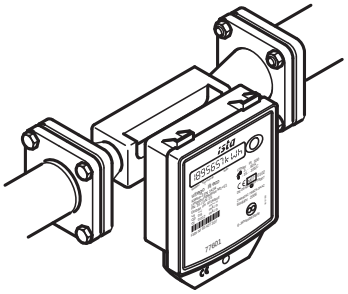
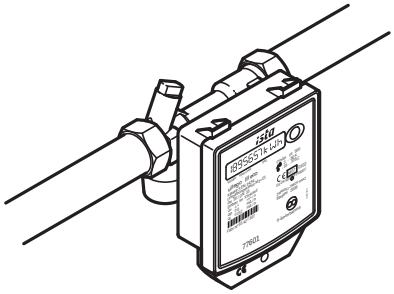
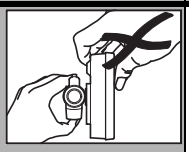
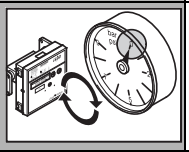
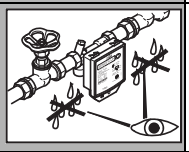
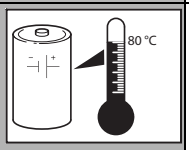
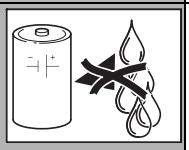
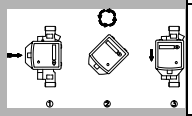
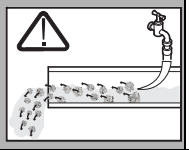
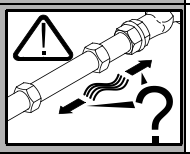
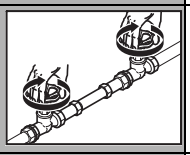
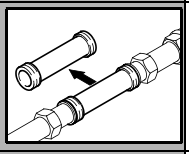
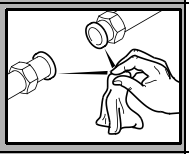
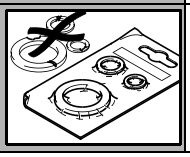
	EN Pictogram	
		

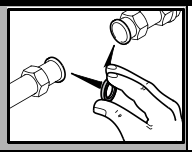
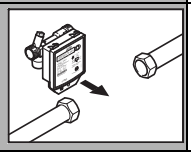
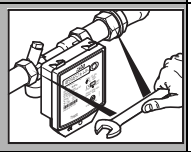
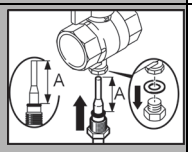
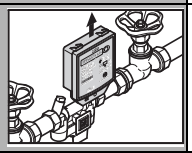
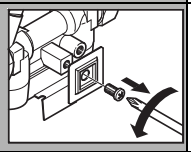
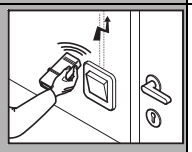
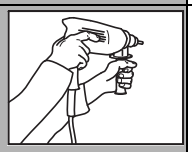
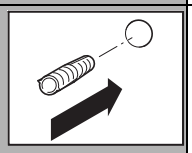
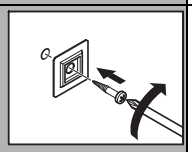
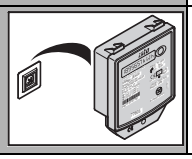
	EN Application / Function
	The heat meter ***ultego® III eco*** is a measuring device for the physically correct recording of the heat consumption. It is subject to mandatory calibration in Germany and many other countries. The device consists of a volumetric flow meter, two permanently attached temperature sensors and a calculator, which calculates the heat consumption from the volume and the temperature difference. The volumetric flow meter is a wear-resistant ultrasonic measuring device without mechanically moving parts. The long-life battery is designed for the entire duration of the calibration period. The ***ultego® III eco*** cannot be opened without breaking the calibration seal. The heat meter may only be operated under the conditions stated in the device documentation and the type plate.

⚠	EN Warning notices	
1		The calculator is attached to an installation base. This is why you must always pick up and transport the heat meter on the thread connection and never on the calculator.
2		The unit may only be mounted by authorized expert personell!
3		The devices may only be installed and deinstalled in depressurized systems.
4		After installation, perform a leak test (cold flush).
5		Only use ***ultego® III eco*** under operating conditions! Risk of hazards and loss of warranty!
6		Breaking the seal renders the warranty void.
7		In case of returning the meter by air mail, you must remove the battery beforehand!
8		Observe the national calibration laws when changing the batteries!

	EN **Warning notices**
9 	Do not open or damage the battery.
10 	Do not heat the battery above 80 °C.
11 	Do not expose the battery to water.
12	Spent batteries have to be disposed of at suitable collection points!
13	Flash protection cannot be guaranteed. This must be secured via the building installation.
14	Observe the regulations for the application of heat meters (see EN 1434, Part 6)! Cavitation in the system has to beprevented!
15	When installing the heat meter, make sure that overflows or water trickles are prevented.
16	Observe the regulations for electronic installations!
17	You may only transport the ***ultego® III*** *eco* in its original packaging.
18	The following applies in Germany for MID-conform devices: for new installations in pipelines smaller/equal DN 25, shortsensors may only be installed directly immersed!

	EN **Mounting**
	Installation notices
	Only experts familiar with the associated risks may align, service, repairor exchange parts.
	The ***ultego® III*** *eco* left our factory in an impeccable technical state.
	Calibration seals of the ***ultego® III*** *eco* may not be damaged or removed! Otherwise the warranty and calibration validity of the device will be void!
	Prior to installing the ***ultego® III*** *eco*, rinse the system thoroughly.
	The calculator is attached to an installation base. This is why you must always pick up and transport the heat meter on the thread connection and never on the calculator.
	All lines must be installed at a minimum distance of 300 mm to power or high-frequency cables.
	If several meters are installed in a unit, make sure that the installation conditions are the same for all meters.
	Cavitation in the entire measuring range must be prevented through overpressure, meaning at least 1 bar to q_p and approx. 2 bar in case of overload q_s (applies for approx. 80 °C).
	The installation site (backflow/flow) is indicated on the meter face. Please refer to the dimensions and check whether there is sufficient free space.
	If the ***ultego® III*** *eco* is installed in the joint backflow of two heating circuits, e.g. heating and warm water, the installation site must be at a sufficient distance (at least 10 DN) from the T-piece so that the different temperatures can mix well.
	Communication: if the ***ultego® III*** *eco* is equipped with one of the options “M-Bus”, “Minibus” or “Impulse output”, it is supplied with a two-veined connection cable that can be extended with a 2×0.75mm² cable (install distribution box). Observe the correct polarity when connecting the impulse output (brown +, white –).
	Temperature sensor: the cables may not be divided, shortened or extended.

	EN **Mounting**
	Notices on installation for cold metering When installing the ***ultego® III eco*** for the use as cold meter, make sure that the transducers on the measuring tube pointto the side or downwards (formation of condensation water).
	The measuring tube always has to be installed in the backflow. (Attention! Use flow calculator!)
	The calculator must be separated from the flow measurement pipe and installed e.g. on the wall. Here you have to makesure that no condensation water can run along the connected pipes into the calculator.
	Install the volumetric flow meter horizontally or vertically between two shut-offs so that the arrow coincides with the flow-direction.
	The sensors must be installed in the same heating circuit as the volumetric flow meter (observe blending).
	The sensors can be installed in T-pieces, ball valves or in immersion sleeves depending on the design (only stilladmissible for old systems acc. to the new MID license).
	The immersion sleeves must reach at least up to the middle of the pipe diameter. The exact minimum immersion depth ofthe sleeve into the flowing medium depends on the approval of the applied temperature sensor.
	Temperature sensors and screw fittings have to be sealed to prevent manipulation.
	**Installation notices for the calculator** The ambient temperature of the calculator may not exceed 55°C.
	Avoid direct solar radiation.
	Installation is possible horizontally or vertically to the volumetric flow meter. To do so, pull the calculator off the volumetric flow meter, turn it and attach it in the desired position.
	With heating water temperatures above 90°C, the calculator must be attached to the wall.
	For wall mounting, pull the calculator off the volumetric flow meter, unscrew the attachment base and mount it on the wall. Slide the calculator back onto the attachment base.
1 	**Performing the installation** Flush pipeline according to DIN/EN. Observe the country specific regulations!
2 	Observe the directional flow comparing it with the arrow on the ***ultego® III eco***.
3 	Close the shut-off devices in front and behind the installation site.
4 	Dismount adapter, if neccessary.
5 	Clean sealing surfaces.
6 	Only insert a new profile sealing.

		EN **Mounting**
7		Insert new seal.
8		Observe the directional flow comparing it with the arrow on the ***ultego® III*** *eco*.
9		Mount meter.
10		Tighten all screw connections(in case of flange connection tighten nuts crosswise).
11		The sensors can be installed in T-pieces, ball valves or in immersion sleeves depending on the design(only still admissible for old systems acc. to the new MID license).
		The following steps are optional and can also be performed at a different time during the installation:
12		Pull the calculator off the attachment.
13		Unscrew the attachment with a screw driver.
14		Prior to drilling, check that there are no electricity cables, gas or water pipes below the surface at the installation site.
15		Drill a hole into the wall (6mm).
16		Insert dowels.
17		Attach the installation base to the wall.
18		Attach the installation base to the wall.

EN

Handling

The displays of the heat meter are arranged in several loops and may differ from the standard displayed here depending on the configuration of the ***ultego® III eco***. With a brief press of the button, the display in the loop in which you currently are is switched forward in cycles. ▼ shows what kind of display type is concerned on the display. With a long press of the button, you switch between the loops or set parameters in input mode. The display data of the ***ultego® III eco*** are divided into four loops:

- User loop

Display	Unit	Meaning	>
0054567	kWh	Accrued heat volume	-
00065.4	m³	Accrued volume	-
888888	kWh	Segment test	Information
F - - -		In case of an error, error message with error ID	Information

- Service loop

Display	Unit	Meaning	>
0.534	m³/h	Current flow	
22.9	kW	Current heat output	
84 47	°C	Current flow/backflow temperature	
04.06.02	D	Date	
786	Bh	Operating hours	
56	Fh	Error hours	
3792701	G	Device number, 7-digit	Information
PulSE	CH	Remote reading mode (optional)	Information
123	A	Primary address with M-Bus option	Information
2345678	K	Property number, 7-digit	Information
18.02.01	F0	Time stamp for F0 warning	Information
3- 01	FW	Firmware version	Information
31.12.01	V	Memory date previous year	Previous year
0034321	kWh	Previous year heat volume on target date	Previous year
00923.12	m³	Previous year volume on target date	Previous year
12	Fh	Error hours previous year	Previous year
- -.- -.- -	C	Code input for parameterizing	-
01.06.02	M	Memory date month 1-15	Previous month

- Month loop

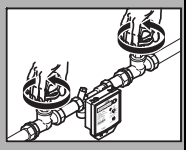
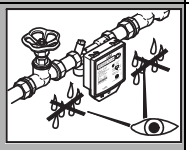
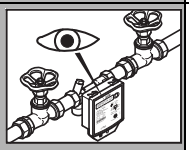
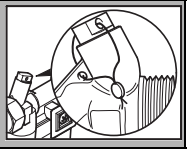
Display	Unit	Meaning	>
0034321	kWh	Previous month heat volume on target date	Previous month
00923.12	m³	Previous month volume on target date	Previous month
12	Fh	Previous month error hours on target date	Previous month

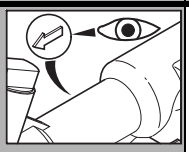
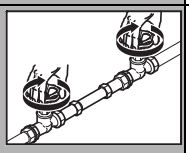
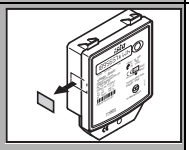
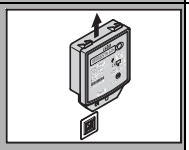
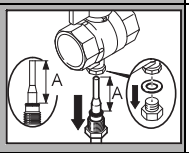
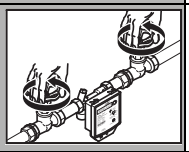
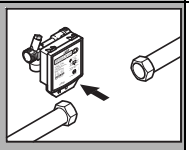
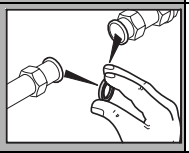
- Parameterizing loop

Display	Unit	Meaning	>
- - - - - -	C	Input of the current date	Information
01.01. - -	S	Annual target date (01.01. --)	-
05.04.06	D	Date (05.04.06)	-
15.33.06	T	Time (15:33:06)	-
2 3 4 5 6 7 8	K	Customer number or M-BUS (secondary address) (see notice in "Parameterizing")	-
123	A	Primary address (see notice in "Parameterizing")	-
Ft	+	Reset error time	-
Nb - - - - -		Return to normal operation	-

The following table describes how to switch between the loops:

- User loop ↔ service loop
  - →: 10 s. push of the button
  - ←: 3 s. push of the button (exception from field "Code input" and "Memory date month")
- Service loop ↔ month loop
  - →: 3 s. push of the button in the field "Memory date month"
  - ←: Automatic after scrolling
- User loop ↔ month loop
  - →: -
  - ←: 3 s. push of the button
- service loop -> parameterizing loop
  - →: 3 s. push of the button in the field "Code input"
  - ←: Brief press of the button in the field "Return to normal operation"

	EN **Commissioning**
	Parameterizing Change the parameterizing loop of the ***ultego® III eco*** as described above. The first - blinks on the display. Enter the digit of the respective date (date format DDMMYYYY) by repeatedly pressing the button. With a brief press of the button, you jump to the next digit. A scroll menu appears after correct entry that switches forward to the next menu point in the parameterizing loop every 1.5s. By pressing for 3 seconds and then releasing the button, you switch to the edit mode of the currently displayed parameter. After entering the new value, you return to the scroll menu with a brief press of the button. **Important:**If the meter is already connected to the M-Bus, you have to trigger a manual voltage change onthe M-Bus to take over the new M-Bus address. **Important:**The device number as well as the firmware version number is provided by the manufacturer.
1 	**Commissioning** Open the shut-off valves in front and behind the installation site.
2 	Check the heating system for impermeability and ventilate it thoroughly.
3 	The message “F0” disappears at latest after 100s. Then check the measuring values “Temperatures” and “Flow” for plausibility.
4	Ventilate the system until the flow display is stable.
5 	Attach the seals to the screw fittings and the sensors.

	EN **Exchange**
1 	Observe the directional flow comparing it with the arrow on the ***ultego® III eco***.
2 	Close the shut-off devices in front and behind the installation site.
3 	Remove the seals.
4 	Detach the calculator from the wall, if applicable.
5 	Remove the temperature sensors from the T-piece, the ball valve or the immersion tubes.
6 	Slowly unscrew the screwed connection of the meter as there is still pressure present on the line. (Stopcock valve does not close fully anymore).
7 	Dismount meter.
8 	Remove seals.
9 	Continue as from Mounting point 9.

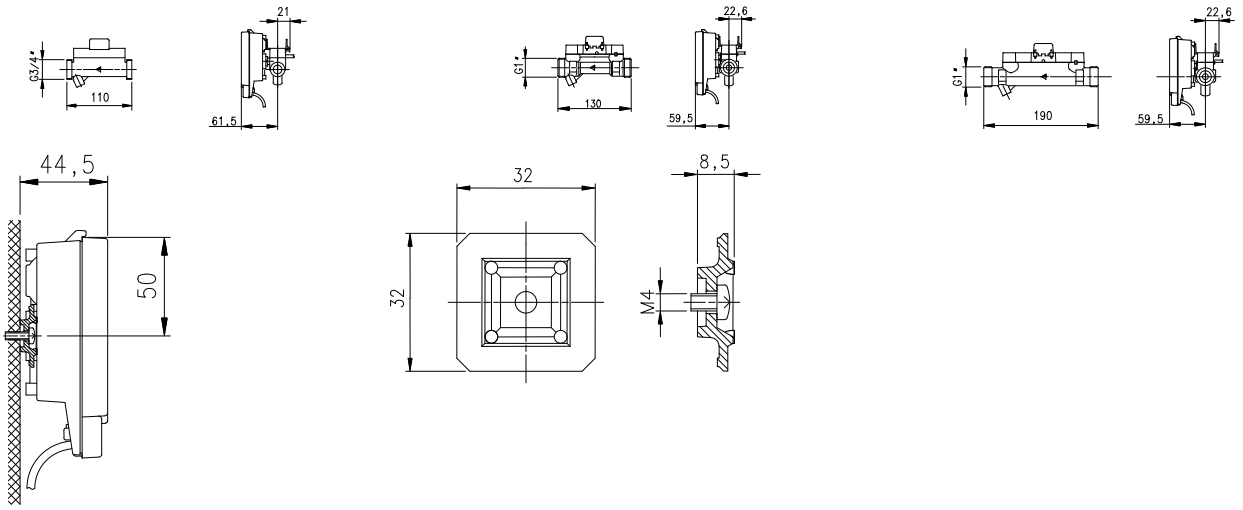
	EN **Reading**
	For 15 months at the end of each month, the calculator saves the values for ■ heat (meter count) ■ volume (meter count) ■ error hours counter (meter count) You have two options to read the meter: 1.via the optical interface 2.manually via the display loops **Important:** The allowed mean frequency of reading must not be exceeded (once within 3h @2400 bd, 1x in 24h @ 300 bd). Any more reading is not allowed and may result in a meter damage.

	EN Reading
	Behavior of the meter ■ If the respective operation margins are exceeded and the flow and temperature difference are positive, the heat quantityand the volume are totaled. ■ All display segments are activated during the segment test for control purposes. ■ At the annual target date, the meter counts for the heat and the volume are taken over into last year's memory each year. ■ The flow, the heat output and the temperature difference are recorded with the proper prefix. In case the operating marginis undercut, the device displays u as prefix. The current temperatures are displayed together in °C in a display line (ininteger numbers). ■ The 8-digit customer number (secondary address with M-Bus mode) can be set in parameterizing mode. In this case, thehighest-order digit is not displayed and internally reset to zero. ■ The operating hours are counted as of the first connection of the supply voltage. ■ This date is carried forward daily. The meter is always set to Central European Time (CET) by default on delivery.
	Error codes and IDs The heat meter constantly performs a self-test and can then display different installation or device errors: ■ **Error code**: *FL nEG* ■Error: Wrong flow direction ■Measures: Check/correct flow or installation direction ■ **Error code**: *DIFF nEG* ■Error: Negative temperature difference ■Measures: Check/exchange the installation site of the sensors ■ **Error code**: *F0* ■Error: No measurable flow ■Measures: Air in the measuring part/pipe, ventilate pipe (supply status) ■ **Error code**: *F1* ■Error: Interruption in the flow temperature sensor ■Measures: Call service ■ **Error code**: *F2* ■Error: Interruption in the backflow sensor ■Measures: Call service ■ **Error code**: *F3* ■Error: Electronics for temperature evaluation is defect ■Measures: Call service ■ **Error code**: *F4* ■Error: Battery empty ■Measures: Call service ■ **Error code**: *F5* ■Error: Short circuit in the flow sensor ■Measures: Call service ■ **Error code**: *F6* ■Error: Short circuit in the backflow sensor ■Measures: Call service ■ **Error code**: *F7* ■Error: Interruption of the internal memory operation ■Measures: Call service
	■ **Error code**: *F8* ■Error: If the errors F1, F2 or F3 or F5, F6 persist for more than 8 hours: detection of tampering attempt. No more measuring operations are performed. ■Measures: Diese F8 Fehlermeldung muß vom Service rückgesetzt werden. ■ **Error code**: *F9* ■Error: Error in the electronics ■Measures: Call service

EN

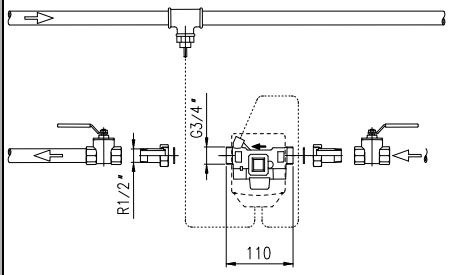
Technical data

Main and connection parameters

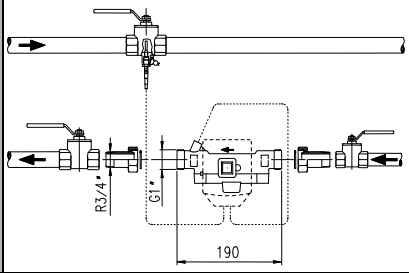


Installation examples

Integration with T-piece and heat meter with 110mm fitting



Integration with ball tap and heat meter with 190mm fitting



Technical data calculator

- Ambient temperature: 5 - 55 °C
- Power supply: Batteries for 6 or 11 years or 24V AC/DC external (special design)
- Temperature sensor: Pt 500
- Communication: Optical interface by default, M-BUS or impulse output optional
- Log: IEC870, 300 Baud in Nb
- Divisibility: Always removable, cable length 1m

↔	**EN** **Technical data**
	Technical data of the volumetric flow meter ■ Temperature range: 5 - 105 °C (national approvals may differ) ■ recommended for heat application:15 to 105 °C ■ recommended for cold application: 5 to 50 °C ■ Nominal pressure: 1,6 MPa (PN 16) ■ Overload: q_s = 2 x q_p, constant ■ Mounting position: horizontal or vertical ■ Measurement range: approved, calibrated 1:50 ■ Measurement accuracy: N 1434 Kl. 3 ■ Typen (Consider the details on the meter): ■ q_p 0,6: 110 mm (3/4“), 190 mm (1“) ■ q_p 1,0: 110 mm (3/4“), 190 mm (1“) ■ q_p 1,5: 110 mm (3/4“), 190 mm (1“) ■ q_p 2,5: 130 mm (1“), 190 mm (1“)
	Technical Data Temperature Sensor ■ Temperature sensor: Pt 500 acc. to EN 60751, not removable ■ Connection: 2-wire, permanent ■ Type: DS direct short, M10 x 27.5mm acc. to EN1434 or rod sensor 45 x 5.2 dia. mm ■ Cable length: 1.5m standard, 5 m optional ■ Max. temperature: 105 °C ■ Installation supply sensor: Mounting element for DS 1/2“ x M10, ball valves for DS, brass pocket 1/2“ for rod sensor ■ Installation return sensor: Integrated (when meter is for installation in return)

CE	**EN** **EC Declaration of conformity**
	Landis+Gyr GmbH, Humboldtstr. 64, D-90459 Nürnberg, herewith declares that the products of type 2WR6 comply with the requirements of the following directives: ■ **2004/22/EG** Measuring instruments directive ■ **2004/108/EU** Electromagnetic compatibility of electric and electronic devices ■ **73/23/EEC** Low-voltage directive Nürnberg, the 25.05.2009 Brunner, COO .... Reichmann, head of R&D ..... name, function signature name, function signature This declaration and the corresponding documents are lodged at Mr. Reichmann c/o Landis+Gyr under the number CE 2WR6 005/05.09. EC type-examination certificate: DE-06-MI004-PTB007 Certificate of the approval of a quality management system: DE-06-AQ-PTB006MID Notified body: PTB Braunschweig und Berlin, Deutschland; Nr. 0102