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EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/12 - 4947

In accordance: with Directive 2004/22/EC of the European Parliament and of the Council as amended implemented in Czech Republic by Government Order No. 464/2005 Coll. as amended that lays down technical requirements on measuring instruments.

Manufacturer: Sensus GmbH Ludwigshafen
Industriestr. 16
67071 Ludwigshafen
Germany

For: water meter - single jet

type: Residia

Accuracy class: 2

Temperature class: T30, T50, T30/90 and T90

Valid until: 14 August 2022

Document No: 0511-CS-A029-12

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

Date of issue: 15 August 2012

Certificate approved by:

Český metrologický institut NOTIFIKOVANÁ OSOBA AO 250 1383
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RNDr. Pavel Klenovský

This certificate was issued according to module B - type examination according to annex B to Directive 2004/22/EC of the European Parliament and of the Council or point 3 of annex 2 to Government Order No. 464/2005 Coll., respectively.

1. Measuring device description

The single jet water meters type Residia are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive of the European Parliament and of the Council no. 2004/22/EC of measuring instruments, as amended.

The water meters type Residia are single jet rotary vane wheel water meters with dry mechanical indicating device (Plastic Can Calculator).

The water meters type Residia (D3) consist of a brass, bronze or plastic body with connecting threads and inlet strainer, a button plate, a stainless steel shaft, a rotary vane wheel with magnetic holder and stainless steel shaft, a plastic gasket, a rubber O-ring, a pressure plate with agate bearing, a brass, steel or plastic inner head ring, a two antimagnetic protection rings (optional), a dry or super dry mechanical indicating device, closing ring with plastic cover (optional) or plastic clamp on cover.

The mechanical indicating device is formed by numbered rollers with 8 drums and 1 pointer. This calculator can be designated for inclined reading. There is black star wheel with 6 arms or the silver one with 20 arms, which can be used for rapid testing, on mechanical indicating device.

The water meters type Residia shall be installed to operate in arbitrary positions with indicating device on the top or on the side.

Water meters type Residia are manufactured according to technical documentation of subcontractor (Ningbo Water Meter Co. LTD.) No. Q/ZNJ 17005-2010.4.2 Annex 1 from 01.03.2011. This documentation contains among others the assembly drawings No. ZN1.630.312 ~ 312k, 313 ~ 313e from 6/2008 and No. ZN1.630.525 ~ 525b from 7/2008.

2. Basic technical data

Nominal diameter (DN) [mm]:	15	20
Ratio Q_3 / Q_1:	≤ 80 [1] for H installations	
	≤ 50 [1] for any other installations	
Ratio Q_2 / Q_1:	1.6	
Ratio Q_4 / Q_3:	1.25	
Accuracy class:	2	
Maximum permissible error for the lower flowrate zone (MPE_l):	± 5 %	
Maximum permissible error for the upper flowrate zone (MPE_u):	± 2 % for water having a temperature ≤ 30 °C ± 3 % for water having a temperature > 30 °C	
Temperature class:	T30, T50, T30/90 and T90	
Water pressure classes:	MAP 16	
Pressure-loss classes:	ΔP 63	
Indicating range [m^3]:	99 999	
Resolution of the indicating device [m^3]:	0.00005 or 0.00002	
Resolution of the device for the rapid testing [pulse/L]:	67,5000	42,7636
Flow profile sensitivity classes:	U0 D0	
Orientation limitation:	No	
Length L [mm]:	80 to190	130
Connection type– Screw thread size:	G¾B G1B	G1B

[1] The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 10.

Nominal diameter (DN):	Installation position:	Minimum flowrate (Q_1)	Transitional flowrate (Q_2)	Permanent flowrate (Q_3)	Overload flowrate (Q_4)
mm	-	m^3/h	m^3/h	m^3/h	m^3/h
15	H	≥ 0,0313	≥ 0,0500	≤ 2,50 [1]	≤ 3,13
15	V	≥ 0,0500	≥ 0,0800	≤ 2,50 [1]	≤ 3,13
20	H	≥ 0,0500	≥ 0,0800	≤ 4,00 [1]	≤ 5,00
20	V	≥ 0,0800	≥ 0,128	≤ 4,00 [1]	≤ 5,00

[1] The value of Q_3 shall be chosen from the R5 line of ISO 3:1973.

3. Test

Technical tests of the water meters type Residia were performed in compliance with the International Recommendation OIML R 49 Edition 2006 (E) with conformity to EN 14154-1:2005+A1:2007, Test Report No. 6015-PT-P0089-11 from April 29th 2011.

4. The measuring device data

The water meters type Residia shall be clearly and indelibly marked with the following information:

- The "CE" marking and supplementary metrology marking
- Number of EC-type examination certificate
- Manufacturer's name or trademark
- Year of manufacture (last two digits) and serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement (m^3)
- Accuracy class 2
- Numerical value Q_3 in m^3/h (Q_3 ×.×)
- The ratio Q_3 / Q_1, (R××)
- The temperature class (T××)
- The maximum admissible pressure (MAP ××)
- The pressure loss class (ΔP ××)
- Classes on sensitivity to irregularities in velocity field (U× D×)
- Direction of flow arrow on both sides of the meter body

There are additional data required if the water meter is equipped with impulse transmitter:

- Output signals for ancillary devices (type / levels)
- External power supply requirements (voltage – frequency)

5. Sealing

The connection of closing ring has to be sealed by lead seal or secured by self-destructive sticker or plastic clamp on cover has to be identified by safeguarding marks on water meters types Residia (D3).