

# BRUGG

Pipes

## LEAK GUARD

Monitoring devices for local and district heating



# PIONEERS IN INFRASTRUCTURE

# LEAK GUARD

## BASIC

The **LEAKGUARD BASIC** monitors the flow and return of a district heating line on 2 channels in parallel. In addition, it continuously measures the insulation and loop resistance of a pair of wires in the insulation layer of pipes (both "Nordic System" (Cu) and "NiCr System" (Brandes)) according to EN 14419. In the event of leaks in the pipe, interruption of the measuring loop or the pipe connections, it immediately sounds the alarm and thus helps to prevent major damage and losses. Alarms can be acknowledged via the device keys and transmitted to a control system via a potential-free contact.

The **LEAKGUARD BASIC** stores one measured value (insulation and loop resistance) for each of the last 30 days in the internal EEPROM memory so they are protected from loss.

The configuration and input of limit values for loop resistance and insulation resistance as well as the readout of measured values and the loop length specification can be carried out on site with a laptop via the Ethernet interface. Thanks to an internal web server, the pre-installed web browser on a laptop is sufficient.

No additional operator software is necessary.

### Technical data



Supply voltage	90 .. 250 V AC, 50 .. 60 Hz
Power consumption	Max. 5 W
Number of measurement channels	2 (e.g. for flow and return of a district heating line)
Insulation measuring range	0 .. 10 MΩ Error: 3% from measured value ±10 kΩ absolute
Loop measuring range	0 .. 19.99 kΩ Error: 3% from measured value ±0.02 kΩ absolute
Measuring section	NiCr ≤ 1.500 m, nordisch ≤ 3.000 m
Length calculation	Yes, for NiCr
Measurement voltage	Typ. 24 V DC
Display	1 LED bar display per measurement channel for "ISO measured value" 1 LED signal per measurement channel for "Loop fault"
On-site operation	1 button each for "ISO alarm" and "Loop fault" acknowledgement 1 Ethernet interface for device configuration, limit value setting and measured value readout
Safety output contacts	1 potential-free changeover contact for: "ISO alarm" and "Loop fault" Max. switching voltage: 250 V AC, max. switching current: 1 A AC
Interfaces	Ethernet 10/100 Mbit/s, temporary for configuration
Operating temperature	-5 °C .. +40 °C
Permissible humidity	0 .. 50% at 40°C, 0 .. briefly 100% at 25°C
Housing protection class	IP 54
Application area	Indoors and protected outdoor installation according to DIN VDE 0100 Section 737. Residential and commercial areas as well as for small businesses
Housing measurements	146 x 111 x 238 mm (W x D x H)

# LEAK GUARD

## CLOUD

The **LEAKGUARD CLOUD** is a measurement and monitoring device for insulation and loop resistance for detecting leaks in pipe systems and interruptions of the measurement loop as well as for monitoring potential-free contacts (e.g. float switches). Each device can cyclically monitor two measurement loops, e.g. the flow and return of a district heating pipe. When exceeding or falling below the freely adjustable resistance limit values, the red alarm LEDs are activated and an alarm message is sent to the UMS server. Additional alarms by e-mail, mobile, etc. are controlled by the UMS server.

No monitoring takes place between the measurement cycles.

The **LEAKGUARD CLOUD** is equipped with a pipe connection monitoring system to detect an interruption of the pipe connection (earth).

Two inputs are available for monitoring potential-free contacts. The contact status (open/closed) is queried every 10 seconds. The limit values for insulation and loop resistance as well as the contact settings are freely programmable via the USB interface using a laptop/netbook. All settings are stored in an internal EEPROM memory so they are protected from loss.

All device locations (measuring stations) and routes can be displayed with the UMS or EasyView software with measured and alarm values, GIS coordinates and mapping.



### Technical data

Supply voltage	Replaceable lithium battery, 3.6 V
Battery life	> 5 year (with daily measurement and weekly status report)
Number of measurement channels	2 (e.g. for flow and return of a district heating line)
Insulation measuring range	0 .. 10 MΩ Error: 3% from measured value ±10 kΩ absolute
Loop measuring range	0 .. 19.99 kΩ Error: 3% from measured value ±0.02 kΩ absolute
Measuring section	NiCr ≤ 1,500 m, Nordic ≤ 3,000 m
Length calculation	Yes, for NiCr
Measurement voltage	12 V DC
Display	1 LED bar display per measurement channel for "ISO measured value" 1 LED per measurement channel for "Loop fault", "ISO fault" and 2 "Contact status" signal LEDs" 6 status LEDs
On-site operation	1 button for real-time measurement with measured value display and test message dispatch
Interfaces	1 USB interface for device configuration Limit value setting and measured value readout 2 contact inputs (cable length max. 10 m)
Interfaces	Ethernet 10/100 Mbit/s, temporary for configuration
Operating temperature	-20 °C .. +50 °C
Permissible humidity	0 .. 100%
Housing protection class	IP 66
Application area	Indoors and protected outdoor installation according to DIN VDE 0100 Section 737. Residential and commercial areas as well as for small businesses
Housing measurements	180 x 180 x 100 mm (W x D x H)

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## **LEAKGUARD**

The new generation of monitoring devices

In district heating networks, detecting leaks at an early stage ensures largely trouble-free operation. Repairs can be carried out in good time before the pipeline fails completely.

For the remote alarm, the devices are equipped with a potential-free output contact or transmit the messages via e-mail/SMS.

In addition, there are options for network solutions via Modbus.

**For your district heating applications with simple commissioning**