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1.0 General

This specification covers the electrical and general requirements for a Water Detection System. The specified equipment herein shall be referred as a Distance Locating System, or (DLS.)

2.0 Applicable Documents

1. National Electrical Code NFPA-70 current edition.
2. American National Standards Institute Corp. and its applicable standards.
3. Standard for Safety ULI 950, Information Technology Equipment.

3. Major Components

The basic components of the DLS shall include the monitor, water sensing cable, internal interconnect terminal blocks and the enclosure.

4.0 System Package and Construction

The DLS shall be constructed as a stand alone unit suitable for flush or surface mounting. The enclosure shall be of a minimum 18 gauge sheet metal construction. The faceplate shall consist of a Digital Display with Status Indicators, Silence, Reset and Test switches, mounted in an acrylic sheet with silkscreened instructions, surrounded by a brushed aluminum frame and protected by a polycarbonate overlay. The assembly shall be hinged and feature a key-locked door to prevent unauthorized access. The assembly shall allow for the installation of an optional graphic map. The system shall contain a listing label from a recognized testing laboratory and shall be listed as a complete system.

5.0 Electrical Characteristics

1. Power requirements
 - a. Input 24 VAC @ 1.0 amps max.
 - b. Input 120 VAC using optional power supply.

6.0 Distance Locating Alarm Panel

The DLAP shall display the distance of leak from the controller on a 4 digit LED display. The distance shall be displayed in feet.

Each Distance Locating Alarm Panel shall include, but not be limited to the following items:

1. Four digit LED display.
2. Red water detected LED indicator.
3. Yellow trouble LED indicator.
4. Summary alarm / trouble relay.
5. System TEST switch.
6. Alarm SILENCE switch.
7. System RESET switch.
8. Audible DISCONNECT switch.

The DLAP should also include provisions for an optional 4 - 20 ma. analog input.



6.1 Sensing Cable

The sensing cable shall be constructed to protect the conductors from dirt and abrasion. The cable shall be available in 50' and 100' lengths, terminated with male and female connectors. The cable sections signal can be connected together, as needed for coverage, up to a total of 1000 feet per zone. The sensing signal shall be less than 10 vac peak to peak.

6.2 Graphic Display

A graphic overlay of the floor plan will be provided with a pattern of the cable installation and routing. The cable shall be marked on the grid in relation to distances to make location of the leak easy to find.

7.0 Operational Characteristics

Status Indicators

1. (Green) *Power On* LED - This LED shall indicate the presence of normal operating power.
2. (Yellow) *Trouble* LED - The LED shall be lit when the water sensing cable is no longer connected.
3. (Red) *Water Alarm* LED - This LED shall be lit when water is detected by the sensing cable.
4. *Test Switch* - This switch shall perform the following functions:
 - a. Light all segments of the 4-digit LED display.
 - b. Cause the DLS to determine the total length of the sensing cable and display the value.
 - c. Sound the audible alarm.
 - d. Close the summary alarm relay.
5. *LED Display* - This shall have four digits and display the water location in feet from the monitor. The distance shall remain on the display until the reset switch is depressed.
6. *Summary Alarm Relay* - This relay shall energize, and the contacts change state, whenever water is in contact with the cable, when there is a wiring fault or other systems trouble, or when the TEST switch is depressed.
7. *Reset Switch* - This switch shall be used to restore the system, alarm relays, and the alarm circuit. If the alarm condition still exists, the circuit will be retriggered.

8.0 Accuracy

The accuracy of the DLS shall be linear and within 1% of the length of cable.

9.0 Environmental Operating Characteristics

Humidity: 5 to 90% RH * Temperature: 0 to 55°C * Altitude: -250 to 10,000 Ft.

10.0 Warranty

The manufacturer of the DLS shall warrant all parts and labor for a period of one year after purchase.

11.0 Manufacturer

The DLS shall be the DL Series as manufactured by AquaALERT, a division of Light Engineered Displays, Inc., 109 Portwatch Way, Wilmington, NC 28412