zelsius® C5-ISF

Electronic compact meter for heating or cooling energy with single-jet flow sensor (ISF)
Optional interfaces: M-Bus, wireless M-Bus, LoRaWAN® and 3 inputs/outputs
Nominal sizes: q_p 0.6 /1.5 /2.5 m³/h

The new zelsius® C5 ISF with single-jet flow sensor combines efficiency with compact design, highest precision and most advanced communication interfaces for M-Bus, wireless M-Bus or LoRaWAN®.

Specially designed for consumption-based energy billing, zelsius® C5 ISF is very well prepared to be used in all real estate with central heat supply:

- Industrial and business buildings
- Apartment buildings and residential complexes
- Multi-family buildings

The advantages of zelsius® C5 ISF can be observed even by the installation. With its compact design zelsius "adapts" easily to nearly any installation situation. The Combi version with removable calculator allows installation even in the smallest distribution boxes. zelsius® C5 ISF can be easily operated via one single button. The application-oriented display offers an optimum of readability and practical demonstration of relevant operating conditions.

Reliability and high dynamic range ensure optimal measurement results during the entire operating time. zelsius® C5 ISF is a threaded meter, equipped with a rugged single-jet flow sensor (ISF) with reaction-free electronic impeller detection, simple to replace and available in all common sizes.

Performance characteristics at a glance

- **Available as heat, cooling or combined heat/ cooling energy meter as well as glycol meter**
- **Lowest design height**
- **Optionally available with M-Bus or radio (wireless M-Bus) as well with 3 programmable inputs / outputs**
- **For horizontal and vertical installation position**
- **Stores monthly readings during the whole running time**
- **Extensive maximal value storage of thermal output, flow rate and other parameters**
- **Precise and long-term stable**
- **Wide dynamic range**

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Technical data sheet zelsius® C5-ISF

Technical data flow sensor ISF

Nominal flow q_p	m³/h	0.6	1.5	2.5
Maximum flow q_s	m³/h	1.2	3.0	5.0
Minimum flow q_i	l / h	12/24	30/60	50/100
Starting flow horizontally ca.	l/h	4	4	5
Pressure loss at q_p	bar	≤ 0,25		
Medium temperature range	°C	$10 ≤ \Theta q ≤ 90$		
Minimum pressure (to avoid cavitation)	bar	0.3		
Meassurement accuracy class		3		
Nominal pressure / peak pressure	PS/PN	16		
IP protection class		54 (65 for heating and cooling energy metering)		
Installation position		horizontal, horizontal tipped through 90°, vertical		
Installation point		return flow optionally forward flow		
Cable length up to calculator (in combi version)	m	1.2		
Installation place temperature sensors		M10x1		
Heat carrier		Water, water-glycol (without Declaration of conformity)		

Dimensions

Height compact version		$H_{max} = 55$ mm
		$H_{max} = 21$ mm
Height combi version	(H1 + H2)	$H_{max} = 65$ mm
		$H_{max} = 21$ mm

Connecting sizes

Nominal flow	q_p	m³/h	0.6	1.5	2.5
Threaded connection	DN	mm	15	15	20
Installation length	L	mm	110	110	130
Height	H1	mm	40	40	40

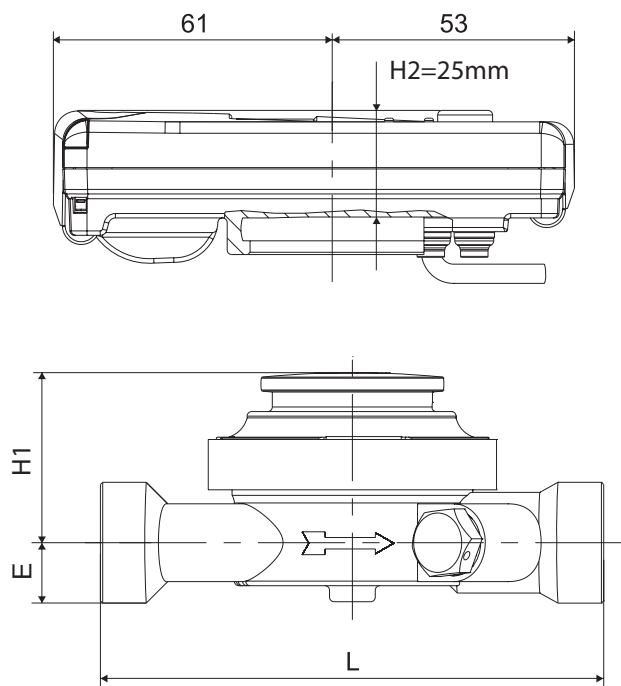**Required minimum free space between meter and ceiling min. = 30 mm**

On-site programmable heat transfer medium for Glycol meter version.

Water-Ethyleneglycol-mixture:
Proportion of Ethylene Glycol 20, 25, 30, 35, 40, 45 or 50%

Water-Propylenglycol mixture:
Proportion of Propylene Glycol 20, 25, 30, 35, 40, 45 or 50 %
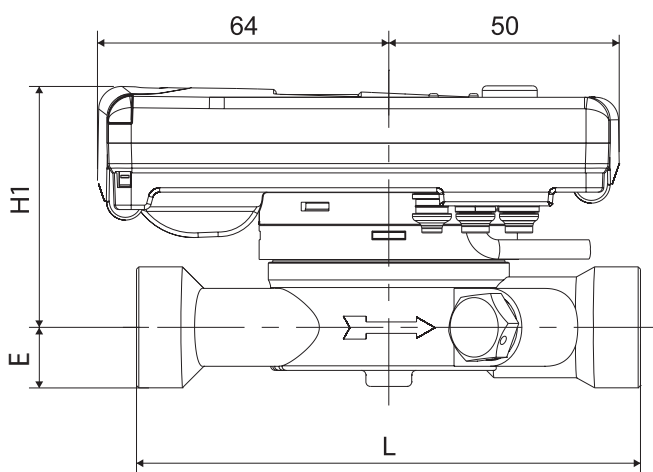
Compact version

Combi version

Technical data calculator

|		
Temperature range	°C	0…105 [1]
Temperature difference range	K	3…80
Display range		LCD 8-digit + additional character
Ambient temperature	°C	5...55
Resolution frequency	°C	0.01
Measurement frequency	s	Standard: 30 For models with M-Bus interface: 10 Optional: 4
Heat consumption display		Standard: MWh Optional: kWh, GJ
Data storage		1 x daily
Due date values		Stores monthly readings during the whole running time
Maximum value storage		extensive storage of flow rate, performance and other parameters
Interface	Standard	optical interface (ZVEI, IrDA)
	Optional	▪ 3 inputs/outputs ▪ M-Bus (The current consumption in the connectionon on the M-Bus level converter:< 1,5 mA), ▪ wireless M-Bus ▪ LoRaWAN®: Daily values or monthly values (incl. half monthly value) Temporary diagnostic protocol (value for temperatures, energy and flow - see separate description)
Supply		3,.6 V lithium battery (different capacities)
Battery lifetime	Years	> 6, opt. >11 (changeable during the operation time)[2]
Protection class		IP54
Ambient class		C
Ambient conditions / climatic influencing (valid for complete compact meter)	- climatic	Highest permissible ambient temperature 55 °C Lowest permissible ambient temperature 5 °C Humidity class IP54
	- mechanical class	M1
	-elektromagnetic class	E1

[1]   approx. -20…105°C for Glycol meter (without Conformity assessment)

[2]   Possibility for battery replacement is country-specific, please check the relevant national regulations.

Technical data temperature sensors

Platinum precision resistor		Pt 1000
Sensor type	mm	according to the model: 45 x 5,0 mm / 45 x 5,2 mm DS 27,5
Temperature range	°C	0 ... 105
Cable length	m	1,5 (opt. 5)
Installation point [1]	supply pipe	red	By direct immersion or by immersion sleeves (in case of existing measuring points)
	return pipe	no marking or blue according to the model	By direct immersion or by immersion sleeves (in case of existing measuring points); optionally integrated in flow sensor

[1] Concerning existing immersion sleeves please observe the note in the separate description "mounting in existing immersion sleeves".
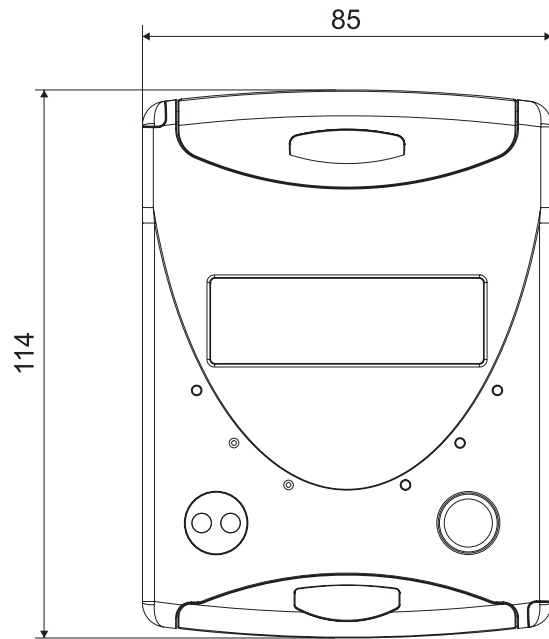
Dimensions data calculator
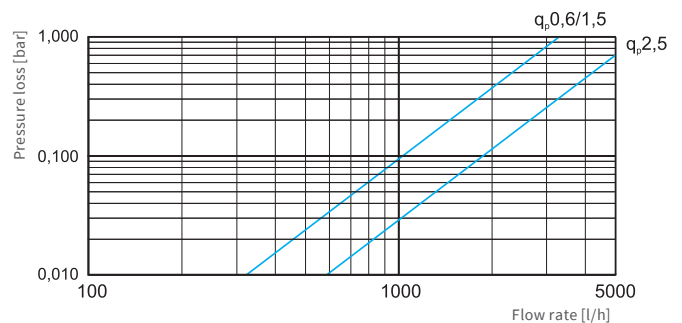
Pressure loss curve

Further zelsius® C5-Versions:

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

zelsius® C5-IUF
Compact meter with ultrasonic
flow sensor (IUF)

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