



# The principle of stationary noise logging

The period how long water flows out of a point of damage has a significant influence on the total loss created by water leaks in supply networks. A reduction of water losses accordingly demands a meaningful decrease of leaking times.

In addition to conventional methods of detecting leaks systematically in grown network structures the installation of stationary noise loggers

**SePem® 01** marks a useful alternative to monitor sections of the system permanently which have once proven to be free of leaks.

For this reason the **SePem® 01** loggers are placed at valves. Of course it is also possible to connect them to underground fire hydrants. The instruments do record noises in a defined period of measurement and additionally transmit radio signals during a certain time schedule out of the valve boxes. For reception of those radio signals the **SePem® 01 - Master** is applied, which collects data when driving along the measurement locations. It is not necessary

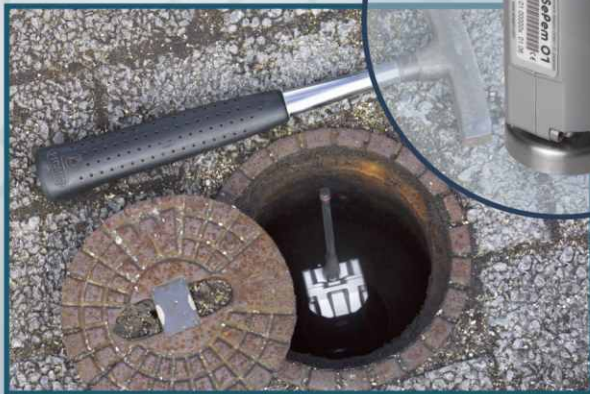
to take out the loggers from their places or to open the valve boxes therefore.

Such data package contains the most essential information about the passed measurement cycle. The most significant information in this regard is the minimum noise level.

If now the **SePem® 01** loggers are read out repeatedly in a suitable and systematic scheme the corresponding minimum levels can be compared at each location. As long as there will be no leak, the readings will not change. But if a leak occurs, the recorded minimum noise level will increase immediately and will remain high afterwards. Depending on the scheme of repetition of driving along the measurement locations (e. g. once per week) the runtime of the leak will be limited to this short period of time and the loss will be recognised not only with the next systematic survey – in worst case after some years.



## Installation variants



The **SePem® 01** noise loggers can be attached in a vertical position and therefore be mounted to valves in manholes for example. The connection to the fitting under test is realised by a magnet in any case.



The alternative is a horizontal installation. For this manner of application the magnet is mounted at the longer side of the **SePem® 01**. The achieved reduction in assembly height is leading to an option to install the logger even in cases of low distance between valve and cover. Due to the option of placing the magnet eccentrically even decentralised fittings are suitable to be used as measuring points.



# Programming options

The communication instrument **SePem® 01 - Master** allows even the less experienced operator to receive quick and reliable results due to the easy and intuitive menu structure as well as the implementation of a jog dial.

With the **SePem® 01 - Master** the **SePem® 01** loggers can be programmed and the data can be read out. Three different measuring options are available, which can be chosen with or without graphical analysis.

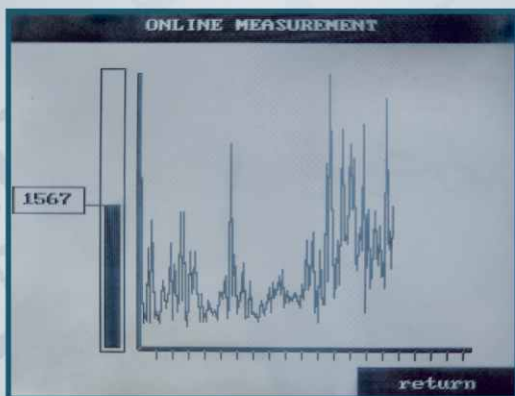
The standard consists in an endless measuring process where measurements are taken in a certain interval free to be programmed. Before read out of data with the **SePem® 01 - Master**, the logger evaluates a minimum noise level.

The second option is to take a time controlled measurement, e. g. for 30 minutes from 2:00 to 2:30 o'clock during the night, and this will be repeated every 24 hours.

The third possibility is one single measurement that can be taken any time and could be of any duration.

Additionally an online measurement can be carried out prior to installing the logger, in order to decide, if the chosen place makes a suitable measurement location.

In case of an indication of a leak during reading the results, a full download of all values is possible – directly on site.



With an online measurement, like displayed here, even before final mounting a decision can be made, if possibly even during day time a zero measurement can be achieved.

PATROL						
FAB	🕒	📶	📶	📶	📶	📶
00000	09:08-05.01.05	100	-	124	100	
00001	09:09-05.01.05	200	>999	21	100	
00002	09:10-05.01.05	2309	>999	455	90	
00003	09:12-05.01.05	1098	120	785	90	
00004	09:15-05.01.05	567	>999	454	90	
00005	10:08-05.01.05	2484	253	912	90	
00006	10:10-05.01.05	232	210	784	90	
00007	10:11-05.01.05	2999	870	453	20	
00008	10:12-05.01.05	564	440	78	90	

Miss. Log. | Del. List | return

In this table all **SePem® 01** data are listed chronologically when passing the measurement locations.

LOGGER DATA	
🕒 Meas. times	100 01 00007
Measurement date	18.02.06
Measurement time	00:00
Measurement duration	1d 00h 00m
Measurement interval	5 min
Type of measurement	-

return

Depending on the demand of a new measurement the measuring times can be defined in a wide range. Selected data are verified by internal logics and corrections are recommended in case needed.

LOGGER DATA															
🕒 Radio times	100 01 00007														
Activation time	10:00														
Activation duration	2 h														
Active repetition time	10 sec														
Active days	<table border="0"> <tr> <td>SO</td><td>MO</td><td>TU</td><td>WE</td><td>TH</td><td>FR</td><td>SA</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table>	SO	MO	TU	WE	TH	FR	SA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SO	MO	TU	WE	TH	FR	SA									
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return

The definition of radio transmitting times has significant influence to the current consumption of the logger. To save energy and enlarge the life span of the battery single days can be deactivated, e.g. weekends.

# Technical data

## SePem® 01 - Master

- ▶ Innovative handling concept by jog dial and soft keys as well as intuitive menu guidance
- ▶ Flexible carrying concept
- ▶ Supporting handle
- ▶ 4 MB internal memory
- ▶ Power supply by 4 rechargeable or disposable batteries „Mignon“
- ▶ Operation from the 12 V supply of the car by direct cable link
- ▶ Operating time min. 8 hours when rechargeable batteries are selected
- ▶ Protection according to IP 54
- ▶ Operating temperature: -10 °C ... +50 °C
- ▶ Storage temperature: -20 °C ... +70 °C
- ▶ Weight approx. 1,000 g
- ▶ Dimensions (W x D x H) in mm: 148 x 57 x 205 (253 with handle)

## SePem® 01

- ▶ Robust aluminium die-casting housing with refined surface
- ▶ Horizontal or vertical installation by 2 magnet connections M10
- ▶ By threaded slide in horizontal installation also applicable in valves boxes with eccentric valves
- ▶ Bi-directional data radio 433 MHz with 1/10 mW
- ▶ Errors automatically corrected, digital high-performance radio transmission
- ▶ Power supply by built-in Lithium battery
- ▶ Operating time: typically 5 years, with daily radio stand by (with radio transmission once per week significantly longer)
- ▶ Protection according to IP68
- ▶ Dimensions (W x D x H) in mm: 108 x 51 x 50
- ▶ Installation depth horizontal in mm: 67
- ▶ Installation depth vertical in mm: 125



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