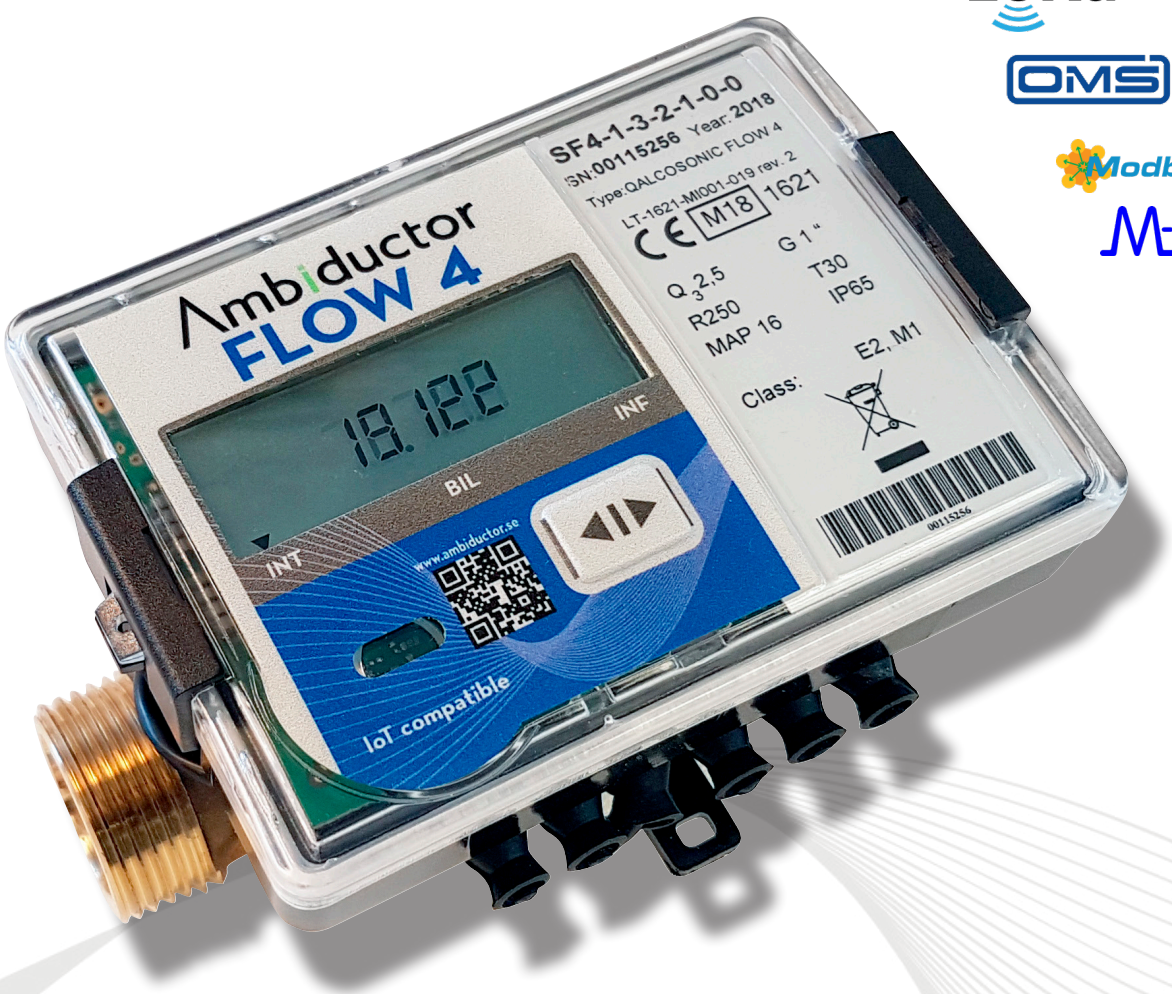
Ambiductor
Flow & Energy Analysis Systems

Ambiductor FLOW 4

Cold- and warm water meter with ultrasonic technology

Applications

Approved for drinking water. Module slot for wired or wireless communication. Suitable for most hot and wold water applications. For water up to +90 °C. Battery operation with external power supply as option.



Characteristics

- Compact ultrasonic meter for hot and cold water
- Certified accuracy class 2 acc. EN1434
- Environmental class C for industrial use
- 1-2 pulse inputs / 1 output as standard
- M-bus, Modbus, wireless M-bus, BACnet and LoRa as option
- Lots of memory for log data
- Battery 10-12 years, 24V or 230V supply
- Dynamic measuring range 1: 250 (alternatively 1:400)
- Status code in the display

Strengths

- Static measurement without moving parts - insensitive to particles
- Accurate flow measurement in both cold and warm water
- Cost-effective remote reading of 2 pulsed water meters via M-bus
- Versatile data storage
- All mounting directions possible
- High IP class
- Advanced alarm management

Intended use

Ambiductor FLOW 4 is a compact ultrasonic meter for measuring flow in water. It fits most applications where you need to measure cold and warm water, approved in accordance with the Measuring Instruments Directive (MID) OIML R49.

Meters for billing must be validated within a time period specified by local legislation.

DN15-50 does not need straight pipe lines. DN65-100 needs 5xDN upstream and 3xDN downstream. Straight pipes are always preferable.

Certified acc: LST EN 14154-1:2005+A2:2011, LST EN 14154-2:2005+A2:2011, LST EN 14154-3:2005+A2:2011.

Function and measurement principle

The meter consists of:

- One ultrasonic flow sensor that measures flow
- One electronic unit that calculates flow and volume. It can be mounted on the flow meter or on the DIN rail on the wall

The device an be equipped with a temperatur sensor Pt500 for measuring the medium temperature.

Ambiductor FLOW 4 is equipped with optical reading head with EN 1434 M-bus protocol.

Communication

Ambiductor FLOW 4 has a module slot and 2 pulsin / outputs. See Options below for options.

The device can be set up via free software that can be obtained from Ambiductor.

Options

The following options are available today.

Communication

Several communication buses are available as M-bus, Modbus, LON, BACnet, CI, Minibus, Wireless M-bus S1, Wireless M-bus T1 and LoRa.

Software options

Customer-specific programming

Hardware options

- Temperature sensor
- IP67
- IP68 (separate datasheet)
- PN25 (in flanged version)
- 24VAC/24VDC/230VAC power supply module
- Customer-specific labeling

In addition to the above mentioned options, other temperature sensors can also be ordered.

External accessories

- Optical eye for IR reading
- Software for programming
- Couplings
- Check valve

Alarm management and status

The meter shows the operating status including all alarms for temperature sensors, flow sensors and the calculator.

Presented both in display and by bus.

Data logger

The flow meter has a built-in data logger that saves:

- 1480 hourly values
- 1116 daily values
- 36 monthly values
- 15 annual values

The archive is saved for 360 months. Measurement values remain even if the voltage is broken for15 years.

Classification

Specification	Data
Metrological class	2014/32/EU / EN4064 Class 2 at 0,1-30 °C (T30) Class 3 at 30-90 °C (T90)
Mechanical class	M1 acc. 2014/32/EU
Electric class	E2 acc. 2014/32/EU
Environmental class	B enl. 2014/32/EU
Protection class	IP 65 (IP 67, IP 68 som tillval)
Other classification	OIML R 49 Approved for drinking water (no heavy metals) PN 16 (PN 25 as option)

Electronic unit

Specification	Data
Power supply	11 years battery Li-SOCl2 or external power supply
Communication	See Options
Pulse input/output	2 programmable in/out
Cable length between flow sensor and calculator	1.2m
Display	8-digit LCD with symbols
Decimals/units, volume	Volume: 00000.001 m3 (1 ml in test-mode)

Temperatures

Specification	Data
Ambient temperature	Flow sensor: +5...65 °C
Medium temperature	+0,1....90 °C
Temperature sensors	Pt500 (Option)

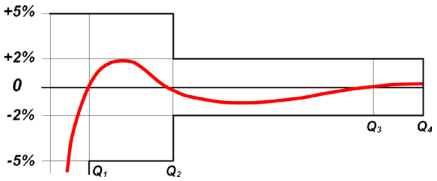
Pulse in/outputs

Specification	Data
Number of in/outputs	2
Unit, pulse input	m3
Pulse value, pulse input	Programmable
Pulse input type	IB by LST EN1434-2
Max frequency pulse input	3 Hz
Max voltage pulse input	3.6 V
Type, pulse output	Open collector
Voltage/current, pulse output	Up to 20mA and 50V
Pulse length, pulse output	100 ms at normal mode (1.6 ms at test mode)
Pulse value, output	Q3 1,6...6,3 = 1 l/p Q3 10...100 = 10 l/p

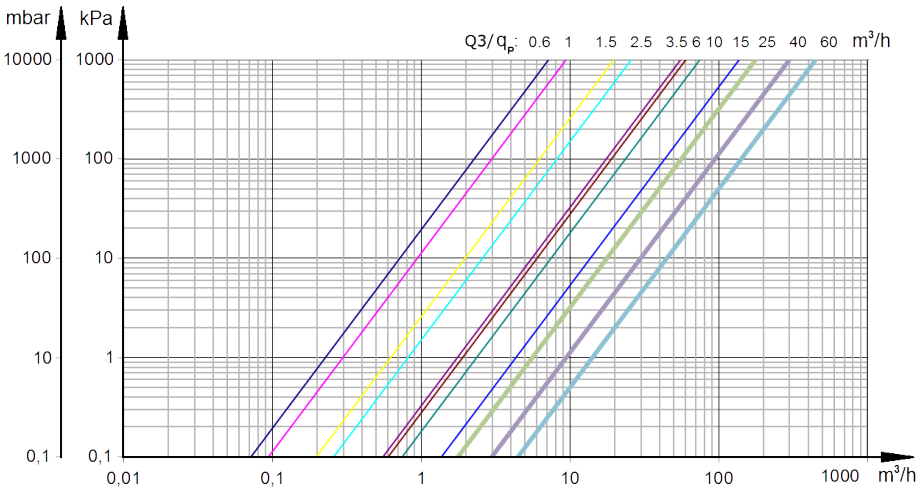
Technical data

Nominal diameter / length (mm)	Nominal flow qp (m3/h)	Max flow Q4 (m3/h)	Transitional flow Q2 (m3/h)	Min flow Q1 (m3/h)	Approx. starting flow (m3/h)	Pressure class ΔP	Dyn. measuring range	Connection	Weight (kg)
DN 15 / 110	1,6	2,0	0,01	0,0064	0,003	63 / 25	R250	G20/G¾	1,4
	2,5	3,125	0,016	0,01	0,005	63	R250		
	2,5	3,125	0,01	0,0063	0,003	63	R400		
DN 20 / 130	2,5	3,125	0,016	0,01	0,005	25	R250	G25/G1	1,4
	4,0	5,0	0,026	0,016	0,008	63	R250		
	4,0	2,0	0,016	0,01	0,005	63	R400		
DN 20 / 190	1,6	2,0	0,01	0,0064	0,003	25	R250	G25/G1	1,4
	2,5	3,125	0,016	0,01	0,005	25	R250		
	2,5	3,125	0,01	0,0063	0,003	25	R400		
	4,0	5,0	0,026	0,016	0,008	63 / 25	R250		
	4,0	5,0	0,016	0,01	0,005	63 / 25	R400		
	6,3	7,875	0,04	0,0252	0,012	63	R250		
	6,3	7,875	0,026	0,016	0,008	63	R400		
DN 25 / 260	6,3	7,875	0,04	0,0252	0,012	25	R250	G32/G1¼	5,6
	10,0	12,5	0,064	0,04	0,02	63	R250		
	10,0	12,5	0,04	0,025	0,012	63	R400		
DN 40 / 300	10,0	12,5	0,064	0,04	0,02	25	R250	G50/G2	6,8
	16,0	20,0	0,1	0,064	0,03	63	R250		
	16,0	20,0	0,064	0,04	0,02	63	R400		
DN 50 / 270	16,0	20,0	0,1	0,064	0,03	25	R250	DN50	8,5
	25,0	31,25	0,16	0,1	0,05	63	R250		
	25,0	31,25	0,1	0,063	0,03	63	R400		
DN 65 / 300	25,0	31,25	0,16	0,1	0,05	25	R250	DN65	10,5
	40,0	50,0	0,26	0,16	0,08	63	R250		
	40,0	50,0	0,16	0,1	0,05	63	R400		
DN 80 / 350	40,0	50,0	0,26	0,16	0,08	25	R250	DN80	13,5
	63,0	78,75	0,4	0,252	0,12	63	R250		
	63,0	78,75	0,26	0,16	0,08	63	R400		
DN 100/ 350	63,0	78,75	0,4	0,252	0,12	25	R250	DN100	14
	100,0	125	0,64	0,4	0,02	63	R250		
	100,0	125	0,4	0,25	0,12	63	R400		

Accuracy



Pressure drop



Ordering details

F1 - 1 3 3 - 1 0 - 0 1 - 1 0

Nominal pressure (PN)	Code		Code
PN16*	0	PN25	1

Protection class	Code		Code
IP65 / IP65*	1	IP67 / IP65	2

Power supply	Code		Code
Battery 3.6V*	1	24VAC/DC with battery and 230V-unit	3

Temperature measurement	Code		Code
Ingen*	0	PL-6 3m	4
DS 1.5m	1	PL-6 5m	5
DS 3m	2	PL-6 10m	6
DS 5m	3		

Communication	Code		Code
None*	0	LON	6
M-bus	1	Minibus	7
CL	2	wireless M-bus T1, 868 MHz	8
wireless M-bus S1, 868 MHz	4	wireless M-bus T1 (non activated)	9
Modbus RS485	5	LoRa	L

Dynamiskt mätområde (Q3/Q1)	Code		Code
R250*	1	R400	2

Flow Q3 m3/h	Code		Code		Code
1,6	1	10	5	63	9
2,5	2	16	6	100	0
4	3	25	7		
6,3	4	40	8		

Connections	Length, mm	Code			Code
G ¾	110	1	DN32	260	5F
G ¾	165	2	DN40	300	6F
G1	130	3	DN50	270	7
G1	190	4	DN65	300	8
G1 ¼	260	5	DN80	300	9
G2	300	6	DN100	360	10
DN25	190	4F			

Max temperature	Code		Code
T30 (kallvatten)	1	T90 (varmvatten)	3

Notes

*) Standard on stock meters

About Ambiductor

Ambiductor is an engineering company in metering, automation, remote reading with focus in the following areas:

- **Smart water meters and thermal energy meters**
- **Smart buildings, industry and society through LoRa, NB-IoT etc.**
- **AmbiSolution - IoT platform for utilities, energy and buildings**
- **Oil meters and meters for industrial liquids**

Read more at www.ambiductor.se

Instructional videos and guides in Swedish at
www.ambiductor.se/support

Disclaimer!

If there is any inconsistency between this version and the original document, the original document will prevail.

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