

Product Information

PipeMonitor-TDR

Insulation and loop resistance monitoring station with time domain reflectometer for fault location

The District Heating Monitoring System *PipeMonitor-TDR* surveilles the insulation and loop resistance of copper cables in pipes in the LANCIER Monitoring UMS system.

The integrated multiplexer module allows for the monitoring of up to 8 measuring pairs with only one measuring device.

If the *PipeMonitor-TDR* detects faults on one of the measuring pairs, the TDR module is automatically switched on for fault location. In this way, the location of the fault is determined within a very short time and troubleshooting can be initiated immediately.

A copper pair in the pipes to be monitored serves as a measuring loop, which is continuously measured by the *PipeMonitor-TDR*. The alarm thresholds for insulation and loop resistance are freely programmable on site or remotely. All settings are saved in an internal EEPROM memory to prevent losses.

For remote alarming, the *PipeMonitor-TDR* has built-in dry contact outputs.

The PipeMonitor-TDR detects and localizes anomalies such as humidity faults, wire breaks and wire-pipe contacts quickly and precisely.



Ordering Data

District Heating Monitoring System *PipeMonitor-TDR*

for fault location, equipped with **time-domain reflectometer** measuring module, color touch screen and
2-channel multiplexer
4-channel multiplexer
6-channel multiplexer
8-channel multiplexer

Order-no. 076872.002
Order-no. 076872.004
Order-no. 076872.006
Order-no. 076872.008

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Insulation and loop resistance monitoring station
with **time domain reflectometer** for fault location

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Technical Data

PipeMonitor-TDR

Number of Measurement channels	8
Operating temperature	-20 °C .. +65 °C
Admissible ambient humidity	0 .. 95 % rel. humidity, non-condensing
Dimensions (W x H x D)	546 x 416 x 186 mm
Resistance measurement	
Insulation resistance	
Measurement range / Resolution	0 .. 1 M / 0,001 MΩ, fault ± 5 % of measurement ±0,01 MΩ 1 .. 200 MΩ / 0,01 MΩ, fault ± 5 % of measurement ±0,01 MΩ
Loop resistance	
Measurement range / Resolution	0 .. 10 kΩ / 0,001 kΩ, fault ± 5 % of measurement ±0,05 kΩ
Measuring voltage	24 V DC
Signal LEDs	
2 x green / red:	Alarm / Acknowledged alarm / Display operation insulation resp. loop
1 x blue:	display operation
Signal outputs	2 dry change-over contacts for: insulation and loop resistance
Max. switchable voltage / current	100 V DC / 0.1 A DC
Fault location via TDR	
Measurement range	62.5 .. 64 km
Location fault	0.01 % .. 0.2 % of the measured value (12.5 cm to 8.0 m, depending on the subsections)
Impedance	30 .. 500 Ω, adjustable
Impulse width	10 ns .. 50 μs
V/2	50.0 .. 150.0 m/μs
Impulse amplitude	10 V with matched load
Input sensitivity	1 mV
Dynamic range	80 dB
Signal output	dry change-over contact for: impedance
Max. switchable voltage / current	100 V DC / 0.1 A DC



Measuring unit

TDR with color touch screen

Multiplexer

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System diagram

