Slovenský metrologický ústav
Karloveská 63, 842 55 Bratislava 4,
Slovenská republika

SNAS
Reg. No. 101/P-035

CERTIFIKÁT EÚ SKÚŠKY TYPU

EU – type examination certificate

Číslo dokumentu: **SK 08-MI001-SMU002** **Revízia 6**
Document number: Revízia 6 nahrádza certifikát zo dňa 3. apríl 2020 *Revision 6*
Revision 6 replaces the certificate issued by April 3, 2020

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: **MWN (WPH-01)**
Type designation:

Základné požiadavky: príloha č. 1 a príloha č. 3 Vodomery (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: **15. júla 2028**
Valid until: *July 15, 2028*

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

Dátum vydania: **29. apríl 2022**
Date of issue: *April 29, 2022*

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 10 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 10 pages.

SLOVAK INSTITUTE OF METROLOGY – Bratislava – NB 1781 SMU

Viliam Mazúr
zástupca notifikovanej osoby
representative of notified body

Poznámka: Tento certifikát EÚ skúšky typu môže byť rozmnožovaný len celý a nezmenený. Bez podpisu a odtlačku pečiatky je neplatný.
Note: *This EU-type examination certificate shall not be reproduced except in full. Certificates without signature and stamp are not valid.*

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 - MWN (for type marking out of Poland is used **WPH-01**)

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
MWN	T30, T50	M1[1]) B[2])	DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300

[1] according to Government Ordinance of the Slovak Republic, Annex No. 1

[2] according to EN ISO 4064-1:2017 and OIML R 49-2:2013

3 Description of measuring instrument

Meter name: Woltman horizontal water meter

Type marking: **MWN, (WPH-01)**

Description of operating principle instrument design:

The industrial horizontal meter is intended for metering of delivered water quantity. The Woltman meter (Picture No. 1 and 2) 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, dry water meter,
- with internal float regulation,
- with removable measuring insert in covered casing,
- measures in horizontal and vertical position.

Picture No.1 Woltman water meter MWN

Picture No.2 Woltman water meter MWN – IP68 version

3.1 Description of subgroups

Marking: MWN, MWN-NK, MWN-NKP, MWN-NO, MWN-NOP, MWN-NKOP, MWN-G (only for DN50 and DN65), MWN-GH (only for DN50 and DN65), (WPH-01, WPH-N-01)

Version with IP68 cover is marked with number 08 (for example MWN50-08)

DN: DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300

The Water meter can be equipped by following output impulses:

- MWN - basic type with mechanical counter
- MWN-NK - mechanical counter with contact impulse transducer
- MWN-NKO - mechanical counter with contact and optical impulse transducer
- MWN-NKP - advance prepared counter for contact transducer
- MWN-NO - mechanical counter with optical impulse transducer
- MWN-NOP –advance prepared counter to optical impulse transducer
- MWN-NKOP - counter for contact and optical impulse transducer prepared in advance
- MWN-G - threaded coupling
- MWN-GH - with hydrant stand pipe
- WPH-01 - basic type with mechanical counter
- WPH-N-01- mechanical counter with contact and/or optical impulse transducer or mechanical counter prepared in advance with contact and/or optical impulse transducer

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 (inlet and outlet without DN125, 150, 200, 250, 300). 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 or 2 scale indicators with pointers for the decimals of m^3. Counter capacity is 999 999 m^3 or 9 999 999 m^3 and resolution of the reading is 0,5; 5 or 50 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 core part of the water meter is the screw gear lying vertically on the axle of pipe axis. The screw gear is pressed by flash of liquid and turns into the rotation. The rotating movement of the screw gear is transferred through the magnetic clutch onto the mechanical counter.

3.5 Technical documentation

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

7250-00000	7108-000000	7307-000000	7345-000000	7380-000000	7798-000000
5000-210000/070	5003-250000/074	5000-640000/174	5000-660000/074	5000-680000/070	5003-890000/075
7255-000000	7200-000000	7308-000000	7347-000000	7385-000000	7190-000000
5000-240000/074	5000-230000/070	5003-640000/074	5000-660000/174	5000-880000/075	6000-260000/070
7257-000000	7205-000000	7320-00000	7348-000000	7387-000000	7195-000000
5000-240000-174	5000-260000/074	5000-620000/070	5003-660000/074	5000-880000/175	6000-780000/075
7258-000000	7207-000000	7325-00000	7360-000000	7388-000000	7197-000000
5003-240000/074	5000-260000/174	5000-650000/074	5000-670000/070	5003-880000/075	6000-780000/175
7100-000000	7208-000000	7327-000000	7365-000000	7790-000000	7198-000000
5000-220000/070	5003-260000/074	5000-650000/174	5000-870000/075	5000-690000/070	5003-900000/075
7150-000000	7300-000000	7328-000000	7367-000000	7795-000000	7411-000000
5000-250000/074	5000-610000/070	5003-650000/074	5000-870000/075	5000-890000/075	
7107-000000	7305-000000	7340-000000	7368-000000	7797-000000	
5000-250000/174	5000-640000/074	5000-630000/070	5003-870000/075	5000-890000/175	

All drawings, schemes and technical documentation used during the conformity assessment are saved in document No. NO-062/08, NO-128/11, NO-373/18, NO-447/20 and NO540/22.

4 Basic technical characteristics

Type marking		MWN40	MWN50	MWN65	MWN80
Nominal diameter DN	mm	40	50	65	80
Indicating range	m^3	10^6			
Resolution of the reading	m^3	0,0005			
Maximum admissible pressure	-	MAP10, MAP16			
Working pressure range	bar	from 0,3 to 16			
Pressure loss	-	ΔP10	ΔP16, ΔP10	ΔP40, ΔP16	ΔP10
Temperature class	-	T30, T50			
Flow profile sensitivity classes	-	U0, D0			
Position	-	H, V			
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/mech. class M1			
Contact impulse transducer NK	dm^3/imp	2,5; 5; 10; 25; 100; 250; 500; 1000			
Optical impulse transducer NO	dm^3/imp	1			

Type marking		MWN100	MWN125	MWN150	MWN200
Nominal diameter DN	mm	100	125	150	200
Indicating range	m^3	10^6		10^7	
Resolution of the reading	m^3	0,0005		0,005	
Maximum admissible pressure	-	MAP10, MAP16			
Working pressure range	bar	from 0,3 to 16			
Pressure loss	-	ΔP25, ΔP10	ΔP25	ΔP25, ΔP10	ΔP16
Temperature class	-	T30, T50			
Flow profile sensitivity classes	-	U0, D0			
Position	-	H, V			
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/mech. class M1			
Contact impulse transducer NK	dm^3/imp	2,5; 5; 10; 25; 100; 250; 500; 1000		250; 500; 1000; 2500; 5000; 10000	
Optical impulse transducer NO	dm^3/imp	1		10	

Type marking		MWN250	MWN300
Nominal diameter DN	mm	250	300
Indicating range	m^3	10^7	
Resolution of the reading	m^3	0,005	0,05
Maximum admissible pressure	-	MAP10, MAP16	
Working pressure range	bar	from 0,3 to 16	
Pressure loss	-	ΔP10	
Temperature class	-	T30, T50	
Flow profile sensitivity classes	-	U0, D0	
Position	-	H, V	
Climatic and mechanical environments	-	closed space /from 5°C to 55°C/mech. class M1	
Contact impulse transducer NK	dm^3/imp	250; 500; 1000; 2500; 5000; 10000	
Optical impulse transducer NO	dm^3/imp	10	105,2632

4.1 Additional technical characteristics

IP Code	IP 66, IP 68
Weight	from 5,5 kg to 103,1 kg

5 Basic metrological characteristics

The maximum permissible error (accuracy class):

± 5 % ($Q_1 \leq Q < Q_2$)

± 2 % ($Q_2 \leq Q \leq Q_4$) for water temperature (from 0,1 to 30) °C

± 3 % ($Q_2 \leq Q \leq Q_4$) for water temperature greater than 30 °C

Diameter	DN	mm	40		50		65		80		100	
Minimum flowrate	Q_1	m³/h	0,3968	0,25	0,4	0,3968	0,504	0,5	0,625	0,63	0,8	0,8
Transitional flowrate	Q_2	m³/h	0,64	0,4	0,64	0,64	0,806	0,8	1	1	1,28	1,28
Permanent flowrate	Q_3	m³/h	25	25	40	25	63	40	100	63	160	100
Overload flowrate	Q_4	m³/h	31,25	31,25	50	31,25	78,75	50	125	78,75	200	125
Measuring range R	Q_3/Q_1	-	63	100	100	63	125	80	160	100	200	125
Ratio	Q_2/Q_1	-	1,6									

Diameter	DN	mm	125	150		200	250	300	
Minimum flowrate	Q_1	m³/h	1,563	2	2	5,04	10	12,8	16
Transitional flowrate	Q_2	m³/h	2,5	3,2	3,2	8,064	16	20,48	25,6
Permanent flowrate	Q_3	m³/h	250	400	250	630	1000	1600	1600
Overload flowrate	Q_4	m³/h	312,5	500	312,5	787,5	1250	2000	2000
Measuring range R	Q_3/Q_1	-	160	200	125	125	100	125	100
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-540/22/B/ER dated April 28, 2022 give sufficient evidence that the technical design of the measuring instrument – Woltman water meter type MWN 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 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 item 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 °C ± 5 °C in following points 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 Annex No.2 (Module D or F) of the Governmental ordinance respectively.

8 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:

a) Manufacturer's name, registered trade name or registered mark
b) Postal address of manufacturer at which they can be contacted
c) Measuring instrument type
d) Measuring unit (m^3)
e) Numerical value of Q_3 in m^3/h (Q_3 x,x) and ratio Q_3/Q_1 (Rxxx)
f) Year of production
g) Production serial number
h) Number of EU-type examination certificate and conformity mark
i) The highest admissible pressure if it differs from 1 MPa (MAP xx)
j) Flow direction
k) The letter V or H, if the meter can only be operated in the vertical or horizontal position
l) Class of pressure loss if it differs from Δp63 (Δp XX)
m) Flow profile sensitivity classes (Ux Dx)
n) The temperature class where it differs from T30
o) Environmental classification

The environmental classification may be given on a separate datasheet, unambiguously related to the meter by a unique identification, and not on the meter itself.

9 Measures asked for providing measuring instrument integrity

9.1 Identification

Woltman meter should be in compliance with the description provided on the item 3 of this Annex and should be in compliance with the marking specified by 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 shroud and water meter body shall be sealed by seal used for security measures (leaden or plastic seal) (Picture No. 3)

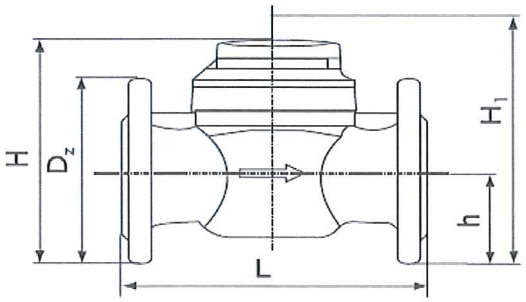
Picture No.3 Emplacement of the seal for security measures

10 Requirements for installation, especially conditions of usage

10.1 Installation data

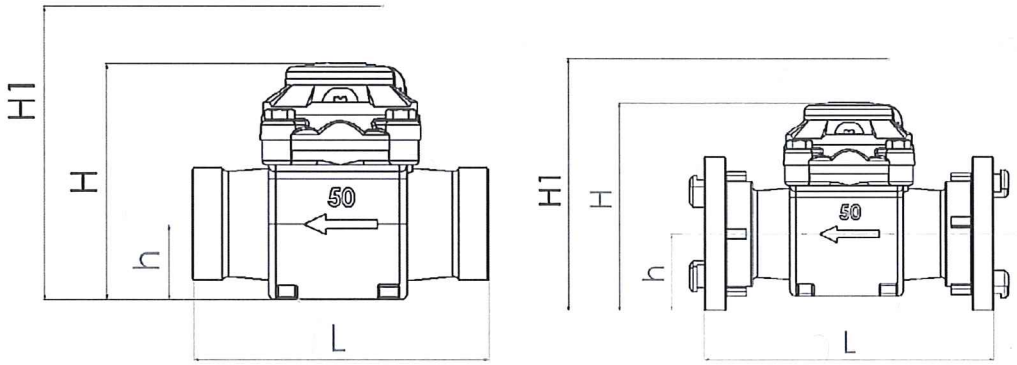
Nominal diameter - DN	40	50	65	80	100
Construction length [mm] - L	200	200	200	225/200	250
Flange diameter [mm] - D_z	150	165	185	200	220
Weight [kg]	7,9	9,9	10,6	13,3	15,6
Height [mm] – H	177	187	197	219	229
Distance axle from edge [mm] – h	65	72	83	95	105
Space height for remove insert - H_1	277	287	297	339	349

Nominal diameter – DN	125	150	200	250	300
Construction length [mm] - L	250	300	350	450	500
Flange diameter [mm] - D_z	250	285	340	400	460
Weight [kg]	18,1	40,1	51,1	75,1	103,1
Height [mm] – H	257	357	382	427	497
Distance axle from edge [mm] – h	120	135	160	193	230
Space height for remove insert - H_1	377	582	607	652	722



Picture No.4 Installation dimensions

Nominal diameter – DN	50-G	50-GH	65-G	65-GH
Construction length [mm] - *L*	200	240	200	240
G	2 1/2	hydrant stand pipe	3	hydrant stand pipe
Weight [kg]	5,5	6,6	6,2	7,3
Height [mm] – *H*	160	170	170	180
Distance axle from edge [mm] – *h*	50	65	51	66
Space height for remove insert - H_1	260	270	270	280



Picture No.5 Installation dimensions - MWN50-G/GH and MWN65-G/GH

10.2 Installation requirements

The Woltman water meter is introduced into the operation by a worker having a certificate for this activity performance. The Woltman 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

Within using the measuring instrument it is needed to be managed by recommendations of a producer by "Instruction of installation and conditions of use of flanged water meters".

Assessment done by: Ing. Viliam Mazúr

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