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LD1V Water Leak Detection Installation and Operation Manual

Contents

1) Operation

In normal mode with no alarms or faults, the audible warning device will be OFF, and green 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 BMS alarm relay will close and the lamp will start flashing between green and red. To stop the audible warning, press the "Mute Alarm" button. On muting, the lamp will stop flashing and remain permanently red, indicating an acknowledged alarm. The system will remain in this state until the water is removed from the cable, the lamp will turn green and BMS alarm relay turn OFF.

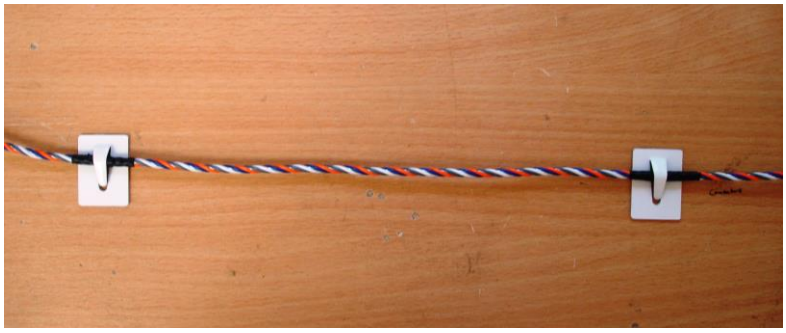
3) Positioning the Water Detection Cable

Terminate the red and black wires from the white cable, to the terminal block marked "Sensor". As cable termination is NOT polarity conscious, any wire can go into any terminal. Note; 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.

4) Fitting Cable Clips

If Cable Clips are required, to protect the small sensor wires and to stop false 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.

Insulating tape under the fixing clip tongue

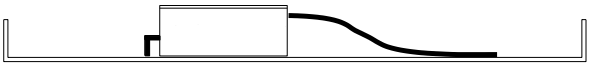


5) Mounting a Spot Probe

Spot probes are supplied with a mounting bracket that can be used to secure the sensor to a wall or the side of a large drip tray. In some applications the mounting bracket may not be required and can be discarded. Two 4.5mm countersunk holes are provided for fixing or the bracket can be glue fixed. When fixing, the stainless-steel pins should be touching the floor providing the flooring is nonconductive i.e., concrete, wood or plastic. For conductive areas, the stainless-steel probes MUST NOT touch the surface, they must be raised to provide a 0.5mm gap between floor and sensor. Height adjustment is provided by sliding the sensor slightly out of its holder. The sensor can also be removed by sliding it out of its holder for testing, maintenance or when cleaning the floor.

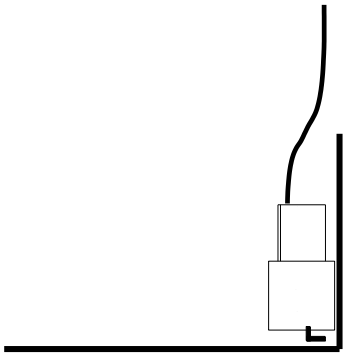
For steel drip trays the sensor has been designed to be positioned on its back with the sensors either facing downward or upside down if a large amount of water is required before detection.

Please refer to diagrams on the following page.

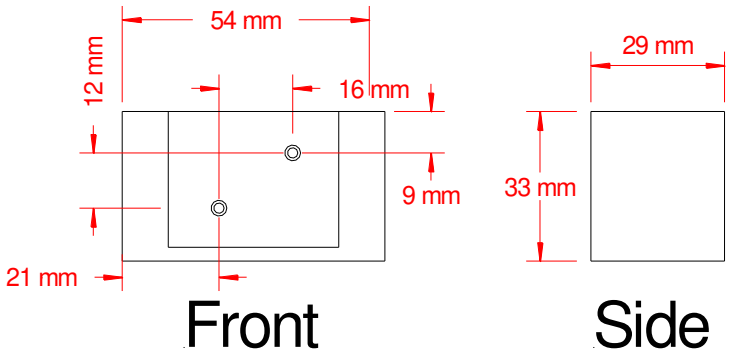


Drip tray without the mounting bracket

Deep drip tray side mounted using bracket
(Sensor not to touch a conductive drip tray)



Mounting to a wall or structure
(Sensor to touch floor unless floor is conductive)



Mounting bracket fixing details

Once the sensor has been positioned, extend the white cable back to the alarm outstation using a 2-core cable, for example Belden 9502. Connect the two cables to the appropriate zone terminals using the removable green terminal block from the outstation. When making connections, ensure that the RED wire from the white cable is terminated to the zone terminal marked “Sig+” and the black cable to “Sig-“. Once both cables have been terminated, give a slight tug to each wire to ensure correct termination to the terminal block. Reversing the cabling will set the zone into “Alarm”. If this happens revert to the terminal connections.

6) Water Shutdown Valve

A 230VAC supply has been provided from the terminal block marked “Valve” to power a solenoid valve fitted to the water feed pipe. 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.

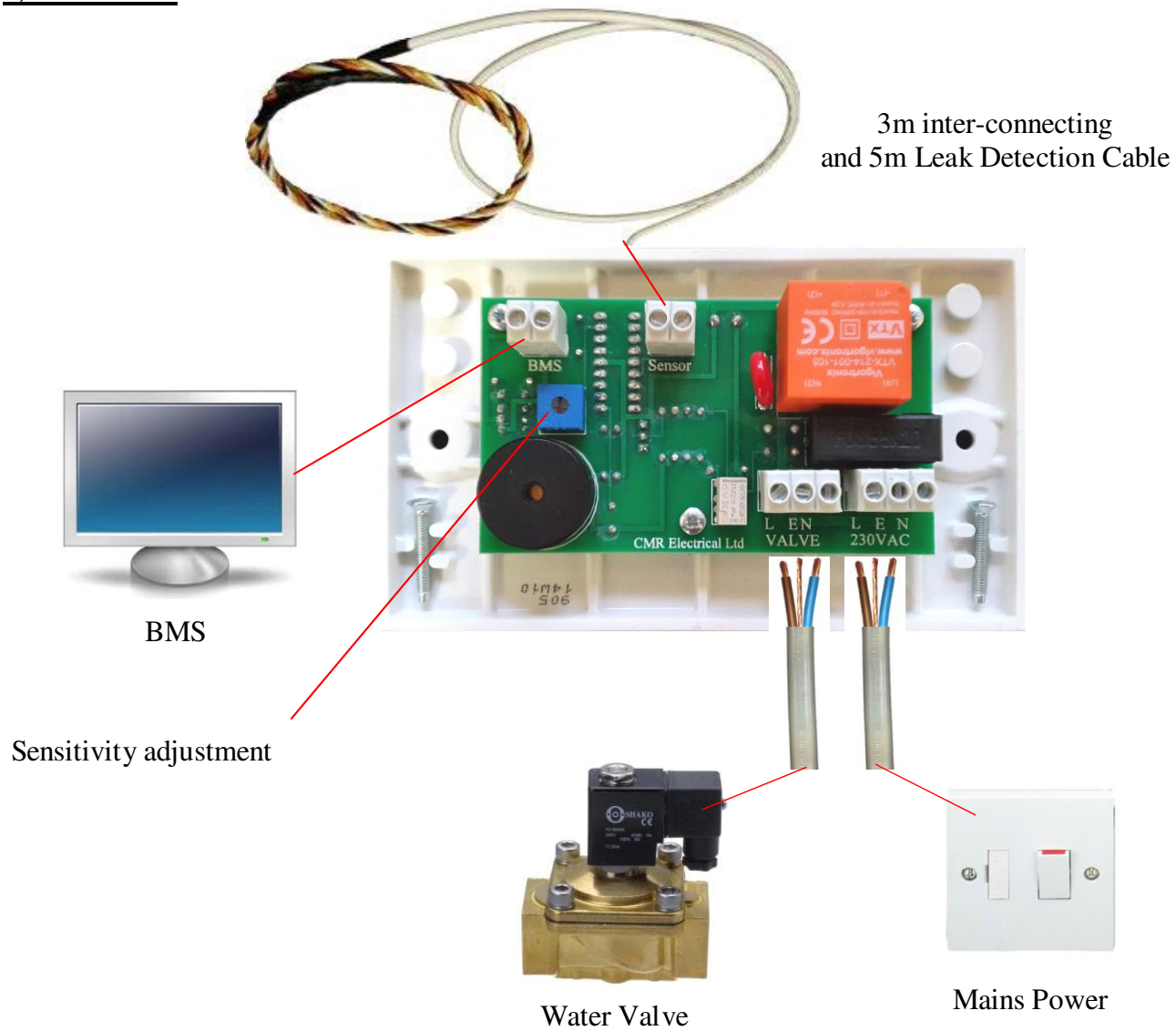
PLEASE NOTE;

On solenoid type valves, the valve MUST be fitted with the arrow on its body, facing the direction of flow, if not, the valve will not stop the flow of water

7) Temporary Valve Shutdown Override

During the detection cable drying out period, the water valve can be opened by pressing the “Mute” push button for at least 5 seconds. Once the cable has dried out the override will automatically be cancelled

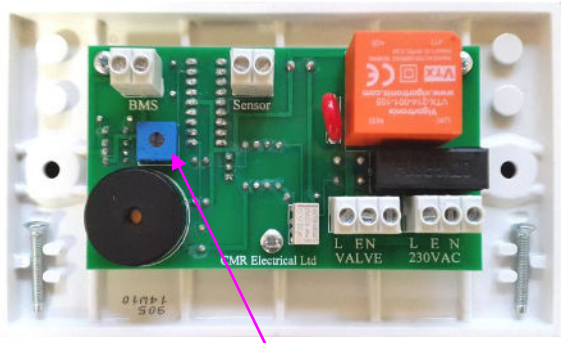
8) Installation



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

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 230VAV “L”, “E” & “N”. The fuse within the fused spur should be rated at 5 Amps.

9) Water Detection Sensitivity Adjustment



Decrease Sensitivity Increase Sensitivity

10) Commissioning

Once the unit is connected as described above, turn off the mains power to the unit. The lamp should illuminate green. If not, refer to the "Fault Diagnostics" below. If the unit powers up with the audible warning going and the light flashing green / 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. Using a cup of CLEAN water, immerse a small area (50mm long) of cable into the water. The controller lamp should start to flash green / red, the audible warning device should be ON and the valve should stop the flow of water, if not refer to the "Fault Diagnostics" below. With the lamp flashing, press the "Mute" button. The audible warning device should stop and the lamp should stop flashing but remain ON. Remove the water and wipe the cable with some tissue, the lamp should turn green, if not refer to the "Fault Diagnostics" below.

11) Maintenance

The system should be fully tested using the commissioning procedure at least once a year for correct operation and if fitted, a check made to ensure that the shutoff valve operates correctly. All cables should be inspected at the same time for signs of damage, dirt contamination or mis-placement.

12) Fault Diagnostics

Fault		Possible Reason
Lamp is OFF and the unit appears dead		1) No power to the control unit. *Test with a meter* 2) The power fuse has blown. *Test the fuse with a meter*
The Water Detected lamp remains ON all the time		1) The cable needs drying out after detecting water. *Using tissue paper dry the cable.* 2) The cable has a short between the sensors due to contaminants. *Clean the cable using water and tissue paper dry out afterwards* 3) The cable has been damaged. *Visually check the cable for damage.* 4) The sensitivity of the detection system is too sensitive *turn the potentiometer until the system resets.* 5) System fault. *Return to manufacture*
When the system has a water detected alarm, the lamp remains OFF, but the audible warning device sounds		1) Lamp fault. *Return to manufacture*
The system will not record a water detected alarm, the lamp remains green and audible warning device remains OFF		1) Sensitivity could be too low or a possible system fault *turn the potentiometer until the system goes into alarm.* 2) System fault. *Return to manufacture*
Horn not working		1) Faulty horn. *Return to manufacture*
The water valve will not open		1) No power to the valve. *Check that 230VAC is access the valves socket terminals. Check ohmic value of the coil is about 736 Ω*
The water valve will not fully close		1) Valve fitted the wrong way round. *Check that the arrow on the valve is pointing the correct direction. Check that the water pressure does not exceed the maximum valve pressure. Check for dirt or contaminants on the valves seat.*