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Notified Body

No. 1383

EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/12 – 4922

Page 1 from 12 pages

In accordance with: point 3 of annex 2 to Government Order No. 464/2005 Coll. (annex B of the Directive 2004/22/EC) from 19 October 2005 that lays down technical requirements on measuring instruments and implements in Czech Republic Directive 2004/22/EC of the European Parliament and of the Council.

Manufacturer: Ningbo Water Meter Co. LTD.
No. 99, Lane 268, Beihai Road
Ningbo 315033
China

For: water meter - single jet
type: SJ-SDC PLUS
Accuracy class: 2
Temperature class: T30, T50, T30/90 and T90

Valid until: 9 April 2022

Document number: 0115-CS-A007-12

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 12 pages.

Date of issue: 10 April 2012



Certificate approved by:

RNDr. Pavel Klenovský

1. Measuring device description

The single jet water meters type SJ-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. 2004/22/EC of measuring instruments, as amended.

The water meters type SJ-SDC PLUS are single jet rotary vane wheel water meters with dry mechanical indicating device (Plastic Can Calculator).

The water meters type SJ-SDC PLUS variant D2 consist of a brass body with connecting threads and inlet strainer, a regulating plate, a bush for impeller with agate bearing, a rotary vane impeller with magnetic ring and stainless steel shaft, a rubber O-ring, a pressure plate with agate bearing, a brass inner screw ring, a plastic gasket (optional), two antimagnetic protection rings, a dry mechanical indicating device, a plastic cover with a closing ring or a plastic clamp on cover.

The water meters type SJ-SDC PLUS variant D4 consist of a brass body with connecting threads and inlet strainer, an adjusting screw, a regulating plate, a bush for impeller with agate bearing, a rotary vane impeller with magnetic ring and stainless steel shaft, a plastic gasket, a rubber O-ring, a pressure plate with agate bearing, a brass inner screw ring, two antimagnetic protection rings, a dry mechanical indicating device and a plastic cover with a closing ring.

There are three variants for composition of the mechanical indicating device: variant with 5 numbered rollers and 4 rotary pointers, variant with 8 numbered rollers and 1 rotary pointer and variant with 7 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. There are two variants for reading of the numbered rollers in case of an indicating device with 8 rollers and 1 pointer: variant with top reading and variant with inclined reading.

The water meters type SJ-SDC PLUS can be equipped by a reed impulse transmitter which can be used for remote reading.

Water meters type SJ-SDC PLUS are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2011.6 Annex 1 from 30.06.2011. This documentation contains among others the assembly drawings No. ZN1.630.591~591g, 592~592c, 591y~591gy, 592y~592cy from 7/2009 and No. ZN1.630.590~590c, 590y~590cy, 523~523k, 523y~523ky, 524~524c, 524y~524cy from 6/2009.

2. Basic technical data

Nominal diameter (DN) [mm]:	15	20	25
Ratio Q_3 / Q_1 :	$\leq 200^1$		
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, T50, T30/90 and T90		
Water pressure classes:	MAP 16		
Pressure-loss classes:	ΔP 63		
Indicating range [m ³]:	99 999		
Resolution of the indicating device [m ³]:	0.00005 or 0.00002		
Resolution of the device for the rapid testing [pulse/L]:	62.0000	40.5000	22.2353
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H		
Length L [mm]:	80 to 115	130	160
Connection type– Screw thread size:	G $\frac{3}{4}$ B, G1B	G1B	G1 $\frac{1}{4}$ B, G1 $\frac{1}{2}$ 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		

¹ The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be at least 10.



Nominal diameter (DN):	Installation position:	Minimum flowrate (Q_1)	Transitional flowrate (Q_2)	Permanent flowrate (Q_3)	Overload flowrate (Q_4)
mm	-	m ³ /h	m ³ /h	m ³ /h	m ³ /h
15	H	≥ 0.0125	≥ 0.0200	$\leq 2.50^1$	≤ 3.13
20	H	≥ 0.0200	≥ 0.0320	$\leq 4.00^1$	≤ 5.00
25	H	≥ 0.0315	≥ 0.0504	$\leq 6.30^1$	≤ 7.88

¹ The value of Q_3 shall be chosen from the R5 line of ISO 3:1973.

3. Tests

Technical tests of the water meters type SJ-SDC PLUS were performed in compliance with the International Recommendation OIML R 49 Edition 2006 (E) with conformity to EN 14154:2005+A1:2007. Results are summarized in Test Report No. 6015-PT-P0004-12 from January 12th 2012.

4. The measuring device data

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

- The “CE” marking and supplementary metrology marking
- Number of EC-type examination certificate
- Manufacturer’s name or trademark
- Year of manufacturing (last two digits) and serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement (m³)
- Accuracy class 2
- Numerical value of Q_3 in m³/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 / V)
- 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

For the SJ-SDC PLUS meters with the closing ring the junction of the closing ring has to be sealed by a wire with a lead seal or secured by self-destructive sticker.

For the SJ-SDC PLUS meters with plastic clamp on cover the clamp on cover has to be marked by safeguarding marks.

For the SJ-SDC PLUS meters with outer adjusting screw (the D4 variant) the adjusting screw has to be sealed by a wire with a lead seal connecting the adjusting screw with the closing ring junction or with the meter body.

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

The location of seal is described in Figures 1 – 3.



Figure 1: The water meter type SJ-SDC PLUS variant D2, DN 15, 7+2 dial – view and sealing:



Figure 2: The water meter type SJ-SDC PLUS variant D2, DN 25, 7+2 dial – view and sealing:

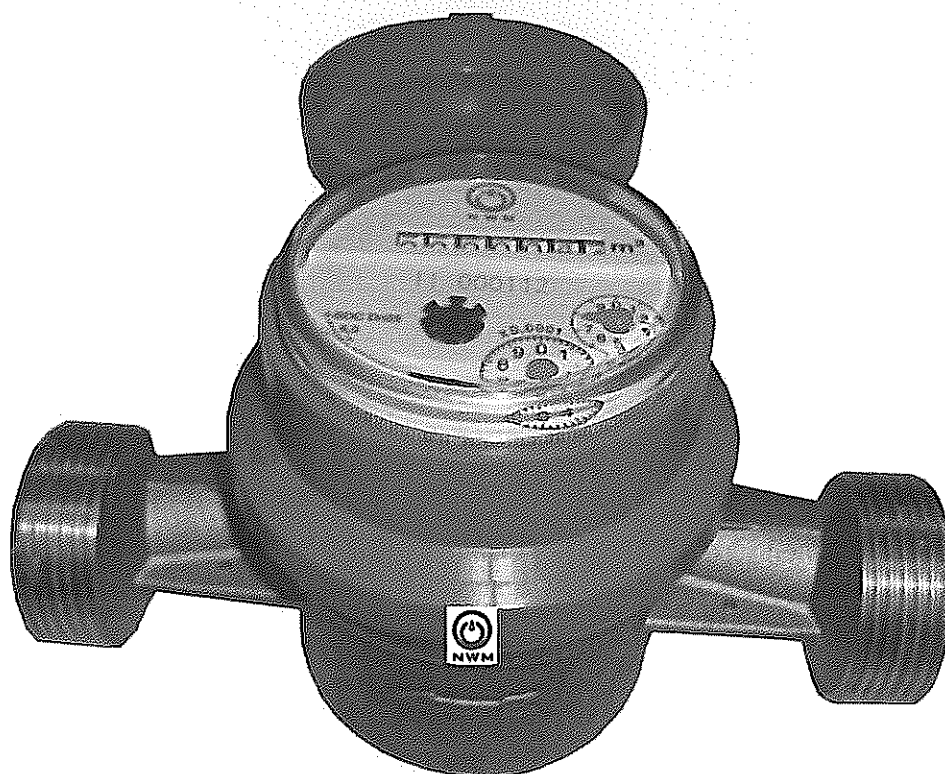


Figure 3: The water meter type SJ-SDC PLUS variant D4, DN 15, 7+2 dial – view and sealing:

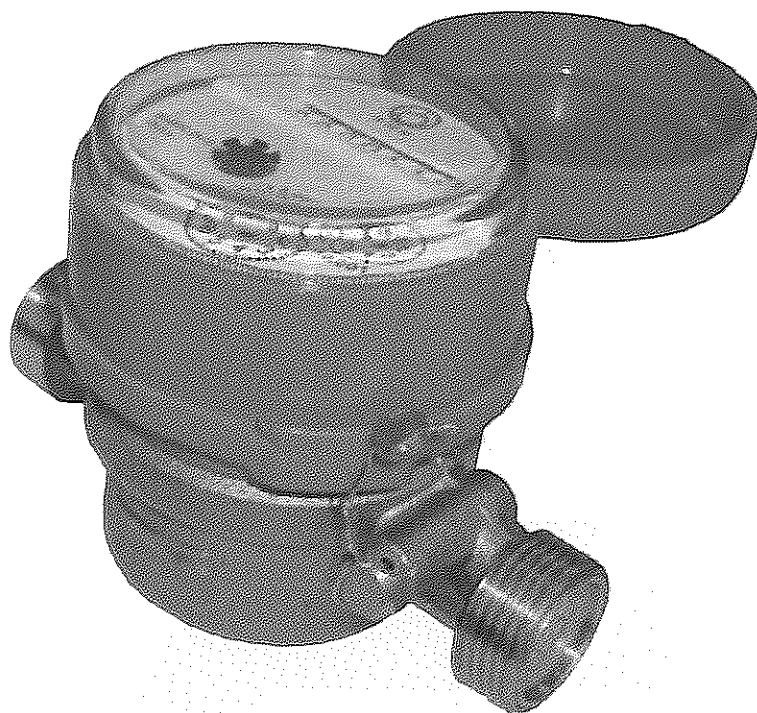


Figure 4: The water meter type SJ-SDC PLUS variant D4, DN 15, 5+4 dial – view:



Figure 5: The water meter type SJ-SDC PLUS variant D2, DN 15, 8+1 dial – view:



Technical drawing of a mechanical assembly, likely a valve or pump, showing a cross-section view with various components labeled with numbers 1 through 13. The drawing includes a title block with Chinese text and a table of parts.

Table 1: Assembly Drawing

Part No.	Part Name	QTY	Unit	Material	Remarks
1	Body	1	PC	ZN5.490.707	
2	Impeller	1	PC	ZN8.310.276	
3	Impeller	1	PC	ZN5.370.063	
4	Pressure Plate	1	PC	ZN8.14.3.080	
5	Radial Seal	1	PC	ZN8.380.057	
6	Magnetic Protection	1	PC	ZN8.380.064	
7	Register	1	PC	ZN8.380.064	
8	Register	1	PC	ZN8.380.064	
9	Register	1	PC	ZN8.380.064	
10	Register	1	PC	ZN8.380.064	
11	Register	1	PC	ZN8.380.064	
12	Register	1	PC	ZN8.380.064	
13	Register	1	PC	ZN8.380.064	

Technical drawing of a water meter assembly showing two views: I (top) and II (bottom). View I is a side cross-section showing the internal mechanism with numbered parts 1 through 14. View II is a front cross-section showing the internal mechanism with numbered parts 1 through 14. The drawing includes dimensions and a list of parts.

序号	代号	名称	数量	材料	单件重量	总计重量	备注
1	ZN5.375.027	Closing Ring	1				
2	ZN5.375.034	Lid-Pin-Cap	1				
3	ZN5.375.053	Lid-Pin-Cap	1				
4		Sealing lead	1				
5		Sealing wire	1				
6		Pressure Plate	1				
7		Inner Screw Ring	1				
8		Impeller Protection	1				
9		Magnetic Protection	1				
10		Register	1				
11		Connector	1				
12		Impeller	1				
13		Body part	1				
14		Connector	1				

序号	代号	名称	数量	材料	单件重量	总计重量	备注
1	ZN5.375.027	Closing Ring	1				
2	ZN5.375.034	Lid-Pin-Cap	1				
3	ZN5.375.053	Lid-Pin-Cap	1				
4		Sealing lead	1				
5		Sealing wire	1				
6		Pressure Plate	1				
7		Inner Screw Ring	1				
8		Impeller Protection	1				
9		Magnetic Protection	1				
10		Register	1				
11		Connector	1				
12		Impeller	1				
13		Body part	1				
14		Connector	1				

序号	代号	名称	数量	材料	单件重量	总计重量	备注
1	ZN5.375.027	Closing Ring	1				
2	ZN5.375.034	Lid-Pin-Cap	1				
3	ZN5.375.053	Lid-Pin-Cap	1				
4		Sealing lead	1				
5		Sealing wire	1				
6		Pressure Plate	1				
7		Inner Screw Ring	1				
8		Impeller Protection	1				
9		Magnetic Protection	1				
10		Register	1				
11		Connector	1				
12		Impeller	1				
13		Body part	1				
14		Connector	1				

序号	代号	名称	数量	材料	单件重量	总计重量	备注
1	ZN5.375.027	Closing Ring	1				
2	ZN5.375.034	Lid-Pin-Cap	1				
3	ZN5.375.053	Lid-Pin-Cap	1				
4		Sealing lead	1				
5		Sealing wire	1				
6		Pressure Plate	1				
7		Inner Screw Ring	1				
8		Impeller Protection	1				
9		Magnetic Protection	1				
10		Register	1				
11		Connector	1				
12		Impeller	1				
13		Body part	1				
14		Connector	1				

序号	代号	名称	数量	材料	单件重量	总计重量	备注
1	ZN5.375.027	Closing Ring	1				
2	ZN5.375.034	Lid-Pin-Cap	1				
3	ZN5.375.053	Lid-Pin-Cap	1				
4		Sealing lead	1				
5		Sealing wire	1				
6		Pressure Plate	1				
7		Inner Screw Ring	1				
8		Impeller Protection	1				
9		Magnetic Protection	1				
10		Register	1				
11		Connector	1				
12		Impeller	1				
13		Body part	1				
14		Connector	1				

序号	代号	名称	数量	材料</
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Figure 8: The water meter type SJ-SDC PLUS variant D2 with inclined reading - assembly drawings:

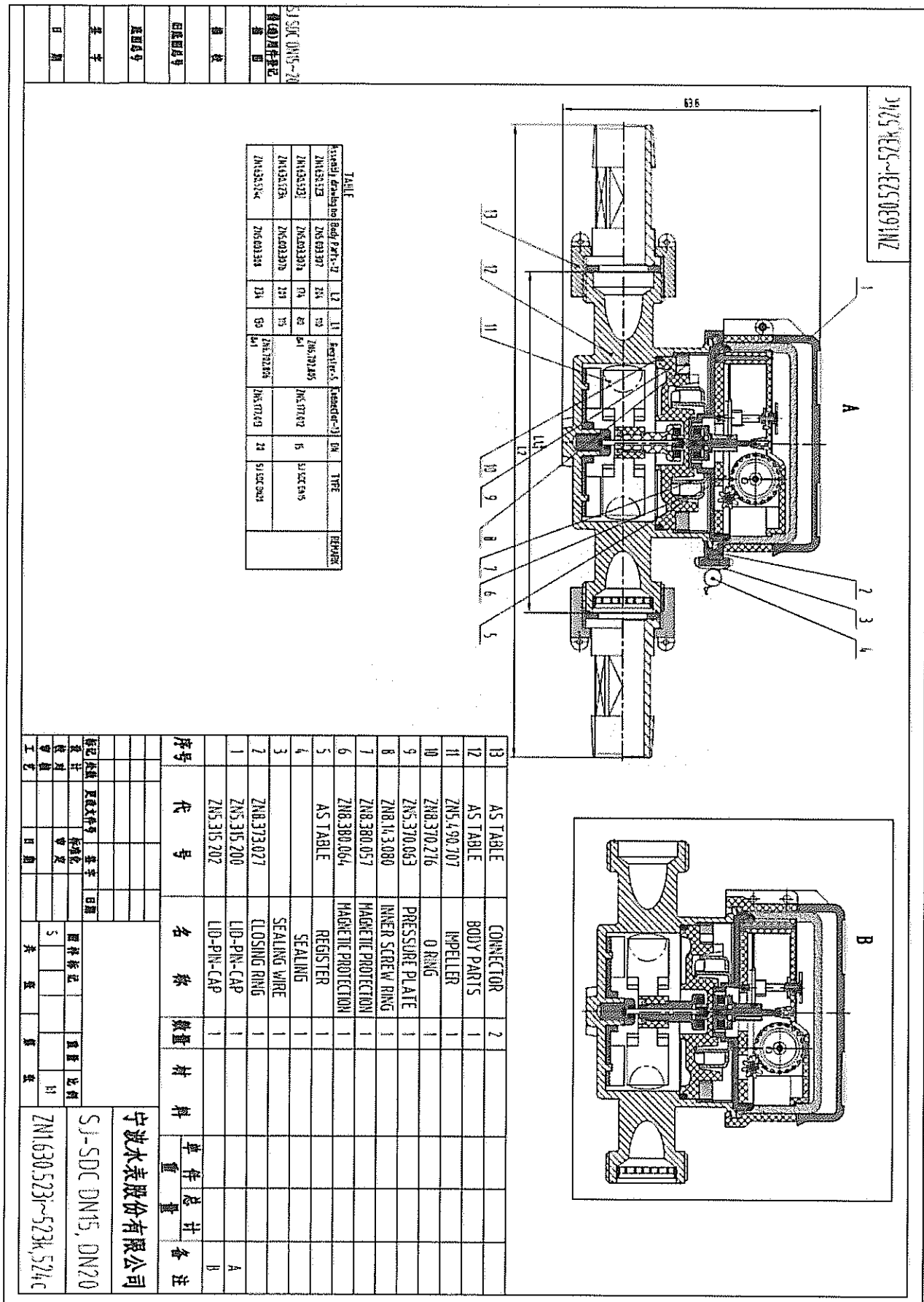
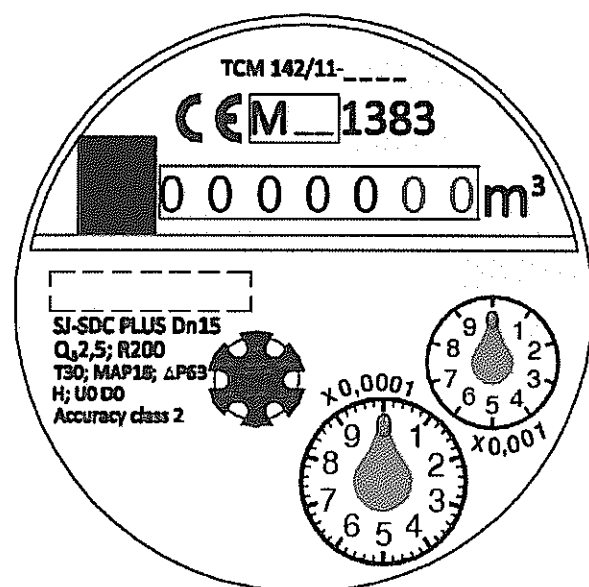
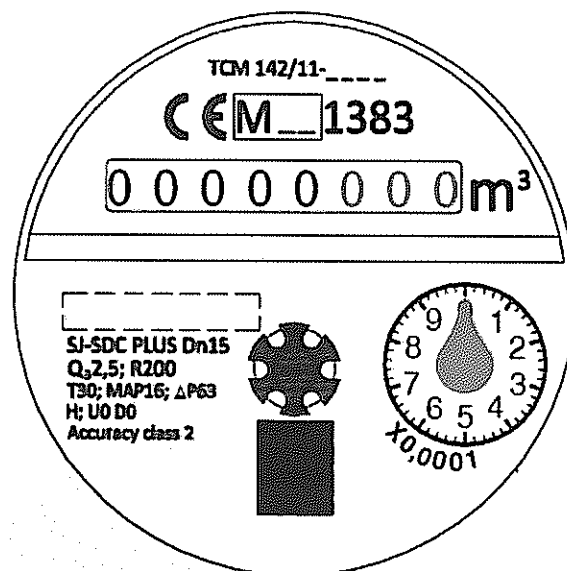
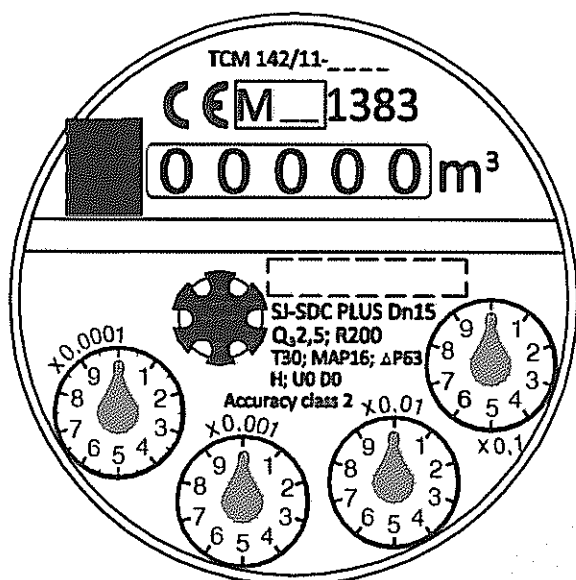
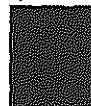


Figure 9: The dial plates of the water meter type SJ-SDC PLUS: the 5+4, 8+1 and 7+2 registers:



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space for manufacture's year and serial number

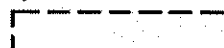
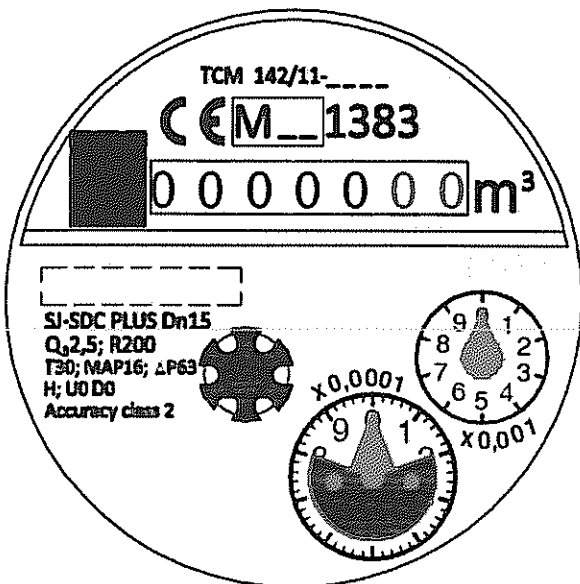
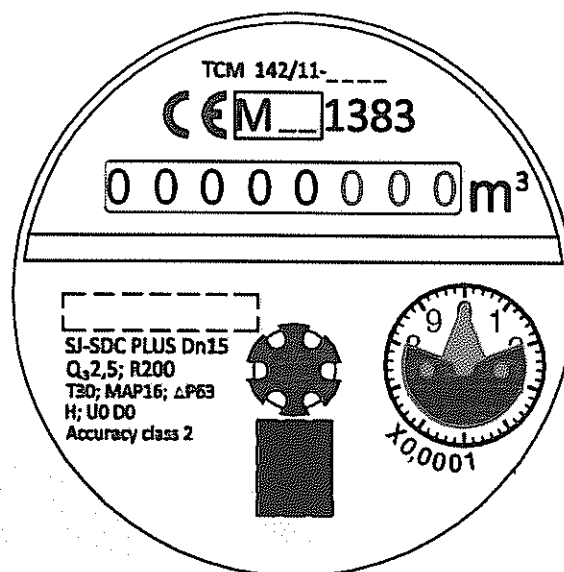
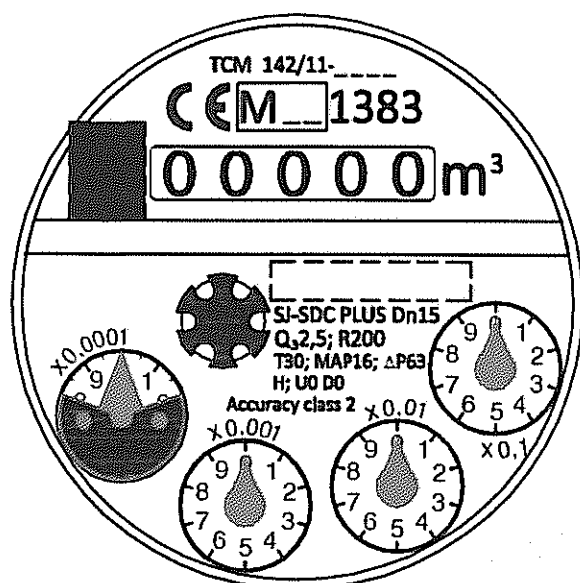
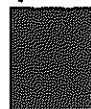


Figure 10: The dial plates of the water meter type SJ-SDC PLUS: the 5+4, 8+1 and 7+2 registers equipped for remote reading:



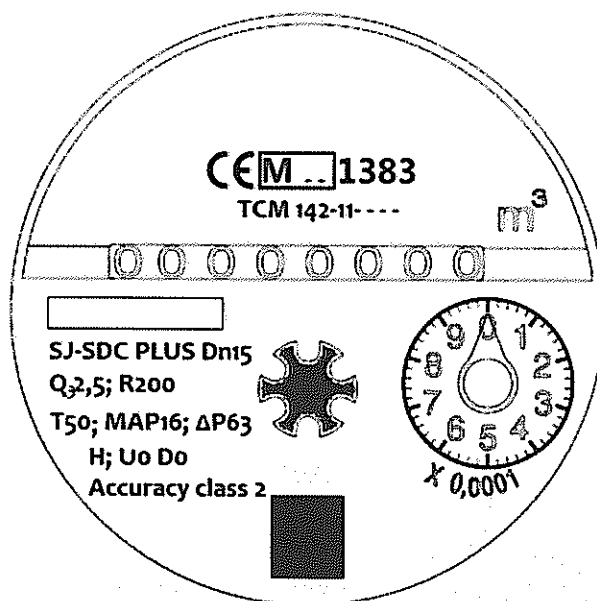
space for manufacture's logo or name



space for manufacture's year and serial number



Figure 11: The dial plate of the water meter type SJ-SDC PLUS with inclined reading, the 8+1 register:



Manufacture's mark or logo



manufacture year and serial number

