



Czech Metrology Institute

Notified Body no. 1383, Okružní 31
638 00 Brno, Czech republic

EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/09 - 4695

Issued by: **Český metrologický institut**
Okružní 31
638 00 Brno
Česká republika

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.

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

In respect of: **water meter – single jet, mechanical**
type: JM2,5 and JM4
manufacturer: APATOR POWOGAZ S.A.
accuracy class: 2
temperature class: T30, T50

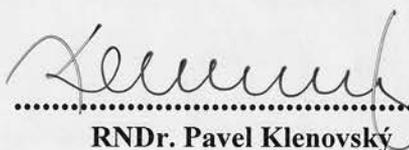
Valid until: **18 August 2019**

Number of document: **0115-CS-A020-09**

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

Date of issue: 19 August 2009





RNDr. Pavel Klenovský

Notified Body No.1383

1. Measuring device description

The single jet, mechanical water meters type JM2,5 and JM4 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 JM2,5 and JM4 consist of a wet measuring section and wet or half-dry mechanical indicating device. Water flows in the measuring section and rotates the vane wheel of transducer. The rotation is transmitting to the system of gear wheels to register. The register consists of four pointers and a fives rollers. The rollers are closed in a casing filled with glycerin. The dial is connected to meter body by cover with screw.

The adjustment of the water meter is executed by turn of swelling plate.

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

Water meters are manufactured according to technical documentation of the company APATOR POWOGAZ S.A. No. 30-9610-000000 from 14.2.2008 and No. 30-9620-000000 from 14.2.2008.

2. Basic technical data

| | | | | |
|---|--|---------|--------|------|
| Meter type | 2,5 | | 4 | |
| Nominal diameter DN [mm]: | 15 | | 20 | |
| Minimum flow rate Q_1 [m ³ /h]: | 0.0156 | 0.03125 | 0.025 | 0.05 |
| Transitional flow rate Q_2 [m ³ /h]: | 0.025 | 0.05 | 0.04 | 0.08 |
| Permanent flow rate Q_3 [m ³ /h]: | 2.5 | | 4 | |
| Overload flow rate Q_4 [m ³ /h]: | 3.125 | | 5 | |
| Orientation limitation | H | V | H | V |
| Ratio Q_2 / Q_1 : | 1.6 | | | |
| Ratio Q_3 / Q_1 : | 160 | 80 | 160 | 80 |
| Accuracy class: | 2 | | | |
| 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 | | | |
| Indicating range [m ³]: | 99999 | | | |
| Resolution of the indicating device [dm ³]: | 0,05 | | | |
| Flow profile sensitivity classes: | U0, D0 | | | |
| Connection type: | Screw thread G ½ B, G ¾ B | | | |
| Power supply (U_{max} / I_{max}): | - | | | |
| K-faktor: | - | | | |
| Resoluting of the device for the rapid testing [pulse/L]: | 12.2469 | | 8.4545 | |

3. Test

Technical tests of the JM2,5 and JM4 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-P013-09 from July 31. 2009.



4. The measuring device data

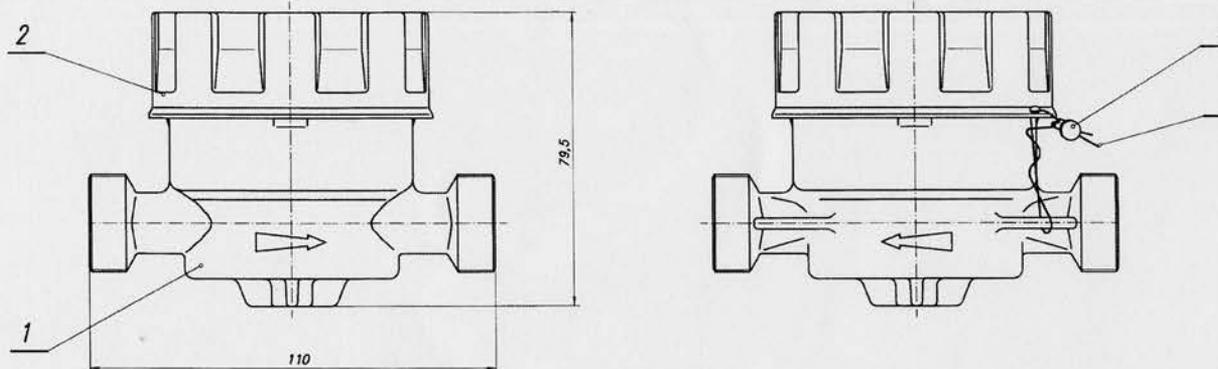
There are following data on the measurement device:

- 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 (1.6 MPa or 16 bar)
- The temperature class (T30, T50)
- The maximum pressure lost (ΔP 63)
- Classes on sensitivity to irregularities in velocity field (U0 D0)
- Direction of flow arrow on both sides of the meter body

5. Sealing

The clamp cover of dial has to be identified. The location of the seal is described in Figure 1.

Figure 1: The sealing of JM:



| Nr. | Description |
|------|-----------------------|
| 1 | Body of water meter |
| 2 | Metal head with screw |
| 3, 4 | Dial plate |
| 5 | Protect seal |
| 6 | Wire |

Figure 2: The sealing of JM:

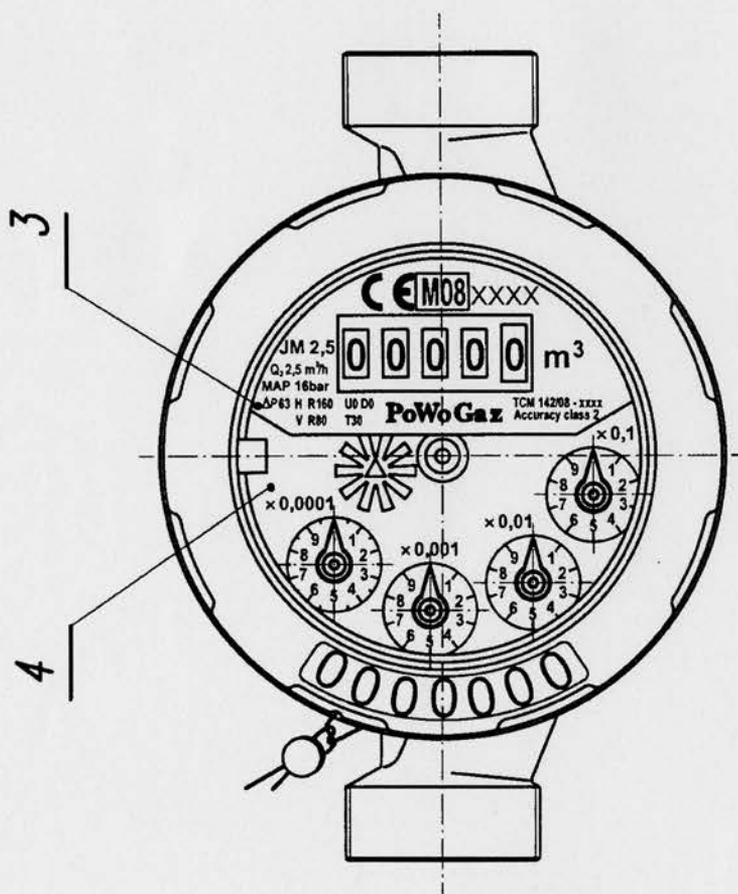
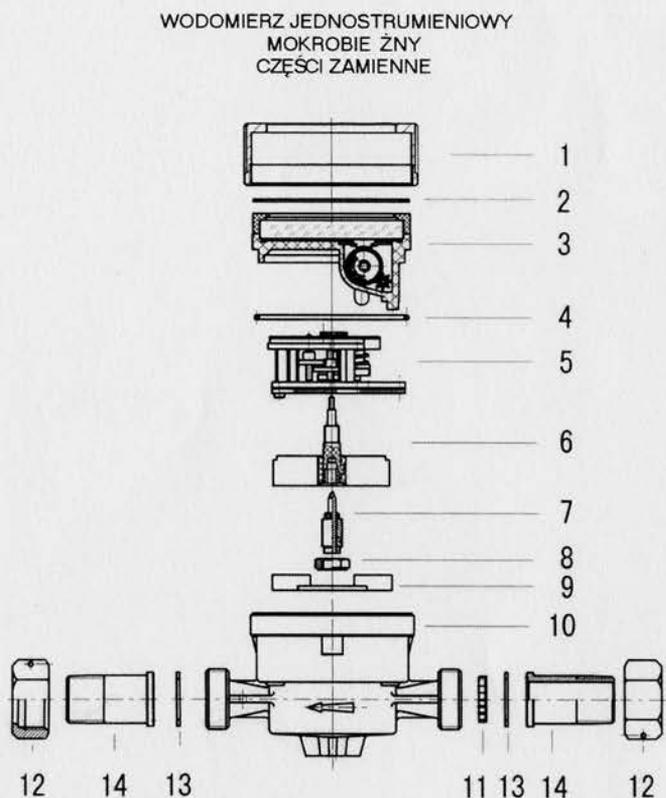


Figure 3: The assembling of JM:



MATERIALS
MATERIAŁY

| CODE Nr części | DESCRIPTION Opis | MATERIALS Materiały |
|-------------------|---------------------------|--|
| 01 | CAP | BRASS |
| | Ostona | Mosiądz |
| 02 | SLIDING GASKET | POLYPROPYLENE |
| | Pierścień poślizgowy | Polipropylen |
| 03 | CAPSULIZED REGISTER | ASSEMBLY |
| | Separowany zespół liczący | Zespół |
| 04 | SEALING-RING | RUBBER |
| | Pierścień uszczelniający | Guma |
| 05 | CLOCKWORK | ASSEMBLY |
| | Mechanizm liczący | Zespół |
| 06 | TURBINE | VANE: POLYPROPYLENE INSERT: POLYAMIDE / SAPHIRE |
| | Wirnik | Łopatkki wirnika: Polipropylen Wkładka łożyskująca: Poliamid / Szafir |
| | | |
| 07 | NUT FOR COUNTER PIVOT | BRASS / STAINLESS STEEL / HARTMETAL |
| | Czopłożyskowy | Mosiądz / Stal nierdzewna / Hartmetal |
| 08 | ADJUSTING VANE | BRASS |
| | Nakładka | Mosiądz |
| 09 | COUNTER PIVOT | NYLON 66 |
| | Płyta sprężająca | Nylon 66 |
| 10 | BODY | BRASS |
| | Korpus | Mosiądz |
| 11 | STRAINER | POLYMETHYLENE |
| | Kierownica | Polimetylen |
| 12 | CONNECTING NUT | BRASS |
| | Nakładka łącznika | Mosiądz |
| 13 | CONNECTING GASKET | RUBBER |
| | Uszczelka | Guma |
| 14 | TAIL PIECE | BRASS |
| | Łącznik | Mosiądz |