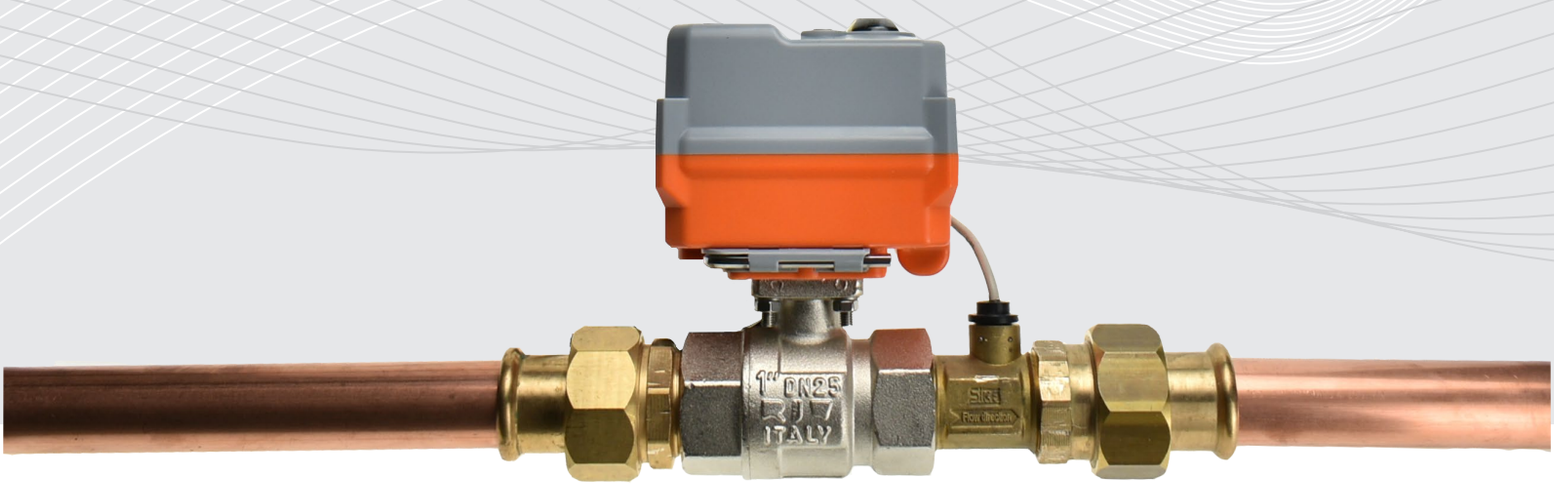
Quensus

Intelligent water management

LeakNet

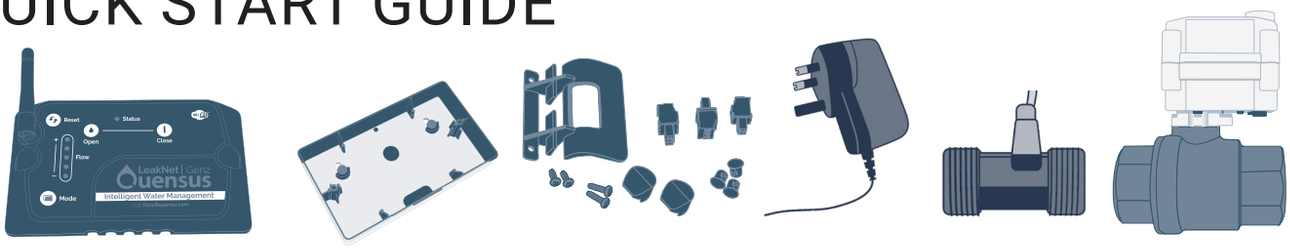
User Manual



English

Ver 9b

QUICK START GUIDE



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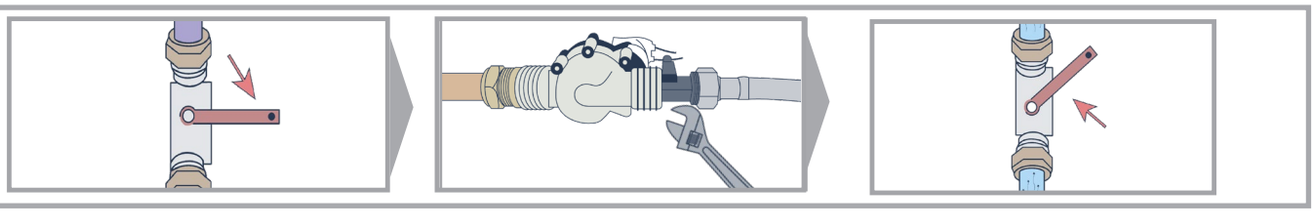

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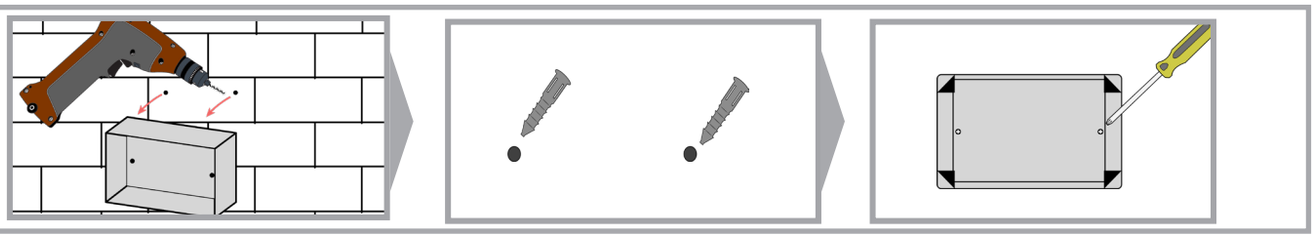

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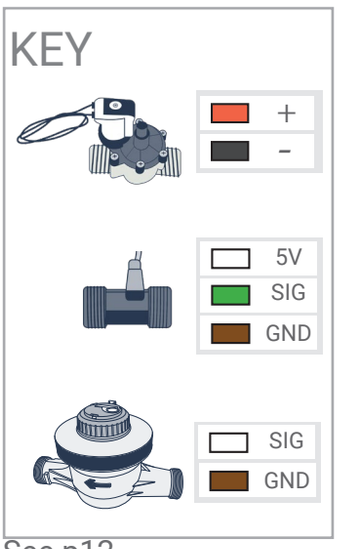

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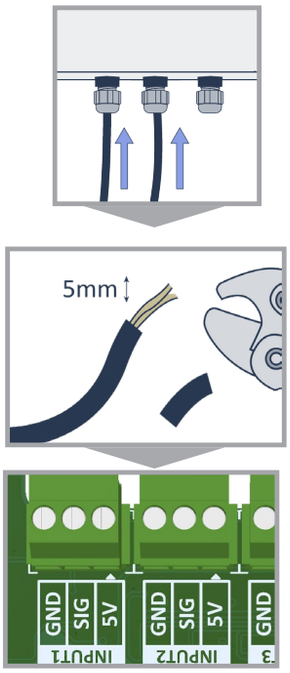

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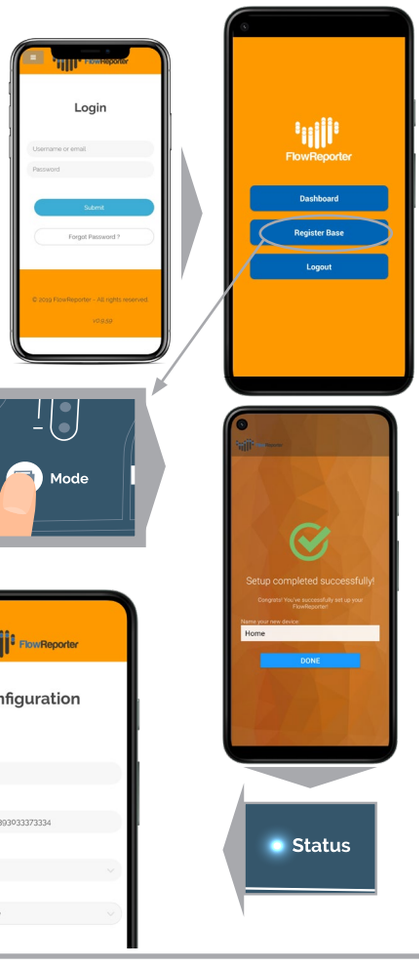
FlowReporter

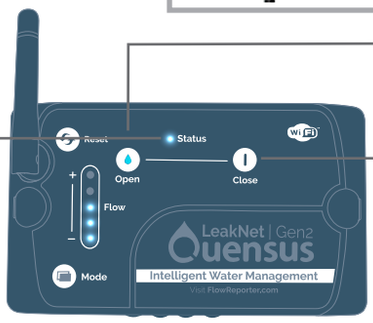


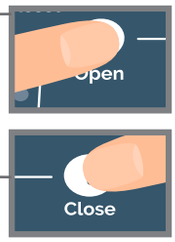
www.FlowReporter.com

Or search FlowReporter

GET IT ON Google Play

Download on the App Store





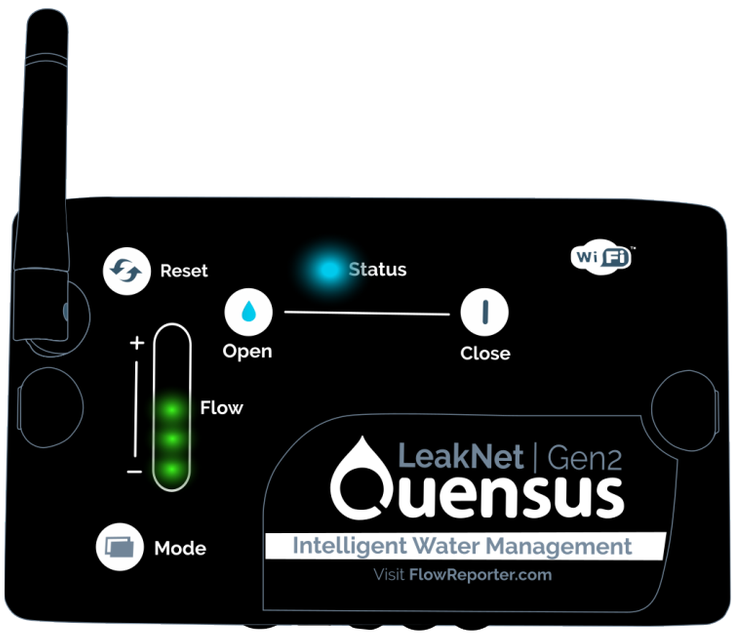
CONTENTS

INTRODUCTION

First of all, thank you - you have made an excellent decision to go with LeakNet, the complete online water management and leak detection system. A solid investment for the future of your water.

Using LeakNet, water consumption can be visualised anytime from anywhere in the world. If a leak is detected, an alert is immediately sent to the user via email. If desired, LeakNet can automatically shut off the water supply, so no water damage is caused in the event of a leak.

The LeakNet Base (pictured) is mains supplied and contains the connection to the Internet via WiFi. It can connect a meter, a valve, and a leak cable, as well as support for BMS inputs and outputs. For water monitoring only (no valve), up to 4 meters can be supported to measure the water flow through 4 different pipes. Using 1 meter, a valve can also be connected to turn off the water supply. Almost any pipe size is accepted, and meters/valves supplied by Quensus come in standard sizes.



GET IT ON Google Play

Download on the App Store

Online capability

You will manage and monitor your LeakNet online using an app called FlowReporter.
Download the app from the iOS or Play store.
Register for your account at www.FlowReporter.com.

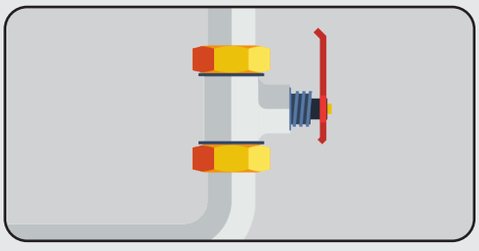
FlowReporter

WARNING

If equipment is installed or used in a manner not specified in this document, the product may not work as expected, and the leak protection capabilities may be impaired. Please contact us if you have any problems or are unsure.

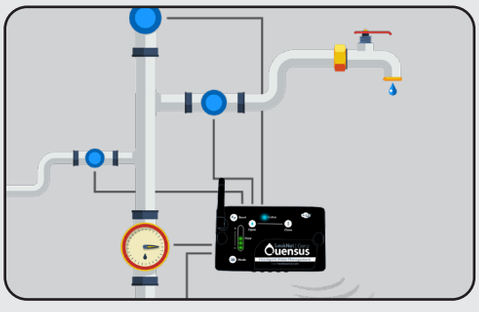
INSTALLATION GUIDE

Overview



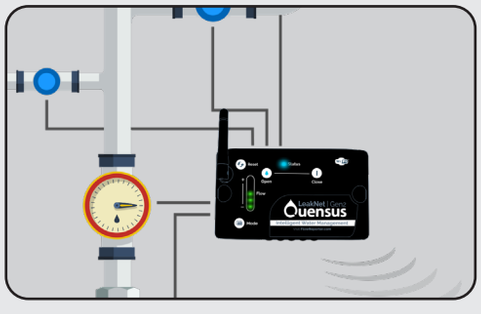
1. Find the stopcock

Decide where the LeakNet will be placed - this will normally be just after the stopcock, where the water enters the building. This will usually be coming up from the ground.



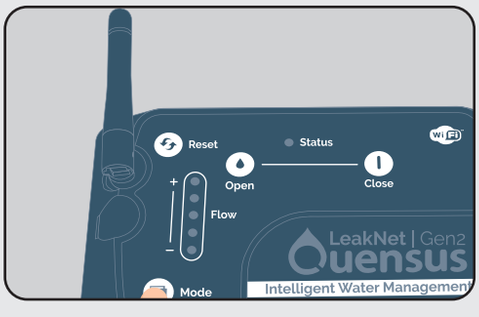
2. Install valve and meter

Make sure the valve (optional) and meter are facing the correct way (arrow pointing in the direction of flow) and install in the proposed location.



3. Install the Base

Choose a location to mount the Base and check WiFi connectivity. Wire the cables from the meter(s) and valve to the Base, making sure to use the cable grip. Screw on the front of the Base, clip in the inserts which hide the screws, and then connect the power adaptor.



4. Connect to WiFi

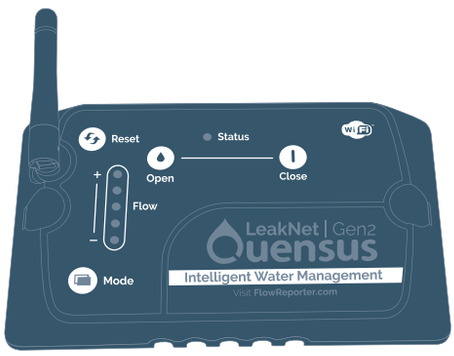
With the “Status” light flashing blue, use your smartphone to login to FlowReporter and select “Register new Base”. Follow the on-screen instructions. Configure the Base online by selecting the fittings used in the above step.

5. Test online

Run a nearby tap. Online, select the name of your new Base, and then click “Close valve”. A few seconds later, the water will stop flowing. Click “View” then “Real time” then “Open valve”. You will see the graph change as the water is turned back on.

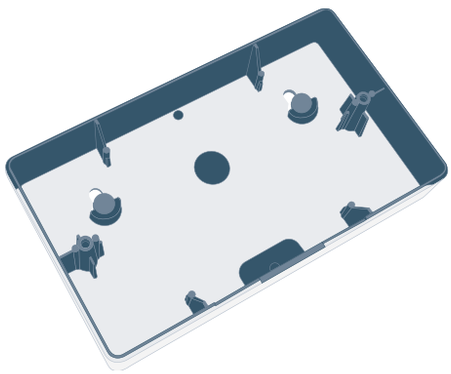
INSTALLATION GUIDE

Item checklist



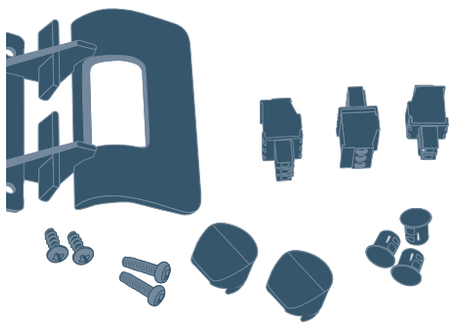
LeakNet Base front

With integrated circuit board.



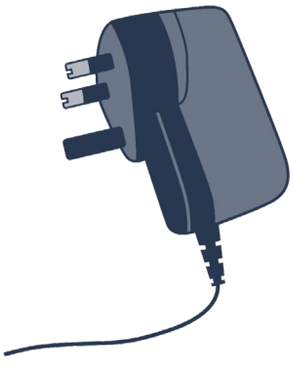
LeakNet Base back box

Wall mountable.



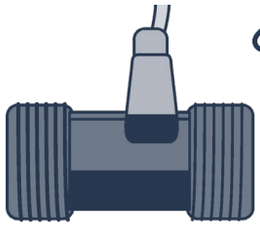
Cable grip, screws and inserts

To fasten cables, battery and enclosure, and increase the visual appeal.



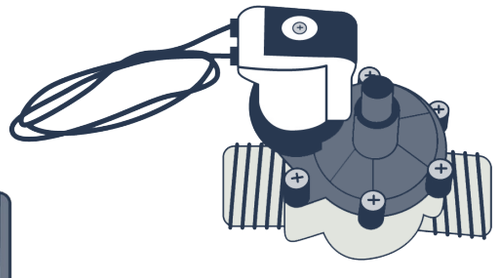
Power adaptor

Standard mains DC power adaptor.



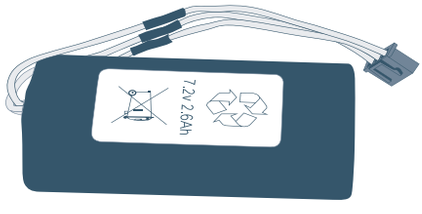
Water meter

To measure water flow. Different sizes are specified on page 12.



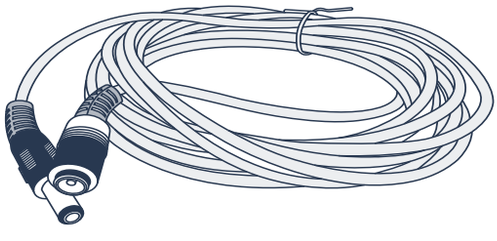
Valve

To turn off water flow. Different sizes are specified on page 12.



Backup battery (optional)

Lithium-ion rechargable battery giving at least 24 hours of operation during a power outage.



DC extension cable (optional)

To extend the reach of the power adaptor by 3m.

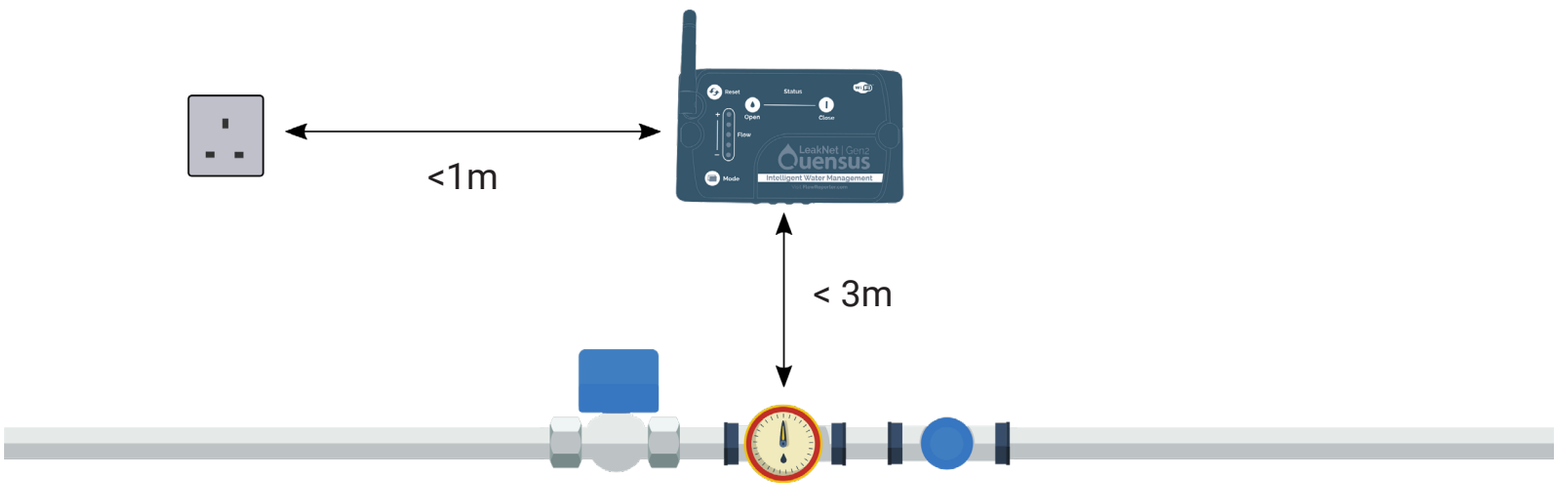
INSTALLATION GUIDE

Before you begin

The Base uses WiFi to communicate over the internet, and requires mains power.

Before installing, decide where the LeakNet Base will be located:

- Within 3 meters of plumbed fittings,
- Within 1 meter of a 100-240V 50/60 Hz mains socket,
- Within range of WiFi (use your mobile phone to check for WiFi signal). Also ensure you have access to the name of the WiFi connection and password.



Location

The Base should be wall-mounted and located no more than 3 meters aways from plumbed fittings.

Power

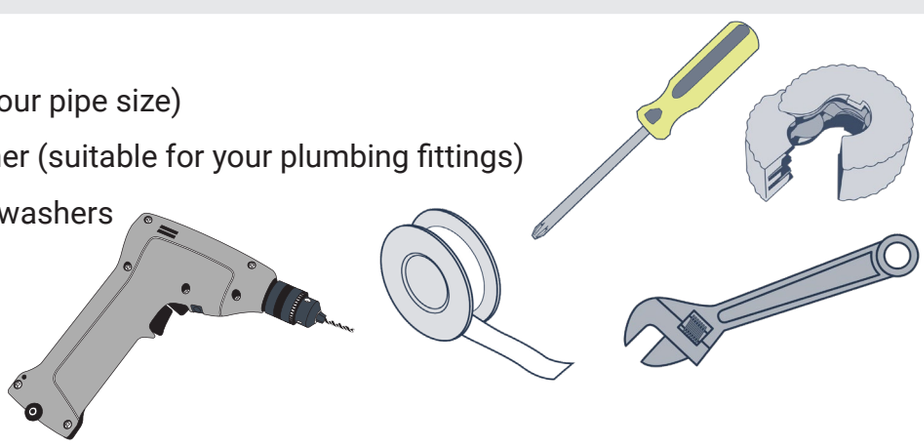
The Base should be located no more than 1 meter away from a mains plug socket.

WiFi

The Base should be located within range of WiFi. Use a smartphone to check the connection is at least 2 bars.

Tools required

- Phillips head screwdriver
- Pipe cutter (suitable for your pipe size)
- Adjustable wrench/spanner (suitable for your plumbing fittings)
- PTFE tape and/or rubber washers
- Drill (if wall mounting)



If WiFi is not available, a standard 3G router can be supplied to provide the wireless connection. Data rates are 4MB per day as a maximum.

INSTALLATION GUIDE

Plumbing instructions

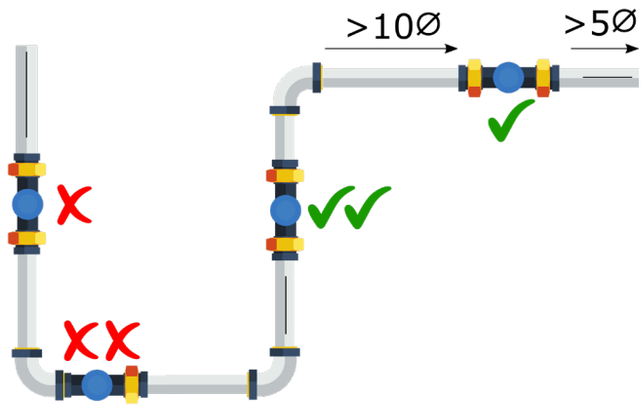
1. Choose location for meter and valve. They will usually be installed together, but try to place the meter as far upstream as possible.

The optimum conditions for placement of a meter are as follows:

a) Straight length of 10 pipe diameters upstream

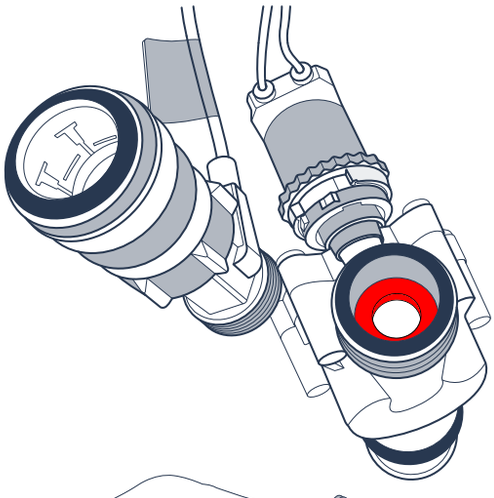
b) Straight length of 5 pipe diameters downstream

c) Direction of flow travelling upwards



Of course, it is usually very difficult to conform to all of these so if you don't manage it, do not worry, the meter will still work but very low flows may not get caught and accuracy will slightly decrease.

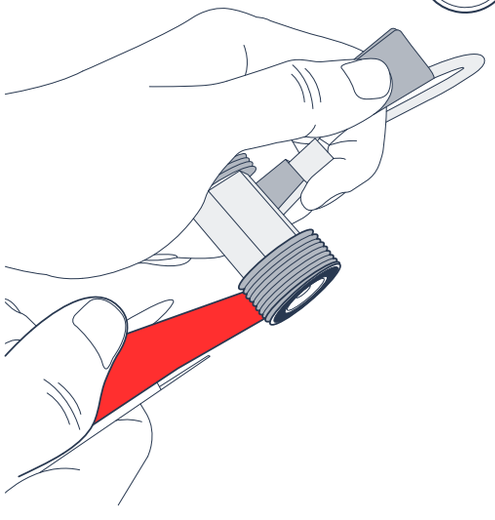
2. Assemble all fittings.



With **pushfit fittings**, use a rubber washer to make watertight connections. Make sure the rubber washer is clean, and hand tighten.

With **compression fittings**, use about 20 turns of PTFE tape around the thread (wrapping around clockwise), and then use a wrench to tighten.

Watertight connections between the valve and meter can easily be achieved using 3 rubber washers or 25 turns of PTFE tape.

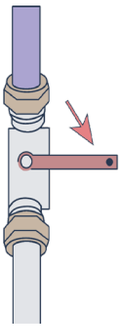


If you are in any doubt, we recommend professional installation by a qualified plumber.

INSTALLATION GUIDE

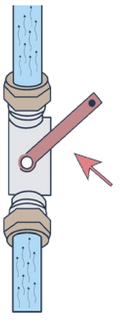
Plumbing instructions (continued)

3. Turn the water supply off and drain the system (or up until the next stopcock downstream).



4. Remove any dried paint on the pipes where the connections will be fitted.

5. Plumb in the fittings, making sure the arrows on the fittings match the direction of water flow. *For the best accuracy, if using a solenoid valve, it should be placed downstream of meter. Motorised valves are direction independent.*



6. Make sure the pipes and fittings are assembled securely, and turn the water supply on.

7. Check for leaks and tighten any fittings.

8. *Optional: Earth bond either side of the installation together if necessary. Ask a qualified electrician if you are unsure.*

9. *Optional: Re-lag the pipework for insulation against freezing.*

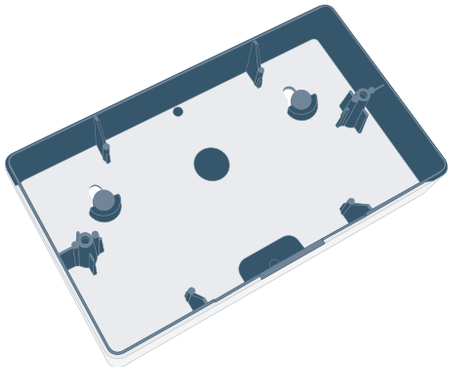
INSTALLATION GUIDE

Wall-mounting instructions

LeakNet should be wall mounted with 5mm screws at a minimum. Make sure the appropriate wall plugs are used and that the length of the screws are not long enough to protrude the other side of the wall.

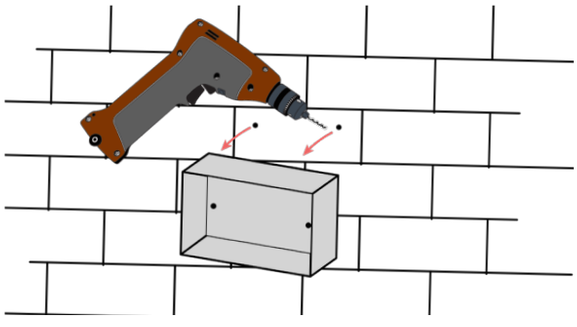
A standard 2-gang pattress back box commonly found with merchants can also be used to flush mount the device. If a 2-gang pattress is used, make sure it is 25mm or deeper and do not overtighten the front screws.

1. Position the LeakNet Base back box on the wall. To ensure maximum WiFi exposure, position the Base at least 30cm away from metal objects, including pipes, and other electronics.



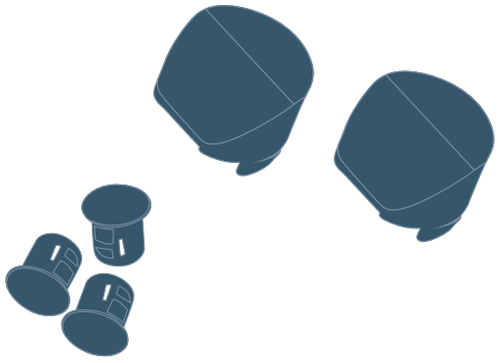
2. Using the appropriate drill bit, drill through the plastic enclosure and wall.

3. Remove the LeakNet Base back box and insert wall plugs.



4. Replace the LeakNet Base back box and screw into the wall plugs.

   Alternatively, you could also simply hang the backbox with screws 90mm apart.



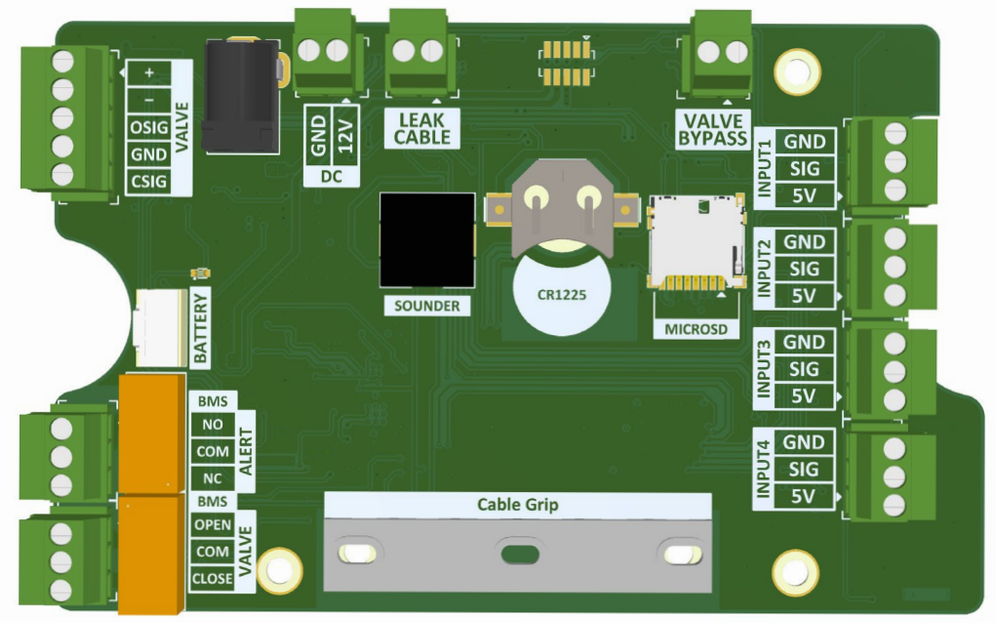
After mounting and wiring, use the small inserts to cover any unused holes, and the larger inserts to cover the 2 screw holes on the front. If these need to be removed, use a small flathead screwdriver to lift out.

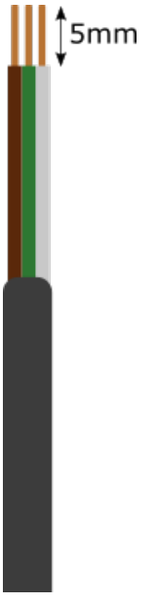
The LeakNet Base and its power supply are not waterproof and should be installed in an appropriately safe place. The plug socket should remain accessible after installation in case of emergency.

INSTALLATION GUIDE

Wiring instructions

Up to 4 water meters or 1 valve and 1 meter can be connected to the circuit board terminal blocks, as pictured below. The exact wiring will depend on your configuration.

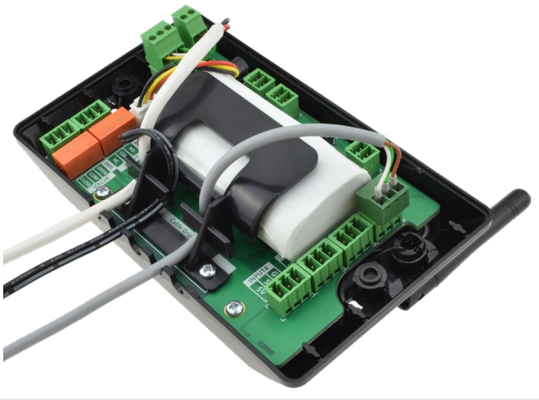




1. Take 5mm insulation off each wire which does not have a connector.
2. Use the wiring guide on the next page and insert each wire into the correct terminal block position then tighten the terminal block screw.

   Note: Each input will have an associated position (1, 2, 3, 4). If only one water meter is used, use INPUT 1.
3. Plug the power in, then if using a battery, plug the battery in.
4. Thread all the cables through the cable grip.
5. Finally, place the LeakNet Base front onto the wall-mounted back box, screw into place and use the plastic inserts to hide the screws.

   DO NOT OVERTIGHTEN THE SCREWS.



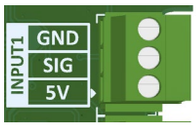
Power

A suitable DC power adapter will be supplied with the kit. If the distance to the nearest plug socket is more than 1m, an extension cable is also provided to extend the reach by an extra 3 metres.

INSTALLATION GUIDE

Wiring instructions

Wiring guide for water meters



3/4” flow meter

GND: Brown

SIG: Green

5V: White

1” flow meter

GND: Brown

SIG: Green

5V: White

2” water meter (1 litre per pulse)

GND: Brown

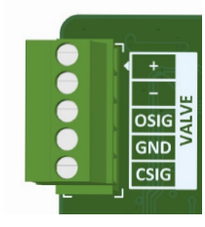
SIG: White

2”-4” flanged water meter (0.1 litre per pulse)

GND: Black

SIG: Red

Wiring guide for water valves



Solenoid valve

1” motorised valve

2” motorised valve

2”-4” flanged motorised valve

LeakNet connection	+	-	OSIG	GND	CSIG	BMS OPEN	BMS COM	BMS CLOSE
Solenoid valve (DC)	Red	Black						
1” motorised valve (DC)	Red	Black	Green	White	Yellow			
2” motorised valve (DC)	Red	Black	Grey	White	Brown			
2”-4” flanged motorised valve (AC)*			Grey	White	Brown	Black	*AC Live*	Red

** Also required: AC neutral (blue) and earth (green/yellow)*

INSTALLATION GUIDE

Wiring instructions

Wiring guide for optional inputs

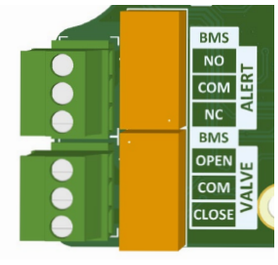
Leak Cable

With leader cable, use red and black.
Without leader cable, use the 2 black cables.

Valve bypass

To override the valve and keep it open during a sprinkler event, feed a volt-free closed circuit to this input.

Wiring guide for optional outputs



To signal an external system such as a BMS (Building Management System), use these relays.

Alert

Outputs whether an alert is present.
Normal operation when there is no alert. Open circuit between COM and NO, and closed circuit between COM and NC.
Switched operation when there is an alert. Closed circuit between COM and NO, and open circuit between COM and NC.

Valve

Outputs the status of the valve, open or closed.
When the valve is open, there would be a closed circuit between COM and OPEN.
When the valve is closed, there would be a closed circuit between COM and CLOSE.

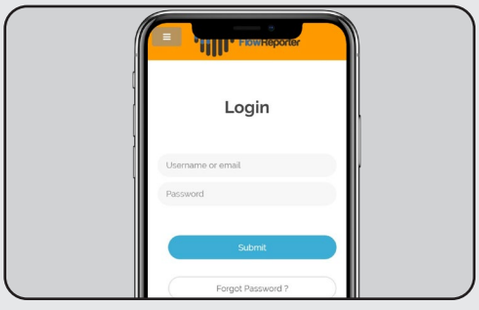
Relay specifications

Maximum Switching Power:	60 W, 125 VA
Maximum Switching Voltage:	220 VDC, 250 VAC
Maximum Switching Current:	2 A

INSTALLATION GUIDE

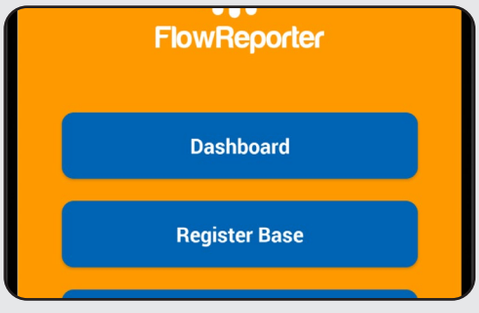
Connecting to the internet

These steps are to be performed by a computer or smartphone with WiFi capability. The entire process uses an internet browser.



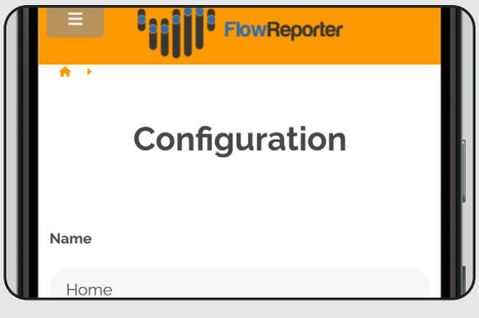
1. Login online

Install the app or browse to **www.FlowReporter.com**.
Once you have registered for an an account, log in.



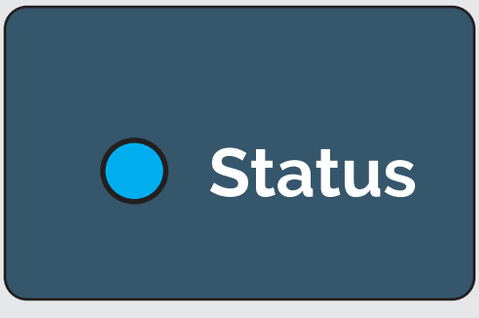
2. Register new Base

Connect the Base to WiFi by clicking “Register Base” and follow the on-screen instructions.
You will be asked to connect to the new WiFi hotspot that the Base creates, so it is important you know how to change WiFi on your device.



3. Configure the Base

Configure the Base online by selecting the fittings used (as cabled on page 12).
The Base will then restart with the new configuration.



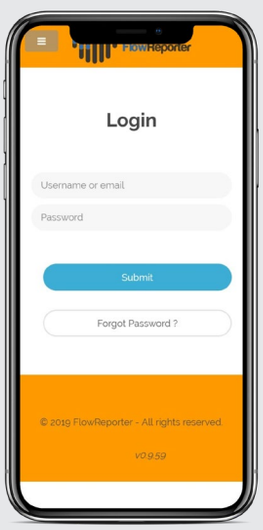
4. Wait for Base to update

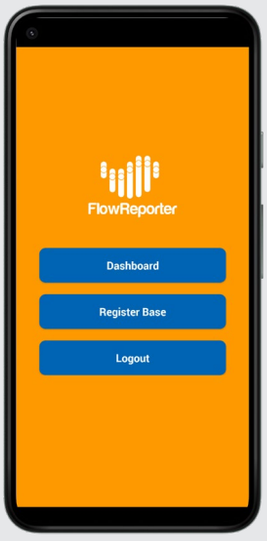
Wait 1 minute for the Base to update. The “Status” LED will start breathing light blue when it has finished updating.

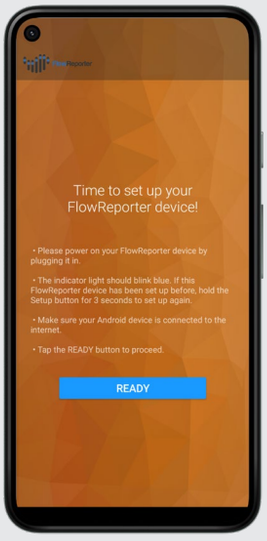
INSTALLATION GUIDE

Connecting to the internet - in detail

Details of each step can be found below (for Android devices - Apple/Windows users will have very similar steps). Note that this process can also be done on a laptop in a web browser.

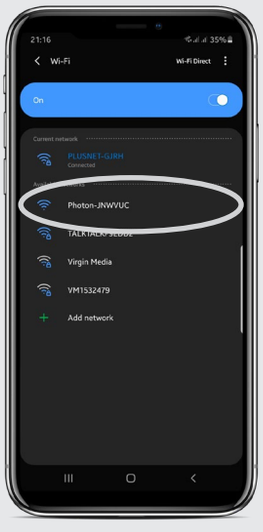


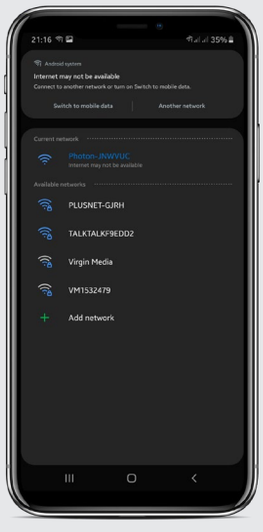




Install the app by searching for FlowReporter on the app store. Alternatively, open up a new browser window and register for an account at **www.FlowReporter.com**.

Once you have an account, log in and click “Register Base”.

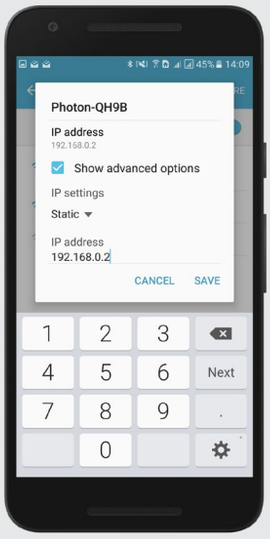


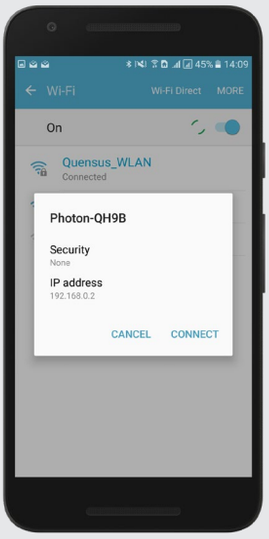


Plug in the LeakNet base and make sure the “Status” light is blinking dark blue. If it isn’t, press and hold the “Mode” button until it does.

Then click “Ready”.

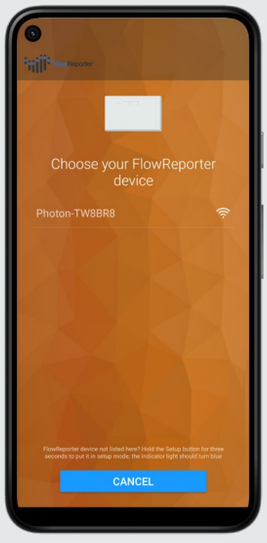
You will now need to connect to the new WiFi hotspot it creates, if the app doesn’t do this automatically, go to your WiFi settings to connect to the new WiFi hotspot. It will look similar to FlowReporter-ABCD on your network list.

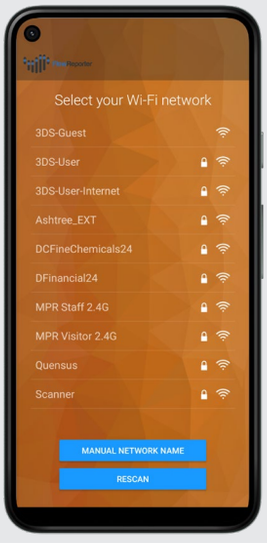


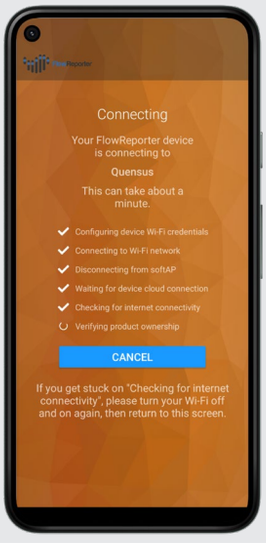


If this fails, try turning your WiFi off and on again, go back to the main Dashboard page, restart the Base and try again from scratch.
If still not working, set your IP address to 192.168.0.2 when connecting to the base, instead of using DHCP. To do this, go to your WiFi settings, tap and hold the FlowReporter-ABCD network until a box appears. Select “Manage network settings”, then “Show advanced options”. Choose “Static” from the “IP settings” menu, and input 192.168.0.2 as the IP address and 255.255.255.0 as the subnet. Finish by selecting “SAVE”. Now try registering the new Base.

Connecting to the internet - in detail (continued)

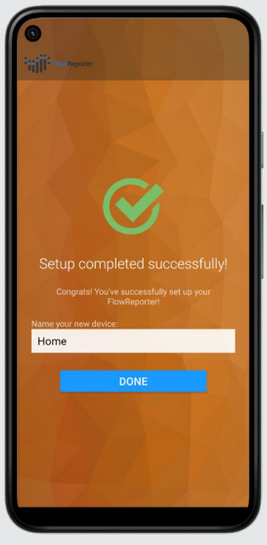


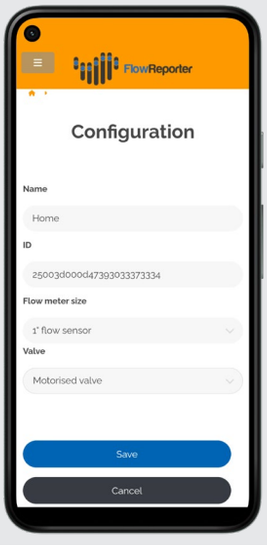




Return to the app and click “Next”.
The screen should change to show the device scanning the area for nearby WiFi (if not, refer to the previous page). A few seconds later, a list of available WiFi will appear. Select yours and type in the password.
MAKE SURE YOUR WiFi IS 2.4GHz ONLY!!!

Wait a few seconds, if the “Status” light is flashing dark blue or green, the connection failed and you should press “Restart”.

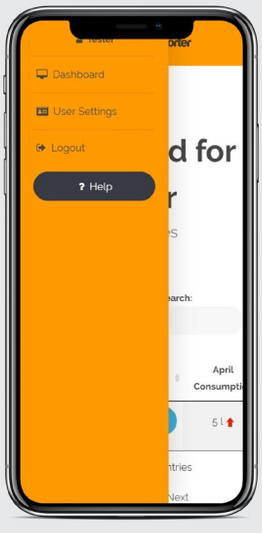




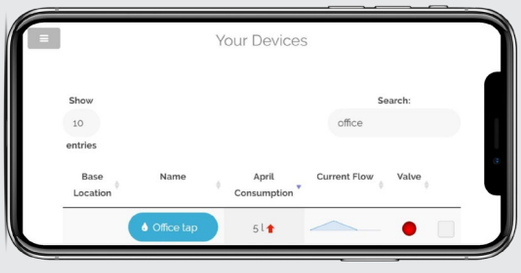
Make sure you’re connected back online, and the “Status” light is slowly breathing light blue, give the device a name, then tap “Done”. If the Base has been registered before, you will be asked whether you’d like to keep the previous settings and data.

Configure the Base online by selecting the fittings used (as recorded on page 12).

Save the settings, then wait 5 seconds for the Base to restart with the new configuration.



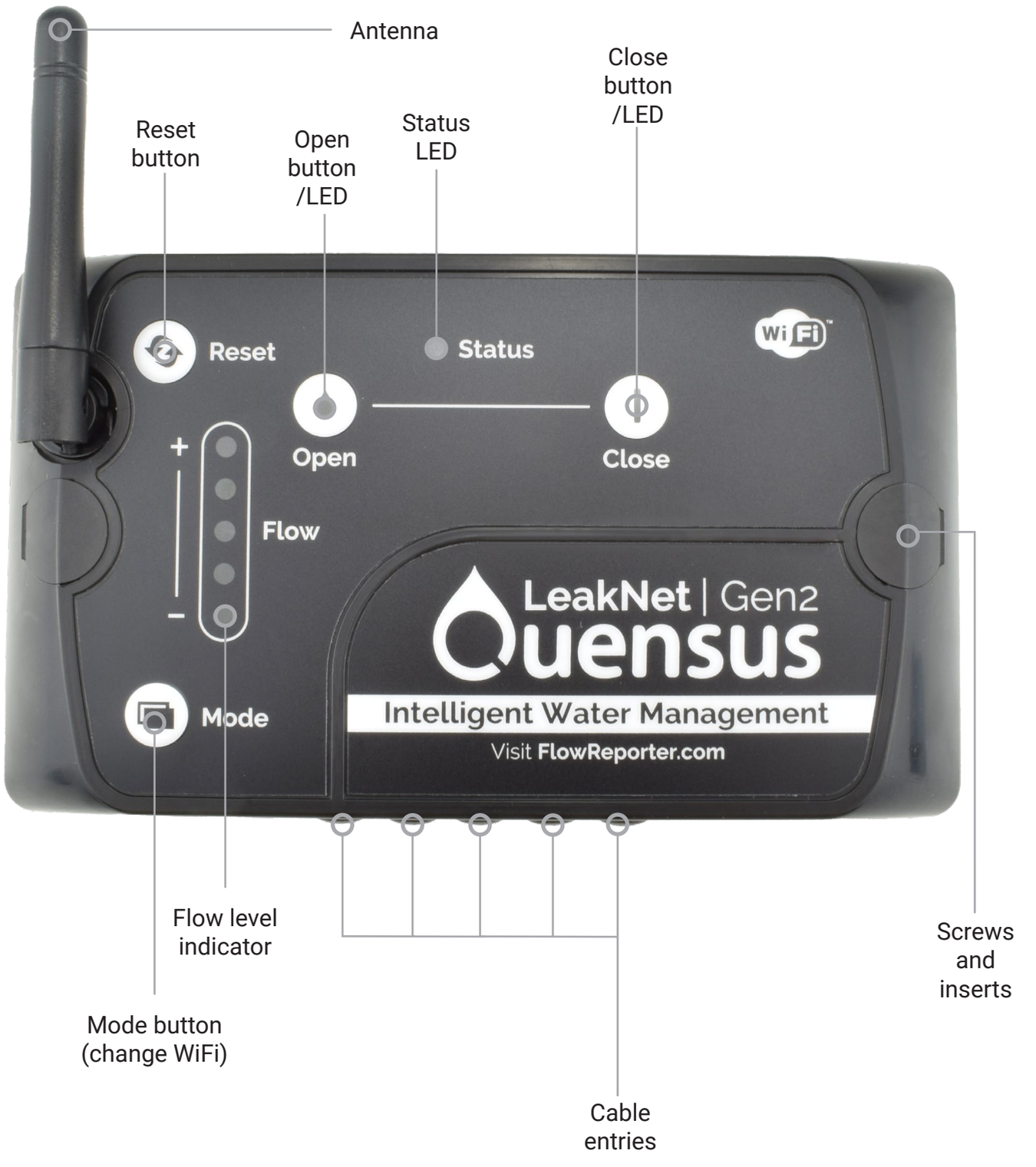
Make sure to enable leak alerts and review the thresholds.
Return to your dashboard by clicking the drawer icon (in the top left) and click “Dashboard”. You will see your new device on your dashboard.
Test the configuration by running a nearby tap, then click “Close valve” and check the water stops flowing. Click “View” then “Real time” then “Open valve”. You will see the graph change as the water is turned back on.



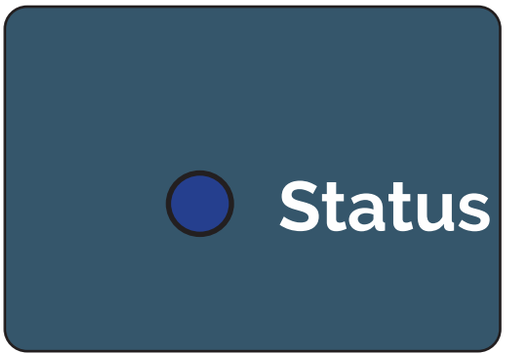
USER MANUAL

LeakNet Base

On the front of the Base, you will see LEDs (lights), buttons and connections.

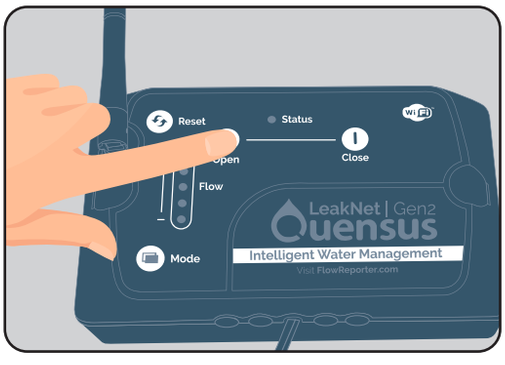


Using the buttons and LEDs



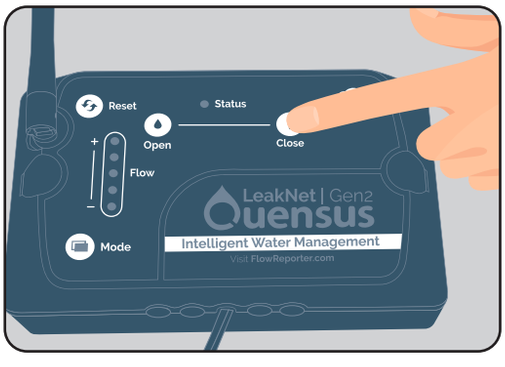
1. Status

To connect the Base to a new WiFi access point, hold down the Mode button for around 5 seconds until the “Status” LED flashes dark blue.



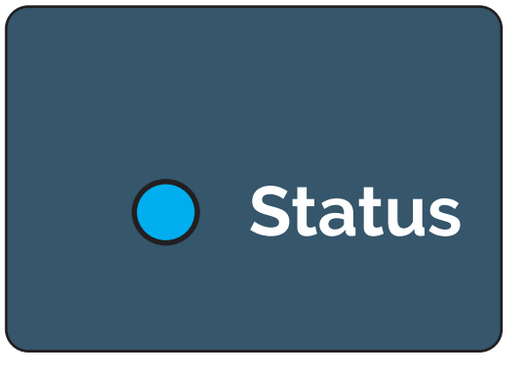
2. Open

To open the valve, hold the “Open” button until the “Open” LED shows green and you hear water flowing. This should take 1 second for a solenoid valve, and 10-45 seconds for a motorised valve.



3. Close

To close the valve, hold the “Close” button until the “Close” LED shows red and you hear the water stop flowing. This should take 1 second for a solenoid valve, and 10-45 seconds for a motorised valve.



4. Status

The “Status” light indicates the status of the internet connection:

- Breathing light blue: Normal operation - connected to the internet
- Breathing white: Normal operation - offline
- Flashing dark blue: Waiting for WiFi credentials
- Flashing purple: Updating to new software

See page 29 for the full list of LED status lights.

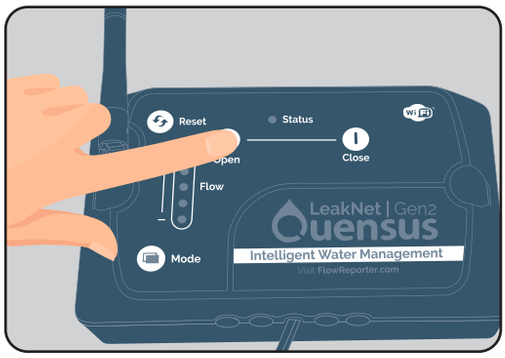
Offline mode

If the device has not been setup online, it can also be configured using the SD card. The default factory configuration can be seen below but can also be edited without requiring to be online.

There are 2 configurations which can be applied independantly, one to be used during **commissioning** (for example during testing, construction stage, or as an “away” mode) and one to be used in normal **operational** settings. From now on, these configurations will be known as **commissioning** and **operational**.

Commissioning is the default, and can be switched to operational by doing the following:

1. Turn on the device and wait at least 10s.
2. Press the open button and then press Reset while keeping the open button pressed.
3. Keep the open button pressed until you hear 2 beeps (and the status light blinks pink twice).



To switch the configuration back to commissioning, do the same again but this time the device will beep and blink pink only once.

If you restart or power off, the configuration will be the same as the one before power off.

If the status blinks pink 3 times, then there is an error with the SD card. Try restarting. If it still shows the error, then try changing the SD card and reset.

Factory default configurations

The following offline mode thresholds will close the valve when exceeded.

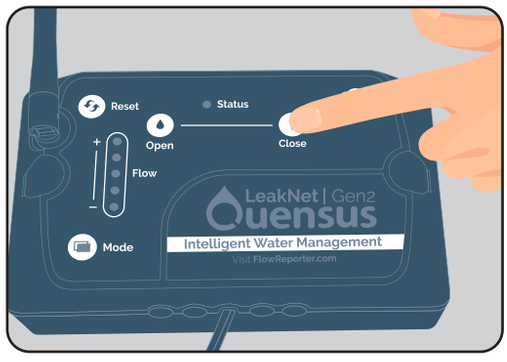
	For flow sensor (default 1”) plus valve :	**For fittings 2” and above:**
Commissioning Configuration		
Time threshold:	10 minutes	2 hours
Volume threshold:	100 litres	2 m^3
Maximum flow threshold:	40 l/min	none
Inactivity threshold:	none	none
Operational Configuration		
Time threshold:	60 minutes	2 hours
Volume threshold:	600 litres	2 m^3
Maximum flow threshold:	40 l/min	none
Inactivity threshold:	24 hours	24 hours

Offline mode

Maximum flow calibration

This setting is to protect from a sudden spike in flow as could happen from a burst pipe. As soon as the maximum flow is exceeded, the valve will shut off the water immediately to prevent damages. The default maximum flow value is specified in the default configurations. However, this can be customised for your own property. The following steps show how to do this calibration automatically, without need to guess:

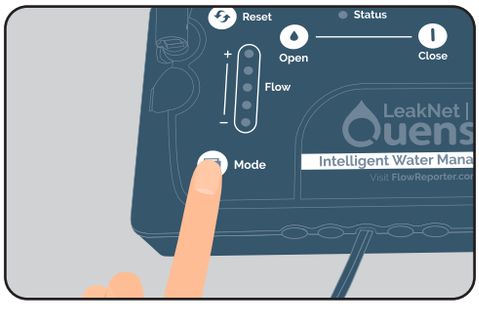
1. Press the close button to shut the water off.
2. Open all faucets and empty the flush tanks downstream.
3. Long press the close button until the status LED shows pink - now you are in max flow calibration mode. Note this mode will exit after 1 minute if nothing else happens.
4. Open the valve using the open button.
5. The device will start measuring the maximum flow for 10-20 seconds before shutting the valve off.
6. Make sure to close all the faucets before re-opening the valve.
7. The max flow threshold will be saved in the current configuration.



If you want to update this threshold in another configuration, do the same procedure whilst in that configuration (Reset + open as described above).

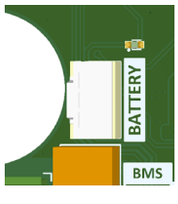
Factory reset

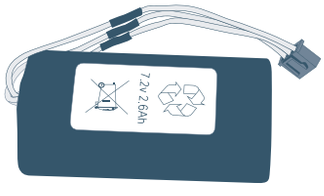
If there are any problems with the new thresholds, you can always revert back to the factory default configurations by pressing the Mode button 3 times.
This will clear the memory and restart the device. When it is restarted, the status LED will beep and blink pink once to show it is in commissioning configuration.



Battery backup

An optional accessory is the lithium ion backup battery, which will supply at least 24 hours of backup power to the device with enough power to close the DC valve (check page 12 to see whether your valve is DC). When the power is restored, the battery will be recharged automatically so you won't need to replace it. Make sure it is plugged into the correct socket labelled BATTERY.



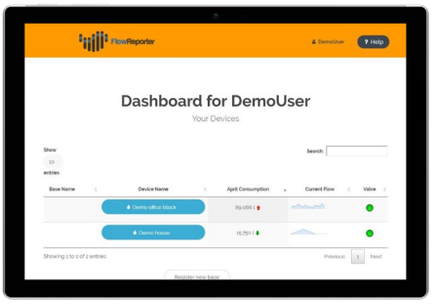


USER MANUAL

Overview of software

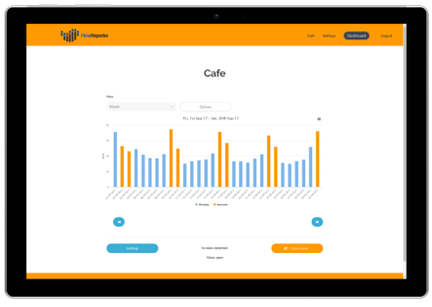
When online, LeakNet works in conjunction with an app and/or web application, which can be found at: **www.FlowReporter.com**.

The software is constantly being updated, so some of the following screens may change. For the most up-to-date documentation, please click the “help” button in the menu bar.



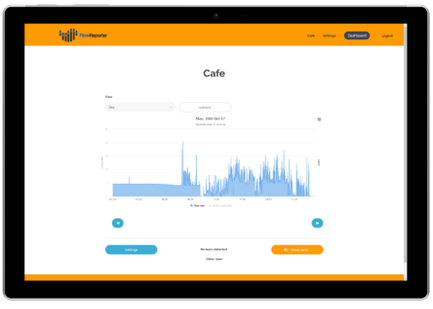
Your dashboard

After logging in, you will see your dashboard. This contains all the Bases you own, then all the devices shared with you. Click on one to bring up the monthly view.



Monthly view

This bar chart shows the water consumption over the last month, split by day. Click on a day to bring up the daily view.

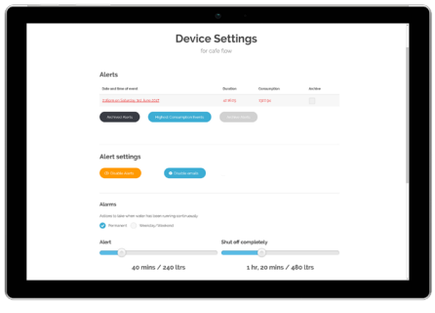


Daily view

This shows more detailed flow rates throughout the day, split into seconds. You can highlight the graph with the mouse (or pinch the screen) to zoom in.

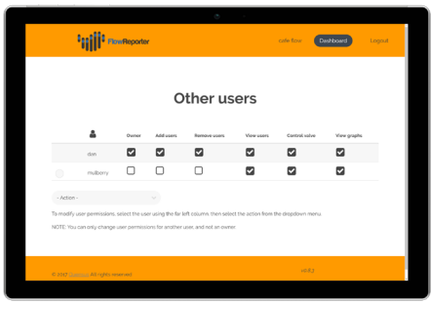
Alerts view

In the alerts dashboard, you will see all the alerts associated with all devices you have access to. These can be categorised and tagged so that real alerts are managed effectively and false alerts are minimised.



Thresholds and alerts

Under settings, you can set your thresholds for when alerts are sent. There are 2 thresholds, one for alerting, and one for turning the water off. In both cases, when water has exceeded the threshold, everyone who has access will be alerted.

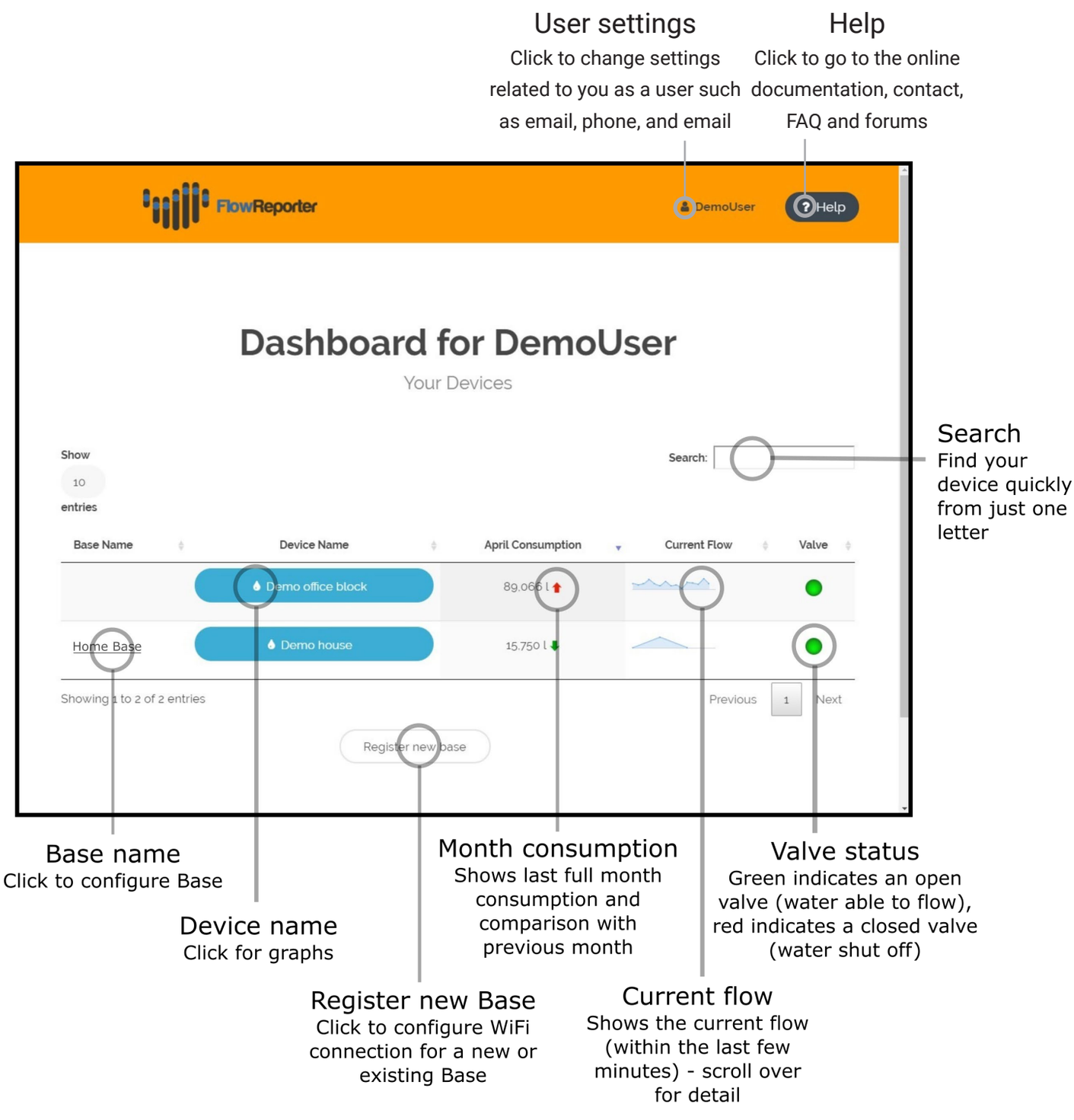


Sharing access

You can send anyone access to a device under settings. After they click the link in the email they will have access to the data and will be able to control the valve by default. You can then modify these permissions under settings.

Dashboard

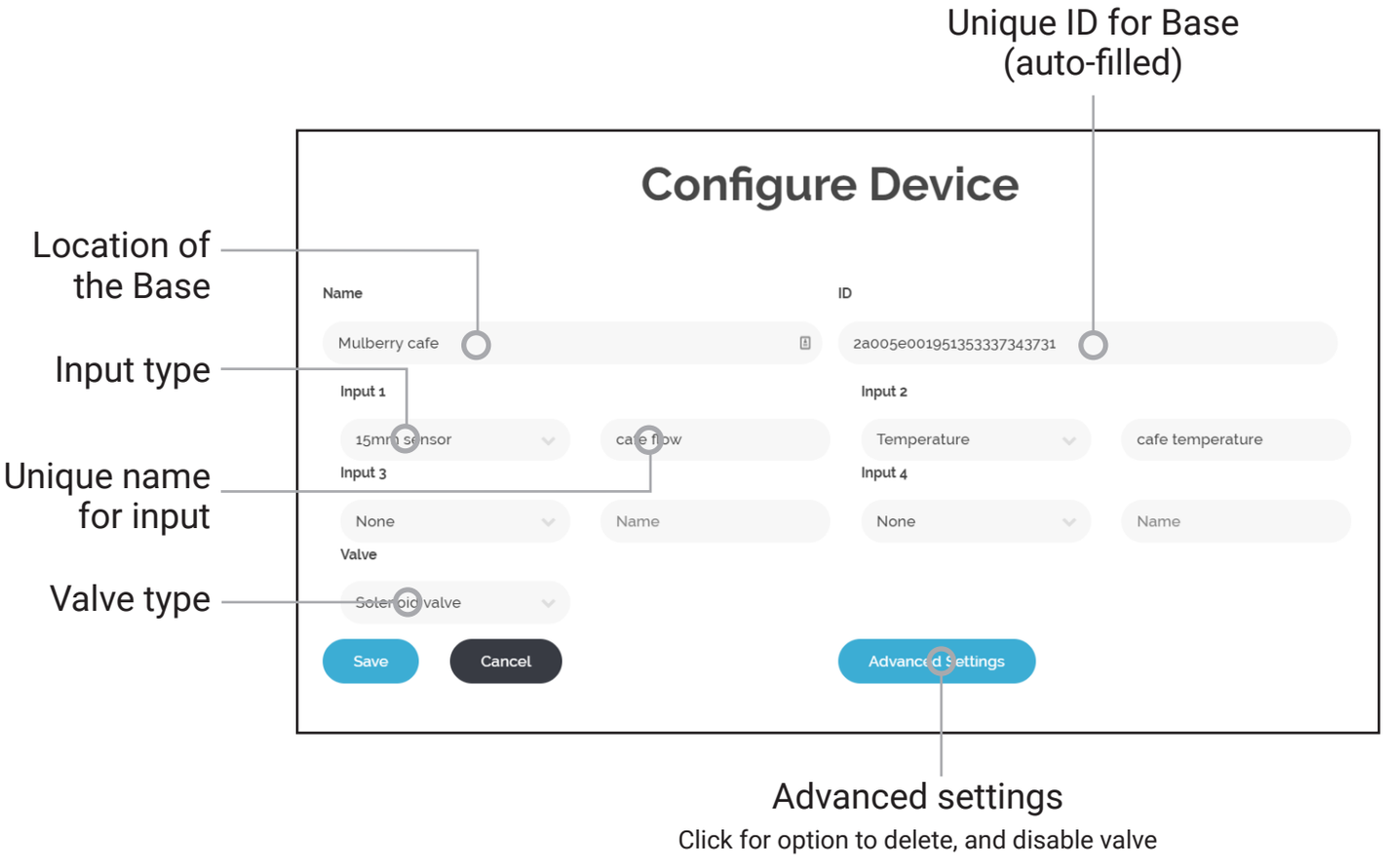
After logging in, you will see a list of Base devices which you have access to (either owned or shared):



USER MANUAL

Configure Base

Clicking a Base device from the dashboard will bring you to Configure Base, which allows you to modify inputs, their names and connected valve:



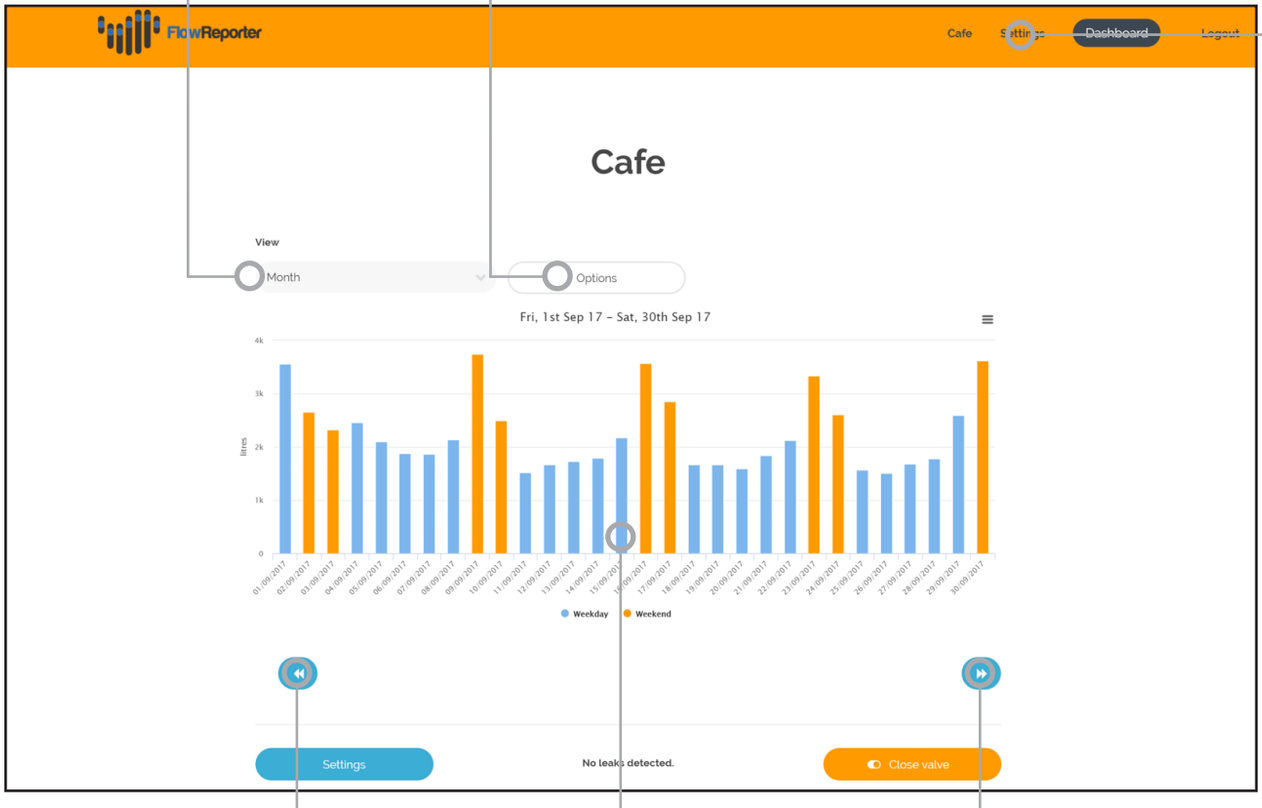
Depending on the exact product you have, this screen may have less options as the product will have a set preconfiguration to make it easier to program.

Graphs

After selecting a flow input, you will see a graph of the consumption for the current month:

View
Choose to view graph of real-time, day, month or year consumption

Options
Click to expand further viewing options such as units, events view, and custom time frame



Back 1 month

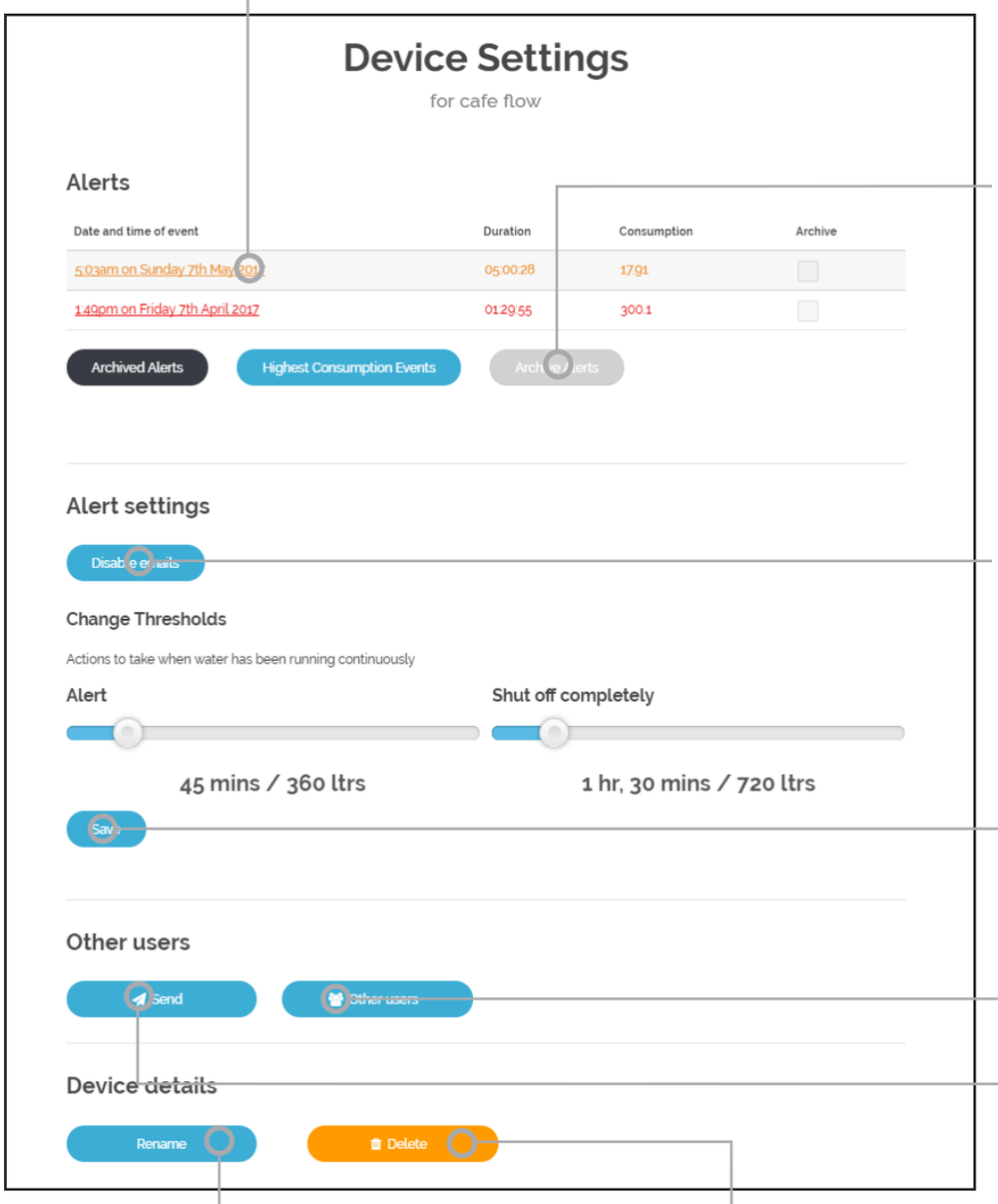
Daily view
Click the bar of a day to view more detailed flowrates

Forward 1 month

USER MANUAL

Device settings

After clicking device settings, you will see the following screen. Depending on your permissions, some sections and buttons may not be visible:



Alerts

Orange text shows minor alerts, red text show major alerts (where the water was shut off) - click to view detailed graph of event

Archive

Remove alerts from this page by checking the boxes and clicking “archive alerts” - these alerts will then be moved to “archived alerts”

Disable emails

If emails are disabled, you will not be notified when alerts are raised - other users who have access will not be affected

Change thresholds

The sliders can be dragged to the desired threshold point - click save to register any changes

Other users

View, delete and modify the permissions given to shared users

Send

Share access to this device with anyone via their email address

Rename

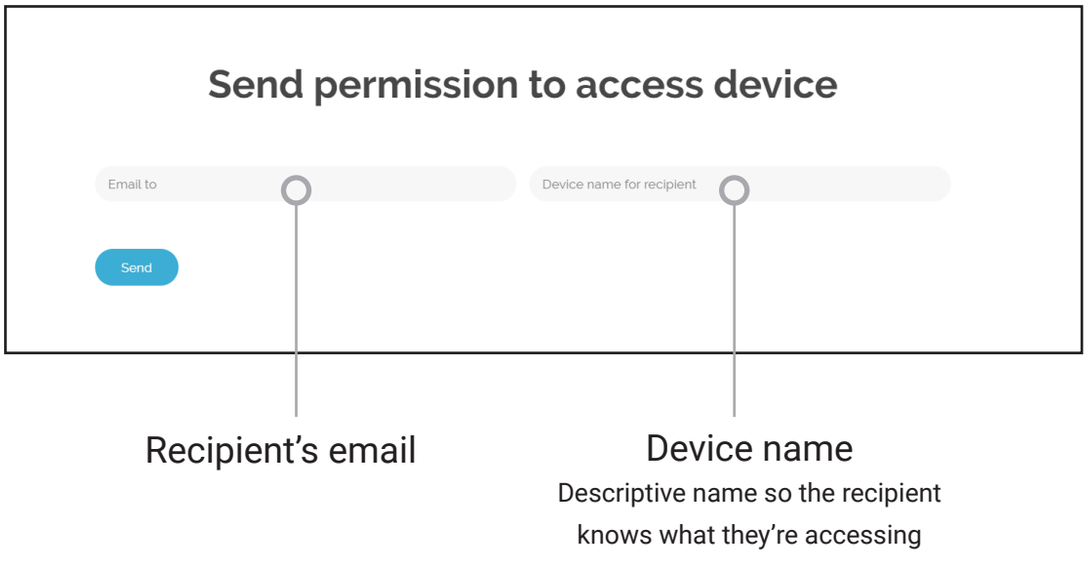
Click to rename the device as it appears in your dashboard

Delete

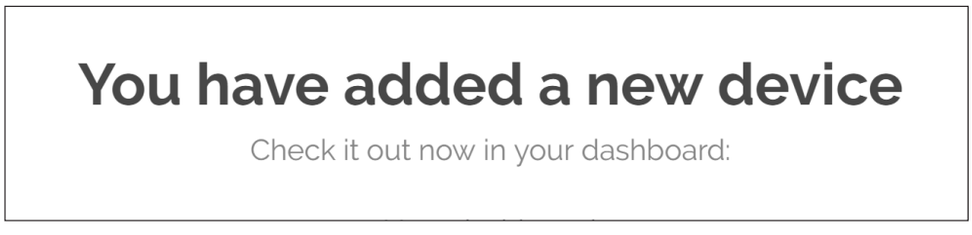
Delete your access to this device - if you are the owner, this will also delete the device for all other users

Sharing access

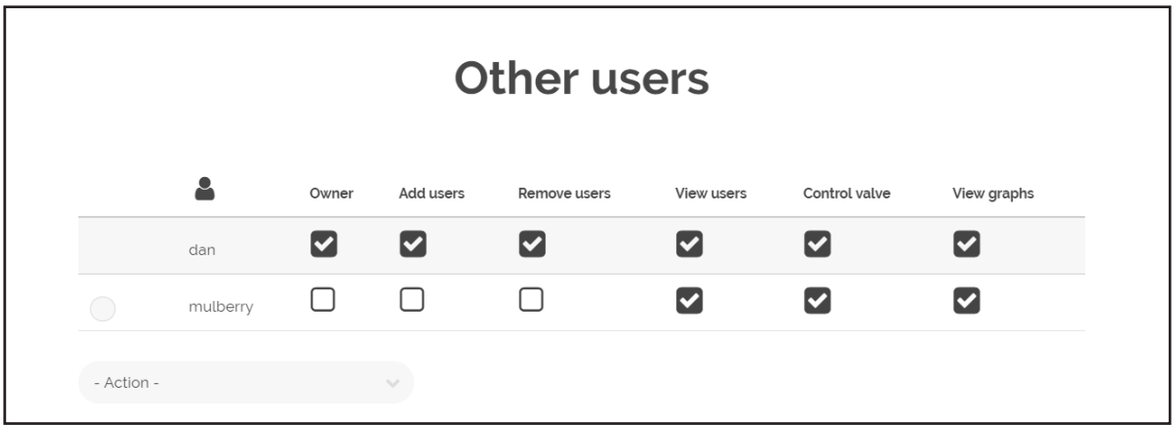
To send access to another user, you must know their email address:



The recipient will receive an email with a link to accept access to the device (if not, make sure to check the spam folder). They must have registered on the website with that same email address before they can accept access. Once they are logged in and have clicked the email link, they will see:



By default, they will be able to view other users, control the connected valve, and view graphs. You can modify these permissions under device settings. Other permissions include the ability to add and remove users (which includes modifying permissions). Owners can only be changed by re-registering the Base device.



Thresholds and alerts

An alert is sent if either of the thresholds have been exceeded. Exceeding the “alert” threshold sends a minor alert, and exceeding the “shut off” threshold sends a major alert and shuts off the water.

Here is an example situation where the flow of water begins at 17:30 and the thresholds are

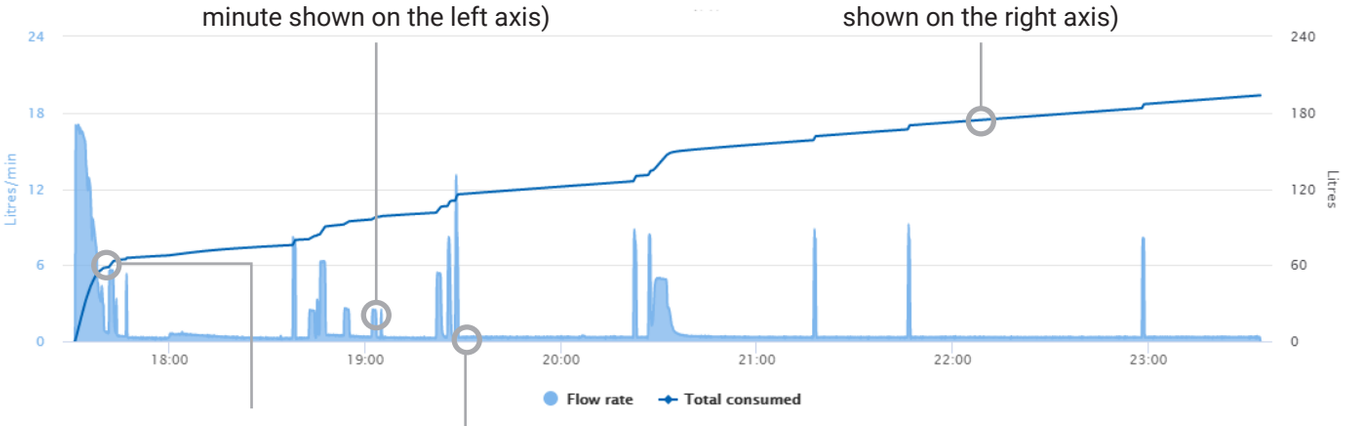
1. Alert threshold = 30 minutes or 60 litres
2. Shut off threshold = 2 hours or 240 litres

Flow rate

This line shows the current flow rate at a point in time (in litres per minute shown on the left axis)

Total consumed

This line shows the total amount of water consumed so far (in litres shown on the right axis)



Minor alert

At this point in time, there has been 60 litres of continuous flow, therefore exceeding the first threshold

Major alert

At this point in time, there has been 2 hours of continuous flow, therefore exceeding the second threshold

Disable the valve

Normally, the valve would close and the water would be turned off after a major alert, however there may be times when you expect an exceptional amount of water usage and do not want the water to turn off.

In these cases, you can either disable the valve before the expected time of usage by pressing the open button, or click the link in the minor alert which disables the valve for that event only.

Note: All users who have permission to control the valve will receive alerts with a link to disable the valve for that event.

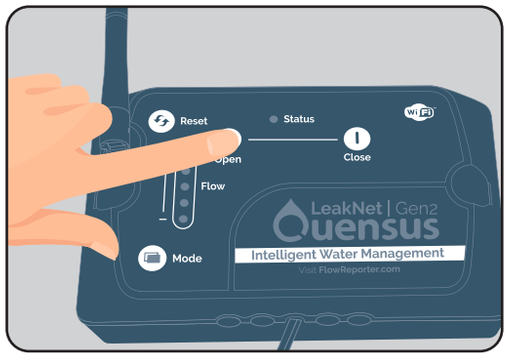
Thresholds and alerts

Leak cable

One leak cable input will take in 2 wires. The theory is that the resistance of these wires will decrease when water is presented anywhere along the wire length. The lower the resistance, the worse the leak. The device will be able to sense the leak and shut the valve to prevent water damages.

There is a default base value which is factory set and should be reasonable for most cases.
If there are issues, then this base value should be set once the leak cable is installed and dry.
To set the base value, just long press the open button until you hear a beep.

This calibration functionality can also be done on the FlowReporter app if there are too many false alerts i.e. the area has naturally high humidity.



Inactivity threshold

There is another threshold called “Inactivity” which will shut the valve off after no water has been flowing for a set number of hours.

This is useful if the occupier has left the property for a long amount of time (e.g. holiday) and has forgot to switch the water off.

There is a default value for this which can be seen on page 19, but you can also change this yourself, either in the SD card configuration or in the FlowReporter app.

Beep audible alert

The device will beep on alert. To turn off, press the open or reset button on the device.

TROUBLESHOOTING

The “Status” light colour indicates the current status of the device:

“Status” LED colour	Problem	Solutions
Slowly pulsing light blue	None - the device is in normal operation.	The device has internet connectivity. If no data is showing after running water, check the input wiring connections.
Slow pulsing white	Normal offline operation.	Connect the device online to gain access to the app and remote features.
Slow pulsing orange	Offline operation without correct time.	Make sure the RTC battery is correctly inserted, and connect the device online (even if just temporarily).
Flashing dark blue	Device requires WiFi credentials to connect online.	Follow the “Connect to WiFi” stage of the installation section.
		If no WiFi is available, use a GSM gateway instead.
Flashing green	Device is attempting to connect to WiFi. With good WiFi signal, this stage should take no more than 10 seconds.	Make sure there is some room around the LeakNet Base. It should be at least 30cm away from metal objects and other electronics. If the status does not change whilst suspended in the middle of the room, then the WiFi signal is too weak.
		Try reducing the distance between the LeakNet Base and the WiFi router, or use a WiFi booster.
Flashing light blue / orange flashes	The device is trying to send signals over the internet. If this takes more than 5 seconds, the internet connection does not meet requirements.	Check your internet connection. Is there internet access on other devices connected to the same WiFi?
		Make sure your firewall is not blocking port 5683.
		Make sure you are not using Enterprise WiFi which needs further login stages or a user account.
		Make sure you are using 2.4GHz WiFi and **not 5GHz**.
Flashing purple	The device is updating software. This stage should take no more than 2 minutes.	After waiting 5 minutes to complete, restart the device by turning the power off and then on again. Temporarily move the Base unit closer to WiFi source.
Flashing white/ nothing showing	Short circuit, or no power	Check plug socket is operational by plugging something else in to test.
		Remove meter and valve cable connections and retry.
Flashing red	Hardware problem	Please contact Quensus if you experience this. Try recording the number of flashes after the SOS signal (3 short flashes – 3 long flashes – 3 short flashes) which will help us determine the exact fault.

If the problem persists, contact Quensus using the contact details on the back page of this manual.

SPECIFICATIONS

Base unit

Dimensions	14.5cm x 11.2cm x 4.7cm
Weight	230g
Enclosure material	Recycled ABS
Connectivity	WiFi IEEE 802.11 b/g/n
Power	12V DC 1.6A max
Battery (optional)	Lithium-ion rechargable 7.2V

Water Meters

Maximum number of meters supported per LeakNet Base = 4.

Thread	Nominal diameter (DN)	Nominal flowrate
3/4” BSP male	11mm	1.8 m3/h
1” BSP male	20mm	3.6 m3/h
2” BSP male	40mm	16 m3/h

Valves

Maximum number of valves supported per LeakNet Base = 1.

Valve type	Thread	Nominal diameter (DN)	Power
None	-	-	12V DC 0.2A max
Solenoid	3/4” BSP male	11mm	12V DC 0.8A max
Motorised	1” BSP female	25mm	12V DC 0.8A max
Motorised	2” BSP female	50mm	12V DC 1.6A max

Larger fittings are available, please contact us to request data sheets.

MAINTENANCE

The LeakNet Base has been designed to be maintenance-free, however the sensors and valves may naturally wear after time. Should the sensors or valves fail, contact Quensus for a replacement.

Cleaning

A damp cloth is recommended for cleaning the LeakNet Base.

TECHNICAL SUPPORT

Please contact Quensus if you require any technical assistance using the details below.

Quensus

Intelligent water management

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