

CERTIFIKAT EÚ SKÚSKY TYPU

EU – type examination certificate

Číslo dokumentu:

Document number:

SK 24-MI001-SMU077

Revízia 1

Revision 1

Revízia 1 nahradza certifikát zo dňa 15. marca 2024

Revision 1 replaces the certificate issued by March 15, 2024

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):

Ningbo Bestway M&E Co., Ltd.

10F, Zhenru Center, No. 225 Northern Section of Huancheng
West road, 315000 Ningbo, China

Druh meradla:

Type of instrument:

Vodomer (MI-001)

Water meter (MI-001)

Označenie typu:

Type designation:

MTW01

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:

15. marec 2034

March 15, 2034

Notifikovaná osoba:

Notified body:

Slovenský metrologický ústav 1781

Slovak Institute of Metrology 1781

Dátum vydania:

Date of issue:

12. august 2025

August 12, 2025

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 9 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 9 pages.



Viliam Mazúr
zástupca notifikovanej osoby
representative of notified body

Poznámka: Tento certifikát EÚ skúsky 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.

History of the Certificate

Issue of the Certificate	Date	Modification
SK 24-MI001-SMU077, Revision 0	March 15, 2024	Initial certificate
SK 24-MI001-SMU077, Revision 1	August 12, 2025	Adding DN15 $Q_3=2,5$ H R200, V R80, DN20 $Q_3=4$ H R200, V R80

Place of production:

- Ningbo Wasser Geraete Co., Ltd.,
No. 9 Xinxing Road, Chalu, Ninghai, 315606 Zhejiang, China

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

Multi-jet magnetic water meter – **MTW01**

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
MTW01	T50	M1 ¹⁾	DN15, DN20, DN25, DN32, DN40, DN50

3 Description of measuring instrument

Meter name: Multi-jet magnetic water meter

Type marking: MTW01

Description of operating principle instrument design:

Multi-jet, dry dial, magnetic vane-wheel water meter for cold potable water and hot water with sealed dry magnetic register and permanent flowrates of 2,5 m³/h, 4 m³/h, 6,3 m³/h, 10 m³/h, 16 m³/h and 25 m³/h have been designed to measure actual volume of clean cold potable and hot water flowing in a completely filled up closed pipeline. The water meter is composed of body, measuring mechanism and counter. Water flowing through a meter sets the vane-wheel in a rotary motion that is transferred directly to the counting mechanism.

The meter is mainly composed of body group and measuring unit group.

The body group consists of the body, the cap, the lid, adjusting device and the inlet strainer. The glass cover can protect the register against the external damages and the lid provides the further protection to the register. The adjusting device built in the body is used to calibrate the meter. The body of the water meter is a brass casting with inlet and outlet screw parts.

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

All the meters are provided with an inductive contact, in order to be retrofitted with different modules, which are not part of this certification.



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

*Picture No. 1 Multi-jet magnetic water meter*

3.1 Description of subgroups

Marking: MTW01

DN: DN15, DN20, DN25, DN32, DN40, DN50

The water meter type MTW01 can be equipped with following devices:

- Pulse module, M-Bus-Module, wM-Bus-Module, Radio-module, which was not part of this certification

3.2 Measuring insert

The measuring unit group consists of the sealed register, the measuring chamber, the vane wheel assembly and the pressure plate. It is a key group for the accuracy performance of the meter. The magnetic gear on the top of vane wheel shaft transmits the movement of the turbine to the clockwork and register.

3.3 Indicating device

The capacity of the counter is 99 999 m³ for sizes DN15, DN20, DN32 and 999 999 m³ for sizes DN40 and DN50 and minimum resolution of the reading is 0,05 dm³. The register lens (glass) can be made of hardened glass or transparent polycarbonate on request to give the register protection against the impact damage and contamination. 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 increased 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 or black pointers 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.

3.4 Principle of operation

The potable water enters the meter from the inlet of the meter and distributed by the lower orifices that equally spaced on the circumference of the measuring chamber, the multi-jet distributed strike the vane wheel at the tip of the vane blades to make it rotation, the measured water by the vane wheel flows out from the top orifices on the measuring chamber. The rotation of the vane wheel (proportional to the velocity of water flow) is transmitted directly to the sealed register, the register totalizes the rotation of the vane wheel and indicates the water volume passing through the meter.

3.5 Technical documentation

A number of drawings of technical documentations is listed in the following table:

Drawings numbers		
MTW01-15-50-001.1	MTW01-15-50-001.2	MTW01-15-50-001
MTW01-15-50-002	MTW01-15-50-003	MTW01-15-50-004

All drawings, schemes and technical documentations used during the conformity assessment are saved in documents No. NO-627/24 and NO-665/25.

4 Basic technical characteristics

Type marking		MTW01														
Nominal diameter DN	mm	15	20	25	32	40	50									
Indicating range	m^3	10^5			10^6											
Resolution of the reading	m^3	0,00005														
Maximum admissible pressure	-	MAP16														
Working pressure range	bar	from 0,3 to 16														
Pressure loss	-	Δp 63														
Temperature class	-	T50														
Flow profile sensitivity classes	-	U0, D0														
Position	-	H, V														
Climatic and mechanical environments	-	closed spaces /from -10°C to 55°C/, mechanical class M1														
EUT testing requirements (OIML R 49-2:2013, 8.1.8)																
Category	Turbine water meters with no electronic devices															
Case	A															



4.1 Additional technical characteristics

Weight [kg]	from 1,19 to 4,25
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5 Basic metrological characteristics

The maximum permissible error (accuracy class):

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

$\pm 2\% (Q_2 \leq Q \leq Q_4)$ 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

Nominal Diameter	DN		mm	15	20	25	25, 32	40	50
Minimum flow rate	Q_1	H	m^3/h	0,0156	0,025	0,0394	0,0625	0,1	0,1563
		V	m^3/h	0,0313	0,05	0,0788	0,125	0,2	0,3125
Transitional flow rate	Q_2	H	m^3/h	0,025	0,04	0,063	0,1	0,16	0,25
		V	m^3/h	0,05	0,08	0,126	0,2	0,32	0,5
Permanent flow rate	Q_3		m^3/h	2,5	4	6,3	10	16	25
Overload flow rate	Q_4		m^3/h	3,125	5	7,875	12,5	20	31,25
Measuring range R	Q_3/Q_1	H	-				160		
		V	-				80		
Ratio	Q_2/Q_1		-				1,6		

Nominal diameter	DN		mm	15	20	25	25, 32	40	50
Minimum flow rate	Q_1	H	m^3/h	0,0125	0,020	0,0315	0,050	0,080	0,125
		V	m^3/h	0,03125	0,050	0,07875	0,125	0,20	0,3125
Transitional flow rate	Q_2	H	m^3/h	0,020	0,032	0,0504	0,080	0,128	0,200
		V	m^3/h	0,50	0,080	0,126	0,20	0,32	0,50
Permanent flow rate	Q_3	-	m^3/h	2,5	4	6,3	10	16	25
Overload flow rate	Q_4	-	m^3/h	3,125	5	7,875	12,5	20	31,25
Measuring range R	Q_3/Q_1	H	-				200		
		V	-				80		
Ratio	Q_2/Q_1	-	-				1,6		



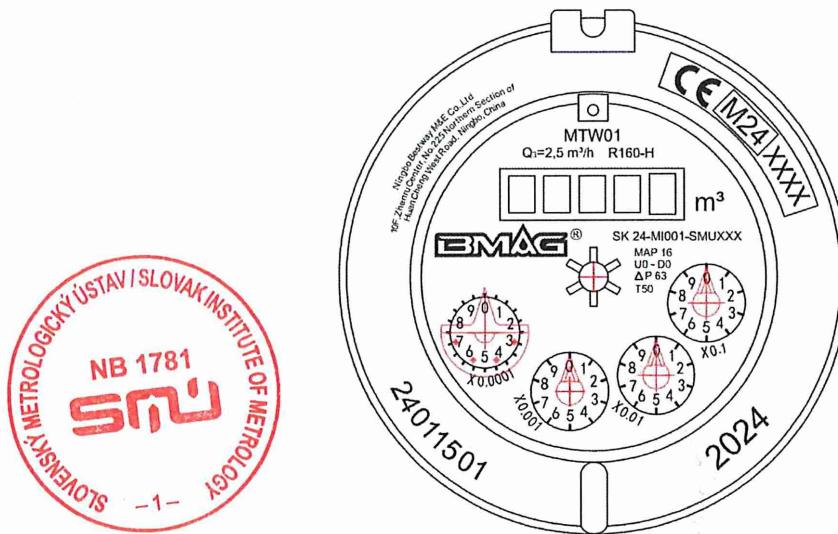
6 Results of conformity assessment

The results of tests, assessments and evaluations given in the evaluation report No. NO-665/25/B/ER dated August 11, 2025 give sufficient evidence, that the technical design of the measuring instrument – multi-jet magnetic water meter type MTW01 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 R 49-1:2013, 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:

- a) Manufacturer's name, registered trade name or registered mark and postal address of manufacturer at which they can be contacted
- b) Measuring instrument type
- c) Measuring unit (m^3)
- d) Numerical value of Q_3 in m^3/h ($Q_3 \times x$) and ratio Q_3/Q_1 (Rxxx)
- e) Year of production and production serial number
- f) Number of EU-type examination certificate and conformity mark
- g) The highest admissible pressure if it differs from 1 MPa (MAP xx)
- h) Flow direction
- i) The letter V or H, if the meter can only be operated in the vertical or horizontal position
- j) Class of pressure loss if it differs from Δp_{63} (Δp XX)
- k) Flow profile sensitivity classes (Ux Dx)
- l) Class of climatic and mechanical environment
- m) The temperature class where it differs from T30



Picture No. 2 Dial plate example

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

Multi-jet magnetic water meter for cold potable and hot water is put onto the market according to 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 annex 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 $20^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 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**

The multi-jet magnetic 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 of the EU-type examination certificate should be placed onto 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

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

Seal used for security measures (leaden seal) shall seal connection of counter shroud and water meter body (Picture No. 3).

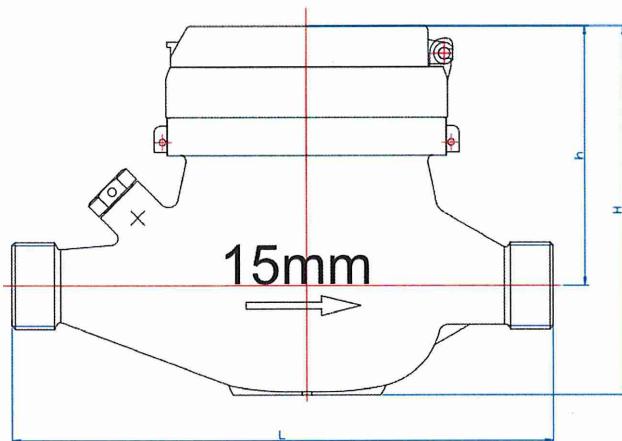


Picture No. 3 Emplacement of the seal for security measures



10 Requirements for installation, especially conditions of usage**10.1 Installation data**

Nominal diameter	DN15	DN20	DN25	DN32	DN40	DN50
Construction length [mm] - L	165/145	190/195	260/225	260/230	300/245	300/280
Width [mm] - h	79	79	81	81	98	98
Height [mm] - H	112	112	121	121	152	152
Weight [kg]	1,21/1,19	1,32/1,33	2,08/2,05	2,2/2,13	3,78/3,57	4,25/4,15

*Picture No. 4 Installation dimensions***10.2 Installation requirements**

A multi-jet magnetic water meter should be introduced into operation by qualified for this activity performance worker. Meter is possible to put into use after a construction in line with this annex and in line with a 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

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

Assessment done by: Maryna Tokarieva

