IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx NEM 09.0009X

Issue No: 6

Certificate history:
Issue No. 6 (2017-06-28)
Issue No. 5 (2015-06-03)
Issue No. 4 (2012-03-26)
Issue No. 3 (2011-10-27)
Issue No. 2 (2011-05-31)
Issue No. 1 (2011-04-15)
Issue No. 0 (2009-07-15)

Status: **Current**

Date of Issue: **2017-06-28**

Applicant: **Fluenta AS**
Haraldsgate 90
5501 Haugesund
Norway

Equipment: **Flare gas meter, FGM 160**
Optional accessory:

Type of Protection: **Ex d e [ia Ga] IIC T6 Gb, Ex ia IIC T6/T5/T4 Ga**

Marking:

Field Computer:
Ex d e [ia Ga] IIC T6 Gb Ta: -40°C to +60°C
FGM160 TFS Ultrasonic Sensors:
Ex ia IIC T6 Ga Ta: -70°C to +60°C
Ex ia IIC T5 Ga Ta: -70°C to +85°C
Ex ia IIC T4 Ga Ta: -70°C to +120°C

Approved for issue on behalf of the IECEx Certification Body: Ståle Sandstad

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 the Official IECEx Website.

Certificate issued by:

DNV GL Nemko Presafe AS
Gaustadalleen 30
P.O. Box 73 Blindern
0314 Oslo
Norway

IECEx Certificate of Conformity

Certificate No:	IECEx NEM 09.0009X	Issue No: 6
Date of Issue:	**2017-06-28**	Page 2 of 5
Manufacturer:	**Fluenta AS** Haraldsgate 90 5501 Haugesund **Norway**	

Additional Manufacturing location(s):

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 electrical apparatus 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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:

NO/NEM/ExTR09.0003/00 NO/NEM/ExTR09.0003/01 NO/NEM/ExTR09.0003/02
NO/NEM/ExTR09.0003/03 NO/NEM/ExTR09.0003/04 NO/NEM/ExTR09.0003/05
NO/NEM/ExTR09.0003/06

Quality Assessment Report:

NO/NEM/QAR09.0001/00 NO/NEM/QAR09.0001/05

IECEx Certificate of Conformity

Certificate No: IECEx NEM 09.0009X Issue No: 6

Date of Issue: **2017-06-28** Page 3 of 5

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

This certificate covers Fluenta Flare Gas Meter FGM 160 (incl. FGM160 TFS ultrasonic sensor) which is designed to measure the velocity of gases in a flare pipe. The Fluenta Flare Gas Meter consists of a Field Computer and Ultrasonic Sensors. The Field Computer is composed of an Increased safety “e” enclosure with terminal blocks and a Flameproof “d” enclosure containing the electronics. The output to the Ultrasonic sensors is supplied through IS-barriers (“ia”).

The standard configuration allows up to 20m Draka RFOU 250V S2/S6 4pair 0.75mm ^{2} or Draka FlexFlame RFOU(i) 150/250(300V) S1/S5 1Pair 0.75mm ^{2} Instr. Cable to the Ultrasonic Sensor. As an option cable length up to 50m can be used by adding a current limiting resistor: *5.6ohm series resistor* .

FGM 160 includes outputs to external IS certified temperature and pressure transmitters, intrinsically safe when connected according to below parameters.
Safety parameters for intrinsically safe connection at terminals Tmp1, Tmp2, Prs1 and Prs2 on the Fluenta enclosure or terminals 23, 24, 29 and 30 on the Technor enclosure.
Maximum output voltage, Uo =27.3V
Maximum output current, Io = 90mA
Maximum output power, Po = 0.62W
Maximum external capacitance, Co = 0.088uF
Maximum external inductance, Lo = 3.5mH, Lo/Ro = 58uH/ohm

The below listed output parameters may be used for entity evaluation when the FGM 160 is connected to an alternative ultrasonic sensor which is covered by a separate Ex certificate.
Safety parameters for connection to ultrasonic sensors.
Maximum output voltage, Uo = 11.7V
Maximum output current, Io = 1.46A
Maximum output power, Po = 1.76W
Maximum external capacitance, Co = 1.54uF
Maximum external inductance, Lo = 0.01uH, Lo/Ro = 8.3uH/ohm

SPECIFIC CONDITIONS OF USE: YES as shown below:

The Ultrasonic sensor head is made of titanium, avoid impact or friction.

IECEx Certificate of Conformity

EQUIPMENT (continued):

Technical Data
Um = 250V AC, 50/60Hz
External fuse: Max 1.25A, min breaking capacity 1500A

Ambient temperature:

Field Computer	Ta: -40°C to +60°C	
Ultrasonic Sensors	T6:	Ta: -70°C to +60°C
	T5:	Ta: -70°C to +85°C
	T4:	Ta: -70°C to +120°C

Ingress protection
IP66 according to IEC 60529 Edition 2.1.

Routine tests

Dielectric test according to clause 7.1 in EN 60079-7.

Routine tests for infallible transformer T811 according to clause 11.2 in EN 60079-11.

IECEx Certificate of Conformity

Certificate No: IECEx NEM 09.0009X Issue No: 6

Date of Issue: **2017-06-28** Page 5 of 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The changes concern:
- Alternative glass material.
- Listing of the intrinsic safe output parameters to ultrasonic sensors. Uo=11.7V, Io=1.46A, Po=1.76W, Co=1.54µF, Lo=0.01µH, Lo/Ro= 8.3uH/Ω.

(Note. The parameters were assessed i previous test report but were not listed in certificate)