

Ultrimis W

Ultrasonic water meter

DN15-DN40



Ultrimis W – a state-of-the-art ultrasonic water meter with the very latest patented design features including the unique W-Sonic Technology measurement method. This technology enables readings in the R800 range at the starting flow from 0.75 l/h (at DN15).

The meter is produced to the highest quality standards and all materials in contact with water are heavy metal free (composite body). It is IP68 water resistant, with high resilience to hydraulic shock and magnetic interference. The design of the measurement chamber makes the water meter insensitive to hydraulic shock. The ultrasonic technology applied in the water meter is completely insensitive to interference from magnetic fields.

APPLICATION

Cold water supply systems with the maximum medium temperature of 50°C and which require reliable water consumption metering and reliable data communication methods, including NFC or RF remote meter reading. The meter can be installed in any position and does not require straight sections upstream and downstream of a water meter.

ULTRIMIS W

Counter with mineral glass standard protection class IP68

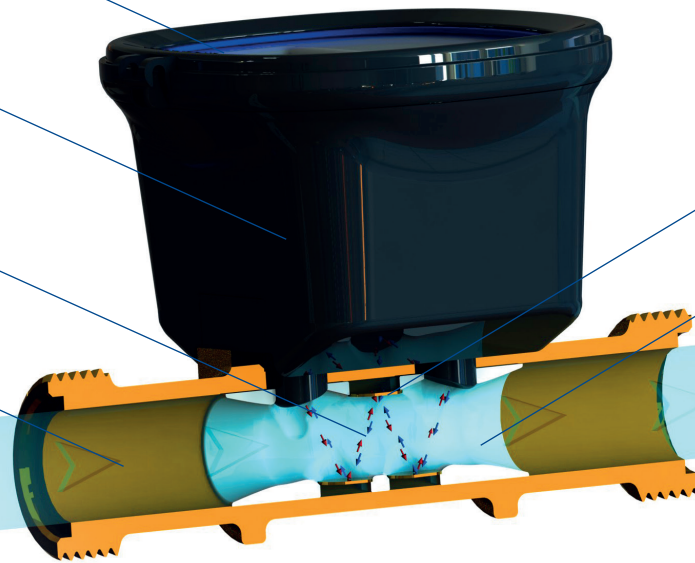
RF (radio-frequency) communication (wM-Bus or OMS)

Unique path of the ultrasonic beam W-Sonic Technology

Body made from composite or brass

Open conduit allows water pass easily

Patented shape of the measuring chamber



ADVANTAGES

SAVING

- High precision measurements enhance **efficient** water use – detection of any leaks present in the system
- Water memet has **no moving parts** and is resistant to impurities. Inspections and maintenance cost-free.
- No requirement to use **straight sections** of pipe at the inlet or outlet of the water meter
- **Small** overall dimensions permit installation of the water meter in all conditions
- The water meter is robust and consumes **a minimal amount of energy**, providing for the stable and long-term operation of the device
- A wide **measurement range** independent of the electrical conductivity of the water (necessary for measurement systems utilising electromagnetic water meters)
- Extremely **low pressure loss** (with a low flow resistance)



COMFORT OF USE

- Hermetic water meter enclosure - **IP68** as standard
- **No physical wear** of the measurement chamber components, even at continuous operation at high flow rates
- Operating pressure - **16 bar**
- Body material: **brass** or **composite**
- **Resistant** to strong **magnetic fields**
- Resists **hydraulic shock**
- High resistance to volumetric overflow, Q_4

ACCURACY OF MEASUREMENT

- Optimal measurement range to **R800** in each operating position (**H, V, H/V**)
- Starting flow already at **0.75 l/h** at DN15
- **Stable** measurements irrespective of the measurement system fouling (thanks to a patented compensation algorithm)
- Reverse flow **measurement** (symmetrical structure and measurement algorithms)

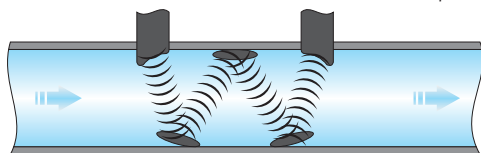
PROTECTS THE ENVIRONMENT

- Very **low energy use** when in operation
- Very low lithium content – **Li < 1,5 g**
- Maximum design battery life of 12 years (RF data frames transmitted every 12 s, 24/7)
- **No heavy metals** in the materials in contact with potable water (composite body)
- Low energy output at the water supply side (the unit pressure drop across the water meter is **0.17 bar** at DN40 for Q_3)
- A measurement range up to R800 is also available for the water meter installation length **L = 80 mm**
- **Very low mass** = low transportation cost
- Low carbon footprint



INNOVATION

The Ultrimis W water meter uses a unique system based on the passage of an ultrasonic beam through the measuring



chamber, providing stabilisation of indications and errors within the entire measurement range. This technology is based on distinctive characteristics such as:

- An unique path of ultrasonic beam allows the Ultrimis W to be much shorter than other ultrasonic waveform systems
- See-through meter, enables free passage of grit.
- Water impurities have no effect on measurement
- Sophisticated control algorithms of the ultrasonic beam with compensation for component ageing
- There is no need to use filters and return valves

COMPLIANCE WITH STANDARDS AND REGULATIONS

- Directive 2014/32/EU of the European Parliament and the Council of Europe of 26 February 2014 on the harmonisation of the laws of member states relating to the making available on the market of measuring devices.
- ACT of 13 April 2016 relating to conformity assessment and market control
- EN-ISO 4064-1÷5:2014(E) – Water meters for potable, cold and hot water.
- OIML R49:2013 – Water meters dedicated to the measurement of potable, cold and hot water.
- Certificate of test type WE cold water TCM 142/16-5405
- Classification of climatic and environmental requirements – Class B – according to EN - ISO 4064:2014;
- Classification of environmental and mechanical requirements – Class M1 according to Directive 2014/32/EU of 26 February 2014;
- Classification of environmental and electromagnetic requirements – Class E1, E2 according to EN - ISO 4064: 2014 and to Directive 2014/32/EU of 26 February 2014;
- PZH approval (all materials used to manufacture the Ultrimis ultrasonic meter have the appropriate hygienic approvals allowing the product to come into contact with drinking water)
- WELMEC 7.2 edition 5
- WRAS certified
- KIWA U certified
- DVGW certified
- IP68 body proof testing

ULTRIMIS W



UL2,5-01
DN15, L80
DN15, L110



UL4-01
DN20, L130
DN20, L105



UL2,5
DN15, L80
DN15, L110
DN15, L115
DN15, L165



UL
DN20,
DN20,
DN20,
DN20,

Communication

- Water meter data reading over NFC (Near Field Communication)
- Radio reading of indications set up to work with WMBUS OMS T1
- FR indication reading dedicated to: Walk-by and drive-by reading systems and a stationary reading system without any reconfiguration required
- Possibility of secondary certification at any certification location with the Testbox module and a dedicated application

CONFIGURATION - NFC

Ultrimis water meters are equipped with standard NFC short-range communication, which can be used to configure the operating mode of the water meter, to read the current parameters of the instrument and to read historical indications of states and errors (also in case of failure or low battery).

The Ultrimis W water meter has a dedicated interface, comprising a special mobile app and the Testbox module. The interface enables re-verification by secondary verification operators.

RADIO READING

- The water meter includes an integrated radio module. This guarantees an efficient remote reading of data.
- RF data frame encryption on the device level (OMS-compliant)
- Data transmission: last month consumption, current month consumption and actual (real time) consumption
- Alarms:
 - Reverse flow
 - Leak
 - Water mains leak
 - Lack of water
 - Tampering
 - No flow
 - Low battery



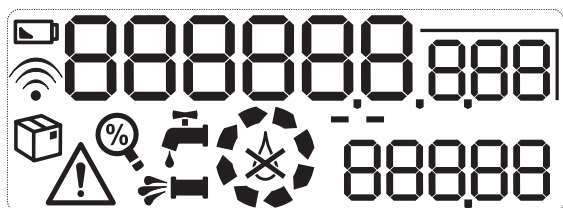


4
L130
L105
L115
L190

UL6,3
DN25, L260
DN25, L165

UL10 - DN32, L260
UL16 - DN40, L300

LCD DISPLAY- FUNCTIONS



888888

Water meter indication – m³

888

Water meter indication – dm³

88888

Actual flow (water meter filled with water)
Software version number and CRC* (lack of water)



Low battery

Radio on

Transport mode
Exit from the shipping mode when detecting a minimum flow rate of:
5L – DN15; 8L – DN20; 12,6L – DN25; 20L – DN32; 32L – DN40

Tamper detected

Test mode

Reverse flow
Switching on the alarm - backflow lasting > 45 s

Small leak
Alarm activation - flow > 0.3 × Q₂ for 240 min.

Spill (water supply malfunction)
Switching on the alarm - flow > Q₄ for 30 s

Animation of water flow direction

Lack of water
Alarm activation - after 30 s

Measurement online

No flow
Alarm activation - no flow for 8 s

EVENTS NOT INDICATED ON THE LCD

Overtemperature
<2°C or >50°C switchover

Animated flow icon steady

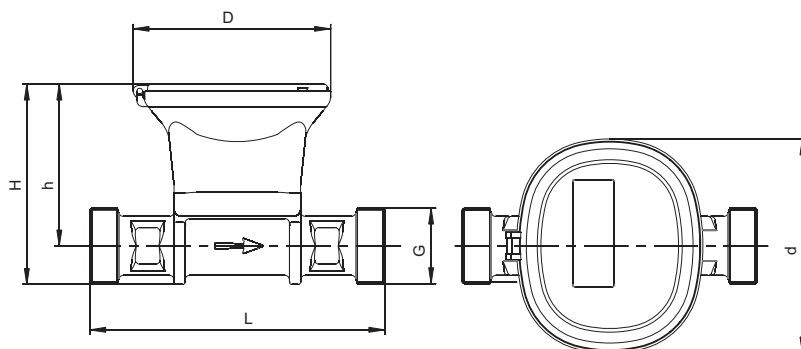
Animated flow icon moves counter-clockwise

*) CRC: control checksum value which verifies if the software source code is correct

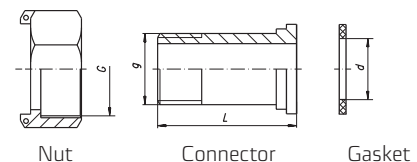
Table 1. TECHNICAL DATA

Parameter			Ultrimis W								
			UL2,5	UL2,5-01	UL4	UL4-01	UL6,3	UL10	UL16		
Nominal diameter	DN	mm	15		20		25	32	40		
Continuous flow rate	Q ₃	m ³ /h	2.5		4		6.3	10	16		
Overload flow rate	Q ₄	m ³ /h	3.125		5		7.875	12.5	20		
Transitional flow rate	Q ₂	dm ³ /h	16		25.6		40.32	64	102.4		
Minimal flow rate	Q ₁	dm ³ /h	10		16		25.2	40	64		
Starting flow level	–	dm ³ /h	0.75		1.2		1.89	3	4.8		
Measuring range	R	Q ₃ /Q ₁	Standard R250*								
Range	–	Q ₂ /Q ₁	1.6								
Temperature class as per EN and OIML	–	°C	T30, T50								
Immunity class for flow disturbance per EN	–	–	U0, D0								
Counter indication range	–	m ³	999999								
The actual scale interval	–	m ³	0.001								
Maximum permissible error in the range: Q ₂ ≤ Q ≤ Q ₄	ε	–	± 2 for cold water T ≤ 30°C ± 3 for water T > 30°C								
Maximum permissible error in the range: Q ₁ ≤ Q < Q ₂	ε	–	± 5								
Water pressure class	as per EN	–	MAP16								
	as per OIML	–	0,3 to 16								
Pressure loss class for the flow Q3	as per EN	ΔP	0.4					0.25			
	as per OIML	–	0.4					0.25			
	by manufacturer	–	0.3	0.4	0.28	0.26	0.17				
Mounting position	–	–	H, V, H/V								
Reverse flow according to the manufacturer	–	–	The water meter dedicated to the measurement of the reverse flow								
Relative humidity	–	%	≤ 100								
IP Insulation class	–	–	IP68								
Body material			brass	composite	brass	composite	brass				
Spigots thread	G	inch	¾"; 7/8 -> ¾" **		1"		1 ¼"	1 ½"	2"		
Water meter length	L	mm	80	110	80	105	130	105	165	260	300
			115	165	110	115	190	130	260		
Height	H	mm	83;	84***	83	88.5		95	102.5	111	
	h	mm	69	69	71		74	77.5	81.5		
Counter size	D	mm	87								
	d	mm	94.5								
Mass	–	kg	0.48	0.52	0.29	0.61	0.63	0.33	1.05	1.68	2.15
			0.53	0.6	0.31	0.66	0.77	0.34	1.39		

*) Also available with: R400, R800
 **) Thread 7/8 -> ¾" only in length 115
 ***) For thread 7/8 -> ¾"



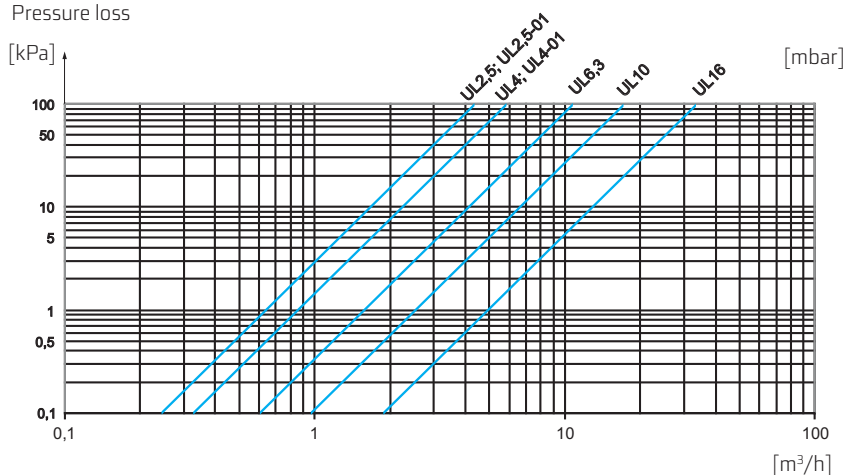
Connection fittings



DN	G	g	d	L
	inch	inch	mm	mm
15	¾"	½"	17	37.5
20	1"	¾"	23	45.5
25	1 ¼"	1"	29	46.5
32	1 ½"	1 ¼"	36	56
40	2"	1 ½"	43	70

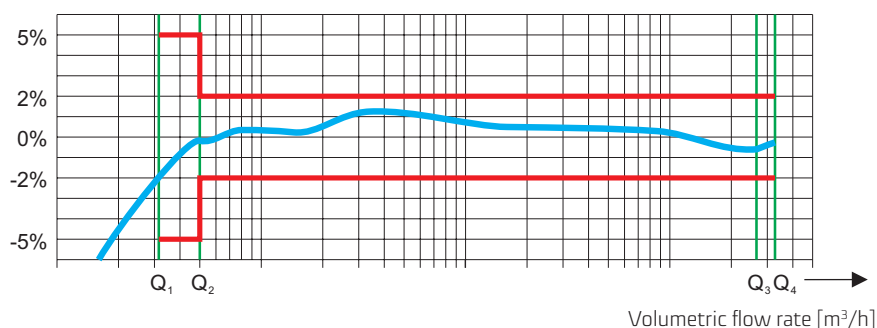
PRESSURE LOSS CHART

Pressure loss

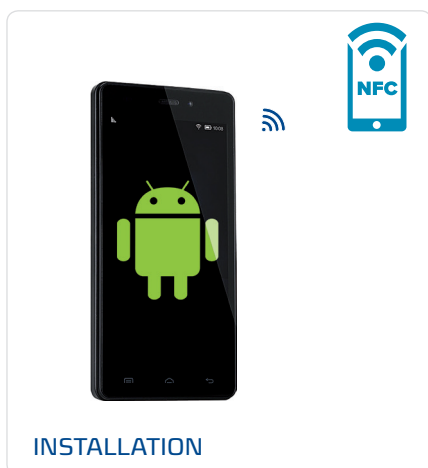
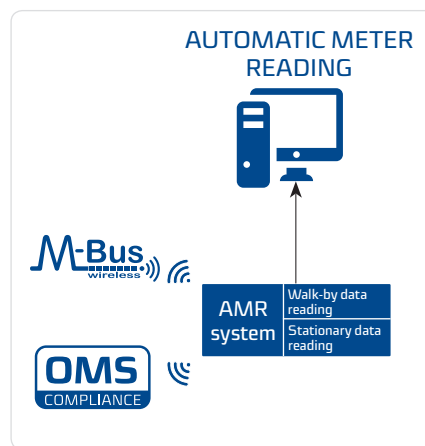
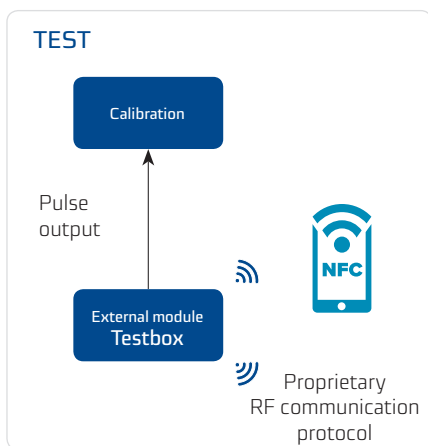


TYPICAL ERROR CHART

Error [%]

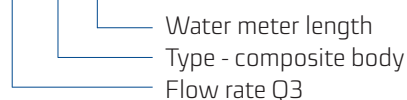


Installation, configuration and remote reading



Order example

UL Q3 - 01 - L



Brass body for all sizes as a standard.

On additional orders we deliver:

- Connectors for water meters without a reverse valve.
- Security sealing clamps with snap seals made of plastic, with individual unique numbers.

The information presented in the data sheet was correct on the date of publication.
The manufacturer reserves the right to make changes and improvements to its products without prior notice.
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