



AQUA-L SERIES MANUAL

Multi-Sensor Acoustic Pipe
Leak Detector





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ACKNOWLEDGMENT:

Our leak detection equipment is specifically made to produce accurate and detailed readings. Results are instantly shown on screen when you need them most.

If you need additional training, a second opinion on the data, or wish to seek out our expert advice on a course of action?

Feel free to contact our team via-

Phone: (+61) 1300 343 464

Email: info@aquald.com



EACH UNIT INCLUDES:

Aqua-L7

- Display Screen
- Wall sensor
- Medium outdoor Sensor
- Large outdoor Sensor

Aqua-L6

- Display Screen
- Medium outdoor sensor
- Large outdoor sensor

Aqua-L5

- Display Screen
- Indoor floor sensor
- Wall sensor
- Medium outdoor sensor

Aqua-L2

- Display Screen
- Medium outdoor sensor

Aqua-L1

- Display Screen
- Wall sensor
- Indoor floor sensor

Note: Each unit includes the user manual & training, lockable aluminium carry case, strap, noise-cancelling headphones, charger. (The steel probe/pole and adapter, telescopic pole is not included with the AQUA-L1 kit).

TECHNICAL SPECIFICATIONS:

Model	Aqua-L1	Aqua-L2	Aqua-L5	Aqua-L6	Aqua-L7
Measuring Context	Indoor	Outdoor	Indoor + Outdoor	Outdoor	Indoor + Outdoor
Included Sensors	Indoor floor sensor + Wall sensor	Medium outdoor floor sensor	Medium outdoor floor sensor + Indoor floor sensor + Wall sensor	Medium outdoor floor sensor + Large Outdoor sensor	Large outdoor floor sensor + Medium outdoor floor sensor + Indoor floor sensor + Wall sensor
Frequency range	1-100000Hz				
Gain	1-10 levels				
Volume	1-10 levels				
Operating mode	General Detection mode(when assessing/ estimating) & Locating mode (when pinpointing)				
Display	7 inch, HD digital touch LCD screen				
Charging hours	7 hours				
Working hours	15 hours				
Charger	5v 2A USB				
Depth	5 meters(only with Large outdoor floor sensor and medium outdoor floor sensor)				
Input power	-2+ w				
Working temperature	(-20oC _ +50oC)				
Host Device weight	0.7kg				
Available Languages	English, Spanish, French, Turkish, Italian				



INTRODUCTION:

The **AQUA-L Series** is our premium range of multi-sensor acoustic pipe leak detectors. Designed by geotechnical engineers and hands-on technology experts, the AQUA-L Series offers exceptional precision, ease of use, and accessibility that you can truly count on. Its impressive ability to penetrate a large variety of surface areas to a maximum depth of 5 meters, can reveal a pipe leak within walls and below the ground from the bathroom to ovals and fields to carparks, major roads and highways. By using its highly-sensitive ceramic sensor's ability to clearly identify the leak.

WORKING PRINCIPLE:

Our AQUA-L Series multi-sensor water pipeline leak detectors capture the leak in the form of frequencies. When a pipeline burst is present below ground or within a wall, it creates what someone might call a gushing sound. This gushing sound can be measured in frequencies (Hz) via its sensors, which are then processed by the host machine, then shown on the display screen as a visual spectrum with signal bars. The sound is simultaneously transmitted through its noise-cancelling headphones. This is the easiest and most effective method of locating a burst pipe without the user always having to pump the line with gas and/or digging any unnecessary holes. The closer the detector's sensor is to the leak, the greater the indication sound will be. The visual spectrum bars will also adjust in height accordingly, depending how close the detector is to the leak.



GETTING STARTED:

1. Preparation:

For detecting a pipe leak in an outdoor environment:

- a. Confirm that a pipe leak is in fact present. This can be done by tracking water loss via a water main/water meter. Unexplained water puddles also indicate a possible burst within a pipeline.

Note: A water main/water meter test can only be accurately performed when there is no water use within the property. This means shutting off all indoor and outdoor water-consuming appliances such as taps, toilets, showers, washing machine, irrigation system. If the water meter continues to tick over, a leak is present.

- b. Search and check for any unknown water flow around the pipe well.
- c. Check for any land subsidence around the pipeline.
- d. Use the medium or large outdoor sensor to check the value of any abnormal leak sounds below ground of the suspected areas of concern.
- e. Use architectural plumbing layout plans to identify where a pipeline may run. Otherwise, a "Pipe locator" may be used to find the direction of the pipeline if the direction is unknown.

For indoor detection of pipe leakage:

- a. Confirm that a pipe leak is in fact present. This can be done by tracking water loss via a water main/water meter. Unexplained water puddles also indicate a possible burst within a pipeline. Otherwise, conduct a pipeline pressure holding test with a manual water pressure tester.
- b. If the pipeline's direction is unknown, a thermal imaging camera can be used to determine the direction of the pipeline (this is optional – although especially useful when a hot-water line has burst).



2. Sensor selection:

Our "AQUA-L Series" offers a variety of sensors. It is very important to choose the correct sensor for detecting a leak. The sensors included in the kit (depending on the model) are;

a. Indoor floor sensor:

The indoor floor sensor is suitable for use on indoor tiled surface areas, timber floors, epoxy coated floors, laminate floors, etc.

b. Wall sensor:

The wall sensor is used on walls, especially useful in narrow, hard-to-reach spaces such as tight spots around walls, beneath cabinets and vanities, around toilet cisterns, etc.

c. Medium Outdoor sensor:

The medium outdoor sensor is suitable for low noise-polluted environments such as external pavements, footpaths, concrete slabs, and suburban streets. The steel rod/soil probe may be attached to this sensor via the adapter in order to detect the pipe leak within gardens, ovals and fields, sand, soils, etc.

d. Large Outdoor sensor:

This sensor is best used within high-traffic and noise-polluted environments such as car parks, major highways and freeways, large construction sites, airports, including water and fire hydrant systems.

3. Assembly instructions:

Step: 1

Connect the strap to the back of the display screen.

Step: 2

Connect the desired sensor via plug to the display screen (this may vary depending on the leak context and environment).

- Wall sensor for leaks within a wall.
- Floor sensor for leaks below-ground.



Step: 3

Connect the noise-cancelling headphones to the display screen via the provided AUX cable and place it comfortably over your head. (AUX allows for instantaneous sound).

Note: The above steps are for general use and should be followed before operating the product. Do not initiate a leak detection without attaching the strap to the display screen.

OPERATION INSTRUCTIONS:

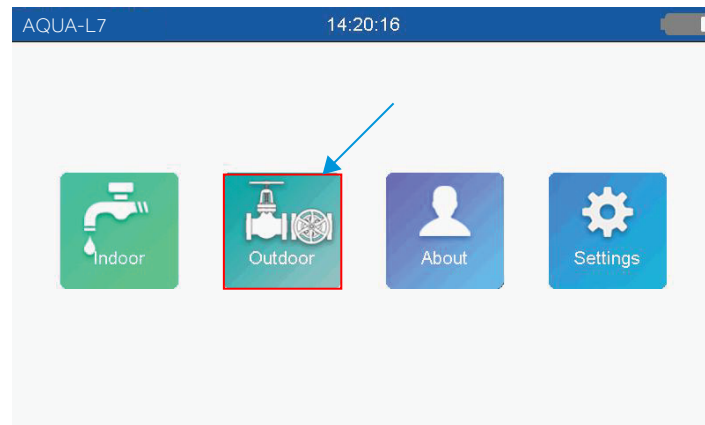
Once assembly of the product is complete, read the "Operation Instructions" carefully to perform different operations on the product according to use;

1. For Outdoor Operation:

Press and hold the red "ON/OFF" button for at least 2 seconds to boot and enter to the interface, as shown in the figure below;



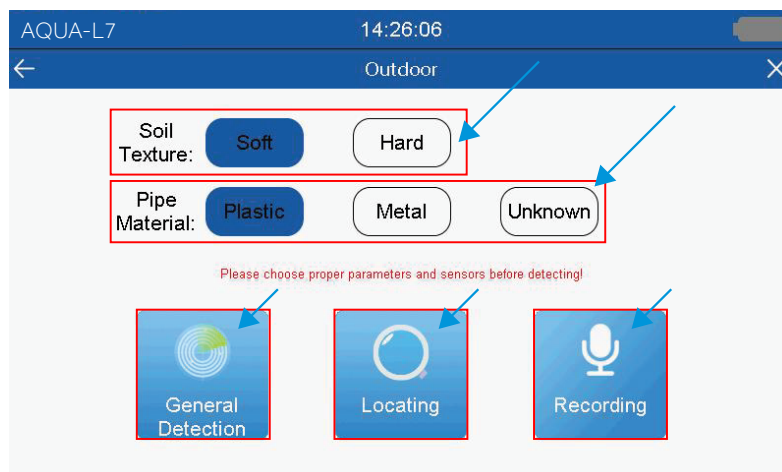
- b. Press the **“Outdoor”** option to perform different functions for outdoor use, as shown in the figure below;



Note: Select the appropriate sensors according to different outdoor detection environments for example **“Medium Sensor”** is suitable for an outdoor normal environment and **“Large Sensor”** is suitable for the outdoor noisy environment.

Outdoor Function Interface:

Once the outdoor option is pressed, the following page will appear on your screen;



Choose the correct options according to the actual situations like;

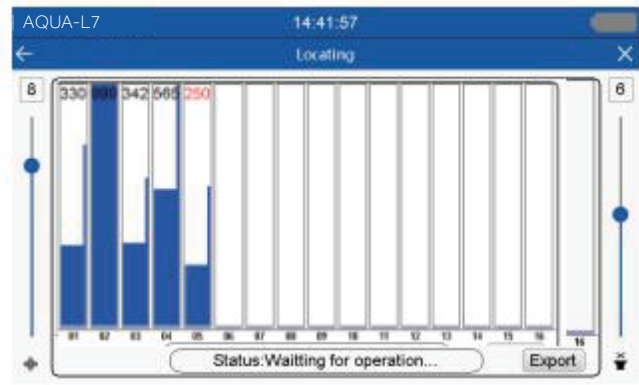
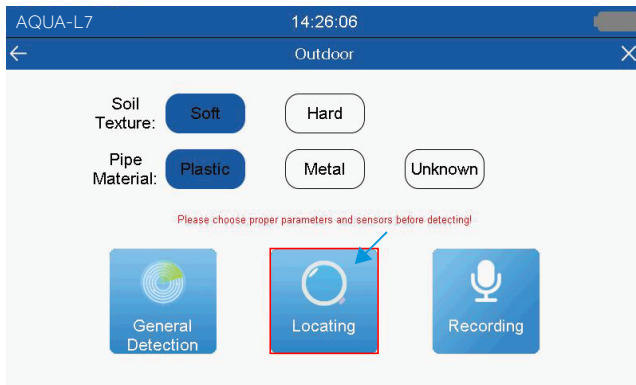
- a. Select the soil texture e.g., "Soft" or "Hard".
- b. Select the pipe material e.g., "Plastic" or "Metal" or "Unknown" according to the detecting environment.
- c. Click the "General Detection" option the following page will appear on your screen.
 - Place the sensor above the pipe.
 - Turn on the knob switch to receive sound, listen to the volume carefully, and observe the spectrum change on the screen.
 - After detecting the first point, press the knob switch to turn off the sound, and move the sensor forward to detect the next points in the same way.

Adjusting these values allows the user to filter out background noise and external ambience.



Note: When the spectrum on the "display screen" is high and the sound in the headset has significantly increased, the area can be identified as a suspected leakage area.

- d. For locating the exact leak points in suspected leakage areas. Follow the steps below;
 - Click the "Locating" option to enter the locating mode.



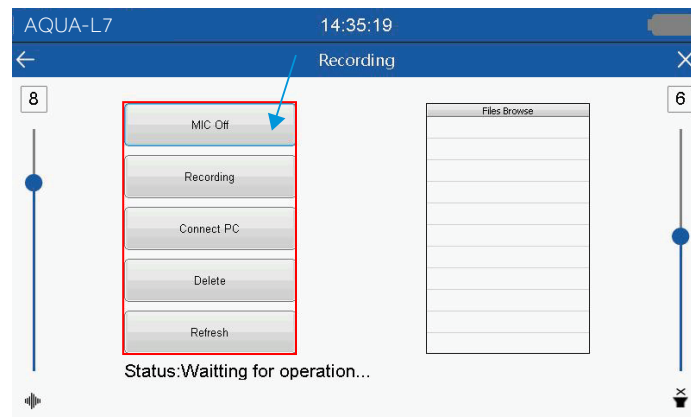
- In the suspected leakage area, start detection from the first point, and click any position in the spectrum bar the signal value will be displayed on the top of the spectrum bar.

Note: The thin bar on the right of the spectrum bar shows the instantaneous noise of the environment, while the thick bar is the sound from below the surface area. Observe the thick bar signal.

- After the thick bar is stable, click any position in the spectrum bar to lock it again, the signal value changes from red to black, and the detection at the first point is completed.
- The same method is used to compare different points in this area. When the detection point has the highest thick spectrum bar, and the signal value is the largest, this can be concluded as the suspected leaking point.

Note: The detection report in the locating mode can be stored on your computer by clicking on the "**Export**" button.

- e. To record the leakage sound on the spot, select the **“Recording”** option, the following page will appear;

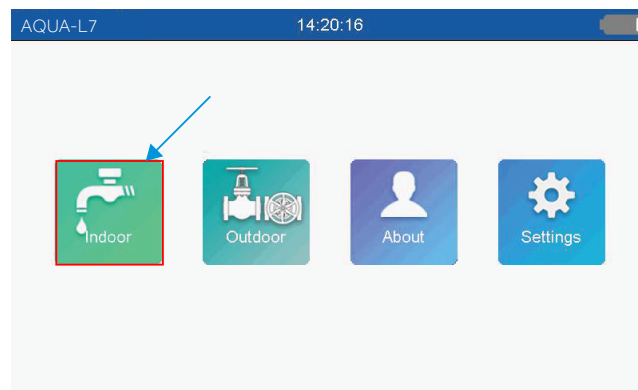


- Click the **“MIC”** option, to turn on the user's voice recording.
- Click the **“Recording”** button to start the voice recording, to stop click the **“Recording”** button again.
- Select the **“Refresh”** button to refresh the files after recording.
- Click the **“Delete”** button to delete the recordings.

2. For Indoor Operation:

These preparations are mainly used for indoor operations and follow the steps below for indoor operation;

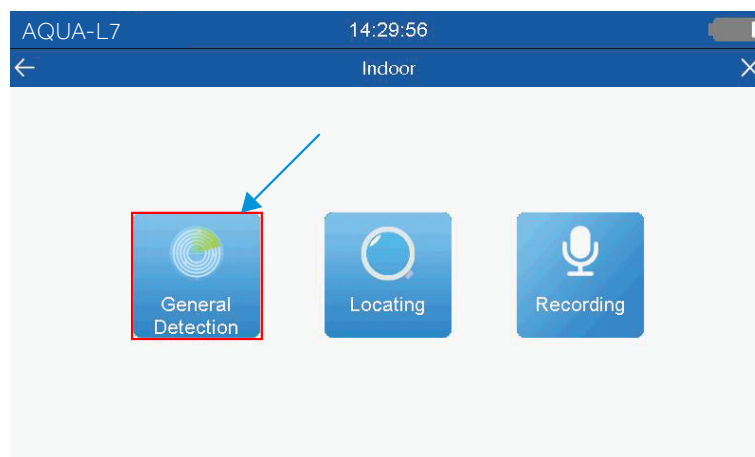
- a. Press the **"Indoor"** option to perform different functions for indoor use.



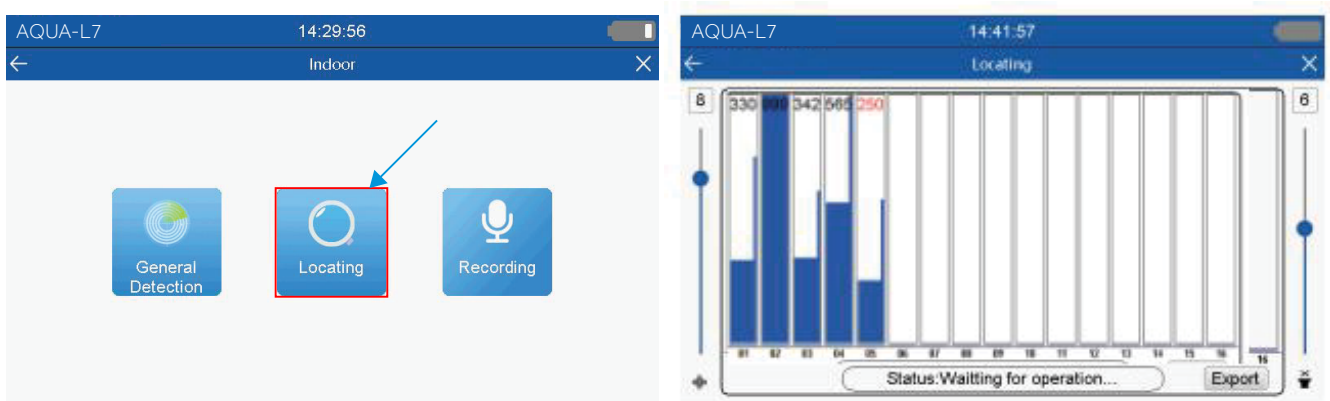
Indoor Function Interface:

For detecting indoor pipe leakage follow the steps below;

- b. Select the **"General Detection"** option.



- Press down on the knob switch, to receive the sound.
 - Pay attention to the sound volume and observe the spectrum change on the screen.
 - When the spectrum on the "display screen" is high and the sound has significantly increased, the area can be identified as a suspected leak point.
- c. For locating the exact leak points in the suspected pipe;
- Click the "Locating" option to enter the locating mode.

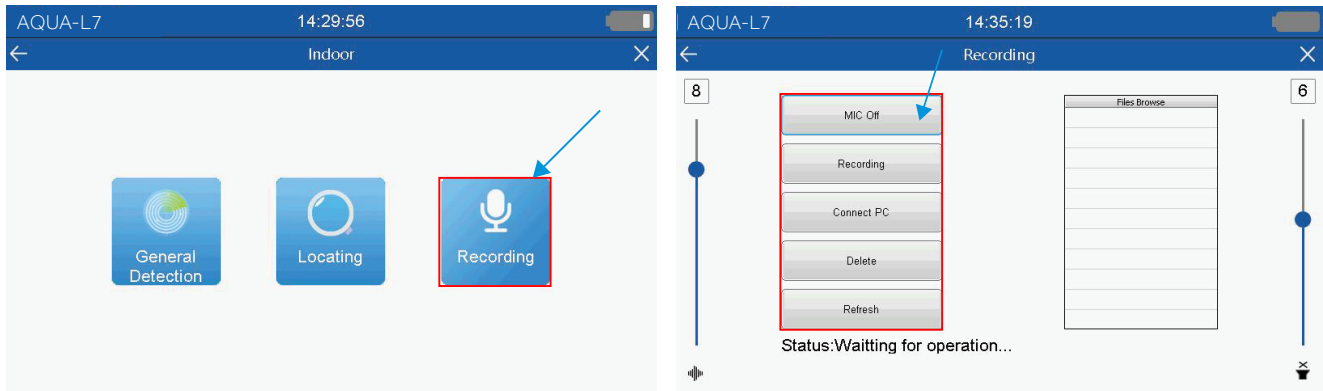


- In the suspected leakage area, start detection from the first point, and click any position in the spectrum bar the signal value will be displayed on the top of the spectrum bar.

Note: The thin bar on the right of the spectrum bar shows the instantaneous noise of the environment, while the thick bar is the sound from the underground, we mainly observe the thick bar signal.

- Once the thick bar is stable and the signal value is the largest, click on any position in the spectrum bar to lock it. This can be concluded as the suspected leaking point.

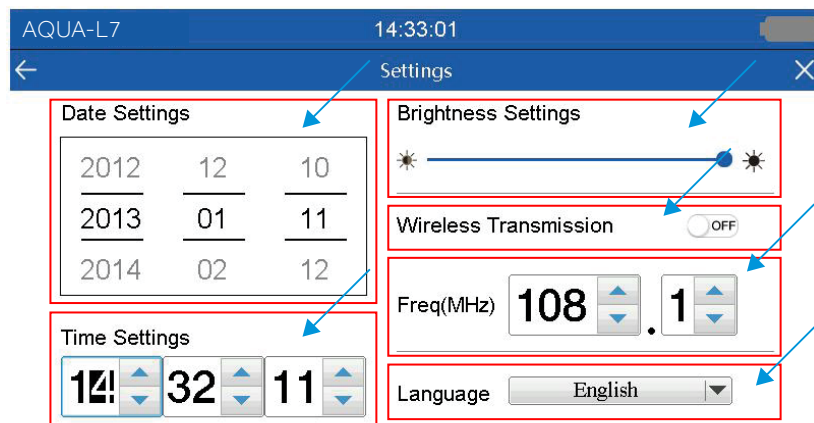
d. To record the leak sound on the spot, select the **"Recording"** option, following page will appear on the screen;



- Click the **"MIC"** button, to turn on the user's voice recording.
- Click the **"Recording"** button to start recording. to stop the recording click the **"Recording"** button again.
- Select the **"Refresh"** button to refresh the files after recording.
- Click the **"Delete"** button to delete the recordings.

3. Other Operations:

For adjusting the **"display screen"**, click the **"Settings"** option to enter the setting interface. The following page will appear on the screen;





- Adjust the date in the **“Date Settings”** section.
- Adjust the time in the **“Time Settings”** section.
- Adjust the **“Brightness”** in the **“Brightness settings”** section by moving the point from left to right.
- Enable or disable the **“Wireless transmission”** option.
- Set the frequency in the **“Freq (MHz)”** section.
- Choose your preferred language, from the **“Language”** drop-down list.

SAFETY INSTRUCTIONS:

Read the operating instructions and act accordingly.

- Unpack the product carefully.
- Store the product in a dry place out of reach of children.
- If the power plug or cord becomes damaged, unplug it immediately.
- Make sure the charger is unplugged before use.
- Do not use this product in harsh weather conditions.
- Keep this device away from flammable products to avoid fire.
- Do not use the product other than intended use.
- Do not use in wet weather and do not use on wet surfaces and environments.
- Fragile ceramics are present inside each sensor. **HANDLE WITH CARE.**



MAINTENANCE:

- Do not throw or drop the device.
- To reduce the risk of damage to the electric plug and cord, pull by plug rather than by cord when disconnecting the unit.
- Do not place the sensor into water, this can cause damage to it.
- Always use the appropriate sensor in accordance with the operation.
- If the instrument is not used for a long time, please charge it before use.
- If you are operating it outdoors, select the corresponding outdoor detection parameters according to the actual environment.

Please visit our website: www.aquald.com to view our complete terms and conditions, including warranty and up-to-date information regarding shipping and returns address.

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