



OIML Member State
SLOVAKIA

OIML Certificate No.
R49/2013-B-SK1-2018.03

OIML CERTIFICATE ISSUED UNDER SCHEME B

OIML Issuing Authority

Name: **Slovak Legal Metrology (SLM)**
Address: Hviezdoslavova 1124/31, 974 01 Banská Bystrica, Slovakia
Person responsible: Jaromír Markovič, Director General

Applicant

Name: **Ningbo Aimei Meter Manufacture Co., Ltd.**
Address: 68, West Town Road, Shangtian Town, Fenghua City,
Zhejiang, 315511, China

Manufacturer

Name: **Ningbo Aimei Meter Manufacture Co., Ltd.**
Address: 68, West Town Road, Shangtian Town, Fenghua City,
Zhejiang, 315511, China

Identification of the certified type (*the detailed characteristics are defined in the additional pages*)

Type **SP**

Designation of the module (*if applicable*)

Multi jet water meter intended for the metering of cold and hot potable water

This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 49, Edition (year): 2013

For accuracy class (if applicable): 2



**OIML Certificate No.
R49/2013-B-SK1-2018.03**

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

This OIML 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 OIML type evaluation report:

No. 2018/CV009 dated 17 December 2018 that includes 15 pages.

The technical documentation relating to the identified type is contained in documentation file:

Ningbo_SP_00 dated 17 December 2018 that includes 95 pages.

OIML Certificate History

Revision No.	Date	Description of the modification
0	17 December 2018	Certificate first issued
-	-	-

Identification, signature and stamp

The OIML Issuing Authority

The OIML Member


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Jaromír Markovič




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Pavol Pavlis

Date: 17 December 2018

Date: 17 December 2018

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 type evaluation report(s) is not permitted, although either may be reproduced in full.

DESCRIPTIVE ANNEX

1. Designation

The mechanical multi-jet dry dial water meter type *SP* is designed to measure, memorise and display the volume of water passing through the measurement transducer at metering conditions. The water meter is intended for the measurement of volumes (consumption) of clean cold and hot water in residential use.

The mechanical water meter type *SP* is multi-jet rotary vane wheel water meters with dry mechanical indication device, with brass body or plastic body.

The water meter is installed into pipe lines in horizontal position only with the indication device positioned at the top. The water meter is not designed to measure reverse flows.

The water meter type *SP* is equipped with pre-payment unit. The pre-payment unit is an ancillary device (pre-setting device) according to clause 3.1.10 of OIML R 49-1. The pre-payment unit is not intended to legal metrological control concerning this OIML certificate according to OIML R 49 and was not assessed.

Depending on national legislation, the pre-payment unit may be subject to legal metrological control. In this case it shall be assessed according to national legislation by a national authority in the country of using of the water meters.

2. Description

Essential parts of the water meters type *SP*:

- measuring mechanism - consisting of measuring chamber and the rotary vane wheel (impeller) with an axle perpendicular to the flow direction;
- dry type mechanical register and indication device with 5 numbered drums (last significant drum moves continuously) and 4 continuously moving rotating pointers;
- brass or plastic housing of water meter with inlet and outlet connections;
- adjustment device – an adjustment screw placed on the body of housing and regulates the internal by-pass flow of the meter;
- magnetic coupling for the connection of the register with the measuring part (impeller).

Non-essential parts of water meter:

- strainer in the inlet of the meter (optional);
- non-return valve in the outlet tube of water meter (optional);
- pre - payment unit placed on the water meter. Data indicated and transferred via pre-payment unit are not considered as a metrological relevant data (see clause 1 of this Descriptive Annex). In all cases the original mechanical register of the water meter remains visible. In case of dispute this register forms the decisive indication of the water meter.

3. Metrological functions

Metrological functions of water meters type *SP*:

- measuring, memorizing and displaying the volume of water passing through the water meter



4. Integrated equipment and functions

Integrated equipment and functions of water meters type *SP*:

- data output module RS485, RS232, M-bus (optional);
- pulse output module (optional).
- pre - payment unit (optional);

Via these integrated equipment and functions no legally relevant data are altered. Data indicated and/or transferred via these parts are not considered as a metrological relevant data.

5. Technical and metrological data

5.1 Technical and metrological parameters of the water meter type *SP*, *DN15*

Type		<i>SP</i>							
Nominal diameter DN	mm	15							
Permanent flowrate Q_3	m ³ /h	1,6				2,5			
Minimum flowrate Q_1	m ³ /h	0,032	0,0254	0,02	0,016	0,03125	0,025	0,02	0,015625
Transitional flowrate Q_2	m ³ /h	0,0512	0,04064	0,032	0,0256	0,05	0,04	0,032	0,025
Overload flowrate Q_4	m ³ /h	2				3,125			
Ratio Q_3/Q_1	-	50	63	80	100	80	100	125	160
Ratio Q_2/Q_1	-	1,6							
Connection thread	-	G ¾ B							
Construction length L	mm	165 / 170 / 190							
Installation position	-	H (indicating device positioned on top)							
Water temperature range	°C	0,1 to 30 (<i>SP brass and plastic body</i>) 0,1 to 50 (<i>SP brass and plastic body</i>) 0,1 to 90 (<i>SP brass body</i>)							
Meter temperature class	-	T30, T50 (<i>SP brass and plastic body</i>) T90 (<i>SP brass body</i>)							
Maximum working pressure	bar	16							
Pressure loss ΔP	bar	0,63							
Maximum permissible error in upper flowrates range $Q_2 \leq Q \leq Q_4$	%	± 2 (at $\Theta \leq 30^\circ\text{C}$) ± 3 (at $\Theta > 30^\circ\text{C}$)							
Maximum permissible error in lower flowrates ranges $Q_1 \leq Q < Q_2$	%	± 5 (at $\Theta \leq 30^\circ\text{C}$) ± 6 (at $\Theta > 30^\circ\text{C}$)							
Scale interval	m ³	0,00005							
Capacity of calculator	m ³	99999							
Mechanical class	-	M1							
Climatic class	°C	-10 to +55							
Electromagnetic class	-	E1							



Flow profile sensitivity class	-	U0D0
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5.2 Technical and metrological parameters of the water meter type SP, DN20

Type		SP							
Nominal diameter DN	mm	20							
Permanent flowrate Q ₃	m ³ /h	2,5				4			
Minimum flowrate Q ₁	m ³ /h	0,05	0,0397	0,03125	0,025	0,05	0,04	0,032	0,025
Transitional flowrate Q ₂	m ³ /h	0,08	0,06349	0,05	0,040	0,08	0,064	0,0512	0,04
Overload flowrate Q ₄	m ³ /h	3,125				5			
Ratio Q ₃ /Q ₁	-	50	63	80	100	80	100	125	160
Ratio Q ₂ /Q ₁	-	1,6							
Connection thread	-	G 1 B							
Construction length L	mm	190 / 195							
Installation position	-	H (indicating device positioned on top)							
Water temperature range	°C	0,1 to 30 (SP brass and plastic body) 0,1 to 50 (SP brass and plastic body) 0,1 to 90 (SP brass body)							
Meter temperature class	-	T30, T50 (SP brass and plastic body) T90 (SP brass body)							
Maximum working pressure	bar	16							
Pressure loss ΔP	bar	0,63							
Maximum permissible error in upper flowrates range Q ₂ ≤ Q ≤ Q ₄	%	± 2 (at Θ ≤ 30°C) ± 3 (at Θ > 30°C)							
Maximum permissible error in lower flowrates ranges Q ₁ ≤ Q < Q ₂	%	± 5 (at Θ ≤ 30°C) ± 6 (at Θ > 30°C)							
Scale interval	m ³	0,00005							
Capacity of calculator	m ³	99999							
Mechanical class	-	M1							
Climatic class	°C	-10 to +55							
Electromagnetic class	-	E1							
Flow profile sensitivity class	-	U0D0							

6. Marking and inscriptions

The following data shall be marked on the water meter:

- a) name or trademark of the manufacturer;
- b) type name of the water meter;
- c) unit of measurement m³;
- d) year of manufacture, the last two digits of the year of manufacture, or the month and year of manufacture;

- e) serial number (as near as possible to the indicating device);
- f) direction of flow, by means of an arrow (shown on both sides of the body or on one side only provided the direction of flow arrow is easily visible under all circumstances);
- g) flowrate Q_3 and ratio Q_3/Q_1 indicated as (R) followed by the ratio;
- h) maximum working pressure, indicated as MAP 16;
- i) the temperature class where it differs from T30;
- j) operating position (letter H according to tables in the point 5 of this certificate);
- k) type approval sign according to national regulations.
- l) Information/inscription that prepayment unit does not provide metrological results. Information/inscription shall be visibly, legibly and indelibly placed on prepayment unit.

6.1 Manufacturer uses following trademarks on the water meters:

AIMEI

ASM



7. Security measures

The water meter shall be protected against unauthorised manipulation by one seal securing the connection of the water meter head with the screw cap of adjustment device.

