

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.01
Project number 2186686
Page 1 of 4

Issuing authority
Person responsible: NMi Certin B.V.
C. Oosterman

Applicant and
Manufacturer: Euromag International S.r.l.
Via della Tecnica 20
35035 Mestrino (PD)
Italy

Identification of the
certified type: An electromagnetic **water meter**
Type: MUT2300 and MUT2200EL with electronic converter MC406M and
MC406AM

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**
24 May 2019


C. Oosterman
Head Certification Board

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

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

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.01
Project number 2186686
Page 2 of 4

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/ Euromag DN 50/ MC 406 dated 30 March 2016 that includes 42 pages;
- No. NMI-16200309-01 dated 14 November 2016 that includes 69 pages;
- No. 160600944/MUT 2200, DN 50, full bore dated 28 October 2016 that includes 31 pages;
- No. 160600948/MUT 2200, DN 65, full bore dated 28 October 2016 that includes 31 pages;
- No. 160600939/MUT 2300, DN 80, reduced bore 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 MUT2300) or a full bore (type MUT2200EL).

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. T10713-5.

Table 1 General characteristics

Measuring principle	Electromagnetic
Accuracy class of MUT2200EL	2
Accuracy class of MUT2300	1
Environmental class	M1 / O (installed outdoors)
Electromagnetic environment	E1 for remote version of converter MC406M E2 for compact version of converter MC406M E2 for compact and remote version of converter MC406AM
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 MUT2200EL	Δp 10 (0,010 MPa or 0,10 bar) for all sizes
Pressure loss class of MUT2300 based on documentation 10713/4-03	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 MUT2300 based on documentation 10713/1-01	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

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.01
Project number 2186686
Page 3 of 4

Power supply	Replaceable battery (2,9 – 3,7 V) DC mains (10 - 28 V) only for MC406AM																		
Software identification	<p>Software 'Bootloader':</p> <table border="1"> <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"> <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
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																		

Table 2 General characteristics of the family of instruments - Reduced bore type MUT2300

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

OIML Member State
The Netherlands

Number R49/2013-A-NL1-19.01
Project number 2186686
Page 4 of 4

Table 3 General characteristics of the family of instruments - Full bore type MUT2200EL

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 MUT2300

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 MUT2200EL

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