

CF ECHO II



Ultrasonic Compact Heat and Cooling Meter, qp 0.6-15 m³/h

The CF ECHO II is the compact meter of Itron's CF Heat and Cooling meter family equipped with ultrasonic flow meter. Electronic data processing gives high precision throughout the entire measurement curve, producing a large dynamic range.

Flows can be measured from qp 0.6 to qp 15 m³/h (DN15 to DN50) with reliable and stable accuracy.

Thanks to a complete portfolio of body variants of every size, the CF ECHO II meters are very flexible in use. All hydraulic bodies carry a flanked design helping meter installation.

Applications

Heating, Cooling and Combined, return and supply positioning, horizontal or vertical.

Features and Benefits

- High metrology
- Advanced functions
- Ease of installation
- Easy reading
- Pre-equipped for communication
- Accurate measurement of high and low flows

Standards Compliance

- MID 2014/32/EU Module B+D
- Class 2.0 acc. EN 1434
- Env. Class E1, M1 acc. 2014/32/EU
- OIML R75
- SP Test ≤ -2%
- PED compliant

CE type approval certificate:
DE-06-MI004-PTB002

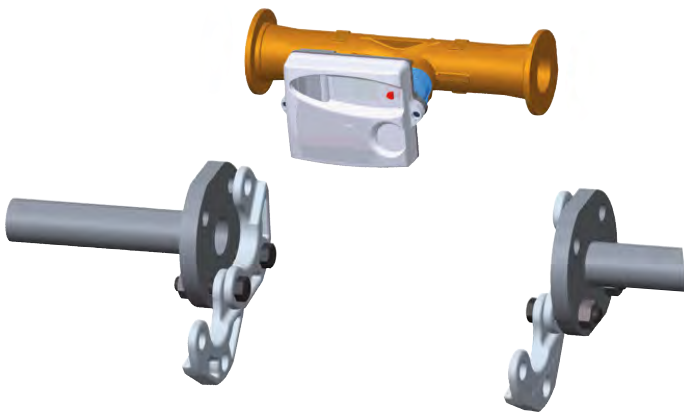
Advanced Functions

The CF ECHO II provides a number of advanced functions such as data-logging for complex network analysis, double tariff for further billing choices, peak recording and lots more, which are powerful diagnostic aids for network management.

All available data are presented on the highly ergonomic and multifunctional display.

Communication Device

The plug and play communication boards open the way for data collection through various reading systems.



NEW! Movable flanges for easy installation directly at the meter body.

Multifunctional Display

The multifunctional display facilitates easy reading, providing fast and clear access to the most important billing data. The display enables the diagnosis of failures alarms form a single glance.

Loop 1

- Billing Data**
- Energy
- Cooling energy*
- Volume
- LCD test
- External water meter 1 + 2*
- *optional



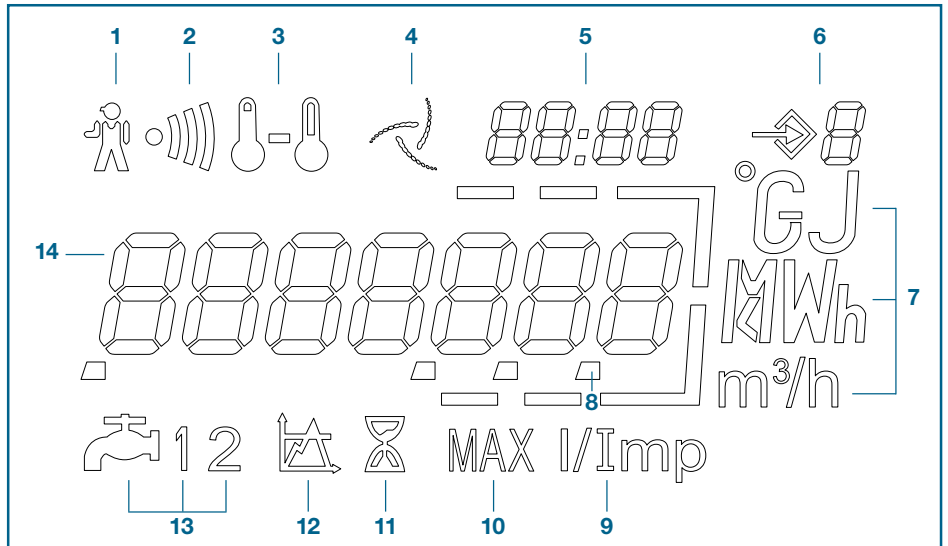
Loop 2

- Additional Information**
- Flow rate
- Power
- Supply temperature
- Return temperature
- Temperature difference
- Operating time
- Power peak date + time*
- Flow peak date + time*
- Temperature peak date + time*
- Time in alarm
- Temperature alarm
- Flow alarm
- Overflow alarm
- Power supply alarm
- Current time + date*
- M-Bus primary address
- M-Bus secondary address
- M-Bus baud rate
- Pulse value water meter 1 + 2*
- *optional



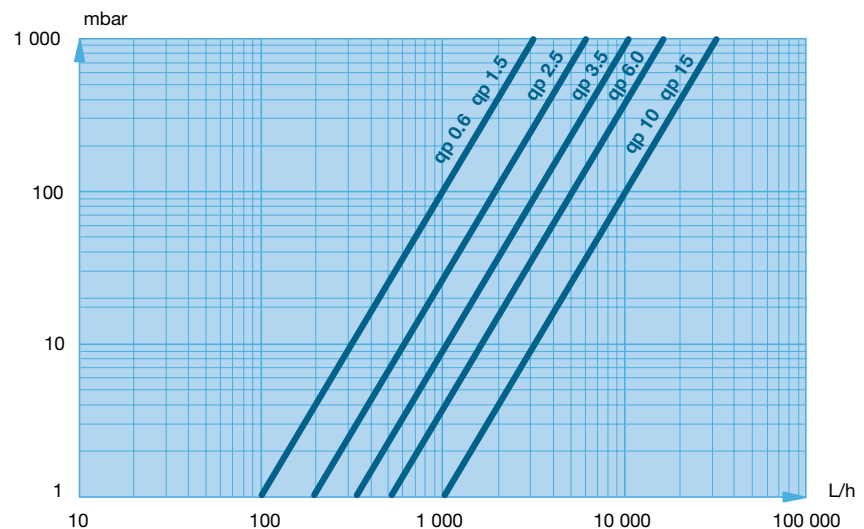
Loop 3

- Fixed Date Reading**
- Fixed date energy 1...24
- Fixed date cooling energy 1...24*
- Fixed date volume 1...24
- Fixed date water meter 1 + 2 1...24*
- Software version
- *optional



- | | | |
|----------------------|----------------------|---------------------------|
| 1 Alarm Icon | 6 Loop Indicator | 11 Elapsed Time Indicator |
| 2 Dirty Warning | 7 Units | 12 Thresholds |
| 3 Temperatures | 8 Decimal Indication | 13 External Water Meters |
| 4 Flow Indicator | 9 Pulse Input Value | 14 Main Digits |
| 5 Date & Time Digits | 10 Peaks | |

Head Loss

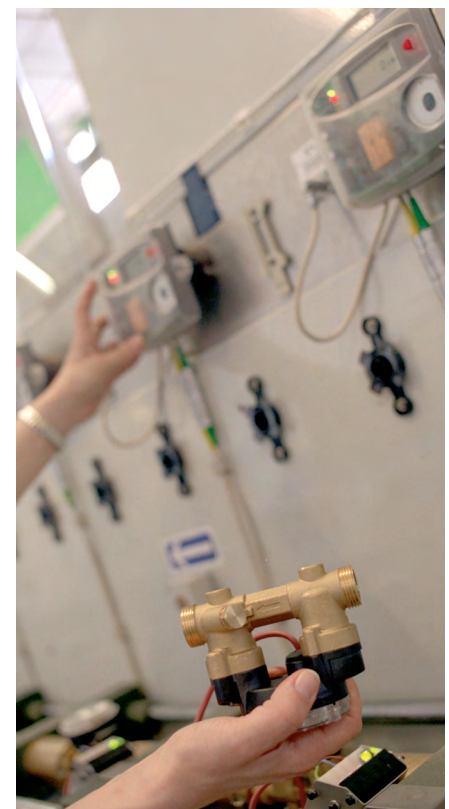


Technical Characteristics

Nominal Flow Qp m³/h	Diameter DN mm	Max flow Qs m³/h	Min flow Qi L/h	Start flow Qstart L/h	Body length mm	Pipe Connection	Nominal Pressure bar	Permanent max. temp. °C	Accidental max. temp. °C
0.6	15	1.2	6	1.2	110	G ¼ B	16/25	130	150
	20	1.2	6	1.2	130	G 1 B	16/25	130	150
	20	1.2	6	1.2	190	G 1 B/flanges	16/25	130	150
1.5	15	3	15	3	110	G ¼ B	16/25	130	150
	20	3	15	3	130	G 1 B	16/25	130	150
	20	3	15	3	190	G 1 B/flanges	16/25	130	150
2.5	20	5	25	5	130	G 1 B	16/25	130	150
	20	5	25	5	190	G 1 B/flanges	16/25	130	150
	25	5	25	5	260	G 1 ¼ B	16/25	130	150
3.5	25	7	35	7	150	G 1 ¼ B	16/25	130	150
	25	7	35	7	260	G 1 ¼ B/flanges	16/25	130	150
	40	7	35	7	300	Flanges	25	130	150
6	25	12	60	12	150	G 1 ¼ B	16/25	130	150
	25	12	60	12	260	G 1 ¼ B/flanges	16/25	130	150
	32	12	60	12	260	G 1 ½ B	16/25	130	150
	40	12	60	12	300	Flanges	25	130	150
	50	12	60	12	270	Flanges	25	130	150
10	40	20	100	20	200	G2 B	16/25	130	150
	40	20	100	20	250	Flanges	25	130	150
	40	20	100	20	300	G 2 B/flanges	16/25	130	150
	50	20	100	20	270	Flanges	25	130	150
15	50	30	150	30	250	Flanges	25	130	150
	50	30	150	30	270	Flanges	25	130	150

CF ECHO II Energy Calculator	
Temperature range	0 ... 180°C
Temperature difference	3 ... 160 K
Temperature sensor type	Pt100 or Pt500, 2 wires
Temperature sensor (Qp 0.6 to 2.5 m³/h)	Direct immersion or pocket type probes integrated in the flow meter body
Cable length to flow meter	From 0.4 to 10 m (Typical 1.5, 3 m)
Back-up memory	EEPROM
Display	LCD - 7 digits
Optical interface	EN 60870-5 / M-Bus protocol
Power supply (optional)	6 or 12 year Lithium battery, 230V main power supply or power supply by M-Bus

CF ECHO II Testing Pulse Value (Qp)	0.6	1.5	2.5	3.5	6	10	15
cm³/impuls	5	10	20	25	50	100	100

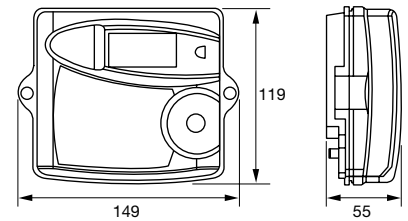


Option Boards

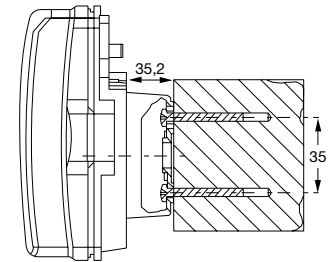
The CF ECHO II is pre-equipped for communication. Different option boards can be plugged simply to the meter and start working automatically.

The following option boards are available:

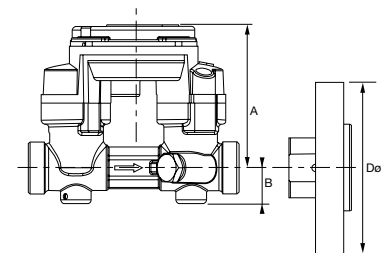
- Board 1: M-Bus + E/V Repetition
- Board 2: M-Bus + 2 Water Meters pulse input
- Board 3: GPRS Modem + E/V Repetition + M-Bus Master
- Board 4: LON + 2 Water Meters pulse input
- Board 5: LoRa CMI4130
- Board 6: M-Bus + 2 Water Meters pulse input + power supply by M-Bus
- Board 7: Modbus



Integrator



Wall mounting



Flow meter

See Technical Characteristics table for available lengths

DN	15	20	25	32	40	50
A	72	72	77	77	85	85
B	18	18	23	24	35	-
Do (flanges)	-	100	110	-	140	160

M-Bus	
Standard reference	EN 1434-3
Baud rate	300 to 2400 baud
Data in standard mode	Energy, Volume, Flow, Temperatures (supply, return, difference), Time in error, Operation time, Date and time, Volume of water meters 1&2, Firmware version
Pulse inputs for 2 water meters	
Pulse value (independent per input)	1 / 2.5 / 10 / 25 / 100 / 250 / 1000 L / imp
Pulse detection	Contact closed $R \leq 500 \Omega$ Contact opened $R \leq 100 k\Omega$ Maximum frequency: 10Hz
Energy and Volume Pulse output	
Pulse value	Repetition of display Energy from 1KWh to 1MWh Volume from 10 L to 1 m ³
LON Application	
Transceiver	TP / FT-10
Transmission speed	78 Kb/s
LoRaWAN characteristics	
Device class	Class A, bi-directional
LoRa version	1.0.2
Activation	OTAA or ABP
Data rate	DR0-DR5 (250 bit7s - 5470 bit7s)
GPRS Modem with integrated M-Bus-Master (option)	
GPRS specifications	Quad Band GSM 850/900/1800/1900MHz
GPRS datatransfer via	SMS, E-Mail, FTP client, http client
M-Bus Master (option)	EN 13757-2/-3, 300/2400 Baud, 8 unit loads
Modbus	
Mode	2 wires, Differential Half-Duplex
Baudrate / Data	2400, 4800, 9600, 19200 bits/s
Format	8 data bit 1 stop bit no parity
Power supply	3,6 V-12V DC from CF heat meter
Power supply by M-Bus (Board 6)	
Current consumption	2 unit loads = 3mA (M-Bus master / permanent load)