



Member state
Czech Republic

OIML Certificate No.
R49/2013-CZ-15.03

OIML BASIC CERTIFICATE OF CONFORMITY

Issuing Authority

Name: Czech Metrology Institute
Address: Okružní 31,
638 00 Brno, CZ
Person responsible: Jan Kalandra

Applicant

Name: Ningbo Water Meter Co., Ltd.
Address: 355 Hongxing Road, Jiangbei District
315032 Ningbo, China

Manufacturer of the certified type

Name: Ningbo Water Meter Co., Ltd.
Address: 355 Hongxing Road, Jiangbei District
315032 Ningbo, China

Identification of the certified type

Water meter

Type: MJ-SDC PLUS

For further characteristics see page 2 to 4

This certificate attests the conformity of above identified Type (represented by the sample(s) identified in the OIML Basic Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

R 49, edition 2013, for accuracy class 2

This certificate relates only to the metrological and technical characteristics of the type of instrument covered by the relevant OIML Recommendation identified above.

This certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated Test report No. 6015-PT-P3012-15 from 24th July 2015 that includes 94 pages including annexes.

Measuring system description:


The water meters type MJ-SDC PLUS are multi jet rotary vane wheel water meters with dry mechanical indicating device.

The water meters type MJ-SDC PLUS consist of a brass body with connecting screw threads or flanges, inlet strainer and adjusting screw, a rubber gasket, plastic casing for an impeller with multiple inlets and outlets, stainless steel shaft with plastic tip, rotary vane impeller with agate bearing and magnetic ring, plastic casing for an indicating device with a rubber O-ring, antimagnetic protection ring, plastic shaft with a magnetic ring, a dry mechanical indicating device, plastic ring, rubber O-ring, glass window and brass screw head ring with a plastic sliding gasket and a plastic lid.

There are two variants for composition of the mechanical indicating device: variant with 5 (DN15-32) or 6 (DN40-50) numbered rollers and 4 rotary pointers and variant with 7 (DN15-32) or 8 (DN40-50) numbered rollers and 2 rotary pointers. There is a star wheel with 6 arms on the indicating device which can be used for rapid testing.

The water meters type MJ-SDC PLUS can be equipped by a reed impulse transmitter for remote reading. The meters can be equipped with parts for mounting of an AMR device and with an inductive pointer for AMR reading.




The OIML Issuing Authority
Pavel Klenovský

13th August 2015

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML Basic Type Evaluation Report (s) is not permitted, although either may be reproduced in full.

Characteristics:

Basic technical data of water meters type MJ-SDC PLUS DN 15 to DN 32:

Nominal diameter (DN) [mm]:	15	20	25	32
Ratio Q_3 / Q_1 :	≤ 200 ¹			
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):	$\pm 5\%$			
Maximum permissible error for the upper flowrate zone (MPE _u):	$\pm 2\%$ for water having a temperature $\leq 30\text{ }^\circ\text{C}$ $\pm 3\%$ for water having a temperature $> 30\text{ }^\circ\text{C}$			
Temperature classes:	T30, T50			
Water pressure class:	MAP 16			
Pressure-loss class:	ΔP 63			
Indicating range [m ³]:	99 999			
Resolution of the indicating device [m ³]:	0.00005			
Resolution of the device for the rapid testing [pulse/L]:	90.0938	60.0000	38.8760	31.0714
Flow profile sensitivity classes:	U0 D0			
Orientation limitation:	H			
Length L [mm]:	165 to 190	190	260	260
Connection type– Screw thread size:	G $\frac{3}{4}$ B, G1B	G1B	G1 $\frac{1}{4}$ B, G1 $\frac{1}{2}$ B	G1 $\frac{1}{2}$ B
Reed switch power supply (U_{\max} / I_{\max}):	max. 24 V / 0.01 A			
Reed switch K-factor [impulse / L]:	0.001, 0.01, 0.1 and 1			

¹ The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be at least 40.

Basic technical data of water meters type MJ-SDC PLUS DN 40 to DN 50:

Nominal diameter (DN) [mm]:	40	50
Ratio Q_3 / Q_1 :	≤ 200 ¹	
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):	$\pm 5\%$	
Maximum permissible error for the upper flowrate zone (MPE _u):	$\pm 2\%$ for water having a temperature $\leq 30\text{ }^\circ\text{C}$ $\pm 3\%$ for water having a temperature $> 30\text{ }^\circ\text{C}$	
Temperature classes:	T30, T50	
Water pressure class:	MAP 16	
Pressure-loss class:	ΔP 63	
Indicating range [m ³]:	999 999	
Resolution of the indicating device [m ³]:	0.00005	
Resolution of the device for the rapid testing [pulse/L]:	10.5417	60.0000
Flow profile sensitivity classes:	U0 D0	
Orientation limitation:	H	
Length L [mm]:	200 to 300	280 to 300
Connection type– Screw thread size:	G2B	G2 $\frac{1}{2}$ B or Flange
Reed switch power supply (U_{\max} / I_{\max}):	max. 24 V / 0.01 A	
Reed switch K-factor [impulse / L]:	0.001, 0.01, 0.1 and 1	

¹ The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be at least 40.

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	≥ 0.0125	≥ 0.0200	≤ 2.50 ¹	≤ 3.13
20	H	≥ 0.0200	≥ 0.0320	≤ 4.00 ¹	≤ 5.00
25	H	≥ 0.0315	≥ 0.0504	≤ 6.30 ¹	≤ 7.88
32	H	≥ 0.0500	≥ 0.0800	≤ 10.0 ¹	≤ 12.5
40	H	≥ 0.0800	≥ 0.1280	≤ 16.0 ¹	≤ 20.0
50	H	≥ 0.1250	≥ 0.2000	≤ 25.0 ¹	≤ 31.25

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

Marking and inscriptions

The water meters type MJ-SDC PLUS shall be clearly and indelibly marked with the following information:

- 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 (m³)
- Accuracy class 2
- Numerical value of Q_3 in m³/h ($Q_3 \times \times$)
- The ratio Q_3 / Q_1 ($R \times \times$)
- The temperature class (T30 or T50)
- The maximum admissible pressure (MAP16)
- The pressure loss class ($\Delta P63$)
- Classes on sensitivity to irregularities in velocity field (U0D0)
- Orientation limitation H
- 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)

These markings shall comply with the requirements of OIML R 49 and shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use.

Security measures

The MJ-SDC PLUS meters have to be sealed by connecting the brass screw head ring to the adjusting screw using a wire with a lead or plastic seal such that the head ring and the adjusting screw cannot be turned without damaging the seal or the sealing wire.

Optionally the meters can be equipped with a safety pin between the dial window and the dial plate to indicate a rough treatment of the meter.

The connection of water meter calculator and reed impulse transmitter has to be sealed, if equipped.