



OIML Member State
SLOVAKIA

OIML Certificate No.
R49/2013-A-SK1-26.02 Rev. 1

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: **Slovak Legal Metrology (SLM)**
Address: **Geologická 9966/1,
821 06 Bratislava-Podunajské Biskupice, Slovakia**
Product Certification Body
**Hviezdoslavova 31
974 01 Banská Bystrica, Slovakia**
Person responsible: **Ing. Dušan Šmigura, PhD., Director of PCB**

Applicant

Name: **ISKRAEMECO ENERGY MEASUREMENT**
Address: **Plot #1 – pyramids industrial west park
10th of Ramadan City – Egypt**

Manufacturer

Name: **ISKRAEMECO ENERGY MEASUREMENT**
Address: **Plot #1 – pyramids industrial west park
10th of Ramadan City – Egypt**

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

Water meter type **Iskrasonic 1000 - IWU100, IWU110 (MWU5)**

Designation of the module *(if applicable)*

Ultrasonic water meters with electronic indication device

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: 2



**OIML Certificate No.
R49/2013-A-SK1-26.02 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. 2026/ER049/SK1 dated 28th August 2026 that includes 17 pages.

The technical documentation relating to the identified type is contained in documentation file name: „Technical documentation file Iskraemeco Energy Measurement_ISKRASONIC1000_00 to 01“ dated 28th September 2026 that includes a sum of documents 171 pages.

OIML Certificate History

Revision No.	Date	Description of the modification
0	16 th March 2026	Certificate first issued
1	28 th August 2026	Added: - measurement of the reverse flow - type IWU100 (R500); - new length (270 mm) in size DN50 - type IWU100 (Fig. 2a). Corrected: - length L2 (300 mm) in size DN50 - type IWU100 (Fig. 2a).

Identification, signature and stamp



The OIML Issuing Authority

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Dušan Šmigura

Date: 28th August 2026

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 water meter family **Iskrasonic 1000** (DN15 - DN50) includes 2 types of ultrasonic water meters: **IWU100** and **IWU110(MWU5)**.

Water meters Iskrasonic 1000 are designed to measure, memorize and display the volume of water passing through the measuring chamber at metering conditions. The water meters are intended for the measurement of clean water volume in residential use.

Water meters Iskrasonic 1000 are ultrasonic water meters with electronic indication device. The operation principle of ultrasonic water meters is to measure flow by emitting high-frequency sound waves (ultrasound) through water and calculating the time it takes for signals to travel between sensors in both directions. Water meters Iskrasonic 1000 can be installed to operate in all positions.

The water meter type **IWU100** is designed to measure the reverse flow.

The water meter type **IWU110(MWU5)** is equipped with the pre-payment system and is not designed to measure the reverse flow.

2. Description

Essential parts of the water meter type **IWU100** and **IWU110(MWU5)**:

Water meter body and ultrasonic flow sensors:

- the brass cylindrical body with inlet and outlet threaded connections;
- the internal plastic parts of the water meter body with two reflectors;
- 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 body of water meter;
- main PCBA unit - for function of LCD display, button, optical port, wireless communication, memory chip and power supply;
- measuring PCBA unit - for function of ultrasonic sensors, temperature and pressure sensors, measurement chip;
- LCD electronic scrolling display with indication range 9 digits (999999.999 m³) in both types;
- displaying of volume in user mode - 3 digits behind the decimal point are framed;
- displaying of volume in test mode - 6 digits behind the decimal point are framed;
- type **IWU100** - one non-replaceable battery for measurement ($U_{\min} = 3 \text{ V}$, $U_{\max} = 3,7 \text{ V}$, 16 years battery lifetime);
- type **IWU110(MWU5)** - one non-replaceable battery for measurement ($U_{\min} = 2,9 \text{ V}$, $U_{\max} = 3,7 \text{ V}$, 12 years battery lifetime).

Non-essential parts of the water meter type **IWU100** and **IWU110(MWU5)**:

- strainer and filter;
- pressure sensor and temperature sensor;
- type **IWU100** - one non-replaceable lithium battery for wireless communication;
- type **IWU110(MWU5)** - one replaceable lithium battery for wireless communication;
- type **IWU110 (MWU5)** - pre-payment system;
- type **IWU110 (MWU5)** - internal valve + valve motor and actuator (for pre-payment system);
- wireless communication interfaces options for all types: optical interface, RS485, Wired M-Bus, Wireless M-Bus, LoRaWAN, Sigfox, GPRS, NB-IoT, pulse output.

2.1 Operation and presentation of legal data

The following legal data are available in user mode on the automatic scroll display of water meter **IWU100** and **IWU110(MWU5)**:

- a) total measured volume (m³);
- b) flow rate (m³/h);
- d) legal software version;
- e) legal software checksum.

Legally relevant software version and checksum for water meters Iskrasonic 1000:

Type of water meter	Legal software versions	Legal software checksums	Measuring PCB software versions	Measuring PCB software checksums
IWU100	2302	455F3300	9-802	8CCE71E4
IWU110(MWU5)	2301	0A04C86A	9-801	82A8d5b1

LCD display is normally turned off. The checksum and software version can be viewed by pressing touch button. After some time of inactivity, the display will automatically turn off (into sleep mode).

2.2 Accountable alarms

If a fault condition occurs and the measurement stops, follow the user manual issued by the manufacturer.

3. Technical and metrological data

Family Iskrasonic 1000, water meter type IWU100							
Parameter	Unit						
Nominal diameter DN	mm	DN15	DN20	DN25	DN32	DN40	DN50
Permanent flowrate Q ₃	m ³ /h	2,5	4	6,3	10	16	25
Minimum flowrate Q ₁	m ³ /h	0,0050	0,0080	0,0126	0,0200	0,0320	0,0500
Transitional flowrate Q ₂	m ³ /h	0,0080	0,0128	0,0202	0,0320	0,0512	0,0800
Overload flowrate Q ₄	m ³ /h	3,125	5	7,875	12,5	20	31,25
Ratio Q ₃ /Q ₁	-	500	500	500	500	500	500
Ratio Q ₂ /Q ₁	-	1,6	1,6	1,6	1,6	1,6	1,6
Reverse flow		Water meter is designed to measure reverse flow.					
Connection thread	-	G ¾ B	G1B	G1-1/4B	G1-1/2B	G2B	G2-1/2B
Construction length L	mm	110/165	130/190	225/260	260	300	270/300
Installation orientation	-	All positions					
Water temperature range	°C	0.1 - 50					
Water temperature range class	-	T50					
Maximum admissible pressure (MAP)	bar	16					
Pressure loss	bar	0,40					
Pressure loss class Δp	-	Δp 40					
Ingress Protection (IP) rating	-	IP68					
Maximum permissible error in upper flowrates range Q ₂ ≤ Q ≤ Q ₄	%	±2% (0,1 - 30°C)					
Maximum permissible error in lower flowrates range Q ₁ ≤ Q < Q ₂	%	±5%					
Scale range – normal precision	m ³	0,001					

Family Iskrasonic 1000, water meter type IWU100

Parameter	Unit	
Scale range – high precision	m ³	0,000001
Capacity of calculator – normal mode	m ³	999999,999
Capacity of calculator – testing mode	m ³	999,999999
Accuracy class	-	2
Mechanical class	-	M1
Environmental class	-	O
Electromagnetic class	-	E1
Climatic class	°C	-25 to +70
Flow profile sensitivity class	-	U0D0
Battery	-	One non-replaceable lithium battery (U _{min} = 3 V, U _{max} = 3,7 V) 16 years battery lifetime

Family Iskrasonic 1000, type IWU110(MWU5)

Parameter	Unit						
Nominal diameter DN	mm	DN15	DN20	DN25	DN32	DN40	DN50
Permanent flowrate Q ₃	m ³ /h	2,5	4	6,3	10	16	25
Minimum flowrate Q ₁	m ³ /h	0,00625	0,01	0,01575	0,025	0,04	0,0625
Transitional flowrate Q ₂	m ³ /h	0,01	0,016	0,0252	0,04	0,064	0,1
Overload flowrate Q ₄	m ³ /h	3,125	5	7,875	12,5	20	31,25
Ratio Q ₃ /Q ₁	-	400	400	400	400	400	400
Ratio Q ₂ /Q ₁	-	1,6	1,6	1,6	1,6	1,6	1,6
Reverse flow		Water meter not designed to measure reverse flow.					
Connection thread	-	G ¾ B	G1B	G1-1/4B	G1-1/2B	G2B	G2-1/2B
Construction length L	mm	165	190	260	260	300	300
Installation orientation	-	All positions					
Water temperature range	°C	0.1 - 50					
Water temperature range class	-	T50					
Maximum admissible pressure (MAP)	bar	16					
Pressure loss	bar	0,63					
Pressure loss class Δp	-	Δp 63					
Ingress Protection (IP) rating	-	IP68					
Maximum permissible error in upper flowrates range Q ₂ ≤ Q ≤ Q ₄	%	±2% (0,1 - 30°C)					
Maximum permissible error in lower flowrates range Q ₁ ≤ Q < Q ₂	%	±5%					



Family Iskrasonic 1000, type IWU110(MWU5)

Parameter	Unit	
Scale range – normal precision	m ³	0,001
Scale range – high precision	m ³	0,000001
Capacity of calculator – normal mode	m ³	999999,999
Capacity of calculator – testing mode	m ³	999,999999
Accuracy class	-	2
Mechanical class	-	M1
Environmental class	-	O
Electromagnetic class	-	E1
Climatic class	°C	-25 to +70
Flow profile sensitivity class	-	U0D0
Battery	-	One non-replaceable lithium battery (U _{min} = 2,9 V, U _{max} = 3,7 V) 12 years battery lifetime

4. Marking and inscriptions

- a) The following data shall be r meter;
- b) unit of measurement m³;
- c) year of manufacture, the last two digits of the year of manufacture, or the month and year of manufacture;
- d) serial number (as near as possible to the indicating device);
- e) 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);
- f) flowrate Q₃ and ratio Q₃/Q₁ indicated as (R) followed by the ratio value;
- g) maximum admissible pressure (MAP);
- h) temperature class (T);
- i) pressure loss class where it differs from (Δp);
- j) the latest date (year) by which the meter shall be replaced;
- k) environmental classification (can be given on a document supplied separately);
- l) installation sensitivity class (where it differs from U0/D0);
- m) electromagnetic environmental class (can be given on a document supplied separately);
- n) type approval sign according to national regulations.

Designation of trademark on the water meter

Manufacturer can used following trademark on its water meters:



5. Security measures

The water meters Iskrasonic 1000 - type IWU100 and type IWU110(MWU5) are protected against unauthorized manipulation and opening (Fig. 3) by:

Type of water meter	Dimension of water meter pipe	Figure number	Sealing description
IWU100	DN15 – DN20	8a	4 x upper plastic cap
			4 x lower plastic cap
			1 x lead seal
	DN25 – DN50	8b	4 x upper plastic cap
			1 x lead seal
IWU110(MWU5)	DN15 – DN20	8c	6 x upper plastic cap
			4 x lower plastic cap
			2 x lead seal
	DN25 – DN50	8d	6 x upper plastic cap
			2 x lead seal

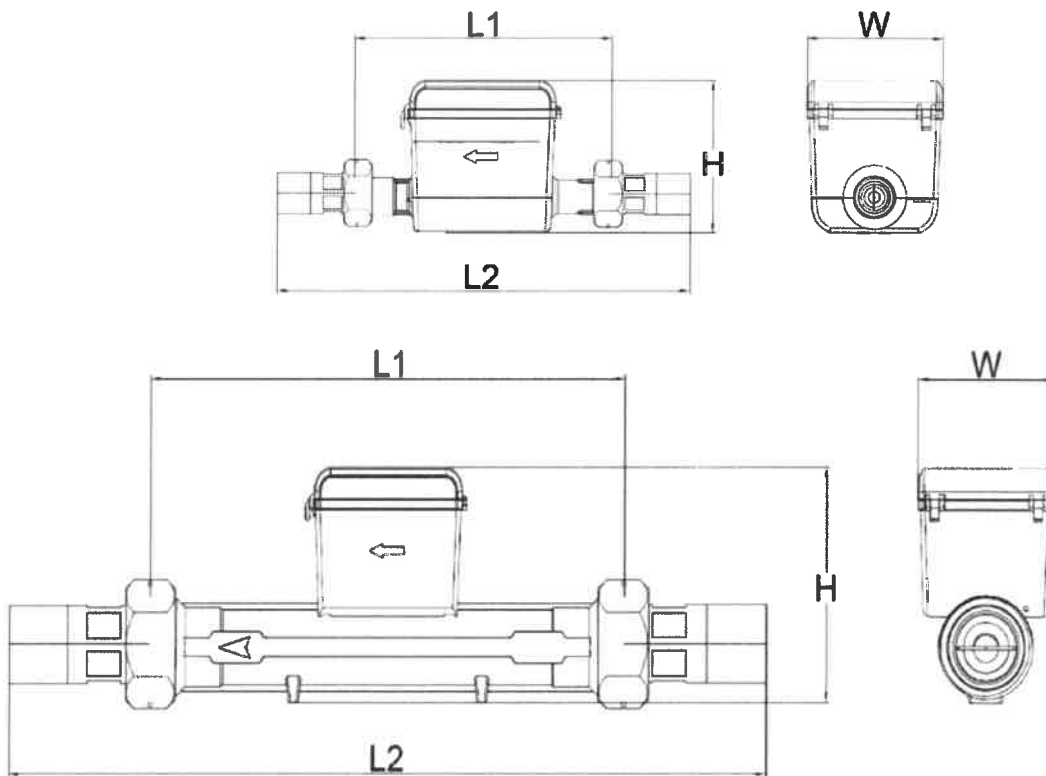
6 Figures



Fig. 1a: Illustrative views of water meter type IWU100



Fig. 1b: Illustrative views of water meter type IWU110(MWU5)

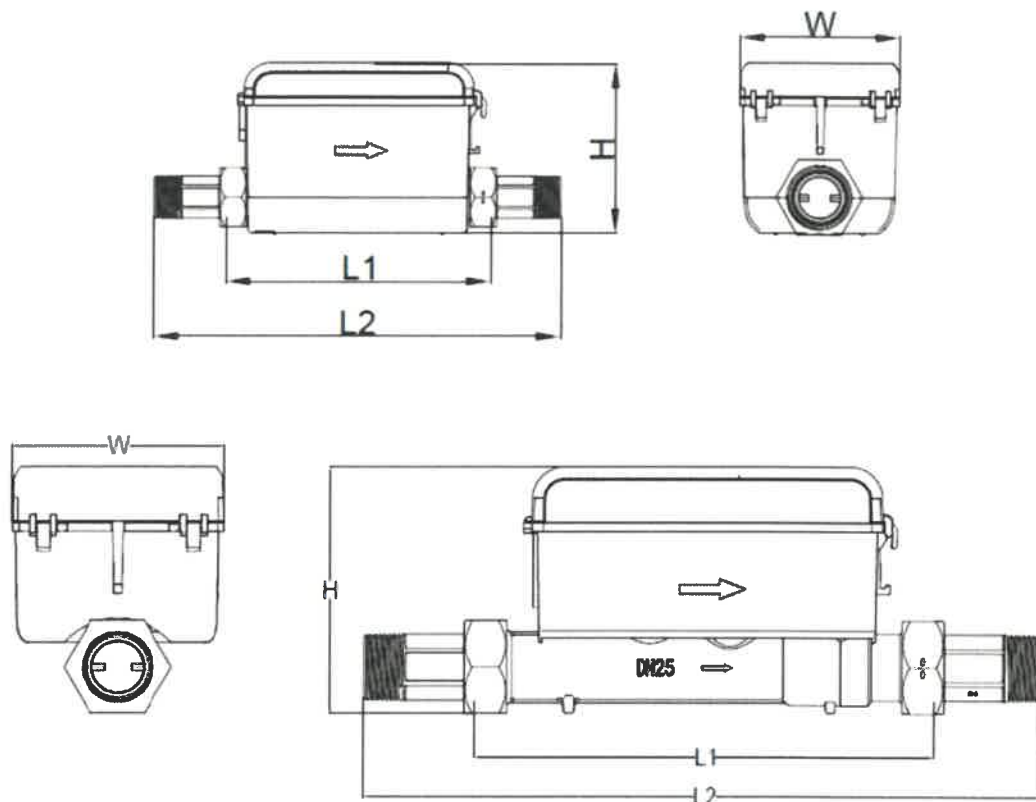


Dimensions of water meter type IWU100

Pipe size	L1 (mm)	L2 (mm)	H (mm)	W (mm)	Thread size
DN15	110	203	96	87	G ¾ B
DN15	165	258	96	87	G ¾ B
DN20	130	233	96	87	G1B
DN20	190	293	96	87	G1B
DN25	225	344	121	87	G1-1/4B
DN25	260	379	121	87	G1-1/4B
DN32	260	383	128	87	G1-1/2B
DN40	300	427	136	87	G2B
DN50	270	422	146	87	G2-1/2B
DN50	300	452	146	87	G2-1/2B

Fig. 2a: Dimensions of water meter type IWU100





Dimensions of water meter type IWU110(MWU5)					
Pipe size	L1 (mm)	L2 (mm)	H (mm)	W (mm)	Thread size
DN15	165	258	104	100	G ¾ B
DN20	190	293	104	100	G1B
DN25	260	379	138	111	G1-1/4B
DN32	260	383	145	111	G1-1/2B
DN40	300	427	153	111	G2B
DN50	300	433	163	111	G2-1/2B

Fig. 2b: Dimensions of water meter type IWU110(MWU5)



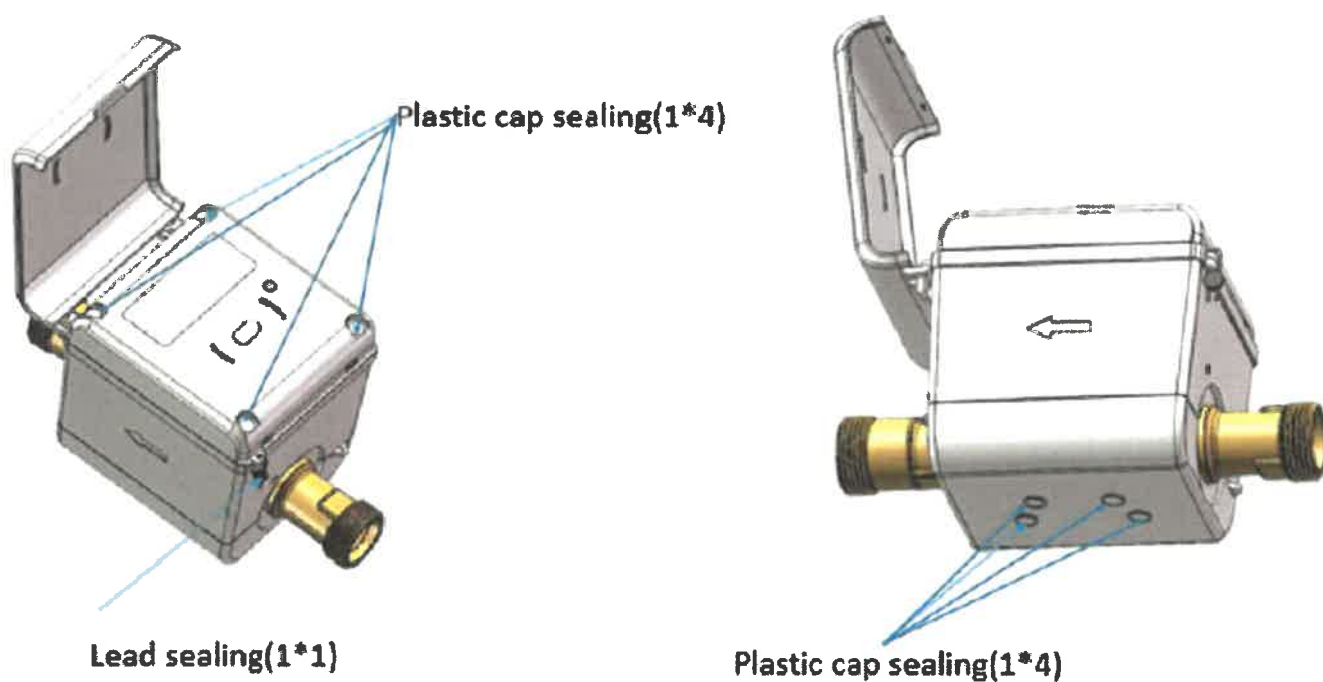


Fig. 3a: Sealing of water meter type IWU100 – sizes from DN15 to DN20

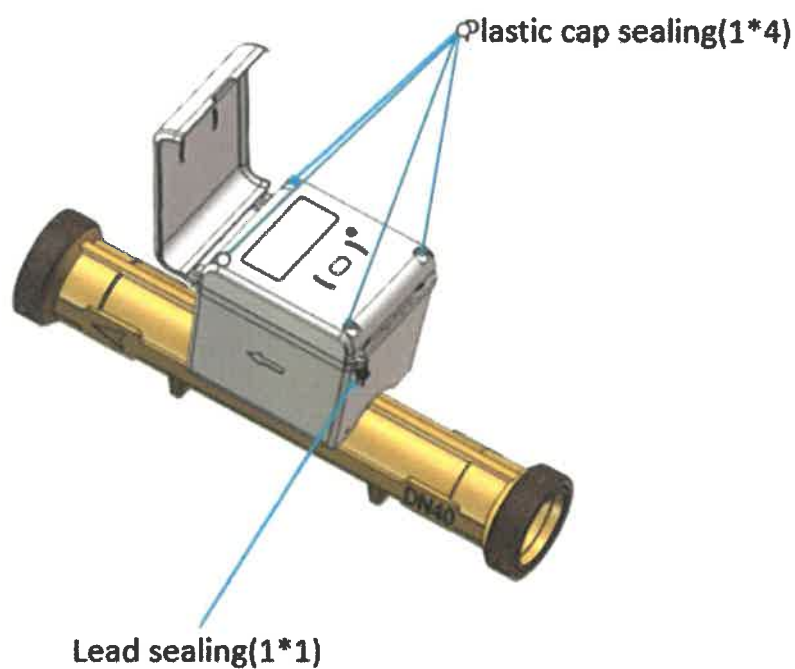


Fig. 3b: Sealing of water meter type IWU100 – sizes from DN25 to DN50



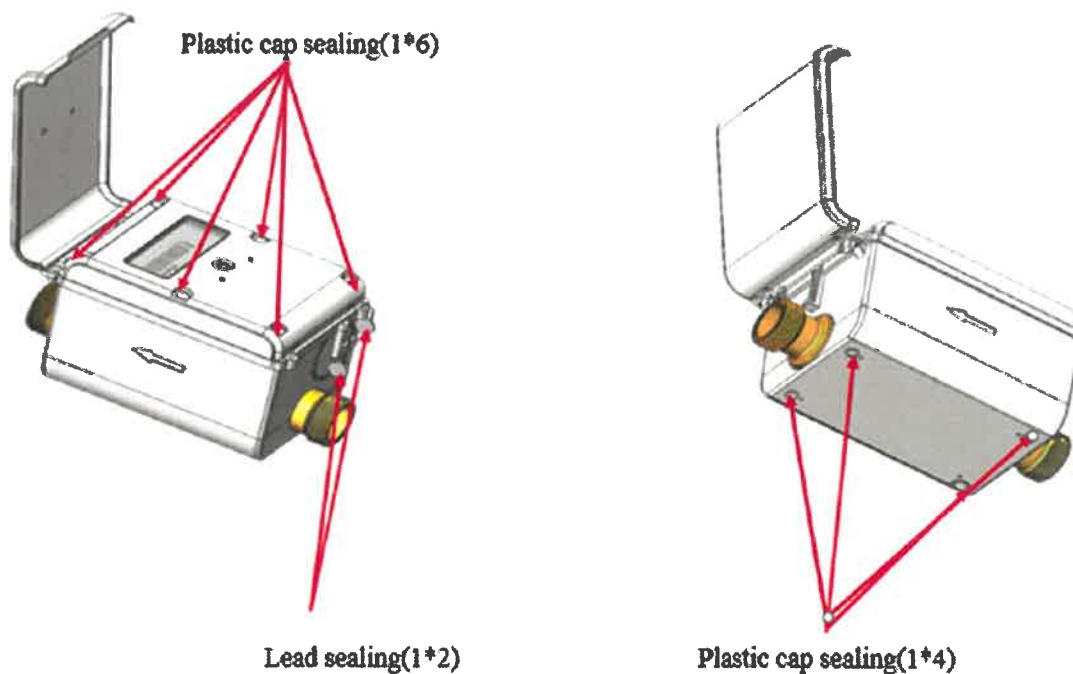


Fig. 3c: Sealing of water meter type IWU110(MWU5) – sizes from DN15 to DN20

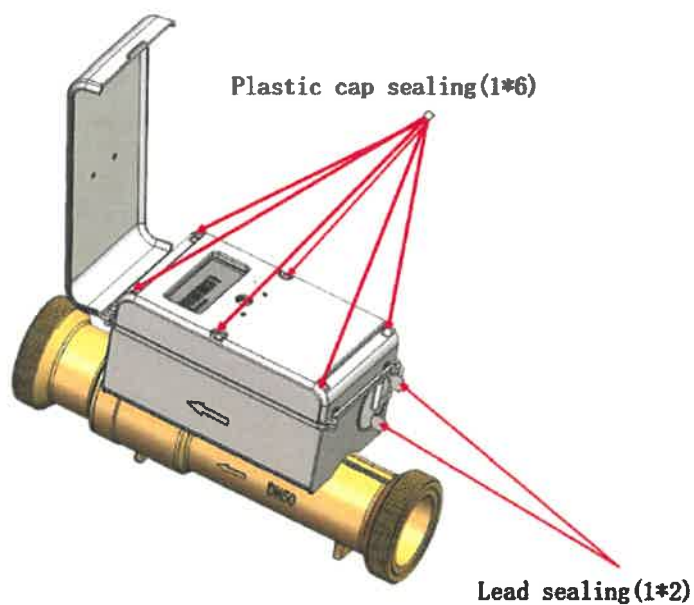


Fig. 3d: Sealing of water meter type IWU110(MWU5) – sizes from DN25 to DN50

