OIML Certificate

OIML Member State
The Netherlands

Number R117/2019-A-NL1-26.04 revision 0
Project number 4100970

Issuing authority Person responsible:	NMi Certin B.V. M.Ph.D. Schmidt
Applicant and Manufacturer	Emerson Process Management Flow B.V. Neonstraat 1 6718 WX Ede The Netherlands
Identification of the certified type	A Coriolis **measurement transducer**, intended to be used as a part of a liquid measuring system. Type: CMFxxx[1]; CMFHCx[1]
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.

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.

---

[1] With xxx or x denoting the size of the measurement sensor.

Issuing Authority **NMi Certin B.V., OIML Issuing Authority NL1**
15 October 2026

Certification Board

NMi Certin B.V.
Thijsseweg 11
2629 JA Delft
The Netherlands
T +31 88 636 2332
certin@nmi.nl
www.nmi.nl

This document is issued under the provision that no liability is accepted and that the applicant shall indemnify third-party liability.

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 digital signature can be verified in the blue ribbon at the top of the electronic version of this certificate.

PRODUCTS RvA C 681

OIML Member State
The Netherlands

Number R117/2019-A-NL1-26.04 revision 0
Project number 4100970

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

- NMi-4100970-01 dated 15 October 2026 that includes 72 pages.

Characteristics of the measurement transducer
Table 1 to Table 6 presents the general characteristics of the measuring instrument.
The construction of the measurement transducer is recorded in documentation folders:

- Flow sensor CMFxxx, CMFHCx : TC7056-14
- Core processor 800 or 820 (MVD series) : TC7057-17
- Flow transmitter 5700 : TC8519-4

Table 1 General characteristics of the CMF and CMFHC series measurement sensors

Density range	400 … 1100 kg/m^3
Maximum viscosity	1080 mm^2/s (cSt) under actual operating conditions
Maximum pressure	25 bar(g)
Accuracy class	0.3 / 0.5 / 1.0 / 1.5
Environmental classes	M3 / E2+E3 / H3
Ambient temperature range	-40 … +55 °C
Intended for the measurement of	Oil and oil products, alcohol, chemicals, potable liquids, liquefied gases under pressure and cryogenic liquids.
Temperature range liquid	<u>For mass measurement:</u> -40 °C … +250 °C -200 °C … +250 °C (only for accuracy class 1.5) <u>For density and volume measurement:</u> -40 °C … +150 °C

Table 2 Specific characteristics of the CMF and CMFHC series measurement sensors

Sensor type	Maximum flow rate [kg/min]	Minimum flow rate [kg/min]				Minimum Measured Quantity [kg]
		Accuracy class 0.3	Accuracy class 0.5	Accuracy class 1.0	Accuracy class 1.5	
CMF010y	1,8	0,033 H, L, M 0,067 P	0,017 H, L, M 0,033 P	0,017 H, L, M 0,033 P		0,05
CMF025y	36	0,45	0,23	0,18		0,5
CMF050y	110	1,3	0,65	0,57		5
CMF100y	450	7,83	3,92	2,3		10
CMF200y	1450	21,7	10,8	7,3		20
CMF300y	4500	73,3	36,7	23		200
CMF350y	4920	138,3	75	75		500
CMF400y	6804	1000	500	250		500
CMFHC2y	12600	491	245	123		1000
CMFHC3y	22000	1059	530	265	213	1000
CMFHC4y	30000	1661	830	415	332	1000

Notes:
- y is a letter which indicates the type of material the meter is built of.
  Where there are different possibilities for a characteristic, the actual letter is indicated in superscript.

Table 3 General characteristics of the 800 or 820 (MVD series) electronics

Environmental classes	M3 E2 for non- and interruptible measuring systems[2] E3 for interruptible measuring systems H3
Ambient temperature range	-40…+55 °C; condensing humidity
Power supply voltage	24 VDC 18… 30 VDC 18…100 VDC / 85…265 VAC, 50…60 Hz

[2] For non-interruptible measuring systems with the 820 remote dual core processor an uninterruptible power supply is mandatory.

Table 4 Software versions of the 800 or 820 (MVD series) electronics

Version	Checksum	Version	Checksum	Version	Checksum
800 Enhanced Core Processor					
3.11	891378AB	3.94	47EB3E10	4.80	F1583A44
3.21	9893B999	3.96	756C1BFD	4.9	6083BF9B
3.30	A73D25DA	4.00	C582F843	5.08	4D368E71
3.42	7FA82CE8	4.02	8D61C368	5.10	82C541D9
3.50	D9343F05	4.14	40860C63	5.20	BD69FDD6
3.52	132CCB63	4.20	2983A9BE	5.22	F4A8D922
3.6	A9CA4E81	4.21–ETO21931	D6349259	5.23–ETO45214	B1D70450
3.61–ETO17170	9AA358FF	4.40	B280233F	5.30	65828884
3.7	BE73CD62	4.42	D7BA0841	5.33	BF3164F6
3.71–ETO18982	580D32B6	4.50	6B48C624	5.40	0218C30B
3.8	8CA8E7D1	4.51–ETO32353	BC1660E8	5.50	761BF30F
3.81–ETO20775	7931CE3D	4.51–ETO33244	D7B81135	5.60	5BE64A27
3.9	58CB3E0C	4.60	DDB76E3C	5.70	DE5E2D3A
3.91–ETO21156	65F98DD7	4.70	AEB92E3F		
820 Remote Dual Core Processor					
1.00	52FB 1CF0	1.30	AC56C460	1.50	F42A4B2C
1.10	787951AA	1.40	8B64EF94	1.51	3BABCE86
1.20	3B7249F6	1.41	073C45F2		

Table 5 General characteristics of the 5700 electronics

Environmental classes	M3 E2 for non- and interruptible measuring systems[3] E3 for interruptible measuring systems H3
Ambient temperature range	-25…+55 °C (if the display is the primary indication) -40…+55 °C (if an approved external display is used as primary indication)
Power supply voltage	21… 90 VDC 100…240 VAC, 50…60 Hz

[3] For non-interruptible measuring systems an uninterruptible power supply is mandatory.

Table 6 Software versions of the 5700 electronics

Version	Checksum	Version	Checksum	Version	Checksum
Transmitter Software (Weights & Measures)*)					
1.20 (1.0)	2DF0D8E9	3.2 (3.0)	8CB1FE4B	4.32 (4.0) ETO48452	8EE78201
1.30 (1.1)	ADE631BB	4.0 (3.0)	0E4997D5	4.40 (4.0)	171C5EDA
1.85 (2.0) ETO28130	0EA71B41	4.07 (4.0)	44477758	4.50 (4.0)	A630F399
2.00 (2.0)	2F52132D	4.1 (4.0)	AFE0673B	4.51 (4.0) ETO48996	7B8E47ED
2.10 (2.0)	23DD3385	4.2 (4.0)	627B3E99	4.60 (4.0)	14203B56
3.0 (3.0)	06108400	4.30 (4.0)	AC509A54	4.70 (4.0)	6E682DF6
3.1 (3.0)	2DE64BB2	4.31 (4.0) ETO48452	71B90839		
Internal Core Processor					
4.02	8D61C368	4.70	AEB92E3F	5.30	65828884
4.14	40860C63	4.80	F1583A44	5.33	BF3164F6
4.20	2983A9BE	4.90	6083BF9B	5.40	0218C30B
4.40	B280233F	5.08	4D368E71	5.50	761BF30F
4.42	D7BA0841	5.10	82C541D9	5.60	5BE64A27
4.50	6B48C624	5.20	BD69FDD6	5.70	DE5E2D3A
4.60	DDB76E3C	5.22	F4A8D922		
PIC Firmware					
8.0	0000DE9C				
LCD PIC Firmware**					
3.0	000081D5 (1.20)	3.0	00007442 (1.30 and later)		

Notes:

*) The transmitter software and the Weights & Measures (W&M) software form a matched set. Please note that the W&M software does not have a checksum and means W&M is licensed.

**) The number between brackets, is the transmitter software which belongs to the stated checksum.

OIML Certificate

OIML Member State
The Netherlands

Number R117/2019-A-NL1-26.04 revision 0
Project number 4100970

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

- *Emerson Automation Solutions Flow Measurement*, 7070 Winchester Circle, Boulder, Colorado 80301, USA.
- *Emerson Process Management Flow Technologies Co.*, Ltd Asia Flow Technology Center, 111 Xing Min South Road Jiangning District Nanjing, Jiangsu Province, 211167, China.
- *F-R Technologias de Flujo, S.A. de C.V.*, Avenida Miguel de Cervantes #111, Complejo Industrial Chihuahua, 31136, Chihuahua, Chihuahua, Mexico.
- *Emerson Process Management Flow B.V.,* Neonstraat 1, 6718 WX Ede, The Netherlands.
- *Emerson SRL*, Str. Emerson Nr.4, Parcul Industrial, Tetarom 2, 400641, Cluj-Napoca, Romania.

Certificate history

Revision	Date	Description of the modification
0	15 October 2026	Initial issue