OIML Certificate

OIML Member State
The Netherlands

Number R117/2019-A-NL1-25.03 revision 0
Project number 3687257

Issuing authority	NMi Certin B.V. Person responsible: M.Ph.D. Schmidt
Applicant and Manufacturer	FAURE HERMAN 2 Lieu-Dit l'Archette 72400 La Ferté Bernard France
Identification of the certified type	A **measuring device** (ultrasonic flow meter) intended to be used as part of an interruptible or non- interruptible dynamic measuring system for liquids other than water. Type: FH-SONIC
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: 2019 "Dynamic measuring systems for liquids other than water"

Accuracy class 0,3, 0,5 and 1,0

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 March 2025

Certification Board

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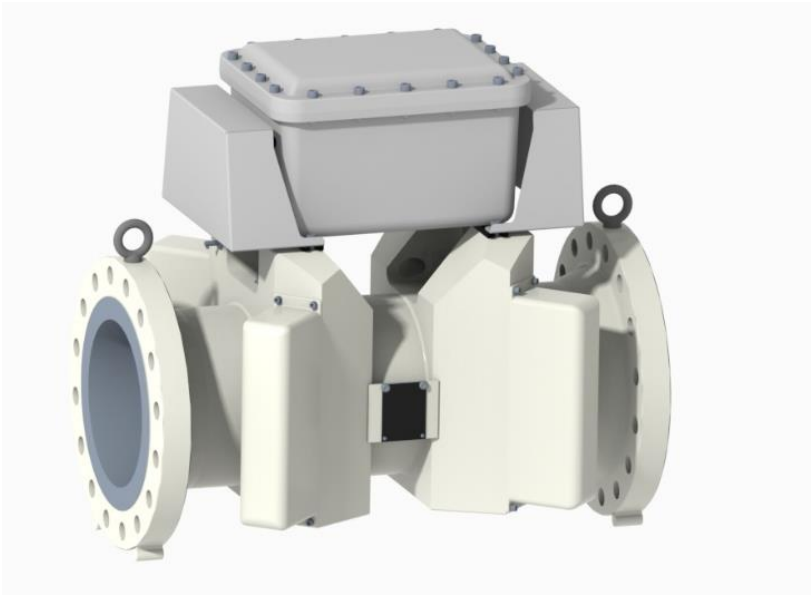
The conformity was established by the results of tests and examinations provided in the associated report(s):

- No. NMi-3687257-01 dated 4 March 2025 that includes 45 pages;
- No. NMi-3687257-02 dated 4 March 2025 that includes 32 pages.

General information about the measuring device

The FH-SONIC is an ultrasonic flow meter for measuring the actual flowing volume of liquid products. It is based on the measurement of the runtimes of ultrasonic pulses along several measuring paths. The meter consists of the following assemblies:

- One meter body with a straight pipe section with 5 ultrasonic measuring paths;
- Two ultrasonic transducers per measuring path, where the two transducers both serve as transmitters and receivers;
- The electronics which are separated from the meter body with the measurement electronics for excitation and processing of the transducer signals and the interface electronic.



Characteristics of the measuring instrument

In Table 1 the general characteristics of the measuring instrument are presented.
The construction of the measuring instrument is recorded in the Documentation folder no. TC12652-1.

Table 1 General characteristics

Number of sound paths	5 Horizontal (measurements) + 1 Vertical (diagnostics)
Sound frequency	Around 1 MHz
Path angle	45°, except for path 2 and 4 of the DN200 (8") size which have a path angle of 71°
Approved quantity	Volume at flowing conditions
Maximum pressure	20 bar(g)
Environmental classes	M2 / E2 Humidity class H3: Condensing, open location
Ambient temperature range	-40 … +55 °C
Product temperature range	-40 … +35 °C
Intended for the measurement of	Liquid petroleum and related pro-ducts, liquids food and chemical products in liquid state with a maximum viscosity of 200 mPa·s.
Power supply voltage	24 V DC
Flow characteristics	See table 2
Approved inputs	-
Approved outputs	Dual pulse output (maximum frequency is 10 kHz)
Software identification	See table 3

Table 2 Characteristics of the family of instruments

Meter size		Q_{min}	Q_{max}	**Minimum measured quantity**	**Minimum Reynolds Number**
[DN]	**[Inch]**	**[m³/h]**	**[m³]**	**[m³]**	**[-]**
200	8	53	1394	2	5000
250	10	92	2198	5	5000
300	12	130	3120	5	5000
350	14	157	3770	5	5000
400	16	205	4925	5	6000
450	18	258	6235	5	6000

Table 3 Software identification

Identification	Version	Checksum
Flow Calc. board MID Software	MID-1.3	87e3d1de
Ultrasound board MID Software	MID-1.3	79f92988
FPGA Software (Ultrasound boards)	24-12-18 ind 99	-

Certificate history:

Revision	Date	Description of the modification
0	4 March 2025	Initial release