OIML Member State Denmark	**OIML Certificate No.** R49/2013-A-DK2-21.04 Revision 5

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: FORCE Certification A/S
Address: Park Allé 345, 2605 Brøndby Denmark
Person responsible: Lars Poder

Applicant

Name: Siemens AG
Address: DE-76181, Karlsruhe, Germany

Manufacturing locations

Name: Siemens S.A.S.
Address: 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France

Name: Siemens Sensors and Communication Ltd.
Address: 117, Guangxian Road, Qi Xian Ling, High-Tech Industry Zone, 116023 Dalian, China

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

MAG5100W DN50-300 and MAG3100 DN350-600 with MAG8000CT

Designation of the module *(if applicable)*

-

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): 1 and 2

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com
Task no.: 126-22962.51 and ID no.: FC-OIML-11246-5

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 reports:

- OIML type evaluation report no. 119-36937.01 issued by FORCE Technology on 24-05-2022
- OIML type evaluation report no. 121-21566.01 version 2 issued by FORCE Technology on 23-02-2022
- OIML type evaluation report no. 121-21566.01 issued by FORCE Technology on 21-10-2021
- Test report no. 119-25154-1 issued by FORCE Technology on 25-02-2020
- Test report 24FL034_01_MAG8000CT FT witnessed and signed by FORCE Technology on 21-05-2024
- Test report no. 124-22226 issued by FORCE Certification on 15-08-2025
- Test report no. 124-34094 issued by FORCE Certification on 13-03-2026

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

Task no. 126-22962.51, 124-22226.51, 121-21566.01

OIML Certificate History

Revision No.	Date	Description of the modification
Revision 0	25-10-2021	Original certificate.
Revision 1	01-07-2022	Change of HW/SW version and updated scope for class 1. It replaces all previous versions.
Revision 2	09-12-2022	Minor editorial change to improve the appearance of the certificate.
Revision 3	31-05-2024	Sensor variants DN350 – 600 approved for vertical installation.
Revision 4	20-08-2025	Sensor variants DN350 – 600 class 2 approved for installation with 0xDN upstream and downstream from the sensor. Additional manufacturing location added to the certificate.
Revision 5	10-04-2026	Sensor variants DN50 – 300 approved for class 1 and 2 and R400 (all orientations).

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com

	OIML Certificate No. R49/2013-A-DK2-21.04 Revision 5
Identification, signature and stamp **The OIML Issuing Authority** Date: 10-04-2026 Michael Møller Nielsen Certification manager	
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.

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com

Measuring system description

The construction consists of an electromagnetic flow sensor, MAG5100W or MAG3100, and a signal transmitter, MAG8000CT.

The design principle is, as for any electromagnetic flow sensor, that a constant pulsed DC electrical current through the coil circuit results in a magnetic field through the sensor bore with direction from coil to coil. When a conductive liquid passes through the magnetic field, a differential DC voltage is introduced between the measuring electrodes.

The sensor has a steel tube and steel flanges, and the bore is fitted with an electrically insulating lining, which is coned to optimize the velocity profile of the fluid. Between the lining and the steel tube are fitted coils, which generate the magnetic field.

The flow meter may be equipped with an optional wireless communication module.

Inscriptions

The water meters type MAG5100W and MAG3100 with MAG8000CT shall be clearly and indelibly marked with the following information:

- System designation
- Manufacturer designation or logo
- Manufacturer postal address
- Type, production year and serial number
- Accuracy class
- Max pressure loss
- Mechanical and electromagnetic environment classes
- Climatic class
- Flow limits
- Sensitivity velocity field classes
- Temperature of medium
- Maximum working pressure (PN)
- Protection class
- Dynamic Range (Q3/Q1)
- Software version (e.g.: 3.11)
- Direction of flow by means of an arrow shown on both sides of the body

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com

Technical and metrological characteristics

Meter size	Orientation	Accuracy class	Flow rates [m³/h]				Ratio Q3/Q1
			Minimum Q1	Transitional Q2	Permanent Q3	Overload Q4	
DN50	All	1	0,158	0,252	63	78,75	400
DN65	All	1	0,250	0,400	100	125	400
DN80	All	1	0,400	0,640	160	200	400
DN100	All	1	0,625	1,000	250	312,5	400
DN125	All	1	1,000	1,600	400	500	400
DN150	All	1	1,575	2,520	630	787,5	400
DN200	All	1	2,500	4,000	1000	1250	400
DN250	All	1	4,000	6,400	1600	2000	400
DN300	All	1	4,000	6,400	1600	2000	400
DN350	Hor & Ver	2	12,500	20,000	2500	3125	200
	Hor	1	20,000	32,000	2500	3125	125
DN400	Hor & Ver	2	20,000	32,000	4000	5000	200
	Hor	1	32,000	51,200	4000	5000	125
DN450	Hor & Ver	2	20,000	32,000	4000	5000	200
	Hor	1	32,000	51,200	4000	5000	125
DN500	Hor & Ver	2	31,500	50,400	6300	7875	200
	Hor	1	50,400	80,640	6300	7875	125
DN600	Hor & Ver	2	31,500	50,400	6300	7875	200
	Hor	1	50,400	80,640	6300	7875	125

Hor = Horizontal, Ver = Vertical, All = All orientations

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com

Meters are approved to measure bi-directional for class 2.

Other sensor variants are also covered by this approval provided the following is fulfilled:

- "R" (Q_3/Q_1) shall not exceed the values in the tables and shall be chosen from OIML R 49-1:2013 list 4.1.4
- Q_3 shall not exceed the values in the tables and shall be chosen from OIML R 49-1:2013 list 4.1.3
- Q_1 shall be larger than the values in the tables
- Q_2 shall be larger than the values in the tables

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com

Other characteristics:

Instrument type:	Complete water meter
Temperature class:	T30 (0.1…30 °C) T50 (0.1…50 °C)
Water pressure class:	MAP 16
Accuracy class:	1 and 2
Electromagnetic environment class:	E2
Mechanical environment class:	M1, Class B and O (building and outdoors)
Ambient temperature range:	-25 °C – 55 °C
Sensitivity to irregularity upstream velocity field classes:	**Class 1 and 2:** The product requires 0xD straight pipe upstream from the sensor for DN50-300 **Class 1:** The product requires 3xD straight pipe upstream from the sensor for DN350-600 **Class 2:** The product requires 0xD straight pipe upstream from the sensor for DN350-600
Sensitivity to irregularity downstream velocity field classes:	**Class 1 and 2:** The product requires 0xD straight pipe downstream from the sensor for DN50-300 **Class 1:** The product requires 3xD straight pipe downstream from the sensor for DN350-600 **Class 2:** The product requires 0xD straight pipe downstream from the sensor for DN350-600
Orientation requirements:	Horizontal, vertical or at an intermediate angle for DN50-300. Horizontal or vertical for DN350-600.
Protection class:	IP68
Power supply:	3.6 V lithium battery, 12-24 VAC/VDC, 115-230 VAC
Battery lifetime:	Up to 6 years
Compact/Remote:	Max. 30 m cable

FORCE Certification A/S · Park Alle 345, 2605 Brøndby Tel+45 43 25 01 77 Fax +45 43 25 00 10 www.forcecertification.com
Mail: info@forcecertification.com