



OIML Member State
SLOVAKIA

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

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: **Slovak Legal Metrology (SLM)**
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821 06 Bratislava-Podunajské Biskupice, Slovakia
Product Certification Body
Hviezdoslavova 31
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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**

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:

Test report No: 2025/MI-001/B060/312.15 dated 6th February 2026 that includes 105 pages

OIML type evaluation report No. 2026/ER046/SK1 dated 16th March 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“ dated 16th March 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

Identification, signature and stamp



The OIML Issuing Authority

Dušan Šimigra

Date: 16th March 2026

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1. Designation

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

The water meter type IWU110 (MWU5) is equipped with the pre-payment system. The pre-payment system is outside of the scope of OIML certification.

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. The water meters Iskrasonic 1000 can be installed to operate in all positions and are not designed to measure the reverse flow.

2. Description

2.1 Parts of the water meter type IWU100 and IWU110 (MWU5):

Essential parts of the water meter:

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 10 digits – type IWU100, 11 digits – type IWU110 (MWU5), and indication range of 999999.999 m³ in both types.
- during the displaying of volume in user mode three digits after the decimal point are framed;
- during the displaying of volume in test mode 6 digits behind the decimal point are framed;
- type IWU100 - one non-replaceable battery for measurement ER34615 ($U_{\min} = 2,9 \text{ V}$, $U_{\max} = 3,7 \text{ V}$, 16 years battery lifetime);
- type IWU110(MWU5) - one non-replaceable battery for measurement ER26500 ($U_{\min} = 2,9 \text{ V}$, $U_{\max} = 3,7 \text{ V}$, 12 years battery lifetime).

Non-essential parts of the water meter:

- strainer and filter;
- pressure sensor and temperature sensor;
- type IWU100 - one non-replaceable lithium battery ER14250 for wireless communication;
- type IWU110(MWU5) - one replaceable lithium battery ER34615 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 both types: optical interface, RS485, Wired M-Bus, Wireless M-Bus, LoRaWAN, Sigfox, GPRS, NB-IoT, pulse output.

3. Operation and presentation of legal data

The following legal data are available in user mode on the automatic scroll display of water meter IWU110 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 versions
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).

4. Accountable alarms

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

5. Integrated equipment and functions

- wireless communication interfaces options for both types:
 - optical interface,
 - RS485,
 - Wired M-Bus,
 - Wireless M-Bus,
 - LoRaWAN,
 - Sigfox,
 - GPRS,
 - NB-IoT,
 - pulse output.

Via these mentioned parts no legally relevant data shall be altered. Data transferred via these part are not considered as a metrological relevant data.



6. Technical and metrological data

Table 1

Iskrasonic 1000 / IWU-100							
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	0,005	0,08	0,0126	0,02	0,032	0,05
Transitional flowrate Q_2	m ³ /h	0,008	0,0128	0,02016	0,032	0,0512	0,08
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
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	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 $Q_2 \leq Q \leq Q_4$	%	±2% (0,1 - 30°C)					
Maximum permissible error in lower flowrates range $Q_1 \leq Q < Q_2$	%	±5%					
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) 16 years battery lifetime					

Table 2

Iskrasonic 1000 / IWU-110 (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
Connection thread	-	G 3/4 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 $Q_2 \leq Q \leq Q_4$	%	$\pm 2\%$ (0,1 - 30°C)					
Maximum permissible error in lower flowrates range $Q_1 \leq Q < Q_2$	%	$\pm 5\%$					
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					



7. Marking and inscriptions

The following data shall be marked on the water meter:

- name or trademark of the manufacturer;
- type name of the water meter;
- unit of measurement m^3 ;
- year of manufacture, the last two 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);
- flowrate Q_3 and ratio Q_3/Q_1 indicated as (R) followed by the ratio value;
- maximum admissible pressure (MAP);
- temperature class (T);
- pressure loss class where it differs from (Δp);
- the latest date (year) by which the meter shall be replaced;
- environmental classification (can be given on a document supplied separately);
- installation sensitivity class (where it differs from U0/D0);
- electromagnetic environmental class (can be given on a document supplied separately);
- type approval sign according to national regulations.

Designation of trademark on the water meter

Manufacturer can use following trademark on its water meters:



8. Security measures

The water meters Iskrasonic 1000 / IWU100 and 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

9. Figures

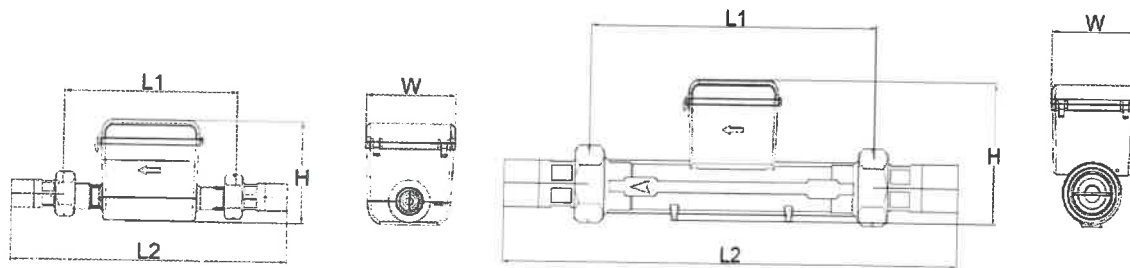


Fig. 1a: Illustrative views of water meter type IWU100



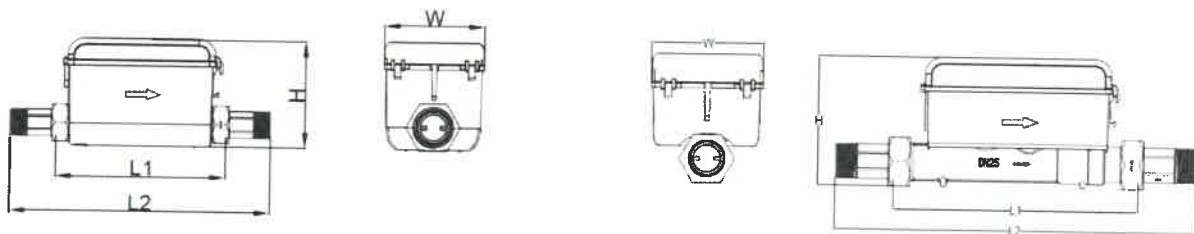
Fig. 1b: Illustrative views of water meter type IWU110 (MWU5)





Dimensions of water meter type IWU100					
Pipe size	L1 (mm)	L2 (mm)	H (mm)	W (mm)	Thread size
DN15	110	203	96	87	G 3/4 B
	165	258	96	87	G 3/4 B
DN20	130	233	96	87	G1B
	190	293	96	87	G1B
DN25	225	344	121	87	G1-1/4B
	260	379	121	87	G1-1/4B
DN32	260	383	128	87	G1-1/2B
DN40	300	427	136	87	G2B
DN50	300	300	146	87	G2-1/2B

Fig. 2a: Dimensions of water meter type IWU100

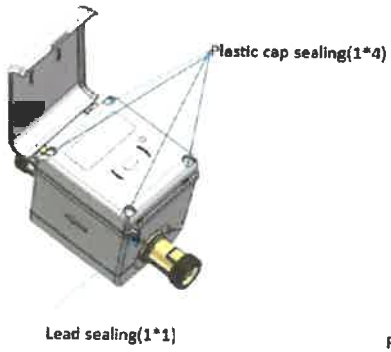


Dimensions of water meter type IWU110 (MWU5)					
Pipe size	L1 (mm)	L2 (mm)	H (mm)	W (mm)	Thread size
DN15	165	258	104	100	G 3/4 B
DN20	190	293	104	100	G1B
DN25	260	379	138	111	G1-1/4B
DN32	260	383	145	111	G1-1/2B
DN40	300	427	153	111	G2B
DN50	300	433	163	111	G2-1/2B

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



DN15/ DN20



DN25 to DN50

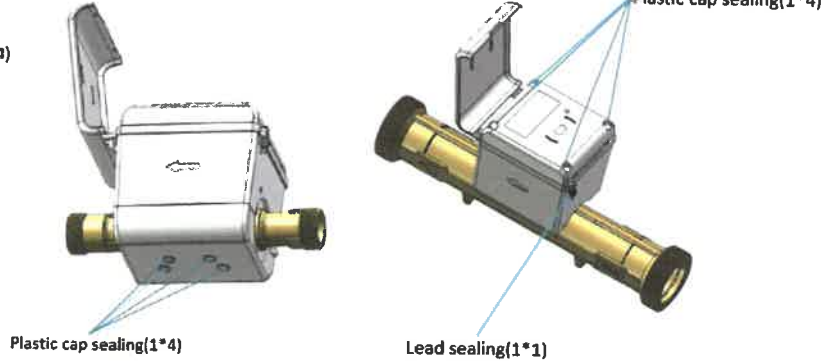
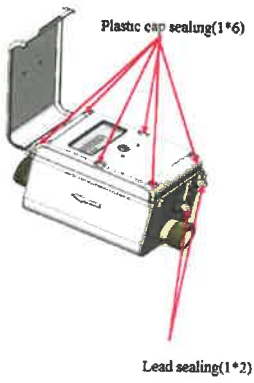


Fig. 3a: Sealing of water meter type IWU100

DN15/ DN20



DN25 to DN50

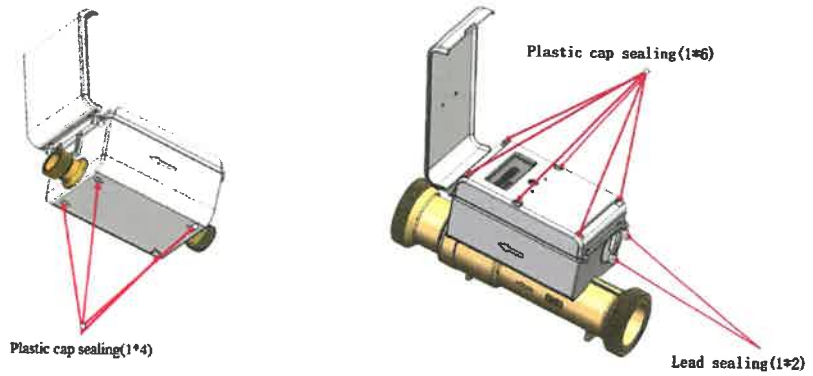


Fig. 3b: Sealing of water meter type IWU110 (MWU5)

