



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 SIR 15.0105X

Issue No: 3

Certificate history:

Issue No. 3 (2019-02-20)

Issue No. 2 (2017-06-23)

Issue No. 1 (2016-05-09)

Issue No. 0 (2016-04-29)

Status: **Current**

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Date of Issue: **2019-02-20**

Applicant: **Gas Measurements Instruments Ltd**
Inchinnan Business Park
Renfrew PA4 9RG
Scotland
United Kingdom

Equipment: **GS7XX Series Gas Detector**

Optional accessory:

Type of Protection: **Flameproof and Intrinsically Safe**

Marking:

Without Figaro TGS2610 sensor

Ex db ia IIC T4 Gb

Ta = -20°C to +50°C

With Figaro TGS2610 sensor

Ex db ia IIB T3 Gb

Ta = -20°C to +50°C

*Approved for issue on behalf of the IECEx
Certification Body:*

C Ellaby

Position:

Deputy 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](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





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Manufacturer: **Gas Measurements Instruments Ltd**
Inchinnan Business Park
Renfrew PA4 9RG
Scotland
United Kingdom

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 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 : 2014-06 Edition:7.0	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"

*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:

[GB/SIR/ExTR16.0075/00](#) [GB/SIR/ExTR16.0115/00](#) [GB/SIR/ExTR17.0131/00](#)
[GB/SIR/ExTR19.0030/00](#)

Quality Assessment Report:

[GB/SIR/QAR06.0031/07](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The GS7XX Series Gas Detector is a family of intrinsically safe (Ex ia) hand held gas sensing instruments accommodating a range of sensor options. In the range of permitted optional sensors, two types are component certified "ia" and two are component certified "d". The GS7XX range is portable equipment, for use within the temperature range -20°C to +50°C.

The equipment is housed in an electrostatically dissipative plastic enclosure with a top cover which incorporates an LCD window. The battery pack forms the base of the enclosure and must only be removed in a non-hazardous area. Internally there are five PCB assemblies, a Bluetooth module, a GPS module, an internal gas flow-path with a pump and motor, and a buzzer. A range of optional internal sensors and an optional sensor (Figaro type TGS2610) that may be fitted internally or in an externally mounted probe.

The GS7xx range is certified for use with for Gas Group IIC, Temperature Classification T4 except when the FIGARO TGS2610 LP gas detector sensor is fitted. With a FIGARO TGS2610 LP gas detector sensor fitted either internally or externally the GS7XX is certified for Gas Group IIB and Temperature Classification T3.

There are two battery pack options: An alkaline battery pack housing 3 Duracell MN1300 (or ID1300) cells in series, and a rechargeable battery pack containing 2 lithium ion cells in a parallel configuration with individual fuses. The cell type is SAFT MP 174565 Integration and the cells are not user replaceable. The rechargeable battery pack has external charging terminals and must only be charged in a non-hazardous area.

A dedicated charger cradle is provided, which delivers a charging current of up to 4.25A with the output voltage being limited to 6.78V. The charger cradle has an ambient temperature range of -20°C to +44°C.

Refer to the Annexe for Optional Sensors

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Only external probes labelled with the certificate number IECEx SIR 15.0105X are permitted to be connected to the GS7xx.
2. The resistance to ultraviolet light of the material used in the equipment enclosure has not been determined, therefore when the equipment is not in use, it must not be subject to prolonged exposure to daylight or light from luminaires.
3. It is not permitted to remove, replace or recharge the batteries or the rechargeable battery pack in a hazardous atmosphere.
4. The following alternative types of alkaline cells are permitted:

ANSMANN INDUSTRIAL LR20

ANSMAN XPOWER LR20

PANASONIC EVOLTA LR20



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

1. Addition of an alternative secondary lithium-ion cell type, MP 174565ise in the existing dual cell rechargeable battery pack configuration within the intrinsically safe enclosure.
2. Addition of a new single cell circuit configuration of the rechargeable battery pack within the intrinsically safe enclosure. Comprising of a secondary lithium-ion cell type, MP 176065ise.
3. The recognition of a minor drawing modification to remove the reference to the cell charge rating. This is administrative and does not affect the aspects of the product relevant to explosion safety.
4. Addition of a specific condition of use to prohibit the changing of the rechargeable battery pack in a hazardous area.
5. The retrospective inclusion of a Specific Condition of Use that relates to GB/SIR/ExTR16.0115/00.

Annex:

[IECEX SIR 15.0105X Iss 3 Annex.pdf](#)

Annexe to: IECEx SIR 15.0105X Issue 3
Applicant: Gas Measurements Instruments Ltd
Apparatus: GS7XX Series Gas Detector



The equipment has the following optional sensors:

Sensor	Device	Position
Barometer	MPL115A2	S1
PPM	TGS2610	SENS1
IR gas sensor	Optosense MIPEX-02 IECEX ITS 11.0047U	SENS2
Moisture / Humidity	SHT1x	SENS3
Oxygen Sensor	Luminox LOX-02	SENS4
4-Series single toxic gas cell	Various	TOX1
4 series single toxic gas cell Or 4-Series dual toxic gas cell	Various	TOX2
4-Series single toxic gas cell Or 4-Series oxygen cell	Various	CELL1
IR dual gas sensor	Sensortech (IR15XX) IECEX SIR 04.0031U	IR1
IR single gas sensor	Sensortech (IR1XXX) IECEX SIR 04.0031U	IR2

The equipment has the following entity parameters:

Battery pack Um = 6.78V
 Charging cradle Um = 250V ac
 Charging cradle Uo = 6.78V

Conditions Of Manufacture

- i. The GS7xx incorporates certified sensors. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices. The manufacturer shall inform Sira of any modifications to the devices that may impinge upon the explosion safety design of the GS7xx.
- ii. The resistance of the following fuses used in the equipment shall be not less than the minimum values given below, at -20°C ambient:

Littelfuse 466

Alkaline battery pack F1, 1.5A: 0.0376Ω
 Rechargeable battery pack F1, 200mA: 0.1965Ω

Schurter 3413.0220.11

Rechargeable battery pack F2, F3, 2.5A: 0.0233Ω

Annexe to: IECEx SIR 15.0105X Issue 3
Applicant: Gas Measurements Instruments Ltd
Apparatus: GS7XX Series Gas Detector



Full certificate change history:

Issue 1 – this Issue introduced the following changes:

- 1 Addition of three alternative alkaline cell types, resulting in the addition of a Condition of Certification.
- 2 The addition of three packing pieces between the battery and the internal insulating plate.

Issue 2 – this Issue introduced the following change:

- 1 The resistance value of the following fuses is no longer required as a Condition of Manufacture:
 - 7+ Sensor PCB F2, F3, 250mA: 0.6055Ω
 - 7+ Sensor PCB F4, 375mA: 0.253Ω
 - 7+ Sensor PCB F5, 75mA: 0.9312Ω
 - Main PCB F1,F2, 75mA: 0.9312Ω

Issue 3 – this Issue introduced the following changes:

- 1 Addition of an alternative secondary lithium-ion cell type, MP 174565ise in the existing dual cell rechargeable battery pack configuration within the intrinsically safe enclosure.
- 2 Addition of a new single cell circuit configuration of the rechargeable battery pack within the intrinsically safe enclosure. Comprising of a secondary lithium-ion cell type, MP 176065ise.
- 3 The recognition of a minor drawing modification to remove the reference to the cell charge rating. This is administrative and does not affect the aspects of the product relevant to explosion safety.
- 4 The addition of a specific condition of use to prohibit the removal, replacement, or recharging of the batteries or the rechargeable battery pack in a hazardous area.
- 5 The retrospective inclusion of a Specific Condition of Use that relates to GB/SIR/ExTR16.0115/00.