



Case Study

LIQUID LEAK DETECTION SYSTEMS

TTK HYDROCARBON & ACIDS LEAK DETECTION SYSTEMS AT A UNIVERSITY LAB, UNITED KINGDOM

PROJECT BACKGROUND

This state-of-the-art university laboratory, composed of several individual sub-laboratories, operates daily a multitude of chemical solvents, such as acetic acid, carbonic acid, nitric acid, as well as hydrocarbon solvents and water-based solvents molecules.



An extract of TTK drawing of hydrocarbon and acid leak detection cables under the raised floor of the laboratory

PROJECT OVERVIEW

Project	University Laboratory
Location	Cardiff, United Kingdom
Application	Laboratory, semiconductors
Project Type	New Project
Project monitored by	TTK UK
Contract Scope	TTK assures engineering, material delivery, installation, final testing and commissioning
Completion Date	Dec 2021
Technology	FG-NET digital monitoring unit with addressable high sensitivity hydrocarbon sensing cables FG-ODC and corrosive liquids sensing cables FG-AC

PROJECT REQUIREMENTS

To ensure a continuous monitoring and an early detection in case of leakage of dangerous liquids inside this cutting-edge laboratory, the client requires an effective leak detection system capable of detecting in very early stage **all kinds of liquids** operated within the facility.

TTK's SOLUTION

Leak detection in laboratory

- Based on the characteristics of the different liquids to be detected, TTK UK recommends a leak detection system capable of monitoring two kinds of sensing cables: on the one hand, chemical/water sensing cable (product reference FG-AC*) and on the other hand, hydrocarbon sensing cable (product reference FG-ODC*). A versatile panel (product reference FG-NET*) monitors the two-in-one system.
*: see detailed products information below.

Three circuits which can be used independently, are available on the FG-NET panel. In this project, all chemical/water sensing cables are connected on one circuit, whereas all hydrocarbon sensing cables are connected on another, via a diversion box. In the event of leak, the panel pinpoints to a precise location on the section of the relevant cable on a dynamic map, allowing a rapid and accurate detection of any chemical, water or liquid hydrocarbon mixture.

Leak detection equipment

Chemical/Water sensing cable:

Made of corrosion and abrasion resistant material, the FG-AC cable is designed to detect and locate acid liquid and water leaks for laboratory and cleanroom applications. Its reusable feature makes it cost effective. It contains an embedded microcontroller on each cable, allowing simultaneous leak detection on a single circuit made of multiple cables.

High sensitivity hydrocarbon sensing cable:

The hydrocarbon sensing cable chosen for this case is a high sensitivity cable. Among the three types of sensing cables with different sensibility in the range, the FG-ODC is optimized for very fast response with light to middle distillates. Cost effective thanks to its reusability feature. Insensitivity to water allowing to avoid false alarms.

Versatile digital monitoring panel:

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 touchscreen interface, TCP/IP and JBUS/MODBUS communication protocols are available.

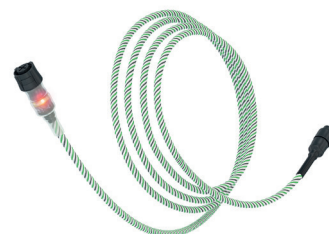
The panel detects simultaneous leaks hence avoid "a leak hides another" risk. Furthermore, when a cable break occurs, the system maintains its integrity by continuing to monitor all preceding cables for faults.

Monitoring your liquid leak exposure

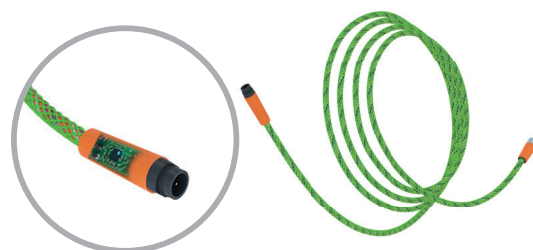
- The versatile TTK system provides an ideal solution for the detection of all kinds of liquids leaks found within this laboratory.



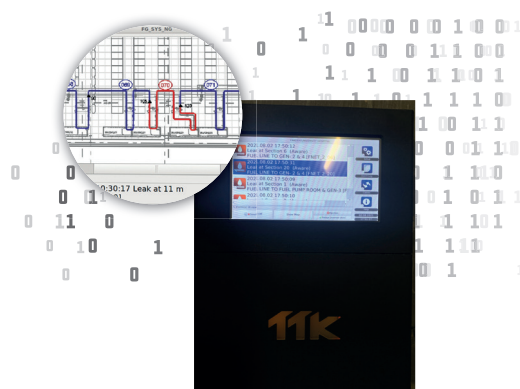
TTK fuel and acids sensing cables under the raised floor of the laboratory



Addressable acids and water sensing cable: FG-AC



Addressable high sensitivity fuel sensing cable: FG-ODC



Versatile digital leak monitoring panel: FG-NET

