

OIML Member State
The Netherlands

Number R 137/2012-B-NL1-18.12
Project number 1902121
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Issuing authority NMI Certin B.V.
Person responsible: C. Oosterman

Applicant and Manufacturer Elster GmbH
Steinern Straße 19-21
55252 Mainz-Kastel
Germany

Identification of the certified type An **Ultrasonic Gas Meter**
Type: Q.Sonic^{max}

Characteristics See page 2 and further

This OIML Certificate is issued under scheme B

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 137-1 (2012) "Gas meters"

Accuracy class 0,5

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.

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Issuing Authority **NMI Certin B.V., OIML Issuing Authority NL1**
12 October 2018



C. Oosterman
Head Certification Board

NMI Certin B.V.
Hugo de Grootplein 1
3314 EG Dordrecht
the Netherlands
T +31 78 6332332
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 report(s):

- No. NMI-9200288-01 dated 18 January 2012 that includes in total 48 pages;
- No. NMI-9200288-03 dated 3 July 2012 that includes in total 47 pages;
- No. NMI-16200535-01 revision 1 dated 1 September 2017 that includes 35 pages;
- No. NMI-1902121-01 dated 12 October 2018 that includes 14 pages.

Characteristics of the measuring instrument

In Table 1 the general characteristics of the measuring instrument are presented.
Table 2 gives an overview of the general characteristics of the family of instruments.

Table 1 General characteristics

Destined for the measurement of	Gas volume	
Environmental classes	M1 / E2	
Accuracy class	0,5	
Working pressure	The meter is either programmed with a density and viscosity setting, corresponding to the applied gas at preset pressure or using live pressure value from the optional pressure sensor. When using a preset value the maximum operating range for pressure p_{max} / p_{min} is 6,25 symmetrically divided around the preset pressure.	
Ambient temperature range	-40 – +70 °C gas meter -40 – +55 °C gas meter with EVCD	
Gas temperature range	-40 – +100 °C gas meter -30 – +80 °C gas meter with EVCD	
Designed for	Non condensing humidity / condensing humidity	
Orientation	Horizontal / vertical up / vertical down / all orientations	
Power supply voltage	18 – 30 V DC	
Software identification	Version	Checksum
Basic System	02.10.01.0003 or 02.11.00.0018	7C01880E 75574588
Archive	02-07-A or 02-07-B	420652AC 013C7919
Postprocessing	02-08-C or 02-08-D	459B14C1 65397437
Density & Viscosity	02.04.00.0001 or 02.04.00.0005	BB87257F 1DF2525D

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Software identification	Version	Checksum
Geometry Correction	02.04.00.0001 or 02.05.00.0000	D8D14A5F 6C1DF991
Modbus	02-20-B or 02-20-C	F4348ED8 F20B85FE
USM	02.10.00.0000 or 02.11.00.0018	3DE0303F 9B8E6234
NGQFB	01.00.07 or 01.00.08	B7568107 350616D6
NGQMB	01.00.10	0C432F97
Gas Quality	02-09-C or 02-09-D	C83315E2 BD083158
Flow Conversion	02-07-D or 02-07-E	587979DE C960A68C

Table 2 General characteristics of the family of instruments

Diameter size		Internal bore [mm]	Minimum flow rate Q_{\min} (m ³ /h)	Transitional flow rate Q_t (m ³ /h)	Maximum flow rate Q_{\max} (m ³ /h)
Inch	DN				
4	100	97	13	100	1000
6	150	146	18	220	2200
		139	16	200	2000
8	200	190	30	400	3500
		180	27	350	3200
10	250	240	48	590	5700
		230	44	540	5200
12	300	295	73	860	8300
		280	66	780	7500
14	350	325	85	1000	10000
		305	75	900	8800
20	500	488,9	200	2100	21000
		431,8	160	1600	16000
24	600	590,9	295	3000	30000
		532,22	240	2400	24000

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Installation conditions:

Installation of the ultrasonic gas meter

For mild and severe flow disturbances the meter needs to be installed with the following minimum piping configuration as upstream inlet:

- mild disturbances: 5D straight piping.
- severe disturbances: 5D straight piping + flow conditioner + 5D straight piping.

The flow conditioner can be of the following types:

- CPA50 type A
- NOVA 50E

The outlet piping shall comply with:

- 3D straight piping (for both mild and severe disturbances).

Any components which could affect the gas flow must be avoided within the above prescribed inlet pipe length. The necessary straight pipe length is stated on the name plate of the meter. The inlet pipe must be designed as a straight pipe section of the same nominal diameter as the gas meter with a maximum tolerance of +/- 3%.

Bi-directional flow measurement

During conformity assessment it is sufficient to verify a bi-directional meter only in one direction.

Temperature sensor

The installation of a temperature sensor is at 2–5D from the outlet of the meter. For bi-directional applications an additional temperature sensor can be installed 2–5D upstream of the meter. The pipe spools including the thermo well(s) shall be installed and considered during the examination for putting into use of the gas meter.

Alternative welded installation

The meters can be welded directly without flanges to the inlet and outlet pipes. The inlet and outlet pipe length shall be according the requirements as prescribed above for mild and/or severe disturbances. The complete meter package (meter including welded piping) shall be calibrated in order to guarantee compliance with Class 0.5.

Interchangeable components:

The ultrasonic transducers mounts are an interchangeable component and can be replaced with units of the same type with additional gasket. After exchange of a part of the system, it is necessary to perform a functional test.