

OIML Member State
The Netherlands

Number R117/2007-A-NL1-22.05 revision 0
Project number 3507455
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Issuing authority NMI Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant and Manufacturer Micro Motion, Inc.
7070 Winchester Circle
Boulder, Colorado 80301
United States of America

Identification of the certified type A **measuring device** (ultrasonic sensor with belonging electronics)
Manufacturer's mark: Daniel
Type: Model 3814 and 3818

Characteristics See following page(s)

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):

R 117-1: 2007 "Dynamic measuring systems for liquids other than water"

Accuracy class 0,3

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.

This certificate and supporting reports comply with the requirements of OIML-CS-PD-07 clause 6.2.

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**
28 March 2022

Certification Board

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The conformity was established by the results of tests and examinations provided in the associated reports:

- No. CPC-804369-1 dated 17 June 2008 that includes 27 pages;
- No. NMI-11200665-1 dated September 2011 that includes 8 pages;
- No. NMI-12200109-01 dated 4 October 2013 that includes 13 pages;
- No. NMI-13200645-01 dated 1 September 2014 that includes 7 pages;
- No. NMI-16200582-01 dated 3 November 2016 that includes 6 pages.

Characteristics of the measuring instrument

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

In Table 2 the characteristics of the family of instruments are presented.

The construction of the measuring instrument is recorded in the Documentation folder no. TC8224-3.

Table 1 General characteristics

Number of sound paths	4
Sound frequency	1,0 MHz
Path angle	60 °
Minimum – maximum flow rate	See table 2; Bi-directional (if calibration performed in both flow directions)
Minimum measured quantity	See table 2
Maximum pressure	300 bar(g)
Environmental classes	M2 / E2
Ambient temperature range	-40 °C / +55 °C;
Product temperature range	See table 3
Intended for the measurement of	liquid petroleum and related products, liquids food and chemical products in liquid state
Power supply voltage	10,4 ... 36 VDC
Software identification	See table 4

Table 2 General characteristics of the family of instruments

Meter size	Minimum flow rate [m ³ /h]	Maximum flow rate [m ³ /h]	Minimum Reynolds number [-]	Minimum measured quantity [m ³]
4"	36	360	10000	1
6"	82	720	10000	2
8"	142	1450	6000	10
10"	223	2250	6000	20
12"	300	3170	6000	50
16"	300	4890	10000	100
18"	450	6334	10000	200

Table 3 General characteristics of the transducers

4"-10" Meter Sizes	12" - 18" Meter Sizes	Liquid Temperature Range	Viscosity Range
LT-01	LT-03	-50 °C to 100 °C	Up to 130 cst
LT-04	LT-05	-50 °C to 150 °C	Up to 1000 cst
LT-06	LT-07	-200 °C to 60 °C	Up to 130 cst
LT-08	LT-09	-50 °C to 150 °C	Up to 130 cst

Table 4 Software specifications

Part	Version	Checksum
Operating system, Kernel	2.6.37.6	0babf2ffe2512c50c22b9af006dd97a7 ulmage.zip
File system	1.02	feef7a9450ac3fe5cebccac5badd6894 rootfs.zip
Firmware	1.04	a3800fb0ed46527d08371c141315b6b1 firmware.zip
Program checksum; Combined kernel, File System & Firmware	1.13	0130745426
	1.22	3499386616
	1.24	1869761847
	1.27	1547356617



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Certificate history:

Revision	Date	Description of the modification
0	28 March 2022	Initial release