



CF-Echo II

Ultrasonic combined heat and cooling meter
DN 15 – DN 100

Your benefits

- Ultrasonic technology:
Long-term stable energy measurement
with maximum measuring accuracy
- Patented warning signal processing:
Alarm message when soiled
- Special lengths available for vertical
impeller meters:
Simple replacement with ultrasonic tech-
nology possible

Application

- High-end device for building management
- As a replacement for mechanical impeller
heat meters
- Metering of heat and/or cooling
consumption in building management

Features

- Nominal diameters from DN 15 up to DN 100
- Nominal flow rates from q_p 1,5 up to q_p 60
- Universal installation position
- Lower pressure loss
- No moving parts
- Electronic calculator
- LCD-resolution 7 digits
- Non-volatile memory EEPROM
- Operating temperature 130 °C, short term 150 °C
- Temperature sensor Pt 100 (2-wires)
- Standard EN 1434
- 24 month register
- Supply via 12-year battery, mains or M-Bus
- Maximum values with time stamp
- **CE** Conformity according European Measuring Instruments Directive (MID)

Options

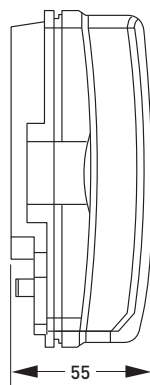
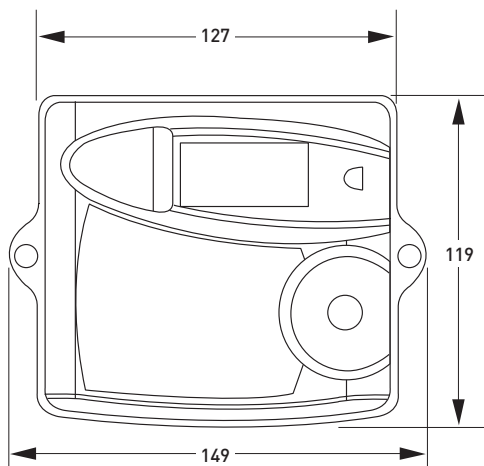
- Calculator usable for compact mounting up to DN 50
- Option cards for:
 - M-Bus / 2 water meter inputs
 - M-Bus / 2 pulse outputs energy + volume
 - M-Bus Power / 2 water meter inputs
 - LonWorks, FTT-10A / 2 water meter inputs
(separate supply 24 V AC/DC necessary)
 - Modbus RTU (RS485) / 2 water meters inputs
(Power supply module 230 V AC necessary)

Technical Data

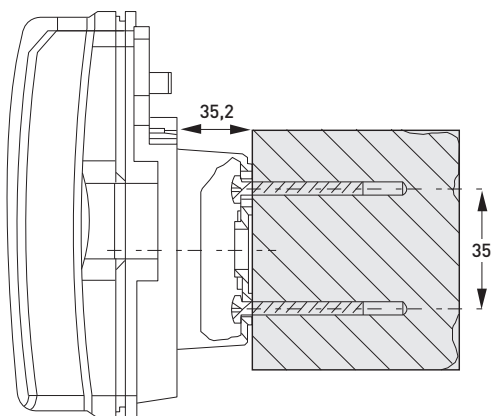
Execution			CF-Echo II														
Nominal flow rate	q _n	m ³ /h	1,5	1,5	2,5	2,5	3,5	3,5	6	6	6	10	10	15	25	40	60
Nominal diameter	DN	mm	15	20	20	20	25	25	25	25	32	40	40	50	65	80	100
Operating pressure	PN	bar	16	16	16	16	16	16	16	16	16	16	16	-	-	-	-
			-	-	-	25	-	25	-	25	-	-	25	25	25	25	25
Kvs-value		m ³ /h	3,21	3,21	6,01	6,01	10,41	10,41	16,39	16,39	16,39	33,15	33,15	33,8	91,3	141,4	200
Maximum flow rate	q _s	m ³ /h	3	3	5	5	7	7	12	12	12	20	20	30	50	80	120
Minimum flow rate	q _i	l/h	15	15	25	25	35	35	60	60	60	100	100	150	250	400	600
Starting flow		l/h	3	3	5	5	7	7	12	12	12	20	20	30	50	80	120
Temperature		max. °C	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Short term temperature		max. °C	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150

Dimensions			CF-Echo II														
Length	L	mm	110	130	130	190	150	260	150	260	260	200	300	270	300	300	360
Height	A	mm	72	72	72	72	77	77	77	77	77	85	85	77	79	86,5	95,5
Height	B	mm	18	18	18	18	23	23	23	23	23	35	35	-	85	92,2	108
Flange external dimension	D	mm	-	-	-	105	-	115	-	115	-	-	150	165	184	206	235
Connection thread on meter	G...B	Inch	¾	1	1	1	1¼	1¼	1¼	1¼	1½	2	2	-	-	-	-
Flange			-	-	-	■	-	■	-	■	-	-	■	■	■	■	■

Dimension Diagram Calculator

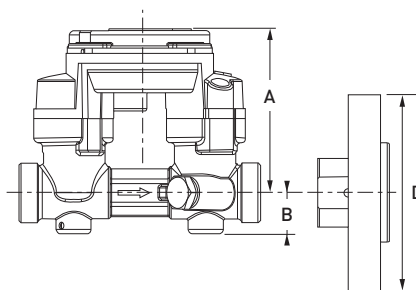


Wall-fastening

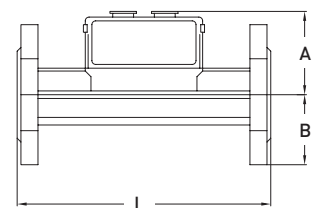


Dimension Diagram

Flow sensor
DN 15 – DN 50

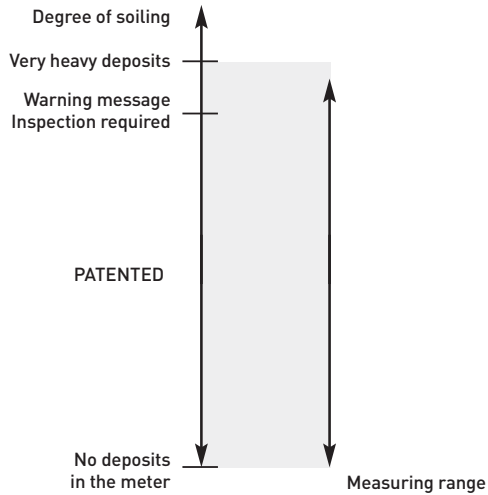


Flow sensor
DN 65 – DN 100



Soiling warning

The CF-Echo II processes a high signal level in a patented process to output a warning signal for the degree of soiling.

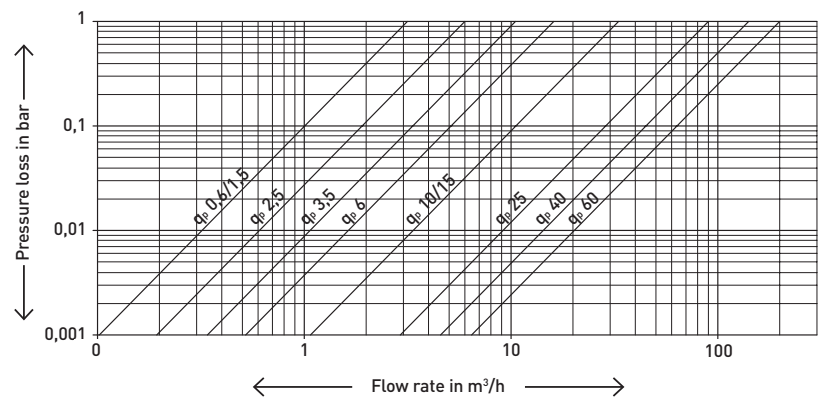


Calculator	
Temperature measuring range	0 to 180 °C
Temperature difference	3 to 160 K
Max. display resolution (7-digits)	<ul style="list-style-type: none"> ■ 9'999,999 ■ 99'999,99 ■ 999'999,9 ■ 9'999'999
Supply voltage lithium battery	3,6 V
Battery lifetime	12 years (optional mains or M-Bus)
Environment class	EN 1434 – class C
Protection class	IP54
Environment temperature	+5 to +55 °C
Storage temperature	-10 to +60 °C
Optical interface	EN 60870-5, M-Bus protocol
Temperature sensor connection	2-wires, cable Ø3,5 to 6,5 mm

Temperature sensor	
Sensor element	Pt 100
Execution	Direct immersion sensor up to DN 20 Pocket sensor initiating DN 25
Connection diagram	2-wires
Installation length	50 mm/105 mm q _p 15
Cable lengths	2x1,75 m / 2x3,0 m initiating q _p 15

Volume measuring meter	
Metrological class approval acc. PTB	EN 1434 - class 2 / 1:100
Calibration in class	3 / 1:100

Typical Head Loss Curve

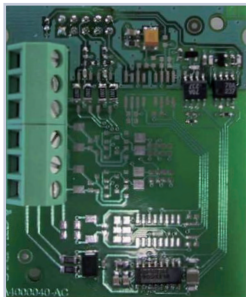


Option cards

As standard, CF-Echo II can accept various option cards. These option cards can also be connected to previously installed heat meters at a later date.

The following option cards are available:

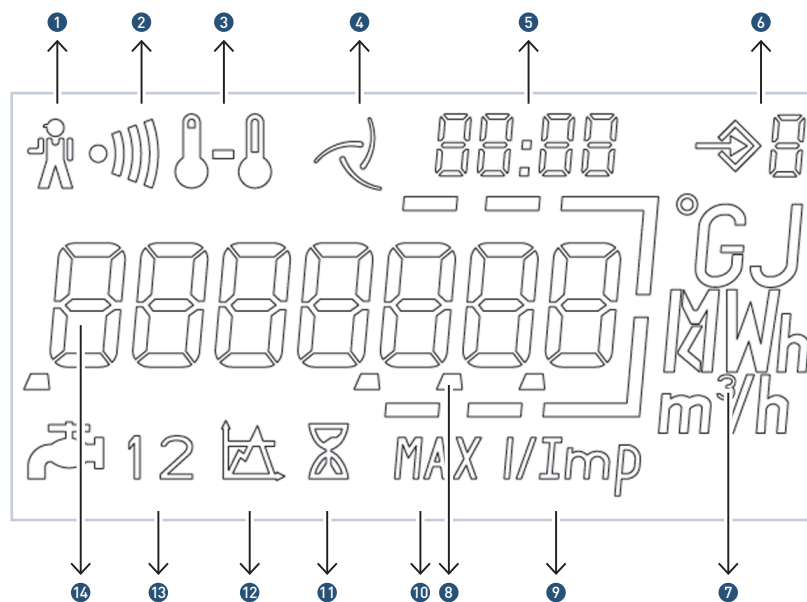
- M-Bus / 2 water meter inputs
- M-Bus / 2 pulse outputs energy + volume
- M-Bus Power / 2 water meter inputs
- LonWorks / 2 water meter inputs



Technical data on request

Multi-function display CF Echo II/CF-51/CF-55

Reading errors are minimised by the concise layout on 3 display levels and the clear symbols for status and alarm messages. The various display levels are selected via a red button. Press the button for app. 3 s to access the next level.



1. Operating fault
2. Soiling warning
3. Temperatures
4. Flow rate display
5. Time/Date
6. Display level
7. Units
8. Decimal points
9. Water meter pulse value
10. Maximum values
11. Operating period
12. Threshold values (not occupied)
13. Water meter inputs
14. Main display section