



OIML Certificate

OIML Member State
The Netherlands

Number R117/2019-A-NL1-24.05 revision 1
Project number 3939292
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Issuing authority NMI Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant and Manufacturer Endress+Hauser SICK GmbH+Co. KG
Bergener Ring 27
01458 Ottendorf-Okrilla
Germany

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. ^[1]

Manufacturers mark: Endress+Hauser
Type: FLOWSIC900 F9L-XXXY ^[2]

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; 1,0; 1,5

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.

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 Reports is not permitted, although either may be reproduced in full.

¹ This measuring device was previously placed on the market under the name Sick Engineering GmbH

² Where Y = D for 8-path and C for 4-path meter.
L = Large scale flow meter type.

Issuing Authority **NMI Certin B.V., OIML Issuing Authority NL1**
28 April 2025

Certification Board

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

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The notification of NMI Certin B.V. as Issuing Authority can be verified at www.oiml.org

This document is digitally signed and sealed.



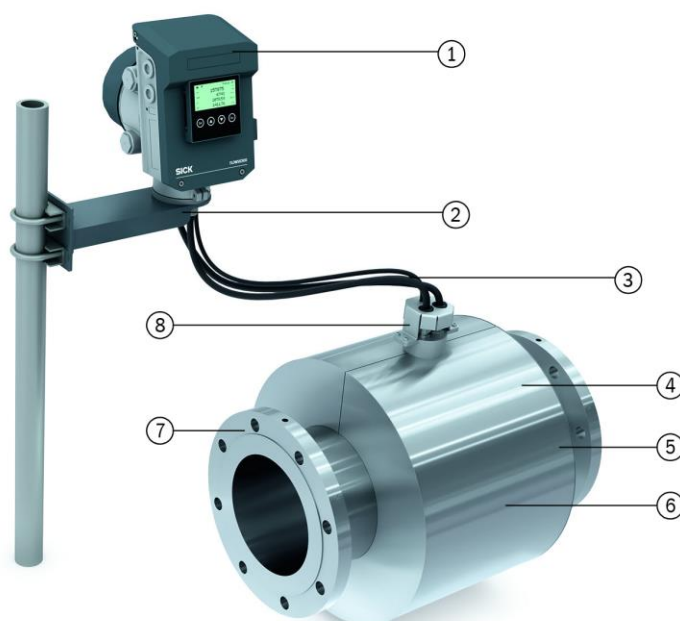
The conformity was established by the results of tests and examinations provided in the associated reports:

- No. NMI-3575261-01 dated 6 December 2024 that includes 77 pages.

General information about the measuring device

The FLOWSIC900 F9L-XXX \mathbf{Y} is an ultrasonic flow meter for measuring the volume of liquified natural gas (LNG) and low viscosity oil. 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 4 or 8 ultrasonic measuring paths.
- Two ultrasonic transducers per measuring path, where the two transducers both serve as transmitters and receivers,
- The signal processing unit (SPU) separated from the meter body with the measurement electronics for excitation and processing of the transducer signals, the interface electronic and the display.



- | | |
|--------------------------------------------------------------------------------|------------------------------|
| 1 SPU (Signal Processing Unit) | 5 Jacketing |
| 2 SPU holder | 6 Meter body |
| 3 Connection cable (for ultrasonic transducers and temperature sensor) | 7 Meter body flange (flange) |
| 4 Thermal factory pre-insulation (ultrasonic transducers under the insulation) | 8 Meter body neck (neck) |



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Characteristics of the measuring device

In Table 1 the general characteristics of the measuring device are presented.
The construction of the measuring device is recorded in the Documentation folder no. TC12890-2.

Table 1 General characteristics

Number of sound path	8 (4 + 4 in X- configuration) ; 4 (A-A plane)
Sound frequency	1.5 MHz
Path angle	$52,5^{\circ} \pm 10^{\circ}$
Approved quantity	Volume at flowing conditions
Maximum pressure	20 bar(g)
Environmental classes	M3 / E2 Humidity class H3: condensing, open location
Ambient temperature range	-40 °C / +55 °C for pulse output and Modbus as the metrologically relevant output signal. -25 °C / +55 °C for local display on the SPU as the metrologically relevant display.
Product temperature range	-200 °C / +60 °C
Intended for the measurement of	Liquified Natural Gas (LNG); Liquid petroleum and related products, liquids food, chemical products any other liquids other than water in liquid state with maximum kinematic viscosity of 2 cSt.
Power supply voltage	23 VDC to 29 VDC The measuring device should always be powered using the following power supply units: Make: Phoenix Contact Type: STEP-CAP/24VDC/2/0.4KJ Part Number: 1519633 Make: FEAS Type: SSESSE24-M Part Number: 622406
Software identification	Version number: 1.1.0. Checksum: EFC304FA The metrological software version and checksum can be displayed: <ul style="list-style-type: none">• by the electronic calculating/indicating device connected to the measuring device, or• via the serial communication line and a computer temporarily connected to the measuring device.



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Flow characteristics	See table 2
Approved inputs	-
Approved outputs	Local Display; Frequency output (maximum frequency is 10 kHz) Modbus RS485 serial communication.
Housing signal processing unit	Aluminium or Stainless steel
Electro-Magnetic Interference (EMI) protection measures	All cables between the sensor and the remote transmitter cannot be longer than 6 meters. Serial RS485 communication cable should be a shielded cable.

Table 2 Characteristics of the family of instruments

Meter size	Inch	8	10	12	14
	DN	200	250	300	350
Minimum flow rate [m ³ /hr]		60	90	130	160
Maximum flow rate [m ³ /hr]		1500	2300	3300	4100
MMQ [m ³]		2	2	5	5
Minimum Reynolds Number		50000	50000	50000	50000

Production location

The measuring instrument is produced at one of the following production locations:

- Endress+Hauser SICK GmbH+Co. KG, Bergener Ring 27, 01458 Ottendorf-Okrilla, Germany

Certificate history:

Revision	Date	Description of the modification
0	6 December 2024	Initial issue
1	28 April 2025	Manufacturer name change. Previously named as "Sick Engineering GmbH".