

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.02
Project number 2386084
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Issuing authority
Person responsible: NMi Certin B.V.
C. Oosterman

Applicant and
Manufacturer: Euromisure S.a.s. di Wika Italia S.r.l.
Via G. Borghisani, 4
26035 Pieve S. Giacomo (CR)
Italy

Identification of the
certified type: An electromagnetic **water meter**
Type: FLC-2300 and FLC-2200EL with electronic converter FLC-406M
and FLC-406AM

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):

R49-1 (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.

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**
4 July 2019


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The conformity was established by the results of tests and examinations provided in the associated report(s):

- No. NMI-15200444-01 dated 31 March 2016 that includes 39 pages;
- No. 150701670 dated 30 March 2016 that includes 42 pages;
- No. NMI-16200309-01 dated 14 November 2016 that includes 69 pages;
- No. 160600944 dated 28 October 2016 that includes 31 pages;
- No. 160600948 dated 28 October 2016 that includes 31 pages;
- No. 160600939 dated 28 October 2016 that includes 34 pages;
- No. NMI-1902198-01 dated 3 December 2018 that includes 16 pages;
- No. NMI-2186686-01 dated 24 May 2019 that includes 43 pages;
- No. NMI-2186686-02 dated 24 May 2019 that includes 47 pages.

Characteristics of the measuring instrument

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

The cylindrical measuring tube of the measurement sensor can have a reduced bore (type FLC-2300) or a full bore (type FLC-2200EL).

Table 2 and 3 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. T11690-0.

Table 1 General characteristics

Measuring principle	Electromagnetic
Accuracy class of FLC-2200EL	2
Accuracy class of FLC-2300	1
Environmental class	M1 / O (installed outdoors)
Electromagnetic environment	E1 for remote version of converter FLC-406M E2 for compact version of converter FLC-406M E2 for compact and remote version of converter FLC-406AM
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 water meter is designed to measure reverse flow
Pressure loss class of FLC-2200EL	Δp 10 (0,010 MPa or 0,10 bar) for all sizes
Pressure loss class of FLC-2300 based on documentation 11690/0-06	Δp 10 (0,010 MPa or 0,10 bar) for sizes < DN80 Δp 40 (0,040 MPa or 0,40 bar) for sizes \geq DN80
Pressure loss class of FLC-2300 based on documentation 11690/0-05	Δp 25 (0,025 MPa or 0,25 bar) for sizes < DN80 Δp 40 (0,040 MPa or 0,40 bar) for sizes \geq DN80

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Power supply	Replaceable battery (2,9 – 3,7 V) DC mains (10 - 28 V) only for FLC-406AM																		
Software identification	<p>Software 'Bootloader':</p> <table border="1" data-bbox="810 645 1375 875"> <thead> <tr> <th>Software versions</th> <th>CRC Checksum</th> </tr> </thead> <tbody> <tr> <td>01.00</td> <td>63A2EDED</td> </tr> <tr> <td>01.01</td> <td>67AEA1E4</td> </tr> <tr> <td>01.02</td> <td>DE7A99AB</td> </tr> </tbody> </table> <p>Software 'Legally relevant firmware':</p> <table border="1" data-bbox="810 943 1375 1218"> <thead> <tr> <th>Software versions</th> <th>CRC Checksum</th> </tr> </thead> <tbody> <tr> <td>01.05</td> <td>CAA8A4C7</td> </tr> <tr> <td>01.15</td> <td>6AA50C55</td> </tr> <tr> <td>01.16</td> <td>E93E3A1E</td> </tr> <tr> <td>01.21</td> <td>79413617</td> </tr> </tbody> </table>	Software versions	CRC Checksum	01.00	63A2EDED	01.01	67AEA1E4	01.02	DE7A99AB	Software versions	CRC Checksum	01.05	CAA8A4C7	01.15	6AA50C55	01.16	E93E3A1E	01.21	79413617
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Table 2 General characteristics of the family of instruments - Reduced bore type FLC-2300

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	0,125	0,2	25	31,25	200
DN65	65	0,2	0,32	40	50	200
DN80	80	0,315	0,504	63	78,75	200
DN100	100	0,5	0,8	100	125	200
DN125	125	0,8	1,28	160	200	200
DN150	150	1,25	2	250	312,5	200
DN200	200	3,15	5,04	630	787,5	200
DN250	250	5	8	1000	1250	200
DN300	300	8	12,5	1000	1250	125

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Table 3 General characteristics of the family of instruments - Full bore type FLC-2200EL

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	0,315	0,504	63	78,75	200
DN65	65	0,5	0,8	100	125	200
DN80	80	0,8	1,28	160	200	200
DN100	100	1,25	2	250	312,5	200
DN125	125	2	3,2	400	500	200
DN150	150	3,15	5,04	630	787,5	200
DN200	200	5	8	1000	1250	200
DN250	250	8	12,8	1600	2000	200
DN300	300	10	16	1600	2000	160

Table 4 General characteristics of the indicating device - Reduced bore type FLC-2300

Meter size	Indicating range (minimum value) [m ³]	Verification scale interval (maximum value) [m ³]
DN50	9 999 999	0,0001
DN65, DN80, DN100, DN125, DN150	9 999 999	0,001
DN200, DN250, DN300	9 999 999	0,01

Table 5 General characteristics of the indicating device - Full bore type FLC-2200EL

Meter size	Indicating range (minimum value) [m ³]	Verification scale interval (maximum value) [m ³]
DN50, DN65, DN80, DN100	9 999 999	0,001
DN125, DN150, DN200, DN250, DN300	9 999 999	0,01