



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:

Document number:

**SK 18-MI001-SMU054**

Revízia 5 nahrádza certifikát zo dňa 19. novembra 2021

Revision 5 replaces the certificate issued by November 19, 2021

**Revízia 5**

Revision 5

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):

**BMETERS s.r.l.**

**Via Friuli 3, 33050, Gonars (UD), Italy**

Druh meradla:

Type of instrument:

**Vodomer (MI-001)**

Water meter (MI-001)

Označenie typu:

Type designation:

**GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+,  
GSD8-I**

Základné požiadavky:

Essential requirements:

príloha č. 1 a príloha č. 3 Vodometry (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:

**28. marec 2028**

March 28, 2028

Notifikovaná osoba:

Notified body:

**Slovenský metrologický ústav 1781**

Slovak Institute of Metrology 1781

Dátum vydania:

Date of issue:

**3. január 2024**

January 3, 2024

Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 17 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 17 pages.



Ing. Viliam Mazúr  
zástupca notifikovanej osoby  
representative of notified body

Poznámka:

Note:

Tento certifikát EÚ skúšky typu môže byť rozmnožovaný len celý a nezmenený. Bez podpisu a odtlačku pečiatky je neplatný.

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 18-MI001-SMU054, Revision 0	March 29, 2018	Initial certificate
SK 18-MI001-SMU054, Revision 1	May 28, 2018	Correct $Q_1$ flowrates
SK 18-MI001-SMU054, Revision 2	February 26, 2019	New model with inductive index and optional metallic plate for protect gear mechanism
SK 18-MI001-SMU054, Revision 3	July 28, 2021	Add R200H $\uparrow$ ( $Q_3$ 2,5 and 4), R50H $\downarrow$ (all sizes), cup for GSD8
SK 18-MI001-SMU054, Revision 4	November 19, 2021	Add plastic body
SK 18-MI001-SMU054, Revision 5	January 3, 2024	R80 V,H $\downarrow$ $\rightarrow$ ( $Q_3$ 2,5 and 4)

### 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

Water meter: GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I

Meter is made in following subgroups:

Type of meter	Temperature class	Class	Nominal Diameter
GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I	T30, T50, T70, T30/90, T90	M1 <sup>1)</sup> , B <sup>2)</sup>	DN15, DN20

## 3 Description of measuring instrument

**Meter name:** vane wheel, single jet, dry dial, mechanic

**Type marking:** GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I

### Description of operating principle instrument design:

Vane-wheel single-jet dry dial type water meter GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO, domaqua m+, GSD8-I have been designed to measure actual volume of cold and hot water flowing in a completely filled up closed pipeline. Water flowing through a meter sets the vane wheel in a rotary motion that is transferred by a magnetic clutch to the counting mechanism. Single jet dry dial type water meters GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I are composed of three basic assemblies:

- measuring section;
- indicating device;
- dry chamber.

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

Water meter can be equipped with a reed contact impulse emitter or by radio or M-BUS module which was not part of this certification.



<sup>1</sup> according to Government Ordinance of the Slovak Republic, Annex No. 1

<sup>2</sup> according to EN ISO 4064-1:2017 and OIML R 49-2:2013



*Picture No. 1 - Picture of basic product*

### 3.1 Description of subgroups

Marking: **GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I**

Sizes: DN15, DN20

The Water meter can be equipped by following devices, which was not part of this certification:

- impulse emitter device;
- radio or M-BUS device.

### 3.2 Measuring section

The measuring section consists in a wet section made by brass or plastic body and sealing plate, where the water flows and rotates the vane wheel. The rotation is transmitted through magnetic coupling (realized with two magnets) to the counting mechanism.

Optionally between sealing plate and locking ring can be inserted a steel disc for anti-ice improved resistance.

Optionally between sealing plate and locking ring can be inserted a metallic disc for extra strong protection of magnetic field.

The adjustment of the intrinsic error curve can be done by rotating the sealing plate or by external regulating screw.



### 3.3 Indicating device

All models have common measuring section, but different dials:

- model GSD8, GSD8-RFM, GSFO or domaqua m+, GSD8-I has the reading rolls in front view position and can be equipped with reed contact impulse emitter and radio or wired M-BUS emitter module which are not part of this certification;
- model GSD8-45 has the reading rolls in 45° position;
- model GSD5 has the reading rolls in front view position and can be equipped with reed contact impulse emitter.

Models GSD8, GSD8-RFM GSFO or domaqua m+, GSD8-45 and GSD8-I registers are formed by five black drums displaying volume in cubic meters and three red drums and one red rotary pointer displaying submultiples of cubic meters.

Model GSD5 registers are formed by five black drums displaying volume in cubic meters and four red rotary pointers displaying submultiples of cubic meters.

The counter design does not allow resetting meter indications.

The capacity of the counter is 99 999 m<sup>3</sup> and resolution of the reading is 0,05 dm<sup>3</sup>.

All models can be equipped with a steel sheet to put around the gear mechanism for fraud protection.

### 3.4 Dry chamber

The indicating device is closed in a dry chamber made by sealing plate and plastic cover, which is clamped to the body.



Picture No. 2 – Model GSD8 with predisposition for M-BUS modules with by material dry chamber





Picture No. 3 – Model GSD8 with options of capsule and cap



Picture No. 4 – Model GSD8 with predisposition for M-BUS modules





Picture No. 5 – Model GSD8 with coloured capsule



Picture No. 6 – Model GSD8-45°

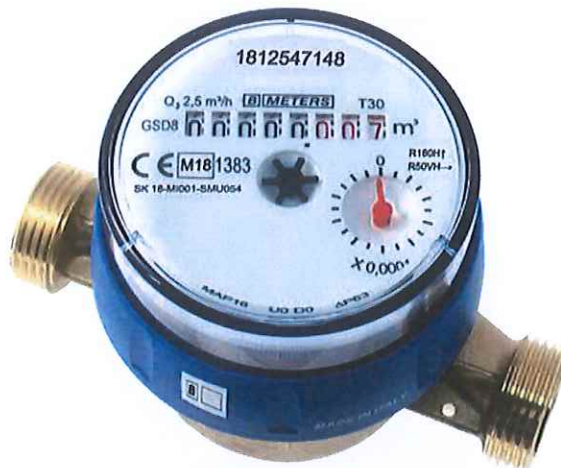


Picture No. 7 – Model GSD5





Picture No. 8 – Model GSFO – domaqua m+



Picture No. 9 – GSD8 with closing ring



Picture No. 10 – GSD8 for pulse sensor







Picture No. 11 – GSD8 or GSD8-I with inductive index



Picture No.12 GSD8 with cup





Picture No.13 GSD8 with plastic body

### 3.5 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 delivered cold and hot water quantity.

### 3.6 Technical documentation

A number of drawings of technical documentation is listed in the following list:

ASSEMBLY		
Drawing No.		
A-8M-1-OM-1	A-G8-1-OM-1	A-G8-5-OM-1
A-8M-1-OR-1	A-G8-1-OR-1	A-G8-6-OM-1
A-8M-5-OM-1	A-G8-2-CA-1	A-G8-7-OM-1
A-G4-1-OM-1	A-G8-2-OM-1	A-G8-8-OM-1
A-G4-1-OR-1	A-G8-2-OR-1	A-8M-5-OM-1
A-G4-2-OM-1	A-G8-3-CA-1	A-G4-3-OM-1
A-G5-1-OR-1	A-G8-3-OM-1	A-G5-3-OM-1
A-G5-2-OR-1	A-G8-3-OR-1	A-G8-9-OM-1
A-G8-1-CA-1	A-G8-4-OM-1	A-G8-10-OM-1
A-G8-6-OR-1	A-G8-10-OM-1	A-G8-11-OM-1
A-GP-1-CA-1	A-GP-1-OM-1	A-G8-OR-1



PARTS		
Drawing No.		
1-1-01-21-9	2-1-02-01-9	2-1-37-02-9
1-1-01-22-9	2-1-02-03-9	2-2-02-01-9
1-1-01-25-9	2-1-04-14-7	2-1-28-20-9
1-1-01-26-9	2-1-21-20-9	3-1-03-09-9
1-1-01-27-9	2-1-21-26-9	4-1-18-10-9
1-1-01-28-9	2-1-22-10-9	4-1-18-14-9
1-1-01-32-9	2-1-22-24-9	4-1-18-22-9
1-1-01-33-9	2-1-22-42-9	6-1-27-02-9
1-1-01-34-9	2-1-22-43-9	6-1-27-03-9
1-1-01-47-9	2-1-22-44-9	7-1-38-09-9
1-1-01-48-9	2-1-26-07-7	7-1-38-11-9
1-1-36-03-9	2-1-26-11-7	1-1-01-21-0
1-2-01-07-9	2-1-28-02-9	1-1-01-25-0
1-2-01-11-9	2-1-28-03-9	1-1-01-27-0
1-2-01-12-9	2-1-28-04-7	1-1-01-32-0
1-2-01-13-9	2-1-28-08-9	1-2-01-07-0
1-2-01-14-0	2-1-28-12-9	1-2-01-13-0
1-2-01-14-9	2-1-28-28-9	1-2-01-14-0
1-2-01-17-9	2-1-28-29-9	1-2-01-18-0
1-2-01-18-9	2-1-30-06-7	2-1-28-32-7
2-1-28-33-7	2-1-15-22-9	2-1-28-34-9
7-1-38-13-9	2-1-22-56-9	2-1-22-57-9
1-1-01-66-9	1-2-01-35-9	2-1-27-05-9
2-1-02-07-9	2-1-05-11-0	2-1-30-03-9

All drawings, schemes and technical documentation used during the conformity assessment are saved in documents NO-375/18, NO-405/19, NO-512/21, NO-524/21 and NO-597/23.



**4 Basic technical characteristics**

Type marking		GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I	
Nominal diameter DN	mm	DN15	DN20
Indicating range	m <sup>3</sup>	99.999	
Resolution of the reading	dm <sup>3</sup>	0.05	
Maximum admissible pressure	-	MAP 16	
Working pressure range	bar	from 0,3 to 16	
Pressure loss		Δp63	
Temperature class	-	T30, T50, T70, T90, T30/90	
Accuracy Class		2	
Flow profile sensitivity classes	-	U0, D0	
Lenght (L)	-	From 80 to 130	From 115 to 130
Connection Type (D)		From G3/4”B to G1”B	From G7/8”B to G1”B
Mounting <sup>3)</sup> :	-	Flow axis in the horizontal plane Flow axis in the vertical plane	
Orientation <sup>3)</sup> :	-	Horizontal with indicating device positioned on top, H↑ Horizontal with indicating device positioned on side, H→ Horizontal with indicating device positioned upside down H↓ Vertical from bottom to top and from top to bottom	
Climatic and mechanical environments	-	closed spaces /from 5°C to 55°C/ mech. class M1	

**4.1 Additional technical characteristics**

Weight	from 0,42 to 0,56 kg
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<sup>3</sup> Depends of marking on the dial

**5 Basic metrological characteristics**

The maximum permissible error (accuracy class):

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

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

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

Nominal Diameter DN	mm	15				20	
Overload flowrate, $Q_4$	m <sup>3</sup> /h	2,0		3,12		5,0	
Permanent flowrate, $Q_3$	m <sup>3</sup> /h	1,6		2,5		4,0	
Transitional flowrate, $Q_2$	m <sup>3</sup> /h	≥ 0,016	≥ 0,0512	≥ 0,020	≥ 0,050	≥ 0,032	≥ 0,080
Minimum flowrate, $Q_1$	m <sup>3</sup> /h	≥ 0,010	≥ 0,032	≥ 0,0125	≥ 0,03125	≥ 0,020	≥ 0,050
Measuring range R, $Q_3/Q_1$		≤ 160 <sup>4)</sup>	≤ 50 <sup>4)</sup>	≤ 200 <sup>4)</sup>	≤ 80 <sup>4)5)</sup>	≤ 200 <sup>4)</sup>	≤ 80 <sup>4)5)</sup>
Orientation Limitation		H↑	V,H↓→	H↑	V,H↓→	H↑	V,H↓→

**6 Results of conformity assessment**

The results of tests, assessments and evaluations given in the evaluation report No. NO 597/23/B/ER dated December 22, 2023 give sufficient evidence that the technical design of the measuring instrument water meter GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I 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:

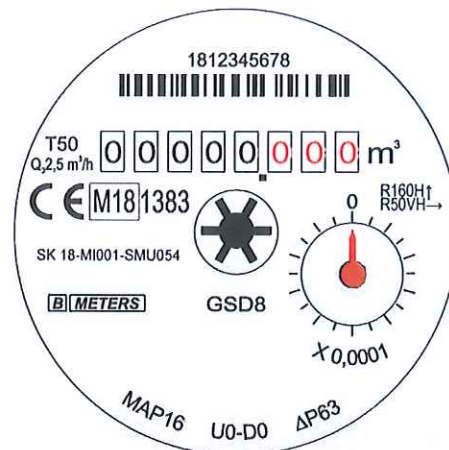
- Manufacturer name, registered trade name or registered mark
- Postal address of manufacturer, at which they can be contacted
- Measuring device type
- Measuring unit (m<sup>3</sup>)
- Numerical value of  $Q_3$  in m<sup>3</sup>/h ( $Q_3$  x,x) and ratio  $Q_3/Q_1$  (Rxxx)
- Year of production (two last digits of the year) and production serial number (for example 180295000 = product year 2018)
- Number of EU-type examination certificate and conformity mark
- The highest admissible pressure if it differs from 1 Mpa (MAP xx)
- Flow direction



<sup>4</sup> The ratio  $Q_3/Q_1$  shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 40

<sup>5</sup> Maximum range for meters marked with H<sub>1</sub> is R50

- j) Letter H↑(Horizontal with indicating device position on the top) H→(Horizontal with indicating device position at the side), V (Vertical from bottom to top and from top to bottom), H↓(Horizontal with indicating device positioned upside down)
- k) Class of pressure loss if it differs from  $\Delta p_{63}$  ( $\Delta p_{XX}$ )
- l) Flow profile sensitivity classes ( $U_x D_x$ )
- m) The temperature class where it differs from T30



Picture No. 14 - Example of dial and manufacturing address printing

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

Single jet dry dial type GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I water meter is 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 classes T30, T50, T70, T90) and  $50\text{ °C} \pm 5\text{ °C}$  (for temperature classes T70, T90, T30/90) in following points 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 Annex No.2 (Module D or F) of the Governmental ordinance respectively.

**9 Measures asked for providing measuring instrument integrity**

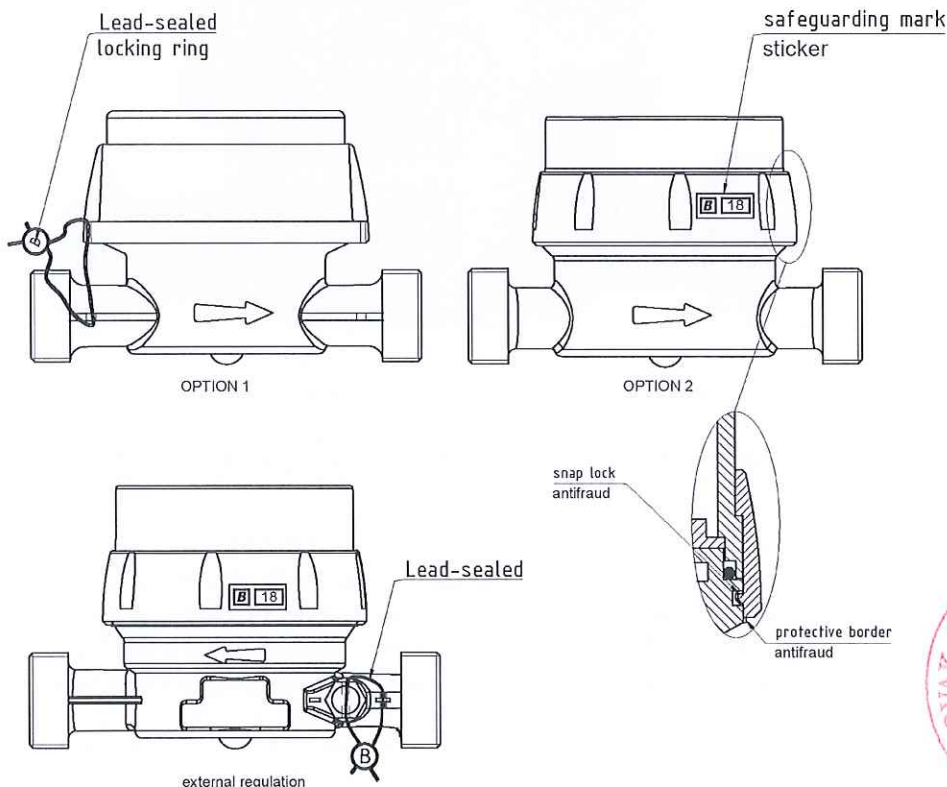
**9.1 Identification**

Single jet dry dial type GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I 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 to be 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**

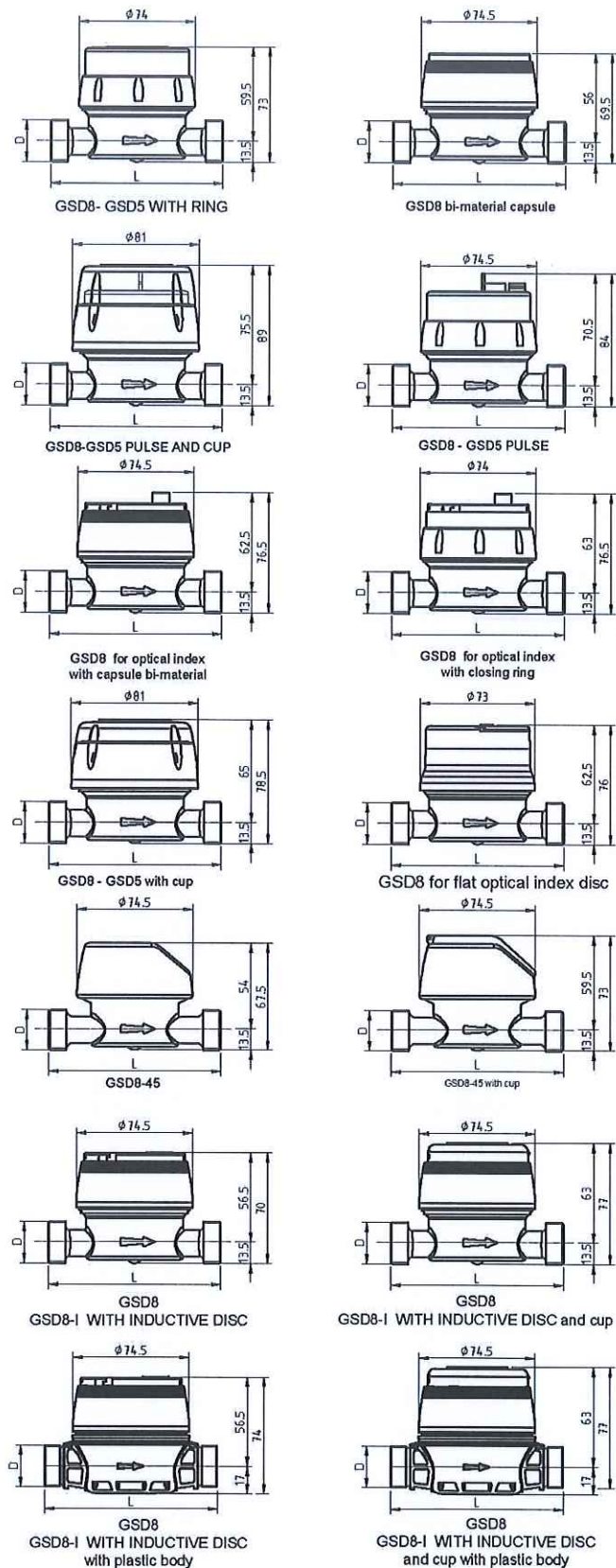
Single jet dry dial type GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I water meter shall be before the conformity assessment according to the Annex No.2 (Module D or F) of the Governmental ordinance sealed by following sealing marks:



Picture No. 15 - Emplacement of seal used for security measures

**10 Requirements for installation, especially conditions of using**

**10.1 Installation data**



Picture No. 16 - Installation dimensions



**10.2 Installation requirements**

Single jet dry dial type GSD8, GSD8-45, GSD5, GSD8-RFM, GSFO or domaqua m+, GSD8-I water meter is introduced into the operation by a worker having a certificate for this activity performance. The water meter is possible to 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 water meters”. A measuring instrument should be installed in direction of water flow arrow marked on the meter body.

The indicating device can be oriented in the position indicating in the dial

- H↑ Mean flow horizontal and the indicating device position on the top
- H→ Mean flow horizontal and the indicating device position on the side
- H↓ Mean flow horizontal and the indicating device position upside down
- V Mean flow vertical from top to bottom or from bottom to top with the indicating device in any position.

**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”.

Assessment done by: Ing. Viliam Mazúr



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