

SeaHawk LD1000 Quick Start Guide



Thank you for purchasing a SeaHawk LD1000 single-zone leak detection controller. This guide outlines device installation and operation. Before you install a LD1000, check our website - www.rletech.com - to ensure you are using the most recent version of our documentation.

If you need further assistance, please visit the support section of our website - rletech.com - or call us at 800.518.1519.

SeaHawk

v2.2
(08/2015)

RLE Technologies

© Raymond & Lae Engineering, Inc. 2011. All rights reserved. RLE® is a registered trademark and Seahawk™, Falcon™, and Raptor™ are trademarks of Raymond & Lae Engineering, Inc. The products sold by Raymond & Lae Engineering, Inc. are subject to the limited warranty, limited liability, and other terms and conditions of sale set forth at <http://rletech.com/RLE-Terms-and-Conditions.html>.

Supplies for Installation

Included with the LD1000

15 foot (4.57m) leader cable
End-of-line terminator (EOL)
Wall mounting hardware

Available from RLE, sold separately

SeaHawk sensing cable, up to 1000 feet (305m)
Isolated RLE power supply, DC (PSWA-DC-24) or AC (WA-AC-24)

Mount the Device

The LD1000 is a wall mounted device, and mounting hardware is supplied with every unit.

1. Select a location for the LD1000 and place the two screw anchors in the wall 4.25 inches (107.9mm) apart.
2. Screw both screws into the wall anchors so that approximately 1/8 inch (3.18mm) of each screw is showing. It may be necessary to adjust the screws—in or out—so that the unit fits snugly to the wall.
3. Remove the front cover from the LD1000 and hang the rear of the unit on the screws.
4. Pull the unit toward the ground, so the screws nestle in the top of each keyhole, and securely fasten the unit to the wall.

** As you wire and configure the LD1000, Refer to Figure A on the back of this page for a detailed diagram of the device's internal circuit board and wiring connections. **

Connect the Sensing Cable

Leader cable is used to connect sensing cable to the LD1000, since sensing cable cannot connect directly to the device.

1. Remove the appropriate circular knockout from the enclosure and thread the end of the leader cable through the knockout.
2. 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 LD1000:
 - 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**
3. Unscrew the EOL from the end of the leader cable.
4. Attach the length of sensing cable to the leader cable.
5. Route the sensing cable according to your cable layout diagram.
6. Secure the EOL to the unoccupied end of the sensing cable.

Connect the Relay Outputs

The LD1000 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

The LD1000 requires an isolated power supply, sold separately and available from RLE. There are separate terminal blocks for DC and AC power. To avoid product damage and personal injury, carefully wire power to the correct terminal blocks. Establish all wiring connections, including sensing cable, relay outputs, and power before you activate the board's power supply.

DIP Switch Settings

The LD1000 has four DIP switches. Adjust the switches to suit your application.

SW1-1	
Configure the Relay Outputs as Supervised or Non-supervised	
Off (default)	Relays are non-supervised - the relays remains OFF until an alarm is detected - at which time the relays turns ON.
On	Relays are supervised - the relays remains ON until either power is disabled or an alarm is detected - at which time the relays turn OFF.
SW1-2	
Configure the Relay Outputs as Latching or Non-latching	
Off (default)	Relays are non-latching - when an alarm is detected, the relays will remain in alarm state until the Quiet/Test/Reset button is pushed, or until the condition that caused the alarm returns to a normal state.
On	Relays are latching - when an alarm is detected, the relays will remain in alarm state until the Quiet/Test/Reset button is pressed.
SW 1-3	
Configure Relay Outputs as Two Summary Alarms or as Separate Leak and Fault Alarms	
Off (default)	Relay one is a leak alarm; relay two is a fault alarm.
On	Both relay one and relay two are summary alarms.

SW 1-4	
Alarm Delay Setting - The time between when an alarm is detected and when the LD1000 reports the alarm. The alarm must be present during the entire delay in order for the alarm to sound.	
Off (default)	10 second alarm delay
On	Two minute alarm delay

Leak Sensitivity

Leak sensitivity indicates how much water must be present for the controller to signal an alarm condition. The lower the sensitivity setting, the more water must be present to trigger an alarm. Use the pot at R25 to set the sensitivity.

R25	
Set the Leak Sensitivity	
High	Gently turn the dial clockwise as far as it will go.
Medium (default)	Gently adjust the dial so it is in between the high and low settings.
Low	Gently turn the dial counter clockwise as far as it will go.

Audible Alarms and Status LEDs; Quiet/Reset/Test Button

JMP2 controls the audible alarm. By default, the audible alarm on the LD1000 is enabled - the jumper is placed over the two prongs on JMP2. To disable the audible alarm, remove the jumper from JMP2.

The LD1000 has three status LEDs:

Status LEDs		
Color	Condition	Status Description
Green	Power	The light glows solid green when power is applied to the unit.
Yellow	Alarm - Cable Break	<ul style="list-style-type: none"> Yellow light blinks when a cable break is detected. Light glows solid yellow once the quiet/reset button is pushed. After the cable break is repaired, the light blinks yellow until the quiet/reset button is pushed again.
Red	Alarm - Leak Detected	<ul style="list-style-type: none"> Red light blinks when a leak is detected. Light glows solid red once the quiet/reset button is pushed. After the leak is cleared, the light blinks red until the quiet/reset button is pushed again.
Red & Yellow	Alarm - Low Input Power	Red and yellow lights alternate blinks when a low input power condition is present.

Use the push button to silence the audible alarm and to test and reset the system.

Quiet/Test/Reset Button	
Quiet	When a cable fault or leak is detected the alarm sounds. Push the button once to silence it.
Reset	With no alarm present, press the button momentarily to reset the system. If any alarms still exist after they are reset, the LEDs will turn on, the audible alarm will sound, and the relays will activate.
Test	Test the LD1000's internal components - push and hold the button for one second - the Fault and Leak LEDs will light and the audible alarm will sound. If the button is held for the entire test sequence, the LEDs will glow solidly and both relays will activate until the switch is released. This test sequence also cycles when the unit is powered on.

Test the System

Once the LD1000 is set up, you should test the system. If the LD1000 is connected to a BMS or NMS, notify monitoring personnel before you test.

To verify the LD1000'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 LD1000. Once the cable break alarm is verified, reapply the EOL and ensure the system returns to its normal operating state.

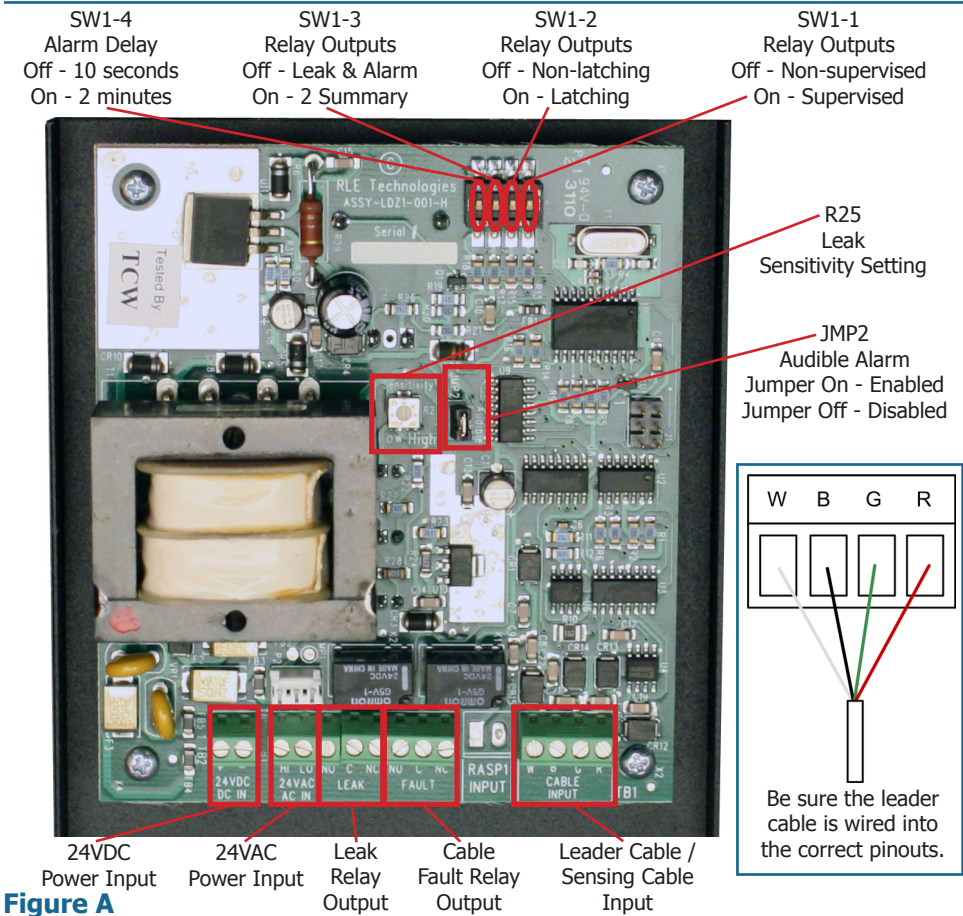


Figure A