SEWERIN
Technologies for leak detection.

AQUAPHON® A 200

Electro-acoustic water leak detection
professional – flexible – intelligent

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Ideal for detecting leaks in water pipe networks

When it comes to detecting leaks in water pipes by electro-acoustic means, the hearing and experience of the user are paramount. The ***AQUAPHON®*** system supports and simplifies this detection process thanks to the outstanding quality of its microphone and measuring technology, intelligent analysis functions and the practical, visual representation of results on the display.

Most reliable leak detection ever

This cutting-edge system offers comfortable, wireless handling, ease of use, versatility and a sturdy, ergonomic design. The ***AQUAPHON®*** system is ideal for both the prelocation and pinpointing of leaks for confident excavation. It is suitable for all your leak detection challenges and will help you locate leaks safely and reliably.

The measurement principle

The water flowing out of the leak in the pipeline causes the pipeline material to vibrate. These vibrations are transmitted throughout the line and can be picked up as structure-borne noise, even at distant contact points such as fittings. The vibrations are also transmitted up through the ground to the surface as ground-borne noise, although this is very muted. The ***AQUAPHON®*** system is your perfect companion for leak detection as it makes the vibrations audible to the human ear and records and visually displays the volume and frequency spectrum.

Prelocating leaks

Place the ***TS 200*** carrying rod with the connected ***TM 200*** touch microphone on fittings along the pipeline and assess the volume. By comparing and determining the values, you can identify which section of the pipeline is most likely to contain the leak.

Pinpointing the leak

Use ground microphone ***BM 200*** (for paved surfaces) or ***BM 230*** (for unpaved surfaces) to analyse the volumes in the identified section pf pipe. To do this, connect carrying rod ***TS 200*** to a ground microphone and move over the pipeline in short intervals. The acoustic signal and visual display of the intensity make it easy to find the maximum. You can now begin to excavate with confidence.

Flexible use

- Thanks to the high protection class (IP67) of the ***AQUAPHON® A 200*** receiver, you'll always be on the safe side, even in extreme environmental conditions. The receiver is impervious to dirt, dust and moisture. The ***TM 200*** touch microphone used for prelocation can even be used continuously under water (IP68).
- The symmetrical housing of the ***AQUAPHON® A 200*** receiver, means that it can be operated by both right-handed and left-handed users with ease.
- You can see everything at a glance: The clear 5.7 inch receiver display shows the current acoustic intensity both in a graph and as a numeric value. Alongside, you can see the previous values for comparison purposes, as well as the current frequency analysis of the noise.
- A full charge of the integrated Li-Ion rechargeable battery in the ***AQUAPHON® A 200*** receiver, ***F8*** wireless headphones and ***TS 200*** carrying rod is enough for a full day's work.
- Work effortlessly and ergonomically. The ***TS 200*** carrying rod with its balanced, ergonomic design fits snugly into your hand. The flexible carrying system for the receiver with two cross belts can be adjusted individually and enables various carrying positions.

Intelligent system in practice

- The ***AQUAPHON®*** system is completely wireless as the ***TS 200*** carrying rod, ***AQUAPHON® A 200*** receiver and ***F8*** wireless headphones communicate by ***S***ewerin ***D***igital ***R***adio ***(SDR)***. Not only does this allow you incredible freedom of movement, it also offers a much greater sound quality without interference from swinging cables.
- The system is operated without buttons or switches using the sturdy 5.7 inch VGA display with touch screen. It offers excellent readability, even in strong sunshine, and can also be operated with gloves. The display is clear and features large, distinct symbols.
- The ***AQUAPHON® A 200*** receiver guides you through the various applications with instructions, which means that even less experienced and occasional users can operate the device reliably.
- Safety thanks to customisable hearing protection: if there is any sudden loud interference noise, e.g. passing vehicles, or if the microphone slips off the valve rod extension, the signal in the headphones can either be muted or completely switched off. Once the source of interference goes quiet, the hearing protection automatically switches back off again.

Professional technology for challenging tasks

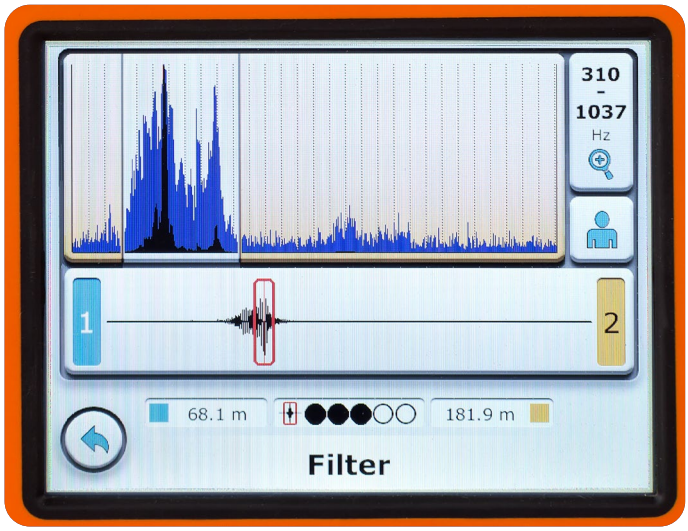
- The high quality piezo microphones with a frequency response specially optimised for leak detection and digital signal processing guarantee excellent acoustic properties. Thanks to the brilliant sound quality and minimisation of sound interference, you can reliably identify and locate leaks, even if the acoustic intensity of the leak is low or there is loud ambient noise.
- At the touch of a button the ***AQUAPHON® A 200*** receiver calculates filters tailored to the current noises and automatically selects suitable frequency ranges. Alternatively, you can manually set filter limits to suit your individual hearing and select frequency ranges that highlight the leak noise. This allows you to concentrate fully on the leak without any sound interference.
- You can record leak noises using the integrated audio player and compare them with each other. Then you can create a noise database to help you analyse leak noises on site, or use this function for training or demonstration purposes.

Pinpointing of leaks

The ***AQUAPHON® A 200*** receiver is also available to buy with an optional integrated module for positioning. The ***GNSS*** (***G***lobal ***N***avigation ***S***atellite ***S***ystem) module stores the current user position when a leak noise is identified. This means the exact geographic position of the leak can be associated with the noise, making it available for documentation at a later date. Noises stored temporarily in the audio player can also be subsequently associated with the appropriate location data once the measurement has been stored.

Optimised filter settings

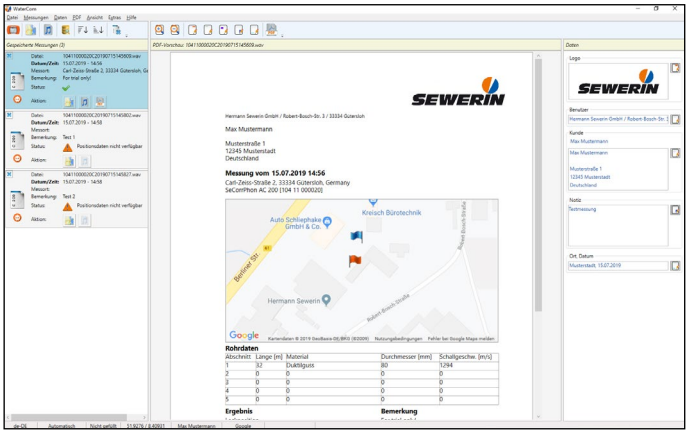
Set the upper and lower filter limits simply and easily by clicking on the graphical representation of the leak noise. Alternatively, manual fine setting in 50 Hz steps is also possible. Select the required filter limit by pressing the key and then set the figure precisely.



Documentation with ***WaterCom*** software

Measurements saved in an ***A 200***, ***C 200*** or ***AC 200*** receiver can be transferred quickly and easily to a computer via USB. Just connect the receiver to the computer via cable and the measuring data will be transferred automatically. It is possible to set up different user and customer data sets in the software. The position of the location for each measurement is shown on an online map (e.g. Google Maps). The locations on the map can be edited, meaning the exact position of the radio transmitter or damage detected by the ground microphone can be pinpointed exactly. It is also possible to add notes to any measurement or point of damage. The software can generate PDFs to produce paper documentation of any measurements.

Noises which have been recorded can be played back using the player integrated into ***WaterCom***. If the software is used regularly to save measurements, it will start to build up a useful noise database. This can then be used, for example, to train new starters in leak detection in what to listen out for.



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Components

The ***TS 200*** carrying rod can be connected to three different microphones. Whereas up until now a special test rod and a carrying rod were required for ground microphones, the ***TS 200*** fulfils both functions. It can be connected to the relevant microphones depending on the application. The ***TS 200*** is powered by a high performance rechargeable battery which guarantees reliable operation for a full day's work. It can be charged in less than four hours directly in the system case.

The ***TM 200*** touch microphone was developed especially for prelocation at fittings in the pipe network. Its frequency response means that it can reliably detect both quiet and low noises, usually occurring in plastic pipes, as well as loud, high-pitched leak noises in metal pipes. The probe tip and available extensions in different lengths mean that it can be perfectly adapted to the structural conditions of all pipe networks. To help you correctly place it on the valve rod extensions, even in the darkness of the valve box, the ***TM 200*** has a torch function, which is activated on the ***TS 200*** carrying rod.

The ***BM 200*** ground microphone is ideal for paved surfaces. The very sturdy housing is optimally decoupled from the actual microphone capsule. A lifting mechanism ensures consistently perfect contact with the ground, so that small bumps make no difference.

The ***BM 230*** ground microphone lends itself more to use on unpaved surfaces. Its solid tripod always guarantees a firm base. If the ground is particularly soft, it is possible to screw on a spike to improve the sound transmission even further.

The system case provides ample space to safely hold all the components of the ***AQUAPHON®*** system. The ***TS 200*** carrying rod, the ***AQUAPHON® A 200*** receiver and the ***F8*** wireless headphones can be charged at the same time. Chargers are available for the measuring vehicle as well as for the workshop and office.

www.sewerin.com

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