

Single jet water meter for in-line installation

# MICROCLIMA THERMAL ENERGY METER



- Detection of backflow
- Dynamic temperature measuring cycle: 2/60 s
- Inlet or outlet and unit of measurement can be set on site
- Detachable calculator, 50 cm cable (optional)
- Communication interfaces:
  - wireless M-Bus
  - wireless M-Bus + 3 pulse inputs
  - M-Bus
  - M-Bus + 3 pulse inputs
  - 2 pulse outputs
- Replaceable battery, service life 10 years
- Ready for external power supply

## TECHNICAL DATA

### Water meter

Measuring method		Bidirectional inductive scanning system		
Nominal flow rate $q_p$	m <sup>3</sup> /h	0.6	1.5	2.5
Horizontal starting flow rate	l/h	3.5	7.0	10.0
Vertical starting flow rate	l/h	4.0	7.0	10.0
Minimum flow rate $q_i$	l/h	24	60	100
Maximum flow rate $q_s$	m <sup>3</sup> /h	1.2	3.0	5.0
Pressure drop $\Delta p$ at $q_p$	bar	0.155	0.210	0.165
Pressure drop $\Delta p$ at $q_s$	bar	0.660	0.840	0.675
Nominal diameter	mm	DN15	DN15	DN20
Thread	inch	G3/4B	G3/4B	G1B
Length	mm	110	110	130
Dynamic range $q_i/q_p$		1:25		
Accuracy class (MID)		3		
Nominal pressure PN	bar	16		
Temperature range of liquid-heat	°C	15-90		
Temperature range of liquid-cooling ( $q_p$ 1.5 and $q_p$ 2.5)	°C	5-50		
Installation point		Inlet or outlet Can be set if the energy value is $\leq$ 10 kWh		
Mounting position		Cooling energy meters: any position Heat meters : horizontal/vertical		
Protection class		IP65		
Liquid		Water Optional, not certified*: water with a propylene glycol or ethylene glycol percentage rate of 20%, 30%, 40% or 50%. (*The type and concentration of glycol can be set if the energy value is $\leq$ 10 kWh)		

### Calculator

Temperature range of liquid-heat	°C	0-150
Temperature range of liquid-cooling ( $q_p$ 1.5 and $q_p$ 2.5)	°C	0-50
Operating ambient temperature	°C	5-55 with 95% relative humidity
Transport temperature	°C	-25-70 (max. 168 hours)
Storage temperature	°C	-25-55
Temperature difference range $\Delta\theta$ heat	K	3 -100
Temperature difference range $\Delta\theta$ cooling	K	-3 - -50
Minimum temperature difference $\Delta\theta$ heat	K	>0.05
Minimum temperature difference $\Delta\theta$ cooling	K	<-0.05
Minimum temperature difference $\Delta\theta_{HC}$ heat/cooling	K	>0.5/< -0.5
Temperature resolution	°C	0,01
Dynamic temperature measuring cycle	s	2/60; with power pack: 2 s permanently
Display		LCD - 8 digits + special characters
Decimals		Up to 3
Units		MWh, kW, m <sup>3</sup> , m <sup>3</sup> /h (kWh, GJ, l, l/h, MW, MMBTU, Gcal). The energy unit can be set until the energy value is $\leq$ 10 kWh.
Interfaces		Optical interface (M-Bus protocol) Optional: wireless M-Bus, wireless M-Bus + 3 pulse inputs; M-Bus, M-Bus + 3 pulse inputs; 2 pulse outputs
Power supply		Replaceable 3 V lithium battery; all models are prepared for a 3 V power pack (input voltage 230 V/24 V)
Estimated lifetime	Years	10; see "Factors influencing battery lifetime" (A technical documents)
Data storage		Non-volatile memory

Reading dates		Selectable yearly reading date; 15 monthly and semimonthly values via display or wireless M-Bus; 24 monthly and semimonthly values via optical interface or M-Bus
2 tariff registers		Can be set individually; energy or time can be added
Storage of maximum values		Flow rate and power
Protection class		IP65
CE		Yes
Electromagnetic interference		EN 1434

### Temperature sensors (2-wire technique)

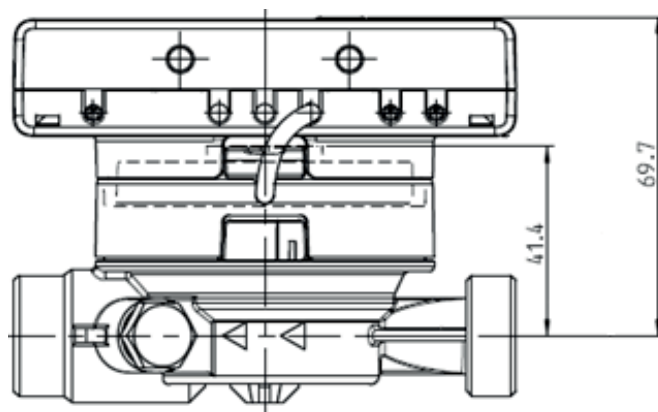
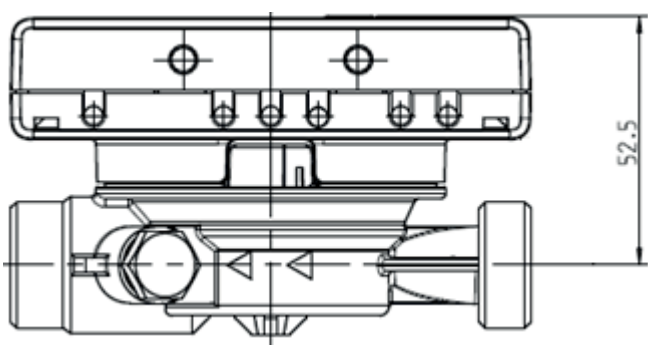
Platinum precision resistor		Pt 1000
Diameter	mm	5; 5.2; 6; AGFW 27.5; 38; needle sensor 3.5 x 75
Cable length	m	1.5; 3; 6
Installation point		Asymmetrical, symmetrical

### Weight

Basic version	q <sub>p</sub>	0.6/1.5	2.5
Calculator not detachable	kg	0.755	0.795
Detachable calculator	kg	0.840	0.880

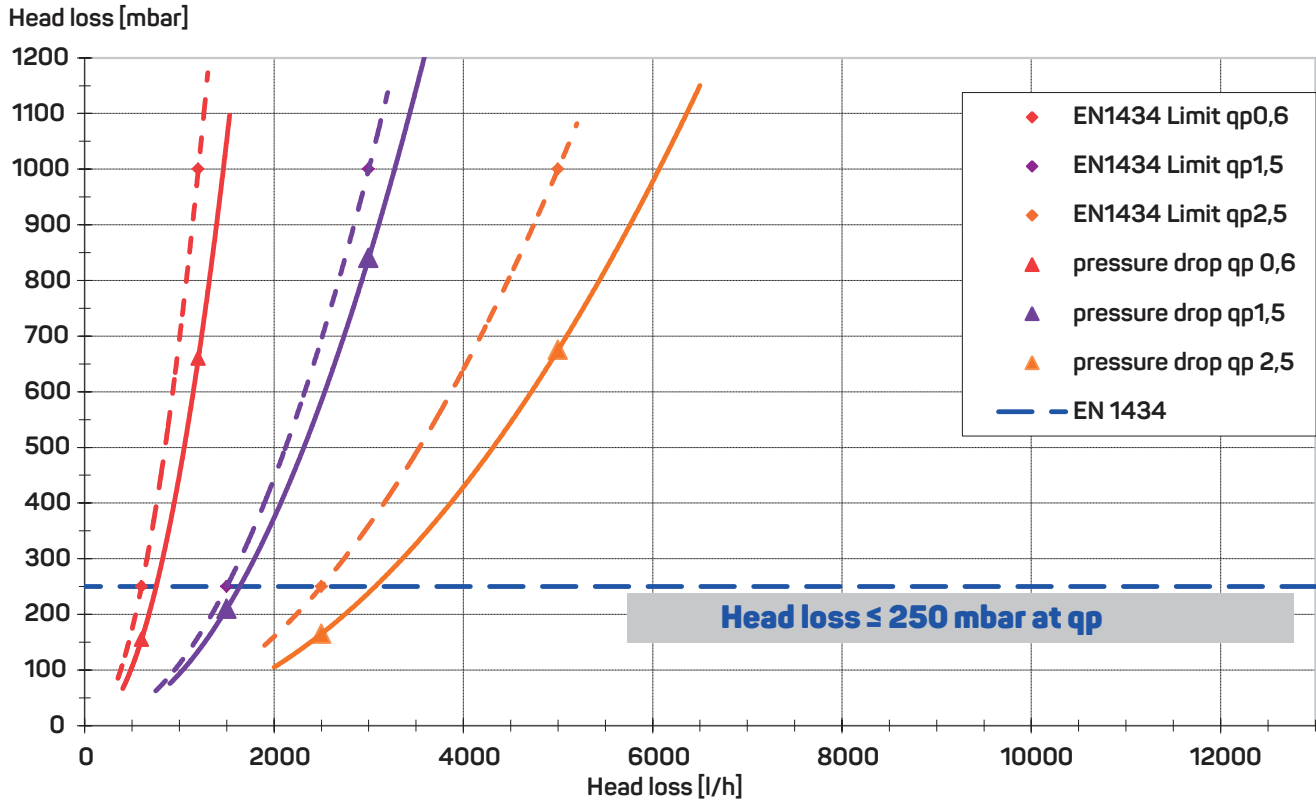
### Dimensions

Basic version	q <sub>p</sub>	0.6/1.5	2.5
Pulse cable length (only separable version)	m	0.50	
Calculator housing (h x w x d)	mm	75 x 110 x 34.5	
Thread		G3/4", DN15	G1" DN20



(On the right: version with detachable calculator)

# HEAD LOSS



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