

ES CERTIFIKÁT TYPU

EC – Type-examination certificate

Číslo dokumentu: **SK 10-MI001-SMU013** Revision 1
Document number: Revízia 1 nahrádza certifikát zo dňa 29. júla 2010
Revision 1 replaces the certificate issued by July 29, 2010

V súlade s: nariadením vlády Slovenskej republiky č. 294/2005 Z. z. o meradlách
In accordance with: v znení nariadenia vlády SR č. 445/2010 Z. z., ktorým sa preberá smernica
Európskeho parlamentu a rady 2004/22/ES v znení smernice 2009/137/ES
*Government Ordinance of the Slovak Republic No. 294/2005 Coll., on measuring
instruments as amended by Government Ordinance No. 445/2010 Coll. which
implemented the Directive 2004/22/EC on measuring instruments as amended by
Directive 2009/137/EC of the European Parliament and Council*

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: **MWN130 (WPH-01-130)**
Type designation:

Základné požiadavky: príloha č. 1 a príloha MI-001 k nariadeniu vlády SR č. 294/2005 Z. z.
Essential requirements: v znení nariadenia vlády SR č. 445/2010 Z. z.
*Annex No. 1 and Annex MI-001 to Government Ordinance of SR No. 294/2005 Coll.
as amended by Government Ordinance No. 445/2010 Coll.*

Platnosť do: **28. júla 2020**
Valid until: **July 28, 2020**


Notifikovaná osoba: **1781**
Notified body:

Dátum vydania: **8. augusta 2012**
Date of issue: **August 8, 2012**

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu a pozostáva z 9 strán.

Essential characteristics, instrument description and approval conditions are set out in the appendix hereto, which forms the part of the certificate and it consists of 9 pages.




RNDr. Anna Nemečková
zástupca notifikovanej osoby
representative of notified body

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., on measuring instruments as amended by Government Ordinance No. 445/2010 Coll. which implemented the Directive 2004/22/EC on measuring instruments as amended by Directive 2009/137/EC of the European Parliament and Council (next Government Ordinance).

Requirements are listed in No. 1 and Annex MI-001 to Government Ordinance of SR No. 294/2005 Coll. as amended by Government Ordinance No. 445/2010 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+A2:2011 Water meters - Part 1: General requirements
- EN 14154-2:2005+A2:2011 Water meters - Part 2: Installation and conditions of use
- EN 14154-3:2005+A2:2011 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 - MWN130 (for type marking out of Poland is used **WPH130-01**)

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
MWN130 MWN130-NK MWN130-NKP MWN130-G (WPH130-01 WPH130-N-01)	T130	M1 ¹⁾ B ²⁾ E1 ¹⁾	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 14154-3:2005+A2 and OIML R 49-2:2004

3 Description of measuring instrument

Meter name: Woltman horizontal water meter

Type marking: MWN130, (WPH130-01)

Description of operating principle instrument design:

The industrial horizontal meter is intended for metering of delivered water quantity. The Woltman meter (Picture No. 1) 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 and hot 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 MWN130

3.1 Description of subgroups

Marking: MWN130, MWN130-NK, MWN130-NKP, MWN130-G (only for DN50), (WPH130-01, WPH130-N-01)

DN: DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, N300

The Water meter can be equipped by following output impulses:

- MWN130 - basic type with mechanical counter
- MWN130-NK - mechanical counter with contact impulse transducer
- MWN130-NKP - advance prepared counter for contact transducer
- MWN130-G - threaded coupling
- WPH130-01 - basic type with mechanical counter
- WPH130-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 (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 m³ and 3 or 2 scale indicators with pointers for the decimals of m³. Counter capacity is 999 999 m³ or 9 999 999 m³ and resolution of the reading is 0,5; 5 or 50 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

The core part of the water meter is the screw gear laying vertically on the axle of pipe axes. 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 drawing of technical documentation are listed in the following table:

7260-000000	7330-000000	7890-000000
5000-310000	5000-720000	5000-790000
5000-340000	5000-750000	7000-760000
7600-000000	7350-000000	7590-000000
5000-320000	5000-730000	6000-740000
5000-350000	5000-760000	6000-750000
7210-000000	7370-000000	7603-000000
5000-330000	5000-770000	
5000-360000	7000-740000	
7310-000000	7390-000000	
5000-710000	5000-780000	
5000-740000	7000-750000	

All drawings, schemes and technical documentation used during the conformity assessment are saved in document No. NO-069/09 and NO-186/12.



4 Basic technical characteristics

Type marking		MWN130-40 MWN130-40-NK MWN130-40-NKP (WPH130-40-01 WPH130-40-N-01)	MWN130-50 MWN130-50-NK MWN130-50-NKP MWN130-50-G (WPH130-50-01 WPH130-50-N-01)	MWN130-65 MWN130-65-NK MWN130-65-NKP (WPH130-65-01 WPH130-65-N-01)	MWN130-80 MWN130-80-NK MWN130-80-NKP (WPH130-80-01 WPH130-80-N-01)
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	-	MAP16			
Working pressure range	bar	from 0,3 to 1,6			
Pressure loss	-	ΔP10		ΔP16	ΔP10
Temperature class	-	T130			
Flow profile sensitivity classes	-	U0, D0			
Position	-	H, V			
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/mech. class M1			
Electromagnetic environments	-	E1			
Contact impulse transducer NK	dm ³ /imp	2,5; 10; 25; 100; 250; 1000			

Type marking		MWN130-100 MWN130-100-NK MWN130-100-NKP (WPH130-100-01 WPH130-100-N-01)	MWN130-125 MWN130-125-NK MWN130-125-NKP (WPH130-125-01 WPH130-125-N-01)	MWN130-150 MWN130-150-NK MWN130-150-NKP (WPH130-150-01 WPH130-150-N-01)	MWN130-200 MWN130-200-NK MWN130-200-NKP (WPH130-200-01 WPH130-200-N-01)
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	-	MAP16			
Working pressure range	bar	from 0,3 to 16			
Pressure loss	-	ΔP10			
Temperature class	-	T130			
Flow profile sensitivity classes	-	U0, D0			
Position	-	H, V			
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/mech. class M1			
Electromagnetic environments	-	E1			
Contact impulse transducer NK	dm ³ /imp	2,5; 10; 25; 100; 250; 1000		25; 100; 250; 1000; 2500; 10000	

Type marking		MWN130-250 MWN130-250-NK MWN130-250-NKP (WPH130-250-01 WPH130-250-N-01)	MWN130-300 MWN130-300-NK MWN130-300-NKP (WPH130-300-01 WPH130-300-N-01)
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	-	MAP16	
Working pressure range	bar	from 0,3 to 1,6	
Pressure loss	-	ΔP10	
Temperature class	-	T130	
Flow profile sensitivity classes	-	U0, D0	
Position	-	H, V	
Climatic and mechanical environments	-	closed space /from 5°C to 55°C/mech. class M1	
Electromagnetic environments	-	E1	
Contact impulse transducer NK	dm ³ /imp	25; 100; 250; 1000; 2500; 10000	250; 1000; 2500; 10000

4.1 Additional technical characteristics

IP Code IP 66, IP 68
 Weight from 7,9 kg to 103,1 kg

5 Basic metrological characteristics

The maximum permissible error (accurate class):

- $\pm 5\%$ ($Q_1 \leq Q < Q_2$)
- $\pm 2\%$ ($Q_2 \leq Q \leq Q_4$) for water temperature (from 0,1 to 30) °C
- $\pm 3\%$ ($Q_2 \leq Q \leq Q_4$) for water temperature greater than 30 °C

Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Minimum flow rate	Q_1	m ³ /h	0,625	0,625	1	1,575	2,5	4	6,25	10	25,2	40
Transitional flow rate	Q_2	m ³ /h	1	1	1,6	2,52	4	6,4	10	16	40,32	64
Permanent flow rate	Q_3	m ³ /h	25	25	40	63	100	160	250	400	630	1000
Overload flow rate	Q_4	m ³ /h	31,25	31,25	50	78,75	125	200	312,5	500	787,5	1250
Measuring range R	Q_3/Q_1	-	40	40	40	40	40	40	40	40	25	25
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. 11233/230/142/12 dated 30. 7. 2012 give sufficient evidence, that the technical design of the measuring instrument – Woltman water meter type MWN130 is in compliance with the technical requirements of the Slovak Republic Governmental Ordinance No. 294/2005 Coll. On measuring instruments as amended by Government Ordinance No. 445/2010 Coll., Annex No. 1 and MI-001 and the EN 14154-1:2005+A2 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) producer’s name or his production mark
- b) type of the Woltman meter
- c) measuring unit m³
- d) numerical value of Q_3 and ratio Q_3/Q_1
- e) production number and the year of production
- f) number of EC certificate type and conformity mark
- g) the highest admissible pressure if it differs from 1 MPa
- h) flow direction
- i) class of pressure loss if it differs from Δp_{63}
- j) class of climatic and mechanical environment
- k) flow profile sensitivity classes
- l) class of electromagnetic environment
- 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 EN 14154-3:2005+A2 and water at temperature $20\text{ °C} \pm 5\text{ °C}$ and $50\text{ °C} \pm 5\text{ °C}$ at the following flow rates:

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

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

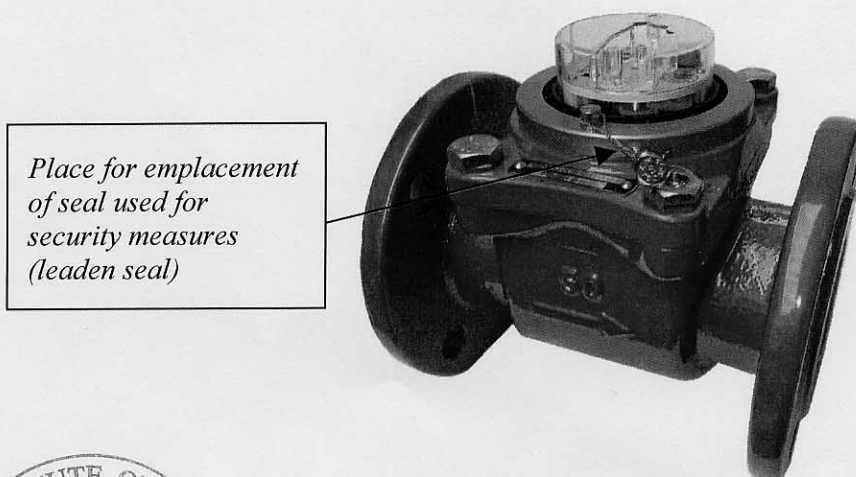
Woltman meter should be in compliance with the description provided on the item 3 of this Annex and should be in compliance with the marking specified by the item 7 of this Annex. The number given to the EC certificate is put at each piece of the measuring instrument.

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 seal used for security measures (leaden seal) (Picture No. 2)



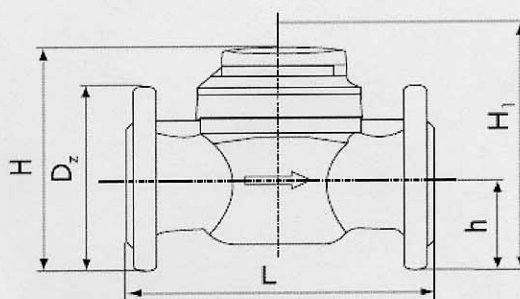
Picture No.2 Emplacement of the seal for security measures

10 Requirements for installation, especially conditions of usage

10.1 Installation data

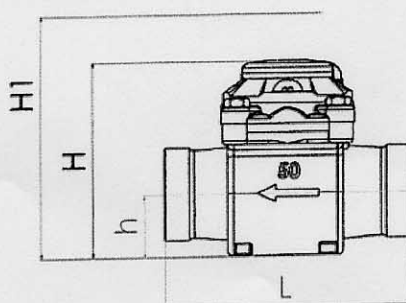
Nominal diameter	DN40	DN50	DN65	DN80	DN100
Construction length [mm] - L	200	200	200	225/200	250
Flange diameter [mm] - D_z	150	165	185	200	220
Weight [kg]	7,9	9,9	10,6	13,3	15,6
Height [mm] - H	177	187	197	219	229
Distance axle from edge [mm] - h	65	72	83	95	105
Space height for remove insert - H_1	277	287	297	339	349

Diameter	DN125	DN150	DN200	DN250	DN300
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.3 Installation dimensions

Nominal diameter	DN50
Construction length [mm] - L	200
Flange diameter [in] - D_z	2 1/2
Weight [kg]	5,5
Height [mm] - H	160
Distance axle from edge [mm] - h	50
Space height for remove insert - H_1	260



Picture No.4 Installation dimensions MWN130-G



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



