



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



Reg. No. 101/P-035

CERTIFIKÁT EÚ SKÚŠKY TYPU

EU – type examination certificate

Číslo dokumentu:

SK 12-MI001-SMU024

Revízia 12

Document number:

Revízia 12 nahrádza certifikát zo dňa 12. April 2023

Revision 12

Revision 12 replaces the certificate issued by April 13, 2023

V súlade s:

In accordance with:

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

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:

Issued to (Manufacturer):

Wasser-Geräte GmbH

Max-Planck Str. 20, 78549 Spaichingen, Germany

Druh meradla:

Type of instrument:

Vodomer (MI-001) / Lopatkový jednvtokový vodomer

Water meter (MI-001) / Vane-wheel single-jet water meter

Označenie typu:

Type designation:

ETW, ETW-E

Základné požiadavky:

Essential requirements:

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.

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:

Valid until:

12. decembra 2032

December 12, 2032

Notifikovaná osoba:

Notified body:

Slovenský metrologický ústav 1781

Slovak Institute of Metrology 1781

Dátum vydania:

Date of issue:

9. augusta 2023

August 9, 2023

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 13 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 13 pages.



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. Certificate without signature and stamp is not valid.

1 Instructions and standards used within assessment

1.2 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.

1.3 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

Vane-wheel single-jet water meter – ETW, ETW-E

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
ETW, ETW-E	T50, T90, T30/90	M1 ⁴⁾ B ⁵⁾	DN15, DN20

3 Description of measuring instrument

Meter name: Vane-wheel single-jet water meter

Type marking: ETW, ETW-E



⁴ according to Government Ordinance of the Slovak Republic, Annex No. 1

⁵ according to EN ISO 4064-1:2017 and OIML R 49-2:2013

Description of operating principle instrument design:

Vane-wheel single-jet water meters ETW, ETW-E with permanent flow rates of 1,6 m³/h, 2,5 m³/h and 4 m³/h have been designed to measure actual volume of cold and hot water flowing in a completely filled up closed pipeline. The water meter for cold and hot water is composed of a body, of the measuring mechanism and the counter. Water flowing through a meter sets the vane-wheel in a rotary motion that is transferred by a magnetic clutch to the counting mechanism. The type ETW-ECO-S additionally has an integrated radio module.

Vane-wheel single-jet water meters ETW, ETW-E are composed of three basic assemblies:

1. measuring unit
2. indicating device (mechanical or electronic unit)
3. radio module (ETW-ECO-S)

The indicating device has been set so that it can be easily adjusted by rotation to facilitate readout.

The body of the water meter is a brass casting (meters could be with composite body) equipped with screwed pipe connectors to enable mounting on a pipeline with the help of fittings and nuts.

Water meters have been fitted for mounting on pipelines in horizontal (dial facing up) and vertical positions. Accidental occurrence of a reverse flow does not affect metrological characteristics provided for a normal flow.

Table No.1 Vane-wheel single-jet water meter ETW, ETW-E

		
ETW-ECO - composite version	ETW-ECO - brass version	ETW-ECO-S - brass version
		
ETW	ETW-I	ETW-ECO-S - composite version

		
ETW-E	ETW-P-E	

3.1 Description of subgroups

Marking: ETW (ETW/ETW-I / ETW-MFS-ECO / ETW-ECO-S) 1/2"(3/4") 80 (60, 110, 130) KW (WW), ETW-E (ETW-P-E) 1/2"(3/4") 80 (110, 115, 130) KW (WW)

DN: DN15, DN20

The meter can be equipped by following devices:

- ETW-I: version with a reed contact pulse transmitter which was not part of this certification
- ETW-MFS-ECO: version adapted for fitting of the radio or remote meter reading devices, M-Bus or Puls-Module which was not part of this certification
- ETW-ECO-S: version with integrated radio module which was not part of this certification

For example:

ETW-MFS-ECO 1/2" 80 T50

Temperature class

Construction length (mm)

Nominal pipe size NPS (inches) or Nominal diameter DN (mm)



3.2 Measuring insert Additional device

The main elements of the measuring unit are the following:

- a body with a strainer set in the inlet channel and a basic axle pressed into the body bottom without any additional swelling plate in the body bottom or with a swelling plate fixed to the body bottom,
- a vane-wheel,
- a packing plate.

The vane-wheel is borne on a basic axle and in a bearing, sleeve mounted on the packing plate. There is a magnet of a magnetic clutch on the vane-wheel. The packing plate is fitted with an adjusting rib angled to water flow, which allows meter adjustment.

3.3 Indicating device

3.1.1 ETW

The capacity of the counter is 99 999 m³ and resolution of the reading is 0,05 dm³.

The counting mechanism includes a rear clutch, gears and a register. The register consists of one pointer and eight-drum roller. A transparent casing facilitates readout of meter indications. On the central axle of the counting mechanism on which the magnet of the magnetic clutch has been fixed there is a flow indicator that performs a function of a vane-wheel rotation indicator. The flow indicator is also used in the process of electronic testing of meters.

The counter design does not allow for resetting of meter indications.

Counter pointers rotate clockwise. Indicated digital values increase as the drums with digits marked on them move upwards. An indication increase by one digit is complete when a digit in a lower decade changes from 9 to 0. In a decade of the lowest values digital indications change continuously. Black digits marked on digital drums indicate cubic meters or their multiples whereas red digits or pointers indicate submultiples of cubic meters.

The pointers move round scales marked with proper multipliers and placed on an indicating dial.

The water meter in the version with a reed contact pulse transmitter – ETW-I – in the counting mechanism, on one of the pointers a magnet is fixed to short-circuit reed relay contacts and the counter casing is equipped with a socket to connect the transmitter assembly. The counter casing with the transmitter is protected with a magnetic shield.

The water meter in the version adapted to the installation of a radio, pulse or M-Bus module of remote reading (ETW-MFS-ECO) are fitted out with a metallized pointer which generates electronic pulses, and the casing of the counter is adapted to the installation of a pulse, M-Bus or radio transmitter for the remote reading of consumption values.

The water meter in the version with integrated radio module is fitted out with a module which is connected with the metallized pointer for the remote reading of consumption values.

3.1.2 ETW-E

The enclosure consists of a lower part where are fixed the coils and the electronic unit.

The lower part is closed by a bayonet connection with a capsule with gaskets or sealing glue that guarantees the protection of the electronic unit.

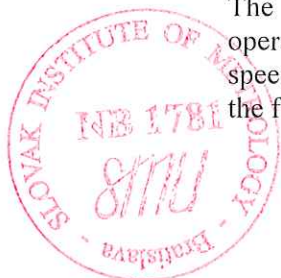
The reading and programming of the electronic unit can be done with an optical probe.

The LCD display shows volume and flow. The water meter has two indication modes: normal mode and high-resolution mode (which is used during the calibration process).

The capacity of the counter is 99 999 m³ and the resolution of the reading is 1 dm³ in normal mode. In high-resolution mode, the resolution of the reading is 0,01 dm³.

3.4 Principle of operation

The water meter operates on the principle of a water speed sensor by impeller wheel. The operating speed of the wheel is proportionated to the speed of overflowing water. The operating speed is proportionated to water delivered quantity. The water meter is dedicated to measure the flow and the delivered cold and hot water quantity.



3.5 Technical documentation

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

ETW, ETW-ECO-1/2“-3/4“-05	ETW-15-110-01 (Body)
ETW-ECO-1/2“-3/4“-003	ETW-20-130-01 (Body)
ETW-ECO-1/2“-3/4“-KW-001.1	ETW-Z-ECO-60-05 (Turbine)
ETW-ECO-1/2“-3/4“-WW-001	ETW-ECO-15-115-01.1
ETW-ECO-1/2“-3/4“-WW-002	ETW-ECO-15-115-01.2
ETW-10,15,20-01.1 (BUCH)	ETW-ECO-15-115-01.3
ETW-10-110-01 (Body)	ETW-ECO-20-115-01.1
ETW-15-80-01 (Body)	ETW-ECO-115-003
ETW-Z-ECO-60-01 (Body)	ETW-ECO-115-KW-001.1
ETW-1/2“-3/4“-003	ETW-ECO-115-KW-001
ETW-ECO-1/2“-3/4“-KW-001	ETW-ECO-115-KW-002
ETW-ECO-1/2“-3/4“-KW-002	ETW-ECO-115-WW-001.1
ETW-ECO-1/2“-3/4“-WW-001.1	ETW-ECO-115-WW-001
ETW-10,15,20-05 (Turbine)	ETW-ECO-115-WW-002
ETW-E-1/2“-3/4“-001.1	ETW-E-1/2“-3/4“-03
ETW-E-1/2“-3/4“-002	ETW-E-1/2“-3/4“-05
ETW-E-1/2“-80-001.3	ETW-E-1/2“-110-001.3
ETW-E-3/4“-130-001.3	ETW-E-1/2“-115-001.3
ETW-E-1/2“-3/4“-001	ETW-E-3/4“-115-001.3
ETW-P-E-1/2“-3/4“-001	ETW-P-E-1/2“-3/4“-002
ETW-P-E-1/2“-3/4“-001.1	ETW-P-E-1/2“-115-001.3
ETW-P-E-1/2“-80-001.3	ETW-P-E-3/4“-115-001.3
ETW-P-E-1/2“-110-001.3	ETW-P-E-3/4“-130-001.3
ETW-E-1/2“-3/4“-001.2	ETW-E-T50/T90-DP
ETW-P-E-1/2“-3/4“-001.2	ETW-P-E-T50/T90-DP
ETW-Z-E, VTZ-E-DP	ETW-Z-E-001.2
ETW-Z-E-001	ETW-Z-E-002
ETW-ECO-R80-T30-90	ETW-ECO-R160-T30-90
ETW-E-DP-T30-90	ETW-P-E-DP-T30-90
ETW-R80-T30-90	ETW-Z-E,VTZ-E-DP-T30-90

All drawings, schemes and technical documentations used during the conformity assessment are saved in documents No. NO-169/12, NO-248/13, NO-313/15, NO-321/16, NO 344/17, NO-348/17, NO-429/19, NO-458/20, NO-472/20, NO-528/22, NO-556/22, NO-576/23 and NO-601/23.



4 Basic technical characteristics

Type marking		ETW, ETW-E	
Nominal diameter DN	mm	15	20
Indicating range	m ³	99 999	
Resolution of the reading	m ³	0,00005 (0,001 for ETW-E)	
Maximum admissible pressure	-	MAP16	
Working pressure range	bar	from 0,3 to 16	
Pressure loss	-	Δp 40	
Temperature class	-	T50, T90, T30/90	
Flow profile sensitivity classes	-	U0, D0	
Position	-	H (dial facing up), V	
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/ mech. Class M1	
Electromagnetic environments	-	E2	
Software	-	Type P, Risk class C, extension L, T, D (Welmec Guide 7.2)	
Software version and checksum		22042601, CRC check code is AEBC	
Power supply	-	Non replaceable battery 3V	
Minimum battery life	-	10 years	

4.1 Additional technical characteristics

Weight	from 0,21 kg to 0,52 kg
Weight ETW-ECO-S	from 0,24 kg to 0,55 kg
Weight ETW-E	from 0,39 kg to 0,50 kg

5 Basic metrological characteristics

The maximum permissible error (accuracy class):

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

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

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



5.1 ETW

Temperature class	T		-	50, 90, 30/90			
Diameter	DN		mm	15			20
Minimum flow rate	Q_1	H	m ³ /h	0,03125	0,03125	0,02	0,05
		V	m ³ /h	0,0625	0,05	0,032	0,08
Transitional flow rate	Q_2	H	m ³ /h	0,05	0,05	0,032	0,08
		V	m ³ /h	0,1	0,08	0,0512	0,128
Permanent flow rate	Q_3		m ³ /h	2,5	2,5	1,6	4
Overload flow rate	Q_4		m ³ /h	3,125	3,125	2	5
Measuring range R	Q_3/Q_1	H	-	80			
		V	-	40	50		
Ratio	Q_2/Q_1		-	1,6			

Temperature class	T		-	50, 90, 30/90		
Diameter	DN		mm	15	15	20
Minimum flow rate	Q_1	H	m ³ /h	0,016	0,0156	0,025
		V	m ³ /h	0,025	0,04	0,064
Transitional flow rate	Q_2	H	m ³ /h	0,0256	0,025	0,04
		V	m ³ /h	0,04	0,064	0,103
Permanent flow rate	Q_3		m ³ /h	1,6	2,5	4
Overload flow rate	Q_4		m ³ /h	2	3,125	5
Measuring range R	Q_3/Q_1	H	-	100 ⁶⁾	160 ³⁾	
		V	-	63 ³⁾		
Ratio	Q_2/Q_1		-	1,6		

Temperature class	T		-	50, 90, 30/90			
Diameter	DN		mm	15	20	15	20
Minimum flow rate	Q_1	H	m ³ /h	0,016	0,025	0,025	0,04
		V	m ³ /h	0,025	0,04	0,04	0,064
Transitional flow rate	Q_2	H	m ³ /h	0,025	0,04	0,04	0,064
		V	m ³ /h	0,04	0,064	0,064	0,102
Permanent flow rate	Q_3		m ³ /h	2,5	4	2,5	4
Overload flow rate	Q_4		m ³ /h	3,125	5	3,125	5
Measuring range R	Q_3/Q_1	H	-	160 ³⁾		100 ³⁾	
		V	-	100 ³⁾		63 ³⁾	
Ratio	Q_2/Q_1		-	1,6			

⁶ Not apply to construction length 60 mm


5.2 ETW-E

Temperature class	T		-	50, 90, 30/90					
Construction length	L		mm	110	110	115	80	115	130
Diameter	DN		mm	15	15	15	20	20	20
Minimum flow rate	Q_1	H	m ³ /h	0,01	0,0125	0,0125	0,0125	0,02	0,02
		V	m ³ /h	0,02	0,025	0,025	0,025	0,04	0,04
Transitional flow rate	Q_2	H	m ³ /h	0,016	0,02	0,02	0,02	0,032	0,032
		V	m ³ /h	0,032	0,0256	0,0256	0,0256	0,064	0,064
Permanent flow rate	Q_3		m ³ /h	1,6	2,5	2,5	2,5	4	4
Overload flow rate	Q_4		m ³ /h	2	3,125	3,125	3,125	5	5
Measuring range R	Q_3/Q_1	H	-	160	200	200	200	200	200
		V	-	80	100	100	100	100	100
Ratio	Q_2/Q_1		-	1,6					

5.3 ETW-P-E

Temperature class	T		-	50, 90, 30/90					
Construction length	L		mm	110	110	80	115	115	130
Diameter	DN		mm	15	15	15	15	20	20
Minimum flow rate	Q_1	H	m ³ /h	0,01	0,0125	0,0125	0,0125	0,02	0,02
		V	m ³ /h	0,02	0,025	0,025	0,025	0,04	0,04
Transitional flow rate	Q_2	H	m ³ /h	0,016	0,02	0,02	0,02	0,032	0,032
		V	m ³ /h	0,032	0,0256	0,0256	0,0256	0,064	0,064
Permanent flow rate	Q_3		m ³ /h	1,6	2,5	2,5	2,5	4	4
Overload flow rate	Q_4		m ³ /h	2	3,125	3,125	3,125	5	5
Measuring range R	Q_3/Q_1	H	-	160	200	200	200	200	200
		V	-	80	100	100	100	100	100
Ratio	Q_2/Q_1		-	1,6					

6 Results of conformity assessment

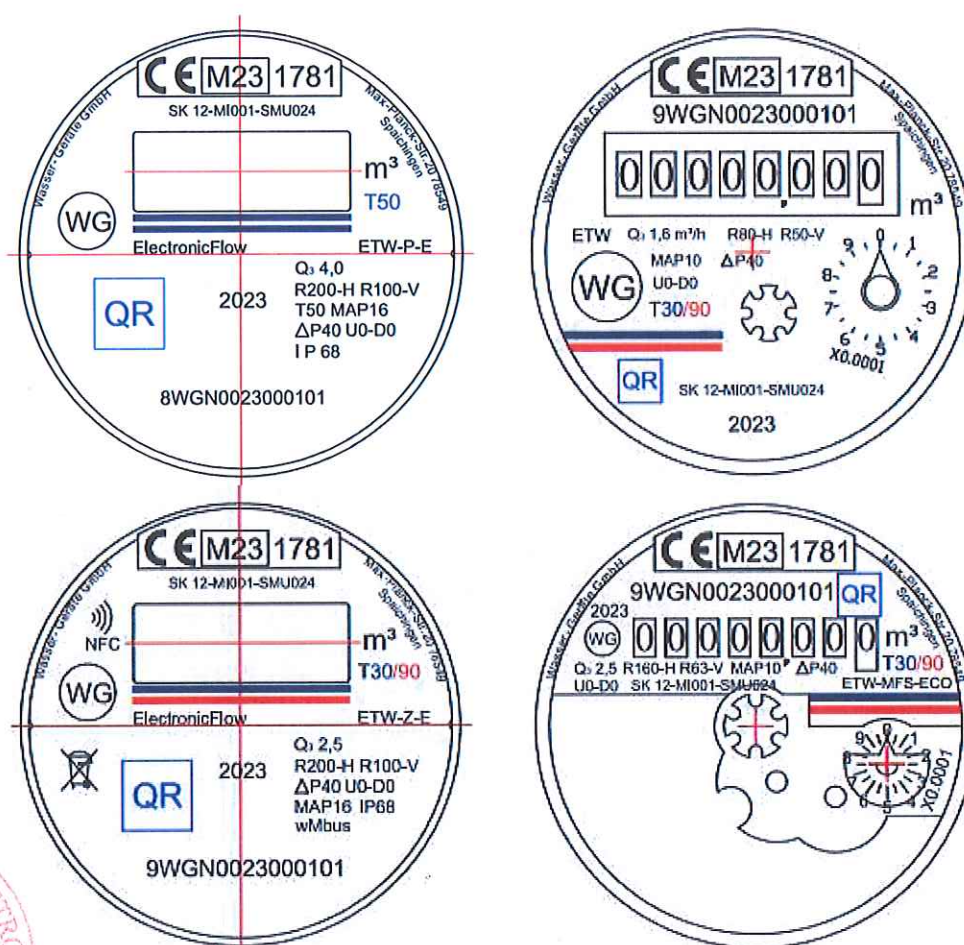
The results of tests, assessments and evaluations given in the evaluation report No. NO-601/23/B/ER dated August 7, 2023 give sufficient evidence, that the technical design of the measuring instrument – Vane-wheel single-jet water meter type ETW, ETW-E is in compliance with the technical requirements 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 at which they can be contacted
- type of the single-jet water meter
- measuring unit m^3
- 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
- the letter V or H, if the meter can only be operated in the vertical or horizontal position
- class of pressure loss if it differs from Δp_{63}
- class of climatic and mechanical environment
- flow profile sensitivity classes
- for a non-replaceable battery: the latest date by which the meter shall be replaced (for ETW-E)
- electromagnetic environmental class (for ETW-E)
- the temperature class where it differs from T30



Picture No.1 Dial plates example

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

Vane-wheel single-jet water meters for cold and hot water 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 $20\text{ °C} \pm 5\text{ °C}$ (for temperature class T50) and $20\text{ °C} \pm 5\text{ °C}$ and $50\text{ °C} \pm 5\text{ °C}$ (for temperature class T90, T30/90) at the following flowrates:

- 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.

9 Measures asked for providing measuring instrument integrity

9.1 Identification

Vane-wheel single-jet 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

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

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



Picture No.2 Emplacement of the label for security measures

9.3 Software security

The software complies with Welmec Guide 7.2, Type P, Risk Class C, with extension T transmission of measurement data (T) and Download of Legally Relevant Software (D).

The software is identified by its version number 22042601.

The legal relevant parameters and metrological parameters are stored on a non-volatile memory, meters support commands through IR communication able to modify metrological parameters but for activating these it is required to plug a hardware jumper on the electronic board.

Plugging of this jumper requires breaking of the mechanical seals described on 9.2.

10 Requirements for installation, especially conditions of using

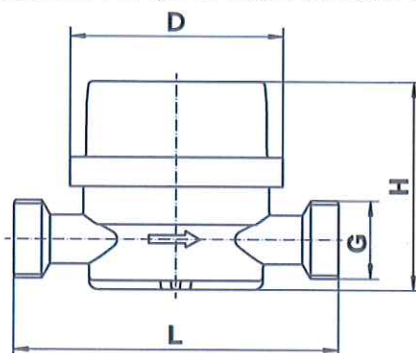
10.1 Installation data

Nominal Diameter	DN15	DN20	DN15 Composite	DN20 Composite
G	1/2", 3/4", 7/8", 1"	3/4", 1"	1/2", 3/4", 7/8", 1"	3/4", 1"
Construction length [mm] - L	60/80/110/115	130/115	80/110/115	130/115
Counter diameter [mm] - D	72/69	72/69	79	79
Weight [kg]	0,39/0,43	0,52	0,21/0,22	0,26
Height [mm] - H	70	70	78	78
Distance axle from edge [mm] - h	16	16	19	19

Nominal Diameter	DN15 ETW-ECO-S	DN20 ETW-ECO-S	DN15 Composite	DN20 Composite
G	1/2", 3/4", 7/8", 1"	3/4", 1"	1/2", 3/4", 7/8", 1"	3/4", 1"
Construction length [mm] - L	80/110/115	115/130	110/115	130/115
Counter diameter [mm] - D	70	70	79	79
Weight [kg]	0,41/0,46	0,55	0,24	0,28
Height [mm] - H	80,5	80,5	91	91
Distance axle from edge [mm] - h	16	16	19	19

Nominal Diameter	DN15 ETW-E	DN20 ETW-E	DN15 ETW-P-E	DN20 ETW-P-E
G	1/2", 3/4"	3/4"	1/2"	1/2", 3/4"
Construction length [mm] - L	80/110/115	115/130	80/110/115	115/130
Counter diameter [mm] - D	69,5	69,5	76	76
Weight [kg]	0,39/0,44/0,45	0,48/0,50	0,24/0,25/0,26	0,28/0,29
Height [mm] - H	70	70	80	80
Distance axle from edge [mm] - h	16	16	19	19





Picture No.3 Installation dimensions

10.2 Installation requirements

A vane-wheel single-jet water meter is introduced into the operation by a worker having a certificate for this activity performance. The vane-wheel single-jet meter is possible to be put into use after a construction in line with this report and in line with the producer instruction by “Instruction of installation and conditions of use of 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 water meters”.

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