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## **WaterSwitch2**

Installation Instructions

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## QUICK USER GUIDE

### 1. Turning water ON or OFF using the WaterSwitch Valve Control

To turn the water ON, press and hold down the WATER ON button on the WaterSwitch Valve Control until you hear a beep. Release the button and the valve will open.

To turn the water OFF, press and hold down the WATER OFF button until you hear 2 beeps. Release the button and the valve will close.

### 2. Turning water ON or OFF using a wireless On/Off switch

To turn the water ON, press either the switch marked "I" on the wireless On/Off switch or the toggle switch marked "O/I". The LED will flash once, the WaterSwitch Valve Control will beep once and the valve will open.

To turn the water OFF, press either the switch marked "O" or the toggle switch marked "O/I". The LED will flash once, the WaterSwitch Valve Control will beep twice and the valve will close.

### 3. Resetting the system after a leak alarm or No Flow or Continuous Flow limits are exceeded

The Water Valve Control will shut the valve on the incoming water main or pipe if a leak detection tape is in contact with water, or if either the No Flow or Continuous Flow set times are exceeded.

1. Press the "WATER OFF" button on the Water Valve Control to mute the alarm – the valve remains closed. If the alarm continues, and you have a detection tape directly connected to the Water Valve Control, disconnect the tape then press the "WATER OFF" button to mute the alarm.
2. Identify where in the property the leak has occurred.
3. If you have wireless leak detector transmitters installed the one that has instigated the alarm will be beeping. If none of the Transmitters are beeping but you have a leak detection tape or tab directly connected to the Water Valve Control then this is where the leak is.
4. Repair the leak and dry the leak detection tape. Tapes should be unplugged and dried either naturally, or with a hairdryer on a medium setting held 1M away from the tape, or on a warm (not hot) radiator.
5. Reposition and reconnect the tape once dry.
6. Press "WATER ON" on the Water Valve Control to open the valve.

### 4. Isolating a leak and turning the water on

LeakSAFE recommend you repair all leaks before the mains water is turned back on. See important notes in Section 3.2

Where a detected leak is from an appliance e.g., a washing machine, and the leak can be contained by not using that appliance, it is possible to isolate that zone to allow the LeakSAFE system to be reset and the water turned back on.

To isolate a zone:

1. Unplug the leak detection tape protecting that zone from the Wireless Transmitter or Water Valve Control.
2. Press "WATER OFF" on the Water Valve Control.
3. Press "WATER ON" on the Water Valve Control to open the valve and restore water to the property.

#### IMPORTANT:

When the leak is repaired, REMEMBER TO DRY AND RECONNECT THE LEAK DETECTION TABS OR TAPES IN THAT AREA.

## WATERSWITCH2 COMPONENTS

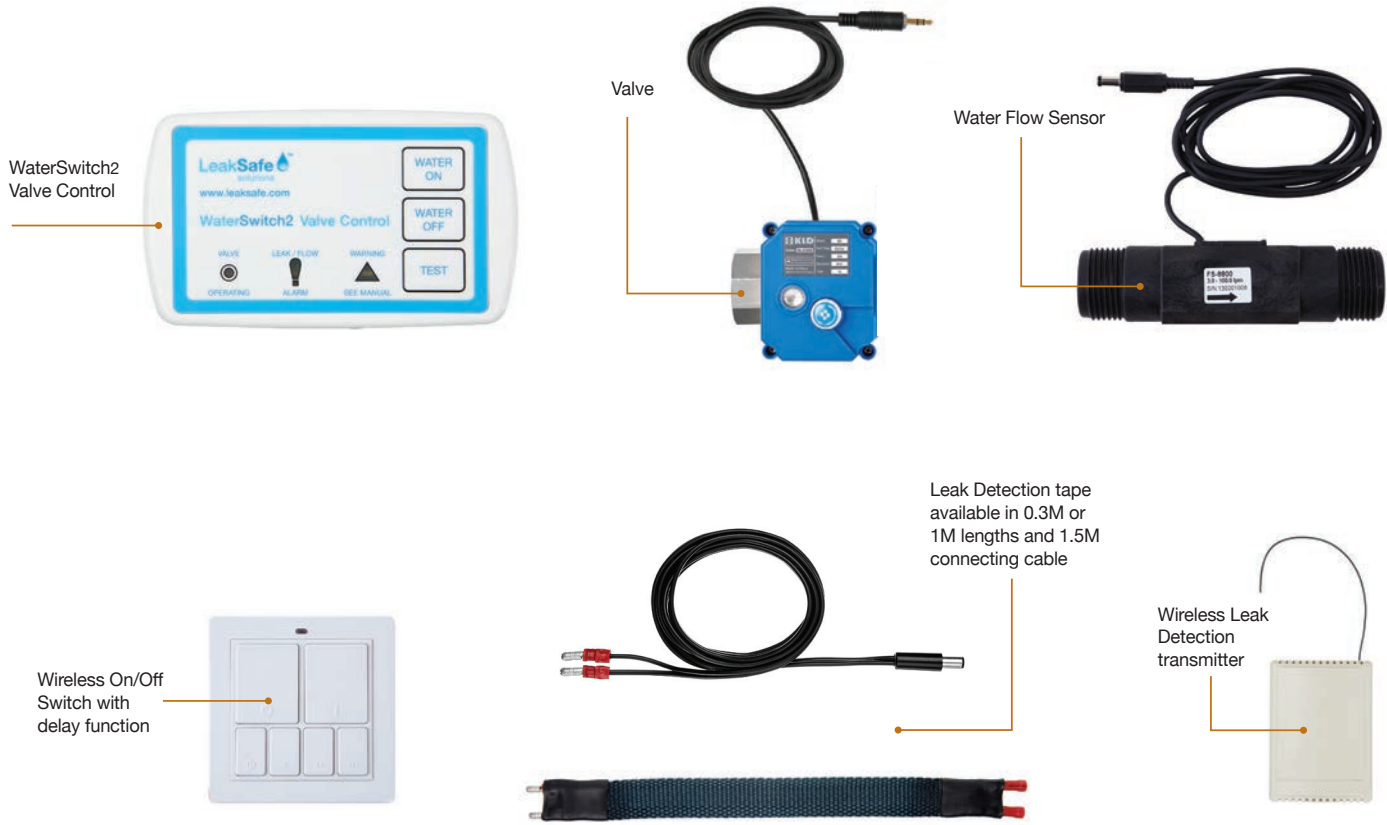
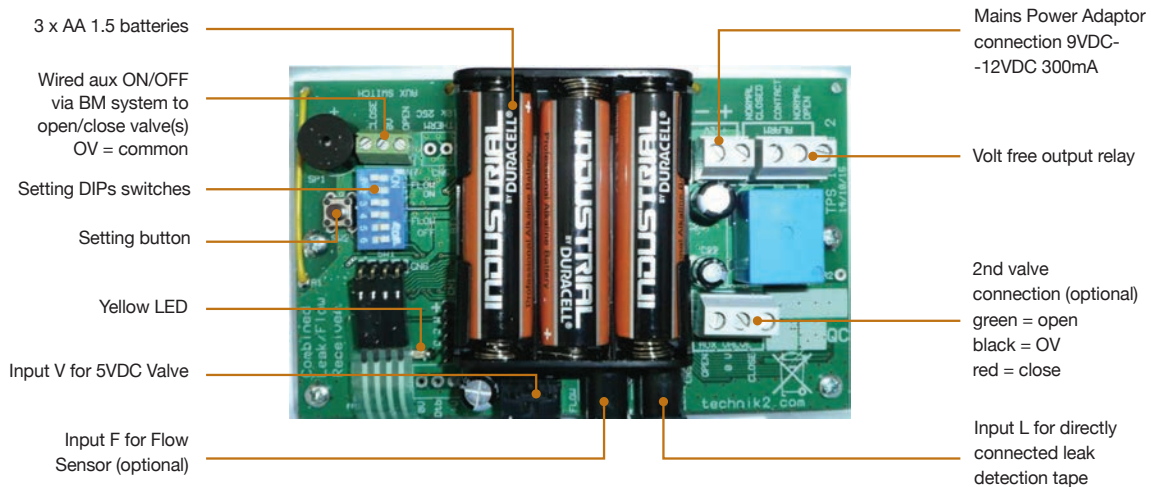


Figure 1. Water valve control, switches and connections



## 1. PROGRAMMING & TEST INSTRUCTIONS

### 1.1 Programming the WaterSwitch Valve Control

Lift and remove the catch cover on the top of the case. Press the catch underneath to release the front panel.

If the Water Valve Control is to be mains powered or any other auxiliary connections are to be made, cut out cable paths and connect to terminals as shown in Figure 1.

Install 3 x AA batteries (the Water Valve Control will beep 3 times to indicate correct installation). Plug in to mains supply if a power adaptor is being used.

Follow the programming Instructions (sections 1.2 & 1.3) and wireless tests (sections 1.5.2 & 1.5.4) before mounting the Water Valve Control in its intended position.

### 1.2 Water Valve Control – DEFAULT SETTINGS

Set Water Valve Control DEFAULT SETTINGS using the DIP switches and Setting Button on the PCB (Figure 1).

- To set AUTO CHECK THAT A VALVE IS CONNECTED set DIP 1 ON. All other DIPs OFF. If set, an alarm will sound if valve is disconnected.

DEFAULT = do not check (DIP 1 OFF).

- To set VALVE AUTO CLOSE ON MAINS POWER FAILURE (when using the optional mains power adaptor) set DIP 2 ON. All other DIPs OFF.

DEFAULT = do not close valve on mains power failure (DIP 2 OFF).

Once the DIPs are set, press and hold the Setting Button UNTIL the Yellow LED comes on and continue to hold until it flashes. Release the Setting Button. The Water Valve Control will beep twice to confirm that the settings are stored in memory.

### 1.3 Water Valve Control – FLOW OR NO FLOW VALVE AUTO CLOSE (Requires installation of a Flow Sensor).

Set using the DIP switches and Setting Button (Figure 1) and with reference to tables below.

#### SET THE ALLOWED CONTINUOUS FLOW TIME LIMIT

Set DIPs 1, 2 & 3 to set the amount of time water may flow continuously before the Valve closes

Time	DIP 1	DIP 2	DIP 3
30 minutes	0	0	0
1 hour	1	0	0
1.5 hours	0	1	0
2 hours	1	1	0
4 hours	0	0	1
6 hours	1	0	1
<b>OFF</b>	<b>0</b>	<b>1</b>	<b>1</b>
5 minute test (for engineer use)	1	1	1
0 = OFF / 1 = ON			

If set time is exceeded the Valve will close and the Water Valve Control will alarm.

FACTORY DEFAULT IF A WATER FLOW SENSOR IS FITTED = 30 MINUTES

#### SET THE ALLOWED NO FLOW TIME LIMIT

Set DIPs 4, 5 & 6 to set the time delay before the Valve closes when no water flow is detected

Time	DIP 4	DIP 5	DIP 6
6 hours	0	0	0
12 hours	1	0	0
18 hours	0	1	0
24 hours	1	1	0
36 hours	0	0	1
48 hours	1	0	1
<b>OFF</b>	<b>0</b>	<b>1</b>	<b>1</b>
5 minute test (for engineer use)	1	1	1
0 = OFF / 1 = ON			

If set time is exceeded the Valve will close but the Water Valve Control will NOT alarm.

FACTORY DEFAULT = OFF

### 1.3 (continued)

Once the DIPs are set, press and hold the Setting Button UNTIL the Yellow LED comes on and then IMMEDIATELY release the Setting Button. The Water Valve Control will beep once to confirm that the settings are stored in memory.

**DO NOT HOLD THE BUTTON ANY LONGER AS THIS WILL RESET ANY CHANGES MADE TO THE DEFAULT SETTINGS.**

Reassemble Water Valve Control.

### 1.4 Initialising the Water Valve Control and testing the Valve Open & Close functions

#### READ THESE IMPORTANT NOTES

1. The Water Valve Control operates the Motorised Valve by either pressing the WATER ON or OFF buttons or by receiving a wireless signal from a Wireless Switch or Leak Detector Transmitter. When it does, the “Valve Operating” LED on the Control flashes green for approximately 10 seconds.

WHILST THE LED IS FLASHING GREEN THE WATER VALVE CONTROL CANNOT RECEIVE ANOTHER WIRELESS SIGNAL. PRESSING THE WIRELESS SWITCH OR ON/OFF BUTTONS DURING THIS PERIOD WILL NOT ACTIVATE THE VALVE.

**NB THE “WATER ON”, “WATER OFF” AND “TEST BUTTONS (Figure 2) MUST BE HELD DOWN FOR APPROX 4 SECONDS TO OPERATE.**

Figure 2.



**WARNING: Do not insert fingers or any other object into the valve whilst it is operating.**

1. Ensure a Valve is connected to input “V” on the bottom of the Water Valve Control.
2. Press and hold down the WATER ON button until it beeps once. The green VALVE OPERATING LED will flash for 10 seconds.
3. When the VALVE OPERATING LED stops flashing, press and hold down the WATER OFF button until it beeps twice. The green VALVE OPERATING LED will flash for 10 seconds, and the valve will close.
4. Press and hold down the WATER ON button until it beeps once to re-open the valve.

## 1.5 Enrolling and testing Wireless Leak Detection Transmitter or Wireless On/Off switch

A maximum of 16 Wireless Leak Detection Transmitters and 2 Wireless On/Off switches can be enrolled on a WaterSwitch2 Water Valve Control.

### 1.5.1 Enrolling a Wireless Leak Detection Transmitter

1. Remove the top cover of the transmitter by placing the transmitter on a flat surface, holding the back plate firmly down and snapping off the cover.
2. Insert 3 x AAA batteries as shown on the battery holder, and reassemble - the transmitter will beep 3 times to confirm correct installation. Leave the cover off the transmitter whilst you complete the enrolling procedure.
3. Press the TEST button on the Water Valve Control 4 times, holding the button down until the LEDs illuminate. The first three times all 3 LEDs will illuminate, on the fourth time the yellow WARNING LED will flash to indicate the Water Valve Control is in ENROL mode. Please note that occasionally the system will enter ENROL mode after only 2 or 3 presses of the TEST button. As soon as the WARNING LED starts to flash the system is in ENROL mode and you can proceed to step 4. **NB. The TEST button needs to be held down for approximately 4 seconds to operate.**
4. Within 15 seconds of the WARNING LED starting to flash press and release the brown Setting button on the Wireless Leak Detection transmitter (Figure 3) the Transmitter will beep and the yellow WARNING LED on the Water Valve Control will stop flashing to confirm that the enrolment was successful. At the same time the Water Valve Control will alarm and close the valve. The Wireless Transmitter will also alarm.

Figure 3.



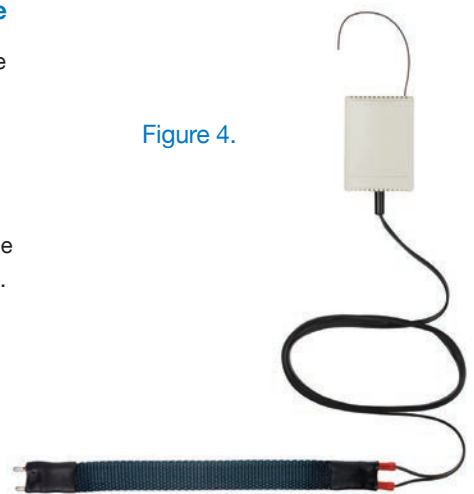
Remove one battery from the Wireless Transmitter to stop the audible alarm, then reposition the battery in the transmitter and replace the transmitter cover.

Reset the Water Valve Control (see section 1.7). This reset must be done before testing or enrolling the next wireless component.

### 1.5.2 Testing the Wireless Leak Detector Transmitter and Leak Detector Tape

1. Assemble a length of leak detection tape (see Section 2.5). Plug the Leak Detector tape and connecting cable in to the Wireless Leak Detector Transmitter. (Figure 4).
2. Check the valve is open.
3. Ensure the transmitter is at least 1 metre away from the Water Valve Control.
4. Wet the test pins at the end of the Leak Detector tape. The red LED "Leak Alarm" on the Water Valve Control will flash, the Water Valve Control will beep and the valve will close. The wireless transmitter will also emit an audible alarm.
5. Remove one battery from the Wireless Transmitter to stop the audible alarm, then reposition the battery in the transmitter and replace the transmitter cover.
6. Reset the Water Valve Control (see section 1.7).

Figure 4.



**NB. If you inadvertently wet the tape rather than its test pins, you will have to disconnect the tape from the wireless transmitter before you will be able to reset the system. Ensure the tape is dry before reconnecting or the system will immediately alarm and close the valve again. The tape can be dried naturally or by using a hairdryer on a medium setting.**

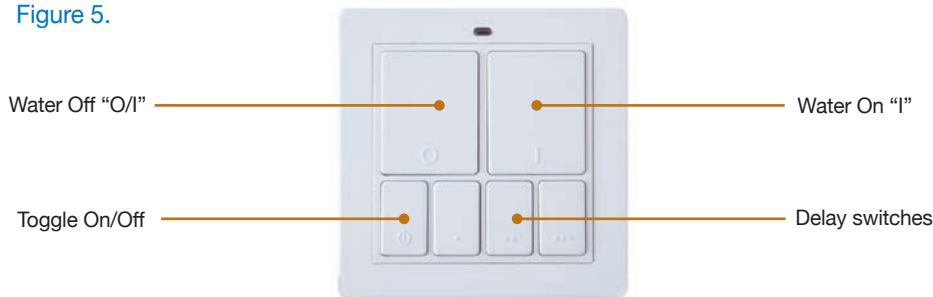
### 1.5.3 Installing batteries and enrolling a Wireless On/Off Switch

1. Install the CR2032 battery and ensure the switch on the back of the On/Off Switch is set to (O/I).
2. Ensure that the On/Off Switch is at least 1M away from the Water Valve Control.
3. Press the TEST button on the Water Valve Control 4 times, holding the button down until the LEDs illuminate. The first three times all 3 LEDs will illuminate, on the fourth time the yellow WARNING LED will flash to indicate the Water Valve Control is in ENROL mode. **NB: The TEST button needs to be held down for approx 4 seconds to operate.**

**Please note** that occasionally the system will enter ENROL mode after only 2 or 3 presses of the TEST button. As soon as the WARNING LED starts to flash the system is in ENROL mode and you can proceed to step 4.

4. Within 15 seconds of the WARNING LED starting to flash press and release the “I” button (Figure 5) on the Wireless On/Off Switch. The Water Valve Control will beep and the yellow WARNING LED will stop flashing to confirm that the enrolment was successful.

Figure 5.



### 1.5.4 Testing the Wireless On/Off Switch

1. Ensure the Switch is at least 1 metre away from the Water Valve Control, press the “O” button (Water Off) on the Switch. The Water Valve Control will beep, the “Valve Operating” green LED will flash, and the valve will close.
5. Press “I” to reopen the valve.

### 1.6 Deleting the Water Valve Control memory

This will clear ALL enrolled wireless devices – wireless leak detector transmitters and wireless On/Off switches and reset the Default Settings and Continuous Flow or No Flow settings to factory default (see sections 1.2 & 1.3).

1. Press and hold down the TEST button for approx. 15 seconds until the Water Valve Control beeps and all the LED's flash.
2. Release the TEST button.
3. The Water Valve Control memory has now been erased. You will need to re-enrol any wireless devices and reset the Default and Flow settings – sections 1.2 & 1.3

### 1.7 Resetting the Water Valve Control after a test alarm or when enrolling wireless components:

1. **Press and hold down the WATER OFF button on the Water Valve Control until it beeps 3 times. The audible alarm and LED flashing will stop but the Valve will remain closed.**
2. **Press and hold down the WATER ON button until it beeps once.**
3. **The Valve will open and the system is reset.**

## 2. INSTALLATION INSTRUCTIONS

### 2.1 Installing the Motorised Valve and Water Valve Control

Install the Motorised Valve as close to the incoming stopcock on the incoming water main as possible, on the property owner's side.

LeakSafe recommend the use of compression joints when installing the Motorised Valve although soldered, speed fit or similar couplings can be used.

Install the valve with the blue actuator positioned for easy access to the manual operating button and a clear view of the window that shows if the valve is open or closed (Figure 9). **DO NOT** hold or use the blue actuator when tightening any connections as this will damage the valve assembly.

Locate the Water Valve Control at the highest practicable point off the floor to maintain a strong wireless signal.

Using the back plate of the Water Valve Control as a template, fix two screws (not supplied) on which to hang the unit. It is important to be able to remove the Water Valve Control by lifting it off the screws.

Connect the valve to the input marked "V" on the bottom of the Water Valve Control.

### 2.2 Installing the Flow Sensor (if installed)

The Flow Sensor is usually installed after the Valve, but can be installed either before or after the valve depending on the available amount of room on the pipe. If room permits the Flow Sensor can be connected directly to the valve as shown (Figure 6).

If space is limited the sensor can be located on the pipe separately to the valve. However, it must be positioned before any tee off points and its' connecting cable must be able to reach the Water Valve Control.

It can be mounted horizontally or vertically.

**THE FLOW SENSOR MUST BE ALIGNED SO THAT THE FLOW IN THE PIPE IS IN THE SAME DIRECTION AS THE ARROW ON THE SENSOR BODY.**

Connect the Flow Switch to the input marked "F" on the bottom of the Water Valve Control.

Figure 6.



### 2.3 Installing the Wireless On/Off Switch

The Wireless On/Off Switch can be installed up to 25 metres away from the Water Valve Control. The distance over which the wireless signal will work will depend on a number of factors including building construction, position of the Water Valve Control and Wireless On/Off Switch and in some instances the effect of interference from other wireless or electronic devices.

Test the wireless signal between the Wireless On/Off Switch and the Water Valve Control before installation by temporarily positioning them in the location where they are intended and repeating the wireless signal test given in Section 1.5.4. All components should be positioned as high as possible off the ground to maximise the wireless signal.

The Wireless On/Off Switch can be screwed to a surface or a standard back box, or fixed to the wall using the double-sided adhesive fixing pads supplied. The switch should be positioned with the LED light at the top.



### Install using adhesive fixing pads

Ensure the switch is positioned where it can be removed without damaging wallpaper or other delicate surfaces.

### Install using screws

#### **N.B. Screwing the switch to an uneven wall can result in cracking the fixing plate.**

1. Ease the cover surround off the fixing plate by inserting a the blade of a small flat screwdriver between the cover surround and the transparent fixing plate along the bottom edge.
2. Press the white switch assembly forward from the back of the fixing plate.
3. Screw the fixing plate to the back box/surface using the screws supplied.
4. Press the switch assembly into the fixing plate and click into place. Press the cover plate onto the fixing plate and over the switch assembly and click into place.

## 2.4 Installing a Wireless Leak Detector Transmitter and Leak Detection tape

A Wireless Leak Detector Transmitter and Leak Detection tape can be installed up to 25 metres away from the Water Valve Control. The distance over which the wireless signal will work will depend on a number of factors including building construction, position of the Water Valve Control and Wireless Transmitter and in some instances the effect of interference from other wireless or electronic devices.

Test the wireless signal between the Wireless Leak Detector Transmitter and the Water Valve Control by temporarily positioning all the components in the location where they are intended and testing in those locations before installation (Section 1.5.2). Position the transmitter as high as possible off the ground to maximise the wireless signal.

### Installation

Fix a screw (not supplied) where the Wireless Transmitter is to be located leaving the head of the screw proud, and hang the Wireless Transmitter on it, or fix using self-adhesive fixing pads or Velcro (not supplied). Ensure that the transmitter's wire aerial is vertical and the Leak Detection tape can be positioned where needed.

## 2.5 Assembling Leak Detection tape and connecting cables:

### Tools required:

Crimping plier suitable for securing red pre-insulated terminals (bullet connectors).

**NB. If lengths of leak detection tape are being daisy chained together with interconnection cable between each length of tape, you will also require:**

- Red 0.5 - 1.5 mm<sup>2</sup> Insulated Male and Female Crimp Bullet Connectors/Terminals with a copper sleeve and flared vinyl insulation.
- 2 core audio cable.

### Assembly (see Figure 8)

1. To connect the 1.5M connection cable to a single length of leak detection tape crimp the female bullet connectors at the end of the connection cable into the male bullet connectors on the leak detection tape.

Figure 7. – Leak detection tape components



Plug the connecting cable in to Input “L” on the Water Valve Control or the input on the bottom of the Wireless Leak Detection Transmitter.

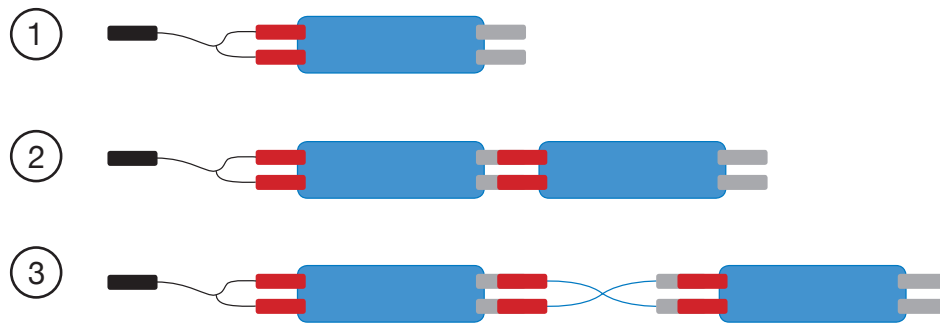
- To connect the 1.5M connection cable to two lengths of leak detection tape to make a longer length of tape, crimp the female bullet connectors at the end of the cable into the male bullet connectors on the first length of leak detection tape, then crimp the test pins of that tape in to the female bullet connectors on the next length of tape. A maximum length of 30M of tape can be connected in this way.

Connect to the wireless Leak Detection Transmitter or Water Valve Control as detailed above.

- To connect the 1.5M connection cable to two or more lengths of leak detection tape with interconnecting 2 core cable between, crimp the female bullet connectors at the end of the 1.5M cable into the male bullet connectors on the first length of leak detection tape. Cut the required length of 2 core cable and strip the insulating sheath off either end of the cable to expose the wire. Crimp 2 male bullet connectors to the wires at one end and 2 female bullet connectors at the other, then crimp the test pins on the first tape in to the female bullet connectors on the connecting cable and the male bullet connectors on the cable into the female connectors on the next length of tape. A maximum of 30M of tape and interconnecting cable can be connected in this way.

Connect to the wireless Leak Detection Transmitter or Water Valve Control as detailed above.

Figure 8.



### 3. RESETTING AND OPENING THE VALVE AFTER A LEAK ALARM

#### 3.1 Resetting the system after a leak has been repaired or No Flow or Continuous Flow limits are exceeded

The Water Valve Control will shut the valve on the incoming water main or pipe if a leak detection tape is in contact with water, or if either the No Flow or Continuous Flow set times are exceeded.

- Press the “WATER OFF” button on the Water Valve Control to mute the alarm – the valve remains closed. If the alarm continues, and you have a detection tape directly connected to the Water Valve Control, disconnect the tape then press the “WATER OFF” button on the Water Valve Control to mute the alarm.
- Identify where in the property the leak has occurred.
- If you have wireless leak detector transmitters installed the one that has instigated the alarm will be beeping. If none of the Transmitters are beeping but you have a leak detection tape or tab directly connected to the Water Valve Control then this is where the leak is.
- Repair the leak and dry the leak detection tape. Tapes should be unplugged and dried either naturally, or with a hairdryer on a medium setting held 1M away from the tape, or on a warm (not hot) radiator.
- Reposition and reconnect the tape once dry.
- Press “WATER ON” on the Water Valve Control to open the valve.

### 3.2 Isolating a leak and turning the water on

LeakSAFE recommend you repair all leaks before the mains water is turned back on.

Where a detected leak is from an appliance e.g., a washing machine, and the leak can be contained by not using that appliance, it is possible to isolate that zone to allow the LeakSAFE system to be reset and the water turned back on.

IF LEAK DETECTION IS DISABLED IN ANY PART OF A PROPERTY THAT AREA IS UNPROTECTED AND THE SYSTEM WILL NOT ALARM OR SHUT THE WATER OFF IF ANOTHER LEAK OCCURS IN THAT AREA.

THE DECISION TO DISABLE ANY PART OF A LEAKSAFE SYSTEM LIES WITH THE OCCUPIER AND LEAKSAFE ACCEPTS NO LIABILITY WHATSOEVER FOR THE CONSEQUENCES OF THAT DECISION.

To isolate a zone:

1. Unplug the leak detection tape protecting that zone from the Wireless Transmitter or Water Valve Control.
2. Press "WATER OFF" on the Water Valve Control.
3. Press "WATER ON" on the Water Valve Control to open the valve and restore water to the property.

**IMPORTANT:** When the leak is repaired, REMEMBER TO DRY AND RECONNECT THE LEAK DETECTION TAPES.

### 3.3 Manual override on the Motorised Valve

To manually operate the valve, lift and turn the operating button (Fig 9). When the valve is open the red line in the valve status window is parallel to the water pipe and at right angles when closed.

Push operating button down when finished.

Fig 9



## 4. INDICATORS AND ALARMS

### LEAK ALARM



1 red flash & 1 beep every 20 seconds  
VALVE CLOSED DUE TO MAINS POWER FAIL  
(if this option was selected)



2 red flashes & 2 beeps every 20 seconds  
VALVE CLOSED DUE TO A WATER LEAK  
BEING DETECTED



3 red flashes & 3 beeps every 20 seconds  
VALVE CLOSED DUE TO WATER CONTINUOUS FLOW  
TIMER BEING EXCEEDED

### WARNING



1 yellow flash & 1 beep every 60 seconds  
LOW BATTERIES, CHANGE BATTERIES ASAP

### VALVE OPERATING



Green flashing every second & 2 beeps  
VALVE CLOSING



Fast green flashing every 0.5 second & 1 beep  
VALVE OPENING



Solid green  
WATER VALVE CONTROL OPERATING ON MAINS  
POWER



2 yellow flashes & 2 beeps every 60 seconds  
VALVE HAS BECOME DISCONNECTED FROM WATER  
VALVE CONTROL (if this option was selected)



## Contact details

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