

# CERTIFIKÁT EÚ SKÚŠKY TYPU

## EU – type examination certificate

Číslo dokumentu: **SK 16-MI001-SMU043** **Revízia 2**  
*Document number:* *Revízia 2 nahrádza certifikát zo dňa 21. júl 2022* *Revision 2*  
*Revision 2 replaces the certificate issued by July 21, 2022*

V súlade s: prílohou č. 2, Modul B nariadenia vlády Slovenskej republiky č. 145/2016 Z. z. o sprístupňovaní meradiel na trhu v znení nariadenia vlády SR č. 328/2019 Z. z., ktorým sa preberá smernica Európskeho parlamentu a Rady 2014/32/EU o harmonizácii právnych predpisov členských štátov týkajúcich sa sprístupnenia meradiel na trhu  
*In accordance with:* *Annex II, Module B to Government Ordinance of the Slovak Republic No. 145/2016 Coll. Relating to the making available on the market of measuring instruments as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll., which implemented the 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*

Žiadateľ/Výrobca: **Apator PoWoGaz S.A.**  
*Issued to (Manufacturer):* **ul. Jaryszki 1c, 62-023 Żerniki, Poland**

Druh meradla: **Vodomer (MI-001)**  
*Type of instrument:* *Water meter (MI-001)*

Označenie typu: **MK-01**  
*Type designation:*

Základné požiadavky: príloha č. 1 a príloha č. 3 Vodometry (MI-001) k nariadeniu vlády SR č. 145/2016 Z. z. v znení nariadenia vlády SR č. 328/2019 Z. z.  
*Essential requirements:* *Annex No. I and Annex No. III Water meters (MI-001) to Government Ordinance of the Slovak Republic No. 145/2016 Coll. as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll.*

Platnosť do: **19. júna 2026**  
*Valid until:* *June 19, 2026*

Notifikovaná osoba: **Slovenský metrologický ústav 1781**  
*Notified body:* *Slovak Institute of Metrology 1781*

Dátum vydania: **29. apríl 2022**  
*Date of issue:* *April 29<sup>th</sup>, 2022*

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 9 strán.  
*Essential characteristics, instrument description and approval conditions are set out in the appendix hereto, which forms the part of the certificate. The certificate including the appendix contains 9 pages.*



  
Viliam Mazúr  
zástupca notifikovanej osoby  
representative of notified body

**History of the Certificate**

Issue of the Certificate	Date	Modification
SK 16-MI001-SMU043, Revision 0	June 20, 2016	Initial certificate
SK 16-MI001-SMU043, Revision 1	July 21, 2021	IP68 update
SK 16-MI001-SMU043, Revision 2	April 29, 2022	New address

**Place of production:**
**1. Apator PoWoGaz S.A.**

ul. Klemensa Janickiego 23/25, 60 – 542 Poznań, Poland

**2. Apator PoWoGaz S.A.**

ul. Jaryszki 1c, 62-023 Żerniki, Poland


**1 Instructions and standards used within assessment**
**1.1 Generally binding instructions**

Meter type was examined in terms of request for given type provisions Government Ordinance of the Slovak Republic No. 145/2016 Coll. relating to the making available on the market of measuring instruments as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll., which implemented the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (next Government Ordinance).

Requirements are set out in Annex No. 1 and Annex No. 3 Water Meters (MI-001) to Government Ordinance of SR No. 145/2016 Coll. as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll.

**1.2 Technical specification used:**

OIML R 49-1:2013	Water meters intended for the metering of cold potable water and hot water. Part 1: Metrological and technical requirements
OIML R 49-2:2013	Water meters intended for the metering of cold potable water and hot water. Part 2: Test methods
OIML R 49-3:2013	Water meters intended for the metering of cold potable water and hot water. Part 3: Test report format
EN ISO 4064-1: 2017	Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements
EN ISO 4064-2: 2017	Water meters for cold potable water and hot water. Part 2: Test methods
EN ISO 4064-3: 2014	Water meters for cold potable water and hot water. Part 3: Test report format
EN ISO 4064-5: 2017	Water meters for cold potable water and hot water. Part 5: Installation requirements

## 2 Type marking

Woltman water meter - **MK-01**

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
MK-01	T30, T50	M1 <sup>1)</sup> , B <sup>2)</sup>	DN 50, DN 80, DN 100, DN 150

## 3 Description of measuring instrument

**Meter name:** Woltman water meter

**Type marking:** MK-01

### Description of operating principle instrument design:

The industrial water meter with vertical rotor axis is intended for metering of delivered water quantity. The Woltman meter (Picture No. 1) operates on the principle of a water speed sensor by impeller wheel. The operating speed of the wheel is proportionate to the speed of overflowing water. The operating speed is proportionate to water delivered quantity. The Water meter is dedicated to measure the flow and the delivered cold water quantity.

Water meter is:

- Woltman horizontal with vertical rotor axis, dry water meter,
- with internal float regulation,
- with removable measuring insert attached to a cover with flanged connection to the body,
- installation of water meter in the area where a vertical pipeline turns to horizontal pipeline, with the counter directed upwards.

Water meters have been fitted for mounting on pipelines in vertical pipeline with the counter directed upwards. Accidental occurrence of a reverse flow does not affect metrological characteristics provided for a normal flow.



<sup>1</sup> according to Government Ordinance of the Slovak Republic, Annex No. 1

<sup>2</sup> according to EN ISO 4064-1:2017 and OIML R 49-2:2013



Picture No.1 Woltman water meter MK-01(left) MK-08 (right)



### 3.1 Description of subgroups

Marking: MK X-01, MK X-01 NK, MK X-01 NKO, MK X-01 NKP, MK X-01 NO, MK X-01 NOP, MK X-01 NKOP,  
(where X is nominal diameter)

Version with IP68 cover is marked with number 08 (example MK50-08)

DN: DN 50, DN 80, DN 100, DN 150

The Water meter can be equipped by following output impulses (which was not part of this certification):

- MK-01 - basic type with mechanical counter
- MK-01-NK - mechanical counter with contact impulse transducer
- MK-01-NKO - mechanical counter with contact and optical impulse transducer
- MK-01-NKP - advance prepared counter for contact transducer
- MK-01-NO - mechanical counter with optical impulse transducer
- MK-01-NOP –advance prepared counter to optical impulse transducer
- MK-01-NKOP - counter for contact and optical impulse transducer prepared in advance
- MK-08 - version with IP68 cover (ready for inductive radio modules)

### 3.2 Measuring insert

The measuring insert consists of the measuring mechanism, mechanism's flanged top cover and counter. The measuring insert is attached to the body by screws. The tightness of the measuring insert is secured in the body by 2 O-rings, while one O-ring secures the outside tightness (measuring insert and screws), the 2-nd O-ring secures the tightness of the insert situated in the body. The position of the regulation blade is adjustable via different positions in relation to the water flow.

### 3.3 Indicating device

The indicating device is a combined number rollers and pointers counter. It consists of 6 rollers for  $m^3$  and 3 scale indicators with pointers for the decimals of  $m^3$ . Counter capacity are 999 999  $m^3$  and resolution of the reading are 0,5  $dm^3$ .

The counter can be equipped by the contact or optical impulse transducer. The mechanical counter is equipped by metal cover, the contact or optical impulse transducer can be equipped as well.

### 3.4 Principle of operation

The water flowing directly impinges the helix turbine at the axis line to make rotation. The measures water flow out from the outlet of the meter. The rotation of the helix turbine is transmitted to the mechanical counter through the worm gearing and the magnet coupling. The sealed register totalizes the rotation of the helix turbine and indicates the water volume passing through the meter.

### 3.5 Technical documentation

A number of drawings of technical documentation are listed in the following list:

Assembly	Assembly	Dial marking	Dial marking
2241-000000	2271-000000	5000-420000	5005-170000
2281-000000	2272-000000	5000-470000	5005-180000
2321-000000	2273-000000	5000-390000	5005-190000
2585-000000	2270-000000	5000-410000	5005-200000

All drawings, schemes and technical documentation used during the conformity assessment are saved in document No. NO-277/14, NO-517/21 and NO-544/22.

## 4 Basic technical characteristics

Type marking		MK-01			
Nominal diameter DN	mm	50	80	100	150
Indicating range	$m^3$	$10^6$			$10^7$
Resolution of the reading	$m^3$	0,0005			0,005
Maximum admissible pressure	-	MAP 16			
Working pressure range	bar	from 0,3 to 16			
Pressure loss	-	$\Delta p$ 63			
Temperature class	-	T30, T50			
Flow profile sensitivity classes	-	U0 / D0			
Position	-	V			
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/mech. class M1			



**4.1 Additional technical characteristics**

IP Code	IP65, IP68
Weight	from 8,2 kg to 45 kg

**5 Basic metrological characteristics**

The maximum permissible error (accuracy class):

$$\pm 5 \% (Q_1 \leq Q < Q_2)$$

$$\pm 2 \% (Q_2 \leq Q \leq Q_4) \text{ for water temperature (from 0,1 to 30) } ^\circ\text{C}$$

$$\pm 3 \% (Q_2 \leq Q \leq Q_4) \text{ for water temperature greater than 30 } ^\circ\text{C}$$

Temperature class	T	-	30, 50			
Diameter	DN	mm	50	80	100	150
Minimum flowrate	$Q_1$	m <sup>3</sup> /h	0,397	1	1,59	3,97
Transitional flowrate	$Q_2$	m <sup>3</sup> /h	0,635	1,6	2,54	6,35
Permanent flowrate	$Q_3$	m <sup>3</sup> /h	25	63	100	250
Overload flowrate	$Q_4$	m <sup>3</sup> /h	31,25	78,75	125	312,5
Measuring range R	$Q_3/Q_1$	-	63			
Ratio	$Q_2/Q_1$	-	1,6			

**6 Results of conformity assessment**

The results of tests, assessments and evaluations given in the evaluation report No. NO-544/22/B/ER dated April 28, 2022 give sufficient evidence that the technical design of the measuring instrument – Woltman water meter type MK-01 is in compliance with the technical requirements of the Slovak Republic Governmental Ordinance No. 145/2016 Coll. relating to the making available on the market of measuring instruments as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll., Annex No. 1 and Annex No. 3 Water Meters and with the requirements determined in EN ISO 4064-1:2017, respectively OIML R49-1:2013, which are relevant for this type of meter.

**7 Data placed on the measuring instrument**

On the shroud, the dial of the indicating device or on an identification plate of every water meter or in the product documentation minimum the following data should be marked:

- producer's name, registered trade name or registered trade mark and contact postal address
- type of the Woltman water meter
- measuring unit m<sup>3</sup>
- numerical value of  $Q_3$  and ratio  $Q_3/Q_1$
- production number and the year of production
- number of EU-type examination certificate and conformity mark
- the highest admissible pressure if it differs from 1 MPa
- flow direction



- i) the letter V or H, if the meter can only be operated in the vertical or horizontal position
- j) class of pressure loss if it differs from  $\Delta p_{63}$
- k) class of climatic and mechanical environment
- l) flow profile sensitivity classes
- m) the temperature class where it differs from T30

## 8 Conditions of conformity assessment of measuring instruments produced with type approval

Woltman water meter put onto the market in line with the procedure of conformity assessment according to the Annex No.2 (Module D or F) of the Governmental ordinance should be in compliance with the technical description by the 3 of this report and at test should be in compliance with the requirements determined in OIML R 49-1:2013 and EN ISO 4064-1:2017. Metrological test is performed by testing equipment which should be in compliance with the requirements determined in EN ISO 4064-2:2017 and water at temperature  $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$  in following point of flowrate:

- a) Minimum flowrate  $Q_1 \leq Q \leq 1,1Q_1$
- b) Transitional flowrate  $Q_2 \leq Q \leq 1,1Q_2$
- c) Permanent flowrate  $0,9Q_3 \leq Q \leq Q_3$

A metrological test may only be performed by a producer, or a notified body respectively in line with the conformity assessment procedure according to the D or F Annexes of the Governmental ordinance respectively.

## 9 Measures asked for providing measuring instrument integrity

### 9.1 Identification

Woltman water meter should be in compliance with the description provided on item 3 of this Annex and should be in compliance with the marking specified the item 7 of this Annex. The number given to the EU-type examination certificate is put at each piece of the measuring instrument.

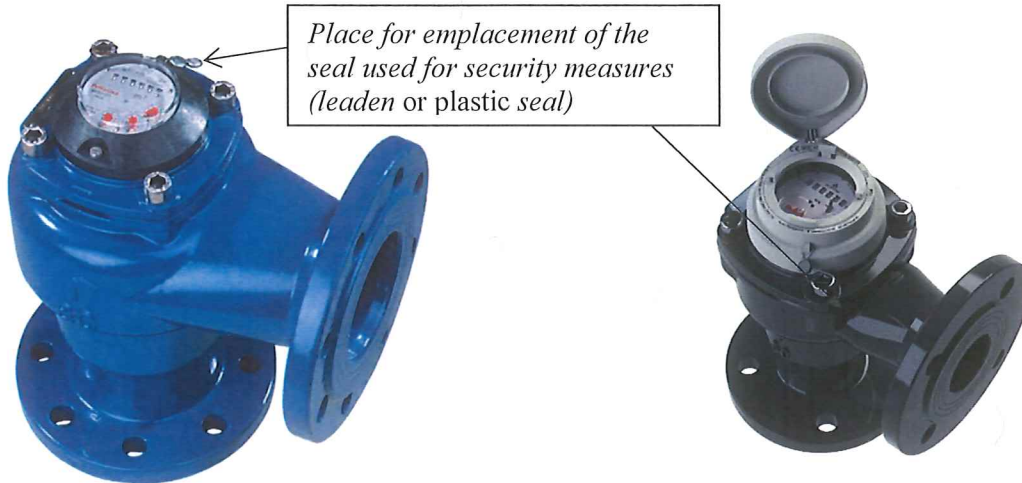
Emplacement of the conformity mark is followed by § 15 of the Governmental ordinance.

### 9.2 Sealing of the measuring instrument

Woltman water meter shall be before the conformity assessment according to the Annex No.2 (Module D or F) of the Governmental ordinance sealed by following sealing marks:

Connection of counter shelter and water meter body shall be sealed by seal used for security measures (leaden or plastic seal) (Picture No. 2)



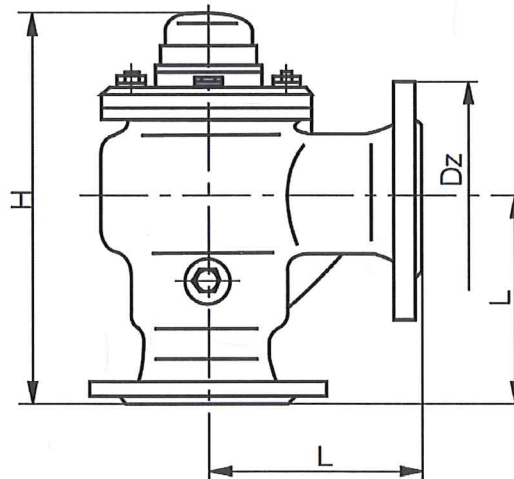


Picture No.2 Emplacement of seal used for security measures

## 10 Requirements for installation, especially conditions of using

### 10.1 Installation data

Nominal diameter	DN50	DN80	DN100	DN150
Construction length [mm] - $L$	150	180	200	250
Flange diameter [mm] - $D_z$	165	200	220	285
Weight [kg]	8,2	18	24	45
Hight [mm] - $H$	249	304	339,3	385,3



Picture No.3 Installation dimensions



### 10.2 Installation requirements

Woltman water meter is introduced into the operation by a worker having a certificate for this activity performance. The Woltman water meter is possible to be put into use after a construction in line with this report and in line with a producer instruction by "Instruction of installation and conditions of use of flanged water meters". A measuring instrument should be installed in direction of water flow arrow marked on the meter body.





**10.3 Conditions of use**

The measuring instrument should be used within the recommendations of a producer or manufacturer: “Instruction of installation and conditions of use of flanged water meters”.

Assessment done by:  Ing. Viliam Mazúr

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