OIML Member State SLOVAKIA	**OIML Certificate No.** **R49/2013-A-SK1-25.13**

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: **Slovak Legal Metrology (SLM)**
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Product Certification Body
Hviezdoslavova 31
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Person responsible: Dušan Šmigura, Director of PCB

Applicant

Name: **Hangzhou Laison Technology Co., Ltd.**
Address: No. 525 Xixi Road
310000 Hangzhou, Zhejiang,
China

Manufacturer

Name: **Hangzhou Laison Technology Co., Ltd.**
Address: No. 525 Xixi Road
310000 Hangzhou, Zhejiang,
China

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

Water meter type **LXCZ**

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

SLOVAK LEGAL METROLOGY SLM

OIML Certificate No.
R49/2013-A-SK1-25.13

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/ER021/SK1 dated 13th October 2025 that includes 17 pages

The technical documentation relating to the identified type is contained in documentation file name: „Technical documentation file Hangzhou Laison_LXCZ_00“ dated 13th October 2025 that includes a sum of documents 69 pages.

OIML Certificate History

Revision No.	Date	Description of the modification
0	13th October 2025	Certificate first issued

Identification, signature and stamp

The OIML Issuing Authority

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Dušan Šmigura

Date: 13th October 2025

SLOVAK LEGAL METROLOGY SLM

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 **LXCZ** is designed to measure, memorize and display the volume of water passing through the measurement transducers at metering conditions. The water meters are intended for the measurement of clean water volume in residential use.

The water meter LXCZ is residential compact ultrasonic water meter with electronic indication device. The measurement is based on ultrasonic bidirectional transit-time principle. The flow is measured by the double-pulse system with positive and negative pulses depending on the flow direction.

The water meter LXCZ can be installed to operate in horizontal position and vertical position. The water meter is not designed to measure the reverse flow.
The water meter type LXCZ is equipped with the pre-payment system.

2. Description

2.1 Parts of the water meters LXCZ:

Essential parts of the water meters:

Water meter body:
- the brass cylindrical body firmly connected together with the plastic housing for the calculator;
- the inner plastic elements (pipe support-down and pipe support-up) placed in the brass body.

Flow sensor:
- two reflection sheets installed in the centre of the cylindrical brass body (pipe section);
- two ultrasonic transducers at the upstream and downstream of the measurement channel (pipe section) to transmit and receive ultrasonic signals.

Calculator and indication device:
- the plastic housing of the calculator with indication device directly mounted on the flow sensor;
- the PCB board;
- the electronic scrolling LCD display with 8 digits and indication range of 99999.999 m3;
- digits behind the decimal point are marked with white line above them which is printed on plastic housing;
- one replaceable lithium battery (Umax: 3,6 V; nominal capacity: 19 Ah, 10 years battery lifetime).

Non-essential parts of the water meter:
- filter;
- internal valve;
- motor for valve;
- strainer;
- remote controller for communication;
- wireless communication interfaces: IR – infrared communication, Bluetooth, WM-Bus, LoRa, LoRaWAN, NB-IoT Standard, GPRS, Cat.1 and Sigfox;
- pre-payment system – utility provider can activate or deactivate pre-payment and additional functions like alarms and valve (open/close) conditions before water meter installation.

2.2 Metrological functions

- measuring, memorizing and displaying the volume of water passing through the water meter.

2.3 Operation and presentation of legal data

The following options are available on the automatic scroll display:

a) total measured volume (m^3);
b) flow rate (m^3/h);
c) water temperature (°C);
d) legal software version (LS464802);
e) legal software checksum (A5CB2E23).

The following options are available in test mode (after entering short code 37 via remote controller):
a) total consumption (L);
b) flow rate (L/h)

3. Software specification

Legally relevant software version and checksum for water meter LXCZ:

Software versions	Checksum	Remarks
LS464802	A5CB2E23	-

The checksum and software version can be viewed by pressing "QUERY".

4. Accountable alarms

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

5. Technical and metrological data

Parameter	**Unit**	**LXCZ**		
Nominal diameter DN	mm	DN15	DN20	DN25
Permanent flowrate Q_3	m^3/h	2,5	4,0	4,0
Minimum flowrate Q_1	m^3/h	0,00625	0,01	0,01
Transitional flowrate Q_2	m^3/h	0,01	0,016	0,016
Overload flowrate Q_4	m^3/h	3,125	5,0	5,0
Ratio Q_3/Q_1	-	400	400	400
Ratio Q_2/Q_1	-	1,6	1,6	1,6
Connection thread	-	G¾ B	G1 B	G1 ¼ B
Construction length L	mm	165	195	225
Installation orientation	-	H/V		
Water temperature range	°C	0,1 to 50		
Water temperature range class	-	T50		
Maximum admissible pressure (MAP)	bar	16		
Pressure loss Pressure loss class Δp	bar -	0,63 Δp 63		
Ingress Protection (IP) rating	-	IP68		

Parameter	Unit	LXCZ
Maximum permissible error in upper flowrates range $Q_2 \leq Q \leq Q_4$	%	± 2 (at $\Theta \leq 30°C$) ± 3 (at $\Theta > 30°C$)
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	L	0,001
Capacity of calculator – normal mode	m^3	99999,999
Capacity of calculator – testing mode	L	99999,999
Accuracy class	-	2
Mechanical class	-	M1
Environmental class	-	O
Electromagnetic class	-	E2
Climatic class	°C	-25 to +55
Flow profile sensitivity class	-	U0D0
Battery	-	one replaceable lithium battery life time 10 years (Umax=3,6 V)

6. Marking and inscriptions

The following data shall be marked on the water meter:

a) unit of measurement (m^3);
b) flowrate Q_3 and ratio Q_3/Q_1 (R);
c) type of water meter;
d) manufacturers name or trademark;
e) year of manufacture or the month and year of manufacture;
f) serial number;
g) the flow direction shall be marked on a water meter's body in form of an arrow;
h) maximum admissible pressure (MAP);
i) temperature class (T);
j) pressure loss class (Δp);
k) H/V – water meter can operate in the horizontal and vertical position;
l) the latest date by which the battery shall be replaced;
m) environmental classification (can be given on a document supplied separately);
n) electromagnetic environmental class (can be given on a document supplied separately);
o) type approval sign according to national regulations.

Manufacturer uses the following trademark on the water meter:

7. Security measures

The water meters LXCZ shall be protected against unauthorized manipulation and opening (Fig. 3) by:

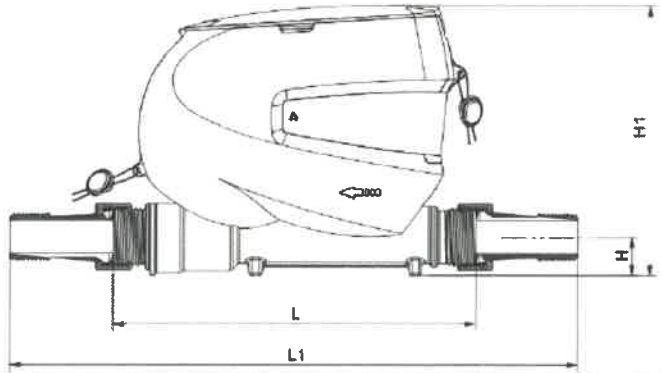
1) Potting the groove with two-component polyurethane glue – groove around PCB is potted with two-component polyurethane glue, which completely covers the electronic part, and is fully sealed with an upper transparent shell, so that the electronic module has high sealing, waterproof, dustproof and antistatic performance. Meanwhile, it can effectively isolate external damage and modification of electronic devices.
2) Sealing plugs and two lead seals – the water meter has left and right separate casings fixed by screws. Sealing plugs are inserted into the screw holes. Meanwhile, two lead seals ensure the connection of the left and right shells, preventing access to the PCB and software and ensuring that the meter is complete and in the same state as it left the factory.
3) Electronic sealing – User STS Protocol.

8. Figures

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

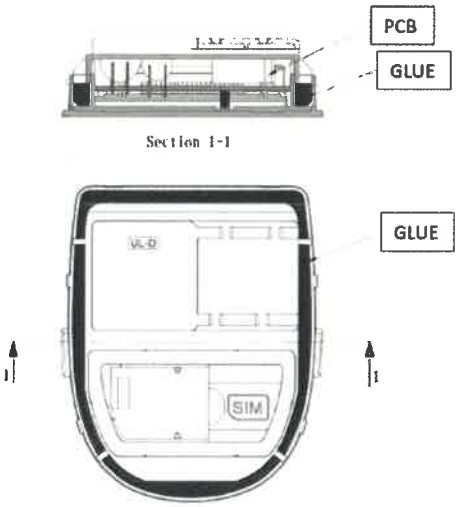
1 – POWER BUTTON – to activate the infrared communication between water meter and remote controller.
2 – NUMBER BUTTON – to enter short codes
3 – BACKSPACE BUTTON – to delete numbers
4 - ENTER - to confirm short codes (tokens)

Fig. 1b: Remote controller for communication with water meter LXCZ

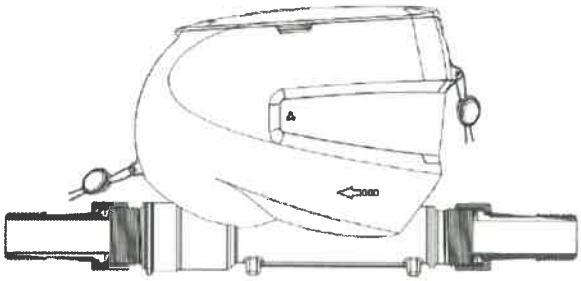


DN	L(mm)	L1(mm)	H(mm)	H1(mm)	W(mm)	Pipe Thread	Meter Thread
15	165	255	17.5	123	100	R1/2	G3/4 B
20	195	295	19.0	127	100	R3/4	G1 B
25	225	325	21.0	127	100	R1	G1 1/4 B

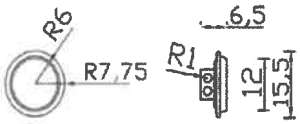
Fig. 2: Dimensions of water meters LXCZ



Potting the groove with glue



Two lead seals



Aluminium lead seal drawing

Sealing stamp logo (LS)

Fig. 3: Sealing of water meter LXCZ

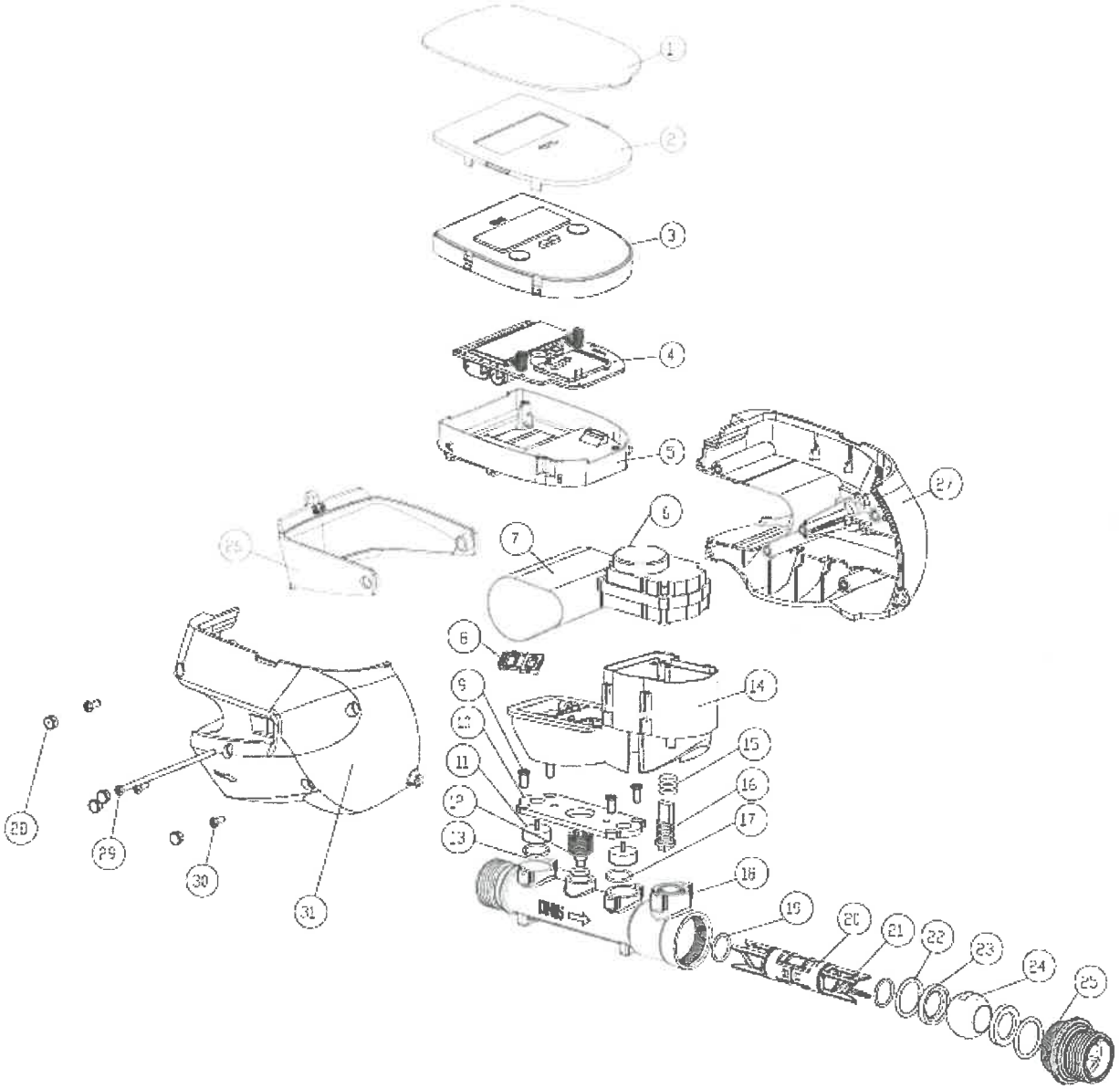


Fig. 4a: Exploded view of water meter LXCZ

NO.	Part Description	Quantity	Material
1	Upper Cover	1	ASA
2	Panel	1	PC
3	Upper Cover of Module Box	1	PC
4	PCB Module Component	1	
5	Lower Cover of Module Box	1	PC
6	Actuator Component	1	
7	Battery Component	1	
8	Battery Connector	1	PP
9	M4-8 Screw	4	Stainless Steel
10	Stainless Steel Plate	1	Stainless Steel
11	Transducer Componnet	2	PPS
12	Temperature Sensor Component	1	Copper
13	Temperature Sensor Sealing Ring	1	Silicone Rubber
14	Metering Componnet	1	
15	Valve Stem Sealing Ring	3	NBR
16	Valve Stem	1	Copper
17	Transducer Sealing Ring	2	Silicone Rubber
18	Copper Pipe Section	1	Copper
19	Bracket Sealing Ring	2	Silicone Rubber
20	Reflector Bracket Componnet	1	PPO+ GF
21	Reflector	2	Stainless Steel
22	Sealing Ring	2	Silicone Rubber
23	Tetrafluoro Ring	2	PTFE
24	Ball Valve and Ball	1	
25	Pipe Section Copper Connector	1	Copper
26	Battery Cover	1	ASA
27	Right Outer Casing	1	ASA
28	Screw Hole Plug	5	ASA
29	M3-80 Screw	1	Stainless Steel
30	M3-10 Screw	4	Stainless Steel
31	Left Outer Casing	1	ASA

Fig. 4b: Description of exploded view of water meter LXCZ

LCD display symbols	
	
Symbol	**Meaning**
	Signal strength
	Data transfer
	Remaining battery capacity
	Warning (Error) message
	Water leakage
	Reverse flow
	Valve open status
	Valve close status
kPa	Water pressure
$	Amount x 1 $
k $	Amount x 1000 $
°C	Water temperature
m^3	Volume unit
m^3/h	Flow rate
$/m^3$	Water tariff
L	Liters (visible in test mode)
L/h	Liters per hour (visible in test mode)

Fig. 5: LCD display symbols of water meter LXCZ

No.	Display content	Description	Unit
1		Full display: 8 digits + symbols	-
2		Blank screen	-
3		Empty pipe EC06	-
4		Total consumption 5 + 3 digits + m^3	m^3
5		Flow rate 5 + 3 digits + m^3/h	m^3/h
6		Water temperature	°C
7		Software version number LS464802	-
8		Legal software checksum A5CB2E23	-
9		Infrared communication turned on via power button on remote controller	-
10		Enter short code 37 (via remote controller) to enter test mode	-
11		Test mode on CAL IN	-
12		Total consumption 5 + 3 digits + L	L (litres)
13		Flow rate 5 + 3 digits + L/h	L/h (litres per hour)
14		Enter short code 38 (via remote controller) to exit the test mode	-
15		Test mode off CAL OUT	-

Fig. 6: Scrolling options of electronic LCD display in water meter LXCZ