



EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/11 - 4813

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:** Apator Powogaz S.A.
Klemensa Janickiego 23/25
60 542 Poznań
Poland
- For:** Water meter - combination
Type: MWN/JS

Accuracy class: 2
Temperature class: T30 and T50
- Valid until:** 7 March 2031
- Document No:** 0115-CS-A009-11
- Description:** Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.
- Date of issue:** 3 March 2021

Certificate approved by:




RNDr. Pavel Klenovský

1 Characteristics of instrument

The combination water meters type MWN/JS 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 Czech Republic by Government Order No. 120/2016 Coll.), as amended.

There are the following versions due to the type:
(„XX” is the type of lateral water meter)

MWN/XX – basic version with the ability to read the radio transmitter. Radio module is not covered by this certification.

MWN/XX-NK - equipped with a reed contact pulse transmitter.

MWN/XX-NKP - can be equipped with a reed contact NK pulse transmitter during operation of water meter.

MWN/XX-IP68 - can be equipped with hermetically sealed register (IP68) and pulse transmitter reed NK or can be equipped with a reed pulse NK transmitter during operation of water meter.

MWN/XX-08 – The water meter with mechanism ready for optical and inductive technology reading with IP68 protection that can be equipped with a radio module during operation of water meter.

The water meter can be divided into three main groups:

- The main water meter type MWN, which is a dry water meter with a horizontal axis of an impeller.
- Lateral water meter types: JS which is a single-jet water meter.
- Switching valve spring S-type. Operation of the valve is automatic without use of an external energy source.

The main type of water meter MWN-executed and marked in accordance with the type certification: SK 08-M001-SMU002, where all measurement parameters and technical description of water meters are set.

Lateral meter type JS -executed and marked in accordance with the type certification: SK 20-M001-SMU059; SK09-MI001-SMU007; TCM 142/11 4832 where all measurement parameters and technical description of water meters are set.

Switching valve S-type - directs water through the lateral meter at low flowrate and both – lateral and main meters at high flowrate by displacement of a control part and deflection of spring.

High values of liquid volume flux can flow only through the main meter.

Lateral water meters are protected against overload by placing restricting valve cooperating with the spring loaded valve in the drain flow.

Measuring ranges of main and lateral water meter interpenetrate. Measuring range of combination meter is contained within the minimum volume flow of lateral meter to the maximum volume flow of main meter. Reading total volume of water passing through the combination meter requires the sum of the readings indicated by the volume of main and lateral meters.

The water meters type MWN/JS shall be installed to operate in horizontal position only with the indicating device positioned at the top.

2 Main characteristics

Basic technical data of water meters type MWN/JS:

Manufacturer:	Apator Powogaz S.A. Klemensa Janickiego 23/25, 60-542 Poznań, Poland									
Model number:	MWN/JS									
Type of used water meters:	MWN50 JS4,0	MWN65 JS4,0	MWN80 JS4,0	MWN100 JS4,0	MWN150 JS16					
Nominal diameter:	50	65	80	100	150					
Type details:										
Q_1 [m ³ /h]:	flowrates are shown in Table <i>Basic metrological data (flowrates)</i>									
Q_2 [m ³ /h]:										
Q_3 [m ³ /h]:										
Q_4 [m ³ /h]:										
Q_3/Q_1 :	1000	630	1600	1000	2500	1600	4000	2500	2500	1600
Q_2/Q_1 :	1.6									
Q_4/Q_3 :	1.25									
Measuring principle:	Combined water meter – woltman and single jet									
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, T50									
Water pressure class:	MAP 16									
Pressure loss class:	Δp 63									
Maximum admissible temperature [°C]:	50									
Maximum admissible pressure [MPa]:	1.6									
Orientation limitation:	horizontal position with the indicating device at the top H↑									
Indicating range [m ³]:	999 999 / 99 999								9 999 999, 99 999	
Resolution of the indicating device [m ³]:	0.0005 / 0.00005								0.005, 0.00005	
Resolution of the device for rapid testing [m ³]:	-									
EUT testing requirements (OIML R 49-2:2013, 8.1.8):										
Category:	-									
Case:	-									
Installation details:										
Connection type (screw thread):	Flange									
The installation sensitivity class:	2									
Minimum straight length of inlet pipe [mm]:	0									
Minimum straight length of outlet pipe [mm]:	0									
Flow conditioner (details if required):	No									
Mounting:	Flange									
Other relevant information:	-									



<i>Length [mm]:</i>	270, 300	300	300, 350	360, 350	500
<i>Reed switch power supply (U_{max} / I_{max}):</i>	Max. 24V / 0.1 A				
<i>Reed switch K-factor (L / impulse):</i>	MWN: 2.5; 5; 10; 25; 50; 100; 250; 500; 1000 / JS: 0.25; 0.5; 1; 2.5; 5.0; 10; 25; 50; 100; 250; 500; 1000				For DN150 see line below
<i>Reed switch K-factor (L / impulse): For MWN/JS 150/16-S</i>	MWN: 25; 50; 100; 250; 500; 1000; 2500; 5000; 10000 / JS: 0.25; 0.5; 1; 2.5; 5.0; 10; 25; 50; 100; 250; 500; 1000				
Information specified by the manufacturer (information in the table below are not certified)					
<i>Environmental class:</i>	B or O				
<i>Electromagnetic environment:</i>	-				
<i>Climatic and mechanical environments</i>	Closed spaces /from 5°C to 55°C/ mechanical class M1				

Basic metrological data (flowrates)

Manufacturer:	Apator Powogaz S.A. Klemensa Janickiego 23/25, 60-542 Poznań, Poland									
Model number:	MWN/JS									
Nominal diameter:	50	65	80	100	150					
Type details:										
Q_4 [m ³ /h]:	31.25	31.25	50	50	78.75	78.75	125	125	312.5	312.5
Q_3 [m ³ /h]:	25	25	40	40	63	63	100	100	250	250
Q_2 [m ³ /h]:	0.04	0.064	0.04	0.064	0.04	0.064	0.04	0.064	0.16	0.256
Q_1 [m ³ /h]:	0.025	0.04	0.025	0.04	0.025	0.04	0.025	0.04	0.1	0.16
Q_{x1} [m ³ /h]:	1.1	1.1	1.3	1.3	1.5	1.5	1.6	1.6	4.5	4.5
Q_{x2} [m ³ /h]:	2.5	2.5	2.8	2.8	2.7	2.7	2.8	2.8	8.5	8.5
Q_3/Q_1 :	1000	630	1600	1000	2500	1600	4000	2500	2500	1600

3 Tests

Technical tests of the water meters type MWN/JS were performed in compliance with the International Recommendation OIML R 49 Edition 2013 (E) with conformity to EN ISO 4064:2017, Test Report No. 6015-PT-P010-11, 6015-PT-P0046-13 and 6015-PT-P0003-21. And technic documentations performed on the base SK 08-M001-SMU002; SK 20-M001-SMU059; SK09-MI001-SMU007; TCM 142/11 4832.

4 Conformity marks and inscription

The water meters type MWN/JS shall be clearly and indelibly marked with the following information:

- Water meter type
- Unit of measurement (m³)
- Numerical value Q_3 in m³/h ($Q_3 \times \times$) and the ratio Q_3/Q_1 ,
- EU-type examination certificate number
- Manufacturer's name, registered trade name or registered trade mark
- Post address of manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture
- 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 $\times \times$)
- Letter H↑ (horizontal position with the indicating device at the top)
- The temperature class (T $\times \times$)
- The pressure loss class ($\Delta P \times \times$)
- The installation sensitivity class (Ux Dx)
- CE marking and metrology marking in line with the Directive 2014/32/EU

These markings shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use. Example is in Figure 1.

5 Additional specifications

The water meters type MWN/JS shall be put onto the market in line with the procedure of conformity assessment according to the Annex D or F of the Directive 2014/32/EU as well as in compliance with the technical description of this report and shall be tested in accordance with the requirements determined in EN ISO 4064-1:2017, respectively OIML R 49-1:2013.

A metrological test may only be performed by a producer, or a notified body respectively in line with the conformity assessment procedure by the D or F Annexes of the Directive 2014/32/EU, respectively.

6 Ensuring the integrity of the instruments

The characteristic of conformity assessment should be imposed on the seal hanged on a wire threaded through the holes in the bolts connecting the main water meter and valve body spring.

Security features should be imposed on the seal hanging on a wire threaded through the holes.

- The head of the blanking plug in the flange of the intake (if any) of the main meter
- The nut connecting the inlet and the main meter rib body
- In flange allows the connection meter inlet side of the hyphen and the head of the screw mounting flange with the inlet connector

Characteristics of the conformity assessment of the main and lateral water meters shall be imposed according to the type examination certificates for these meters. The locations of seals are described in Figure 1.

7 Drawings of the instrument

Water meters type MWN/JS are manufactured according to the technical documentation of manufacturer. Technical documentation contains following drawings:

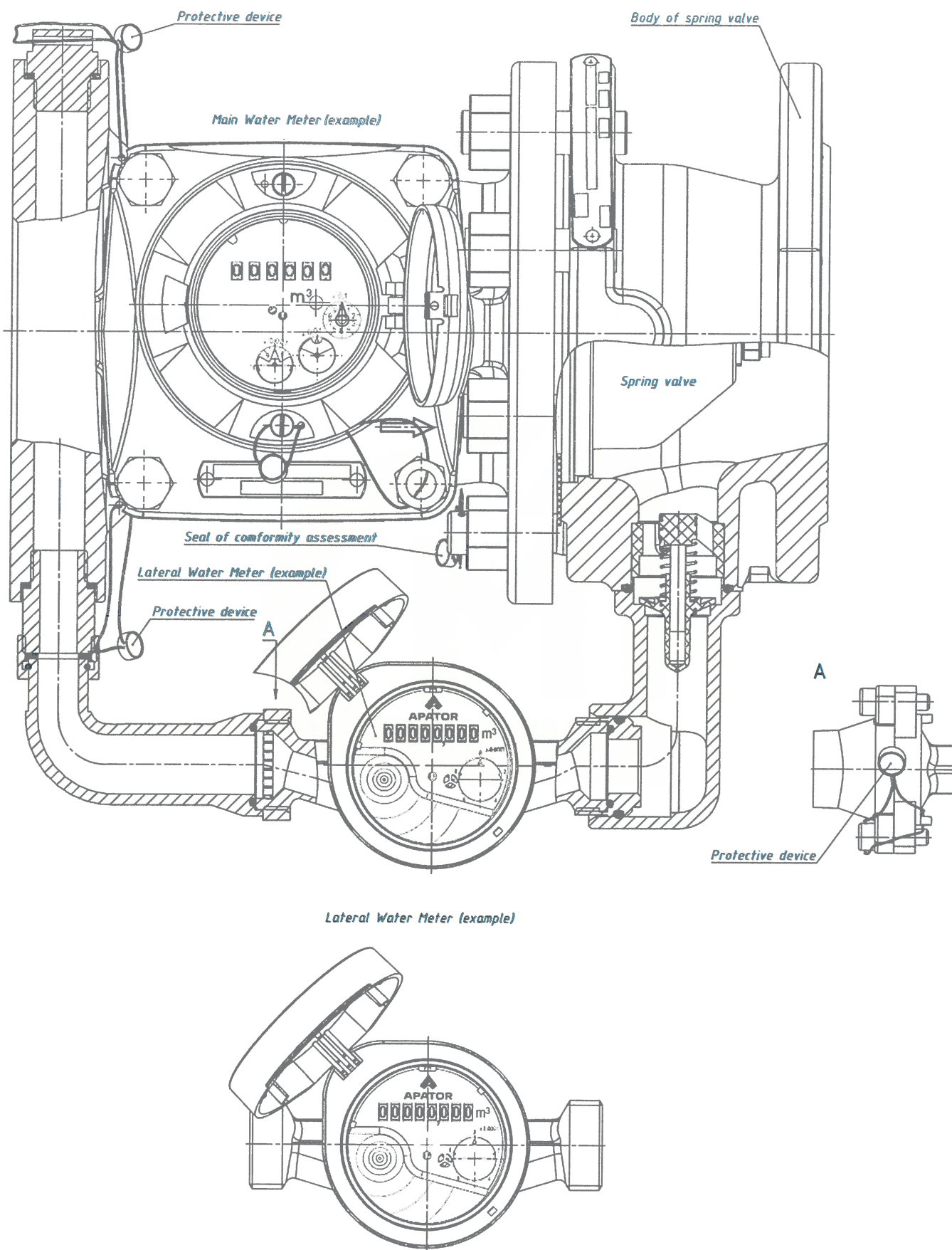
Document reference	Date	Brief description
5905-000000	26.2.2021	DN50 MWM/JS – Outline and assembly drawings
5906-000000	26.2.2021	DN50 MWM/JS Smart D+ – Outline and assembly drawings
5915-000000	22.12.2020	DN65 MWM/JS – Outline and assembly drawings
5916-000000	22.12.2020	DN65 MWM/JS Smart D+ – Outline and assembly drawings
5925-000000	22.12.2020	DN80 MWM/JS – Outline and assembly drawings
5926-000000	22.12.2020	DN80 MWM/JS Smart D+ – Outline and assembly drawings
5935-000000	22.12.2020	DN100 MWM/JS – Outline and assembly drawings
5936-000000	22.12.2020	DN100 MWM/JS Smart D+ – Outline and assembly drawings
5945-000000	22.12.2020	DN150 MWM/JS – Outline and assembly drawings
5905-000000 Exploded view	26.2.2021	DN50 MWM/JS 50/4 – Exploded view
5915-000000 Exploded view	26.2.2021	DN65 MWM/JS 65/4– Exploded view
5925-000000 Exploded view	26.2.2021	DN80 MWM/JS 80/4– Exploded view
5935-000000 Exploded view	26.2.2021	DN100 MWM/JS 100/4– Exploded view
5945-000000 Exploded view	26.2.2021	DN150 MWM/JS 150/16– Exploded view
0000-004735	2021-02-24	Side plate description of JS4-05 R160 side meter
5000-220050	2019-08-23	Dial plate description of MWN50 main meter
5000-230050	2019-08-23	Dial plate description of MWN65 main meter
5000-610050	2019-08-23	Dial plate description of MWN80 main meter

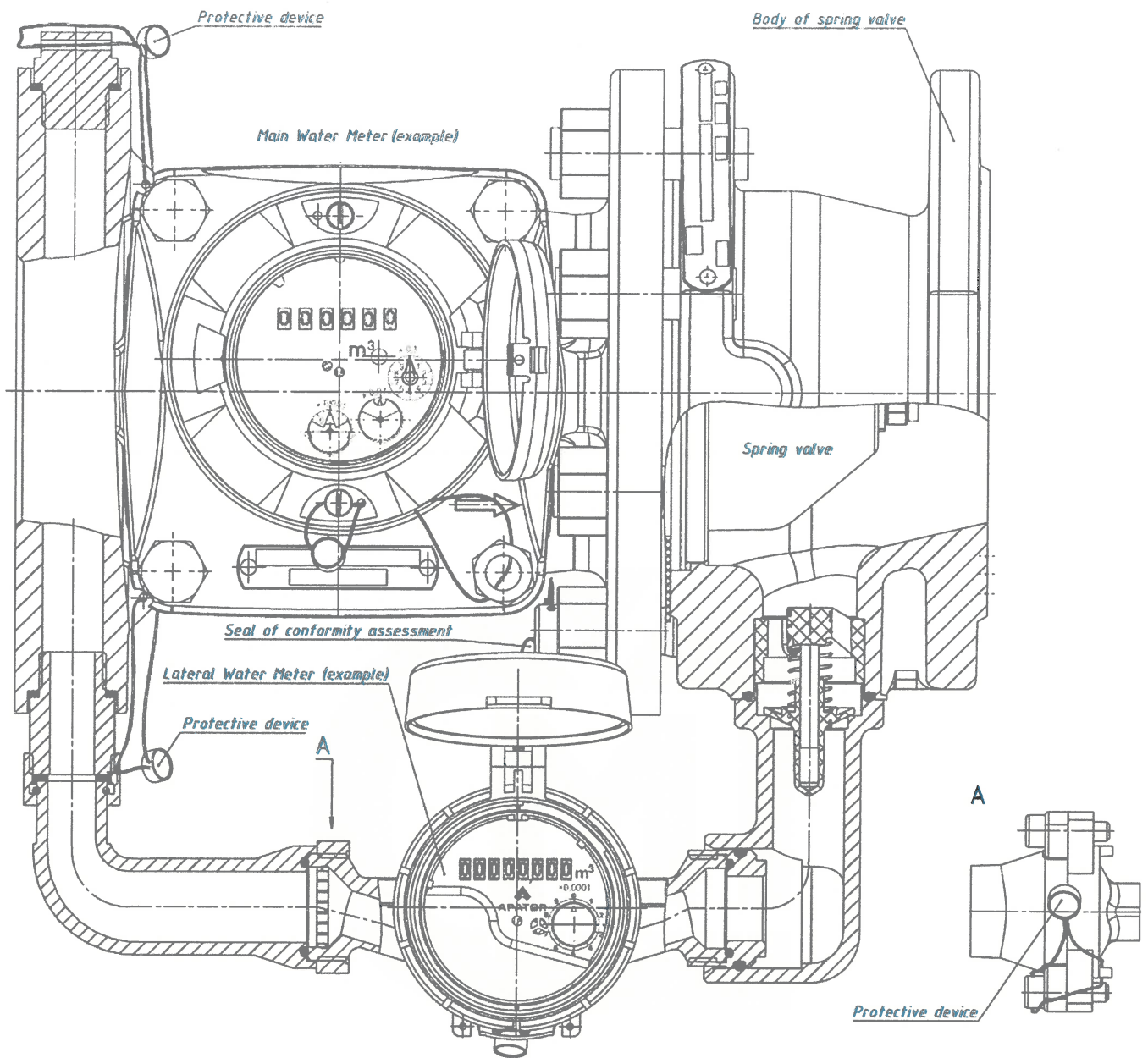
5000-620050	2019-09-02	Dial plate description of MWN100 main meter
5000-670050	2019-09-02	Dial plate description of MWN150 main meter
9004-040770	2020-05-29	Dial plate description of JS4-02 R160 side meter
9004-460708	2020-01-15	Dial plate description of JS4-04 R160 side meter
9004-770703	2021-02-24	Dial plate description of JS4-05 R160side meter
9004-950600	2019-08-23	Dial plate description of JS4-02 R100 side meter
9007-240701	2020-07-01	Dial plate description of JS4-NK R100 side meter
9007-640870	2020-07-02	Dial plate description of JS16-01 R160 side meter
9007-641171	2020-06-24	Dial plate description of JS16-01 R100 side meter
9007-740870	2020-07-02	Dial plate description of JS16-01-NK R160 side meter
9007-741070	2020-12-15	Dial plate description of JS16-01-NK R100 side meter

History of additions

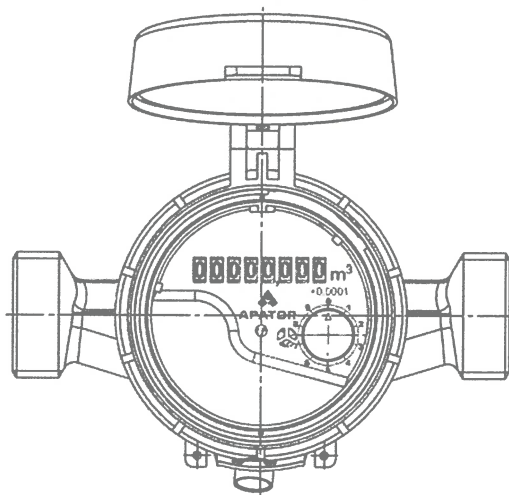
Addition No.	Description
Addition 0	Issuing certificate
Addition 1	Added lateral meter type JS (TCM 142/11-4832)
Addition 2	Added lateral meter type MTK (CH-MI001-08013-02)
Addition 3	Renewal of certificate, added JS Smart D+ from SK 20-M001-SMU059 certificate (up to R160); Removed MWN/JM; MWN/WM; MWN/WS meters.

Figure 1: The water meter type MWN/JS – view and sealing, example of register:

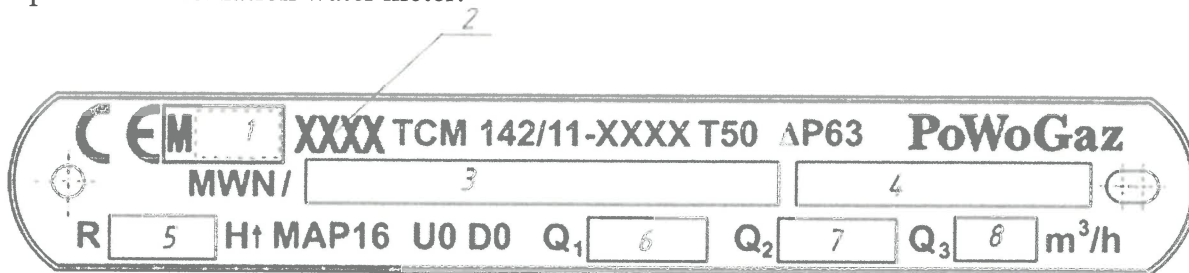




Lateral Water Meter (example)



- Data plate of combination water meter:



1. Year of metrology testing
2. Number of the notified body
3. Type of device
4. Year of manufacturer (last two digits) and the serial number
5. The ratio Q_3/Q_1
6. Numerical value Q_1
7. Numerical value Q_2
8. Numerical value Q_3