EC-TYPE EXAMINATION CERTIFICATE
Number: TCM 142/09 - 4708
Addition 1
This addition replaces all previous versions of this certificate in full wording.

Issued by: **Český metrologický institut**
Okružní 31
638 00 Brno
Czech Republic

Notified body no. 1383

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.**
(Applicant) **Klemensa Janickiego 23/25**
60-542 Poznań
Poland

In respect of: **water meter – multi jet, mechanical**
type: WS2,5; WS4; WS6,3; WS10; WS16; WS25
accuracy class: 2
temperature class: T30, T50

Valid until: **15 October 2019**

Number of document: 0115-CS-A029-09

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 5 pages.

Date of issue: 9 November 2011

RNDr. Pavel Klenovský
Notified Body No.1383

Addition 1 added WS6,3 length 165 mm and WS25.

1. Measuring device description

The multi jet, mechanical water meters type WS2,5; WS4; WS6,3; WS10, WS16 and WS25 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 WS2,5; WS4; WS6,3; WS10, WS16 and WS25 consist of a wet 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 coupling 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 five rollers. The measuring section and dry mechanical indicating device are connected to meter body by cover with screw.

The adjustment of the water meter is executed by turn of adjusting screw.

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

There is version NK with reed contact pulse transmitter and version NKP with plastic socket pre-equipped for later installation of pulse transmitter or remote reading device - radio module. (Radio module in not cowered by this certification) There is a magnet on one of the pointers in the counting mechanism in the both versions NK and NKP.

Water meters are manufactured according to technical documentation of the company APATOR POWOGAZ S.A., No. 9114-000000 WS2,5; No. 9124-000000 WS4; No. 9134-00000 WS6,3; No. 9144-000000 WS10; No. 9154-000000 WS16; No. 9155-000000 WS25.

2. Basic technical data

Meter type	WS2,5 WS2,5-XX	WS4 WS4-XX	WS6,3 WS6,3-XX	WS10 WS10-XX	WS16 WS16-XX	WS25 WS25-XX
Nominal diameter DN [mm]:	15 / 20	20	25	25 / 32	40	50
Minimum flowrate Q_1 [m³/h]:	0.025	0.04	0.063	0.1	0.16	0.25
Transitional flowrate Q_2 [m³/h]:	0.04	0.064	0.1008	0.16	0.256	0.4
Permanent flowrate Q_3 [m³/h]:	2.5	4	6.3	10	16	25
Overload flowrate Q_4 [m³/h]:	3.125	5	7.875	12.5	20	31.25
Ratio Q_2 / Q_1:	1.6					
Ratio Q_3 / Q_1:	100					
Accuracy class:	2					
Orientation limitation:	Horizontal					
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, T50					
Maximum admissible temperature [°C]:	30, 50					
Water pressure classes:	MAP 16					
Maximum admissible pressure [MPa]:	1,6					
Pressure-loss classes (ΔP) [kPa]:	63				40	63
Total length [mm]:	165/190	190	165/260	260	300	300
Indicating range [m³]:	99 999					
Resolution of the indicating device [dm³]:	0,05					
Flow profile sensitivity classes:	U0, D0					
Connection type: Screw thread	G ¾ / G1	G1	G 1¼	G 1¼ G 1½	G2	G 2½
Connection type: flange	Or flange connection					
Reed contact K-factor [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. 24 V / 0.1 A					

3. Test

Technical tests of the WS2,5; WS4; WS6,3; WS10, WS16 and WS25 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-P018-09 from September 14 2009 and Test Report No. 6015-PT-P0109-11 from October 17 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 ×.×)
- The ratio Q_3 / Q_1, (R××)
- The maximum admissible pressure (×× MPa or ×× bar)
- The temperature class (T××)
- The maximum pressure lost (ΔP ××)
- Classes on sensitivity to irregularities in velocity field (U0 D0)
- 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 connection of water meter screw cover with of adjusting screw, and connection of water meter body and reed impulse transmitter if any has to be sealed.
The location of the seal is described in Figure 1.

Figure 1: The sealing of the water meters type WS (version with pulse transmitter):
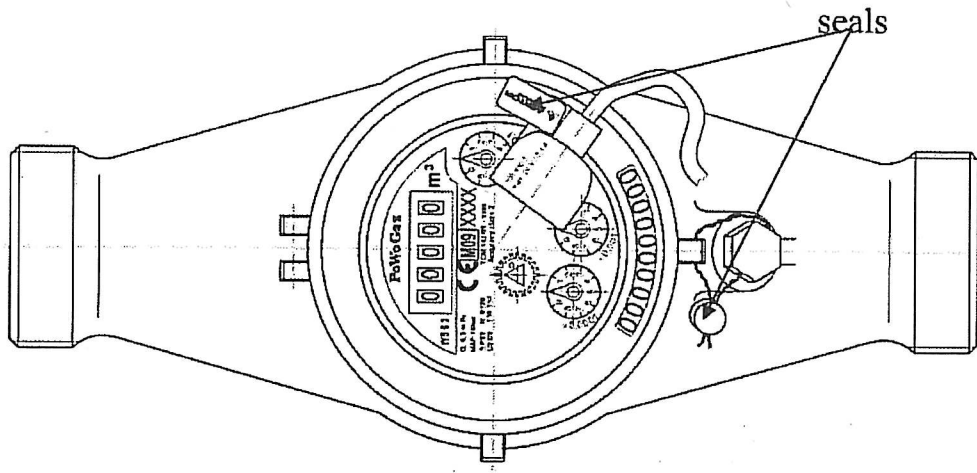
Figure 2: The assembling of the water meters type WS:

1. Lid / *Pokrywka*
2. Hinge pin / *Kolek*
3. Cover / *Osłona*
4. Washer / *Pierścień poślizgowy*
5. Lens / *Szybka*
6. O-ring / *Pierścień uszczelniający*
7. Register / *Mechanizm zliczający*
8. Anti-magnetic ring / *Pierścień antymagnetyczny*
9. Center gear / *Oprawa magnesu*
10. Register chamber / *Komora mechanizmu zlicz.*
11. Washer / *Pierścień poślizgowy*
12. Magnet support / *Oprawa magnesu*
13. Vane wheel / *Skrzydełko*
14. Measuring chamber / *Komora pomiarowa*
15. Gasket / *Pierścień uszczelniający*
16. Main casing / *Korpus*
17. Adjusting plug / *Śruba regulacji*
18. Joint washer / *Podkładka*
19. Adjusting screw / *Wkręt regulacji*
20. Strainer / *Sitko*
21. Gasket / *Uszczelka*
22. Coupling / *Łącznik*
23. Coupling nut / *Nakrętka łącznika*

WODOMIERZ WIELOSTRUMIENIOWY SUCHOBIEŻNY – WS
(APATOR POWOGAZ S.A.)
MATERIALS
MATERIAŁY

CODE / *Nr części*	DESCRIPTION / *Opis*	MATERIALS / *Materiały*
01	LID / *Pokrywka*	ABS / *ABS*
02	HINGE PIN / *Kolek*	H62 BRASS / *Mosiądz*
03	COVER / *Osłona*	ZHPb59-1 / *Mosiądz*
04	WASHER / *Pierścień poślizgowy*	PE / *Polietylen*
05	LENS / *Szybka*	GLASS / *Szkło*
06	O-RING / *Pierścień uszczelniający O-ring*	NITRLE RUBBER / *Guma*
07	REGISTER / *Mechanizm zliczający*	ABS, POM, 1Cr18Ni9 / *Terpolimerakrylonit, Poliacetal, Stal nierdzewna*
08	ANTI-MAGNETIC RING / *Pierścień antymagnetyczny*	ELECTRICIAN'S PURE IRON DT / *Stal magnetycznie miękka*
09	CENTER GEAR / *Oprawa magnesu*	POM, SIFERRITE / *Poliacetal, magnes ferrytowy*
10	REGISTER CHAMBER / *Komora mechanizmu zliczającego*	ABS / *Terpolimerakrylonit*
11	WASHER / *Pierścień poślizgowy*	NITRLE RUBBER / *Guma*
12	MAGNET SUPPORT / *Oprawa magnesu*	ABS, SIFERRITE / *Terpolimerakrylonit, magnes ferrytowy*
13	VANE WHEEL / *Skrzydełko*	POM, ABS / *Terpolimerakrylonit, Poliacetal*
14	MEASURING CHAMBER / *Komora pomiarowa*	ABS / *Terpolimerakrylonit*
15	GASKET / *Pierścień uszczelniający*	PE / *Polietylen*
16	MAIN CASING / *Korpus*	ZHPb59-1 / *Mosiądz*
17	HINGE SCREW / *Śruba regulacji*	HPb59-1 / *Mosiądz*
18	JOINT WASHER / *Podkładka*	PE / *Polietylen*
19	HINGE PLUG / *Wkręt regulacji*	POM / *Poliacetal*
20	STRAINER / *Sitko*	PE / *Polietylen*
21	GASKET / *Uszczelka*	NITRLE RUBBER / *Guma*
22	COUPLING / *Łącznik*	HPb59-1 / *Mosiądz*
23	COUPLING NUT / *Nakrętka łącznika*	ZHPb59-1 / *Mosiądz*