



Government of India
Ministry of Commerce & Industry
Petroleum & Explosives Safety Organisation (PESO)
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail : explosives@explosives.gov.in

Phone/Fax No : 0712 -2510248, Fax-2510577

Approval No : A/P/HQ/MH/104/7702 (P531013)

Dated : 28/07/2023

To,

M/s. Emerson-Rosemount Micro Motion Inc.,
12001 Technology Drive ,Eden Prairie
MN55344
U.S.A

Sub : Approval of Flame Proof, Intrinsically Safe Type Electrical Equipment under Petroleum Rules 2002- Regarding.

Sir(s),

Please refer to your letter No. **OIN1415208** dated **27/07/2023** on the subject.

The following Ex electrical equipment(s) manufactured by you according to **IEC 60079-0 : 2017, IEC 60079-1 : 2014-06, IEC 60079-11 : 2011, IEC 60079-26 : 2014-10,** standards and covered under **DEKRA Certification B.V.** Test reports mentioned below is/are approved for use in **Zone 1** of Gas **IIC** hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Vortex Flowmeter Model 8800D	Ex db [ia] IIC T6..T1 Ga/Gb (integral transmitter)	P531013/1	DEKRA Certification B.V.	IECEX KEM 05.0017X Issue No 11	20/10/2021	As per test report.

This Approval is granted subject to observance of the following conditions:-

- 1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the DEKRA Certification B.V. Test Reports referred to above.
- 2)The equipment shall be used only with approved type of accessories and associated apparatus.
- 3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
 - (a) Name of the manufacturer
 - (b) Name and number by which the equipment is identified.
 - (c) Number & date of the test report of the DEKRA Certification B.V. applicable to the equipment.
 - (d) Equipment reference number of this letter by which use of apparatus is approved.
 - (e) Protection level.
- 4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the DEKRA Certification B.V. Test report and is identical with the one tested and certified at DEKRA Certification B.V. shall be furnished with each equipment.
- 5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenance schedule, if any, recommended by DEKRA Certification B.V. in their test reports and copy of instructions booklet detailing

operation & maintenance of the equipment so as to maintain its Flame Proof characteristics.

6) The After sales service and maintenance of subject equipment shall be looked after by your representative Emerson Process Management (India) Private Limited, Plot No. A-145/4, T.T.C. Industrial Area, M.I.D.C. Pawane, Near Koparkhairne, Navi Mumbai - 400 710 (Maharashtra)

This approval also covers the permissible variations as approved under the DEKRA Certification B.V. test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with. The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis.

The Approval is Valid upto **31/12/2027**

Yours faithfully,

(K. Thiagarajan)
Jt. Chief Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :

1. Jt. Chief Controller of Explosives, West Circle, MUMBAI
2. Emerson Process Management (India) Private Limited, Plot No. A-145/4, T.T.C. Industrial Area, M.I.D.C. Pawane, Near Koparkhairne, Navi Mumbai - 400 710 (Maharashtra)

for Chief Controller of Explosives
Nagpur

(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

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IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX KEM 05.0017X**

Page 1 of 4

Certificate history:

Status: **Current**

Issue No: 11

Issue 10 (2021-06-07)

Issue 9 (2019-11-12)

Issue 8 (2019-05-17)

Issue 7 (2018-07-11)

Issue 6 (2018-01-26)

Issue 5 (2017-05-09)

Issue 4 (2016-06-16)

Issue 3 (2015-09-28)

Issue 2 (2015-01-13)

Issue 1 (2011-05-13)

Date of Issue: 2021-10-20

Applicant: **Emerson – Rosemount, Micro Motion Inc.**
12001 Technology Drive
Eden Prairie, MN 55344
United States of America

Equipment: **Vortex Flowmeter Model 8800D**

Optional accessory:

Type of Protection: **Ex db and Ex ia**

Marking: Ex db [ia] IIC T6 ... T1 Ga/Gb (integral transmitter)
Ex db [ia Ga] IIC T6 Gb (remote transmitter)
Ex ia IIC T6 ... T1 Ga (remote sensor)

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
Netherlands





IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 05.0017X**

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Date of issue: 2021-10-20

Issue No: 11

Manufacturer: **Emerson - Rosemount, Micro Motion Inc.**
12001 Technology Drive
Eden Prairie, MN 55344
United States of America

Manufacturing locations: **Emerson Process Management FlowF-R Tecnologías De Flujo, S.A. de** **Flow Measurement Emerson SRL**
Technologies Co., Ltd **C.V** Cluj Flow Technology Center
111, Xing Min South Road, Jiangning Ave. Miguel de Cervantes 111 Str. Emerson, nr. 4
District, Nanjing Complejo Industrial Parcul Industrial Tetarom 2
Jiangsu Province Chihuahua, Chihuahua, 31136 400641, Cluj-Napoca
211100 **Mexico** **Romania**
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-26:2014](#) Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR11.0057/09](#)

Quality Assessment Report:

[NO/PRE/QAR15.0018/03](#)

IECEX ATR:

File reference:



IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 05.0017X**

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Date of issue: 2021-10-20

Issue No: 11

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Model 8800D Vortex Flowmeter consists of a cast aluminum or stainless-steel electronics housing in type of protection flameproof enclosures Ex db and an integral or remote mounted stainless-steel meter body/sensor assembly in type of protection intrinsic safety Ex ia. The electronics processes and converts the sensor signal into a 4-20 mA, HART digital, pulse, Modbus RS-485, or Foundation Fieldbus output signal.

Remote mounted sensor: in type of protection intrinsic safety Ex ia IIC, is only to be connected to the associated Model 8800D Vortex Flowmeter electronics. The maximum allowable length of the interconnecting cable is 152 m (500 ft.).

For the type designation, thermal and electrical data see Annex 1 to report NL/DEK/ExTR11.0057/09.

SPECIFIC CONDITIONS OF USE: YES as shown below:

When the equipment is installed, precautions shall be taken to ensure the ambient temperature of the transmitter lies between -50 °C to +70 °C, taking into account process fluid effects. If the ambient temperature is outside this range remote transmitters shall be used.

For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.

The Flowmeter is provided with special fasteners of property class A2-70 or A4-70.

Units marked with "Warning: Electrostatic Charging Hazard" may use non-conductive paint thicker than 0.2 mm. Precautions shall be taken to avoid ignition due to electrostatic charge on the enclosure.



IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 05.0017X**

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Date of issue: 2021-10-20

Issue No: 11

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
minor constructional changes

Annex:

[382993500-ExTR11.0057.09-Annex 1.pdf](#)

Note: In this document [.] is used as decimal separator.

Description

The Model 8800D Vortex Flowmeter consists of a cast aluminum or stainless-steel electronics housing in type of protection flameproof enclosures Ex db and an integral or remote mounted stainless-steel meter body/sensor assembly in type of protection intrinsic safety Ex ia. The electronics processes and converts the sensor signal into a 4-20 mA, HART digital, pulse, Modbus RS-485, or Foundation Fieldbus output signal.

Remote mounted sensor: in type of protection Ex ia IIC, is only to be connected to the associated Model 8800D Vortex Flowmeter electronics. The maximum allowable length of the interconnecting cable is 152 m (500 ft.).

Type designation

8800D **E** **6** **D** **MTA** **GN** **M5** **A20** **V5**
I **II** **III** **IV** **V** **VI** **VII** **VIII** **IX**

Designation	Explanation	Value	Explanation
I	Model	8800D	Vortex flowmeter
II	Sensor temperature range	N E S	Standard: -40 °C to +232 °C Extended: -200 °C to +427 °C Severe service: -200 °C to + 427 °C
III	Conduit entry	1 2 6 7	½-14 NPT – aluminum housing M20x1.5 – aluminum housing ½-14 NPT – SST housing M20x1.5 – SST housing
IV	Output	D P F C M	4-20 mA digital HART 4-20 mA digital HART with pulse FOUNDATION FIELDBUS One 4-20 mA digital HART with scaled output and one FOUNDATION FIELDBUS MODBUS RS-485
V	Multivariable	MTA MPA MCA Blank	Multivariable output with integral temperature sensor Multivariable output with pressure compensation Multivariable output with pressure and temperature compensation with integral temperature sensor No multivariable output
VI	Electrical connector	GN Blank	ATEX flameproof A size, mini connector (minifast) No connector
VII	Display	M5 Blank	LCD display No display
VIII	Remote Electronics	R10 R20 R30 R33 R50 R75 Rxx A10 A20 A33 A50 A75 Blank	10 ft. (3 m) cable 20 ft. (6.1 m) cable 30 ft. (9.1 m) cable 33 ft. (10 m) cable 50 ft. (15.2 m) cable 75 ft. (22.9 m) cable Customer specified cable length in feet ** 10 ft. (3 m) armored cable 20 ft. (6.1 m) armored cable 33 ft. (10 m) armored cable 50 ft. (15.2 m) armored cable 75 ft. (22.9 m) armored cable Integral mount electronics
IX	Ground screw	V5	External ground screw

Note: * Other types of protection that appear on the marking of the equipment are not relevant to this certificate.

Note: ** Consult manufacturer for additional lengths up to 500 ft (152 m)



Model Type Designation – QUAD Configuration

8800D Q E 6 D D D F M5 A20 V5
 I II III IV V VI VII VIII IX X XI

Designation	Explanation	Value	Explanation
I	Model	8800D	Vortex flowmeter
II	Meter Type	Q	Quad Transmitter Configuration
III	Sensor Temperature Range	N E S	Standard: -40 °C to +232 °C Extended: -200 °C to +427 °C Severe service: -200 °C to + 427 °C
IV	Conduit entry	1 2 6 7	½-14 NPT – aluminum housing M20x1.5 – aluminum housing ½-14 NPT – SST housing M20x1.5 – SST housing
V	Transmitter 1 Output	D P F M	4-20 mA digital HART 4-20 mA digital HART with pulse FOUNDATION FIELDBUS MODBUS RS-485
VI	Transmitter 2 Output	D P F M	4-20 mA digital HART 4-20 mA digital HART with pulse FOUNDATION FIELDBUS MODBUS RS-485
VII	Transmitter 3 Output	D P F M	4-20 mA digital HART 4-20 mA digital HART with pulse FOUNDATION FIELDBUS MODBUS RS-485
VIII	Transmitter 4 Output	D P F M	4-20 mA digital HART 4-20 mA digital HART with pulse FOUNDATION FIELDBUS MODBUS RS-485
IX	Display	M5 Blank	LCD display No display
X	Remote Electronics	R10 R20 R30 R33 R50 R75 Rxx A10 A20 A33 A50 A75 Blank	10 ft. (3 m) cable 20 ft. (6.1 m) cable 30 ft. (9.1 m) cable 33 ft. (10 m) cable 50 ft. (15.2 m) cable 75 ft. (22.9 m) Customer specified cable length in feet ** 10 ft. (3 m) armored cable 20 ft. (6.1 m) armored cable 33 ft. (10 m) armored cable 50 ft. (15.2 m) armored cable 75 ft. (22.9 m) armored cable Integral mount electronics
XI	Ground screw	V5	External ground screw
Note: * Other types of protection that appear on the marking of the equipment are not relevant to this certificate.			
Note ** Consult manufacturer for additional lengths up to 500 ft (152 m)			



Thermal data

Ambient temperature range: -50 °C to +70 °C
 Process temperature range: -200 °C to +427 °C

Temperature class transmitter: T6
 Temperature class sensor: see table below

Ambient Temperature [°C]	Process Temperature [°C]	T-Class Sensor
-50 to +70	-200 to +75	T6
-50 to +70	-200 to +95	T5
-50 to +70	-200 to +130	T4
-50 to +70	-200 to +195	T3
-50 to +70	-200 to +290	T2
-50 to +70	-200 to +427	T1

Electrical data

Power supply: 32 Vdc max (Fieldbus, digital output), $U_m = 250\text{ V}$
 42 Vdc max (4-20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250\text{ V}$