WATER MEASUREMENT

ULTRIMIS W

ULTRASONIC WATER METER
DN15, DN20, D25, DN32, 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 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.

MID R 800

R

AMR READY

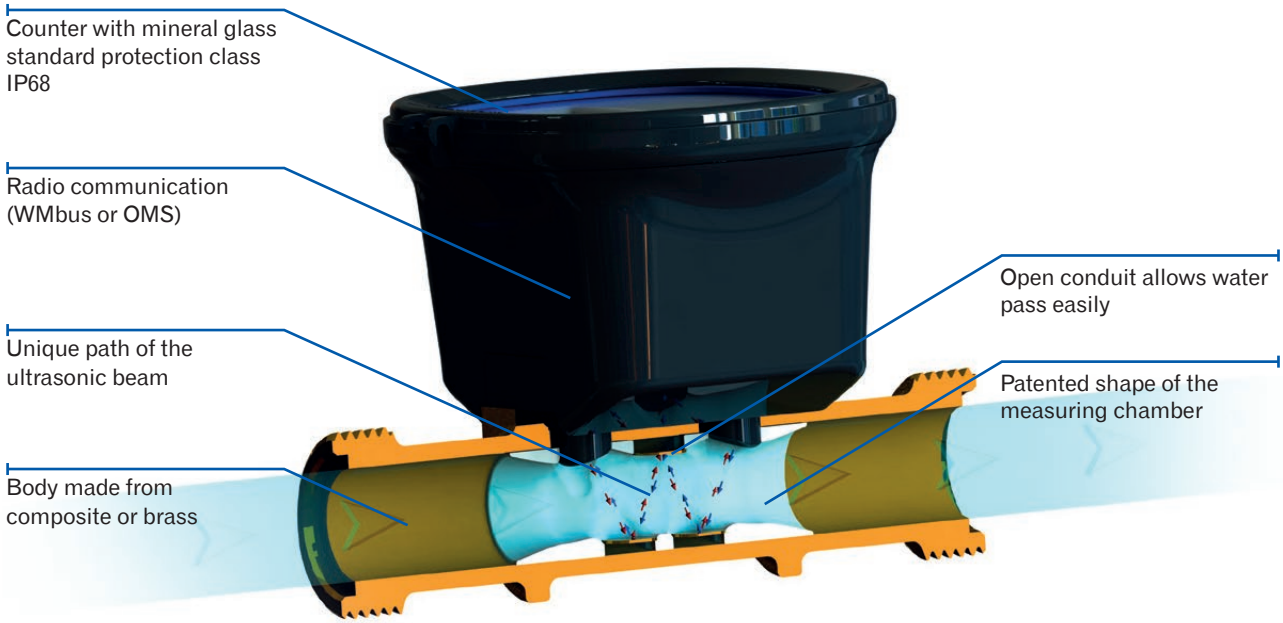
DATA LOGGER READY

APATOR

SONIC TECHNOLOGY

NEW MID R=800

ultrimis W



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 maintenannce 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 - 16 bar or 10 bar [1)]
- 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.

[1)] For other values, see the Installation and Operation Manual

ACCURACY OF MEASUREMENT

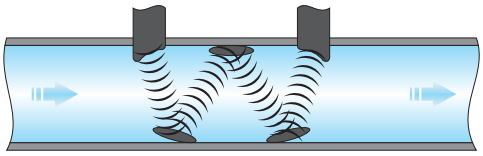
- Optimal measurement range to R800 in each operating position (H,V,H/V)
- Starting flow from 0,75 l/h for DN15
- Low pressure drop 1 bar for 4m3/h in DN15
- Measurement accuracy remains stable regardless of system element contamination (dedicated method of processing the measuring signal)
- Reverse 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)
- Measurement range up to R800 is available for watermeters with body lenght starting from L=80mm
- Very low mass = low CO_2 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



SONIC TECHNOLOGY

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
- 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

FEATURES

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 [2)]
- 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

[2)] OMS v4 encryption in mode 7 is available in water meters with the firmware version from 02.01

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).

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

RADIO READING

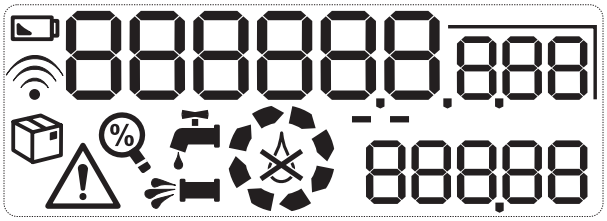
- The water meter includes an integrated radio module. This guarantees an efficient remote reading of data.
- Frame encryption at the level of the device (by OMS).
- Sends information about: usage during the previous month, the current month and on the day of reading.
- Alarms:
  - Reverse flow
  - Leak
  - 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
UL16 - DN40 L300

LCD display- functions



Water meter indication – m^3

Water meter indication – dm^3

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

- Low battery
- Radio on
- Transport mode
  Exit from transport / storage mode after min flow:
  5L- DN15; 8L - DN20; 12.6L - DN25; 20L - DN32; 32L- DN40
- Tamper detected/System error
- Test mode
- Small leak
  Alarm activation - flow> 0.3 x 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
- Water meter life sign

ADDITIONAL ALARMS NOT LISTED ON LCD

(access to all alarms only in the radio reading)

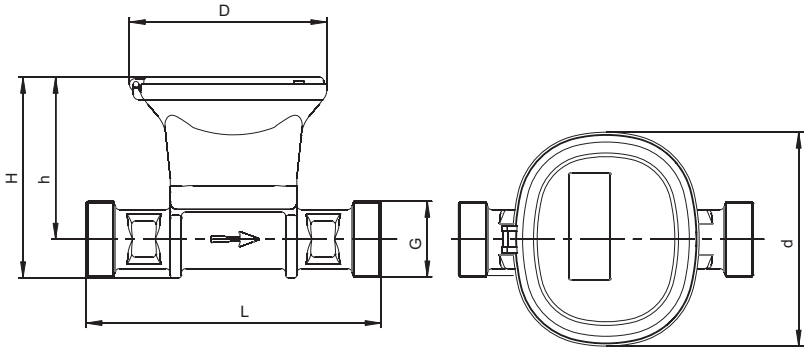
- Reverse flow
  Switching on the alarm - backflow lasting> 45 sec
- No flow
  Alarm activation - no flow for 30 days

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

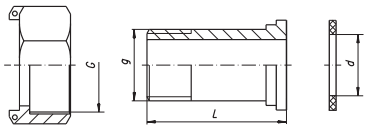
Table 1. TECHNICAL DATA

Parameter/marking				Ultrimis W						
				UL2,5	UL2,5-01	UL4	UL4-01	UL6,3	UL10	UL16
Nominal diameter		DN	mm	15	15	20	20	25	32	40
Continuous flow rate		Q_3	m³/h	2,5	2,5	4	4	6,3	10	16
Overload flow rate		Q_4	m³/h	3,125	3,125	5	5	7,875	12,5	20
Transitional flow rate		Q_2	dm³/h	5	5	8	8	12,6	20	102,4
Minimal flow rate		Q_1	dm³/h	10	10	16	5	25,2	40	64
Starting flow level		–	dm³/h	0,75	0,75	1,2	1,2	1,89	3	4,8
Measuring range		R	Q_3/Q_1	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		–	m³	10^6						
The actual scale interval		–	dm³	0,01						
Maximum permissible error in the range: $Q_2 \le Q \le Q_4$		ε	%	± 2 for cold water T≤30°C ± 3 for water T>30°C						
Maximum permissible error in the range: $Q_1 \le Q < Q_2$		ε	%	± 5						
Water pressure class	as per EN	–	bar	MAP10, MAP16						
	as per OIML	–	bar	0,3 to 10 or 0,3 to 16						
Pressure loss class for the flow Q_3	as per EN	ΔP	bar	0,4						0,25
	as per OIML	–	bar	0,4						0,25
	by manufacturer	–	bar	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	brass	brass
Spigots thread		G	inch	¾"; ⅞ -> ¾"**	¾"	1"	1"	1 ¼"	1 ½"	2"
Water meter length		L	mm	80 / 110 115 / 165	80 / 110	105 / 115 130 / 190	105 / 130	165 / 260	260	300
Height		H	mm	83; 84***	83	88,5	88,5	95	102,5	111
		h	mm	69	69	71	71	74	77,5	81,5
Counter size		D	mm	87						
		d	mm	94,5						
Mass		–	kg	0,48 / 0,52 0,53 / 0,6	0,29 / 0,31	0,61 / 0,63 0,66 / 0,77	0,33 / 0,34	1,05 / 1,39	1,68	2,15

*) Other values available on request: R400, R800
**) Thread ⅞ -> ¾" only in length 115
***) For thread ⅞ -> ¾"



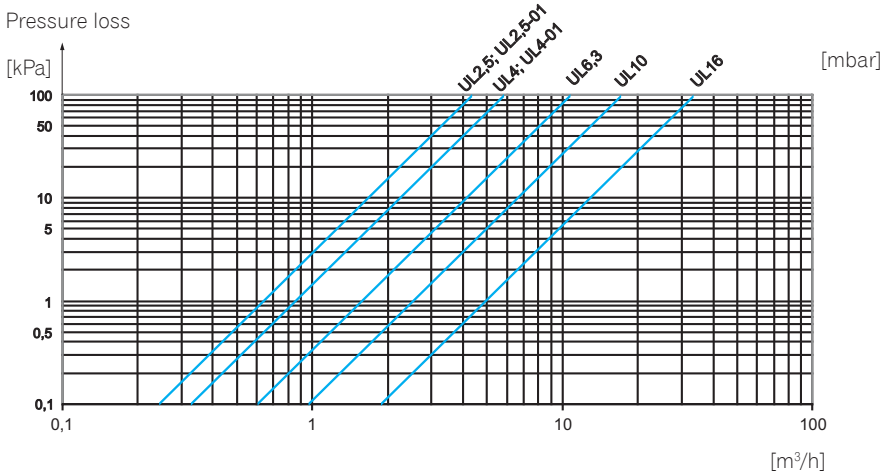
Connection fittings



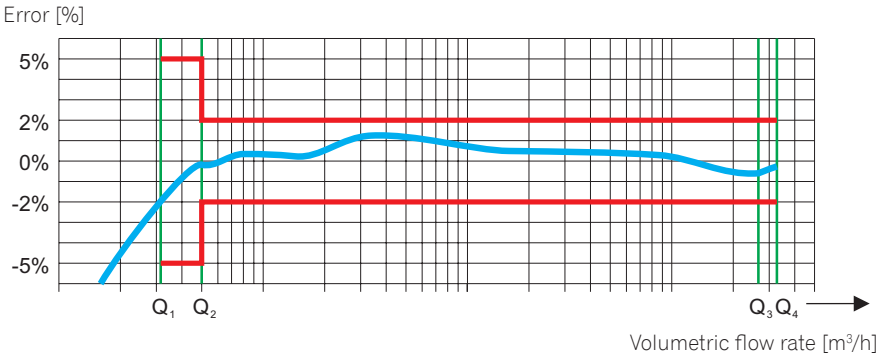
Nut Connector Gasket

DN	G	g	d	L
	inch	inch	mm	mm
15	¾"	½"	17	37,5
20	1"	¾"	23	45,5
25	1¼"	1"	29	46,5
32	1½"	1¼"	36	56
40	2"	1½"	43	70

PRESSURE LOSS CHART

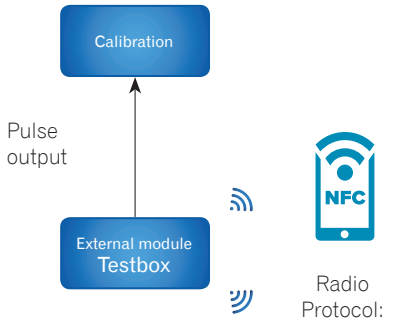


TYPICAL ERROR CHART

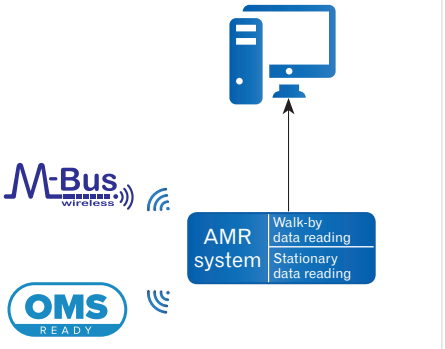


INSTALLATION, CONFIGURATION AND REMOTE READING

TEST/CONFIGURATION



AUTOMATIC METER READING



INSTALLATION

ORDER EXAMPLE:

UL Q3 - 01 - L

- L — Water meter length
- 01 — Type - composite body
- Q3 — 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

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