



EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/12 - 4923

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
Ningbo 315032
China

For: water meter – multi jet
Type: MJ-SDC PLUS

Accuracy class: 2
Temperature class: T30, T50

Valid until: 9 April 2022

Document No: 0115-CS-A008-12

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

Date of issue: 4 August 2020



Certificate approved by:


RNDr. Pavel Klenovský

1 Measuring device description

The multi jet water meters type MJ-SDC PLUS 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 MJ-SDC PLUS are multi jet rotary vane wheel water meters with dry mechanical indicating device.

The water meters type MJ-SDC PLUS consist of a brass body with connecting screw threads or flanges, inlet strainer and adjusting screw, a rubber gasket, plastic casing for an impeller with multiple inlets and outlets, stainless steel shaft with plastic tip, rotary vane impeller with agate bearing and magnetic ring, plastic casing for an indicating device with a rubber O-ring, antimagnetic protection ring, plastic shaft with a magnetic ring, a dry mechanical indicating device, plastic ring, rubber O-ring, glass window and brass screw head ring with a plastic sliding gasket and a plastic lid.

There are two variants for composition of the mechanical indicating device: variant with 5 (DN15-32) or 6 (DN40-50) numbered rollers and 4 rotary pointers and variant with 7 (DN15-32) or 8 (DN40-50) numbered rollers and 2 rotary pointers. There is a star wheel with 6 arms on the indicating device which can be used for rapid testing.

The water meters type MJ-SDC PLUS can be equipped by a reed impulse transmitter for remote reading. The water meters has not been tested with 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.

Water meters type MJ-SDC PLUS are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2013.12 Annex 1 from 31.12.2013. This documentation contains among others the assembly drawings No. ZN1.630.xxx where xxx is 519-519b, 520, 611, 796, 797, 799, 800, 613-613b, 802, 803, 805, 806, 1097-1100, 1097b, 1098b, 1247, 1248, 1247a, 1248a from 10/2013.

2 Basic technical data

Data for DN15 to DN32:

Nominal diameter (DN) [mm]:	15	20	25	32
Ratio Q_3 / Q_1 :	200 or 160			
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 _l):	± 5 %			
Maximum permissible error for the upper flowrate zone (MPE _u):	± 2 % for water having a temperature ≤ 30 °C ± 3 % for water having a temperature > 30 °C			
Temperature classes:	T30, T50			
Water pressure class:	MAP 16			
Pressure-loss class:	ΔP 63			
Indicating range [m ³]:	99 999			
Resolution of the indicating device [m ³]:	0.00005			
Resolution of the device for the rapid testing [pulse/L]:	90.0938	60.0000	38.8760	31.0714
Flow profile sensitivity classes:	U0 D0			
Orientation limitation:	horizontal with indicating device on top (H↑)			
Length L [mm]:	165 to 190	190	260	260
Connection type– Screw thread size:	G ³ / ₄ B, G1B	G1B	G1 ¹ / ₄ B, G1 ¹ / ₂ B	G1 ¹ / ₂ B
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A			
Reed switch K-factor [impulse / L]:	0.001, 0.01, 0.1 and 1			



Data for DN40 to DN50:

Nominal diameter (DN) [mm]:	40	50
Ratio Q_3 / Q_1 :	200 or 160	
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 _l):	± 5 %	
Maximum permissible error for the upper flowrate zone (MPE _u):	± 2 % for water having a temperature ≤ 30 °C ± 3 % for water having a temperature > 30 °C	
Temperature classes:	T30, T50	
Water pressure class:	MAP 16	
Pressure-loss class:	ΔP 63	
Indicating range [m ³]:	999 999	
Resolution of the indicating device [m ³]:	0.00005	
Resolution of the device for the rapid testing [pulse/L]:	10.5417	60.0000
Flow profile sensitivity classes:	U0 D0	
Orientation limitation:	horizontal with indicating device on top (H↑)	
Length L [mm]:	200 to 300	280 to 300
Connection type– Screw thread size:	G2B	G2½B or Flange
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A	
Reed switch K-factor [impulse / L]:	0.001, 0.01, 0.1 and 1	

DN	Minimum flowrate (Q_1) $Q_3 / Q_1 = 200$	Transitional flowrate (Q_2) $Q_3 / Q_1 = 200$	Minimum flowrate (Q_1) $Q_3 / Q_1 = 160$	Transitional flowrate (Q_2) $Q_3 / Q_1 = 160$	Permanent flowrate (Q_3)	Overload flowrate (Q_4)
mm	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h
15	0.0125	0.0200	0.0156	0.0250	2.50	3.13
20	0.0200	0.0320	0.0250	0.0400	4.00	5.00
25	0.0315	0.0504	0.0394	0.0630	6.30	7.88
32	0.0500	0.0800	0.0625	0.1000	10.0	12.5
40	0.0800	0.1280	0.1000	0.1600	16.0	20.0
50	0.1250	0.2000	0.1563	0.2500	25.0	31.25

3 Tests

Technical tests of the water meters type MJ-SDC PLUS were performed according to the standard EN 14154:2005+A2:2011 and according to the International Recommendation OIML R 49:2006 (E) with results reported in Test Report No. 6015-PT-P0005-12 from January 12th 2012 and No. 6015-PT-P0055-14 from February 5th 2015 and according to EN ISO 4064:2017 (E) and OIML R 49:2013 (E) with results reported in Test Report No. 6015-PT-P0037-20 from 31st July 2020.



4 The measuring device data

The water meters type MJ-SDC PLUS 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 manufacturing (last two digits) and serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement (m^3)
- Accuracy class 2
- Numerical value of Q_3 in m^3/h ($Q_{3\times\times}$)
- The ratio Q_3 / Q_1 ($R_{\times\times}$)
- The temperature class ($T_{\times\times}$)
- The maximum admissible pressure ($MAP_{\times\times}$)
- The pressure loss class ($\Delta P_{\times\times}$)
- Classes on sensitivity to irregularities in velocity field ($U \times D_{\times}$)
- Orientation limitation (H_{\uparrow})
- 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

The MJ-SDC PLUS meters have to be sealed by connecting the brass screw head ring to the adjusting screw using a wire with a lead or plastic seal such that the head ring and the adjusting screw cannot be turned without damaging the seal or the sealing wire.

Optionally the meters can be equipped with a safety pin between the dial window and the dial plate to indicate a rough treatment of the meter.

The connection of water meter calculator and reed impulse transmitter has to be sealed, if equipped.

The location of the seal is shown in Figures 1 and 2.

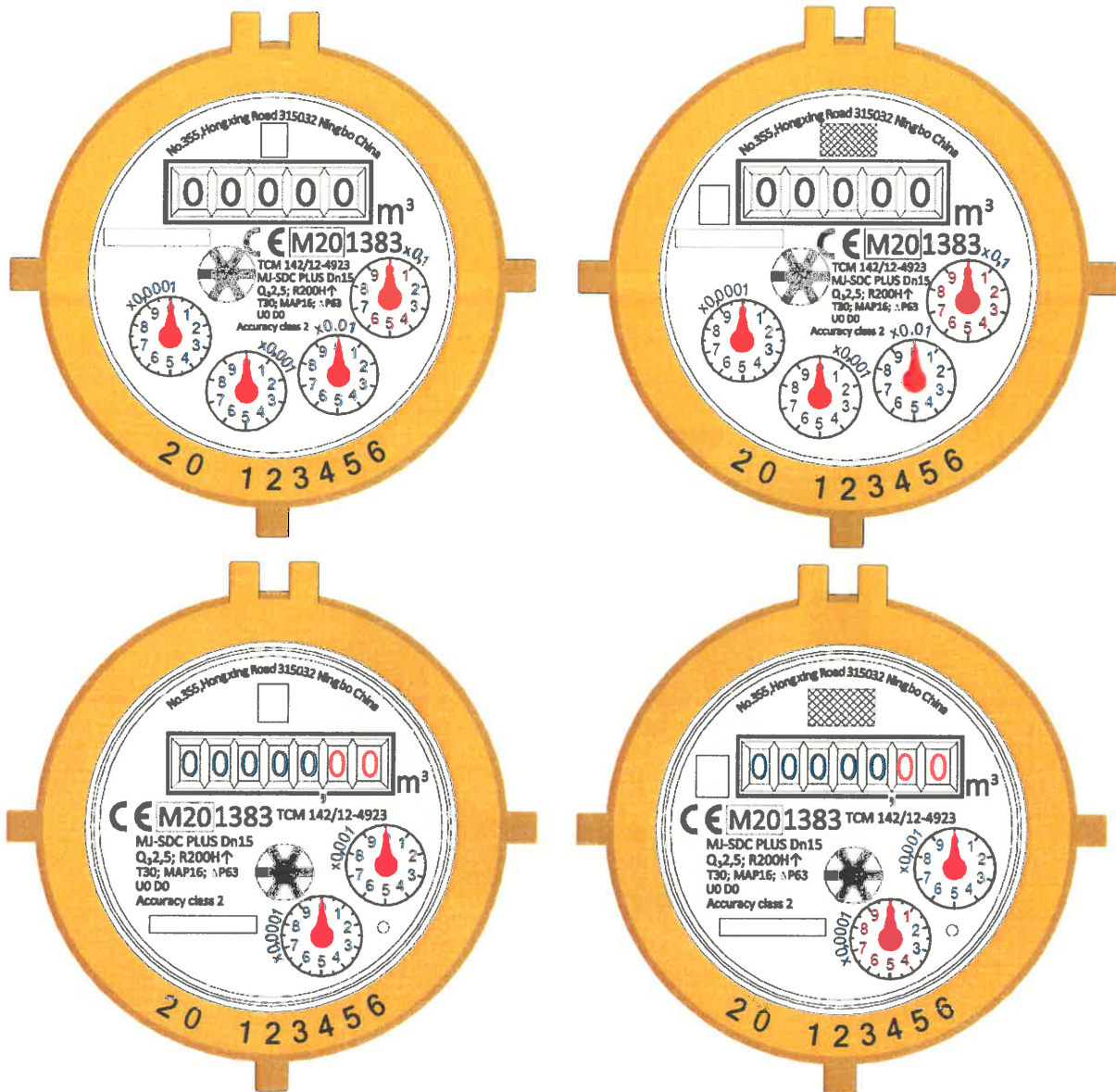
Figure 1: Example of the water meter type MJ-SDC PLUS, DN15 – view and sealing



Figure 2: Example of the water meter type MJ-SDC PLUS, DN15 prepared for AMR mounting



Figure 3: Examples of the dial plates of the water meter type MJ-SDC PLUS DN15 to DN32: case with manufacturer's name or logo only (left) and case with both – manufacturer's and customer's name or logo (right). Variants with magnetic pointer for reed impulse transmitter or inductive pointer for AMR reading are also possible.






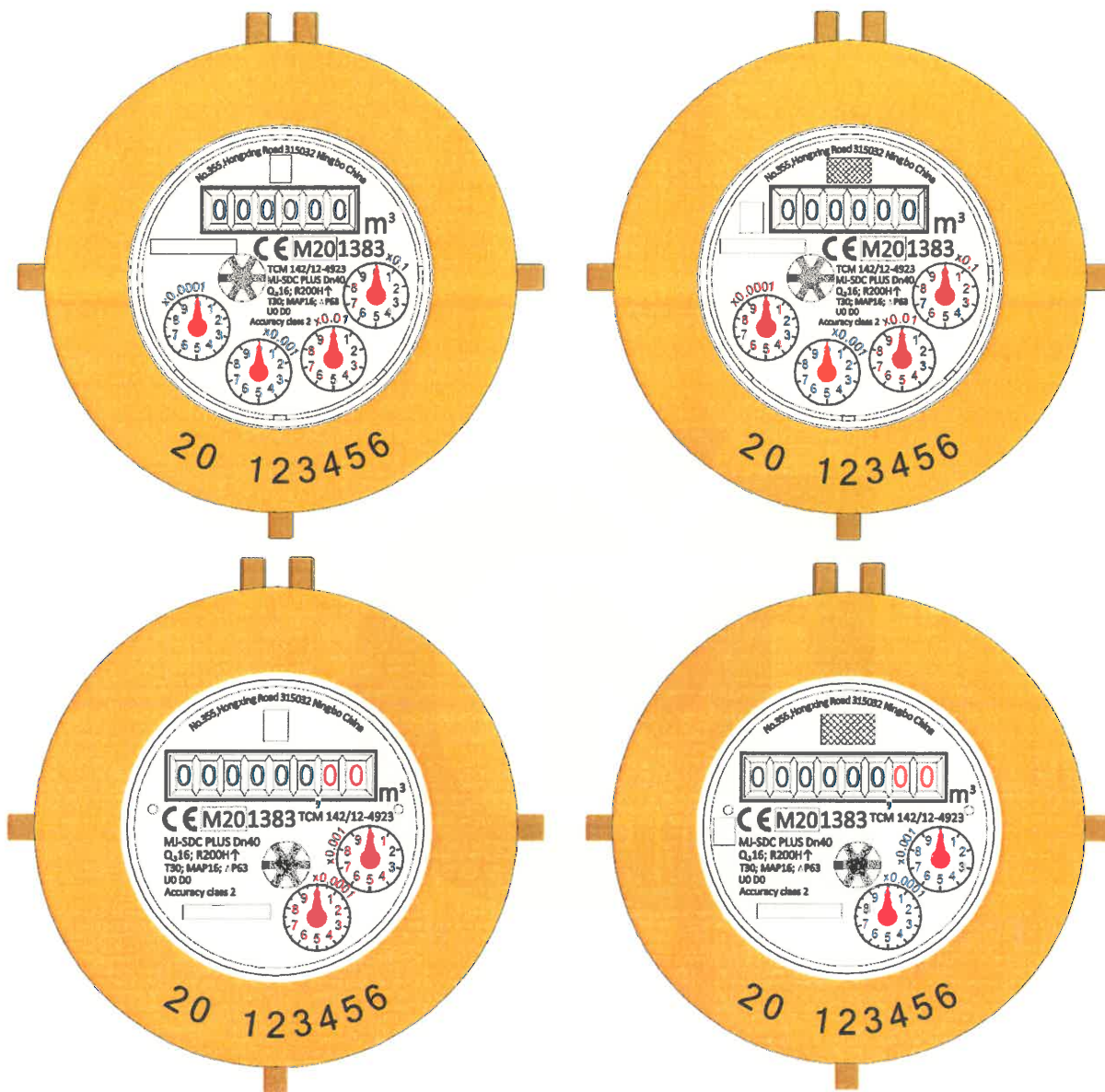
-  Manufacturers' logo or name
-  Customer's logo or name
-  Serial number

Figure 4: Examples of the dial plates of the water meter type MJ-SDC PLUS DN40 to DN50: case with manufacturer's name or logo only (left) and case with both – manufacturer's and customer's name or logo (right). Variants with magnetic pointer for reed impulse transmitter or inductive pointer for AMR reading are also possible.






-  Manufacturers' logo or name
-  Customer's logo or name
-  Serial number

Figure 5: Variant of the dial plate of the water meter type MJ-SDC PLUS with CE mark on plastic plate fixed on the head ring. This variant is possible for all kinds of dials. The plastic plate is not removable without damage.

