



Heat and cold meter
Q heat 5.5 US M-Bus / Impuls-IN

Static ultrasonic heat and cold meter

- › Precise and durable ultrasonic measurement technology
- › Flow sensor in all-metal design with nominal flow rate q_p 0,6-10 m³/h
- › Integrated M-Bus interface and two pulse inputs for integration into a Q M-Bus system
- › Flexibility by changing the return and supply flow as well as the energy unit
- › Heat meter and heat meter with cooling option
- › Short and static temperature measurement cycle
- › Compact design and detachable calculator unit
- › Any installation position without restrictions

Application

The measuring device is used to record heat energy or cold energy. The main areas of application are supply systems with a central heating or cooling circuit in which only water is used as the energy medium.

Features

- › flow sensor in all-metal design with nominal flow Q_p 0.6 m³/h ... 10. m³/h
- › contamination-resistant ultrasonic measurement process
- › position-independent, high dynamic range up for detection of smallest flow rates
- › integrated M-Bus interface and two pulse inputs for integration into a Q M-Bus system
- › optionally also available with integrated M-Bus interface only
- › system optimisation possible via extended M-Bus data telegram
- › Flexibility during commissioning by switching the return and supply flow without exchanging the temperature sensors as well as changing the energy unit
- › Available as heat meter and heat meter with cooling option
- › Standard ort and static temperature measurement cycle every 12 seconds (with 10 year battery) - ideal for use in central supply facilities
- › Compact design and detachable calculator unit as standard for tight and difficult-to-access installation situations
- › any installation position, also „overhead“
- › user-friendly parameter setting via the IR interface via Q app and Q tool or directly via the device buttons

Technical data

General



QUNDIS GmbH hereby declares that the heat meter with ultrasonic Q heat 5.5 US M-Bus / Impuls-IN complies with directives 2011/65/EU (RoHS) and 2014/30/EU (EMC) and 2014/32/EU (MID).

The full text of the EU Declaration of Conformity is available at the following Internet address: <https://qundis.com/service/downloads-and-information/eu-declaration-of-conformity/#qr01>

Ambient conditions

Protection rating	Calculator unit: IP65 according to EN 60529 Flow sensor: IP65 according to EN 60529
Transport	-25 °C ... 70 °C, < 95 % r.F. (without condensation)
Storage	-5 °C ... 45 °C, < 95 % r.F. (without condensation)
Usage	5 °C ... 55 °C, < 95 % r.F. (without condensation)
Medium	Only use water without chemical additives as the medium for this device. Glycol additives or sodium chloride NaCl (common salt) are expressly not permissible.

Standards

Interference resistance and interference emission	EN 301 489-1, EN 301 489-3
Security	EN 62368-1, EN 62479
Quality of the heating medium	according to VDI guideline 2035, AGFW standard 510

Influencing quantities

Electromagnetic class	E1
Mechanical class	M2
Ambient class	A
Measuring accuracy class	3/2 (depending on flow sensor)

Calculator unit Temperature range

as heat meter	0 °C ... 105 °C
as heat meter with cooling option ¹	0 °C ... 105 °C

Calculator unit Temperature difference range

as heat meter	3 K ... 70 K
as heat meter with cooling option	3 K ... 70 K
start of metering temperature difference	0.2 K

Power supply

Lithium battery	Nominal voltage 3.0 V
Lithium content	0.86 g
Battery type	CR17450E-R
Batteries per device	1 (replaceable)
Battery life	7 (optional 10) years

Display levels

Display	8-digit LCD + pictograms
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¹ Cold register not assessed for conformity. National regulations must be observed.

Display levels

Display consumption value	kWh - MWh
	MJ - GJ
	kWh - MJ (only up to 50 litres cumulative flow rate)
	MWh - GJ (only up to 50 litres cumulative flow rate)

Cable length Calculator unit - Flow sensor

Cable length	80 cm
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Technical data Communication

Connection cable		OUT		IN	
Function		M-Bus		Pulse inputs	
Length		3 m		1 m	
within Scope of delivery		included		included for variants with pulse inputs	
Protection class		IP65			
Cable ends		End sleeves			
Cable sheathing		PVC			
Connection cable - Colour assignment					
Pulse input		Imp1	orange (ground)	brown	
		Imp2	red (ground)	black	
M-Bus		M-Bus	orange (not assigned)	brown (not assigned)	
		M-Bus	red	black	
Specifications M-Bus					
Possible readouts per day		96 (every 15 minutes) ²			
Baud rate		300, 2400			
Pulse input specification					
Class		according to EN 1434-2, Class IB, Restriction: Switching threshold at low level max. 0.25 V			
Pulse length		≥ 100 ms			
Pulse frequency		≤ 5 Hz (2.5 Hz with filter setting „on“)			
Current source		≤ 0.1 mA			
Number of pulse inputs		2			
Specification of impulse outputs of connected consumption meters					
Magnetic switch		Reed contact			
Integrated circuit		Open collector			
Namur sensor		not possible			

² if readings are taken less frequently, unused "credits" are stored in the device

Technical data Temperature sensor

Temperature sensor	
Measuring element	Pt1000 according to EN 60751
Version	Type DS
Diameter Ø	5.0 mm - 5.2 mm - 6.0 mm - AGFW
Installation variant ³	5.0 mm - direct (Ball valve) / indirect (Immersion sleeve) 5.2 mm - direct (Ball valve) / indirect (Immersion sleeve) 6.0 mm - direct (Ball valve) / indirect (Immersion sleeve) AGFW 27.5 mm - direct (Ball valve) AGFW 38 mm ($\geq q_p$ 3.5 m ³) - direct (Ball valve)
Cable length	Standard: 1.5 m Optional: 3.0 m

³ Observe national and country-specific regulations on the use of immersion sleeves!

Technical data Flow sensor

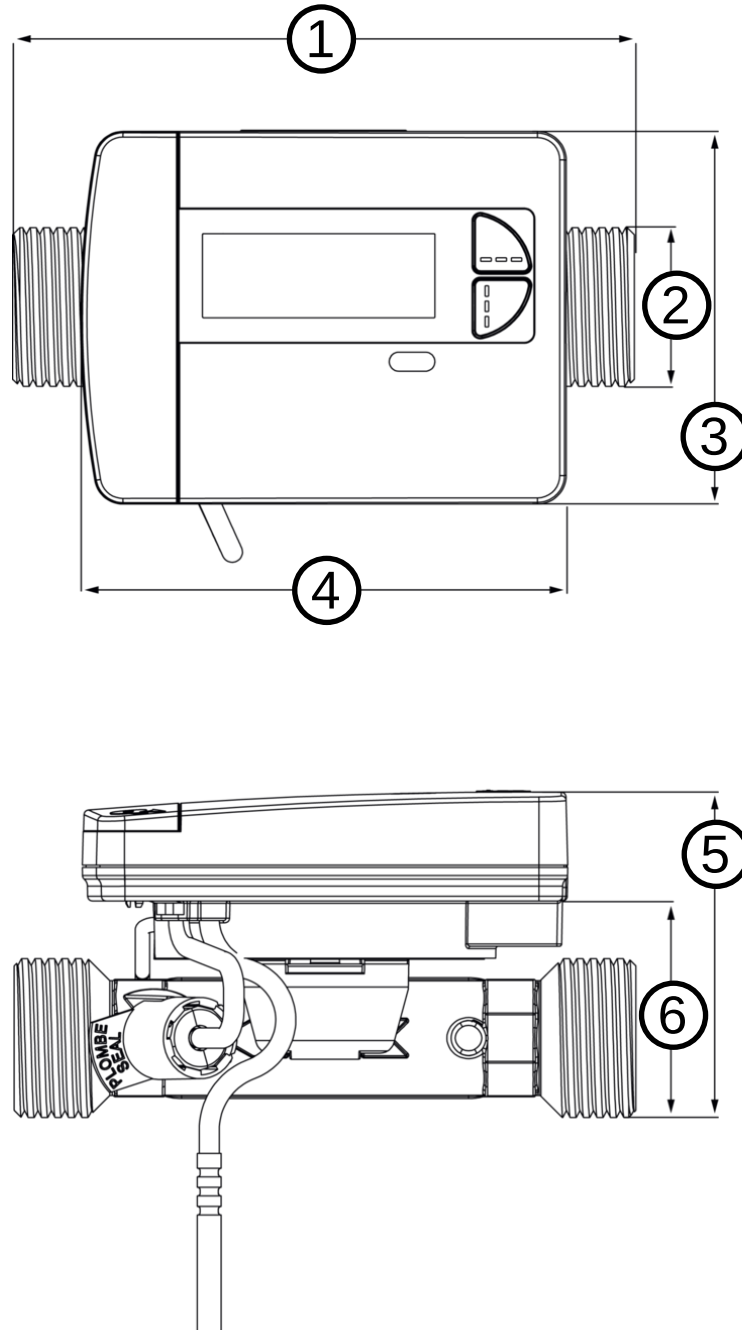
Nominal flow rate q_p	0.6 m³/h	1.5 m³/h	1.5 m³/h	2.5 m³/h
Nominal diameter DN	15 mm	15 mm	20 mm	20 mm
Overall length	110 mm	110 mm	130 mm	130 mm
Connection	G 3/4 B	G 3/4 B	G 1 B	G 1 B
Weight	530 g	530 g	660 g	660 g
Installation location	Return flow or supply flow (switchable up to 50 litres cumulative flow)			
Installation position	any			
Inflow and outflow zone	not required (U0/D0)			
Minimum flow q_i	12 l/h	15 l/h	30 l/h	25 l/h
Maximum flow q_s	1200 l/h	3000 l/h	3000 l/h	5000 l/h
Start-up limit q_0	6 l/h	6 l/h	10 l/h	10 l/h
Dynamic range	1:50	1:100	1:50	1:100
Measuring accuracy class	3	2	3	2
Pressure loss at q_p	20 mbar	130 mbar	65 mbar	180 mbar
Max. permissible operating pressure	16 bar			
Min. system pressure to avoid cavitation ⁴	1 bar	1.5 bar	1 bar	2 bar
Temperature range as heat meter	5 °C ... 90 °C			
Temperature range as heat meter with cooling option	5 °C ... 90 °C			

Nominal flow rate q_p	3.5 m³/h	3.5 m³/h	6.0 m³/h	6.0 m³/h	10.0 m³/h	10.0 m³/h
Nominal diameter DN	25 mm	25 mm	25 mm	25 mm	40 mm	40 mm
Overall length	150 mm	260 mm	150 mm	260 mm	200 mm	300 mm
Connection	G 1 1/4 B	G 1 1/4 B	G 1 1/4 B	G 1 1/4 B	G 2 B	G 2 B
Weight	875 g	1173 g	875 g	1173 g	1390 g	1750 g
Installation location	Return flow or supply flow (switchable up to 50 litres cumulative flow)					
Installation position	any					
Inflow and outflow zone	not required (U0/D0)					
Minimum flow q_i (optionally available)	28 l/h	28 l/h	48 l/h (24 l/h)	48 l/h (24 l/h)	100 l/h	100 l/h
Maximum flow q_s	7000 l/h	7000 l/h	12000 l/h	12000 l/h	20000 l/h	20000 l/h
Start-up limit q_0 (optionally available)	14 l/h	14 l/h	24 l/h (12 l/h)	24 l/h (12 l/h)	50 l/h	50 l/h
Dynamic range (optionally available)	1:125	1:125	1:125 (1:250)	1:125 (1:250)	1:100	1:100
Measuring accuracy class	2	2	2	2	2	2
Pressure loss at q_p	49 mbar	38 mbar	152 mbar	122 mbar	169 mbar	168 mbar
Max. permissible operating pressure	16 bar					
Min. system pressure to avoid cavitation ⁵	1 bar	1 bar	1.5 bar	1.5 bar	1.5 bar	1.5 bar
Temperature range as heat meter	5 °C ... 90 °C					
Temperature range as heat meter with cooling option	5 °C ... 90 °C					

⁴ cavity formation in fast flowing liquids

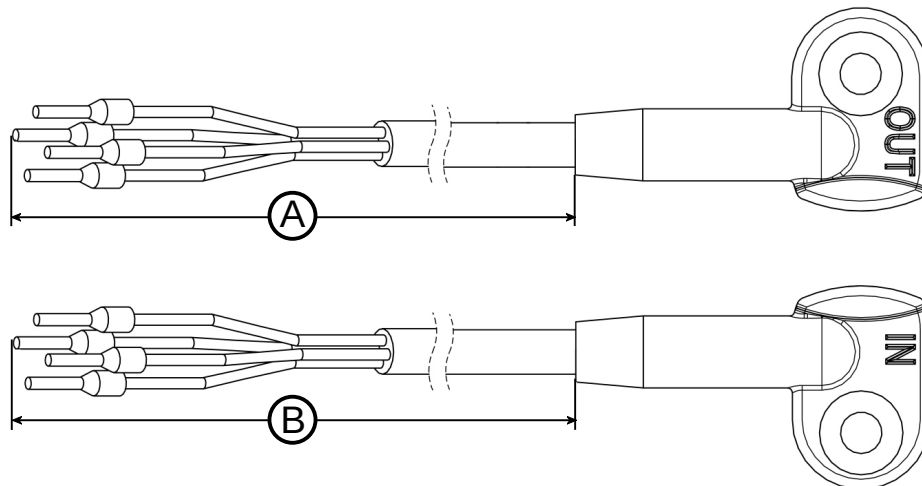
⁵ cavity formation in fast flowing liquids

Dimensional drawings



	0.6 m³/h	1.5 m³/h	1.5 m³/h	2.5 m³/h	3.5 m³/h	3.5 m³/h	6.0 m³/h	6.0 m³/h	10,0 m³/h	10,0 m³/h
1	110 mm	110 mm	130 mm	130 mm	150 mm	260 mm	150 mm	260 mm	200 mm	300 mm
2	G ¾ B	G ¾ B	G 1 B	G 1 B	G 1¼ B	G 1¼ B	G 1¼ B	G 1¼ B	G 2 B	G 2 B
3	78 mm									
4	101.5 mm									
5	65 mm	65 mm	68.48 mm	68.48 mm	84 mm	84 mm	84 mm	84 mm	100 mm	100 mm
6	41.5 mm	41.5 mm	45 mm	45 mm	60.5 mm	60.5 mm	60.5 mm	60.5 mm	76.5 mm	76.5 mm

Dimensional drawings: Connection cable



All dimensions in mm

A	3000
B	1000

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