





Ultrasonic thermal energy meter

# **The Versatile**

# ULTRAHEAT / ULTRACOLD T450

The universal meter -

applicable in building services and district heating -

precise, reliable, flexible

and with a high degree of economic efficiency





# FLEXIBLE



The T450 is versatile: With exchangeable temperature sensors, exchangeable power supply and one slot for communication modules, the T450 can be adapted to the system requirements at any time.

Be able to react to all circumstances at any time

Furthermore, the T450 offers exceptional flexibility especially due to its calibration logbook. The installation location, energy unit and sensor type can be changed at any time - even during operation. Also multiple firmware updates are possible.

Also multiple innivare updates are possible.

YOURThe T450 adapts itself flexibly to future requirements and<br/>developments. This means fewer stock variants and fast<br/>response times.

# PRACTICAL Simple operation and handling



The T450 focuses on practical use and ease of operation: Two pushbuttons simplify the handling of the device and are easy to use, even with the lid open.

Large installation spaces allow easy connection of communication cables and sensors. Electronic and communication modules are protected by a frame to prevent damage.

M-Bus modules have four terminals instead of two. This allows daisy chaining, whereby junction boxes can be omitted.

YOURThis enables a quick and error-free installation.BENEFITS:In addition, the T450 has a clear labeling, which allows you<br/>to pinpoint the technical specifications immediately.





# Intelligent measurement technology for exceptional reliability

The ULTRAHEAT®T450 is a compact and at the same time flexible ultrasonic meter, which is suitable for many, especially demanding applications. Robustness, easy installation, on-site configurations, retrofitting of communication modules, sensors or power supply - these are just a few of the features that distinguish the T450. The new electronic design enables power supply via M-Bus and thereby an almost unlimited service life. The unique calibration logbook makes it possible to change the installation location, sensor type and energy unit at any time.



- Heat meter
- Cooling meter
- Combined heat / cooling meter

#### Characteristics and features

**ROBUST and DURABLE** 

- Stainless steel transducers- resistant to:
- Abrasion and particles
- Deposits and chemical residues in the heating circuitPressure peaks and negative pressure
- Temperature resistant 130°C permanent
- Also for difficult environmental conditions: IP68 for calculator and volume measuring unit possible
- Long service life due to extremely efficient electronics

#### INTELLIGENT

- Parameterizable installation location even during operation
- Adaptive measurement cycle
- Detailed error flags
- Logbook with 44 monitored functions
- Battery life indication

#### PRACTICAL and FLEXIBLE

- Removeable temperature sensors (Pt100 and / or Pt500)
- Doubled M-Bus terminals
- Battery exchange possible
- LCD symbols for loop and display-ID
- Calibration logbook for changes in the field, even after commissioning has already taken place

Technical data								
MID B, H1 (EN 1434), national co	oling	Nominal flow $q_p$	0.6	1.5	2.5	3.5	6.0	[m <sup>3</sup> /h]
up to IP68		Maximum flow q <sub>s</sub>	1.2	3	5	7	12	[m <sup>3</sup> /h]
10 mm high digits		Minimum flow q <sub>i</sub>	6	15	25	35	60	[l/h]
5 130 [°	°C]	Operating limit	2.4	6	10	7	12	[l/h]
3 120 [K	<]	Mounting length	110 / 190	110 / 130 / 190	130 / 190	260	260	[mm]
PN16 / PN25 [b	oar]	Thread connection	G¾ / G1	G¾ / G1 / G1	G1 / G1	G1 ¼	G1 ¼	
	up to IP68 10 mm high digits 5 130 [ <sup>r</sup> 3 120 [ł	up to IP68 10 mm high digits 5 130 [°C] 3 120 [K]	10 mm high digitsMinimum flow qi5 130[°C]3 120[K]Mounting length	up to IP68Maximum flow qs1.210 mm high digitsMinimum flow qi65 130[°C]Operating limit2.43 120[K]Mounting length110 / 190	up to IP68 Maximum flow q <sub>s</sub> 1.2 3   10 mm high digits Minimum flow q <sub>i</sub> 6 15   5 130 [°C] Operating limit 2.4 6   3 120 [K] Mounting length 110 / 190 110 / 130 / 190	up to IP68 Maximum flow q <sub>s</sub> 1.2 3 5   10 mm high digits Minimum flow q <sub>i</sub> 6 15 25   5 130 [°C] Operating limit 2.4 6 10   3 120 [K] Mounting length 110/190 110/130/190 130/190	up to IP68 Maximum flow q <sub>s</sub> 1.2 3 5 7   10 mm high digits Minimum flow q <sub>i</sub> 6 15 25 35   5 130 [°C] Operating limit 2.4 6 10 7   3 120 [K] Mounting length 110/190 110/130/190 130/190 260	up to IP68 Maximum flow q <sub>s</sub> 1.2 3 5 7 12   10 mm high digits Minimum flow q <sub>i</sub> 6 15 25 35 60   5 130 [°C] Operating limit 2.4 6 10 7 12   3 120 [K] Mounting length 110/190 110/130/190 130/190 260 260

#### LCD display

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00251328

with 8 digits and many useful symbols, such as dynamic battery level indicator, or the loop indicator, so you always know where you are in the menu. **Everything at a glance.** 

Housing lid For a comfortable handling, the lid can be opened and stopped (stepwise).

#### Optical interface

for hands-free readout and parameterization with the self-retaining opto head.

# Water meter ◀

pulse inputs enable a cost-effective integration of hot and cold-water meters into different communication networks.

Protected electronics

Ensures the functional reliability of the meter. The cover protects the sensitive electronics from contacts and coarse dirt.

#### 2 Pushbuttons

for an easy and comfortable menu guidance.

The buttons are easy to handle even when the lid is open.



#### Changeable communication modules

can be retrofitted at any time and thus always be state of the art. The modules are equipped with electronic protection, which also functions as an insertion aid.

# Openable battery compartment

(on the back side) The low lithium batteries (AA-cells) are easy to replace. The display on the LCD shows the battery level indication. Alternative power supply will then also be accommodated here.



# INTELLIGENT Utilization of improvement potentials



The T450 provides data for billing as well as data on the current status, efficiency and usage of the heating system. This enables it to analyze consumption and draw conclusions about potential improvements and problems in the system. Customers can also use the values, e.g. minima, maxima or average values, to better assess whether their individual consumption is high or low.

HIGHLIGHT:

The battery life indication constantly calculates the remaining time until battery replacement based on the consumption profile.

# ROBUST



### Prepared for all adversities

The meter can also be used if the conditions are demanding: DuraSurface<sup>™</sup>, all-metal measuring sections and stainless-steel transducers enable accurate, trouble-free operation even under adverse conditions. Soiling, abrasive particles, pressure peaks, high temperatures, line misalignment and vibrations don't affect the exact measurement of the T450. However, environmental influences such as mechanical and

electromagnetic influences do not put the T450 out of step.

**HIGHLIGHT:** In the special version, the T450 can even be installed in locations that are occasionally flooded without damaging the meter. The modularity remains the same.

## DURABLE

# The economical alternative



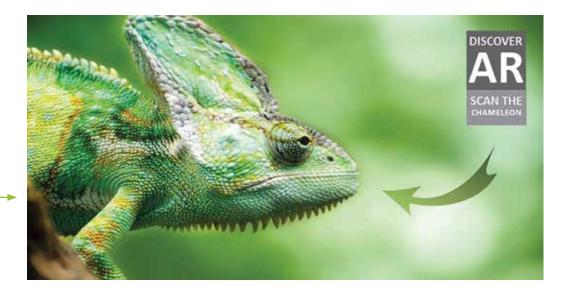
Intelligent power supply, economical electronics in combination with robust measurement technology and revisionable construction allow the T450 to be used for a very long time without malfunctions or maintenance and, if necessary, to be repaired. Should the meter no longer meet the state of the art standards, a firmware update on-site offers the possibility of meeting future requirements.

HIGHLIGHT: Complete power supply possible via the M-Bus. (power-over M-Bus)





Discover a new world



### Center of Competence HEAT in short:

- "Made in Germany"- own development, manufacturing and sales
- Since 1983 experiences with ultrasonic thermal energy meters
- Operations on all five continents
- Optimized and order-related manufacturing
- Modularity and software parameterization leads to fast reaction times on orders
- Certified acc. to ISO 9001, 14001 and EC Directive D+H1 (MID)
- State-approved test center KBY5
- Service-Center for revisions and repairs
- Committed to improved energy efficiency and environmental conservation
- Solid and established partner network

## Landis+Gyr AG

Alte Steinhauserstrasse 18 6330 Cham Switzerland

phone: +41 41 935 6000 fax: +41 41 935 6601 info@landisgyr.com www.landisgyr.eu

#### Landis+Gyr GmbH

Humboldtstr. 64 D-90459 Nuremberg Germany

phone: +49 911 723 7036 fax: +49 911 723 7301 info-nbg.de@landisgyr.com

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