



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

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

Approval No : A/P/HQ/MH/104/7105 (P531032)

Dated : 06/05/2022

To,

M/s. Emerson-Rosemount, Micro Motion Inc.,
12001 Technology Drive, Eden Prairie, MN 55344, USA.,

U.S.A

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

Sir(s),

Please refer to your letter No. **OIN1059493** dated **23/04/2022** 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,** 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 8600D	Ex db [ia] IIC T6..T2 Ga/Gb or Ex db [ia Ga] IIC T6 Gb	P531032/1	DEKRA Certification B.V.	IECEX DEK 11.0022X 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 M/s.

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)

Conditions of the Approval:-

The approval for above equipment is subject to validity of IECEX Quality Assessment Report NO/PRE/QAR15.0018

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 **31/12/2026**

Yours faithfully,

(A.B. Tamgadge)
Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :

1. Jt. Chief Controller of Explosives, West Circle, MUMBAI
2. M/s. 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 DEK 11.0022X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 11	Issue 10 (2021-06-07)
Date of Issue:	2021-10-20		Issue 9 (2020-09-25)
Applicant:	Emerson - Rosemount, Micro Motion Inc. 12001 Technology Drive Eden Prairie, MN 55344 United States of America		Issue 8 (2018-07-11)
Equipment:	Vortex Flowmeter Model 8600D		Issue 7 (2018-01-26)
Optional accessory:			Issue 6 (2017-03-22)
Type of Protection:	Ex db and Ex ia		Issue 5 (2016-06-16)
Marking:	Ex db [ia] IIC T6 ... T2 Ga/Gb (integral transmitter) Ex db [ia Ga] IIC T6 Gb (remote transmitter) Ex ia IIC T6 ... T2 Ga (remote sensor)		Issue 4 (2015-09-28)
			Issue 3 (2015-01-13)
			Issue 2 (2013-11-14)
			Issue 1 (2011-12-23)

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

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 DEK 11.0022X**

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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

Additional
manufacturing
locations:

**Emerson Process Management FlowF-R Tecnologías De Flujo, S.A. de
Technologies Co., Ltd.**
111, Xing Min South Road
Jiangning, Nanjing
Jiangsu Province, 211100
China

C.V
Ave. Miguel de Cervantes 111,
Chihuahua, Chihuahua, 31136
Mexico

Flow Measurement Emerson SRL
Cluj Flow Technology Center
Str. Emerson, nr. 4
Parcul Industrial Tetarom 2
400641, Cluj-Napoca
Romania

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 60079-1:2014-06](#) 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 60079-26:2014-10](#) 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/ExTR11.0022/09](#)

Quality Assessment Report:

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



IECEX Certificate of Conformity

Certificate No.: **IECEX DEK 11.0022X**

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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 8600D 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 8600D 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/ExTR11.0022/09.

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 DEK 11.0022X**

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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-ExTR11.0022.09-Annex 1.pdf](#)

Description

The Model 8600D 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, 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 8600D Vortex Flowmeter electronics. The maximum allowable length of the interconnecting cable is 152 m (500 ft).

Type designation

8600D N 1 P M5 R10 V5
 I II III IV V VI VII

Designation	Explanation	Value	Explanation
I	Model	8600D	Vortex flowmeter
II	Sensor Temperature Range	N	Standard: -50 °C to +250 °C
III	Conduit entry	1	½-14 NPT – aluminum housing
		2	M20 x 1.5 – aluminum housing
		6	½-14 NPT – SST housing
		7	M20 x 1.5 – SST housing
IV	Transmitter Output	D	4-20 mA digital HART
		P	4-20 mA digital HART with pulse
		F	FOUNDATION FIELDBUS
		M	MODBUS RS-485
V	Display	M5	LCD display
		Blank	No display
VI	Remote Electronics	R10	10 ft. (3 m) cable
		R20	20 ft. (6.1 m) cable
		R30	30 ft. (9.1 m) cable
		R33	33 ft. (10 m) cable
		R50	50 ft. (15.2 m) cable
		R75	75 ft. (22.9 m) cable
		Rxx	Customer specified cable length in feet **
		A10	10 ft. (3 m) armored cable
		A20	20 ft. (6.1 m) armored cable
		A33	33 ft. (10 m) armored cable
		A50	50 ft. (15.2 m) armored cable
		A75	75 ft. (22.9 m) armored cable
Blank	Integral mount electronics		
VII	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: -50 °C to +250 °C

Temperature class transmitter: T6

Temperature class sensor: see table below

Ambient Temperature [°C]	Process Temperature [°C]	T-Class Sensor
-50 to +70	-50 to +75	T6
-50 to +70	-50 to +95	T5
-50 to +70	-50 to +130	T4
-50 to +70	-50 to +195	T3
-50 to +70	-50 to +250	T2

Electrical data

Power supply: 32 Vdc max (Fieldbus, digital output), U_m = 250 V

42 Vdc max (4-20 mA HART analog and pulse outputs, MODBUS), U_m = 250 V