



# LLD1020-1 Leak Detector

Environmental Systems  
& Equipment Service

Operation and Maintenance Manual

The ES2 Model LLD1020-1 Liquid Leak Detector is designed to monitor for liquid leaks on a solid surface and provide audible and visual alarms with contact output provided for remote alarming.



LLD1020 Alarm Panel

## About this Instruction Manual:

This Manual should be read before installation or your LLD1020 Liquid Level Detector, and referred to for maintenance or service.

### Installation / Start-Up:

Guides in the proper placement and setup of the Detector.

### Functional:

Explains how the LLD1020 functions.

### Operation:

Describes normal use of the product.

### Maintenance:

Causes and fixes for abnormal operation, or "false alarms".

## Installation:

The LLD1020 requires only a nearby 120 Vac receptacle, for stand-alone operation. It contains an alarm contact for interfacing to your control system, if applicable. Before plugging-in, locate your LLD1020 Detector for convenient access and visibility, within about 10' of the area you want to protect. The panel box is easily wall-mountable with feet provided. The sensor, on a standard 16' cable, may simply be placed on your floor in the protected area, or attached to your floor using the mounting-holes in its bracket.. Consider your placement from a trip-hazard standpoint as well.



Sensor

## Function:

The Leak Detector consists of a Control Panel, and a remote Proximity Sensor, connected via a 5-meter low-voltage cable. The control panel contains a resettable circuit breaker for unit protection, a 24 volt DC power supply, indicators for Normal and Alarm conditions, an Alarm annunciator, and switches for silencing, or resetting an Alarm.

It supplies low-voltage to the remote proximity sensor. The sensor is factory-mounted on a stainless-steel bracket for stability and corrosion resistance, such that its downward-facing sensing surface is close to, but not touching, your floor. The sensor is an adjustable-sensitivity capacitive prox. type, with threaded barrel, and in this case detects the presence of water, but not the floor. Careful setting of the sensor distance from the floor, as well as the sensitivity, results in reliable detection of as little as 1/32" of water.

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### Operation:

The detector is operational as soon as power is applied. The indicator "Active" LED lights to show that the sensor is operational, but *not* sensing any liquid, this is the normal state. If the sensor detects liquid, it changes state, turning off the "Active" LED, and turning on the "Alarm" LED, as well as the audible annunciator. The audible annunciator may be silenced during an alarm condition, by turning the selector switch, to "Silence" (to the right). Do not unintentionally leave the switch in the silent position, as this will disable the audible annunciator. An alarm condition is retained after liquid beneath the sensor is removed, with the red indicator remaining illuminated and the contact output closed. Pressing the yellow "Reset" button clears this condition. However, the alarm will repeat upon release of the button, if the sensor still detects liquid.

### Maintenance & Troubleshooting:

Very little effort is required to maintain reliable operation. Keep the sensor free of foreign materials, since an eventual accumulation under the sensor could cause a false alarm. It is advisable to perform a simple test occasionally, to confirm proper detection, and indication. You need only place the sensor in a small intentional spill, to simulate a leak. If the sensor happens to detect your (dry) floor, then it is set just a bit too sensitive, or is adjusted too close to the floor, for your specific floor material. Using the retaining nuts, adjust it away from the floor, and re-tighten, or, turn down the sensitivity adjustment slightly set screw located on the side of the sensor. In the unlikely event you no longer observe an "Active" LED indication :

1. Check the power at the receptacle servicing the LLD2010 detector, and remedy as necessary.
2. Test activate the sensor by placing a finger on its sensing surface. If an Alarm results, the green "Active " LED is at fault
3. Loosen the (8) perimeter screws on the control panel, and move the front panel away from the box. Referencing the Component Layout, observe the "DC OK" indicator on the power supply on the left. If OK (Green), the Sensor is at fault.
4. Note the fuse to the right of the power supply, and check that it is not blown. If it is, replace it with *F1AL250V*, and see if the power supply lights again. If it will not stay set, or the supply does not again light, the power supply is at fault.

### Applications:

- Monitor chemical storage tank secondary containment
- Monitor piping secondary containment
- Monitor chemical storage room floor
- Monitor for water leaks in flood prone areas
- Monitor for oil leaks on machinery
- Monitor for process leaks
- Monitor for HVAC condensate leaks

**For Technical Support  
Parts and Service  
Call ES2 Toll Free at  
877-766-2372**

### LLD1020 Options:

- Custom programming and controls
- Custom enclosures
- Battery Back-up
- Solar power supply
- Radio or cell phone alarm transmission

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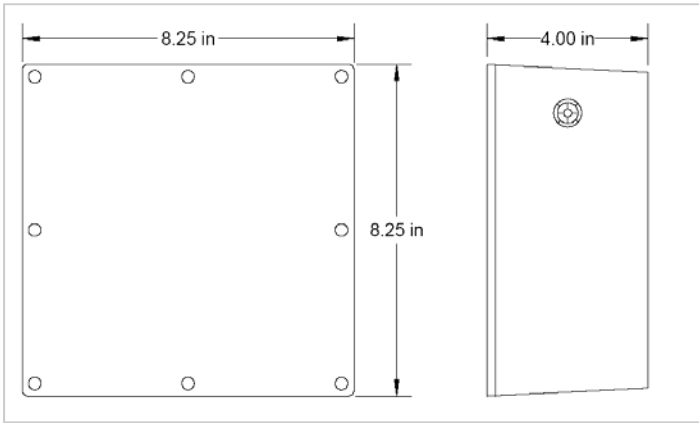
# LLD1020 Specifications:

## Alarm Panel

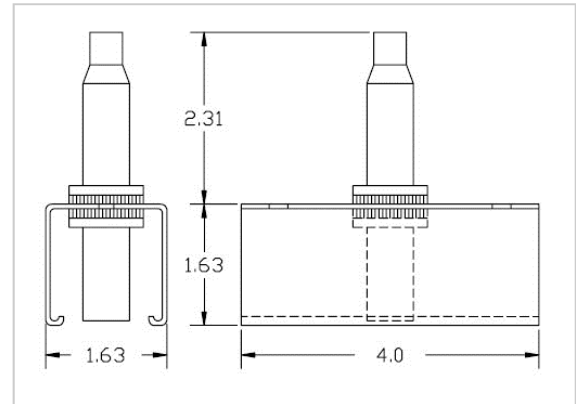
Enclosure	PVC molded, foam gasket, SS screws, UL, NEMA 4,4X ,6P rating
Dimensions	8"wide x 8" high x 4" deep
Indicator lights	NEMA 4X, 22mm, bright LED, 100,000 hour, efficient, cool operation
Push Buttons	NEMA 4X, 22mm, heavy duty, safety yellow
Annunciator Horn	NEMA 4X, molded, solid state piezo electric, 95 decibels @ 2ft
Power cord	Length 6ft, conductor 16awg, 120v plug
Power requirements	100-240 Vac, 50-60hz, 1-phase, 6 watts
Alarm output	Dry (unpowered) contact, 8 amp, selectable N.O. or N.C,
Temperature range	0° F to 130° F

## Sensor

Materials	Chemical resistant PVC, IP67 immersable, UL rating, mount CPVC
Cable	PVC sealed with plug end, standard length 15ft option 25ft extension cable
Dimensions	Overall including mount 4" x 4" x 1.63"
Mounting	304 Stainless Steel - free standing or bolt down
Technology	Capacitive proximity - maximum distance sensitivity .39"
Power	24Vdc, 2ma supplied from LLD1020 alarm panel
Output	Fail-safe NPN: on during normal operation - off in alarm state
Indication	Sensor LED illuminated = normal condition, Off = liquid leak condition
Temperature Range	13° F to 122° F

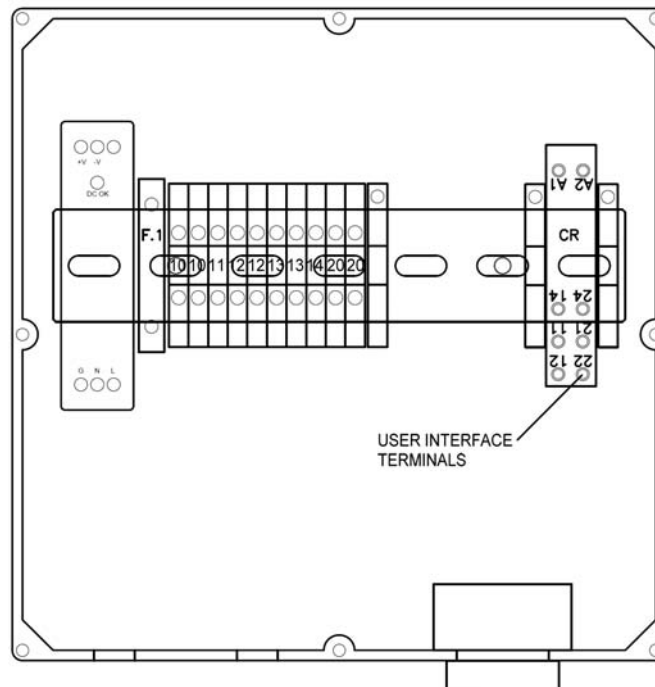


**Panel Dimensions**



**Sensor Dimensions**

**Panel Layout**



# LLD1020 Liquid Leak Detector

## Electrical Schematic

