



# ČESKÝ METROLOGICKÝ INSTITUT



## EHS certifikát o schválení typu měřidla EEC type-approval certificate

**Značka schválení:**

Approval mark

CZ 05

142.4267

**Vydává:**

Issued by:

**Český metrologický institut**

**Okružní 31**

**638 00 Brno**

**Česká republika**

**Ve shodě:**

In accordance with:

s vyhláškou č. 333/2000 Sb. ze dne 6. září 2000, která implementuje v České republice Směrnici Rady 79/830/EHS (Council Directive 79/830/EEC).

**Žadatel:**

Issued to:

**BONEGA<sup>®</sup>, spol. s r.o.**

**Potoční 302**

**696 66 Sudoměřice nad Moravou**

**Česká republika**

**Pro:**

In respect of:

**jednotkový suchoběžný vodoměr na  
teplou vodu**

single jet, dry dial water meter for  
hot water

**typ: BONEGA<sup>®</sup> T/TA**

type: BONEGA<sup>®</sup> T/TA

**Výrobce:**

Manufacturer:

**BONEGA<sup>®</sup>, spol. s r.o.**

**Platnost do:**

Valid until:

**11. 12. 2015**

**Číslo dokumentu:**

Document number:

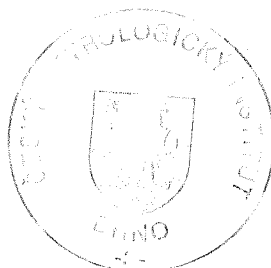
**0111-CS-A103-05**

**Popis měřidla:**

Description:

Základní charakteristiky, schválené podmínky a speciální podmínky, jsou-li nějaké, jsou popsány v tomto EHS certifikátu o schválení typu. Certifikát má celkem 6 stran.

Essential characteristics, approved conditions and special conditions, if any, are described in this EEC type-approval certificate. This certificate contains 6 pages.



RNDr. Pavel Klenovský  
generální ředitel ČMI

## Technical Test Report

### 1. Measuring device description

Single jet, dry dial water meters for hot water, type BONEGA® T/TA are destined for measurement of passed fluid amount as working meter in the sense of the Act No. 505/1990 Coll.

Single jet, dry dial water meters for hot water, type BONEGA® T/TA consist of a wet measuring section (rotary vane wheel transducer) and dry mechanical indicating device. Water meter can be installed both horizontally and vertically.

Wet section of the water meter is formed by brass water meter body and connecting threads. Water meter forms, together with brass cover measuring space, where rotary vane wheel is located. Water is regulated by a system of slides. These slides set up conditions for correct water meter operation and metrological parameters compliance within full flow range. Rotary vane wheel having six vanes is mounted on stainless steel shaft, mounted in two bearings. Wet section is closed by cover having magnetic coupling with dry water meter section.

Dry section of the water meter registers and displays passed fluid amount. It is based on mechanical principle. Water meter is equipped by mechanical transducer. Indicating device is formed by roller (five black digits displaying volume in cubic meters and three red digits displaying parts of cubic meters) and one rotary counters displaying tenths of liters. Digits are 4 mm height, moving upwards and a digit movement is completed in the moment when next lower decade digit is changed from 9 to 0. Water meters are manufactured according to technical documentation of the company, specified in the design list number YG-BONEGA-02.

### 2. Basic technical data

Table 1.: Basic technical and metrology data:

Parameter	Label	Unit	DN 13	DN 20
Maximal flowrate	Qmax	m <sup>3</sup> /hour	3	5
Nominal flowrate	Qn	m <sup>3</sup> /hour	1,5	2,5
Transitional flowrate	Qt	m <sup>3</sup> /hour	0,12	0,20
Minimal flowrate	Qmin	m <sup>3</sup> /hour	0,015	0,03
Metrology class			B	B
Max. Operating pressure	MAP	kPa	1600	
Operating pressure	Pn	kPa	1000	
Pressure loss	ΔP	kPa	100	
Max. Operating temperature	MAT	°C	90	
Max. Permissible errors				
- upper zone	MPE	%	±3	
- lower zone			±5	
Max. reading		m <sup>3</sup>	99 999,9999	
Min. reading		dm <sup>3</sup>	0,05	
Length		mm	80 – 110	130
Connecting thread			G ¾"	G 1"
Weight (TA - shielded)		kg	0,55 (0,70)	0,65 (0,80)

### Measuring device data

There are following data on the measurement device:

1. manufacturer, water meter type
2. serial number, year of manufacture.
3. type approval sign.
4. flow rate ( $Q_n$ ),
5. max. pressure in bars (MAP),
6. max. temperature in °C
7. arrow showing flow direction,
8. metrology class,
9. horizontal (H) and vertical (V) mounting sign

### 3. Test

According to the fact that all the metrological parameters of the water meters of type BONEGA® T/TA are known and described in Czech type approval certificate No. TCS 142/98-2905 approved in 1998, only technical documentation examination was performed according to Decree of Ministry of Industry and Trade of the Czech Republic No. 332/2000.

### 4. Verification

Water meters for hot water are verified according to Decree of Ministry of Industry and Trade of the Czech Republic No. 333/2000.

The same indicating device output is used as in practical use.

Verification marks are formed by one lead seal. The location of seals is described in Figure 2. It is also possible to seal the inlet connection thread.

### 5. Verification validity period

Verification validity period is stated by the applicable Decree of Ministry of Industry and Trade of the Czech Republic.

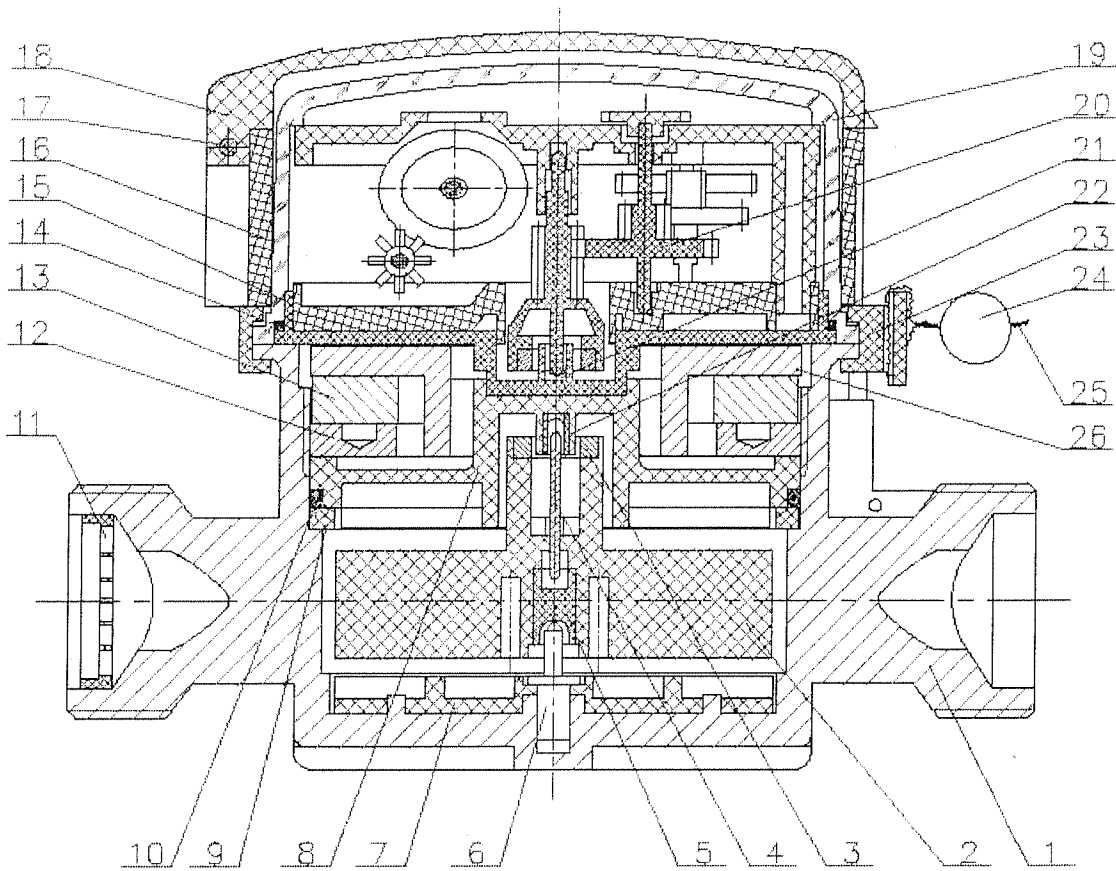


Fig. 1.: water meter cross-section

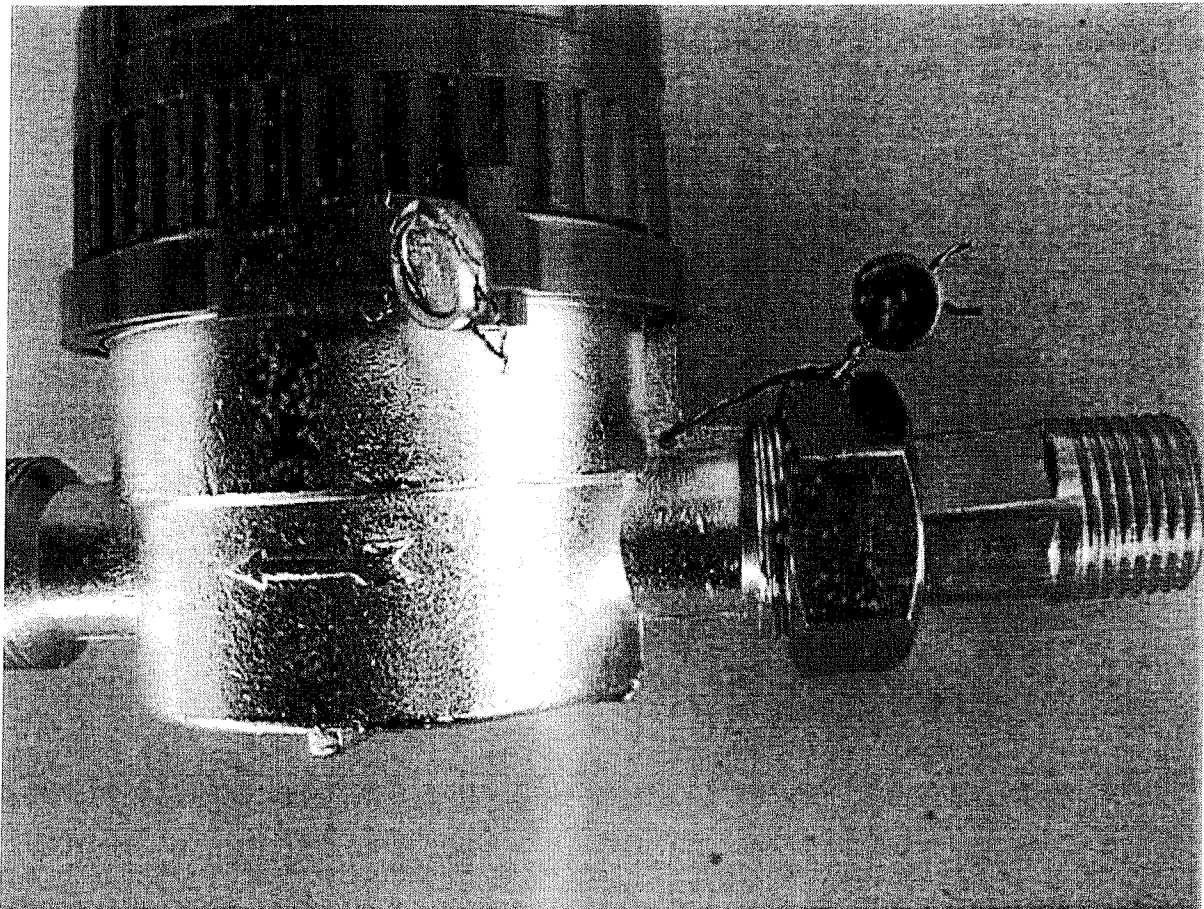


Fig. 2.: Sealing scheme

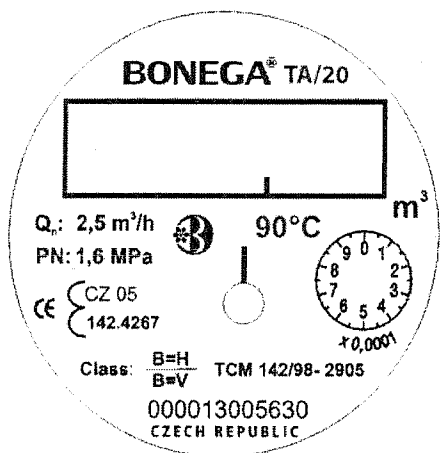
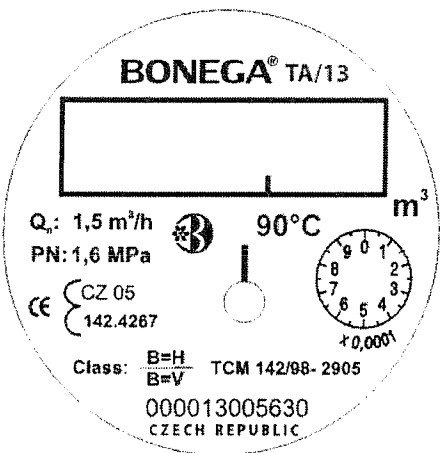
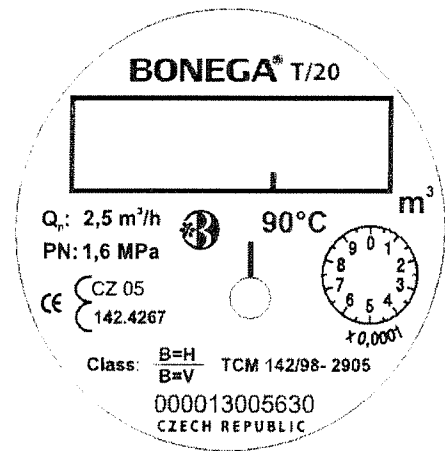
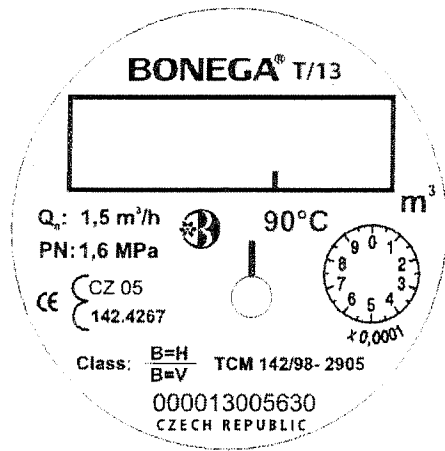


Fig. 3: Front panel with indicating device