

T E C H N O L O G Y   W I T H   A   F U T U R E



## LOG 3000

- High-performance notebook correlator
- Simple operation
- Highly sensitive Vibrophone
- Excellent measurement results

## LOG 3000 – High-sensitivity correlation technology

LOG 3000 is a mobile notebook correlator of the latest generation with excellent measurement characteristics for the precision acoustic location of leaks in pressurised water piping. The system can be used on all piping materials that are employed in the construction of piping networks (such as, for example, steel, cast-iron, plastics, cement etc.) in a precise and efficient way. The results of measurements are reported on in a simple and meaningful way and provide the basis for the unearthing of piping and subsequent repair of damage.

Further, the device can be used to support work concerning the pre-location of leaks (measurement area localisation, provision of directional information, assignment of noise sources) or for the preventive inspection of pipeline sections. Additionally, the device offers the possibility for the location and the initial measurement of non-documented or illegal pipe connections. Special functions such as, for example, surface correlation, the recording of correlation characteristics (histogram) or the automatic look-up of lateral / sound-velocity factors, offer additional benefits in correlation technology.



### Use

#### 1. Notebook

Today's technology makes it possible to read in the leakage noises transmitted to the receiver using the LOG 3000 software in real time via a USB interface. A decisive advantage of the notebook correlation technology lies in the almost unlimited computing power of today's computer technology; it can be used under all Windows operating systems. The notebook, as a central part of the

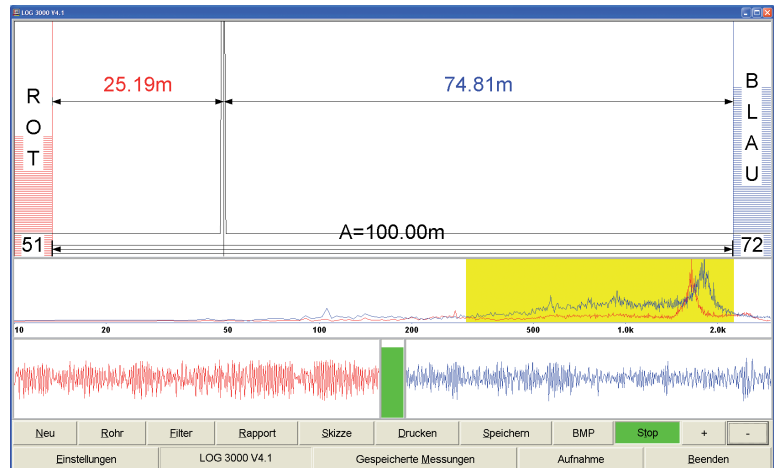
LOG 3000 system, offers additional customer advantages in the area of the data export and archiving, such as, for example

- Printer function
- recording and replay of leakage noises using WAV files
- generation and viewing of measurement reports in BMP image format

Thanks to the low resource allocation necessary for the LOG 3000 software, the Notebook PC is available for further applications that are helpful for correlation work in the field (e.g. ORTOMAT-GIS, Hydroport, Ortomat-MT easyMap, maintenance lists, installation plans etc.). The PC can also be used, of course, for normal Office applications.

## 2. Software

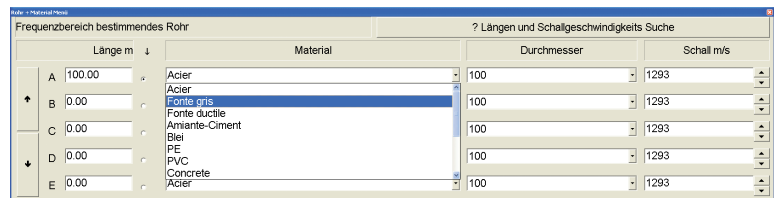
LOG 3000 software serves as the main man-machine interface for correlation work. In spite of its complexity and its capabilities, operation is very simple and user-friendly. On starting the software, for example, the user is requested to input all necessary measurement parameters. After the automatic verification of all input signals, the results of measurements are available within just a few seconds. Once started, measurements continue running up to the point in time for real time reporting and measurement results are continuously updated. This allows external noises to be monitored and recognised, which essentially contributes to the quality of leakage location. Further, the user is immediately notified about any signal faults or malfunctions. On the correlation screen, all information on the measurements are available at a glance.



Correlation screen

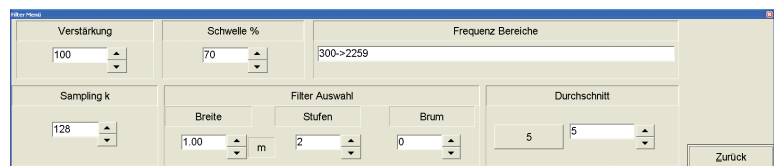
### Pipe Menu

The parameters of any measurement started can be changed at any time in the menu "Pipe". After the pipe material and the pipe diameter are selected, the appropriate velocity of sound is automatically retrieved from the database. Up to five different pipe materials with various dimensions and pipeline lengths can be chosen by making selections in the pull-down menus.



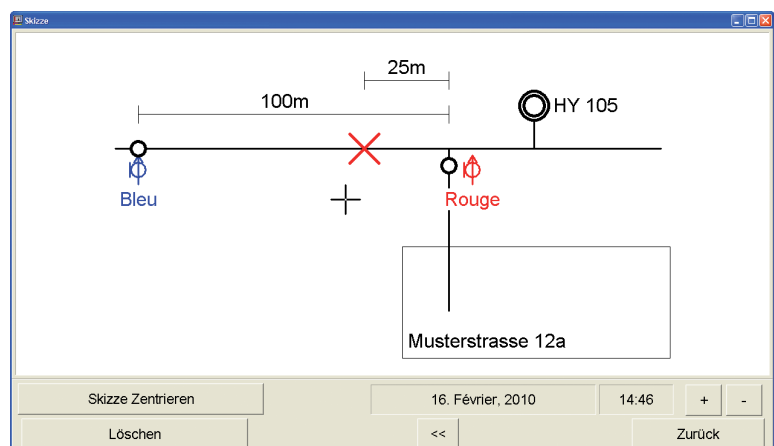
### Filter Menu

The frequency spectrum represented in the main menu gives information on the acoustic correlation signals. Depending on the particular situation, the automatically chosen default settings appropriate to the pipe material chosen can be adapted in the "filter" menu.



### Report Menu

After a leak has been located, the measurement parameters can be displayed and stored in a simple and very fast way in the "report" menu.





### 3. Hardware

The LOG 3000 is a compact, elegant, high-performance correlator which enjoys higher-than-average acceptance.



#### Vibrophone

The Vibrophone is the heart of the correlator. Its sensitiveness is decisive in determining whether leakage location is still possible or not, even in situations with only very low levels of leakage noise (in the case of measurements made on PE piping, for example).

The LOG 3000 PE-Vibrophone is the result of efforts to develop a highly sensitive sensor which produces the best possible measurement results on metal as well as plastic piping.

Using the highly efficient Neodym magnetic coupler, the sensor can be optimally and quickly installed at the point of measurement. In addition to its robustness and its insensitivity to knocks, the Vibrophone is also immune to electro-magnetic influences and magnetic fields.

Further, it is completely waterproof (IP68) and can be used over a wide range of temperatures (-35°C to +100°C). In the standard version, it is connected to the RED / BLUE transmitter with a 2-meter cable. Various extension leads are available, of course, for measurements in deeper manholes.



#### Transmitters

The RED / BLUE transmitters amplify the signals measured by the Vibrophone and transmit them over the license-free 433 MHz radio band to the receiver. Two noise filter options (steel / plastic) are available that can be selected when switching the unit on.

Because of its high AGC (automatic gain control) functionality, signal levels can be processed from very low to very high leakage noise levels. The audio signals can be directly monitored on the transmitter unit (3,5 mm audio socket). For easy optical recognition, the two casings are painted with a durable powder coating in RED or BLUE. The internal NiMH battery allows interrupt-free operation for a whole working day and has no memory effect.



#### Receiver

The receiver passes on the radio signals received from the transmitter to the Notebook via a USB interface. Both radio channels can be received using an antenna. A loudspeaker integrated in the receiver is used for checking the audio from the two points of measurement.

With its internal battery, the receiver can operate without interruption for up to 15 hours.

**The LOG 3000 Notebook correlator is a professional tool. It makes an essential contribution to low-cost leak detection in water supply networks and is the most important piece of test equipment for the exact location of leaks in the pipeline network.**