



High Accuracy  
Advanced Functions  
Communication

## CF ECHO II

### Ultrasonic Compact Heat Meter, Qp 0.6-15 m<sup>3</sup>/h

- ▶ High metrology
- ▶ Advanced functions
- ▶ Ease of installation
- ▶ Easy reading
- ▶ Pre-equipped for communication



The CF ECHO II is the compact meter of the new generation of Actaris ultrasonic heat meters. Electronic data processing gives high precision throughout the entire measurement curve, producing a dynamic range exceeding class C.

Flows can be measured from Qp 0.6 to Qp 15 m<sup>3</sup>/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 and Combined, return and supply positioning, horizontal or vertical.

#### Benefits

- Accurate measurement of high and low flows,
- Easy reading,
- Pre-equipped for communication.

#### Standards Compliance

- Class 2.0 acc. EN 1434
- Env. Class C acc. EN 1434
- OIML R75 class 4
- PTB Class C
- SP Test ≤ -2%
- PED compliant

#### 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.

## ▶ 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\***
- **Instantaneous bonus\***
- **Cumulative bonus\***
- Time in alarm
- Temperature alarm
- Flow alarm
- Overflow alarm
- Power supply alarm
- M-Bus primary address
- M-Bus secondary address
- M-Bus baud rate
- **Pulse value water meter 1/2\***

\* *Optional*

## ▶ Loop 3

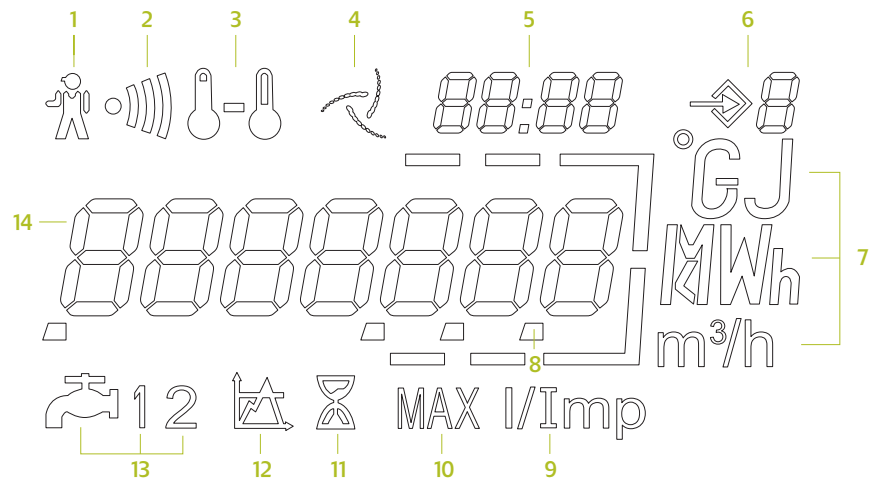
### Fixed Date Reading

- Fixed date energy 1...13
- Fixed date cooling energy 1...13
- Fixed date volume 1...13
- **Fixed date water meter 1/2 1...13\***
- Software version

\* *Optional*

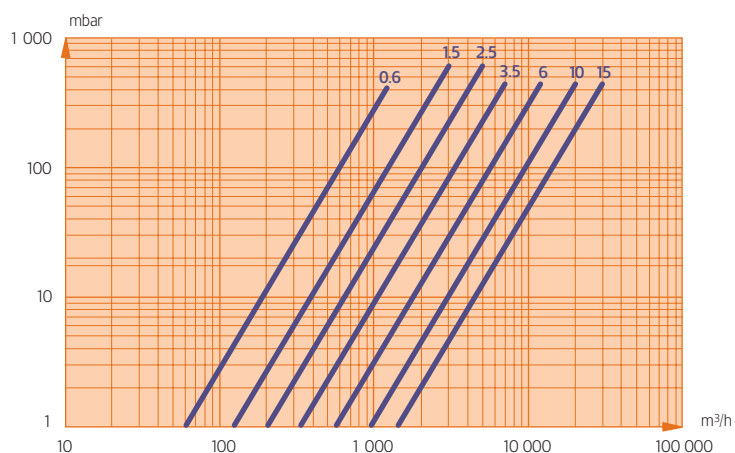
## Multifunctional Display

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. The LCD has a long life time and through a push button you get easily access to each level of data.



- |                      |                      |                           |
|----------------------|----------------------|---------------------------|
| 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 3/4 B	16	130	150
	20	1.2	6	1.2	130	G 1 B	16	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 3/4 B	16	130	150
	20	3	15	3	130	G 1 B	16	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	130	150
	20	5	25	5	190	G 1 B/Flanges	16/25	130	150
	25	5	25	5	260	G 1 1/4 B	16	130	150
	25	5	25	5	260	G 1 1/4 B/Flanges	16/25	130	150
3.5	25	7	35	7	150	G 1 1/4 B	16	130	150
	25	7	35	7	260	G 1 1/4 B/Flanges	16/25	130	150
	40	7	35	7	200	G 2 B	16	130	150
	40	7	35	7	250	Flanges	25	130	150
	40	7	35	7	300	G 2 B/Flanges	16/25	130	150
6	25	12	60	12	150	G 1 1/4 B	16	130	150
	25	12	60	12	260	G 1 1/4 B/Flanges	16/25	130	150
	32	12	60	12	260	G 1 1/2 B	16	130	150
	40	12	60	12	200	G 2 B	16	130	150
	40	12	60	12	250	Flanges	25	130	150
	40	12	60	12	300	G 2 B/Flanges	16/25	130	150
	50	12	60	12	270	Flanges	25	130	150
10	40	20	100	20	200	G 2 B	16	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	250	Flanges	25	130	150
	50	20	100	20	270	Flanges	25	130	150
15	40	30	150	30	200	G 2 B	16	130	150
	40	30	150	30	250	Flanges	25	130	150
	40	30	150	30	300	G 2 B/Flanges	16/25	130	150
	50	30	150	30	250	Flanges	25	130	150
	50	30	150	30	270	Flanges	25	130	150

### CF ECHO II Energy Calculator

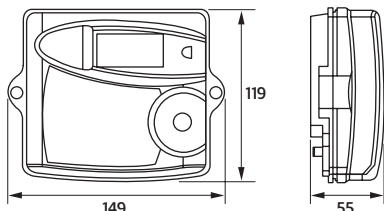
Temperature range	0 ... 180 °C
Temperature difference	3 ... 160 °C
Temperature sensor type	Pt100 or Pt500, 2 wire
Temperature sensor (Qp 0.6 to 2.5 m³/h)	Direct immersion or pocket type probes integrated in the flow meter body
Cable length to flow meter	From 0.4 to 10 m (Typical 1.5, 3 m)
Back-up memory	EEPROM
Display	LCD - 7 digits
Optical interface	According to EN 60870-5
Power supply	Main - 230 V Standard life-time lithium battery (6 years typical) Long life-time lithium battery (12 years typical)

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

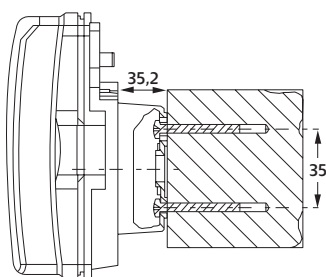


## Dimensions

### ► Integrator

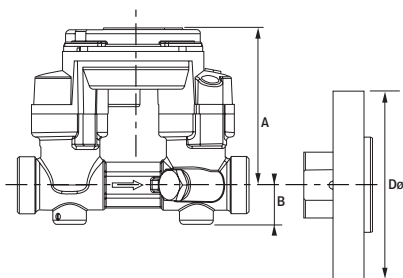


### ► Wall mounting



### ► Flow meter

See *Technical Characteristics table for available lengths.*



DN	15	20	25	32	40	50
A	72	72	77	77	77	77
B	18	18	23	24	26	-
Dø (Flanges)	-	105	115	-	150	165

## 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 external Water meters**
- Board 3: **Modem + 2 external Water meters**
- Board 4: **LON + 2 external Water meters**
- Board 5: **RF + 2 external Water meters**
- Board 6: **RS232 + 2 external Water meters**



### ► M-Bus

Standard reference	EN 1434-3
Baud rate	300 to 9600 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 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 $R \geq 100 k\Omega$ Maximum frequency: 2Hz

### ► Energy and Volume Pulse output

Pulse value	Repetition of display Energy from 1KWh to 1MWh Volume from 10 L to 1 m <sup>3</sup>
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For more information, please contact your local agency.



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