



OIML Member State  
SLOVAKIA

OIML Certificate No.  
R49/2013-A-SK1-20.02 Rev. 1

## OIML CERTIFICATE ISSUED UNDER SCHEME A

### OIML Issuing Authority

Name: **Slovak Legal Metrology (SLM)**  
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**Product Certification Body**  
Hviezdoslavova 31  
974 01 Banská Bystrica, Slovakia  
Person responsible: Dušan Šmígura, Director of PCB

### Applicant

Name: **Ningbo Aimei Meter Manufacture Co., Ltd.**  
Address: 68, West Town Road, Shangtian Town, Fenghua  
Zhejiang, China 3155

### Manufacturer

Name: **Ningbo Aimei Meter Manufacture Co., Ltd.**  
Address: 68, West Town Road, Shangtian Town, Fenghua  
Zhejiang, China 3155

### Identification of the certified type *(the detailed characteristics are defined in the additional pages)*

Water meter type **UWM**

### Designation of the module *(if applicable)*

Ultrasonic water meter intended for the metering of cold potable water

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



**OIML Certificate No.**  
**R49/2013-A-SK1-20.02 Rev. 1**

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. 2025/ER010/SK1 dated 6<sup>th</sup> November 2025 that includes 19 pages.

The technical documentation relating to the identified type is contained in documentation file:  
Ningbo Aimei\_UWM\_01 dated 6<sup>th</sup> November 2025 that includes 76 pages.

**OIML Certificate History**

Revision No.	Date	Description of the modification
0	17 <sup>th</sup> July 2020	Certificate first issued
1	6 <sup>th</sup> November 2025	<p>Add:</p> <ul style="list-style-type: none"><li>- Ratio to R800</li><li>- temperature class T70 for brass body</li><li>- checksum 25667</li><li>- options of trademarks (6 pcs)</li><li>- plastic body for DN15 and DN20 with temperature class T30 and T50</li></ul> <p>Changes:</p> <ul style="list-style-type: none"><li>- one pc battery to 2 or 3 pcs batteries</li><li>- address of OIML Issuing Authority SLM</li><li>- formal the year "2020" to "20" in the Certificate number</li></ul>

Identification, signature and stamp

**The OIML Issuing Authority**





Dušan Šmigura

Date: 6<sup>th</sup> November 2025

**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.

## 1. Designation

The ultrasonic water meter type **UWM** is designed to measure, memorise and display the volume of water passing through the measurement transducer at metering conditions. The water meter is intended for the measurement of volume of clean water in residential, commercial and light industrial use.

The water meter type UWM is compact ultrasonic water meter with electronic indication device. The measurement is based on ultrasonic bidirectional transit-time principle.

The water meter type UWM can be installed to operate in all positions and is not designed to measure the reverse flow.

## 2. Description

Essential parts of the water meter type UWM:

- Flow sensor:
  - cylindrical brass body or plastic body with inlet and outlet threaded connections;
  - inner plastic element with two mirrors (sound path) placed in the cylindrical body;
  - two ultrasonic sensors placed on the upside of the cylindrical body.
- Calculator and indication device:
  - plastic housing of the calculator with indication device directly mounted on the flow sensor;
  - main PCB board with LCD display and optical sensor;
  - electronic LCD non-permanent (automatic scrolling) display with 10 digits and indication range of 99999.99999 m<sup>3</sup>. The sub-multiples of a cubic meter are indicated on the display by the comma and top and bottom lines. The measured volume is displayed for 10 s. When the maximum indication range of the volume totalization is reached, the indication range will continue measuring starting from zero cubic meter;
  - batteries see tables in point 3:
    - two or three non-replaceable lithium batteries, U<sub>max</sub>=3,7 V, life time up to 16 years,
    - one non-replaceable lithium batteries, U<sub>max</sub>=3,6 V, life time up to 10 years.

The end of batteries life indicator is activated based on pre-calculated power consumption.

Non-essential parts of the water meter type UWM:

- non return valve (optionally);
- communication in terfaces: optical infrared, RF, LoRaWAN, wM-Bus, OMS, Sigfox, NB-IoT, M-Bus, and Pulse.

### 2.1 Metrological functions

- measuring, memorizing and displaying the volume of water passing through the water meter. The measured volume (accumulated volume) is presented by means of electronic LCD display.



## 2.2 Software specification

Software versions	Size	Checksum	Remarks
V1.3	DN 15	21574	See tables in point 3
		25667	
	DN 20	22681	
		25667	

The software version and checksum can be checked:

- on the screen (by automatically scrolling the display) in the form of: 13 and checksum (21574/25667/22681);
- on the type plate in the form of: SW 13 and checksum (21574/25667/22681).

## 2.3 Accountable alarms

During the measuring process the calculator and indication device detects automatically if a fault condition occurs and eventually stops the measurement reporting an alarm indication on the display. See user manual issued by the manufacturer.

## 3. Technical and metrological data

3.1 Table with technical and metrological data UWM DN15,  $Q_3=1,6 \text{ m}^3$ , software and checksum 13 25667

Water meter type		UWM						
Characteristics	Unit							
Nominal diameter DN	mm	15						
Material of body	-	brass / plastic						
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	1,6						
Minimum flowrate $Q_1$	$\text{l/h}$	12,8	10	8	6,4	5,08	4	3,2
Transitional flowrate $Q_2$	$\text{l/h}$	20,48	16	12,8	10,24	8,13	6,4	5,12
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	2						
Ratio $Q_3/Q_1$	R	125	160	200	250	315	400	500
Ratio $Q_2/Q_1$	-	1,6						
Connection thread	mm	G ¾ B G 7/8 B - G ¾ B						
Construction length $L$	mm	From 110 to 190						
Pressure loss class $\Delta p$	bar	0,40 $\Delta p_{40}$						
Battery	-	2 or 3 pcs Umin 2,7V, Umax 3,7V, life time up to 16 years						



3.2 Table with technical and metrological data UWM DN15,  $Q_3=2,5 \text{ m}^3$ , software and checksum 13 25667

Water meter type		UWM							
Characteristics	Unit								
Nominal diameter DN	mm	15							
Material of body	-	brass / plastic							
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	2,5							
Minimum flowrate $Q_1$	$\text{l/h}$	15,625	12,5	10	7,94	6,25	5	3,97	3,125
Transitional flowrate $Q_2$	$\text{l/h}$	25	20	16	12,7	10	8	6,35	5
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	3,125							
Ratio $Q_3/Q_1$	R	160	200	250	315	400	500	630	800
Ratio $Q_2/Q_1$	-	1,6							
Connection thread	mm	G $\frac{3}{4}$ B G $\frac{7}{8}$ B - G $\frac{3}{4}$ B							
Construction length $L$	mm	From 110 to 190							
Pressure loss class $\Delta p$	bar -	0,40 $\Delta p_{40}$							
Battery	-	2 or 3 pcs Umin 2,7V, Umax 3,7V, life time up to 16 years							

3.3 Table with technical and metrological data UWM DN20,  $Q_3=2,5 \text{ m}^3$ , software and checksum 13 25667

Water meter type		UWM							
Characteristics	Unit								
Nominal diameter DN	mm	20							
Material of body	-	brass / plastic							
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	2,5							
Minimum flowrate $Q_1$	$\text{l/h}$	20	15,625	12,5	10	7,94	6,25	5	
Transitional flowrate $Q_2$	$\text{l/h}$	32	25	20	16	12,7	10	8	
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	3,125							
Ratio $Q_3/Q_1$	R	125	160	200	250	315	400	500	
Ratio $Q_2/Q_1$	-	1,6							
Connection thread	mm	G 1 B							
Construction length $L$	mm	From 110 to 190							
Pressure loss class $\Delta p$	bar -	0,40 $\Delta p_{40}$							
Battery	-	2 or 3 pcs Umin 2,7V, Umax 3,7V, life time up to 16 years							



3.4 Table with technical and metrological data UWM DN20,  $Q_3=4 \text{ m}^3$ , software and checksum 13 25667

Water meter type		UWM							
Characteristics	Unit								
Nominal diameter DN	mm	20							
Material of body	-	brass / plastic							
Permanent flowrate $Q_3$	m <sup>3</sup> /h	4							
Minimum flowrate $Q_1$	l/h	25	20	16	12,7	10	8	6,35	5
Transitional flowrate $Q_2$	l/h	40	32	25,6	20,32	16	12,8	10,16	8
Overload flowrate $Q_4$	m <sup>3</sup> /h	5							
Ratio $Q_3/Q_1$	R	160	200	250	315	400	500	630	800
Ratio $Q_2/Q_1$	-	1,6							
Connection thread	mm	G 1 B							
Construction length $L$	mm	From 110 to 190							
Pressure loss class $\Delta p$	bar	0,40 $\Delta p_{40}$							
Battery	-	2 or 3 pcs Umin 2,7V, Umax 3,7V, life time up to 16 years							

3.5 Table with technical and metrological data UWM DN15,  $Q_3=1,6 \text{ m}^3$ , software and checksum 13 21574

Water meter type		UWM			
Characteristics	Unit				
Nominal diameter DN	mm	15			
Material of body	-	brass / plastic			
Permanent flowrate $Q_3$	m <sup>3</sup> /h	1,6			
Minimum flowrate $Q_1$	l/h	12,8	10	8	6,4
Transitional flowrate $Q_2$	l/h	20,48	16	12,8	10,24
Overload flowrate $Q_4$	m <sup>3</sup> /h	2			
Ratio $Q_3/Q_1$	R	125	160	200	250
Ratio $Q_2/Q_1$	-	1,6			
Connection thread	mm	G ¾ B G 7/8 B - G ¾ B			
Construction length $L$	mm	From 110 to 190			
Pressure loss class $\Delta p$	bar	0,63 $\Delta p_{63}$			
Battery	-	1 pc li-battery Umin 3V, Umax 3,6V, life time up to 10 years			





3.6 Table with technical and metrological data UWM DN15,  $Q_3=2,5 \text{ m}^3$ , software and checksum 13 21574

Water meter type		UWM				
Characteristics	Unit					
Nominal diameter DN	mm	15				
Material of body	-	brass / plastic				
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	2,5				
Minimum flowrate $Q_1$	$\text{l/h}$	15,625	12,5	10	7,94	6,25
Transitional flowrate $Q_2$	$\text{l/h}$	25	20	16	12,7	10
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	3,125				
Ratio $Q_3/Q_1$	R	160	200	250	315	400
Ratio $Q_2/Q_1$	-	1,6				
Connection thread	mm	G $\frac{3}{4}$ B G $\frac{7}{8}$ B - G $\frac{3}{4}$ B				
Construction length $L$	mm	From 110 to 190				
Pressure loss class $\Delta p$	bar -	0,63 $\Delta p_{63}$				
Battery	-	1 pc li-battery Umin 3V, Umax 3,6V, life time up to 10 years				

3.7 Table with technical and metrological data UWM DN20,  $Q_3=2,5 \text{ m}^3$ , software and checksum 13 22681

Water meter type		UWM			
Characteristics	Unit				
Nominal diameter DN	mm	20			
Material of body	-	brass / plastic			
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	2,5			
Minimum flowrate $Q_1$	$\text{l/h}$	20	15,625	12,5	10
Transitional flowrate $Q_2$	$\text{l/h}$	32	25	20	16
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	3,125			
Ratio $Q_3/Q_1$	R	125	160	200	250
Ratio $Q_2/Q_1$	-	1,6			
Connection thread	mm	G 1 B			
Construction length $L$	mm	From 110 to 190			
Pressure loss class $\Delta p$	bar -	0,63 $\Delta p_{63}$			
Battery	-	1 pc li-battery Umin 3V, Umax 3,6V, life time up to 10 years			



3.8 Table with technical and metrological data UWM DN20,  $Q_3=4 \text{ m}^3$ , software and checksum 13 22681

Water meter type		UWM			
Characteristics	Unit				
Nominal diameter DN	mm	20			
Material of body	-	brass / plastic			
Permanent flowrate $Q_3$	$\text{m}^3/\text{h}$	4			
Minimum flowrate $Q_1$	$\text{l/h}$	20	16	12,7	10
Transitional flowrate $Q_2$	$\text{l/h}$	32	25,6	20,32	16
Overload flowrate $Q_4$	$\text{m}^3/\text{h}$	5			
Ratio $Q_3/Q_1$	R	200	250	315	400
Ratio $Q_2/Q_1$	-	1,6			
Connection thread	mm	G 1 B			
Construction length $L$	mm	From 110 to 190			
Pressure loss class $\Delta p$	bar	0,63			
	-	$\Delta p_{63}$			
Battery	-	1 pc li-battery Umin 3V, Umax 3,6V, life time up to 10 years			

3.9 Table with other technical and metrological data UWM

Water meter type		UWM			
Characteristics	Unit				
Installation orientation	-	All positions			
Water temperature range	$^{\circ}\text{C}$	0,1 to 30 brass and plastic body 0,1 to 50 brass and plastic body 0,1 to 70 brass body			
Temperature class	-	T30, T50 brass and plastic body T70 brass body			
Maximum admissible pressure MAP	bar	16			
Maximum permissible error in upper flowrates range $Q_2 \leq Q \leq Q_4$	%	$\pm 2$ (at $\theta \leq 30^{\circ}\text{C}$ ) $\pm 3$ (at $\theta > 30^{\circ}\text{C}$ )			
Maximum permissible error in lower flowrates range $Q_1 \leq Q < Q_2$	%	$\pm 5$			
Capacity of calculator	$\text{m}^3$	99999,99999			
Scale interval	$\text{m}^3$	0,00001			
Accuracy class	-	2			
Mechanical class	-	M1			
Climatic class	$^{\circ}\text{C}$	- 25 to + 55			
Electromagnetic class	-	E1 for brass body E1, E2 for plastic body			
Climatic and mechanical environmental conditions (class)	-	B / O (fixed meters installed in a building / outdoors)			
Flow profile sensitivity class	-	U0 D0			



#### 4. Marking and inscriptions

The following data shall be marked on the water meter:

- a) manufacturer's name or mark;
- b) type of water meter;
- c) measuring unit  $\text{m}^3$ ;
- d) year of manufacture or the month and year of manufacture (first two digits in serial number or year on the marking);
- e) serial number (as near as possible to the indicating device);
- f) flowrate  $Q_3$  and ratio  $Q_3/Q_1$  ( $R....$ );
- g) flow direction shall be marked on a water meter's body in form of an arrow;
- h) maximum admissible pressure ( $MAP$ );
- i) temperature class where it differs from T30 ( $T$ );
- j) pressure loss class ( $\Delta p$ );
- k) the latest date by which the meter shall be replaced;
- l) environmental classification;
- m) electromagnetic environmental class;
- n) type approval sign according to national regulations.

#### 5. Designation of trademarks on the water meters (6 options)

Manufacturer can use following trademarks on its water meters:



#### 6. Security measures

The water meter type UWM shall be protected against unauthorised manipulation and opening by the wire with a seal securing the connection between the upper and lower part of plastic housing of the calculator and indication device. The location of the seal is shown in Fig. 3.

#### 7. Figures

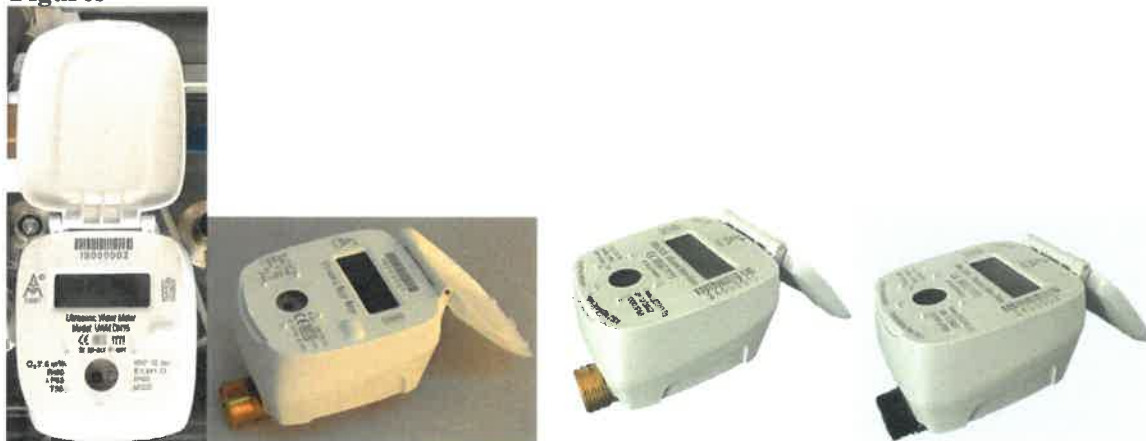
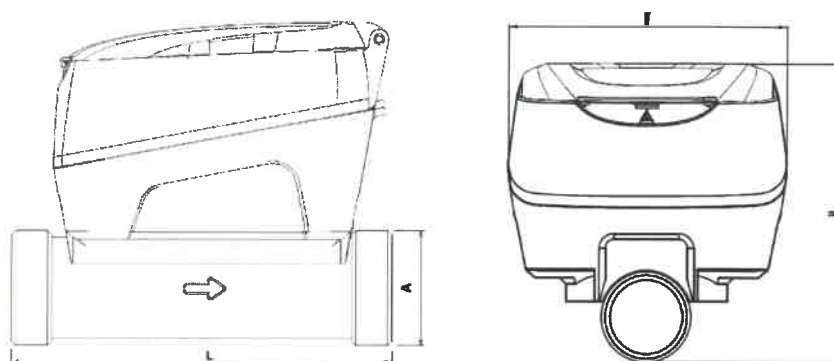


Fig. 1: Illustrative views of the water meters type UWM



DN size	L (mm)	H (mm)	W (mm)	A (mm)
DN15	from 110 to 190	87	81	G ¾ B, G 7/8 B-G3/4 B
DN20	from 110 to 190	90	81	G1 B

Fig. 2: Basic dimensions of the water meter UWM

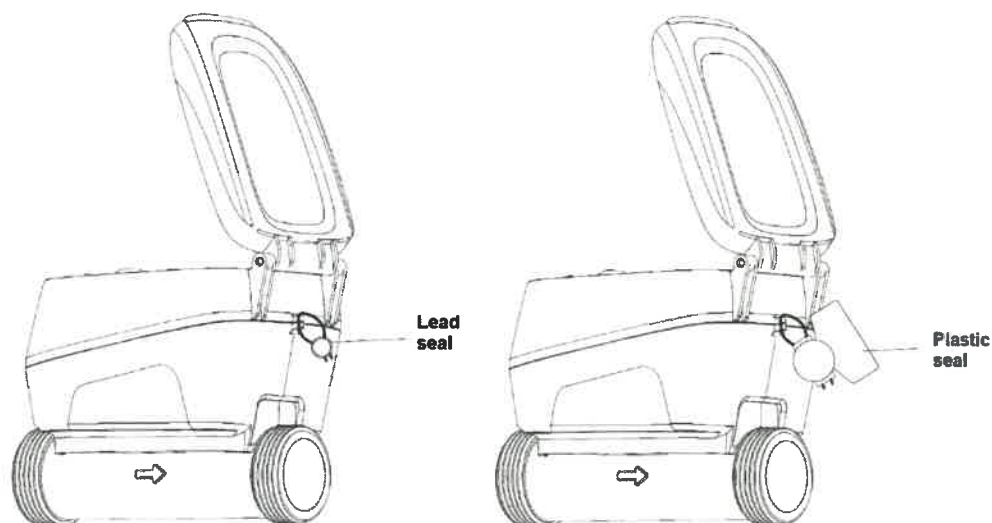


Fig. 3: The sealing of water meter UWM (variants)

