SYNOPSYS - DIGITAL ADDRESSABLE WATER LEAK DETECTION STANDALONE SYSTEM (Distance Locator)

INDEX

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1. GENERAL

Water leak detection System shall be designed to protect the Air-conditioned premises and to alert the personnel about the leak in the AC systems. The system shall be capable of interfacing to Water leak detection sensors, condensation sensors & I/O modules. Events should be clearly reported on LCD/LED display with full English language description of the nature of the fault in the panel. The successful bidder shall make detailed working drawings and coordinate them with other agencies at site. Water Leak Detection systems shall be integrated with BMS.

SYSTEM DESCRIPTION

A. The water leak detection system that utilizes linear water sensing cable and can detect the presence of water at any point along its length. Spot Detectors are NOT acceptable
B. The system shall be powered by A.C. power supply and have alarm and fault potential free relays which may be monitored by 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.
E. The system shall be SYNOPSYS Linear Leak Detection as manufactured by Jay Fire Systems.

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2. APPLICABLE STANDARDS

Original Equipment Manufacturer Standard

3. SYSTEM COMPONENTS

The Water leak detection system shall comprise of Main Linear Water Leak Detection Panel, Linear Water Leak Sensing cables and sounders.

EQUIPMENT/SYSTEM DESIGN

Main Linear Water Leak Detection Panel (SY – 1310)

Features:

A. The Main Water Leak Detection Panel shall operate on 230V A.C. supply . The Water Leak Detection Panel shall provide supervision for the water sensing cable. It shall provide, at minimum, the following:

1. LCD display to indicate distance to Leak Location in Meters .
2. Modus output for BMS Monitoring.
3. Red LED for Power On.
4. Red LED for Alarm.
5. Fault Relay output.
6. Common Alarm Relay Output.
7. Built-In audible sounder and one Common Hooter Ouput

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Addressable Water Leak Sensing Cable. (WD-AS)

Features:

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.
2. The cable shall be restorable and corrosion resistant, and shall not require replacement after being wet.
3. Maximum length of Liner Leak Detection Cable not to exceed 150 meters per Interface Module.
4. Maximum spacing between detection cable runs, 10 feet on center.
5. Minimum spacing from exterior walls, 1 foot.
6. Cable shall be installed in the path of a potential water leak.

SOUNDER

The sounder shall give audible alarm when any sensor operates. It shall be complete with electronic oscillations, magnetic coil (sound coil) and accessories ready for mounting (fixing). The sound output from the Hooter should not be less than 85 decibels at the source point.

4. INSTALLATION

To fit the cable sensor to the floor using non conductive supports and to ensure the cable is firmly held on the floor throughout its length without any lagging of the cable.
Connect the 4-core leader cable to the interface module and terminate at the sensor input.
Power the input through the panel under the specified zone.

5. TESTING

Testing the cable by pouring water over the cable to simulate an water leak , distance is displayed and the alarm relay operates. Extension of alarm to the BMS system to be verified. The panel needs to be reset manually once the cable dries up.

6. COMMISSIONING

Sr No	Description	Visual	Test Readings	Documentation
1	All cables are tested for continuity, insulation, resistance etc.			√
2	System installation proper as per drawing	√		
3	Carry out visual checks on all panels, cables, interphase modules etc.to ensure they are clean and free from any mechanical damage	√		
4	Check for proper termination & feruling	√		
5	Check input A/C supply voltage		√	
6	Check for proper Sensor cable installation for the floor with non conductive supports	√		
7	Check for fault indications.		√	
8	Pour water over sensing cable and check for Leak indication on the panel with Leak distance in Metres		√	
9	Check for extension of alarms in the BMS		√	

7. DOCUMENTATION

The Alarm contractor, upon completion of the commissioning activity, shall hand over the system to the customer.

At the time of hand over, the contractor shall provide the customer with the following documentation:

1. Copy of detailed report
2. Component and equipment list
3. Product description sheets
4. System design drawing(s)
5. System schematic diagram(s)
6. System operating manual

8. HANDOVER

Prior to final acceptance, the installing contractor shall provide complete operation and maintenance instruction manuals to the owner. All aspects of system operation and maintenance shall be detailed, including wiring diagrams of all circuits, a written description of the system design, sequence of operation and drawing(s), illustrating control logic and equipment used in the system. Checklists and procedures for emergency situations, maintenance operations and procedures shall be included in the manual.

9. TRAINING

General

The contractor shall provide the customer with details of the training required by personnel to operate and maintain the Water Leak detection system. The Contractor and the customer shall jointly agree the number of staff to attend the training courses.

10. MAINTENANCE

Routine maintenance should be carried out in accordance with relevant is and TAC requirements. All performance checks undertaken should be recorded in the system log book. As a minimum, the following performance checks must be undertaken on each maintenance visit. The static handling procedures must be adhered to and extreme caution must be exercised when working inside the control due to the presence of main voltage 240 V AC. Carry out verification checks as detailed in the commissioning instructions. Remove dust and dirt from the panel exterior using a soft brush or a lint cloth. A solvent which is harmless to the finishes of metal and plastic may be applied to more stubborn stains. Examine the exterior of the enclosure for any signs of damage or loose cable glands and rectify any faults found. Remove any dust or dirt form the interior of the control panel using a soft brush or a vacuum cleaner. Examine the printed circuit boards for signs of over-heating, dry joints and/or damaged tracks.

---------- **END OF DOCUMENT** ----------

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