AquaViser™

Kit

By **AquaViser**

Installation Manual V 1.0

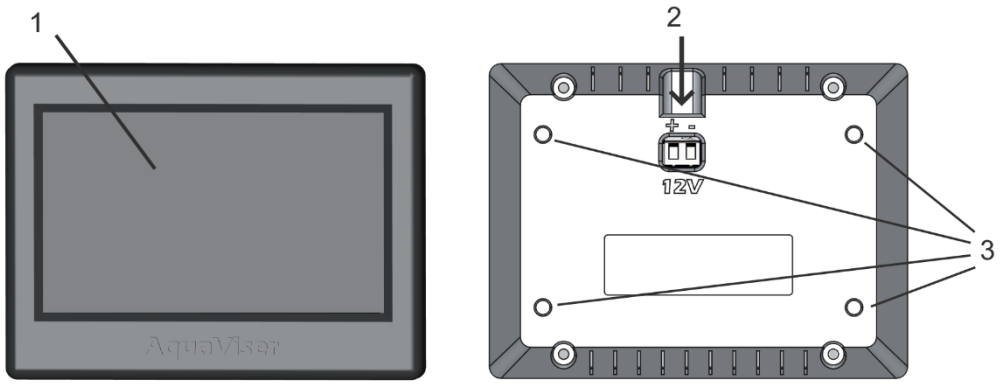
Contents

1. Product overview.

The AquaViser Kit Includes:

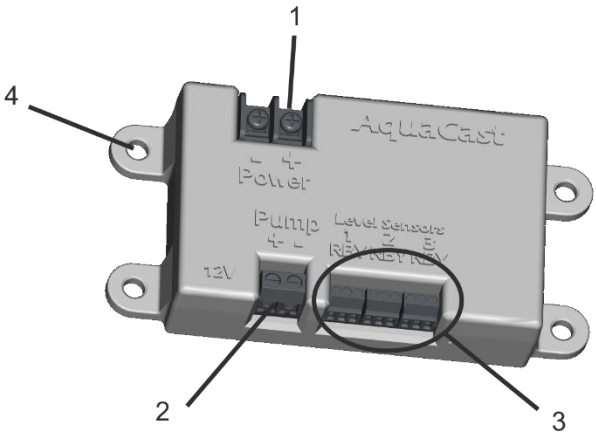
AquaViser LCD

1. Touch LCD
2. 12 Volt Screw Terminals
3. Brass mounting nuts - use M3 bolts and washers (included)



AquaCast Module

1. 12V power (screw terminals)
2. 12V pump output (screw terminals)
3. Tank level / temp sensor inputs (screw terminals)
4. Mounting holes 4.5mm diameter (M4 nuts and 15mm bolts included)



Overview continued

1. Product Overview

The **AquaViser System** is a wireless, 12V-compatible tank monitoring and control solution, designed for use in **caravans and campervans** and other off-grid or mobile water systems. The system provides real-time tank level and water temperature monitoring, and can wirelessly control a water pump — all without the need for any complex wiring between the display and sensing unit.

System Components

- **AquaViser (LCD Display)**: Sends and receives data wirelessly and requires only a 12V power supply.
- **AquaCast Module**: Handles all sensor inputs and pump control. Also powered by a 12V supply.

Wireless Communication

All control signals and sensor data are transmitted **wirelessly** between the AquaCast and AquaViser, eliminating the need for data cables. This simplifies installation, especially in tight or pre-wired / fabricated spaces.

Key Features

- Wireless tank level and pump control system.
- Simple 12V-only wiring to LCD — no signal wires needed.
- AquaCast connects to:
    - **Up to 3 tank level sensors** (e.g., water or grey tanks).
    - **1 optional water temperature sensor** (replaces one tank level input).
- Full customization of:
    - **Tank sizes and names**.
    - **Sensor calibration** (empty/full voltage setting).
    - **LCD backlight brightness and dim timeout.**

Tank Sensor Wiring

Each tank input supports three-wire “stable signal” sensors with the following wire colour convention:

- **Red** – 12V output to the sensor.
- **Blue** – Signal from sensor.
- **Yellow** – Ground.

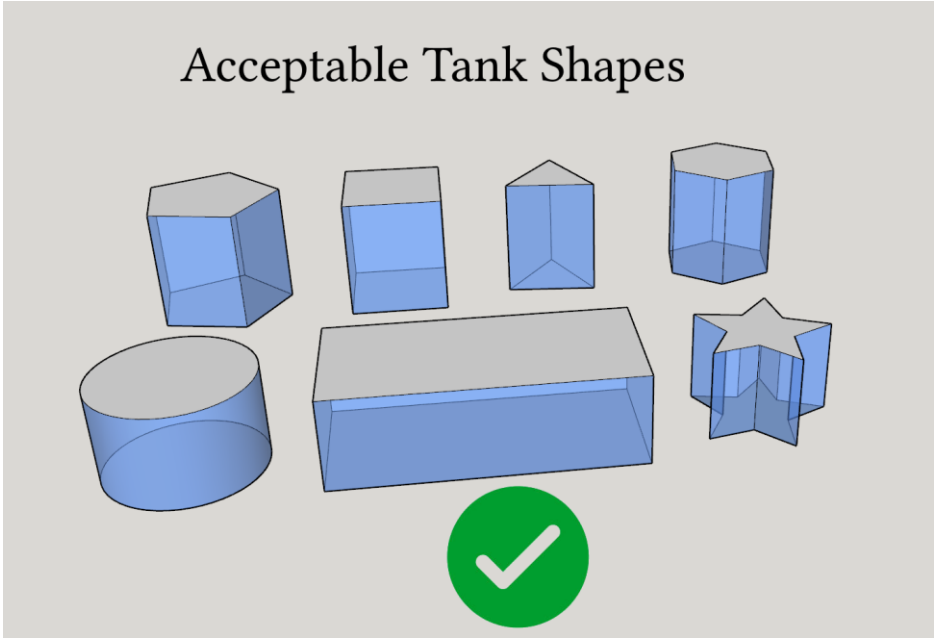
If a **water temperature sensor** is desired, it replaces **Tank 1**'s input. Use a compatible **NTC thermistor** connected between the **red and blue terminals only** (leave Yellow unconnected).

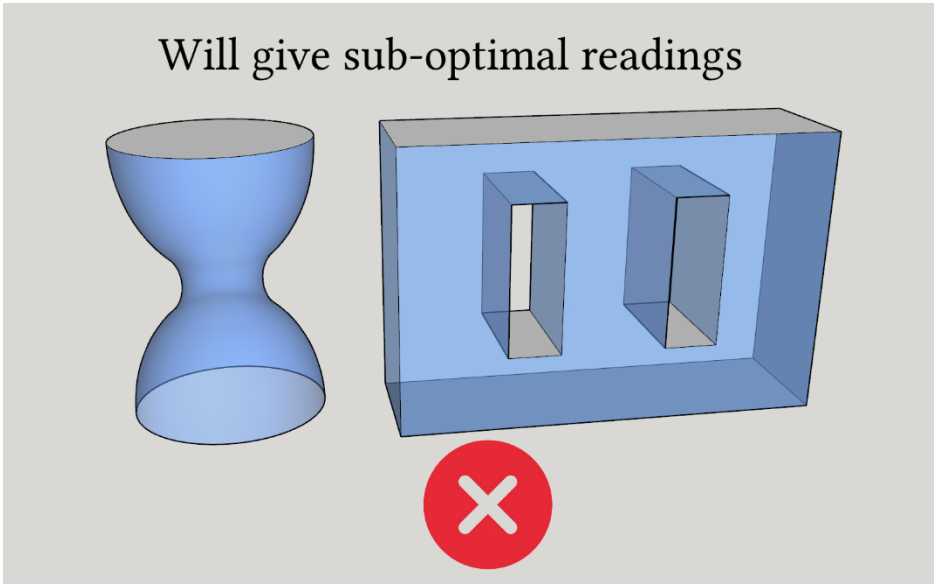
Installation and Wiring

- Both AquaViser and AquaCast are powered by a **regulated 12V DC supply**.
- Detailed wiring, install instruction and **fusing guidelines** are provided in the following sections.
- Screw terminals are used throughout for easy connection of power, pump, and sensor lines.

This modular and wireless system allows for flexible setup, reliable operation, and easy customization to suit a wide variety of installations.

For pressure transducers to give the absolute best readings, a prism shaped tank works best. This where the height of the liquid is proportional to the volume of liquid. See the optimal and sub-optimal shapes below. General rule: Perfect tanks have vertical walls where the very top and bottom of the tank are the only non-vertical faces.





2. Important notes on wiring.

2.1 Power Requirements.

- Ensure all components are powered with a **regulated 12V DC supply** or **12V battery (no more than 14.5 V)**.
- Supplying incorrect voltage can **damage the AquaViser LCD or AquaCast module permanently**.
- Always wire up devices / sensors / pumps with the power off.

2.2 Wiring Requirements.

- The AquaViser (LCD) draws **no more than 0.5 A**
    - Fused 22 AWG copper (or larger) wiring is sufficient.
- The AquaCast module may draw **up to 8A** under full load. Ensure the power source can supply **at least 12V, 8A** continuously (this will depend on your pump being used and should not be exceeded).
    - AquaCast (module) - Use at least fused 14 AWG copper for short runs (<1 meter); 12 AWG or 10 AWG for longer runs to minimize voltage drop. This will depend on your specific pump requirements.

2.3 Fusing.

- Always place an **inline fuse** close to the power source:
    - **0.75–1A fuse** for the LCD line
    - **10–15A fuse** for the module power line

  * Remember - Fuses protect against **short circuits and overcurrent** conditions where the current will exceed the wires rating.

2.4 Polarity.

- Double-check all connections for **correct polarity**. Reversing power lines can **instantly damage** the components.

2.5 Connector Quality

- Use **secure, reliable connectors** rated for the required current. Loose or cheap connectors can overheat and fail.

2.6 Wire Routing.

- Always connect wiring with power off connecting power wires last.
- Keep **power wires separate from signal/data wires** to avoid electrical noise or interference.

- Avoid sharp bends and strain on wires.

2.7 Power Supply Recommendation

- Use a **regulated 12V DC supply** (or battery of no more than 14.5V) capable of **12A or more** for safe operation.
- If using a switching power supply, ensure it is properly ventilated and protected from overload.

3. Installation Instructions.

3.1 Mounting the AquaCast

The AquaCast is designed with four mounting holes to allow flexible installation. It can be securely mounted in any orientation — horizontal, vertical, or flat — depending on your system layout and space constraints.

3.1.1 Mounting Guidelines:

- Use M4 or similar screws to mount on stable surface (m4 nuts and bolts included)
- Avoid over-tightening the screws to prevent damage to the casing.
- Ensure the mounting surface is flat and stable to prevent stress on the board.

3.1.2 Environmental Considerations

- Install in a dry location protected from water spray, direct sunlight, or extreme humidity.
- Operating temperature range: **-10°C to 50°C**.
- Ensure sufficient airflow if the module will be used with a motor above 4A.
- Do not thermally insulate the module

3.1.4 Screw Terminals

- The AquaCast uses several types of screw terminals for secure and reliable connections:
    - **Power Input Terminals**:
      Large screw terminals are provided for connecting a regulated 12V power supply. Use a flat-blade screwdriver to firmly secure the wires. Strip approximately 6–8 mm of insulation before insertion.
    - **Pump Output Terminals**:
      These terminals handle higher current (up to 10A) and require properly sized

wire (see wiring section). Ensure wire strands are tightly twisted or use ferrules to avoid stray strands.

- **Level Sensor Terminals**:
  Small, fine-pitch screw terminals are used for sensor connections. These typically require a **precision flat-blade screwdriver** (2.5 mm or smaller). Avoid over-tightening, and insert only stripped wire tips (around 4–5 mm).

- **General Tips for All Terminals:**
- Double-check wire polarity before powering on.
- Tug test all wires gently after tightening to confirm they are secure.
- **Beware of bare or fraying wires** — exposed strands can cause short circuits between adjacent terminals. Always twist wires neatly and consider using ferrules for safety. Avoid inserting tinned wires unless using ferrules, as solder can creep under pressure and loosen over time.

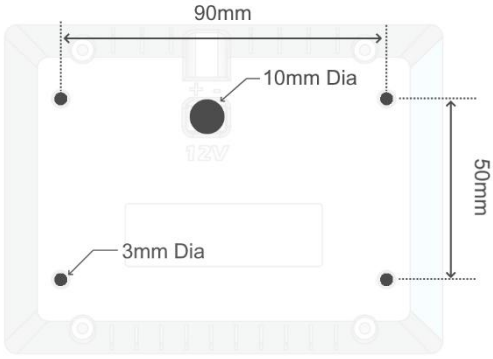
3.1.3 Wiring Clearance

- Leave enough space around the module for cable routing and connector access.
- Avoid placing the device near high-EMI sources such as motors or large inductive loads.

3.2 Installing the AquaViser (LCD)

3.2.1 Mounting the AquaViser

The AquaViser is designed to be surface-mounted on a flat mounting surface. Only 12V is required as all data is passed wirelessly from the module. Ensure the screen is easily visible and protected from accidental contact or harsh environments.



Find enclosed mounting hole template for the LCD

- M3 brass inserts are used to mount on the wall
  Used with M3 bolts
- A 10mm hole is recommended for wire access

Mounting Guidelines:

- Use M3 or bolts through the four mounting points. Do not over tighten
- Do not apply excessive force to the screen during installation.
- Allow clearance behind the screen for connector access and ventilation.

3.2.2 Environmental Considerations

- Install in a dry, well-ventilated location.
- Avoid exposure to direct sunlight or condensation.
- Operating temperature range: **-10°C to 50°C**.
- Do not thermally insulate

3.2.3 Wiring Clearance

- Ensure power is accessible behind the display for the power connection.
- Route wires cleanly and avoid sharp bends at the connector ends.
- If mounted in an enclosure, allow for airflow or heat dissipation, especially near power regulators or backlight circuits.

3.2.4 Screw Terminals

The AquaViser uses a small screw terminal for power input:

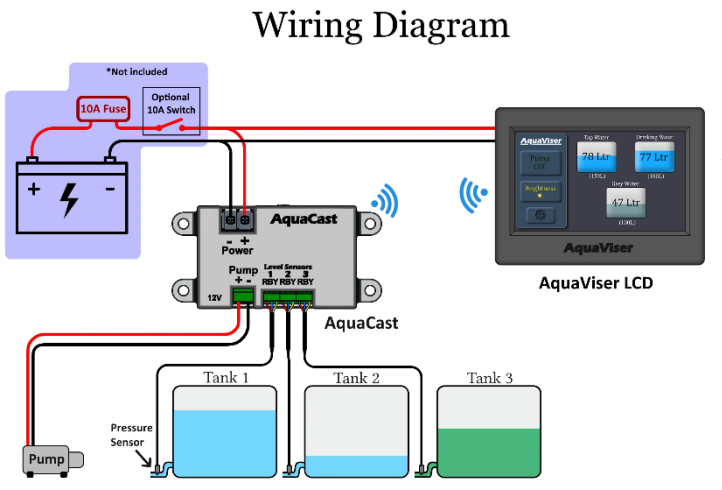
- **Power Input Terminal**:
  A compact screw terminal connects to the 12V power line. Use a **precision flat-blade screwdriver (2.5 mm or smaller)**. Strip 5–6 mm of insulation before insertion. Avoid overtightening.

General Tips:

- Always turn power off and check polarity (+ and -) before connecting the display.
- Avoid frayed or loose wire strands that could short to nearby terminals.
- Use ferrules on stranded wire where possible for clean, reliable connections.
- Use automotive wiring and keep wires fastened/immobile to reduce fatigue and wire breakages.

3.2.5 Wiring diagram

Keep wiring short and at the right gauge for the power requirement.



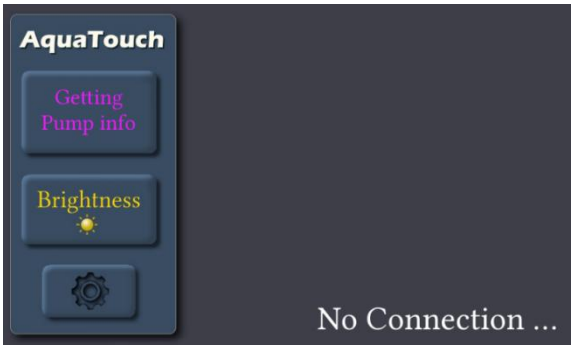
4. Operation / Getting started:

4.1 Pairing the AquaViser LCD with the AquaCast module

4.1.1 Powering the module

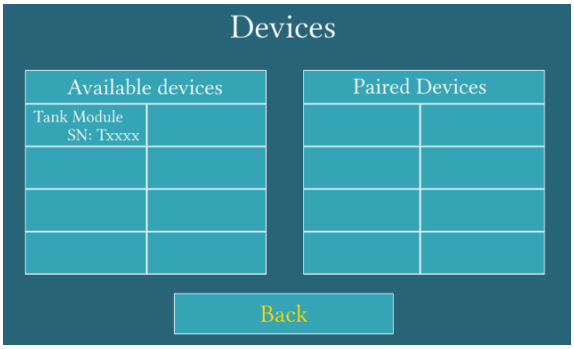
Ensure the module as 12V power and there is a visible Green LED power indicator near the tank sender terminals.

4.1.2 Pairing



- The AquaViser LCD should start up with a splash screen and a welcome chime followed by the blank AquaViser main screen.
- "No Connection …" will be displayed if there is no AquaCast connected.
- Press the cog wheel (bottom left) to enter the menu.

- Once in the menu press the Pair device button to enter the Devices Screen

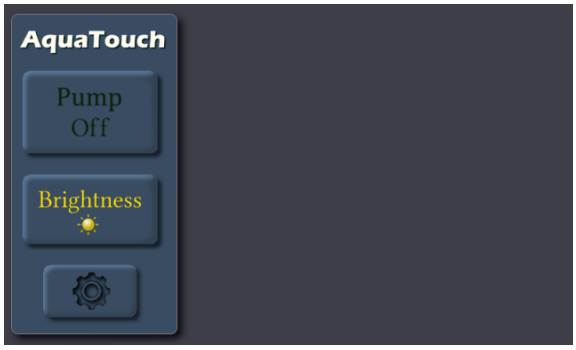


- Once in the device screen find and press your Module

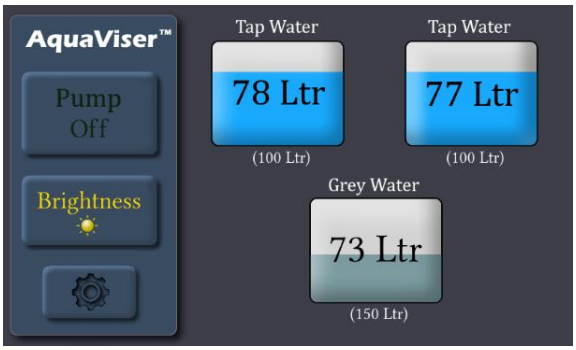
* Note - If you don't see your AquaCast device, ensure it is powered on and click the pair button (found next to the power terminals) to put it into pairing mode. You should see a blue LED now blinking. This will remain in pairing mode for 3 minutes.

- Once selected click 'Pair'

- At the main screen, what you see will depend on what you have connected to the AquaCast. If there are no tanks connected, the pump status button will say ‘Pump Off’.



- You can have up to 3 tanks connected to a single AquaCast and 4 tanks with 2 AquaCasts.
- By default, the tanks sizes are 100 Ltr each and tanks 1 and 2 will be Tap Water. Tank 3 will default to Grey Water.
- This can be all changed and customised in the ”tank setup” menu.



4.2 Tank Setup

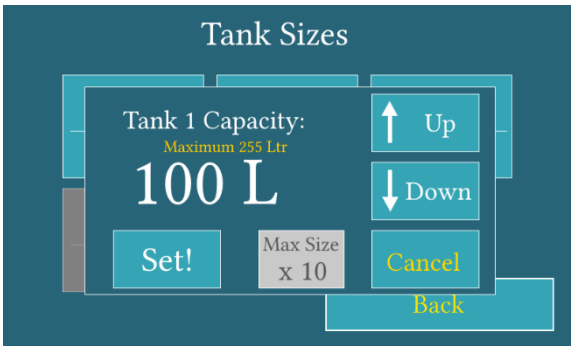
- Contains the Options:
    - Tank Sizes
    - Calibrate senders
    - Tank Labels

4.2.1 Tank Sizes

- Clicking ‘Tank Sizes’ will bring you to a screen listing the tank sizes. Click a tank to adjust its size.

- Once selected, you can adjust the take size between 1 and 255 L using the up and down arrows. Holding an arrow will make it go faster. Once the amount is achieved press the 'Set!' button.
- To increase the maximum size of the tank, press the 'Max Size x 10' button. It will increase the tank size to 2,550 Ltr. Pressing it again will increase it again and can keep going up to 255 kL. After this another press will reset it back to 255 Ltr.

  *Use the lowest Maximum Ltr, for your tank, to get the best tank resolution. Eg A 250 Ltr tank should not use the 2,550 Ltr max, use the 255 Ltr max. It can use the 2,550 Ltr Maximum, but it will only display tens of litres instead of single litre resolution.

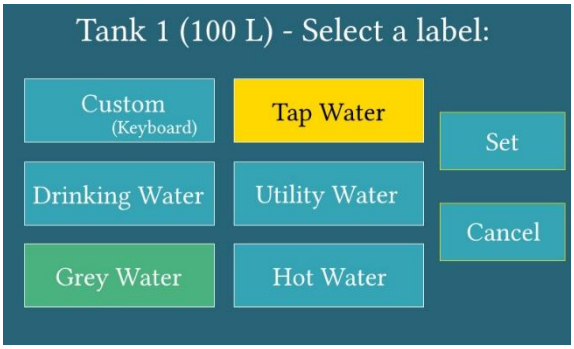


4.2.2 Tank Labels

- Clicking 'Tank Labels' will bring you to a screen listing the tank Labels. Unavailable tanks will appear grey. Click a tank to adjust its Label.

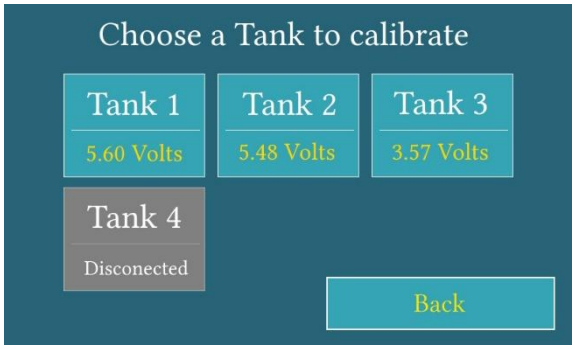
- The tank Label selection screen indicates the chosen label by highlighting it yellow. Click the desired label and press 'set' to change the tank label.

* Note – If a tank has a label of 'Grey Water', the tank's water colour will appear green on the main screen. It will also alarm differently. Grey water tanks will alarm when 'nearly full', rather than 'nearly empty' like all other tanks (including custom labelled tanks).

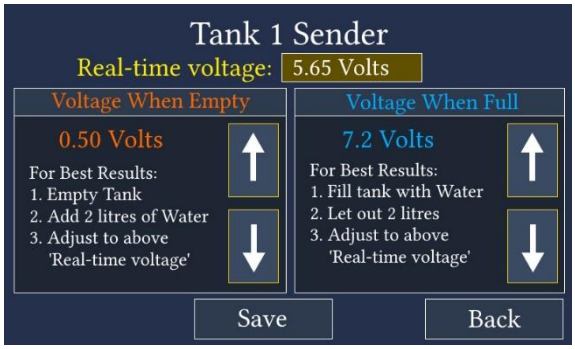


- To create a custom label, tap the 'Custom (Keyboard)' button.
- You will be presented with a text box and a keyboard.
- Type the custom name and select save.
- Pressing exit will still select the custom name in the previous screen but will disregard any changes made on the keyboard screen.

4.2.3 Calibrate Senders



- After selecting the 'Calibrate Senders' from the 'Tank Setup' Screen you will see the attached tanks and their senders' respective voltages. Select a tank to see the calibration settings.

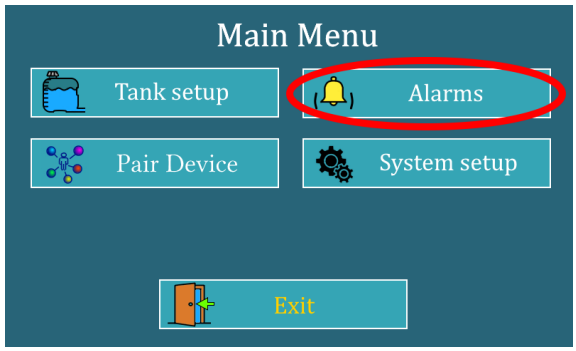


- After selecting a tank, 'Voltage When Empty' (orange) and 'Volage When Full' (blue) are displayed.

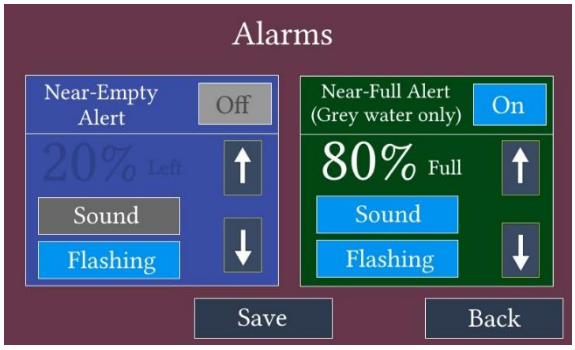
*Note - These set the voltage endpoints for empty and full tanks. To adjust, empty the tank, add a few litres and look at the 'Real-time voltage' reading at the top of this screen (gold coloured box). Change the 'Voltage when empty' voltage to match this reading using up and down arrows. Press and hold the arrows to make the numbers change faster. Then fill the tank with water and let out a few litres and do the same for 'voltage when full'.

- Press 'Save' to store the values and apply linear voltage interpolation, or press 'Back' to discard changes.

5 Alarms



- This example shows the Near-Empty alert (alarm) is off. If it were to be turned on the screen would flash when alarming but there would be no alarm sound.
- The Near-Full Alert (grey water only) is on, and will have an audible alarm and will flash when the tank reaches its threshold of 80% full.

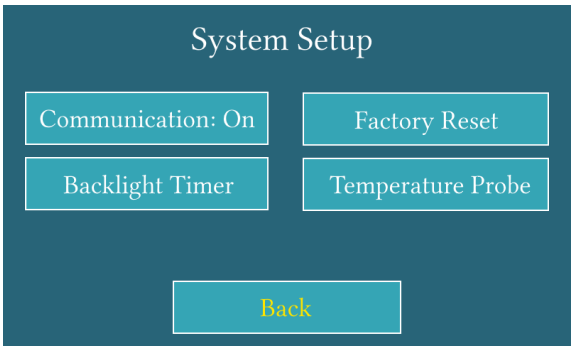


- Tap ‘On’, ‘Off’, ‘Sound’ and ‘Flashing’ buttons to toggle them.
- Once the tank reaches the threshold volume, the alarm is displayed with either flashing, sound, both or neither.
- The ‘Clear alarms’ button will turn off the screen alert.

*Note - Grey Water Alarms will re-arm after the levels have reached half of the threshold volume. All other tanks will re-arm once they have been filled to reach the threshold levels plus half of their remaining empty tank space.

6 System Setup

Enter the system setup screen by selecting ‘System setup’ in the ‘main menu’ screen.



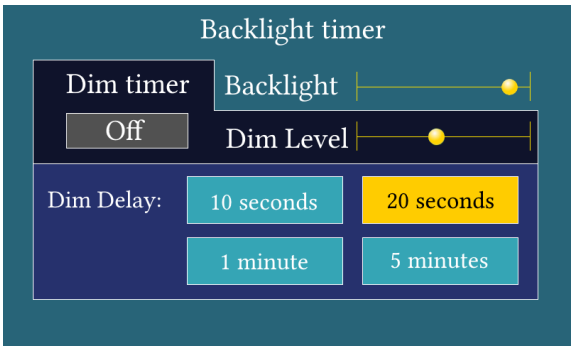
6.1 Communication

- Pressing ‘Communication: On’ will turn all communication off and ‘Communication off’ will be displayed. If pressed again All Communication will be turned back on.

6.2 Factory Reset

- Factory Reset will reset all settings like it was when it was new from factory, and will forget all paired devices. When pressed it will ask if you are sure, before resetting and restarting the device.

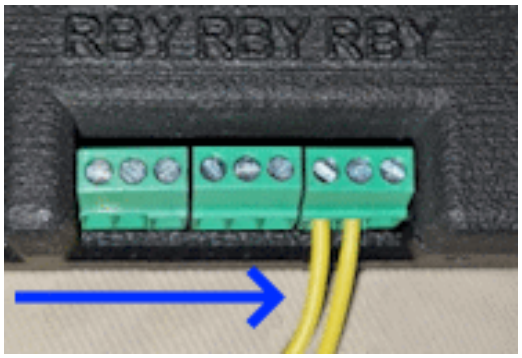
6.3 Backlight timer



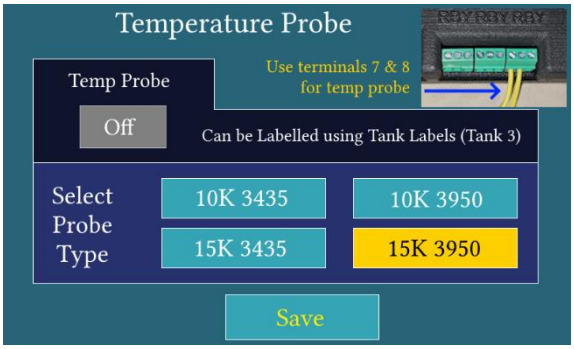
- Turn the backlight Dim timer on selecting the backlight timer button the ‘System setup’ menu and pressing the grey ‘Off’ button so it turns blue and says ‘On’.
- Slide the Backlight slider to adjust the desired backlight. Slide the Dim level Slider to adjust how dim the screen will go after the desired time of inactivity.
- Select the dim delay time (highlighted in yellow). This is the amount of time the screen will wait after the last screen touch, to apply the Dim Level to the backlight.

- Note: If the dim level is at the lowest setting, the screen will turn ‘OFF’ after the dim delay time.

6.4 Temperature Probe



- The temperature Probe must be plugged into the AquaCast using the red and blue terminals (R and B or number 7 and 8 from the left) of sender 3, with terminal 9 left empty.



- To turn on the temp probe function, Select Temperature probe on the System Setup Menu.
- In the temperature probe screen press the grey ‘Off’ button to turn it on and select the type of temperature probe you have. Each probe is pre calibrated for the temperature probe.

- A temperature gauge will appear on the main screen in place of tank 3 and will have the label assigned to tank 3.
- To change the Label above the temperature gauge, go to ‘Tank Labels’ in ‘Tank setup’ and select ‘Tank 3’ to select a label. A custom name can be typed in if you select the ‘Keyboard’ label and type a new name.

7. Troubleshooting

7.1 Troubleshooting table

Problem	Solution
Main screen is showing No Connection… / no AquaCast module appears in the Paired Devices list (Available Devices).	Restart both the AquaViser and AquaCast devices and press the pair button on the AquaCast (blue led should blink). Then check the paired Devices list again on the AquaViser. If problem persists, do a factory reset on the AquaViser.
'No Connection…' appears at the bottom of the main screen. Even after pairing.	Check the AquaCast is still powered on – Green LED on the front (next to the tank senders wiring). If the AquaViser is a very long way away from the AquaCast, position the AquaCast and AquaViser so they either face each other or face away from each other or face front to back, as best as you can. The signal propagates the strongest from the front and back of each device.
No Tanks or wrong number of tanks displayed or main screen or has only the AquaViser tile on the left (right two thirds of the screen is blank)	1. Check tank sender connections at AquaCast 2. Check there is a voltage on the Red (10V), blue (signal wire) and Yellow (ground). - Green LED is on – check sender wiring (Red, Blue, Yellow) - Green led is off – unit has no power. - If blue is 0V check red and yellow are properly secured. If Green LED is on and blue wires have no voltage disconnect sender from tank – if the tank appears see next section.
Tank disappears intermittently on the screen.	If this happens the tank sender is somehow getting negative pressure. This can happen if the sender is placed in the tank hose, higher than the bottom of the tank, and the water level becomes lower than the sensor. fix – position the sender so it is below or in-line with the bottom of the tank. No loops or kinks or humps in the hose before the sender. After the sender loops and humps are fine.

Temperature display is showing either a tank where the temperature gauge should be, or is showing the wrong or inconsistent temperature.	1. Go to Menu – System Settings – Temperature Probe. 2. Check the temperature is 'On'. If it says 'Off' press the 'Off' button so it displays 'On' and turns from grey to blue. 3. Check the correct temperature probe has been selected in the menu. 4. Check the wiring is secured in Sender 3 R and B (Red and Blue). It does not matter which way around the two wires are connected. 5. Check there are no breaks in the wire and check the temp probe for damage.
Tanks are not showing the correct total volume or volume of liquid.	1. Go to section 4.2 of this manual and run through the tank setup again, including tank calibration. 2. If the sender is placed in the hose (not in the tank), make sure there are no bends or loops in the hose between the tank and the pressure sensor. 3. Make sure the pressure sensor is at or below the bottom of the tank. 4. For tanks that are not a perfect prism shape with perfectly straight, parallel and vertical walls, the volume in the tank cannot be accurate due to the geometry of the tank not allowing the height of the liquid to increase proportionally with the volume of the liquid.

If something is happening that is not covered in the above table, please contact us by navigating to our website contact page - https://aquaviser.com.au/support/ either sending us an email or give us a call on the listed number.

8. Specifications.

Model Name	AquaViser™ Smart Display
LCD type	4.3" IPS 800 x 480 LCD capacitive touchscreen
Operating Voltage	12 VDC nominal (range: 11.5 – 14.5 VDC)
Processor	Tensilica Xtensa LX6 dual-core 240 MHz processor
Power Consumption	150 mA full brightness, 45 mA standby auto-dim (12V)
Wireless Frequency	2.4 GHz
Wireless Range	500 m Line-of-sight and ~ 90m through 5 brick walls
Wireless Encryption	AES 128-bit dynamic encryption
Compatible Module	AquaCast™ module
Enclosure Material	High-strength high-temp durable Nylon
Dimensions (L × W × H)	112 × 27 × 91 mm
Cert./Compliance	CE, RCM

Model Name	AquaCast™ Controller Module
Wireless Type	2.4 GHz - AES 128-bit dynamic encryption
Wireless Range	500 m Line-of-sight and ~ 90m through 5 brick walls
Operating Voltage	12 VDC nominal (range: 11.5 – 14.5 VDC)
Power Consumption	0.08 A (not including pump)
Recommended Sensors	AquaViser™ Pressure Sensors
Compatible Sensors	12 V (3 wire) Analog linear sensors
Maximum Load (pump) Current	8 A continuous (18 A inrush / spike)
Display Interface	AquaViser™ Smart Display module (required)
Enclosure Material	High-strength high-temp durable Nylon
Certifications/Compliance	CE, RCM, RoHS
Dimensions (L × W × H)	112 × 55 × 23 mm

9. Warranty

Limited Warranty

AquaViser products are warranted to the original purchaser to be free from defects in materials and workmanship under normal use and installation conditions for a period of 12 months from the original date of purchase.

During the warranty period, AquaViser may, at its discretion:

- repair the product,
- replace the product with an equivalent product, or
- refund the original purchase price.

Proof of purchase is required for all warranty claims.

Warranty Exclusions

This warranty does not cover damage or failure caused by:

- incorrect installation,
- improper wiring or reverse polarity,
- over-voltage or under-voltage conditions,
- over-current or short circuit conditions,
- water ingress caused by incorrect installation or damaged seals,
- physical abuse, impact, or modification,
- exposure to chemicals, fuel, saltwater corrosion, or excessive heat,
- use outside the specified operating conditions,
- unauthorized repair attempts,
- firmware modification or unsupported software use,
- normal cosmetic wear.

Items may have reduced warranty coverage depending on operating environment.

Limitation of Liability

To the maximum extent permitted by law, AquaViser shall not be liable for:

- indirect or consequential damages,
- loss of property,
- loss of profits,

- water damage,
- vehicle damage,
- tank overflow,
- equipment downtime,
- data loss.

The user is solely responsible for verifying correct installation and operation before relying on the product.

AquaViser products are intended as monitoring aids only and must not be relied upon as the sole means of preventing overflow, leakage, equipment failure, or safety-critical incidents.

AquaViser shall not be liable for any direct, indirect, incidental, special, or consequential damages arising from the use of, inability to use, or reliance upon the product or its readings.

AquaViser products are intended as informational monitoring devices only. Readings may be affected by installation conditions, sensor placement, environmental factors, electrical interference, or component failure. Users must independently verify fluid levels and system status before relying on the product for operational, maintenance, health, agricultural, livestock, or safety-related decisions.

Australian Consumer Law

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty Claims

For warranty support, contact:

support@aquaviser.com.au

Please include:

- proof of purchase,
- product serial number,
- description of the fault,
- installation photos where applicable.

10. Maintenance

The AquaViser system is designed to require minimal maintenance. Periodic inspection is recommended to ensure reliable operation, especially in marine, outdoor, or high-vibration environments.

Inspect the AquaViser LCD, AquaCast module, wiring, fuse, terminals, and connectors periodically. Check that all wiring remains secure, undamaged, and properly supported. Loose terminals, corroded connectors, damaged insulation, or poor power connections may cause inaccurate readings, intermittent operation, or loss of communication.

Keep the AquaViser LCD and AquaCast module clean and dry. Clean the LCD screen with a soft, dry or slightly damp cloth only. Do not use solvents, abrasive cleaners, pressure washing, or excessive water when cleaning the product.

Check that cable entries, mounting points, and surrounding areas remain free from water buildup, corrosion, dust, and debris. If the product has been exposed to moisture, inspect all connectors and terminals before continued use.

Do not open, modify, or attempt to repair the AquaViser LCD or AquaCast module unless instructed by AquaViser Support. Unauthorized repairs or modifications may affect product reliability and warranty coverage.

If abnormal readings, screen issues, communication loss, or alarm problems occur, refer to the Troubleshooting section before contacting AquaViser Support.

11. Open-Source Software Notices

This product may include or be built using third-party open-source software components, including software distributed under the MIT License and GNU Lesser General Public License.

Open-source software is provided by its respective copyright holders and contributors. Such software is provided “as is”, without warranty of any kind, to the extent permitted by the applicable licence.

Use of these open-source components does not grant any rights to the AquaViser name, branding, hardware design, firmware, documentation, or other proprietary materials.

Where required, copyright notices, licence terms, and source-code availability information for applicable open-source components are available by contacting AquaViser Support.

To view the relevant third-party software licences, scan the QR code below or visit: aquaviser.com.au/licences

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