Heat meter Q heat 5

Screw-type and measuring capsule heat meter (WMZ) with IrDA interface and an interface for retrofitting external modules. The devices can be equipped with the required communication technology from the factory.*
As an option, all heat meter types are available with 2 additional impulse inputs for adding up to two external meters.*

Can be used in the systems **Q opto** and **Q basic** or through an internal communication interface in the systems **Q M-Bus**, **Q walk-by** and **Q AMR**.
Can be retrofitted with external modules for use in certain systems.

As variant HMC5–001… with combined heat and cold metering.

* in progress

QUNDIS™
ADVANCED MEASURING SOLUTIONS.

Application

The heat meter is used for measuring heat energy. With model HMC5–001... the combined measurement of heat and cold energy is possible. The main areas of application are in central heating systems where the heating energy is outputted individually to different consumers.

This is meaningful in:
~ Apartment buildings
~ Offices and administration buildings

Functions

General

~ IrDA interface for reading out and setting parameters for the heat meter
~ Mains-independent, for local use, 6 or 10-year lithium battery
~ Values are measured by two platinum PT 1000 resistance thermometers and one hydraulic impeller wheel sensor with magnet-free scanning according to the inductive principle for low-wear and reliable long-term measuring operation
~ High resolution thanks to 8-digit LC display that indicates current value, old value, check number and many service and operating parameters
~ Additional display of 15 monthly values with date
~ Storage of the maximum supply flow and return flow temperatures as well as the maximum current flow with date
~ Programming of the device-specific parameters (e.g. due date) is possible on site using the control keys or the IrDA interface
~ The communication technology required is either already integrated from the factory or can be retrofitted through add-on modules in the field. Radio (AMR and walk-by), M-Bus or impulse output are available as integrated solutions. Alongside radio (AMR and walk-by), M-Bus and different impulse outputs, RS 232 modules are also available as external modules.
~ Since the module interface is also compatible with the heat meters of the G line (G20 to G54), the add-on modules already in the field can still be used when the meter has been replaced.
~ With the basic version, add-on modules for radio or M-Bus communication as well as impulse output and RS 232 modules can be retrofitted on-site via the module interface
~ Optionally available with additional impulse input interface for connection of up to 2 external water meters

Screw-type variant

~ Heat meter or combined heat/cold meter **Q heat 5** for direct or indirect installation of the temperature sensors
~ MID approval granted

Capsule variant

~ 2" capsule heat meter or combined 2" capsule heat/cold meter for direct or indirect installation of the temperature sensors
~ Fits in all 2" coax EATs, taking geometric specifications into account
(see page 24)
~ MID approval granted

System modules

Q basic

Q basic are products that can be readout visually. The **Q basic** system represents the entry level to reliable consumer data recording. They are especially suited to tasks or systems that do not require complex data evaluations or particularly fast readout processes.

How **Q basic** functions
The time needed for classical on-site meter-reading should be borne in mind when assessing whether this system is suitable. Measuring results are noted manually.

Q opto

Devices in the **Q opto** system are readout using an optical close-range interface.
More data can be readout using the **Q opto** system than is the case during visual readout of **Q basic**. These are products with a close range optical interface that can be read out with a corresponding unit.

How **Q opto** functions
The IrDA interface makes semi-automatic readout possible through the opto-electronic interface using special readout devices and software. Data exchange takes place using infrared light over short distances.

Q M-Bus

Devices in the **Q M-Bus** system are readout using a wired device. The **Q M-Bus** system is based on the wired M-Bus standard for wired meter remote readout and can be used with all kinds of consumer meters. The greatest advantage of **Q M-Bus** technology is its high level of flexibility: since it is no problem to operate devices from various manufacturers on one bus.

How **Q M-Bus** functions
The measuring devices are connected by a 2-wire bus cable to a building central unit and can be read out centrally from there. This means on-site readout at the device is no longer necessary.
Depending on the system, significantly shorter readout intervals are possible. This way, information about energy consumption is available quickly.

Q walk-by

Devices in the **Q walk-by** system are readout supported by local radio signals. **Q walk-by** makes meter reading as inexpensive as it is easy by using a mobile readout system – just walking by. The meter-reader does not have to enter the tenant's flat or office. In the case of smaller systems, data can usually be received outside the building in most cases.

How **Q walk-by** functions
The meters transmit current consumption data at the set reading time. The meter-reader only needs his mobile readout system. This comprises a mobile data collector and a netbook with respective software. The data collector collects the radio telegrams and, after a plausibility check, transmits them wirelessly to the netbook via a Bluetooth interface.

Q AMR

Devices in the **Q AMR** system are readout radio-supported. All consumption usual in the household is recorded by measuring devices and transmitted wirelessly to network nodes. Each network node has all the consumption information available – on account of continual data exchange between the devices. These data can be readout via the interface at the node, by radio from a (stationary) vehicle or via a gateway by modem or IP interface from a remote location.

How **Q AMR** functions

The meters send the current consumption data in cycles. The battery operated network nodes receive, check and store the data fully automatic. The data can now be read at any network node, either directly through the data interface or “from the outside” by radio. Even more comfortably: the data can be read through a gateway directly from the office, e.g. through the GSM phone network, through GPRS or through computer or broadband cable networks.
Q AMR is compatible with the KNX European standard for home automation.

Type summary

On the basis of the type matrix, the heat meter variant can be determined by combining the possible equipment options. Not all features can be combined with one another due to special technical details.

Product family

Options	Part no. *	Block1	Block2	Block3	Block4
Heat meter compact		**HMC5**	xxxx	xxxx	xxxx0
Heat meter removable		**HMR5**	xxxx	xxxx	xxxx0

Execution

Options	Part no. *	Block1	Block2	Block3	Block4
Standard (without extension / adaptation)		xxxx	00**0**x	xxxx	xxxx0
Heat metering + cold metering		xxxx	00**1**x	xxxx	xxxx0
Heat metering + solar metering		xxxx	00**2**x	xxxx	xxxx0
Heat metering + cold metering + solar metering		xxxx	00**3**x	xxxx	xxxx0

Communication

Options	Part no. *	Block1	Block2	Block3	Block4
IrDA		xxxx	00x**1**	xxxx	xxxx0
IrDA + pulse in **		xxxx	00x**A**	xxxx	xxxx0
IrDA + pulse out **		xxxx	00x**B**	xxxx	xxxx0
IrDA + M-Bus **		xxxx	00x**C**	xxxx	xxxx0
IrDA + M-Bus + pulse in **		xxxx	00x**D**	xxxx	xxxx0
IrDA + walk-by **		xxxx	00x**E**	xxxx	xxxx0
IrDA + walk-by + pulse in **		xxxx	00x**F**	xxxx	xxxx0
IrDA + AMR **		xxxx	00x**G**	xxxx	xxxx0
IrDA + AMR + pulse in **		xxxx	00x**H**	xxxx	xxxx0

* x = any option code
** In progress

Volume meter
Screwed connection

Options		Supply flow temperature sensor (SF) Return flow temperature sensor (RF)	Part no. * Block1	Block2	Block3	Block4
0.6 m³/h - 110 mm	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**0**xxx	xxxx0
1.5 m³/h - 110 mm	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**1**xxx	xxxx0
2.5 m³/h - 130 mm	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**2**xxx	xxxx0
1.5 m³/h - 80 mm	Return flow installation	SF direct/indirect submersible RF direct/indirect submersible	xxxx	xxxx	**H**xxx	xxxx0
0.6 m³/h - 110 mm	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**J**xxx	xxxx0
1.5 m³/h - 110 mm	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**K**xxx	xxxx0
2.5 m³/h - 130 mm	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**L**xxx	xxxx0
1.5 m³/h - 80 mm	Supply flow installation	SF direct/indirect submersible RF direct/indirect submersible	xxxx	xxxx	**Y**xxx	xxxx0

Volume meter 2"
capsule meter (Ista)

Options		Supply flow temperature sensor (SF) Return flow temperature sensor (RF)	Part no. * Block1	Block2	Block3	Block4
0.6 m³/h - G2	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**4**xxx	xxxx0
1.5 m³/h - G2	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**5**xxx	xxxx0
2.5 m³/h - G2	Return flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**6**xxx	xxxx0
0.6 m³/h - G2	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**M**xxx	xxxx0
1.5 m³/h - G2	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**N**xxx	xxxx0
2.5 m³/h - G2	Supply flow installation	SF direct/indirect submersible RF integrated direct submersible	xxxx	xxxx	**O**xxx	xxxx0

Temperature sensor

Options	Part no. * Block1	Block2	Block3	Block4
5.0 x 45 mm - 1.5 m cable length	xxxx	xxxx	x**0**xx	xxxx0
5.2 x 45 mm - 1.5 m cable length	xxxx	xxxx	x**1**xx	xxxx0
6.0 x 50 mm - 1.5 m cable length	xxxx	xxxx	x**2**xx	xxxx0
acc. to AGFW - 1.5 m cable length	xxxx	xxxx	x**3**xx	xxxx0
5.0 x 45 mm - 3.0 m cable length	xxxx	xxxx	x**4**xx	xxxx0
5.2 x 45 mm - 3.0 m cable length	xxxx	xxxx	x**5**xx	xxxx0
6.0 x 50 mm - 3.0 m cable length	xxxx	xxxx	x**6**xx	xxxx0
acc. to AGFW - 3.0 m cable length	xxxx	xxxx	x**7**xx	xxxx0

Power supply
Supply cycle

Options	Part no. * Block1	Block2	Block3	Block4
Battery 6 years - 36 seconds	xxxx	xxxx	xx**0**x	xxxx0
Battery 10 years - 36 seconds	xxxx	xxxx	xx**1**x	xxxx0
Battery 6 years - 6 seconds	xxxx	xxxx	xx**4**x	xxxx0

* x = any option code

Approval – medium

Options	Part no. *	Block1	Block2	Block3	Block4
Heat MID/Class 3 (standard) Cold without - (heating) water		xxxx	xxxx	xxx**0**	xxxx0
without - (heating) water + Glythermin P44		xxxx	xxxx	xxx**A**	xxxx0
without - (heating) water + Tyfocor L		xxxx	xxxx	xxx**B**	xxxx0
without - (heating) water + Tyfocor N		xxxx	xxxx	xxx**C**	xxxx0
without - (heating) water + Antifrogen L		xxxx	xxxx	xxx**D**	xxxx0
without - (heating) water + Antifrogen N		xxxx	xxxx	xxx**E**	xxxx0
without - (heating) water + Dowcal 20		xxxx	xxxx	xxx**F**	xxxx0
without - (heating) water + Gelbin DC 924 L		xxxx	xxxx	xxx**G**	xxxx0
without - (heating) water		xxxx	xxxx	xxx**X**	xxxx0

Due date

Options	Part no. *	Block1	Block2	Block3	Block4
31.12. (standard)		xxxx	xxxx	xxxx	**0**xxx0
31.01.		xxxx	xxxx	xxxx	**1**xxx0
28.02.		xxxx	xxxx	xxxx	**2**xxx0
31.03		xxxx	xxxx	xxxx	**3**xxx0
30.04.		xxxx	xxxx	xxxx	**4**xxx0
31.05.		xxxx	xxxx	xxxx	**5**xxx0
30.06.		xxxx	xxxx	xxxx	**6**xxx0
31.07.		xxxx	xxxx	xxxx	**7**xxx0
31.08.		xxxx	xxxx	xxxx	**8**xxx0
30.09.		xxxx	xxxx	xxxx	**9**xxx0
31.10.		xxxx	xxxx	xxxx	**A**xxx0
30.11.		xxxx	xxxx	xxxx	**B**xxx0
none		xxxx	xxxx	xxxx	**Z**xxx0

Threshold value (heat/cold recording)

Options	Part no. *	Block1	Block2	Block3	Block4
1.0 / 0.2 K (standard)		xxxx	xxxx	xxxx	x**0**xx0
0.2 / 0.2 K		xxxx	xxxx	xxxx	x**1**xx0
0.5 / 0.5 K		xxxx	xxxx	xxxx	x**2**xx0
1.0 / 0.5 K		xxxx	xxxx	xxxx	x**4**xx0
1.0 / 1.0 K		xxxx	xxxx	xxxx	x**5**xx0

Labeling – Documentation

Options	Part no. *	Block1	Block2	Block3	Block4
German - German (standard)		xxxx	xxxx	xxxx	xx**0**x0
English - English		xxxx	xxxx	xxxx	xx**2**x0
Italian - Italian		xxxx	xxxx	xxxx	xx**3**x0
French - French		xxxx	xxxx	xxxx	xx**4**x0
Spanish - Spanish		xxxx	xxxx	xxxx	xx**5**x0
Greek - Greek		xxxx	xxxx	xxxx	xx**6**x0
Lithuanian - Lithuanian		xxxx	xxxx	xxxx	xx**7**x0
Czech - Czech		xxxx	xxxx	xxxx	xx**8**x0

Display

Options	Part no. *	Block1	Block2	Block3	Block4
kWh (standard)		xxxx	xxxx	xxxx	xxx**0**0
MWh		xxxx	xxxx	xxxx	xxx**2**0
MJ		xxxx	xxxx	xxxx	xxx**3**0
GJ		xxxx	xxxx	xxxx	xxx**4**0

* x = any option code

Installation material

Screw-type meter

Installation sets with RF ball valves	Part no.
Direct measurement installation set R 1/2" with RF ball valves for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K001 001
Direct measurement installation set R 3/4" with RF ball valves for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K001 002
Direct measurement installation set R 1" with RF ball valves for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K001 003
Direct measurement installation set R 1" with RF ball valves for WMZ with qp 2.5 m³/h	HMXI-K001 004
Direct measurement installation set R 3/4" with RF ball valves for WMZ with qp 2.5 m³/h	HMXI-K001 005

Installation sets with RF screwed connections	
Direct measurement installation set R 1/2" with RF screwed connections for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K002 001
Direct measurement installation set R 3/4" with RF screwed connections for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K002 002
Direct measurement installation set R 1" with RF screwed connections for WMZ with q_p 0.6 m³/h and 1.5 m³/h	HMXI-K002 003
Direct measurement installation set R 1" with RF screwed connections for WMZ with q_p 2,5 m³/h	HMXI-K002 004
Direct measurement installation set R 3/4" with RF screwed connections for WMZ with q_p 2.5 m³/h	HMXI-K002 005

Flushing tubes	
Flushing tube G 3/4", 80 mm	FKM0032
Flushing tube G 3/4", 110 mm	FKM0033
Flushing tube G 1", 130 mm	FKM0034

Adapter - Extension sets	
Adapter set G 3/4" x G 1"	HMXI-K003 001
Extension set G 3/4" x G 1", 110 to 130 mm	HMXI-K003 002
Extension set G 3/4" x G 3/4", 110 to 165 mm	HMXI-K003-003
Extension set G 3/4" x G 3/4", 110 to 130 mm	HMXI-K003-004
Extension set G 3/4" x G 1", 110 to 190 mm	HMXI-K003-005

2" capsule meter

Single-pipe connection piece (EAT)

The seals and the cover plate (for flushing the pipes) are not included in the scope of supply, please order separately.

for meters with 0.6 m³/h and 1.5 m³/h	110 mm, G 1/2" and solder 15 mm	FKM0006
for meters with 0.6 m³/h and 1.5 m³/h	110 mm, G 3/4" and solder 18 mm	FKM0005
for meters with 0.6 m³/h and 1.5 m³/h	80 mm, IG 3/4"	FKM0008
for meters with 2.5 m³/h	130 mm, solder 22 mm	FKM0007
Cover plate	for 2"-EAT	FKM0053
Profile gasket	for 2"-EAT and 2" meter	FKS0007

Accessories

Adjustable c-spanner	for mounting/removing 2" capsule meters	HMXI-P002 001
wall fastener	for devices with removable calculator unit	HMRI-K001 001

Ball valves with additional opening for insertion of the temperature sensor

The seals are not included in the scope of supply, please order separately.

		Part no.
for pipe thread R 1/2"		FKM0023
for pipe thread R 3/4"		FKM0024
for pipe thread R 1"		FKM0025

Ball valves

The seals are not included in the scope of supply, please order separately.

for pipe thread R 1/2"	G 3/4"	FKM0027
for pipe thread R 3/4"	G 3/4"	FKM0028
for pipe thread R 1"	G 3/4"	FKM0029
for pipe thread R 3/4"	G 1"	FKM0030
for pipe thread R 1"	G 1"	FKM0031

Screwed connections

The seals are not included in the scope of supply, please order separately.

for pipe thread R 1/2"	G 3/4"	FKM0018
for pipe thread R 3/4"	G 3/4"	FKM0019
for pipe thread R 1"	G 3/4"	FKM0020
for pipe thread R 3/4"	G 1"	FKM0021
for pipe thread R 1"	G 1"	FKM0022

Individual parts for fitting immersion sleeves

Muff for immersion sleeve installation	R 1/2"	FKM0035
Muff for immersion sleeve installation	R 3/4"	FKM0036
Muff for immersion sleeve installation	R 1"	FKM0037
Immersion sleeve for the above-mentioned muffs	G 1/4", Ø 5.0 mm	FKM0038
Immersion sleeve for the above-mentioned muffs	G 1/4", Ø 5.2 mm	FKM0039

Replacement immersion sleeves (for existing external installation sets)

Immersion sleeve	G 1/4", Ø 5,0 mm	FKM0038
Immersion sleeve	M 10x1, Ø 5,0 mm	FKM0051
Immersion sleeve	G 1/4", Ø 5,2 mm	FKM0039
Immersion sleeve	M 10x1, Ø 5,2 mm	FKM0051

Other individual parts

Seal for meter	2 mm, 3/4"	FKS0005
Seal for meter	2 mm, 1"	FKS0006
Leading for temperature sensor or volume meter	wire length 250 mm	FNS0001
Temperature sensor sleeve G 1/4"		FKM0049
Temperature sensor sleeve M 10 x 1		FKM0050

Ordering

The part numbers shown in the type summary must be quoted in orders.

Technology

The heat meter comprises a pair of precise temperature sensors and a volume meter which is installed in a hot water or cooling circuit. An electronic calculator unit continually calculates the difference in temperature between the supply and return flow and multiplies the value by the flow rate. The result of this (current heating or cooling capacity) is cumulated, displayed or forwarded to a data-processing system by radio or cable.
The heat meter is a heat meter that can be extended by various external modules.
In addition, the heat meters can be fitted in the factory with the required type of communication technology.

The **Q heat 5** has three communication interfaces.

1. The IrDA interface accessible from outside. This allows parameters to be set for the **Q heat 5** on site at any time.
2. The module interface, which can be used to retrofit the heat meter for radio or other communication methods. The respective modules are simply mounted on the calculator unit.
3. Alternatively, internal equipping with communication interfaces for radio, impulse output and M-Bus.

Measuring principle

The flow sensor (volume meter) of the screw-type meter works according to the single-jet impeller wheel sensor principle. The water flow hits an impeller wheel radially.
The hydraulic sensor of the capsule meter works according to the multi-jet measuring principle. The water flow hits the impeller wheel symmetrically from the walls of the measuring capsule.
The wheel impeller speed is scanned electronically.
Incorrect direction of flow is detected and indicated by a fault message in the display.

Determining water consumption

Using the measured difference in temperature between supply and return flow, the flow rate and the calculated thermal coefficient, the heat quantity is shown on the LC display in physical units (kWh, MWh, MJ, GJ) following an internal calculation process. To increase measuring accuracy, the density and enthalpy values are determined for every measurement and integrated into the calculation.

Storing the consumption values

The heat consumption values are continually cumulated. The current status is stored at 24.00 h on the due date.
The due date is set with the aid of the two keys or a programming tool, December 31 is the default setting.
Every time the current consumption and the annual consumption is saved, the heat meter calculates a checksum. This can be read out together with the due date value and checked in the billing program. This allows incorrect display readouts (e.g. “switched digits”) to be detected. The stored due date value remains in place for one year.

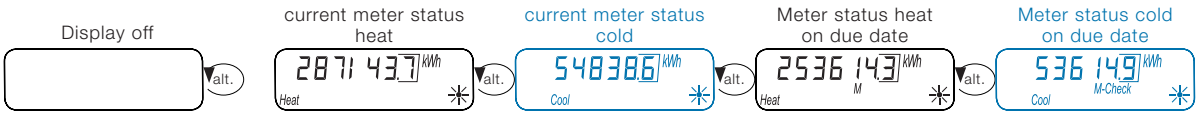
Display

Device states, display units and consumption values are shown via the LC display on several levels (up to 10 levels). The heat meter is equipped with two keys that can be used to switch between the individual display steps and levels.

The meter display is usually switched off and is only activated after a key has been pressed. The display is switched on every 36 seconds, however, to check the function, and shows either the current meter status, the meter status on due day and a fault message, if appropriate.

Quick reading mode

Standard loop (Indicating of meter status is depending on the device configuration)



Fault messages

If the device displays a severe fault, then the error code and the error date will be displayed before the meter status displays.

Incorrect direction of flow

If a wrong flow direction has been identified, then the display “wrong flow direction” is shown before the meter status displays.

Overview Display levels

L0 Current consumption values
Error messages

L1 Annual consumption values

L2 Current values

L3 Parameter

L4 Connections
(integrated communication modules)

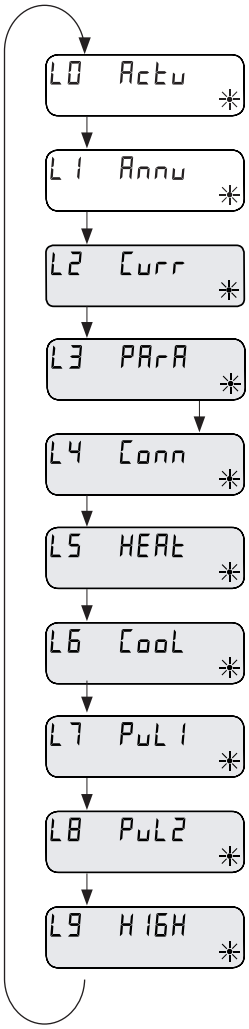
L5 Monthly values heat

L6 Monthly values cold

L7 Monthly values impulse input 1

L8 Monthly values impulse input 2

L9 Maximum values



Standard levels

The levels coloured grey can all be switched off separately.

Key for changing level

Key for moving within a level

Display level L0
Current consumption values

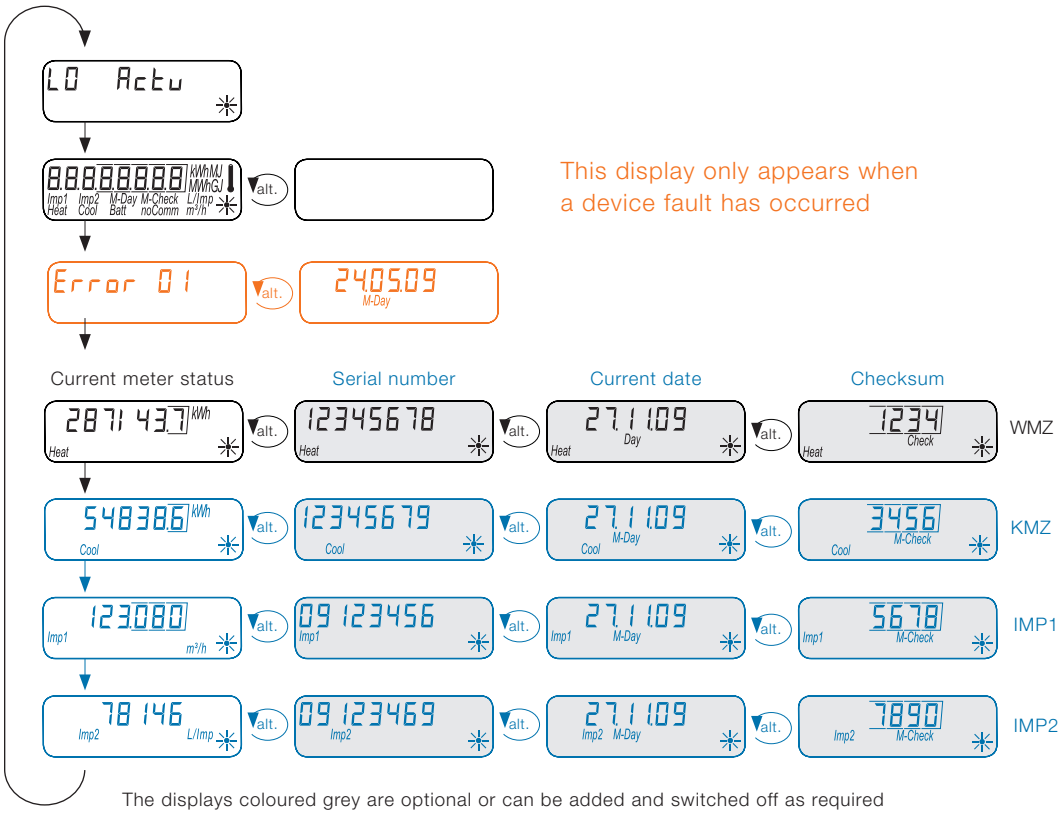
Displays the level

Display test – all on
Display test – all off

Error code
Error date

Current consumption values

These segment blocks depend on the device configuration.

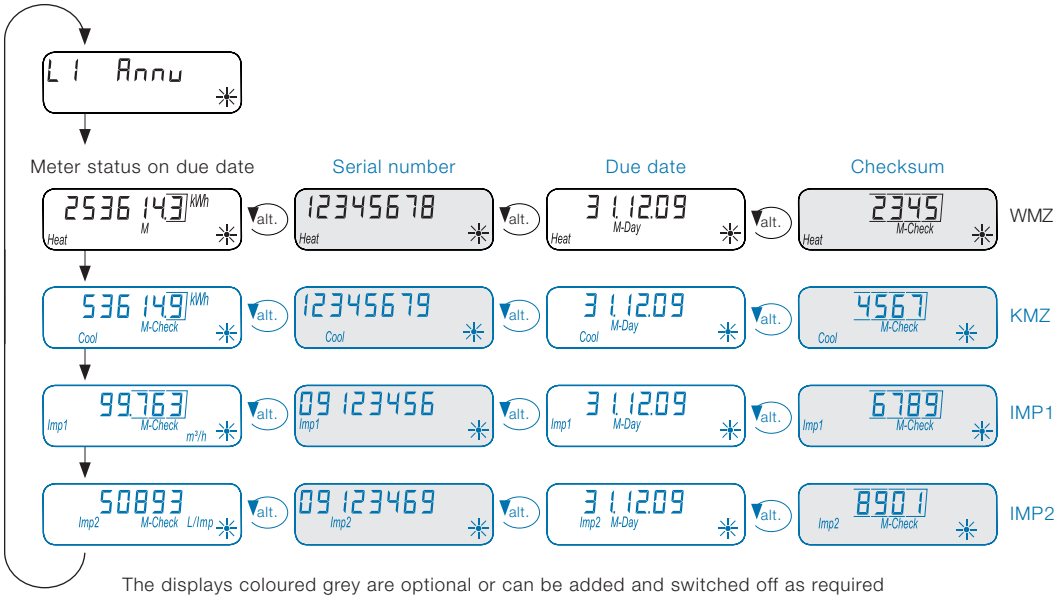


Display level L1
Annual consumption values

Displays the level

Annual consumption values

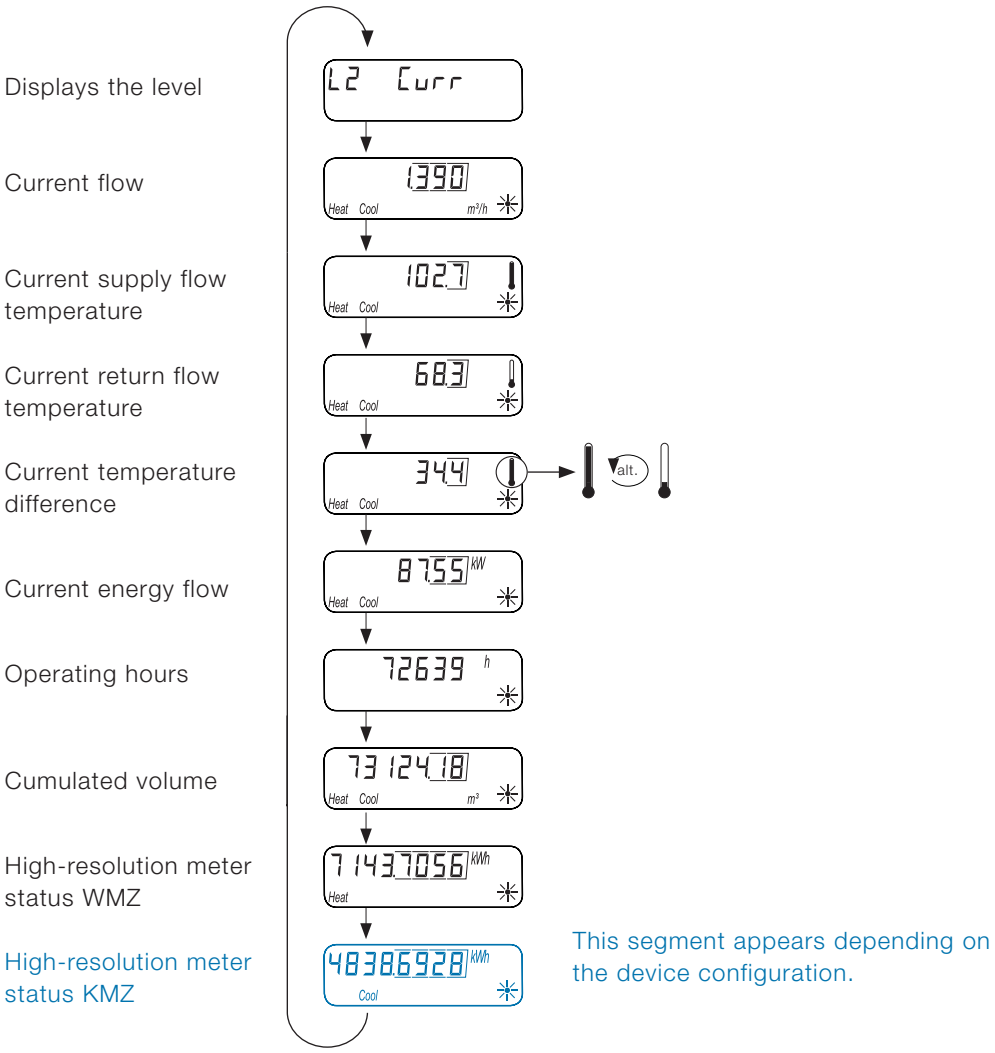
These segment blocks depend on the device configuration.



Key for changing level

Key for moving within a level

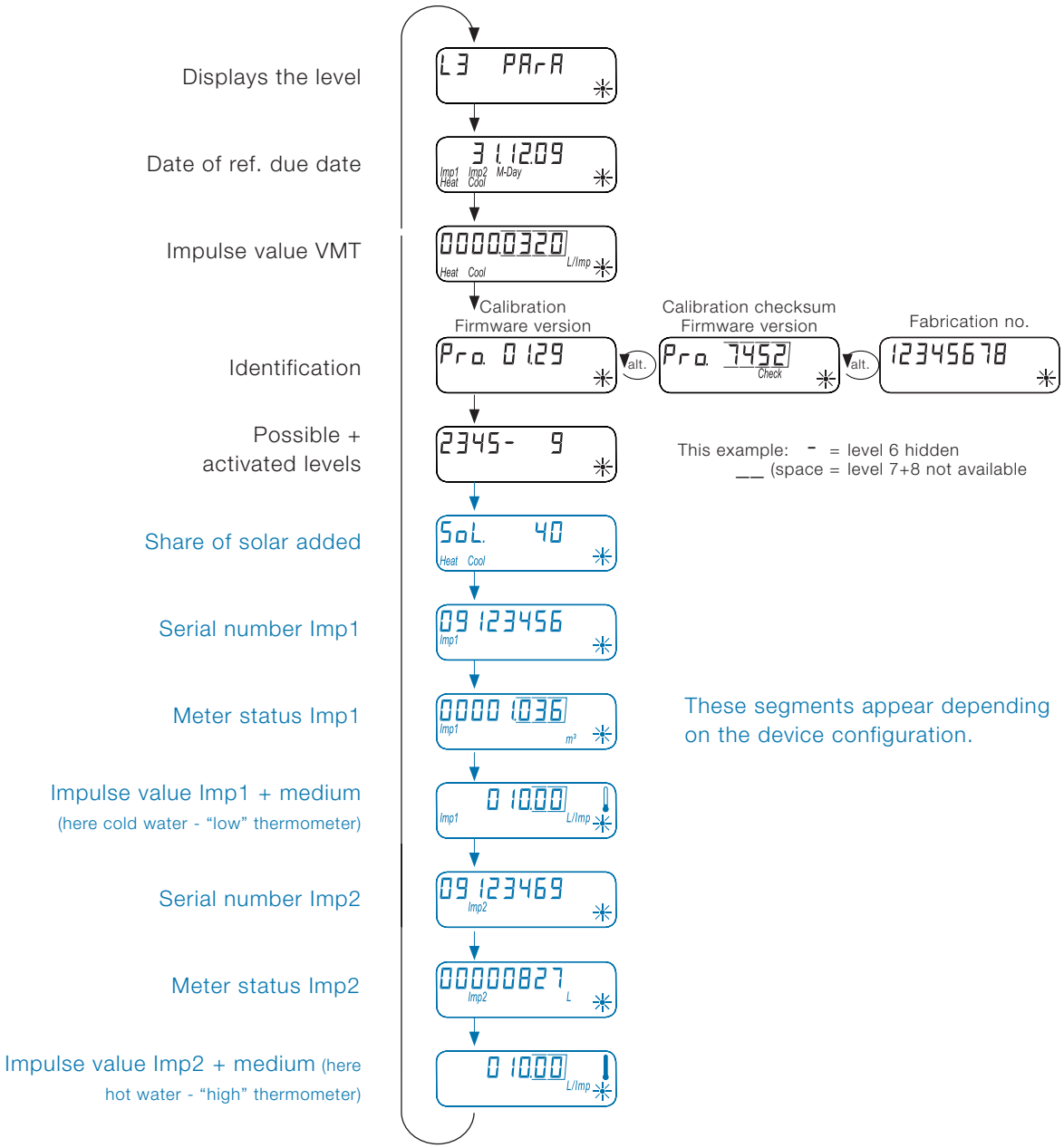
alt. Alternating display



Key for changing level

Key for moving within a level

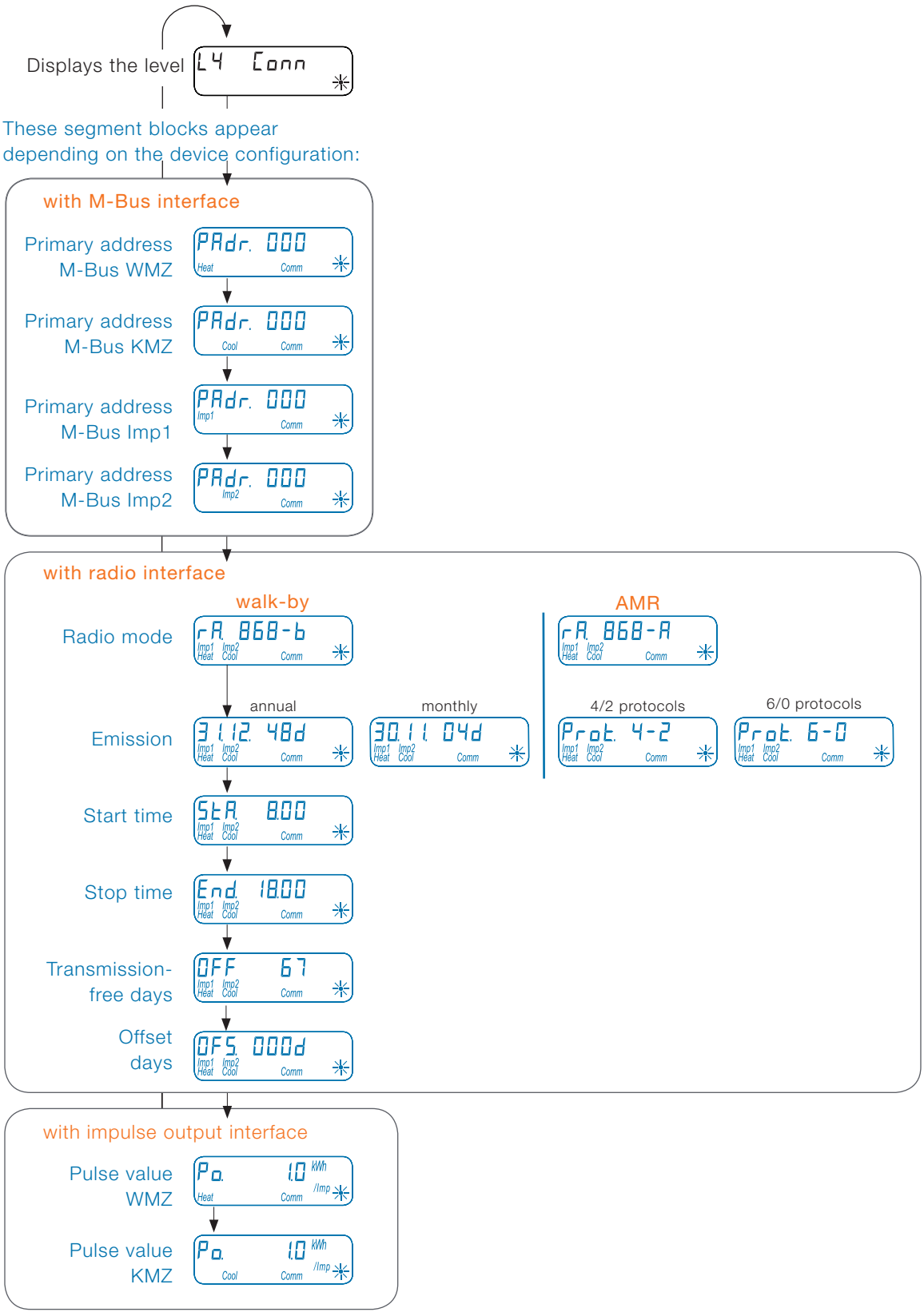
alt. Alternating display



Key for changing level

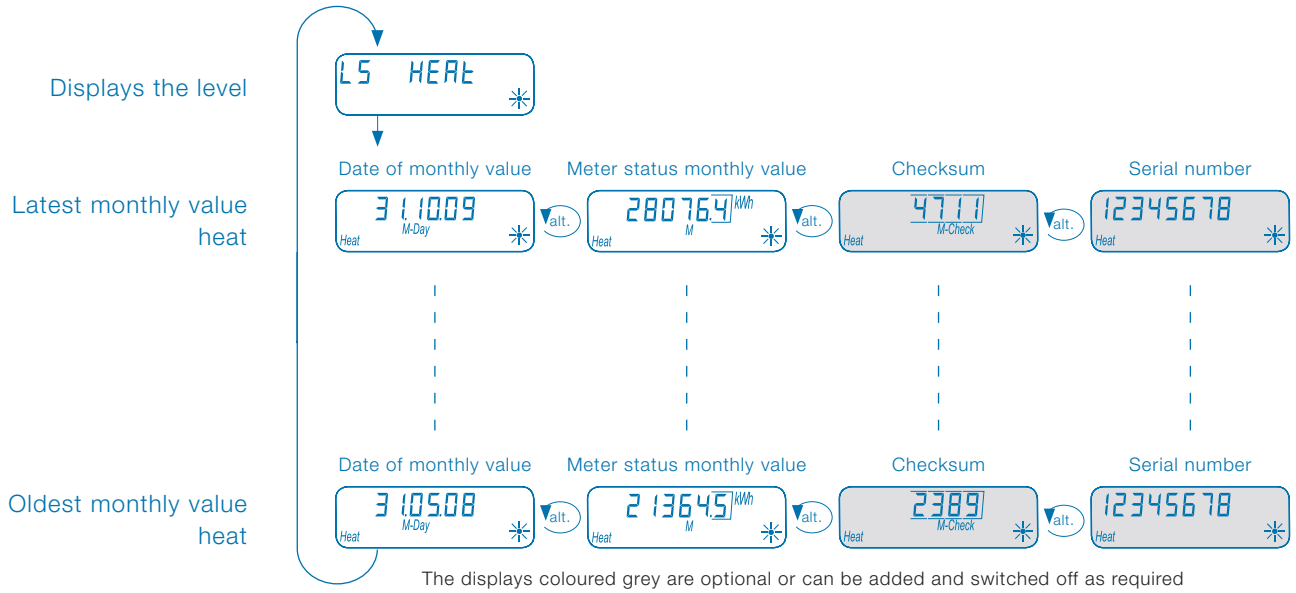
Key for moving within a level

alt. Alternating display


Displays the level
L4 Conn
These segment blocks appear depending on the device configuration:
with M-Bus interface
Primary address M-Bus WMZ
PAdr. 000
Heat Comm
Primary address M-Bus KMZ
PAdr. 000
Cool Comm
Primary address M-Bus Imp1
PAdr. 000
Imp1 Comm
Primary address M-Bus Imp2
PAdr. 000
Imp2 Comm
with radio interface
walk-by
AMR
Radio mode
rA. 868-b
rA. 868-A
annual
monthly
4/2 protocols
6/0 protocols
Emission
31.12. 48d
30.11. 04d
Prot. 4-2
Prot. 6-0
Start time
StA. 8.00
Stop time
End. 18.00
Transmission-free days
OFF 67
Offset days
OFS. 000d
with impulse output interface
Pulse value WMZ
Po. 1.0 kWh /Imp
Pulse value KMZ
Po. 1.0 kWh /Imp
Key for changing level
Key for moving within a level

Display level L5
Monthly values heat

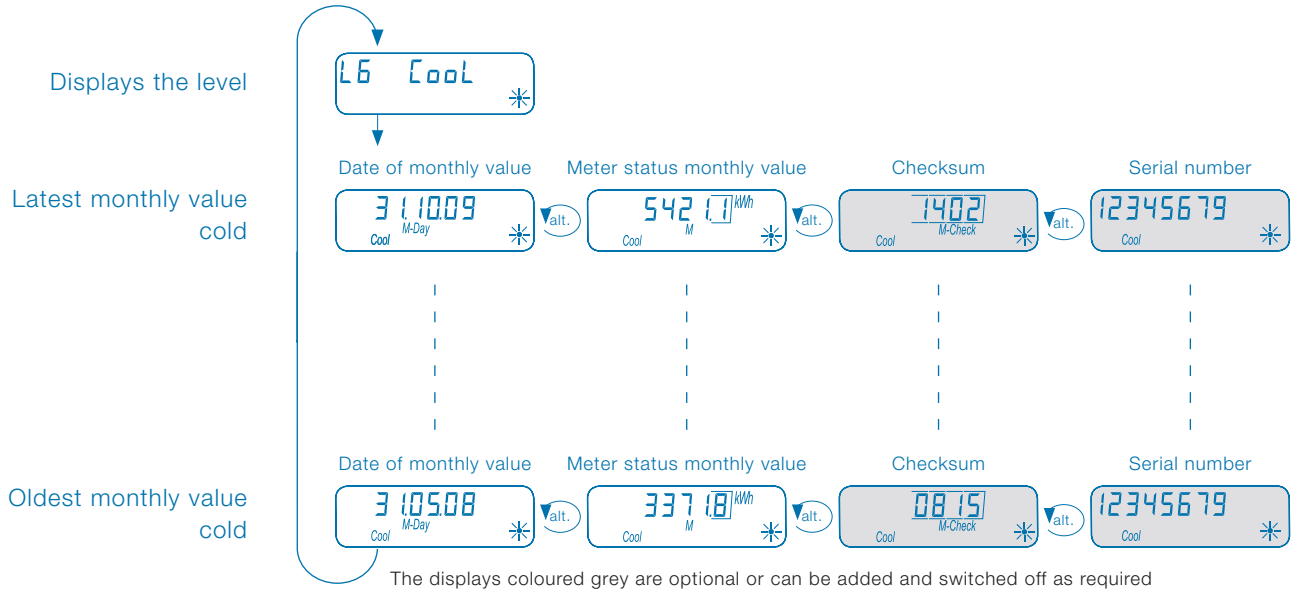
This level is only displayed when the device has been configured for heat metering.



The displays coloured grey are optional or can be added and switched off as required

Display level L6
Monthly values cold

This level is only displayed when the device has been configured for cold metering.



The displays coloured grey are optional or can be added and switched off as required

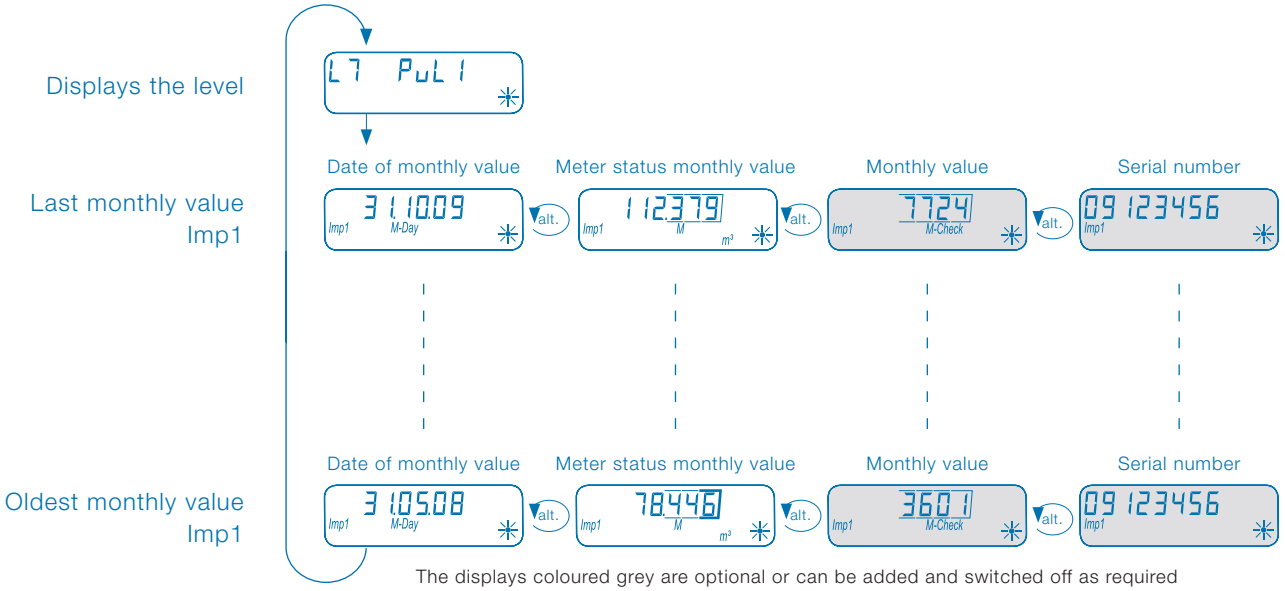
Key for changing level

Key for moving within a level

alt. Alternating display

Display level L7
Monthly values Imp1

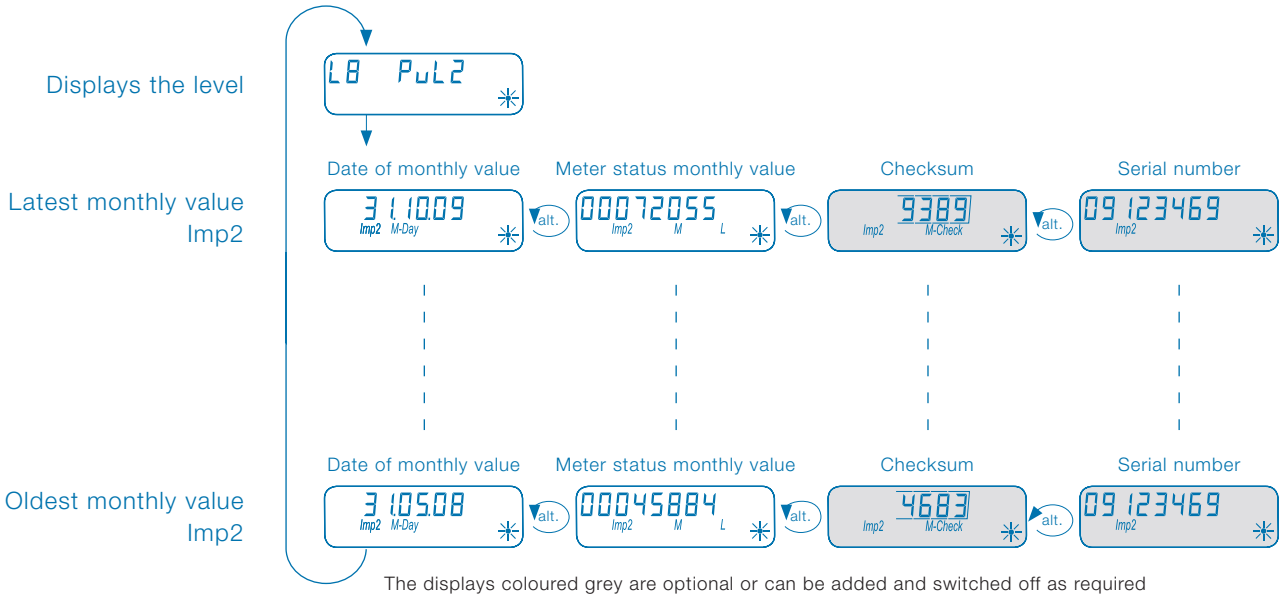
This level is only displayed if there is an additional meter switched to impulse input 1.



The displays coloured grey are optional or can be added and switched off as required

Display level L8
Monthly values Imp2

This level is only displayed if there is an additional meter switched to impulse input 2.

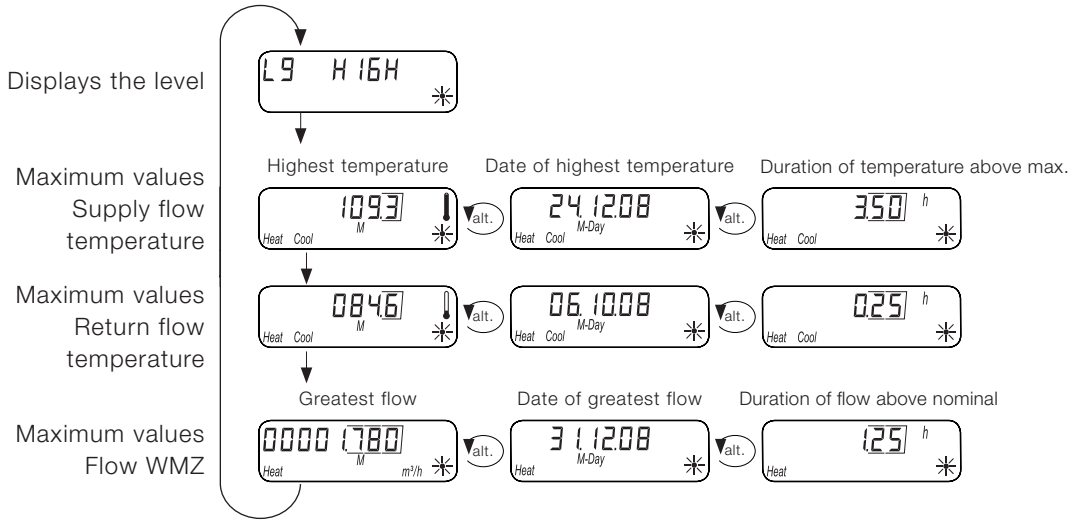


The displays coloured grey are optional or can be added and switched off as required

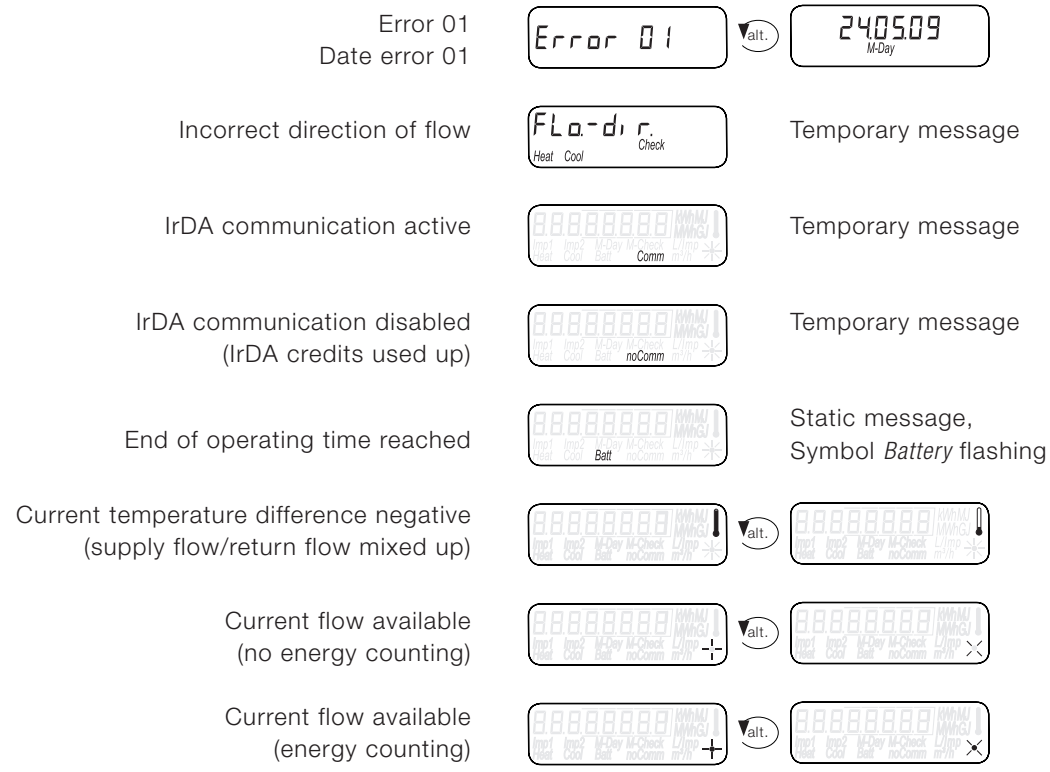
Key for changing level

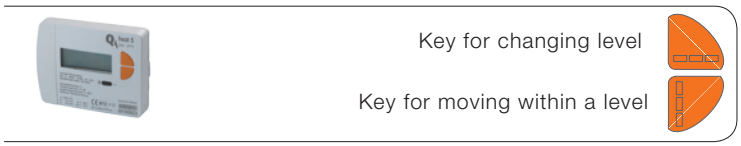
Key for moving within a level

alt. Alternating display



Fault and status messages





alt. Alternating display

Parameter-setting possibilities

With PC

~ Reference due date
~ Password for close-range interface
~ Display in kWh or MWh or MJ or GJ
~ Selection of the levels to be displayed

In addition, for devices with 2 additional impulse inputs:
~ Serial number of the external meters
~ Impulse values of the external meters
~ Starting counting statuses of the external meters
~ Medium can be chosen from water or hot water

In addition with M-Bus devices:
~ Primary addresses for heat, cold, impulse 1, impulse 2

In addition for walk-by devices:
~ Time delay (offset) in days to the readout day
~ Weekdays without telegram transmission
~ Transmission period within one day (e.g. from 8 am to 6 pm CET)
~ Changing parameter setting for use in **Q AMR** system (not reversible)

Independently of the readout time set, the measuring devices transmit status information several times a day.

In addition with devices with solar adaptation:
~ Share of glycol or brine

Via keys

~ Reference due date
~ Display in kWh or MWh or MJ or GJ
~ Selection of the levels to be displayed

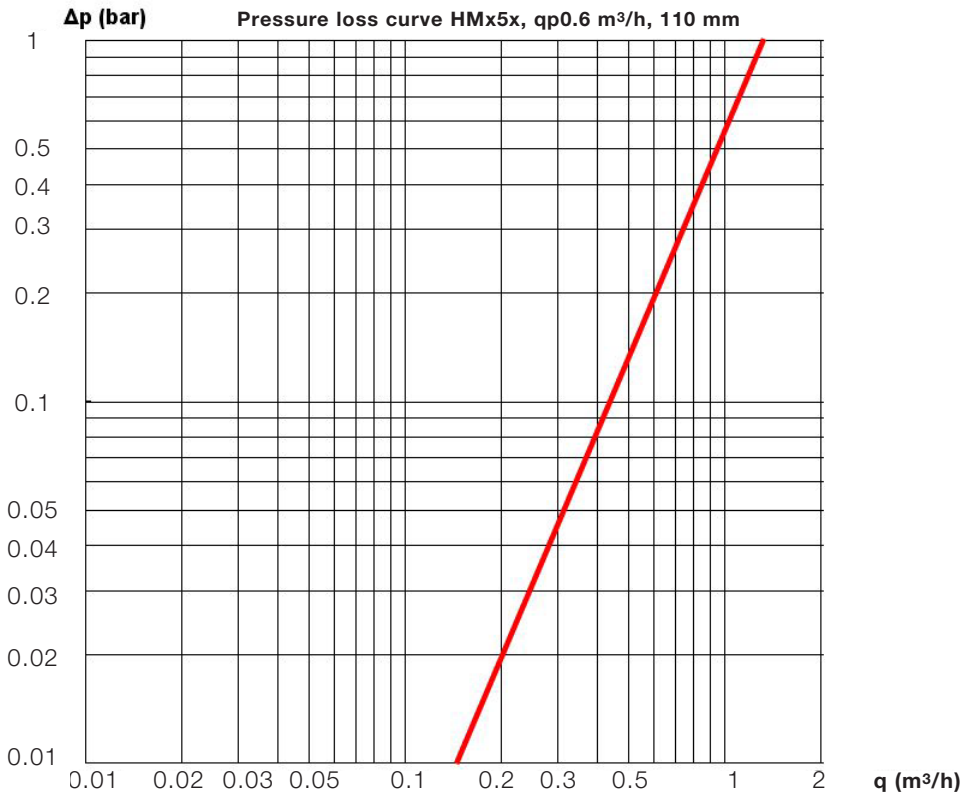
In addition, for devices with 2 additional impulse inputs:
~ Serial number of the external meters
~ Impulse values of the external meters
~ Starting counting statuses of the external meters
~ Medium can be chosen from water or hot water

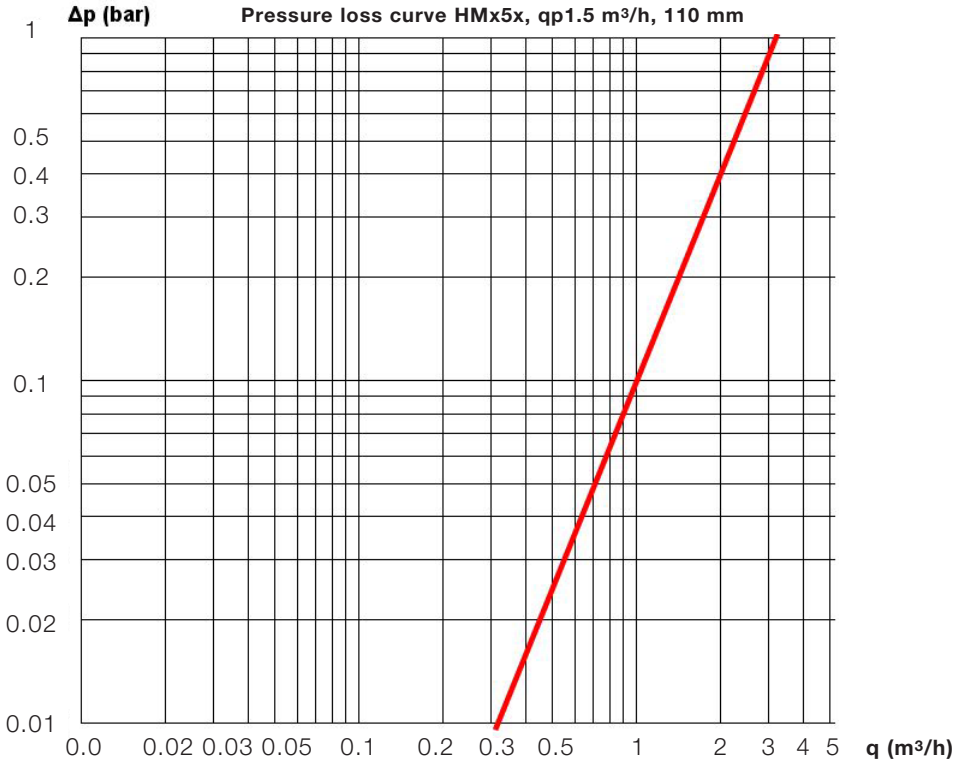
In addition with M-Bus devices:
~ Primary addresses for heat, cold, impulse 1, impulse 2

In addition with devices with solar adaptation:
~ Share of glycol or brine

Pressure loss curves

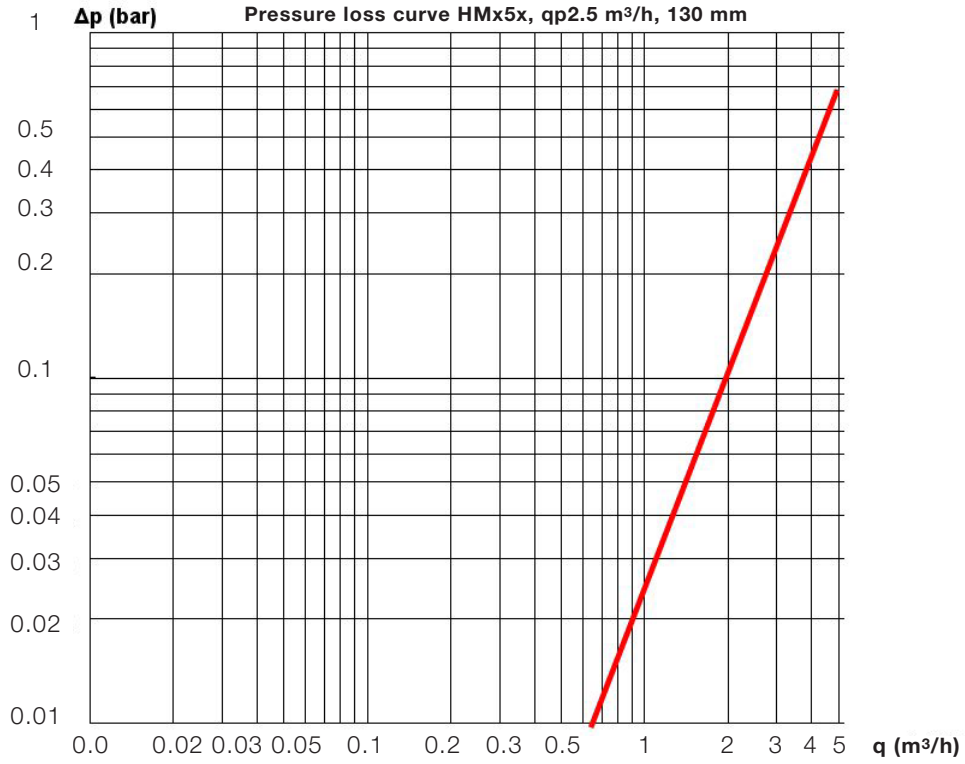
Screw-type meter



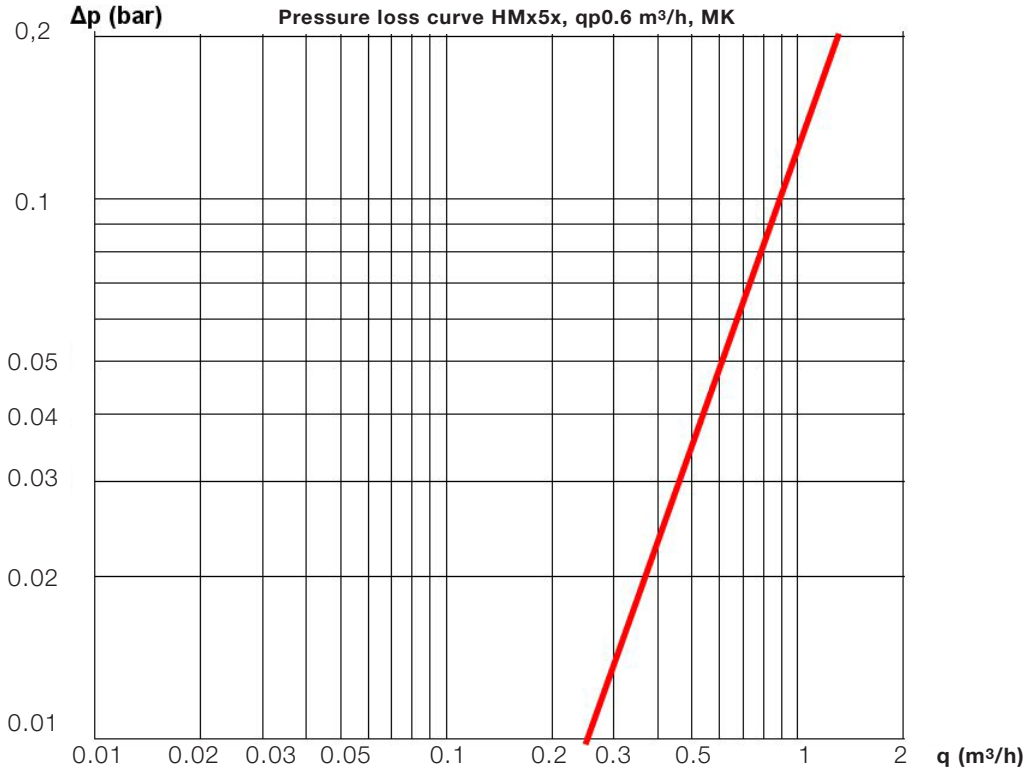


Δp Loss of pressure in bar q Flow rate in m³/h

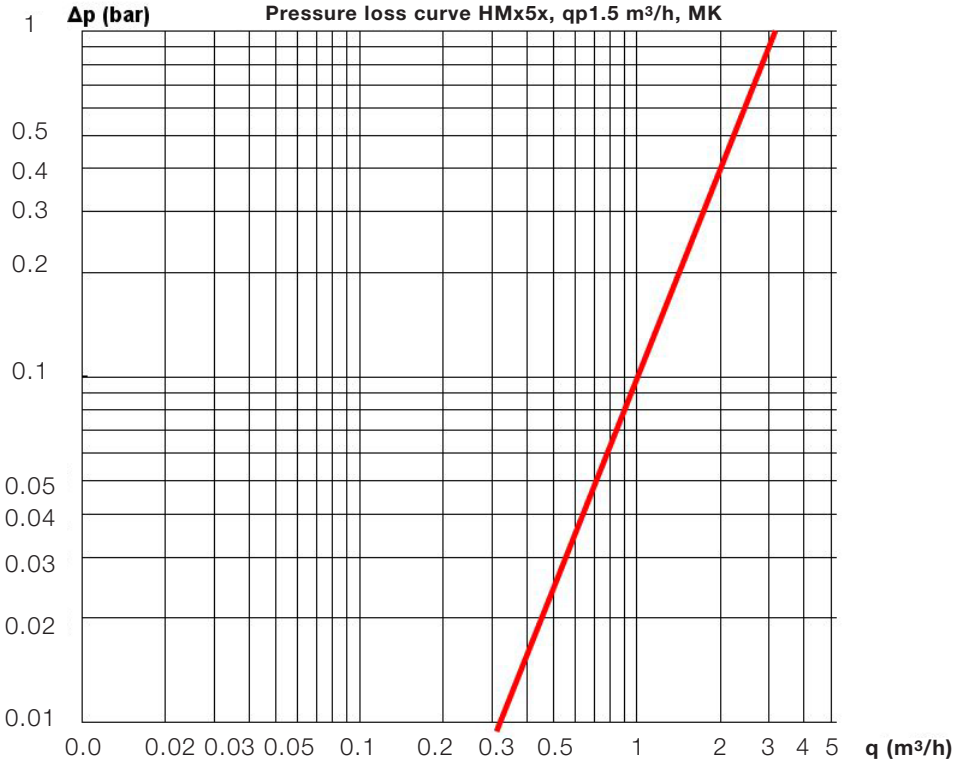
Screw-type meter

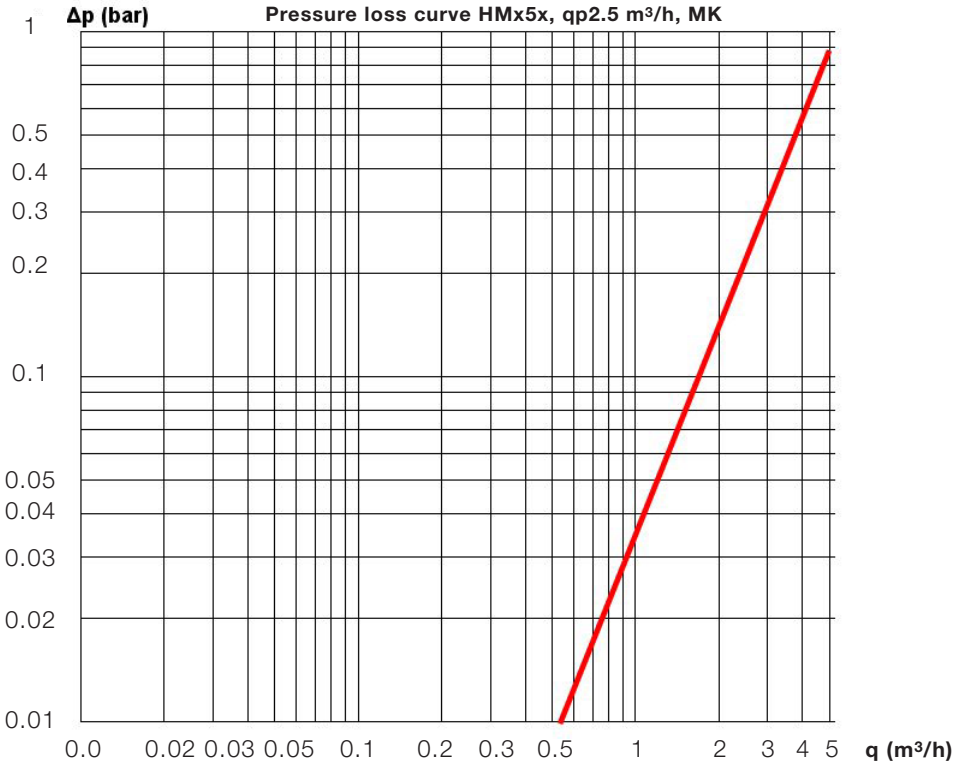


2" capsule meter



Δp Loss of pressure in bar q Flow rate in m³/h





Δp Loss of pressure in bar q Flow rate in m³/h

Technical data

Standards

CE conformity	see declaration of conformity
Electromagnetic compatibility	
Interference resistance	EN 61000-6-2
Emitted interference	EN 61000-6-3
Protection rating	
IP protection rating	IP65 according to EN 60529
Heat meter	
European Measuring Instruments Directive (MID) EC type-examination certificate	2004/22/EC DE-12-MI004-PTB009
Heat meter	EN1434
Quality of heat medium	VDI guideline 2035
Impact values	
Electromagnetic class	E1
Mechanical class	M1
Environment class	A
Measuring accuracy class	3

Calculator unit

Temperature range	
as heat meter as heat/cold meter	15... 90 °C 5... 90 °C
Calibrated temperature difference Temperature difference by start of metering	3 - 70 K Heat: 1.0 K / Cold: 0.2 K (selectable by Part no.)
Ambient temperature	5 ... 55 °C
Energy supply	
Lithium battery	Nominal voltage 3.0 V
Service life	> 6 (opt. 10) years + 6 months reserve
Display levels	
Standard	up to 10 (depending on the design and the included options)
Display	8-digit LCD
Energy display	kWh, MWh (opt. MJ, GJ)

Temperature sensor

Measuring element		PT 1000 according to EN 60751
Execution		Type DS
Diameter of conduit		5.0 mm – 5.2 mm – 6.0 mm – AFGW
Type of installation		5.0 mm - direct (ball valve) / indirect (immersion sleeve)* 5,2 mm - direct (ball valve) / indirect (immersion sleeve)* 6,0 mm - indirect (immersion sleeve)* AGFW - direct (ball valve)
Cable length	Standard	1.5 m
	Optional	3.0 m

* Heed national and country-specific regulations concerning the use of immersion sleeves.

Flow sensor
Screw-type meter

Connection sizes and dimensions		**0.6 m³/h**	**1.5 m³/h**	**1.5 m³/h**	**2.5 m³/h**
Length		**110 mm**	**80 mm**	**110 mm**	**130 mm**
Connection		G ¾ B	G ¾ B	G ¾ B	G 1 B
Ground	compact removable	668 g 820 g	575 g 709 g	650 g 802 g	743 g 895 g
Installation position		horizontal/vertical			
Nominal flow qp		**0,6 m³/h**	**1,5 m³/h**	**1,5 m³/h**	**2,5 m³/h**
Minimum flow qi	horizontal vertical	24 l/h 24 l/h	30 l/h 30 l/h	30 l/h 30 l/h	50 l/h 50 l/h
Ratio qp/qi	horizontal vertical	25:1* 25:1	50:1 50:1	50:1* 50:1	50:1* 50:1
Ratio qs / qp		2:1			
Start-up		3-4 l/h	4-5 l/h	4-5 l/h	6-7 l/h
Max. permissible operating pressure Min. system pressure to prevent cavitations		16 bar 1 bar			
Temperature range		10 ... 90 °C			

Flow sensor
2” capsule meter

Connection sizes and dimensions		**0,6 m³/h**	**1,5 m³/h**	**2,5 m³/h**
Installation length of the EAT		**110 mm**	**110 mm**	**130 mm**
Pipe connection		G 3/4" Solder 15 mm or 18 mm		G 1" Solder 22 mm
Ground	compact removable	605 g 757 g	605 g 757 g	607 g 759 g
Installation position		horizontal/vertical		
Meter thread at the EAT		G 2 B	G 2 B	G 2 B

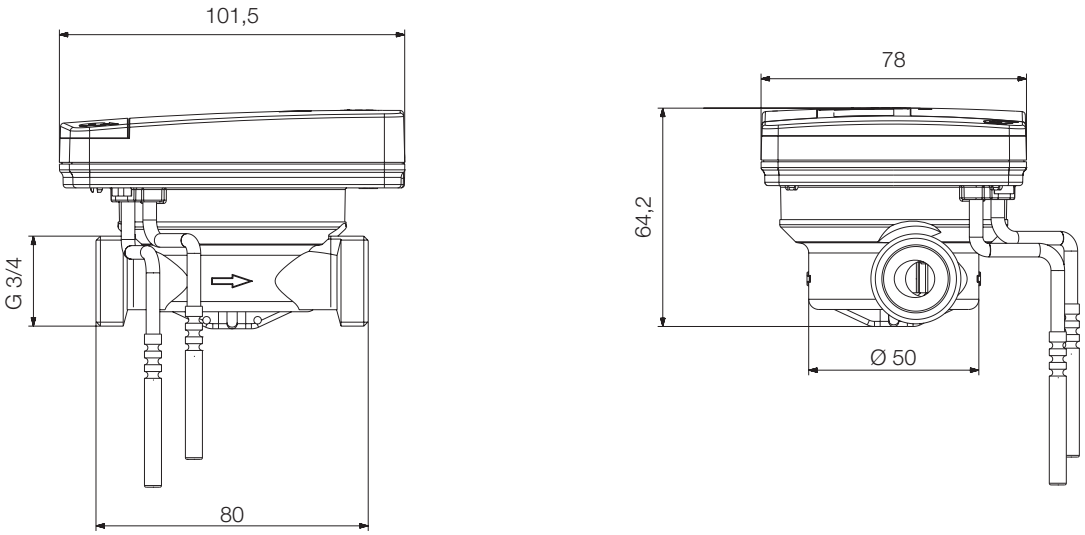
Nominal flow qp		**0,6 m³/h**	**1,5 m³/h**	**2,5 m³/h**
Minimum flow qi	horizontal vertical	30 l/h 30 l/h	30 l/h 30 l/h	50 l/h 50 l/h
Ratio qp/qi	horizontal vertical	20:1* 20:1*	50:1* 50:1	50:1* 50:1
Ratio qs / qp		2:1		
Start-up		3-4 l/h	4-5 l/h	6-7 l/h
Max. permissible operating pressure Min. system pressure to prevent cavitations		16 bar 1 bar		
Temperature range		10 ... 90 °C		

* As an option, variants with a higher dynamic range are also available

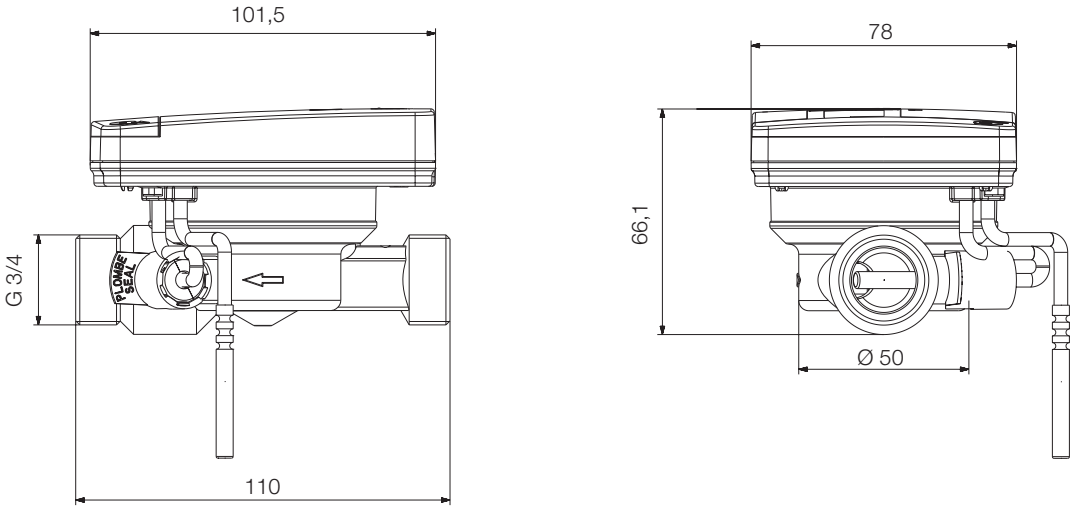
Dimensional drawing

Screw-type meter
Compact

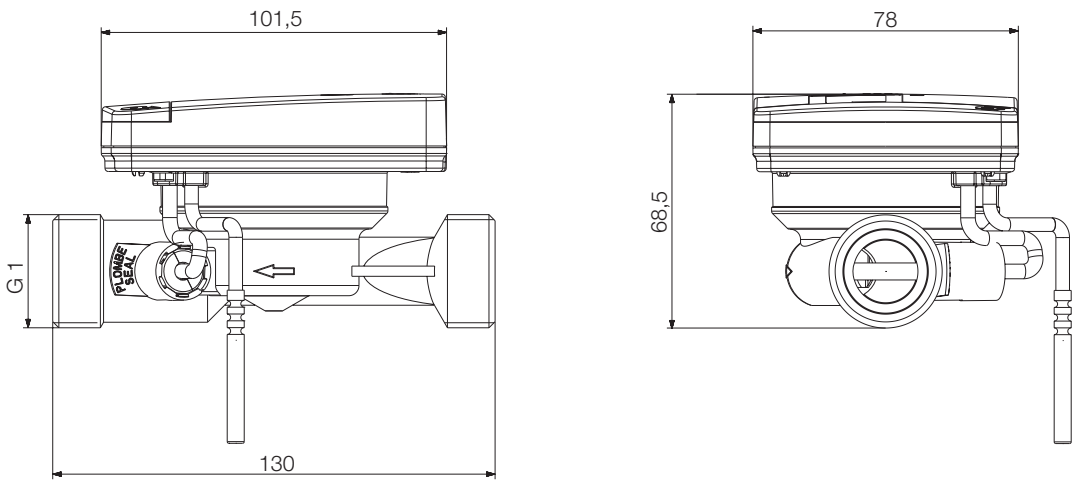
Installation length 80 mm



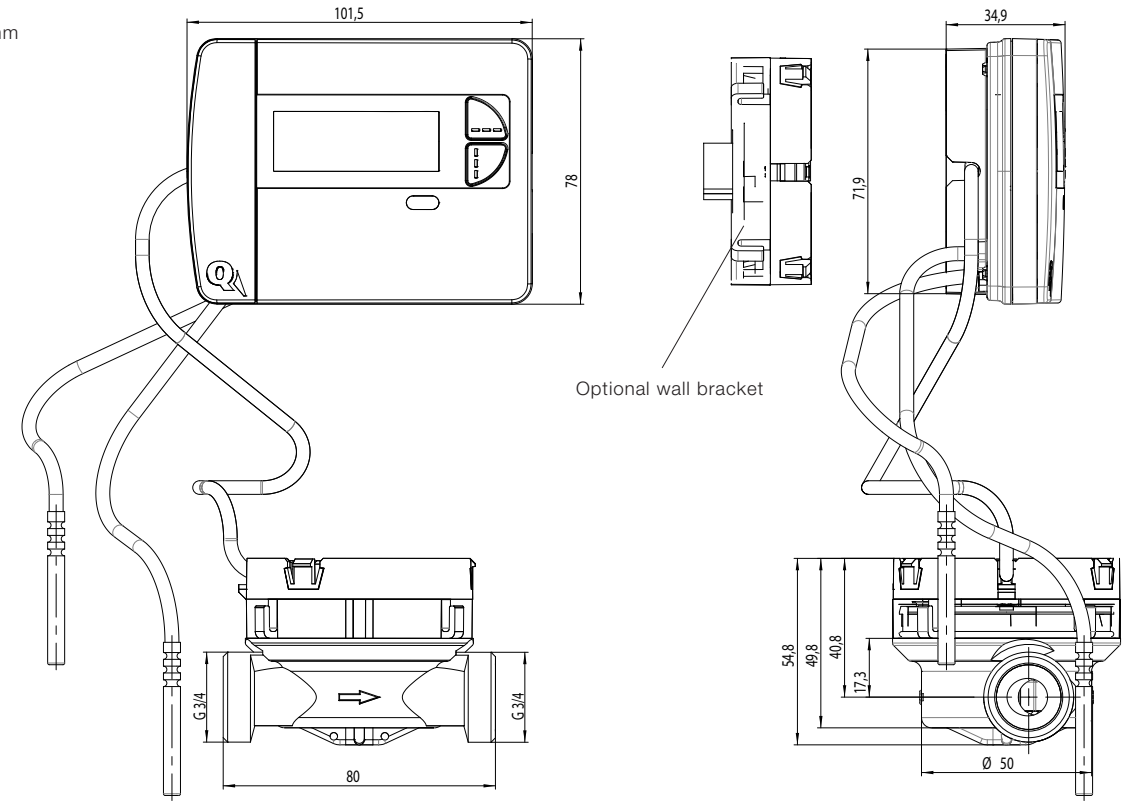
Installation length 110 mm



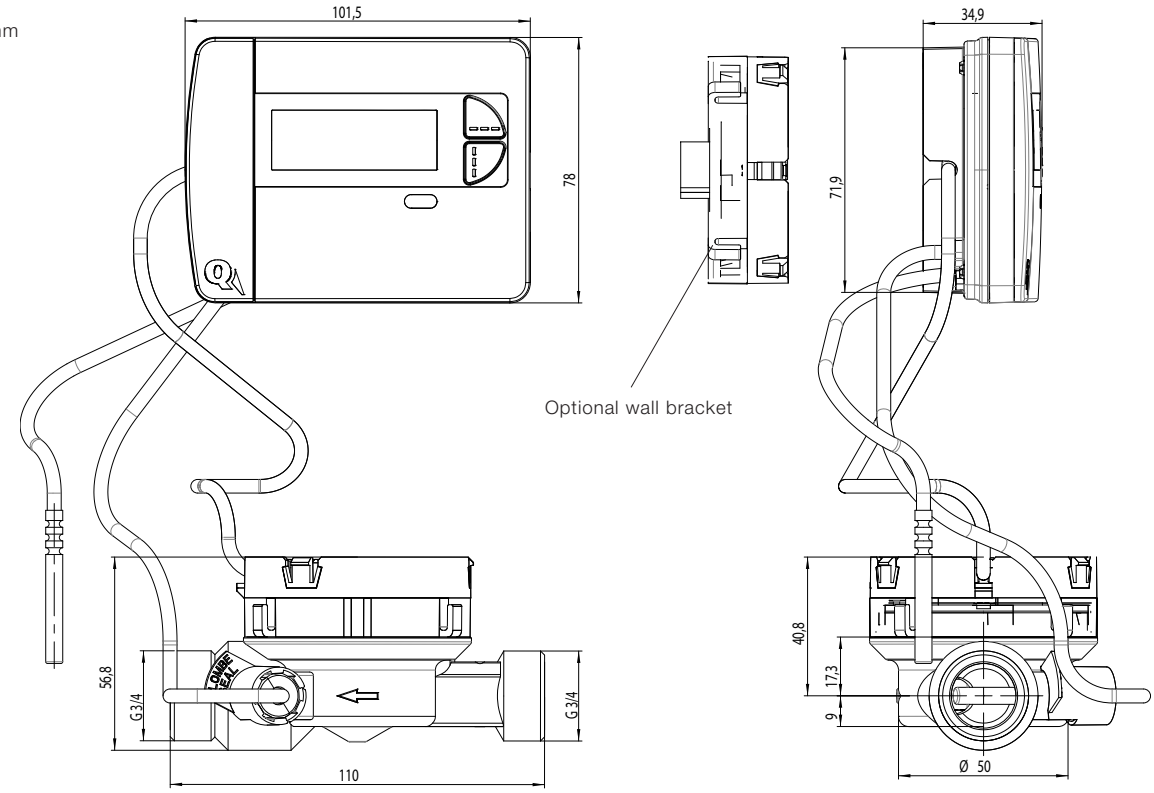
Installation length 130 mm



Installation length 80 mm

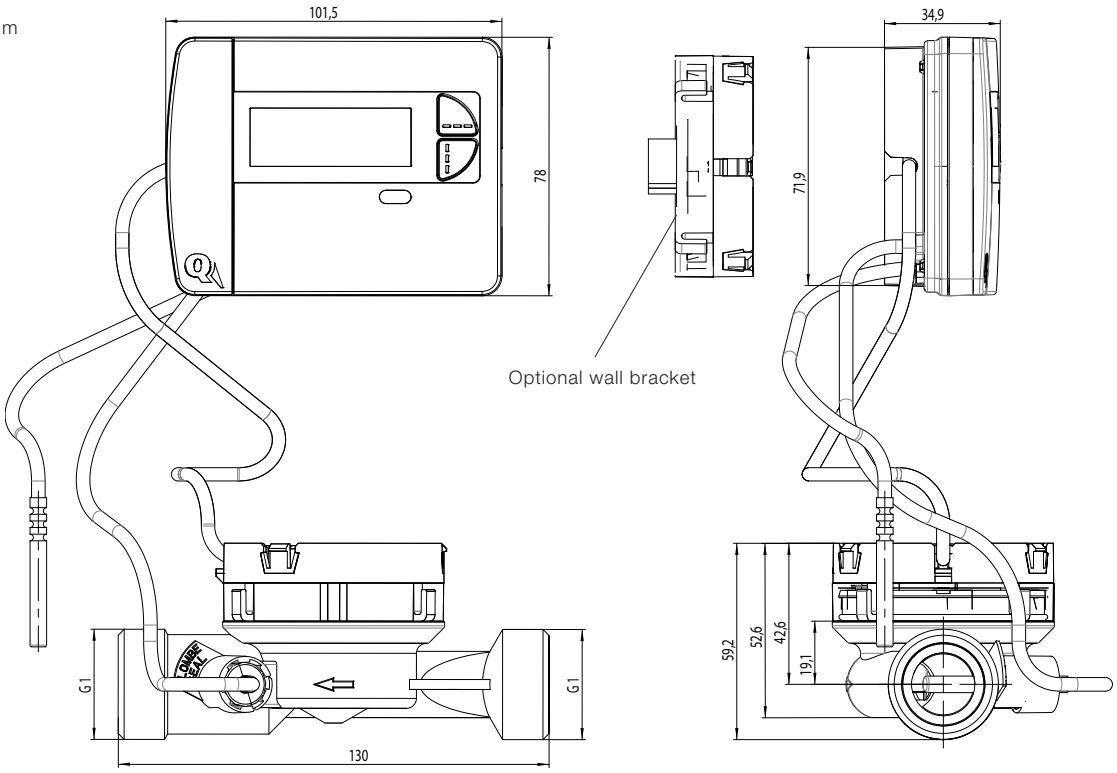


Installation length 110 mm

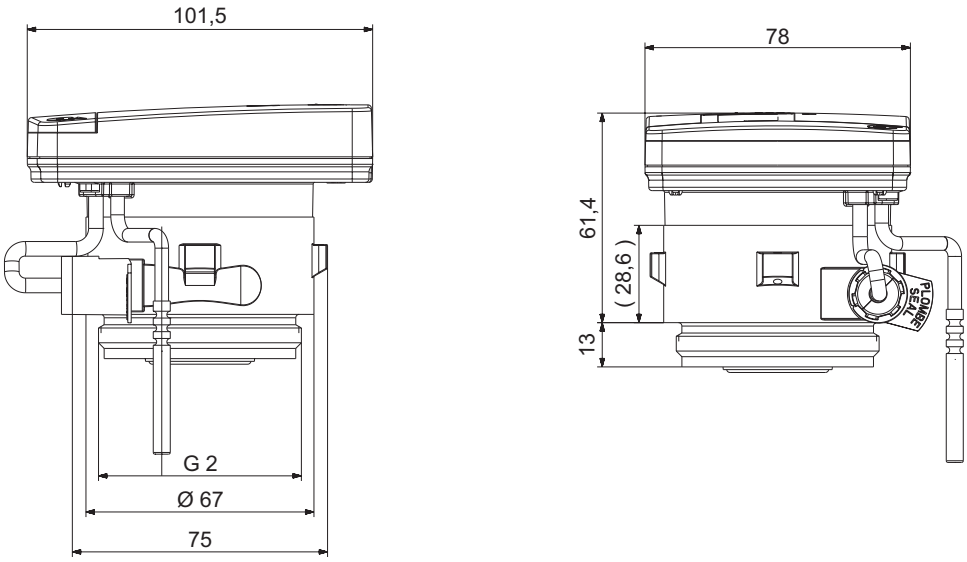


Screw-type meter
Removeable

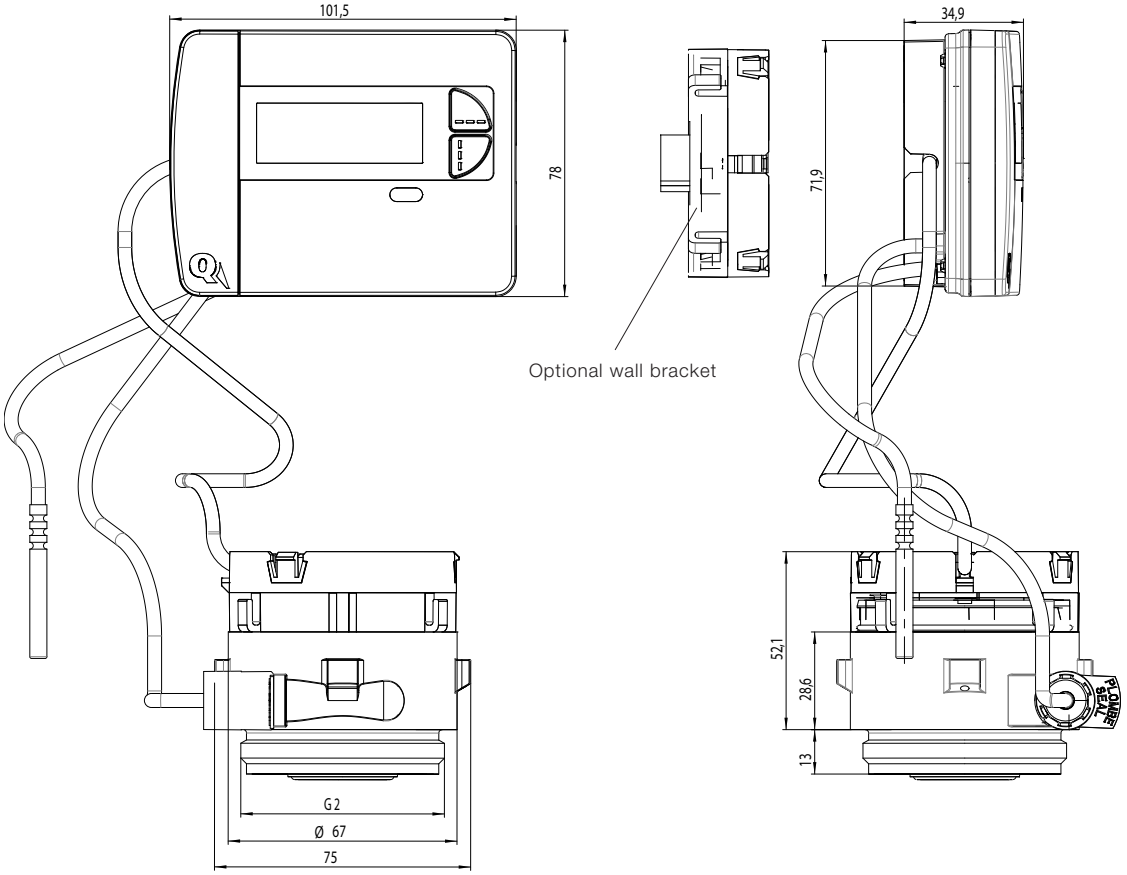
Installation length 130 mm



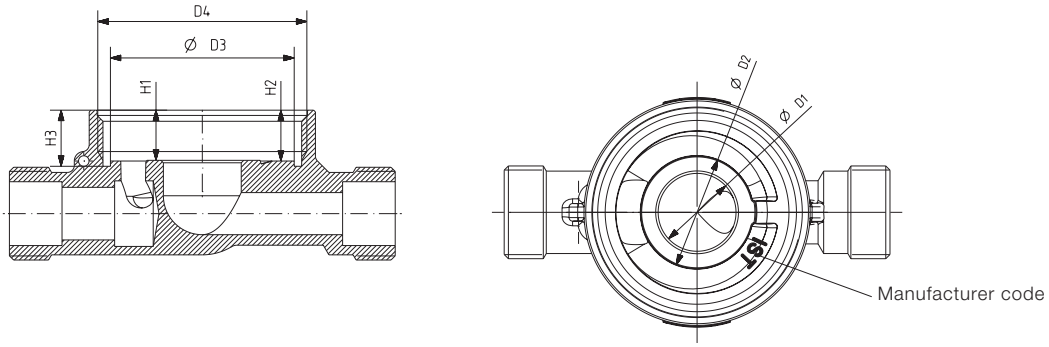
2“ capsule meter
Compact



2” capsule meter
Removeable



Single-pipe
connection piece (EAT)



Ø D1 (mm)	Ø D2 (mm)	Ø D3 (mm)	D4	H1 (mm)	H2 (mm)	H3 (mm)
22,2 ± 0,2	32,2 ± 0,2	52,4 ± 0,2	G 2-B	14,3 + 0,2	14,5 + 0,2	16 + 0,2

QUNDIS GmbH
Sonnentor 2
99098 Erfurt / Germany
Tel.: +49 361 26 280-0
Fax: +49 361 26 280-175
Mail: info@qundis.com