

ES CERTIFIKÁT TYPU

EC – Type-examination certificate

Číslo dokumentu: **SK 11-MI001-SMU019** **Revision 0**
Document number:

V súlade s: **nariadením vlády Slovenskej republiky č. 294/2005 Z. z. o meradlách, ktorým sa preberá smernica Európskeho parlamentu a rady 2004/22/ES z 31. marca 2004 o meradlách**
In accordance with: **Government Ordinance of the Slovak Republic No. 294/2005 Coll., on measuring instruments, which implemented the Directive 2004/22/EC of the European Parliament and Council of the March 31, 2004 on measuring instruments**

Žiadateľ/Výrobca: **Apator Powogaz S.A.**
Issued to (Manufacturer): **ul. Klemensa Janickiego 23/25, 60 – 542 Poznań, Poľská republika**

Druh meradla: **Vodomer / Skrutkový vodomer**
Type of instrument: **Water meter / Woltman water meter**

Označenie typu: **MP-01 (WS-01; WS-N-01)**
Type designation:

Základné požiadavky: **príloha č. 1 a príloha MI-001 k nariadeniu vlády SR č. 294/2005 Z. z.**
Essential requirements: **Annex No. 1 and Annex MI-001 to Government Ordinance of SR No. 294/2005 Coll.**

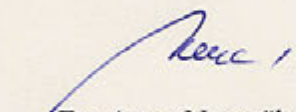
Platnosť do: **21. augusta 2021**
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Notifikovaná osoba: **1781**
Notified body:

Dátum vydania: **22. augusta 2011**
Date of issue: **August 22, 2011**

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 8 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 8 pages.




Dr. Anna Nemečková
osoba oprávnená konať v mene notifikovanej osoby č. 1781
Notified body No.1781

Poznámka: ES certifikát typu je bez pečiatky a podpisu neplatný. Tento ES certifikát typu môže byť rozmnožovaný len celý a nezmenený. Rozmnožovať jeho časti je možné len s písomným súhlasom Slovenského metrologického ústavu.
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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. 294/2005 Coll. (next Government Ordinance), on measuring instruments, which implemented the Directive 2004/22/EC of the European Parliament and Council of the March 31, 2004 on measuring instruments.

Requirements are listed in No. 1 and Annex MI-001 to Government Ordinance of SR No. 294/2005 Coll.

1.2 Harmonised standards and normative documents used

OIML R 49-1:2006 - Water meters intended for the metering of cold potable water and hot water. Part 1: Metrological and technical requirements

OIML R 49-2:2004 - Water meters intended for the metering of cold potable water and hot water. Part 2: Test methods

EN 14154-1:2005+A1:2007 - Water meters - Part 1: General requirements

EN 14154-2:2005+A1:2007 - Water meters - Part 2: Installation and conditions of use

EN 14154-3:2005+A1:2007 - Water meters - Part 3: Test methods and equipment

1.3 Other instructions used:

OIML R 49-2:2006 - Water meters intended for the metering of cold potable water and hot water. Part 2: Test methods

OIML R 49-3:2006 - Water meters intended for the metering of cold potable water and hot water. Part 3: Test report format

STN 25 7821 – Water meters intended for the metering of cold and hot water and flow members of heat meters, Installation and conditions of use

2 Type marking

Woltman water meter – MP-01 (for type marking out of Poland is used **WS-01; WS-N-01**)

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
MP-01 MP-01-NK MP-01-NKP MP-01-NO MP-01-NOP MP-01-NKOP (WS-01;WS-N-01)	T30,T50	M1 ¹⁾	DN40, DN50, DN65, DN80, DN100

3 Description of measuring instrument

Meter name: Woltman vertical water meter

Type marking: MP-01, (WS-01; WS-N-01)

Description of operating principle instrument design: The industrial vertical water meter 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 water quantity.

Water meter is:

- Woltman vertical, dry water meter,
- with internal float regulation,
- with removable measuring insert in covered casing,
- measures in horizontal position.

Water meters have been fitted for mounting on pipelines in horizontal positions. Accidental occurrence of a reverse flow does not affect metrological characteristics provided for a normal flow.



Picture No.1 Woltman water meter MP-01

3.1 Description of subgroups

Marking: MP-01, MP-01-NK, MP-01-NKP, MP-01-NO, MP-01-NOP, MP-01-NKOP, (WS-01, WS-N-01)

DN: DN40, DN50, DN65, DN80, DN100

The Water meter can be equipped by following output impulses:

- MP-01 - basic type with mechanical counter
- MP-01-NK - mechanical counter with contact impulse transducer
- MP-01-NKO - mechanical counter with contact and optical impulse transducer
- MP-01-NKP - advance prepared counter for contact transducer
- MP-01-NO - mechanical counter with optical impulse transducer
- MP-01-NOP –advance prepared counter to optical impulse transducer
- MP-01-NKOP - counter for contact and optical impulse transducer prepared in advance
- WS-01 - basic type with mechanical counter
- WS-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 out side 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 m³ and 3 scale indicators with pointers for the decimals of m³. Counter capacity are 999 999 m³ and resolution of the reading are 0,5 dm³.

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

Water meter is an essential part of the rotor, located vertically with respect to the axis of the pipeline. The rotor is pressed by flash of liquid and turns into the rotation. The rotating movement of the rotor is transferred through the magnetic clutch onto the mechanical counter.

3.5 Technical documentation

A number of drawing of technical documentation's are listed in the following table:

30-2080-000000	31-5000-510000	30-2897-000000	31-5003-080000
30-2085-000000	31-5000-090000	30-2898-000000	31-5000-120000/114
30-2087-000000	31-5003-100000	30-2930-000000	31-5000-020000
30-2820-000000	31-5000-010000	30-2935-000000	31-5000-110000
30-2825-000000	31-5000-090000	30-2937-000000	31-5003-060000
30-2826-000000	31-5000-090000/051	30-2938-000000	31-5000-110000/114
30-2827-000000	31-5003-050000		
30-2828-000000	31-5000-090000/114		
30-2860-000000	31-5000-030000		
30-2865-000000	31-5000-110000		
30-2867-000000	31-5003-070000		
30-2868-000000	31-5000-110000/114		
30-2890-000000	31-5000-040000		
30-2895-000000	31-5000-120000		

All drawings, schemes and technical documentation's used during the conformity assessment are saved in document No. NO-099/10.



4 Basic technical characteristics

Type marking		MP-01-40 MP-01-40-NK MP-01-40-NKP MP-01-40-NO MP-01-40-NOP MP-01-40-NKO MP-01-40-NKOP (WS40-01 WS40-N-01)	MP-01-50 MP-01-50-NK MP-01-50-NKP MP-01-50-NO MP-01-50-NOP MP-01-50-NKO MP-01-50-NKOP (WS50-01 WS50-N-01)	MP-01-65 MP-01-65-NK MP-01-65-NKP MP-01-65-NO MP-01-65-NOP MP-01-65-NKO MP-01-65-NKOP (WS65-01 WS65-N-01)	MP-01-80 MP-01-80-NK MP-01-80-NKP MP-01-80-NO MP-01-80-NOP MP-01-80-NKO MP-01-80-NKOP (WS80-01 WS80-N-01)	MP-01-100 MP-01-100-NK MP-01-100-NKP MP-01-100-NO MP-01-100-NOP MP-01-100-NKO MP-01-100-NKOP (WS100-01 WS100-N-01)
Nominal diameter DN	mm	40	50	65	80	100
Indicating range	m ³	999 999				
Resolution of the reading	m ³	0,0005				
Maximum admissible pressure	-	MAP16				
Working pressure range	bar	from 0,3 to 16				
Pressure loss	-	ΔP63				
Temperature class	-	T30,T50				
Flow profile sensitivity classes	-	U0, D0				
Position	-	H				
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; 50; 100; 250; 500; 1000				
Optical impulse transducer NO	dm ³ /imp	1				

4.1 Additional technical characteristics

IP Code	IP 66, IP 68
Weight	from 11,6 kg to 30 kg

5 Basic metrological characteristics

The maximum permissible error (accurate class):

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

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

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

Diameter	DN	mm	40/50	65	80	100
Minimum flowrate	Q_1	m ³ /h	0,31	0,5	0,8	1,25
Transitional flowrate	Q_2	m ³ /h	0,5	0,8	1,26	2
Permanent flowrate	Q_3	m ³ /h	25	40	63	100
Overload flowrate	Q_4	m ³ /h	31,25	50	78,75	125
Measuring range R	Q_3/Q_1	-	80			
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. 8273/230/142/11 dated August 16, 2011 give sufficient evidence, that the technical design of the measuring instrument – Woltman water meter type MP-01 is in compliance with the technical requirements of the Slovak Republic Governmental Ordinance No. 294/2005 Coll. On measuring instruments, Annex No. 1 and MI-001, and the STN EN 14154-1:2005+A1 and OIML R 49-1:2006 standards.

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:

- a) producers name or his production mark
- b) type of the Woltman meter
- c) measuring unit m^3
- d) numerical value of Q_3 and ratio Q_3/Q_1
- e) production number and the year of production
- f) number of ES certificate type and conformity mark
- g) the highest admissible pressure if it differs from 1 MPa
- h) flow direction
- i) the letter V or H, if the meter can be operated in the vertical or horizontal position
- j) class of pressure loss if it differs from ΔP_{63}
- k) class of climatic and mechanical environment
- l) flow profile sensitivity classes
- m) output signal of impulse transducer
- n) the temperature class where it differs from T30

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

Woltman meters put onto the market in line with the procedure of conformity assessment according to the D or F Annexes 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 49-1:2006. Metrological test is performed by a testing equipment which should be in compliance with the requirements determined in STN EN 14154-3:2005+A1 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 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 EC certificate is put at each piece of the measuring instrument. Emplacement of the conformity mark is followed by § 7 of the Governmental ordinance.



9.2 Sealing of the measuring instrument

The Woltman water meter shall be before the conformity assessment according to the D or F Annexes sealed by following sealing marks:

Connection of counter shroud and water meter body shall be sealed by conformity mark (lead seal) (Picture No. 2)

Place for emplacement of seal used for security measures (leaden seal)

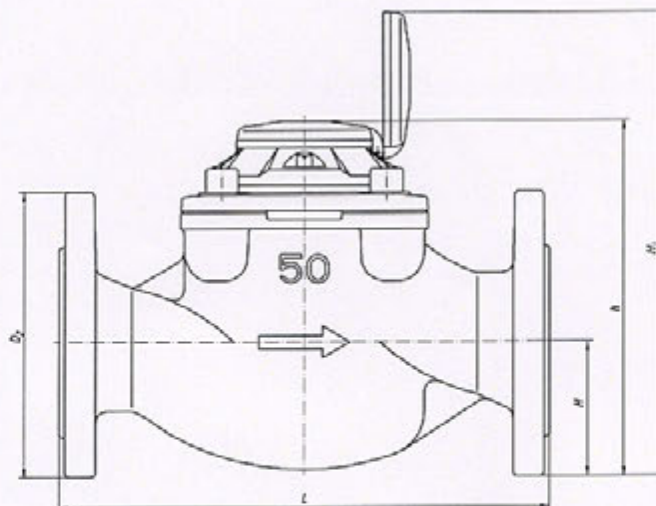


Picture No.2 Emplacement of the seal for security measures

10 Requirements for installation, especially conditions of usage

10.1 Installation data

Nominal diameter	DN40	DN50	DN65	DN80	DN100
Construction length [mm] - L	200/270/300	200/270/300	300	300/350	360/350
Flange diameter [mm] - D_z	150	165	185	200	220
Weight [kg]	12	13	19,5	21,5	30
Height [mm] - H	183	200	250	255	335
Distance axle from edge [mm] - h	70	73	87	95	105
Space height for remove insert - H_1	283	300	350	375	455



Picture No.3 Installation dimensions



10.2 Installation requirements

A 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. Miroslava Benková, Director of the Flow Centre

