TRICEL

GENERATIONS OF INNOVATION

AquaSafe Alarm

Installation and operating guidelines

Packaged pumping stations

Engineering a green future

1642128/0-UK-May-2026

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1. Product summary

1.1 System overview

The AquaSafe Alarm high water level alarm with an 85 dB audible alarm and LED status display. The system is activated via a float switch located inside the pumping station, which is set higher than the activation point of the primary pump.

The panel features a trickle-charged battery so that it can continue to monitor the pumping station during periods of mains power failure. It also includes three volt-free contacts for connection to building management systems and other remote devices.

The AquaSafe Alarm alerts the end user when:

- there is a power failure to the alarm
- there is a high level condition in the chamber
- a previous high level condition has been recorded
- a service visit is due

1.2 AquaSafe Alarm (Mini)

Includes a mini float switch with a 10 m cable.

Waste types

Grey Ground Surface Storm Treated

Suitable systems include:

- HydroMini

1.3 AquaSafe Alarm (Sump)

Includes a sump float switch with a 10 m cable.

Waste types

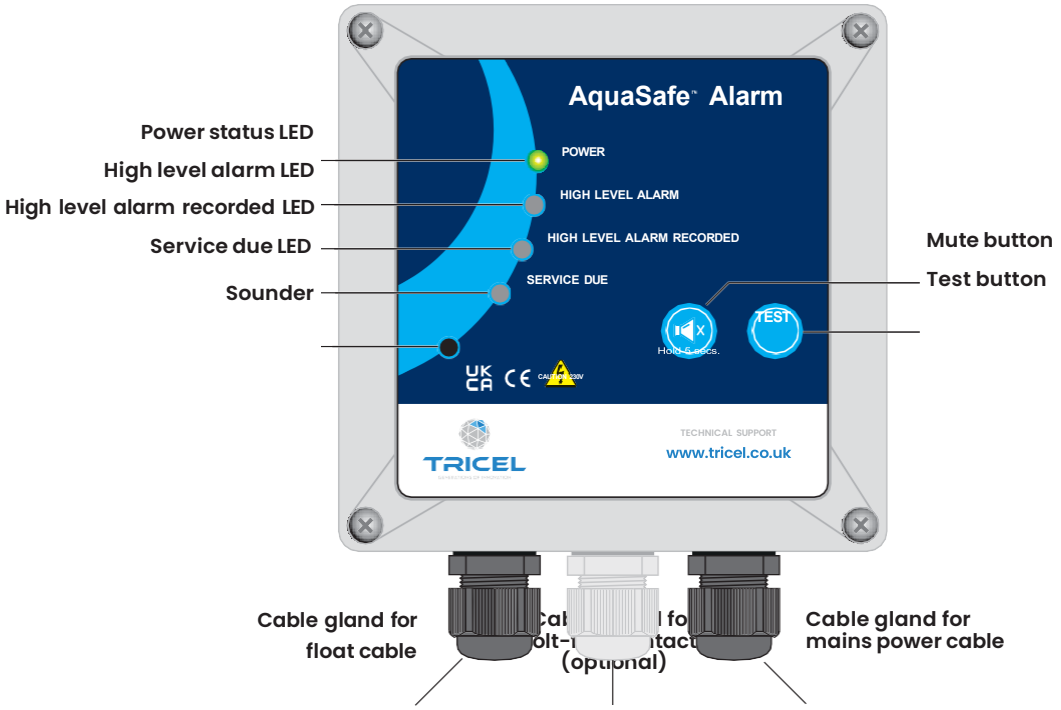
Grey Ground Surface Storm Treated Foul

Suitable systems include

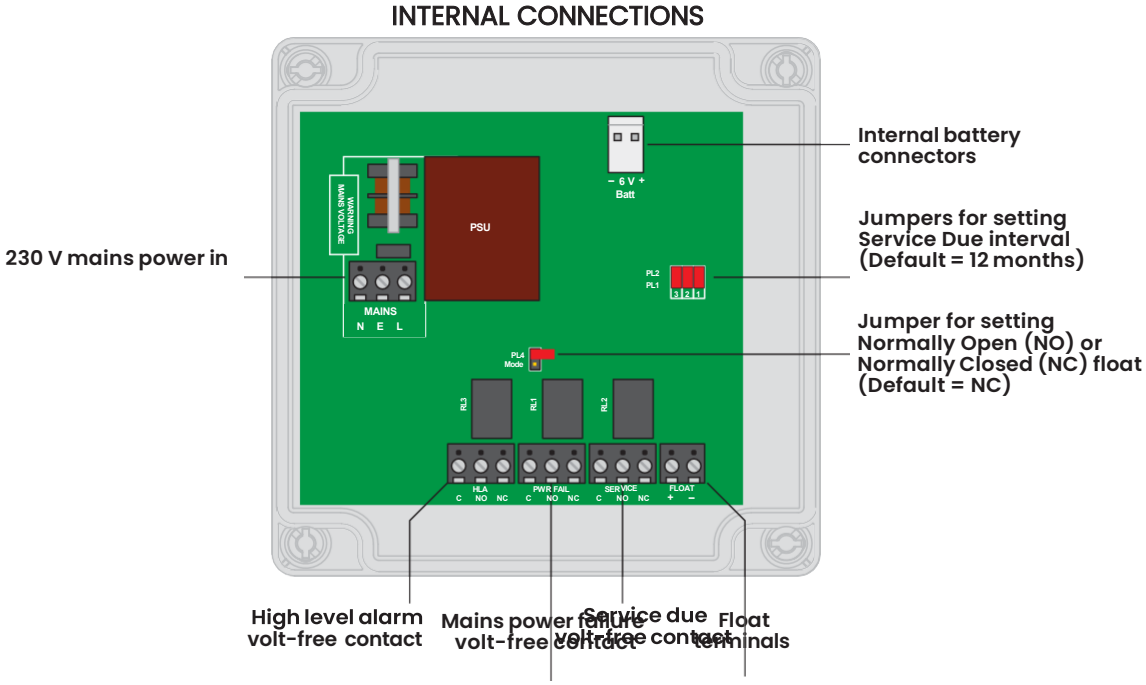
- HydroMidi
- HydroMax
- FoulMidi
- FoulMax
- FoulPro (single pump)

1.4 Anatomy of an AquaSafe Alarm

FRONT FACIA



INTERNAL CONNECTIONS



2. Site preparation and installation

2.1 Advisory

All products are manufactured and developed to the highest standards and assembled with precision and care. Each product has been rigorously tested. We constantly strive to develop our products to provide you with the most innovative products possible.

Please read these installation and operating guidelines carefully prior to installation. These guidelines contain important information and hazard warnings, which will enable you to install and operate your product safely, economically, and reliably.

Only qualified personnel should carry out the installation in accordance with the latest IET wiring regulations

BS7671. All works should be in line with the Health and Safety at Works Act 1974.

It is important to note that these guidelines are for guidance only and it is the installer's responsibility to satisfy themselves that the installation procedure is in accordance with good practice, this will then eliminate any potential damage to the product during or after installation.

If you are unsure on any point, then please your vendor for further information.

2.1.1 Intended use

This AquaSafe Alarm is designed for use indoors or in a suitable waterproof outdoor enclosure. Under no circumstances should the product be installed outdoors without suitable protection from both water and extreme temperatures (operating temperature -10°C to +40°C).

2.1.2 Receipt of goods

Remove the AquaSafe Alarm from its packaging and inspect for any signs of damage. Should there be any damage or missing parts this must be reported immediately (no claim will be considered after 24 hours from time of delivery). Please refer to the appropriate parts list in Section 6.

2.2 Location

The AquaSafe Alarm panel must be located in a dry area where the panel is audible and accessible by the end user.

Select a suitable location for the AquaSafe Alarm panel. It must be located within 10 m of the base of the pump chamber/sump routed through the cable duct to the AquaSafe Alarm panel. If you need to mount the panel further away from the pump chamber/sump, please contact your vendor for further information.

When siting the panel please consider the Noise Pollution Act.

2.3 Mounting the AquaSafe Alarm panel

Before you mount the panel you will need to drill a hole into the panel for volt free contact(s) cabling (if required).

- The mini float switch or sump float switch uses the M16 cable gland (supplied and installed as standard).
- The power cable uses the M16 gland (supplied and installed as standard).
- For the volt-free contacts, you will need to drill the appropriate diameter hole as shown in Figure 1 to add the M16 or M20 cable gland. The cable gland required would depend on the diameter of signalling cable used.

Mount the panel to a wall or backboard using the mounting points located at the back of the panel using appropriate screws and wall plugs for the surface. Please see Section 5.4 for dimensions.

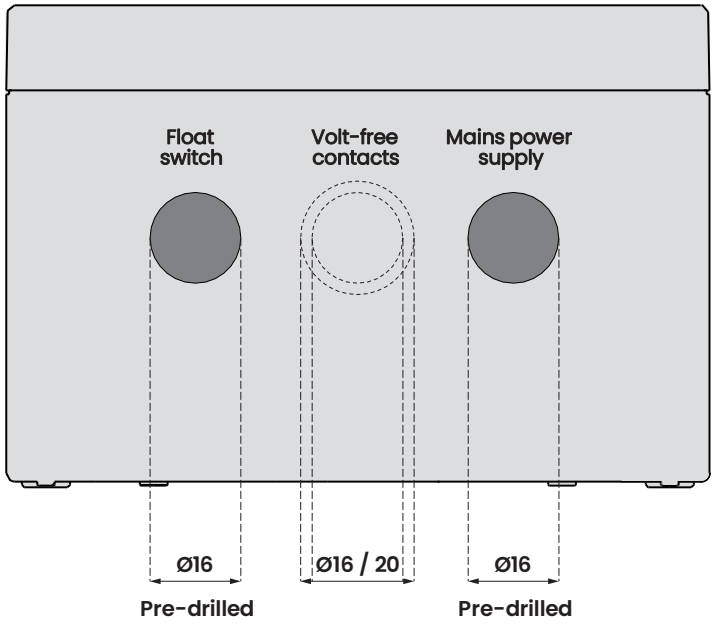


Figure 1. Drilling the mounting panel

2.4 Installing a mini float switch

2.4.1 Mounting the float in a HydroMini

Refer to the specific installation and operating guidelines for the system when installing the float switch.
The mini float switch is supplied with a 10 m cable. Should you require more than 10 metres please contact your vendor for further information.

1. Use the top position of the float bracket. Please ensure you position the mini float switch higher than the duty pump activation point contained within, as shown in Figure 2.
2. When positioning the mini float switch insert the float cable through the green washer.
3. Orientate the mini float switch so it is in the **Normally Closed** position (Figure 3)
4. Insert the mini float cable through the blue plastic washer and nut and tighten fully.
5. Draw the float cable through the duct to the control panel location when the system is commissioned.

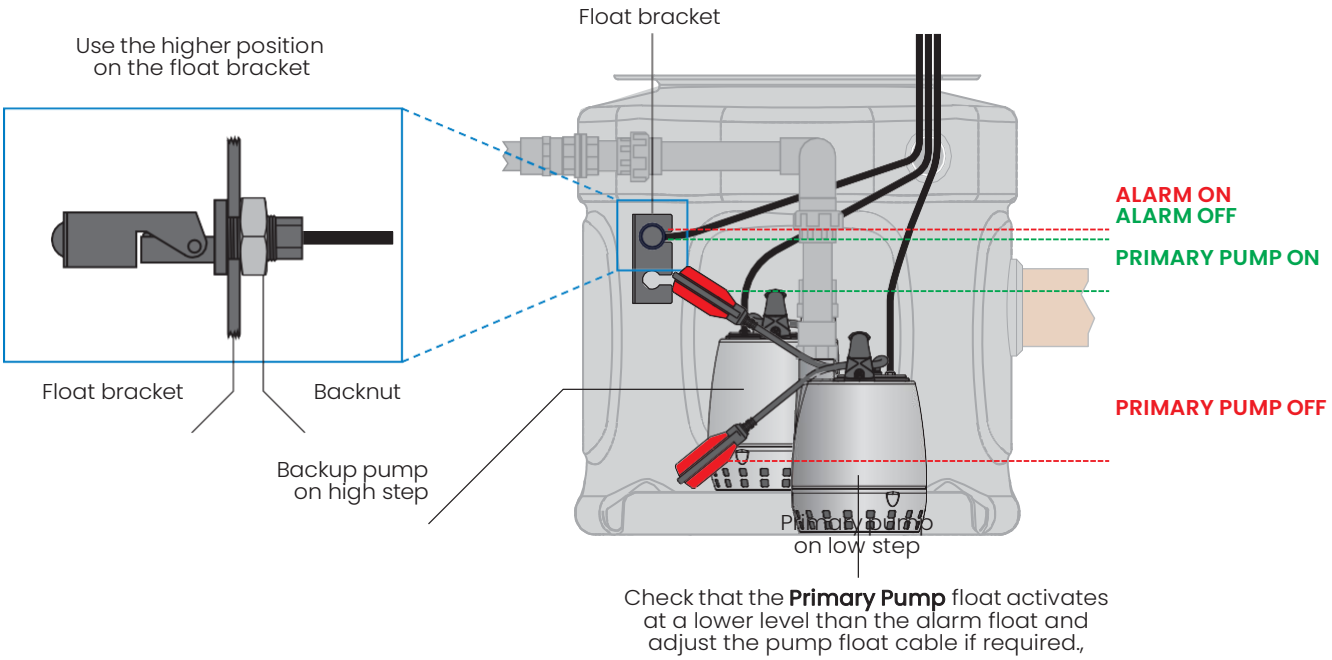
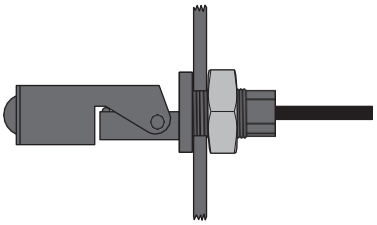
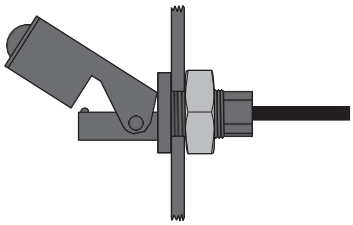


Figure 2. Mini float switch on and off positions (HydroMini Twin)



Alarm OFF



Alarm ON

*Mini float switch in the **NORMALLY CLOSED** orientation for the AquaSafe Alarm only. Please also refer to the AquaSafe Alarm installation and operating guidelines. Once installed check the alarm is operating as expected.*

Figure 3. Mini float orientation (Normally Closed)

2.4.2 Connecting the mini float to the AquaSafe Alarm

1. Loosen the float switch cable gland located on the underside of the AquaSafe Alarm panel, as shown in Figure 1.
2. Draw the mini float switch cable through the cable gland.
3. Connect the brown core to the positive and the blue core to the negative terminal, as shown in Figure 4.

Please note, that the AquaSafe Alarm panel is factory set to a Normally Closed contact. The advantage is that should the mini float cable become damaged and/or disconnected the alarm will activate.

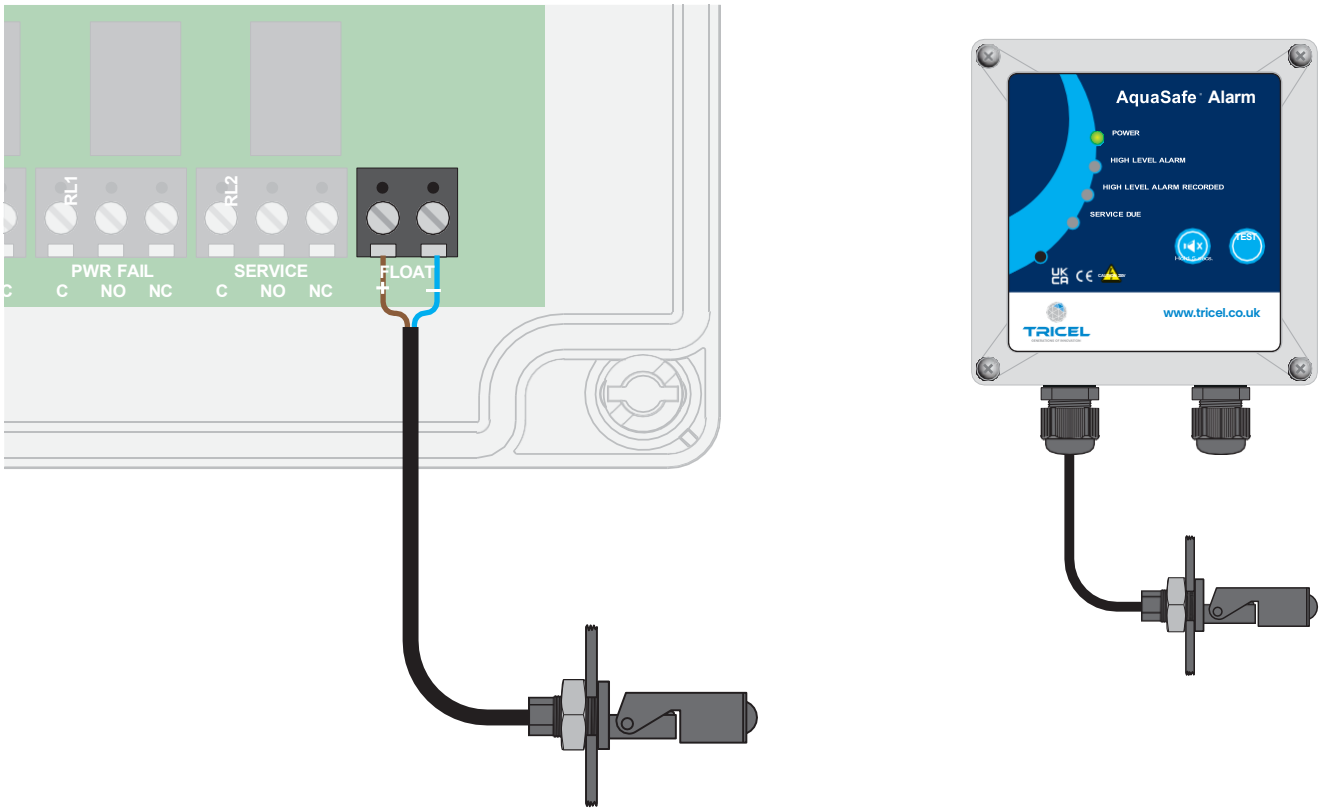


Figure 4. Connecting the mini float switch to the AquaSafe Alarm.

2.5 Installing a sump float switch

2.5.1 Mounting a sump float

Refer to the specific installation and operating guidelines for the system when installing the float switch.

The sump float switch is supplied with a 10 m cable. Should you require more than 10 metres please contact your vendor for further information.

1. Please ensure you position the sump float switch higher than the primary pump activation point contained within, as shown in Figure 5. For the FoulMax refer to Figure 6.
2. Install the sump float switch cable securely using the chamber's float bracket if present.
3. Attach the counterweight approximately 80 mm from the top of the float switch. You must separate the counterweight by removing the centre screw, once separated position the cable and put the counterweight back together ensuring the centre screw is tightened.
4. Pull the float cable through the M20 cable gland on the float bracket. Position the sump float switch higher than the primary pump activation point. Once the float has been positioned tighten the M20 gland.
5. Fix the cable into position using a cable tie to ensure the float doesn't drop down.
6. Draw the float cable through the duct to the control panel location when the system is commissioned.

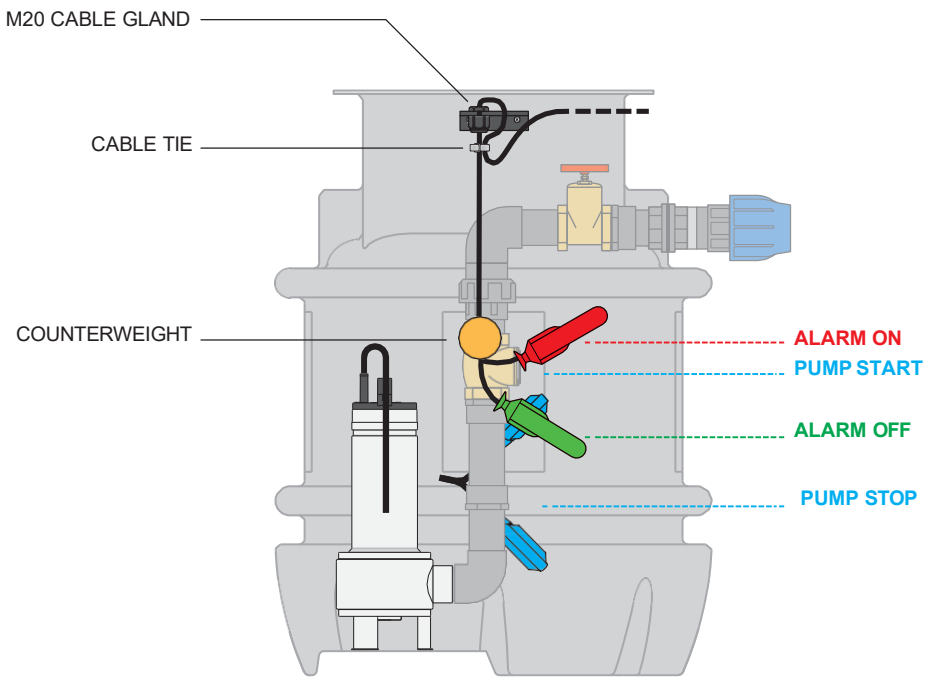


Figure 5. Mounting a sump float switch in a FoulMidi

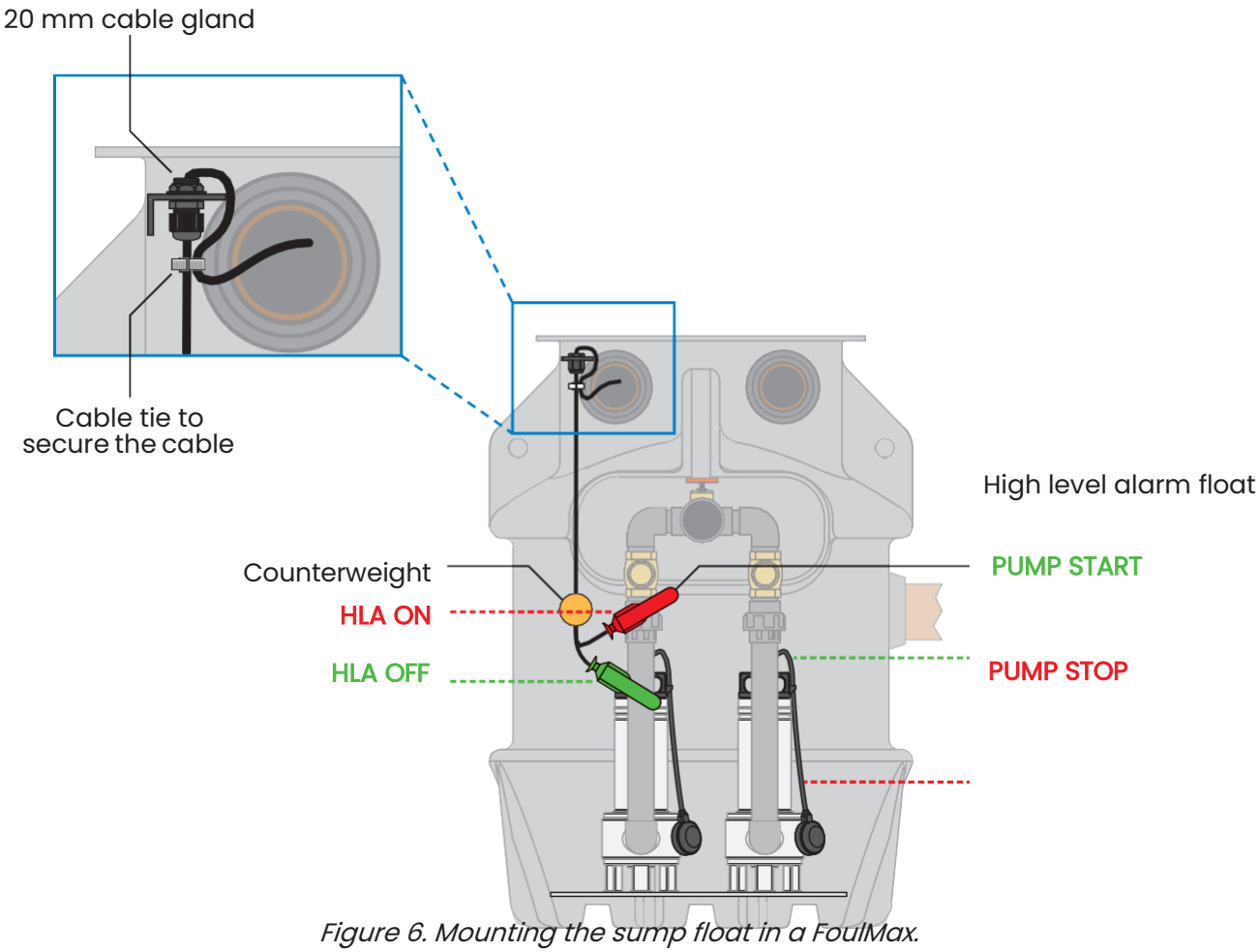


Figure 6. Mounting the sump float in a FoulMax.

2.5.2 Connecting the sump float to the AquaSafe Alarm

1. Loosen the float switch cable gland located on the underside of the AquaSafe Alarm panel, as shown in Figure 1.
2. Draw the sump float switch cable through the cable gland.
3. Connect the brown core to positive and the blue core to the negative terminal, as shown in Figure 7.
4. Ensure that the black core is isolated.

Please note that the AquaSafe Alarm panel is factory set to a **Normally Closed** contact. The advantage is that should the sump float cable become damaged and/or disconnected the alarm will activate.

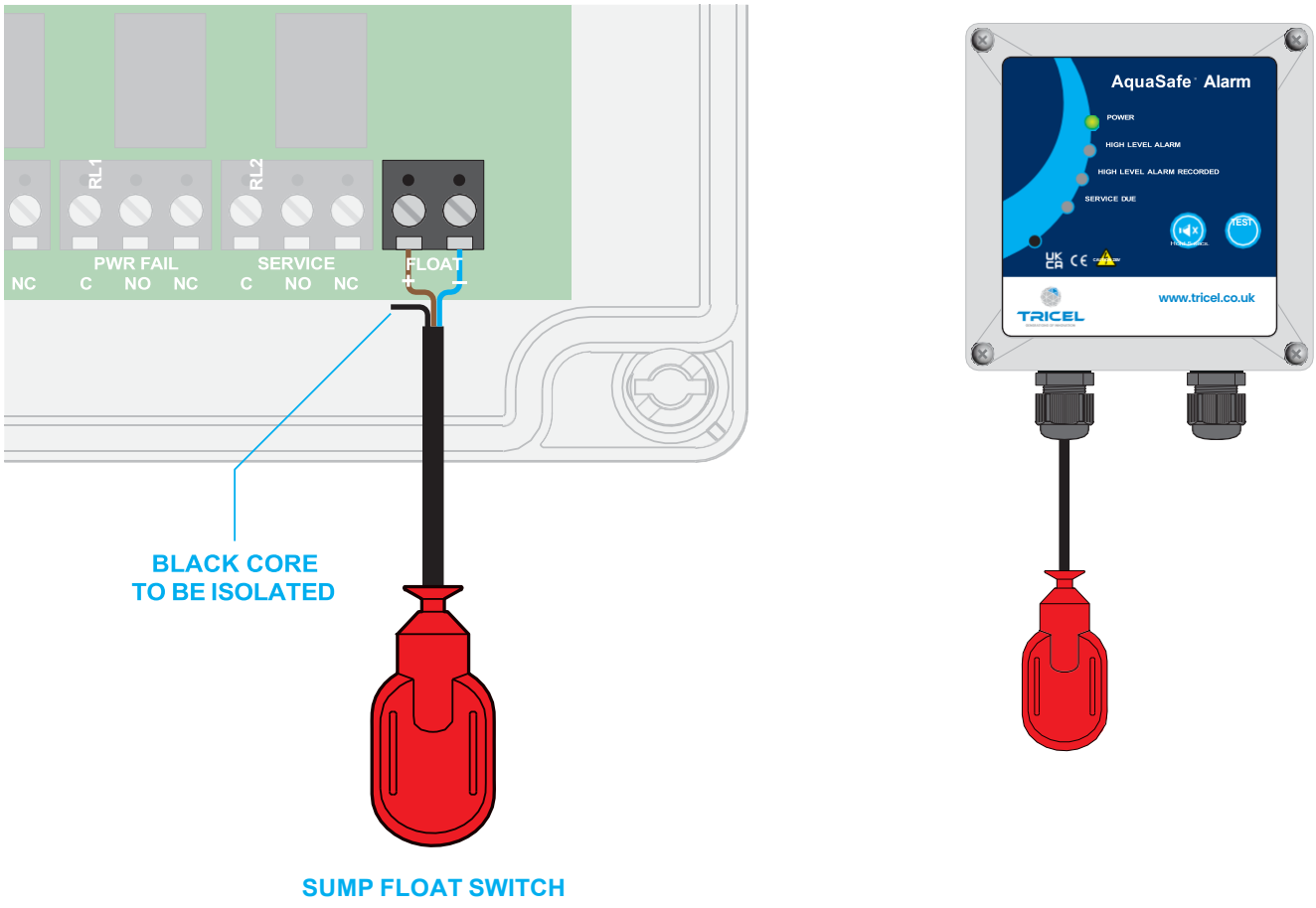


Figure 7. Connecting the sump float to the AquaSafe Alarm.

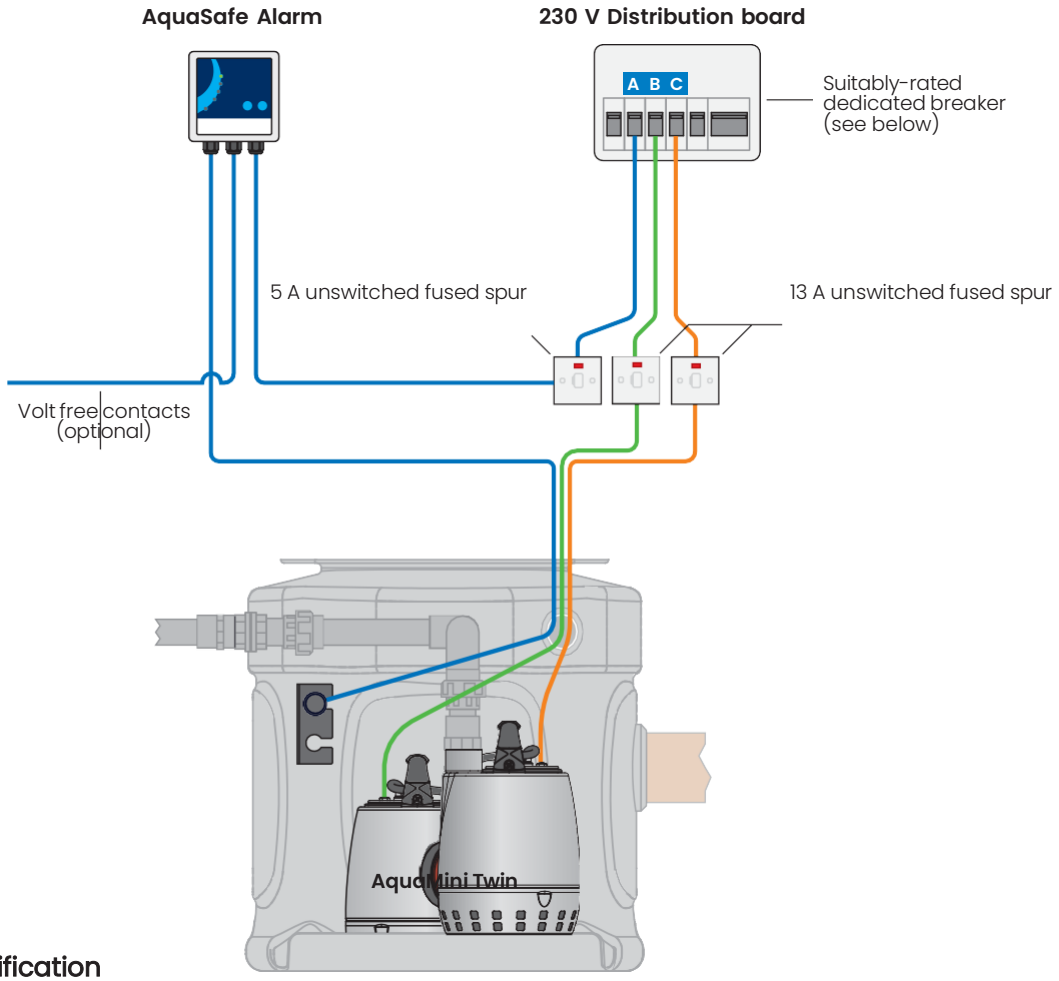
2.6 Connecting the AquaSafe Alarm to the mains electrical supply

The AquaSafe Alarm should be connected to the mains electrical supply by a qualified person in accordance with the Institute of Electrical Engineers Regulations with the latest IET wiring regulations – BS7671. Take into account all the electrical information as shown in Section 4 when installing the panel.

The AquaSafe Alarm must be powered to a clearly-labelled dedicated breaker (5 A MCB). Never power it via a ring main or radial spur.

The panel comes with a 1 m three-core mains power cable for connection to an 5 A unswitched fused spur. The unswitched fused spur should be sited adjacent to the AquaSafe Alarm panel and clearly labelled.

Isolate the connection until you are ready to test the system.



Breaker specification

Ref	Description	Breaker type	Rating
A	AquaSafe Alarm	MCB	6 A
B	GXRM-9 pump	RCBO, Type-C	10A
C	GXRM-9 pump	RCBO, Type-C	10A

Only power pumps, battery backup devices or AquaSafe Alarm via dedicated breakers.
Never power them via a ring main or radial spur.

Figure 8. Connecting the AquaSafe Alarm to mains electrical supply.

2.7 Normally open – normally closed contacts

The PL4 jumper on the circuit board is factory-set to **Normally Closed (NC)** to operate the float switch. This is the correct setting, because it will trigger the alarm if the float cable becomes damaged or comes loose.

If you need to change this to be **Normally Open (NO)**, fit the jumper so that it bridges the contacts.

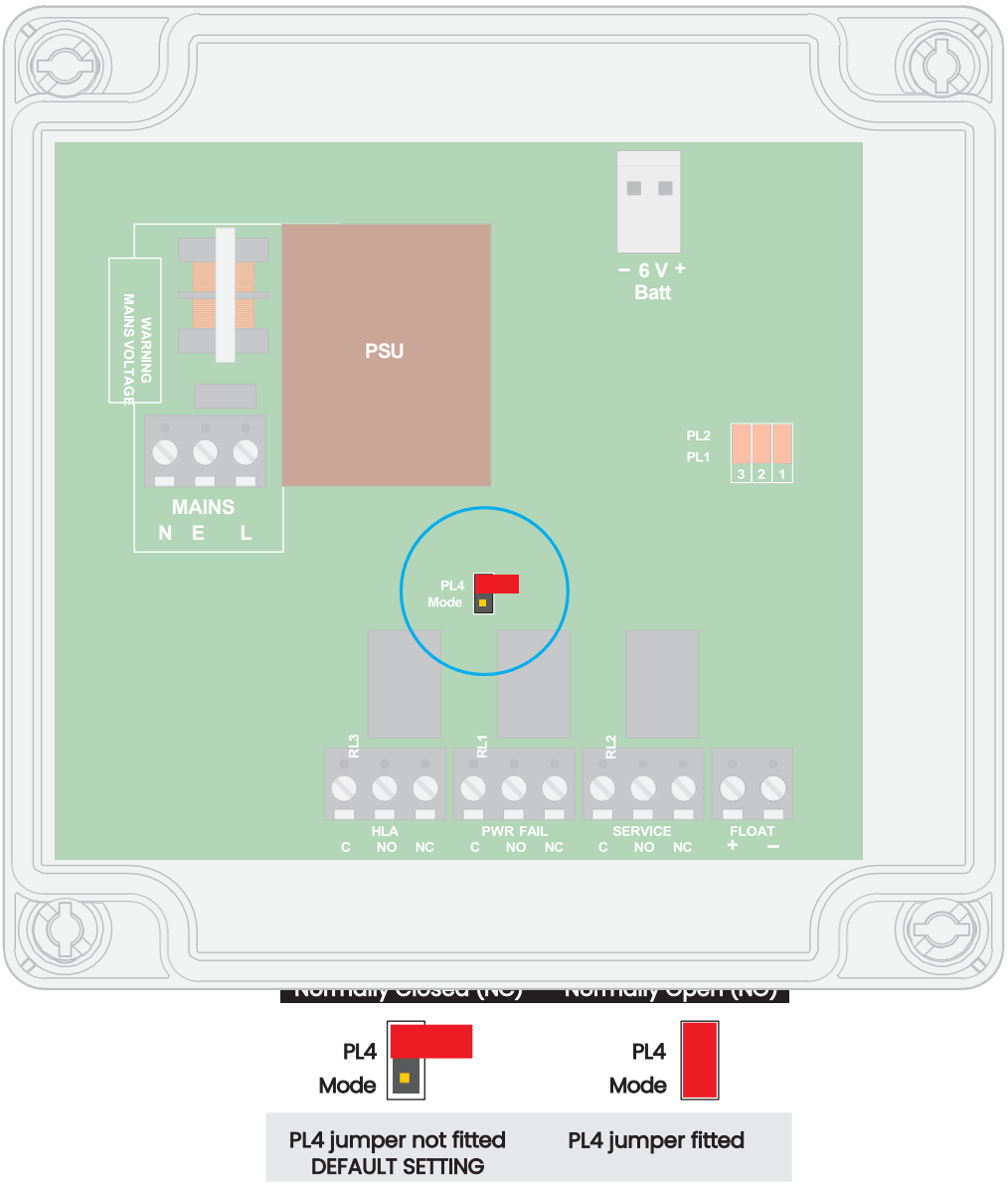


Figure 9. Jumper settings.

2.8 Volt-free contacts

The AquaSafe Alarm features three volt-free (dry) contacts for connecting it to external devices such as dial-out telemetry or a building management system (BMS). They can be configured to be Normally Open (NO) or Normally Closed (NC) to suit the requirements of the external device.

The volt-free contacts are intended for use of low voltage (SELV/ELV) circuits operating a maximum of 1 amp.

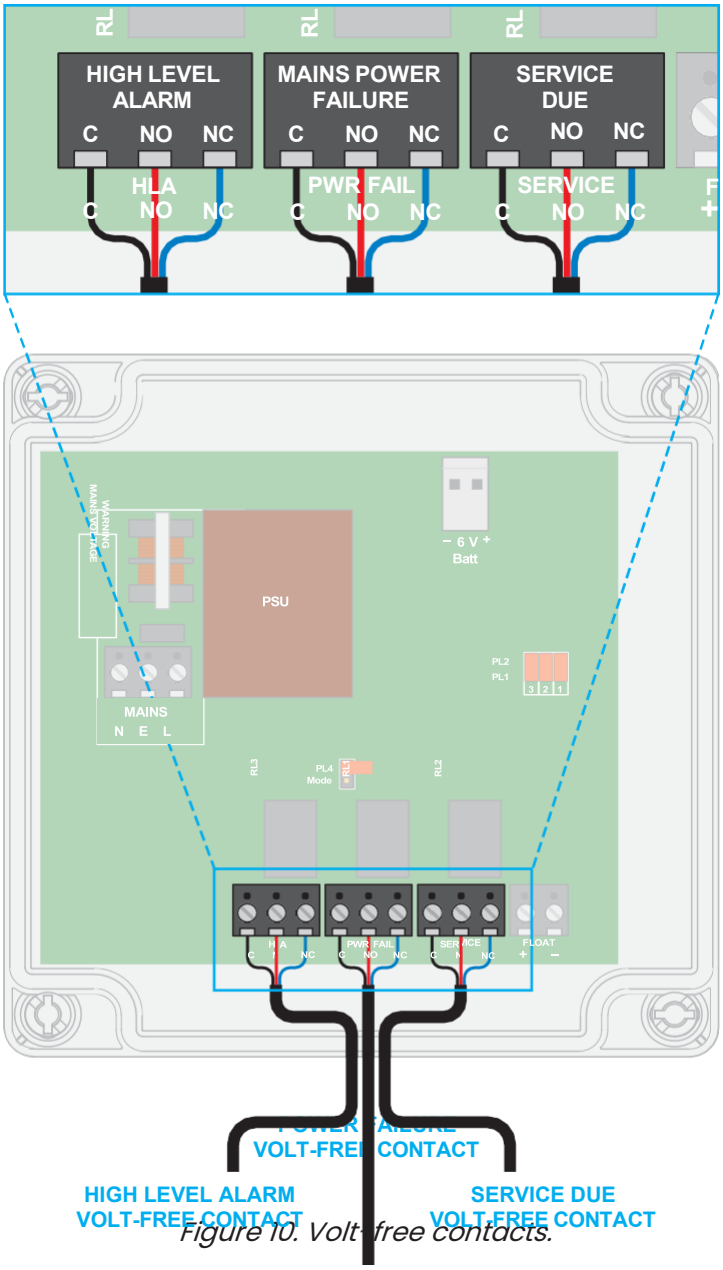


Figure 10. Volt-free contacts.

3.7.1 High level volt-free contact

This contact will send a signal to an external device such as a dial-out telemetry or building management system (BMS) if a high level situation occurs.

3.7.2 Power fail volt-free contact

This contact will send a signal to an external device such as a dial-out telemetry or building management system (BMS) if there is a removal of mains power to the AquaSafe Alarm occurs.

This relay is normally energised when mains power is applied.

3.7.3 Service due volt-free contact

This contact will send a signal to an external device such as a dial-out telemetry or building management system (BMS) when a service of the pump station is due.

3.7.4 Setting NC or NO contacts

To make a volt-free connection one core should connect to the Common (C) terminal (**Black**) and one core to either the Normally Open (NO) terminal (**Red**) or the Normally Closed (NC) (**Blue**).

The choice of NO or NC contact depends on the requirements of the receiving device.

The cable colours shown above are for illustrative purposes only. Actual core colours will depend on the cable used by the installer.

2.9 Internal battery

The AquaSafe Alarm features a a trickle-charged battery so that it can continue to monitor the pumping station during periods of mains power failure for up to 24 hours if the battery is fully-charged.

Please replace the internal battery every two years.

2.10 Installation procedure

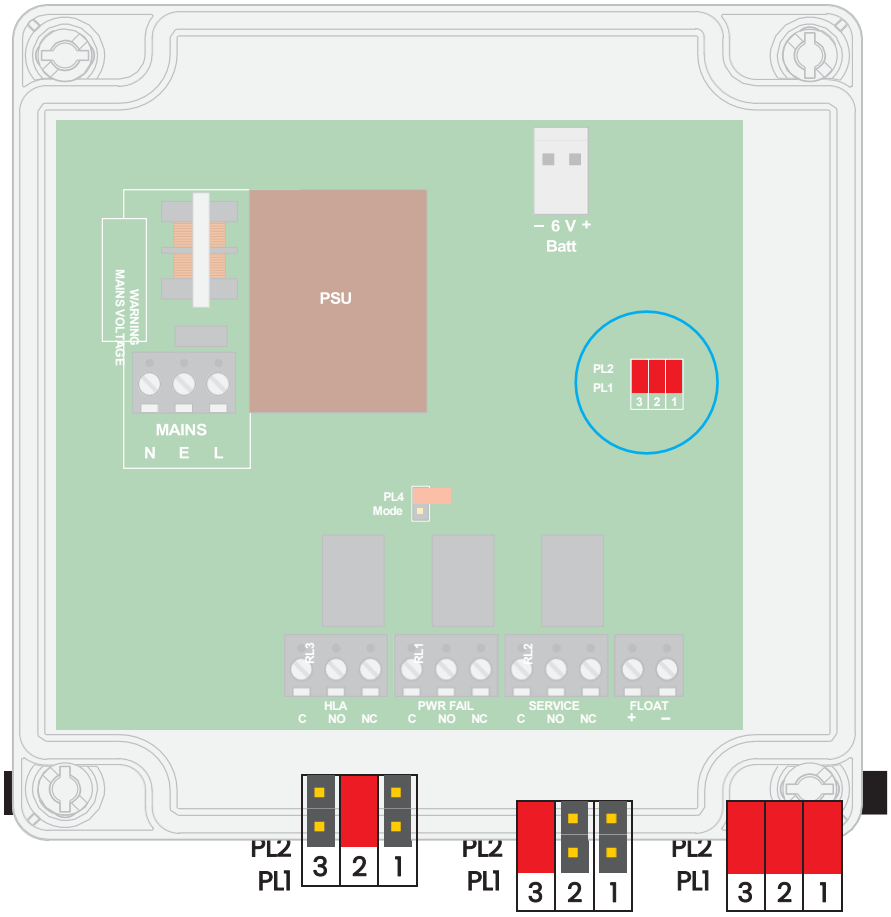
1. Rotate panel fascia fixing screws and release the cable glands to obtain access to the inside of the panel.
2. Make float connections (Section 2.4 or 2.5).
3. Make volt-free contact connection if required (Section 2.8).
4. Set the Service Interval (Section 3.1). Please see Section 11.2 for appropriate Service Visit Intervals.
4. Connect the internal battery to the PCB, the negative core will already be connected. The positive core must be attached to the positive section of the internal battery on the base of the AquaSafe Alarm panel. Once connected it will run through its starting up sequence. The green power light will flash (and the unit will beep) until the mains power supply has been connected.
5. Replace panel fascia fixing screws and tighten the cable gland before switching on from the mains power.
6. Switch on mains electrical supply. The green power light will now be permanently lit and the system is ready to monitor.
7. Remove power to the pumps contained within the chamber and allow the water level to rise until the high level float switch is activated and activates the alarm.
8. Reset the High Level Alarm Recorded alert by pressing and holding the Mute and Test buttons simultaneously for 10 seconds (Section 4.3).
9. Press the 'Test' button to simulate a high level alarm (Section 3.2).
10. Reset the Service Reminder timer by pressing and holding the Mute button and at the same time press the Test button five times (Section 4.4).

3. Operation

3.1 Setting the Service Due interval

The AquaSafe Alarm features an internal clock which counts the time remaining until your pumping system (and alarm) should be serviced. Once a service is due the Service Due alert will be triggered to remind you to book a service visit.

The service interval is factory set to yearly. To change to quarterly or half-yearly please change the jumper settings on the PCB as shown in Figure 8.



Number of beeps	3	6	12
Jumper 1	Not fitted	Fitted	Fitted
Jumper 2	Fitted	Not fitted	Fitted
Jumper 3	Not fitted	Not fitted	Fitted

Figure 12. Setting the jumpers for the service interval.

3.2 Test button

Figure 13. Test button.

- Holding the Test Button simulates a high level alarm.
- The audio sounder will beep and the High Level Alarm LED will flash.
- This will override the Audio Sounder Mute Function if it has previously been activated.
- When the Test Button is released, the High Level Alarm Recorded LED will NOT start flashing unlike a genuine high level alert.

3.3 Mute button

Figure 14. The mute button.

- To silence the Audio Sounder for seven days, hold the Mute Button for 5 seconds. The sounder will beep twice to confirm and the LED which was triggered will become lit continuously for the duration of the beeps.
- Please note the High Level Alarm, Power Fail and Service Due LEDs will stay lit until the system is fully reset.

4. Alerts

4.1 Power failure

Figure 15. The power indicator.

5.1.1 Under mains power

When the AquaSafe Alarm is connected to mains power, the Power LED glows green.

5.1.2 Mains power failure (fully-charged battery)

If mains power fails, the AquaSafe Alarm automatically switches to be powered from the internal trickle-charged battery.

The Power LED glows red continuously and the sounder beeps every two seconds.

If the Power Failure volt-free contact is connected, a signal will be sent to the remote system.

5.1.3 Low battery mode

The system will continue to operate normally under battery power until the battery's voltage reaches a critical threshold, at which point it switches to Low Battery mode

In low battery mode all four LEDs will flash sequentially with a five second pause in between.

The Time To Next Service value is saved as a precaution.

To conserve energy, volt-free contact relays are de-energised, including the Power Failure volt-free-contact relay, and the sounder is silenced.

5.1.4 Flat battery

If mains power is not restored, the battery eventually fall below a second critical threshold.

At this point the system will shut itself down.

When mains power is restored the AquaSafe Alarm will automatically reboot and the Time To Next Service value is retrieved.

4.2 High Level Alarm

Figure 16. High level alarm.

When a high level state is detected is the chamber the High Level visual indicator will light up red and the panel will beep every two seconds.

If the High Level Alarm volt-free contact is connected, a signal will be sent to the remote system.

The audible alarm can be muted by pressing the Mute button. The red LED will remain lit.

This alert is self-resetting. When the water level in the chamber falls below the de-activation point of the high level alarm float the LED will switch off and the sounder will stop beeping. The High Level Alarm Recorded will flash yellow to indicate the system has been at high level, but is currently at a safe level.

4.3 High Level Alarm Recorded alert

Figure 17. The high level alarm recorded alert.

After a high level alarm condition has returned to normal the High Level Alarm Recorded alert will trigger.

While there is no immediate problem, the cause of the high level alarm must be investigated. It could indicate a problem with the pumping system that needs to be addressed urgently.

High Level Alarm Recorded LED will flash yellow every two seconds.

It will continue flashing until the system is manually reset.

To reset, press and hold the Mute and Test buttons simultaneously for 10 seconds.

DO NOT IGNORE THIS ALERT.
It indicates there may be a fault with the pumping system. This must be investigated so that your property is protected.

4.4 Service Due alert

Figure 18. Service Due alert.

The AquaSafe Alarm features an internal clock which counts the time remaining until your pumping system (and alarm) should be serviced. Once a service is due the Service Due alert will be triggered to remind you to book a service visit.

The Service Due LED will flash red and the sounder will beep every two seconds.

5.4.1 Muting the alarm for seven days

Press and hold the MUTE button for five seconds.

The sounder will beep twice to confirm and the Service Due LED will become lit continuously for the duration of the beeps

The audible alarm will be silenced. The Service Due LED will remain lit to remind you that a service is due.

After seven days the audible alarm will sound again.

5.4.2 Resetting the Service Due timer

Press and hold the MUTE button. At the same time press the TEST button five times.

The AquaSafe Alarm will beep a number of times equal to the service interval in months eg. 3 beeps for quarterly, 6 beeps for six-monthly, 12 beeps for annually.

The Service Due LED will switch off. The Service Due alarm will sound again once the service interval has expired.

The service interval is factory-set to yearly. To change to quarterly or half-yearly please refer to Section 3.1.

DO NOT IGNORE THIS ALERT.
It is a reminder that the pumping system and AquaSafe Alarm need be serviced. Regular servicing is vital to ensure your property is protected from flooding and may be a condition of your building insurance.

5. Technical specification

5.1 Technical specifications

Power supply	230 V AC 50Hz
Rated power	<10 VA
Internal battery	6 V, 1.3 AH
Sound alarm level	85 dB
Mains power cable length	1 m
Weight	0.5 kg
Material	ABS
Colour	Grey
Operating temperature	-10°C to +40°C

5.2 Conformity

The AquaSafe Alarm conforms to:

- The Low Voltage Directive, EN61010:2010.
- The EMC Directive EN55014:2006, A1 and EN55014-2:2015.

5.3 Panel dimensions

Figure 19. Panel dimensions (mm).

5.4 Mounting plate template

If using a printed copy as a drilling guide, print at 100% enlargement and check the dimensions before drilling.

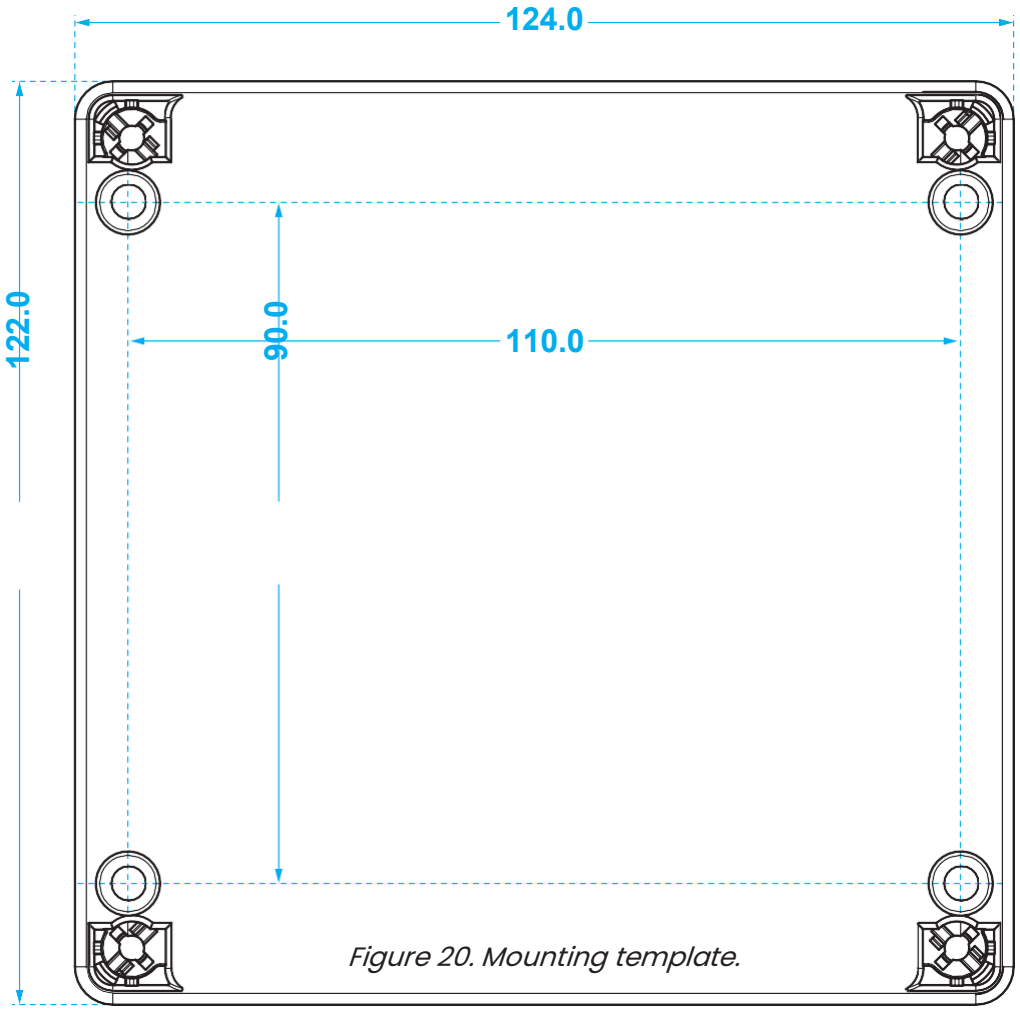


Figure 20. Mounting template.

6. Parts list

6.1 AquaSafe Alarm (Mini)

Qty	Product name
1	AquaSafe high level alarm panel
3	16mm black gland
1	20mm black gland
1	Mini float switch with 10 m cable
1	Installation and operating guide

6.2 AquaSafe Alarm (Sump)

Qty	Product name
1	AquaSafe high level alarm panel
3	16mm black gland
2	20mm black gland
1	Sump float switch with 10 mm cable
1	Counter weight (spherical, plastic)
1	Installation and operating guide

7. Maintenance

All maintenance works (inspections and services) MUST be undertaken by a technically qualified/ competent company/engineer.

Before carrying out any maintenance work the system MUST be completely disconnected from the mains power supply, and measures should be taken to prevent the system from being inadvertently switched back on.

When undertaking works within the chamber/sump suitable measures MUST to taken to ensure safe access in accordance with current safety regulations. (See Section 9 Health and Safety).

The product should be inspected quarterly, with the following being performed;

- Operate the test button – as shown in Section 3.2.
- Check High Level Alarm float switch – manually trigger the float switch to test the functionality of the high level alarm.
- Inspect all cables for signs of wear and tear.

When installed in conjunction with a pump system, please refer to the product installation and operating guidelines for pump station maintenance requirements.

We also recommend the unit is serviced regularly and all mechanical parts are checked by a qualified engineer.

Please refer to Section 11 for further information on Servicing.

8. Fault finding

Please check the product has been installed thoroughly and correctly.

Problem	Cause	Solution
High Level Alarm is constantly sounding	Damaged float cable	Repair float cable
High Level Alarm is	Faulty float switch	Replace float switch
High Level Alarm is constantly sounding	PL4 jumper in incorrect position	Remove jumper from PL4 to enable normally closed contact on the HLA float switch connection
High Level Alarm is constantly sounding	Pump has failed and station is at high level	Seek advice from a qualified electrician / pump engineer
High Level Alarm is sounding before the pump activates	Float level set incorrectly the incorrect NO/NC contact	Raise the height of the HLA float switch so it activates higher than the activation point of the primary pump
No volt-free output to external devices	Signal cable is connected to	Move signal cable to the correct contact
No power LED lit	No mains power to the system and the battery not	Check the mains power supply in from the distribution board and connect the 6V battery

9. Health and safety

Pay attention to the following regulations when installing the product or ask a qualified electrician/distributor.

9.1 Safety precautions

To minimise the risk of accidents in connection with a service or installation these rules should be followed:

- Make sure there are no poisonous gases within the work area.
- Check the explosion risk before using electric hand tools.
- Do not ignore health hazards.
- Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Make sure you have a clear path of retreat.
- Use a safety helmet, safety goggles and protective shoes.
- If working at height or in confined spaces, ensure you meet the current health and safety regulations.
- A first aid kit must be close to hand.
- No unauthorised modifications should be made.
- Operation should be in accordance with this guide.

9.2 Electrical connections

Anyone carrying out electrical work must ensure that reasonable provision has been made in the design and installation of the electrical installations in order to protect any persons who might use, maintain or alter the electrical installation of that dwelling from fire and injury, including electric shock, this should be done in accordance with the latest IET wiring regulations BS7671.

- The following works should only be done by qualified and authorized electricians.
- Safeguard Europe disclaims all responsibility for work done by untrained or/and unauthorized personnel.
- Heed operating voltage (as shown in Section 3 and additional labels).
- Take out the main fuses to isolate the mains power supply from the control system before repairs or any other works and ensure it cannot be energized again.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.
- If persons are likely to come into physical contact with the pump or pumped media, the earthed (grounded) socket must have an additional connection to an earth (ground) fault protection device (GFI). (See earthing)
- Connection only to a mains power supply installed in accordance to the local regulations. Please consider the voltage drop of long supply cables.
- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well-ventilated room above the backpressure level. Never install the control unit within the chamber.

9.3 Earthing

For safety reasons, the earth conductor should be approximately 50mm (2") longer than the phase conductors. If the motor cable is jerked loose by mistake, the earth conductor should be the last conductor to come loose from the first terminal. This applies to both ends of the cable. Ensure the correct earthing of the pump and control system.

Only qualified electricians should carry out the electrical installation in accordance with the latest IET wiring regulations BS7671. All works should be in line with the Health and Safety at Works Act 1974.

10. Product guarantee

12-month guarantee from date of sale.

11. Servicing

Our service agreements consist of planned preventive maintenance visits at an agreed frequency. As part of all service visits, a detailed service check list is utilised that covers all visual inspections, working tests, system adjustments and electrical safety checks.

11.1 Why servicing is important

All pumping stations and their ancillary equipment such as battery backup systems and alarms should be serviced at least onece per year to remains fully operational and fulfils its life expectancy.

11.2 Service visit intervals

In accordance with BS EN 12056-4 pump equipment should be maintained at intervals of:

Services per year	Building type
1	Single residential dwelling where there isn't a risk of flooding eg outside
2	• Single residential dwelling if there is a risk of flooding due to product failure (eg, basement applications) • Multiple residential dwellings
4	Commercial premises

11.3 Service agreement benefits

Service agreements consist of planned preventive maintenance visits at an agreed frequency. During each service visit a detailed schedule of works is followed that covers all visual inspections, working tests, system adjustments and electrical safety checks.

The key benefits of service agreements are:

- Validate your building insurance
- Reduce the risk of failure
- Increase equipment life expectancy
- Receive peace of mind
- Reduce running costs

Tricel Weston, Winterstoke Road, Weston-super-Mare, BS24 9AN, United Kingdom
+44 (0)1934 422 311 customerservice@tricelwater.co.uk www.tricel.co.uk