OIML Member State SLOVAKIA	**OIML Certificate No.** **R49/2013-A-SK1-25.04**

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: **Huizhong Instrumentation Co., Ltd.**
Address: No.126 West Gaoxin Road, High-Tech
Industrial Development Zone
Tangshan 063020, China

Manufacturer

Name: **Huizhong Instrumentation Co., Ltd.**
Address: No.126 West Gaoxin Road, High-Tech
Industrial Development Zone
Tangshan 063020, China

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

Water meter type **SCL-61HFY-100**

Designation of the module *(if applicable)*

Ultrasonic water meter 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 (if applicable): 2

SLOVAK LEGAL METROLOGY SLM

OIML Certificate No.
R49/2013-A-SK1-25.04

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/ER050/SK1 dated 24th January 2025 that includes 17 pages.

The technical documentation relating to the identified type is contained in documentation file name: „Technical documentation file Huizhong_SCL_00 to 07“ dated 4th December 2024 that includes 266 pages.

OIML Certificate History

Revision No.	Date	Description of the modification
0	28th January 2025	Certificate first issued
-	-	-

Identification, signature and stamp

The OIML Issuing Authority

SLOVAK LEGAL METROLOGY SLM

.....

Dušan Šmigura

Date: 28th January 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 water meters type **SCL-61HFY-100** 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 use.

The water meter type SCL-61HFY-100 is compact ultrasonic water meter with electronic indication device. The measurement is based on ultrasonic bidirectional transit-time principle.
The flow is measured by the difference in time-of-flight of ultrasonic pulses with flow (downstream) and opposite to flow (upstream).

The water meter type SCL-61HFY-100 can be installed to operate in the horizontal position with indication device on the top or in the vertical position.
The water meter type SCL-61HFY-100 is not designed for measurement of reverse flow.

2. Description

2.1 Parts of the water meter type SCL-61HFY-100:

Essential parts of the water meter:

Flow sensor:
- cylindrical brass body with inlet and outlet threaded connections;
- the inner plastic element (casing pipe) placed in the cylindrical brass and in the plastic body;
- two reflection sheeds installed in the center of the pipe at an angle of 45 degrees with the axis of the 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:
- plastic housing of the calculator with indication device directly mounted on the flow sensor;
- main PCB board with LCD display and optical sensor;
- non-replaceable lithium battery. The end of battery life indicator is activated when the battery voltage is below 3,6 V, lifetime 13 years;
- electronic LCD display (scrolling with using of optical sensor) with 10 digits and indication range of 19999,99999 m^3;
  The sub-multiples of a cubic meter are indicated on the display by the comma under numbers and above the numbers. When the maximum indication range of the volume totalization is reached, the indication range will continue measuring starting from zero cubic meter.

Non-essential parts of the water meter type SCL-61HFY-100:

- thermistor;
- valve (optionally);
- pressure sensor (optionally).

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

a) the total measured volume (m^3) is presented by means of the electronic LCD display;
b) the following displays are available by means of short overlaps of the optical infrared sensor by the finger:
   - total measured volume (m^3);
   - flow rate (m^3/h);
   - water temperature (°C);
   - cumulative effective running time (h);
   - pressure (kPa) - where applicable;
   - date (day-month-year);
   - time (hour-minute-second);
   - meter ID;
   - display test (an "eights" test);
   - display test (a "blanks" test);
   - checksum
   - software version number.

2.4 Software specification

Software version and checksum of legally relevant software:

Software versions	Checksum	Remarks
V1-1.1	1762	NB-IoT/LoRaWAN/W-MBus

The software version and checksum can be checked through the scrolling display.

2.5 Accountable alarms

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

2.6 Integrated equipment and functions

- optical interface;
- NB-IoT;
- M-Bus;
- RS-485;
- RF, Pulse, Sigfox (optional);
- LoRaWAN;
- W-MBus.

Via the parts listed in the point 2.6 no legally relevant data shall be altered. Data transferred via these parts are not considered as a metrological relevant data.

3. Technical and metrological data

Characteristics	Unit	SCL-61HFY-100	
Nominal diameter DN	mm	15	20
Permanent flowrate Q_3	m^3/h	2,5	4
Minimum flowrate Q_1	m^3/h	0,010 0,0079 0,006	0,016 0,0127 0,010
Transitional flowrate Q_2	m^3/h	0,016 0,0127 0,010	0,026 0,0203 0,016
Overload flowrate Q_4	m^3/h	3,125	5
Ratio Q_3/Q_1	R	250 315 400	
Ratio Q_2/Q_1	-	1,6	
Connection thread	mm	G ¾ B	G1 B
Construction length L	mm	110	130
Installation orientation	-	H/V with indication device on top	
Water temperature range (temperature class)	°C	0,1 to 50 (T30, T50)	
Maximum admissible pressure MAP	bar	16	
Pressure loss class Δp	bar -	0,40 Δp 40	
MPE in upper flowrates range $Q_2 \leq Q \leq Q_4$	%	± 2 (at $\Theta \leq 30°C$) ± 3 (at $\Theta > 30°C$)	
MPE in lower flowrates range $Q_1 \leq Q < Q_2$	%	± 5	
Capacity of calculator	m^3	19999,99999	
Scale interval (resolution of the indicating device)	m^3	0,00001	
Accuracy class	-	2	
Mechanical class	-	M1	
Climatic class	°C	- 25 to + 70	
Electromagnetic class	-	E2	
Climatic and mechanical environmental conditions (class) according to EN ISO 4064-1/OIML R 49-1	-	O (fixed meters installed outdoors)	
Flow profile sensitivity class	-	U0D0	
Battery	-	non-replaceable li-battery 3,6 V, life time 13 years	

4. Marking and inscriptions

The following data shall be marked on the water meter:

a) name or trademark of the manufacturer;
b) type name of the water meter;
c) unit of measurement m^3;
d) year of manufacture, the last two digits of the year of manufacture, or the month and year of manufacture;
e) serial number (as near as possible to the indicating device);
f) flowrate Q_3 and ratio Q_3/Q_1 indicated as (R) followed by the ratio value;

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 (T30, T50);
j) pressure loss class (Δp);
k) letter H, if the meter can only be operated in the horizontal position, letter V, if the meter can only be operated in the vertical position;
l) the latest date by which the meter shall be replaced;
m) environmental classification;
n) installation sensitivity class;
o) electromagnetic environmental class;
p) type approval sign according to national regulations.

Designation of trademarks on the water meters

The manufacturer uses following trademarks on the water meter:

HUIZHONG

HUI ZHONG

5. Security measures

The water meter type SCL-61HFY-100 shall be protected against unauthorized manipulation and opening by two lead seals ensuring the connection of the upper cover (prevents access to the PCB and software) with the lower part of the water meter (contains the body of the water meter). (Fig: 2).

6. Figures

Fig. 1: Illustrative views of the water meter type SCL-61HFY-100

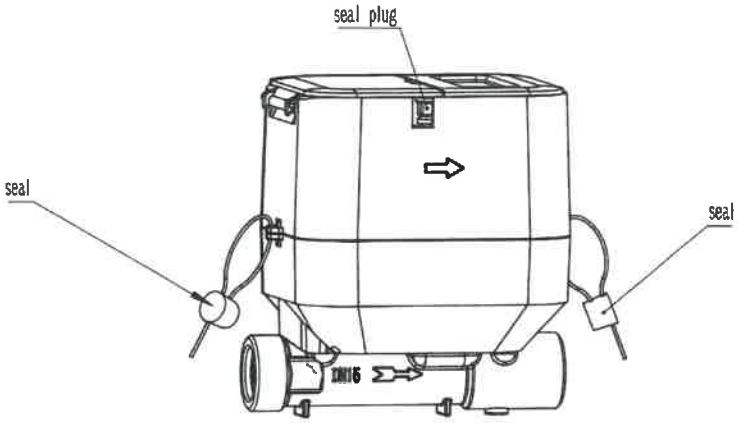
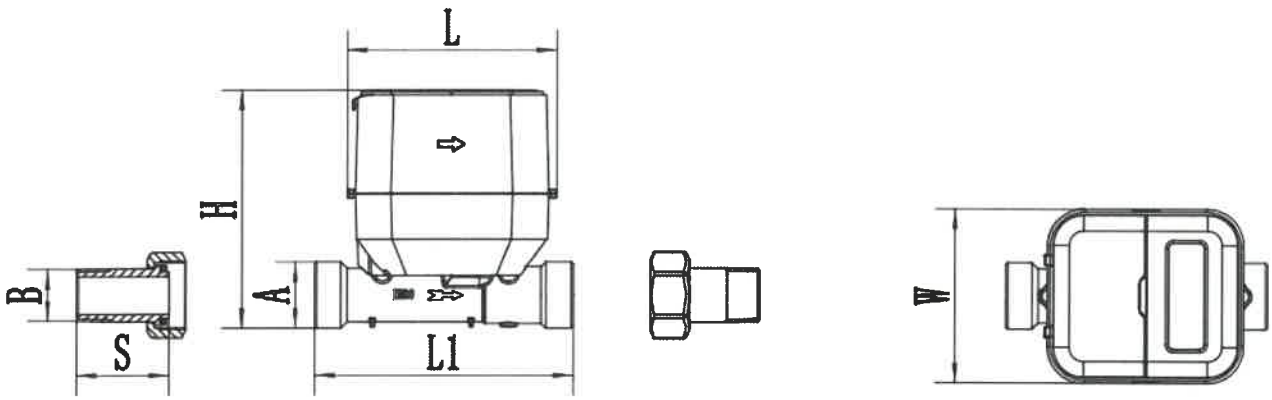


Fig. 2: The sealing of water meter type SCL-61HFY-100



Dimensions in mm

Type	DN	L1	L	H	W	A
SCL-61HFY-100	15	110	106	118	87	G ¾ B
	20	130		130		G 1B

Fig. 3: Dimensions of the water meter SCL-61HFY-100