



OIML Member State
Czech Republic

OIML Certificate No.
R49/2013-A-CZ1-2021.05

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: Czech Metrology Institute
Address: Okružní 31, 638 00 Brno, Czech Republic

Person responsible: Jan Kalandra

Applicant

Name: APATOR POWOGAZ S.A.
Address: ul. Klemensa Janickiego 23/25; 60-542 Poznań; Poland

Manufacturer

Name: APATOR POWOGAZ S.A.
Address: ul. Klemensa Janickiego 23/25; 60-542 Poznań; Poland

Identification of the certified type *(the detailed characteristics will be defined in the additional pages)*

water meter - ultrasonic
ULTRIMIS (UL)

Designation of the module *(if applicable)*

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This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 49

Edition (year): 2013

For accuracy class (if applicable): 2



This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated OIML type evaluation report:

- No. 0511-ER-V029-21 dated 7 October 2021 that includes 62 pages including annex 1
- Test report No. 6015-PT-P5006-21 that includes 91 pages including annex 1, annex 2 and annex 3
- Test report No. 6015-PT-P5007-21 that includes 53 pages including annex 1
- Software validation test report No. 6011-PT-SW024-21 that includes 3 pages
- EMC test report No. 8551-PT-E0054-21 that includes 7 pages including annex 1

The technical documentation relating to the identified type is contained in documentation file:

0511-UL-V029-21

OIML Certificate History

Revision No.	Date	Description of the modification
Addition 0	15 October 2021	Issuing certificate

The OIML Issuing Authority

RNDr. Pavel Klenovský
Head of Certification Body

Date: 15 October 2021



Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

Measuring system description

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.

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.

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 arbitrary orientation. The water meters type ULTRIMIS (UL) are not designed to measure reverse flow.

Marking and inscriptions

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

- Unit of measurement (m^3)
- Numerical value Q_3 in m^3/h ($Q_3 \times \times$) and the ratio Q_3 / Q_1
- OIML certificate of conformity number
- Name of trademark of the manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture and 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 $\times \times$)
- Letter H (horizontal position) or V (vertical position)
- The temperature class (T $\times \times$)
- The pressure loss class ($\Delta P \times \times$)
- The installation sensitivity class (U \times D \times)
- For a non-replaceable battery: the latest date by which the meter shall be replaced
- Environmental classification (B or O)
- Electromagnetic environmental class (E \times)
- Software version and checksum

These markings shall comply with the requirements of OIML R 49 and shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use.



Characteristics

Basic technical data of water meters types 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 ³ /h]:	flowrates are shown in Table <i>flowrates</i>						
Q_2 [m ³ /h]:							
Q_3 [m ³ /h]:							
Q_4 [m ³ /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_l):	±5%						
Maximum permissible error for the upper flowrate zone (MPE_u):	± 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:	$\Delta P40$					$\Delta P25$	
Environmental class:	B or O						
Electromagnetic environment:	E1, E2						
Maximum admissible temperature [°C]:	50						
Maximum admissible pressure [MPa]:	1.6						
Orientation limitation:	any						
Indicating range [m ³]:	999 999						
Resolution of the indicating device [m ³]:	0.001						
Resolution of the device for rapid testing [m ³]:	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 ¼ 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 – 165	105- 190	105 - 190	165 - 260	260	300	200 - 300
<i>Length [mm] – composite body:</i>	80 - 110	105- 130	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:	03.00 / 5563; 04.01 / 235E; 04.10 / 62C7611F						

Table Flowrates

Model number:	UL 2.5			UL 4		
<i>Nominal diameter (DN):</i>	15 / 20			20		
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



Model number:	UL 6.3			UL 10		
Nominal diameter (DN):	25			25 / 32		
Q_1 [m ³ /h]:	0.008	0.016	0.025	0.013	0.025	0.040
Q_2 [m ³ /h]:	0.013	0.025	0.040	0.020	0.040	0.064
Q_3 [m ³ /h]:	6.30	6.30	6.30	10.00	10.00	10.00
Q_4 [m ³ /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 ³ /h]:	0.025	0.040	0.020	0.040	0.064
Q_2 [m ³ /h]:	0.040	0.064	0.032	0.064	0.102
Q_3 [m ³ /h]:	10.00	10.00	16.00	16.00	16.00
Q_4 [m ³ /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 ³ /h]:	0.050	0.0625	0.100
Q_2 [m ³ /h]:	0.080	0.100	0.160
Q_3 [m ³ /h]:	25.0	25.0	25.0
Q_4 [m ³ /h]:	31.3	31.3	31.3
Q_3/Q_1 :	500	400	250

Securing components and verification marks

The ULTRIMIS (UL) meters have to be sealed by embedding of the clamp on cover of the meter to the body of the meter. 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.

