



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 NEP 19.0020X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2021-01-27)
Date of Issue:	2023-04-06		Issue 1 (2020-07-21)
Applicant:	RAE Systems (Shanghai) Inc. No. 990 E. Huiwang Road, JIADING DISTRICT, Shanghai 201815 China		
Equipment:	Fixed Gas Detector Model FGM-6*00*		
Optional accessory:			
Type of Protection:	Ex db, ia, tb		
Marking:	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66 (Ta: -40°C~+65°C)		
	Ex db ia IIC T6 Gb Ex tb IIIC T85°C Db IP66 (Ta: -20°C~+55°C)		

Approved for issue on behalf of the IECEx
Certification Body:

Guo Aihua

Position:

General Manager

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

**Shanghai Inspection and Testing Institute of Instruments
and Automatic Systems Co., Ltd. (SITIIS)/
National Supervision and Inspection Center for Explosion
Protection and Safety of Instrumentation (NEPSI)
103 Cao Bao Road
Shanghai 200233
China**



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Manufacturer: **RAE Systems (Shanghai) Inc.**
No. 990 E. Huiwang Road, JIADING DISTRICT, Shanghai 201815
China

Manufacturing
locations: **Honeywell Sensing and Control
(China) Co Ltd**
No. 1668 Tianyin Road
Nanjing Science Park
Jiangning District
Nanjing 211100
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 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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 Reports:

CN/NEP/ExTR19.0026/00

CN/NEP/ExTR19.0026/01

CN/NEP/ExTR19.0026/02

Quality Assessment Report:

NO/PRE/QAR16.0005/05



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Type Designation:

FGM-6a00b

a indicates sensor type, includes 1 (LEL), 2 (NDIR) and 3 (EC);

b indicates material of main housing, includes S (stainless steel) and blank (aluminum alloy).

Fixed Gas Detector comprises a cylindrical main housing and a gas sensing head. The main housing, which contains the electronics and an LED display, comprises a threaded window cover and a base with mounting lugs. The base has two 3/4 NPT cable entries to connect separately certified cable glands and one M25*1.5 threaded hole, which is used to mount the sensing head.

Product with different sensor type has the same structure for the sensing head. It is made of stainless steel and comprises two parts, cylindrical jointed and fastened with a threaded nut. For LEL/NDIR type, the sensing end has an 80um sinter fused into the enclosure to allow gas penetration to be detected by the internal equipment, the mounting end contains a setting compound through which the equipment wiring passes. For EC type, additional safety barrier board is located in the sensor head and encapsulated. The sensor PCB and replaceable gas sensor are located behind a removable chromium plated sensor cover.

The relationship between type and Ex marking is shown as the following table,

Type	Ex marking
FGM-6100, FGM-6100S FGM-6200, FGM-6200S	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66
FGM-6300, FGM-6300S	Ex db ia IIC T6 Gb Ex tb IIIC T85°C Db IP66

Rating: 16~32 VDC Um = 250V

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Repairs of the flameproof joints may only be made by the manufacturer or on behalf of the manufacturer and on his own responsibility. Repair in compliance with the values in IEC 60079-1 is not accepted.
- The cable entries have to be connected by means of suitable cable entry devices with type of protection of Ex d IIC Gb, Ex tb IIIC Db IP66. The cable entry device shall be approved in accordance with IEC60079-0:2017, IEC60079-1:2014 and IEC60079-31:2013, and which are covered by a separate conformity certificate.
- This product shall be connected to the equipotential bonding system. Refer to the manual.
- When used in combustible dust atmospheres, there is potential electrostatic charging risk on the surface of the equipment. Refer to the manual for the precaution.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue No.1:

1. Type of protection Ex tb was added.
2. New revision for the nameplate drawings and control part of manual.
3. Revise the Specific Conditions of use.
4. Add the missing drawings of general assembly for products with stainless steel enclosure in last issue.

Issue No.2:

Add additional manufacturing location.

Issue No.3:

- 1.Alternative component U5 on MCU board;
- 2.Revision of drawing "MCU board BOM" is revised.