SoundSens

High Performance multi-point Correlation

Soundsens is a high performance, multi-point leak noise correlation system which combines ease of use with new standards in leak pinpointing performance. The system comprises highly sensitive, self contained correlation pods, which record large amounts of sample data when deployed in a network.

SoundSens correlator pods are completely waterproof, submersible, battery powered and will require no maintenance for at least five years.

Dedicated Windows software easily and quickly processes this data on download through the programming/ download case, providing highly accurate multiple cross correlations to pinpoint leaks over the full area of logger deployment.

The combination of dedicated sensor design, advanced data sampling and storage together with powerful processing software gives the highest levels of performance, using the speed and effectiveness of multi-point deployment.

Sets of SoundSens correlator pods can be carried to site in three carry case sizes, containing 2, 6 or 12 pods respectively. Any number of cases can be linked together to enable large scale survey work.

Features

- Automatic multi-point correlation

- High performance leak detection

- Easy deployment

- Rapid multiple correlations to quickly cover large areas

- Advanced processing and reporting software

- Flexible deployment for 2 to over 36 correlation pods

- Maintenance free for 5 years

- Immediate or timed deployment for unattended night work

- Highly sensitive equipment with digital filtering to enable outstanding results during day working

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Deployment

Correlation pods are programmed in their carry case for immediate or timed deployment. They are then magnetically attached to available network fittings. For immediate deployment, data gathering begins after a preset interval, units are then downloaded and processed. In more difficult locations night work may be required. The loggers are deployed and begin gathering data at a preset time. They are then collected for processing the following day.

Download

Data is easily downloaded via the carry case interface. Correlation analysis can be achieved using a laptop PC in the field or on return to an office PC.

Processing Survey

An area can be surveyed quickly and easily. The software automatically compares and grades results to produce areas of interest and indicates these on a pipe schematic. The sophisticated software quickly and automatically cross correlates all sensors to comprehensively cover a large survey area in seconds.
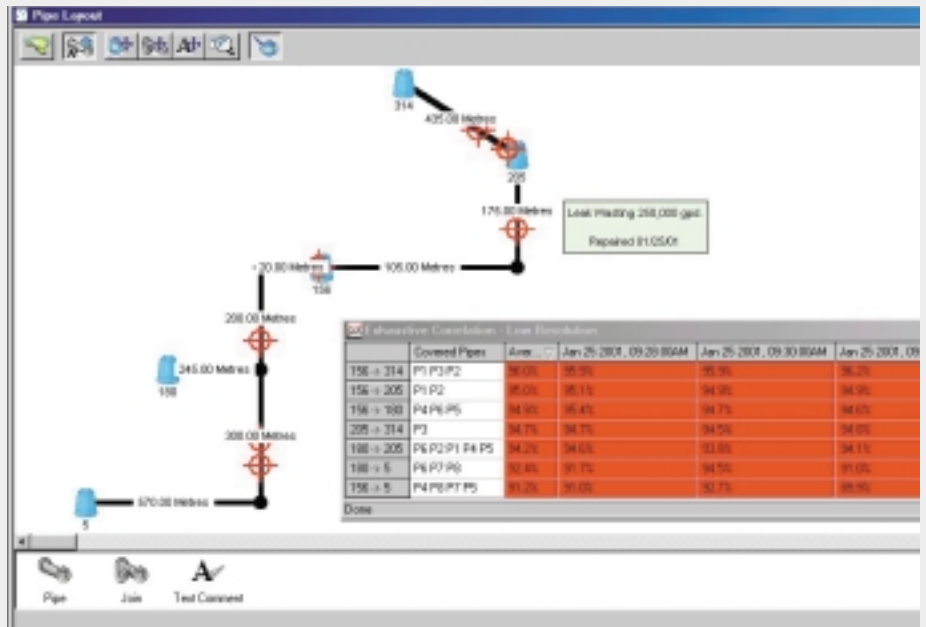
Advanced Design

SoundSens systems can be supplied with two or more correlator pods, with an interface unit contained within a carry case.

The award winning designs have resulted in a revolutionary product that can save up to 400% of the time normally required to find and locate leaks ready for repair.

Three or more SoundSens correlator pods used together can find leaks in complex interconnected pipe networks where traditional correlators cannot resolve the exact position.
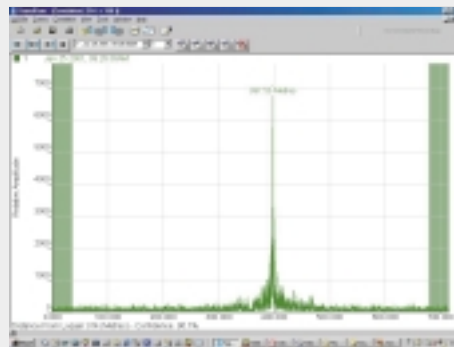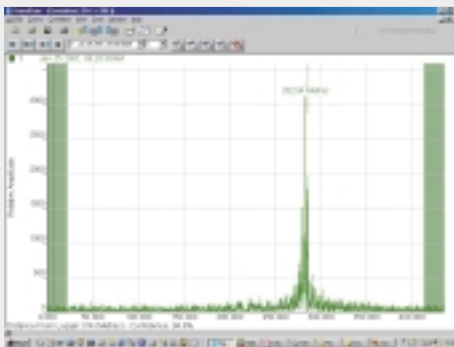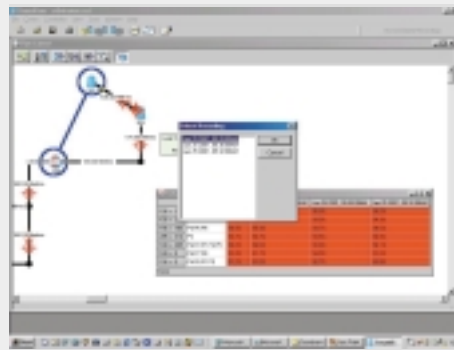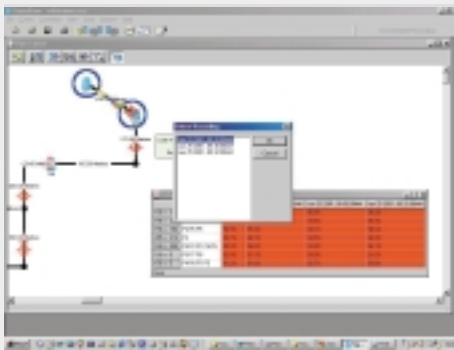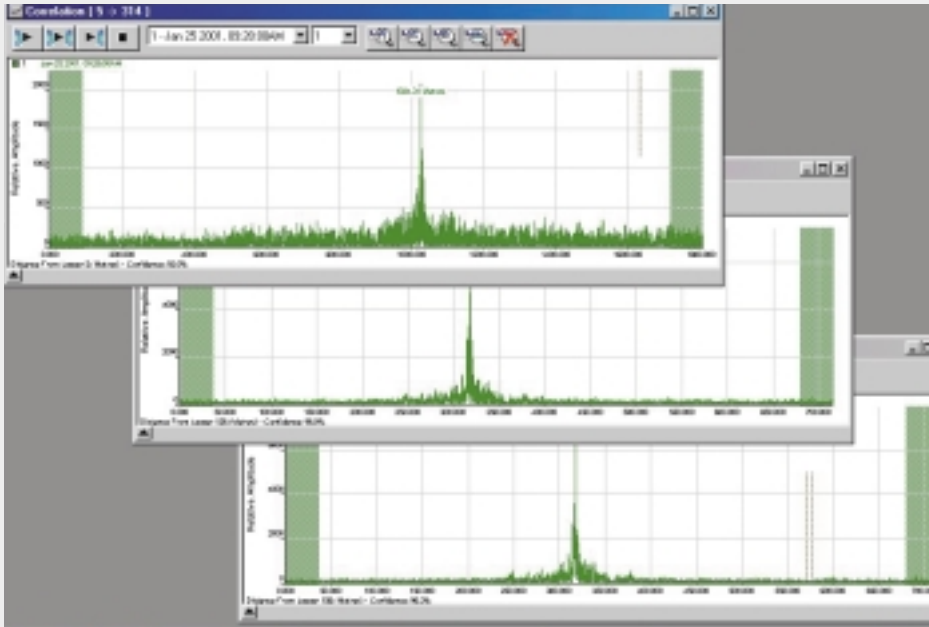
The advanced digital accelerometer circuits and sophisticated mathematical processing provides clean signals even in difficult applications, such as non-metallic and large diameter pipelines.

Advanced features

In addition to functions associated with traditional leak noise correlators, Soundsens has many advanced features, which will be appreciated by inexperienced and experienced users alike.

- Automatic grading of correlation runs with colour coding to quickly identify the best results
- Automatic velocity measurement. Using the multiple pod positions velocity measurements can quickly be made - essential for accuracy when pipe characteristics are uncertain.
- Automatic filtering. The PC processing power allows various filter ranges to be automatically scanned to select those which give the best result in any situation.

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Pinpointing

The operator enters pipe details quickly and easily and then SoundSens software will automatically calculate accurate leak position(s). A pipe schematic can be simply clicked and dragged into place, superimposed on top of an imported map if required.

Detailed analysis

Traditional correlation graphics can be viewed between any selected loggers. The operator has the security of multiple correlation analysis and the ability to superimpose graphs for correlations from different sensors to cross-check results.

High performance

The latest in sensor technology, with immediate digitising and storing, high sampling rate and direct transfer for processing, gives levels of leak detection performance not available through traditional leak noise correlators.
The PC processing power provides ease of use, speed of analysis and multiple graphics modes to maximise performance.

• Frequency analysis with coherence display. If manual filter override is required, the signal frequencies can be displayed to assist operator selection.

• Audio signals from selected loggers can be played back to increase user confidence.

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SoundSens Technical Specification

Sensor Input	Analog	Internal Accelerometer to pickup audible noise in pipeline
		Frequency range from 1 to 2,750 Hz
		Signal resolution from 12 bit A to D converter
	Attachment of logger/sensor	Powerful magnetic coupling to attach Correlator Pod to pipework/valve
Logging Features	Memory	Recording 650,000 readings. (memory expandable to 1.35 million readings on request)
		Individual measurements can be pre-programmed into a series of 32 separate recordings
	Sample Rate	1 to 5.5 KHz user adjustable (4.8 KHz default)
	Delayed start	Either start at a nominated time, or after set delay period
	Logger ID	Factory set Logger ID number Also user can enter another logger Identity number to simplify recognition for operators
	Clock	On board 24 hour real time clock with date facility.
	Software	Compatible with Radcom "SoundSens" analysis software
Communications	Serial Comms	4 pin MIL connector for RS232 communications via an interface unit to laptop PC, or desktop PC at 115,200 Baud
	Serial Cable to PC	9 pin D extension cable supplied, to connect interface unit to PC Also can be used to connect one Interface unit "in cascade" to an other Interface unit for large scale Correlator Pod applications
	Cable to Pods	The Interface unit is supplied with glanded cables and 4 Pin Military connectors to fit Correlator Pod Loggers.
Physical	Construction	Correlator Pod: Die-cast aluminum enclosure, powdercoat spray painted Carry Case: Rugged construction with aluminum cladding
	Dimensions and Weight	Individual Correlator Pod: 1.54 lb, 6.3" H incl Magnet x 2.6" Diam 2 Pod Case: 10.1 lb empty, 13.2 lb including 2 pods, 14.5" W x 12.6" D x 5.9" H 6 Pod Case: 17.6 lb empty, 26.4 lb including 6 pods, 15.9" W x 12.2" D x 12.2" H 12 Pod Case: 30.8 lb empty, 49.5 lb including 12 pods, 23.8" W x 16.1" D x 12.2" H
	Temperature	+14° to +122°F (Operating)
	Ingress protection	Individual Correlator Pods: IP68 submersible
	Power	Correlator pod has Lithium-ion cell operational for 5 years under normal operating conditions. Carry Case interface unit contains NiCad battery which typically requires charging monthly or less. 240 /110v switch mode charger supplied in kit with mains lead.

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