Product Catalogue | Water Leak Detection
About Us

The Sewerin group of companies is an internationally successful, technically innovative, family owned group with headquarters in Gütersloh, Germany.

With top-level products and services, we are the market technology leader and a partner to the gas and water supply industry. Together with our over 90 years of experience in the development of measuring devices, the knowledge accumulated by our own measuring teams contributes significantly to our success.

At the Gütersloh location, our innovative devices move through design, development, testing and production before they are finally ready for the market. Throughout, there is a particular emphasis on high quality and functionality. An important factor of success is the production in Germany.

For the water supply industry, we are offering electro-acoustic water leak detectors, noise loggers, correlators, tracer gas leak detectors and mobile measuring systems for flow analysis.

In addition to the sale of those measuring devices and services, we are offering stationary and mobile device maintenance service. An extensive distribution network consisting of sales engineers, subsidiaries and distribution partners in over 80 countries makes success on a global level possible. In the US we cooperate with almost 20 official sales partners.

While others are still searching ...

... WE ARE FINDING LEAKS!
Professional leak detection

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

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 of the leak noise audible to the human ear, and records and visually displays the volume and frequency spectrum for visual as well as audible identification.

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.

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 analyze the volumes in the identified section of 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.
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 Sewerin Digital Radio (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 is ensured thanks to customisable hearing protection. The signal in the headphones can either be muted or completely switched off if there is any sudden loud interference noise, e.g. passing vehicles, or the microphone slips off the valve rod extension. Once the source of interference goes quiet, the hearing protection automatically switches back off again.

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 while in the carrying case. Chargers are available for the vehicle as well as for the workshop and office.

Professional technology for challenging tasks

- The high-quality piezo microphones with a frequency response specially optimized 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 analyze leak noises on site, or use this function for training or demonstration purposes.
AQUAPHON® A 150 – Compact – Universal – Reliable

AQUAPHON® is a first-class water leak detection system. Professional prelocation and the precise pinpointing of leaks is ensured by the A 150 receiver together with the well-established microphone technology from the AQUAPHON® A 200 system. Connected via high-end microphones and wireless headphones, this device impresses with its brilliant reproduction quality. The display offers support by visualising the noise for reliable and differentiated evaluation. Small, light and handy – the receiver wins over customers with its innovative, compact design and maximum comfort when carrying. Thanks to adjustable filters and automatic frequency scanning, frequency ranges can be individually adapted to the user’s hearing, influences from sound interference minimized and sound quality optimized for reliable evaluation of the leakage situation.

Reliable results and availability

The high-quality piezo microphones with frequency response optimized especially for leak detection and the digital signal processing offer outstanding acoustic properties. Thanks to the excellent sound quality and minimisation of sound interference, you can reliably identify and locate leaks even if the sound intensity of the leak is weak or there is significant ambient noise. The AQUAPHON® A 150 receiver automatically calculates the filters and selects suitable frequency ranges. Alternatively, you can set manual filter limits according to your individual hearing and select frequency ranges which accentuate the leak noise. This allows you to concentrate fully on the leak without any sound interference.

In addition, the high-performance rechargeable battery guarantees optimum availability without needing to be recharged – for at least two days of work.

Efficient prelocation and pinpointing

The A 150 receiver is recommended for prelocation along fittings or pinpointing on different surfaces – either outdoors or in buildings. Measurements can be conveniently started or terminated using the activation key. Current and previous minimum noise levels are shown both as a graph and a numerical readout on the practical display. Volume, filter limits and hearing protection can all be individually adjusted to optimum effect.
Universal sensor interface

The microphone is securely connected to the carrying rod thanks to a star knob screw and a sturdy, form-fit mounting. The sensor interface on the carrying rod ensures that the microphones are reliably detected. In the past a special test rod and a carrying rod were required for ground microphones but the TS 150 now performs both functions. It records the relevant microphones depending on the application. The microphones do not need to be charged. They are supplied with power by a high-performance rechargeable battery in the staff, which guarantees reliable operation for at least 16 hours.

The benefits of the AQUAPHON® A 150

- An extremely compact, lightweight, practical housing complete with belt clip – for convenient, effortless carrying and maximum freedom of movement
- High-quality piezo microphones with frequency responses optimized especially for leak detection to cover every application, simple changeover ensured
- Automatic frequency scanning and frequency ranges that can be individually adapted to the user's hearing for reduced sound interference and optimum filter selection
- Long availability periods – no need for recharging – thanks to high-performance rechargeable battery technology
- An illuminated display with an optimized tilt angle and auto-switch display (180° rotation) for easy read-off from the receiver, irrespective of position
AQUAPHON® A 50 – Compact – On-Hand – Efficient

The reasonable entry-level model
The AQUAPHON® A 50 system provides professional, electro-acoustic water leak detection. The A 50 receiver and various microphones make the prelocation and pinpointing of leaks successful. When both microphone and headphones are attached, the device boasts impressively high reproduction quality. The display helps by visualizing the noises to provide reliable, differentiated evaluations. When the A 50 with SDR radio module (Sewerin Digital Radio) is used and the F8 wireless headphones are connected, there are no cables to affect the sound quality or restrict your movement.

Efficient prelocating and pinpointing of leaks
Superior microphone technology ensures excellent sound quality with the UM 50 universal microphone and the TS 50 test rod. The A 50 receiver is ideal for prelocating at fittings and pinpointing on a variety of surfaces – indoors and outdoors. An activation key conveniently starts and stops measurements. The supporting display indicates current and previous minimal levels, both numerically and graphically. It boasts a particularly practical feature: the display is always easy to read thanks to an optimized tilt angle that automatically rotates its view by 180° depending on the carrying position. Volume, filter limits and hearing protection can all be customized for optimal performance.

Compatibility with the existing AQUAPHON® A 100 microphones (BO-4, 3P-4, …), is another advantage.

Maximum carrying convenience, long battery life
Practical dimensions and low weight make the compact A 50 receiver perfect for everyday use. As an alternative to the carrying strap, the lightweight receiver can be easily fastened to your belt with a clip: freedom of movement, effortless carrying, no annoying elements! The powerful battery guarantees optimal availability without recharging for up to one work week.
**Principal application**

The high-quality microphone technology of the *AquaTest T10* permits first-class sensitivity in picking up noises. Even the smallest leaks are reliably detected by the test rod. When using the test rod on objects that lie deeper under the surface, extensions can easily be screwed on between the probe tip and microphone. Individual optimization of acoustic results is assisted by the option of selecting one of eight different filter settings. When operating the unit, noise levels can be sampled by simply placing your thumb on the sensor area or by using the toggle on/off mode option. The unit listens only as needed, thereby reducing the annoyance and distraction of unwanted sounds. The *AquaTest T10* display shows the current and previous minimum noise levels, as well as the current noise intensity. The minimum noise levels are shown as numeric values; the actual noise intensity is displayed as a bar graph. This gives even less experienced operators visual support if and when they are approaching a leak.

**Additional applications – pinpointing leaks and acoustic pipe location**

Previously surveyed leaks can also be pinpointed with the *AquaTest T10*. For this, the probe tip is replaced with wind protected ground mic adapter. This picks up the noise of the leak at the surface as well as blocking other ambient noises. In addition, triped can be attached to the test rod or wind protection device to work over rough surfaces. If a pipe is set into vibration, e.g. using the knocker or stopper of the *COMBIPHON*® system, the position of the pipe can be located using the *AquaTest T10*. This involves systematically testing the surface in short intervals. The volume increases in approach to the vibrating pipeline. The noise is loudest directly above the pipe.
**Stethophon® 04 – Compact Listening Device**

**Characteristics**

The *Stethophon® 04* is a sound detector for recording and amplifying structure-borne oscillations of all kinds. The oscillation sensor provides undistorted sound reproduction even when the noise is barely audible.

Besides the cable headphones, a wireless version is available with *SDR* digital radio. The Sewerin Digital Radio (*SDR*) offers a sound transmission quality equal to or better than cable. By going without the cable, the comfort of work is improved considerably. Headphones and detector connect automatically via bi-directional antennae link when switched on.

*Sewerin Digital Radio* works over short distances without any loss. Unlike simple analogue radio transmissions, the completely digital signal processing does not allow acoustic interferences, caused by hissing, re-amplifying, etc., to occur. The filter function enables the users to listen to the sound at the frequency that best suits their hearing and the particular noise being listened to. The filters make it easier to hear certain noises such as the deep-pitched sounds typical from leaks in plastic pipes and higher frequencies from metallic pipes.

The hearing protection feature automatically ensures that the headphones are muted when loud noises suddenly arise to protect the operator.

To help with the leak detection, the *Stethophon® 04* not only indicates the noise levels acoustically, but also displays them digitally. The lowest measured noises of the previous and current locations are numerically displayed and can be compared objectively.

**Applications**

- Slab leak detection
- Contact microphone leak detector survey tool in water networks
- Examination of house service lines when the water meter is replaced
- Examination and localization of damages in compressed air systems
- Check on machine bearings
LOCATING PLASTIC PIPES ACOUSTICALLY

As non-metallic pipes are not electrically conductive, they cannot be located with the classic electro-magnetic method. Another principle in pipe location is used with the acoustic method: the pipes transmit mechanical vibrations better than the surrounding soil.

The vibrations are transmitted along the pipe and over the soil to the surface where they can be detected by ground microphones (AquaTest T10, AQUAPHON® A 50, A 150, A 200).

Just as with the acoustic location of water leaks, the highest intensity indicates the position of the pipe. Basically fiber cement or metallic pipes can also be located with this method.

The volume increases as you get closer to the vibrating pipeline. The signal is loudest directly above the pipe, thereafter the intensity starts to decrease again. The visual display is particular helpful for novices or those who do not use the system often.

COMBIPHON® – Striker

Water service lines are caused to vibrate using the Striker. This steadily taps the pipe from the outside like an electric hammer.

The Striker can be easily attached to pipes with a diameter of up to 4 inches using the supplied chain attachment.

COMBIPHON® – Stopper

Water mains require more energy to vibrate. The water column is set in motion by controlling the volume using the Stopper at a fire hydrant. The Stopper is a battery powered intensity controlled piston. The sound can be detected over long distances, depending on the soil conditions (clay, compact soil – over 1 mile).

An advantage in using a power controlled piston, as opposed to a spring one, is that pressure variations have no effect on the settings.
The principle

The SeCorr® 300 is a system of unprecedented quality to complement the existing product range. The fully digital signal processing and transmission eliminates the interference which so often causes problems in conventional correlators.

Digital correlation

The digital radio eradicates the notorious hissing in transmission paths. Even the narrow bandwidth of analog modules no longer poses a restriction. The noises recorded from the leak are already digitized in the microphone thus eliminating feedback via the cables.

This produces significant advantages, particularly in plastic pipes, where the noise emitted from the leak is, as a rule, very poorly transmitted and thus very quiet. The result is improved leak coverage in non-metallic pipes, which is increasingly used nowadays in water pipe networks.

The hardware

Notebooks and desktop PCs can be used to analyze the measurements, as can Tablet PCs or field notebooks, for example, which have been specially designed for use in adverse conditions. Thanks to the USB standard, the system can be easily connected to the computers. Provided the computer is state-of-the-art, the SeCorr® 300 system offers the user every possibility to produce optimal results, even under difficult conditions where conventional correlators would reach their limits.

Overview of basic functions

- Offline correlation – for long distance correlation outside the radio transmission range
- Different user modes – simple – standard – detailed
- Automatic sound velocity calculation
- Original noises can be recorded, with the option of creating a noise archive for comparison purposes
- Automatic filtering (FFT) and interference suppression
- Filters up to 10 types in up to 5 filter groups; the results of various, arbitrary filter settings can be compared and also allows the user to filter out interferences when surveying plastic pipe
- Input up to 5 different pipe sections and up to 3 freely definable extra materials providing optimal flexibility as opposed to fixed standards for correlation professionals
- Digital hydrophones set for long distance and/or large diameter pipes including fire hydrant quick adapters
SeCorr® C 200 – NEW Correlation Standard

The principle of correlation
Location with a correlator involves simultaneously measuring the noises caused by a leak on the pipeline at two fittings (e.g. on isolation valves, curb stops, or hydrants). Highly-sensitive microphones record the noises on the fittings, radio transmitters transmit the signals to a receiver – the correlator – which determines the run time difference, i.e. the time lag between the noises reaching the two measuring points. The correlator then calculates the exact leak position based on the entered pipe material, size, and length.

Reliably and accurately pinpoint leaks
Professional: The SeCorr® C 200 is a state-of-the-art, portable high-performance correlator, which enables leaks in underground pipelines to be located reliably, quickly and accurately. Its user interface is clearly and logically laid out. There are many extra functions available for complex location scenarios.

Flexible: The SeCorr® C 200 is recommended for all users undertaking professional leak detection as it can handle any leak detection scenario. It can easily measure the leak noise location between mics in different pipe materials, diameters and lengths.

Intelligent: The sophisticated firmware of the SeCorr® C 200 means that the measurement sequence is almost fully automatic. Once the pipeline data has been entered and the measurement started, all other steps are performed without the intervention of the operator. The measured noises are constantly analyzed in the background and the optimal filter settings selected automatically.

Automatic filters, results-oriented measurement display
The SeCorr® C 200 independently optimizes the measuring results by automatically selecting appropriate filters – without the user having to intervene. However, filters can also be set manually.

One special feature of the correlator is its results-oriented, userfriendly on-screen display of the measuring results. Concrete information about the position of the leak is highlighted, instead of having to interpret complex curves. The quality of the calculations shown in the display provides the user with constant information about how reliable the measurement is.

Thanks to the results-oriented view, the user can immediately implement further steps, e.g. confirm the location by acoustic means RT 200.
**SeCorr® C 200 – NEW Correlation Standard**

The radio transmitters

The *RT 200* radio transmitters feature 500 mW high-performance transmission paths. They allow noiseless data transmission, even on measuring sections covering hundreds of feet. The *RT 200* radio transmitters come on as soon as you plug in the microphone cable. Three different bandpasses mean that the noises can be fully processed before radio transmission. This means that the *RT 200* radio transmitters can be adjusted to a wide range of pipe materials and lengths. The microphone’s LED light function can also be activated via the membrane keypad.

The microphones

The *UM 200* microphone used for picking up structure-borne noise features a very wide frequency response and is extremely sensitive in the low frequency range. This makes the *UM 200* perfect for recording even the quietest of noises, particularly on plastic pipes. The cable is extremely sturdy and can withstand heavy mechanical loads. This guarantees a long service life in daily use, even under the harshest of conditions. A high-quality plug and an extremely strong contact adapter make the *UM 200* microphone a professional all-rounder.

The hydrophones

The *HY 200* hydrophones make the SeCorr® an excellent measuring system for use along large transmission pipelines and long distances between individual attachment points. Because they are installed directly in the water column, hydrophones do not use the structure-borne noise that travels along the pipe, but rather the noise transmitted by the water in the pipe. The *HY 200* are extremely sensitive in the very low frequency range, far below audible sounds. In this way they perfectly complement the SeCorr® system when used in plastic pipe networks. The set comes in a dedicated plastic case, keeping all the components such as hydrophones, adapters for installing on fire hydrants and connecting cables close to hand.

The system case

A separate sturdy system case has space to safely hold all the system components. The *C 200* receiver, two *RT 200* radio transmitters and two *UM 200* microphones as well as optional accessories can all be stored in the case with optimal protection for transit. The system components can be charged in the closed case in the workshop or in the vehicle.
The system **SecorrPhon** is a multifunctional leak detector offering three functions in one: prelocation, pinpointing and correlation. The clever combination of these processes in one system allows you to confidently locate the leak regardless of the ambient conditions. With just a few finger strokes, you can quickly and easily switch between the various applications.

**Prelocating leaks**

Place carrying rod **TS 200** and the connected touch microphone **TM 200** on fittings along the pipeline and evaluate the volume. By evaluating the noise intensity, you will be able to identify the section of pipeline where the leak is likely to be.

**Pinpointing**

Evaluate the volumes in the identified section of pipe using ground microphone **BM 200** (for paved surfaces) or **BM 230** (for unpaved surfaces). Connect carrying rod **TS 200** to a ground microphone and move over the pipeline in short intervals. The acoustic signal and the visual display of the noise intensity make it easy to find the maximum leak noise. The leak is then located with sufficient accuracy to allow confident excavation.

**Comparison of correlative and acoustic location techniques**

The correlation method is essentially different to the conventional method of acoustic water leak detection. Instead of systematically checking the fittings (prelocating) and then pinpointing with ground microphones at one position, correlation involves taking two simultaneous measurements at two fittings. With acoustic location the user compares and evaluates the leak noises. This technique can be used in many network structures, however successful location is dependent upon human hearing and, to a large extent, the experience of the user. Leak detection by correlation, on the other hand, provides accurate measurement values – regardless of the hearing of the user and largely irrespective of external disturbances.
SeCorrPhon AC 200 – Professional – Flexible – Intelligent

Professional

The user interface of the SeCorrPhon AC 200 is clearly and logically laid out. There are also many extra functions available for complex location scenarios.

The high-quality piezo microphones with frequency response optimized especially for leak detection and the digital signal processing offer outstanding acoustic properties. Thanks to the excellent sound quality and minimization of sound interference, you can reliably identify and locate leaks even if the sound intensity of the leak is weak or there is significant ambient noise.

At the touch of a button the SeCorrPhon AC 200 will apply tailored filters to the current noises and will automatically select the appropriate frequency ranges. Alternatively, you can set manual filter limits according to your individual hearing and select frequency ranges which accentuate the leak noise. This allows you to concentrate fully on the leak without any sound interference.

In addition, you have the option of recording leak noises with the integrated audio player and comparing them with each other. You can use these recordings for training or demonstration purposes or to create a noise database, allowing you to better evaluate leak noises on site.

Flexible

All-in-one device: prelocation, pinpointing and correlation. The innovative combination of these methods in one system allows you to confidently locate the exact source of the leak regardless of the ambient conditions.

The SeCorrPhon AC 200 is recommended for all users undertaking professional leak detection because it can handle any scenario. It can easily measure the leak noise from different pipe sections, pipe materials, diameters and pipe lengths.

With acoustic leak detection, the current sound intensity is displayed as a graph and as a numeric value on the large and clear 5.7 inch receiver display. You can also see the previous values simultaneously for better comparison as well as the current frequency analysis of the noise.

Intelligent

The sophisticated firmware of the SeCorrPhon AC 200 means that the measurement sequence is almost fully automatic. Once the pipeline data has been entered and the measurement started, all other steps are performed without the intervention of the operator.

The measured noises are constantly analysed in the background and the optimal filter settings selected. The SeCorrPhon AC 200 instructions guide the user through the various applications. This means that even users with less experience and occasional users can use the device with confidence.
**SeCorrPhon system – Components for Correlation**

**The radio transmitters**

The **RT 200** radio transmitters feature 500 mW high performance transmission paths. These allow noiseless data transmission, even on measuring sections covering hundreds of feet. The **RT 200** radio transmitter comes on as soon as you plug in the microphone cable. Three different bandpasses mean that the noises can be fully processed before radio transmission, making the **RT 200** radio transmitter adjustable to a wide range of pipe materials and lengths. The microphone’s LED light function can also be activated via the membrane keypad.

**The microphones**

The **UM 200** microphone used for picking up structure-borne noise features a very wide frequency response and is extremely sensitive in the low frequency range. This makes the **UM 200** perfect for recording even the quietest of noises, particularly on plastic pipes. The cable is extremely robust and can withstand heavy mechanical loads. This guarantees a long service life in daily use, even under the harshest of conditions. A high-quality plug and an extremely strong contact adapter make the **UM 200** microphone a professional all-rounder.

**The hydrophones**

The **HY 200** hydrophones make the **SeCorrPhon** an excellent measuring system for use along large transmission pipelines and long distances between the individual attachment points. Because they are installed directly in the water column, hydrophones do not use the structure-borne noise that travels along the pipe, but rather the noise transmitted by the water in the pipe. The **HY 200** hydrophones are extremely sensitive in the very low frequency range, far below audible sounds. This also makes them the perfect complement to the **SeCorrPhon** system when used in plastic pipe networks. The set comes in a dedicated plastic case, keeping all the components such as hydrophones, adapters for installing on fire hydrants and connecting cables close to hand.

**The system case**

A separate sturdy system case has space to safely hold all the system components. The **SeCorrPhon AC 200**, two **RT 200** radio transmitters, two **UM 200** microphones, two **BM 200 / BM 230** ground microphones, a **TM 200** touch microphone, **TS 200** carrying rod and the **F8** wireless headphones as well as optional accessories can all be stored in the case with optimal protection for transit. The system components can be charged in the closed case in the workshop or in the vehicle.
**SeCorrPhon system – Components for Leak Detection**

**The carrying rod**

The TS 200 carrying rod can be connected to three different microphones. In the past, a special test rod and a carrying rod would have been required for ground microphones, but now the TS 200 performs both functions. It transmits the applicable microphone data to the receiver. The TS 200 is powered by a high-performance rechargeable battery, which guarantees reliable operation for a full working day. It can be recharged in less than four hours directly in the system case.

**The touch microphone**

The TM 200 touch microphone has been specially developed for prelocation along fittings in the pipe network. Its frequency response allows the reliable detection of both muted and low-pitched noises, which tend to occur on plastic pipes, as well as loud and high-pitched leak noises on metal pipelines. The probe tip and available extensions in varying lengths allow optimal adjustment to structural conditions in all pipe networks. The TM 200 features an LED light function, which is activated on the TS 200 carrying rod to allow secure positioning on the valve nut in dark valve boxes.

**The wind protected microphone**

The ground microphone BM 200 is ideal for paved surfaces. The extremely robust housing is optimally detached from the actual microphone capsule. A lifting mechanism ensures consistently perfect contact with the ground. Small surface bumps, therefore, no longer affect results.

**The soft soil microphone**

The ground microphone BM 230 is better suited to unpaved surfaces. The solid tripod ensures a consistently secure position. If the ground is particularly soft, an extra spike can be screwed in to allow even better noise transmission.
The principle of noise logging

The duration of time that water leaks from the distribution network has a significant influence on “real water loss” and “non-revenue water” calculations. The goal is to quickly identify water leaks to reduce the dollars lost, reduce the impact on non-revenue water calculations, be efficient, be good stewards of the environment, and reduce potential property damage. This goal can be achieved with SePem® 155 loggers.

In addition to conventional leak detection survey methods, SePem® 155 loggers are an effective, permanent monitoring tool to quickly identify leaks that may never reach the surface. With its ease of reprogramming and versatility, the SePem® 155 loggers can also be redeployed to other locations for shorter-term leak detection surveys. This process is often referred to as “lift and shift”.

With the aid of the SePem® 01 Master, the user establishes listening times, frequency and duration, alarm levels and “Patrol Times” for the collection of data. The “listening times” are typically programmed for periods during which flow and traffic noise are at their minimum level. “Patrol Times” are typically set for “regular working hours” eliminating the need for overtime.

The compact design of the SePem® 155 enables the logger to be placed in valve boxes, meter pits, and on unusual contact points. The highly sensitive microphone enables programmed monitoring of distances up to 1,600 linear feet of pipe between loggers. Spacing of the logger is dependent on the pipe size, pipe material, service density, and contact points available.

The SePem® 01 Master is portable and can be carried, or placed in the vehicle mounting bracket while patrolling for data collection.

During patrol, the result is both an audible and visual “leak/no leak” indicator, substantiated by two pieces of critical leak detection data- “minimum noise level” and “noise consistency”. Data results are cataloged by physical location, logger, patrol, date, and can be easily archived for comparison with future data. One SePem® 01 Master can accommodate up to 500 SePem® 155 loggers.

SePem® Master Communicator for data backup and visualization

The SePem® Master Communicator software is freeware, which allows you to display the data managed on the SePem® 01 Master directly on a PC. The patrol lists are transmitted directly after connection and saved in a database. In logger lists you can directly access and easily manage measurements from the individual SePem® noise loggers.
A tried and tested method

Using tracer gas is a tried and tested method for pinpointing leaks. It can be used in gas and water distribution networks, pipelines in buildings, heating systems, pressurized communication cables, gas-filled high voltage power lines and landfill sites sealed with double membrane layers. It can also be used to test for leaks in industrial products such as pipes, pumps, engine blocks and airfoils.

Detecting water leaks by tracer gas involves feeding a mixture of 95% nitrogen (carrier gas) and 5% hydrogen into the pipelines. The hydrogen escapes through the leak and is detected by the highly sensitive, specialized sensor.

The low amount of hydrogen (just 5%) means that this method is safe: the gas is incombustible as per ISO 10156 thanks to the use of nitrogen as the carrier gas. It is non-toxic as well as non-corrosive, and is therefore also permitted for use in drinking water networks.

Tracer gas is cheap and easy to obtain from technical gas or welding gas dealers. It is also environmentally-neutral and permeates all cover layers such as asphalt, concrete and other seal coats. Tracer gas always looks for the shortest route from the leak to the surface.

Rely on precision and safety

The VARIOTEC® 460 Tracergas was developed especially for leak detection on underground pipes by using tracer gas. It is characterised by an outstanding price to performance ratio.

Precise

The extraordinarily low cross sensitivity of the gas-sensitive semiconductor (SC) ensures an absolutely sure result and a resolution down to 0.1 ppm hydrogen.

Functional

Thanks to an innovative operating concept, a large display and simple menu structure, device operators can quickly get reliable results.

Efficient

In combination with the bell probe D80 you can achieve outstanding reaction times.

Flexible

The expanded measuring range of the thermal-conductivity sensor, up to 100 % vol. hydrogen easily allows for further measuring tasks.

Mobile

The 4 AA-size rechargeable batteries can be charged in just 3 hours and the operating time is at least 8 hours. As an alternative, you can use disposable batteries.
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Ingo Matlachowski
US Sales Manager
Hermann Sewerin GmbH
Phone +1 888 592 9916
Cell +1 888 592 9916 ext. 102
sewerin-usa@sewerin.net
ingo.matlachowski@sewerin.com
www.sewerin.com

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