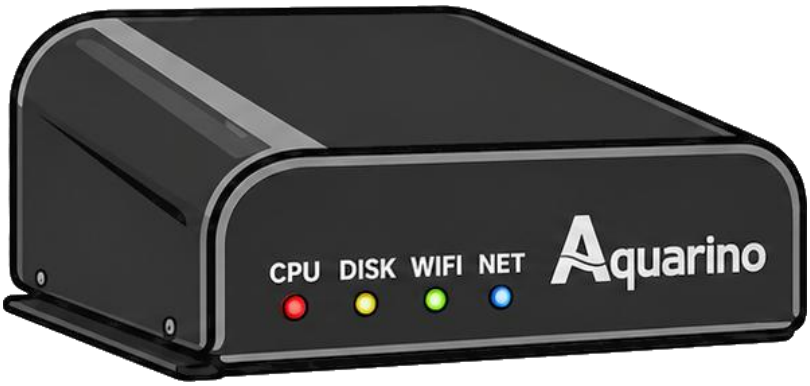
AQUARINO
CONTROLLER

USER MANUAL



Automation and monitoring hub
for aquariums, tanks and ponds

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Preface

Like every aquarist, I looked for what was best for my fauna and flora; it took a lot of equipment, products and study.

After buying several devices to monitor, control and help me care for my aquarium, I realised that none of them met my needs perfectly. There was difficult setup, high cost and plenty of limitations.

So I decided to use my knowledge of technology, and my own resources, to offer our hobby a new option. That is the moment Aquarino was born.

I am very proud of what we have built. Many aquarists took an active part, sending suggestions. We only reached this result because you believed in the project.

What we want to keep as the essence of Aquarino is direct contact with aquarists, close support and service, and speed in delivering new features and products.

Join our channels to ask questions, send suggestions and talk about the hobby:

- WhatsApp: https://chat.whatsapp.com/Hp9GjAmptpUEzbykjlUCMC
- Facebook: https://www.facebook.com/AquarinoController
- YouTube: https://www.youtube.com/c/aquarino

Aquarino depends on all of us to move forward and become a reference in usability, features and service for aquarists worldwide.

Thank you! We will repay your trust, and take our hobby to a new level.

Laercio M F Junior

Founder and Director of Innovation, Aquarino

How to use this manual

This manual is meant to be read in order the first time, and consulted by topic afterwards. If your Aquarino Controller has just arrived, follow Parts II and III in sequence — in under an hour it will be connected and controlling its first outlets.

Five kinds of highlight appear throughout the text:

> BACKGROUND
> Explains the reasoning behind a recommendation. Reading it is optional, but it helps you make better day-to-day decisions.

> TIP
> A practical suggestion that saves time or improves the result.

> CAUTION
> A situation that can harm the equipment or your aquarium. Worth reading.

> IMPORTANT
> Information that, if ignored, can cause real damage — always read it.

> EXAMPLE
> A concrete case with numbers, to make the concept stick.

The screenshots were taken in the **Local Manager** — the interface the equipment itself serves on your network — on a phone, which is how most aquarists use the Aquarino day to day. The same screens exist in the Aquarino app.

> BACKGROUND
> ### The screens in this manual
> The Aquarino Controller is updated frequently, and the manual follows every update. Small visual differences between the images and your screen are expected and do not indicate a problem.

PART I

Getting to know your Aquarino Controller

What the hub does, what is in the box and how it makes decisions.

1 What the Aquarino Controller is

2 In the box, and the parts

3 How the Controller decides

CHAPTER 1

What the Aquarino Controller is

The **Aquarino Controller** is an automation and monitoring hub for aquariums, tanks and ponds. It brings together, in a single piece of equipment, the readings from your sensors, the control of the outlets, the dosing pumps, the automatic feeder and the rules that tie it all together — with access over your Wi-Fi network and over the internet.

Designed in collaboration with many aquarists and specialists, the Controller was made to grow with your system: you start with the hub, the temperature sensor and the outlet bar that come with the product, and add sensors and modules as the need arises.

1.1 What it does

- **Reads sensors** — up to 3 temperature, 2 flow, 2 leak and 4 level sensors, plus the pH, ORP, conductivity (salinity), TDS, oxygen and alkalinity modules.
- **Controls up to 16 outlets**, through one or two Powerbar V8 units, with scheduler, timer, cycle and failover switching modes.
- **Drives up to 6** 12 V **dosing pumps**, with scheduling, reservoir tracking and precision calibration.
- **Takes care of feeding**: it triggers the automatic feeder and turns off the pumps you choose during the feeding period.
- **Automates with rules**: up to 24 rules of the kind "if the sensor goes past this value, turn this on and turn that off".
- **Protects against power failure**, with the Failover module: it detects the outage, turns off what is not essential and preserves your UPS.
- **Alerts you** by e-mail — and by push or Telegram, through the Aquarino app — when something goes off script.
- **Records everything**: event logs and hour-by-hour graphs for every sensor.

1.2 What it does not do

Being clear about the limits of the equipment is part of using it well.

- It **does not measure what has no sensor**. Parameters without an installed module can be entered manually (Chapter 12), but the one doing the measuring is you.
- It **does not replace your judgement**. The rules execute exactly what you configured — no more, no less. Start simple and evolve.
- It **is not a UPS**. The Failover module manages the battery power you already have; what sustains the aquarium through the outage is your UPS.

- It **does not excuse good electrical practice**. Circuit breakers, an RCD and proper grounding remain the responsibility of the aquarium installation.

1.3 Local Manager and Cloud: two paths, the same equipment

You reach the Aquarino Controller in two ways, and the screens are the same in both:

Access	When to use it
Local Manager — through the equipment's IP address, in any browser on your network	Day to day, at home. It works **without internet** and is ideal to leave open on a tablet next to the aquarium
Aquarino app — on your phone, from anywhere	Away from home, and for account features: access sharing, push and Telegram notifications, several devices in a single list

> BACKGROUND
> Some critical actions — configuring Wi-Fi, calibrating sensors, shutting down, resetting the network and factory reset — only work with you **on the same network** as the equipment. It is a deliberate protection: nobody turns your aquarium off from a distance.

CHAPTER 2

In the box, and the parts

2.1 What comes in the box

- Aquarino Controller hub;
- Universal-voltage 12 V / 5 A power supply;
- Powerbar V8 with a 2-metre shielded CAT5E network cable;
- PRO temperature sensor with a 2-metre cable.



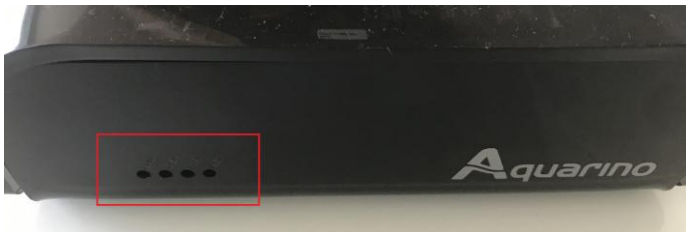
The Aquarino kit: the control hub and the Powerbar V8, with the PRO temperature sensor.

2.2 LED panel

Four lights on the front of the hub tell you the state of the equipment without you opening a single screen:

LED	Behaviour
CPU (red)	Blinks continuously — the sign that the processor is alive. If it stops blinking, the equipment has frozen
DISK (yellow)	Lights up while the configuration and history files are being read or written
WIFI (green)	**Solid**: connected to your network. **Blinking**: in setup mode, broadcasting its own network (Chapter 8). **Off**: lost the network — the equipment retries every 1 minute

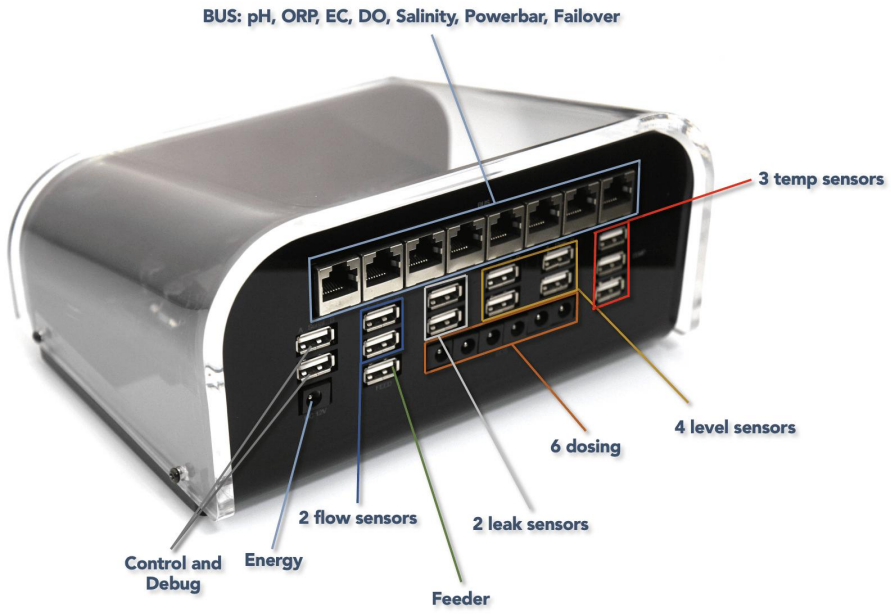
LED	Behaviour
NET (blue)	On when there is internet access. With it off, the equipment keeps working on the local network, but sends no e-mails and does not appear in the app away from home



The LED panel: CPU, DISK, WIFI and NET.

2.3 Connectors and ports

Every port on the hub is identified by name, and each has a single, dedicated purpose:



The rear panel holds every connection on the hub.

Port	Quantity	What it is for
TEMP	3	Temperature sensors
FLOW	2	Water flow sensors
LEAK	2	Leak detection sensors
LEVEL	4	Level sensors
FEED	1	Automatic fish feeder

Port	Quantity	What it is for
BUS	8	Aquarino modules: Powerbar, Failover and the measurement modules (pH, ORP, EC, TDS, O2)
DOS (P4)	6	12 V dosing pumps
DC 12V	1	The power supply that comes with the product

> CAUTION
>
> **The BUS ports are not network ports**
>
> Even though the connector is the same as a network cable's, the **BUS** ports are meant only for Aquarino modules. Never plug in a cable coming from your router or switch.

2.4 Mounting

The Aquarino was designed to be on display, not hidden inside the cabinet. It comes with silicone feet for horizontal use on any flat surface, and mounting holes on the underside for vertical installation.



Horizontal on the silicone feet, or vertical using the holes on the underside.

CHAPTER 3

How the Controller decides

Before diving into the screens, it is worth understanding the logic that governs the equipment. Five minutes on this chapter prevent most of the confusion beginners run into.

3.1 Automatic × Manual

The system works in one of two modes:

Mode	What it means
Automatic	The normal state. Schedules, timers, cycles and automation rules are in charge of the outlets and dosing pumps
Manual	You have taken over: when you turn an outlet on or off by hand, the system **freezes** the state of the outlets and **suspends every rule** until you hand control back to automatic

Manual mode exists for maintenance: siphoning, cleaning the skimmer, water changes. You turn off what you need, do the job, and go back to automatic.

> TIP
>
> **Set up the automatic return**
>
> Forgetting the system in manual mode is the most common mistake — and the aquarium runs without its rules in the meantime. In **System → Time Limit in Manual Mode** you set a period (up to 240 minutes) after which the equipment returns to automatic on its own. The factory value is 0, meaning no automatic return.

3.2 The order of precedence

When more than one thing wants to command the same outlet, whichever is higher on this list wins:

1. **Manual** — your direct command sits above everything.
2. **Feeding** — during the feeding period, the outlets marked to turn off stay off, no matter what the rules say.
3. **Failover** — during a power outage, the outlets without battery permission are turned off.
4. **Delay** — an outlet counting down a delay waits for the countdown to finish.
5. **Automation rules** — in the order they appear on the Rules screen.

6 **Outlet mode** — scheduler, timer, cycle, always on or always off.

> EXAMPLE
> The skimmer's outlet is in **Always ON**. You start a feeding, and it is marked to turn off during feeding: the outlet turns off. When the period ends, "Always ON" takes over again — without you doing anything.

3.3 Emergency

The red button in the top right corner of every screen is the **Emergency Stop**: it turns off every outlet, interrupts any dose in progress, cancels the feeder and puts the system into manual mode — immediately, with no confirmation prompt.

> CAUTION
> After an emergency, nothing turns back on by itself: the outlets stay in manual, off. Once the situation is resolved, go to the **Power** screen and tap **ALL AUTO** to hand control back to the system.

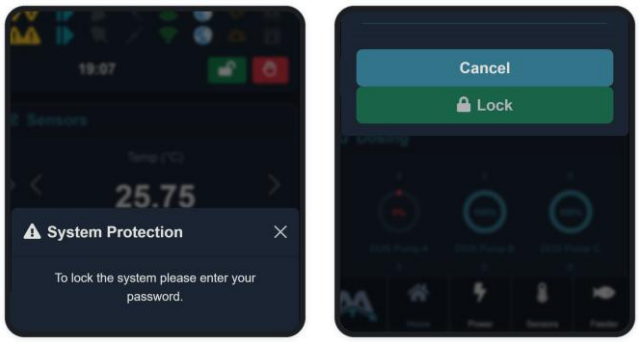
3.4 Protected mode

The padlock in the top bar locks the system against accidental — or curious — changes. With the padlock closed, the equipment ignores every command: outlets, dosing pumps, settings. The only action accepted is unlocking, with the password.

7 Tap the **open padlock** (green) in the status bar.

8 Enter the device password — from the factory, `aquarino` — and tap **Lock**.

9 The padlock turns **red and closed**: the system is protected. To release it, tap it again and enter the password.



Protected mode asks for the password to lock — and to unlock.

> **TIP**
> Change the default password in **System → Device Password** (up to 10 characters). It is the same password as the padlock's. And do not forget it: it also protects the equipment's administrative actions.

PART II

Installation

The right spot, power under control and every sensor in its port.

4 Where and how to install

5 Powerbar: your aquarium's outlets

6 Temperature, flow, leak and level sensors

7 Measurement modules and Failover

CHAPTER 4

Where and how to install

Place the hub on a flat, dry, easily reached surface, in an area meant for electronic equipment. Unlike the devices that live hidden inside the cabinet, the Aquarino was designed to be on display — but a few precautions still apply:

Avoid	Why
Places exposed to splashes, or above the water line	This is electronic equipment; constant moisture shortens its life
Running sensor cables alongside power cables	Electrical interference degrades the readings, especially temperature and the probes
Stretching communication cables beyond 5 metres	Powerbar, Failover and sensor extenders have a 5-metre limit for reliable communication

10 Position the hub — horizontal on the silicone feet, or vertical using the holes on the underside.

11 Connect the 12 V supply to the **DC 12V** port and to the wall outlet.

12 Wait a few seconds: the equipment gives a **beep** and the green Wi-Fi LED starts **blinking**, showing that it is ready to be configured (Chapter 8).

> TIP
> Finish the physical installation — Powerbar, sensors, dosing pumps — before moving on to the network setup. That way, on your first access, the screens already show your actual aquarium.

CHAPTER 5

Powerbar: your aquarium's outlets

The **Powerbar V8** is the Aquarino's power distribution and control bar: eight outlets individually commanded by the hub. The Controller accepts **two** Powerbars, for a total of **16 outlets**.



The Powerbar V8: eight individually controlled outlets.

5.1 Installing

13 Unplug your Aquarino from the wall.

14 On the Powerbar, set the **address switch**: **A** for outlets 1 to 8, **B** for outlets 9 to 16.

15 Connect the supplied network cable between the Powerbar and a **BUS** port on the hub.

16 Connect the Powerbar's power cable to your mains supply (110 V or 220 V).

17 Power the Aquarino back on.

18 Confirm detection in **System → System Status**, in the **Powerbar** block.

Characteristic	Value
Outlets per Powerbar	8
Powerbars per hub	2 (switches A and B)
Supply voltage	110 V or 220 V
Maximum load per Powerbar	10 A

Characteristic	Value
Communication cable	2 m included; 5 m maximum
Mounting	Horizontal or vertical, with its own mounting holes

CAUTION

Respect the load limits

Add up the consumption of everything plugged into each Powerbar and keep a margin below the **10 A** per bar. Heaters and chillers are the biggest consumers — when in doubt, spread them across the two bars.

BACKGROUND

Two Powerbars on the same switch position

If both bars are on the same switch position (A and A, for example), both respond to the same commands and the system cannot tell them apart. Each Powerbar needs a different letter.

CHAPTER 6

Temperature, flow, leak and level sensors

The sensors in this chapter connect to the labelled USB ports on the hub. Installation always follows the same ritual — power off, connect, power on, check — so it is summarised only once:

> IMPORTANT
>
> **The installation ritual for any sensor**
>
> 1. **Unplug** your Aquarino from the wall.
> 2. **Connect** the sensor to the correct port.
> 3. **Power** the equipment back on.
> 4. Open the **Sensors** screen and **check the reading**.
>
> Connecting sensors with the equipment powered on can damage the sensor or the hub.

6.1 Temperature (TEMP ports)

Monitoring temperature is the most basic need of any aquarium, and the kit already includes a category **A** sensor. The three TEMP ports accept sensors from categories A, B and C:

- Sensors of the **same category** are automatically averaged — useful in large aquariums, to read the temperature at more than one point and work with the mean.
- Sensors of **different categories** appear as independent readings (Temp A, Temp B, Temp C) — for example: aquarium, sump and room.



The PRO temperature sensor that comes with the product.

Characteristic	Value
Resolution	12 bits — 0.0625 °C
Update	Every 60 seconds
Categories	A, B and C

> **TIP**
> Avoid running the temperature sensor cable alongside the power cables of your other equipment — electrical interference is the most common cause of a fluctuating reading.

6.2 Flow (FLOW A and B ports)

Flow sensors measure the flow in your plumbing: the actual return flow, or the ideal flow through the chiller or the UV filter. Use the model that matches your pipe diameter:

Model	Maximum flow
DN15	30 L/min — 1,800 L/h
DN20	60 L/min — 3,600 L/h
DN25	120 L/min — 7,200 L/h
DN32	120 L/min — 7,200 L/h
DN40	200 L/min — 12,000 L/h



Flow sensor, installed in line with the plumbing.

After connecting, set the model in **System → Calibration → Flow** (Chapter 20) and check the reading on the Sensors screen.

6.3 Leak detection (LEAK A and B ports)

Every aquarist's nightmare is a silent leak. The two LEAK ports let you monitor two separate spots — for example, the cabinet floor and the sump area.



The leak sensor sits flush with the floor, metal face down.

- Install it with the **metal face down**, flush with the floor.
- Choose the spot considering the **slope of the floor** — that is where the water runs.

- To test it, touch the metal part with a wet fingertip and check the alert on the Sensors screen.

6.4 MAG magnetic level sensor (LEVEL A and B ports)

The MAG level sensor detects water **through the glass**, without touching it — ideal for monitoring the overflow level or the top-off reservoir with nothing inside the water.



The MAG sensor sticks to the outside of the glass.

- Suited to glass up to **5 mm** thick (adjustable up to 10 mm).
- 40 cm cable — use the USB extender, up to a maximum of 5 metres.
- Connect it to the **LEVEL A** or **LEVEL B** ports.

> TIP
> **Sensitivity adjustment**
> Under the sensor's cap, where the LED sits, there is a small adjustment screw: **anticlockwise** increases sensitivity (thicker glass), **clockwise** reduces it (thinner glass).

6.5 Optical level sensor (LEVEL C and D ports)

The optical sensor is the precision one: it detects the level at an exact point, ideal for controlling evaporation top-off in the sump or the balling reservoir.



The optical sensor, with its magnetic holder included.

- 3-metre cable, with a magnetic holder included.
- With a USB extender, a maximum total length of 5 metres.
- Connect it to the **LEVEL C** or **LEVEL D** ports.

BACKGROUND

Normally open, normally closed

Every level sensor has a resting state: **open** (no water) or **closed** (with water). In the sensor's configuration (Chapter 12) you tell it which state is expected in your use — and the Aquarino then treats the opposite state as an alert condition.

CHAPTER 7

Measurement modules and Failover

7.1 Measurement modules (BUS ports)

The BUS ports take the modules that widen what the Controller sees in the water. Each installed module makes the corresponding sensor "wake up" on the Sensors screen — detection is automatic, at equipment start-up:

Module	What it measures	Units
pH (A and B)	Water pH — up to two independent modules	pH
ORP	Oxidation-reduction potential	mV
EC	Conductivity / salinity	µS/cm, mS/cm, ppt, specific gravity, kg/m³
TDS	Total dissolved solids — ideal for RO water	ppm
Oxygen (SAT/DO)	Dissolved oxygen saturation	% or mg/L
Aquarino KH	Alkalinity, measured by the integrated Aquarino KH (Chapter 24)	dKH, ppm, mEq/L



pH reading module: the probe that connects to the BUS bus.

19 Unplug your Aquarino.

20 Connect the module to any **BUS** port.

21 Power it back on and check the reading on the **Sensors** screen.

22 Calibrate the probe before trusting the readings — Chapter 20 has the step-by-step for each one.

> BACKGROUND
> **What if I do not have the module?**
> Without the pH module, for example, the pH sensor simply does not appear. To track parameters you measure with chemical tests, use the **Custom A** and **Custom B** manual sensors and the alkalinity sensor's **Manual Value** field (Chapter 12) — the values you enter go into the graphs and the rules like any other sensor.

7.2 Failover module

The Failover is the brains behind your aquarium's UPS: it monitors voltage, current and consumption (kWh), detects the power outage and turns off the outlets you marked as non-essential — so the battery lasts longer for what matters.



The Failover module, installed between the mains supply and the UPS.

23 Unplug your Aquarino.

24 Connect the Failover module's network cable to a **BUS** port on the hub.

25 Connect the module's male plug to the mains supply.

26 Connect the module's female socket to the UPS.

27 Plug the Powerbar and the Aquarino into the UPS.

28 Power the Aquarino on and calibrate the voltage in **System → Calibration** (Chapter 20).

Characteristic	Value
Maximum current	25 A
Voltage	Universal — detects 110 V or 220 V automatically
Communication cable	5 metres maximum
Sensors it enables	Volts, Amps and Power (consumption in W and kWh)

How the system behaves during a power outage — and how to configure each outlet for it — is in Chapter 23.

PART III

First access

Getting the equipment onto your network and finding your way around the screens.

8 Connecting to your Wi-Fi network

9 Local Manager, the app and the status bar

CHAPTER 8

Connecting to your Wi-Fi network

Freshly powered on, the Aquarino Controller does not yet know your network. So it creates a **Wi-Fi network of its own**, called **Aquarino**, for you to join and hand over the credentials. The whole process takes a few minutes.

> TIP
> The **Aquarino app** has a wizard that handles these steps for you — it joins the equipment's network, delivers your network's password and registers the equipment to your account. If you prefer the guided path, install the app and choose **Add device**. The steps below are the manual path, through the browser.

8.1 Before you start

- The equipment must be **powered on**, with the green Wi-Fi LED **blinking** — the sign that the Aquarino network is on the air;
- Have your **Wi-Fi network name and password** at hand;
- Confirm that your network is **2.4 GHz** — the equipment does not connect to 5 GHz networks;
- Have an **e-mail address** you actually check: it will be the link between the equipment and you.

> CAUTION
> **Equipment that belonged to someone else**
> If your Aquarino was previously configured by another owner, the network it creates may have a different name — the previous owner may have customised the hostname. If the green LED is not blinking, the equipment probably still remembers an old network: use **System → Network Reset**, or talk to our support team.

8.2 Step by step

29 On your phone or notebook, open the Wi-Fi settings and join the **Aquarino** network. It has no password and **no internet** — when the device warns you, choose to stay connected.

30 Open the browser and type the address **http://192.168.0.1**. The Local Manager home screen appears.

31 Open the **System** menu. In the **User E-Mail** field, enter your e-mail address and save. The equipment will be **bound to that e-mail** as its owner, and that is where the alerts go.

32 In the **Device Name** field, give your equipment a name — up to 10 characters, no spaces. Example: `MyReef`. It is the name that identifies the equipment in support and in the app.

33 Still in System, tap **Wifi Settings**. Wait for the scan, select your network from the list, enter the password and tap **Save**.

34 The equipment restarts and joins your network. At the end, the beep sounds and the green LED stays **solid** — connected. The blue LED lit means there is internet too.

8.3 The welcome e-mail

Once online, the equipment sends your e-mail the access instructions: the address of the **Local Manager** (its IP on your network) and the cloud access address. Keep that e-mail — and if the IP ever changes, a new notice arrives on its own.



The welcome e-mail carries the two access addresses of your equipment.

> **TIP**
> Wait up to 5 minutes and check the spam folder too. Without that e-mail, you can find the equipment's IP in your router's device list, or on the app's **System** screen.

8.4 Requirements for your network

Requirement	Detail
2.4 GHz only	If your router is dual-band, use the 2.4 GHz band — on many models it is enough to create a separate network name for it
Name without special characters	Avoid spaces and accents in the network name (SSID), as per RFC 1738. If necessary, rename the network on the router
Reasonable signal where the equipment sits	Networks with a very weak signal (below −75 dBm) do not appear in the list. Weak signal is the most common cause of dropouts after installation

Requirement	Detail
20 MHz channel, B/G/N mode	Routers in mixed channel-width mode (20/40 MHz) can cause random disconnections. Fix it at 20 MHz if you notice dropouts

TIP

Reserve the equipment's IP on the router

The Aquarino gets its IP via DHCP, and routers can change that address over time. Reserve the IP based on the equipment's **MAC address** (System screen) on your router — that way the Local Manager's address never changes. If you prefer, the equipment also accepts a static IP, on the Wi-Fi settings screen itself.

IMPORTANT

Registration needs to happen once

On its first connection to the internet, the equipment registers itself with the Aquarino servers — that is what enables operation and binds the equipment to your e-mail. A new device that has never had internet access sits waiting for that registration. Once registered, it works normally even without internet.

CHAPTER 9

Local Manager, the app and the status bar

9.1 Local Manager

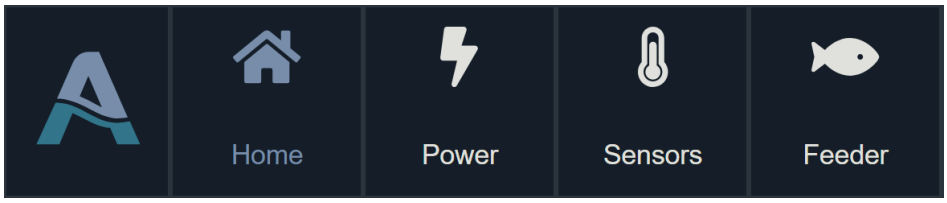
The **Local Manager** is the interface the equipment itself serves on your network: type its IP into any browser — notebook, phone, tablet, any operating system — and you are in. It works **independently of the internet**: if your connection drops, control of the aquarium remains fully intact on the local network.

9.2 Aquarino app

The **Aquarino app**, for Android and iPhone, gathers all your devices into a single list and reaches the Controller from anywhere, through the cloud. It is where you share access with other people, receive push notifications and link Telegram. The app's manual is a document of its own — here, whenever a feature depends on it, the text says so.

9.3 The menu

Navigation is the same in the Local Manager and in the app. There are ten areas:



The Aquarino Controller menu.

Area	What you find there
Home	The overview: favourite sensors, feeding, outlets and dosing pumps (Chapter 10)
Power	State and configuration of the 16 outlets (Chapter 11)
Sensors	Readings, favourites and alerts (Chapter 12)
Feeder	Feeding mode and its schedules (Chapter 13)
Dosing	The 6 dosing pumps (Chapter 14)
Rules	The automation rules (Chapter 15)
Logs	The event log (Chapter 17)
Graphs	The sensor history (Chapter 16)

Area	What you find there
Custom.	Units, language and preferences (Chapter 18)
System	Network, password, calibration, maintenance (Chapter 19)

9.4 The status bar

Present on every screen, the status bar sums up the equipment at a glance: eight notification icons, the clock, the protected-mode padlock and the emergency button.

Icon	Lit means	Tapping it
Alert	Some sensor outside its configured limits	Opens the Sensors screen
Rules	Rules in conflict with each other (Chapter 15)	Opens the Rules screen
Feeding	Feeding period in progress	Opens the Feeder screen
Dosing	A dose running at this moment	Opens the Dosing screen
Wi-Fi	Connected to your network	—
Internet	With access to the internet and the cloud	—
Update	New version available (Chapter 25)	Opens the update dialog
Battery	Power outage — Failover active (Chapter 23)	—

In the centre sits the system **clock** — tap it to set the date, time and format. On the right, the protected-mode **padlock** and the red **Emergency Stop** button (Chapter 3).

The footer of every screen shows the **Firmware** and **Manager** versions and your equipment's name.

> BACKGROUND
> The screens refresh on their own every 30 seconds. While you are editing something or keeping a dialog open, the refresh pauses — nothing overwrites what you are typing.

PART IV

Getting to know the screens

Every screen of the Aquarino Controller, field by field.

10 Home screen

11 Power

12 Sensors and alerts

13 Feeder

14 Dosing

15 Automation rules

16 Graphs

17 Logs

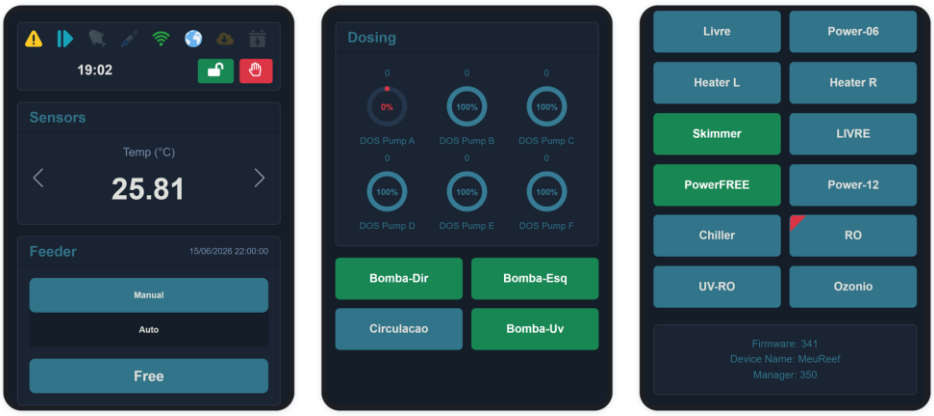
18 Custom. — preferences

19 System and System Status

CHAPTER 10

Home screen

The Home screen exists to answer, within three seconds, the question of every morning: **is everything all right with my aquarium?**



The Home screen: favourite sensors, feeding, dosing pumps and outlets.

10.1 Sensors

The Sensors block is a carousel of the sensors you marked as **favourites** on the Sensors screen (Chapter 12). One sensor at a time, changing every 10 seconds — or via the side arrows. The value appears in **red** when the sensor is outside its alert limits.

> TIP
> Favourite only what you want to see at a glance — temperature, salinity, pH. The carousel also defines what the **Aquarino Display** shows, if you have one (Chapter 24).

10.2 Feeding

Shows the current mode (**Manual** or **Auto**), the date of the last feeding and the **Feed** button, which triggers an immediate feeding. During the feeding period, the button becomes **Stop Feed**, to end it early.

10.3 Dosing pumps

A progress ring per pump, with the percentage left in the reservoir at the centre and the number of doses (or days) remaining above it. The ring turns **red** when the reservoir crosses the "low reservoir" limit set on the Custom. screen.

10.4 Outlets

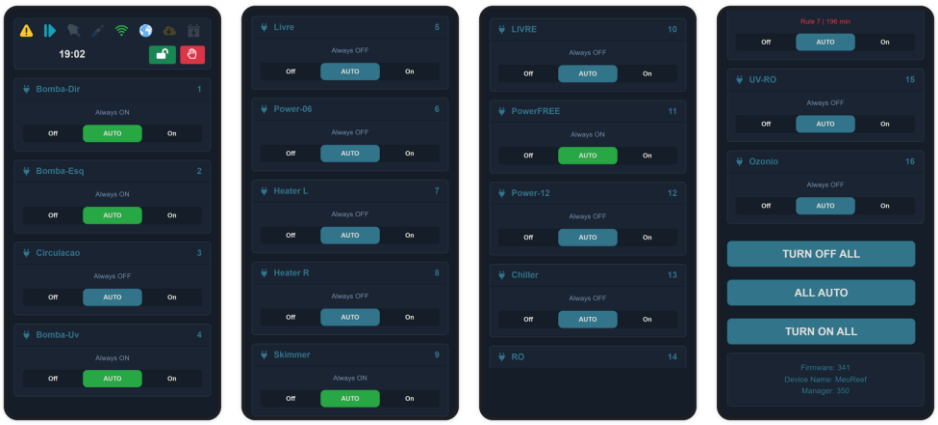
One button per outlet, with the name you gave it: **green** when on, blue when off. Tapping a button turns the outlet on or off right away — and puts the system into **manual mode** (Chapter 3).

> CAUTION
> A tap on the Home screen acts immediately, with no confirmation prompt. Remember: touch an outlet by hand and the rules stay suspended until the system goes back to automatic.

CHAPTER 11

Power

The Power screen is your aquarium's electrical panel: each outlet with a name, an operating mode and a three-position switch.



The Power screen: each card shows the name, current mode and the Off / AUTO / On switch.

11.1 The three-position switch

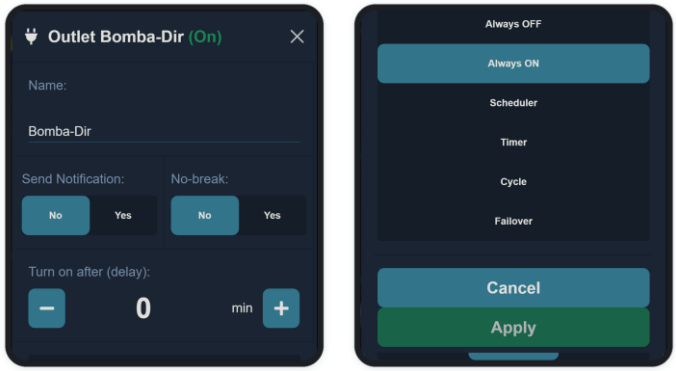
Position	What it does
Off	Turns the outlet off manually — and puts the system into manual mode
AUTO	Hands the outlet back to automatic control: schedules, cycles and rules apply again
On	Turns the outlet on manually — and puts the system into manual mode

The switch shows **green** whenever the outlet is energised — turned on by you or by the automation. Below the name, the state text says who is in charge: the configured mode, `Rule N` when a rule has taken over, `Feeding` during a feeding, or the countdown of a delay.

The three large buttons at the bottom of the screen act on all outlets at once: **TURN OFF ALL**, **ALL AUTO** and **TURN ON ALL**.

11.2 Configuring an outlet

Tap the **name** of any outlet to open its settings:



The outlet settings: name, notification, no-break, delay and operating mode.

Field	What it does
Name	Up to 10 characters, no accents. Use names you recognise in a hurry: `Skimmer`, `Heater-L`, `Chiller`
Send Notification	Notifies you on every switching of this outlet. Useful for critical equipment; noisy for the rest
No-break	May this outlet stay on during a power outage? Requires the Failover module (Chapter 23)
Turn on after (delay)	Delay, in minutes, applied to automatic switch-ons — up to 1440 min. The classic use is keeping the skimmer from overflowing after a power cut

11.3 The operating modes

Mode	Behaviour
Always OFF	Stays off, unless an automation rule turns it on. The right mode for a chiller or heater driven by a rule
Always ON	Stays on continuously. The right mode for the return pump and circulation pumps
Scheduler	Turns on at the start time and off at the end time, every day. The lighting mode
Timer	A continuous cycle: on for X minutes, off for Y minutes (5 to 1440 each)
Cycle	The timer above, but only inside a scheduled window. Example: from 2 pm to 10 pm, 10 min on every hour
Failover	Stays off and **turns on only during a power outage** — for example, an emergency air pump. Requires the Failover module

11.4 Ready-made recipes

The combinations below cover most of the equipment in an aquarium:

Equipment	Mode	Off during feeding?	No-break?
Return pump	Always ON	Yes	**Yes**
Skimmer	Always ON	Yes	No
Heater / Chiller	Always OFF + temperature rule (Chapter 15)	Yes	No
Lighting	Scheduler (e.g. 2 pm to 10 pm)	No	No
Wavemaker	Timer or Cycle (e.g. 10 min on, 50 off)	Yes	No
Emergency air pump	Failover	No	**Yes**
UV reactor	Scheduler	No	No

BACKGROUND

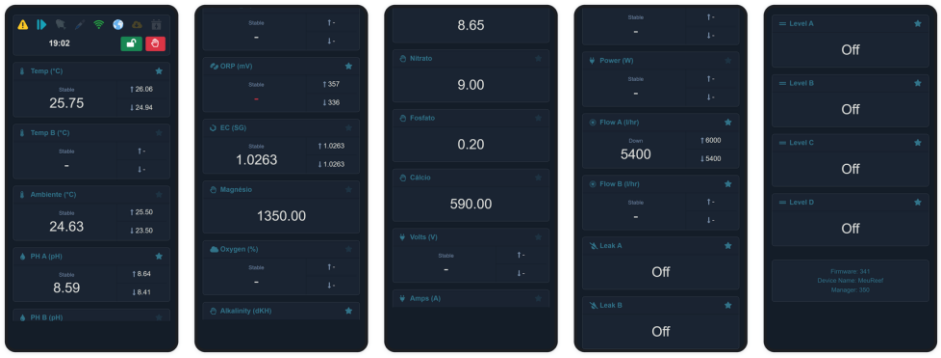
Why the heater goes in "Always OFF"

It looks counter-intuitive, but it is the right design: the outlet stays normally off and **the automation rule** turns it on when the temperature drops (Chapter 15). If the rule fails or is disabled, the heater stays off — which is the safe state. The same reasoning applies to the chiller.

CHAPTER 12

Sensors and alerts

The Sensors screen shows everything the equipment can see: one card per sensor, with the current value, the trend and the recorded extremes.



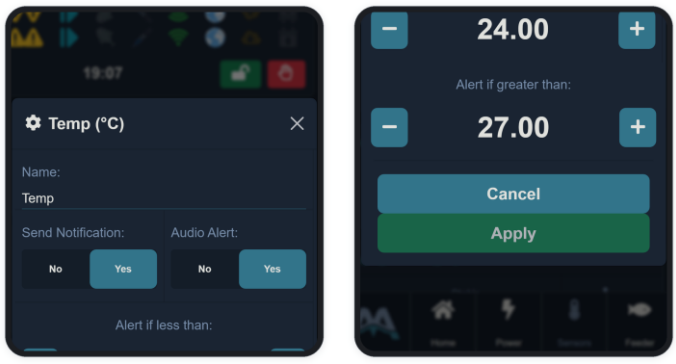
The Sensors screen: value, trend, minimum and maximum for each sensor.

12.1 The sensor card

- **Name and unit** — the name can be customised in the sensor's configuration.
- **Favourite star** — favourites appear in the Home screen carousel and on the Aquarino Display. Tapping the star takes effect immediately.
- **Trend** — Stable, Up or Down, compared with the reading from a few minutes earlier.
- **Current value** — in red when outside the alert limits.
- **Maximum and minimum** — the extremes recorded by the system.

12.2 Configuring alerts

Tap the card of a configurable sensor (the ones showing the gear) to set the name, notification and limits:



The sensor configuration: name, notification, audio alert and limits.

Field	What it does
Name	Up to 10 characters
Send Notification	An e-mail when the sensor leaves the limits — and when it returns
Audio Alert	The equipment's beep while the sensor is out of range
Alert if less than	Lower limit. Zero disables this side of the alert
Alert if greater than	Upper limit. Zero disables this side of the alert

TIP

Limits that produce useful alerts

Set the limits **outside** your aquarium's normal variation — use the minimum and maximum the sensor card records as a reference. A good alert is one that means a real problem: if it fires every day, you stop reading it.

Example: an aquarium stable between 25 and 27 °C → alert below **24.5** and above **27.5**.

BACKGROUND

The alert warns once

On leaving the range, the equipment sends **one** e-mail and lights the alert icon; the beep continues for as long as the condition lasts. A new e-mail is only sent if the sensor returns to normal and leaves the range again — no spam in your inbox.

12.3 Level sensors

Level sensors have no numeric limits — they have an expected state. In the configuration, choose:

Option	When to use it
Normally Open	The resting state is no water at the sensor's spot — e.g. an overflow sensor. It gets wet, it alerts
Normally Closed	The resting state is with water — e.g. the sump's minimum level. It runs dry, it alerts
Not Relevant	The sensor should not raise alerts — reading only

12.4 Manual values

The **Custom A** and **Custom B** sensors — and **Alkalinity**, when there is no integrated Aquarino KH — accept the **Manual Value** field: you run your chemical test and enter the result. The value goes into the graphs, the carousel and the rules like any other reading.

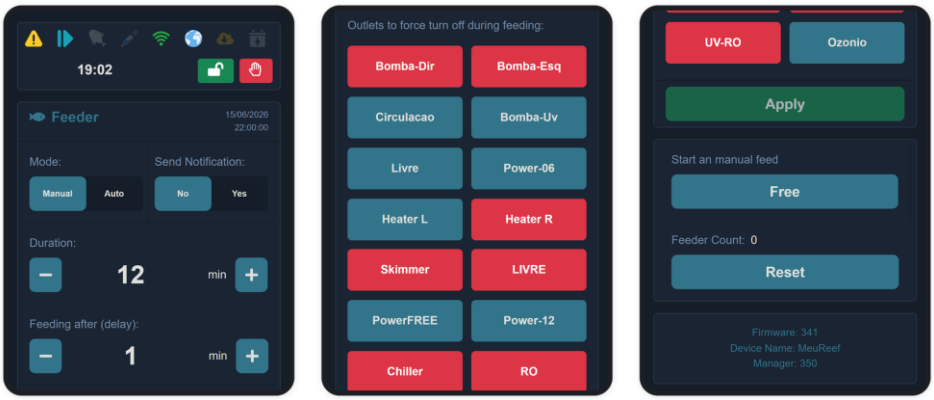
12.5 Calculated sensors

- **CO2** — calculated from alkalinity and pH (requires both).
- **Power** — consumption in watts, calculated as Volts × Amps from the Failover module; it accumulates consumption in kWh, with a resettable counter.

CHAPTER 13

Feeder

Feeding mode solves a classic problem: feeding with the pumps running means watching the food vanish into the sump. Here you define which outlets turn off during feeding, for how long, and at what times — with or without an automatic feeder.



The Feeder screen: mode, duration, outlets and the four schedules.

13.1 The fields

Field	What it does
Mode	**Manual**: feeding only happens when you tap Feed. **Auto**: the scheduled times fire on their own
Send Notification	Notifies you at the start and end of each feeding
Duration	For how many minutes the marked outlets stay off — from 1 to 60
Feeding after (delay)	A wait, in minutes (0 to 30), between turning the outlets off and triggering the feeder — time for the water to settle before the food drops

13.2 Outlets forced off

In the **Outlets to force turn off during feeding** strip, tap the buttons of the outlets that should stop — return pump, skimmer, wavemakers. A **red** button = turns off during feeding.

13.3 The four schedules

In Auto mode, up to four times a day trigger a feeding. Leaving a time at **00:00 disables it** — the label changes to *(Disabled)*. With all four at 00:00, the system returns to Manual mode on its own.

13.4 Automatic feeder

If you have an electronic feeder with a manual trigger button, it can be wired to the **FEED** port — the Aquarino then "presses the button" for you at every feeding, after the configured delay. Ask our support team about adapting your model.



Automatic feeder adapted for the Aquarino FEED port.

The footer of the screen shows the **count of feedings** performed, with a button to reset it.

> EXAMPLE
>
> **A typical setup**
>
> Mode **Auto**, times **08:00** and **20:00**, duration **10 minutes**, delay **2 minutes**, turning off the return pump, skimmer and wavemakers.
>
> At 08:00: the three outlets turn off, the feeding icon lights up, and at 08:02 the feeder fires. At 08:10, everything returns to its previous state — recorded in the log.

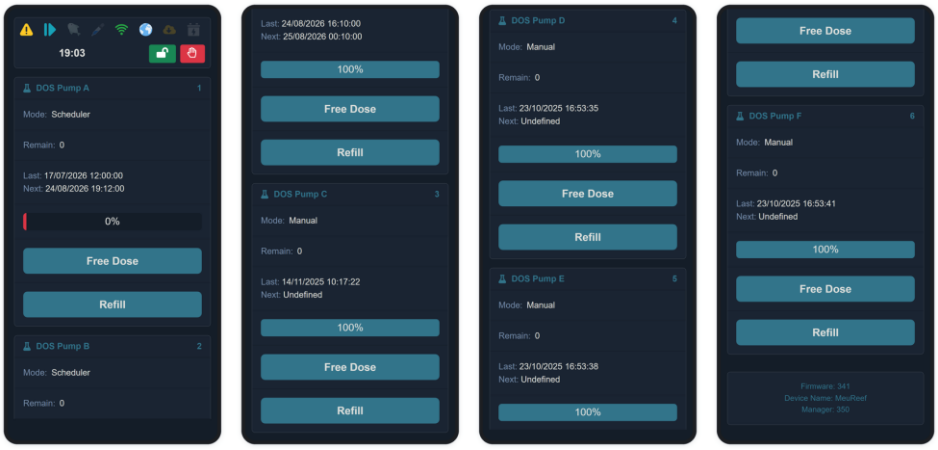
CHAPTER 14

Dosing

The Aquarino drives up to **6** 12 V **dosing pumps** — any pumps, of any brand, as long as they run on 12 V. Each with its own reservoir, its own schedule and its own calibration.



The Aquarino peristaltic dosing pump, wired to one of the six DOS ports.



The Dosing screen: mode, remaining doses, last and next dose, and the reservoir.

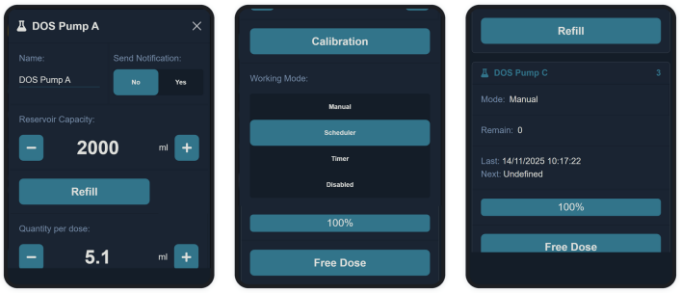
14.1 The doser card

Item	What it shows
Mode	Manual, Scheduler, Timer or Disabled
Remain	Doses left in the reservoir — or days, depending on the preference on the Custom. screen. Shows `Auto` when the reservoir is untracked (capacity 0)
Last / Next	The most recent dose and the next scheduled one

Item	What it shows
Reservoir bar	The percentage remaining. It turns red below the limit set on the Custom. screen
Free Dose	Fires a one-off dose, outside the schedule
Refill	Tell the system you have topped up the reservoir — it goes back to 100%

14.2 Configuring

Tap the doser's name (while it is idle) to open its configuration:



The doser configuration: reservoir, quantity per dose and working mode.

Field	What it does
Name	Up to 10 characters — e.g. `Calcium`, `KH`, `Magnesium`
Send Notification	An e-mail on every dose from this pump
Reservoir Capacity	The volume of your container, in mL. With the capacity filled in, the system deducts each dose and warns you when it is running low. **Zero** turns tracking off: the pump doses with no bookkeeping
Quantity per dose	How many mL come out in each dose — 0.1 to 1000 mL
Working Mode	Manual, Scheduler, Timer or Disabled — detailed below

Mode	Behaviour
Manual	Only doses when you tap Free Dose — or when an **automation rule** says so (Chapter 15)
Scheduler	Spreads N doses (1 to 24) evenly between a start and an end time, on the weekdays you choose
Timer	Doses every X minutes (5 to 1440), counted from the last dose
Disabled	The doser doses through no path at all. It is the factory default

14.3 Verify schedule

In Scheduler mode, the **Verify schedule** button shows the full plan before you apply it: total period, interval between doses, total volume for the period and the exact time of each dose. Make checking it a habit — it is the difference between guessing and knowing.

> EXAMPLE
> A **1000 mL** reservoir, a **1 mL** dose, scheduled from **00:00 to 23:00** with **24 doses**: one dose per hour, 24 mL per day, and the reservoir lasts ~41 days. The verification screen shows exactly that, hour by hour.

14.4 The safeguards

- At most **3 dosers** run at the same time — the others wait their turn.
- The minimum interval between doses from the same pump is **5 minutes**.
- An **uncalibrated doser does not dose** (Chapter 21).
- If the reservoir does not hold enough for the full dose, the dose **does not happen** — and you get an e-mail warning.
- When the level crosses the low-reservoir limit, a reminder to refill arrives.

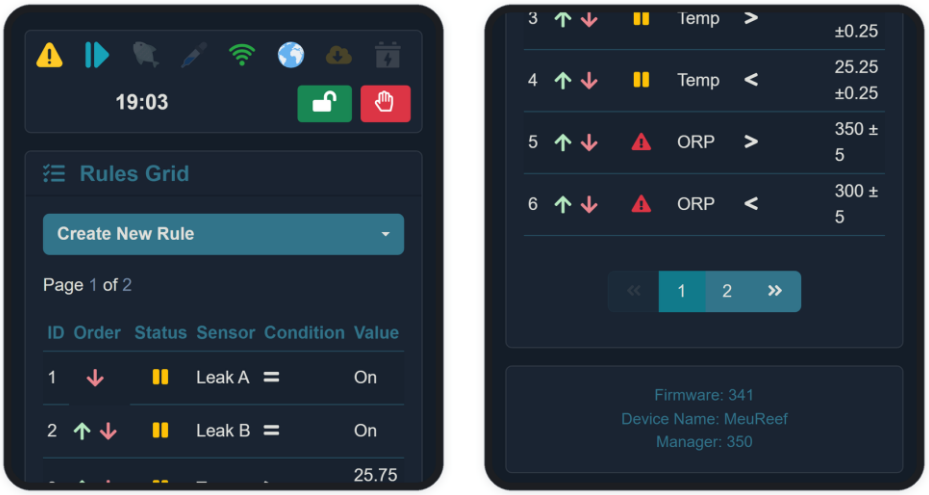
> CAUTION
> **Timer mode and related elements**
> **Timer** mode counts from the last dose — the times drift over the days. For elements that must keep their ratio to one another (like the parts of a balling method), prefer the **Scheduler**, which keeps times fixed and predictable.

> TIP
> Avoid long hoses between the pump and the aquarium: dosed liquids evaporate in the hose and create vapour pockets that steal accuracy from the dose.

CHAPTER 15

Automation rules

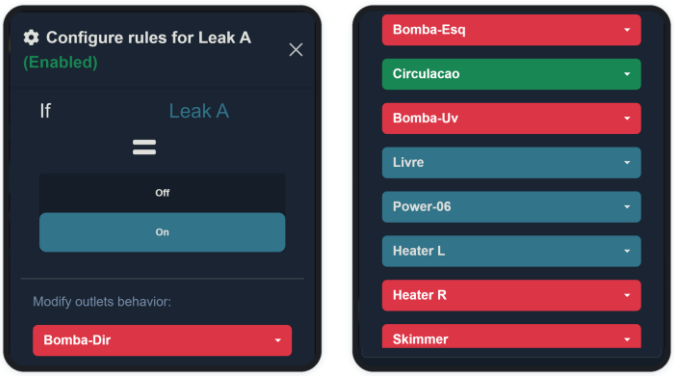
The rules are where the Controller stops being a dashboard and becomes an automator: **"if the sensor goes past this value, turn this on, turn that off, dose that other thing"**. There are up to 24 rules, evaluated in the order they appear on the screen.



The Rules screen: status, sensor, condition and each rule's enable switch.

15.1 Anatomy of a rule

Tap **Create New Rule**, choose the sensor, and build the sentence:



Editing a rule: condition, tolerance and the actions on outlets and dosers.

- **If** — the sensor being watched.
- **Comparator** — greater than (>) or less than (<). For on/off sensors (level, leak), the comparison is always equality: On or Off.
- **Value** — the trigger point.
- **With tolerance of** — the slack that prevents nervous on-off switching (detailed below).
- **Outlets** — for each outlet: Turn On, Turn Off or Do nothing.

- **Dosers** — for each doser: Apply Dose or Do nothing, with the rule's minimum interval between doses.

15.2 Tolerance is the soul of the rule

The tolerance creates a **dead band** around the value: the rule fires when the sensor goes past `value + tolerance` and only disarms when it comes back past `value - tolerance`. Without it, a sensor oscillating around the trigger point would switch the equipment on and off dozens of times an hour.

> EXAMPLE
> **Chiller**
>
> **If Temp > 26.5 with tolerance 0.5**, turn on the chiller's outlet.
>
> The chiller turns on when the temperature goes past **27.0** (26.5 + 0.5) and stays on until it drops below **26.0** (26.5 – 0.5). A clean cycle, with no on-off chatter.

> EXAMPLE
> **Heater**
>
> **If Temp < 24.5 with tolerance 0.5**, turn on the heater's outlet.
>
> The heater turns on when the temperature drops below **24.0** and turns off when it climbs above **25.0**.

> BACKGROUND
> If you leave the tolerance at zero, the system automatically adopts **1% of the value** — a minimum protection against on-off chatter.

15.3 Rule status

Status	Meaning
Disabled	The rule exists, but is switched off (the "Active?" switch set to No)
Standby	Enabled, condition not yet met — the normal state
Running	The condition is true and the actions are in force
Conflict	The rule cannot act — see below

15.4 Conflicts

A rule goes into **Conflict** — and lights the icon in the status bar — when it cannot carry out what it asks:

- the target outlet is in **manual mode** with a state opposite to what the rule wants;
- another rule, higher in the order, is already commanding the same outlet the other way;
- the outlet's Powerbar is not present.

The order breaks the tie: rules are evaluated top to bottom, and the arrows in the **Order** column reposition each one. Put the safety rules — leak, level — above the comfort rules.

IMPORTANT

Rules sleep in manual mode

Whenever the system is in **manual mode**, every rule is suspended. That is the desired behaviour during maintenance — but it is also the reason to configure the **Time Limit in Manual Mode** (Chapter 3): so the aquarium never goes without its rules through forgetfulness.

EXAMPLE

A safety rule with a leak sensor

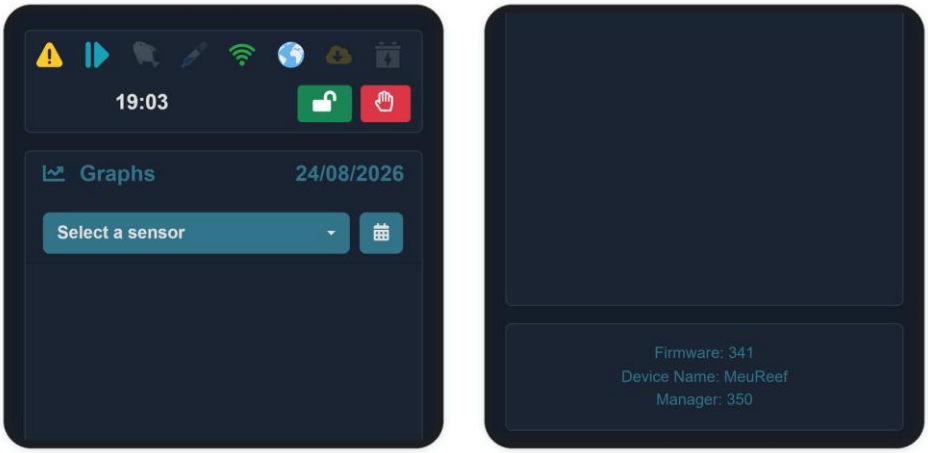
If Leak A = On: turn off the return pump and the UV reactor.

Water detected on the floor, and the system cuts the pumps that would keep pouring it out — while the alert e-mail lands in your pocket.

CHAPTER 16

Graphs

If the Home screen answers "is everything all right now?", the Graphs screen answers "what has been going on?". Each sensor records one point per hour, and here you walk through that history day by day.



The Graphs screen: select up to three sensors and browse the dates.

16.1 How to use it

35 In the **Select a sensor** list, pick the first sensor — it is plotted immediately.

36 Add up to **3 sensors** to the same graph; the second one gets its own axis on the right.

37 Use the **calendar** to change the day — any date up to today.

38 The **–** and **+** buttons adjust the vertical zoom, to magnify small variations.

39 The red button removes the last sensor added.

With **one** sensor selected, the dashed **Minimum** (blue) and **Maximum** (red) lines show the configured alert limits — you can see at a glance when the parameter flirted with the danger zone.

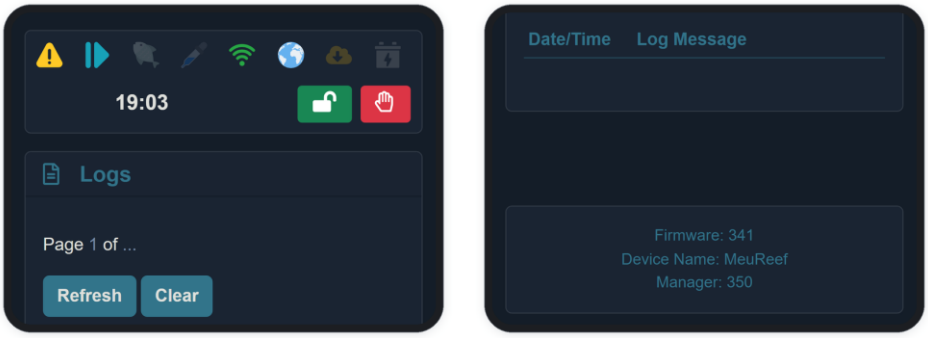
> BACKGROUND
>
> **Local × cloud**
>
> In the Local Manager the graph shows **one day at a time, with one point per hour** — the history lives on the equipment's memory card. Through the **Aquarino app**, the same data appears with higher resolution and longer periods, served from the cloud.

> **TIP**
> The graph is the best tool for tuning your rules: look at the sensor's real daily variation and place the value and tolerance outside it. A rule designed on top of the graph does not keep firing for nothing.

CHAPTER 17

Logs

The event log tells, in chronological order, everything the equipment did and why: outlet turned on by such-and-such rule, feeding started, dose executed, mode changed. It is the first screen to open when something did not go as expected.



The Logs screen: date, time and the reason for each action.

- Entries appear from newest to oldest, **10 per page**.
- **Refresh** reloads the list; **Clear** erases the whole log — with confirmation, and with no way back.
- Every outlet action says **who ordered it**: scheduler, timer, cycle, rule N, feeding or manual mode.

Typical messages	What they mean
`turned ON by Scheduler`	The outlet's mode acted at the scheduled time
`turned OFF by Rule 2`	An automation rule took over the outlet
`Feeder started!...`	The feeding period began and the marked outlets turned off
`System Mode change to Manual`	Someone touched an outlet — the rules are suspended
`Firmware update successfully`	An update was completed

> BACKGROUND
> Entries older than **30 days** are deleted automatically. When there is internet, the logs are also sent to the cloud — in the app, you can search them with no page limit.

CHAPTER 18

Custom. — preferences

This screen gathers the display and unit preferences. Nothing here changes how the equipment works — only how it talks to you. Each option is applied **on the spot**, with no save button.



The Custom. screen: units, formats, language and warning limits.

Preference	Options
Temperature	°C, °F or °K
Power	W, mW, kW, Wh or kWh
Flow Port A / B	mL/min, L/min, L/h, gal/min, gal/h — or the accumulated total in L or gallons
Date	DD/MM/YYYY, MM/DD/YYYY, YYYY/MM/DD or YYYY/DD/MM
Hour	12H or 24H
Language	Portuguese or English
LED	Turns the panel lighting on or off
Audio	Turns the alert beep on or off
Alkalinity	dKH, ppm or mEq/L
Eletro Conductivity	µS/cm, mS/cm, salinity (PPT ≈ PSU), specific gravity or density (kg/m³)
Oxygen	% saturation or mg/L
TDS	Conversion factor: USA (0.55), Europe (0.64) or Australia (0.70)
Dosing Remaining	Show what is left in the dosers in **doses** or in **days**

Preference	Options
Low reservoir %	The percentage at which the reservoir starts warning: 5, 10 or 20%

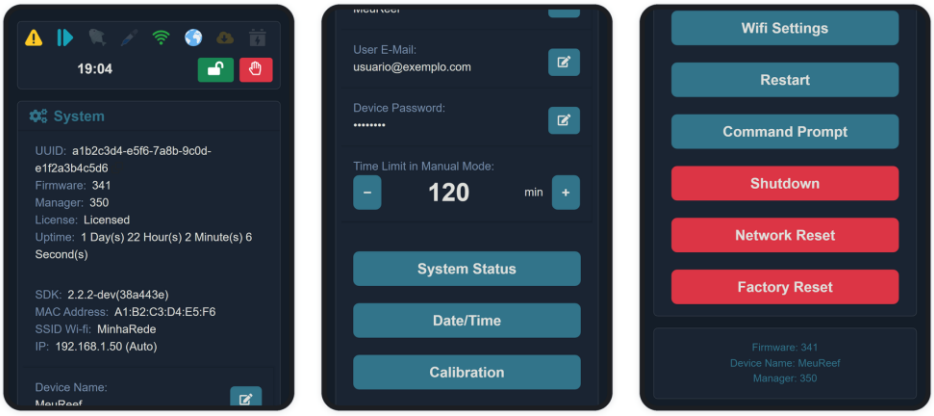
> **TIP**
> Choose the same units as your tests and refractometer — that way you compare numbers directly, with no conversion in between. If you measure salinity in PPT, set the EC sensor to PPT and be done with it.

CHAPTER 19

System and System Status

19.1 System screen

It gathers the equipment's identification, the network details and every administrative action.



The System screen: identification, versions, network and actions. The identifiers in this image were replaced with sample values.

Information	What it is for
UUID	The equipment's unique identifier — what you give to support and use in integrations. The button next to it copies it
Firmware	Version of the internal system
Manager	Version of the interface
License	A device registered with your e-mail shows as **Licensed**
Uptime	How long the equipment has been on without restarting
SDK	Version of the internal platform — information for support
MAC Address	Network identification — what you use to reserve the IP on the router
SSID / IP	The network it is connected to and the Local Manager's access address

Editable fields

Field	Detail
Device Name	Up to 10 characters, no spaces. Identifies the equipment in the app and in support

Field	Detail
User E-Mail	The owner's e-mail — destination of the alerts and the account binding. Up to 60 characters
Device Password	Up to 10 characters. Protects the protected-mode padlock. Factory default: `aquarino`. When you change it, you receive a confirmation e-mail
Time Limit in Manual Mode	From 0 to 240 minutes. After that time, the system returns to automatic on its own. Zero disables the return

Actions

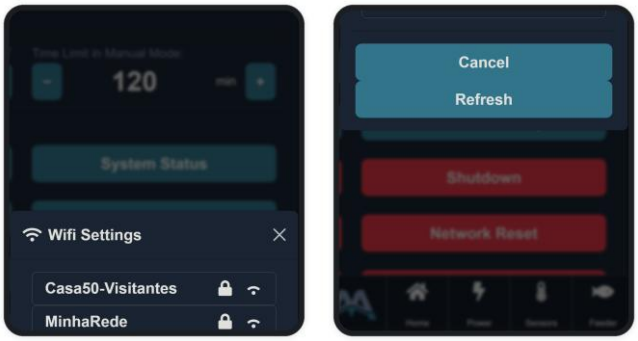
Button	What it does
System Status	Opens the detailed diagnostics (section 19.3)
Date/Time	Sets the clock — date, time and format. With internet, the equipment also syncs the time on its own
Calibration	Opens the sensor calibration centre (Chapter 20)
Wifi Settings	Changes the Wi-Fi network — with the network scan, password, and the static IP option
Restart	Restarts the equipment. No settings are lost
Command Prompt	Sends text commands — a diagnostics feature, use it under support's guidance
Shutdown	Shuts operation down safely before you unplug it
Network Reset	Erases the stored Wi-Fi networks. The equipment restarts in setup mode (Chapter 8)
Factory Reset	Erases **all** settings: outlets, dosers, sensors, rules, feeder and network

IMPORTANT

Factory Reset returns the equipment to its brand-new state: you will have to redo the network, the names, the outlet modes, the rules and the calibrations. Use it only if instructed by support.

BACKGROUND

Wi-Fi setup, calibration, shutdown, network reset and factory reset require you to be **on the same network** as the equipment — through the app away from home, those buttons warn that the feature is not available remotely.



Changing networks: the scan, the password and the choice between DHCP and a static IP.

19.2 Date and time

The internal clock has its own battery and keeps the time even without power. With internet, it sets itself over the network; without internet, adjust it on the **Date/Time** screen — the **Date/Time Now!** button copies the time from the device you are using, in one tap.

19.3 System Status

This is the diagnostics screen. You will probably never need it — but when you do, it is the one support will ask for.



The System Status: internal health, inputs and outputs, network and sensors.

Block	What it reports
Controller	Internal health: I2C communication, clock (RTC), memory card (SD), file system and free memory
IO	The expansion circuits: miscellaneous, flow, level/leak and feeder/dosers
Powerbar	Detection of Powerbars A and B
Network	DHCP, Wi-Fi signal quality, error counters, last cloud sync and the MQTT state
Temperature Sensors	The state of each temperature sensor

Block	What it reports
Analogs	The state of each measurement module: Ok, Not Detected or Unstable

TIP

What to look at first

No cloud access? The **Network** block: signal, internet errors and MQTT.

Empty graphs? The **Controller** block: SD and FS.

A Powerbar went missing? The **Powerbar** block — and check the cable and the A/B switch.

PART V

Calibration

Trustworthy readings and precise doses — the care that sustains the automation.

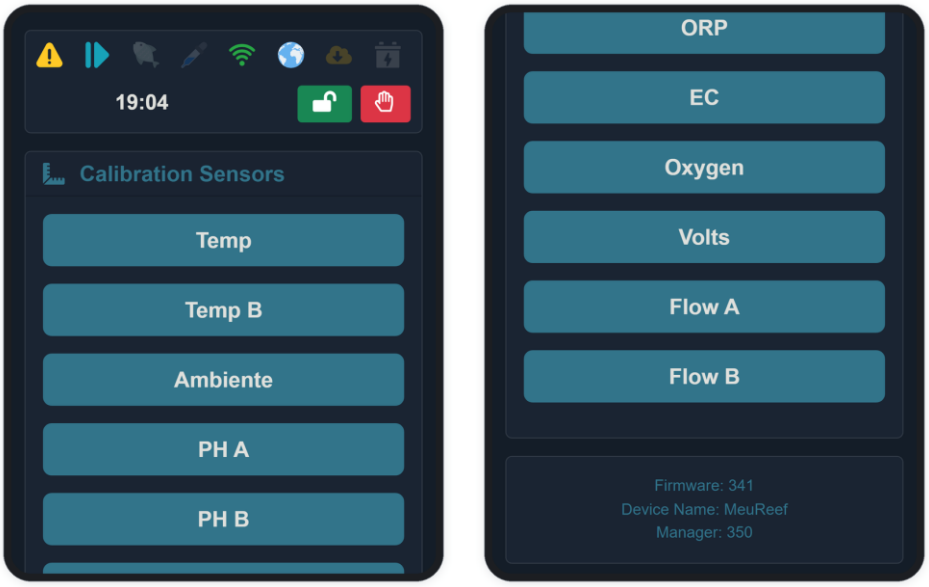
20 Calibrating the sensors

21 Calibrating the dosers

CHAPTER 20

Calibrating the sensors

All the automation decides on top of what the sensors say — and a good sensor is a calibrated sensor. The calibration centre lives in **System → Calibration**: one button per calibratable sensor, each with the step-by-step right on its screen.



The calibration centre: one button per detected sensor.

IMPORTANT

Before any calibration

Go to the **Power** menu and tap **TURN OFF ALL** — the system enters manual mode and the rules stop. That way, a strange reading in the middle of a calibration will not switch on a chiller or fire a doser.

When you finish, go back and tap **ALL AUTO**.

And **never reuse calibration solutions**: a used solution is a contaminated solution, and it records a wrong point.

20.1 pH

Use **two solutions**, the closest to the range you want to measure: for pH above 7.0 (a marine aquarium), the **7.0 and 10.0** solutions; for pH below 7.0, the **4.0 and 7.0** solutions.

40 Start with the **low point**: place the temperature sensor and the pH probe in the first solution and wait **5 to 10 minutes** to stabilise.

41 Set the solution's value in the field and tap **Calibrate Low Point**.

42 Rinse the probe under running water, immerse it in the second solution, and wait again.

43 Set the value and tap **Calibrate High Point**.

The screen shows the live reading — and, on Aquarino probes, also the **slope**, the probe's health indicator.

20.2 ORP

ORP accepts a **single-point** calibration — the high point — with a **225 mV or 400 mV** solution. Immerse the probe, wait 5 to 10 minutes, enter the value and calibrate. If you want more accuracy, do two points, starting with the low one.

20.3 Conductivity (EC)

Use **two solutions**: **12,880 µS/cm** for the low point and **53,000 µS/cm** for the high point — the ideal pair for marine water. The procedure is the same as for pH: temperature sensor alongside, 5 to 10 minutes of stabilisation per point, running water between one solution and the next.

20.4 TDS

Use **84 µS/cm** for the low point and **1,413 µS/cm** for the high point — the right pair for monitoring reverse-osmosis water. Same ritual as EC.

20.5 Oxygen (SAT/DO)

The simplest one: leave the probe **exposed to the air** for 5 to 10 minutes and tap **Calibrate High Point**. Air is the 100% saturation reference.

20.6 Temperature

Temperature sensors calibrate by **offset**: place a reference thermometer in the water, wait for it to stabilise, and adjust the difference (−1.0 to +1.0 °C) until the readings match.

20.7 Flow

Calibrating the flow sensor means choosing the **model**: select yours (DN15, DN20, DN25, DN32, DN40) and the correct factor is applied. Afterwards, if you want, fine-tune the factor against a real measurement.

20.8 Failover (voltage)

44 Keep the Failover's network cable connected to the hub and **disconnect the module's power cable**. Wait 5 minutes and calibrate the **low point as zero**.

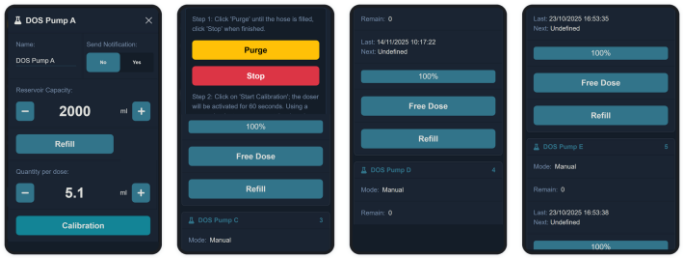
45 Reconnect the power and calibrate the **high point** with your mains voltage (110 to 240 V) — if you have a multimeter, use the measured value.

> **CAUTION**
> Be careful in any activity involving electrical measurements. If you are not confident, call an electrician — the aquarium will thank you more than your haste will.

CHAPTER 21

Calibrating the dosers

Calibrating the doser is what guarantees that an order to "dose 2 mL" actually delivers 2 mL to the aquarium. The calibration panel lives inside each doser's configuration — the **Calibration** button.



The doser calibration panel, inside the configuration screen.

Step 1 · Fill the hose

Tap **Purge** and let the pump work until the hose is completely full, with no bubbles. Tap **Stop**.

> CAUTION
> This step is not optional: with air in the hose, the next steps measure the wrong volume, and the error gets written into the calibration.

Step 2 · Measure what the pump delivers

46 Put the hose outlet into a graduated container — a measuring cylinder or a syringe.

47 Tap **Start Calibration**: the pump runs for **60 seconds**, with a countdown on screen.

48 Measure the dosed volume and enter it in the **Volume Measured** field, in mL. The **Dosing Rate** is recalculated automatically.

Step 3 · Check

Still with the container at the outlet, tap **Test Dosage** and check the dose's volume:

If it delivered	What to do
More than configured	Reduce the Dosing Rate (–) and test again
Less than configured	Increase the Dosing Rate (+) and test again
The right amount	Tap **Apply** to save. Done

IMPORTANT

The calibration is only saved when you tap **Apply** at the bottom of the configuration. Closing the dialog without applying discards everything.

TIP

Use a graduated container with good resolution — a 0.5 mL error on a 2 mL dose is a 25% error in every future dose. And recalibrate periodically: the equipment reminds you when the calibration turns 90 days old, because hoses age and lose flow.

PART VI

Advanced features

Well-tuned alerts, power under control and the ecosystem working together.

22 Alerts and notifications

23 Failover: power under control

24 Integration with the Aquarino ecosystem

25 Software updates

CHAPTER 22

Alerts and notifications

The Aquarino alerts you through four channels, and each has its calling:

Channel	Calling
Beep (audio alert)	For whoever is at home. It sounds for as long as the alert condition lasts
Alert LED in the status bar	The visual warning on any screen
E-mail	The record that stays. It arrives at the address configured on the System screen
Push and Telegram	Through the **Aquarino app**: notifications on your phone and on Telegram, configurable per device

22.1 What raises a warning

- **A sensor outside its limits** — as configured for each sensor (Chapter 12);
- **Switchings** of an outlet, doser or feeding — when that item's notification is turned on;
- **A doser reservoir low** or insufficient for the dose;
- **Power outage and recovery** — with the Failover module;
- **A communication failure** with a Powerbar or module;
- **A new software version** available;
- **A restart** of the equipment — you receive the system-started notice, with the access address.

> BACKGROUND
>
> **The e-mails arrive in English**
>
> The e-mail alert messages are sent in English — for example, *"The Temp is out of range: 28.1 °C"*. The content is always the item's name and the value that triggered the warning.

22.2 The daily quota

The equipment sends at most **50 e-mails per day**. On reaching the quota, it sends one last notice — *"Daily email quota limit exceeded!"* — and goes quiet until the next day.

IMPORTANT

A blown quota is a symptom, not a defect

If you keep hitting the quota, some alert is configured inside the aquarium's normal range and firing all day long — and the excess can end up **masking an important warning**. Review the limits (Chapter 12) and leave the switching notification on only for critical equipment.

TIP

The channel recipe

Push for what is urgent, **e-mail** for what must be on record, **beep** for whoever is next to the aquarium. In the app, you choose each device's channel in **Notification Preferences**.

CHAPTER 23

Failover: power under control

With the Failover module installed (Chapter 7), the Aquarino starts to see the mains supply: voltage, current and consumption. And when the power goes out, it executes a plan you defined calmly — instead of leaving the UPS to cope with everything switched on.

23.1 What happens in an outage

49 The equipment detects the voltage outside the normal range (below 70% or above 130% of nominal — universal voltage, detected automatically).

50 The **battery** icon lights up in the status bar and you receive the *"Energy Failure"* e-mail.

51 The outlets **without** no-break permission (Chapter 11) are turned off — the non-essentials come off the battery.

52 The outlets in **Failover** mode turn on — the emergency air pump takes the stage.

53 When the power returns, everything goes back to its programmed state, and the *"Energy Restored"* e-mail arrives.

> EXAMPLE
>
> **A typical power plan**
>
> **On the UPS**: return pump (essential — no-break: Yes).
>
> **Off during the outage**: skimmer, lighting, UV reactor, chiller, heater (no-break: No).
>
> **On only during the outage**: air pump (Failover mode).
>
> The result: the battery that would sustain everything for 20 minutes now sustains circulation for hours.

23.2 Power consumption

The Failover also enables the **Volts**, **Amps** and **Power** sensors: mains voltage, total current and consumption — including the accumulated kWh, with a resettable counter. You get to know, in hard currency, how much the aquarium adds to the electricity bill each month.

> CAUTION
>
> The module's maximum capacity is **25 A**. If consumption approaches the limit, the equipment warns you — redistribute the loads.

CHAPTER 24

Integration with the Aquarino ecosystem

24.1 Aquarino KH

With an integrated **Aquarino KH**, alkalinity stops being a manual value and becomes a continuous reading inside the Controller: it joins the carousel, the graphs and the rules. The integration is set up on the Aquarino KH, in **Configuration → Aquarino Controller Integration** — just paste in the Controller's **UUID** (System screen, copy button).

> BACKGROUND
> With both alkalinity and pH present, the Controller also calculates **dissolved CO2** — one more sensor for your graphs and rules.

24.2 Aquarino Display

The **Aquarino Display** is the external panel that shows your parameters in real time, without opening an app. It displays exactly the sensors you marked as **favourites** — the same set as the Home screen carousel. Up to 5 displays can follow the same device.

24.3 Aquarino app and Alexa

- The **app** gathers your devices, push notifications, Telegram and access sharing with other people — useful for whoever looks after the aquarium in your absence.
- With the **Alexa skill**, you query and command the Aquarino by voice. The linking is done through the Alexa app, with your Aquarino account.

24.4 API for integrators

For anyone who wants to take the data into other systems, the app lets you create **integration tokens** (Integrations menu): each token grants read access to one device's sensors, through the Aquarino cloud API. Partner apps — such as Aquarium Hub, Golden Reef, ReefFlow and ReefMind — use this very same path.

CHAPTER 25

Software updates

The Aquarino checks for news on its own. When a new version is available, the **update** icon lights up in the status bar and you receive an e-mail — *"We have news for you!"*. The installation is your decision:

54 Tap the lit update icon.

55 Read the notice and confirm with **Update**.

56 Wait: the screen shows a countdown of up to **5 minutes** while the firmware and the Manager are downloaded and installed. The equipment restarts on its own at the end.

57 Check the Log: *"Firmware update successfully"* and *"Manager update successfully"* — and the new versions in the footer.

IMPORTANT

Do not update remotely

Update **while you are near the aquarium** — never while travelling. During the update the equipment restarts, doses are interrupted for safety, and once it finishes it is worth checking the aquarium and the settings. Which is exactly what the on-screen notice recommends.

BACKGROUND

With the system **locked** (padlock closed), the update does not run — unlock it first. And your settings are **not lost** in an update: outlets, rules, calibrations, everything stays.

PART VII

Maintenance and support

Solutions for the most common problems and how to talk to us.

26 Troubleshooting

27 Frequently asked questions

28 Specifications

29 Support and warranty

CHAPTER 26

Troubleshooting

26.1 Network and access

Symptom	What to do
Green LED blinking non-stop	The Wi-Fi setup was not completed or the password is wrong. Redo Chapter 8, double-checking the password
Green LED off	The equipment lost the network — it retries every 1 minute. Check that the router is up and the signal at the spot
Blue LED off (no internet)	Local control keeps working. Without internet there are no e-mails, no cloud and no app away from home. Check the router's connection
The network does not appear in the setup list	Signal too weak where the equipment sits (the cut-off is −75 dBm), or a 5 GHz network. Move the router closer or enable the 2.4 GHz network
The equipment keeps dropping off the network	Fix the router's channel at 20 MHz (B/G/N mode), avoid mixed channel-width mode, and check the signal in System → System Status → Network
The IP changed and I lost access	Check the router's device list, or the app's System screen. Then reserve the IP on the router by the MAC address
No access through the app, but the Local Manager works	System → System Status → Network: check Internet, MQTT and the last cloud sync

26.2 Outlets and Powerbar

Symptom	What to do
Outlets showing "Not Detected"	The Powerbar is not responding: check the network cable in the BUS port, the bar's power supply and the A/B switch
Both Powerbars show the same state	The address switches are on the same letter. One must be on A, the other on B
An outlet does not obey a rule	Look at the rule's status (Conflict?) and the outlet's mode — in manual mode, rules do not act. Check the rule order too
An outlet turned back on by itself after I switched it off	The system returned to automatic — through the Time Limit in Manual Mode — and the outlet's mode took over. That is the configured behaviour

Symptom	What to do
Nothing turns on and the system refuses commands	Check the padlock (protected mode) and whether there was an Emergency Stop — in that case, Power → ALL AUTO restores it

26.3 Sensors and dosers

Symptom	What to do
A sensor with an unstable reading	Move the sensor cable away from power cables; check the connector; on probes, check the age and redo the calibration
Sensor "Not Detected"	Check the connection on the correct port. BUS modules are detected at start-up: restart the equipment after connecting
A sensor alert with the value "-"	A missing reading: a communication failure or a faulty sensor — it is not a water problem
A doser does not dose	Check, in this order: Disabled mode? Not calibrated? Reservoir insufficient? Are 3 dosers already running? System locked?
An inaccurate dose	Recalibrate (Chapter 21) and check for bubbles and the hose length
Empty graphs	System → System Status: check SD and FS in the Controller block. The history lives on the memory card

26.4 If nothing solves it

Talk to support (Chapter 29) with the equipment's **UUID** at hand and, if possible, a screenshot of the **System Status** screen. In many cases we can diagnose remotely.

CHAPTER 27

Frequently asked questions

What happens if the internet goes down?

Nothing essential. Sensors, rules, outlets, dosers and feeding keep working — control is entirely local. You temporarily lose the e-mails, the cloud and access from outside the house; the Local Manager remains reachable by IP. When the connection returns, the history is synchronised.

And if the power goes out?

When it returns, the equipment resumes on its own, with every setting preserved. With the Failover module and a UPS, the outage becomes a managed event: the essentials carry on, the rest waits (Chapter 23).

Can I use dosing pumps from other brands?

Yes — any **12 V** dosing or peristaltic pump can be controlled by the Aquarino. The calibration (Chapter 21) adapts the system to your pump's flow rate.

How much equipment can I connect?

16 outlets (two Powerbars), 6 dosers, 1 feeder, 3 temperature sensors, 2 flow, 2 leak, 4 level, plus the measurement modules on the BUS.

Does the Controller measure pH, salinity, ORP?

It does, with the corresponding modules installed in the BUS ports (Chapter 7). Without the module, the parameter can be entered manually and still make its way into graphs and rules.

Can I access it from outside the house?

Yes, through the **Aquarino app** — the equipment needs to be online (blue LED lit). Critical actions, such as calibrating and configuring Wi-Fi, still require you on the same network, for safety.

Can more than one person follow the equipment?

Yes. Through the app you share access by entering the person's e-mail — they need an Aquarino account. Access can be revoked at any time.

I changed a setting and nothing happened. Why?

Check the padlock: in protected mode the system ignores commands. And remember that in manual mode the rules are suspended — the outlets only go back to obeying schedules and rules in automatic.

The beep is bothering me. How do I turn it off?

In **Custom.** → **Audio**. You can also turn the audio alert off per sensor, keeping the beep only for what is critical. The panel LEDs can be switched off in Custom. too.

I lost the device password.

The factory password is `aquarino`. If it was changed and forgotten, talk to support with the equipment's UUID at hand.

CHAPTER 28

Specifications

Item	Specification
Application	Aquariums (marine and freshwater), tanks and ponds
Controlled outlets	Up to 16, with two Powerbar V8 units (8 outlets, 10 A each, universal voltage)
Dosing pumps	Up to 6 12 V pumps, with calibration; maximum of 3 simultaneous
Feeder	1 FEED port, with 4 daily schedules and feeding mode
Temperature sensors	3 ports; 0.0625 °C resolution; automatic averaging per category
Flow sensors	2 ports; models DN15 to DN40
Leak sensors	2 ports
Level sensors	4 ports: 2 magnetic (MAG) and 2 optical
Measurement modules	pH (×2), ORP, conductivity/salinity, TDS, oxygen and alkalinity (via Aquarino KH)
Failover	Optional module: voltage, current and consumption (kWh); 25 A capacity; automatic universal voltage
Automation rules	Up to 24, with configurable hysteresis, acting on outlets and dosers
Alerts	Beep, LED, e-mail (up to 50/day) and, through the app, push and Telegram
Data logging	Logs kept for 30 days and hour-by-hour sensor history, on a memory card, sent to the cloud
Connectivity	2.4 GHz Wi-Fi (802.11 b/g/n)
Access interfaces	Local Manager (browser, on the local network, no internet needed) and the Aquarino app (Android and iOS)
Safety	Password-protected mode, emergency stop, automatic return from manual mode
Updates	Over the network, upon user confirmation
Power supply	Universal-voltage 12 V / 5 A supply (included)
Structure	Acrylic case, horizontal or vertical use

CHAPTER 29

Support and warranty

29.1 Support channels

Whenever you need guidance or assistance, talk to us. We are here to help.

Channel	Address
E-mail	aquarinocontroller@gmail.com
WhatsApp — users' group	https://chat.whatsapp.com/Hp9GjAmptpUEzbykjlUCMC
Website	https://www.aquarino.com.br/
YouTube	https://www.youtube.com/c/aquarino
Facebook	https://www.facebook.com/AquarinoController

TIP

How to speed up your support case

Have the equipment's **UUID** (System screen) and the **firmware** version at hand;

Describe what you observed and since when;

If possible, send a screenshot of the **System Status** screen and the relevant stretch of the **Log**.

29.2 Warranty

Aquarino guarantees that the Aquarino Controller product has undergone rigorous quality testing and carries a **1-year** warranty from the date of purchase, covering manufacturing defects and technical problems that compromise its proper operation.

Conditions

58 The warranty follows the product: if you sell it before the period ends, the new owner is entitled to the same conditions.

59 The product must be used according to the instructions in this manual and for its intended purposes.

60 The warranty does not cover damage from misuse, drops, accidents, improper installation, unauthorised modifications, use of non-recommended parts or accessories, nor problems arising from inadequate electrical supply or voltage fluctuations.

61 To claim the warranty, present the purchase invoice and describe the problem found.

62 The period for repair or replacement is up to 30 days, counted from delivery of the product to the authorised service centre.

63 If the product is under warranty and cannot be repaired, Aquarino reserves the right to replace it with a new product.

How to claim the warranty

Get in touch through any of the channels above, with the invoice at hand and a description of the problem. Our team will guide you through the next steps.

Thank you for choosing the Aquarino Controller. Happy reefing!