

SeCorrPhon AC 06 | Combined correlator and electro-acoustic water leak detector



SeCorrPhon AC 06

Basic principles of acoustic water leak detection

When pressure pipelines leak, water gushes out of the crack into the ground.

The pipe material vibrates at the leakage point. These vibrations are transmitted by the pipe and can even be noticed at distant contact points, for example fittings.

The water jet and the pipe in the vicinity of the leak also cause the ground to vibrate. These vibrations are transmitted through the ground to the earth's surface where they manifest themselves as ground noise.

What is correlation?

Correlation is computer-assisted leak detection in underground pressure line systems. Leak sites emit a noise which is carried along the pipe material. This noise reaches two fittings (valves, hydrants, home shut-off valves etc.) at different times. The time lag depends on the distance of the leak from the two contact points.

Highly sensitive microphones record the incoming noises on the fittings and a radio transmitter transmits these noises to the receiver where the run time difference of the signals is determined.

The exact position of the leak is then calculated from the information about the material, the diameter and the length of the measuring section.

Why correlation?

Unlike electro-acoustic leak detection in water pipes, correlators work independently of the volume of the leak noises. This means that the intensity of the ambient noise barely affects the measuring procedure.

Successful correlation is therefore even possible during the day on busy roads when electro-acoustic measurement is not an option.

Even factors such as laying depth, surface, type of ground or ambient interference, for example wind or rain, do not affect the accuracy of the measuring result.

Nor do the hearing and experience of the user determine the success of the leak detection operation. The technical possibilities of the user-friendly correlator alone determine the quality of the measuring result.

What is electro-acoustic water leak detection?

Firstly, the test rod is used to listen to suspected leak noises on accessible fittings (slide gates, hydrants, home shut-off valves etc.). This prelocation step isolates the area to be examined more closely. The ground microphone is then used to listen to the surface of the section of pipe and determine the exact location of the leak. The human ear still plays an important part in analysing the noise as it can compare and analyse the volume and sound.

Why two processes?

Each process has its limits and weaknesses. Cleverly combining all the advantages maximises the certainty of determining the exact location of the leak.

SEWERIN's SeCorrPhon AC 06 makes use of both methods at the same time.

Radio transmitter RT 06

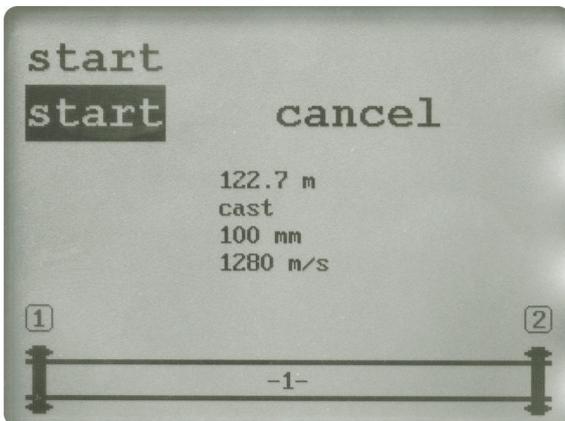
- Quick and easy to use
 - Select measuring point and position of transmitter
 - Switch on RT 06 transmitter by connecting microphone
- High-performance transmission paths with 500 mW transmitting power
- Simple radio operation even if line-of-sight is obstructed
- Frequency filter for effective adjustment for measurements on plastic piping



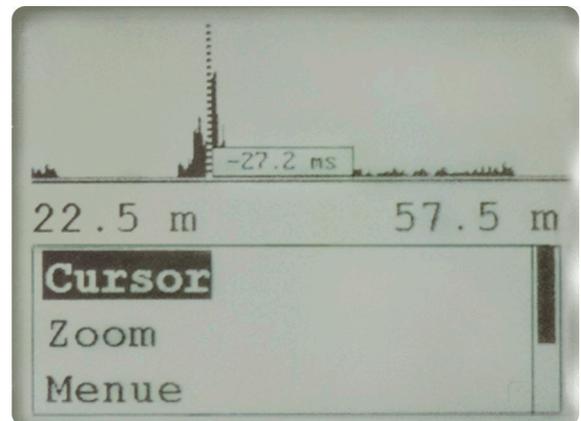
SeCorrPhon AC 06

SeCorrPhon AC 06 as a correlator

- Lightweight, ergonomic handling
- Easy to use thanks to rotary pulse encoder and film keypad
- Can be switched to single-channel radio if a transmitter fails
- Coherence analysis with frequency recommendation for optimal filter setting – ensures clear illustration of the leak position
- Radio reception over more than 2.000 m per channel
- Measuring assistant for everyday situations
- High-resolution graphic display
- PC communication software for printing out and recording measurements
- High-performance transmission path (500 mW) with optimal selectivity

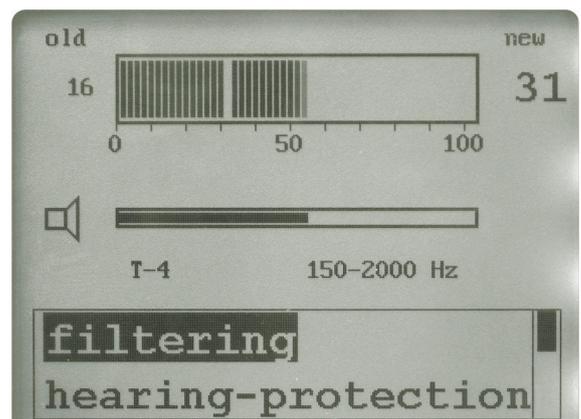


Correlation displays



SeCorrPhon AC 06 as an electro-acoustic water leak detector

- Socket for direct microphone input
- Excellent sound thanks to powerful digital signal processor
- Listening with on-screen support: minimum sound level display, memory function
- Hearing protection function
- Variable filter setting
- Automatic microphone recognition (ground microphones, test rod or handy microphone for buildings)
- Port for PC communication



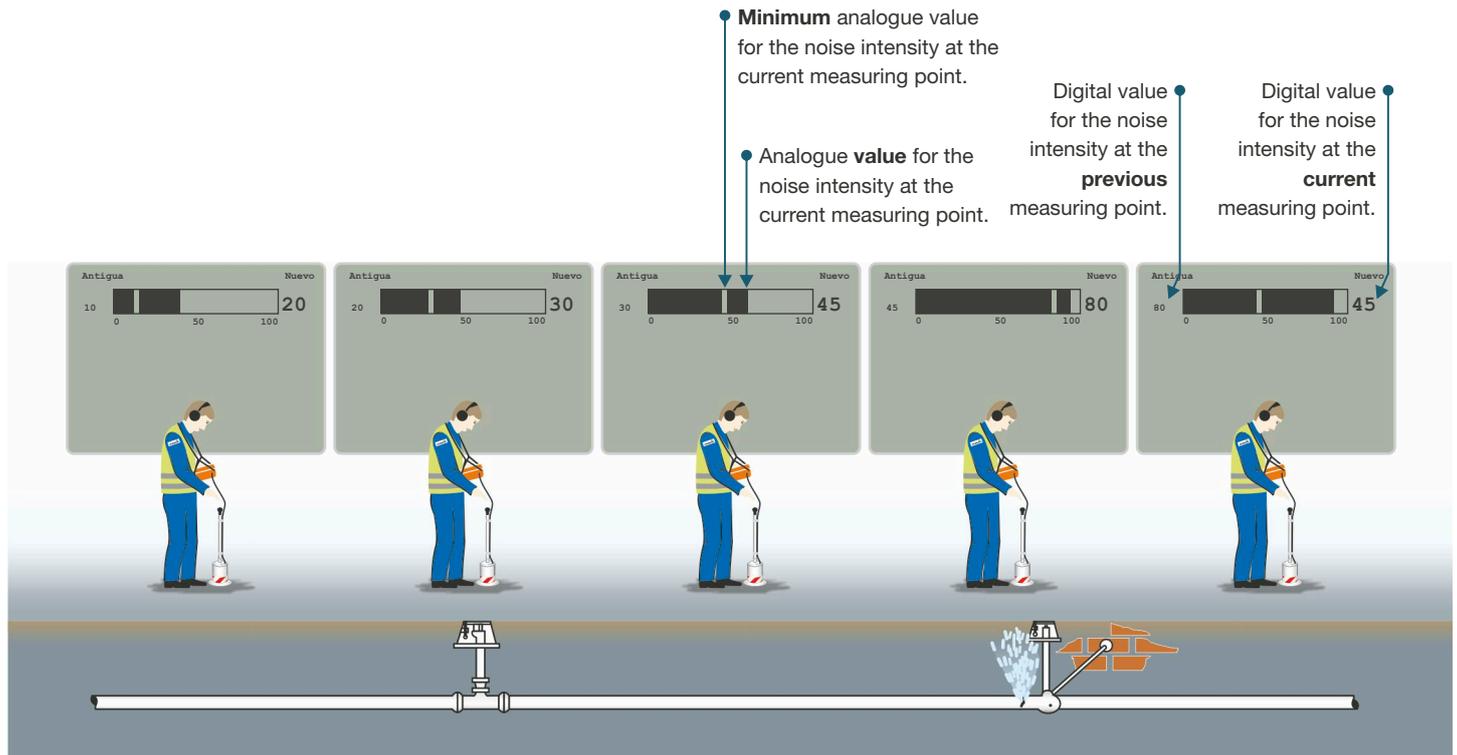
Electro-acoustic water leak detection

Pinpointing with ground microphone

Using the ground microphone at regular intervals enables the leak to be located with sufficient accuracy for confident excavation. The **SeCorrPhon AC 06** displays a precise optical comparison of the noise intensities.

Is the noise getting louder or softer?

The visual display is particularly helpful for novices or those who do not use the system often.



System case

The robust rolling hard-top case can hold the **SeCorrPhon AC 06** receiver, the **RT 06** radio transmitter, microphones for electro-acoustic water leak detection and other accessories.

The equipment can be charged in the closed case so that it is always ready for use.

Please contact us for a comprehensive quotation, including additional technical specifications and information on accessories.