LoRaWAN

ENERGY METER

C5 IUF

Brunata

- Connect your everyday life with the network of the future - LoRaWAN
- Ensure high measurement stability and a low pressure loss
- Brunata takes care of all the work while you save time
- Based on ultrasonic technology with no moving parts
- Get your property ready for the legal requirements and technical standards of the future

C5 - IUF is a compact energy meter with high measurement rate and long battery lifetime

Application

The energy meter C5 - IUF can be used to measure the energy consumption and is available as an energy meter for heating, an energy meter for cooling and a combined energy meter for heating and cooling. With a built-in LoRaWAN radiomodule, the energy meter is designed for remote reading and can register large amounts of data. This means that the meter can provide an overview of the consumption used. With these elements, C5 - IUF is one of the market's most leading resource-optimized meters, both in terms of operation, environment and economy.

Properties

The measurement principle is static and based on ultrasonic technology, which provides many benefits: no moving parts (avoids wear and tear of the meter's components), low pressure loss, low start flow, etc. This provides great measurement accuracy and long battery lifetime.

Functions

- Ultrasonic
- Low start flow and low pressure loss
- Compact design
- Rotatable calculator
- Fast reaction

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Technology has left an indelible mark on society and has played an active role in optimising digitisation. One of the most recent initiatives is Internet of Things, IoT, which is a network of electronic devices that can communicate with one another by means of sensors. One of the things technology has made possible is to connect several devices to the internet so that you can keep yourself updated at any time with the status of your of your electricity meter or smoke detector, for example. These options can be effectuated through LoRaWAN, Long-Range Wide-Area Network, which is an open, internationally recognised standard for communication between different devices such as IoT sensors and IoT gateways.

Facts

- MID-approved
- Sends a telegram every 24 hour
- Available as an energy meter for heating or cooling, or a combined energy meter for heating and cooling
- The energy meter has 15 years of battery lifetime

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
Flow rate		4 s "fast reaction heat meter" in accordance with DIN EN 1434 - 1:2016-02
Temperatures		4 s "fast reaction heat meter" in accordance with DIN EN 1434 - 1:2016-02
Consumption Standard	MWh	Option kWh or GJ
Data backup		1 x daily
Standard optical interfaces		ZVEI, IrDA
Frequency band		868 MHz
Radiomodule		LoRaWAN
Transmission frequency		Every 24 hours
Storage of monthly due date values		During the entire operation time
Maximum value storage		Flow rate, therman output and other parameters
Battery		3.6 V lithium battery
Battery lifetime		Up to 15 years
Protection class		IP 54
Environmental class		A
Ambient conditions / climate influencing		Valid for complete compact meter
Climatic highest permissible ambient temperature	°C	55
Lowest permissible ambient temperature	°C	5
Mechanical class		M1
Electro-magnetic class		E1

| Technical data temperature sensors		
Plantimun precision resistor		pt 1000
Sensor type Temperature range	°C	45 x 5,2 mm 0 ... 105 / 0 ... 150 (*)
Cable lenth	m	q_p 0,6 to 2,5, approx. 1,5 m. - q_p 3,5 to 10, approx. 5 m.
Installation hot pipe		≤ 2,5 m³/h direct, ≥ 3,5 m³/h pocket
Installation cold pipe		≤ 2,5 m³/h direct, ≥ 3,5 m³/h pocket

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Technical data flow sensor

Nominal flow q_p	m³/h	0,6	1,5	2,5	3,5	6	10
Maximum flow q_p	m³/h	1,2	3	5	7	12	20
Minimum flow q_p	l/h	6	15	25	35	60	100
		12	30	50	70	120	200
Pressure loss at q_p	bar	≤ 0,25					
Temperature range (*)	°C	0 ≤ Θ q ≤ 105 / 0 ≤ Θ q ≤ 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 Body with flange	PS/PN PS/PN	16/16 25/25					
IP protection class		68					
Installation position		in any position					
Installation point		return pipe, optionally supply pipe when installed					
Cable lenght up to calculator	m	1,2					
Installation adapter for temperature sensors	2	M10 x 1					
Heat carrier (Medium)		Water (without additives)					

(*) optionally

Connection sizes (*)

Nominal flow q_p (m³/h)	L (mm)	Threaded connection	Flange
0,6	110	G3/4B	
0,6	130	G1B	
0,6	190	G1B	DN20
1,5	110	G3/4B	
1,5	130	G1B	
1,5	190	G1B	DN20
2,5	130	G1B	
2,5	190	G1B	DN20
3,5	150	G1/4B	
3,5	260	G1/4B	DN25
6	150	G1/4B	
6	260	G1/4B G1/2B	DN25 DN32
10	200	G2B	
10	300	G2B	DN40

(*) optionally

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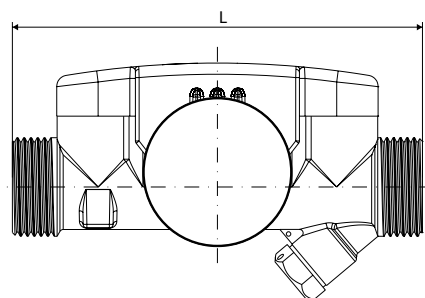**C5 IUF**

Dimensions

85

114

H1max

61

H₂ = 25mm

53
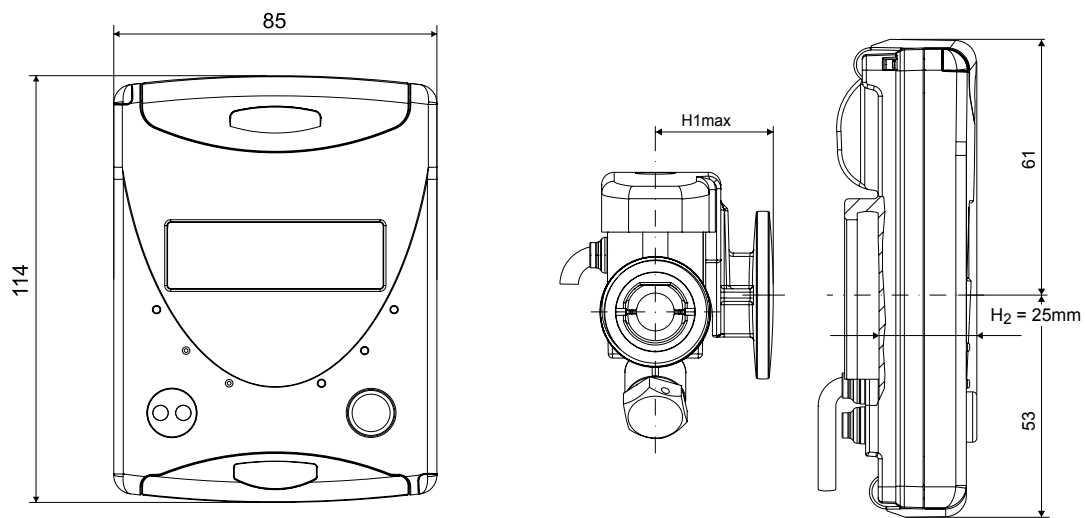
Dimensions data calculator

L
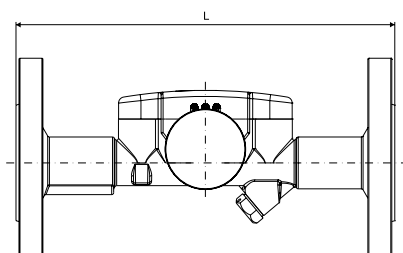
Dimensions flow sensor with flange

L

Dimensions flow sensor with thred connection

Pressure loss graph

qₚ0,6   qₚ1,5   qₚ2,5   qₚ3,5   qₚ6   qₚ10

Pressure loss (mbar)

1,000

0,100

0,010

100   1000   10000   20000

Flow rate (l/h)