



# EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/16 - 5405

## Addition 5

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

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**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.  
ul. Klemensa Janickiego 23/25  
60-542 Poznań  
Poland

**For:** water meter – ultrasonic  
type: ULTRIMIS (UL)

Accuracy class: 2  
Temperature class: T30 and T50

**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:** 28 February 2020

Certificate approved by:



RNDr. Pavel Klenovský

## 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<sup>3</sup> 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.

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 horizontal and vertical (with flow direction from bottom to top and from top to bottom) position with the indicating device positioned at the top or at the side.

## 2 Main characteristics

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

Manufacturer:	Apator POWOGAZ S.A.					
Model number:	UL 2.5	UL 4	UL 6.3	UL 10	UL 16	UL25
Nominal diameter:	15 / 20	20	25	25 / 32	40	50
Type details:						
$Q_1$ [m <sup>3</sup> /h]:	flowrates are shown in Table <i>flowrates</i>					
$Q_2$ [m <sup>3</sup> /h]:						
$Q_3$ [m <sup>3</sup> /h]:						
$Q_4$ [m <sup>3</sup> /h]:						
$Q_3/Q_1$ :	800; 400; 250				500; 400; 250	
$Q_2/Q_1$ :	1.6					
$Q_3/Q_4$ :	1.25					
Measuring principle:	ultrasonic					
Accuracy class:	2					
Maximum permissible error for the lower flowrate zone (MPE <sub>l</sub> ):	±5%					
Maximum permissible error for the upper flowrate zone (MPE <sub>u</sub> ):	± 2 % for water having a temperature ≤ 30 °C ± 3 % for water having a temperature > 30 °C					
Temperature class:	T30, T50					
Water pressure class:	MAP 10, MAP 16					
Pressure loss class:	ΔP40				ΔP25	

<i>Environmental class:</i>	B or O					
<i>Electromagnetic environment:</i>	E1, E2					
Maximum admissible temperature [°C]:	50					
Maximum admissible pressure [MPa]:	1.6					
Orientation limitation:	horizontal position with the indicating device at the top and the side; vertical position with flow from bottom to top and from top to bottom					
<i>Indicating range [m<sup>3</sup>]:</i>	999 999					
<i>Resolution of the indicating device [m<sup>3</sup>]:</i>	0.001					
<i>Resolution of the device for rapid testing [m<sup>3</sup>]:</i>	0.00001					
EUT testing requirements (OIML R 49-2:2013, 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 ½ B or G 1 ½ B	G 2 B or flange	G 2 ½ B or flange
Minimum straight length of inlet pipe [mm]:	0					
Minimum straight length of outlet pipe [mm]:	0					
<i>The installation sensitivity class:</i>	U0D0					
Flow conditioner (details if required):	No					
Mounting:	-					
Other relevant information:						
<i>Length [mm] – brass body:</i>	80 - 160	105 - 190	165 - 260	260	300	200 - 300
<i>Length [mm] – composite body:</i>	80 - 110	105 - 130	-	-	-	-
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]:	1.9					
<i>Minimum battery life time [years]:</i>	10 years					
Frequency [Hz]:	-					
Software:						
Legally relevant part of software:						
Software version / CRC checksum:	01.01 / 4C5b; 01.03 / 0A74; 02.01 / 6C74; 03.00 / 5563; 04.01 / 235E					
Other specification of software:						
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						

Table *Flowrates*

Model number:	UL 2.5			UL 4		
Nominal diameter (DN):	15 / 20			20		
$Q_1$ [m <sup>3</sup> /h]:	0.003	0.006	0.010	0.005	0.010	0.016
$Q_2$ [m <sup>3</sup> /h]:	0.005	0.010	0.016	0.008	0.016	0.026
$Q_3$ [m <sup>3</sup> /h]:	2.50	2.50	2.50	4.00	4.00	4.00
$Q_4$ [m <sup>3</sup> /h]:	3.13	3.13	3.13	5.00	5.00	5.00
$Q_3/Q_1$ :	800	400	250	800	400	250

Model number:	UL 6.3			UL 10		
Nominal diameter (DN):	25			25 / 32		
$Q_1$ [m <sup>3</sup> /h]:	0.008	0.016	0.025	0.013	0.025	0.040
$Q_2$ [m <sup>3</sup> /h]:	0.013	0.025	0.040	0.020	0.040	0.064
$Q_3$ [m <sup>3</sup> /h]:	6.30	6.30	6.30	10.00	10.00	10.00
$Q_4$ [m <sup>3</sup> /h]:	7.88	7.88	7.88	12.50	12.50	12.50
$Q_3/Q_1$ :	800	400	250	800	400	250

Model number:	UL 16				
Nominal diameter (DN):	40				
$Q_1$ [m <sup>3</sup> /h]:	0.025	0.040	0.020	0.040	0.064
$Q_2$ [m <sup>3</sup> /h]:	0.040	0.064	0.032	0.064	0.102
$Q_3$ [m <sup>3</sup> /h]:	10.00	10.00	16.00	16.00	16.00
$Q_4$ [m <sup>3</sup> /h]:	12.50	12.50	20.00	20.00	20.00
$Q_3/Q_1$ :	400	250	800	400	250

Model number:	UL 25		
Nominal diameter (DN):	50		
$Q_1$ [m <sup>3</sup> /h]:	0.050	0.0625	0.100
$Q_2$ [m <sup>3</sup> /h]:	0.080	0.100	0.160
$Q_3$ [m <sup>3</sup> /h]:	25.0	25.0	25.0
$Q_4$ [m <sup>3</sup> /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 ISO 4064, 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 and 6011-PT-SW005-20.

### 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 (m<sup>3</sup>)
- Numerical value  $Q_3$  in m<sup>3</sup>/h ( $Q_3 \times \dots$ ) 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 ××)
- Letter H (horizontal position) or V (vertical position)
- The temperature class (T××)
- The pressure loss class ( $\Delta P$  ××)
- 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
- 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 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
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 $\frac{7}{8}$ " > $\frac{3}{4}$ " 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
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
5051-000000	13.5.2016	UL6,3 DN25 L165 water meter
5060-000000	17.5.2016	UL10 DN32 L260 water meter
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)

### 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

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

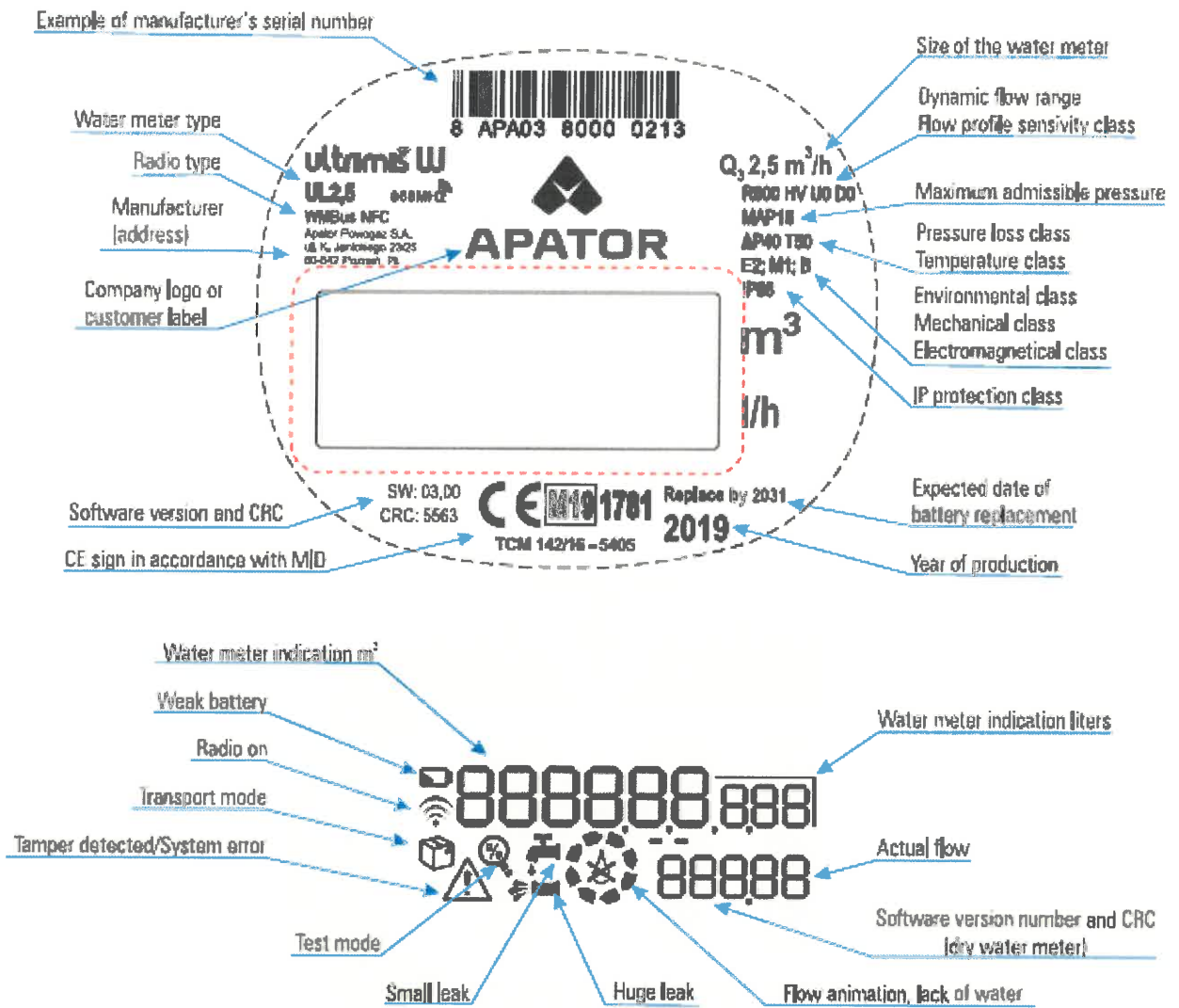


Figure 2: The water meter type ULTRIMIS (UL) – view and sealing (including safeguarding mark):

