Czech Metrology Institute

Member state
**Czech Republic**

OIML Certificate No.
**R49/2013-CZ-15.02**

# OIML BASIC CERTIFICATE OF CONFORMITY

**Issuing Authority**

Name: Czech Metrology Institute
Address: Okružní 31,
638 00 Brno, CZ
Person responsible: Jan Kalandra

**Applicant**

Name: LIANYUNGANG LIANLI · FIRST METER CO., LTD.
Address: 9# Yuzhou South Road, Haizhou Development Zone, Lianyungang, Jiangsu, China

Manufacturer of the certified type
Name: LIANYUNGANG LIANLI · FIRST METER CO., LTD.
Address: 9# Yuzhou South Road, Haizhou Development Zone, Lianyungang, Jiangsu, China

Identification of the certified type

**Water meter**
**Type: DS TAR**

For further characteristics see page 2 to 4

This certificate attests the conformity of above identified Type (represented by the sample(s) identified in the OIML Basic Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

**R 49, edition 2013, for accuracy class 2**

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This certificate relates only to the metrological and technical characteristics of the type of instrument covered by the relevant OIML Recommendation identified above.

This 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. 6015-PT-P3009-15 from 8th June 2015 that includes 81 pages including annexes.

**Measuring system description:**

The water meter type **DS TAR** are multi jet rotary vane wheel water meters with dry mechanical indicating device (plastic can calculator) or super dry mechanical indicating device (plastic can calculator or copper can calculator). The water meters type **DS90TAR, DS04TAR** consist of a brass, bronze, iron or plastic body with connecting threads or flanges and inlet strainer, a adjusting screw, a wet measuring unit, a register chamber with two magnet shield and two corundum bearings, two O-ring, a dry mechanical indicating device, a tempered glass, two fixed ring, a sliding gasket and brass bronze or plastic cap with a lid. The water meters type **DS97TAR** consist of a brass, bronze, or plastic body with connecting threads and inlet strainer, a adjusting screw, a wet measuring unit, a pressure plate with magnet shield, a shield gasket, a O-ring and a separating plate with a corundum bearings, super dry mechanical indicating device with transparent plastic cover (plastic can calculator) or with copper can with tempered glass (copper can calculator) ,a O-ring, a lower plate with a agate bearing and a plastic cap with a plastic lid.

Adjusting is made by adjusting screw which is covered by adjusting plug.

The meter is intended for mount to the connecting horizontal pipework with the flow axis in the horizontal plane and with the indicating device positioned at the top.

There are two types of the mechanical indicating device. The first one is formed by numbered rollers with five drums and four rotary pointers for water meter DN15 to DN32 and six drums and three or four rotary pointers for water meter DN40 to DN50. The second one is formed by numbered rollers with eight drums and one rotary pointer for water meter DN15 to DN32 and eight drums and one or two rotary pointers for water meter DN40 to DN50. These calculators can be designated for inclined reading. There is star wheel with ten arms which can be used for rapid testing in mechanical indicating device.

The water meters type **DS TAR** can be equipped by a reed impulse transmitter which can be used for remote reading.

Český metrologický institut

**The OIML Issuing Authority**
Pavel Klenovský

16 June 2015

## Characteristics:

Basic technical data of water meters type **DS TAR** DN15 TO DN 25

| | | | | | | |
|---|---|---|---|---|---|---|
| **Manufacturer:** | LIANYUNGANG LIANLI · FIRST METER CO., LTD.<br>9# Yuzhou South Road, Haizhou Development Zone, Lianyungang, Jiangsu, China | | | | | |
| **Model number:** | DS 97 TAR, DS 90 TAR, DS 04 TAR | | | | | |
| **Type details:** | | | | | | |
| Nominal diameter(DN)[mm] | 15 | | 20 | | 25 | |
| Overload flowrate($Q_4$)[$m^3$/h] | 3.13 | 2.00 | 5.00 | 3.13 | 7.88 | 5.00 |
| Permanent flowrate($Q_3$)[$m^3$/h] | 2.50 | 1.60 | 4.00 | 2.50 | 6.30 | 4.00 |
| Transitional flowrate($Q_2$)[$m^3$/h] | 0.05 | 0.05 | 0.08 | 0.08 | 0.13 | 0.13 |
| Minimum flowrate($Q_1$)[$m^3$/h] | 0.031 | 0.032 | 0.050 | 0.050 | 0.079 | 0.080 |
| Ratio $Q_3/Q_1$: | 80 | 50 | 80 | 50 | 80 | 50 |
| Ratio $Q_2/Q_1$: | 1.6 | | | | | |
| Ratio $Q_4/Q_3$: | 1.25 | | | | | |
| Accuracy class | 2 | | | | | |
| Maximum permissible error for the lower flowrate zone ($MPE_1$) | ±5% | | | | | |
| Maximum permissible error for the upper flowrate zone ($MPE_u$) | ±2% for water having a temperature ≤30℃<br>±3% for water having a temperature > 30℃ | | | | | |
| Temperature class: | T30 and T50 | | | | | |
| Water pressure classes | MAP 16 | | | | | |
| Pressure-loss classes | $\Delta P$ 63 | | | | | |
| Indicating range[$m^3$] | 99 999 or 999 999 | | | | | |
| Resolution of the indicating device[$m^3$] | 0.00005 | | | | | |
| Resolution of the device for the rapid testing[pulse/L] | DS 97 TAR – 122.4691,<br>DS 97 TAR – 125 (8 drums),<br>DS 90 TAR - 93,<br>DS 04 TAR - 142.2222 | | DS97TAR–84.5455,<br>DS 97 TAR – 84.8485(8 drums),<br>DS90 TAR -71.9008,<br>DS 04TAR-126.4198 | | DS 97 TAR – 41.5385,<br>DS 97 TAR–41.1765 (8 drums),<br>DS 90 TAR - 41.5385,<br>DS 04 TAR - 71.9008 | |
| Flow profile sensitivity classes | U0 D0 | | | | | |
| Orientation limitation | H | | | | | |
| Length of horizontal water meter L[mm] | 110 to190 | | 160 to 190 | | 160 to260 | |
| Length of vertical water meter L[mm] | 96 to 105 | | 100 to 150 | | | |
| Connection type-screw thread size | G3/4B or G1B | | G1B | | G11/4B or G11/2B | |
| Reed switch power supply($U_{max}/I_{max}$): | Max.24V/0.01A | | | | | |
| Reed switch K-factor[impulse/L] | 0.001, 0.01, 0.1and 1 | | | | | |

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Basic technical data of water meters type **DS TAR** DN32 to DN 50

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|---|---|---|---|---|---|---|
| **Manufacturer:** | LIANYUNGANG LIANLI · FIRST METER CO., LTD.<br>9# Yuzhou South Road, Haizhou Development Zone, Lianyungang, Jiangsu, China | | | | | |
| **Model number:** | DS 97 TAR, DS 90 TAR, DS 04 TAR | | | | | |
| **Type details:** | | | | | | |
| Nominal diameter(DN)[mm] | 32 | | 40 | | 50 | |
| Overload flowrate($Q_4$)[$m^3$/h] | 12.50 | 7.88 | 20.00 | 12.50 | 31.30 | 20.00 |
| Permanent flowrate($Q_3$)[$m^3$/h] | 10.00 | 6.30 | 16.00 | 10.00 | 25.00 | 16.00 |
| Transitional flowrate($Q_2$)[$m^3$/h] | 0.20 | 0.20 | 0.32 | 0.32 | 0.50 | 0.51 |
| Minimum flowrate($Q_1$)[$m^3$/h] | 0.125 | 0.126 | 0.200 | 0.200 | 0.313 | 0.320 |
| Ratio $Q_3/Q_1$: | 80 | 50 | 80 | 50 | 80 | 50 |
| Ratio $Q_2/Q_1$: | 1.6 | | | | | |
| Ratio $Q_4/Q_3$: | 1.25 | | | | | |
| Accuracy class | 2 | | | | | |
| Maximum permissible error for the lower flowrate zone ($MPE_1$) | ±5% | | | | | |
| Maximum permissible error for the upper flowrate zone ($MPE_u$) | ±2% for water having a temperature ≤ 30℃<br>±3% for water having a temperature > 30℃ | | | | | |
| Temperature class: | T30 and T50 | | | | | |
| Water pressure classes | MAP 16 | | | | | |
| Pressure-loss classes | $\Delta P$ 63 | | | | | |
| Indicating range[$m^3$] | 99 999 or 999 999 | | | | | |
| Resolution of the indicating device[$m^3$] | 0.00005 or 0.0005 | | | | | |
| Resolution of the device for the rapid testing[pulse/L] | DS 97 TAR–41.5385, DS97 TAR–41.1765 (8 drums), DS90 TAR–41.5385, DS 04 TAR–50.8442, | | DS97 TAR-22.9779, DS 97 TAR – 12.5 (8 drums), DS90TAR –22.9779, DS04 TAR–22.9779 | | DS97 TAR–22.9779, DS 97 TAR –8.4848 (8 drums), DS 90 TAR –19.9308, DS 04 TAR –19.9308 | |
| Flow profile sensitivity classes | U0 D0 | | | | | |
| Orientation limitation | H | | | | | |
| Length of horizontal water meter L[mm] | 160 to260 | | 200 to 300 | | 270 to300 | |
| Connection type-screw thread size | G11/2B | | G2B | | G21/2B or Flange | |
| Reed switch power supply($U_{max}/I_{max}$): | Max.24V/0.01A | | | | | |
| Reed switch K-factor[impulse/L] | 0.001, 0.01, 0.1and 1 | | | | | |

**Marking and inscriptions**

The water meters type DS TAR shall be clearly and indelibly marked with the following information:

- Unit of measurement ($m^3$)
- Numerical value $Q_3$ in $m^3$/h ($Q_3$ ×.×) and the ratio $Q_3$ / $Q_1$, (R80, R50)
- OIML certificate of conformity number
- Name of trademark of the manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture and 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)
- Maximum admissible pressure (MAP 16)
- Letter H (horizontal position)
- The temperature class (T50, T30)

These markings shall comply with the requirements of OIML R 49 and shell be visible without dismantling the water meter after the instrument has been placed on the market or put into use.

**Security measures**

The connection of the adjusting plug and the brass ring of the meter has to be sealed.