

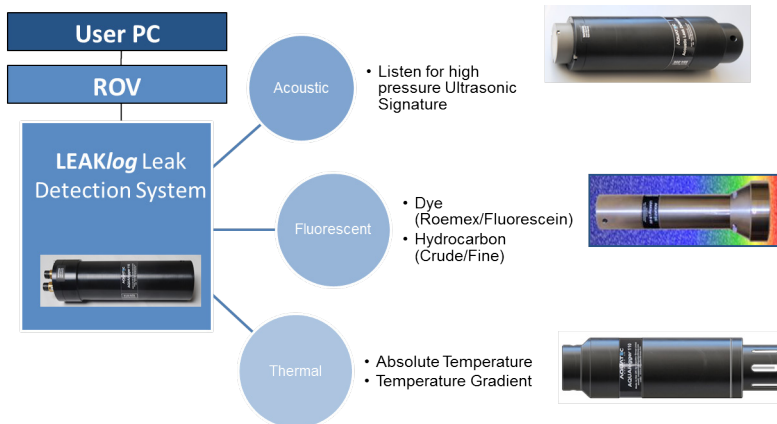
# DATASHEET

## LEAKlog LEAK DETECTION SYSTEM

Two stage leak detection via ROV or diver

### OVERVIEW

The Aquatec Group designs and manufactures leak detection systems for the oil industry, with over 15 years experience. We use a variety of detection techniques, including fluorescence detection, active and passive acoustic detection, thermal gradient detection, and pressure differential systems. Aquatec leak detection systems are field-proven and have been used on projects around the world. We also provide systems and operator personnel for hire across the globe, as well as on-site and remote training.



### DATA ACQUISITION

Aquatec's leak detection systems use our tried and tested *AQUAlogger* data acquisition technology, also found in hydrotest data loggers and our oceanographic data logging instrumentation. The standard *LEAKlog* acquisition system has two independent channels that may be connected to a range of different sensors. *AQUAtalk* software on the user's PC allows real-time display of leak detection signals.

### FLUORESCENCE DETECTION

During precommissioning, fluorescent dye may be injected into the pipeline during the flooding phase so that any leaks are more easily detected. Fluorescent dyes are also used in control fluids. Models in our **LEAKlog LR** series of long range fluorometer sensors are available for various fluorescent tracers, including ultra-violet sensors, which are also able to detect hydrocarbons. The sensors can detect very small quantities of tracer dye resulting from leaks, even in highly turbid conditions, when traditional 'black light' technology is insufficiently sensitive. The maximum detection range of a significant leak in clear water is greater than 10 metres.

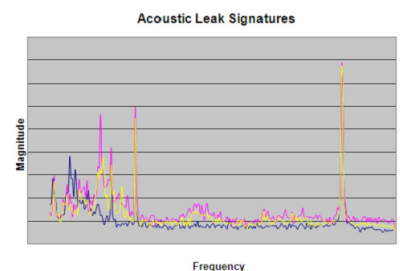
### ACOUSTIC LEAK DETECTION

Following research into the typical signals emitted by high pressure leaks, a highly sensitive directional ultrasonic detection sensor was developed. Background noise such as from an ROV, is filtered out, so that only the ultrasonic signals in the band of interest are monitored and analysed.

The **LEAKlog PA1** acoustic sensor operates alongside the existing fluorometer or thermal sensors, thus providing a two-stage detection process. It is also ideal for situations where the use of fluorescent dyes is either unfeasible or not permissible.

### THERMAL LEAK DETECTION

When there is a temperature differential between the sea water and the contents of a pipeline, the fast response **LEAKlog T1** temperature probe can be used to detect small thermal plumes rising from the leak source. The probe can provide an absolute temperature output, or an ultra-sensitive temperature gradient output. Typical differential temperature sensitivity is in the order of millidegrees.



### KEY FEATURES

**ROV or diver held • Field proven systems • Two-stage detection process • 3 different types of sensor**  
**Long range fluorometers with max range of 10m • Acoustic sensors for when dye is not permitted • Complete systems**

## System components

Description	Order code
LEAKlog Acquisition System, comprises: 2-channel data acquisition system rated to 3500 m ~ RS232/485 converter; 24V power cable tail for ROV Communications cable tail for ROV ~ AQUAtalk control and display software	LEAKlog 100
Long Range Rhodamine/Roemex 9022 Fluorometer sensor	LEAKlog LR-FR
Long Range Fluorescein Fluorometer sensor	LEAKlog LR-FF
Long Range UV Fluorometer sensor	LEAKlog LR-UV
Fast response thermal sensor	LEAKlog T1
Passive acoustic sensor	LEAKlog PA1

## System Specification

<b>Long range fluorometer</b>	Dimensions: Max diameter 100 mm, length 296 mm Weight: ~5 kg Material: Stainless steel Depth rating: 3500 m
<b>Acoustic sensor</b>	Dimensions: Max diameter 80 mm, length 261 mm Weight: 1.4 kg Material: Acetal Depth rating: 2000 m
<b>Thermal sensor</b>	Dimensions: Max diameter 80 mm, length 292 mm Weight: 1.35 kg Material: Acetal Depth rating: 2000 m
<b>2-channel data acquisition logger</b>	Dimensions: Max diameter 76 mm, length 268 mm Weight: 1.9 kg Material: Anodised aluminium Depth rating: 3500 m

## Fluorometer Specification

	LR-UV	LR-FF	LR-FR
<b>Excitation</b>	370 nm $\pm$ 5	472 nm $\pm$ 18	543 nm $\pm$ 14
<b>Reception</b>	450 nm $\pm$ 40	534.5 nm $\pm$ 24	586 nm $\pm$ 13
<b>Example dyes</b>	UV dyes	Fluorescein	Roemex 9022, RX-9034A



## Contact us

**t** +44 (0)1256 416010 (UK) **t** +1-281-220-6035 (USA) **e** [inquiry@aquatecgroup.com](mailto:inquiry@aquatecgroup.com) **w** [www.aquatecgroup.com](http://www.aquatecgroup.com)

Aquatec House, Stroudley Road, Basingstoke, Hampshire, RG24 8FW, UK