CABLE-BASED WATER LEAK DETECTION

2004 NOVA Award Nomination 10

According to Contingency Planning Research, water damage causes 27% of business outages and ranks as the second leading cause of such outages. Water leaks can originate from many sources such as air conditioning units, cold-water chillers, water supply and return lines, clogged drains, damaged skylights or windows, construction errors, or even condensation drips. To reduce the downtime risks posed by water-related problems, RLE Technologies has developed a patented, cable-based water leak detection solution that is more accurate, comprehensive, and scalable than traditional approaches for water leak detection. Common applications are areas where mission-critical equipment is located, including data rooms, data centers, clean rooms, utility corridors, laboratories, telecommunication facilities, storage areas, elevator shafts, drip pans under water-cooled equipment, and many more.

Traditionally, spot detectors are used for monitoring water leaks. Spot detectors sense water leaks at a single point and are often used because they are the most economical and familiar; however, they have one major drawback. They are most effective in an area where the liquid is contained, such as the cement dam under an air conditioning unit. Another common approach for monitoring water leaks is hydroscopic tape-based systems. The tape is installed around equipment or infrastructure to be monitored by using an adhesive. Once the tape becomes wet, it triggers an alarm. Unfortunately, moisture inside the woven cloth is a frequent source of false alarms, and it also takes a long time to dry following the detection of a real leak.

In contrast, RLE delivers a "continuous run" sensing system using a cable-based sensor in conjunction with intelligent control panels. To begin with, this cable-based solution allows for more comprehensive protection against water dangers by supporting detection of multiple leaks, covering larger areas, and better pinpointing the exact location of a leak. Also, RLE's sensing cables are nonconductive, which allows them to detect any conductive fluid, not just water. Moreover, this cable is less prone to false alarms by enabling adjustable sensitivity, it dries easily and quickly for "resetting" after an alarm condition has occurred, and it enables quick installation because of its flexible construction and the controller's ease of integration with existing building management systems.

With RLE's intelligent cable sensor, businesses can reduce water risks by early detection of single or multiple water leaks in a specific area or in multiple areas in conjunction with a zone control panel. Companies typically divide a visible area into several zones and monitor each zone using a multizone control panel. Then, the sensing cable is placed on the floor or the sub-floor around the potential leak sources, with each cable monitoring one zone. This allows each zone's sensitivity to be adjusted. If water or other conductive liquids contact the cable anywhere along its length, the control panel annunciates to indicate in which zone the leak is located.

For larger areas, businesses can pinpoint the exact location of the water leak using one continuous length of sensing cable in conjunction with a "distance read" control panel. A single cable can be used for up to several thousand feet and is installed throughout the floor or sub-floor around possible water sources. When a leak occurs, the control head annunciates this information and provides a distance measurement within a few feet. This information is cross-referenced with a cable route map that indicates the corresponding location of the leak. The "distance read" system is ideal for larger areas where it is not possible to view the cable, or any water it may come in contact with, such as large raised-floor areas.

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Cable-Based Water Leak Detection Technology – Illustrations