CMR Electrical LD1V Single Zone Water Leak Detection Alarm Instruction Manual

Contents

CMR Electrical LD1V Single Zone Water Leak Detection Alarm

Specifications

- **Power Supply:** 230VAC
- **Cable Type:** White cable with red and black wires
- **Alarm System:** Audible warning device with green lamp indicator
- **Valve Control:** Solenoid valve for water shutdown

Product Usage Instructions

- **Positioning the Water Detection Cable:**
  Terminate the red and black wires from the white cable to the terminal block marked Sensor. The cable is not polarity conscious, so any wire can go into any terminal. Avoid fitting the cable in areas where it can be damaged or walked on.
- **Fitting Cable Clips:**
  If cable clips are needed, apply insulating tape around the detection cable before closing the clip tongue to protect the sensor wires. Place clips every 1 to 1.5 meters apart. Ensure the cable touches the floor between clips without being tightened so it does not touch the floor.
- **Mounting a Spot Probe:**
  Refer to diagrams for mounting the sensor on steel drip trays or walls. Connect the white cable back to the alarm outstation using a 2-core cable. Terminate the cables to the appropriate zone terminals on the outstation, ensuring correct wire connections to prevent false alarms.
- **Water Shutdown Valve:**
  A 230VAC supply from the terminal block marked Valve powers a solenoid valve on the water feed pipe. If a leak is detected, this supply is removed to shut the valve. Note that the valve must be installed with the arrow indicating the flow direction.
- **Temporary Valve Shutdown Override:**
  To open the water valve during cable drying, press the Mute button for at least 5 seconds. The override is automatically canceled once the cable is dry.

Operation

In normal mode with no alarms or faults, the audible warning device will be OFF, and the green lamp will be ON.

Water Detected Alarm

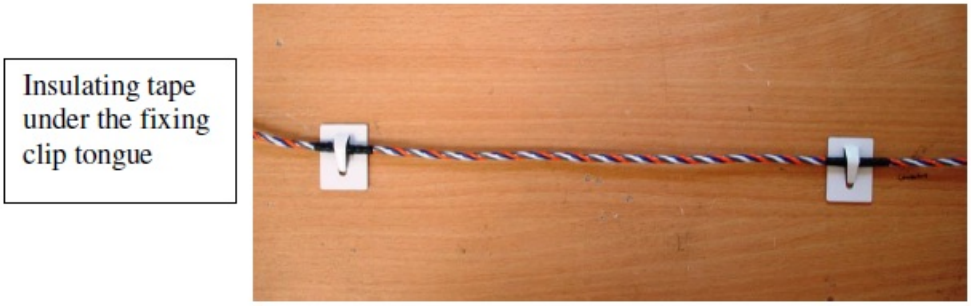
When the detection cable comes into contact with water anywhere along its length, the audible warning device will start, the BMS alarm relay will close and the lamp will start flashing between green and red. To stop the audible warning, press the “Mute Alarm” button. On muting, the lamp will stop flashing 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 turns and the BMS alarm relay turns OFF.

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

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 meters 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.

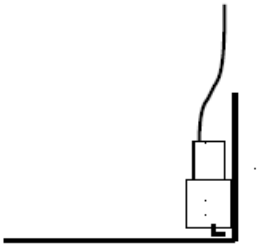


Mounting a Spot Probe

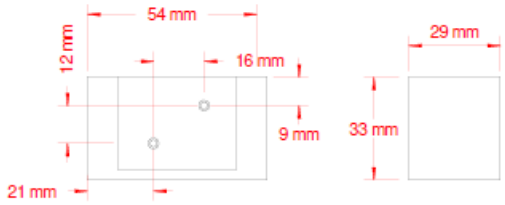
- Spot probes are supplied with a mounting bracket that can be used to secure the sensor to a wall or the side of a large drip tray. In some applications, the mounting bracket may not be required and can be discarded. Two 4.5mm countersunk holes are provided for fixing or the bracket can be glue fixed. 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 the floor and the 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 sensor either downward or upside down if a large amount of water is required before detection.
- Please refer to the 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



Mounting bracket fixing details

(Sensor to touch floor unless the floor is conductive)

- 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.

Water Shutdown Valve

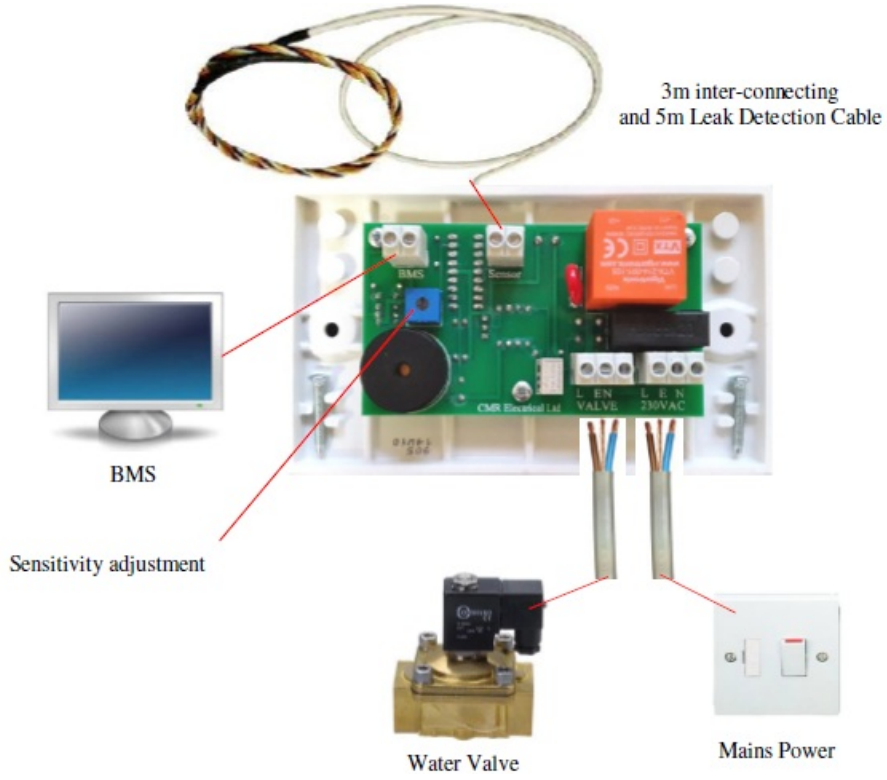
A 230VAC supply has been provided from the terminal block marked “Valve” to power a solenoid valve fitted to the water feed pipe. If a water leak is detected by the unit, this supply will be removed thereby shutting the valve. Once the leak has been rectified the detection cable may take some hours to 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

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.

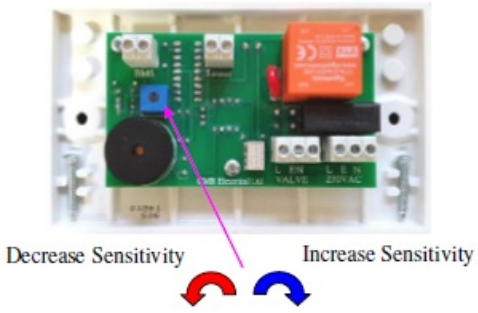
Installation.



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.

Water Detection Sensitivity Adjustment



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.

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 misplacement.

Fault Diagnostics

Fault		Possible Reason
The 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 th e time.		*1)* The cable needs to dry out after detecting water. *Using ti ssue paper dry the cable.* *2)* The cable has a short between the sensors due to conta minants. *Clean the cable using water and tissue paperand dr y it out afterward* *3)* The cable has been damaged. *Visually check the cable f or damage.* *4)* The sensitivity of the detection system is too sensitive *tto urn the potentiometer until the system resets.* *5)* System fault. *Return to manufacture*
When the system has a water-detected alar m, the lamp remains OFF, but the audible w arning 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 *tur n 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 accessing th e valve* *socket terminals. Check the hmic value of the coil is about 73 6 Ω*
The water valve will not fully close		1) Valve fitted the wrong way round. *Check that the arrow on the valve is pointing in the correct direction. Check that the w ater pressure does not exceed the maximum valve pressure. Check for dirt or contaminants on the valve seat.*

Frequently Asked Questions

- **Q: What should I do if the audible warning device is not turning off?**
  A: Check for any alarms or faults indicated by the system. If there are none, ensure proper power supply and connections.
- **Q: How often should I adjust the water detection sensitivity?**
  A: Sensitivity adjustment should be done during installation and commissioning. Re-adjust if false alarms occur or environmental conditions change.

Documents / Resources

 LD1V Water Leak Detection Installation and Operation Manual	CMR Electrical LD1V Single Zone Water Leak Detection Alarm [pdf] Instruction Manual LD1, LD1V, LD1V Single Zone Water Leak Detection Alarm, Single Zone Water Leak Detection Alarm, Water Leak Detection Alarm, Leak Detection Alarm, Detection Alarm

References

- User Manual