Ultrasonic water meter

ULTRIMIS

Description

The Ultrimis is an ultrasonic water meter with many patented desgn and technoligical features, such as the proprietary „W-Sonic Technology“ ultrasonic measurng method. None of the materials in contact with water used for the construction of this meter contain heavy metals. The standard version of this water meter is fully waterproof. The innovative structure makes our product arguably the lightest and smallest ultrasonic water meter available to our customers.

Measurement range (MID)

Cold and hot water: R250, R400 and R800 (R500 for water meters DN50)

Application

Our ultrasonic water meters measure the flow and volume of water up to a max. temperature of 50°C or 70°C using a closed-loop systen, with the full flow rates up to a max. pressure of 16 bar (PN16). This is important, especially when precision measurement of water consumption and the application of modern technologies are required, including NFC and radio reading systems. The water meters feature an e-display (IP68); may be installed in any orientation (H, V, H/V) and do not require the use of UODO straight sections, filters or check valves.

Product features

- Structure of the measurement chamber: flow-trough, without moving elements, resistatnt to impurities, no outlays on inspections or maintenance works
- No need to use straight sections upstream or downstream of the water meter
- Small dimensions, probably the smalles and lightest ultrasonic water meters on the market
- Very low energy consumption
- Very low lothium content - Li < 1.5 g for 2xAA
- Expected battery life of up to 16 years (12 years with the radio)
- No heavy metals in the materials in contact with potable water (composite body)
- Very low weight = low CO2 emission, low transport cost
- Hermetic housing for the water meter - IP68 as standard
- Maximum flow limited only by pressure loss
- No wear of the measurement chamber elements during continuous operation even for hight flows
- Pressure - 16 bar
- Resistant to strong magnetic fields
- Resistant to hydrodynamic impact
- Highly resistant ot overload flow rates - Q4, option of exceeding the overload flow rate during operation (dedicated e-system to monitor the ultrasonic beam parameters, hence compensating for ageing of the piezo elements)
- Reverse flow measurement

Specification			Ultrimis							
			UL2.5	UL2.5-01	UL4	UL4-01	UL6.3	UL10	UL16	UL25
Nominal diameter	DN	mm	15		20		25	32	40	50
Permanent flow rate	Q_3	m^3/h	2,5		4		6,3	10	16	25
Overload flow rate	Q_4	m^3/h	3,125		5		7,875	12,5	20	31,25
Transitional flow rate	Q_2	dm^3/h	16		25,6		40,23	64	102,4	160
Minimum flow rate	Q_1	dm^3/h	10		16		25,2	40	64	100
Measurement range	R	Q_3/Q_1	R250 in standard							
Transitional flow rate	Q_2	dm^3/h	10		10		25	40	64	100
Minimum flow rate	Q_1	dm^3/h	6		16		12	25	40	62,5
Measurement range	R	Q_3/Q_1	R400							
Transitional flow rate	Q_2	dm^3/h	-		-		-	-	-	80
Minimální průtok	Q_1	dm^3/h								50
Minimum flow rate	R	Q_3/Q_1	R500							
Measurement range	Q_2	dm^3/h	5		8		13	20	32	-
Minimum flow rate	Q	dm^3/h	3		5		8	13	20	-
Measurement range	R	Q_3/Q_1	R800							
Starting flow for R250, R400, R500, R800	-	dm^3/h	0,75		1,2		1,89	3	4,8	12
Range for R250, R400, R500, R800	-	Q_2/Q_1	1,6							
Temperature class (EN and OIML)	-	°C	T30, T50, T70				T30, T50			
Flow profile sensitivity class (EN)	-	-	U0. D0							
Counter indication range	-	m_3	999999							
Scale interval value	-	m_3	0,001							
Maximum permissible error in the range of $Q_2 \leq Q \leq Q_4$	ε	%	±2 for cold water T≤30°C ±3 for water T>30°C							
Maximum permissible error in the range of $Q1 \leq Q \leq Q_2$	ε	%	±5							
Battery	-	-	2x integrated 3,6 V DC lithium AA batteries							
Frequency	-	-	868 MHz up to 25 mW E.R.P. EU868 MHz LoRa up to 25 mW E.R.P. 434 MHz up to 10 mW E.R.P							
RF communication standard	-	-	OMS-compliant WM-bus OMS-compliant WM-bus + LoRaWAN							
Radio transmission mode	-	-	T1 or C1							
Water pressure class (EN)	-	bar	MAP16							
Water pressure class (OIML)	-	bar	0,3 do 16							
Pressure loss class at Q_3 (EN)	ΔP	bar	ΔP240 at T30, T50				ΔP40		ΔP40	
			ΔP25 at T70				-		-	
Pressure loss class at Q_3 (OIML)	-	bar	0,4						0,25	
Pressure loss class at Q_3 Manufacturer specified	-	bar	0,25		0,25		0,28	0,26	0,17	0,24
Installaton orientation	-	-	H, V, H/V							

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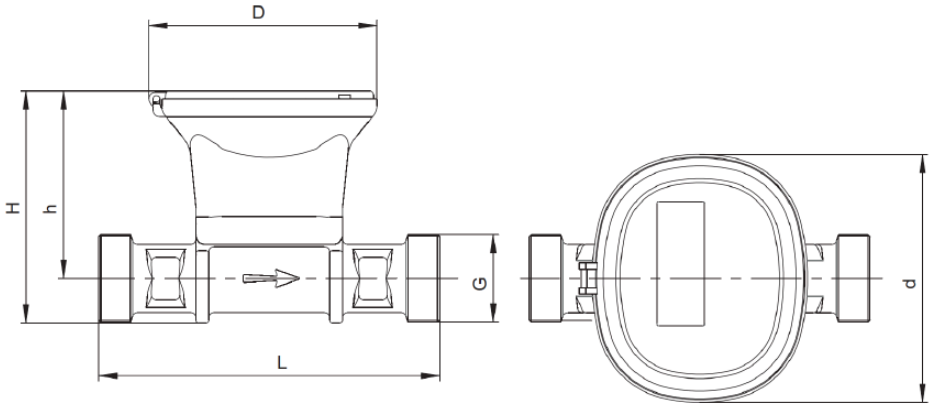
Reverse flow (manufacturer specified)	-	-	Reverse flow metering by design							
Relative humidity	-	%	≤100							
IP	-	-	IP 68							
Water meter body material			brass	composite	brass	composite	brass			
Connection thread size	G	inch	3/4“		1“		1 1/4“	1 1/2“	2“	Flanged ends***
			7/8“ ->3/4“*							
	G1	mm								155
Water meter length	L	mm	80	110	80	105	130	105	165	260	300	200; 270; 300
			115	165	110	115	190	130	260			
Height	H	mm	83; 84		83	88,5			95	102,5	111	158
	H1	mm	88			94			100	107	117	164
	H2	mm	163			169			175	182	192	240
	h	mm	14;15**		14	17,5			21	25	30,5	72
Counter size	d	mm	87							
	D	mm	94,5							
Flange size	Dz	mm								165
Weight	-	kg	0,48	0,52	0,29	0,61	0,63	0,33	1,05	1,68	2,15	6,29; 6,75
			0,53	0,6	0,31	0,66	0,77	0,34	1,39			

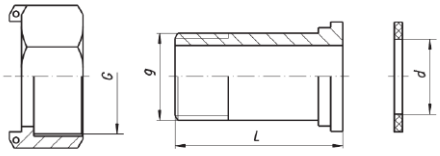
*Theread size 7/8“ -> 3/4“ available for 115 mm long versions only
**Applies to thread size 7/8“ -> 3/4“
***Aldo available n a G2 1/2 version

TECHNICAL DRAWINGS



DN	G	g	d	L
	inch	inch	mm	mm
15	3/4“	1/2“	17	37,5
20	1“	3/4“	23	45,5
25	1 1/4“	1“	29	46,5
32	1 1/2“	1 1/4“	36	56
40	2“	1 1/2“	43	70
50	2 1/2“	2“	54	74,2

Nut Connector Seal



Communication

- Water meter data reading over NFC (Near Field Communication)
- RF (radio-frequnecy) reading of indications compatible with WM-BUS
- RF indication reading for walk-by and drive-by reading systems and stationary reading systems without any reconfiguration required
- Secondary verification at any suitable location with the Testbox module and a dedicated application

Configuration - NFC

The ultrimis water meters feature standard NFC data communication which enables configuration of the operating mode, rading of actual parameter values of the instument and downloading the historical indications of statuses and errors (even at a low battery voltage or meter failure).

Developed specifically for hte Ultrimis water meter, the data communication interface includes a dedicated SPIDAP application and the Testbox module. The data communication interface enables re-verification by secondary verification operators SPIDAP.

The data logger supported by NFC enables modification of the interval and range of data logging. The data logging interval can be configured from 12 minutes to 45 days. One of the 10 predefined data acquisition sets can also be selected. Depending on the datat acquisition set selected, up to 800 inique records can be stored. The data acquired can drive histograms to evaliate whether the water meter has been specified correctly for its actual application.

Radio reading

- The water meter includes an integrated radio module. This guarantees and efficinet remote reading of data
- Frame encryption at the level of the device (by OMS)
- Sends information about: usage during the previous month, the cureent mont and on the day of reading
- Alarms:
  - Reverse flow
  - Leak
  - Large leak
  - Lack of water - air in the water meter
  - No flow
  - Low battery

Contacts

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