



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 11.0019

Issue No: 9

Certificate history:

Status: **Current**

Issue No. 9 (2018-10-31)

Issue No. 8 (2018-06-25)

Date of Issue: **2018-10-31**

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Issue No. 7 (2018-02-13)

Issue No. 6 (2016-08-24)

Applicant: **Gas Measurement Instruments Limited**
Inchinnan Business Park
Renfrew
Scotland PA4 9RG
United Kingdom

Issue No. 5 (2015-01-05)

Issue No. 4 (2014-03-25)

Issue No. 3 (2012-07-12)

Issue No. 2 (2011-12-16)

Issue No. 1 (2011-06-20)

Issue No. 0 (2011-02-23)

Equipment: **Personal Surveyor 2xx / PS2xx Gas Detector**

Optional accessory:

Type of Protection: **Intrinsic Safety and Flameproof**

Marking:

Ex ia d IIC T* Gb (Ta = -20°C ≤ Ta ≤ +50°C)

* T4 or T3 depending on battery type

Ex ia IIC T* Ga (Ta = -20°C ≤ Ta ≤ +50°C)

* T4 or T3 depending on battery type

IEC 60079-0:2007 Edition 5 (used for guidance in respect of marking)

Approved for issue on behalf of the IECEx
Certification Body:

C Ellaby

Position:

Deputy Certification Manager

Signature:
(for printed version)

Date:

2018-10-31

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





IECEX Certificate of Conformity

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Date of Issue: 2018-10-31 Page 2 of 4
Manufacturer: **Gas Measurement Instruments Limited**
Inchinnan Business Park
Renfrew
Scotland PA4 9RG
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 : 2004 Edition:4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition:5	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2006 Edition:5	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/ExTR11.0037/00	GB/SIR/ExTR11.0143/00	GB/SIR/ExTR11.0312/01
GB/SIR/ExTR12.0178/00	GB/SIR/ExTR14.0071/00	GB/SIR/ExTR16.0207/00
GB/SIR/ExTR18.0006/00	GB/SIR/ExTR18.0089/00	GB/SIR/ExTR18.0203/00

Quality Assessment Report:

GB/SIR/QAR06.0031/02



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Personal Surveyor 2xx / PS2xx Gas Detector, Personal Surveyor 2xx+ / PS2xx+ Gas Detector, Personal Surveyor 2xx-LMP / PS2xx-LMP Gas Detector are portable, hand held, gas sensing instrument that is designed for confined space monitoring, e.g. in sewers, underground piping or within tanks and other personal monitoring applications. The instrument consists of three, PCB parts, these being the Display, Sensor and Power that are all connected via flexible connections. In addition to the three, PCB parts, the instrument contains a single pump assembly.

The Display PCB is fitted with a single liquid crystal display unit (LCD), two micro switches, a vibration motor and various electronic components including a number of LEDs for visual warning indication. The Sensor PCB is fitted with three, different types of gas sensor (LEL, CO/H₂S, and O₂) and an audible alarm with various electronic components. The Power PCB is a semi-potted assembly that houses a single lithium polymer battery with the associated charger circuit. All parts are housed in a plastic enclosure held together by six, individual screws. Two push buttons are mounted on the front of the enclosure; these operate the instrument and interrogate the measurements displayed on the LCD.

Charging of the equipment (lithium polymer batteries) is only permitted in a non-hazardous area.
Refer to the Certificate Annex for additional information and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: NO



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

This issue, Issue 9, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. The introduction of an additional Bluetooth circuit, which are identified by the following models 2xx+ / PS2xx+, 2xx-LMP / PS2xx-LMP, Gas Detector which is added to the certificate, with the following modifications.

Refer to the annexe for additional changes.

Annex:

[IECEX SIR 11.0019 Annexe Iss 9.pdf](#)

Annexe to: IECEx SIR 11.0019 Issue 9
Applicant: Gas Measurement Instruments Limited
Apparatus: Personal Surveyor 2xx / PS2xx Gas Detector



EQUIPMENT (continued)

The Personal Surveyor Gas Detector has three sensor positions that are designated either 'PELL1', TOX1' or 'CELL1', each of which is fitted with one of the sensors listed below:

Explanation of the product variant:

Models	Descriptions.
Personal Surveyor 2xx / PS2xx Gas Detector	Original certified product.
Personal Surveyor 2xx+ / PS2xx+ Gas Detector	Adds Bluetooth and optional switched LEL sensor.
Personal Surveyor 2xx-LMP / PS2xx-LMP Gas Detector	Identical to Personal Surveyor 2xx+ / PS2xx+ Gas Detector. The model have been labelled differently for a specific market.

Sensor Position: PELL1 ('Ex d', flameproof sensors)

Manufacturer	Part no.	Certificate no.
Alphasense Ltd	Type A	IECEX SIR 07.0031X Issue 1
City Technology Ltd	4P-75, 4P-75C, 4P-75C(T4), 4P-75M, 4P-75M(T4)	IECEX SIR 04.0013U Issue 5
SGX Sensortech	VQ548ZD/W, VQ500 series	IECEX SIR 04.0014U Issue 3
GMI Ltd	As determined by GMI Ltd	Not applicable, fully assessed as part of this certificate, refer to drawing 67018A SIRA V2 revision 1 originally listed on Sira report no. R51A14936A.
MIPEX	MIPEX-03-X-XX-X.2	IECEX ITS 11.0047U
Dynamant Ltd.	MSH2-LP/HC/3/ series	IECEX FTZU 15.0002U
Dynamant Ltd.	MSH2ia LP/HC/3/ series	IECEX FTZU 15.0002U

Sensor Position: PELL1, (intrinsically safe sensor)

Manufacturer	Part no.	Certificate no.
SGX Sensortech	VQ548MP	IECEX ULD 14.0002U

Sensor Position: TOX1 (Simple apparatus)

Manufacturer	Part no.
Alphasense Ltd	COAF, COAX, COAE, D2 +D2 (adaptor)H2SA1, H2SAH, H2SAESO2AE, SO2AF, NO-A1, NO-AE, NO2-A1,NO2-AE, CL2-A1
City Technology Ltd	COSH, 4CO, 4CF, 4CF+, CO3E300, CO3E500S4HS, 4HS+, 4HS/LM, H2S3E100, H2S3E100S, 4H, 4H/LM, H2S3E304S, 4HYT, H23E1%, H23E4%, 4HN, HCN3E30F
SGX Sensortech	EC4-500-CO, EC4-2000-COEC4-100-H2S, EC4-1000-H2SEC4-20-SO2, EC4-2000-SO2, EC4-250-NO, EC4-2000-NO, EC4-20-NO2
DD Scientific Ltd	GS+4DT, GS+4CO and GS=4H2S

Sensor Position: CELL1 (Simple apparatus)

Manufacturer	Part no.
Alphasense Ltd	O2A2, O2A1, O2A3
City Technology Ltd	4OX2, 4OX1, 4OXV, 4OXLL
SGX Sensortech	EC410
DD Scientific Ltd	S+4OX

Date: 31 October 2018

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Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org

Annexe to: IECEx SIR 11.0019 Issue 9
Applicant: Gas Measurement Instruments Limited
Apparatus: Personal Surveyor 2xx / PS2xx Gas Detector



Conditions of Manufacture

The Manufacturer shall comply with the following:

- The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.
- The Personal Surveyor Gas Detector shall only be marked with a temperature class of 'T4' when fitted with the type GEB102649 (manufactured by General Electronics Battery Co.,Ltd.) single Lithium Polymer battery. All other battery types require the apparatus to be marked T3.

DETAILS OF CERTIFICATE CHANGES:

Issue 1 - This variation introduced the following changes:

- An alternative battery type/option, GEB102649, manufactured by General Electronics Battery Co. Ltd. When fitted with this alternative battery, the Personal Surveyor 2xx / PS2xx Gas Detector maybe marked with a temperature class of T4.
- PCB modifications
- An additional CELL 1 position sensor type/option (City Technology Ltd type 40XV Oxygen Sensor)

Issue 2 – this Issue introduced the following changes:

- A reduction of the maximum charger voltage (Um) from Um: 30V to Um: 6V and safety components rated on this maximum voltage were approved.
- A non-metallic enclosure static test has been added – measurement of capacitance, therefore the 'X' condition has been removed from the certificate.

Issue 3 – this Issue introduced the following changes:

- Two of the tables were modified to recognise that the part numbers and supplier of the following sensors have been altered, this is an administrative change only and the replacement sensors are technically equivalent to those previously used:

Sensor Position: TOX1 (Simple apparatus)

Previous sensor details		Replacement sensor details	
Manufacturer	Part No	Manufacturer	Part No.
MRB Scientific Ltd.	S+4DT, S+4CO, S+4H2S	DD Scientific Ltd.	GS+4DT, GS+4CO, GS+4H2S

Sensor Position: CELL1 (Simple apparatus)

Previous sensor details		Replacement sensor details	
Manufacturer	Part No.	Manufacturer	Part No.
MRB Scientific Ltd.	S+4OX	DD Scientific Ltd.	S+4OX

- The casting compound was changed.

Issue 4 – this Issue introduced the following change:

- The recognition of a distributor's label.

Issue 5 – this Issue introduced the following change:

- A new model option was introduced into the range of Personal Surveyor 2XX / PS2XX Gas Detectors, this option uses an intrinsically safe sensor as detailed below:

Sensor Position: PELL1, intrinsically safe sensor:

Manufacturer	Part no.	Certificate no.
SGX Sensortech	VQ548MP	IECEX ULD 14.0002U

The following marking is applicable to this option:

Ex ia IIC T* Ga

(Ta = -20°C ≤ Ta ≤ +50°C)

* T4 or T3 depending on battery type

As a result of this change, IEC 60079-26:2006 Edition 2 was added to the list of certifying standards.

Annexe to: IECEx SIR 11.0019 Issue 9
Applicant: Gas Measurement Instruments Limited
Apparatus: Personal Surveyor 2xx / PS2xx Gas Detector



2. The label material was previously, specifically defined but the specification has now been changed to allow an equivalent material to be used.
3. The manufacturer of the sensors has changed name from "E2V" to "SGX Sensortech".
4. ExTR GB/SIR/EXTR11.0312/01 replaced ExTR GB/SIR/EXTR11.0312/00 to recognise changes to Sira Free Reference Number

Issue 6 – this Issue introduced the following changes:

1. The introduction of an optional alternative sensor pcb to permit the use of the MIPEX3 series (MIPEX-03-X-XX-X.2) sensor manufactured by Optosense LLC \ Mipex Technology, Ex certified by certificates IECEx ITS 11.0047U as an intrinsically safe Ex component, the description is amended to reflect this change. The following marking is applicable to this option:
 Ex ia IIC T* Ga
 (Ta = -20°C ≤ Ta ≤ +50°C)
 * T4 or T3 depending on battery type
2. As a result of a change to the scope in IEC60079-26:2014 (Edition 3) of this standard it cannot now be applied to equipment certified to a single type of protection and therefore IEC 60079-26 is removed from the list of assessment standards.

Issue 7 – this Issue introduced the following change:

1. To permit the use of:
 - A new type of O2 sensor, City Technology Ltd., part no. 40xLL, on the sensor PCB. The table - Sensor Position CELL1 (Simple apparatus), of permitted sensors is revised to include this type as follows:

Manufacturer	Part no.
City Technology Ltd	40X2, 40X1, 40XV, 40xLL

- An alternative type of tilt switch.
- An alternative (universal) set of printed circuit boards.

Issue 8 – this Issue introduced the following change:

1. To permit the use of:
 - Additional sensor types Dynamant MSH2-LP/HC/3/ series and Dynamant MSH2ia-LP/HC/3/ series on the sensor PCB.
 The table Sensor Position PELL1 in the certificate, listing permitted sensors, is revised to include these type as follows:

Manufacturer	Part no.	Certificate nos.
Dynamant Ltd.	MSH2-LP/HC/3/ series	IECEX FTZU 15.0002U
Dynamant Ltd.	MSH2ia LP/HC/3/ series	IECEX FTZU 15.0002U

Issue 9 – this Issue introduced the following changes:

1. The introduction of an additional Bluetooth circuit, which identified by the following models 2xx+ / PS2xx+, 2xx-LMP / PS2xx-LMP, Gas Detector which is added to the certificate, with the following modifications.
 - Circuit modification to add Bluetooth and NFC communication.
 - Circuit modification to allow electronically switched operation of LEL sensor.
 - PCB modification to accommodate changes listed above.
 - Alternative F4 value, 125mA and 75mA for the VQ548MP and Dynamant sensors respectively.
 - Corrections to update the sensor list.
2. The description was modified to recognise these changes.