

## SeCorr® O8

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Correlator with latest DSP technology for precise detection of water leaks



### The principle

#### What's correlation?

Correlation is a method used to detect leakages in buried pipe networks.

#### Technique

A leak in a pipe under pressure creates noise that travels through the pipe walls, the surrounding ground and along the contents of the pipe. The noise is detected at two separate points, (valves, hydrants, stop taps) by highly sensitive microphones. It follows that the noise will take longer to travel to the microphone furthest from the source; this is referred to as the "time delay" or  $\Delta t$ . Utilizing this and other information (pipe diameter, material and length of section under test), the exact leak position can be calculated by the correlator **SeCorr® O8**.



## Advantages

Electro acoustic methods of leak detection can be affected by external noise interferences such as cars, wind etc. The correlator **SeCorr<sup>®</sup> 08** is unaffected by these interferences making leak detection possible in even the noisiest environments. Other surrounding influences including the depth of pipe, ground conditions and rain have no effect on the accuracy of results.

The operator's experience and sense of hearing is paramount when utilizing electro acoustic devices; Correlation is based on purely mathematical calculations. Consequently the reliance on these subjective views are eliminated allowing anyone with minimal training to carry out leak location.

## Features of the SeCorr<sup>®</sup> 08

- Latest DSP-technique (**D**igital-**S**ignal-**P**rocessor)
- High-resolution pixel display
- Water-resistant film-keyboard and increment dial for comfortable operation
- Application as electro-acoustic water leak detector
- FFT analysis (**F**ast-**F**ourier-**T**ransformation)
- Coherence analysis for optimal filter settings
- Automatic frequency analysis
- Highest calculating accuracy and very high speed of measurements
- Radio reception for more than 1.24 miles transmission on each channel
- High flexibility in combination of all components (1 or 2 radio channels)
- Radio-signal monitoring

## System components

### Signal reception



Highly sensitive Piezo accelerometers record noises in the frequency ranges of approx. 1 to 10,000 Hz. A range of adapters enables connection to a wide variety of measuring points.



Hydrophones do not pick up the sound from the pipe material, but directly out of the water column. This offers a considerable improvement of the location range, especially with correlations on plastic pipes. Correlating leaks over 1500 ft. is possible.

### Signal editing and transmission

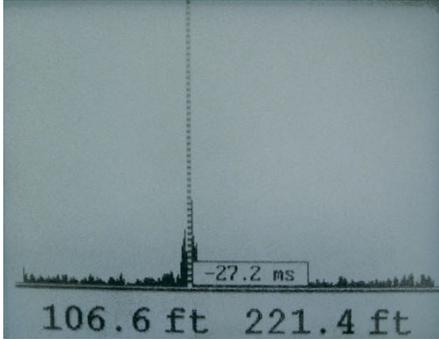
As soon as the microphones receive the noise from a leak the signal is automatically amplified to the optimum level and transmitted digitally along with the amplification details to the **SeCorr<sup>®</sup> 08**.

Both pieces of information are analyzed and processed by the **SeCorr<sup>®</sup> 08**. Utilizing 500mW transmitters signal transmission is clear and strong. Correlation of up to 2.48 miles is possible; local conditions may affect the range. Even if the radio transmitter is located within buildings or behind cars or trees correlation can be carried out successfully.

Since correlation requires two microphones, these can either be connected to both radio transmitters or if using only one radio channel, directly to the **SeCorr<sup>®</sup> 08**.



## Software SeCorr<sup>®</sup> 08



- Software "professional" for all location demands
- Software "standard" for the less experienced operators

## System case



This robust plastic case offers space for all system components. The Receiver and two transmitters can be charged simultaneously inside the closed case.

## Technical Data

### Receiver SeCorr<sup>®</sup> 08

- Display 320 x 240 pixels with background LED illumination
- PC connection for information download
- Socket for direct connection of a variety of microphones
- BNC connector for antenna input with 90 deg rod aerial (rotary)
- 1 or 2 radio channels
- Built in NiMH rechargeable batteries and 12V socket for direct power or charging from vehicle
- Operating by 12 V= from a vehicle is possible
- Operating/storage temperature:  
14 °F up to 104 °F / -4 °F up to 140 °F
- Protection class: IP 54
- Weight: approx. 2.86 pound
- Dimensions (W x H x D):  
approx. 4.92 x 7.09 x 2.56 in
- Operating time: approx. 8 hours



## Radio transmitter RT 06

- Automatic microphone recognition when attached
- Automatically on when microphone connected
- Selectable low-pass filter to increase performance on non-metallic pipes
- Automatic signal control
- 500 mW output power level with optimal selectivity
- Operating/storage temperature:  
14 °F up to 104 °F / -4 °F up to 140 °F
- Protection class: IP 67
- Weight: approx. 2.86 pound
- Dimensions (W x H x D):  
approx. 4.92 x 7.48 x 2.87 in
- Operating time: approx. 10 hours



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We are certified in accordance with EN ISO 9001

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