



Linear Water Leak Detection Engineering Specifications

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LINEAR WATER LEAK DETECTION ENGINEERING SPECIFICATIONS

CSI SECTION []
LINEAR WATER LEAK DETECTION SYSTEM(S)
[DISTANCE LOCATING TYPE] [MODULAR TYPE]

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide Linear Water Leak Detection System as shown on drawings, specified herein, and as needed for a complete and proper Installation.
- B. Related work not in this section:
 - 1. Conduit systems, wires, and cables.
 - 2. Other alarm or building systems.

1.02 REFERENCES

- A. State and Local Codes.
- B. Manufacturer's Design and Installation Manual

1.03 SYSTEM DESCRIPTION

- A. UL listed water leak detection system [with Distance Locating] or [with Module] that utilizes linear water sensing cable and can detect the presence of water at any point along its length.
- B. The system shall be powered by a UL listed 24VDC power supply and have alarm and fault connections, and 4-20mA / 0-10VDC analog outputs which may be monitored by a Fire Alarm Panel, Building Management System or other monitoring system.
- C. System may be used as a standalone system.
- D. Water sensing cable layout to provide coverage per manufactures design recommendations. Zoning shall be designed for reference by geographical area.
- E. If Zoning is required, a floor plan of the hazard area shall be displayed next to the interface module. The zone plan shall depict the entire route of the water sensing cable along with its respective zoning.
- F. The system shall be the ProH2O Linear Leak Detection as provided by SAFE Fire Detection, Inc.

1.04 SUBMITTALS

- A. Submit product data and shop drawings. Drawings must include isometric and plan view layouts of the system under provisions of section [].
- B. Supply one copy of the manufacturer's Installation & Operation Manual after completion of installation.
- C. Supply one copy of the commissioning record within 30 days after installation and commissioning.
- D. Each bidder must supply their proposed system design for the area(s) to be protected together with a letter certifying that the design strictly complies with the limitations established by the manufacturer.

1.05 QUALITY ASSURANCE

- A. The water leak detection system must be listed by Underwriter’s Laboratory, Inc. or other acceptable testing facility.
- B. Installation shall be supervised by a representative who was trained by the manufacturer, and has a minimum of five years experience in installation and testing of like systems.
- C. Contractor shall warranty the system for a period of one year after the final Inspection.

1.06 PROJECT CONDITIONS

- A. Physical/Environmental Requirements:
 - 1. The cabinet [or Module] shall be permanently mounted where specified on the shop drawings or in a location to facilitate access and ease of service.
 - 2. The cabinet [or Module] must be mounted in an ambient temperature range of 32° to 120° Fahrenheit (0° to 50° Celsius).

1.07 SEQUENCING and SCHEDULING

- A. Coordinate work performed under this section with work specified in other sections as noted in Section [].

1.08 MAINTENANCE

- A. Maintenance Service: Shall be provided by a factory authorized and factory trained representative in accordance with the manufacturer’s recommendation and local requirements of the authority having jurisdiction.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Linear Water Leak Detection System:
 Acceptable Manufacturer: SAFE Fire Detection, Inc.
 5915 Stockbridge Dr.
 Monroe, NC 28110
 Ph.: 704-821-7920 Fax: 704-821-4327
- B. Detection Method: Linear Water Leak Detection

2.02 MANUFACTURED PRODUCTS

- A. The ProH2O Linear Water Leak Detection:

ProH2O Professional Distance Locating	Part #: L1018
Linear Leak Detection (WLDL-D1M)	Part #: L1017
ProH2O Module (PM1)	Part #'s: L1004, L1006, L1007
Leak Detection Cable	

2.03 EQUIPMENT/SYSTEM DESIGN

[chose from A or B]

- A. The ProH2O Professional system shall operate on 24 VDC and provide supervision for the water sensing cable. The ProH2O Professional shall provide, at minimum, the following:
1. Green power-on LED
 2. Red Alarm LED
 3. Yellow Fault LED
 4. Form "C" Alarm relay (latching or non-latching) - 8 amp @ 30VDC (max)
 5. Form "C" Fault relay (latching or non-latching) - 8 amp @ 30VDC (max)
 6. Built-In audible sounder programmable (activate or inactivate)
 7. LCD Display with backlight to indicate distance to leak location in meters and feet
 8. 4-20mA and 0-10VDC analog outputs
 9. Operating current @ 24VDC:
 - a) Normal Operation (LCD Backlight Off) 100mA
 - b) Normal Operation (LCD backlight On) 160mA
 - c) Both Relays Activated (LCD backlight On) 200mA
- B. The Module system shall operate on 12 to 30 VDC and provide supervision for the water sensing cable. The ProH2O Module shall provide, at minimum, the following:
1. Alarm, Fault and DC Power connections
 2. Operating current @ 24VDC:
 - a) Normal Operation 10mA
 - b) Alarm and Fault condition 27mA
- C. The Linear Water Leak Cable shall provide, at minimum, the following
1. Water detection cable shall consist of 4 conductors, 2 water sensitive and 2 data. The conductors are individually insulated and protected with an outer covering of braided polypropylene.
 2. The cable shall be restorable and corrosion resistant, and shall not require replacement after being wet.
 3. The cable shall be designed as a Plug and Play and comes in three lengths (21.5 ft (3.75m), 50 ft (15m) and 100' (30m).
 4. Maximum length of Liner Leak Detection Cable not to exceed [Professional 1000 feet (300 meters)] [Module 100 feet (30 meters)].
 5. Maximum spacing between detection cable runs, 6 feet on center.
 6. Minimum spacing from exterior walls, 1 foot.
 7. Cable shall be installed in the path of a potential water leak.
- D. Contractor shall submit shop drawings that include, but are not limited to, the following:
1. Plan view of the hazard area including the location of pipes, valves, and any likely source of water intrusion.
 2. Location of equipment to be protected.
 3. Layout of water detection cable and location of [ProH2O Professional] [ProH2O Module].

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The Linear Water Leak Detection System: The contractor shall install the system in accordance with the manufacturer's installation recommendations and Operating Manual.

3.02 FIELD QUALITY CONTROL

- A. Tests and Commissioning:
 - 1. The contractor shall commission the complete installation in the presence of the end user or their appointed representative.
 - 2. The contractor shall provide materials, all necessary instrumentation, test equipment, and labor.
 - 3. The contractor shall record all test and commissioning requirements and a copy shall be provided to the end user or an authorized representative.
 - 4. Checks must be made to ensure that all ancillary equipment and warning devices are operational as designed and specified with care taken not to discharge a suppression system.
 - 5. The contractor shall upon completion of commissioning and testing provide the end user or authorized representative with the isometric as-built drawings as well as the commissioning records, Installation and Operation manuals.
 - 6. The contractor shall be, or be represented by an authorized representative of SAFE Fire Detection, Inc. This person must have successfully completed SAFE's technical training seminar and show proof of it by means of a valid certificate number. The company listed on the certificate must currently employ this person, who must be present during testing and commissioning. The certificate is valid for a period of two years from the date on the certificate.