



Heat and cold meter Q heat 5.5 US R

Static ultrasonic heat and cold meter

- › Precise and durable ultrasonic measurement technology
- › Flow sensor in all-metal design with nominal flow rate q_p 0,6-2,5 m³/h
- › Integrated radio technology for integration into a Q walk-by or Q AMR system
- › Flexibility by changing the return and supply flow as well as the energy unit
- › Heat meter and combined heat/cold meter
- › 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 0.6-2.5 m³/h
- › Patented, contamination-resistant ultrasonic measurement process
- › Position-independent, high dynamic range up to 1:100 for detection of smallest flow rates
- › Radio data transmission by sending Q AMR- and Q walk-by telegrams in C-mode as standard
- › Optional only with Q AMR telegrams or Q AMR extended telegrams¹ available for system optimization
- › For secure data transmission optionally with AES encryption mode 5 and mode 7 available
- › 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 combined heat/cold meter
- › Standard short 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“

Technical data - Norms and standards

Conformity	see EU Declaration of Conformity
Electromagnetic compatibility	
Interference resistance and emitted interference	EN 301489-1, EN 301489-3
Security of information technology equipment	EN 62368-1
IP protection rating	
Calculator unit	IP65 according to EN 60529
Flow sensor	IP65 according to 60529
Meter	
European Measuring Instruments Directive (MID)	2014/32/EU
Meter	EN1434
Quality of heat medium	according to VDI guideline 2035, according to AGFW standard 510
Influencing quantities	
Electromagnetic class	E1
Mechanical class	M2
Ambient class	A
Measuring accuracy class	3 / 2 (depending on Flow sensor)

¹ Q AMR telegram extended by current flow temperature, current return temperature, current volume flow and current output

Technical data - Calculator unit

Temperature range	heat meter: 10 °C ... 105 °C combined heat meter/cold meter: 0 °C ... 105 °C cold meter: 0 °C ... 50 °C
Temperature difference range	heat meter: 3 K ... 70 K combined heat meter/cold meter: 3 K ... 70 K cold meter: 3 K ... 50 K start of metering temperature difference: 0.2 K
Ambient temperature	5 °C ... 55 °C
Power supply	
Lithium battery	nominal voltage 3.0 V
Battery life	7 (opt. 10) years
Display levels	
Display	8-digit LCD + pictograms
Energy display (switchable)	kWh <-> MWh MJ <-> GJ kWh <-> MJ (only up to 50 liters cumulative flow) MWh <-> GJ (only up to 50 liters cumulative flow)
Connection cable Calculator unit - flow sensor	80 cm

Technical data - Temperature sensor

Measuring element	PT 1000 according to EN 60751
Version	type DS
Diameter Ø	5.0 mm - 5.2 mm
Type of installation	5.0 mm - direct (ball valve) / indirect ¹⁾ (immersion sleeve) 5.2 mm - direct (ball valve) / indirect ¹⁾ (immersion sleeve)
Cable length	standard: 1.5 m optional: 3.0 m

¹⁾ Note national and country-specific regulations concerning the use of immersion sleeves!

Technical data - Radio technology

Transmission behavior C-mode	
Q walk-by	every 112 seconds 10 hours per day (8.00 - 18.00) 365 days a year
Q AMR ¹⁾	every 7.5 minutes 24 hours per day 365 days a year
Radio technology	
Radio frequency	C-mode (868.95 +/- 0.25) MHz
Transmission power	typically 10 dBm, maximum 14 dBm
Duty cycle	< 0.1 % (50 ms/128 s)
Data transmission	EN 13757-4

¹⁾ OMS-conform data telegrams.

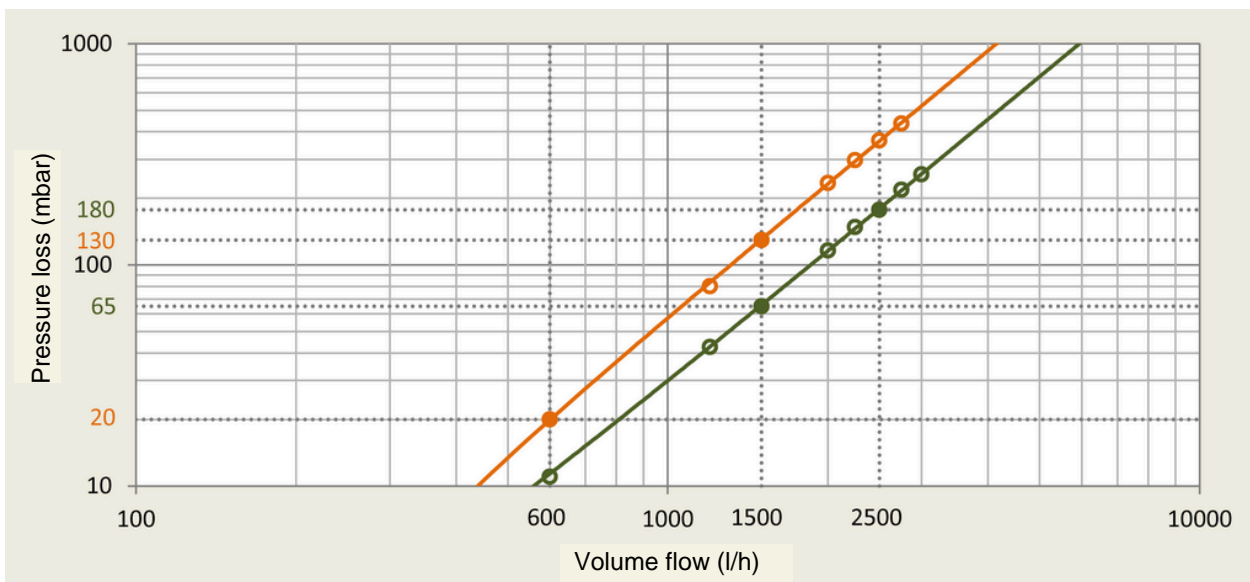
Technical data - Flow sensor

Nominal flow rate q_p	0,6 m ³ /h	1,5 m ³ /h	1,5 m ³ /h	2,5 m ³ /h
Length	110 mm	110 mm	130 mm	130 mm
Connection	G $\frac{3}{4}$ B	G $\frac{3}{4}$ B	G 1 B	G 1 B
Weight	530 g	530 g	660 g	660 g
Installation location	return or supply flow (switchable up to 50 liters 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 q_i/q_p	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 ¹⁾	1 bar	1,5 bar	1 bar	2 bar
Temperature range heat	20 °C ... 90 °C			
Temperature range heat/cold	5 °C ... 90 °C			
Temperature range cold	5 °C ... 50 °C			

¹⁾ Cavity formation in fast flowing liquids

Ambient conditions	
Transport	-25 °C ... 70 °C, < 95 % r.h. (without condensation)
Storage	-5 °C ... 45 °C, < 95 % r.h. (without condensation)
Operation	+5 °C ... 55 °C, < 95 % r.h. (without condensation)
Medium	Only use water without chemical additives as the medium for this device (heat and cold meter). Glycol additives or sodium chloride NaCl (common salt) are expressly not permitted!

Pressure loss curves

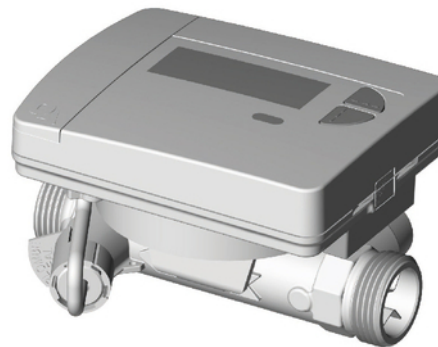
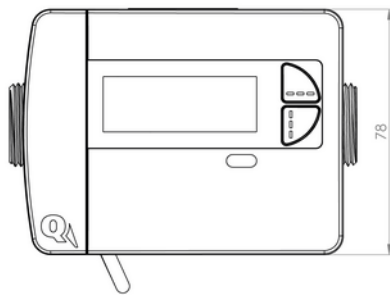
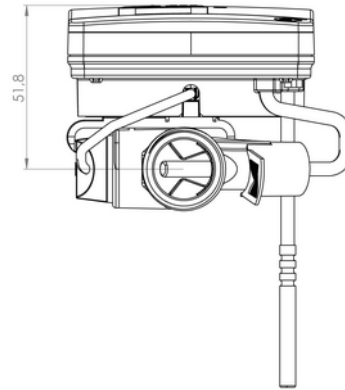
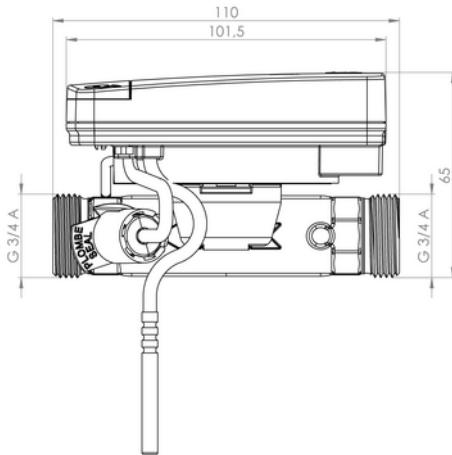


Length 110 mm = orange

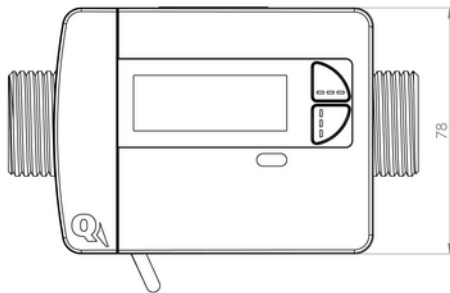
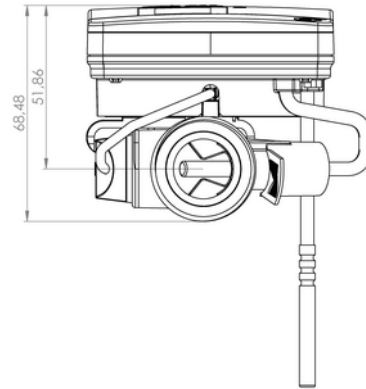
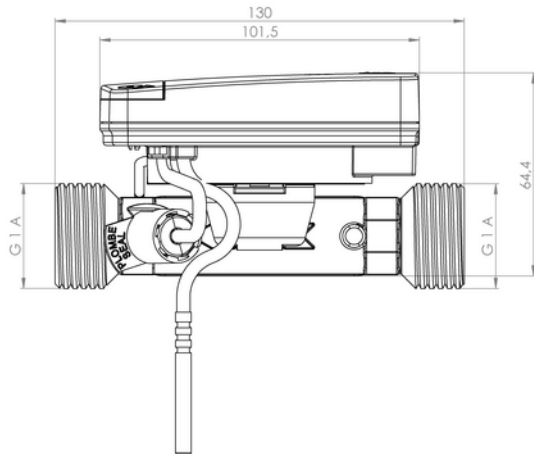
Length 130 mm = green

Dimensional drawings

Installation length 110 mm - thread 3/4 inch - (0.6 m³/h and 1.5 m³/h)



Installation length 130 mm - thread 1 inch - (1.5 m³/h and 2.5 m³/h)



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