



LIQUID LEAK DETECTION SYSTEMS

# Case Study

## TTK WATER LEAK DETECTION SYSTEM AT DATA CENTER BUILDING, GERMANY

### PROJECT BACKGROUND

A plant room and a server room were equipped with a German brand analog water leak detection system installed over ten years ago – this out-of-date system is not equipped with any Modbus or TCP/IP interface allowing modern communication with BMS. Furthermore, frequent false alarms emitted by the system disturb the facility management's daily operations.



### PROJECT OVERVIEW

**Project** Global Leader of Colocation Data Center (American multinational company\*)

\*: Due to client confidentiality, the client name has been removed from this project study.

**Location** Frankfurt, Germany

**Application** Data Center Building

**Project Type** Retrofit Project

**Project followed by** TTK GmbH (Frankfurt)

**Contract Scope** TTK design, supply, install and assure maintenance of the leak detection system

**Completion Date** January 2019

**Technology** FG-NET digital monitoring unit  
FG-EC addressable water sensing cable

The client decided to reinforce the security level in the critical areas by replacing the old analog system with a new, reliable digital system to benefit from the technical progression this modern system has.

# TTK's SOLUTION

TTK Germany recommended its over-edge digital water leak detection system – the FG-NET panel with FG-EC addressable water sense cables - be installed under the false floor to the perimeter of both the plant room and server room.

## Sense cables:

- Differing from the analog sensing cables, each length of FG-EC cable contains an embedded microprocessor which intelligently monitors the cable status and provides continuous real-time communication to the TTK digital units. Moreover, its highly visible LED (placed on the female end connector) provides quick identification of the cable status, which is extremely helpful for technicians working in the dark environment under the false floor:
  - Green LED: normal status, no alarm raised
  - Red LED: leak detected on the cable
  - LED off: cable break on this or any upstream cable

## Digital monitoring panel:

- The FG-NET monitoring panel is integrated into the existing electrical control box inside the technical room on the ground floor. It is connected to the central building control system via Modbus communication protocol available on the panel.
- In the event of a leak, the FG-NET displays the leak location on its touch screen, precise to 1m. Furthermore, it drives dynamic drawings on the host BMS, which can be visualized at the same time on the central building control room's screens.
- Up to 120 lengths sense cables (or 1800 metres) can be managed independently by the FG-NET panel. In the example of this case study, over 30 lengths of FG-EC water leak sense cables were installed on one single FG-NET panel, allowing for easy extension if required in the future. Both water sense cables and oil sense cables could be added to this same system to protect further areas from the risk of water or oil leaks.



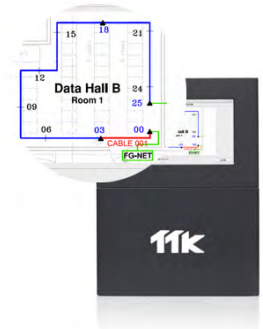
FG-EC Addressable water leak detection cable with embedded microprocessor



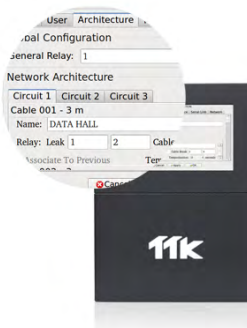
Typical Data Center false floor water sense cable installation example



FG-NET panel: Simultaneous alarms displayed on one screen



FG-NET panel: Dynamic map shows leak in real time



FG-NET panel: Easy setup of relays for each cable



FG-NET panel: User-friendly interface of configuration

