

Total Network Transparency

Monitoring of Pipe Networks for Local and District Heating



Feel safe

LANCIER Monitoring accompanies you:



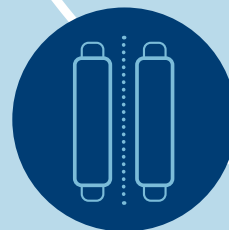
1. During network planning

- Route sections
- Device locations
- Communication lines



4. During operation

- Visualisation of routes and measured values
- Inspection prior to expiry of warranty
- Fault localisation
- Recommendations for action
- Loop plans





2. In the construction phase

- Control measurements
- Early detection of assembly errors
- Documentation of construction progress



3. During initial operation

- Acceptance measurements
- Creation of original curves
- Loop reconnaissance



Network planning and documentation

Think about monitoring as early as the network planning stage

The specialists at LANCIER Monitoring can provide you with useful support during the planning of district and local heating networks.

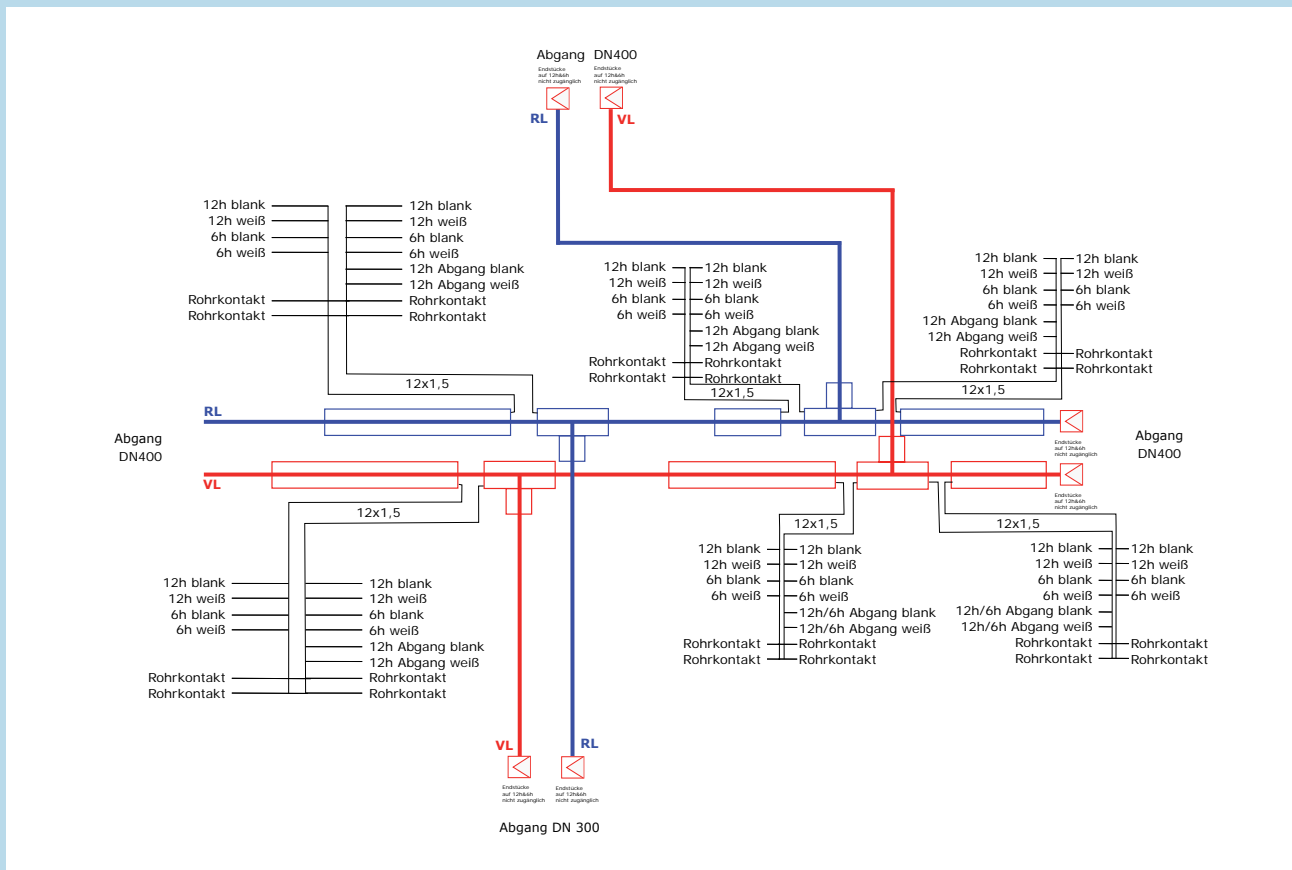
This begins with the division of the routes into sections optimised for monitoring and the planning of suitable measurement technology.

We communicate with all the specialist departments and trades involved to ensure that the information is consistent.

Making good things better: Training at LANCIER Monitoring

We love sharing our knowledge. From experts to experts in the relaxed atmosphere of our training centre – and have been doing so since 2019, because you never stop learning.

Stay up to date and let us provide you with the basics and the latest knowledge of measurement technology.



Cable outlets

LANCIER Monitoring services

- Planning of route sections
- Support with the selection of sensing equipment
- Planning the monitoring technology
- Communication with all specialist departments and trades
- Provision of qualified specialist personnel
- Determination of the tender criteria
- Documentation of construction progress
- Training and further education on the latest measurement technology methods and products



Device locations and route paths are clearly visualized in the UMS2 platform.



Support during the construction phase and initial operation

Documentation of the construction works

Important parameters are supervised and documented with regard to the pipe installation and the measuring sections. This applies, for example, to the position and installation direction of junctions, the quality of the sensing equipment and the inspection of the pipe sensor connections and wire junction boxes.

The work carried out (joint installation including wire connections) is checked at critical points or at critical times throughout the entire construction period, e.g. using automatic daily measuring equipment and manual control measurements.

Final checks

After completion of the new district heating network, a careful final inspection is carried out with a cold and hot measurement of the entire system.

If no loop plan is available, the plan should be drawn up after a detailed loop clarification.

If necessary, additional troubleshooting including localisation is carried out.

Modern measurement technology at the cutting edge

Building on over 50 years of experience, our engineers are constantly working in close co-operation with users and universities to develop new practical solutions for effective and user-friendly monitoring systems and devices.

Construction supervision by LANCIER Monitoring

- > Daily control and documentation of construction progress
- > Daily automatic measurement of the monitoring sections already installed
- > Sporadic manual control measurements
- > Online visualisation

< **The result:**
Cost reduction through early detection of installation errors (e.g. for joints, wire system, etc.)



1 | PipeCheck

- Handheld measuring device for sensor technology in district heating pipes
- Mobile, small, lightweight, and powerful
- For checking existing or newly installed measuring sections in district heating pipe monitoring



2 | PipeCase LTE

- Verification of the correct installation of the monitoring system during the construction phase
- Battery-powered
- Data transmission via LoRaWAN or LTE

3 | PipeTDR

- Time domain reflectometer (TDR)
- For pinpoint fault location in plastic jacket pipes
- LANCIER PipeTDR-2C specially developed for plastic jacket pipes
- Cloud-enabled



During operation

Always have a complete overview

The larger a heating network is, the more important the use of continuous monitoring becomes. This is the only way to deploy the scarce specialised personnel in a targeted and effective manner.

Early detection and localisation of leaks, sleeve and jacket damage increases the efficiency of the pipe network and protects the investment. Repairs at an early stage save costs and minimise downtimes.



District heating monitoring units

- > For Nordic system (Cu), hierarchical systems and NiCr systems
- > Fault location for Nordic (Cu) and NiCr systems
- > Permanently installed:
 - with wired power supply or self-operated using batteries
 - for single sections or complete pipe networks
- > Signalling paths via cable, LTE or LoRaWAN (IoT)
- > Mobile devices for manual measurement
- > Visualisation in the LANCIER Monitoring UMS system, in BMS or on special platforms

Permanent monitoring systems



PipeMonitor

Fault location is the highlight of the PipeMonitor district heating pipe monitoring system. It continuously monitors the insulation and loop resistance of wire pairs of all wire systems in the insulation layer of district heating pipes in accordance with EN 14419. A time domain reflectometer (TDR) or a resistance measuring bridge is used to locate faults in plastic jacket pipes.



PipeAlarm / PipeAlarmLX



Battery-powered and LTE-based local and remote pipe monitoring. The **Pipe-Alarm** device series from LANCIER Monitoring is a compact, battery-powered monitoring solution for pipe sections with a pair of monitoring wires in the insulation layer. The devices are easy to install and operate. No on-site power supply or network connections are required. In the case of a fault, alarms are sent via LoRaWAN, LTE, or GSM networks.



PipeSens-M / PipeSens-M



Network analysis of local and district heating pipes via **LoRaWAN**. The PipeSens district heating pipe monitoring system from LANCIER Monitoring utilises LoRaWAN communication for fast and effective data transmission. It can be easily integrated into existing LoRaWAN networks. PipeSens-M is used for measuring points in street caps and harsh environments.



Smart-Cover-Box / Smart-Sensor-Box



Access control and switch monitoring with measurement value transmission via **LoRaWAN**. As a LoRa node, the Smart-Boxes have two contact inputs for detecting float switches or access controls, for example. The battery-operated Smart-Boxes are independent of external power sources.

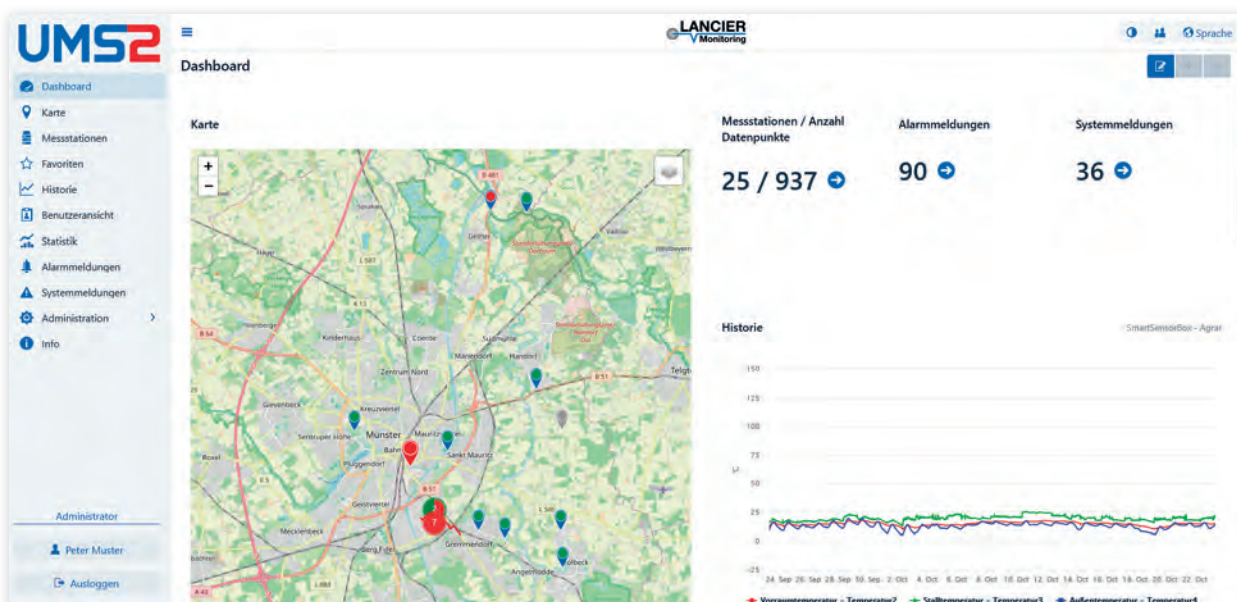
Intuitive and quick to achieve results

The UMS2 platform provides all important information with just a few mouse clicks

With the Unified Monitoring System (UMS) from LANCIER Monitoring, you can store your own plans and documents for quick access and assign them to the corresponding routes or specific sections.

All measuring stations and routes are listed on the start screen and can be selected at the click of a mouse.

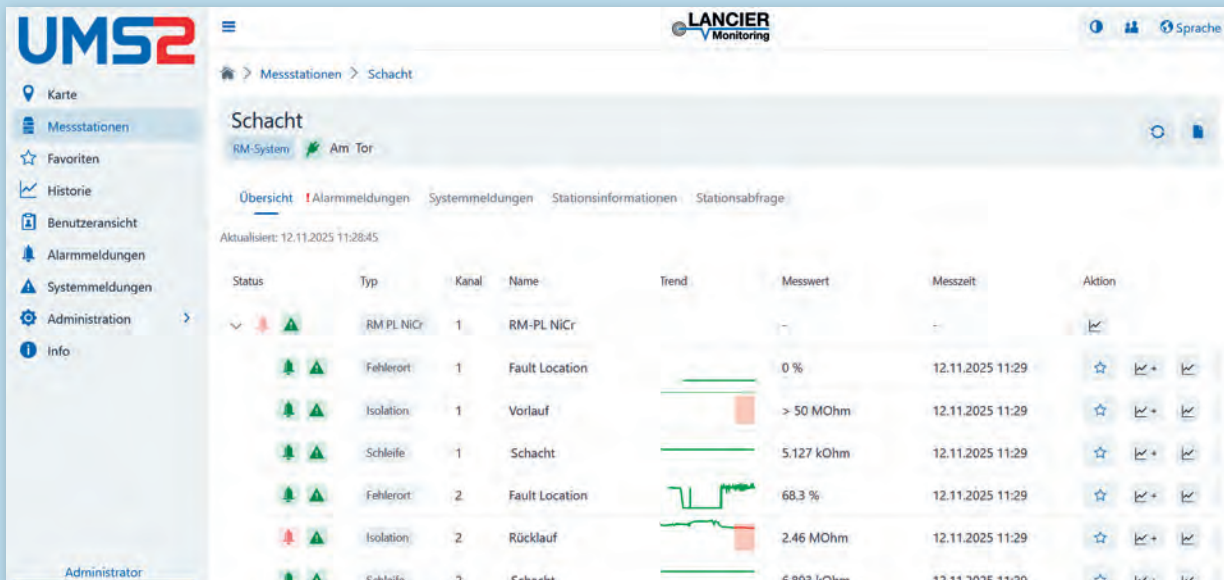
Alarms and warnings are immediately visible by changing colour. This provides a quick overview of the status of the entire system. GIS data can be stored.



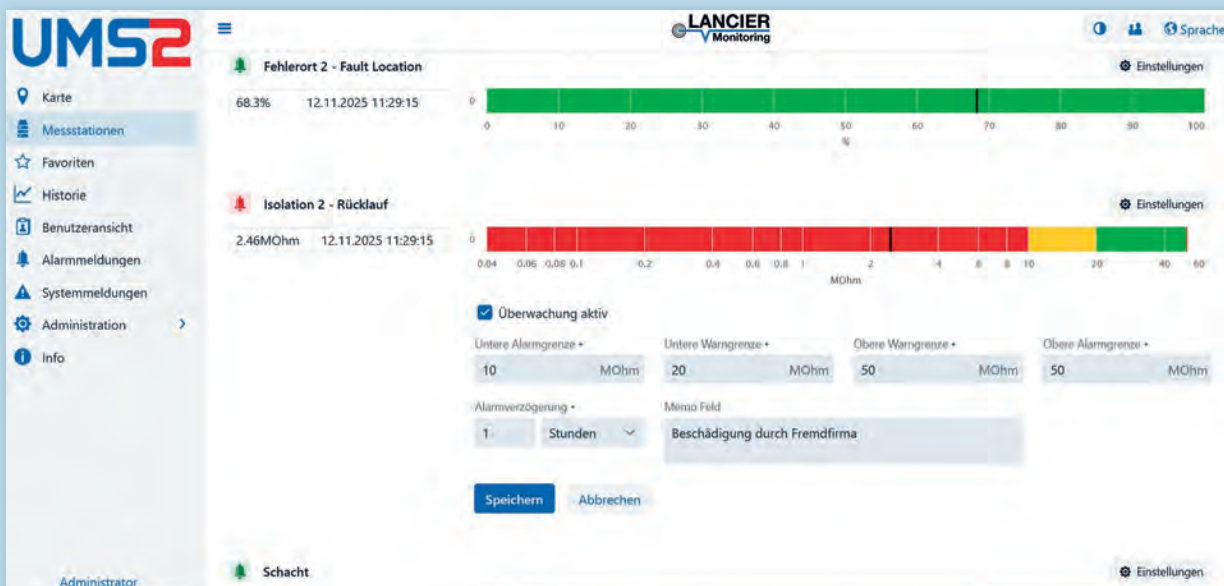
Freely configurable dashboard



Measurement history of the insulation value of a district heating pipeline



Clear display of all measured values of a route



Individual adjustment of limit values

UMS components

- > The measuring stations installed on site provide the data for network and system monitoring.
- > The UMS server manages and analyses the measurement data in a central database and provides the data and information for the clients.
- > Client/server communication uses the encrypted https internet protocol and can therefore be carried out securely via the internet or intranet with standard browsers.
- > LANCIER Monitoring can provide the server in a hosting model on request.



We develop solutions together:
innovative, reliable, future-proof

LANCIER Monitoring GmbH
Gustav-Stresemann-Weg 11
48155 Münster, Germany
T +49 (0) 251 674 999-0
mail@lancier-monitoring.de

www.lancier-monitoring.de

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