

LD310 Quick Start Guide

Thank you for purchasing a LD310 single-zone leak detection controller. This guide outlines device installation and operation. Before you install a LD310, check the website to ensure you are using the most recent version of our documentation.

If you need further assistance, contact ACI at techsupport@workaci.com

Supplies for Installation

Included with the LD310

15 foot (4.57m) leader cable, End-of-line terminator (EOL)

Available from ACI, sold separately

SeaHawk sensing cable, up to 300 feet (91.4m)
Isolated ACI DC power supply (Part# A/PS24-5V-S)

Mount the Device

1. Remove the circuit board from the base to expose the mounting holes. Examine how the board fits into the base. You'll have to put it back together so make sure you understand how it was assembled before you remove it. To remove the board pull the circuit board clip out to relieve the tension that holds the board in place. Angle the board up and then pull it to the right to remove it from the base. Move the board slowly and gently to get it out of the base without damaging any circuitry.
2. Secure the base in the desired location.
3. Put the circuit board back into the enclosure. There are two "L" shaped brackets along the left side of the enclosure. Angle the board in under the lip of these L brackets and as far down as it will go against the plastic pegs at the bottom of the enclosure. Guide the board so it is parallel with the base. Pull the circuit board clip out and push the board down until the circuit board clip snaps into place and secures the board. The board is a very tight fit in the enclosure. Work slowly and gently so the board is secured by the enclosure and doesn't get damaged in the process.

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Connect the Sensing Cable

Leader cable is used to connect sensing cable to the LD310, since sensing cable cannot connect directly to the device.

1. Insert the four stripped wires of the leader cable into the appropriate slots in the Cable Input terminal block at the bottom right corner of the LD310:
   White wire: insert into pinout labeled **W**
   Black wire: insert into pinout labeled **B**
   Green wire: insert into pinout labeled **G**
   Red wire: insert into pinout labeled **R**
2. Unscrew the EOL from the end of the leader cable.
3. Attach the length of sensing cable to the leader cable.
4. Route the sensing cable according to your cable layout diagram.
5. Secure the EOL to the unoccupied end of the sensing cable.

Connect the Relay Outputs

The LD310 can be used as a stand-alone device, but it does have two Form C relay outputs that communicate leak and fault status to another device or system. If you wish to use the relay outputs, wire them at this time.

Connect the Power and Modbus Relay Output

The LD310 requires an isolated 5VDC power supply.

A power supply is not included with the LD310, but an isolated 5VDC power supply (Part# A/PS24-5V-S) is available from ACI.

To avoid product damage or personal injury, wire power to the slots labelled **+** and **–** in the DC IN terminal blocks. Establish all wiring connections, including sensing cable, relay outputs, and power before you activate the power supply.

Program Jumpers

The LD310 has three sets of three-pin jumpers. JP1 configures the sensitivity of the leak setting. JP2 configures the relay outputs. JP3 configures the audible alarm. If you change the jumpers you must cycle power to the LD310 in order for it to recognize the change.

JP1 Set the Leak Sensitivity	
Jumper spans top 2 pins	High sensitivity - most sensitive - system alarms with .5" (13mm) wetted cable
Jumper is not installed	Medium sensitivity - system alarms with 2" (51mm) wetted cable
Jumper spans bottom 2 pins	Low sensitivity - least sensitive - system alarms with 6" (152mm) wetted cable
JP2 - Configure the Relay Outputs	
Jumper spans top 2 pins	Relays are supervised - the relays remains ON until either power is disabled or an alarm is detected - at which time the relays turn OFF.
Jumper spans bottom 2 pins	Relays are non-supervised - the relays remains OFF until an alarm is detected - at which time the relays turns ON.
JP3 - Configure the Audible Alarm	
Jumper is not installed	Audible alarm is disabled. This is the LD310's default setting.
Jumper spans bottom 2 pins	Audible alarm is enabled.

LED

The LD310 has one LED, which is used to report a variety of conditions.

Power On / Normal - The LED is on and displays a solid green color during normal operation with no alarm present.

Cable Break - The LED flashes orange while the audible alarm sounds. Once the alarm silence button is pushed, the LED will continue to flash orange slowly until the cable break is resolved.

Leak - The LED flashes red while the audible alarm sounds. Once the alarm silence button is pushed, the LED will continue to display a solid red color until the leak is resolved and the cable is dry.

Audible Alarm and Silence/Test/Reset Button

By default, the audible alarm on the LD310 is disabled. To activate the audible alarm, first loosen the screws at the bottom of the enclosure and remove the unit's lid. Remove the warning sticker from the top of the audible alarm, move the jumper on J3 so it covers the bottom two pins, and cycle power to the unit. Replace the LD310's lid and tighten the screws to secure it.

The LD310 has one push-button switch, which is used to silence the audible alarm and to test and reset the system.

The audible alarm sounds when a cable break or leak is detected. When the audible alarm is activated, push the button once to silence the alarm.

Test mode allows the LD310 to test its internal components. To initiate test mode, push and hold the button for approximately 5 seconds - when the LED flashes red and green, the audible alarm sounds, and the relays activate (change state) the test is complete. Release the button.

When you release the button after the test cycle, the entire unit resets and the LED returns to green. If there was a leak or cable break present before you ran the test and that leak or break is still present, the unit will alarm for this condition again after a few seconds.

Test the System

Once the LD310 is set up, you should test the system. If the LD310 is connected to a BMS or NMS, notify monitoring personnel before you test.

To verify the LD310's functionality, test three points within the length of sensing cable - one at the beginning, one in the middle of the length, and another near the end of the length of cable.

There are a variety of ways to simulate a leak.

- Pour a small puddle of water on the cable while it rests on the floor.
- Dunk the cable in a cup of water.
- Wet a paper towel or rag and wrap it loosely around the cable. This is popular if the cable is used in pipe applications. Be careful to wrap the wet cloth loosely around the cable. Do not put pressure on the cable.

Remove simulated leak sources. Return the system to its normal operating state.

To test the cable fault alarm, remove the end-of-line terminator (EOL) from the end of the sensing cable. This will cause a cable break, which should be reported appropriately by the LD310. Once the cable break alarm is verified, reapply the EOL and ensure the system returns to its normal operating state.

