Model AT302

Installation and Owners Manual

The installing Plumber and the User MUST read this manual before use, to ensure they understand the installation, operation, and service requirements of the system.

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1. Introduction and how it works

The AquaTrip is a programmable electro-mechanical Water Trip Switch. It monitors water flow into the property and is able to shut off the water automatically in the event of a leak, a cracked pipe, a tap or faucet left running, a leaky toilet cistern or some other plumbing failure. It can detect very low water flow, and is more sensitive than most water meters. It consists of a Control Panel wirelessly connected to a Control Box, connected by a cable to a Flow Sensor, with an integrated Shutoff Valve.

The System *works by measuring water flow over time*, and is equipped with a Flow Sensor linked to a Timer. You must program the **Flow Time** setting on the AquaTrip with the longest period of time you think water may flow continuously on the property (without a break in flow), during normal use. This Flow Time can be set from 1 minute to 3 hours. ***The System will shut off the water if it sees continuous water flow for longer than the Flow Time that you have programmed into it*.**

For example: If you set the Flow Time to 30 minutes and the water flows continuously for more than 30 minutes, the System will trip and shut off the water supply.

As long as all water flow stops at some point within the 30 minutes, the Flow Sensor timer is reset. The timer then restarts from zero when the water flow resumes.

> ⚠ ***WARNING - Before you operate or program the System, read all the warnings in this manual. If you do not understand the warnings, please contact your plumber for advice or contact - info@aquatrip.com***

In order for the System to respond as quickly as possible to a leak, it has multiple modes which allow for variable Flow Times for different times of the day and or night. These can be manually or automatically activated if you are going to be away from home, or used to enhance over night detection while everyone is asleep.

AquaTrip cannot prevent leaks occurring, but it may alert you to the existence of a leak once the Flow Time has been exceeded. It is up to you to program these Flow Times to a duration which will suit your normal water usage. It is best to start with shorter times, as the system will then be able to indicate a leak or inadvertent use as quickly as possible after it occurs. You can change the Flow Time settings at any time.

Flow Sensor and Shutoff Valve | **Control Box** | **Control Panel**

What to do if the water turns OFF ?

To turn the water back on, press the **RESET WATER** button on the Control Panel. The water will turn on within 15 to 30 seconds. If the water does NOT turn back on, or the Control Panel does not respond for some reason, you can always turn the water on manually by pressing the blue Control Button on the underside of the Control Box for > THREE seconds, OR, using the Emergency Manual Override procedure explained in Section 10. If this does not work, *check the local Council mains water supply in your area has not been turned off.*

If your AquaTrip turns off the water, the Control Panel will emit a beep and the display will flash every 5 minutes. (To ensure peaceful sleep, the Panel will not beep between 10pm and 6am).

You must look for any obvious leaks to identify the cause of the 'Trip' before turning the water back on. If none are evident, turn the water on and look for a less evident cause.

2. Installation Preparation and Warning Precautions - READ CAREFULLY

This Leak Detection System must be installed by a licensed plumber according to Local Government Building, Plumbing and Water Utility Supply regulations. Local government approvals may be required.

WARNING ⚠ **Fire Suppression Lines** - Do not install the system on any Fire Suppression Supply lines. If a Fire Suppression system is present, the Shutoff Valve must be installed downstream of the supply lines to that system, so that it has no influence on the water supply to the Fire Suppression system.

Before installing the system, determine if any of the following devices are installed on the property:-

1. Irrigation System **2.** Solar Hot Water System **3.** Water Softener or Humidifier

4. Icemaker **5.** Automatic Pool Filler **6.** Reverse Osmosis Filtration System

Check for any other appliance that may use water in an **automated or sporadic manner**. Take into account the water usage requirements of these appliances when programming the system. Ensure that you program the Flow Time settings so that there is no interference to the normal operating requirements of these systems. Alternatively, install the system downstream of these systems. If you do this, they will **not** be monitored by the Leak Detection System.

WARNING ⚠ **Freezing Conditions** - Do not fit the Shutoff Valve in an area where it is likely be exposed to freezing conditions. The system will not function below freezing. If conditions are likely to drop to zero, only the metal valve version of this product can be installed, and it must be insulated to prevent it freezing. The PVC valve cannot be installed in zero or sub zero temperatures.

WARNING ⚠ **Pressure Rating** - Do a pressure test on the main incoming supply to the property. Check that the pressure does not exceed the pressure rating of the Shutoff Valve version that you are installing. If the pressure is within 80% of the maximum rated pressure of the valve, then a Pressure Reduction Valve (PRV) must be fitted. This is to allow for surges in pressure in the mains supply which may then exceed the maximum rated pressure of the Shutoff Valve. The valves respective pressure ratings can be found under the Technical Specifications in Section 17, Pg. 26.

WARNING ⚠ **Pumped Supply** - If the water supply to the property is pressurised using a pump, the system may not be suitable for the application. If the pump has a pressure vessel to maintain a constant pressure in the pipes, it will work in most circumstances. However if the pump has no pressure vessel the system will not be able to detect smaller leaks, as the pressure drop from a small leak may be insufficient to cause the pump to come on, and maintain the pressure in the system (***See Section 3 step 5 for Pump Setup***).

WARNING ⚠ **Backflow Prevention** - If there is backflow down the pipe from the house to the Flow Sensor, due to very long distance piping and/or large diameter piping or undulating terrain or other circumstances creating reverse flow and pressure, then it may be necessary to install a backflow prevention valve after the Shutoff Valve. This is because the backflow may prevent the Flow Sensor from detecting the continuous flow caused by a leak. In addition, it may also be necessary to engage the Pump Mode setting to compensate for the ebb and flow in the pipe (***See Section 3, Pg. 4, step 5 for Pump Setup***).

WARNING ⚠ **Hard Water** - In hard water areas where calcification is a problem with plumbing fixtures, this could inhibit functionality of the system. Therefore the user is advised to increase scheduled servicing and system check procedures to compensate for this, as required by the severity of the water hardness. **NOTE:** If a Water Softener or Humidifier is fitted, if possible, install the Shutoff Valve downstream.

Always install the Shutoff Valve and Control Box in a location easily accessible for maintenance. There must be a manual stop cock upstream of its installation point, so the system can be isolated from the incoming supply.

In installations using rain water tanks, bore water or water supplied in some rural areas, we would recommend installing an inline filter (if not already fitted) on the incoming main line to minimise debris entering the system.

WARNING ⚠ Before programming and using the system, read and take account of all the **System Use Warnings** in **Section 13**, **Pg. 23.** Make sure you understand the **Maintenance and Service Requirements** in **Section 15**. Be certain that you understand **how to override the System in an Emergency**, **see Section 10**, **Pg.11**

3. Commissioning the System BEFORE installation.

The Control Panel and Control Box communicate with each other using a radio signal. Before installation you must power up both devices in the sequence described below and they will automatically establish the radio link.

STEP 1 - Remove the lid from the Control Box by squeezing the lid lock tabs and then slide out the circuit board, noting the orientation of the lid. Get all the AA batteries ready and only install **ONE of them into the battery holder**.

STEP 2 - Remove the battery cover from the Control Panel and install the 3 x AA batteries, noting their polarity. The message "***Add batteries to Control Box Now***" will appear on the Control Panel display. Now insert the remaining battery into the battery holder on the Control Box circuit board. The Control Panel will show "***Busy searching for Control Box***", and the Control Box LED will blink GREEN whilst searching. Within about 10 seconds the Control Panel will beep and display the message "***Link to Control Box successful"*** *and the LED will blink RED once as it links*. The two devices are now linked and synchronised.

If for some reason they do not link the first time and go into a search mode, remove both sets of batteries, press the button on the Control Box for 10 seconds and the OK button on the Control Panel for 10 seconds. This powers them down properly. Now repeat the process in the same order as in Step 2. ***If this fails, refer to Section 8 on the Radio Communications System.***

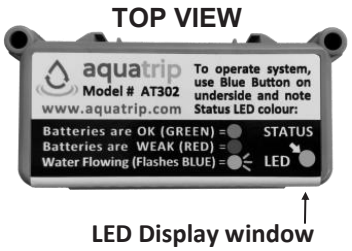
STEP 3 - The display will now say - "***Set the Clock - use OK to start"***. Press the OK button and now set the correct DAY and TIME (if you miss this step, set the clock later using the OK MENU button - Pg. 18). **You must set the clock before completion. If the clock is wrong, system features will not function correctly.**

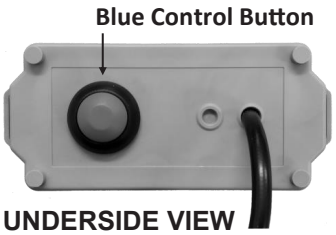
STEP 4 - **MOST IMPORTANT** - Close the Control Box by carefully sliding the circuit board into the grooves on the inside of the lid. The board will ONLY slide in all the way when inserted into the CORRECT side of the box. It is IMPERATIVE that the lid latches click shut and engage properly with the lid, as any moisture ingress can destroy your device. *This is NOT covered under warranty should it occur!*

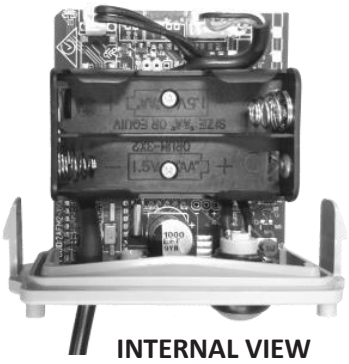
STEP 5 - After installation, you will need to set up all the Flow Times and Peak Flow periods and other settings to suit the users requirements. If you do not change any of these settings then the factory default settings will apply.

CONTROL PANEL

CONTROL BOX

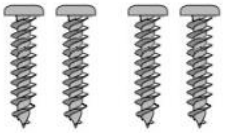






Service Plug

Batteries x5



Mounting Screws

SPECIAL NOTE - FOR PRESSURE PUMP WATER SUPPLIES

If you are connecting to a water supply that is supplied by a pressure pump with NO pressure tank or air tank to maintain the pressure in the line, ***then you need to enable PUMP mode.***

To do this, remove one battery from the Control Panel, hold down the OK MENU button and simultaneously re-insert the battery. Now look at the LCD display.

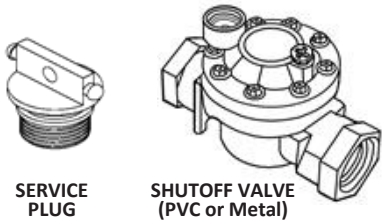
Two optional menus will appear consecutively:-

1. **Pump Mode** - Use the arrow buttons to change to ON then press OK to save
2. **Automatic Reset** - Leave at the default setting of NO and press OK to save

Automatic Reset - *The Auto Reset function only operates when the Exclusion Period function is being utilised*. This function is designed for public washrooms or commercial applications, and it allows the system to automatically turn the water back on, if it has tripped. While the Exclusion Period is active, all water use is ignored. Outside of the Exclusion Period, if a leak is detected the water will shut off. However, if Auto Reset is turned ON, when the next Exclusion Period begins, even if the leak is still present, the water will automatically be turned back on again so the facility can be used.

4. Shutoff Valve Installation

The Shutoff Valve may be supplied with the Flow Sensor screwed into place. The Flow Sensor is connected by a cable to the Control Box. The Shutoff Valve may be **PVC or Metal** depending on the model version. If fitting the PVC valve version try to use PVC fittings. If using metal fittings with PVC valves, take extra care not to overtighten them.



SERVICE PLUG — SHUTOFF VALVE (PVC or Metal)

Install the Shutoff Valve on the incoming main COLD water line, AFTER the Mains shut off valve, water meter and fire suppression system (if fitted). This allows the system to monitor as much of the property's plumbing as possible.

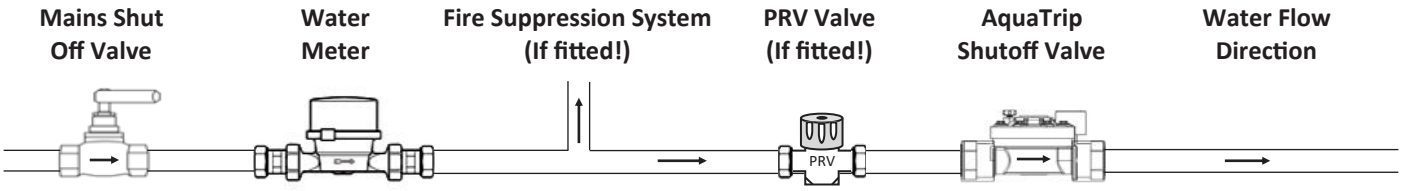
After installation is complete, place the Service Plug in its bag for protection and attach the bag to the Flow Sensor.

WARNING ⚠ **The Shutoff Valve is directional and the water flow direction must match the direction of the arrow stamped on the valve, else the system will not function. DO NOT install the valve in Hot Water Lines. The maximum water operating temperature is 50 °C or 122 °F.**

Horizontal Pipe Installations

The Shutoff Valve must preferably be mounted horizontally in line on the incoming pipe. **This is because the Flow Sensor must always be upright in a vertical plane.** If the installation is in a horizontal plane, the parts will generally be arranged as per Diagram A. The system must be installed according to local government plumbing and building regulation requirements, and the installer must take into account the plumbing and appliances already at the installation, which may have a bearing on the functionality of the system and its interaction with those appliances.

Diagram A **Typical Horizontal Installation format (Example only)**



Vertical Pipe Installations

If the incoming pipe runs vertically, e.g. coming up through the floor from under the house slab or in the basement, the Shutoff Valve may be mounted vertically in line on that pipe, BUT, if this is the case, you **MUST** fit the optional **Right Angle Adapter (Part # RA90)** see Diagram B alongside, before you screw the Control Box into the Shutoff Valve. **(*See Section 5, Pg. 6 of this manual for vertical pipe installations.)***

Diagram B

 # RA90 Right Angle Adapter

NOTE: Whether the Shutoff Valve is mounted horizontally or vertically, the Flow Sensor MUST ALWAYS sit vertically or the system will NOT function.

External or Below Ground Installations

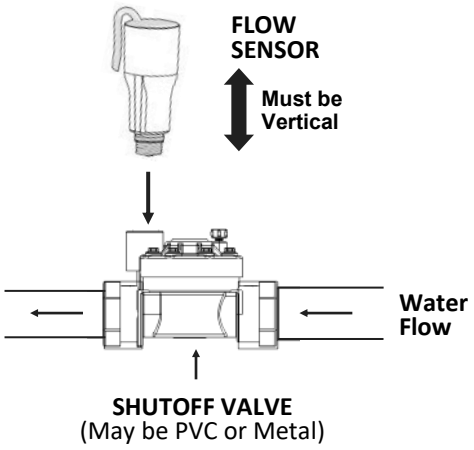
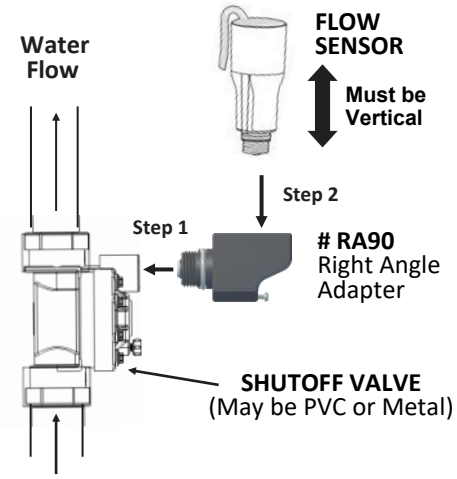
If it is necessary to install the Shutoff Valve outside or underground, install a suitable **ground box** or **valve box** to protect the system from the elements. Do not leave it exposed out in the open. The Flow Sensor is fully waterproof and can be immersed in water if required. If it is mounted outside in below zero temperatures, make sure the ground box is **fully insulated** to prevent it freezing. The system cannot operate below freezing temperatures and may fail.

WARNING ⚠ **If it is likely that the system may be exposed to zero or sub zero temperatures, you must use the Metal Shutoff Valve only, and it must be insulated to prevent it freezing. DO NOT FIT the PVC Valve version in an installation where it may be exposed to freezing temperatures, it may fail.**

If mounted underground, make sure the underside of the ground box lid has at least 5cm or 2" clearance above the TOP of the Flow Sensor, when the lid is replaced on the ground box. This is to prevent damage to the Flow Sensor if the lid is forced down by some impact to it.

5. The Flow Sensor

The Flow Sensor may be supplied already screwed into the Shutoff Valve. It is designed to be mounted on a horizontal pipe. **The Flow Sensor must always be in a VERTICAL orientation**. If you need to mount the valve on a pipe running vertically, you will need to unscrew the Flow Sensor and install optional part # RA90 right angle adapter, into the valve, and then screw the Flow Sensor into the RA90. Note the Flow Sensor seals via an O Ring. **IT IS NOT A COMPRESSION FITTING SO DO NOT OVERTIGHTEN IT PAST THE POINT WHERE YOU FEEL IT STOP. TAKE GREAT CARE TO NEVER OVERTIGHTEN THE FLOW SENSOR WHEN SCREWING IT INTO THE VALVE, YOU COULD DAMAGE OF FRACTURE IT.**

Horizontal Installation	Vertical Installation
	The Flow Sensor seals using an O-ring, it is not a compression fitting. Never use PTFE tape on the Flow Sensor or RA90 threads (if fitted). If the Shutoff Valve is mounted Vertically you must install the optional Right Angle Adapter (Part # RA90) so the Flow Sensor is still sitting in a vertical plane. ***Follow the instructions supplied with the RA90.*** 

6. Mounting the Control Box

The Control Box is connected to the Flow Sensor via a 2 metre waterproof cable. This cable can be extended by a further 6m or more if required (optional Accessory # **CBL-SOL6**). Mount the Control Box securely, in a location where the radio signal can best reach the Control Panel located inside the building, and can also be easily accessed for servicing - See installation options below and on the next page.

While the Control Box is waterproof it must always be mounted with the lid and button facing downward to minimise the chance of water ingress.

ABOVE GROUND INSTALLATION OPTIONS (The best option for maximum radio range)

1. Using the supplied cable tie, the Control Box can be attached to the pipe work after the Valve
   OR
2. It can be mounted on a nearby fence post with the provided screws or Cable Tie. Take care to protect or bury the cable running from the Flow Sensor to the Control Box to avoid it being damaged
   OR
3. It can be fitted to a pole or garden stake pressed into the ground, using the screws or cable tie provided. If using this method, ensure it is not in a location where it can be damaged.

BELOW GROUND INSTALLATION OPTIONS (Ensure the Control Box is close to the surface)

1. If the Shutoff Valve is mounted underground in a valve box, always try to mount the Control Box to the wall of the valve box or underside of the lid, using the short screws or cable ties provided OR
2. By drilling a hole through a supporting web on the underside of the valve box lid, and cable tying the box to the **underside** of the lid.
3. It is preferable to try to get the Control Box out into the open air above ground to maximise the radio reception.

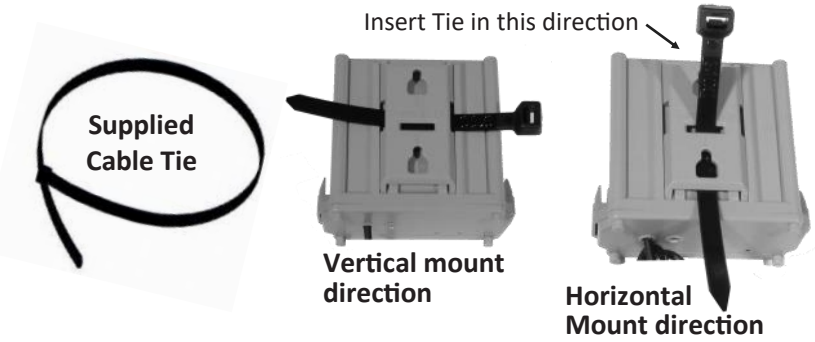
Possible Control Box installation options

There are many possibilities for the installation of the Shutoff Valve, and the mounting of the Control Box, and this is very dependent on the layout of the water supply to the property. For maximum effectiveness, the Shutoff Valve should be fitted as close to the Water Meter or Main Shutoff Valve as possible. This way, all of the underground piping is protected against leaks. The valve can however, be fitted anywhere on the incoming water main supply.

Some water mains and their meters are fully underground, and some are raised above ground. Below are some suggestions as to how the Control Box may be mounted :-

Control Box (35mm)

Use the supplied Cable Tie in the following fashion to mount the Control Box to your chosen location. You may need to slide the mounting bracket onto the Control box. **NOTE**: *The bracket can slide on in both directions. IF you wish to use the Screw Mount keyholes, make SURE you slide the bracket on the correct way around!*

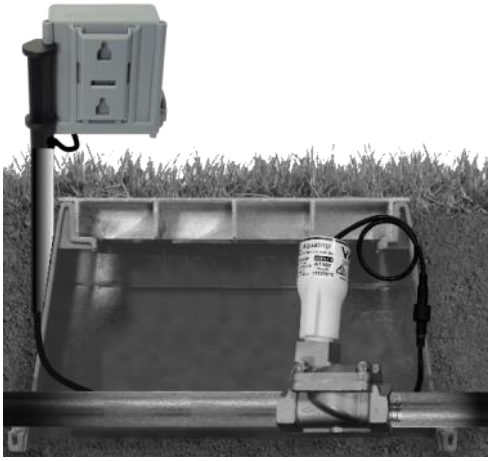


Control Box - Between Tube Holes (64mm)

Installation to Above Ground Water Meter, with Control Box Cable Tied to meter—Thin section or thick section. Water Pump Cover boxes make a great cover for your completed AquaTrip and Water Meter assembly!

HOLE DRILLING GUIDES

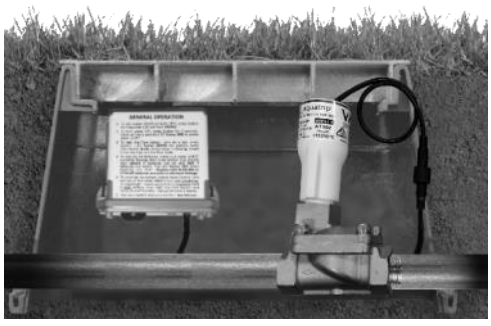
Installation to above or below ground Water Meter, with Control Box attached to a stake in the ground. If running the cable external to a Valve Box, be sure to pass it through some poly pipe to prevent Garden Trimmer damage



Use the drilling guide on the papers edge to make it easy to mark your Drill holes.

Control Panel Mounts (55mm)

Installation within below ground Valve Box, with Control Box attached to the internal sidewall of the box using the supplied screws. For improved Radio Range, run the cable external to the Valve Box, being sure to pass it through some poly pipe to prevent Garden Trimmer damage. Example shows Cable Tying the Control Box to the fence.



Protect cable run into the ground with Poly Pipe

7. The System Check Procedure [Five Steps]

Use the BLUE Control Button on the underside of the Control Box to conduct the following tests:-

With water flowing (Flow Sensor **IS** detecting flow)	**With NO water flowing** (Flow Sensor **NOT** detecting)
Press the Button The LED will light up GREEN if the batteries are okay and RED if they need replacing **IF** water is flowing, the LED will then flash BLUE	Press the Button The LED will light up GREEN if the batteries are okay and RED if they need replacing **IF NO** water is flowing the LED will then turn off

If you have turned on a tap, and no water flows initially, reset the system by pressing the BLUE button for three seconds. You may hear a click as the Control Box resets the Shutoff Valve, and the water will now begin flowing.

STEP 1 - Flow Sensor Test

- Turn on a tap so that the water is flowing continuously at a **slow trickle** of at least 40 to 50ml or 1.25 to 1.5oz per minute, this is when a drip just becomes a constant trickle.
- Press the button once, the LED will light GREEN to let you know the batteries are OK, then flash BLUE to indicate it can see the water flowing. The Blue LED will continue to display when water is flowing, for up to 240 flashes (or 4 minutes), then stay off to conserve the batteries. If you need to visually check flow again, press the button once more.
- If the Flow Sensor cannot see the flow. Check the Flow Sensor is firmly screwed into the Shutoff Valve and test again. If need be, increase the flow slightly, and retest. If flow now registers, then scale the flow back to around 40 to 50ml or 1.25 to 1.5oz per minute, and recheck the Flow Sensor can see the reduced flow.

This Flow Sensor test confirms the Flow Rate that the Flow Sensor can detect. It should see flow down to around 50ml or 1.5 oz per minute. Due the effect of hysteresis, a slightly larger flow may be required to start the Flow Sensor, but once it has begun sensing the flow, it will continue to do so, even if it drops down to around 50ml or 1.5oz per minute.

STEP 2 - Water Shutoff Test

- Turn on a tap to give a steady stream of water flow. Now press the blue button for three seconds. The valve will shut and the water flow will stop. This may take up to a minute as the pressure in the pipes must dissipate. This test checks that the Shutoff Valve is working correctly. The Control Box LED will flash RED briefly, every few seconds to indicate that the water is off!

STEP 3 - Water Reset Test

- Now that the water has shut off, press the Control Button for three seconds and the water will come on. You should hear a click as the Control Box signals the Shutoff Valve to open and the water begins flowing again.

STEP 4 - Leak Detection Test

Turn the tap on again, press and hold the button down.

- As long as the Flow Sensor can see the flow, the BLUE LED will flash. Now turn off the tap to stop the water flow. The BLUE LED will stop flashing as soon as the Flow Sensor can no longer see any flow. This should be within 30 or so seconds of turning off the tap.
- If the BLUE LED display does not stop flashing, it means that the Flow Sensor is still sensing water flowing on the property somewhere. Check for taps dripping or left running or leaking toilets etc.

STEP 5 - Flow Sensor Functionality Test

If the Flow Sensor continues to detect water flow, and you are certain that there is no water flowing anywhere, you need to test if the Flow Sensor is working correctly, as follows:-

- Turn on a tap to a flow of about 50ml or 1.5oz per minute, then turn **off** the MAIN incoming tap to the property and, as you are cutting off the main supply, the BLUE LED should stop almost immediately. This confirms that the Flow Sensor is no longer seeing any flow and is working correctly.

If the BLUE LED continues flashing even after the main supply is cut, it means the Flow Sensor may be jammed or damaged and the Flow Sensor may need replacing, or the Shutoff Valve itself may need servicing.

8. Control Panel Radio Range Testing - Setup and Tips

A. Testing the Radio Range of the Control Panel

A Radio Range Test MUST be carried out to ensure the radio signal will reach the desired Control Panel mounting location, and this is completed as follows:-

1. Trip the Shutoff Valve by holding down the blue Control Button on the Control Box for three seconds until the water goes OFF.

2. Now press OK MENU on the Control Panel and scroll through to the Radio Range Test menu, then press OK.

3. The Control Panel will now detect the signal from the Control Box every 15 seconds and indicate the signal strength as a percentage. Start by standing next to the Shutoff Valve for the first reading (should come up as 100%), then walk towards the desired Control Panel mounting position, re-testing as you go, every 10 metres.

4. After each reading, press OK again to initiate the next test. (*TIP:* if you have a wristwatch with a second hand, take a note of when you get a response. It will ALWAYS respond at exactly the same time every 15 seconds). **A reading of GREATER than 50% is desirable at the chosen Control Panel mounting location**.

5. Try to locate the Control Panel in a location where it is not too far from the Control Box. Note that metal or concrete walls and mesh metal security/insect screens can act as barriers, preventing the radio signals from the two units reaching each other.

6. Ensure that wherever the Control Panel is to be located, that the Control Panel has a constant signal strength in excess of 50% linking it to the Control Box. Always hang the Control Panel upright on a nail or screw in a location where it can receive the maximum strength signal strength from the Control Box.

NOTE: If the range is insufficient, because of excessive distance, or geophysical shielding, you can also relocate the Control Box. It is on a 2m cable allowing it to be located up and away from the Shutoff Valve. The higher it is located the better the radio reception. If necessary, optional 6m cable extensions are available to relocate the Control Box to a position where the signal strength is best.

B. Radio Signal Delay

In order to preserve Battery Life, normal update commands are passed between the Control Panel and the Control Box at 10 minute intervals.

If a water shutoff event has occurred the Control Box will respond to a reset signal from the Control Panel within 15 to 30 seconds. This depends on the time between the leak occurring and the time the Control Panel 'Reset Water' button is pressed. (< 40 Minutes, responds in < 15 Secs, after 40 minutes responds in < 30 Secs.)

C. Radio Signal Strength contributing factors

1. **Rain or Water** - If there is heavy rain or if the Control Box becomes immersed in water, this can cause a temporary block to the radio signal travelling between the Control Panel and Control Box. This will show as **LINK SCAN** or **LINK BAD** on the Control Panel display. Once the weather clears or the Control Box is no longer submerged, the two units will re-establish the connection.

2. **Below Ground Installations** - If the Control Box is mounted below ground level, this can reduce the ability of the Radio Signal to get out into the environment to be received by the Control Panel. If this is the cause of the Control Panel having difficulty maintaining a signal strength in excess of 50%, then a solution can be to relocate the Control Box to be above ground and mount it on a nearby fence or garden stake or pole in the ground.

3. **Distance and Barriers** - if the Control Box and Control Panel are installed too far apart or with barriers between them which can block the radio signal, this will have an impact on radio signal strength and connectivity. By conducting the procedures outlined in Section 8 Part A and Part C.2 above, it is possible to minimise their impact.

For more details on how the Radio Communications system works, and for further advice on the operation and trouble shooting of the Radio Link system, please refer to Section 9, Pg. 10.

9. The Radio Communications System - Operation and Troubleshooting

The system uses a coded Radio Signal to communicate and create a wireless link between the Control Panel and the Control Box. Once linked together, they only communicate every ten minutes, except if the water has been turned off, then they communicate every 15 or 30 seconds. ***So if you issue a command by changing a setting, that command will only take effect at the next ten minute update between the two devices.***

During installation, if you have trouble linking the Control Panel to the Control Box as described in Section 4 Step 1. or, if the Control Panel loses the link with the Control Box after installation at some point, you can link the two devices by using one of the following two methods:-

A. Manual Radio Link Procedure

The Control Box must be tripped to put it into Search mode, so it will be looking for the Control Panel signal. Trip the valve by holding down the blue button on the Control Box for three seconds (until the LED lights RED). Once you hear the valve shut, press the RESET WATER button on the Control Panel. The Panel may initially not respond, but will enter search mode. Within about two minutes, it will have located the Control Box and the radio link will be established.

B. Automatic Radio Link Procedure Option

If the Control Panel and Control are in range of each other, they will automatically link up after about 90 minutes.

If the Control Panel loses the radio link with the Control Box

The Control Panel will begin to scan and search for the Control Box signal. This will show up as **Link Searching** on the display. After a few hours of trying the display will change to **Link BAD** with a number to denote the number of times the Panel has tried to relink with the Valve. At 100 attempts it will stop counting, but continue searching for the Control Box. This will continue until the Control Box is found. This searching will run down the battery more quickly. So if you notice the display says - **Link BAD** - follow one of the procedures below.

To fix this, you must first try to re-establish the radio link. There are three optional ways to do this:-

- You can either follow Step 2 in Section 3, Pg.4 OR
- Complete the Manual Link Procedure listed earlier in this section, OR
- Place the Control Panel near to the Control Box, and let the Automatic Radio Link Procedure take place.

Once you have re-established the Radio Link, perform a Radio Range Test to find the strongest signal location. Refer to Section 8, page 9 or Section 11c, Pg. 20 in this manual for instructions on how to conduct a Radio Range Test. A signal strength above 50% is best for reliable operation.

If necessary, it is possible to add one or more 6m extensions to extend the cable connecting the Control Box to the Flow Sensor. This allows you to relocate the Control Box to a position where it can better receive and send signals to and from the Control Panel.

NOTE: If you cannot re-establish the radio link, there may be a problem with the radio in either the Control Panel or Control Box, so both will need to be serviced or replaced.

Replacing the batteries

At some point, the system will require its batteries to be replaced. You will be prompted to do this by the Control Panel, however we recommend you do it every 12 months as a safety precaution in any event. After the new batteries are installed, the Control Panel and Control Box will link up automatically again within 90 minutes. ***Do not forget to set the clock again after you have replaced the Control Panel batteries.***

WARNING: Once again, it is absolutely imperative that you clip the lid shut PROPERLY on your Control Box. Failure to do this will likely cause water damage. Make SURE you slide the PCB into the grooves on the inside of the box, as if forced, it is possible to close the lid with the PCB not properly in the grooves. This will allow water in!!!

10. Emergency Manual Override and Fire Fighting Procedure

The system has an **Emergency Manual Override** facility, ensuring that you can always disengage the system in an Emergency, and that you will have unrestricted access to water. The Emergency Manual Override is used when *you need to use water nonstop for an extended period,* ***e.g. FIRE FIGHTING***, or in the event of a system malfunction. You can also use the Emergency Override if the batteries go flat and you do not have replacements handy.

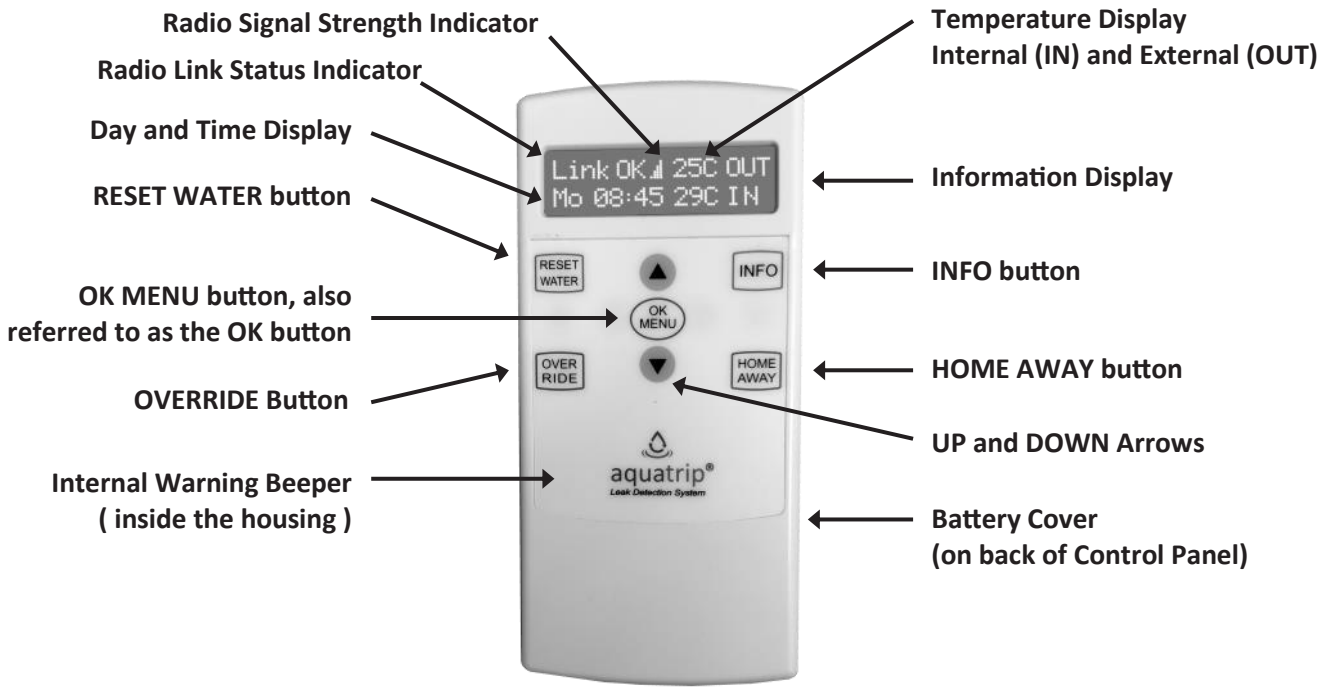
WARNING ⚠ *When the system is in Emergency Manual Override, it cannot shut off the water in the event of a leak. DO NOT leave the system in this mode unnecessarily, as there will be no leak detection capability.*

Rotate Flow Sensor ONLY HALF a turn anti-clockwise to override the system

1. To place the system in **Emergency Manual Override,** rotate the **Flow Sensor HALF** a turn anti-clockwise.
2. To cancel **Emergency Manual Override**, gently rotate the Flow Sensor clockwise until it **just** stiffens, but **DO NOT OVERTIGHTEN IT! IT IS NOT A COMPRESSION FITTING, IT SEALS USING AN O-RING. IF OVER TIGHTENED IT CAN BE DAMAGED OR FRACTURE.**
3. If you have re-engaged the Flow Sensor after using the **Manual Override facility,** you **MUST ALWAYS** confirm that the system is functioning correctly by running the System Check Procedure as covered in Section 7 of this manual.

11. The Control Panel

The Control Panel has seven buttons which can be used to control most of the functions and settings of the system. In the unlikely event that your Control Panel should malfunction, you can still control the system from the Control Box itself. See Section 7, Pg. 8 for System Testing and the section above for the Emergency Override function.



NOTE: WARNING BEEP - The Control Panel will emit a short beep every five minutes if there are any warning messages. Press the INFO button to read the message. This will also silence the beep. For peaceful sleep, the Control Panel will not issue any warning beeps between 10pm and 6am.

11.a The RESET WATER button

RESET WATER

The **RESET WATER** button is used to turn the water back on after the system has turned the water off. Press the button once to turn the water on. The water will turn on within a 15 to 30 second period. ***If you press this button again for more than three seconds, it will cancel your original command.***

If the system shuts off the water it means that it has detected water flowing continuously for longer than the Flow Time programmed in to it, for that particular time of the day. After the water has shut off, the Control Panel will emit a short beep every five minutes to let you know the water is off.

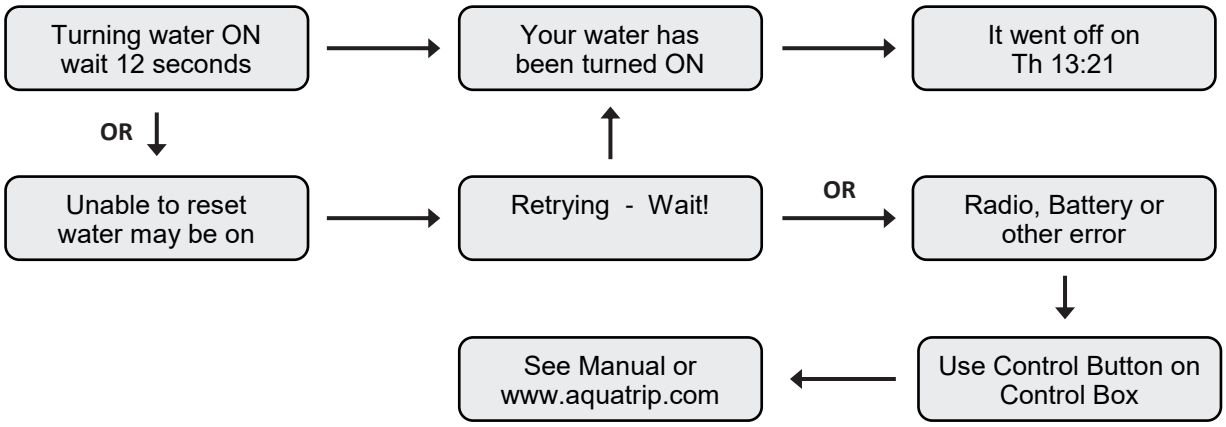
If you ever hear a beep from the Control Panel, always press the **INFO** button to find out what message is waiting for you on the display. If the water has gone off, the Control Panel will start to beep within 10 minutes of the water being off. When you press the **INFO** button the following message will display.

Water OFF! Reset and look for cause

When you see this message, press the **RESET WATER** button. Refer to the flow chart to show you the possible messages displays which may occur when you press the **RESET WATER** button

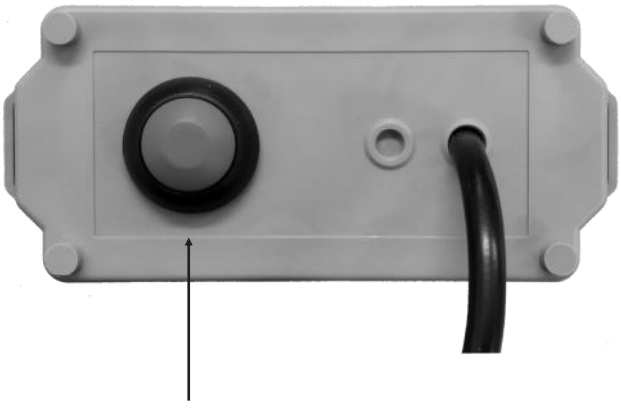
If the Control Panel loses its radio signal connection with the Control Box, the Control Box will not be able to respond and will not be able to turn the water back on, and an error message will appear on the Display. The Control Panel will automatically try to turn the water back on again. If the retry fails, you must turn the water back on manually by pressing the blue button on the underside of the Control Box. See illustration below.

When you press the **RESET WATER** button, the following displays will appear.



If the water does not turn on, you can turn the water on <u>manually</u> by holding down the blue Control Button on the Control Box for 3 seconds - this will open the Shutoff Valve. If that should also fail to turn the water back on, you can <u>manually override</u> the system by turning the Flow Sensor half a turn anti-clockwise, this will open the Shutoff Valve and allow water to flow. **See Section 10, Pg. 11 for how complete the Emergency Manual Override procedure.**

Control Box found near Shutoff valve



Blue Control Button

11.b The INFO button

INFO

The **INFO** button displays the general system status and warning messages. If there are any warning messages or if you have activated any special features these will be shown first. These will be followed by standard system messages telling you key information on the status of various aspects of the system.

INFO Button - Information Message Displays

When you press the **INFO** button, the display will scroll through the following menus to inform you of the status of key aspects of the system:-

Link OK◢ 25C OUT
Tu 17:54 21C IN

This display shows the strength of the **Radio Signal Link** between the Control Panel and Control Box, and the day, time and indoor and outdoor temperatures. If the radio signal link is lost between the Control Panel and the Control Box, the Control Panel will begin to search for the Control Box. This will show up as **Link Searching** on the display. If after repeated failed attempts to find the Control Box, the display will change to **Link BAD.**

Link Searching
Tu 17:54 21C IN

OR

Link BAD 99
Tu 17:54 21C IN

NOTE: If this occurs, to resolve the issue, refer to Section 9, Pg. 10 - The Radio Communications System.

After the Radio Signal Link & general status display, the display will scroll through the following menus:-

FLOW TIME right now is XX min

This shows what the Flow Time is currently set for, at this exact moment in time. As the time of day changes and different Flow Time settings come into effect, the current Flow Time setting for that exact time of day, will display on this menu. If currently Overridden or Excluded, this status will also be shown here.

↓

Longest Flow this week 19 mins

This is the longest continuous flow of water this week. The figure clears every Sunday at midnight, so the time shown will be your longest continuous water flow since last Sunday at midnight.

↓

Last Trip Time We 08:35

This is the last day and time that the System detected continuous flow which exceeded the programmed Flow Time and caused the system to shut off the water.

↓

Trip Count = 13

This is the number of "Trip" events that the system has recorded since the counter was last reset. You can reset the counter from the Trip Count menu within the SETUP menu, which you access using the **OK MENU** button.

↓

Control Panel Batteries 100%

This screen shows the capacity of the batteries in the Control Panel. The Panel will start to beep when the batteries get low. We suggest replacement when they fall below 50%. Use **3 x AA** Alkaline or Lithium batteries.

↓

Control Box Batteries 100%

This screen shows the capacity of the batteries in the Control Box. The Panel will start to beep when the batteries in the Control Box get low. To prevent damage, we suggest replacement annually or when they fall below 50%. Use **2 x AA** Alkaline or Lithium ones.

↓

NITE WATCH = ON
AWAY WATCH = OFF

This screen shows whether the **Nite Watch** and **Away Watch** functions are turned ON or OFF. Refer to the **OK MENU** button section for an explanation of these features and how to turn them on or off.

When you press the **INFO** button, in addition to the Information Messages that are displayed and were explained on the previous page, any System Warning messages will also be shown. Warnings are always shown first. Here are some of the Warning messages that could display, and an explanation of them:-

INFO Button - System Warning Message Displays

Water OFF! Reset & look for cause

This message will display if the water has been shut off for any reason. The Control Panel will also beep every five minutes, after the next update has been received from the Control Box (within ten minutes). Press the **RESET WATER** button to turn the water back on and find out why it was shut off.

Radio Link Error (See Manual)

This message advises you that the Control Panel and the Control Box can no longer communicate with each other. Please refer to Section 9, Pg. 10 that deals with the Radio Communications system.

Exclusion Period M-W-F-S 17-19hrs

If you have set the Exclusion Period (Sleep Mode) to allow use of an irrigation system or for some other purpose, this menu will appear to remind you that it is set and show a summary of the current setting.

Control Panel Batteries LOW!

This message advises you that the batteries in the Control Panel are LOW and need replacing. See Section 12, Pg. 22 on how to replace the batteries.

Control Box Bats FLAT Replace NOW

This message advises you that the batteries in the Control Box which controls the Flow Sensor and Shutoff Valve, are FLAT and need replacing. See Section 12, Pg. 22 on how to replace the batteries.

No flow detected in past 24 hours

↓

Conduct System Check Procedure

↓

System may need to be serviced

⚠ VERY IMPORTANT MESSAGE ⚠

This message is an alert that <u>the Flow Sensor has not seen any flow for more than 24 hrs and this *may* indicate a potential system problem</u>. One of the following three conditions may apply:-

1. The most common reason for this message is you have actually not used any water for more than 24 hours. In this case, the system is still functioning normally. However, if this is not the case, there may be a definite problem with the Flow Sensor and the procedure described in (3) below must be followed.
2. The system has been manually overridden and is no longer sensing water flow, so will no longer function as a Leak Detector (the MOST important reason for this message).
3. The Flow Sensor or Shutoff Valve has developed a problem and needs to be checked. Please conduct the System Check Procedure and if the system fails those tests, contact your distributor. You may also engage your plumber to check the system's functionality for you.

System INACTIVE until Sa 14.45

This message is to remind you that **<u>the system has been overridden</u>** and is now inactive until Saturday at 14:45pm (as an example). This is the result of pressing the Override button, which will disengage the system for whatever override time period you have set. There is <u>no leak detection</u> during this time period. See Section 11d, Pg. 20 on the **OVERRIDE** button for a more detailed explanation.

AWAY mode is set Flow Time 3 mins

This indicates that the system is in **AWAY** mode, and it will display the Flow Time you have chosen for when the system is in Away mode. However, if an Exclusion Period has been set, the water still flows normally during the excluded time(s). This will allow irrigation or other water consumption to happen while you are away.

Water will turn OFF in 5 mins

This menu appears when the manual **Turn Water OFF** function has been activated. This function is accessed from the system menu, by using the **OK MENU** button. The display tells you how long it will be before the water turns off.

↓

Water turned OFF by the user

This will be followed by a second screen when the water actually turns off, which tells you that the water was turned off by the user and **<u>not</u>** a leak or over-use. This could be for plumbing maintenance or some other reason.

11.c The OK MENU button

The **OK MENU** button is used to access all the SETUP menus for adjusting the various programmable features of the system. Use the **UP and DOWN** arrows to scroll though the menus available.

NOTE: The menu explanations are arranged in the order you will find them if you use the UP arrow to scroll through the menus. If you use the DOWN arrow they will appear in reverse order.

OK MENU Button Summary - Menu Display Order (if scrolling using the UP arrow)

SETUP MENU - use Arrows to select

From this menu you can scroll up and down the menus to access the various settings and functions. Follow the instructions on the screen within each menu to access and change the settings (prompts appear after a delay).

WATER FLOW TIMES Use OK to change

The **FLOW TIME** menu is where you set the length of time water can flow <u>continuously</u> before the system shuts off the water. See the FLOW TIME settings menu on the following pages.

PEAK FLO PERIODS Use OK to change

You can choose two different time periods of the day when you expect to use water for the longest time. Generally this would be in the morning (say 6am to 8am) and then again in the evening, (say 6pm to 10pm). You can set them to whatever suits your water usage. You set the start hour and the finish hour of each time period.

EXCLUSION PERIOD Use OK to change

The **EXCLUSION PERIOD** menu is where you program the system to ignore water flow for certain periods of time on certain days, like putting the system to into a sleep mode. See the EXCLUSION PERIOD settings menu on the following pages.

CLOCK - Sa 20:14 Use OK to change

The **CLOCK** is set from this menu. It is important that the clock is set correctly, as the whole system relies on the clock to co-ordinate all the timing of the other leak detection settings. See the CLOCK setting menu on the following pages.

Turn water OFF! Use OK to begin

The **TURN WATER OFF** menu is where you can use the Control Panel to close the Shutoff valve and turn off the water supply directly. See the TURN WATER OFF menu function on the following pages.

TRIP COUNT = 12 Use OK to clear

The **TRIP COUNT** logs how many times the System detected flow which was long enough to cause the system to "trip" and shut off the water. See the TRIP COUNT menu function on the following pages.

NITE WATCH = OFF Use OK to change

The **NITE WATCH** is a selectable feature which puts the System into the Night Watch Flow time for night time period that you have selected. This offers extra protection if a leak occurs overnight. See the NITE WATCH menu setting on the following pages.

AWAY WATCH = OFF Use OK to change

The **AWAY WATCH** is a selectable feature which automatically puts the System into Away mode, if the system sees **no flow for a 24 hour period <u>starting</u> at midnight**. See the AWAY WATCH menu setting on the following pages.

WATER FLOW CHECK Use OK to begin

The **WATER FLOW** check menu allows you to see on the Control Panel ***if water is <u>actually</u> flowing at that exact moment in time***, and allows identification of leaks if present. See the WATER FLOW CHECK menu setting on the following pages on how to use this feature.

SERVICE SCHEDULE Use OK to view

This reminds the user of the most important items that will need service and attention over the life of the system. See the System Service and Maintenance section of this manual for full details of the maintenance requirements of the system.

WETNESS SENSING Hold OK to setup

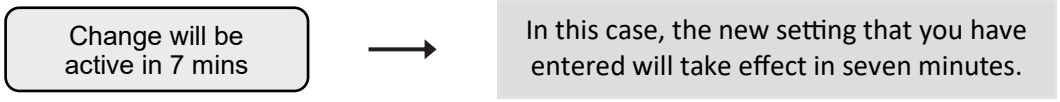
The **WETNESS SENSING** menu is where you link any of the optional Wetness Sensors to the Control Panel. If these sensors detect wetness in their immediate location, they will signal the Control Box to shutoff the water, <u>within one minute</u>. See the WETNESS SENSING setup menu on the following pages.

RADIO RANGE TEST Use OK to begin

The **RADIO RANGE TEST** menu is where you can test to check that the radio signal link between the Control Panel and the Control Box is good enough for reliable communication. See the RADIO RANGE TEST setup menu on the following pages.

ADJUSTING THE SETTINGS USING THE SETUP MENU

All setting changes which are set from the Control Panel, will be sent by coded radio signal to the Control Box. ***In order to conserve battery power, these commands are only sent every ten minutes***, when the two devices exchange information. After you change any setting and the command is sent from the Control Panel, the message screen below will nearly always appear. It will tell you how long it will be before the new settings take effect.

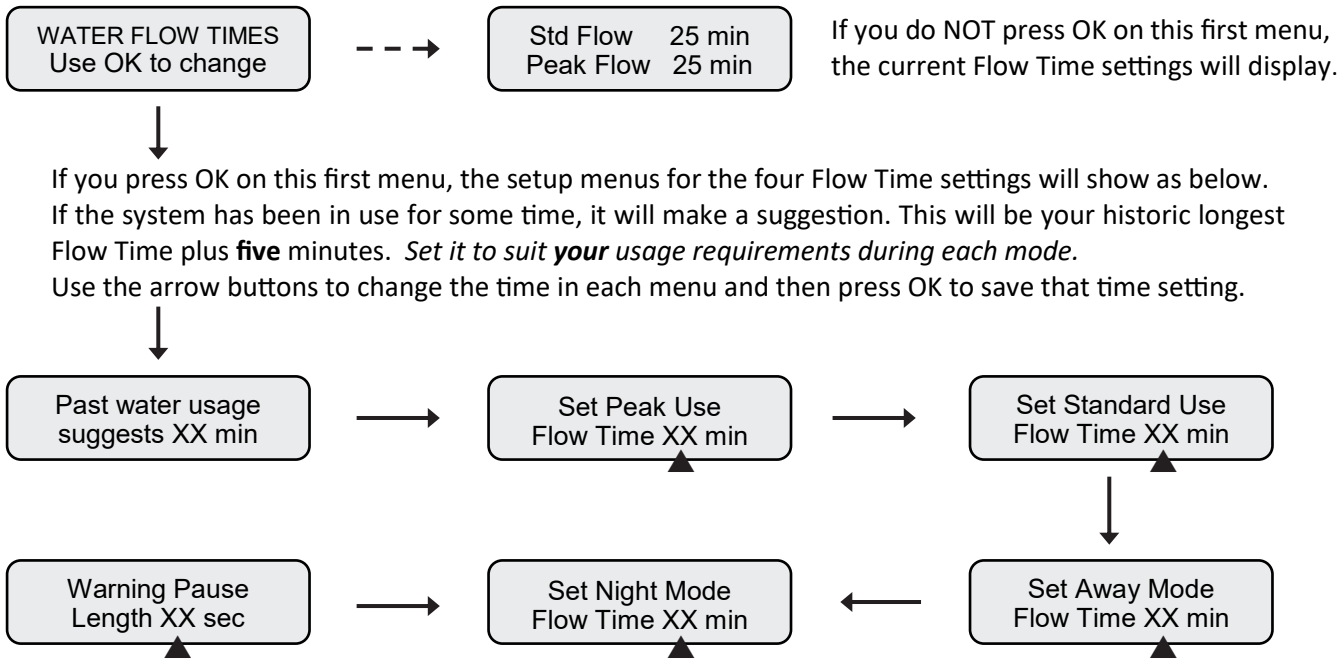


WATER FLOW TIME - SETTING

It is important to set the shortest possible Flow Time that suits your normal water use. This Flow Time can vary according to the different times of the day or night, when you are likely to be using more or less water. This menu is used to set up those flow times. You can change these settings at any time. In order to make the System more responsive, there are two settings available: -

1. **Peak Use Flow Time** - The Peak Use Flow Time period is when the property is likely to be fully occupied and continuous water usage is likely to be higher. Select the maximum continuous water Flow Time you would like for those times when your water use is at its peak. **Default is 25 min's.**
2. **Standard Use Flow Time -** Within this setting you select the maximum Flow Time for all times outside the Peak Flow Time period, i.e., the rest of the day or night. This is generally the time when the house is less likely to be occupied and continuous water usage will probably be lower. This allows you to (usually) set a shorter Flow Time for the standard or off peak period. **Default is 25 min's.**
3. **Away Mode Flow Time -** This is the amount of time that you want water to be able to flow while the system is in Away mode. Set this flow time to be as short as possible, taking into account any appliances you have which may need water flow while you are away e.g. Ice Makers, Solar Water Heaters etc. **Default is 3 min's.**
4. **Night Mode Flow Time** - This is the length of time that water can flow during the time you think you will be asleep or overnight, when the system is in Night Mode. **Default is 3 min's.**
5. **Early Warning Pause Timer** - So you can never be caught out by the water turning off when you do not expect it, e.g. being caught in the shower without water, there is an **early warning function**. Three minutes before you reach the maximum Flow Time setting, the system will pause the water flow for 1 to 15 seconds (programmable), then reinstate the flow. If you turn off the water, wait 10 seconds or so, and turn it on again, you can restart the Flow Timer *(Don't tell the kids!)* You must set the Pause Timer length in this menu. If your house has long pipe runs, choose a longer Pause Time, as it takes time for the loss of flow to be noticed. **The default setting is OFF.**

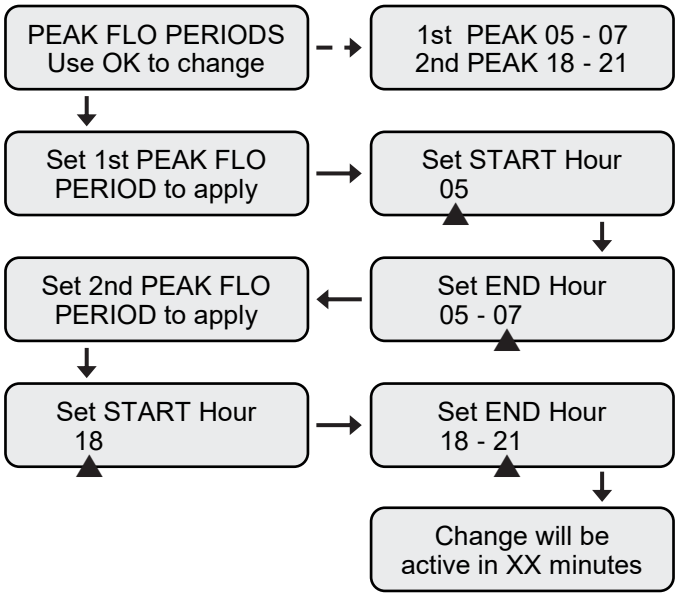
Refer to the Warnings in Section 2, Pg. 3 and Section 13, Pg.23 before activating this feature.



▲ For the rest of the manual, this symbol denotes the *flashing* value being changed.

PEAK FLOW PERIODS - SETTING

This function allows you to set up TWO different periods within the 24 hour cycle, to be designated as PEAK periods (where you would like a usually LONGER, but can be SHORTER flow time). The Peak Flow time setting will apply during these hours chosen. If you do NOT wish to use these PEAK FLOW periods, simply make the PEAK use and STANDARD use flow times in the WATER FLOW TIMES menu to be equal to one another. **NOTE: 24 hour clock format.**



If you do not press OK to change the settings, the current setting will appear. In this example, the first peak period is 5am to 7am and the second peak period is 6pm to 9pm.

Press OK to begin, and the START hour of the FIRST period will flash. Use the arrow buttons to adjust, then press OK to save the value. It is only possible to set whole hours.

The END hour will flash next. Enter the hour you want the Peak Period to end. As before, use the arrow buttons to adjust and then press OK to save.

In the same manner as before, you may now set the START and END hour for the SECOND Peak Flow Period.

The final screen will advise when the change activates.

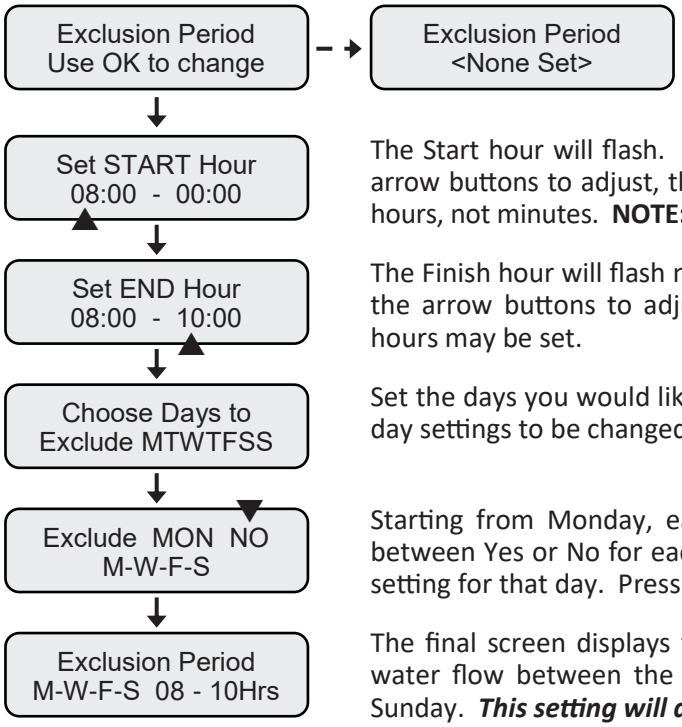
NOTE: If you only want ONE Peak Flow Period, set the 2nd one the same as or within the times of the 1st one.

EXCLUSION PERIOD - SETTING (Sleep Mode)

This function allows you to exclude a certain period of the day and/or days of the week from your system's detection schedule. It puts the system into a Sleep Mode while the Exclusion Period is active and the system will ignore all water flow during this time period. It is designed to allow much longer Flow Times for certain designated periods, e.g. for garden irrigation or some other automated water usage requirements.

It is also useful for Commercial and Public Washrooms, where the system can be set to ignore all water use during business hours and only operate after hours. This setting, in combination with the Automatic Reset Function, allows the system to potentially reduce water waste and improve maintenance schedules by controlling leaks and plumbing failures while still allowing uninterrupted normal use of the facility.

The factory default setting is OFF. If you have previously set an Exclusion Period and then want to turn it off, set the Start Time and Finish Time both to the same hour. The Exclusion Period function will now be turned off.



If you do not press OK to change the settings, the current setting will appear. In this example no Exclusion Period is set.

The Start hour will flash. Enter the hour you want the Exclusion Period to start. Use the arrow buttons to adjust, then press OK to save the value. It is only possible to set whole hours, not minutes. **NOTE: 24 hour clock format.**

The Finish hour will flash next. Enter the hour you want the Exclusion Period to end. Use the arrow buttons to adjust and then press OK to save the value. Again, only whole hours may be set.

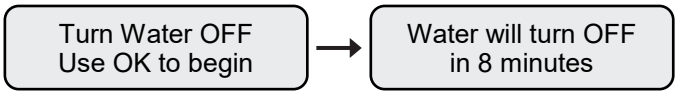
Set the days you would like the Exclusion Period to apply to. The menu which allows the day settings to be changed appears next.

Starting from Monday, each day will appear in sequence. Use the arrows to toggle between Yes or No for each day (its letter will become a —), then press OK to store the setting for that day. Pressing OK, moves on to the setting for the next day.

The final screen displays the saved settings. In this example, the System will ignore all water flow between the hours of 8am till 10am on Monday, Wednesday, Friday and Sunday. ***This setting will also appear in the INFO menu display.***

TURN WATER OFF - COMMAND

This menu allows you to manually turn the water off from the Control Panel. Once you activate this command, the water will only turn off, **after the next data update**, which will be within the next ten minutes.



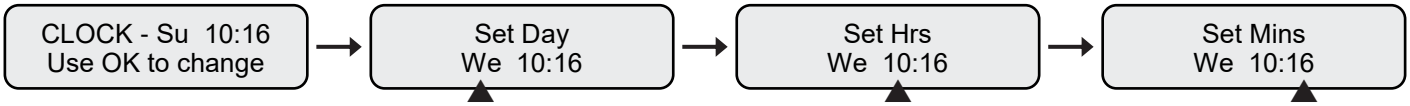
To cancel this command, re-enter the same menu, then press the OK button when prompted.

Turn the water on again using the **RESET WATER** button and then the **OK MENU** Button. This double confirmation reduces the risk of accidental resetting of the water. Inform all occupants of the property, that if the water has been turned off using this function, there may be plumbing work taking place on the property!

THE CLOCK - SETUP [IMPORTANT]

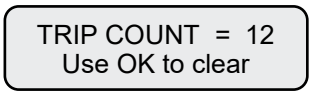
The Clock MUST be set to the correct Day and Time for all the other time based functions of the system to work correctly. The system does not log the actual date, only the days of the week and the time.

NOTE: The clock is in the 24 hour format.



Use the arrow buttons to change the settings (flashing item) and then press OK to advance and save the setting.

TRIP COUNTER - INFORMATION



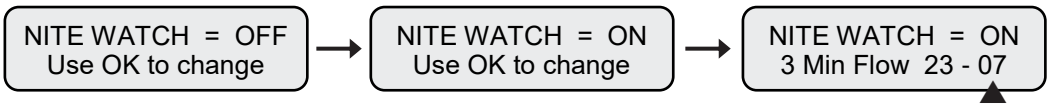
The Trip Counter logs each time the system trips and shuts off the water in response to any of the Flow Times being exceeded. It will not count the times you have used the 'Manual Water Off' command.
You can reset the counter back to zero by pressing the OK button while in the menu.

NITE WATCH - SETTING

NITE WATCH is a special feature which, if enabled, gives a faster leak detection response time for the overnight period. If you enable the NITE WATCH feature, whatever time you have set it to finish will apply, and whatever Flow Time you have chosen will apply. The start time is fixed at 11 pm (23) and only the End Time can be set, from midnight (00) to 7 am. The flashing digit represents whole hours.

If you exceed your Nite Watch Flow Time during the times it applies, it will shut off the water. When you reset the water and turn it back on, the system will know you are awake and need extended flow, so will cancel the Nite Watch mode for that night only. The following night it will re-engage as programmed.

The factory default setting is OFF. Press the OK button to turn this feature ON or OFF.



AWAY WATCH - SETTING

The AWAY WATCH function is designed to help those users who may forget to activate the **AWAY** mode when they leave the property unattended for an extended time. Away Watch does it automatically for you. *It works as follows:-*

The Away Watch function looks to see if there has been any water flow in a 24 hour period. If there was no flow during that time, it presumes you are not home and will automatically activate **AWAY** mode, and only allows the Flow Time you have set for Away mode. This speeds up the response time of the system to any leak that may occur while you are away. When you return home, if the AWAY mode has been automatically engaged, press the Home/Away button to cancel.

The factory default setting is OFF, so you must consciously turn this feature ON if you want to use it.

AWAY WATCH = OFF
Use OK to change → AWAY WATCH = ON
Use OK to change

⚠ **WARNING: Refer to the Warnings in Section 2, Pg. 3 and Section 13, Pg. 23 before setting this function.**

NOTE: If possible, subject to local conditions, set the system to AWAY mode whenever you leave the property unattended (see HOME AWAY button Section). However, it is also a good idea to keep this automated AWAY function enabled, as if you do forget to manually turn AWAY mode on, you know that within 48 hours at most, this mode will automatically engage.

WETNESS SENSORS - SETUP (Optional extra accessory)

As optional extras in some markets, there are Wireless Wetness Sensors available which can be wirelessly linked with your Control Panel. The Sensors can sit in areas which have the highest risk of leaks or have a pipe burst, such as water dispensers, washing machines, dishwashers or water heaters. If the Sensors detect a water leak they will send a coded radio signal to the Control Box and it will shut off the water within one minute of the leak occurring (provided the water is CURRENTLY flowing). Order model # **WS-1**

You can add as many Sensors to the Control Panel as you like. You must pair each Sensor with the Control Panel in order for it to be able to communicate with the Control Box and Shutoff Valve. The Sensors are powered by long life batteries, and will begin beeping when their batteries need replacing.

You will not need to use this menu unless you want to add new Sensors to the system. We suggest you ask your plumber to do this as part of the initial installation and setup, alternatively you can purchase the Sensors afterwards and easily add them to your system.

Wetness Sensing
Hold OK to set up → Add Batteries to
Wetness Sensor → Searching for
Wetness Sensor → Link up to
Sensor Successful

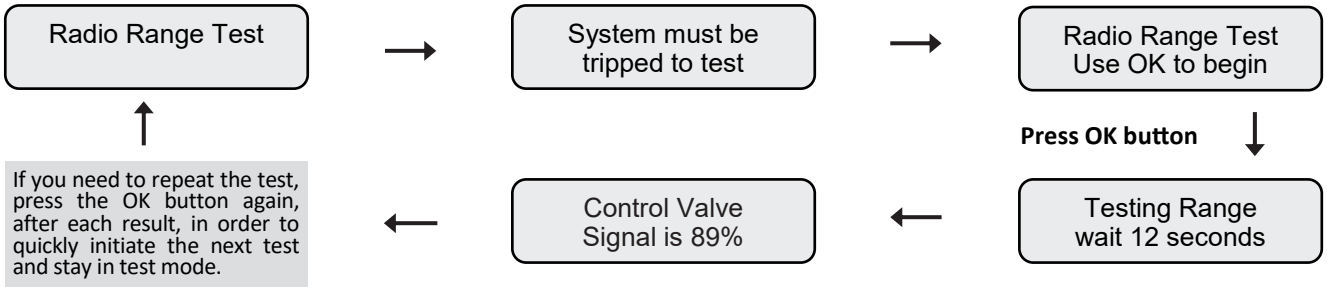
If you add Wetness Sensors to your system, link them to the System by following the instructions included with the Wetness Sensors. The menus which will appear on the Control Panel for this process will be as shown above. Do not hold OK on this menu unless you intend adding a Wetness Sensor.

RADIO RANGE TEST

This menu allows the user to test how strong the Radio Signal link is between the Control Panel and the Control Box. It is used to find the best location for your Control Panel, and to ensure it receives the best strength signal from the Control Box and vice versa. We recommend mounting your Control Panel near your most used entry/exit point to your property, for easy system access, as long as the signal strength is sufficient at that mounting point.

To use the Range Test feature, the system must be in the tripped condition, i.e. the water has shut off. In this state, the Control Box is searching for the Control Panel reset signal every 15 seconds. To trip the Shutoff Valve, the quickest way is to hold down the button on the Control Box for three seconds (until LED flashes RED), please refer to Step 2 of the System Check procedure on page 8 if you are uncertain how to do this.

Once the Valve has shut off the water, the test can begin. Start by standing next to the Control Box and the signal should be 100%. Now, slowly move away, testing the system say every 10 metres or so. Once you get to your preferred Control Panel location, make sure you have a minimum signal strength of at least 40%. The menus will display as follows: -

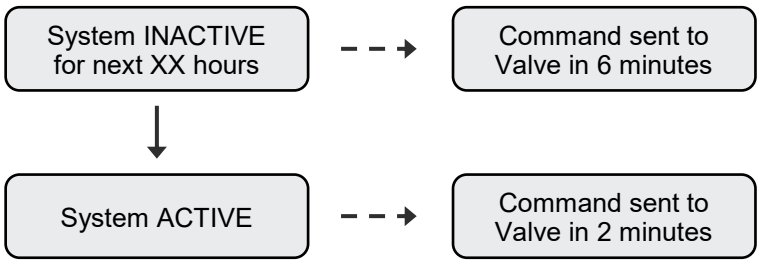


11.d - The OVERRIDE button

OVER RIDE

The **OVERRIDE** mode cancels all the Flow Time settings for an adjustable period**.** When you enter this mode the hour number will flash, use the UP/DOWN arrows to set the amount of time in hours that you want the system to be overridden for. Then press the OK button to save the setting. While the system is in Override mode, water can flow continuously without interruption. Once the Override period is over, normal Flow Times will apply. **Remember to allow for up to a 10 minute delay for the command to take effect.**

Override Button Message Displays



Do NOT use this Override for Fire Fighting. Use the Emergency Manual Override function explained in Section 9.

NOTE: If you need to override the system for much longer than fourteen hours, say for a few days:- For example: you are having construction done on your property, or you are fire fighting or for some other reason you need constant flow for a very long period, you can manually override the system. See Section 10. **Do NOT forget to re-engage the system afterwards.**

11.e - The HOME AWAY button

HOME AWAY

The **HOME AWAY** button switches the system from **HOME** Mode with all the user defined Flow Times, into **AWAY** Mode where the Flow Time can be set from 1 minute to 15 minutes. **Pressing the button again will toggle the status back to HOME Mode. Note the switch between the two modes is NOT instant, it will occur at the next update, within the next ten minutes.**

When you activate **AWAY** mode it ignores all other Flow Time settings and defaults the system to the Away Mode Flow Time. This is for any time the property is left unattended. Remember to set the system back to **HOME** on your return.

Refer to Section 12, Pg.23 on System Warnings before engaging this function.

WARNING ⚠ In AWAY mode, if any Exclusion Period settings are active, these will still apply. The system ignores all water flow during those time periods. However, if there is a leak outside of those times the system will shut off the water, which will remain off during the next Exclusion Period, unless the Automatic Reset function has been enabled.

WARNING ⚠ If a leak should occur while the Exclusion Period is active, and say water is flowing due to irrigation, and is leaking elsewhere at the same time (e.g. irrigation valve failure), the System will only be able to respond to the real leak, after the Exclusion Period ends and the current Flow Time which then applies, is exceeded.

Status - HOME set
Flow Time - Normal

Use Home Away button to change status

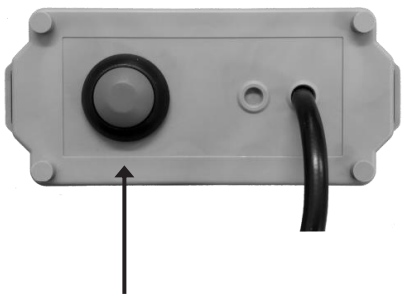
Status - AWAY set
Flow Time - XX mins

12. How to test and change the batteries

The Control Panel will start to beep when the batteries get low in either the Control Panel or the Control Box. The Battery low warning will appear as part of the INFO button display. To ensure your System continues to operate correctly, you must change the batteries mentioned, as soon as possible after noting this warning! It is HIGHLY RECOMMENDED that the Control Box batteries are checked for leakage twice a year. As a precaution against leakage, they should be changed each year. Leaking batteries are very likely to damage your system, and this is NOT covered under warranty.

WARNING ⚠ **DO NOT USE zinc or heavy duty batteries in this product, only use high quality Alkaline or Lithium batteries.** Note that Lithium batteries last a lot longer, but collapse rapidly at the end of their lives, giving little warning to this effect.

The battery level can be checked directly on the Control Box. Regardless of whether water is flowing or not, press the Blue button on the box once and release - If the LED lights **GREEN** then the batteries are fine, if it lights **ORANGE** they are fair, if it lights **RED** they need to be replaced **ASAP.** If **Flashing RED** they need to be replaced **immediately**, as in this condition the water will constantly be shut off by the device.



Push the button here

CONTROL BOX (Usually found outdoors near your Water Meter)

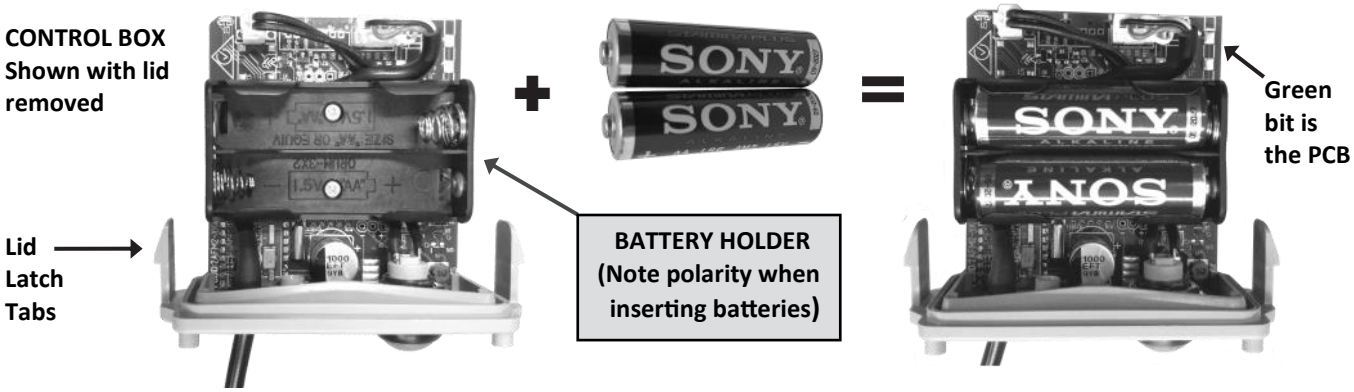
Observe LED Colour here

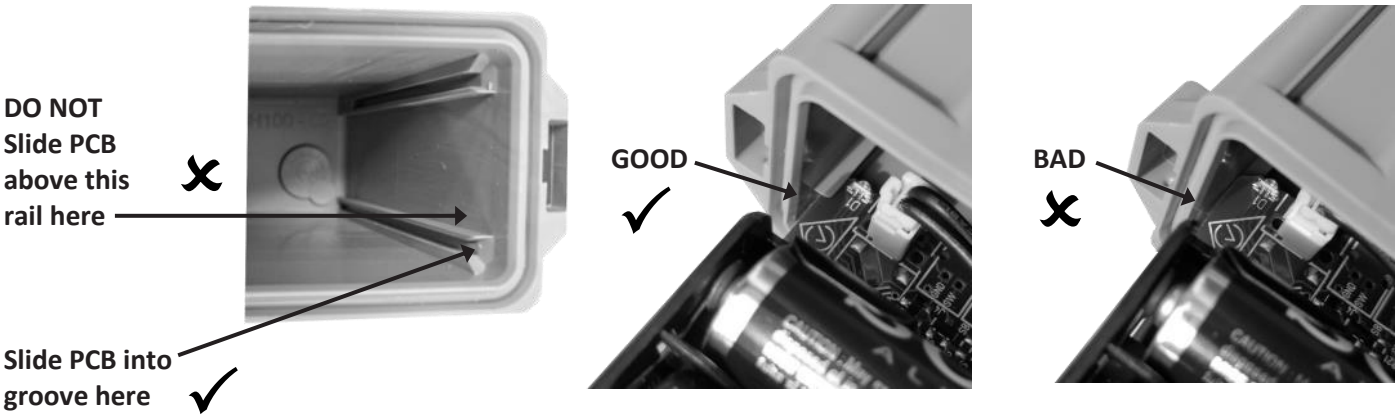
1. Control Box Battery replacement (Require 2 x AA)

WARNING ⚠	Do not open the Control Box Lid if there is any chance of getting water or rain inside the housing. If the housing is wet, dry it well with some tissues or absorbent cloth before opening it. Any water that enters the housing will not be able to escape and will condense on the internal components. Over time it will damage your system.

Remove the base by squeezing and pinching forwards, the two Lid Latch Tabs and gently slide the Printed Circuit Board (PCB) out of the box. Replace the two AA batteries with good quality lithium or alkaline batteries and carefully slide the circuit board back **into the grooves** inside the box lid. If the PCB does not go all the way in, you have the lid upside down. **MAKE SURE THAT BOTH LID LATCH TABS CLICK AND LATCH INTO PLACE** to ensure a watertight seal.

(DO NOT use zinc or heavy duty batteries).

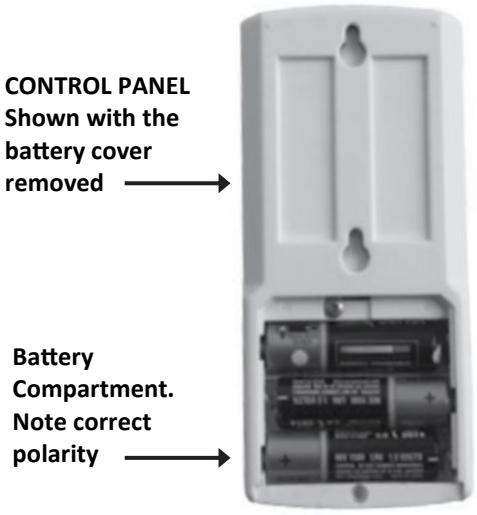




2. Control Panel Battery replacement (Require 3 x AA)

To replace the batteries in the Control Panel. Turn the Control Panel over and slide off the battery cover. Always replace all three batteries at the same time. **When replacing the Control Panel batteries**, you will be prompted on the display to put batteries into the Control Box as well. If necessary, you can do this, if not necessary, wait and that prompt screen will pass. You will be now asked to set the Clock.

NOTE:	*After you insert the new batteries into the Control Panel, it will go into a search mode and may take up to 90 minutes to re-establish the Radio Link with the Control Box.* *Do not forget to set the clock again after inserting new batteries, as if the clock is wrong the system will malfunction.*



13. System Use and Function Warnings - READ CAREFULLY

Fire Fighting - ***In the event of a fire on the property***, you must immediately engage the Emergency Manual Override mode of your system (see Section 10, Pg. 11). This will allow uninterrupted water flow for fire fighting.

WARNING *It is the system owner and the users responsibility to make sure that **ALL** occupants of the property are made fully aware of the features and functions of the Leak Detection System, and are clearly shown and understand how to override the system in an emergency.*

No Water Use Warning - Your system will constantly monitor the water usage on your property. If it does NOT detect water flow for a period of 24 hours or more, it WILL alert you by sounding the buzzer each day, and with the following warning message on the Control Panel thereafter - "**No water flow detected in past 24 hours**"……

WARNING ***Under no circumstances should you ignore this message***. *It may well be legitimate if you have been away from the property for more than 24 hours, however, if you know that water has flowed within this time, then you MUST check to see if your system has been overridden or is faulty. If in any doubt as to why this message appeared, consult your plumber, as the system may need to be serviced.*

Hard Water Areas - If your property is in an area which has hard water, the system may require more regular testing and servicing. Calcification may build up within the system and inhibit its performance.

WARNING *Hard Water may cause interference with the Flow Sensor or other components of your Leak Detection system. It is preferable that the Shutoff Valve be fitted downstream of a Water Softener system if fitted. In any case, regular inspections of the Debris Filter are highly recommended.*

Flow Time Setting Optimisation - To enable the system to alert you to a potential plumbing problem as quickly as possible, set the Flow Times to be the shortest time possible, that does not interfere with your normal day to day water usage. Make use of the different Flow Time settings and the Away and Night mode settings.

WARNING *Your leak detection system is designed to warn and alert you to possible leaks or plumbing failures. It cannot prevent leaks or prevent damage from leaks, however it may help to minimize water loss and may reduce potential property damage, if the shortest possible Flow Time settings (comfortable for the users), are applied.*

The HOME AWAY mode - This is used to switch the System from **HOME** Mode with all the user defined programmed Flow Time and other settings, into **AWAY** Mode. Pressing the button again will toggle the status back to **HOME** Mode. You must set the length of the flow time in AWAY mode, in the Flow Time settings menu.

When you activate AWAY mode it cancels all other Flow Time settings and defaults the system to the AWAY mode Flow Time. This is for any time the property is left unattended. Remember to set the system to HOME on your return.

WARNING *In AWAY mode, if any Exclusion Period settings are active, these will still apply. The system ignores all water flow during those time periods. However, if there is a leak outside of those times the system will shut off the water, which will remain off during the next Exclusion Period.*

If a leak should occur while the Exclusion Period is active, and say water is flowing due to irrigation, and is leaking elsewhere at the same time (e.g. irrigation valve failure), the system will only be able to respond to the real leak, three minutes after the Exclusion Period ends.

Leaving the Home unattended - If you leave the property, you should engage the AWAY mode on the Control Panel.

WARNING *Before you use AWAY mode, take into account the water use requirements of your house while you are away. e.g. Irrigation, solar hot water, auto refilling pools, evaporative air conditioners etc. Always check that there are no appliances which may use enough water to trip the system. Check no appliances will be damaged if their water supply is cut off*.

Early Warning Pause Timer - This is a selectable feature which halts the water flow (from 1 to 15 seconds), three minutes before the maximum Flow Time is reached. It is designed as an early warning indicator that you are close to reaching the maximum Flow Time set.

WARNING *In some plumbing situations, if the water supply is momentarily halted, the warning pause may give rise to a short rush of cold or hot water. If you enable this feature, you must test to ensure there are no extreme water temperature changes which may cause scalding from hot water, or shock from cold water. To test, set the Flow Time to 5 minutes, and the Pause Timer to your preferred setting. Then, run the shower at your preferred temperature until the Flow stops (after +/- 2 Minutes) and then restarts after the warning pause. Check for any temperature changes during the starting and stopping of the water flow which may cause discomfort.* ***If in any doubt, do NOT enable this feature***

14. System Troubleshooting and Leak Diagnosis

If the system has detected a leak, it is important you find the cause of the leak, or the system will keep turning off the water. Finding the cause of some leaks can be difficult, but generally they can be traced to something simple to fix. The Flow Sensor is more sensitive than many water meters and in most cases, it will detect flow before the water meter begins turning. Use the System Check Procedure in Section 7, to test for water flow and identify if you have a leak or if an appliance is using or losing water.

Common causes of leaks to look out for:-

NOTE: For troubleshooting the Radio Communications System, please refer to Section 9, Pg. 10

- Toilet flush button/lever not returning properly (Very common)
- Toilet cistern flush washer not sealing properly (Very common)
- Worn Tap or Faucet washers causing them to not shut off properly
- Irrigation valves not sealing properly or are faulty
- Fractured underground pipes and pipe joints
- Hot water cisterns leaking out the overflow vent/pressure relief valve
- Braided flexible lines/hoses bulge and perish
- Garden Hoses left on with the spray nozzle closed but not fully shut off or dripping
- Garden Hoses left on/under pressure, causing a fitting to blow off

Q: The system will not detect water flow. You cannot get the Control Box to display the blue LED when water flows.

A: The Flow Sensor may not be fully screwed in to the Shutoff Valve. Gently tighten the Flow Sensor further, and re-test. If water is definitely flowing and you have already checked the Flow Sensor is tight enough in the Shutoff Valve, it may mean that there is a fault with the Flow Sensor. It is possible the Flow Sensor has jammed or failed or the mesh filter has become blocked and cannot detect the flow. There could also be a problem with the valve itself, and debris may have compromised its function.

Q: The system will not shut off the water after the Flow Time is exceeded.

A: The diaphragm in the Shutoff Valve may be defective or have jammed in the open position, or some debris is stuck within the Shutoff Valve. Replace the diaphragm in the Valve or replace the entire Shutoff Valve.

Q: The system detects large flows but not a small flow.

A: The Flow Sensor may not be fully screwed in to the Shutoff Valve. Gently tighten the Flow Sensor and retest.

***Q: The system shuts off the water, but a small flow still continues*.**

A: The Flow Sensor may not be fully screwed in to the Shutoff Valve. Gently tighten the Flow Sensor and retest. If the problem persists, the Flow Sensor or Shutoff Valve diaphragm may be faulty and must be serviced or replaced.

Q: How do I tell the difference between a 'real' leak or just accidental tripping?

A: If the system continuously trips in SUCCESSION after resetting, then you have an ongoing leak somewhere and you must look for the cause. Use the System Check Procedure in Section 7, Pg. 8 and check for the common causes of leaks as suggested above. If the valve trips INTERMITTENTLY and it's not caused by inadvertent use, then it's usually caused by an appliance which uses water automatically. e.g: an icemaker, humidifier, a toilet cistern with a leaky fill or flush washer, or a dripping tap.

Q: My water often goes off during the night, but not during the day?

A: At night, there are less people accessing the mains water supply, so the pressure in the supply is higher and more constant. This causes small leaks that are difficult to detect when the pressure is fluctuating during the day. Toilets are the usual causes.

Q: My water goes off occasionally and I cannot find a leak?

A: The system cannot be triggered unless water is actually flowing, even if it is only a small amount. Therefore a small amount of water is leaking somewhere. Immediately after resetting the water, conduct the System Check Procedure to confirm the presence of the leak and the functionality of the system. Check out any appliances that may use water automatically or use water slowly for extended periods, like a Humidifier or Ice Maker etc. Refer to Section 7, Pg. 8 for more details.

Q: How do I find out the source or cause of a leak?

A: Firstly check the toilets. Turn off the supply tap to each individual toilet cistern, then you can use the Water Flow Test function on the Control Panel to see if water flow is indicated, or, observe the LED on the Control Box. By a process of elimination, cutting off the supply to each water consuming appliance, and checking to see if the flow continues, you can usually work out which one is causing the problem. If it is not an appliance it may be a concealed pipe somewhere or a pipe joint.

Q: What do I do if I cannot find the leak?

A: The leak may be hidden underground or in a cavity wall or under the house slab or somewhere inaccessible and not readily visible. In this case you should contact a Leak Detection company, who will have the specialised equipment needed to locate the leak. You may have to leave your system in Manual Override Mode until the leak is repaired. **WARNING: Leaving the system in Manual Override will cause an increase in property damage and water loss while the leak goes un-repaired!**

Q: My water pressure has decreased over time.

A: This may be caused by the Mesh Filter in the base of the Flow Sensor becoming clogged. It may also be caused by the diaphragm within the Shutoff Valve no longer being within service limits and requiring replacement. The service life of the diaphragm is very dependent on local conditions, but in any event the diaphragm should be replaced every five years. **This job must be done by your plumber**.

15. System Service and Maintenance Requirements

Regular System Testing - At least every six months, to ensure your system is working correctly, you, or if necessary your plumber, must conduct all five steps of the System Check Procedure in Section 7 and the other tests required on the Service Record Form in Section 19 page 27. This helps to ensure your system is working as it should. Re-confirm that the Flow Time settings suit your water usage requirements and are set as short as possible.

Certified System Testing - Further to the point above, in some countries, if you are receiving a discount from your insurance company through the installation of the system, it may be a requirement that a plumber complete the Service Record Form on Section 18 on a regular basis, in order to keep your Insurance discount current.

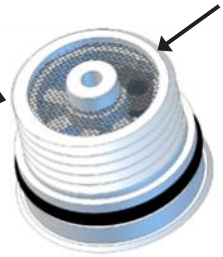
Battery Testing - At least every six months, use the **INFO** button to scroll through the **INFO** screen menus until you see the Battery % capacity menus. Note the battery capacities and replace them if they fall below 50%. Also, press the Blue Button on the Control Box and observe the LED colour (**GREEN** = OK, **ORANGE** < 80%, **RED** < 40%, **Flashing** = FLAT).

Flow Sensor Servicing - If you ever need to have the Flow Sensor replaced, the Flow Sensor will need to be unscrewed, and the Service Plug (supplied at installation) screwed in its place. The Service Plug should be in a small zip lock bag attached to the Shutoff Valve or the Flow Sensor cable. With the Service Plug installed, water is able to flow without restriction, but you will have no leak detection functionality until the Flow Sensor is re-fitted.

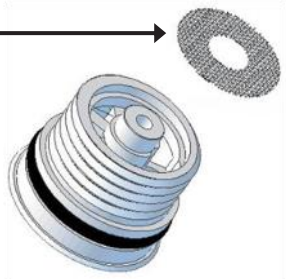
Shutoff Valve Servicing - The Diaphragm in the Shutoff Valve must be replaced every five years **by your plumber.** Varying local conditions may require it to be replaced more frequently. A symptom of the diaphragm exceeding its service limits, will be a loss of pressure or a resonance from the valve body or the inability to shut off the water.

Debris Filter Servicing - There is a small stainless steel mesh debris filter located in the threaded base of the Flow Sensor. If you notice any pressure loss on the property, this filter screen may have become clogged. If on a mains water supply with hard water prone to calcification, or tank water or bore water supply, this will need to be monitored more regularly. Cleaning or replacing the filter will usually restore the plumbing to full pressure.

FLOW SENSOR
Threaded section showing debris filter



Debris Filter



WARNING
The filter has sharp edges, and be careful not to prick your finger with the needle.

Use a sewing needle or similar to assist filter removal.

16. Other optional accessories

Slave Control Panel - In some markets extra wireless slave remote control panels are available. These Panels can only turn the water back on if it has been shut off, without accessing the main Control Panel. This allows the user to have an extra Control Point from which to control the ON/OFF water function, but not alter any settings. Ideal for Multi Storey residences, Granny Flats or Dual Occupancy buildings. When ordering, quote Part Number **AR8-B.**

Slave Remote Control Model AR8-B

Wireless Wetness Sensors - In some markets, Wetness Sensors are available. These detect 'Water on the Floor' situations and send a signal to the Control Box to shutoff the water within 60 seconds. Order part number **WS-1.**

Wetness Sensor Model WS-1

Flow Sensor Extension Cables - 6 Metre extension cables are available for extending the distance between the Control Box and Flow Sensor. A number can be joined together for greater lengths. Order part number **CBL-SOL6.**

Cable CBL-SOL6

17. Technical Specifications

This Leak Detection System is optionally available with a range of different size valves in either PVC or Stainless Steel.

Material	PVC Valve			Stainless Steel Valve (SS316)		
Valve Size	25mm (1")	40mm (1.5")	50mm (2")	15mm (1/2")	20mm (3/4")	25mm (1")
Operating Pressure Range	10 - 150 PSI	20 - 150 PSI	20 - 150 PSI	7 - 150 PSI	7 - 150 PSI	7 - 150 PSI
	69 - 1034 KPa	138 - 1034 KPa	138 - 1034 KPa	49 - 1034 KPa	49 - 1034 KPa	49 - 1034 KPa
	0.69 - 10.3 Bar	0.69 - 10.3 Bar	0.69 - 10.3 Bar	0.5 - 10.3 Bar	0.5 - 10.3 Bar	0.5 - 10.3 Bar
Maximum Operating Pressure	150 PSI	150 PSI	150 PSI	150 PSI	150 PSI	150 PSI
	1034 KPa	1034 KPa	1034 KPa	1034 KPa	1034 KPa	1034 KPa
	10.3 Bar	10.3 Bar	10.3 Bar	10.3 Bar	10.3 Bar	10.3 Bar
Operating Temperature Range	0 °C - 50 °C 33 °F - 122 °F Cold Water Only	0 °C - 50 °C 33 °F - 122 °F Cold Water Only	0 °C - 50 °C 33 °F - 122 °F Cold Water Only	0 °C - 50 °C 33 °F - 122 °F Cold Water Only	0 °C - 50 °C 33 °F - 122 °F Cold Water Only	0 °C - 50 °C 33 °F - 122 °F Cold Water Only
Flow Sensing Range	From 50ml/min From 1.7oz per min	From 50ml/min From 1.7oz per min	From 50ml/min From 1.7oz per min	From 50ml/min From 1.7oz per min	From 50ml/min From 1.7oz per min	From 50ml/min From 1.7oz per min
Power Supply	5 x AA Alkaline or Lithium Batteries	5 x AA Alkaline or Lithium Batteries	5 x AA Alkaline or Lithium Batteries	5 x AA Alkaline or Lithium Batteries	5 x AA Alkaline or Lithium Batteries	5 x AA Alkaline or Lithium Batteries

18. Certifications and Regulatory

CERTIFIED TO NSF/ANSI 61 & 372 | SANS 1808-35:2010 | Cert 23037 S030 | ACMA RCM | 2AFM2—XK420 | 20567-XK420

FCC Compliance Statement - This device complies with Part 15 of the FCC rules. Operation is subject to the two following conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not authorised by the manufacturer could void your right to use or operate the product.

Industry Canada Compliance Statement - This device complies with Industry Canada licence exempt RSS standard(s). Operation is subject to the two following conditions (1) this device must not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Changes or modifications not authorised by the manufacturer could void your right to use or operate the product.

Déclaration de conformité Industrie Canada - Cet appareil est conforme avec Industrie Canada RSS exempt de licence standard . Son fonctionnement est soumis aux deux conditions suivantes (1) ce dispositif ne doit pas causer d'interférences nuisibles, et (2) ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent entraîner un mauvais fonctionnement de l'appareil. Les changements ou modifications non autorisées par le fabricant peuvent annuler votre droit d'utiliser ou de faire fonctionner le produit.

The device contains FCC ID 2AFM2—XK420 , IC 20567—XK420

In some markets the device ID can be accessed on screen by pressing the down arrow on the Control Panel once, when the screen is not being used for any other function.

19. Service Records

At least every six months, test your System by completing the System Check Procedure in Section 7, and the other tests listed on this form. This task may need to be done by an authorised person if Insurance or other compliance requirements need to be met.

Test Date	Test Results		System Check Results ✓		Completed By
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		
Date	Control Box batteries	%	Flow Sensor		**Name**
Notes:	Control Panel batteries	%	Water Shutoff		
	Radio Range Test	%	Water Reset		**Company**
	Wetness Sensors		Leak Detection		
			Flow Sensor Functionality		

20. Customer Handover and Installation Checklist

Customer Handover - Once the system is set up and functioning correctly, the installing plumber must do following:-

1. Place the Service Plug & Dust Cap in the Zip Lock Bag and attach it to the Flow Sensor Cable with a Twist Tie or Cable Tie.
2. Program the Control Panel to the users requirements or explain the default settings in force. Show the user the location of all the components of the system. Explain the features, programming, maintenance and service aspects of the system. Tick off each item on the Installation Checklist with the user, making sure they understand each item.
3. Complete the Installation Checklist and Table to finalise the installation. Hand the user this Installation and Owners Manual.

Plumbers Installation Checklist - Complete this checklist and table. *Leave this document with the user*.

☑ ***The user has been advised and understands the following :-***
☐ How to locate the Control Box, Flow Sensor and Shutoff Valve.
☐ How to operate and program the system.
☐ How to replace the batteries and the type of batteries required.
☐ How to temporarily override the system using the Control Panel.
☐ How to manually override the system using the Flow Sensor in an emergency - **VERY IMPORTANT!**
☐ How to set the Away mode and Nite Watch and Away Watch functions.
☐ How to conduct the FIVE steps of the System Check Procedure every six months.
☐ Explain the optional accessories that are available (Wetness Sensors, Slave Control Panels e.t.c.).
☐ The importance of reading this Manual.
☐ The importance of registering this product online - go to **www.aquatrip.com.au/warranty-registration**

Customer Name	
Installation Address	
Date of Installation	
Installation Company	
Installer Name	
System Model #	
System Serial #	

21. Warranty

The sale and use of this product is governed by our Terms of Sale and Warranty and Indemnity conditions as displayed in the Warranty section of our website **www.aquatrip.com.** This product is warranted to be free from defects in materials and workmanship for a period of one year from the date of installation, provided that the product is used in accordance with the installation, maintenance and testing requirements described in this Installation and Owners Manual. This warranty is in addition to your rights under the Consumer law in the country of sale. Failure due to: incorrect installation; misuse; water ingress from negligence; uncompleted prescribed service schedules; discharged, leaking and corroding batteries, are not covered by the Warranty. The Warranty is limited to the replacement of the faulty parts or components, and does not cover the cost of removal and/or re-installation of the replacement components or device, or any consequential loss. The warranty becomes null and void if the Box has been tampered with, repaired, or damaged by any unauthorized person. An official receipt as proof of purchase will be required for all applications under this warranty policy. Our products come with guarantees that cannot be excluded under the Consumer Law in the country of sale. You may be entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You may also be entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The national Distributor responsible for this warranty reserves the right to inspect and test the products for the purpose of determining the extent of any defect and the validity of any claim made under this Warranty. For our detailed Terms of Sale and Warranty Terms and Indemnity conditions, refer to the Warranty section of our website **www.aquatrip.com**