LOG3000 BT

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

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LOG3000 BT – High-sensitivity correlation technology

LOG3000 BT is a mobile notebook correlator 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, castiron, 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 prelocation 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 input the leakage noises transmitted to the receiver into the LOG3000 BT software in real time via the wireless Bluetooth connection. A decisive advantage of the notebook correlation technology lies in the almost unlimited computing power of today's computer technology.
As the central unit of the LOG3000 BT, the notebook 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

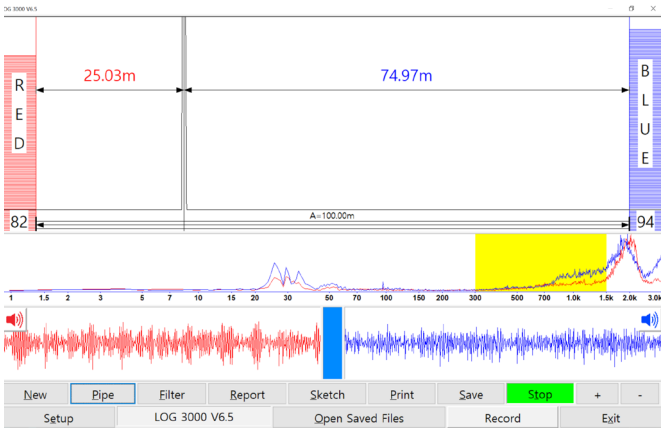
Thanks to the low resource allocation necessary for the LOG3000 BT software, the Notebook PC is available for further applications that are helpful for correlation work in the field (e.g. INFRAPORT, maintenance lists, installation plans, etc.). The PC can also be used, of course, for normal Office applications.

2. Logiciel

LOG3000 BT software serves as the main manmachine interface for correlation work. In spite of its complexity and its capabilities, operation is very simple and userfriendly. 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 recognized, 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.

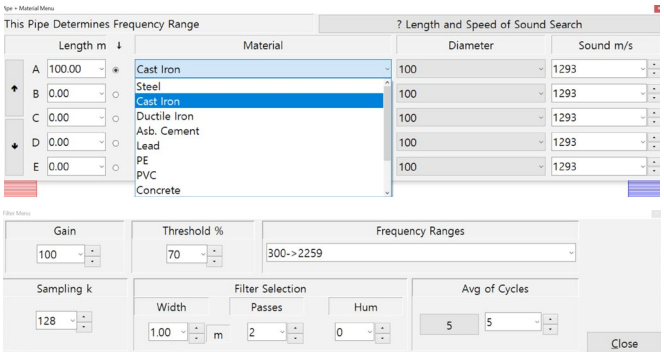
Pipe Menu

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.



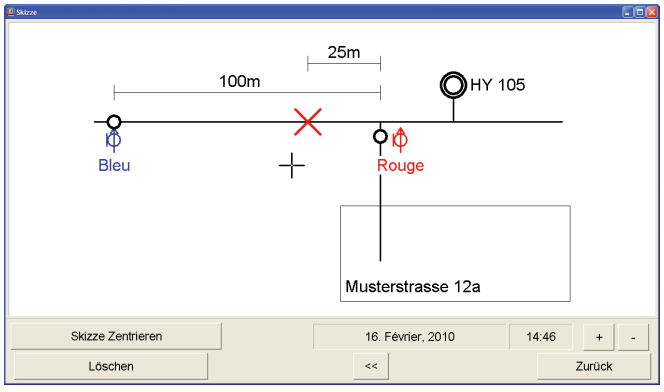
Filter Menu

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. With a tablet, the camera function can be used directly for documentation purposes.



3. Hardware

The LOG3000 BT is a compact, elegant, high-performance correlator which enjoys higher-than-average acceptance.

VIBROPHONE

The VIBROPHONES are the beating 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 LOG3000 BT VIBROPHONE is the successful result of efforts to develop a highly sensitive sensor which achieves the best possible measurement results on metal and 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 being robust and impact-resistant, the VIBROPHONES are resistant to electromagnetic interference 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 1.8-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. The device selects filter settings fully automatically.
Because of its high AGC (automatic gain control) functionality, signal levels can be processed from very low to very high leakage noise levels. It is possible to listen to the audio signals directly on the notebook or tablet. To be able to distinguish between the two casings at a glance, one has a RED rubber protective covering and the other a blue one. The internal NiMH battery allows interruptfree operation for a whole working day and has no memory effect.

Receiver

The receiver transmits the radio signals from the transmitters to the notebook/tablet via a USB interface or wireless Bluetooth radio connection. Both radio channels can be received using an antenna. The wireless connection with the notebook means that the receiver is suitable for mobile use in the field. Thanks to an internal lithium battery, the receiver can be used for up to 12 hours without stopping.

The LOG3000 BT notebook correlator is a professional tool. It makes an essential contribution to lowcost 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.

HYDRO

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