



WaterSwitch3

Installation Instructions

LeakSafe ™

WATERSWITCH3 COMPONENTS



WaterSwitch3 Valve Control

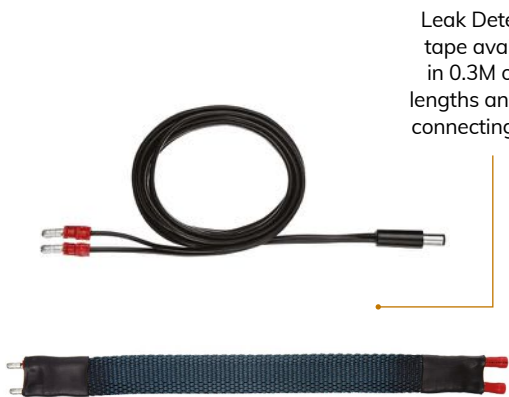


Wireless On/Off Switch with delay function



Valve

Water Flow Meter



Leak Detection tape available in 0.3M or 1M lengths and 1.5M connecting cable

Wireless Leak Detection transmitter



1. PROGRAMMING & TEST INSTRUCTIONS

1.1: Programming the WaterSwitch Valve Control

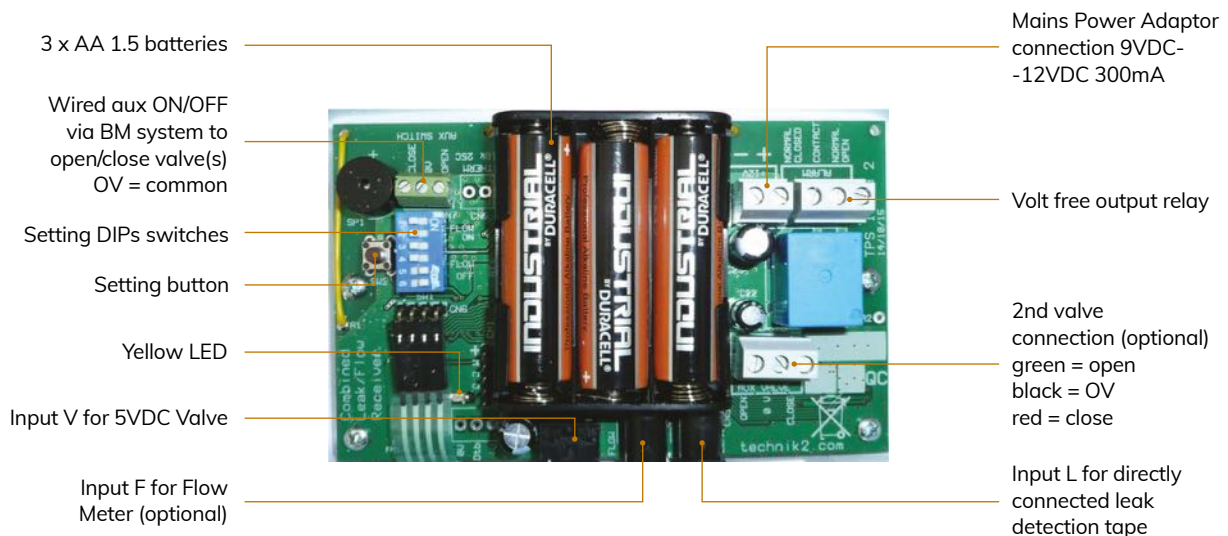
Lift and remove the catch cover on the top of the case. Press the catch underneath to release the front panel.

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.

Figure 1. Water valve control, switches and connections



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).

1. To set DO NOT AUTO CHECK THAT A VALVE IS CONNECTED set DIP 1 ON.

DEFAULT = DO AUTO CHECK (DIP 1 OFF). An alarm will sound if valve is disconnected.

2. 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 lights and you hear a beep. Release the button then immediately press and release the button again you will hear another beep and the yellow LED goes out. Return all DIPs to the OFF position.

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

Set using the DIP switches and Setting Button (Figure 1) and with reference to the 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 (Factory default)	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
OFF	0	1	1
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.

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
OFF (Factory default)	0	1	1
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.

*Valve size 20mm – 42mm: 5 minute engineer test. Valves 54mm +: 20 minute engineer test

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

Reassemble Water Valve Control.

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

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 the 'WATER ON' button it beep once. The green 'VALVE OPERATING LED' will flash for 10 seconds.
3. When the 'VALVE OPERATING LED' stops flashing, press the 'WATER OFF' button it will beep twice. The green 'VALVE OPERATING LED' will flash for 10 seconds, and the valve will close.
4. Press the 'WATER ON' button to re-open the valve.

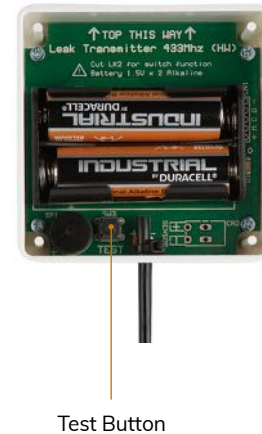
1.5 Enrolling and testing a Wireless Leak Detection Transmitter or Wireless On/Off switch

1.5.1 Enrolling a Wireless Leak Detection Transmitter

1. Remove the cover from the wireless transmitter. Leave the batteries out.
2. Press **'ENROL'** on the Water Valve Control until yellow **'WARNING LED'** lights, then press **'ENROL'** again until green **'VALVE OPERATING LED'** starts to flash.
3. Hold down the brown **'TEST'** button in the wireless transmitter (Figure 2) and install 2 x AA batteries. Release the **'TEST'** button and the red LED in the transmitter will flash and beep. You have 5 minutes to enrol the transmitter.
4. Make sure there is at least a 2M distance between the Valve Control and the Wireless Transmitter.
5. Press the **'TEST'** button in the transmitter again, it will beep, and the Water Valve Control will also start to beep.
6. Press the **'ON'** button on the Water Valve Control to enrol the two components. The transmitter will beep three times to confirm the enrolment.

Repeat the procedure for any other wireless transmitters and when all transmitters are enrolled press **'OFF'** on the Water Valve Control to exit enrol mode.

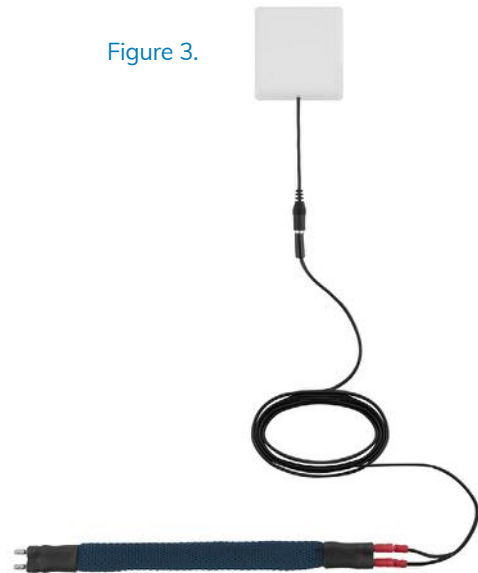
Figure 2.



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 into the Wireless Leak Detector Transmitter. (Figure 3).
2. Check the valve is open.
3. Ensure the transmitter is at least 2 metres away from the Water Valve Control.
4. Wet the test pins at the end of the Leak Detection 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 and the internal red LED will flash all the time the test pins are wet.
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: Press the **'WATER OFF'** button on the Water Valve Control and it will beep once. The audible alarm and red LED flashing will stop but the Valve will remain closed. Press the **'WATER ON'** button - it will beep once, and the Valve will open.

Figure 3.



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. Slide backplate of wireless switch down to release the catches. Insert a small flat bladed screwdriver into the openings on the left of the switch and turn gently, the cover will separate from the backplate.
2. Install the 2 x CR2032 batteries in the wireless switch.
3. Press and hold 'ENROL' on the Water Valve Control until yellow 'WARNING LED' lights, release then press 'ENROL' and release again, and the green 'VALVE OPERATING LED' will start to flash.
4. Make sure there is at least a 2M distance between the Valve Control and the Wireless Switch.
5. Press and hold the 1h button on the wireless switch until the green light on the switch flashes, release and press 1h again then press 'ON' to send the enrol signal. The Water Valve Control will start to beep. Press 'ON' on the valve control to accept the enrol command.
6. Press 'OFF' on the wireless switch to exit enrol mode on the switch and press 'OFF' on the Water Valve Control to stop enrol mode on the Control.



Wireless On/Off Switch with delay function

1.5.4 Testing the Wireless On/Off Switch

1. Ensure the wireless On/Off switch is at least 2 metres away from the Water Valve Control. Press the 'OFF' switch. The blue LED indicator on the switch will flash, the Water Valve Control will beep twice to confirm a wireless signal has been received, and the wireless switch will flash red and beep twice to confirm that the command has been acknowledged. The valve will close.
2. Press the 'ON' switch. The blue LED indicator on the switch will flash, the Water Valve Control will beep once to confirm a wireless signal has been received, and the wireless switch will flash green and beep once to confirm that the command has been acknowledged. The valve will open.

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 'OFF' button until the red 'LEAK ALARM LED' lights, release and press 'OFF' button again. The Water Valve Control will beep 3 times to confirm that it has returned to factory default settings.

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 8). **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. Do not over tighten the screws, 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 Meter (if installed)

The Flow Meter can be installed either before or after the valve depending on the available amount of room on the pipe, 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 installed horizontally or vertically but must be aligned so that the flow in the pipe is in the same direction as the arrow on the meter body.

Connect the Flow Meter to the input marked 'F' on the bottom of the Water Valve Control.

Figure 5.



2.3 Installing the Wireless On/Off Switch

The Wireless On/Off Switch must be installed at least 2 metres away from the Water Valve Control and will work up to 25 metres away. 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 practicable off the ground to maximise the wireless signal.

The Wireless On/Off Switch can be screwed to a surface, or fixed to the wall using the double-sided adhesive fixing pads supplied.

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 using self-adhesive fixing pads or Velcro. Ensure that the transmitter's connection cable hangs vertically 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 mm² Insulated Male and Female Crimp Bullet Connectors/Terminals with a copper sleeve and flared vinyl insulation.
- 2 core audio cable.

Assembly (see Figure 7)

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.

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

2. 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.

3. 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.

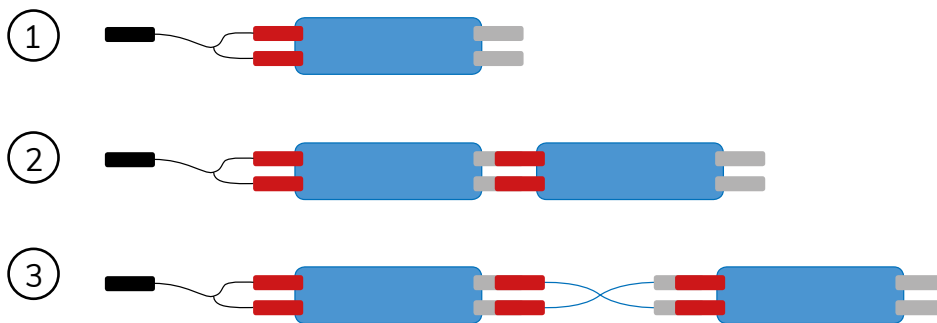
Connect to the wireless Leak Detection Transmitter or Water Valve Control as detailed above.

Figure 6.

Leak detection tape components



Figure 7.



3. RESETTING AND OPENING THE VALVE AFTER A LEAK ALARM

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 the No Flow or Continuous Flow set times are exceeded.

3.1 Resetting the system after a leak has been repaired or Continuous Flow limits 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 on the Water Valve Control 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.

3.2 Resetting the system after a No Flow limit is exceeded

If the valve has closed because the No Flow limit is exceeded press the **'WATER ON'** button on the Water Valve Control or wireless On/Off switch to open the valve and reinstate the water.

3.3 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 ZONE IS UNPROTECTED. 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.

3.4 Manual override on the Motorised Valve





To manually operate the valve, lift and turn the operating button (Figure 8). 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.






4. INDICATORS AND ALARMS

LEAK ALARM

-  Rapid beeping for 15 seconds then 1 red flash & 1 beep every 60 seconds
VALVE CLOSED DUE TO MAINS POWER FAIL (if this option was selected)
-  Rapid beeping for 15 seconds then 2 red flashes & 2 beeps every 60 seconds
VALVE CLOSED DUE TO A WATER LEAK BEING DETECTED
-  Rapid beeping for 15 seconds then 3 red flashes & 3 beeps every 60 seconds
VALVE CLOSED DUE TO WATER CONTINUOUS FLOW TIMER BEING EXCEEDED
-  3 red flashes & no beeps every 15 seconds
VALVE CLOSED DUE TO NO FLOW TIMER BEING EXCEEDED

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

WARNING

-  1 orange flash & beep every 60 seconds
LOW BATTERIES, CHANGE BATTERIES ASAP
-  4 orange flashes & 4 beeps every 60 seconds
VALVE HAS BECOME DISCONNECTED FROM WATER VALVE CONTROL (if this option was selected)

Support and FAQ's are available to view or download at www.leaksafe.com/support

QUICK USER GUIDE

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

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

To turn the water 'OFF', press the 'WATER OFF' button you will hear 2 beeps, and the valve will close.

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

To turn the water ON

Press the 'ON' switch. The blue LED indicator on the switch will flash, the Water Valve Control will beep once to confirm a wireless signal has been received, and the wireless switch will flash green and beep once to confirm that the command has been acknowledged. The valve will open.

Turning the water OFF

Press the 'OFF' switch. The blue LED indicator on the switch will flash, the Water Valve Control will beep twice to confirm a wireless signal has been received, and the wireless switch will flash red and beep twice to confirm that the command has been acknowledged. The valve will close.

3. Resetting the system after a leak alarm 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 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 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.

4. Resetting the system after a No Flow limit is exceeded

If the valve has closed because the No Flow limit is exceeded press the 'WATER ON' button on the Water Valve Control or wireless On/Off switch to open the valve and reinstate the water.

5. 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 3.3

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.



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