

Total Network Transparency

Monitoring of Pipe Networks
for Local and District Heating



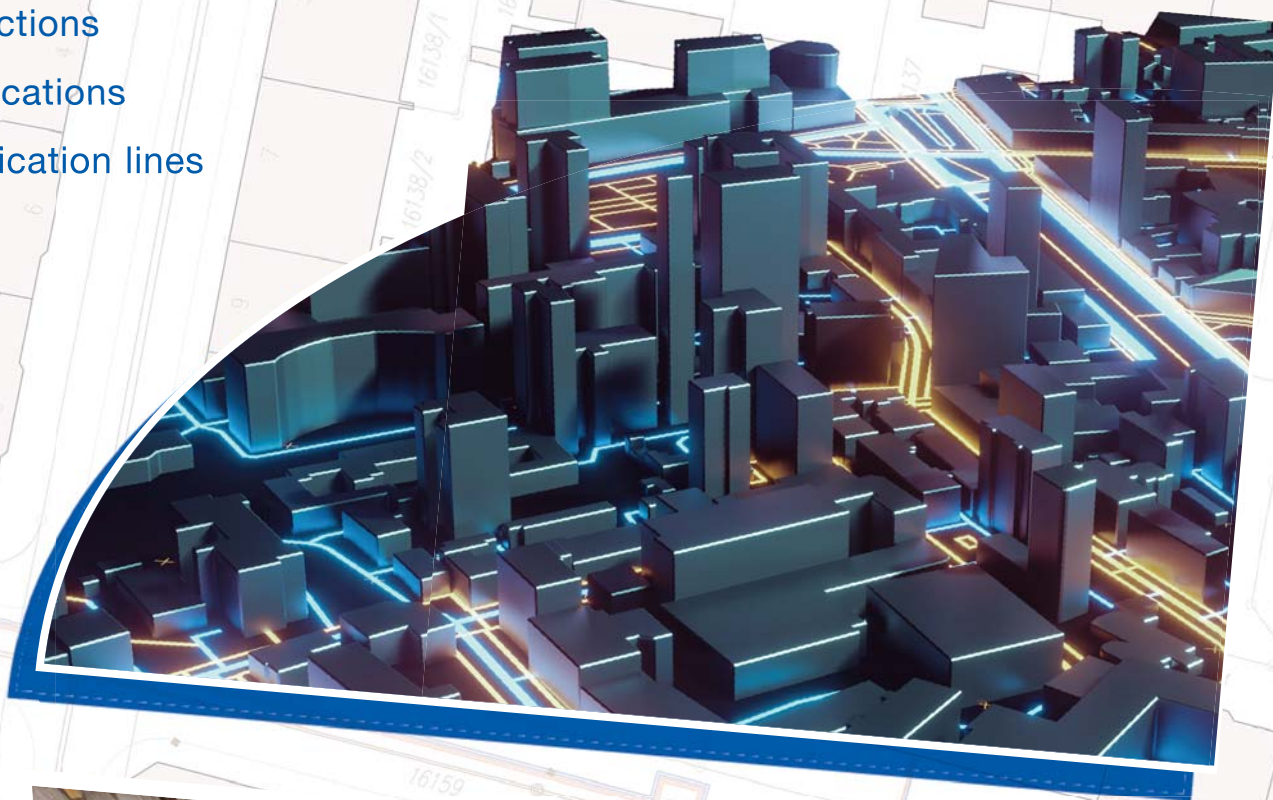
Photo: BRUGG Pipes

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

LANCIER Monitoring supports you:

During network planning

- ④ Route sections
- ④ Device locations
- ④ Communication lines

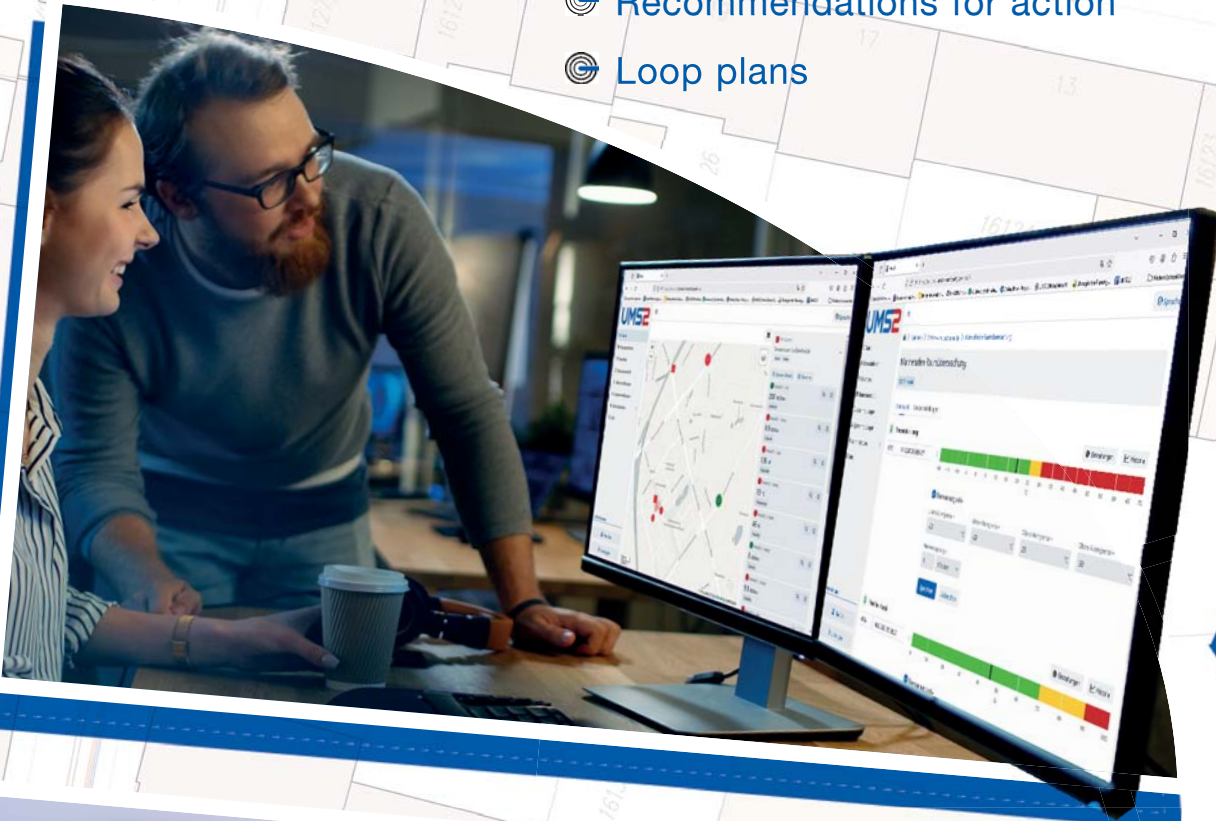


In the construction phase

- ④ Control measurements
- ④ Early detection of assembly errors
- ④ Documentation of construction progress

During operation

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



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.

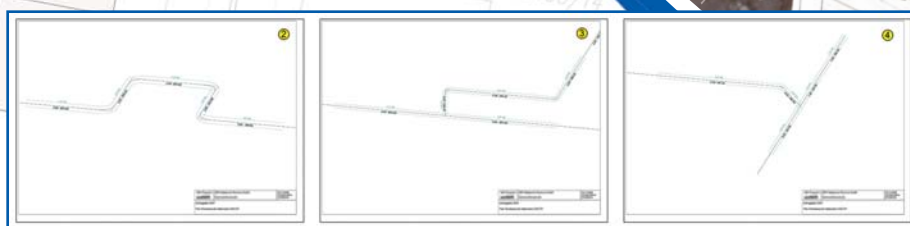


REIHE 1 (Standard) REIHE 2 (Dämmreihe 2 - SWP)
 Grabenbreiten in Anlehnung an DIN 4124 zur Verlegung von Kunststoff-Mantelrohren

DN	D	A	B	KL-B	KL-T	KL-L	E
600	600	1200	2650	3250	600	1500	9 m
500	500	1110	2400	3000	600	1500	8 m
400	400	910	2100	2700	600	1500	7 m
300	450	800	1500	2100	600	1500	7 m
250	400	750	1450	2050	600	1500	6 m
200	315	515	1300	1900	600	1500	5 m
150	250	450	1200	1800	600	1500	4 m
125	225	425	1030	1630	600	1500	4 m
100	200	400	1000	1600	600	1500	3 m
80	160	360	910	1510	600	1500	3 m
65	140	290	870	1470	400	1000	3 m
50	125	275	830	1430	400	1000	3 m
40	110	260	850	1250	400	1000	3 m
32	110	260	850	1250	400	1000	3 m
25	90	240	850	1250	400	1000	3 m

ACHTUNG!
 Alle Montagehilfen sind Sandsäcke oder Rohrauflagen aus extrudiertem PCKW-freiem Hartschaum zu benutzen (Abstand max. E).
 Kanthölzer sind nach AGFW (FW401-13) nicht zulässig.
 Das Maß „A“ vergrößert sich im Bereich der DC um 2 x S.

Zu den Maßen "B" und "KL-B" werden für waagerechten Verbau 2x150mm und für Kanalsäulen-Verbau 2x300mm zugerechnet.



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.



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

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.



Image: LOGSTOR

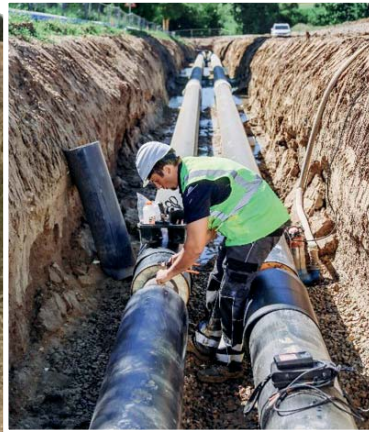
Construction supervision by LANCIER Monitoring

- 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.)

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.



PipeCheck

Hand-held measuring device for sensing wires of district heating pipes.

The PipeCheck mobile measuring device for checking existing or newly installed measuring sections in district heating pipe monitoring is small, light and powerful.



PipeCase LTE with PipeAlarm

for checking the correct installation of the monitoring system for local and district heating pipes during the construction phase - battery-operated and LTE-based.



PipeTDR

Time domain reflectometer for fault location in plastic jacket pipes.

With a time domain reflectometer (TDR), damage to and in cables can be detected and located with pinpoint accuracy. The LANCIER PipeTDR-2C has been specially developed for use on plastic jacket pipes.

During operation

Always have a complete overview

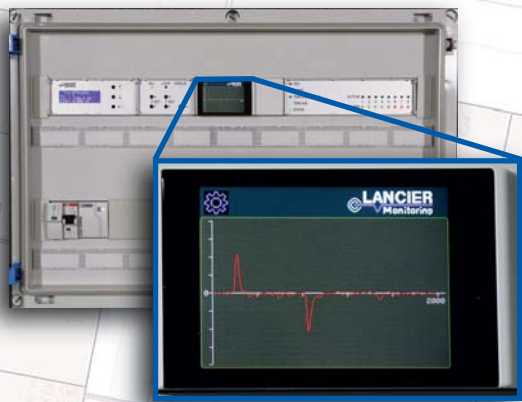
The larger a heating network is, the more important the use of continuous monitoring becomes. This is the only way to deploy the scarce specialised personnel in a targeted and effective manner.

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 NiCr, Nordic system (Cu) and hierarchical systems
- Fault location for NiCr and Nordic (Cu) 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



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 or a resistance measuring bridge is used to locate faults in plastic jacket pipes.



PipeAlarm

Battery-operated and LTE-based local and district heating pipe monitoring device.

The PipeAlarm2 LTE/UMS device series from LANCIER Monitoring is the compact, battery-operated monitoring solution for pipe sections with a pair of monitoring wires in the insulation layer. The devices are simple to install and easy to operate. On-site power supply and network connections are not required. In the case of a fault, alarms are sent via LTE or GSM networks.



PipeSens



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.



Smart-Cover-Box

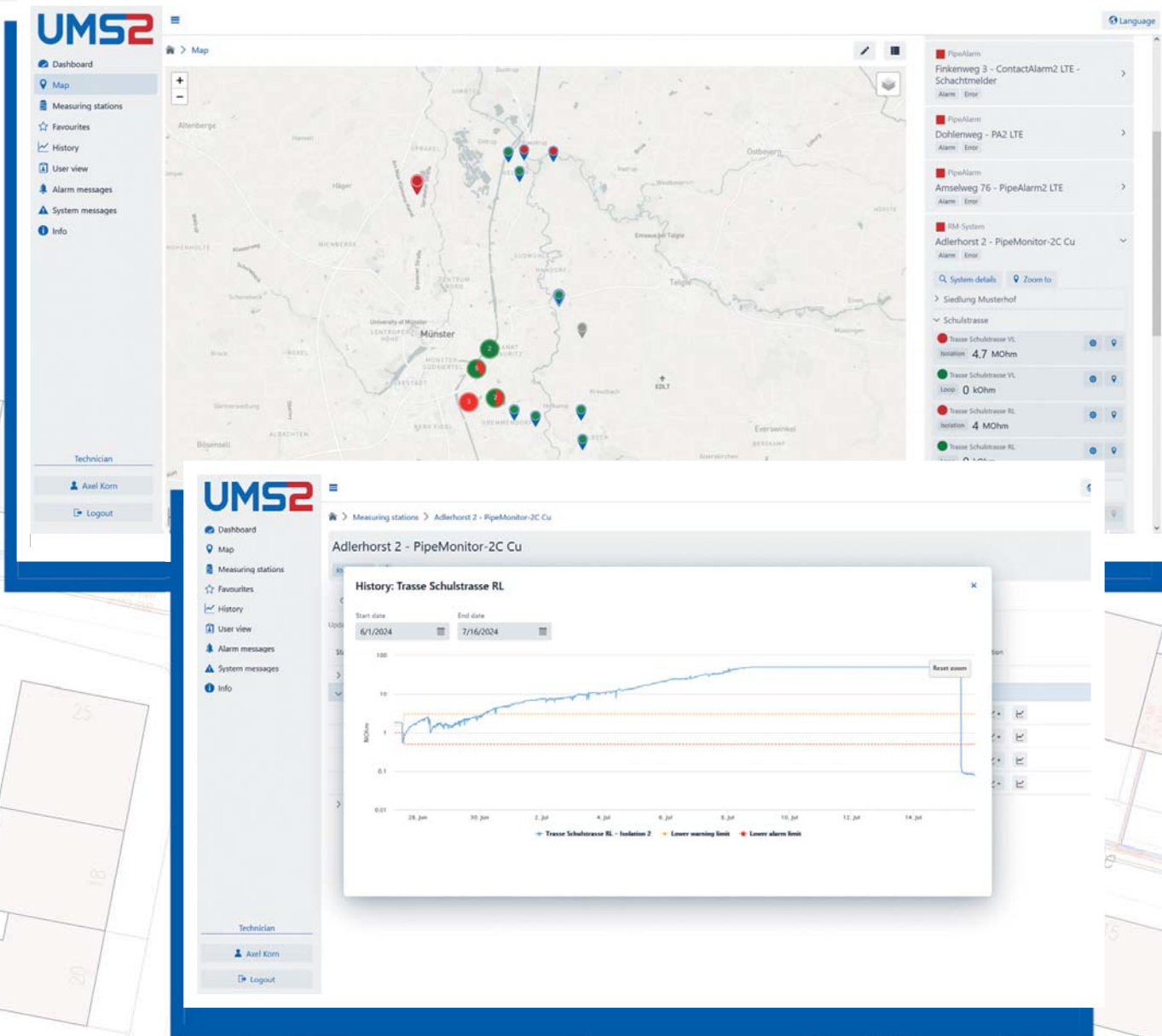


Access control and switch monitoring with measurement value transmission via LoRaWAN.

As a LoRa node, the Smart-Cover-Box has two contact inputs for detecting float switches or access controls, for example.

The battery-operated Smart-Cover-Box is independent of external power sources.

Intuitive and quick to achieve results



The UMS 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.

Status	Station type	Name	Location	Updated
▲	RM-System	Adlerhorst 2 - PipeMonitor-2C Cu	Keller (Schule)	30.07.2024 09:57:20
▲	PipeAlarm	Amselweg 76 - PipeAlarm2 LTE	Keller	30.07.2024 06:01:12
▲	PipeAlarm	Dohlenweg - PA2 LTE	Schacht 45	30.07.2024 06:05:06
▲	PipeAlarm	Finkenweg 3 - ContactAlarm2 LTE - Schachtmelder	Schacht 66	30.07.2024 06:04:35
▲	RM-System	HKW - PipeMonitor-4C NiCr	Heickraftwerk	23.07.2024 15:27:51
▲	PipeAlarm	Rohrüberwachung	PipeCase-Feldversuch	30.07.2024 09:02:34
▲	PSC	Vakuumpkontrolle - PSC - Trasse 64	Ü-Station	30.07.2024 09:57:36

Adlerhorst 2 - PipeMonitor-2C Cu

Details

Alarmlmeldungen (3)

Systemmeldungen (1)

Modules

Schulstrasse Channel: 2

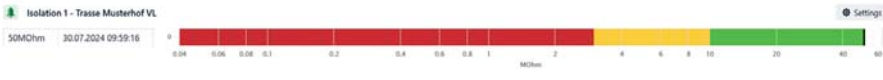
Siedlung Musterhof Channel: 1

Schacht- und Drucküberwachung Channel: 3

Siedlung Musterhof

RM NiCr

Limit values | Local limit values



Error location | Length



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.

Handed over by:

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