RLE Technologies

Choosing the Right Water Detection System

Application and Configuration Guide

Introduction

This application and configuration guide is designed to familiarize users with RLE's different water leak detection systems. The guide will also help users select the RLE water detection system that best suits their needs.

RLE Technologies manufactures three different types of water detection systems: spot detectors, zone detection systems, and distance read detection systems. These systems are detailed below. RLE technical support is always available to answer user questions: 800-518-1519.

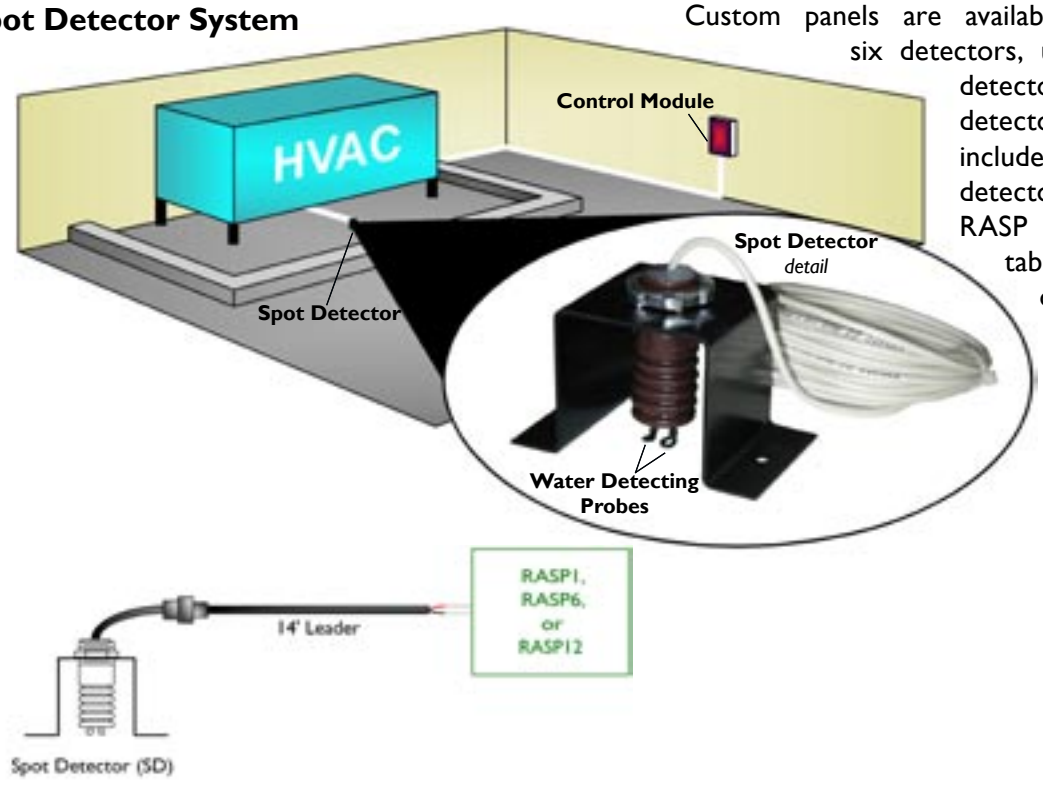
Spot Detectors

A spot detector senses water at a single point. These detectors are most frequently used in small rooms, air conditioning drip pans or dams, and around floor drains. Spot detectors are the most economical way to detect water.

The spot detector utilizes two water detecting probes. These probes extend to the floor; the distance between the probes and the floor is adjustable to a maximum of ¾ inch. A metal bracket, which supports the probes and electronics, can be glued or bolted to the floor.

Each spot detector must connect to a control module. This control module is usually mounted on a wall in a high traffic area, and provides visual and audible annunciation of a water leak. Control panels are available for one, six or twelve spot detectors. Custom panels are available for multiples of six detectors, up to 30 total spot detectors. A typical spot detector application would include one or multiple spot detectors connected to a RASP control panel. The table on the back page of this guide notes which RASP units are compatible with specific spot detector groupings.

Spot Detector System

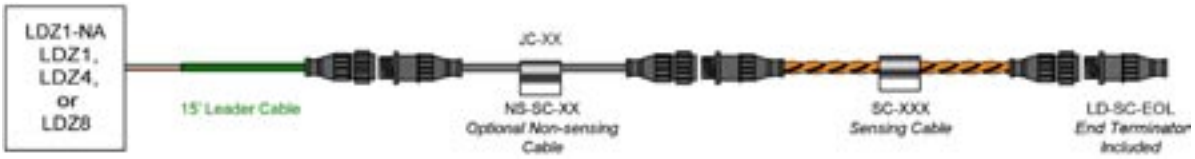


Zone Systems

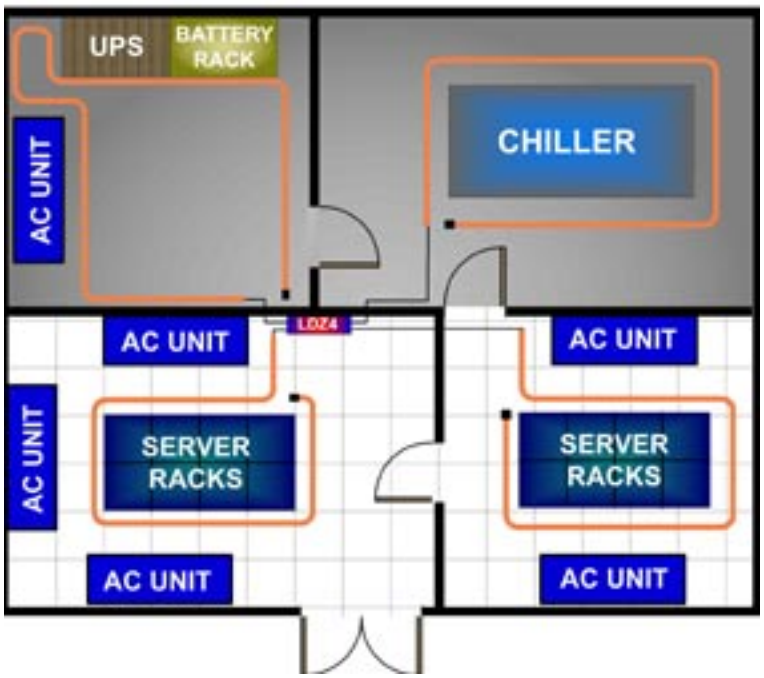
Cable-type systems are recommended for large areas. Cable-type systems provide better floor coverage than spot detectors.

One type of cable system is a zone system. Water leak detection sensing cable is placed on the floor or sub-floor, around all possible leak sources. The room or rooms are then divided into multiple areas, or zones. Each cable monitors one zone. The diagram at the bottom of this page shows a zone system plan for a data center.

If water or other conductive liquids contact the cable anywhere along its length, the control panel visually and audibly annunciates the water leak and in which zone the leak is located. Control panels are available to support one zone (LDZ1), (LDZ1-NA), four zones (LDZ4), or eight zones (LDZ8). Leak Detected relay output is standard. Each individual zone's sensitivity is adjustable.



All cable-type systems are supervised systems. A supervised system monitors the cable for any type of break or misconnection. If a break in the cable occurs, a trouble LED illuminates.

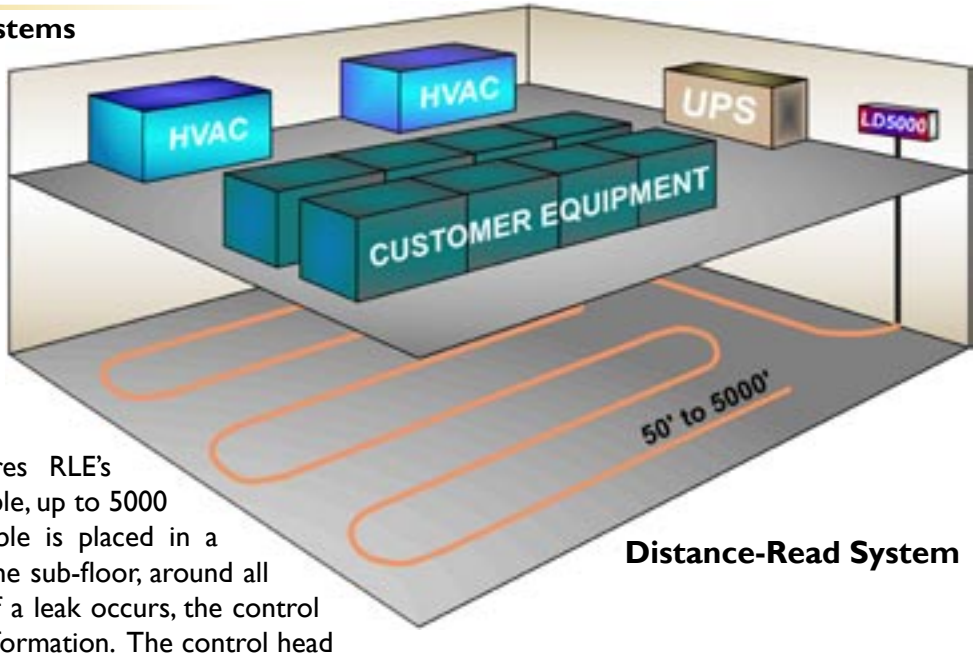


Zone System

This example shows an area divided into a four zone arrangement; each room is a zone. This configuration features the LDZ4 and four RLE water leak detection cables.

Distance-Read Systems

Another cable-type system is a distance-read system. The distance-read system pinpoints the location of a water leak. Distance-read systems are particularly useful in facilities with large raised-floor areas.

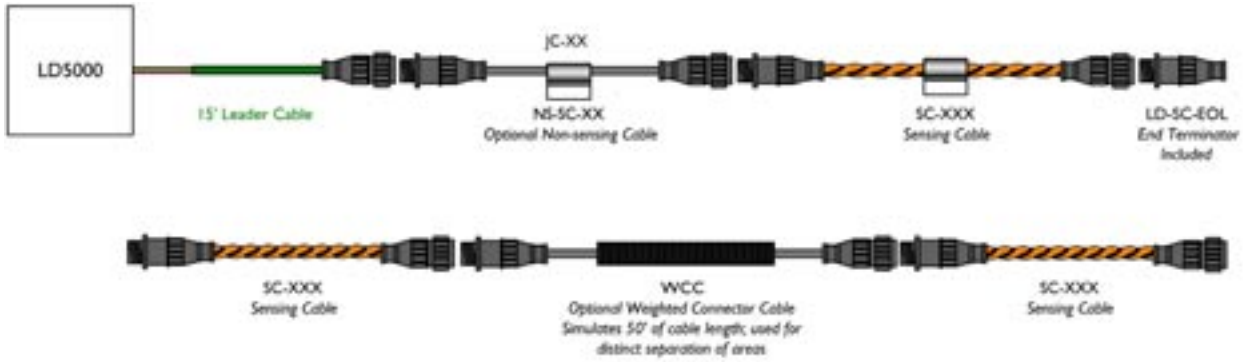


Distance-Read System

This technology features RLE's water leak detection cable, up to 5000 feet in length. The cable is placed in a serpentine pattern on the sub-floor, around all possible leak sources. If a leak occurs, the control head annunciates this information. The control head then provides a distance measurement. This distance measurement is cross referenced with the water leak detection reference map, and the location of the leak is pinpointed within a few feet.

A LD5000 control head is used with the distance-read system. The LD5000 can be configured through the keypad and LCD on the unit itself, or it can be connected to a PC via the EIA-232 and configured through a menu-driven program. EIA-485, 4-20mA, and relay outputs are standard. Sensitivity is adjustable.

RLE Water Leak Detection Cables come in lengths of 25, 50, and 100 feet. The same cable can be used for LDZ zone series systems and LD5000 distance-read systems. Cables can be connected end-to-end, and are delivered to users with the connectors installed. End-of-line terminators are included on all RLE water detection systems requiring them.



J-clips are self-adhesive clips used to secure cable to the floor. J-clips should be installed at four foot intervals along the cable. If the cable is placed in a direct air stream, J-clips should be placed 18 inches apart. J-clips are sold in packages of 10, 15, 18, 22, or 50 pieces.

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	Cable Systems				Spot Detection Systems	
Controller	**LDZ1-NA**	**LDZ1**	**LDZ4 or LDZ8**	**LD5000**	**RASP1**	**RASP6**
Number of Cables Monitored	One	One	Four or Eight	One	One SD	Six and Multiples of Twelve SDs (6, 12, 24)
Supervised System	No	Yes	Yes	Yes	No	No
Output	Relay (1)	Relay (2)	LDZ4: Relay (3) LDZ8: Relay (3), EIA-485, EIA-232	Relay (3) EIA-485, EIA-232, 4-20mA	Relay	Relay
Visual / Audible Annunciation	Visual - Yes Audible - No	Yes	Yes	Yes	Yes	Yes
Power	24V	24V	24V	98-132VAC	24V	24V
Leader Cable	15 Feet	15 Feet	15 Feet	15 Feet		
End Terminator	Included	Included	Included	Included		

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Additional Notes:

- Power adapters are not included. RLE can provide 24V power supplies for applications where such power is unavailable.
- All systems include leader cables. Spot detectors come with a 14 foot leader cable; the LDZ1-NA, LDZ1, LDZ4, LDZ8, and LD5000 include a 15 foot leader cable.
- A water leak detection reference map is recommended to help pinpoint the leak location.
- Weighted connector cables can be used to artificially add distance between cable segments. This is recommended when connecting multiple floors.
- Plenum rated non-sensing cable is available.
- Custom spot detectors are available to interface LDZ control heads.