

SEPEM 01 - LEAK NOISE LOGGERS FOR SURVEY OR PERMANENT USE RADIO OR GSM TRANSMISSION



SEPEM® 01 - PRINCIPAL



SePem® 01 is a highly sensitive noise microphone and data logger which is set up by the user to record noise levels at intervals as frequently as 1 second to 1 hour for one night, for days or permanently. The logger transmits its information to the Master control unit via radio (or SMS/GSM with the SePem 01 GSM) at times chosen and programmed by the operator. They are manufactured from injection moulded aluminium making them incredibly robust. Ask yourself how many of your current plastic loggers do you accidentally break when they get dropped or handled roughly?

SePem® 01 noise loggers are mounted onto valves or fire hydrants by corrosion proof stainless steel magnets offering lasting clean sound transmission connections. The logger can be mounted horizontally or vertically and even on off centre spindles giving a better chance of providing even distances distribution throughout the network.

The battery can operate for up to **five years** or even 10, depending on the parameters set.



SEPEM® 01 - METHOD OF DEPLOYMENT

LIFT - AND - SHIFT The traditional method of surveying for leaks, sending operatives out "valve bashing", is labour intensive and requires the leakage technician to be trained and to have some aptitude for the work. Often the work can only successfully be carried out in the relative quiet of the night when labour rates are higher. For these reasons there is an increasing trend to automate and simplify the process which can now be achieved with the SePem 01 noise loggers.



PERMANENT DETECTION OF LEAKS

The quicker it can be identified that a network is leaking (and from where), the less precious water and revenues are lost. The permanent installation of noise loggers from the **SePem®** family of instruments has proved to be a cost effective tool in the early identification of water loss.

ALARMS AND RESULTS - RADIO TRANSMISSION



The SePem® 01 - Master is used to programme the loggers' parameters which are freely selectable by the user. No PC is required at any point (there is a download and software facility available if you do wish to use a PC). Even the less experienced operator can quickly obtain reliable results thanks to the simple, intuitive menu structure and easy to use "jog dial". As long as there is no leak, the recorded Minimum Noise Level (M.N.L.) value will not change. However, if a leak does develop the recorded M.N.L. will rise and will remain high. This is clearly indicated on the Master, both visually and audibly.



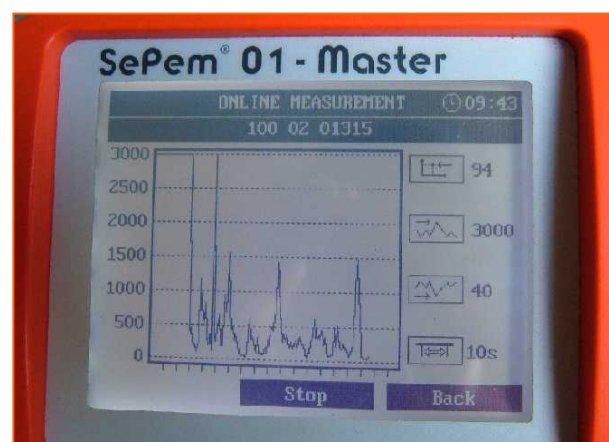
The measuring times can be defined .
Fields are verified by internal logic algorithms and corrections recommended if required



In Patrol mode the screen shows all data listed chronologically. Black cells indicate a leak



To save energy radio transmission times, days and duration can be selected e.g. What is the point of transmitting at weekends if no one is patrolling?



With online real time measurement the current noise level can be seen allowing you to see if there is a leak and also demonstrates that the microphone is working.
Can you test your current logger's microphone?

SEPEM 01 GSM - PERMANENT REMOTE NETWORK MONITORING

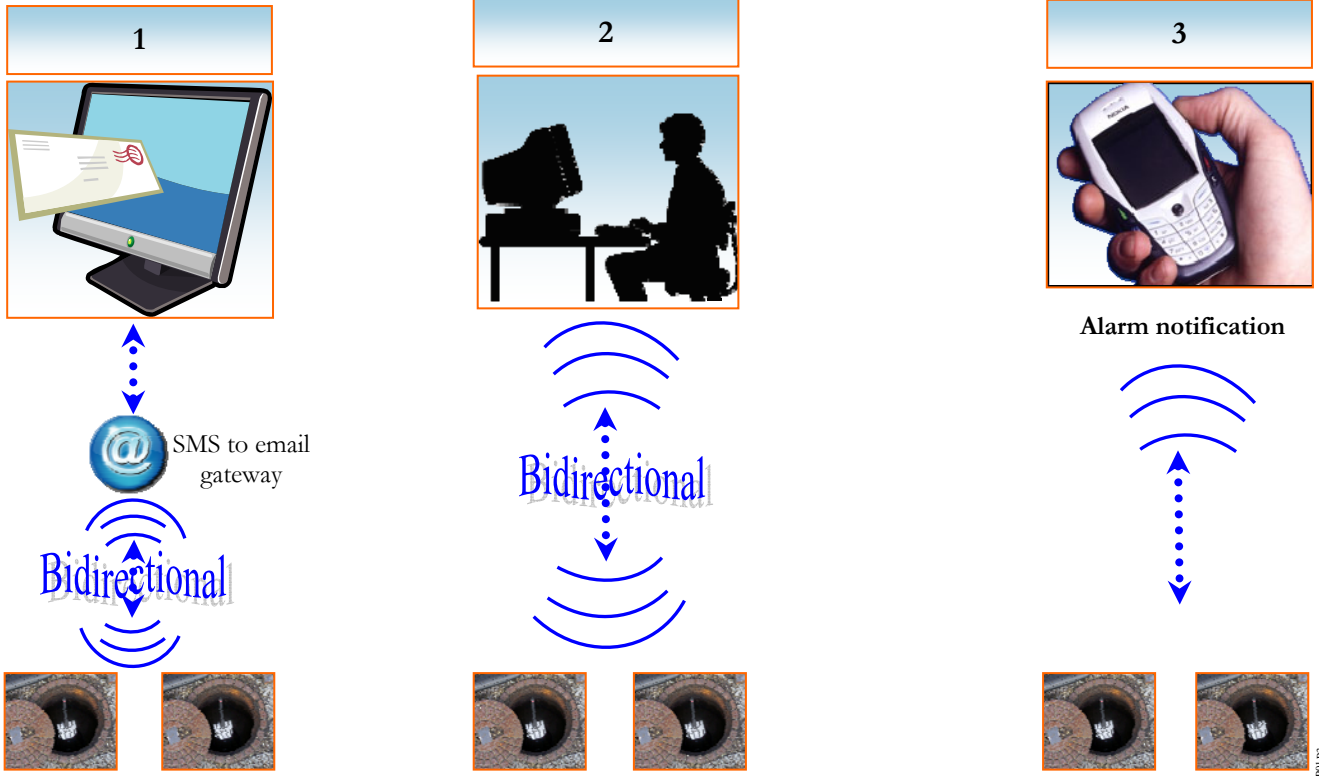


You probably recognise that some parts of your network are critical and would benefit from continuous remote leak monitoring with early alarm indications. Alternatively you may prefer remote monitoring instead of regular "drive bys" or "Lift and shift" surveys. The SePem 01 GSM can do all this for you. The SePem 01 GSM housing and microphone is physically the same as the SePem 01 but the GSM version incorporates a SIM card tray which enables it to send messages straight from the valve or hydrant chamber **without the need of any other infrastructure** fixed to lamp posts or walls. No power supplies to provide, nothing, just the logger in the chamber.

SEPEM 01 GSM - HOW IT WORKS

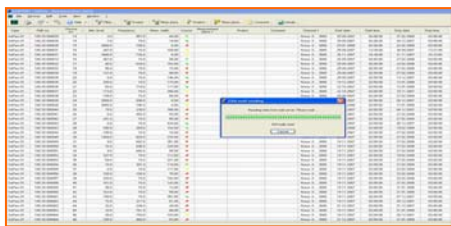
Loggers are programmed to listen and record the **Minimum Noise Level** values at intervals as frequently as 1 second to 1 hour. A typical setting may be to record every minute for half an hour between 02:00 and 02:30. The **M.N.L** is transmitted by SMS over the GSM network at intervals chosen by you, daily, weekly, monthly or even by alarm to your mobile when it has increased to a specific level. The SMS can be managed by any or all of the options below:

1. An SMS sent to an SMS to email gateway service which converts the message into an email and sends it to a computer running the SePem software
2. Directly to a computer with a GSM modem and running the SePem 01 GSM software
3. Alarm directly to an operative's mobile phone

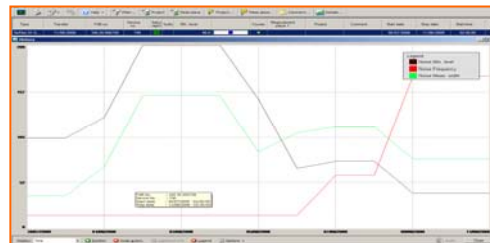


SEPEM 01 GSM - SOFTWARE

The SePem 01 GSM software is used to programme and manage the SePem GSM logger. As well as direct cable connection the loggers can be programmed remotely using SMS. The software automatically receives text messages or emails from the loggers in the network. A traffic light system quickly alerts you as to which areas need further investigation. The data may be filtered, analysed and viewed in many different ways; by location; noise level; or trend of the previous readings to name a few.



A list of loggers with the: MNL; date of measurements; transmission date; trend of the noise levels, colour coded so that you can immediately see which areas of interest require attention.



Graphs of: Historic M.N.L; Strongest frequency and measurement width.

SEPEM 01 - MASTER AND LOGGER- TECHNICAL DATA



- Innovative information handling by “jog dial” and soft keys combined with intuitive menu guidance
- Flexible carrying design with fold out supporting handle and vehicle mounting cradle
- Visual (red flashing light and display) and audible warning of leak for driver's attention
- List of any “missed” loggers from patrol
- The Spread and Strongest frequency is displayed offering further information

Operating temperature	10 °C ... +50 °C
Protection rating	54
Storage temperature	20 °C ... +70 °C
Dimensions	W x D x H) mm: 148 x 57 x 205
Memory	8 MB
Operating temperature	-20 °C ... +55 °C
Battery life	4 rechargeable or disposable batteries: AA, or by 12V DC, from cigar lighter, or hard wired. Operating time minimum 8 hours

Weight approx.
LOGGERS

1kg

SEPEM 01 RADIO

SEPEM 01 GSM

Construction	Tough and durable injection moulded aluminium housing
Positioning	Horizontal or vertical installation. by a magnet in a sliding track allowing it to fit onto eccentric valves
Power supply	Lithium battery
Protection rating	IP rating: 68 (submersible down to 1 m)
Dimensions	(W x D x H): - 108 x 51 x 50 mm
Sampling rate interval	1 second to – 1 hour
Operating temperature	-20 °C ... +55 °C
Battery life	Operating time: typically 5 years, with daily radio transmission. Up to ten years depending on settings
Communication	Digital bidirectional radio transmission- errors in transmission are automatically corrected

Up to 10 years

GSM network using SMS and direct cable