



# EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/11 - 4855

## Addition 2

This addition replaces all previous versions of this certificate in full wording.

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**In accordance:** with Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.).

**Manufacturer:** Ningbo Water Meter (Group) Co., Ltd.  
355 Hongxing Road, Jiangbei District  
315032 Ningbo  
China

**For:** water meter – single jet  
type: SJ-LFC and SJ-WDC

Accuracy class: 2  
Temperature class: T30 or T50

**Valid until:** 3 August 2031

**Document No:** 0115-CS-A029-11

**Description:** Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

**Date of issue:** 29 June 2021

**Certificate approved by:**



  
RNDr. Pavel Klenovský

## 1 Measuring device description

The single jet water meters type SJ-LFC and SJ-WDC are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive of the European Parliament and of the Council no. 2014/32/EU of measuring instruments, as amended.

The water meters type SJ-WDC are single jet rotary vane wheel water meters with wet mechanical indicating device.

The water meters type SJ-LFC are single jet rotary vane wheel water meters with semi dry (Liquid Filled Calculator) mechanical indicating device with protected register drums.

The water meters type SJ-WDC consist of a brass, bronze or plastic body with connecting threads, an inlet strainer, an adjusting screw (optional), an adjusting button plate, a stainless steel shaft with plastic pivot, a rotary vane wheel and gears, a mechanical indicating device formed by numbered rollers with 5 drums and 4 rotary pointers, a black star wheel with 6 arms, which can be used for rapid testing, a register holder ring, a rubber O-ring, a glass disc, a rubber gasket and brass, bronze, steel or plastic head ring with a plastic cover.

The water meters type SJ-LFC consist of a brass, bronze or plastic body with connecting threads, an inlet strainer, an adjusting screw (optional), an adjusting button plate, a stainless steel shaft with plastic pivot, a rotary vane wheel and gears, a mechanical indicating device formed by numbered rollers with 5 drums, installed in capsule filled by a special liquid, and 4 rotary pointers, a black star wheel with 6 arms, which can be used for rapid testing, a rubber O-ring, a glass or plastic disc, a rubber gasket and brass, bronze, steel or plastic head ring with a plastic cover.

The water meters type SJ-LFC and SJ-WDC can be equipped by a reed impulse transmitter which can be used for remote reading. The water meter has not been tested with the reed impulse transmitter installed within this certification. The meters can be equipped with parts for mounting of an AMR device and with an inductive pointer for AMR reading.

The water meters type SJ-LFC and SJ-WDC shall be installed to operate in horizontal position with indicating device on the top or in vertical position with flow direction upwards.

The water meters type SJ-LFC and SJ-WDC are manufactured according to the technical documentation of manufacturer No. Q/ZNJ 17005-2013.12 Annex 1 from 31st of December 2013. This documentation contains among others the assembly drawings No. ZN1.630.539, 539a-539d, 540, 541, 543, 543a, 544, 544a-544d, 545, 546, 548, 548a from 02/2011, ZN1.630.642-644, 642y-644y from 9/2010 and ZN1.630.1707, 1708 from 8/2020.

## 2 Basic technical data

|                                                                            |                                                                                              |                                                 |                              |                              |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------|------------------------------|
| Nominal diameter (DN) [mm]:                                                | 15                                                                                           | 20                                              | 25                           | 32                           |
| Overload flowrate (Q <sub>4</sub> ) [m <sup>3</sup> /h]:                   | 3.13                                                                                         | 5.00                                            | 7.88                         | 12.5                         |
| Permanent flowrate (Q <sub>3</sub> ) [m <sup>3</sup> /h]:                  | 2.50                                                                                         | 4.00                                            | 6.30                         | 10.0                         |
| Transitional flowrate (Q <sub>2</sub> ) [m <sup>3</sup> /h]:               | ≥ 0.0200 (H)<br>≥ 0.0500 (V)                                                                 | ≥ 0.0400 (H)<br>≥ 0.1280 (V)                    | ≥ 0.0630 (H)<br>≥ 0.2016 (V) | ≥ 0.1000 (H)<br>≥ 0.3200 (V) |
| Minimum flowrate (Q <sub>1</sub> ) [m <sup>3</sup> /h]:                    | ≥ 0.0125 (H)<br>≥ 0.0313 (V)                                                                 | ≥ 0.0250 (H)<br>≥ 0.0800 (V)                    | ≥ 0.0394 (H)<br>≥ 0.1260 (V) | ≥ 0.0625 (H)<br>≥ 0.2000 (V) |
| Ratio Q <sub>3</sub> / Q <sub>1</sub> :                                    | ≤ 200 <sup>1</sup> (H)<br>≤ 80 <sup>1</sup> (V)                                              | ≤ 160 <sup>1</sup> (H)<br>≤ 50 <sup>1</sup> (V) |                              |                              |
| Ratio Q <sub>2</sub> / Q <sub>1</sub> :                                    | 1.6                                                                                          |                                                 |                              |                              |
| Ratio Q <sub>4</sub> / Q <sub>3</sub> :                                    | 1.25                                                                                         |                                                 |                              |                              |
| Accuracy class:                                                            | 2                                                                                            |                                                 |                              |                              |
| Maximum permissible error for the lower flowrate zone (MPE <sub>l</sub> ): | ± 5 %                                                                                        |                                                 |                              |                              |
| Maximum permissible error for the upper flowrate zone (MPE <sub>u</sub> ): | ± 2 % for water having a temperature ≤ 30 °C<br>± 3 % for water having a temperature > 30 °C |                                                 |                              |                              |
| Temperature class:                                                         | T30 or T50                                                                                   |                                                 |                              |                              |
| Water pressure classes:                                                    | MAP 10 and MAP 16                                                                            |                                                 |                              |                              |
| Pressure-loss classes:                                                     | ΔP 63                                                                                        |                                                 |                              |                              |
| Indicating range [m <sup>3</sup> ]:                                        | 99 999                                                                                       |                                                 |                              |                              |
| Resolution of the indicating device [m <sup>3</sup> ]:                     | 0.00005                                                                                      |                                                 |                              |                              |
| Resolution of the device for the rapid testing [pulse/L]:                  | 66.1333                                                                                      | 50.7273                                         | 27.0000                      | 13.0952                      |
| Flow profile sensitivity classes:                                          | U0 D0                                                                                        |                                                 |                              |                              |

|                                                        |                                     |     |                                                                   |                                  |
|--------------------------------------------------------|-------------------------------------|-----|-------------------------------------------------------------------|----------------------------------|
| Orientation limitation:                                | H (dial on top), V (flow upwards)   |     |                                                                   |                                  |
| Length L [mm]:                                         | 110 to 190                          | 130 | 160                                                               | 160                              |
| Connection type– Screw thread size:                    | G <sup>3</sup> / <sub>4</sub> B G1B | G1B | G1 <sup>1</sup> / <sub>4</sub> B G1 <sup>1</sup> / <sub>2</sub> B | G1 <sup>1</sup> / <sub>2</sub> B |
| Reed switch power supply<br>( $U_{\max} / I_{\max}$ ): | max. 24 V / 0.01 A                  |     |                                                                   |                                  |
| Reed switch K-factor<br>[impulse / L]:                 | 0.001, 0.01, 0.1 and 1              |     |                                                                   |                                  |

<sup>1</sup> The ratio  $Q_3 / Q_1$  shall be chosen according to paragraph 4.1.4 of EN ISO 4064-1:2017 | OIML R 49-1:2013

### 3 Test

Technical tests of the water meters type SJ-LFC and SJ-WDC were performed according to the International Recommendation OIML R 49 Edition 2006 (E) and EN 14154-1:2005+A1:2007, Test Report No. 6015-PT-P0090-11 from April 29<sup>th</sup> 2011 and according to EN ISO 4064:2017 and OIML R 49 Edition 2013, Test Reports No. 6015-PT-P0012-18 from 12<sup>th</sup> February 2018 and 6015-PT-P0030-21 from 15<sup>th</sup> June 2021.

### 4 The measuring device data

The water meters type SJ-LFC and SJ-WDC shall be clearly and indelibly marked with the following information:

- The “CE” marking and supplementary metrology marking
- Number of EU-type examination certificate
- Manufacturer’s name or trademark
- Postal address at which the manufacturer can be contacted
- Year of manufacture (last two digits) and serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement ( $\text{m}^3$ )
- Accuracy class 2
- Numerical value  $Q_3$  in  $\text{m}^3/\text{h}$  ( $Q_3 \times \times$ )
- The ratio  $Q_3 / Q_1$ , ( $R \times \times$ )
- The temperature class ( $T \times \times$ )
- The maximum admissible pressure ( $\text{MAP} \times \times$ )
- The pressure loss class ( $\Delta P \times \times$ )
- Classes on sensitivity to irregularities in velocity field ( $U \times D \times$ )
- Orientation limitation marks H and/or V together with the corresponding value of R
- Direction of flow arrow on both sides of the meter body

There are additional data required if the water meter is equipped with impulse transmitter:

- Output signals for ancillary devices (type / levels)
- External power supply requirements (voltage – frequency)

### 5 Sealing

A connection of the water meter body and the closing ring has to be sealed by a wire with a lead or plastic seal for water meters types SJ-LFC and SJ-WDC. The connection of water meter calculator and reed impulse transmitter has to be sealed, if equipped.

The location of the seal is described in Figure 1.

Figure 1: Example of the water meter type SJ-LFC DN 15 with brass body– view and sealing

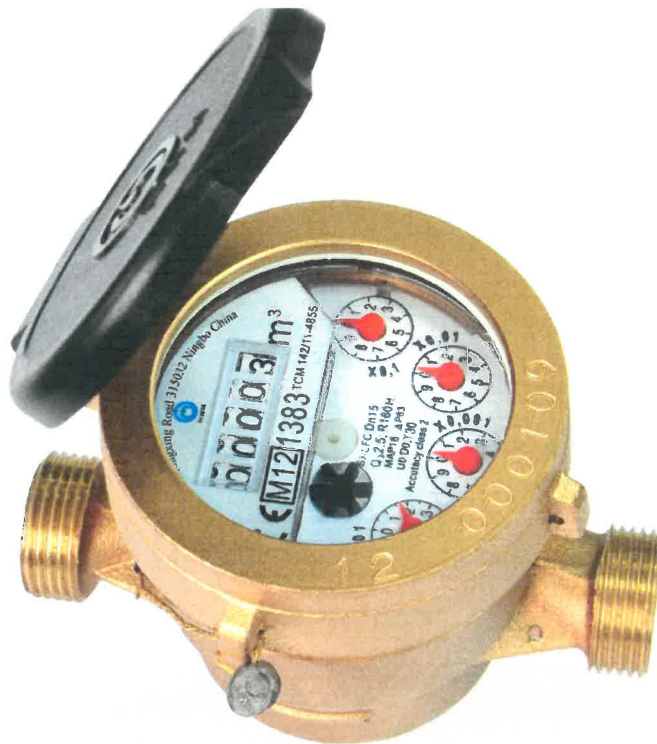


Figure 2: Example of the water meter type SJ-LFC DN 15 with brass body – the second dial variant

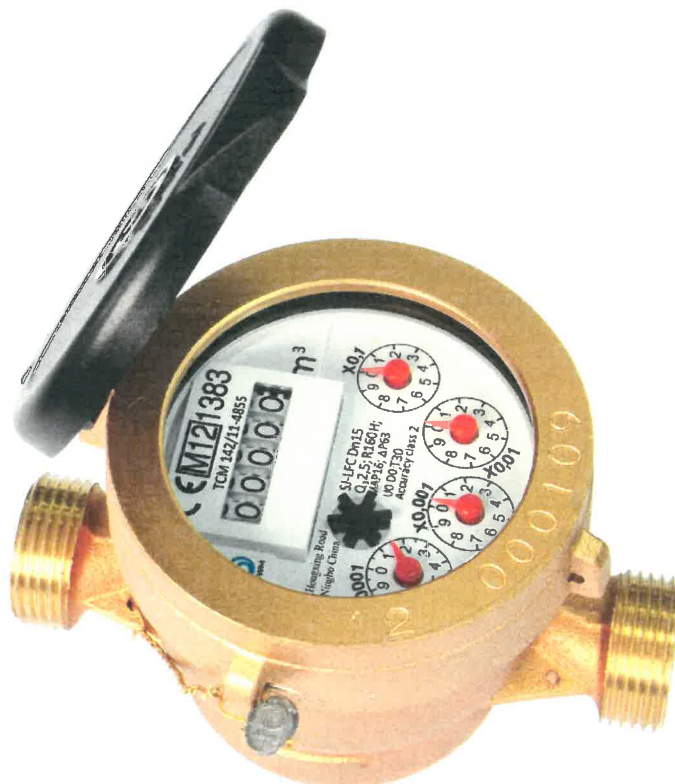


Figure 3: Example of the water meter type SJ-LFC DN 15 with brass body– the third dial variant



Figure 4: Example of the water meter type SJ-LFC DN 15 with plastic body



Figure 5: Example of the water meter type SJ-LFC DN 15 with plastic body – another dial variant



Figure 6: Example of the water meter type SJ-LFC DN 15 with impulse transmitter



Figure 7: Example of the water meter type SJ-WDC DN 15 with brass body



Figure 8: Example of the water meter type SJ-LFC variant FD2 with inductive pointer and parts for mounting of an AMR device



Figure 9: The dial plates of the water meter type SJ-LFC

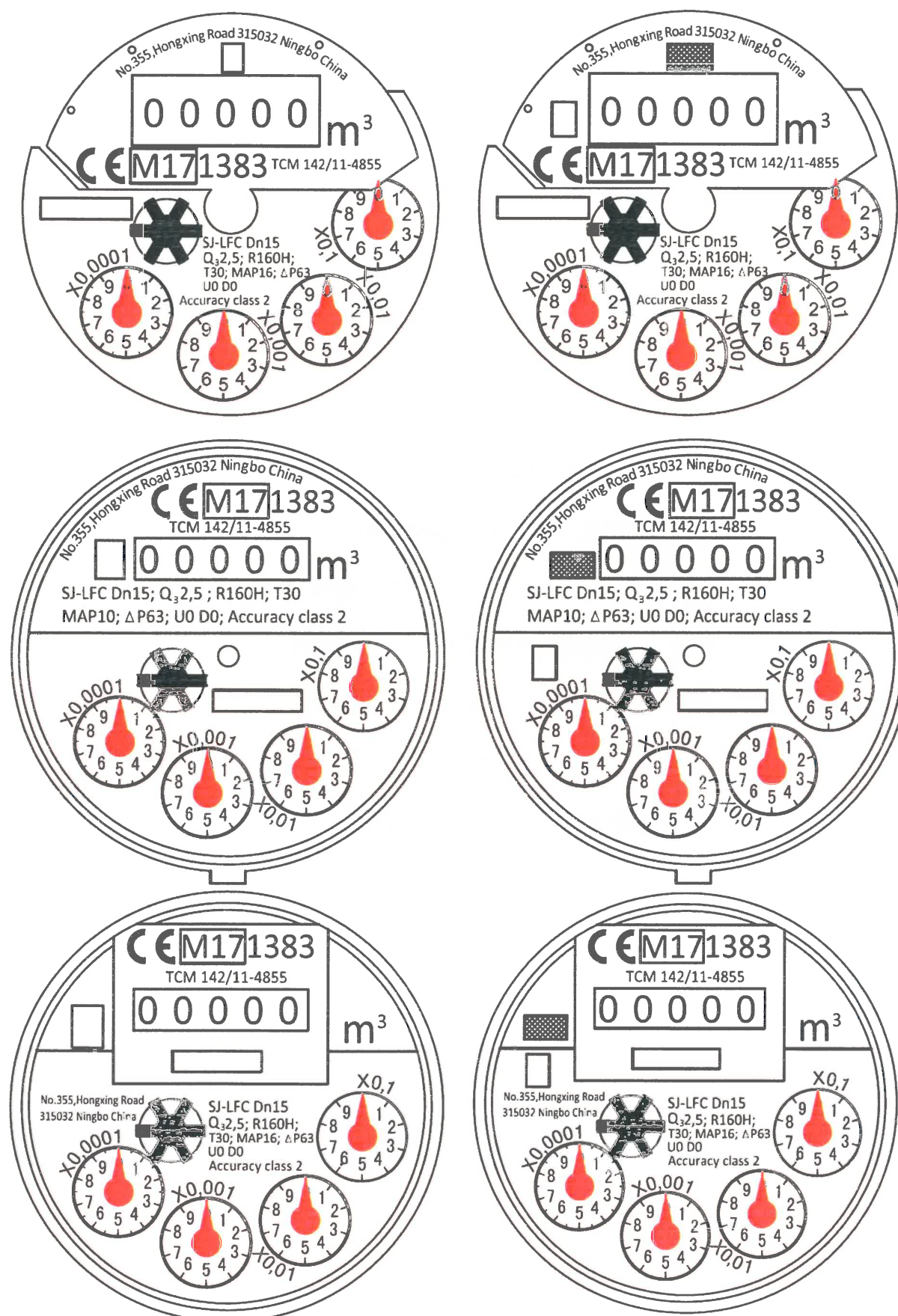


Figure 10: The dial plates of the water meter type SJ-WDC

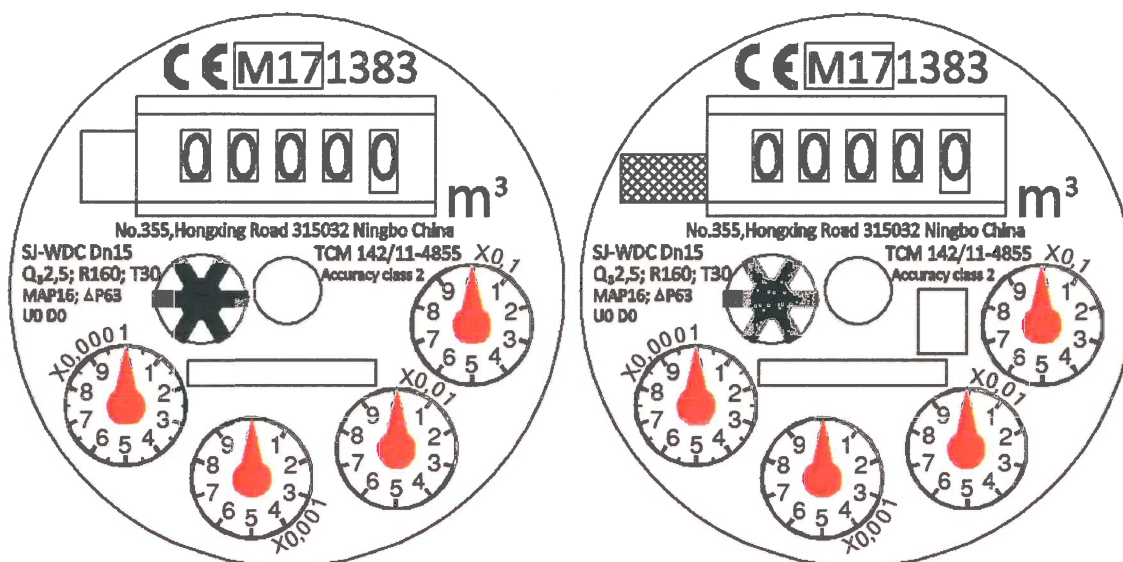
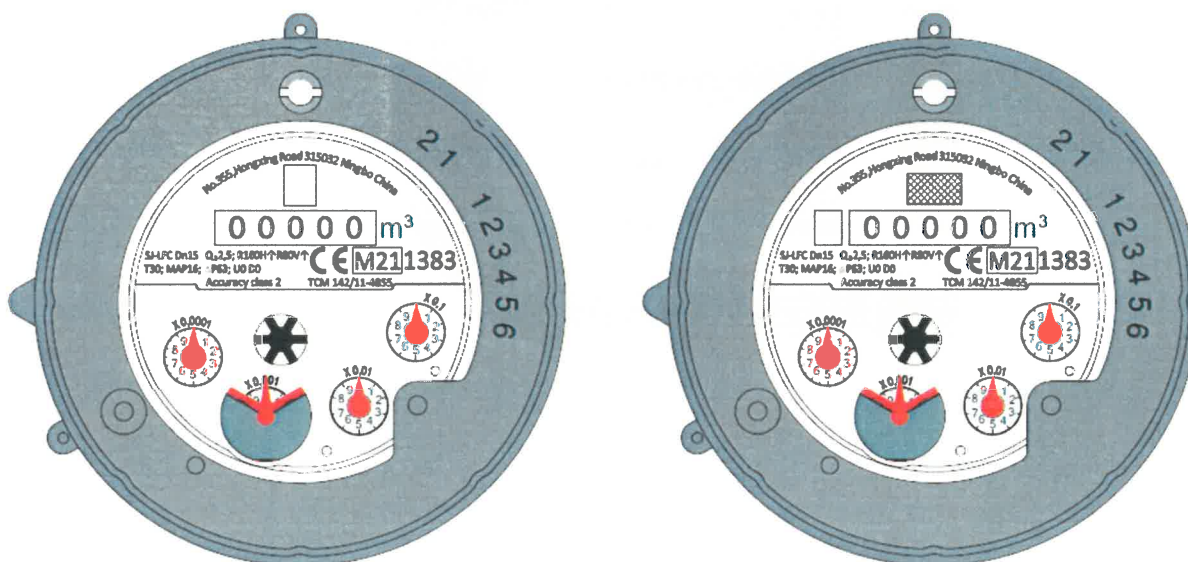


Figure 11: The dial plates of the water meter type SJ-LFC variant FD2 with inductive pointer and parts for mounting of an AMR device



Graphical notation as in the key below is used for the dial drawings:

