

OIML Member State
The Netherlands

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Project number 3531004
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Issuing authority NMI Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant Badger Meter, Inc.
4545 West Brown Deer Road
Milwaukee, WI 53224
United States of America

Manufacturer Badger Meter Europe GmbH
Nürtinger Straße 76
72639 Neuffen
Germany

Identification of the certified type An electromagnetic **water meter**
Type: M2000

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.

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Issuing Authority **NMI Certin B.V., OIML Issuing Authority NL1**
7 April 2023

Certification Board

NMI Certin B.V.
Thijssseweg 11
2629 JA Delft
the Netherlands
T +31 88 636 2332
certin@nmi.nl
www.nmi.nl

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

- No. NMI-13200483-01 Revision 1 dated 7 July 2022 that includes 29 pages;
- No. NMI-3531004-02 dated 7 April 2023 that includes 18 pages.

Characteristics of the measuring instrument

In Table 1 the general characteristics of the measuring instrument are presented.
In Table 3 and 4 the characteristics of the family of instruments are presented.
The construction of the measuring instrument is recorded in the Documentation folder no. T10970-1.

Table 1 General characteristics

Measuring principle	Electromagnetic flow metering
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 10 (0,10 bar)
Power supply	AC version: 85 – 265 VAC (45 – 65 Hz) or DC version: 9 – 36 VDC (grounding mandatory)
Software identification	See table 2
Legally relevant parameters	<ul style="list-style-type: none"> - The settings in the "Meter setup" and "Measurement" sections shall be in accordance with calibration data. - The "Totalizer Unit" shall be set to cubic meter M³. - The "dial type" and "resolution" must be set according to the table 4.

Table 2 software identification

Version	Checksum per language						
	English / German	English / Czech	English / Spanish	English / French	English / Russian	English / Swedish	English / Turkish
v1.15	DBDE	A020	7909	B8D6	A351	F370	477E

Version	Checksum per language						
	English / German	English / Czech	English / Spanish	English / French	English / Russian	English / Swedish	English / Turkish
v1.18	6B41	6231	424E	83F6	74A1	DC9F	30AB
V1.19	92F2	D414	E27D	7501	225C	0156	B8AA
V1.20	FAD0	418C	9833	7EA8	5DB6	C8DC	A0C5
V1.21	5436	A588	064A	EEF2	D7B1	0B1F	BFDF
V1.22	9CDF	F1B5	5640	3F93	2B65	4B8A	F2DE

Table 3 General characteristics of the family of instruments

Meter size	Ø in- and outlet [mm]	Flow rates [m ³ /h]				Ratio Q3/Q1
		Minimum Q1	Transitional Q2	Permanent Q3	Overload Q4	
DN50	50	0,252	0,4032	63	78,75	250
DN65	65	0,4	0,64	100	125	250
DN80	80	0,64	1,024	160	200	250
DN100	100	1	1,6	250	312,5	250
DN125	125	1,6	2,56	400	500	250
DN150	150	2,52	4,032	630	787,5	250
DN200	200	4	6,4	1000	1250	250
DN250	250	6,4	10,24	1600	2000	250
DN300	300	10	16	2500	3125	250
DN350	350	10	16	2500	3125	250
DN400	400	16	25.6	4000	5000	250
DN450	450	25.2	40.32	6300	7875	250
DN500	500	25.2	40.32	6300	7875	250
DN600	600	25.2	40.32	6300	7875	250
DN800	800	40	64	10000	12500	250

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 4 General characteristics of the indicating device

Meter size	Indicating range (minimum value) [m ³]	Verification scale interval (maximum value) [m ³]	Totalizer Resolution setting	Dial type setting
DN50	99 999	0,0001	0,0001	6 dial
DN65 till DN150	999 999	0,001	0,001	7 dial
DN200 till DN600	9 999 999	0,01	0,01	8 dial
DN800	99 999 999	0,1	0,1	9 dial

Production location

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

- Badger Meter Czech Republic s.r.o.
Mařkova 2082/26, 621 00 Brno, Czech Republic

Certificate history:

This revision replaces the previous version.

Revision	Date	Description of the modification
Initial	11 January 2021	-
1	17 March 2022	Added production location.
2	7 April 2023	Extension of line sizes and added software revisions