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Applicable standards: EN ISO 4064-1:2017, EN ISO 4064-2:2017, EN IS0 4064-4:2014, EN IS0 4064-5:2017.

Additionally documents applied:
OIML R 49-1:2013, OIML R 49-2:2013.

The measuring instrument shall meet the following specifications:

1 Design of the instrument

1.1 Construction

Multi-jet wet dial water meter for cold water (T30) consisting of the brass housing with impeller, rotating in the measuring chamber, and roller-pointer indicating device. Programmable data logger with the ferroelectric random access memory (FRAM) is integrated in the meter, which records up to 15 last day meter data. A remote data communication module is connected to the data logger that transmit meter reading data to the terminal server at set time intervals by wireless GPRS communication, from where they are available to registered users.
In the meter body, a remote control shut-off valve is additionally installed in the outlet pipe.

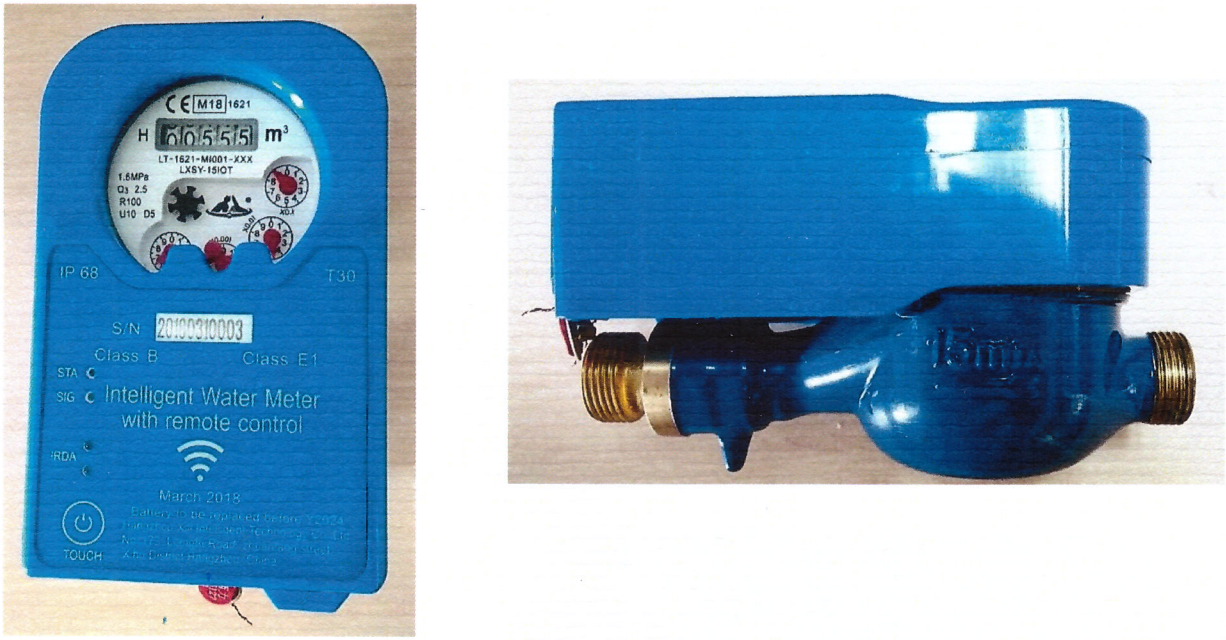

Fig.1. Water meter LXSY-15IOT

1.2 Measurand sensor

Multi-jet measurand sensor consists of the measuring chamber with impeller rotating inside. Water flows through the meter and rotates impeller which rotational frequency is proportional to volume of the water passing through the meter. Rotation of the impeller is transmitted from the impeller axis directly to the gear drive of the mechanical indicating device.

1.3 Measurement value processing

Direct measurement value processing of the meter is not applicable.
The measurement value processing of the ancillary device installed on the meter is described in section 1.7 of this appendix.

1.4 Indication of the measurement results

Measurement results are indicated on the roller-pointer indicating device consisting of five numbered rollers and four circular scales with pointers. Rollers are predicted for cubic meters, circular scales – for litres and its sub-multiples. Value of the verification scale interval is 0,05 ltr.

1.5 Optional equipment and functions subject to MID requirements

None.

1.6 Technical documentation

Intelligent remote water meter. Technical parameters. Edition 1, 25-10-2017.
User manual of intelligent remote water meter. Edition 1, 25-10-2017.
Software description. Edition 1, 25-10-2017.
Drawing of the meter label. Edition 1.1, 10-04-2018.

Other reference documents on which basis this certificate is issued, are stored in a file Nr.LEI-12-MP-073.18.

1.7 Integrated equipment and functions not subject to MID

On the meter is integrated ancillary device – the master control unit (MCU) with a data logger that has ferroelectric memory (FRAM) and capable of storing up to 15 last day meter reading data.
Ancillary device of the meter can operate in two modes: infrared mode and GPRS mode.
On the pointer of the circular scale (×0,001 m^3) of the meter is attached the magnet. When the pointer rotates, the three Hall sensors receive magnetic pulse signals that are converted to an electrical signal and transmitted to the control unit for processing (Fig. 2).

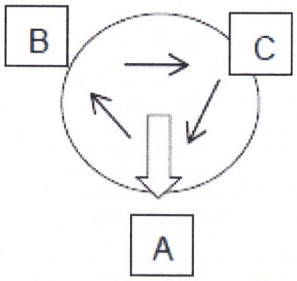

Fig.2. Principle of volume pulse sampling of the meter

The accumulated on the data logger data periodically (no more than once per hour) are transmitted via the integrated GPRS module through a mobile communication to the terminal server, which stores the data of the last 36 months of the meter. These data are available only to registered users.
The design block diagram of the meter ancillary device is presented in Fig. 3.

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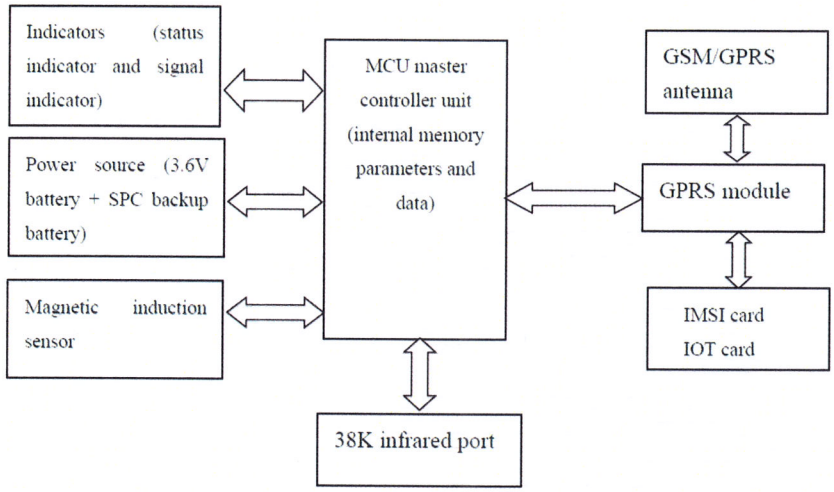

Fig.3. Design block diagram of the meter ancillary device

The 38 kHz infrered communication interface is integrated on the meter ancillary device, intended for meter data reading and parameters setting via hand-held terminal.
The meter housing (outlet channel) has a remote control shut-off valve, which is controlled by the infrared interface via a hand-held terminal or via GPRS communication, after receiving information from the terminal server.

REMARK: The functions of the ancillary device of the meter don't influence operation of the basic functions of the meter to which requirements of the Directive 2014/32/EU are applied.

2 Technical data

2.1 Rated operating conditions

2.1.1 Measurand

The volume of water passing through the meter.

2.1.2 Measurement range

The measurement range of the water meter LXSY-15IOT and main technical characteristics are presented in table 1;

Table 1

Nominal diameter DN, mm	15
Permanent flowrate Q_3, m³/h	2,5
Ratio Q_3/Q_1 (R)	100
Minimum flowrate Q_1 m³/h	0,025
Transitional flowrate Q_2 m³/h	0,040
Overload flowrate Q_4 m³/h	3,125
Meter temperature class	T30
Maximum admissible pressure MAP, bar	16
Pressure loss class	ΔP 63
Meter length, mm	165
End connection	G ¾

2.1.3 Accuracy class

Accuracy class	:	2 according to EN ISO 4064-1

2.1.4 Environmental conditions / Influence quantities

Ambient temperature	:	5 °C to 55 °C;
Humidity level	:	condensing;
Installations	:	indoor;
Climatic and mechanical environment (ancillary device)	:	B according to EN ISO 4064-1;
Electromagnetic environment (ancillary device)	:	class E1;
Protection class (ancillary device)	:	IP68.

2.2 Other operating conditions

2.2.1 Mounting position of the water meter

Water meter shall be mounted horizontally, indicating device positioning on top.

2.2.2 Technical data of the water meter ancillary device

Power source	:	3,6 V replaceable battery;
Battery life	:	at least 6 years;
Remote data communication	:	GPRS/GSM;
Data transmission frequency	:	900 MHz/1800 MHz;
Memory of the data logger	:	15 KB non-volatile FRAM memory;
Infrared interface	:	38 kHz, NEC protocol.

3 Interfaces and compatibility conditions

The communication interfaces of the meter's ancillary device are described in section 1.7 of this appendix.

4 Requirements on production, putting into use and utilization

4.1 Requirements on production

At the end of the manufacturing process the water meters shall be tested according to the requirements of the LST EN 4064-2, section 10.1. Errors of water meters shall not exceed the maximum permissible errors, described in Annex III (MI-001) of the Directive 2014/32/EU.
The meters shall be tested within each of the following flowrates:

between Q_1 and $1{,}1Q_1$;
between Q_2 and $1{,}1Q_2$;
between $0{,}9Q_3$ and Q_3.

Water temperature of tests shall be 20 °C ± 10 °C.

4.2 Requirements on putting into use

The water meter LXSY-15IOT must be installed in accordance with the requirements of user manual listed in section 1.6.
The straight pipelines installation is required for the meter: upstream ≥ 10 × DN, downstream ≥ 5 × DN (flow profile sensitivity class U10 D5).

4.3 Requirements for consistent utilization
No special requirements identified.

5 Control of the measuring process after tasks of the instrument in use

5.1 Documentation of the procedure
None.

5.2 Special equipment or software
None.

5.3 Identification of hardware and software
Identification of hardware:

- see Fig.1 and Fig. 4 of this appendix.

Identification of software: not applicable.

5.4 Calibration-adjustment procedure
None.
Water meters errors determination test shall be carried out at the flow rates listed in section 4.1 of this appendix.

6 Security measures

6.1 Sealing
Access to the replaceable battery of the ancillary device (Fig.4, pos.1) and casing of the ancillary device (Fig.4, pos.2) are sealed with manufacturer's hanged seals.

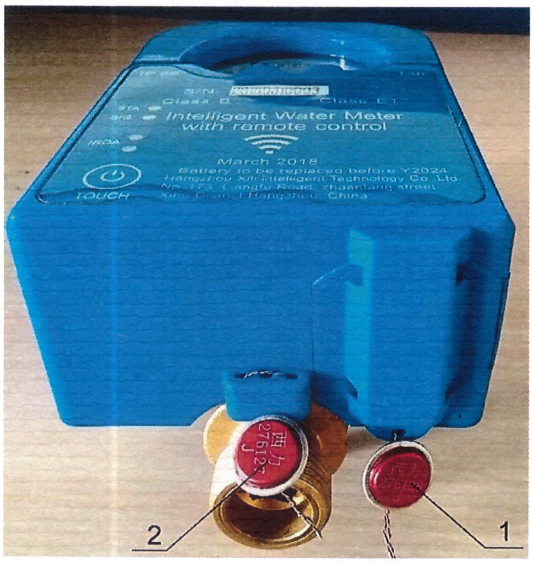

Fig. 4. Sealing of the water meter

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Fig. 5. Manufacturer's hanged seal

6.2 Data logger

The data logger of the ancillary device stores up to 15 last day meter data.

which records up to 15 last day meter data.

7 Marking and inscriptions

7.1 Information to be borne by and to accompany the measuring instrument

The label on the water meter indicating device contains the following information:

- EU-type examination certificate number (LT-1621-MI001-033);
- unit of measurement: m^3;
- mounting position of the meter: H;
- permanent flowrate Q_3;
- the ratio Q_3/Q_1, preceded by „R";
- the flow profile sensitivity class of the meter.

Additional label-sticker is attached on the casing of ancillary device of the meter. On the label is the following information:

- meter manufacturer's mark or its name;
- manufacturer's address;
- the temperature class of the meter;
- year of manufacture and serial number of the meter;
- climatic and mechanical environmental class of the meter's ancillary device;
- electromagnetic class of the meter's ancillary device;
- the last date by which the battery of the ancillary device shall be replaced.

Arrow to indicate the direction of the flow shall appear on the water meter housing.

7.2 Conformity marking

In addition, the label of water meter should contain the following marking:

- „CE" marking;
- metrology marking, consisting of the capital letter „M" and the last two digits of the year of its affixing, surrounded by a rectangle;
- identification number of the notified body, which carried out the conformity assessment.

8 List of the drawings attached to the certificate.

Labelig drawing of the meter. Edition 1.1, 10-04-2018.

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9 Certificate history

Issue	Date and reference No.	Description
1	2	3
LT-1621-MI001-033	24-04-2018, Nr. LEI-12-MP-073.18	Type examination certificate first issued

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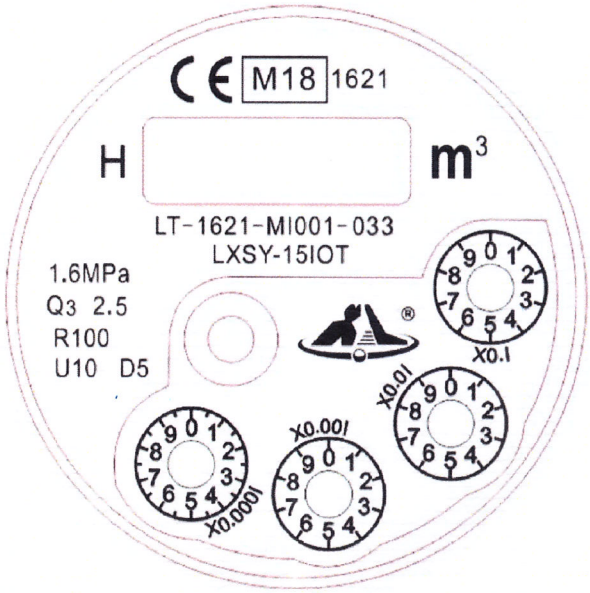
Hangzhou Xili Intelligent Technology Co., Ltd.

Labels

1. Label on mechanical water meter



2. Label on electronic component

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