

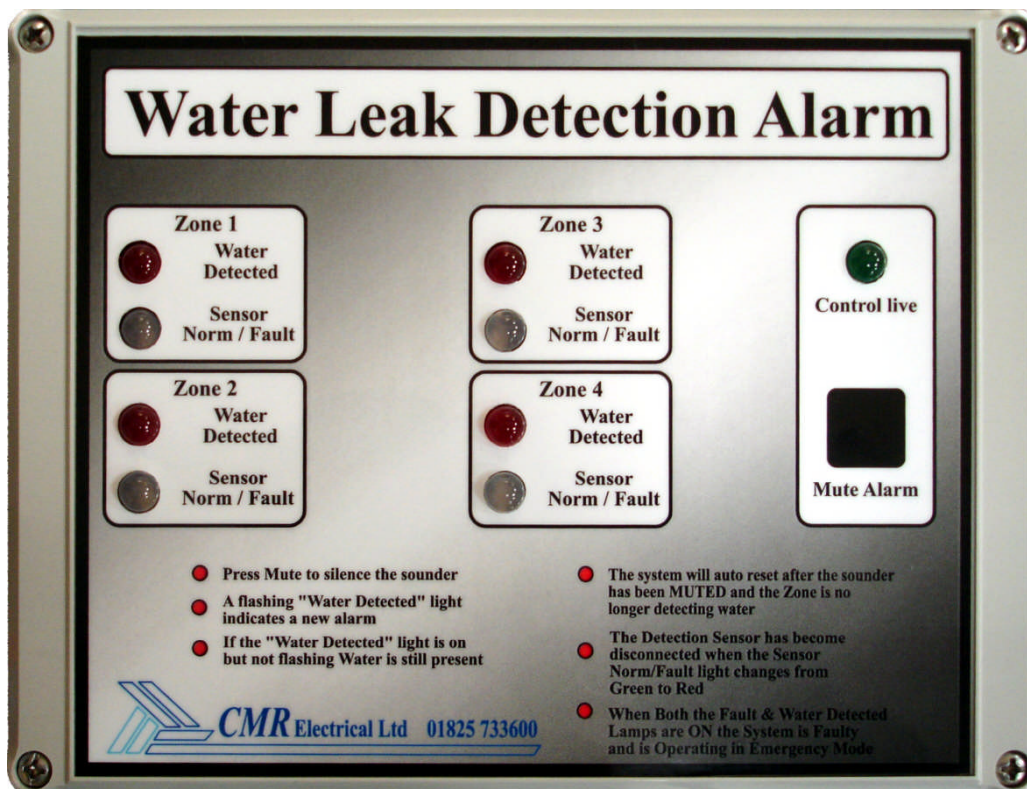


CMR Electrical Ltd
Bolton House
Five Chimneys Lane
Hadlow Down
East Sussex
TN22 4DX
Tel: 01825 733600

LD4V

Three and Four Zone Water Leak Detection

Installation and Operation Manual



Contents

- 1) *Operation*
- 2) *Water Detected Alarm*
- 3) *Sensor Fault*
- 4) *Water Detection Sensitivity Adjustment*
- 5) *Installation Drawing*
- 6) *Fitting Cable clips*
- 7) *Installation*
- 8) *Positioning the water detection cable*
- 9) *Water shutdown Valve*
- 10) *Fitting the battery backup if supplied*
- 11) *Commissioning*
- 12) *Emergency Mode*
- 13) *Fault Diagnoses*

1) Operation

In normal mode with no alarms or faults, the audible warning device will be OFF, the “Water Detected” alarm lamp will be OFF, the “Sensor Norm/Fault” lamp will be ON and green and the Control Live lamp will be ON.

2) Water Detected Alarm

When the detection cable comes into contact with water anywhere along its length, the audible warning device will start, the alarm relay will close and the red “Water Detected” lamp will start flashing. To stop the audible warning press the “Mute Alarm” button. On muting, the “Water Detected” lamp will stop flashing and remain permanently ON indicating an acknowledged alarm. The system will remain in this state until the water is removed from the cable when the “Water Detected” lamp and alarm relay will automatically turn OFF.

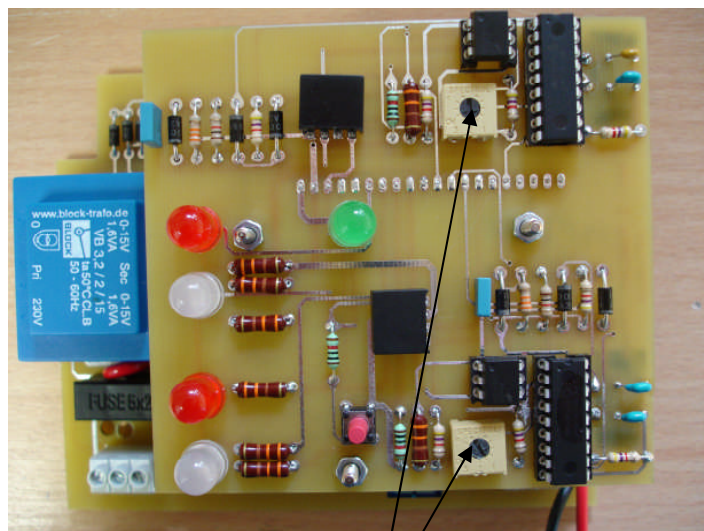
3) Sensor Fault

Because of the exposure of the detection cable on the floor the system monitors for any breaks in the detection cable and of the interconnection cable between the control unit and the detection cable. Provided continuity is maintained the “Sensor Norm / Fault” lamp will remain ON and Green. If a break within the cable is found, the audible warning device will start, the Green lamp will turn RED and start flashing. To stop the audible warning press the “Mute Alarm” button. On muting, the red “Sensor Norm / Fault” lamp will stop flashing and remain permanently ON indicating an acknowledged alarm. The system will remain in this state until the cable fault is repaired when the “Sensor Norm / Fault” lamp will revert back to Green. If the controller detects a break in the cable, the system will continue to detect water up to the point of the break.

REMEMBER, THIS ALARM WILL NOT OPERATE THE OUTPUT ALARM RELAY.

4) Water Detection Sensitivity Adjustment

To increase the sensitivity of the cable turn the potentiometer ANTICLOCKWISE, to decrease the sensitivity turn CLOCKWISE.



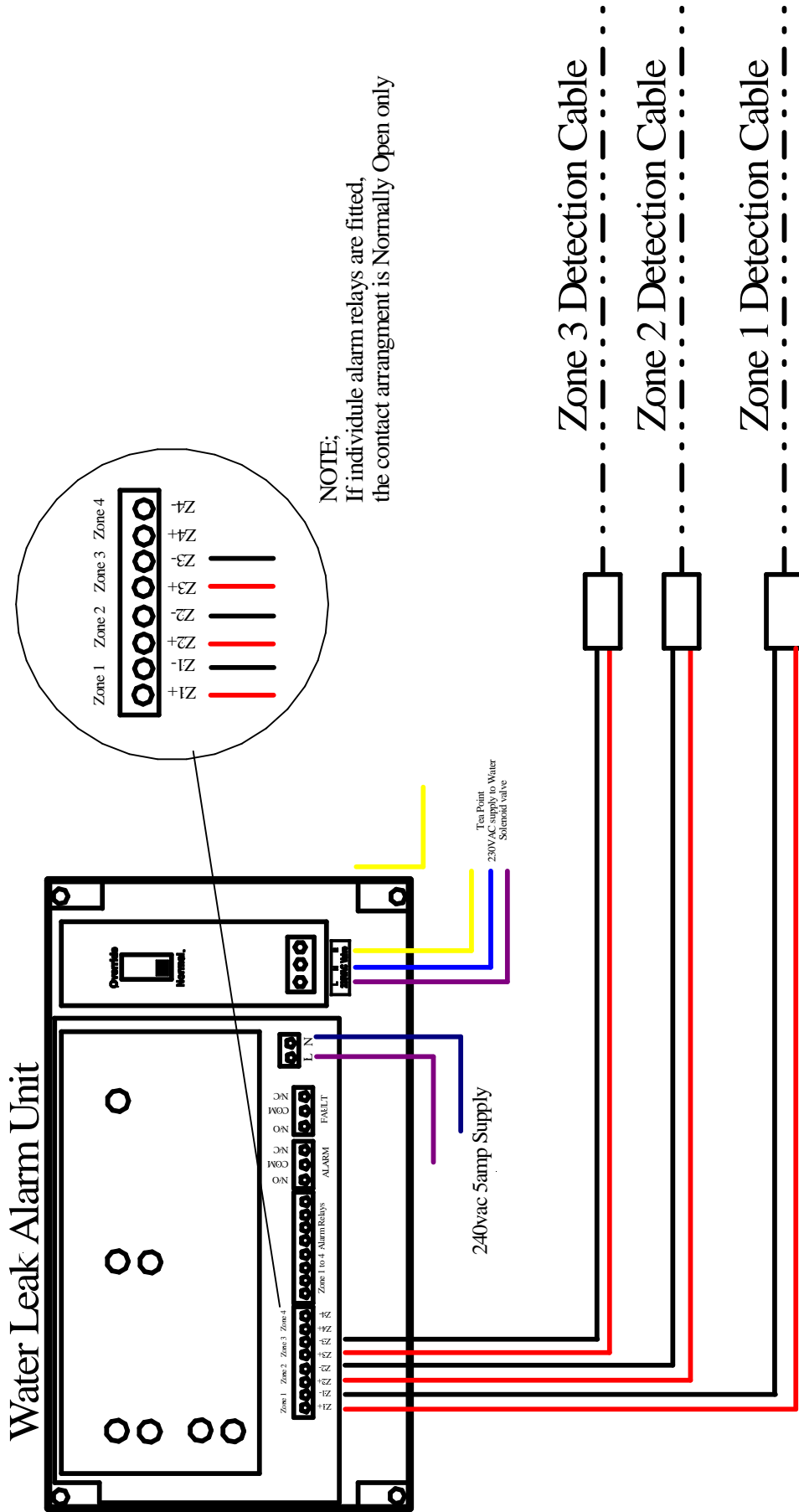
Increase Sensitivity



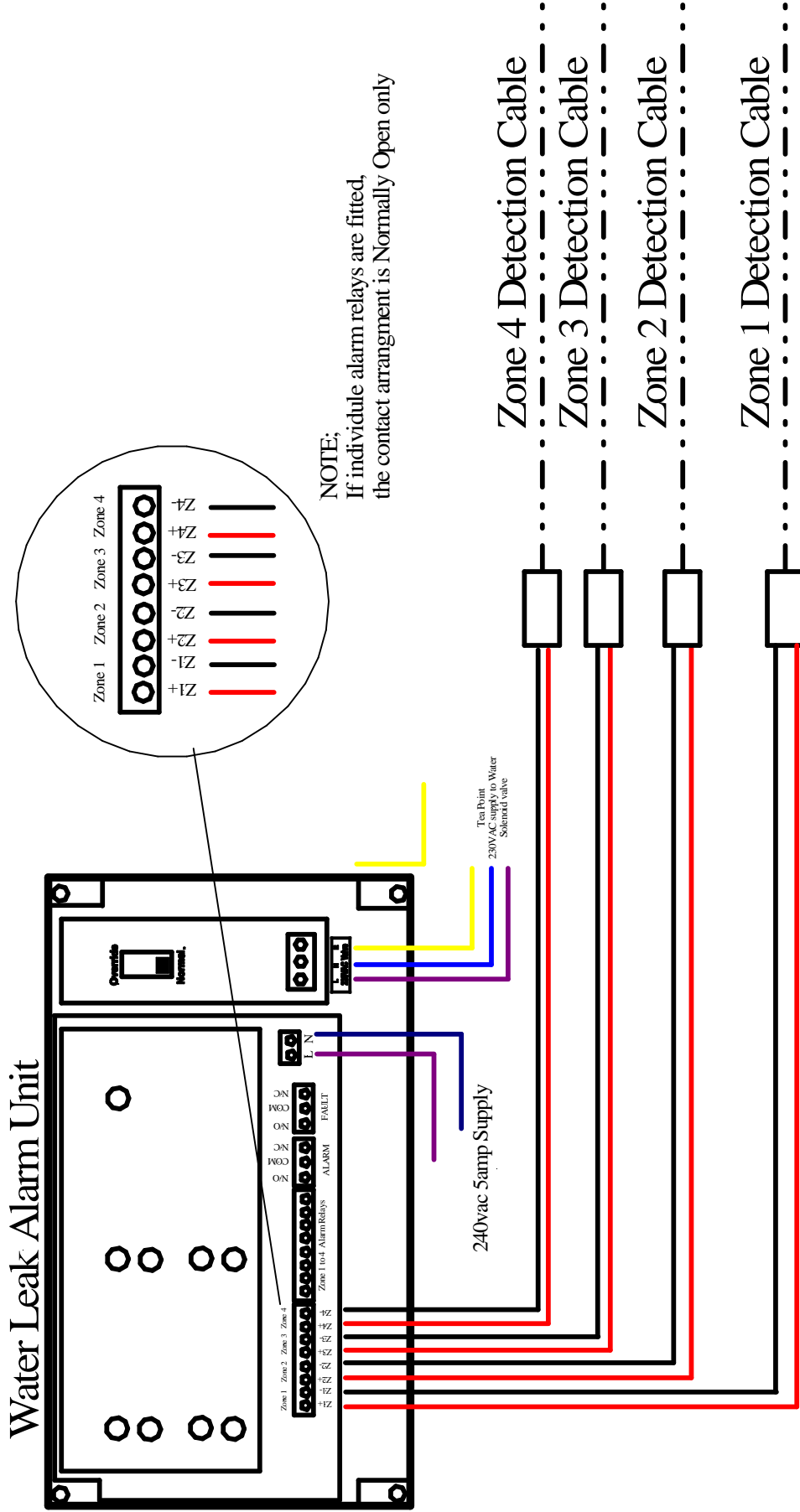
Decrease Sensitivity

5) Installation Drawing

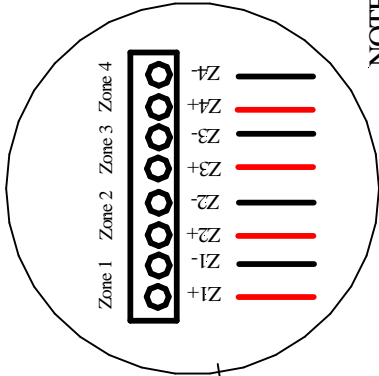
3 Zone Water Leak Detection Alarm



4 Zone Water Leak Detection Alarm

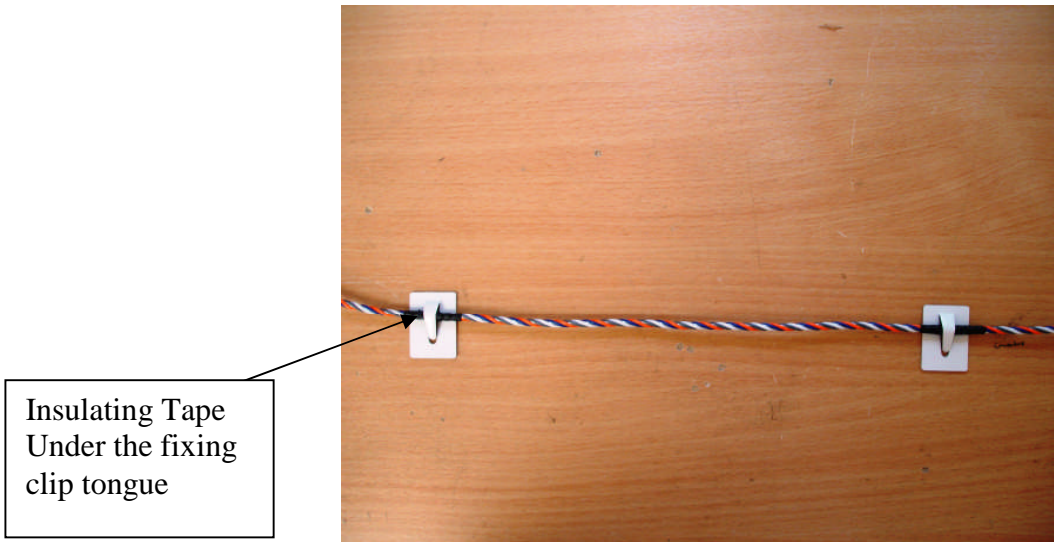


NOTE;
If individual alarm relays are fitted,
the contact arrangement is Normally Open only



6) *Fitting Cable Clips*

If Cable Clips are required, to protect the small sensor wires and to stop false water detected alarms from occurring insulating tape should be first applied around the detection cable before the clip tongue is closed. Clips should be fitted approximately every 1 to 1.5 metres apart. When using clips make sure that the cable touches the floor between the clips, **DO NOT** tighten the cable so that the cable does not touch the floor.



7) *Installation*

THIS EQUIPMENT SHOULD ONLY BE CONNECTED AND WORKED ON BY A QUALIFIED ELECTRICIAN.

To mount the unit to a wall, first remove the front cover to expose the internal equipment. In each corner of the housing positioned below/above the front cover fixings will be found the mounting holes.

Plastic glands have been provided for incoming power and outgoing signal cables. The large gland requiring a 20mm hole within the housing is for the power cable and the smaller gland requiring a 13mm hole within the housing is for the signal cable. Care should be taken when drilling the holes to ensure no damage occurs to the electronic equipment.

A suitably rated 230VAC power cable supply should be run from a fused spur to the unit and terminated to the internal terminal block marked “L”, & “N”. The fuse within the fused spur should be rated at 3Amps.

8) *Positioning the water detection cable*

The detection cable is susceptible to damage and should not be fitted to areas where the cable is likely to be damaged or walked on. If fitting the cable around Air Conditioning Units with humidifiers, ensure that cable is positioned at least one metre from the ACU to stop intermittent alarms being generated from over humidity or water droplets from the AHU. Having positioned the detection cable, ensure that the End of line terminator is plugged into the end of the cable (see drawing above).

9) *Water Shutdown Valve*

A 230VAC supply has been provided to power a solenoid valve in the water feed. If a water leak is detected by the unit this supply will be removed thereby shutting the valve. Once the leak has been rectified the detection cable may take some hours to dry out. During the dry out period the valve can be opened by operating the override switch inside the unit located on the right hand side. Once operated a lamp on the front of the unit will illuminate.

10) Fitting the battery backup if supplied

The battery should be fitted connected after the system as been commissioned. Place the battery within the housing in the space provided. Connect the small BLACK cable to the “—“ battery terminal and the RED with black dots wire to the batteries “+” terminal. If the battery is misconnected, the battery fuse located on the small PCB will blow.

11) Commissioning

Having connected the unit as described above, turn of the mains power to the unit. The “Control Live” should illuminate and the “Sensor Norm/Fault” lamp should be ON and green. If not, refer to the “Fault Diagnostics” below. If the unit powers up with the audible warning going and one of the lights flashing RED, press the mute button and wait to see if the alarm clears. If the alarm remains ON after approximately 20 seconds , refer to the “Fault Diagnostics” below. With the unit powered and both lamps green, unplug the End of line terminator positioned at the end of the detection cable. The controller “Sensor Norm/Fault” lamp should start to flash RED and the audible warning device should be ON, if not refer to the “Fault Diagnostics” below. With the “Sensor Norm/Fault” lamp flashing, press the “Mute” button. The audible warning device should stop and the “Sensor Norm/Fault” lamp should stop flashing but remain ON. Replace the End of line terminator, the “Sensor Norm/Fault” lamp should turn from RED to GREEN, if not refer to the “Fault Diagnostics” below. Using a cup of CLEAN water, immerse a small area (50mm long) of cable into the water. The controller “Water detected” lamp should start to flash RED and the audible warning device should be ON, if not refer to the “Fault Diagnostics” below. With the “Water detected” lamp flashing, press the “Mute” button. The audible warning device should stop and the “Water detected” lamp should stop flashing but remain ON. Remove the water and wipe the cable with some tissue, the “Water detected” lamp should turn OFF, if not refer to the “Fault Diagnostics” below.

12) Emergency Mode

If the system stops looking for water or a fault for a period of 16 seconds all zone alarm and zone fault lamps will illuminate but not flash, the horn will sound and the fault relay will energise. On muting the alarm, all the alarm lamps will extinguish but all the fault lamps including the fault relay will remain ON. In this mode all available and active zones will be looking for and report a water leak but will not advise of a cable fault. Due to the way in which the system looks for water whilst in this mode false alarms or the loss of an alarm can occur due to cross talk between zones. If the unit goes into this mode the fault must be reported to CMR and not left to run for long periods without repair.

13) Fault Diagnoses

Fault	Possible Reason
ALL LEDS are OFF and the unit appears dead	<ol style="list-style-type: none"> 1) No power to the control unit. <i>Test with a meter</i> 2) The power fuse has blown. <i>Test the fuse with a meter</i>
The Water Detected LED remains ON all the time.	<ol style="list-style-type: none"> 1) The cable needs drying out after detecting water. <i>Using tissue paper dry the cable.</i> 2) The cable has a short between the sensors due to Contaminants. <i>Clean the cable using water and tissue paper dry out afterwards</i> 3) The cable has been damaged. <i>Visually check the cable for damage.</i> 4) The sensitivity of the detection system is too sensitive. <i>Remove the lid from the small plastic box connected to the detection cable and turn the potentiometer until the system resets.</i> 5) System fault. <i>Return to manufacture</i>
When the system has a water detected alarm, the LED remains OFF, but the audible warning device sounds.	<ol style="list-style-type: none"> 1) LED fault. <i>Go into lamp test mode to test the LEDS</i> 2) System fault. <i>Return to manufacture</i>
The system will not record a water detected alarm, the LED and audible warning device remain OFF	<ol style="list-style-type: none"> 1) Sensitivity could be too low or a Possible system fault. <i>Remove the lid from the plastic box and turn the potentiometer until the system goes into alarm.</i> 2) System fault. <i>Return to manufacture</i>
The water detected fault LED remains on.	<ol style="list-style-type: none"> 1) The detection or signal cable is broken or disconnected. <i>Check for cable faults or breaks.</i> 2) Detection module fault. <i>Dip part of the detection cable into a cup of water and see if it sets up an alarm.</i> 3) Controller fault. <i>Temporarily short terminals 1 & 5 in the control unit to setup an alarm.</i> 4) System fault. <i>Return to manufacture</i>
All zone Alarm and Fault lamps are on but only the Alarm lamps extinguish after muting.	<ol style="list-style-type: none"> 5) The system is in Emergency mode, <i>Return to manufacture</i>
Horn not working	<ol style="list-style-type: none"> 1) Faulty horn. <i>Use the Test facility.</i> 2) System fault. <i>Return to manufacture</i>
The battery will not power the system	<ol style="list-style-type: none"> 1) Battery discharged, disconnect a lead and test with a meter. 2) Battery fuse blow, see item 10 3) Charger fault, disconnect a battery lead & check for 13.5V across the battery wires.