



LIQUID LEAK DETECTION SYSTEMS

Case Study

TTK WATER LEAK DETECTION SYSTEM

In a

LEADING DATA CENTER IN MILAN, ITALY



Image Source: Adobe Stock

ABOUT THE PROJECT

Our client is a leading global developer and operator of data centres, providing critical digital infrastructure to some of the world's most innovative companies.

The facility, located east of Milan, spans 16 acres and comprises two purpose-built buildings with a combined critical IT power capacity of 40 MW (megawatts). The campus is designed to support high-density computing workloads while ensuring rapid scalability and deployment speed in a performance-driven environment.

Leak detection systems are a mandatory safety measure, systematically required by industry certification frameworks and insurance policies to mitigate operational risks associated with water ingress and fluid leaks.

PROJECT OVERVIEW

Client

A Leading Global Developer and Operator of Data Centres

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

Location

Milan, Italy

Application

Data Center

Project Type

New Build

Project managed by

Temar – TTK's Local Partner

Contract Scope

Design & Material Delivery

Completion Period

Q1 2027

Technology

Digital Monitoring Unit FG-NET, Water Sense Cable (FG-EC and FG-ECX), Water Point Sensor (FG-ECP-L)



Image Source: Adobe Stock

AREAS PROTECTED

- **Data Hall Areas** - Primary monitoring zone for IT equipment and cooling infrastructure
- **Chiller Water Pipework** - Full perimeter coverage of chiller supply and return lines
- **Technical Areas** - Secondary spaces including electrical rooms and plant areas

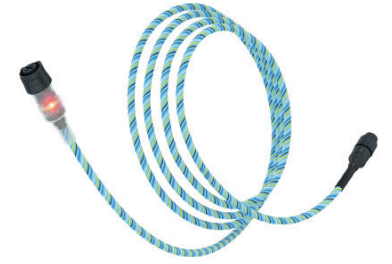
TTK's SOLUTIONS

■ Water Sense Cables (FG-EC and FG-ECX)

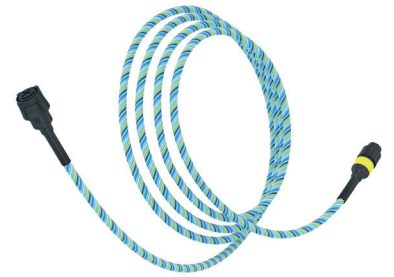
A total of 4 km of water detection sense cables – comprising both addressable (FG-EC) and analogue (FG-ECX) types – are deployed along chiller water pipework throughout the data hall perimeter. The cable selection and routing follow the system design specifications, ensuring complete coverage of the highest-risk zones.

Key characteristics:

- Continuous real-time monitoring along the entire cable length
- Non-absorbent cable structure allows rapid reset within seconds of leak elimination
- All cables are supervised by the FG-NET digital monitoring panel



FG-EC addressable water sense cable



FG-ECX analogue water sense cable

■ Point Sensor (FG-ECP-L)

Water point sensors (FG-ECP, L-shape configuration) are deployed in confined areas where sense cables are not geometrically suited, ensuring no monitoring gap exists across the facility.



FG-ECP-L water point sensor

■ Digital Monitoring Panel (FG-NET)

Six FG-NET digital control units aggregate all sense cable and point sensor data into a centralised monitoring architecture. The panels are fully integrated with the site's Building Management System (BMS) via Modbus TCP/IP, enabling:

- Real-time alarm notification and precise fault localisation
- Visual pinpointing of leak events on interactive site maps
- Seamless integration with existing site infrastructure and protocols

■ Outcome

This solution fully meets the client's technical and operational requirements. Given the performance of this installation, the same leak detection architecture is set to be progressively deployed across the client's upcoming phases at this and other sites.



Digital monitoring unit FG-NET

