


The Itron logo is located in the top left corner of the page. It consists of the word "Itron" in a white, sans-serif font, with a small yellow lightning bolt symbol above the letter 'o'. The logo is set against a red rectangular background.

Itron

The background of the page is a photograph of a corner window. The window is white and provides a view of a park with green grass and trees with autumn-colored leaves. In the bottom right corner of the window, a white radiator is visible. The floor is made of dark wood.

Heating and Cooling Catalog

KNOWLEDGE TO SHAPE YOUR FUTURE

At Itron, the phrase «Knowledge to shape your future» is more than a simple slogan. It's a fundamental tenet of who we are, and it helps define what we're working toward every day - enabling our customers to build a sustainable future for their business, their customers and the environment.

ITRON'S GLOBAL PRESENCE

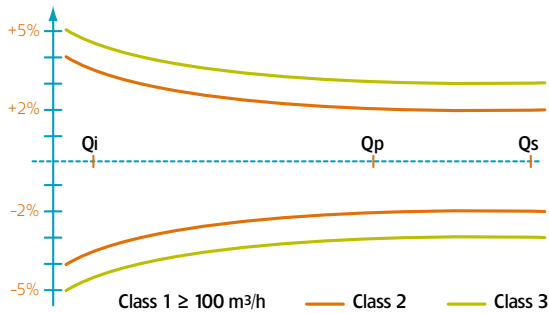
We are a global leader in technology and innovation. Helping the world make the most of its resources. We are local people serving local utilities. We are Itron.



Itron heat meters are produced at Itron manufacturing plant Oldenburg in Holstein (Germany).

METROLOGY CLASSES ACCORDING TO EN 1434 AND MID

Flow Meter Tolerance



Most Common

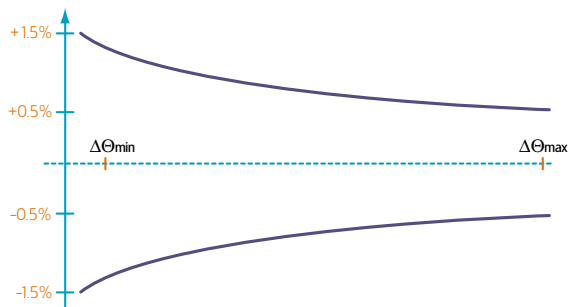
$$Q_i = Q_p / 100$$

$$Q_s = 2 \times Q_p$$

Error Class 2

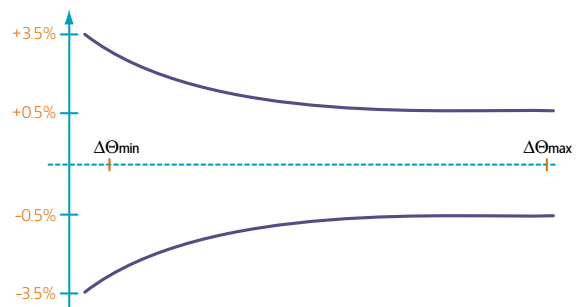
$$E_{FM} = \pm \left(2 + 0.02 \frac{Q_p}{Q} \right)$$

Calculator Tolerance



$$E_C = \pm \left(0.5 + \frac{\Delta\Theta_{min}}{\Delta\Theta} \right)$$

Sensors Tolerance



$$E_S = \pm \left(0.5 + 3 \frac{\Delta\Theta_{min}}{\Delta\Theta} \right)$$

Complete meter

$$E_{CM} = \pm \left(3 + 4 \frac{\Delta\Theta_{min}}{\Delta\Theta} + 0.02 \frac{Q_p}{Q} \right)$$

ENVIRONMENT CONDITION CLASSES

» Class A

- Indoor usage
- Residential applications
- Low relative humidity conditions
- Normal electromagnetic conditions

» Class B


- Outdoor usage
- Residential applications
- Normal relative humidity conditions
- Normal electromagnetic conditions

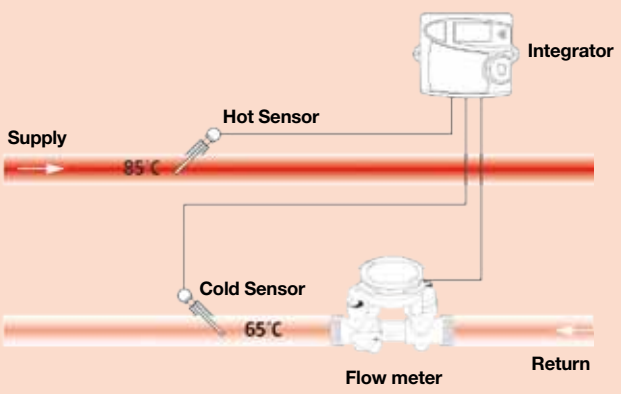
» Class C

- Indoor usage
- Industrial application
- Normal relative humidity conditions
- High electromagnetic conditions

TEMPERATURE SENSORS INSTALLATION

- » Sensor pockets must be installed in the supply and return pipe of the circuit where the flow is fitting.
- » Do not install sensor pockets on a high point of the network.
- » Install the sensor pocket downstream of the flow meter.
- » Pockets must be mounted with an angle between 45° and 90°.
- » Temperature sensors are paired delivered. Always mount them matched one to one (same ID number).

 **HEATING APPLICATION**

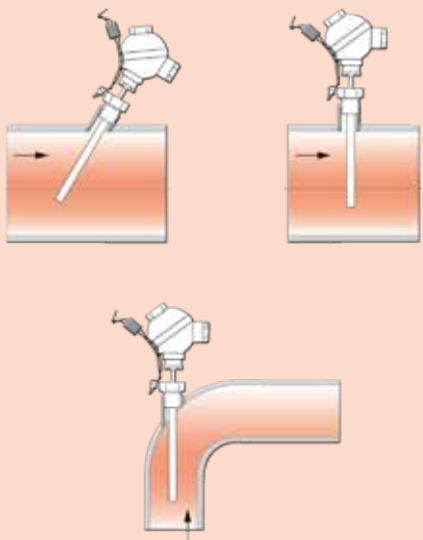



Supply 85°C Hot Sensor Integrator

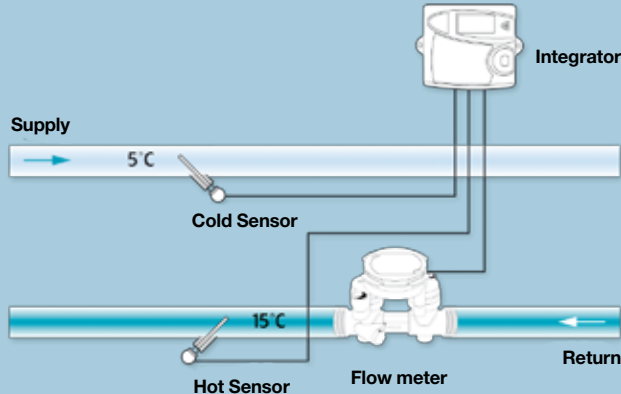
Cold Sensor 65°C Flow meter Return

> **Temperature sensors installation best practices for Heating application**

- Sensor pockets and connected sleeves must be installed head upwards.



 **COOLING APPLICATION**

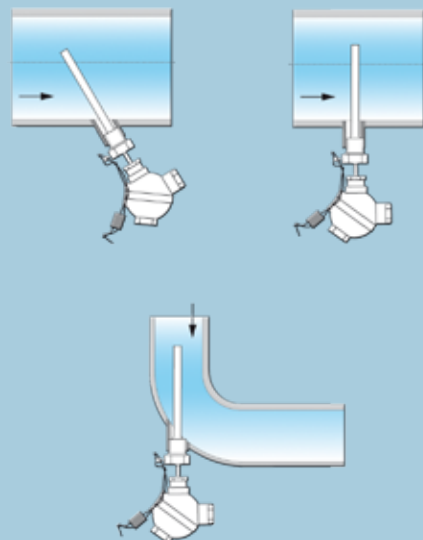


Supply 5°C Cold Sensor Integrator

Hot Sensor 15°C Flow meter Return

> **Temperature sensors installation best practices for Cooling and Combined applications**

- To prevent water condensation, sensor pockets and connected sleeves must be installed head downwards.
- To prevent rusted terminals, head temperature sensors should be potted with resin.
- Never use oil or grease to lubricate pockets. Use silicon instead.



Compact Meters

INTEGRAL-V MAXX - MECHANICAL HEAT METER



- » High metrology performances
- » Optimised dimensions
- » Modular structure
- » Pre-equipped for communication

CE type approval certificate:
DE-06-MI004-PTB003



Calculator

Temperature range	°C	20...90 / 20...140 (option)
Temperature difference	°C	3...70 / 3...120 (option)
Display resolution	KWh m³	0...9999999 0...99999,99
Power supply		Lithium cell 10 years
Ingress protection	IP	54
Environmental Classification		EN1434-C/2004/22/EC class E1, M1

Flow Sensor		Qp 0,6	Qp 1,5	Qp 2,5
Nominal Size DN	mm	15	15	20
Nominal Flow rate Qp	m³/h	0,6	1,5	2,5
Dynamic range	PTB	H : 1:100 / V : 1:50	H/V : 1:100	H/V : 1:100
Max. Flow (short time) Qs	m³/h	1,2	3,0	3,0
Minimum Flow rate Qi	l/h	6	15	25
Temperature range T _{vmt}	°C	20-90°C	20-90°C	20-90°C
Operating pressure P _N	bar	16	16	16
Connection		G 3/4 A	G 3/4 A	G 1 A
Length	mm	110	110	130

Temperature Sensor

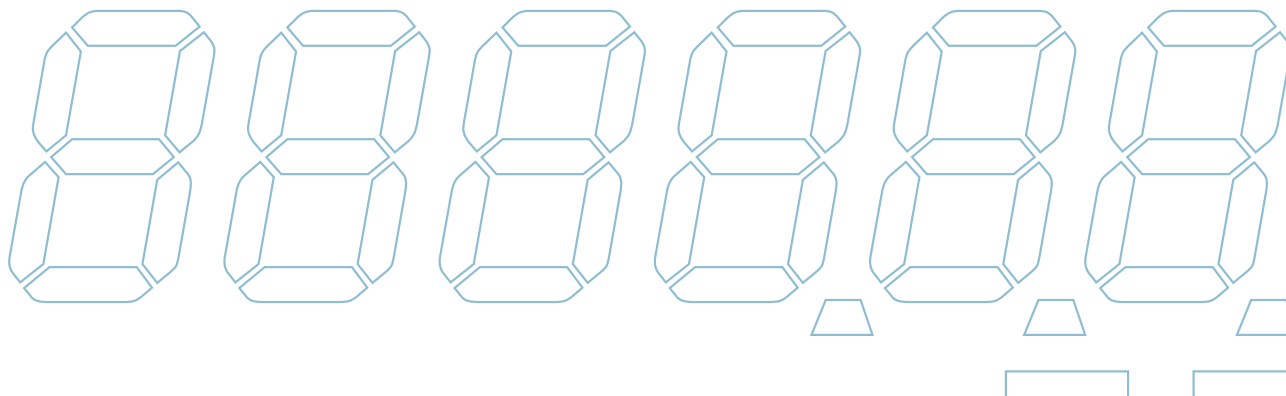
Type	PT100
Pocket sensors (standard)	PS50 mm/Ø 6mm/spiral cable
Temperature range	0...90°C
Cable length	1,2 m
Other sensors on request	

OPTIONS

All Integral-V MaXX meters are prepared to be connected to different types of option boards. The meter automatically detects the connected option and provides the additional functions. Option connectors can be plugged even on site without breaking metrological seals.

Available boards:

- » Board 1: **M-Bus + 4 external Water meters**
- » Board 2: **Energy/Volume pulse repetition**



INTEGRAL-MK MAXX - MECHANICAL HEAT METER (CAPSULE CONCEPT)



- » Class C approved flow sensor
- » Proven electronic turbine detection
- » Capsule system
- » Advanced functions
- » Pre-equipped for communication

CE type approval certificate:
DE-06-MI004-PTB003



Calculator			
Temperature range	°C	20-90 / 20 – 140 (option)	
Temperature difference	K	3-70 / 3 – 120 (option)	
Display resolution 8 digits	kWh	0...9999999	
	m ³	0...99999,99	
Power supply	Voltage V	3,6	
	Lifetime	Lithium cell 10 years	
Environmental classification	EN1434	EN1434 – C / 2004/22/EC class E1, M1	
Ingress protection	IP	54	
Flow Sensor		Qp 1,0	Qp 2,5
Nominal Size DN	mm	15	20
Nominal Flow rate Qp	m ³ /h	1,0	2,5
Dynamic range	PTB	C	C
Standard calibration class	PTB	B	B
Max. Flow (short time) Qmax	m ³ /h	1,2	3,0
transitional Flow rate Qt*	l/h	80	200
Minimum Flow rate Qmin*	l/h	20	50
Temperature range T _{vmt}	°C	20-90°C	20-90°C
Operating pressure P _N	bar	16	16
Body sizes / EAT	3/4"-110	X	-
	1"-130	X	X
Capsule / EAT interface		EN14154-2 Annex B type A1	

* Standard calibration values according to class B (Dynamic 1/50)

Temperature Sensor		
Type		PT100
Pocket sensors (standard)	Type	PS 50mm / Ø6mm / spiral cable
Temperature range	°C	0....90
Cable length		1,2 m
Other sensors on request		

OPTIONS

All Integral-MK MaXX meters are prepared to be connected to different types of option connectors.

The meter detects automatically the connected option and provides the additional functions.

Option connectors can be plugged even on site without breaking metrological seals.

Available boards:

- » Board 1: **M-Bus + 4 external Water meters**
- » Board 2: **Energy/Volume pulse repetition**

CF-ULTRAMAXX MK - UTRASONIC HEAT METER (CAPSULE CONCEPT)



- » Itron innovation - first capsule heat meter with static technology
- » Extended dynamic range covers usual flow rate conditions in residential metering
- » Different options for implementation in communication systems
- » Advanced features for field data analysis.
- » Removable calculator

CE type approval certificate:
DE-10-MI004-PTB001

Calculator				
Temperature range		°C	0-90 / 0 – 150*	
Temperature difference		K	3-90 / 3 – 150*	
Display resolution 8 digits	Standard	kWh	99.999.999	
		Option	MWh	99.999.999
			GJ	99.999.999
			GJ	999.999.99
			m ³	999999,99
Power supply	Lithium cell 10+1 years (standard) By M-Bus (optional version)			
Environmental classification	EN1434	EN1434 – C / 2004/22/EC class E1, M1		
Ingress protection	IP	54		
Environmental temperature	°C	5...55°C (operation) / -10...60°C (transport)		
Optical interface	ZVEI / EN 60870-5 / M-BUS protocol			
Temperature sensors	Type	Pt500		
Cable calculator <-> flow meter	L [m]	0,5m		
Flow meter		qp1,5	qp2,5	
Max. overload flow	qss [m ³ /h]	3,3	5,5	
Maximum flow	qs [m ³ /h]	3	5	
Nominal flow	qp [m ³ /h]	1,5	2,5	
Minimum flow approval / production	qi [l/h]	6 / 15	25 / 50	
Cut off flow rate	qc [l/h]	2	3	
Accuracy class approval / production		EN1434 – class 2 / 3	EN1434 – class 2 / 3	
Dynamic qp/qi approval/ production		250 / 100	100 / 50	
Nominal pressure	PN [bar]	16	16	
Head loss @ qp	bar	0,25	0,25	
Temperature range permanent / short	°C	1...90 / 100	1...90 / 100	
Ingress protection	IP	67	67	
Body sizes / EAT	3/4"-110	X	-	
	1"-130	X	X	
Capsule / EAT interface	EN14154-2 Annex B type A1			
Temp.-Sensor				
Type	Pt500			
Pocket Sensors (standard)	Type	PS 50mm / Ø6mm / spiral cable		
Temperature range	°C	0...90		
Cable length	m	1,2		
Pocket Sensors (optional)	Type	PS 50mm / Ø6mm / silicone cable		
Temperature range	°C	0...150		
Cable length	m	1,75		
Direct Sensors (optional)	Type	DS 27,5mm / EN1434 / silicone cable		
Temperature range	°C	0...150		
Cable length	m	1,75		

*indication on type plate depends on type of connected temperature sensors.

COMMUNICATION OPTIONS :

The Ultra MaXX can be delivered with integrated options :

- » M-Bus
- » M-Bus and power-supply from M-Bus (2 unit loads)
- » Energy/Volume Pulse repetition
- » Water-meters pulse inputs
- » Radio mobile or fixed network (EverBlu and AnyQuest compatible)

ADVANCED MEMORY OPTION FOR ADDITIONAL FUNCTIONALITIES

- » Historical peak values on flow, power and supply temperature
- » Tariff function
- » 4 users programmable independant data loggers working in parallel for 6 values and different time periods

CF-ULTRAMAXX V - UTRASONIC HEAT METER



- » Extended dynamic range covers usual flow rate conditions in residential metering
- » Different options for implementation in communication systems
- » Versions with 2 indexes for use in combined heating and cooling applications
- » Advanced features for field data analysis.
- » Removable calculator

CE type approval certificate:
DE-10-MI004-PTB001

Calculator

Temperature range	°C	0-90 / 0 – 150*
Temperature difference	K	3-90 / 3 – 150*
Display resolution 8 digits	Standard	kWh
	Option	MWh
		GJ
		GJ
	m³	999999,99

Power supply	Lithium cell 10+1 years (standard) Lithium cell 6+1 years (option) by M-Bus (optional version)
--------------	--

Environmental classification	EN1434-C/2004/22/EC class E1, M1
------------------------------	----------------------------------

Ingress protection	IP	54
Environmental temperature	°C	5...55°C (operation) / -10...60°C (transport)

Optical interface	ZVEI / EN 60870-5 / M-BUS protocol
-------------------	------------------------------------

Temperature sensors	Type	Pt500
---------------------	------	-------

Cable calculator <-> flow meter	L [m]	0,5m
---------------------------------	-------	------

Flow meter		qp1,5	qp2,5
Max. overload flow	qss [m³/h]	3,3	5,5
Maximum flow	qs [m³/h]	3	5
Nominal flow	qp [m³/h]	1,5	2,5
Minimum flow	qi [l/h]	6	15
Cut off flow rate	qc [l/h]	2	3
Accuracy class		EN1434 – class 2	EN1434 – class 2
Dynamic qp/qi		250	250
Nominal pressure	PN [bar]	16	16
Head loss @ qp	bar	0,24	0,23
Temperature range	°C	1...90 (120 as option)	
Ingress protection	IP	67	
Available sizes	3/4" - 110	X	-
	1" - 130	X	X

Temp.-Sensor

Type	Pt500
------	-------

Pocket Sensors (standard)	Type	PS 50mm / Ø6mm / spiral cable
---------------------------	------	-------------------------------

Temperature range	°C	0...90
-------------------	----	--------

Cable length	m	1,2
--------------	---	-----

Pocket Sensors (optional)	Type	PS 50mm / Ø6mm / silicone cable
---------------------------	------	---------------------------------

Temperature range	°C	0...150
-------------------	----	---------

Cable length0	m	1,75
---------------	---	------

Direct Sensors (optional)	Type	DS 27,5mm / EN1434 / silicone cable
---------------------------	------	-------------------------------------

Temperature range	°C	0...150
-------------------	----	---------

Cable length	m	1,75
--------------	---	------

*indication on type plate depends on type of connected temperature sensors.

COMMUNICATION OPTIONS

The Ultra MaXX can be delivered with integrated options :

- » M-Bus
- » M-Bus and power-supply from M-Bus (2 unit loads)
- » Energy/Volume Pulse repetition
- » Water-meters pulse inputs
- » Radio mobile or fixed network (EverBlu and AnyQuest compatible)

ADVANCED MEMORY OPTION FOR ADDITIONAL FUNCTIONALITIES

- » Historical peak values on flow, power and supply temperature
- » Tariff function
- » 4 users programmable independant data loggers working in parallel for 6 values and different time periods

CF ECHO II - ULTRASONIC HEAT METER



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	16/25	130	150
1.5	15	3	15	3	110	G 3/4 B	16/25	130	150
	20	3	15	3	130	G 1 B	16/25	130	150
2.5	20	5	25	5	130	G 1 B	16/25	130	150
	20	5	25	5	190	G1B/flanges	16/25	130	150
	25	5	25	5	260	G 1¼ B	16/25	130	150
3.5	25	7	35	7	150	G 1¼ B	16/25	130	150
	25	7	35	7	260	G 1¼ B/flanges	16/25	130	150
	40	7	35	7	300	Flanges	25	130	150
6	25	12	60	12	150	G 1¼ B	16/25	130	150
	25	12	60	12	260	Flanges	16/25	130	150
	32	12	60	12	260	G 1½ 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	270	Flanges	25	130	150



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

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

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

OPTIONS BOARDS

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

- » Board 1: **M-Bus + Energie/Volume Pulse Repetition**
- » Board 2: **M-Bus + 2 inputs for external water meters**
- » Board 3: **M-Bus + 2 inputs for external water meters + power supply by M-Bus**
- » Board 4: **LON + 2 inputs for external water meters**
- » Board 5: **Radio + 2 inputs for external water meters (EverBlu and AnyQuest compatible)**
- » Board 6: **RS 232**
- » Board 7: **GPRS Modem + M-Bus master**

Calculators

CF 51 / CF 55 - CALCULATORS



CF51

- » Modular Design
- » Plug and Play Communication options boards
- » Bonus calculator
- » Max. demand manager
- » 2 wires

CE type approval certificate:
DE-06-MI004-PTB006



CF55

- » Complex Tariff Manager
- » Powerful Datalogger
- » Plug and Play Communication Boards
- » 4 wires

CE type approval certificate:
DE-06-MI004-PTB006



CF 51 Energy Calculator

Metrology exceeds	PTB, DRIRE, OIML, EN 1434
Temperature range	0 ... 180 °C
Temperature difference	3 ... 160 °K
Temperature sensors	Pt100 or Pt500, 2 wires
Display	LCD - 7 digits
Back-up memory	EEPROM
Power supply (optional)	6 or 12 year Lithium battery - 230 V main power supply or power supply by M-Bus
Protection class	IP64
Environmental class	Class C acc. EN 1434
Ambient temperature	5 ... 55 °C
Pulse value (programmable)	1 / 2.5 / 10 / 25 / 100 / 250 / 1000 L
Optical interface	According to EN 60870-5 / M-Bus protocol

CF 55 Energy Calculator

Metrology exceeds	PTB, DRIRE, OIML, EN 1434
Temperature range	0 ... 180 °C
Temperature difference	3 ... 160 °K
Temperature sensors	Pt100 or Pt500, 4 wires
Display	LCD - 7 digits
Back-up memory	EEPROM
Power supply (optional)	6 or 12 year Lithium battery - 230 V main power supply or power supply by M-Bus
Protection class	IP64
Environmental class	Class C acc. EN 1434
Ambient temperature	5 ... 55 °C
Pulse value (programmable)	1 / 2.5 / 10 / 25 / 100 / 250 / 1000 L/imp or 2.5, 4.5, 7.5, 10, 25 imp/L
Optical interface	According to EN 60870-5 / M-Bus protocol

OPTION BOARDS

The CF 51/CF 55 are pre-equipped for communication. Different option boards can be plugged in the meter and start working automatically.

The following option boards are available:

- » Board 1: **M-Bus + Energie Volume Pulse Repetition**
- » Board 2: **M-Bus + 2 inputs for external water meters**
- » Board 3: **LON + 2 inputs for external water meters**
- » Board 4: **Radio + 2 inputs for external water meters (EverBlu and AnyQuest compatible)**
- » Board 5: **M-Bus + 2 inputs for external water meters + power supply by M-Bus**
- » Board 6: **RS 232**
- » Board 7: **GPRS Modem + M-Bus master**
- » Board 8: **Double M-Bus output (only available for CF 55)**

CF 800 - HIGHLY ACCURATE AND VERSATILE COMMUNICATING CALCULATOR FOR HIGH END APPLICATIONS



Technical characteristics	
Metrology exceeds	PTB, DRIRE, OIML, EN 1434
Temperature range	0 180°C
Temperature difference	3... 160 K
Temperature sensor type	Pt100 or Pt500, 4 wire shielded
Display	LCD - 7 digits
Back-up memory	EEPROM
Power supply	230 VAC +10% -15%
Interchangeable backup battery	3 V 2.5 Ah
Protection class	IP54
Environmental class	Class C acc. EN 1434
Ambient temperature	5 ... 55 °C
Optical interface	According to EN 62056-21/EN +60870-5
Standard output	Energy/Volume Repetition
Communication capacity	Option1 LON WORK, M-Bus, Radio or Modem Option 2 (COMIO) 4 Analogic Outputs and 2 Relay Outputs or 2 water meters input and Communication Bus (MBus IEC 870 or MBus RS 485 C)
Combined heating/cooling metering interface	Optional



- » Powerful communication features
- » Integrated data logger and tariff manager
- » High accuracy and reliability
- » Easy Handling
- » Approvals: LNE F-04-G-1279, MID DE-06- MI004-PTB001

CF 800 AS A COMMUNICATIONS EXPERT

In order to optimize energy consumption and its administration, the CF 800 is fitted with outputs adapted to industrial standards. This flexibility of application gives the CF 800 all the advantages of modern telecommunications systems, assuring total compatibility with the peripherals for building and process control systems.

As a standard, CF 800 is fitted with repetition outputs for energy and volume.

OPTION BOARDS

Two additional slots for option board allow personalizing of communications through the CF 800:

Option board 1 = one communication

Option board 1

- LON WORK board or
- M-Bus IEC 870-1 board or
- Radio board or Modem board



Option board 2 (COMIO)

- 4 analogic output
- 2 threshold or alarm relays or 2 water meter inputs
- 1 communication output
- M-Bus IEC 870
- M-Bus RS 485
- CF 150 current loop
- CF 150 RS 485



- » The CFCS software allows reading and configuring the product on site. As a standard, CF 800 is fitted with an optical interface.

Option board 2 (COMIO) = 7 outputs, of which one for communications

The cards may be configured and parameterized on site, making their application very flexible, allowing for their adaptation to system changes. The configuration of all communication boards is easy and simple using the CFCS-Software and the optical interface.

TEMPERATURE SENSORS PT100/PT500 ACCORDING TO EN 60751

Direct immersion temperature sensors



» TDF50

TDF50 up to 120°C - 2 wire		
Pipe size	Cable length	Application
DN 15...20	1.7 m	Heating/Cooling

Pocket temperature sensors



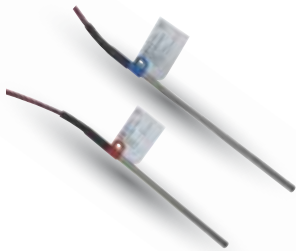
» THF50

THF50 pocket sensor up to 120°C - 2 wires		
Pipe size	Cable length	Application
DN 15...20	1.7, 2.5 or 5 m	Heating/Cooling

PS123-100 pocket sensor 105 mm up to 150°C - 2 wires		
Pipe size	Cable length	Application
DN 50...80	10 m	Heating/Cooling

THFC Temperature sensors pocket long 85 / 120 / 210 mm up to 150°C - 2 wire or 4 wire		
Pipe size	Cable length	Application
DN 50...200	2.5 / 5 m	Heating/Cooling

Pocket temperature head sensors



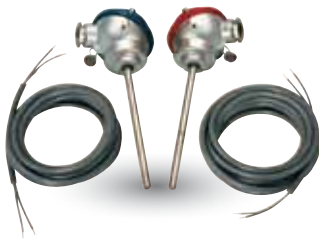
» THF-C105 / THF-C140

THF105 pocket sensor up to 180°C - 2 wires		
Pipe size	Cable length	Application
DN 50...80	no cable, 3, 5 or 10 m	Heating

THF140 pocket sensor up to 180°C - 2 wires		
Pipe size	Cable length	Application
DN 100...200	no cable, 3, 5 or 10 m	Heating

THF230 pocket sensor up to 180°C - 2 wires		
Pipe size	Cable length	Application
DN 200...400	no cable, 5 or 10 m	Heating

4 wires sensors available on demand



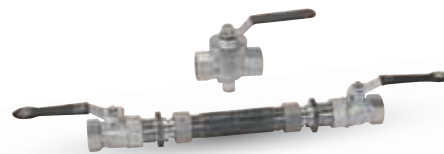
» THF140

HEATING AND COOLING METER CONNECTION KITS

Kits for Direct Immersion

Pipe size	Type	Distance pipe length	Meter connection
DN 15	DI-A	110	3/4"
	DI-B	110	3/4"
DN 20	DI-A	130	1"
	DI-B	130	1"

» Direct Immersion Kits



Type DI-A

Kits for Pockets Sensor

Pipe size	Type	Distance pipe length	Meter connection
DN 15	PS-A	110	3/4"
	PS-B	-	3/4"
	PS-Y	-	3/4"
DN 20	PS-A	130	1"
	PS-B	-	1"
	PS-Y	-	1"
DN 25	PS-C	260	1" 1/4
	PS-D	-	1" 1/4
	PS-G	260	Flanges
	PS-H	-	-
DN 32	PS-F	-	1" 1/2
DN 40	PS-E	300	2"
	PS-F	-	2"
	PS-G	300	Flanges
	PS-H	-	-
DN 50	PS-G	270	Flanges
	PS-H	-	-
DN 65	PS-G	300	Flanges
	PS-H	-	-
DN 80	PS-G	300	Flanges
	PS-H	-	-
DN 100	PS-G	360	Flanges
DN 100 ... 200	PS-H	-	-
DN 250 ... 400	PS-H	-	-

» Pocket Sensor Kits



Type PS-A



Type PS-C



Type PS-E



Type PS-H

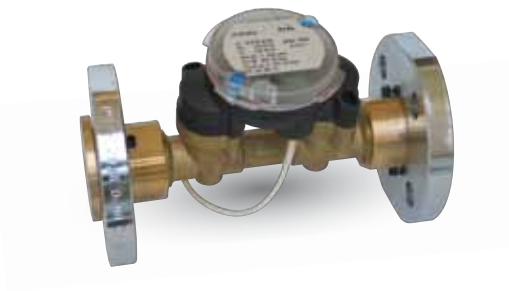
Pipe size		DI-A	DI-B	PS-A	PS-B	PS-Y	PS-C	PS-D	PS-E	PS-F	PS-G	PS-H
Ball valve with DI entry		✓	✓									
T piece				✓	✓	✓						
2 x Ball valve		✓				✓						
Pocket and welding piece							✓	✓				
2 x Pocket and welding piece									✓	✓	✓	✓
Connector set		✓	✓	✓	✓	✓			✓	✓		
Connector set with pocket							✓	✓				
Distance pipe		✓	✓	✓			✓		✓		✓	

Ultrasonic Flow Meter

US ECHO II - ULTRASONIC FLOW METER



Threaded version



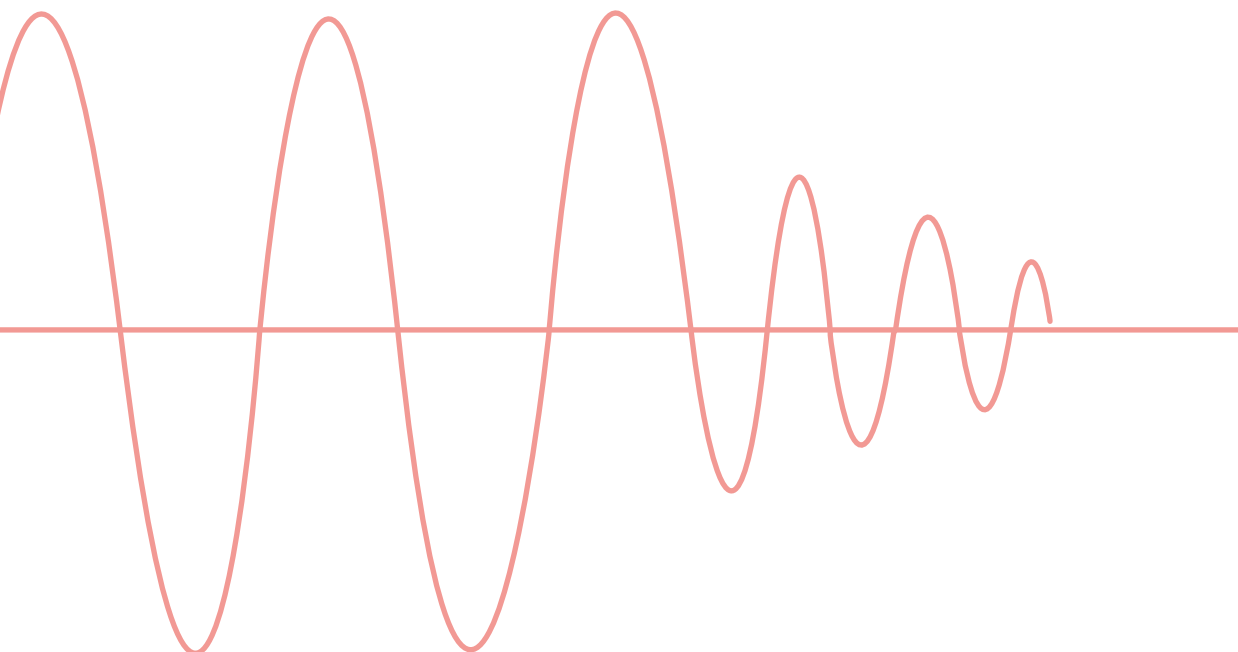
Flanged version

- » High Accuracy
- » Robustness
- » Ease of Installation
- » Self Management

CE type approval certificate:
DE-06-MI004-PTB008

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	16/25	130	150
1.5	15	3	15	3	110	G 3/4 B	16/25	130	150
	20	3	15	3	130	G 1 B	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 1/4 B	16/25	130	150
3.5	25	7	35	7	150	G 1 1/4 B	16/25	130	150
	25	7	35	7	260	G 1 1/4 B/ flanges	16/25	130	150
	40	7	35	7	300	Flanges	25	130	150
6	25	12	60	12	150	G 1 1/4 B	16/25	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	16/25	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	270	Flanges	25	130	150

Pulse Value (Qp)	Pulses (L/p)	Test Pulses (cm³/p)
0.6	1, 2.5, 10, 25, 100, 250	5
1.5	1, 2.5, 10, 25, 100, 250	10
2.5	1, 2.5, 10, 25, 100, 250	20
3.5	1, 2.5, 10, 25, 100, 250	25
6	1, 2.5, 10, 25, 100, 250	50
10	1, 2.5, 10, 25, 100, 250	100
15	1, 2.5, 10, 25, 100, 250	100



US BR 473 - ULTRASONIC FLOW METER



Type		DN65 qp25	DN80 qp40	DN100 qp60
Ambient temperature	°C	5 -55	5 -55	5 -55
Stockage temperature	°C	-20 -60	-20 -60	-20 -60
Maximum flow	qs (m³/h)	50	80	120
Nominal flow	qp (m³/h)	25	40	60
Minimum flow	qi (l/h)	250	400	600
Cut off flow	qc (l/h)	50	80	120
Head loss @ qp	bar	0.075	0.08	0.09
Water temperature (heat versions)	°C	5... 150°C	5... 150°C	5... 150°C
Water temperature (cooling and combined versions)	°C	5... 120°C	5... 120°C	5... 120°C
Nominal diameter	DN	65	80	100
Body length	Lenght (mm)	300	300	360
Connections	Flanges	PN25	PN25	PN25/PN16
Cable to calculator	L (m)	5	5	5



- >> High accuracy
- >> Robustness
- >> Ease of installation
- >> Power supply by calculator

Electrical connection and power supply

The basic version of BR 473 must be power-supplied by the integrator (CF 51, CF 55 or CF 800) or an external power supply (pulse box). Compatibility in accordance with the following table.

Compatibility US BR 473 with power supply of calculators				
	Battery small	Battery large	Mains 230V	via M-BUS
CF 51	✓	✓	not allowed	not allowed
CF 55	✓	✓	✓	✓
CF 800	-	-	✓	-
PulseBox	✓	✓	✓	-

US FUE380 - ULTRASONIC FLOW METER

Diamètres		125	150	200	250	300	400
Nominal flow	qp (m³/h)	100	150	250	400	500	950
Minimum flow	qi (l/h)	1	1,5	2,5	4,0	5,6	9,5
Nominal flow	qp (m³/h)	100	150	250	400	500	950
Maximum flow	qs (m³/h)	200	300	500	800	1120	1900
Cut off flow	qc (l/h)	200	300	500	800	1100	1900
Head loss @ qp		Equal to the headloss of a bore pipe with identical diameter					
Nominal Pression	bar	16					
Water Temperature	°C	5...110°C					
Pulse weight	L	250					2500
Power supply		230 VAC 50 Hz +/- 20 %					
Ingress protection		IP67					
Ambient Temperature	°C	0°C...+60°C					
Storage Temperature	°C	-10°C...+60°C					



STRAINERS

“T” Strainers



>> “T” Strainers / Filtres en “T”

Nominal diameter/Calibre	mm	50	65	80	100	150	200	250
Filtering area strainer/diameter		10.5	10.8	10.5	10.3	10.9	5	5
Max. pressure	bar	20						
Length	mm	200	230	270	300	330	350	350
Weight	mm	13	21	28	35	58	80	92

FLOW STRAIGHTENERS

S-3D Flow Straighteners



>> S-3D

Nominal diameter	mm Inches	50 2”	65 2”1/2	80 3”	100 4”	150 6”	200 8”	
End connection (Flange)		PN 10/16				PN 10 or 16		
Length	mm	150	195	240	300	450	600	
Width	mm	165	185	200	222	323	427	
Weigh	kg	7.5	10.5	13.5	22	51	89	
Max. pressure	bar	20						

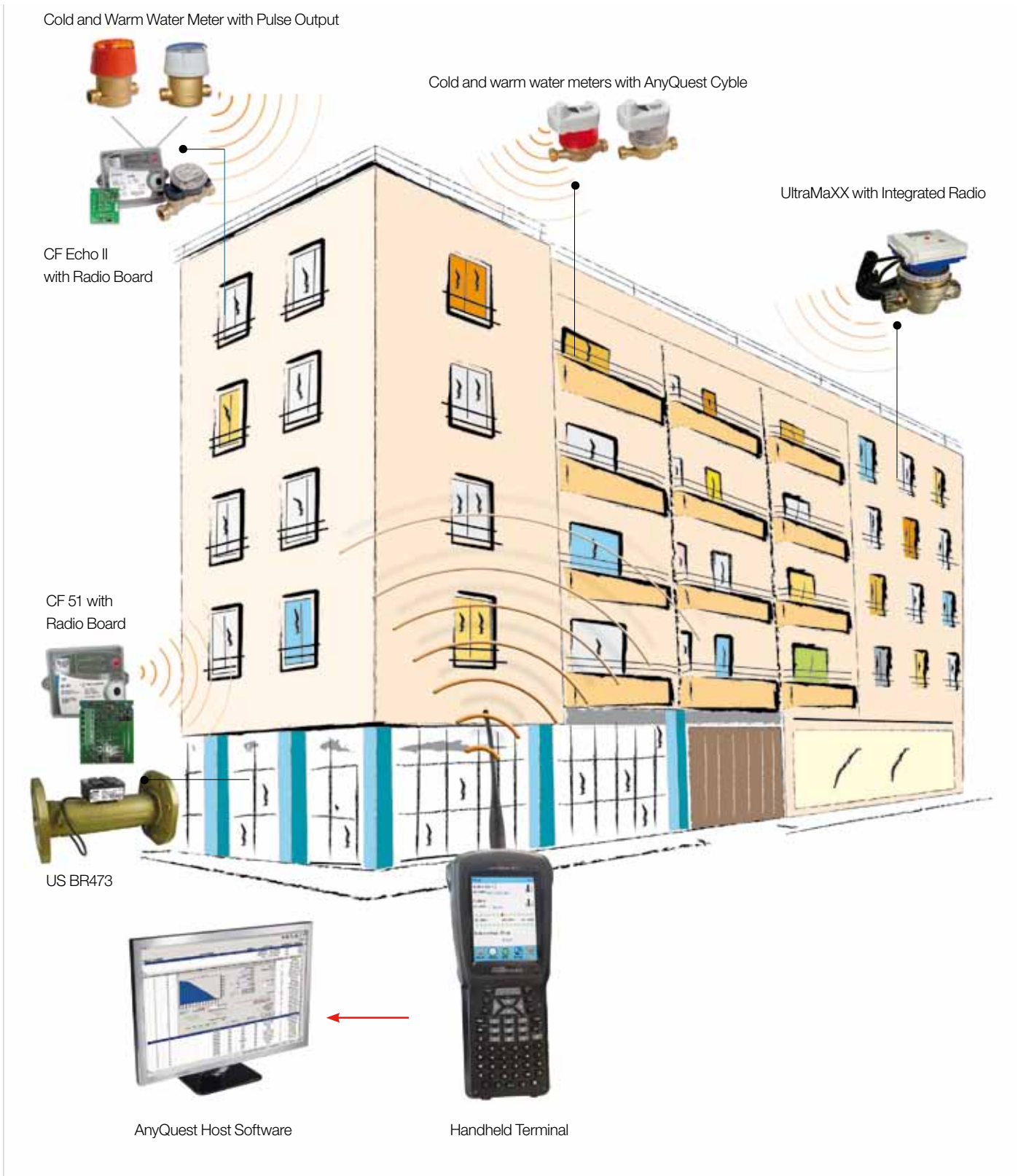
RJ-1 Flow Straighteners



>> RJ-1

Nominal diameter/Calibre	mm Inches	250 10”	300 12”	400 16”	500 20”
End connection (Flange)		PN 10 or 16			
Length	mm	500			
Weight	kg	81	97	160	221
Max. pressure	bar	20			

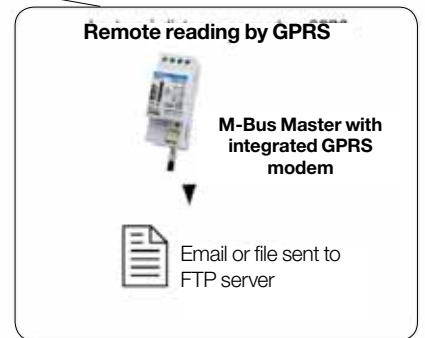
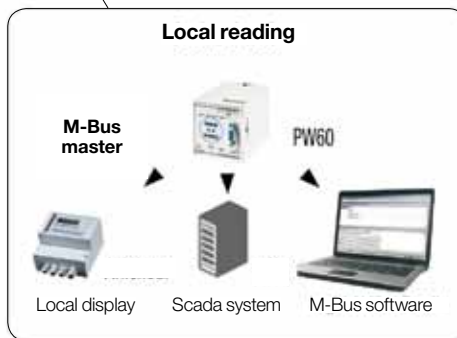
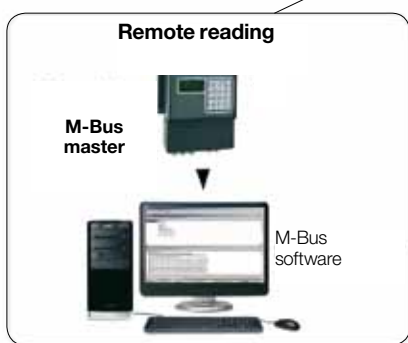
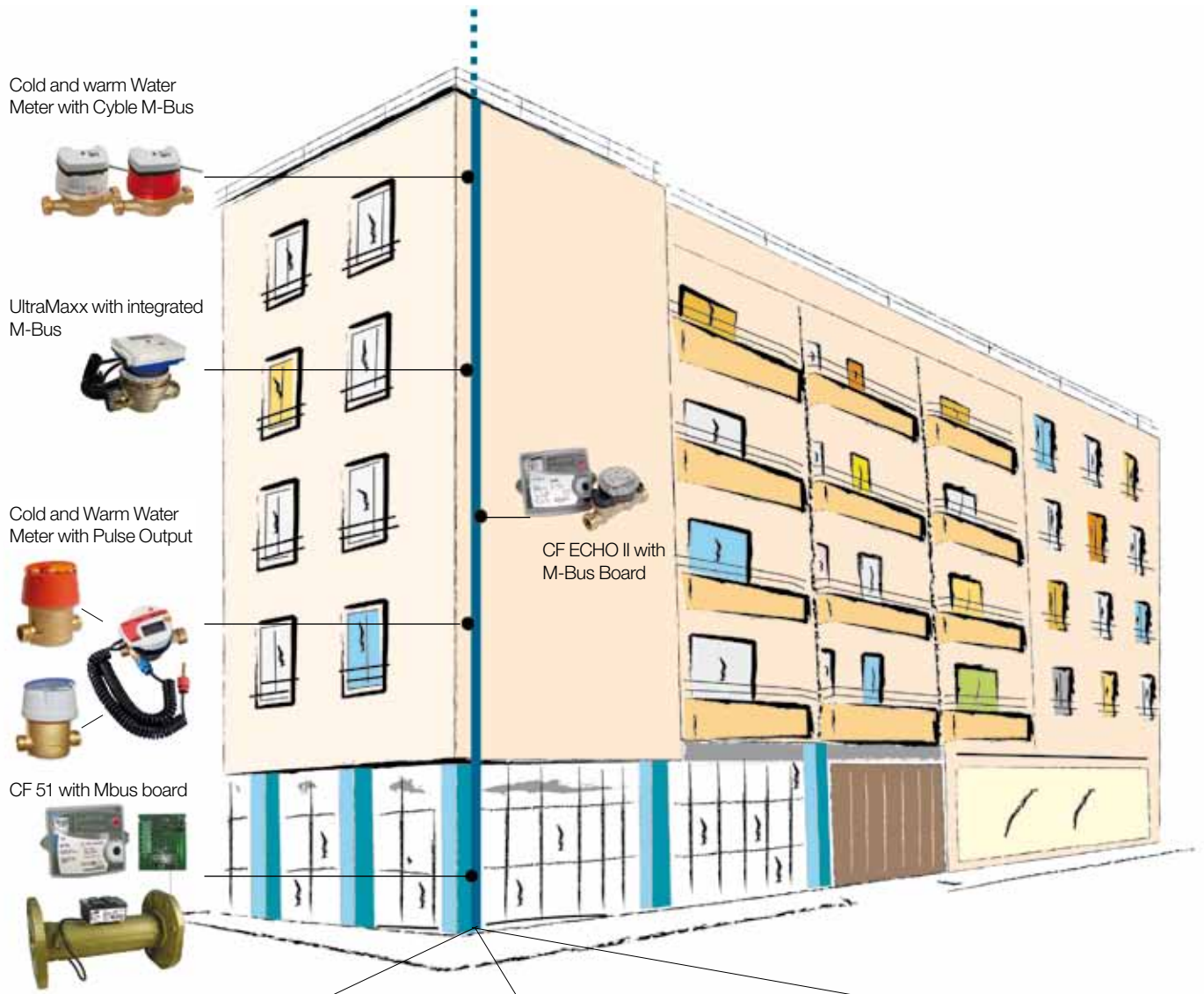
ANYQUEST ENHANCED - MOBILE RADIO FREQUENCY METER READING



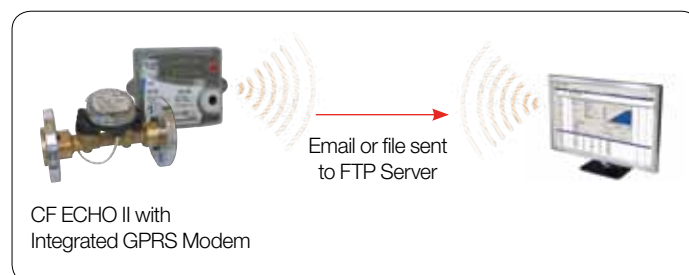
EVERBLU - WIRELESS FIXED NETWORK SYSTEM



REMOTE METER READING WITH M-BUS PROTOCOL



REMOTE METER READING BY GPRS





Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: www.itron.com

For more information, contact your local sales representative or agency:

9, rue Ampère
71031 Mâcon cedex
France

Phone: +33 3 85 29 39 00

Fax: +33 3 85 29 38 58