LIQUID LEAK DETECTION SYSTEMS

Case Study

TTK WATER & OIL LEAK DETECTION SYSTEM In a LEADING DATA CENTRE, GERMANY

Monitored Areas

Some examples of areas monitored in this data center:

- CRAH (Computer Room Air Handler) galleries
- Technical corridors
- Chilled water pipes
- Batteries
- UPS (Uninterruptible Power Supply)
- IDF cabinets (Individual Distribution Frame)
- MMR (Meet Me Room)
- Water entries, pump rooms and sprinkler pumps
- Fuel pipe entries

TTK addressable water sensing cable FG-EC
addressable oil sensing cable FG-OD

PROJECT OVERVIEW

Client & Project	A global leader in digital infrastructure and data centre solutions provider *: Due to client confidentiality, the client name has been removed from this project study.
Location	Berlin, Germany
Application	Multi-scale Data Centre Building
Project Type	New Project
Project managed by	TTK Deutschland GmbH
Contract Scope	Turnkey project: including planification, material delivery, installation, testing & commissioning
Completion Date	October 2022
Technology	Digital monitoring unit FG-NET, water sensing cables FG-EC, Point sensors FG-ECP, fuel sensing cable FG-OD

TTK's Solutions

Addressable sense cables for CRAH units

In this non-raised floor data centre, the addressable sense cables FG-EC are installed directly onto the floor around the CRAH units to ensure very early detection.

The patented and unique structure of these sense cables allows them to sense water, but not to be disturbed by the presence of condensate, dust or metal, allowing reliable detection in an environment where condensate and dust are commonly present.

The microprocessor embedded in the cable intelligently monitors the cable status and provides continuous real-time communication to the TTK monitoring panels. In the case of water on the cable, it alerts the monitoring panel with an accurate location. Since each sense cable is independent (thanks to the microprocessor), leaks can be detected simultaneously and reported to the client's BMS.

FG-EC Addressable water leak detection cable installed around CRAH unit

Point sensors in L-shape for technical corridors

For technical corridors, point sensors in customized L-shape are placed at each side of doors. Connection boxes are installed at eye level allowing immediate identification of each box's real-time status thanks to the green or red blinking LED on the front lid of the box.

Both water sense cables (FG-EC) and point sensors (FG-ECP) are installed, some being around the perimeter and others in a straight layout, depending on the specific area to be protected.

Several fuel sense cables are also installed in fuel pipe entries to detect hydrocarbon leaks.

TTK customized L-shape water point sensor (FG-ECP) near a corridor door

Versatile digital panel for centralized monitoring

The FG-NET panel is designed to be used with all TTK digital sensing cables, for water, acid and hydrocarbon leak detection. Powerful system capacity (monitoring up to 500 sensing cables with satellite device) with a touchscreen interface, TCP/IP and JBUS/MODBUS communication protocols are available.

The panel detects simultaneous leaks hence avoiding the "a leak hides another" risk. Furthermore, when a cable break occurs, the system maintains its integrity by continuing to monitor all preceding cables for faults.

FG-NET digital monitoring control panel installed on site

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