



EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/11 – 4832

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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: APATOR POWOGAZ S.A.
Klemensa Janickiego 23/25
60-542 Poznań
Poland

For: water meter – single jet
type: JS; JS90; JS130

Valid until: 17 May 2021

Document number: 0115-CS-A020-11

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 8 pages.

Date of issue: 18 May 2011



Certificate approved by:

RNDr. Pavel Klenovský

1. Measuring device description

The single jet, mechanical water meters type JS; JS90; JS130 with permanent flowrates of 1,6 m³/h, 2,5 m³/h, 4 m³/h, 6,3 m³/h, 10 m³/h and 16 m³/h are designed to measure 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 JS; JS90; JS130 with permanent flowrates of 1,6 m³/h, 2,5 m³/h, 4 m³/h, 6,3 m³/h, 10 m³/h and 16 m³/h consist of a dry measuring section and dry mechanical indicating device. Water flows in the measuring section and rotates the vane wheel of transducer. The rotation is transmitting by a magnetic clutch to the system of gear wheels to register. Water meters may be equipped with units that improve their resistance to external magnetic field. The register consists of four pointers and a fives rollers or one pointer and eight rollers. The measuring section and dry mechanical indicating device are connected to meter body by retaining ring or by a shield of counting mechanism.

The adjustment of the water meter is executed by turn of sealing plate with ribs or takes place through the closing or opening of the by pass pipe of the measuring unit.

The water meter shall be installed to operate in horizontal or vertical position.

There is version NK with a reed contact pulse transmitter and NKP with socket pre equipped for later installation of pulse transmitter or remote reading devices – radio module. (Radio module is not covered by this certification) There is a magnet on one of the pointers in the counting mechanism in the both version NK and NKP. There is also the performance of the meter to the mechanism of counting the degree of protection IP68 as well as NK or NKP.

In the version adapted for fitting the radio or remote meter reading devices on one of the pointers a magnet has been suited to fit a radio device for wireless reading or a remote meter reading device.

Water meters are manufactured according to technical documentation of the company APATOR POWOGAZ S.A.:

No.30-9530-000000; No.30-9730-000000; No.30-9538-000000; No.30-1089-000000; No.30-1087-000000; No.30-1086-000000
 No.30-9550-000000; No.30-9731-000000; No.30-9579-000000; No.30-1088-000000; No.30-1084-000000; No.30-1083-000000
 No.30-9555-000000; No.30-9732-000000; No.30-9559-000000; No.30-1055-000000; No.30-1053-000000; No.30-1057-000000
 No.30-9570-000000; No.30-9733-000000; No.30-9574-000000; No.30-1056-000000; No.30-1054-000000; No.30-1058-000000
 No.30-9540-000000; No.30-9670-000000; No.30-9548-000000; No.30-1049-000000; No.30-1043-000000; No.30-1042-000000
 No.30-9560-000000; No.30-9671-000000; No.30-9589-000000; No.30-1289-000000; No.30-1288-000000; No.30-1287-000000
 No.30-9565-000000; No.30-9672-000000; No.30-9569-000000; No.30-1291-000000; No.30-1286-000000; No.30-1285-000000
 No.30-9580-000000; No.30-9673-000000; No.30-9584-000000; No.30-1255-000000; No.30-1253-000000; No.30-1251-000000
 No.30-1256-000000; No.30-1254-000000; No.30-1252-000000
 No.30-1249-000000; No.30-1248-000000; No.30-1247-000000

2. Basic technical data

Meter type:	JS-XX; JS90-XX (XX – is a version of the basic design with or without equipment.)		
Nominal diameter DN [mm]:	15 or 20		
Minimum flowrate Q_1 [m ³ /h]:	H	≥ 0.01	≥ 0.013
	V	≥ 0.025	≥ 0.031
Transitional flowrate Q_2 [m ³ /h]:	H	≥ 0.016	≥ 0.02
	V	≥ 0.04	≥ 0.05
Permanent flowrate Q_3 [m ³ /h]:		≤ 1.6 ¹	≤ 2.5 ¹
Overload flowrate Q_4 [m ³ /h]:		≤ 2	≤ 3.125
Ratio Q_3 / Q_1 :	H	≤ 160 ²	≤ 200 ²
	V	≤ 63 ²	≤ 80 ²
Ratio Q_2 / Q_1 :	1.6		
Ratio Q_4 / Q_3 :	1.25		
Accuracy class:	2		
Orientation limitation:	H or V		
Maximum permissible error (MPE) lower flow range:	± 5 %		
Maximum permissible error (MPE) upper flow range:	± 2 % for water having a temperature ≤ 30 °C ± 3 % for water having a temperature > 30 °C		
Temperature class:	T30 ÷ T90; T30/90,		
Maximum admissible temperature [°C]:	30 ÷ 90		
Water pressure classes:	MAP 16		



Maximum admissible pressure [MPa]:	1.6
Pressure-loss classes(ΔP)[kPa]:	63
Total length [mm]:	$105 \geq L \leq 130$
Connection type: Screw thread	$G^{3/4}$ or $G^{7/8}$ or G1
Indicating range [m ³]:	99999
Resolution of the indicating device [dm ³]:	0.05
Flow profile sensitivity classes:	U0, D0
Reed contact K-faktor [impulse / L]:	0,25; 0,5; 1; 2,5; 5; 10; 25; 50; 100; 250; 500; 1000
Reed contact power supply (U_{max} / I_{max}):	Max. 24V / 0,1 A

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

² The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 10.

Meter type:	JS-XX; JS130-XX (XX – is a version of the basic design with or without equipment.)		
Nominal diameter DN [mm]:	25 or 32 or 40		
Minimum flowrate Q_1 [m ³ /h]:	H	≥ 0.032	≥ 0.05
	V	≥ 0.08	≥ 0.125
Transitional flowrate Q_2 [m ³ /h]:	H	≥ 0.05	≥ 0.08
	V	≥ 0.126	≥ 0.2
Permanent flowrate Q_3 [m ³ /h]:		≤ 6.3 ¹	≤ 10 ¹
Overload flowrate Q_4 [m ³ /h]:		≤ 7.875	≤ 12.5
Ratio Q_3 / Q_1 :	H	≤ 200 ²	
	V	≤ 80 ²	
Ratio Q_2 / Q_1 :		1.6	
Ratio Q_4 / Q_3 :		1.25	
Accuracy class:		2	
Orientation limitation:		H or V	
Maximum permissible error (MPE) lower flow range:		$\pm 5\%$	
Maximum permissible error (MPE) upper flow range:		$\pm 2\%$ 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 or T50	
		T30 ÷ T130; T30/130 only for $Q_3 / Q_1 \leq 100$ for H and $Q_3 / Q_1 \leq 50$ for V	
Maximum admissible temperature [°C]:		30 ÷ 130	
Water pressure classes:		MAP 16	
Maximum admissible pressure [MPa]:		1.6	
Pressure-loss classes(ΔP)[kPa]:		63	
Total length [mm]:		$165 \geq L \leq 300$	
Connection type: Screw thread		$G1^{1/4}$ or $G^{1/2}$ or G 2	
Indicating range [m ³]:		99999	
Resolution of the indicating device [dm ³]:		0.05	
Flow profile sensitivity classes:		U0, D0	
Reed contact K-faktor [impulse / L]:		0,25; 0,5; 1; 2,5; 5; 10; 25; 50; 100; 250; 500; 1000	
Reed contact power supply (U_{max} / I_{max}):		Max. 24V / 0,1 A	

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

² The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 10.



3. Test

Technical tests of the JS, JS90, JS130 water meters were performed in compliance with the International Recommendation OIML R 49 Edition 2006 (E) with conformity to EN 14154:2005, Test Report No. 6015-PT-P029-10 from May 16. 2011.

4. The measuring device data

There are following data on the measurement device:

- The “CE” marking and supplementary metrology marking
- Number of EC-type examination certificate
- Name or trademark of manufacturer
- Year of manufacture (last two digits)
- Measuring device type
- The serial number (as near as possible to the indicating device)
- 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 , ($R \times \times$)
- The maximum admissible pressure ($\times \times$ MPa or $\times \times$ bar)
- The temperature class ($T \times \times$)
- The maximum pressure lost ($\Delta P \times \times$)
- Classes on sensitivity to irregularities in velocity field ($U_0 D_0$)
- Direction of flow arrow on both sides of the meter body

and 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 location of the seal is described in Figure 1.

Figure 1: The sealing of JS and JS-NK

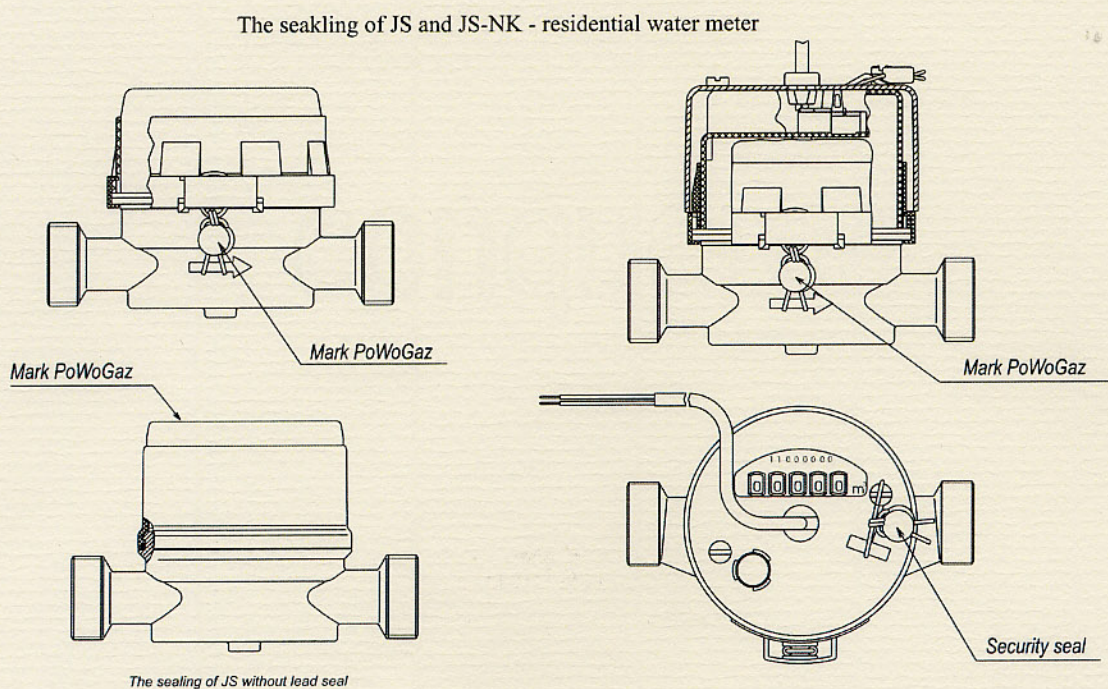
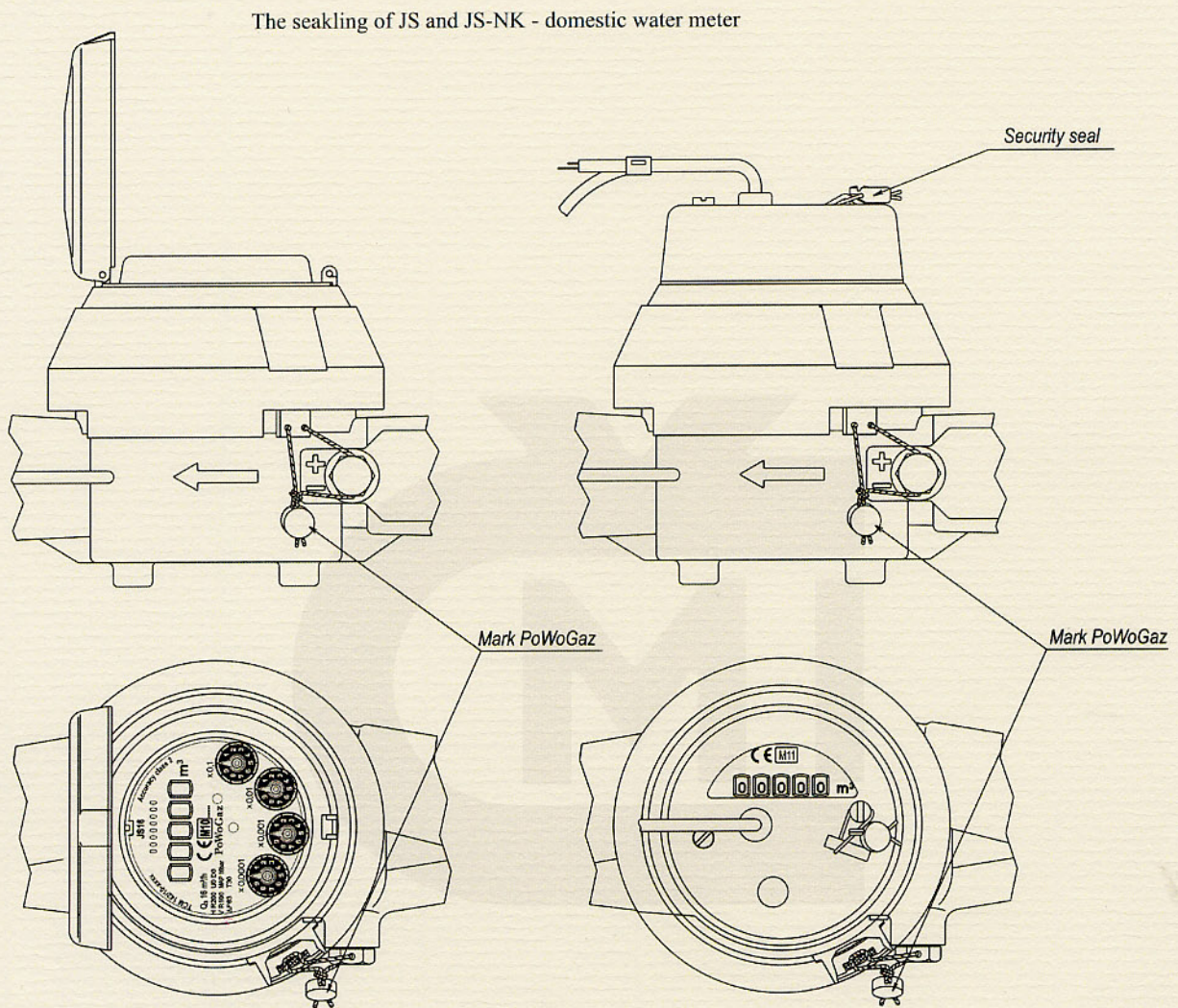


Figure 2: The assembling of JS:

WYKAZ MATERIAŁÓW
wodomierzy skrzydełkowych do wody zimnej i ciepłej o
DN15, DN20

CODE Nr części	DESCRIPTION Opis	MATERIALS Materiały
1	LID (OPTIONAL)	Lexan 121 R 205184 niebieski
	Pokrywka (opcja)	
2	HINGE PIN (OPTIONAL)	Brass, Stainless steel
	Kolek (opcja)	
3	COVER (OPTIONAL)	Terluran HH-112 (ABS) niebieski
	Oslona (opcja)	
4	REGISTER	Terpolimerakrylonit, Poliacetal, Stal nierdzewna
	Mechanizm zliczający	
5	FIXING RING (OPTIONAL)	Lexan 121 R 205184 niebieski
	Pierścień mocujący (opcja)	
6	ANTI-MAGNETIC RING (OPTIONAL)	PASC 60
	Pierścień antymagnetyczny (opcja)	
7	HOLDING RING	S235JR+N
	Pierścień dociskowy	
8	SEALING PLATE	Noryl GFN1630V-801 lub CuZn40Pb2(MO58), Albis-Polyamid 66PAFC10, Szafir
	Płyta uszczelniająca	
9	O-RING	Guma EPDM 80°Sha 150°C
	Pierścień uszczelniający	
10	VANE WHEEL	Polipropylen GB205U, Grilamid LKN-5H, Hartferrit 24/16,
	Skrzydeltko	
11	PRIMARY AXIS	00H17N14M2-h10-C2
	Oś podstawowa	
12	PLATE	PPO Noryl PX1786G- 701
	Płyta spiętrzająca	
13	FRAMEWORK	MO 58
	Korpus	
14	STRAINER	Daplen DS. 65 G 20
	Sitko	

1. Lid (optional)

1. Pokrywka (opcja)

2. Hinge pin (optional)

2. Kolek (opcja)

3. Cover (optional)

3. Oslona (opcja)

4. Register

4. Mechanizm zliczający

5. Fixing ring (optional)

5. Pierścień mocujący (opcja)

6. Anti-magnetic ring (optional)

6. Pierścień antymagnetyczny (opcja)

7. Holding ring

7. Pierścień dociskowy

8. Packing plate

8. Płyta uszczelniająca

9. O-ring

9. Pierścień uszczelniający

10. Vane wheel

10. Skrzydeltko

11. Primary Axis

11. Oś podstawowa

12. Plate (optional)

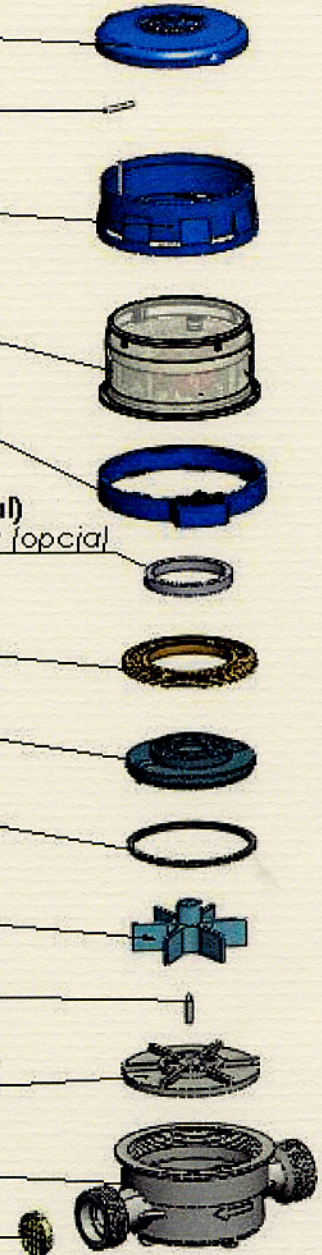
12. Płyta spiętrzająca (opcja)

13. Framework

13. Korpus

14. Strainer

14. Sitko



WYKAZ MATERIAŁÓW

wodomierzy skrzydełkowych, do wody zimnej i gorącej o wielkościach
DN25, DN32, DN40.

CODE Nr części	DESCRIPTION Opis	MATERIALS Materiały
1	LID (optional)	PPO
	Pokrywka (opcja)	
2	HINGE PIN (optional)	BRASS, STAINLESS STEEL
	Kolek (opcja)	
3	COVER (optional)	PPO
	Oslona (opcja)	
4	REGISTER	ASSEMBLY
	Mechanizm zliczający	
5	ANTI-MAGNETIC RING	PASC 60
	Pierścień antymagnetyczny	
6	RING	BRASS, STEEL
	Pierścień dociskowy	
7	PACKING PLATE	ASSEMBLY: BRASS, PPS, PPO, PA, SAPHIRE, PASC 60
	Płyta uszczelniająca	
8	O-RING	RUBBER
	Pierścień uszczelniający	
9	VANE WHEEL	ASSEMBLY: PP, PPS, PPO, PA, STAINLESS STEEL, HARTMETAL, HARTFERRIT
	Skrzydło	
10	PLATE	ASSEMBLY: BRASS, PPO, STAINLESS STEEL, HARTMETAL
	Płyta spiętrzająca	
11	WASHER	CENTELLEN, UNISEAL
	Podkładka specjalna	
12	PLUG	BRASS
	Korek	
13	GASKET	FIBRA
	Podkładka	
14	ADJUSTING SCREW	BRASS
	Wkręt regulacji	
15	STRAINER	PPO
	Sitko	
16	FRAMEWORK	BRASS
	Korpus	

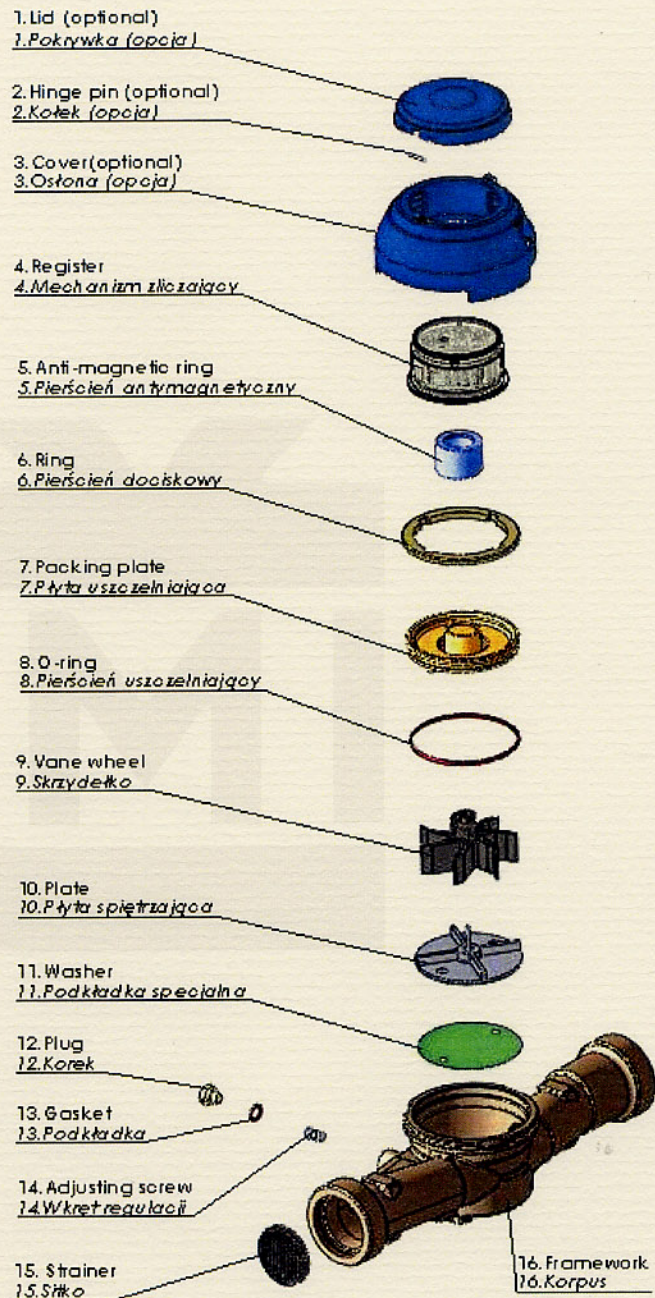


Figure 3: The sight of JS and JS-NK

