liquid spillage.

4. Using a wrong DC plug or forcing the DC plug into an electronic device may cause damage to the device or its malfunction.

5. Desktop power adapters should be placed on a stable surface. Falling can lead to permanent damage.

6. Do not place power adapters in high humidity locations or near water.

7. Do not place power adapters in high ambient temperature locations or near sources of heat or fire.

8. The output current and output power must not exceed the rated values provided in the specification.

9. Disconnect the device from power supply before cleaning. Do not use liquid or aerosol cleaners. Only use a damp cloth for wiping.

10. To dispose of this product, contact a local licensed recycling company. Do not dispose of your power adapter with mixed municipal waste.

The table below lists the power adapters dedicated for our devices along with the models and names of the devices they can be used with.

Power adapter model	Power adapter parameters	Power adapter specification	List of compatible devices
TPS-1201000ZZ	Plug power adapter 12 V 1 A DC	Input voltage: 100-240 V AC Operating frequency: 50-60 Hz Maximum input current: 0.6 A Output voltage: 12 V DC [11.4-12.6 V] Output current: Max. 1 A Input connector type: DC 5.5/2.1	1. Level sensor * 2. Thermo view * 3. pH meter Plus * 4. TDS meter Plus * * First generation devices were powered by a 3.3 V 2 A power adapter. Before purchasing a power adapter, contact us to find out which power adapter is suitable for your device.
TPS-1202000ZZ	Plug power adapter 12 V 2 A DC	Input voltage: 100-240 V AC Operating frequency: 50-60 Hz Maximum input current: 0.6 A Output voltage: 12 V DC [11.4-12.6 V] Output current: Max. 2 A Input connector type: DC 5.5/2.1	1. Dosing pump 2. Dosing pump Pro 3. Dosing pump X3 4. Salinity guardian
TPS-1204000ZZ	Plug power adapter 12 V 4 A DC	Input voltage: 100-240 V AC Operating frequency: 50-60 Hz Maximum input current: 1.2 A Output voltage: 12 V DC [11.4-12.6 V] Output current: Max. 4 A Input connector type: DC 5.5/2.1	1. Dosing pump Large
GST120A24R7B	Desktop power adapter 24 V 5 A DC	Input voltage: 85-264 V AC Operating frequency: 47-63 Hz Maximum input current: 1.4 A Output voltage: 24 V DC [23.8-25.2 V] Output current: Max. 5 A Input connector type: R7B 4 PIN	1. Reef flare S 2. Reef flare Pro S
GST220A24R7B	Desktop power adapter 24 V 9.2 A DC	Input voltage: 85-264 V AC Operating frequency: 47-63 Hz Maximum input current: 1.7 A Output voltage: 24 V DC [23.8-25.2 V] Output current: Max. 9.2 A Input connector type: R7B 4 PIN	1. Reef flare M 2. Reef flare Pro M 3. Reef flare L

GST280A24R7B	Desktop power adapter 24 V 11.67 A DC	Input voltage: 85-264 V AC Operating frequency: 47-63 Hz Maximum input current: 2.0 A Output voltage: 24 V DC (23.8-25.2 V) Output current: Max. 11.67 A Input connector type: R7BF 4 PIN	1. Reef flare Pro L
GST280A24R7B	Desktop power adapter IDLC-45A-500	Input voltage: 90-295 V AC Operating frequency: 47-63 Hz Maximum input current: 0.16 A Output voltage: 35-50 V Output current: Max. 0.5 A Input connector type: N/A	1. Reef flare Bar S 2. Reef flare Bar M
GST280A24R7B	Desktop power adapter IDLC-45A-1050	Input voltage: 90-295 V AC Operating frequency: 47-63 Hz Maximum input current: 0.4 A Output voltage: 16.8-24 V Output current: Max. 1.05 A Input connector type: R7BF 4 PIN	1. Reef flare Bar L

DC 5.5/2.1 connector:

R7B and R7BF connector: