Read these instructions carefully before using this product.
Keep these instructions in a safe place for future reference.

Aqualeak WG
Instruction Manual

Version 1.1

Document Information

Copyright

Publication

Publisher: Aqualeak Ltd. Publication date: 08 February 2024. Version number: 1.1

All possible care has been taken in the preparation of this manual, but Aqualeak, its agents and distributors accept no liability for any inaccuracies that may be found. This manual reflects the state of the product at the publication date below, but further enhancements while in service may mean that the manual does not precisely reflect your system. Aqualeak reserves the right to make changes without notice both to this manual and the products which it describes.

Purpose

This document provides installation and operating instructions for the Aqualeak WG Leak Detection System.

Symbols and Notices Used

Important information has been highlighted throughout this document using the following symbols:

Warning

See relevant section

Take note of this information

Important Safety Information has been highlighted throughout the Safety Information section using the following warning notices:

⚠DANGER	⚠WARNING	⚠CAUTION	⚠DAMAGE
Death / serious injury (irreversible)	Death / serious injury (irreversible)	Minor injury (reversible)	Damage to property
Immediate risk	**Potential risk**	**Potential risk**	**Potential risk**

Contact Details

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Contents

Tables

Figures

1 Safety Information

For your safety and the safety of others, please ensure that you read the Safety Information below, **before** you install or operate this product.

1.1 Intended Use

Only use this product for the intended purpose described in this manual.

1.2 Statutory Obligations

Installation and maintenance must comply with all relevant local laws and regulations ('statutory obligations'), particularly concerning electrics, water supplies, and building regulations.

Statutory obligations always override manufacturer documentation.

It is the responsibility of the customer to conduct a Health & Safety risk assessment prior to installing and operating this product.

- ✕ This product should not be operated by children or persons with reduced physical, sensory or mental capabilities. Where necessary, such persons should be given supervision by a qualified person responsible for their safety.
- ✕ **DO NOT** position the unit (including its power cable) where it may violate Fire or Health and Safety regulations (e.g. block fire exits or stairwells etc.).

1.3 Electrical Safety

⚠DANGER

RISK OF 230 VOLT ELECTRIC SHOCK

ONLY qualified, competent and approved persons (e.g. 'electrical engineers') may undertake installations, repairs, or relocations of this product.

The product must be earthed correctly.

For **indoor use** only.

Ensure that the building electrical system is compliant with Safety Regulations.

⚠WARNING

RISK OF DEATH OR SERIOUS INJURY

- ✕ **DO NOT** allow children or any other unqualified or unapproved persons to install, repair, clean, relocate, or otherwise interfere or tamper with the product.
- ✕ **DO NOT** immerse the unit or its peripherals in liquid.
- ✕ **DO NOT** install outdoors, near hot works, or where there is a danger of freezing.

1.4 Installation Safety

⚠DAMAGE

RISK OF DAMAGE

Install the product on a **hard, solid, and level** surface.

Follow the instructions provided in this manual. Where necessary, refer to the Aqualeak website (www.aqualeak.com) for contact and support information.

⚠CAUTION

RISK OF INJURY

Be aware of any existing electrical (e.g. wiring), water (e.g. pipes), or other installations in the vicinity (including within or behind the surface used for mounting.

Where applicable, this manual should be read in conjunction with manufacturer documentation for any components specified in the installation requirements of this manual.

1.5 Post-Installation Safety

Once installed:

1. Perform a test run to ensure normal operation.
2. Explain all safety precautions to the end user.
3. Provide a copy of this manual to the end user.

It is the responsibility of the end user to supply this manual to any other subsequent users.

All goods are sold subject to our 'Conditions of Sale'.

As Aqualeak Detection Ltd. continuously improves products, they may be modified without notice. In such circumstances, this manual and other relevant documentation should be disregarded. Updated documentation will be produced, supplied with new product ranges and made available on request.

SAVE THESE INSTRUCTIONS

2 Product Overview

Ensure you have read the **Safety Information** in **Section 1** before attempting installation or operation of this unit.

The Aqualeak WG is a Major Leak Detection System suitable for detecting leaks in residential and commercial buildings. The Aqualeak WG Leak Detection System can be used as a standalone monitoring system or integrated into Building Management Systems (BMS).

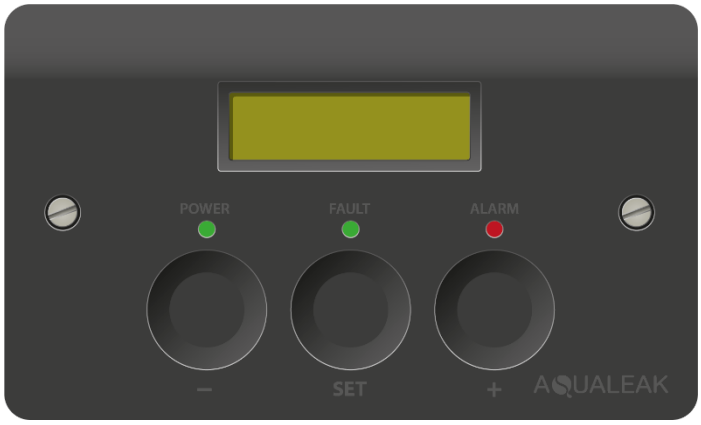


***Figure 1**: Aqualeak WG Water Leak Detection System*

The Aqualeak WG Leak Detection System is specifically designed to help customers meet the requirements of the WAT-02 and WAT-03 elements of the Building Research Establishment Environmental Assessment Method (BREEAM) criteria. The Aqualeak WG Leak Detection System is capable of detecting major water leaks at the site boundary or as it enters the building. Subject to a successful audit by an authorised, third-party assessor, the implementation of these types of systems can help customers achieve BREEAM credits, demonstrating the environmental and sustainability credentials of the property.

The Aqualeak WG can be programmed with expected water usage patterns allowing greatly increased sensitivity to unexpected volumes of water entering the site or building. When a user-defined threshold is breached, audible and LED alarms are activated on the Aqualeak WG as well as any external alert systems connected to the unit. In response, the water supply can be shut off using standard high or low voltage valve assemblies directly connected to the Aqualeak WG.

Features and benefits

- Helps users meet BREEAM WAT-02/03 criteria
- Reduced risks of flooding with continuous monitoring
- Helps reduce water consumption
- Multiple outputs
- Pulsed output – 1 pulse = 10 litres
- Functions with minimum human intervention
- Can help users meet CIREG best practice guidance
- Single solution for monitoring large properties
- 7 Day threshold programming
- Audible and visual alarms
- Monitors for leaks and internal system faults
- User configurable and self-maintainable

Operation

In operation, the Aqualeak WG continuously monitors the flow sensor connected to it for both circuit integrity and the presence of water. If a leak or fault is detected, an audible alarm is activated, an LED illuminated, and, if connected, the Aqualeak WG will report its alarm status to any connected device (BMS/SMS/beacon, valve) via its volt free contacts.

During operation, Aqualeak WG will:

- Activate an audible alarm and illuminate the LEDs when a leak is detected
- Shut off local water supplies via a shut-off valve if leak is detected
- Autonomously close the valve at pre-set times of the day
- Monitor different flow rates at different times of the day
- Allow users to investigate faults/alarms and perform diagnoses
- Automatically switch to back-up battery if required
- Report its alarm status to any connected device (BMS/SMS/beacon valve)

2.1 Technical Specifications

Aqualeak WG	Specification	Notes
Dimensions	146 x 86 x 69 mm	**Millimetres.** Width x Height x Depth
Weight	300 g	**Grams** (0.3 Kilograms)
Supply Voltage	100-240 VAC	**Volts / Alternating Current** 50-60 Hertz
Output Relay Voltage	230 VAC	
Output Relay Current	8 A	**Amps.** Maximum into resistive load
Relay Minimum Load	10 mA	**Milliamps.** At 5 VDC (Volts / Direct Current)
Leader Cable	Belden 9534	Belden 9534 EIA RS-232 Multicore Cable (4 Core, 24 AWG, 0.2 mm^2). Variable length.
Detection Response Time	1 second	
Alarm (Audible)	85 dB	**Decibels.** Within 0.6 m range
Alarm (Visible)	LED Indicator	Front panel
Operating Temperature (Control)	0 to +50°C	**Degrees Centigrade.** Ambient temperature
Operating Temperature (Valve)	0 to +60°C	
Operating Humidity	10 to 95%	Relative humidity (non-condensing) at 45°C
Operating Altitude	0 to 3,000 m	**Metres**
Storage Temperature	-20 to +70°C	
Input channels	1	
Display	3 lines x 16 characters LCD	

Table 1: *Aqualeak WG Technical Specifications*

2.2 Input-Output Connections

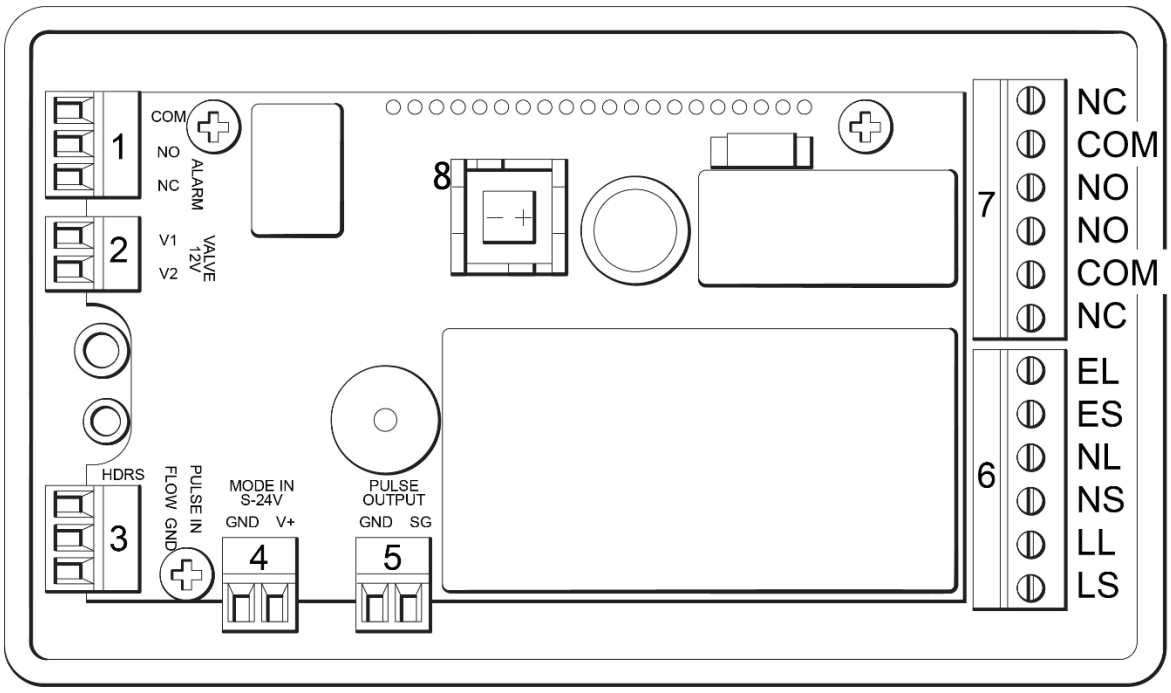


Figure 2: Aqualeak WG Input-Output Connections

Item	Name	Notes	Relay Abbreviations
1	Alarm Relay	COM | NO | NC	**COM** = Common **NC** = Normally Closed **NO** = Normally Open
2	Latching Valve Output	Connection for optional battery backup unit	
3	Meter Input	PULSE IN |Flow GND	
4	Mode In S-24V	Connection for latching solenoid valve	
5	Pulse Output (for BMS)	GND | SG	**Mains Abbreviations**
6	Mains Supply / Loop	E | E | N | N | L | L	**LS** = Live Supply **LL** = Live Loop **NS** = Neutral Supply **NL** = Neutral Loop **ES** = Earth Supply **EL** = Earth Loop
7	Mains Alarm Relay 1 & 2	NC | COM | NO | NO | COM | NC	**Mains Alarm Relay Abbreviations** NC | COM | NO | NO | COM | NC
8	Back-Up Battery	The supplied battery should be installed prior to initial set-up	

Table 2: Aqualeak WG Input-Output Connections

3 Installation

Risk of electric shock and equipment damage! Ensure you have read the **Safety Information** in **Section 1** before attempting installation. The Aqualeak WG can be either surface mounted with the supplied pattress, or flush mounted (back-box not supplied).

3.1 Unit Installation

3.1.1 Back up Battery

In the event of a mains electricity failure, the back-up battery will run the Aqualeak WG for up to 12 hours. The battery will recharge once mains electricity returns.

To install the back-up battery, remove the Aqualeak WG cover and place the battery supplied into the battery housing. See Figure 2.

3.1.2 Mounting

Mount the unit as follows:

1. Ensure the unit has been properly removed from its packaging.
2. Securely mount the supplied **pattress box** or an appropriate **flush mount alternative** in a suitable location, and make the cable entries as required.
3. Bring the **cables** through the pattress box or flush mount alternative to the unit **before** starting to make final connections.
4. Securely house the unit in the pattress box or flush mount alternative.

3.1.3 Power Connections

A competent electrician must power the Aqualeak WG via an appropriate mains supply at a nominal **230V 50-60Hz**, from a **spur** with a minimum capacity of **8 Amps**. This supports switching power to external loads through the **8 Amp Double Pole Double Throw (DPDT) relay**.

Referring to Figure 2, connect power to the Aqualeak WG as follows:

1. Route the power cable from the unswitched fused spur into the unit mount, using suitable containment/cable protection.
2. Connect the **power cable** (i.e. Live, Neutral and Earth) to the unit.

3.2 Connecting to Peripherals

The Aqualeak WG is designed to be used with a separate Valve and Flow Meter. It is possible to monitor either at the property boundary or at the entry point to the building. A second Aqualeak WG can be used so that both can be monitored concurrently.

3.2.1 Monitoring at Property Boundary

For monitoring at a property boundary, the meter and valve should be installed to the cold-water mains pipe immediately after the water supplier's meter. They must not be located where there is a danger of freezing. The Aqualeak WG should be positioned inside the building where it can be easily accessed.

3.2.2 Internal Monitoring

For internal monitoring, the Valve and Flow meter assemblies should be fitted on the cold-water mains supply pipe immediately after the stop cock in a secure, indoor location. The assembly must not be located where there is a danger of freezing. The control unit should be mounted adjacent to the valve and meter assemblies but in a location where it can be easily accessed.

Figure 3 presents an internal and external monitoring system that can be presented as part of a BREEAM assessment.

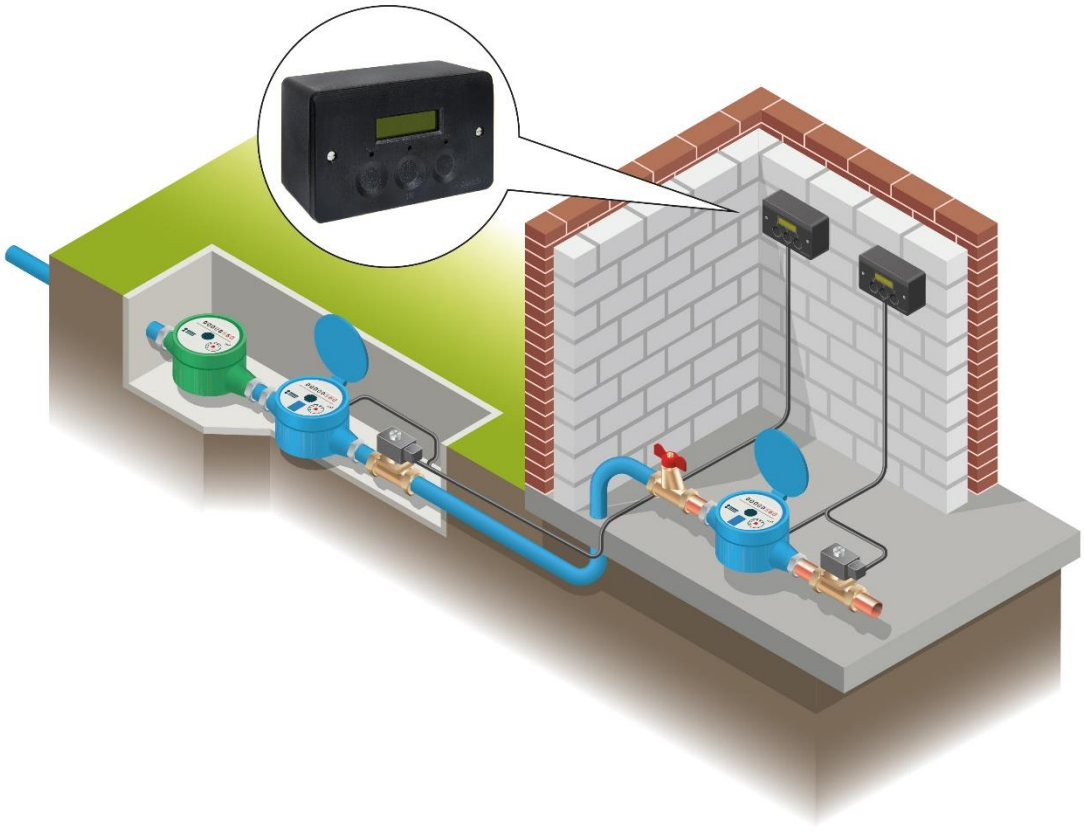


***Figure 3**. External and Internal Configurations of Aqualeak WG Installation*

3.2.3 Water Meters

There are two different types of water meter supplied with the WG, both are multi-jet pulsed output turbine models supplied with a pulse reader. Depending on the size installed, the meter will either have screwed or flanged connections.

Both types of meter have a pulse reader that is to be attached at installation. Refer to Figure 4 for the WG meter wiring diagram. The pulse reader has a fly lead with a white and brown wire coming from it. It is advised that the connections to the cable between the fly lead and the terminals in the WG are made using an IP67 rated junction box.

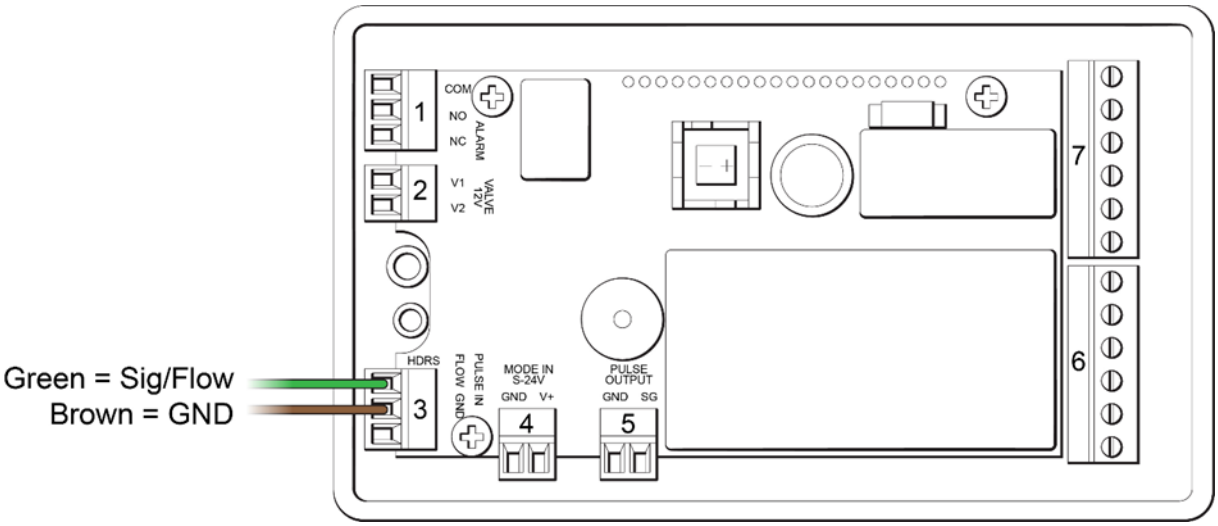


***Figure 4**. Meter Wiring Diagram*

3.2.4 Valves (latching only or solenoid)

A competent electrician should be responsible for connecting the Aqualeak WG to mains power.

The Aqualeak mains supply should be 230V at 50Hz to 60Hz. A spur should have minimum capacity of 8A to allow switching of external loads. 12v Valves are wired using Terminal connector 2 in Figure 2. 230V Solenoid valves are wired with respect of whether they are ancillary devices requiring Normally Open “NO” (see Figure 5) or Normally Closed “NC” (see Figure 6) signalling protocols.

Note: Both Figure 5 and 6 show use of the Relay 1 pins of terminal connector 7; where necessary Relay 2 can also be used.

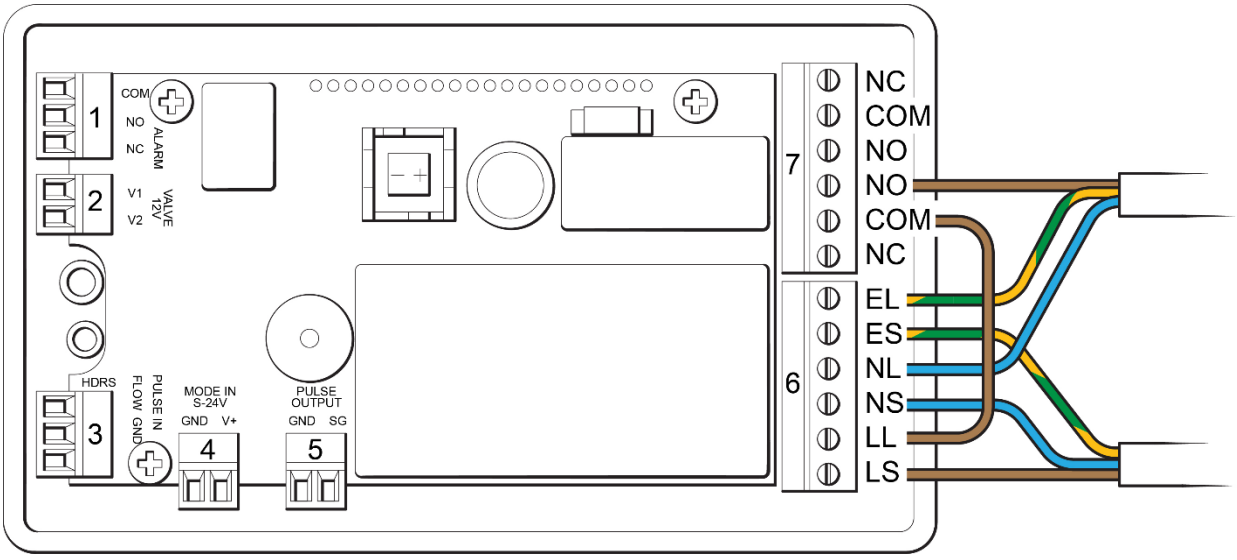


***Figure 5**. Normally Open (NO) Ancillary Wiring Diagram*

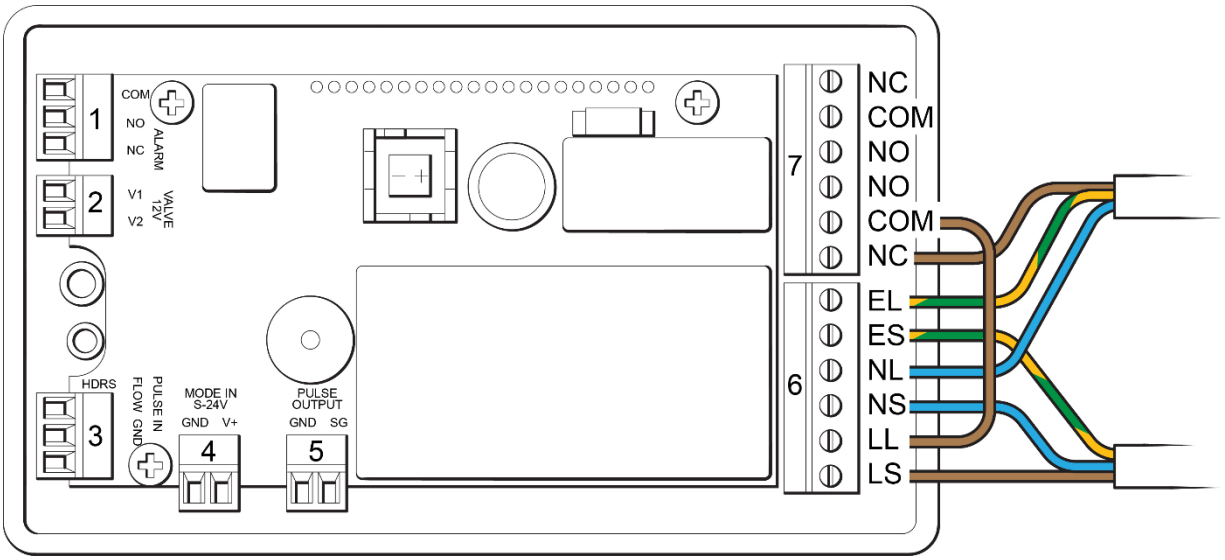


***Figure 6**. Normally Closed (NC) 230V Ancillary Wiring Diagram*

3.2.5 Snubbers

In order to limit the effect of potential electromagnetic interference on system performance from high indicytrance components, we strongly recommend that valves, whether purchased from Aqualeak or not, are installed with a snubber and be locally isolated. Snubbers can be purchased separately from Aqualeak if required.

Figure 7 shows the general wiring scheme for the inclusion of a snubber in an Aqualeak WG installation.

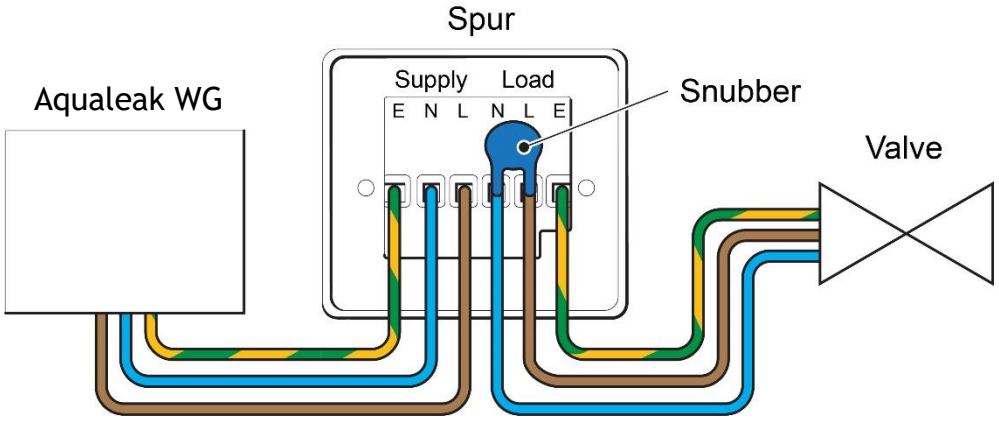


Figure 7. Snubber Wiring Diagram

3.2.6 Beacon or Short Messaging Service (SMS) Alarm Units

A competent electrician should be responsible for connecting the Aqualeak WG to mains power. Note that these units are not typically mains powered and therefore will need an external power supply and will need to be connected to either COM and NO or COM and NC, depending on if they are NC or NO.

The Aqualeak WG can be connected to a Beacon or Short Message Service (SMS) type alarm unit.

To connect to a Beacon or SMS unit it is first necessary to establish whether the alarm device uses a Normally Open “NO” or Normally Closed “NC” signalling protocol. Once identified, refer to Figure 8 or 9 for the correct wiring diagram.

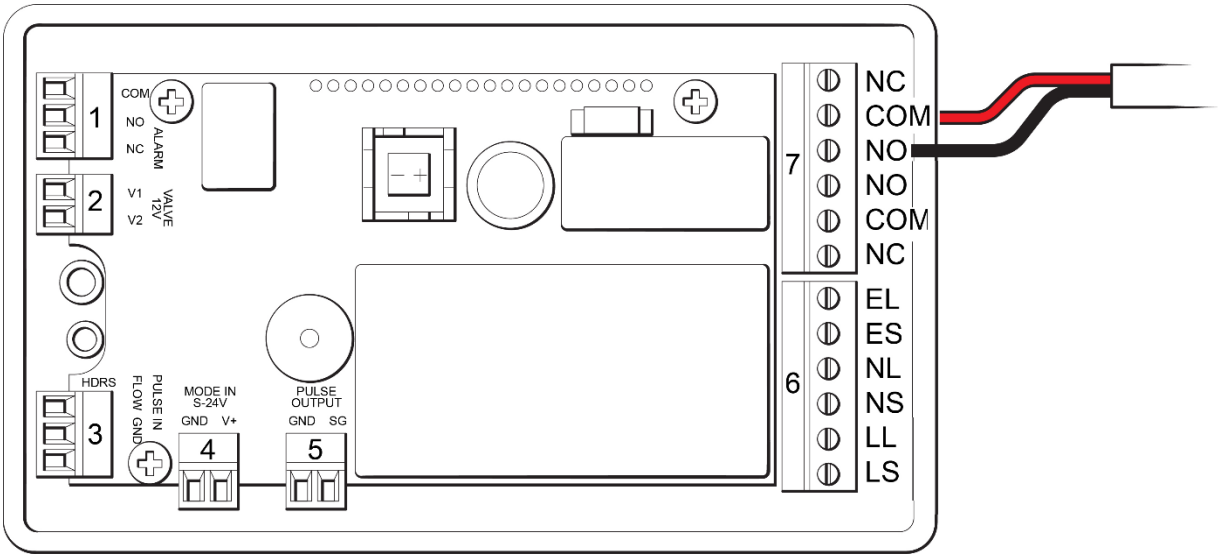


Figure 8. Normally Open (NO) Wiring Diagram for Beacon or SMS units

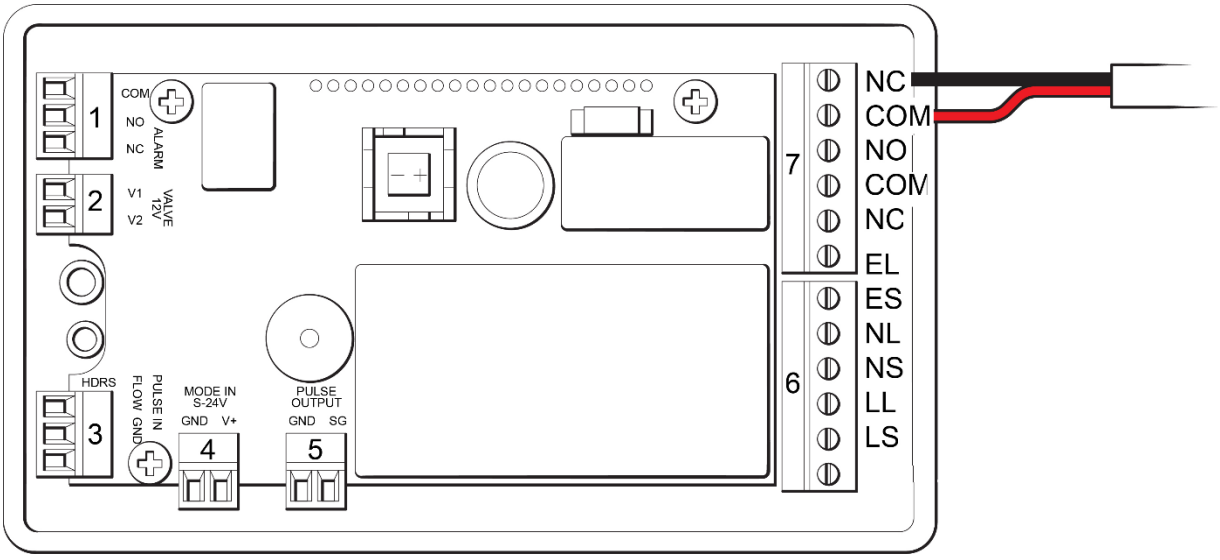


Figure 9. Normally Closed (NC) Wiring Diagram for Beacon or SMS units

3.2.7 Connecting to a Building Management System (BMS)

The WG provides a pulse output for connection to a BMS. The two wire Pulse Output connection terminal is indicated on the wiring diagram given in Figure 10.

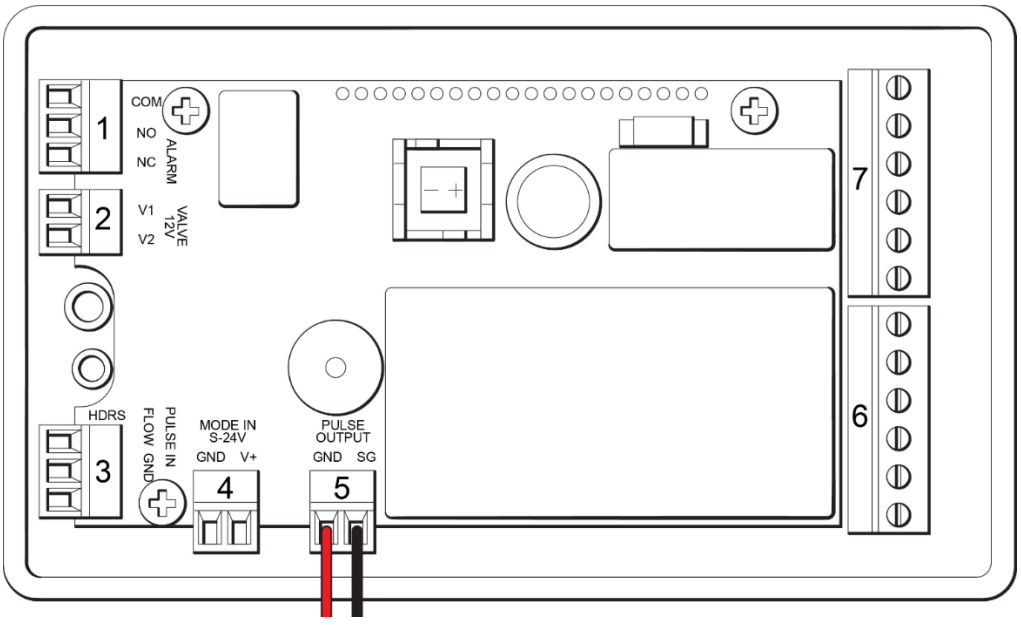


Figure 10. Wiring Diagram for Pulse Output to a Building Management System

4 Menu Navigation and Configuration

4.1 Accessing the Menu Items

The three buttons on the front of the unit shown in Figure 11 are used to access different menus and adjust values.

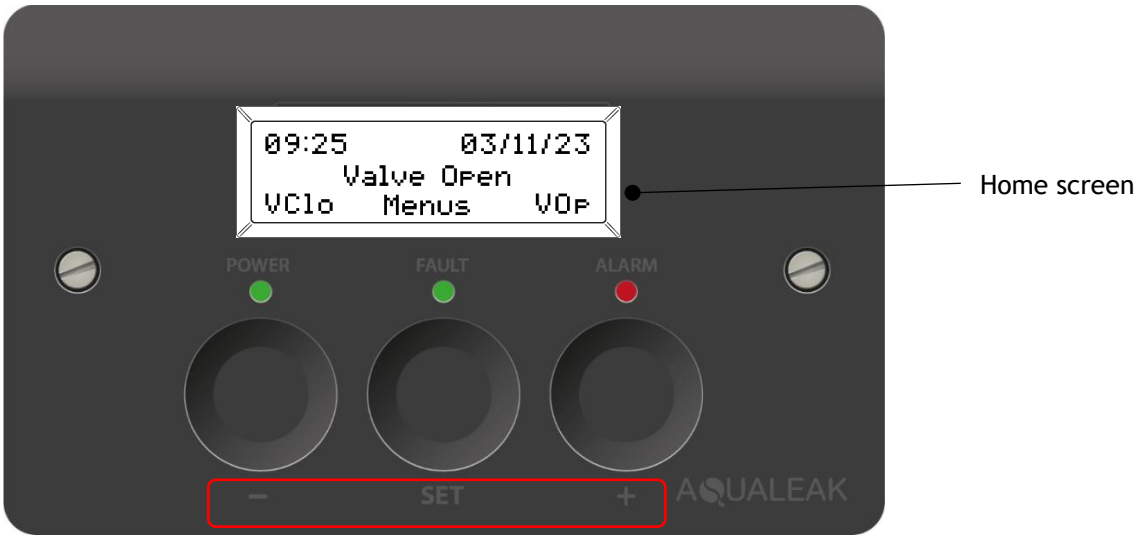


***Figure 11**. Typical Home screen*

[+] and [-] buttons enable the user to scroll up and down through the menu and [Set] selects the menu item.

[+] and [-] can then be used to control the valves and to scroll through the menus, once [SET] has been pressed. to enter the menus.

Once a value has been saved, the [+] button can then be used to move to the next submenu item, whilst the [-] will move back to the main menu.

The Home screen can be accessed at any time by pressing and holding the set button for 3 seconds. If whilst following instructions in the sections below an error is made, return to the Home screen and restart from the beginning of the section.

The Home screen is described in more detail in **Section 5** of this manual.

4.2 Passcode Protection

The menu settings are passcode protected to ensure that only authorised people can adjust them.

When selecting a menu item that is passcode protected you will be prompted to enter the four-digit passcode supplied to Engineers by Aqualeak. Enter each digit of the passcode by using [+] and [-] and press [Set] to move from one digit to the next. Once all four digits are correctly entered, press [Set] and access to all menu settings is given.

4.3 Main Menu

From the Home screen it is possible to enter the menu system by pressing [Set].

The menu options appear as follows:

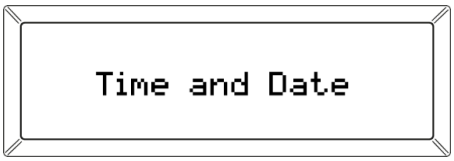
- Time and Date
- Valve Exercise
- Flow Monitoring
- Event Logging
- Misc Settings

Use the [+] / [-] buttons to scroll to the required option and press [Set] to enter the settings in that area. You can now make adjustments as required and detailed in the sections to follow.

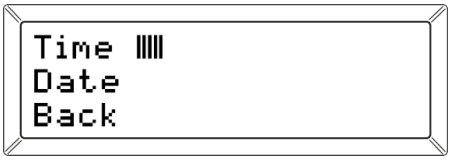
4.4 Time and Date

To adjust time and date within the system, follow these instructions:

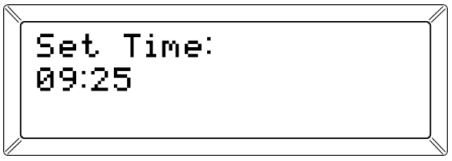
1. Press [Set] on the Time and Date option from the menu.



2. Press [Set] to enter Time.



3. Press [+] or [-] to adjust a digit then [Set] to save. Repeat for each digit.

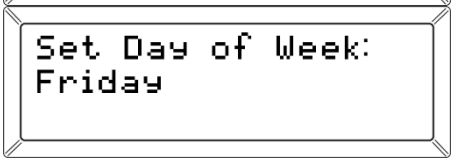


4. Press [+] to enter daylight saving time.
5. Press [+] or [-] to adjust daylight saving time then [Set] to save.
6. Press [-] to move back through the menu to return to the Time and Date submenu.

To continue to adjust the date:

7. Press [+] to select Date and press [Set].

8. Press [+] or [-] to adjust the day, press [Set] to save.



9. Press [+] to continue forward to adjust date.
10. Press [+] or [-] to adjust a digit of the date then, [Set] to Save. Repeat for each digit.
11. Press [+] to enter the date format.

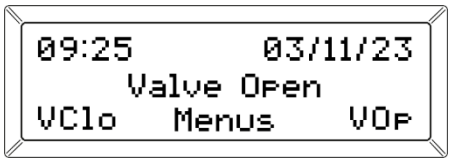
12. Press [+] or [-] to adjust the date format then [Set] to save.
13. Press [-] to move back through the menu to return to the Time and Date submenu.
14. Press [+] to select Back, then [Set] to move back to the main menu or hold [Set] for 3 seconds to return to the Home screen.

4.5 Valve Manual Control

The Aqualeak WG allows the User to override any programming to manually control the connected valve. This is carried out in the Home screen:

Pressing [-] closes the valve.

Pressing [+] opens the valve.



If the manual operation of the valve overrides the programmed schedule, the right-hand Alarm LED will flash blue.

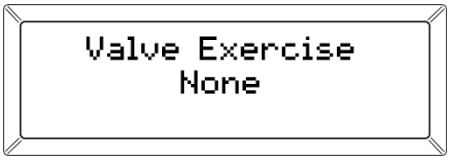
4.6 Valve Exercise

The Aqualeak WG will perform automatic checks on the associated valve to ensure it is functioning correctly. The Valve Exercise area of the menu allows the User to configure how often and when the checks take place.

To set up the Valve Exercise parameters, follow these instructions:

First, the type of valve connected the Aqualeak WG is programmed.

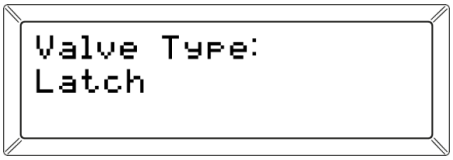
1. Press [Set] on the main menu item Valve Exercise. Any previously configured Valve Exercise will be displayed here.



2. Press [Set] to enter the Valve Exercise submenu.

3. Press [Set] to select Valve Type.

4. Use [+] and [-] to adjust the valve type in use. Press [Set] to save.

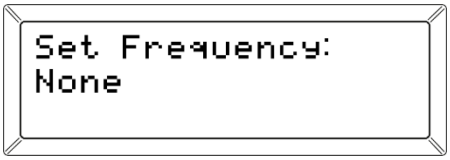


5. Press [-] to move back to the Valve Exercise submenu.

The exercise frequency and timing parameters can then be set.

6. Press [Set] to enter the Exercise Setup.

7. Press [+] and [-] to adjust the desired frequency. Press [Set] to save.



8. Press [+] to enter the Exercise Time.

9. Press [+] or [-] to adjust a digit of the Exercise Time and then [Set] to Save. Repeat for each digit.

10. Press [-] to move back to the Valve Exercise submenu.

11. Press [+] to select Back, then [Set] to move back to the main menu or hold [Set] for 3 seconds to return to the Home screen.

4.7 Flow Monitoring

The Flow Monitoring Menu contains a range of functionality. To assist understanding, the Flow Monitoring menu area will be described in the following subsections.

The primary Flow Monitoring submenu consists of the three areas:

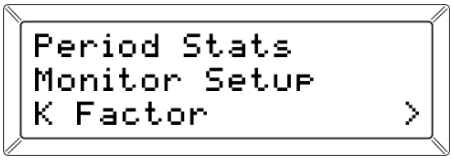
1. Period Stats — Provides an up-to-date view of the monitoring status.
2. Monitor Setup — Where waterflow threshold timing is programmed, along with monitoring profiles and Alarm configuration.
3. K Factor — The K Factor is the ratio of pulses to l/m and is used by the Aqualeak WG to convert the pulses received from the connected meter into the correct flow rate. The Aqualeak WG defaults to a K factor of 10 but can also be set to 1 as required.

4.7.1 Period Status

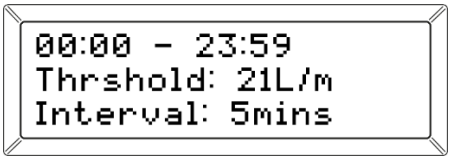
Selecting the Period Status from the Flow Monitoring menu option gives the current monitoring parameters:

1. Press [Set] on the main menu item Flow Monitoring.

2. Select Period Stats and press [Set].



Current monitoring parameters will be displayed



4.7.2 Monitor Profile

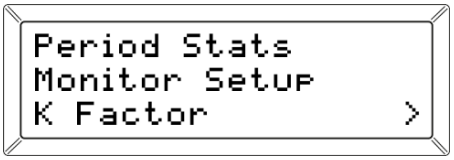
In some installations it may not be desirable to programme all of the threshold changes the Aqualeak WG has available. The Monitor Profile option allows the User to structure threshold programming to suit the application.

The Monitor Profile options are:

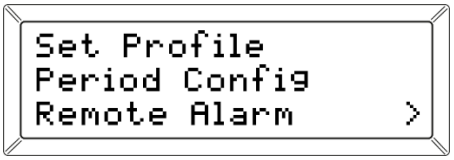
Daily	Gives four threshold period settings which are then used every day of the week.
Weekly	Gives four threshold period settings which can be different for each day of the week.
Permanent	Gives only one threshold setting per day which are then used every day.

1. Press [Set] on the main menu item Flow Monitoring.

2. Select Monitor Profile and Press [Set].



3. Select Set Profile from the submenu and Press [Set].



4. Press [+] and [-] to select the desired Monitor Profile and press [Set] to save.

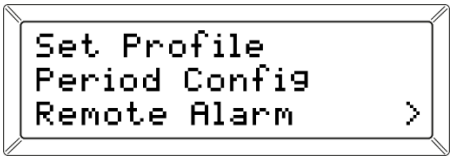
4.7.3 Programming Threshold Periods

The programming of threshold periods is first determined by the selected Monitor Profile as discussed in **Section 4.7.2** above.

The subsequent threshold period programming is then carried out in the Period Config submenu option.

1. Press [Set] on the main menu item Flow Monitoring.

2. Select Period Config and Press [Set].

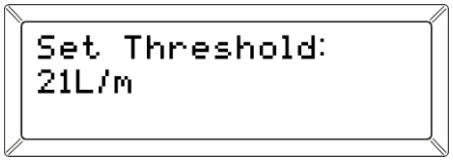


Each Monitoring Period available for programming is then provided in a further submenu. To programme a period, the following information is required:

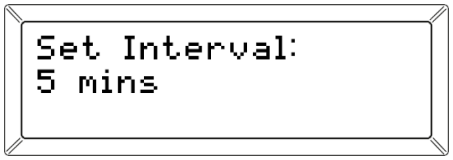
Period Time	The time the period is to begin and end.
Threshold	The maximum waterflow threshold in l/m
Interval	The amount of time the water flow has to be above the threshold for there to be an alarm.

If the Monitor Profile selected is “Permanent” the User will only be given the option to programme a single Threshold and Interval:

1. Press [+] and [-] to select the desired Threshold and press [Set] to save.

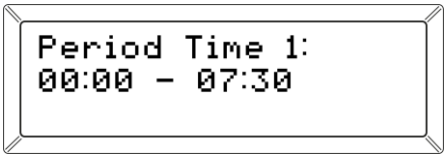


2. Press [+] and [-] to select the desired Interval and press [Set] to save.

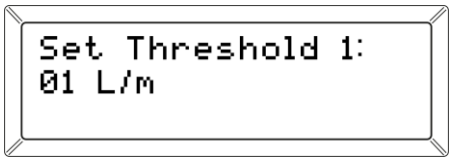


When the Monitor Profile selected is Daily:

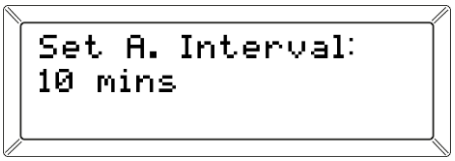
1. Press [+] and [-] to select the desired Period and press [Set] to save.



2. Press [+] and [-] to select the desired Time Range and press [Set] to save.
3. Press [+] and [-] to select the desired Threshold and press [Set] to save.



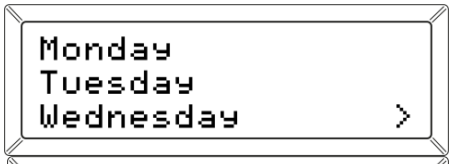
4. Press [+] and [-] to select the desired Interval and press [Set] to save.



5. Press [+] and [-] to select the next desired Period, press [Set] to save and continue from point 4.

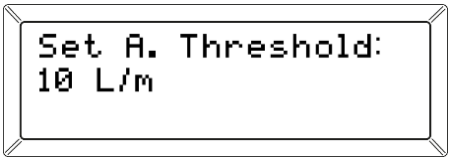
When the Monitor Profile selected is Weekly:

1. Select the day of the week to which the next 4 Periods to be programmed should apply.

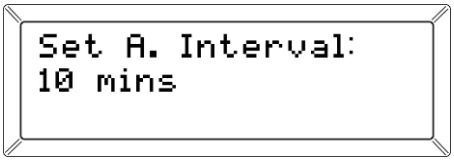


2. Press [+] and [-] to select the desired Period and press [Set] to save.
3. Press [+] and [-] to select the desired Time Range and press [Set] to save.

4. Press [+] and [-] to select the desired Threshold and press [Set] to save.



5. Press [+] and [-] to select the desired Interval and press [Set] to save.



6. Press [+] and [-] to select the next desired Period, press [Set] to save and continue from point 4.

4.7.4 Valve State Scheduling

A further facility provided by the Aqualeak WG is to schedule changes in the status of the connected valve. For example, where programmed thresholds allow water to flow up to a maximum flow rate before raising an alarm, valve state scheduling allows for the valve to be shut off when no waterflow is anticipated.

Valve schedule programming is also governed by the Monitor Profile setting selected in **Section 4.7.2**. The schedule programming for each Monitor Profile is as follows:

Daily	A single schedule period is programmed and used for every day of the week.
Weekly	A single schedule period is programmed for each day of the week.
Permanent	A single schedule period is programmed and used for every day of the week.

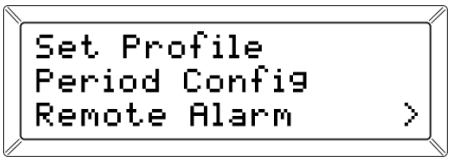
The Schedule Mode must also be configured. The Schedule Mode allows the User to set how the valve is opened or closed throughout the day. There are 3 Schedule Modes to choose from:

Open	The valve is left open (unless a leak detected or it is manually closed).
Closed	The valve is left closed unless manually opened.
Period	The valve will open at the programmed open and close times.

If the Monitoring Profile is set to Daily or Permanent, the Schedule Mode is programmed as a single selection:

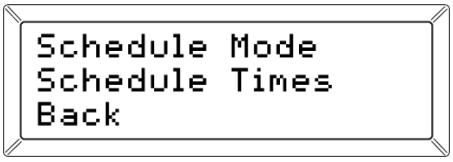
1. Press [Set] on the main menu item Flow Monitoring.

2. Select Period Config and Press [Set].

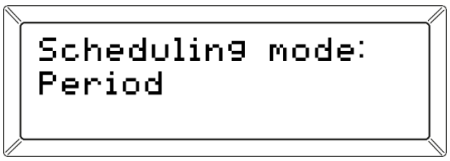


3. Press [+] to pass any associated Period programming submenus.

4. Select Schedule Mode and Press [Set].



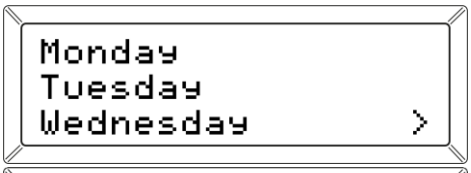
5. Press [+] or [-] to select the desired Scheduling Mode and press [Set] to save.



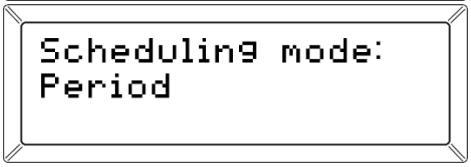
If the Monitoring Profile is set to Weekly the Schedule Mode is programmed for each day of the week. This allows a mix of programming options.

Continuing from step 4 above:

6. Press [+] or [-] to select the desired day of the week to programme. Press [Set] to save.



7. Press [+] or [-] to select the desired Scheduling Mode. Press [Set] to save.



The next step is to programme the timing of valve transitions where the Period Scheduling Mode has been selected.

As an example, if the first scheduled instruction is to open the valve at 8am, the Aqualeak WG will assert that the valve is closed prior to 08:00. Similarly, if the close time is programmed for 20:00, the valve will remain closed until the next programmed open time. This and a further valve scheduling example is given in Figure 12.

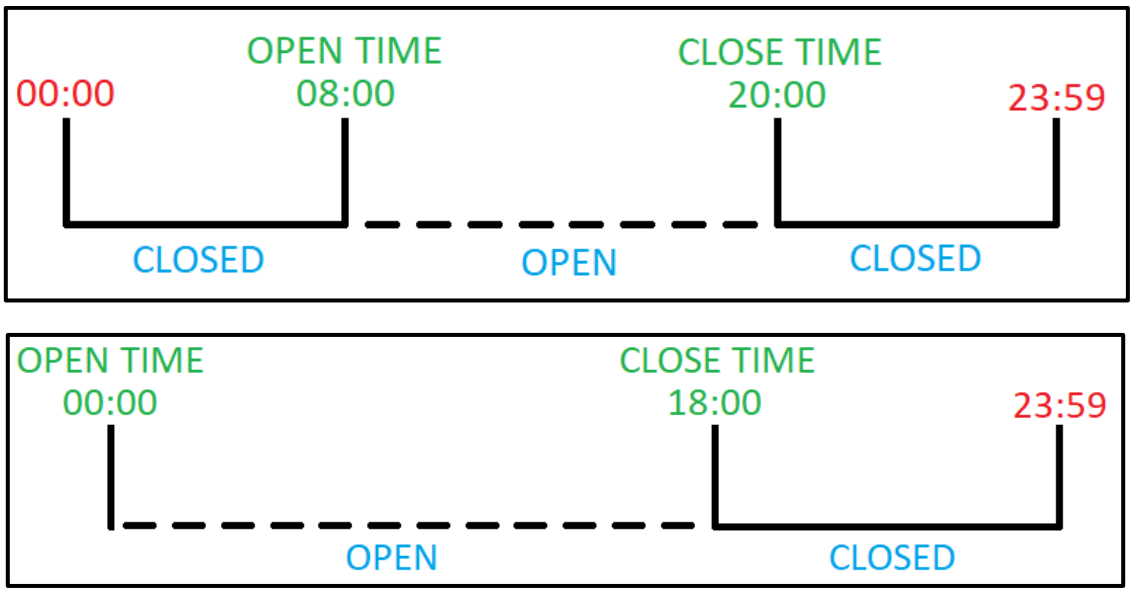
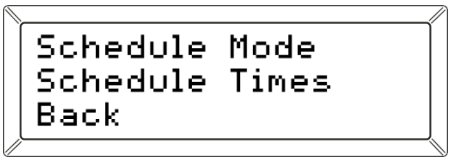


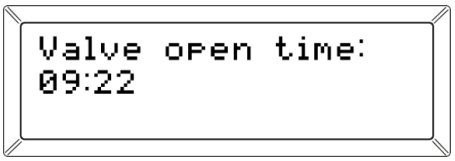
***Figure 12**. Examples of Scheduled Valve Programming*

If the Monitoring Profile is set to Daily or Permanent, the Scheduled Valve Timing can be programmed as follows (continuing from step 4 above):

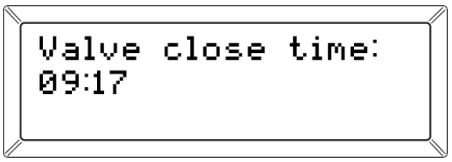
3. Select Schedule Times and Press [Set].



4. Press [+] or [-] to adjust a digit of the valve open time then [Set] to Save. Repeat for each digit.



5. Press [+] or [-] to adjust a digit of the valve close time then [Set] to Save. Repeat for each digit.



If the Monitoring Profile is set to Weekly, the valve transitions for each day assigned Period Schedule Mode must be programmed. It may be helpful to write this out prior to beginning. An example is given in Table 3.

DAY	MODE	OPEN TIME	CLOSE TIME
Monday	Period	08:00	00:00
Tuesday	Open	X	X
Wednesday	Open	X	X
Thursday	Period	10:00	16:00
Friday	Period	00:00	20:00
Saturday	Close	X	X
Sunday	Close	X	X

***Table 3**. Example Mixed Mode Valve Timing Schedule*

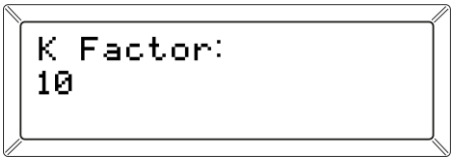
4.7.5 K Factor

The K Factor is the ratio of pulses to l/m and is used by the Aqualeak WG to convert the pulses received from the connected meter into the correct flow rate. The Aqualeak WG defaults to a K factor of 10 but can also be set to 1 as required.

1. Press [Set] on the main menu item Flow Monitoring.

2. Select K Factor and Press [Set].

3. Press [+] or [-] to adjust the K Factor. Press [Set] to save.



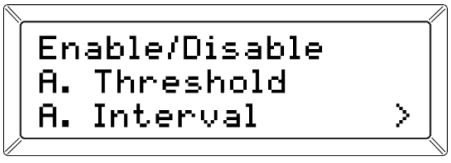
4.7.6 Remote Alarm

If a remote alarm is connected to the panel (such as security alarm), when it is activated the remote alarm threshold settings are those the WG defaults to. For example, if you want there to be zero flow when unoccupied and you set a security alarm when leaving the building, you can link this to the WG so that thresholds are all set to zero. Once the security alarm is deactivated, thresholds return to normal monitoring mode.

To set the alarm settings:

1. Press [Set] on the main menu item Flow Monitoring.

2. Set Thresholds by pressing the Threshold option.



3. Set intervals by pressing the Interval option.

4. Press [Set] to save.

4.8 Event Logging

The event logging facility within the main menu keep a record of the time, date and cause of the last 30 events.

To access the Event Log:

1. Press [Set] on the main menu item Event Log.

2. Select Enter Log in the submenu and Press [Set].

   Press [+] or [-] to scroll through the stored events.

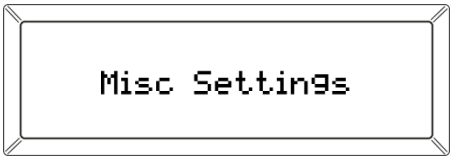
3. To exit the event log press [-], to reset the Log, select Reset Log and Press [Set]

4.9 Miscellaneous Settings

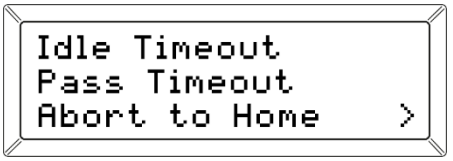
Misc settings are for settings that don't affect the leak monitoring such as screen timeouts.

To access the miscellaneous settings:

1. Press [Set] on the main menu item Misc Settings.

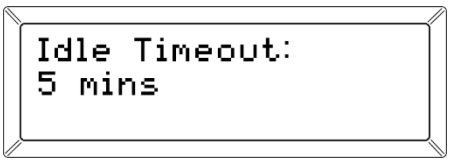


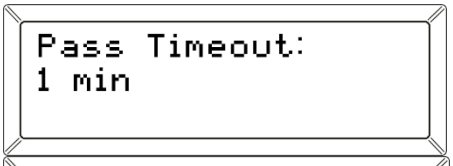
2. Press [+] or [-] to scroll through the Misc Setting options and press [Set] to select.

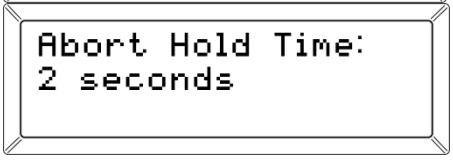


3. Make changes as required using the [+] and [-] buttons.

4. Press [Set] to save the changes.



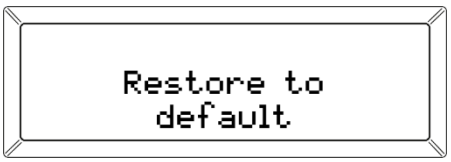




4.10 Restore to Default Settings

To restore the system back to default settings:

1. Press [SET] on the main menu item.
2. Press [Restore to default] option.



5 Operation

Ensure you have read the **Safety Information** in **Section 1** before operating this product.

When the Aqualeak WG has been connected to the associated components and powered on, after a few seconds it will display the Home screen, showing default settings, and the power LED will be solid green.

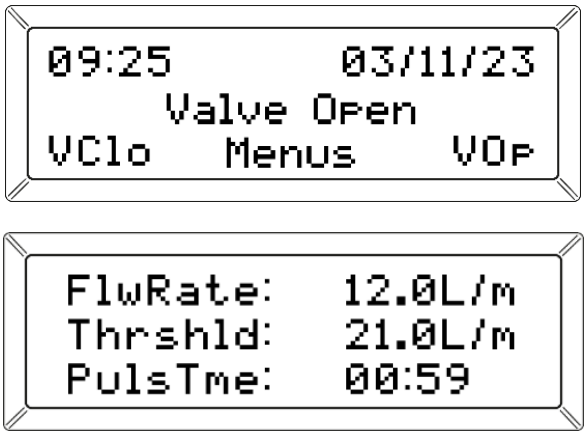


***Figure 13**: Home Screen (top) and first screen you see when you press [SET] (bottom)*

Display	Description
Time	The set time is shown on screen in format hh:mm
Date	The set date is shown on screen
Menus	Gives access to menu items
VClo	Valve close
VOp	Valve open

***Table 4**: Home Screen Key*

Display	Description
FlwRate	Current Flow Rate
Thrshld	Flow threshold (maximum flow of water that can flow before valve shuts)
PulsTme	The current pulse interval in seconds

***Table 5**: Home Screen Key*

Once powered on, the Aqualeak WG Leak Detector maintains the programmed background timing scheme while continuously monitoring flow.

System status is displayed via indicator LEDs and operation is undertaken via capacitive touch buttons located at the front of the unit as shown in Figure 14.

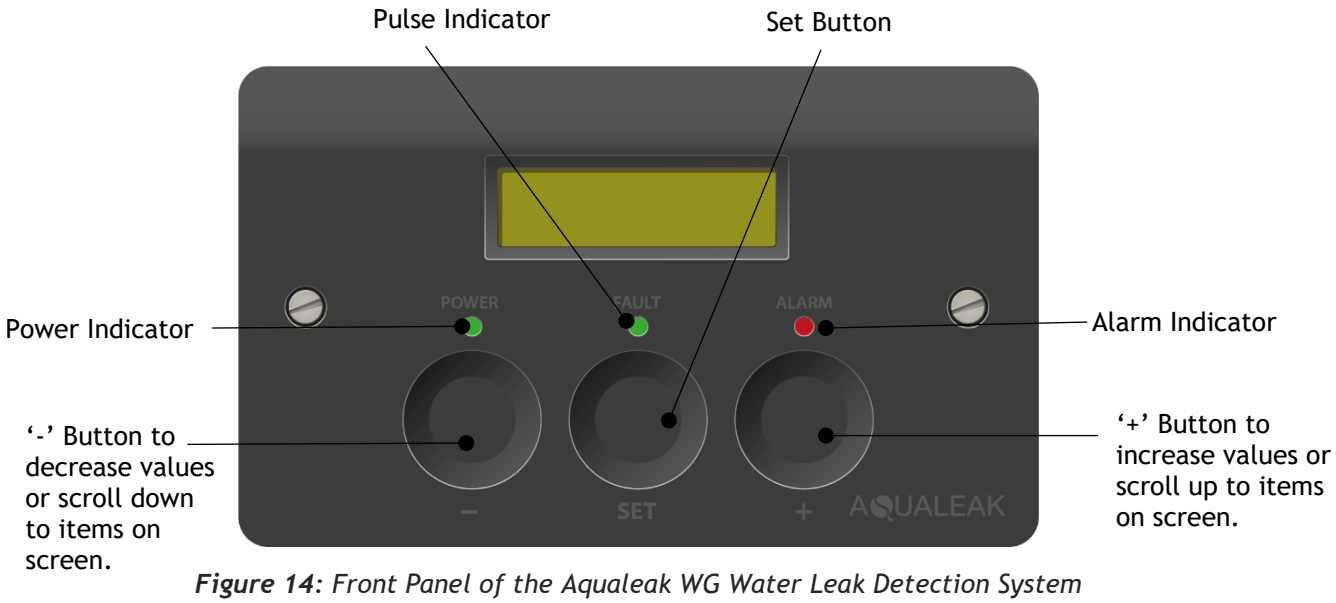


***Figure 14**: Front Panel of the Aqualeak WG Water Leak Detection System*

Aqualeak WG Indicators	Description
Power	Standard monitoring mode. Green when ON.
Fault	In normal operation the fault LED flashes green to show the pulses received.
Alarm	Red flashing indicates a leak is detected.

***Table 6**: Indicator Modes*

5.1 Monitor Mode

Monitor Mode is the Aqualeak WG standard mode of operation. In Monitor Mode the green Power LED will be lit and the fault LED will flash green every time the unit receives a pulse.

5.2 Alarm Mode

When a threshold is exceeded, the Aqualeak WG unit will go into Alarm Mode. An audible alarm will sound and the alarm LED will flash red.

When the Aqualeak WG is in Alarm Mode:

Press [+] to mute the alarm. The alarm LED will now be solid blue.

Once the leak has been investigated and resolved:

Press [-] to reset the unit.

If the cause of the leak has been removed, the system will return to standard Monitoring Mode.

If the leak condition is still present, the Aqualeak WG will go back into Alarm Mode once thresholds are exceeded again.

6 Maintenance

Ensure you have read the **Safety Information** in **Section 1** before undertaking maintenance.

6.1 Cleaning

Clean the outside of the unit only. Use a dry, clean cloth.

✕ **DO NOT** use abrasive agents or solvents to clean the equipment.

7 Troubleshooting

Table 7 lists the most common problems and their solutions.

Problem	Possible Cause	Possible Solution
System does not power on	**Power cable** is incorrectly connected	Check the power cable. Review **Section 3.1.3 and Section 2.2**
	Unswitched fused spur is faulty or inactive	Check fuses and power on the unswitched fuse spur. Review **Section Section 3.1.3** and **Section 2.2**
No pulse detected	Incorrect wiring	Check wiring. Review **Section 3.1.3** and **Section 2.2**

***Table 7**. Aqualeak WG Troubleshooting*

If a problem cannot be solved then please call support on **+44 (0)1249 715698** or visit our website at www.aqualeak.com.

8 Warranty

The Aqualeak WG Water Leak Detector has a 2 year back-to-base warranty as standard, and a 5-year warranty when annually maintained by Aqualeak.

The warranty is applicable from the original purchase date and includes repair or replacement if the product is defective. The following exclusions apply:

- ✕ If the system is purchased second hand. Only new products are covered.
- ✕ Persons not named as the original purchasers on the order information.
- ✕ Physical damage to the unit due to abuse, accident, neglect, or misuse. This includes:
    - Damage caused by water or other liquids.
    - Damage caused by connection to incompatible power sources.
    - Damage caused by connection to incompatible devices not manufactured by Aqualeak.
    - Damage caused by improper installation (i.e. not following the instructions provided).
    - Normal wear and tear.
    - Unauthorised attempts to repair, modify, or disassemble the item by unqualified persons.

For further information on our warranty and returns procedure, contact us on **+44 (0)1249 715698** or visit our website at www.aqualeak.com.

AQUALEAK

Only for EC countries:

Do not dispose of Master Unit and Outstations into household waste!

According the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national right, measuring tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.