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V 3112

EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/16 - 5405

Addition 13

This addition replaces all previous versions of this certificate in full wording.

In accordance: with Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.).

Manufacturer: APATOR POWOGAZ S.A.
Jaryszki 1c
62-023 Żerniki
Poland

For: water meter – ultrasonic

type: ULTRIMIS (UL)

Accuracy class: 2

Temperature class: T30, T50 and T70

Valid until: 6 November 2026

Document No: 0511-CS-A033-16

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

Date of issue: 20 May 2025

Certificate approved by:

Český metrologický institut
-3-

Ing. František Staněk, PhD.

1 Characteristics of instrument

The ultrasonic water meters type ULTRIMIS (UL) are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive 2014/32/EU of the European Parliament and of the Council of the harmonisation of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.), as amended.
The water meters type ULTRIMIS (UL) are ultrasonic water meters with an electronic indicating device.
The water meters type ULTRIMIS (UL) consist of a brass or a composite body with connecting screw threads, one pair of ultrasonic transducers and the electronic indicating device. The electronic indicating device is formed by LCD display shown volume and flow. The water meters have two indication modes: normal resolution mode and high resolution mode (which is used during the calibration process). The water meter displays the volume resolution of 0.00001 m^3 on the digital display in the high resolution mode. Water meter is without any buttons with LCD display and communication interfaces. The adjustment and reading/setting metrological data is realized electronically using NFC. The access to the metrological parameters is secured by password. Legally non-relevant part of communication with meter is possible by radio module with frequency 433 MHz or 434 MHz or 868 MHz and used frequency is marked on the register. There is a possibility of one or two-way communication by described radio modules. Radio modules are not matter of this certificate and the compliance to other regulations i.e. RED Directive or other should be covered by other document.
Ultrasonic water meter has a separation of software. The version of SWs and CRCs are displayed in the auto-rounding menu on LCD in second row in the form:
Axx.xx – SW version of legally relevant part
bxx.xx – CRC of legally relevant part
Cxx.xx – SW version of legally non-relevant part
dxx.xx – CRC of non-legally relevant part
The water meters type ULTRIMIS (UL) can be equipped by radio module which is not part of this certificate.
The water meters type ULTRIMIS (UL) shall be installed to operate in any position. Horizontal position with the indicating device at the bottom was tested according to points 7.3 and 7.4.4 of ISO 4064:2024 with all results were under MPE, but this position is not subject of this certificate.
The water meters type ULTRIMIS (UL) can be equipped with:

- The inlet straightener according to the documentation listed in the chapter 7.
- Communication inbuild modules wM-Bus (wireless based on ISM Bands) and/or LoRaWAN protocols (wireless based on ISM Bands) and/or M-Bus (wired).

2 Main characteristics

Basic technical data of water meters type ULTRIMIS (UL):

Manufacturer:	Apator POWOGAZ S.A.						
Model name:	UL2.5		UL4	UL6.3	UL10	UL16	UL25
Nominal diameter:	15	20	20	25	25 /32	40	50
Type details:							
Q_1 [m^3/h]:	flowrates are shown in Table *Basic metrological data (flowrates)*						
Q_2 [m^3/h]:							
Q_3 [m3/h]:							
Q_4 [m^3/h]:							
Q_3/Q_1:	800; 400; 250						500; 400; 250
Q_2/Q_1:	1.6						
Q_4/Q_3:	1.25						
Measuring principle:	ultrasonic						
Accuracy class:	2						
Maximum permissible error for the lower flowrate zone (MPE_l):	±5 %						
	± 2 % for water having a temperature ≤ 30 °C						

Maximum permissible error for the upper flowrate zone (MPE_u):	± 3 % for water having a temperature > 30 °C					
Temperature class:	T30, T50, T70		T30, T50			
Water pressure class:	MAP10, MAP16					
Pressure loss class:	*ΔP40* for T30 and T50 *ΔP25* for T30, T50, T70		*ΔP40*		*ΔP25*	
Reverse flow:	*Not designed to measure*					
Mechanical environment class (OIML R 49-1:2024/ Directive 2014/32/EU): [1]	B, O / M1					
Electromagnetic environment: [1]	E1, E2					
Temperature range ambient:	-25 °C / 70 °C					
Maximum admissible temperature [°C]:	30, 50, 70					
Maximum admissible pressure [MPa]:	1.6					
Orientation limitation:	No limitation					
Indicating range – testing mode/user mode [m^3]:	*999 999*					
Resolution of the indicating device testing mode/user mode [m^3]:	*0.001*					
Resolution of the device for rapid testing [pulse/dm^3]:	*10; 100; 1000; (testbox interface)*					
Resolution of the indicating device for rapid testing [m^3]:	*0.00001*					
EUT testing requirements (OIML R 49-2:2024, 8.1.8):						
Category:	Ultrasonic water meters					
Case:	B					
Installation details:						
Connection type (screw thread):	G ¾ B or G ⅞ B / G ¾ B or G 1 B	G 1 B	G 1 ¼ B	G 1 ¼ B or G 1 ½ B	G 2 B or flange	G2 ½ B or flange
Minimum straight length of inlet pipe [mm]:	0					
Minimum straight length of outlet pipe [mm]:	0					
Flow profile sensitivity class:	*U0D0*					
Flow conditioner (details if required):	No					
Mounting:	-					
Orientation:	Any					
Other relevant information:	-					
Length [mm] – brass body:	80 - 165	105-190	105 - 190	165 - 260	260	300	200 - 300
Length [mm] – composite body:	80 - 110	105 - 130	105 - 130	-	-	-	-
Reed switch power supply (U_{max} / I_{max}):	-						
Reed switch K-factor (impulse / L):	-						
Installation details (electrical):							
Wiring instructions:	-						
Mounting arrangement:	-						
Orientation limitations:	-						
Power supply:							
Type (battery, mains AC, mains DC):	Non-replaceable battery						
U_{max} (V):	3.6						

U_{min} (V):	2.5
Frequency:	-
Minimum battery life time [years]:	10 years
Software version / CRC checksum (of legally relevant SW):	03.00 / 5563; 04.01 / 235E; 04.10 / 62C7611F; 05.00 / 8F1DCB26; 6.02 / C8F24A9C
Previous SW version / CRC checksum (of legally relevant SW):	01.01 / 4C5b; 01.03 / 0A74; 02.01 / 6C74
Ancillary devices (not certified):	
Reed sensor power supply (U_{max} / I_{max}):	-
Type	M-Bus (acc. to EN13757)
Power supply (U_{max} / I_{max})[2]:	-
K-factor [pulse/Litres]:	-
Reed sensor power supply (U_{max} / I_{max}):	-
Further information specified by the manufacture (not certified)	
Specific requirements for embedded software for built-for-purpose measuring instrument (type P)	
Extension I1: Water meters	
Extension T: Transmission of Measurement Data via Communication Networks (NFC)	
Extension S: Software separation	
Additional specification (certified):	
Wireless communication wM-Bus (T1, T2, C1); LoRa	
Information specified by the manufacturer (information in the table below are not certified):	
IP68 protection degree	

[1] The ratio Q_3 / Q_1 shall be chosen according to paragraph 4.1.4 of OIML R 49-1:2024

Table *Flowrates*

Manufacturer:	Apator POWOGAZ S.A.					
Model number:	UL 2.5			UL 4		
Nominal diameter:	15 / 20			20		
Type details:						
Q_1 [m³/h]:	0.003	0.006	0.010	0.005	0.010	0.016
Q_2 [m³/h]:	0.005	0.010	0.016	0.008	0.016	0.026
Q_3 [m³/h]:	2.50	2.50	2.50	4.00	4.00	4.00
Q_4 [m³/h]:	3.13	3.13	3.13	5.00	5.00	5.00
Q_3/Q_1:	800	400	250	800	400	250

Manufacturer:	Apator POWOGAZ S.A.					
Model number:	UL 6.3			UL 10		
Nominal diameter:	25			25 / 32		
Type details:						
Q_1 [m³/h]:	0.008	0.016	0.025	0.013	0.025	0.040
Q_2 [m³/h]:	0.013	0.025	0.040	0.020	0.040	0.064
Q_3 [m³/h]:	6.30	6.30	6.30	10.00	10.00	10.00
Q_4 [m³/h]:	7.88	7.88	7.88	12.50	12.50	12.50
Q_3/Q_1:	800	400	250	800	400	250

Manufacturer:	Apator POWOGAZ S.A.				
Model number:	UL 16				
Nominal diameter:	40				
Type details:					
Q_1 [m³/h]:	0.025	0.040	0.020	0.040	0.064
Q_2 [m³/h]:	0.040	0.064	0.032	0.064	0.102
Q_3 [m³/h]:	10.00	10.00	16.00	16.00	16.00
Q_4 [m³/h]:	12.50	12.50	20.00	20.00	20.00
Q_3/Q_1:	400	250	800	400	250

Manufacturer:	Apator POWOGAZ S.A.		
Model number:	UL 25		
Nominal diameter:	50		
Type details:			
Q_1 [m³/h]:	0.050	0.0625	0.100
Q_2 [m³/h]:	0.080	0.100	0.160
Q_3 [m³/h]:	25.0	25.0	25.0
Q_4 [m³/h]:	31.3	31.3	31.3
Q_3/Q_1:	500	400	250

3 Tests

Technical tests of the water meters type ULTRIMIS (UL) were performed in compliance with the International Recommendation OIML R 49 Edition 2013 (E), with conformity to EN ISO 4064:2017, Test Reports No. 6015-PT-P0023-16, 8551-PT-E0094-16, 6015-PT-P0010-17, 6015-PT-P0027-18, 6015-PT-P0053-18, 6015-PT-P0029-19, 6015-PT-P0007-20, 6015-PT-P0063-20 and 6011-PT-SW005-20 and Type Evaluation Report No. 0511-ER-V145-20 (with related Test Reports No. 6015-PT-P0046-21, EMC test report No. 8551-PT-E0054-21 and Software validation Test Report No. 6011-PT-SW005-21 according to WELMEC 7.2, 2019), Type Evaluation report No. 0511- ER-V104-21 (with Test Report No. 6015-PT-P0010-22) and Type Evaluation report No. 0511-ER-V105-21 (with Test Report 6015-PT-P0020-22, No. 6011-PT-SW006-22 and EU-type examination certificates for Radio Equipment Directive 2014/53/EU, Annex III, module B, No. 0220-CC-V0027-22, No. 0220-CC-V0033-22, No. 0220-CC-V0034-22), Type Evaluation report No. 0511-ER-V154-23 (with Test report 6015-PT-0006-24) and Type Evaluation report No. 0511-ER-V048-24 (with Test report 6015-PT-0019-25 and Test report 6011-PT-SW007-25 according to WELMEC 7.2 2023).

4 Conformity marks and inscription:

The water meters type ULTRIMIS (UL) shall be clearly and indelibly marked with the following information:

- Water meter type (ULTRIMIS (UL))
- Unit of measurement (m³)
- Numerical value Q_3 in m³/h (Q_3 ×.×) and the ratio Q_3 / Q_1,
- EU-type examination certificate number
- Manufacturer´s name, registered trade name or registered trade mark
- Post address of manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture
- Serial number (as near as possible to the indicating device)
- Direction of flow, by means of an arrow (shown on both sides of the body or on one side only provided the direction of flow arrow is easily visible under all circumstances)
- Maximum admissible pressure (MAP ××)
- Any position or Letter H (horizontal position) and/or V (vertical position)
- The temperature class (T××)
- The pressure loss class (ΔP ××)
- The installation sensitivity class (U× D×)
- For a non-replaceable battery: the latest date by which the meter shall be replaced
- Environmental classification (B or O)

- Electromagnetic environmental class (E×)
- Software version / checksum
- CE marking and metrology marking in line with the Directive 2014/32/EU

These markings shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use. Examples are in Figure 1.

5 Additional specifications:

The water meters type ULTRIMIS (UL) shall be put onto the market in line with the procedure of conformity assessment according to the Annex D or F of the Directive 2014/32/EU as well as in compliance with the technical description of this report and shall be tested in accordance with the requirements determined in EN ISO 4064-1:2017, respectively OIML R 49-1:2013.

A metrological test may only be performed by a producer, or a notified body respectively in line with the conformity assessment procedure by the D or F Annexes of the Directive 2014/32/EU, respectively.

6 Ensuring the integrity of the instruments:

The ULTRIMIS (UL) meters have to be sealed by embedding of the clamp on cover of the meter to the body of the meter (Figure 2). The cover can be removed only destroying this part. The cover has to be equipped with safeguarding marks. Water meter is equipped with electronic tamper detection that shows any attempt of tamper on the LCD display.

7 Drawing of the instrument:
Water meter type ULTRIMIS (UL) are manufactured according to the technical documentation of manufacturer. Technical documentation contains following drawings:

Document reference	Date	Brief description
5020-000000	14.5.2016	UL2,5 DN15 L110 water meter
5020-040000	15.9.2016	sealing
5020-040001	15.9.2016	front plate and LCD description
5020-040002	24.10.2016	material list
5020-010106	07.04.2021	UL2,5 DN15 L165 water meter additional brass body
5021-000000	14.5.2016	UL2,5 DN15 L80 water meter
5022-000000	17.6.2016	UL2,5 DN15 L115 water meter
5023-000000	17.6.2016	UL2,5 DN15 L115 ⅞“ > ¾“ water meter
5024-000000	14.5.2016	UL2,5 DN15 L165 water meter
5025-000000	14.5.2016	UL2,5-01 DN15 L110 water meter
5026-000000	14.5.2016	UL2,5-01 DN15 L80 water meter
5030-000000	18.1.2017	UL2,5-G1 DN20 L130 water meter
5040-000000	10.5.2016	UL4 DN20 L130 water meter
5040-010105	11.02.2021	UL4 DN20 L190 additional brass body
5041-000000	10.5.2016	UL4 DN20 L105 water meter
5042-000000	17.6.2016	UL4 DN20 L115 water meter
5043-000000	10.5.2016	UL4 DN20 L190 water meter
5045-000000	12.5.2016	UL4-01 DN20 L130 water meter
5046-000000	12.5.2016	UL4-01 DN20 L105 water meter
5050-000000	14.5.2016	UL6,3 DN25 L260 water meter
5050-010103	07.12.2020	UL6,3 DN25 L260 water meter additional brass body
5051-000000	13.5.2016	UL6,3 DN25 L165 water meter
5060-000000	17.5.2016	UL10 DN32 L260 water meter
5060-010103	07.12.2020	UL10 DN32 L260 water meter additional brass body
5061-000000	18.1.2017	UL10 G 1¼ B DN32 L260 water meter

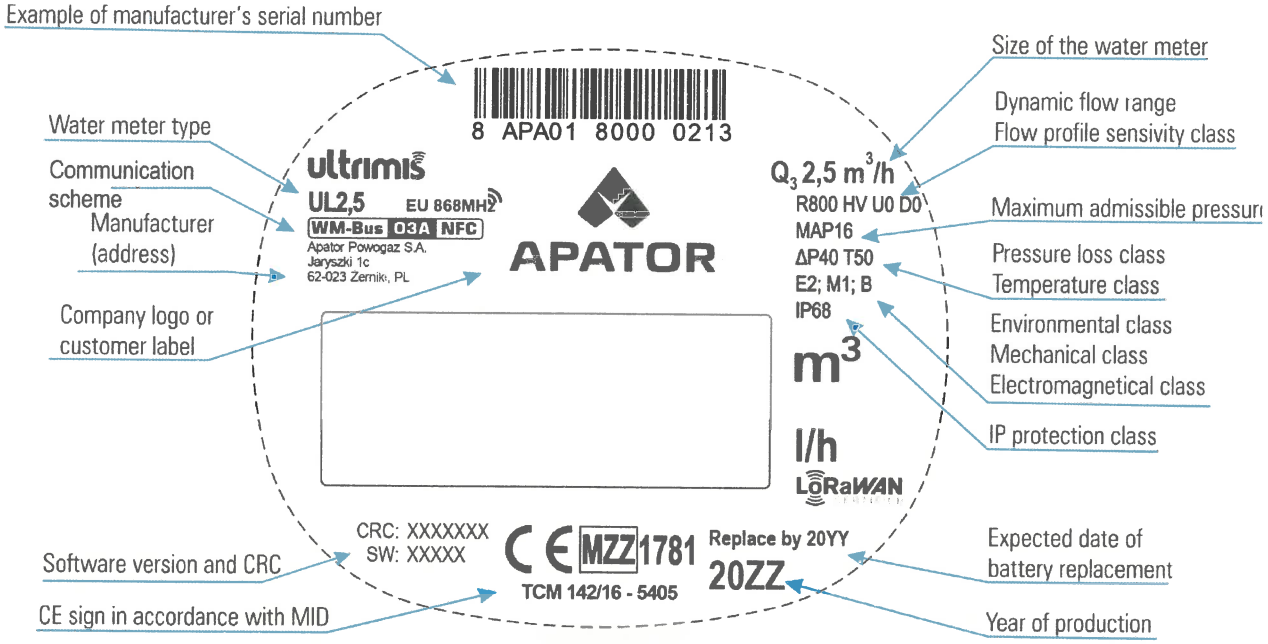
5070-000000	14.5.2018	UL16 DN40 L300 water meter
5071-000000	14.5.2018	UL10 DN40 L300 water meter
5080-000000	15.10.2019	UL25 DN50 L200 water meter
5081-000000	15.10.2019	UL25 DN50 L270 water meter
5082-000000	15.10.2019	UL25 DN50 L300 water meter
-	7.10.2016	Tamper detection mechanism (2 pages)
5025-020000	13.02.2018	TA1 868 MHz electronics
5025-050000	13.02.2018	TA2 868 MHz electronics
5025-060000	29.05.2019	TA3 868 MHz electronics
5025-070000	12.09.2019	TA3,5 433 MHz electronics
5025-080000	15.10.2019	TA4 868 MHz electronics
5025-090000	23.06.2020	TA4 433 MHz electronics
5025-100000	08.10.2021	TA4b 868 MHz electronics
5025-110000	08.10.2021	TA4b 868 MHz T2 electronics
5025-120000	08.10.2021	TA4b 433 MHz electronics
5120-000000	15.6.2022	UL 2.5 DN15 L110 Water meter
5121-000000	15.6.2022	UL 2.5 DN15 L80 Water meter
5122-000000	15.6.2022	UL 2.5 DN15 L115 Water meter
5123-000000	15.6.2022	UL 2.5 DN15 L115 Water meter 7/8 -> 3/4
5124-000000	15.6.2022	UL 2.5 DN15 L165 Water meter
5125-000000	15.6.2022	UL 2.5 DN15 L110 Water meter
5126-000000	15.6.2022	UL 2.5 DN15 L80 Water meter
5140-000000	15.6.2022	UL 4 DN20 L130 Water meter
5141-000000	15.6.2022	UL 4 DN20 L105 Water meter
5142-000000	15.6.2022	UL 4 DN20 L115 Water meter
5143-000000	15.6.2022	UL 4 DN20 L190 Water meter
5145-000000	15.6.2022	UL 4 DN20 L130 Water meter
5146-000000	15.6.2022	UL 4 DN20 L105 Water meter
5025-130000	27.10.2022	TA4b meter + TA3 radio 868MHz
5025-140000	22.11.2022	TA5b + Radio Lora WAN
R-009.11/22_01/EN	05.02.2024	Product life cycle
5021-310000	12.3.2024	UL2.5 DN15 L80 drawing of brass body with inlet strainer
5024-310000	12.3.2024	UL2.5 DN15 L165 drawing of brass body with inlet strainer
5025-310000	12.3.2024	UL2.5-01 DN15 L110 drawing of polymer body with inlet strainer
5026-310000	12.3.2024	UL2.5-01 DN15 L80 drawing of polymer body with inlet strainer
5041-310000	12.3.2024	UL4 DN20 L105 drawing of brass body with inlet strainer
5043-310000	12.3.2024	UL4 DN20 L190 drawing of brass body with inlet strainer
5045-310000	12.3.2024	UL4-01 DN20 L130 drawing of polymer body with inlet strainer
5046-310000	12.3.2024	UL2.5-01 DN15 L110 drawing of polymer body with inlet strainer
5050-310000	13.3.2024	UL6.3 DN25 L260 drawing of brass body with inlet strainer
5051-310000	13.3.2024	UL6.3 DN25 L165 drawing of brass body with inlet strainer
5060-310000	13.3.2024	UL10 DN32 L260 drawing of brass body with inlet strainer
5070-310000	13.3.2024	UL16 DN40 L300 drawing of brass body with inlet strainer
5121-310000	11.3.2024	UL2.5 DN15 T70 L80 drawing of brass body with inlet strainer
5124-310000	11.3.2024	UL2.5 DN15 L165 drawing of brass body with inlet strainer
5125-310000	12.3.2024	UL2.5-01 DN15 L110 drawing of polymer body with inlet strainer
5126-310000	12.3.2024	UL2.5-01 DN15 L80 drawing of polymer body with inlet strainer
5141-310000	11.3.2024	UL4 DN20 T70 L105 drawing of brass body with inlet strainer
5143-310000	11.3.2024	UL4 DN20 L190 drawing of brass body with inlet strainer
5145-310000	12.3.2024	UL4-01 DN20 L130 drawing of polymer body with inlet strainer

5146-310000	12.3.2024	UL4-01 DN20 L105 drawing of polymer body with inlet strainer
5090-000000	15.01.2025	Water meter assembly (M-Bus)
5090-020000	15.01.2025	Housing of electronic counter (M-Bus)
5090-030001	13.02.2025	Dial description (M-Bus)
5090-060000	15.01.2025	Electronic counter assembly (M-Bus)

History of additions

Addition No.	Description
Addition 0	Issuing certificate.
Addition 1	Added new software and changed screw connection.
Addition 2	Added DN40 and water pressure class MAP10, new SW.
Addition 3	Changed software version and checksum; editorial changes.
Addition 4	New radio module with frequency (433, 434 or 868) MHz for communication with water meter – legally non-relevant part.
Addition 5	Added diameter DN50, added SW version: 04.01 with: CRC: 235E
Addition 6	Added brass body length 190 mm for UL2.5 DN20, fix maximal total length L165mm of UL 2.5 DN15
Addition 7	Changed meter electronic and added SW version: 04.10 with: CRC: 62C7611F; added radio modules that are not covered by the certificate
Addition 8	Change of the address from Klemensa Janickiego 23/25, 60-542 Poznań to Jaryszki 1c, 62-023 Żerniki
Addition 9	Added temperature class T70 for DN15 and DN20
Addition 10	Added communication protocol LoRa
Addition 11	Correcting a typo in the address
Addition 12	Addition of the new inlet straightener
Addition 13	Addition of communication by wired M-Bus, revision of drawings list

Figure 1: The water meter type ULTRIMIS (UL) – example of register:



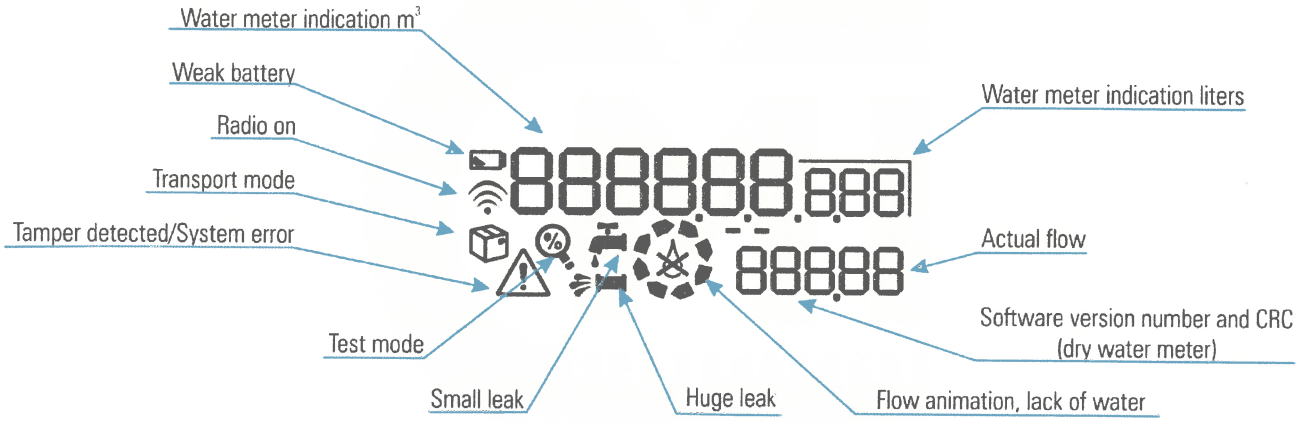


Figure 2: The water meter type ULTRIMIS (UL) – view and sealing (including safeguarding mark):