ULTRASONIC HEATING/COOLING METER

QALCOSONIC HEAT 1

Application

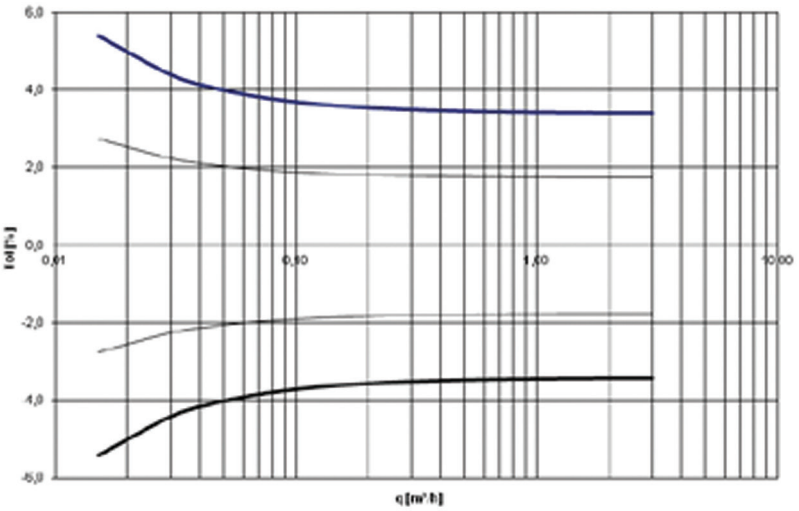
The ultrasonic meter for heating and cooling QALCOSONIC HEAT 1 is designed for measuring heating and cooling energy and the recording of data in two separate registers.
It is intended for commercial accounting of energy consumption in objects of local or district heating systems: in dwelling houses, office buildings as well for industrial applications.

- Static liquid metering using ultrasonic technology
- High accuracy
- Heating/cooling
- AMR

Special features

- Accuracy class 2
- Nominal flow 0.6/ 1 /1.5/ 2.5 / 3.5 /6.0 /10 /15 m3/h
- Dynamic range up to Qp/Qi = R 100/250
- No straight sections required
- No measurement of air
- Ambient class B
- Protection class IP 65/67
- Nominal pressure PN16/25 bar
- Pressure P25/63
- Temperature measurement Pt500, 0 °C ... 180 °C
- Temperature of conveying liquid: 5 °C ...130 °C
- Metering archive
- Battery lifetime > 12 years
- Power supply options: Battery/External
- Optional communication modules
- Mounting in any installation position

Measuring accuracy class 2



Approvals

MID
EN 14154

AMR Interfaces

Optical
Radio 868 MHz
M-Bus/CL LON MiniBus
Pulse output

Optical interface

Integrated into the front panel of calculator. It is designed for data reading via M-bus protocol and parameterization of the meter.

Radio interface

The internal radio provides data reading via WMBUS telegram:

- Current total Enrergy
- Current flow
- Current date and time
- Accounting date information
- Error date

Wired M-BUS interface

The internal M-BUS module provides data reading possibility via M-Bus protocol.

Data registration

Hourly, daily and monthly parameter values

- Integrated energy
- Integrated cooling energy
- Integrated energy of tariff
- Integrated volume of liquid
- Integrated pulse value in pulse input 1/2
- Maximum thermal power value for heating/cooling and date
- Maximum value of flow/return temperature of heat conveying liquid and date
- Minimum value of flow/return temperature of heat conveying liquid and date
- Minimum value of temperature difference and date
- Average value of flow/return temperature of heat conveying liquid
- Operating time without an error
- Total error code
- Time when the flow rate exceeded 1.2 Qs
- Time when the flow rate was less than Qi

Universal pulse imputs/outputs

- Pulse cable (optional)
- Two configurable pulse outputs/inputs
- Flow direction indication

ERROR codes

EERROR code indication in case of errors.

Data logger – history values

- Every hour, day and month values of the measured parameters are stored in internal memory
- All data from archive can be read by means of the remote reading
- In addition data logger records of monthly parameters can be seen on the display

LCD indicator:

- The device is equipped with 8-digits LCD (Liquid Crystal Display) with special symbols to display parameters, measure ment units and operation modes
- The following information can be displayed:
  - integral and instantaneous measured parameters,
  - archive data and set day data,
  - device configuration information,
- Programmable LCD displaying parameters

Power supply:

Power supply (one of following depending on meter configuration):

- AA battery 3,6 V 2,4 Ah (Li-SOCl2) battery, operation time at least 11 years,
- 12..42 V DC or 12...36 V 50/60Hz AC external power supply, used current 10 mA and back up battery AA 3,6 V (Li-SOCl2), operation time at least 11 years (without reading data through digital interfaces).
- 230 V (+ 10% - 30%) 50 / 60Hz AC power supply, current consumption is not more than 10 mA, the meter should be equipped with external power supply unit and an external transformer TRS.

Technical data

Flow rate sensor	Qp [m^3/h]	0.6 / 1.0 /1.5 /2.5 / 3.5 / 6.0 /10 /15
	R qp/qi [m^3/h]	100/250
	Medium Temp. (operating temperature)	0,1 ... 130°C
Technical data	LCD-Display	8-digit
	Protection class [IP]	IP65/67
	Ambient class	Class B / EN 14 154
	Ambient temperature	+5 °C...+55 °C
	Installation place	indoor, outdoor in a pit or inst. box
	Installation position	all installation positions (vertical, horizontal, rising pipe, down pipe)
	Nominal pressure [bar]	PN16/25 bar
	Pressure loss	0.63 / (0.25) bar
	Flow sensor cable length	1,2m (2,5m or 5 m – special order)
	Temperature sensor, two-wire connection, cable length	Up to 5m.
	Battery lifetime	10-12 years
	Mounting of calculator	Mounting on standard DIN-rail

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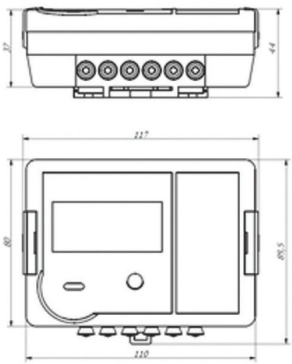
Permanent flow rate qp, m^3/h	Upper flow rate q_s, m^3/h	Lower flow rate qi, m^3/h	Threshold value of flow rate, m^3/h	Overall length L, mm	Pressure losses at q_p, kPa	Joining to the pipeline (Thread – G, flange–DN)
0,6	1,2	0,006	0,003	110	7	G3/4“
0,6	1,2	0,006	0,003	190	0,9	G1“ or DN20
1,0	2,0	0,01	0,005	110	11,3	G3/4“
1,0	2,0	0,01	0,005	190	2,5	G1“or DN20
1,5	3,0	0,006	0,003	110	17,1	G3/4“
1,5	3,0	0,006	0,003	190	5,8	G1“or DN20
1,5	3,0	0,015	0,003	110	17,1	G3/4“
1,5	3,0	0,015	0,003	190	5,8	G1“or DN20
1,5	3,0	0,015	0,005	130	7,2	G1“
2,5	5,0	0,01	0,005	130	19,8	G1“
2,5	5,0	0,01	0,005	190	9,4	G1“or DN20
2,5	5,0	0,025	0,005	130	19,8	G1“
2,5	5,0	0,025	0,005	190	9,4	G1“or DN20
3,5	7,0	0,035	0,017	260	4	G1 1/4“or DN25
6,0	12,0	0,024	0,012	260	10	G1 1/4“or DN25
6,0	12,0	0,06	0,012	260	10	G1 1/4“or DN25
10,0	20,0	0,04	0,02	300	18	G2“or DN40
10,0	20,0	0,100	0,02	300	18	G2“or DN40
15,0	30,0	0,06	0,03	270	12	DN50
15,0	30,0	0,15	0,03	270	12	DN50

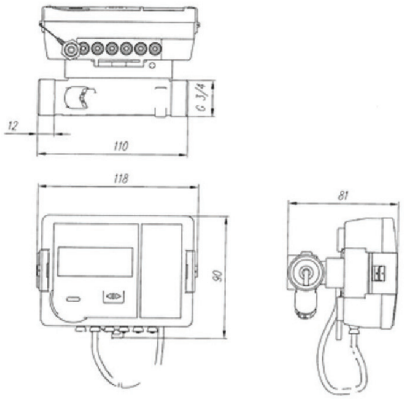
Dimensions of calculator

117 mm x 44 mm x 89,5 mm,



Sizes and dimensions of heat meter

Example – flow sensor Q3= 1,6/2,5m3/h, Threaded end con-nec- tions G3/4“, mounting length L=110 mm.



DN [mm]	15	20	25	40	50
L [mm]	110	130/ 190	260	300	270
H [mm]	81	85	123/134	141/163	167
G / Flange DN	G3/4“	G1“ or DN20	G1 1/4“ or DN25	G2“ or DN40	DN50