



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-13627**

This is to certify that the
Flow Transmitter

with type designation(s)
**Controller transmitter 1500, 2500, 1700, 2700, 3350 and 3700,
Flow Meters CMF200, CMF300, CMF400, CMFHC2, CMFHC3 and CMFHC4,
Flow Meters F025, F050, F100, F200 and F300**

Issued to
**Micro Motion Inc.
Boulder, United States**

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application
Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Controller transmitter 1500, 2500, 1700, 2700, 3350 and 3700	D	B	A	A	C
Flow Meters CMF200, CMF300, CMF400, CMFHC2, CMFHC3 and CMFHC4	D	B	A	A	C
Flow Meters F025, F050, F100, F200 and F300	D	B	A	A	C

This Certificate is valid until **2016-12-31**.

Issued at **Høvik** on **2014-01-17**

DNV local station: **San Francisco**

Approval Engineer: **Nils Jarem**

for **Det Norske Veritas AS**

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**Odd Magne Nesvåg
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

The Type Approval covers the following units:

Frequency input discrete controller/transmitters, models 1500/2500, 1700/2700, 3350 and 3700.
Coriolis flow meters, models CMF200, CMF300, CMF400, CMFHC2, CMFHC3 and CMFHC4.
Coriolis flow meters, models F025, F050, F100, F200 and F300

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Test reports:

Intertek report # 3196553BOX-001B (Conducted Low Freq., Radiated Emission and Conducted Emission), dated 2010-06-30
Dekra report No. DE/BVS/07/2091 (IP)
NMI report No. CPC-710466-1 with Annex 1 to 6 (Climate, vibration and EMC)
Intertek report No. G100044687DET-001, (Environmental tests)
Exam report No. BVS PB 09/04 (IP)
NMI report No. CVN/201269-1 (Environmental + EMC for CMF400)
Intertek report # G100709939GRR-001 (env) dated 2013-07-30
Intertek report # G100759186GRR-002a (env) dated 2012-10-19
Intertek report # G100759186GRR-001 (emc) ver. A.
Intertek report # G100759186GRR-002 (env) dated 2012-10-19

Other standards referenced:

OIML R117-1, Edition 2007 (E), Dynamic Measuring Systems for Liquids Other Than Water

Dimensional drawings:

CMF400M, dwg. No. 20004644 rev. A, dated 2006-08-08
CMFHC3M815N2BAEZZZ, dwg. No. 200121000, rev. C, dated 2008-03-24
CMFHC3M811N2BAEZZZ, dwg. No. 20012200, rev. B, dated 2008-04-08
CMFHC3M510N2A2EZZZ, dated 2010-07-12
CMF400M, dwg. No. EP-3008016, rev. B, dated 2002-10-07
3700, dwg. No. EP-3300458, rev. A, dated 1998-04-08

Assembly drawings:

Weld Assy, CMFHC3, dwg. No. ER-20010300, rev. DI, dated 2011-09-09
Flanged Assy, CMFHC3, dwg. No. ER-20010735, rev. IG, dated 2007-08-31
Assy 3700/3350, dwg. No. ER-20014004, rev. BA, dated 2008-12-05
Assy Board Stack 3700, dwg. No. ER 20014006, rev. A, dated 2008-12-05

Product information brochures:

Micro Motion Coriolis Solutions, doc. No. GI-00713
High Performance Coriolis Measurement Systems, doc. No. MC-001062 rev D
Micro Motion Flow and Density Technology, doc. No. MC-00993, rev. E, dated November 2008

Product Data Sheets:

Micro Motion Elite High Capacity Coriolis Flow and Density Meters, dwg. No. PS-001041, rev. L
Micro Motion Series 3000 Transmitters and Controllers, dwg. No. PS-00291, rev. E
Micro Motion Elite Coriolis Flow and Density Meters, dwg. No. PS-00374, rev. Y
Micro Motion® F-Series Coriolis Flow and Density Meters, dwg. No. PS-00603, rev. N

Initial Survey report, DNV San Francisco, dated 2012-11-19

Tests carried out

Applicable tests according to Standard for Certification No.2.4 (April 2006)

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE