

ES CERTIFIKÁT TYPU

EC – Type-examination certificate

Číslo dokumentu: **SK 12-MI004-SMU002** Revision 0
Document number:

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: **Merače tepla - snímač prietoku**
Type of instrument: **Heat meters – flow sensors / Woltman flow sensors**

Označenie typu: **MP130-NC (WS-N-130-NC)**
Type designation:

Základné požiadavky: príloha č. 1 a príloha MI-004 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-004 to Government Ordinance of SR No. 294/2005 Coll.
as amended by Government Ordinance No. 445/2010 Coll.*


Platnosť do: **11. júna 2022**
Valid until: **June 11, 2022**

Notifikovaná osoba: **1781**
Notified body:

Dátum vydania: **12. júna 2012**
Date of issue: **June 12, 2012**

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 7 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 7 pages.




Dr. 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.

Note: EC-type examination certificate without signature and seal is not valid. This EC-type examination certificate may not be reproduced other than in full. Extracts may be taken only with the permission of the Slovak Institute of Metrology.

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), on measuring instruments, which implemented the Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments.

Requirements are listed in No. 1 and Annex MI-004 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 75-1:2002 Heat meters. Part 1: General requirements
- OIML R 75-2:2002 Heat meters. Part 2: Type approval tests
- EN 1434-1:2007 Heat meters. Part 1: General requirements
- EN 1434-2:2007 Heat meters. Part 2: Constructional requirements
- EN 1434-4:2007 Heat meters. Part 4: Pattern approval tests
- EN 1434-5:2007 Heat meters. Part 5: Initial verification tests

1.3 Other instructions used:

- OIML R 75-3:2006 Heat meters. Part 3: Test Report Format
- EN 1434-3:2007 Heat meters. Part 3: Data exchange and interfaces
- EN 1434-6:2007 Heat meters. Part 6: Installation, commissioning, operational monitoring and maintenance

2 Type marking

Woltman flow sensor - MP130-NC (for type marking out of Poland is used **WS-N-130-NC**)

Meter is made in following subgroups:

Type of meter	Limits of temperature	Class	Nominal Diameter
MP130-NC (WS-N-130-NC)	$\theta_{min} = 0,1 \text{ } ^\circ\text{C}$ $\theta_{max} = 130 \text{ } ^\circ\text{C}$	C ¹⁾	DN40, DN50, DN65, DN80, DN100

3 Description of measuring instrument

Meter name: Woltman vertical flow sensor

Type marking: MP130-NC, (WS-N-130-NC)

Description of operating principle instrument design: The Woltman vertical flow sensor is a sub-assembly of Heat meter through which the heat-conveying liquid flows and which emits a signal, which is a function of the volume or the volumetric flow rate. The Woltman flow sensor (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 flow sensor is dedicated to measure the flow and the delivered cold and hot water quantity.

¹ according to EN 1434-1:2007+A1 and OIML R 75-1:2002



Flow sensor is:

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



Picture No.1 Woltman flow sensor MP130-NC

3.1 Description of subgroups

Marking: MP130-NC, (WS-N-130-NC)
DN: DN40, DN50, DN65, DN80, DN100

The flow sensor can be equipped by following output impulses:

- MP130-NC - basic type with mechanical counter with contact or optical impulse transducer
- WS-N-130-NC - basic type with mechanical counter with contact 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 m^3 and 3 scale indicators with pointers for the decimals of m^3 . Counter capacity is $999\,999\,m^3$ and resolution of the reading is $0,5\,dm^3$.

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 core part of the flow sensor 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's are listed in the following table:

2110-000000	5000-170000
2830-000000	
2940-000000	5000-180000
2870-000000	
2880-000000	5000-200000

All drawings, schemes and technical documentation's used during the conformity assessment are saved in document No. NO-100/10.

4 Basic technical characteristics

Type marking	MP130-	40/50-NC	65-NC	80-NC	100-NC
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	-	PN16			
Working pressure range	bar	from 0,3 to 1,6			
Pressure loss	-	ΔP25			
Limits of temperature (θ _{min} and θ _{max})	-	θ _{min} = 0,1 °C , θ _{max} = 130°C			
Min. length of straight pipe before/after flow sensor	-	0			
Position	-	H			
Environmental class	-	C			
Contact impulse transducer NC	dm ³ /imp	2,5; 5;10; 25;50; 100; 250;500; 1000 and others			

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 (accuracy Class 3):

$$E_f = \pm (3 + 0.05 q_p/q), \text{ but not more than } \pm 5 \%$$

DN	mm	40/50	65	80	100
q _i	m ³ /h	0,3	0,5	0,8	1,2
q _p	m ³ /h	15	25	40	60
q _s	m ³ /h	30	50	80	120
q _p /q _i	-	50			



6 Results of conformity assessment

The results of tests, assessments and evaluations given in the evaluation report No. 8274/230/142/12 dated May 31, 2012 give sufficient evidence, that the technical design of the measuring instrument – Woltman flow sensor type MP130-NC 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-004, and the EN 1434-1:2007 and OIML R 75-1:2002 standards.

7 Data placed on the measuring instrument

On the shroud, the dial of the indicating device or on an identification plate of every flow sensor 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 flow sensor
- c) measuring unit m^3
- d) limits of flow rate (q_v , q_p and q_s)
- e) limits of temperature (θ_{min} and θ_{max})
- f) accuracy class
- g) production number and the year of production
- h) number of EC certificate type and conformity mark
- i) the letter V or H, if the flow sensor can be operated in the vertical or horizontal position
- j) maximum admissible working pressure (PN-class)
- k) indication of the direction of flow
- l) environmental class
- m) orientation limitations
- n) maximum pressure loss (pressure loss at q_p)
- o) installation requirements, including installation pipe lengths
- p) output signal of impulse transducer

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

Woltman flow sensor 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 75-1:2002. Metrological test is performed by a testing equipment which should be in compliance with the requirements determined in EN 1434-5:2007 and water at temperature $20\text{ °C} \pm 5\text{ °C}$ (A random samples shall be drawn from each lot (10 percent from each lot). All instruments in the sample shall be carried out with water at temperature $50\text{ °C} \pm 5\text{ °C}$, too. The lot is accepted when 95 percent of random samples of the sensors not exceed the maximum permissible errors given in OIML R 75-1:2002) at the following flowrates:

- a) $q_i \leq q \leq 1,1 q_i$
- b) $0,1 q_p \leq q \leq 0,11 q_p$
- c) $0,9 q_p \leq q \leq q_p$

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

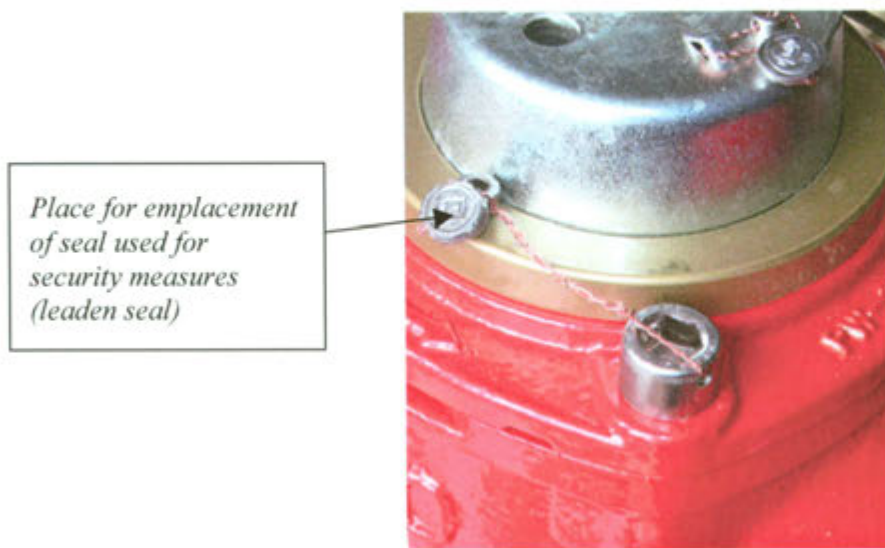
9.1 Identification

Woltman flow sensor 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 flow sensor shall be before the conformity assessment according to the D or F Annexes sealed by following sealing marks:

Connection of counter shroud and flow sensor body shall be sealed by seal used for security measures (lead seal) (Picture No. 2)



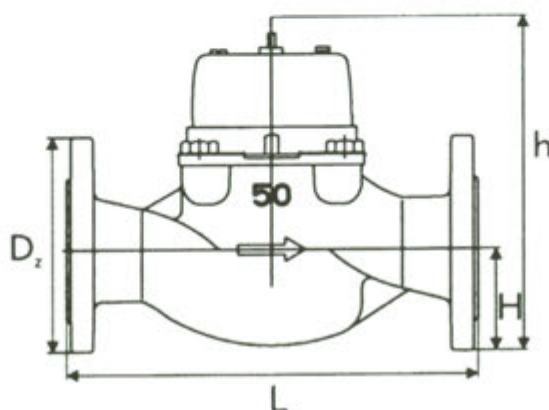
Picture No.2 Emplacement of the seal for security measures

10 Requirements for installation, especially conditions of usage

10.1 Installation data

Nominal diameter	DN40	DN50	DN65	DN80	DN100
Construction length (mm) - <i>L</i>	200/270/300	200/270/300	300	300/350	360/350
Flange diameter (mm) - <i>D_z</i>	150	165	185	200	220
Weight (kg)	12	13	19,5	21,5	30
Height (mm) - <i>H</i>	183	200	250	255	335
Distance axle from edge (mm) - <i>h</i>	70	73	87	95	105





Picture No.3 Installation dimensions

10.2 Installation requirements

The Woltman flow sensor is introduced into the operation by a worker having a certificate for this activity performance. The Woltman flow sensor 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 flow sensors". 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 flow sensors".

Assessment done by: Ing. Viliam Mazúr