

ORTOMAT-MTC

Noise level measurement with correlation



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Process optimization in permanent leak monitoring



ORTOMAT-MTC is an leak detection investment which delivers two-way savings:

1. Repair cost Savings

Early detection and rapid localization can prevent water damage, which in a worst-case scenario, can cost as much as an entire system to repair.

2. Water loss savings

Small concealed leaks lead to surprisingly high water losses: At a water pressure of 45 psi (3 bar), a leak with a diameter of $\frac{1}{8}$ inch (8 mm) leads to an annual loss of 6.57 million gallons (24,870 m³) – at 145 psi (10 bar), the loss is almost 14 million gallons.

Leak monitoring for underground water pipes

Using the latest technology and methods, the ORTOMAT-MTC leak monitoring system detects the location of leaks at any early stage. Water pipes operated under pressure can be checked or monitored quickly and efficiently – on a temporary or permanent basis. Using correlation technology, a leak can be pinpointed between two loggers. The user is then provided with simple but meaningful information about leaks. Measurement data is transferred automatically and is then available online.

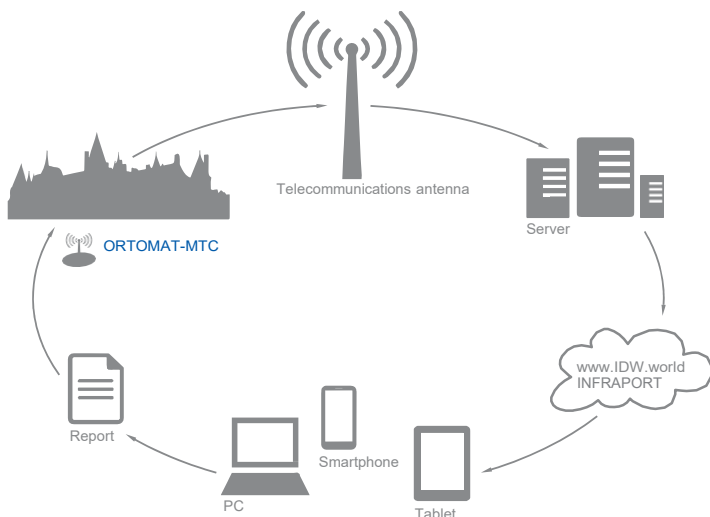
Installation methods

A magnetic adapter connects the noise loggers in manholes and hydrants or directly to water pipes. ORTOMAT-MTC has a robust housing with the and are designed for the most adverse conditions.

Thanks to their small size and easy installation loggers can be quickly and easily installed in a pipeline network. Any mechanical connection to the pipeline network can be used as a measuring point.

Measuring principle

The ORTOMAT-MTC operates 24/7 recording noise at the measuring point. During the day's lowest water use time (often between 2–4 am), noises are specially monitored. A vibration sensor inside the logger, records the smallest leak noises in the pipeline. Noise levels detected from different loggers are synchronized and compared in order to pinpoint specific locations of leaks along the pipeline. Noise recording are saved as audio files to allow users to review leak noises over time. ORTOMAT-MTC also offers HydroALERT, a monitoring and alarm feature which detects authorized or unauthorized opening of a hydrant on the network.



Data transfer

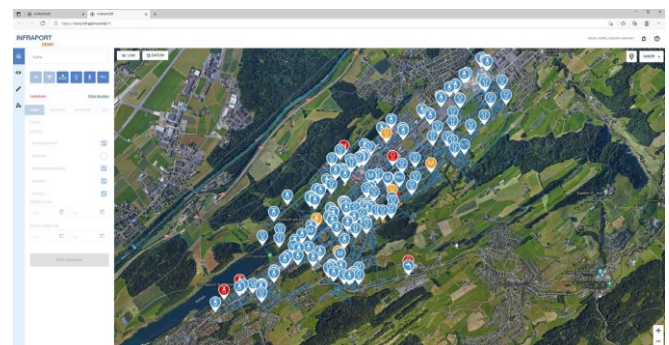
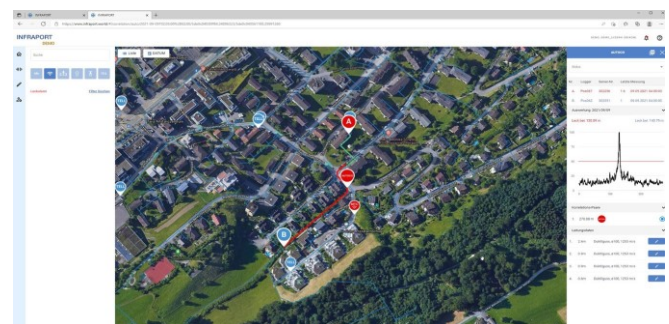
The data logger provides fully automated communication with the web server. Newly detected leak sites can be reported immediately. As an all-in-one solution, no radio repeaters or radio networks are needed to transfer the measurement data. No programming devices have to be installed on site for reprogramming the loggers. The ORTOMAT-MTC can work with the existing broadband and extremely well-developed mobile phone networks. Devices no longer need to be installed on site for reprogramming purposes. Settings and firmware updates can be issued centrally via the server, using over-the-air programming (OTA/FOTA). This process is fully automated, ensuring that system maintenance can be kept to a minimum.

Data analysis

No local software installation is needed to visualize and manage the measurement data. Data from ORTOMAT-MTC tem is always available online via a application called INFRAPORT. Users can log into INFRAPORT from a PC or smart phone and access information on their water system. The location and status of ORTOMAT-MTC devices installed in the field are visualized in map and list views.

Benefits include:

- Temporary or permanent early leak detection and pinpoint location
- Unique time synchronization of the individual measurement points for exact correlation
- Independent measurement points communicating directly to the server via cellular networks
- Easy to understand analysis with measurement
- Easy to installation devices
- No need for wireless repeater
- Loggers operate on standard AA lithium batteries
- Available with integrated SIM chip or interchangeable SIM card
- Easy to expand installation over time
- ORTOMAT leak monitoring has been proven out through thousands of installations worldwide





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