

zelsius® C5-IUF

Electronic compact meter for heating or cooling energy with ultrasonic flow sensor (IUF)

Optional interfaces: M-Bus, wireless M-Bus and 3 inputs/outputs

Nominal sizes: q_p 0.6 to 10 m³/h

The zelsius® C5 ultrasonic heating and cooling meter operates with an innovative ultrasonic technology, specially developed for a broad scope of application from submetering to district heating. For meter sites with fast temperature changes, zelsius® C5-IUF is also available as "fast reaction heat meter" in accordance with DIN EN 1434-1:2016-02.

In case of installation points with immersion pockets with an installation length of 85 mm to 150 mm (with clamp screw or 1/4" interior thread) a new type of temperature sensor is now available that can be used universally and thus offers a logistic advantage.

For calibration exchange of mechanical flow sensors by ultrasonic meters the so-called short lengths (150 mm and 200 mm) are also available for zelsius® C5-IUF.

This wear-free ultrasonic technology is stable in the long run, insensitive to dirt and measures reliably, even with very small flow volumes. The ultrasonic flow sensors can be operated permanently up to a heat medium temperature of 130 °C and are optimally suited for application in district heat supply. Because of the high overload capacity and the wear-free measurement technology they can also be used to measure energy in hot water supply systems in accordance with § 9 (2) of the German heating costs ordinance.

A single button is used to call up all the important device and consumption data, such as reference date values, maximum values or the stored monthly values over the entire lifetime of the meter.



Its diverse, optionally selectable communication interfaces mean that the zelsius® C5 guarantees efficiency and precision in the recording of consumption data, whether wirelessly or by M-Bus.

ZENNER
All that counts.

Technical data flow sensor type IUF

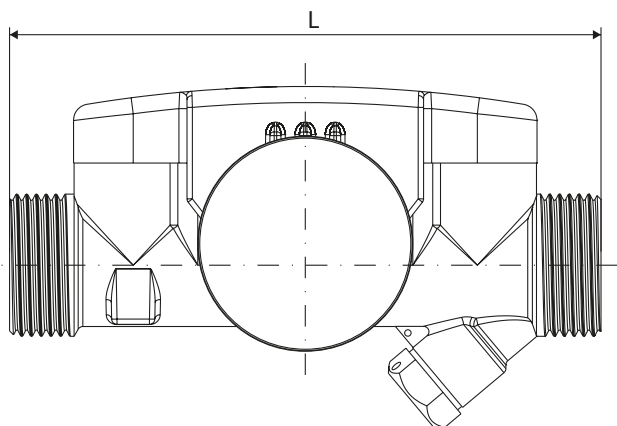
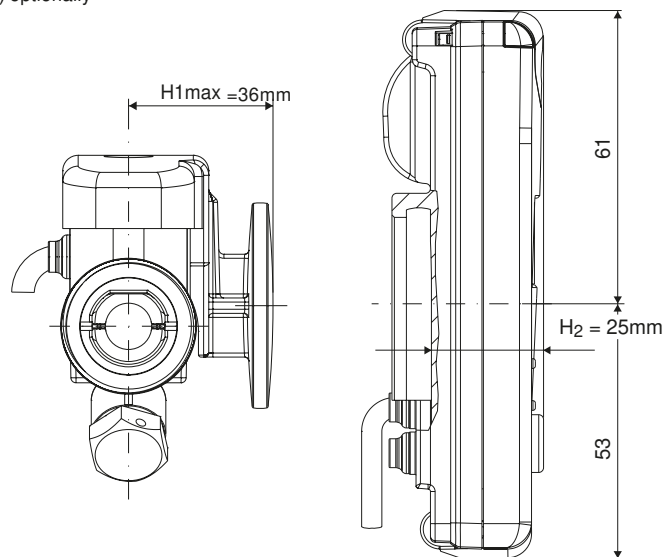
Nominal flow q_p	m ³ /h	0.6	1.5	2.5	3.5	6	10
Maximum flow q_s	m ³ /h	1.2	3	5	7	12	20
Minimum flow q_i	l/h	6	15	25	35	60	100
Pressure loss at q_p	bar	≤ 0.25					
Temperature range (*)	°C	$0 \leq \Theta q \leq 105 / 0 \leq \Theta q \leq 130$					
Minimum pressure (to avoid cavitation)	bar	1 bar at q_p and 80 °C medium temperature					
Measurement accuracy class (*)		2 (optional 3)					
Nominal pressure (*)							
■ Body with thread connection	PS/PN	16/16					
■ Body with flange	PS/PN	25/25					
IP protection class		68					
Installation position		in any position					
Installation point		return pipe, optionally supply pipe					
Cable length up to calculator	m	1.2					
Installation adapter for temperature sensors		M10 x 1					
Heat carrier (Medium)		Water					

(*) optionally

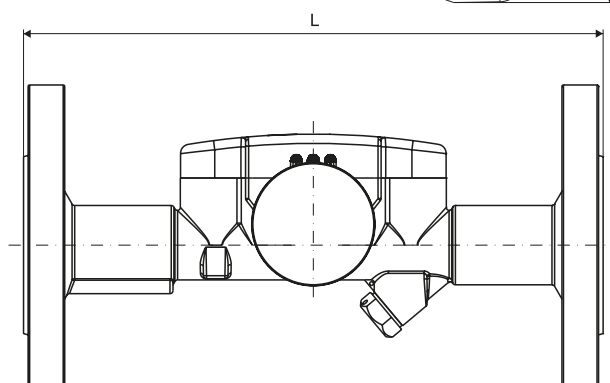
Connection sizes (*)

Nominal flow q_p (m ³ /h)	L (mm)	Threaded connection	Flange
0.6	110	G $\frac{3}{4}$ B	
0.6	130	G1B	
0.6	190	G1B	DN20
1.5	110	G $\frac{3}{4}$ B	
1.5	130	G1B	
1.5	190	G1B	DN20
2.5	130	G1B	
2.5	190	G1B	DN20
3.5	150	G1 $\frac{1}{4}$ B	
3.5	260	G1 $\frac{1}{4}$ B	DN25
6	150	G1 $\frac{1}{4}$ B	
6	260	G1 $\frac{1}{4}$ B G1 $\frac{1}{2}$ B	DN25 DN32
10	200	G2B	
10	300	G2B	DN40

(*) optionally



Dimensions flow sensor with thread connection



Dimensions flow sensor with flange

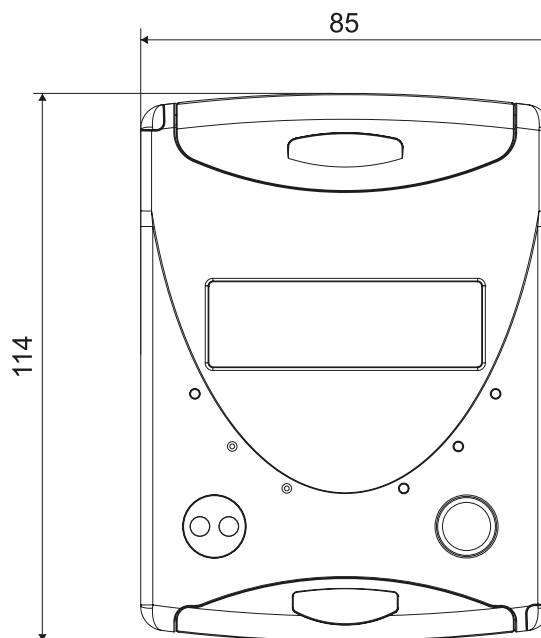
Technical data calculator

Temperature range	°C	0 ... 105 / 0 ... 150
Temperature difference range	K	3 ... 80 / 3 ... 130
Display		LCD 8-digit + additional characters
Ambient temperature during operation	°C	5 ... 55
Storage temperature	°C	-20 ... + 65
Resolution temperature	°C	0.01
Measurement frequency	s	flow rate = 4 temperatures = 4 / 32 (*)
Unit to read the heat consumption		Standard MWh; opt. kWh, GJ
Data backup		1 x daily
Due date values		Storage of all monthly values during the entire operation time
Maximum value storage		Extensive storage of flow rate, thermal output and other parameters
Interface	Standard	Optical interface (ZVEI, IrDA)
	optional	3 inputs/outputs M-Bus, radio
Supply		3.6 V lithium battery (different capacities)
Battery lifetime	years	> 6, opt. ≥ 11
Protection class		IP54
Environmental class		A
Ambient conditions/ climatic influencing	- climatic	Highest permissible ambient temperature 55 °C, Lowest permissible ambient temperature 5 °C, Humidity class IP54
(valid for complete compact meter)	- mechanical class	M1
	- electro-mag-netic class	E1

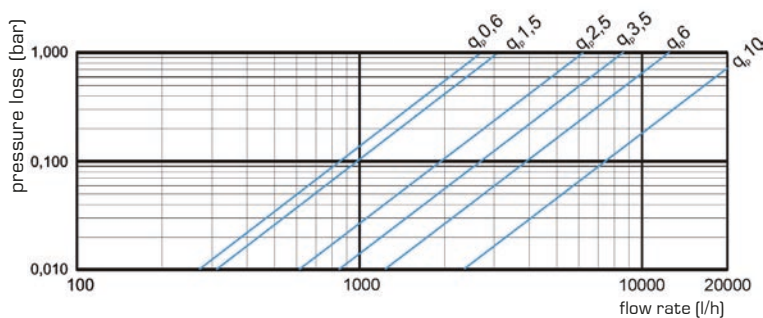
Technical data temperature sensors

Platinum precision resistor		Pt 1000
Sensor type (*)	mm	45 x 5.0 mm / 45 x 5.2 mm DS 27.5 / DS 38 Universal 6 - 150
Temperature range	°C	0 ... 105 / 0 ... 150 (*)
Cable length	m	q _p 0.6 to 2.5: approx. 1.5 (optional: approx. 5) q _p 3.5 to 10: approx. 5
Installation	supply pipe	by direct immersion or by immersion sleeves (in case of existing measuring points)
	return pipe	Integrated in the flow sensor, optionally external

(*) optionally



Dimensions data calculator



Pressure loss curve

Further zelsius® C5-Versions:



zelsius® C5-CMF
Compact meter with coaxial
measuring capsule (CMF)



zelsius® C5-ISF
Compact meter with single-jet
flow sensor (ISF)

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