OIML Certificate

OIML Member State
The Netherlands

Number R49/2013-A-NL1-21.05 revision 3
Project number 3562842

Issuing authority Person responsible:	NMi Certin B.V. M.Ph.D. Schmidt
Applicant and Manufacturer	Aichi Tokei Denki Co., Ltd. 2-70 Chitose, 1-Chome Atsuta-Ku, Nagoya Japan
Identification of the certified type	An electromagnetic **water meter** Type: SU, SU-KF, SU-KR, SU-KS, SU- MF, Q4000, Q4000B
Characteristics	See page 2 and further

This OIML Certificate is issued under scheme A.

This 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):

R 49-1 (2013) "Water meters intended for the metering of cold potable water and hot water"

Accuracy class 2

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation identified above. This Certificate does not bestow any form of legal international approval.

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate was 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.

Issuing Authority

NMi Certin B.V., OIML Issuing Authority NL1
3 February 2023

Certification Board

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The conformity was established by the results of tests and examinations provided in the associated reports:

- No. NMi-2543079-01 dated 13 August 2021 that includes 150 pages;
- No. NMi-2543079-02 dated 13 August 2021 that includes 17 pages.

Characteristics of the measuring instrument
In Table 1 the general characteristics of the measuring instrument are presented.
Table 2 gives an overview of the general characteristics of the family of instruments.
The construction of the measuring instrument is recorded in the Documentation folder no. T12202-2.

Table 1 General characteristics

Measuring principle	electromagnetic
Accuracy class	2
Environmental class	M1 / O (installed outdoors)
Electromagnetic environment	E2
Temperature range ambient	-25 °C / +55 °C
Water temperature class	T50 (+0,1 °C / +50 °C)
Maximum admissible pressure (MAP)	1,6 MPa (16 bar)
Orientation	All positions (Horizontal, vertical or diagonal)
Flow profile sensitivity class	U0 and D0 (0 x DN upstream and 0 x DN downstream)
Reverse flow	The sensor is also intended to measure reverse flow
Pressure loss class full bore	Δp 10 (0,10 bar)
Pressure loss class reduced bore	Δp 25 (0,25 bar)
Power supply	(Non-)replaceable battery (3.0 – 3.7 V)
Software identification	Version number: 20200830 with checksum 7560B151 20200831 with checksum 3053DC1D A1.00 with checksum 01C1BA32 C1.00 with checksum 01BF1355

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Table 2 General characteristics of the family of instruments

Flow characteristics full bore

Meter size	Ø in- and outlet [mm]	Flow rates [m³/h]				Max. ratio Q3/Q1
		Minimum Q1	Transitional Q2	Permanent Q3	Overload Q4	
DN40	40	0,1	0,16	25	31,3	250
				40	50	400
DN50	50	0,158	0,252	63	78,8	400
DN65	65	0,25	0,4	100	125	400
DN80	80	0,4	0,64	160	200	400
DN100	100	0,625	1	250	313	400
DN125	125	1	1,6	400	500	400
DN150	150	1,58	2,52	630	788	400
DN200	200	2,5	4	1000	1250	400

Please note that the flow rates Q1, Q2, Q3 and Q4 can be freely chosen as long as:
- Values Q3 and ratio Q3/Q1 are selected from paragraph 4.1 of OIML R49-1: 2013(E);
- Values mentioned for Q1 and Q2 are minimum values and the ratio Q2/Q1 = 1,6;
- Values mentioned for Q3 and Q4 are maximum values and the ratio Q4/Q3 = 1,25;
- The ratio Q3/Q1 is at least 40.

Flow characteristics reduced bore

Meter size	Ø in- and outlet [mm]	Flow rates [m³/h]				Max. ratio Q3/Q1
		Minimum Q1	Transitional Q2	Permanent Q3	Overload Q4	
DN50	50	0,1	0,16	40	50	400
DN65	65	0,158	0,252	63	78,8	400
DN80	80	0,25	0,4	100	125	400
DN100	100	0,4	0,64	160	200	400
DN125	125	0,625	1	250	313	400
DN150	150	1	1,6	400	500	400
DN200	200	1,58	2,52	630	788	400
DN250	250	2,5	4	1000	1250	400
DN300	300	2,5	4	1000	1250	400

Please note that the flow rates Q1, Q2, Q3 and Q4 can be freely chosen as long as:
- Values Q3 and ratio Q3/Q1 are selected from paragraph 4.1 of OIML R49-1: 2013(E);

- Values mentioned for Q1 and Q2 are minimum values and the ratio Q2/Q1 = 1,6;
- Values mentioned for Q3 and Q4 are maximum values and the ratio Q4/Q3 = 1,25;
- The ratio Q3/Q1 is at least 40.

Table 3 General characteristics of the indicating device

Meter size	Indicating range (minimum value) [m³]	Verification scale interval (minimum resolution) [m³]
DN40 up to DN100 for full bore DN50 up to DN125 for reduced bore	999999,9999	0,0001
DN125 up to DN200 for full bore DN150 up to DN300for reduced bore	9999999,999	0,001

Certificate history:
This revision replaces the previous version.

Revision	Date	Description of the modification
Initial	25 May 2021	-
1	23 June 2021	Additional information added to the certificate and administrational changes.
2	13 August 2021	Administration changes.
3	3 February 2023	Hardware and software update.