



EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/15 - 5289

Addition 3

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
Type: WP-SDC PLUS

Accuracy class: 2
Temperature class: T30 and T50

Valid until: 19 May 2025

Document No: 0511-CS-A020-15

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

Date of issue: 20 April 2021

Certificate approved by:




RNDr. Pavel Klenovský

1 Measuring device description

The water meters type WP-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 2014/32/EU of the European Parliament and of the Council of the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in the Czech Republic by Government Order No. 120/2016 Coll.), as amended.

The water meters type WP-SDC PLUS are single jet turbine meters with turbine's axis in the flow direction (Woltmann meters). The meters are equipped with dry or super dry (copper can or stainless steel can) mechanical indicating device.

The water meters type WP-SDC PLUS consist of a cast iron body with connecting flanges and a measuring unit. The measuring unit is connected to the body by a flange cover which is fixed by four screws and sealed by a rubber o-ring.

The measuring unit consists of a plastic holder with bushes for an impeller, an impeller with a stainless steel shaft, a transmission with magnetic coupling to the indicating device, the flange cover made of iron and brass with an adjusting screw, a plastic register cover fixed by an immovable plastic plate, a plastic bracket for an indicating device (in case of copper can or stainless steel can register only) a dry mechanical indicating device (plastic register) or a super dry mechanical indicating device (copper can or stainless steel can register) and an upper plastic lid.

There are two variants of dial composition for the meters type WP-SDC PLUS. The reading consists of either a) numbered rollers with six drums and three rotary pointers or b) numbered rollers with six drums, two rotary pointers and one rotary plate with a scale. The meters are equipped with a star wheel with six arms which can be used for rapid testing.

The water meters type WP-SDC PLUS can be equipped with a reed impulse transmitter which can be used for remote reading, however, the water meters have not been tested with the reed impulse transmitter and it is not a part of 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 WP-SDC PLUS can be installed to operate in arbitrary position.

The water meters type WP-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. ZN1.631.xxx with xxx being 215-221, 315-321, 327-333, 339-345 from 4/2013.

2 Basic technical data

Basic technical data of water meters type WP-SDC PLUS from DN 50 to DN 100:

Nominal diameter (DN) [mm]:	50	65	80	100
Overload flowrate (Q_4) [m^3/h]:	78.75	78.75	125	200
Permanent flowrate (Q_3) [m^3/h]:	63	63	100	160
Transitional flowrate (Q_2) [m^3/h] for position $H\uparrow$:	≥ 0.403	≥ 0.403	≥ 0.640	≥ 1.024
Transitional flowrate (Q_2) [m^3/h] for any other position:	≥ 0.630	≥ 0.630	≥ 1.000	≥ 1.600
Minimum flowrate (Q_1) [m^3/h] for position $H\uparrow$:	≥ 0.252	≥ 0.252	≥ 0.400	≥ 0.640
Minimum flowrate (Q_1) [m^3/h] for any other position:	≥ 0.394	≥ 0.394	≥ 0.625	≥ 1.000
Ratio Q_3 / Q_1 for position $H\uparrow$:	$\leq 250^1$			
Ratio Q_3 / Q_1 for any other position:	$\leq 160^1$			
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):	$\pm 5 \%$			
Maximum permissible error for the upper flowrate zone (MPE_u):	$\pm 2 \%$ for water having a temperature $\leq 30 \text{ }^\circ\text{C}$ $\pm 3 \%$ for water having a temperature $> 30 \text{ }^\circ\text{C}$			
Temperature class:	T30 and T50			
Water pressure classes:	MAP 16			

Pressure-loss classes:	ΔP 40	ΔP 40	ΔP 25	ΔP 63
Indicating range (6+2) [m ³]:	999 999			
Resolution of the indicating device [m ³]:	0.0005			
Resolution of the device for the rapid testing [pulse/L]:	10.491429	10.491429	6.2631579	3.315
Flow profile sensitivity classes:	U0 D0			
Orientation limitation:	-			
Length L [mm]:	200	200	225	250
Connection type:	Flange connection			
Reed switch power supply (U_{\max} / I_{\max}):	max. 24 V / 0.01 A			
Reed switch K-factor [impulse/L]:	0.01 or 0.001			

¹ The ratio Q_3 / Q_1 shall be chosen from EN ISO 4064-1:2017 section 4.1.4 or OIML R 49-1:2013 (E) section 4.1.4.

Basic technical data of water meters type WP-SDC PLUS from DN 125 to DN 200:

Nominal diameter (DN) [mm]:	125	150	200
Overload flowrate (Q ₄) [m³/h]:	312.5	500	787.5
Permanent flowrate (Q ₃) [m³/h]:	250	400	630
Transitional flowrate (Q ₂) [m³/h] for position H↑:	≥ 1.600	≥ 1.600	≥ 2.520
Transitional flowrate (Q ₂) [m³/h] for any other position:	≥ 2.500	≥ 2.560	≥ 4.032
Minimum flowrate (Q ₁) [m³/h] for position H↑:	≥ 1.000	≥ 1.000	≥ 1.575
Minimum flowrate (Q ₁) [m³/h] for any other position:	≥ 1.563	≥ 1.600	≥ 2.520
Ratio Q_3 / Q_1 for position H↑:	≤ 250 ¹	≤ 400 ¹	
Ratio Q_3 / Q_1 for any other position:	≤ 160 ¹	≤ 250 ¹	
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 class:	T30 and T50		
Water pressure classes:	MAP 16		
Pressure-loss classes:	ΔP 63	ΔP 25	ΔP 40
Indicating range (6+2) [m³]:	999 999	9 999 999	
Resolution of the indicating device [m³]:	0.0005	0.005	
Resolution of the device for the rapid testing [pulse/L]:	3.315	14.535	6.4421053
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	-		
Length L [mm]:	250	300	350
Connection type:	Flange connection		
Reed switch power supply (U _{max} / I _{max}):	max. 24 V / 0.01 A		
Reed switch K-factor [impulse/L]:	0.01 or 0.001	0.001 or 0.0001	

¹ The ratio Q_3 / Q_1 shall be chosen from EN ISO 4064-1:2017 section 4.1.4 or OIML R 49-1:2013 (E) section 4.1.4.

3 Tests

Technical tests of the water meters type WP-SDC PLUS were performed in compliance with the International Recommendation OIML R 49 Edition 2013 (E) and EN ISO 4064:2017, Test Reports No. 6015-PT-P0060-13 from 13th April 2015, 6015-PT-P0025-19 from 17th June 2019 and 6015-PT-P0005-21 from 5th February 2021.

4 Marks and inscriptions

The water meters type WP-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 manufacture (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 Q_3 in m^3/h ($Q_3 \times \times$)
- The ratio Q_3 / Q_1 , ($R \times \times$) with respect to the orientation of the meter
- 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: $H \uparrow$ (horizontal position with the indicating device on top) or “Any” (any position besides the $H \uparrow$ position)
- 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

One of the screws connecting the water meter body and the flange cover has to be sealed (Figure 1). The removable indicating device has to be protected against manipulation by a seal fixing a pin near the connection of the upper plastic lid and the plastic register cover (Figure 2). For the DN 150 and DN 200 sizes where the adjusting screw can be approached from outside the adjusting screw has to be sealed (Figure 3). The seals are realized by a wire with a lead or plastic seal.

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 body and reed impulse transmitter has to be sealed, if equipped.

Figure 1: The water meter type WP-SDC PLUS DN 50 – view and sealing:



Figure 2: The water meter type WP-SDC PLUS DN 50 – view and sealing:

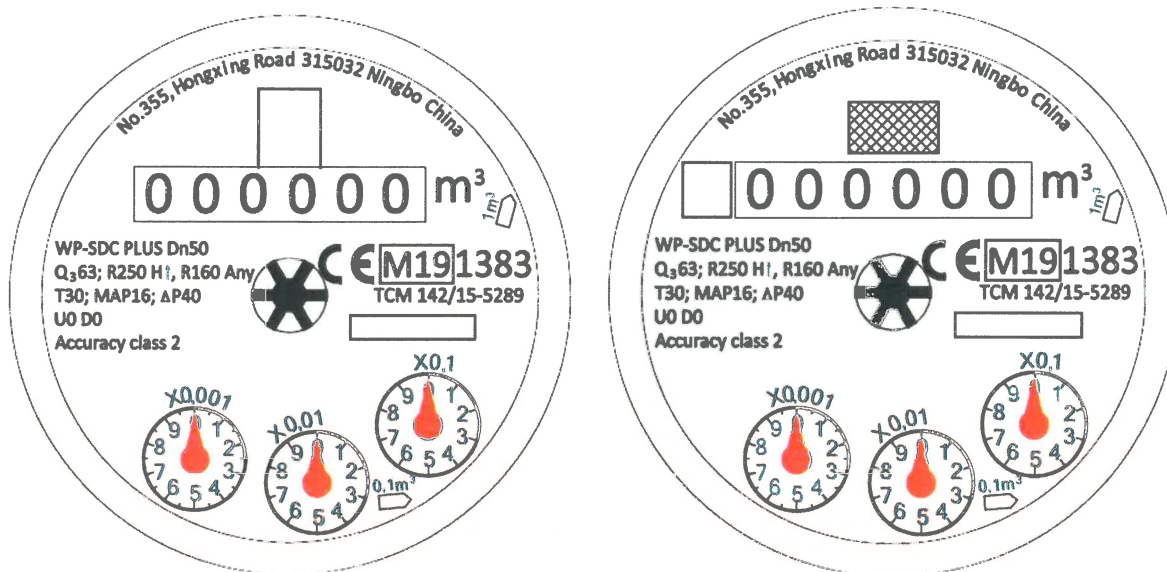


Figure 3: The water meter type WP-SDC PLUS DN 150 – view and sealing of the adjusting screw.

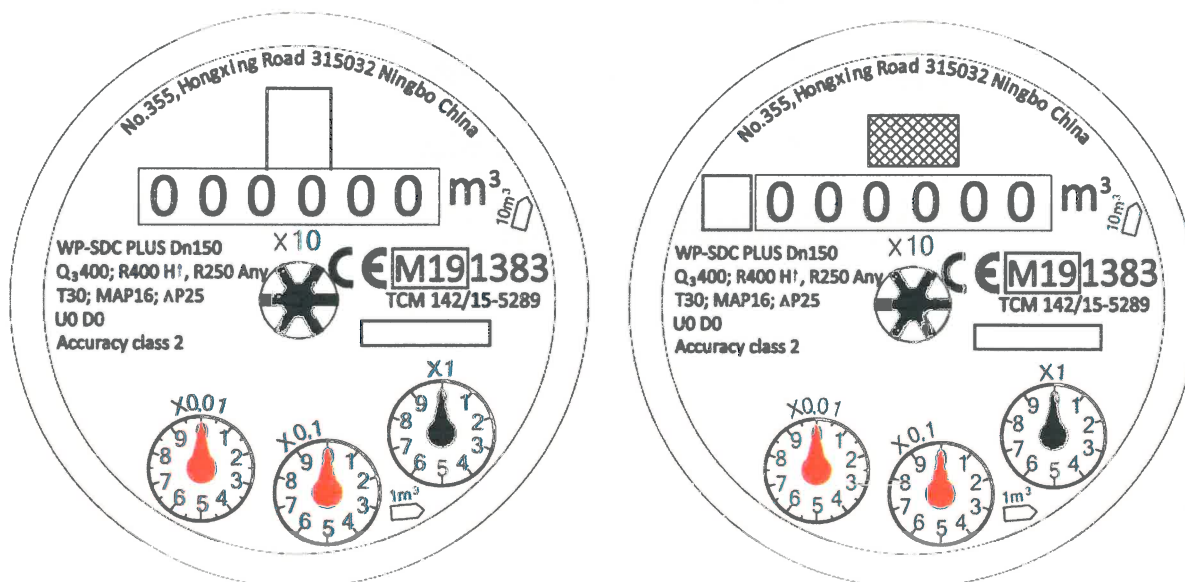


Figure 4: The dial plates of the water meter type WP-SDC PLUS – variant with 3 pointers. The meters can be equipped also with inductive pointers for AMR reading or magnetic pointers for reed impulse transmitter. Optionally the serial number and/or the CE mark can be placed on top of the plastic register cover on a part which is not removable without damage.

DN 50 to DN 125:



DN 150 to DN 200:



Manufacturers' logo or name



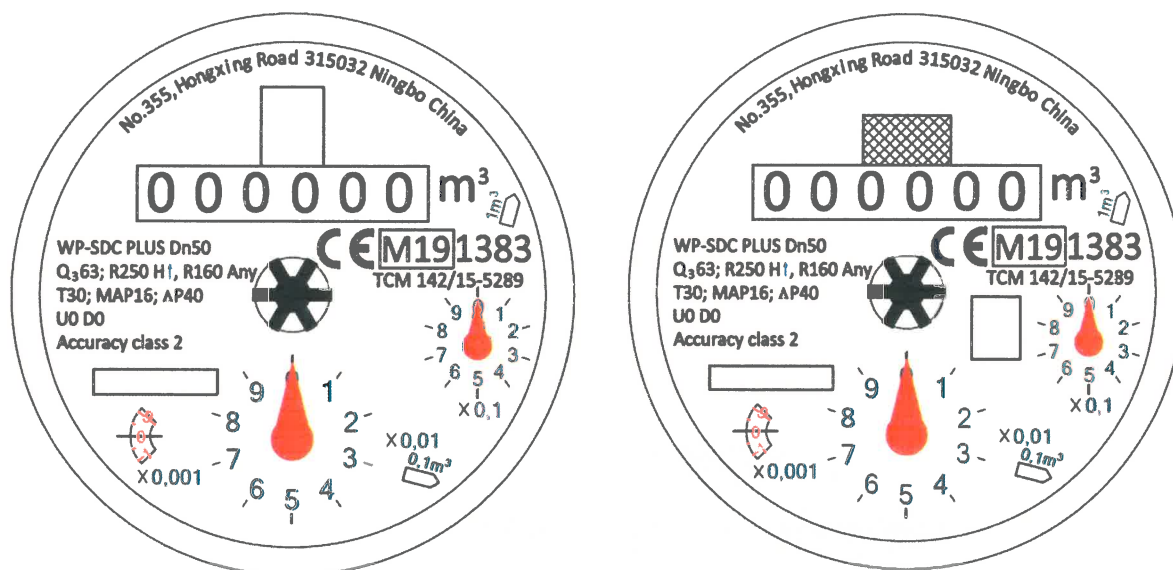
Customer's logo or name



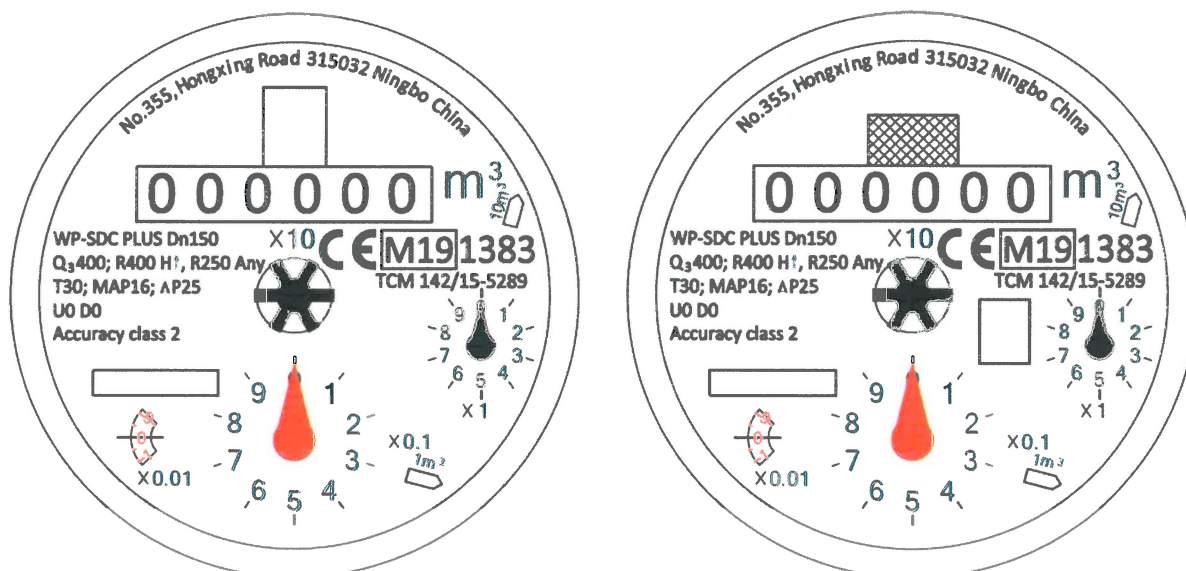
Serial number

Figure 5: The dial plates of the water meter type WP-SDC PLUS – variant with 2 pointers and rotary plate with a scale. The meters can be equipped also with inductive pointers for AMR reading or magnetic pointers for reed impulse transmitter. Optionally the serial number and/or the CE mark can be placed on top of the plastic register cover on a part which is not removable without damage.

DN 50 to DN 125:



DN 150 to DN 200:



Manufacturers' logo or name



Customer's logo or name



Serial number