

OIML Member State
The Netherlands

Number R137/2012-B-NL1-18.09 revision 1
Project number 1902613
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Issuing authority NMI Certin B.V.
Person responsible: C. Oosterman

Applicant and Manufacturer Daniel Measurement and Control, Inc.
11100 Brittmoore Park Drive
77041 Houston, Texas
United States of America

Manufacturer's name Daniel

Identification of the certified type An **ultrasonic gas meter**
Type: 3414 / 3415 / 3416 / 3417 GUSM or Senior Sonic

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**
30 August 2018



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

- No. NMI-15200438-01 dated 3 November 2015 that includes 47 pages;
- No. NMI-15200787-01 dated 25 February 2016 that includes 50 pages;
- No. NMI-16200416-01 dated 19 August 2016 that includes 11 pages;
- No. NMI-16200582-02 dated 3 November 2016 that includes 7 pages.
- No. NMI-1902613-01 dated 23 August 2018 that includes 51 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.

The construction of the measuring instrument is recorded in Documentation folder number T11159-2.

The ultrasonic gas meter is produced at the following production locations:

- Daniel Measurement and Control, Inc., 11100 Brittmoore Park Drive, 77041 Houston, Texas, United States of America.
- Emerson SRL, Emerson street no. 4, 400461 Cluj – Napoca, Romania.

Gas meter configuration

Model 3414 The model 3414 is equipped with 4 measuring paths in a horizontal configuration.

Model 3415 The model 3415 contains a model 3414 path layout and electronics. The model 3415 is additionally equipped with one check path which is connected to a separate set of electronics.

Model 3416 The model 3416 contains a model 3414 path layout and electronics. The model 3416 is additionally equipped with one check path and one diagnostic path which are connected to a separate set of electronics.

Model 3417 The model 3417 is composed of two model 3414 electronics and transducers built into a model 3417 spool piece. The meter can be used in the following configurations:

1. Two separate gas meters
2. Pay / check configuration

Table 1 General characteristics

Destined for the measurement of	Gas volume
Environmental classes	M2 / E2
Accuracy class	0,5
Maximum pressure	425 bar



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Ambient temperature range	-40 °C / +55 °C	
Gas temperature range	Transducer type	Temperature range
	T11 T12 T21 T22 T32 T41	-20 °C / +55 °C -20 °C / +55 °C -20 °C / +55 °C -40 °C / +55 °C -40 °C / +55 °C -50 °C / +100 °C
Designed for	Condensing humidity	
Orientation	All orientations	
Power supply voltage	10,4 – 36 V DC	
Software identification	Version number: 1.24 Checksum: 1869761847 Version number: 1.27 Checksum: 2717395331 Version number: 1.30 Checksum: 2620208593 Version number: 1.31 Checksum: 3367318398 Version number: 1.35 Checksum: 1438734832	

Table 2 General characteristics of the family of instruments

diameter		V_{min} [m/s]	V_t [m/s]	V_{max} [m/s]
DN [mm]	Typical range [mm]			
100	80 ~ 108	0,5	0,1 x V_{max}	30,5
150	124 ~ 161			
200	173 ~ 212			
250	216 ~ 265			
300	257 ~ 315			
350	284 ~ 343			
400	325 ~ 394			32,5
450	367 ~ 445			
500	408 ~ 495			
600	491 ~ 597			
750	730 ~ 749			
900	876 ~ 899			
1050	1029 ~ 1048	23		
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Installation conditions:

Inlet piping and flow straightener

The meter is used, with the indicated minimum piping lengths, in one of the following configurations:

- 5D piping followed by a CPA 50E/CPA 55E straightener followed by 10D piping at the inlet of the meter. See document 11159/0-13.

Certificate history:

This revision replaces the previous version.

Revision	Date	Description of the modification
Initial	23 August 2018	-
1	30 August 2018	Editorial changes in date of test reports