Calculator T550 Ultraheat® (UC50…)
Calculator T550 Ultracold® (UC50…)

Issue: 29.10.2012

Operating Instructions UC 309-101d

These Operating Instructions must be handed to the final user on start-up!

3280 009 101 d

Note: In the following text, the term calculator covers the heat meter calculator as well as the cold meter calculator and the combined heat/cold meter calculator, if not mentioned otherwise.

General information

The T550 Ultraheat® (UC50…) calculator is designed for heating and cooling applications. The calculator forms the volumes from the pulses of the flow sensor. The flow and return temperatures are sensed using platinum resistors.

The volume of water and the temperature difference between the flow and return are then calculated and the product is summated.

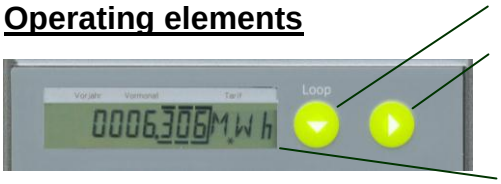
The result is that the quantity of thermal energy consumed is displayed in the units kWh / MWh or MJ / GJ.

The **mounting place** and the **pulse value** of flow sensor with pulse output must correspond with the in the calculator set values (see LOOP 2).

Technical data

Environment class	A (EN 1434)
Mechanical class	M1 *)
Electromagnetical class	E1 *)
*) according 2004/22/EG directive	
Ambient humidity	< 93 % r. h. at 25°C without condensation
Storage temperature	- 20 to 60°C
Max. Height	2000 m above MSL
Ambient temperature	5 to 55°C
Housing degree of prot.	IP 54 per EN 60529
Safety class	
line 110 / 230 V AC	II per EN 61558
line 24 V AC/DC	III per EN 61558
Response threshold f. ΔT	0.2 K
Temperat. diff. ΔT	3 K to 120 K
Temperat.meas. range	0...180°C
Sensors Type	Pt500 or Pt100 per EN 60751
Temp. sensors length	max. 10m
Battery	3,6V DC Lithium
Power supply	230/110V AC 50/60Hz
	24V AC/DC 50/60Hz
Power input	< 0,8W
Pulse input	IB/IC per EN1434
Pulse length	min. 10ms
Pulse frequency	max 50Hz
Pulse wire length	max. 20m (recommended)

Operating elements



Displays

The displays of the meter are arranged on several levels (LOOPs).

Button 1 advances the display to the next loop. After the last loop, the user loop (LOOP 0) appears again.

Button 2 displays the data of the selected loop. Within a loop, the button 1 is used to advance to the next line of the display. After the last line of the display, the first display line appears again.

The digits after the decimal point of displayed values are indicated by a surrounding border.
Calibrated values can be recognized by the star symbol shown in addition to the value.

Depending on how the unit is parameterized, the number of items displayed and the data shown may differ from this description. Certain button functions may also be disabled.

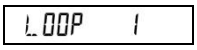
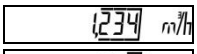
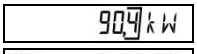
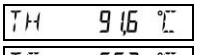
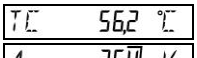
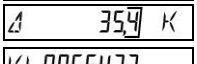
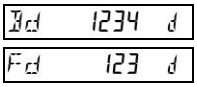
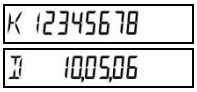
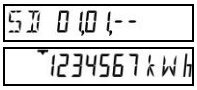
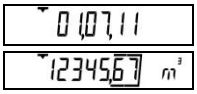
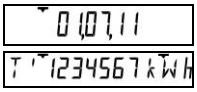
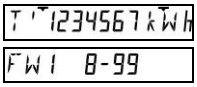
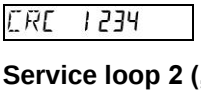
Service loop (selection)

LOOP 1	Service loop 1
LOOP 2	Service loop 2
…	…
LOOP 0	User loop 0

User loop („LOOP 0“)

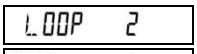
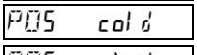
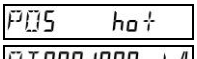
LOOP 0	Head of the loop
F -------	Error message with error code numer [1])
1234567 kWh	Accumulated quantity of energy with tariff status
T1 1234567 kWh	Tariff register 1,2,3 [2])
1234567 m³	Accumulated volume
PI1-3	Volume pulse input 1 [3])
1234567 m³	at 2 s interval with current volume
PI2-3	Volume pulse input 2 [3])
1234567 m³	at 2 s interval with current volume
88888888 kW/h	Segment test

Service loop 1 („LOOP 1“)

	Head of the loop
	Current flowrate
	Current power
	Current temperature „hot“, „cold“
	at 2 s interval
	Temperature difference
	Volume pulse
	Volume at energy calculation
	Operating time
	Error time
	Property number, M-Bus secondary address
	Date
	Yearly set day (DD.MM)
	Quantity of energy (previous year) on set day
	at 2 s interval with date
	Volume for previous year on set day
	at 2 s interval with date
	Tariff register 1,2,3, previous year on set day [2]
	Firmware version
	CRC Code

Service loop 2 („LOOP 2“)

The service loop 2, the **installation details** are displayed.

	Head of the loop
	Mounting place of the flow sensor cold
	side or hot side
	Pulse value

At a **heat meter calculator** or a **combined heat/cold meter calculator** the mounting place of the flow sensor cold side is equivalent to return flow.

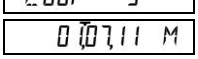
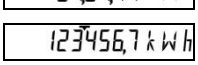
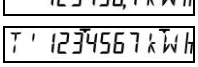
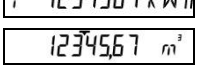
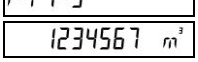
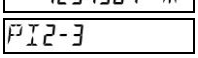
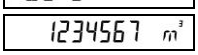
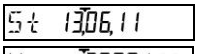
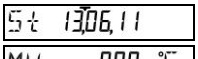
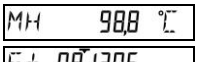
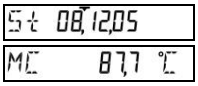
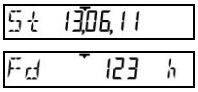
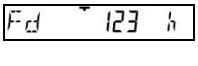
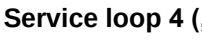
At a **cold meter calculator** the mounting place of the flow sensor hot side is equivalent to return flow.

Service loop 3 („LOOP 3“)

Service loop 3 shows the **monthly values**. Button 1 is used to select a month out of the previous months. The data for that month are then opened with button 2. Each further press of button 2 shows the next value for the selcted month.

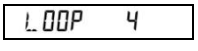
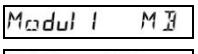
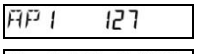
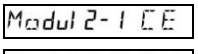
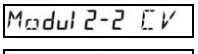
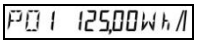
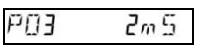
After the last display, the previously selected set day is displayed again. Pressing button 1 selects the next set day.

If you want to exit and go directly to the next loop, choose a monthly value by pressing button 2 and then press button 1.

	Head of the loop
	Set day for june 2011
	Quantity of energy on the set day
	Tariff 1,2,3 on the set day [2]
	Volume on the set day
	Volume pulse input 1 [3]
	at 2 s interval with volume on the set day
	Volume pulse input 2 [3]
	at 2 s interval with volume on the set day
	Max. flowrate at period,
	at 2 s interval with date stamp
	Max. power at period,
	at 2 s interval with date stamp
	Max. temperatures „hot“ on the set day,
	at 2 s interval with date stamp
	Max. temperatures „cold“ at period,
	at 2 s interval with date stamp
	Error time count on the set day

Service loop 4 („LOOP 4“)

Service loop 4 shows the **unit parameters**.

	Head of the loop
	Current tariff 1,2,3 [2]
	at 2 s intervals with threshold value 1
	Module 1: M-Bus module
	M-Bus primary address 1
	Module 2: pulse module; chan. 1 = energy;
	Channel 2 = volume; at 2 s intervals
	Significance for energy quantity pulses *)
	Significance for volume pulses *)
	Pulse duration in ms *)

[1] Basic display if error existent

[2] Visible if tariff is activated

[3] Visible if a module with pulse input is installed

*) for „fast pulses“

Previous year's values

The electronic unit stores the meter readings for quantity of energy, volume, the tariff register and error time as well as the current maxima for flowrate, power, temperature difference, flow temperature and return temperature with their date stamps on a yearly set day.

Monthly values

The electronic unit stores the calculator for quantity of energy, volume, the tariff register and error time as well as the monthly maxima for flowrate, power, temperature difference, flow temperature and return temperature with their date stamp for up to 60 months on the set day of each month.

The standard used is Cetral European Time (CET). If daylight-saving time is activated, storage will be performed accordingly.

Error messages

The meter constantly performs self-diagnostics and can display various error massages.
Error message ***F4*** means the battery must be replaced.
Error message ***F1, F2*** or ***F5, F6, F8*** means that the temperature sensor is defective. Massage ***F3, F7, F9*** indicates a fault in the electronics. In all these cases, please call service.

Functional details

If the response temperature threshols are exceeded and the temperatur difference is positive, **the quantity of thermal energy** is summed. **Power** and **temperature difference** are acquired with the correct sign. If the response temperature threshold is not reached, the value is preceded by a **u**. The current **temperatures** are shown in separate lines with a resolution of 0.1°C.
In the segment test, all segments of the display are switched on for test purposes.
To calculate the maximum, the power and flowrate are averaged over a **measuring period** of, for example, 60 min. The **maximum values** from the average calculation are preceded by ***Ma***. The **maximum temperatures** are preceded by ***MH*** resp. ***MC***.
The 8-digit **property number** (also the secondary address in M-Bus operation), can be set in parameter setting mode. The **unit number** is assigned by the manufacturer.
The **operating time** is counted from the first time the power supply is connected. **Error times** are summated, if an error is pending that prevents the meter from measuring.
The **date** is incremented daily.
The type of installed **modules** is displayed. If an M-Bus module is installed, the primary and secondary address awill be displayed on the following lines.
The number for the **firmware version** is assigned by the manufacturer.

EU Declaration of conformity

Landis+Gyr herewith declares that the products of type UC50 comply with the requirements of the following directives:

- **2004/22/EC** Measuring instruments directive *)
- **2004/108/EC** Electromagnetic compatibility
- **2006/95/EC** Low-voltage directive
- **1999/5/EC** Directive on radio equipment and telecommunication terminal equipment (R&TTE)
- **2002/95/EC** Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

*) for cold meter in Germany applies PTB TR K 7.2

Nürnberg, 12.10.2012

Brunner, COO name, function ..... signature Fuchs, Head R&D name, function ..... signature

This declaration and the corresponding documents are lodged at Mr. Fuchs c/o Landis+Gyr under the number CE UC50 003/10.12

EG type-examination certificate
DE-11-MI004-PTB035
EG design-examination certificate
DE-11-MI004-PTB036
Certificate of the approval of a quality management system
DE-12-AQ-PTB006MID
Notified body: PTB Braunschweig and Berlin, Germany; Nr. 0102

In Germany the cold meter is approved under the number 22.75/11.04.

Further information

- The electronic unit must only be cleaned on the outside. Please use a soft, damp cloth to do this, which can be dipped in a non-corrosive cleaning agent.
- User seals may only be removed by authorized persons for service purposes and must be replaced afterwards.

Up-to-date versions of all instructions can be found on our homepage **www.landisgyr.com.**

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