



OIML Certificate

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.06 revision 4
Project number 3939824
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Issuing authority NMI Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant and Manufacturer KROHNE Altometer
Kerkeplaat 12
3313 LC Dordrecht
The Netherlands

Identification of the certified type An electromagnetic **water meter**
Type: OPTIFLUX x300C; OPTIFLUX x000F + IFC300y
with x being 1, 2, 4, 5 or 6 and with y being F or W

Characteristics See following page(s)

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 1 and 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.

This certificate and supporting reports comply with the requirements of OIML-CS-PD-07 clause 6.2.

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**
25 March 2025

Certification Board

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This document is issued under the provision that no liability is accepted and that the applicant shall indemnify third-party liability.

The notification of NMI Certin B.V. as Issuing Authority can be verified at www.oiml.org

This document is digitally signed and sealed. The digital signature can be verified in the blue ribbon at the top of the electronic version of this certificate.





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

- No. NMI-1901662-01 dated 10 October 2019 that includes 59 pages;
- No. NMI-2424688-01 dated 2 February 2021 that includes 33 pages.
- No. NMI-2436524-01 dated 3 November 2022 that includes 12 pages.

Characteristics of the measuring instrument

In Table 1 the general characteristics of the measuring instrument are presented.

In Table 2 the characteristics of the family of instruments are presented.

The construction of the measuring instrument is recorded in the Documentation folder no. T10003-10.

Table 1 General characteristics

Measuring principle	Electromagnetic
Accuracy class	1 and 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 intended to measure reverse flow
Pressure loss class	Δp 25 (0,25 bar) for OPTIFLUX 5000 for sizes DN25 up to and including DN100 and Δp 10 (0,10 bar) for OPTIFLUX 5000 for sizes > DN100 and other OPTIFLUX types
Power supply	100 - 230 VAC, 50/60 Hz 12 - 24 VDC (grounding mandatory) 24 V AC/DC, 50/60 Hz (grounding mandatory)
Software identification	See table 4

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Table 2 General characteristics of the family of instruments

Meter size	Accuracy class	Flow rates [m³/h]				Ratio Q3/Q1
		Minimum Q1	Transitional Q2	Permanent Q3	Overload Q4	
DN25	2	0,04	0,064	16	20	400
DN32	2	0,0625	0,1	25	31,25	400
DN40	2	0,0625	0,1	25	31,25	400
DN50	1	0,1	0,16	40	50	400
DN65	1	0,1587	0,2540	100	125	630
DN80	1	0,2540	0,4063	160	200	630
DN100	1	0,3968	0,6349	250	312,5	630
DN125	1	0,6349	1,0159	400	500	630
DN150	1	0,6349	1,0159	400	500	630
DN200	1	1	1,6	1000	1250	1000
DN250	1	1,6	2,56	1600	2000	1000
DN300	1	2,5	4	2500	3125	1000
DN350	1	5	8	2500	3125	500
DN400	1	8	12,8	4000	5000	500
DN450	1	8	12,8	4000	5000	500
DN500	1	12,6	20,16	6300	7875	500
DN600	1	39,375	63	6300	7875	160
DN700	1	125	200	10000	12500	80
DN800	1	125	200	10000	12500	80
DN900	1	200	320	16000	20000	80
DN1000	1	200	320	16000	20000	80
DN1100	1	200	320	16000	20000	80
DN1200	1	200	320	16000	20000	80
DN1300	1	312,5	500	25000	31250	80
DN1400	1	312,5	500	25000	31250	80
DN1500	1	312,5	500	25000	31250	80
DN1600	1	312,5	500	25000	31250	80
DN1800	1	500	800	25000	31250	50

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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) [m ³]	Verification scale interval (minimum resolution) [m ³]
DN25; DN32; DN40; DN50	99.999	0,0001
DN65; DN80	999.999	0,0001
DN100; DN125; DN150	999.999	0,001
DN200; DN250; DN300	9.999.999	0,001
DN350; DN400; DN450; DN500	9.999.999	0,01
DN600	9.999.999	0,1
DN700; DN800; DN900; DN1000; DN1100; DN1200	99.999.999	0,1
DN1300; DN1400; DN1500; DN1600; DN1800	99.999.999	1

Table 4 Software specification

The electronic revision number is used to lay down the software version and the hardware of the instrument. If either changes, the number is updated. Approved electronic revision numbers with displayable checksum:

Electronic revision number	Identification	Software version	Checksum
3.4.0_	Sensor Electronic	2.2.1_00000004	7100 7100
	Main Software	3.0.6_00008547	38E8 38E8
	User Interface Software	3.4.0_20170106	5311 28AE
	IO2 (Exi IO configurations)	2.2.3_00008548	2207 2207
	IO2 (Modular IO and Modbus configurations)	2.2.3_00008549	8E6A 8E6A
3.4.1_	Sensor Electronic	2.2.1_00000004	7100 7100
	Main Software	3.0.7_00008684	E2D0 E2D0
	User Interface Software	3.4.0_20170106	5311 28AE



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Electronic revision number	Identification	Software version	Checksum
	IO2 (Exi IO configurations)	2.2.3_00008548	2207 2207
	IO2 (Modular IO and Modbus configurations)	2.2.3_00008549	8E6A 8E6A
3.4.2_	Sensor Electronic	2.2.1_00000004	7100 7100
	Main Software	3.0.7_00008684	E2D0 E2D0
	User Interface Software	3.4.1_20180411	6586 28AE
	IO2 (Exi IO configurations)	2.2.3_00008548	2207 2207
	IO2 (Modular IO and Modbus configurations)	2.2.3_00008549	8E6A 8E6A
3.4.11_	Sensor Electronic	2.2.1_00000004	7100 7100
	Main Software	3.0.7_00008684	E2D0 E2D0
	User Interface Software	3.4.1_20180411	6586 28AE
	IO2 (Exi IO configurations)	2.2.3_00008548	2207 2207
	IO2 (Modular IO and Modbus configurations)	2.2.3_00008549	8E6A 8E6A

The software versions and checksums are visible by means of the next menu items:

- B3.7: test > information > CRC
- C5.1.7: setup > device > device info > CRC

Production location

The water meter is produced at one of the following production locations:

- KROHNE Altometer
Kerkeplaat 12
3313 LC Dordrecht
The Netherlands
- KROHNE Measurement Technology (Shanghai) Co., Ltd.
No. 555 Minshen Road, Songjiang Industrial Zone
Shanghai 201612
China
- KROHNE Marshall Pvt., Ltd.
A-36, B-14, MIDC Estate, H-Block, Pimpri Colony, Pimpri-Chinchwad
Maharashtra 411018
India
- Conaut Controles Automaticos Ltda.
Estrada Louis Pasteur, 382, Embu das Artes
São Paulo 06835-701
Brazil



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Certificate history:

This revision replaces the previous version.

Revision	Date	Description of the modification
Initial	10 October 2019	-
1	2 February 2021	Lowering flow profile classification to U0 and D0 Lowering for size DN50 to accuracy class 1 on basis of previous tests results
2	3 November 2022	Addition of virtual reference board
3	13 June 2023	Evaluation according to OIML R49 of PCB revisions due to diode changes and software changes
4	25 March 2025	New production locations added