



WATER MEASUREMENT



## ULTRIMIS W

**ULTRASONIC WATER METER**  
DN15, DN20, D25 i DN32



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 gives an exceptional measurement capability with an R800 flow range starting at 0.75 litres per hour for a DN15 pipe. 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.

### APPLICATION

Water supply systems for cold water of temperatures of up to 50°C, for use in buildings that require precise measurements of water consumption and use of the latest communication technologies including NFC and compliance with automatic meter reading system. The meter can be installed in any position and does not require straight sections upstream and downstream of a water meter.



**APATOR**



**SONIC**  
TECHNOLOGY

**NEW**  
**MID R=800**



# ultrimis W

ADVANTAGES

Counter with mineral glass  
standard protection class  
IP68

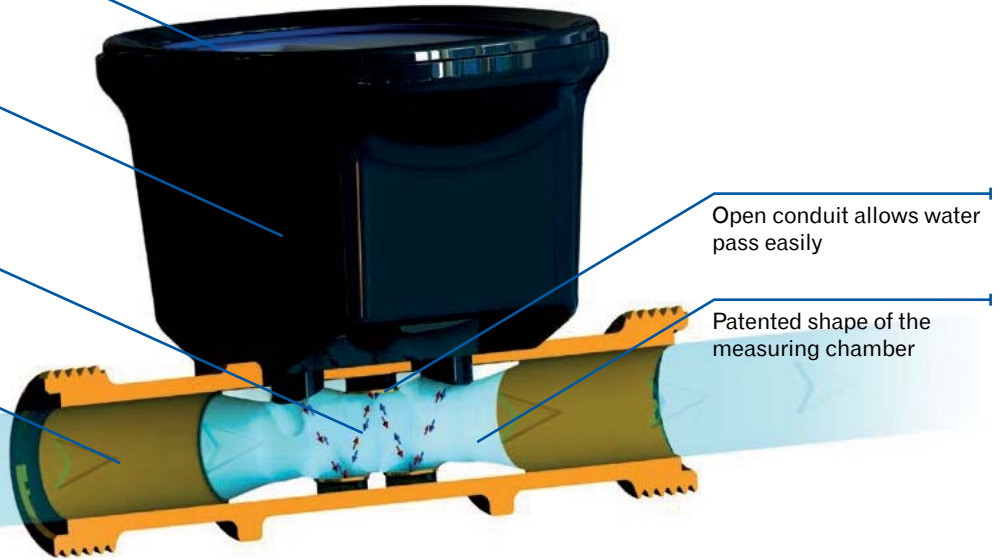
Radio communication  
(WMbus or OMS)

Unique path of the  
ultrasonic beam

Body made from  
composite or brass

Open conduit allows water  
pass easily

Patented shape of the  
measuring chamber



## ADVANTAGES

### SAVINGS

- 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
- Can be installed in all locations due to its minimal physical size
- 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)



### COMFORT OF USE

- Hermetic water meter enclosure - IP68 as standard
- Measuring chamber elements protected from wear during continuous operation even at high flow rates
- Operating pressure -16bar
- Two body material choices: brass or composite
- Resistant to strong magnetic fields
- Resistant to hydraulic shocks
- High resistance to overload flows - Q4, possibility of exceeding the overload flow.

### ACCURACY OF MEASUREMENT

- Optimal measurement range to R800 in each operating position (H,V,H/V)
- Starting flow from 0,75 l/h for DN15
- Low pressure drop 1 bar for 4m<sup>3</sup>/h in DN15
- Measurement accuracy remains stable regardless of system element contamination (dedicated method of processing the measuring signal)
- Reverse flow measurements



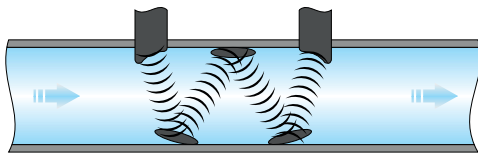
## ECO-FRIENDLY

- Very low energy use when in operation
- Very low lithium content – LI < 1,5g for 2xAA
- Expected battery lifetime of 16 years (12 years with radio)
- Heavy metal and Pb free (composite body)
- Draws a minimal amount of energy from the power supply network (unit pressure drop on the water meter below 0.4 bar at a flow of  $Q_3$ )
- Unique body length L80 with measuring range R800
- Very low mass = low CO<sub>2</sub> emissions, low transportation cost



## USING THE LATEST TECHNOLOGY

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
- The electronic system used to operate the ultrasound beam parameters takes into account any changes in the piezo elements
- No need for use of a strainer or a return valve

## 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



# ultrimis **W**



UL2,5-01  
DN15, L80



UL4-01  
DN20, L130



UL2,5  
DN15, L80

## COMMUNICATION

- Reading of the water meter data via NFC
- Radio reading of indications set up to work with WMBUS OMS T1
- Remote reading possible for: walk-by, drive-by and stationary system without settings reconfiguration
- Possibility of secondary certification at any certification location with the Testbox module

## CONFIGURATION - NFC

Ultramis 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).

A dedicated application makes it possible to perform a re-certification of the Ultramis W for secondary certification operators.

## RADIO READING

- The water meter includes an integrated radio module. This guarantees an efficient remote reading of data.
- Frame encryption at the level of the device (by OMS) or by using a zero key.
- Sends information about: usage during the previous month, the current month and on the day of reading.
- Alarms:
  - Reverse flow
  - Leak
  - Large leak
  - Lack of water – air in the water meter
  - Tampering attempts (dismantling of the water meter counter)
  - No flow
  - Low battery



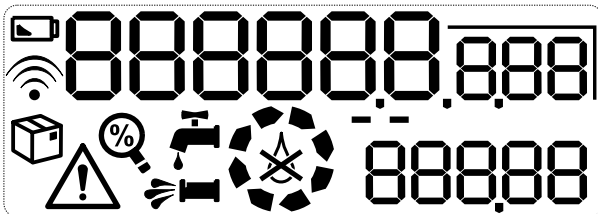


UL4  
DN20, L130

UL6,3  
DN25, L260

UL10  
DN32, L260

LCD display- functions



888888

Water meter indication – m<sup>3</sup>

888

Water meter indication – dm<sup>3</sup>

88888

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



Low battery



Radio on



Transport mode



Tamper detected/System error



Test mode



Small leak



Spill (water supply malfunction)



Animation of water flow direction



Lack of water



Water meter life sign

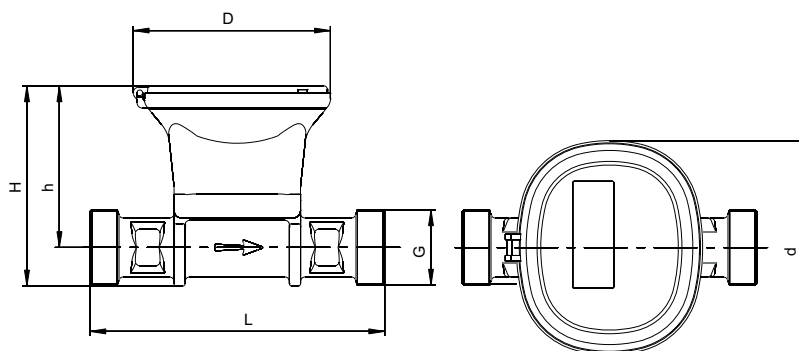
\* CRC-checksum verifying the source code correctness of the program used

Table 1. TECHNICAL DATA

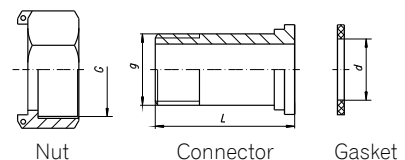
Parameter/markings			Ultrimis W												
			UL2,5		UL2,5-01		UL4		UL4-01		UL6,3		UL10		
Nominal diameter	DN	mm	15		15		20		20		25		32		
Continuous flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	2,5		2,5		4		4		6,3		10		
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	3,125		3,125		5		5		7,875		12,5		
Transitional flow rate	Q <sub>2</sub>	dm <sup>3</sup> /h	5		5		8		8		12,6		20		
Minimal flow rate	Q <sub>1</sub>	dm <sup>3</sup> /h	3,125		3,125		5		5		7,875		12,5		
Starting flow level	–	dm <sup>3</sup> /h	0,75		0,75		1,2		1,2		1,89		3		
Measuring range	R	Q <sub>3</sub> /Q <sub>1</sub>	to 800 in all installation positions; H; V; H/V												
Range	–	Q <sub>2</sub> /Q <sub>1</sub>	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 <sup>3</sup>	10 <sup>6</sup>												
The actual scale interval	–	dm <sup>3</sup>	0,01												
Maximum permissible error in the range: Q <sub>2</sub> ≤ Q ≤ Q <sub>4</sub>	ε	%	± 2 for cold water T ≤ 30°C ± 3 for water T > 30°C												
Maximum permissible error in the range: Q <sub>1</sub> ≤ Q < Q <sub>2</sub>	ε	%	± 5												
Water pressure class	as per EN	–	bar		MAP16										
	as per OIML	–	bar		0,3 to 16										
Pressure loss class for the flow Q <sub>3</sub>	as per EN	ΔP	bar		ΔP0,4										
	as per OIML	–	bar		0,4										
	by manufacturer	–	bar		0,3		0,4		0,28		0,26				
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		brass		
Spigots thread	G	inch	¾"; 7/8 -> ¾"		¾"		1"		1"		1 ¼"		1 ½"		
Water meter length	L	mm	80	110	80	110	105	115	105	130	165	260	260		
			115	165			130	190							
Height	H	mm	83; 84**		83		88,5		88,5		95		102,5		
	h	mm	69		69		71		71		74		77,5		
Counter size	D	mm	87												
	d	mm	94,5												
Mass	–	kg	0,48	0,52	0,29	0,31	0,61	0,63	0,33	0,34	1,05	1,39	1,68		
			0,53	0,6			0,66	0,77							

\*) Thread 7/8 -&gt; ¾" only in length 115

\*\*) For thread 7/8 -&gt; ¾"



## Connection fittings



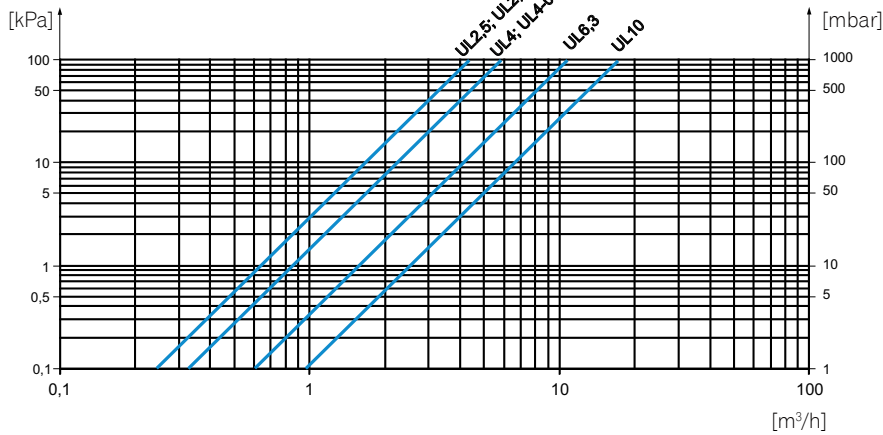
DN	G	g	d	L
	inch	inch	mm	mm
15	¾"	½"	17	37,5
20	1"	¾"	23	45,5
25	1 ¼"	1"	29	46,5
32	1 ½"	1 ¼"	36	56



# IOTAFLOW SYSTEMS PVT. LTD.

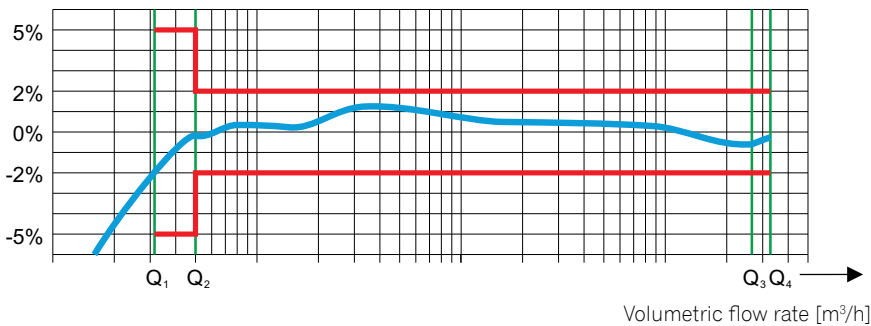
## PRESSURE LOSS CHART

Pressure loss



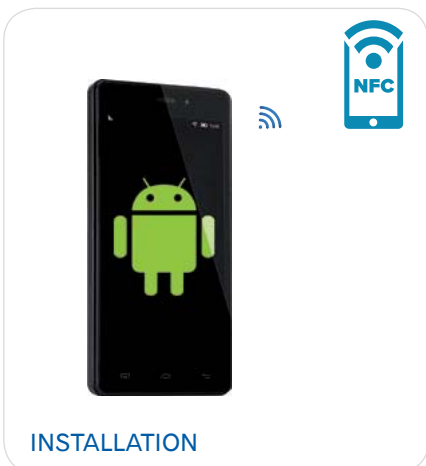
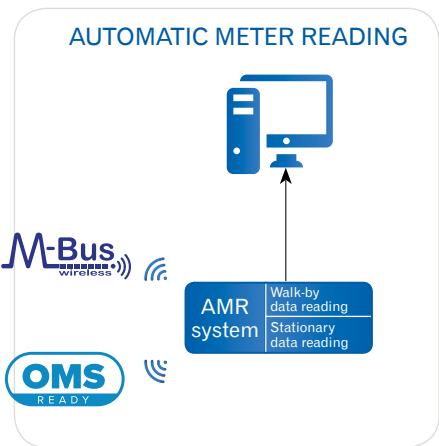
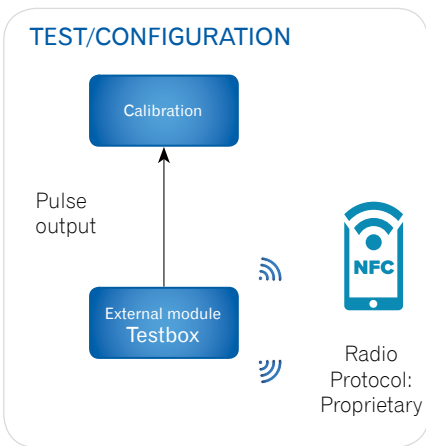
## TYPICAL ERROR CHART

Error [%]



TECHNICAL DATA

## INSTALLATION, CONFIGURATION AND REMOTE READING



### ORDER EXAMPLE:

UL Q3 - 01 - L

- Water meter length
- Type - composite body
- Flow rate Q3

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

