



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 04.0031U** issue No.: **6**

Status: **Current**

Date of Issue: **2013-09-27**

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Applicant: **SGX Sensortech (IS) Ltd**
2 Hanbury Road
Widford Industrial Estate
Chelmsford
Essex CM1 3AE
United Kingdom

Certificate history:
Issue No. 6 (2013-9-27)
Issue No. 5 (2012-11-14)
Issue No. 4 (2012-4-24)
Issue No. 3 (2011-2-14)
Issue No. 2 (2009-3-2)
Issue No. 1 (2008-6-24)
Issue No. 0 (2004-12-3)

Electrical Apparatus: **IR1xxxxxx**
Optional accessory:

Type of Protection: **Flameproof**

Marking: **Ex d IIC Gb**

Approved for issue on behalf of the IECEx
Certification Body:

C Ellaby

Position:

Deputy Certification Manager

Signature:
(for printed version)

Date:

C. Ellaby
2013-09-27

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
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

sira
CERTIFICATION



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Manufacturer: **SGX Sensortech (IS) Ltd**
2 Hanbury Road
Widford Industrial Estate
Chelmsford
Essex CM1 3AE
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 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 : 2007-10 Explosive atmospheres - Part 0: Equipment - General requirements

Edition: 5

IEC 60079-1 : 2007-04 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition: 6

*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

IECEX ATR:	File Reference:
UK/SIR/04/10461 GB/SIR/ExTR12.0093/00	R51L10311A and R51L10461A
GB/SIR/ExTR09.0023/00.	55L11068
GB/SIR/QAR07.0026/02	
GB/SIR/ExTR09.0026/00.	GB/SIR/QAR07.0026/03/ GB/SIR/ExTR12.0250/00
GB/SIR/ExTR11.0020/00	GB/SIR/ExTR13.0246/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The IR1xxxxxx-series Gas Sensing Head comprises a cylindrical stainless steel body housing an infra-red emitter and one or more detectors. Electrical connections are made via pins that pass through a potting compound at the rear of the device. Gas enters the device via two wire meshes, one of which is brazed into the inside of the front face of the enclosure, the second retained by the internal components. The meshes offer a protection against dust ingress of IP5X

The detector is a pyroelectric type and may be varied to detect a number of different gases. The dual-detector (TO-5/TO-39) versions have seven pins, the single detector (TO-18) versions have six or eight pins. If required, all versions of the IR1xxxxxx (apart from the models excluded in the Schedule of Limitations) may be used in intrinsically safe circuits as a galvanically isolating device with infallible separations between the lamp and detector circuits up to 10 V. The maximum input power is 2.5 W.

CONDITIONS OF CERTIFICATION: NO



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EQUIPMENT(continued):

Schedule of limitations

The user/installer shall comply with the following:

- The IR1xxxxxx-Series gas sensing head shall only be used in an ambient temperature of:
IR1nGJS Series - -40°C to +75°C
All other Series - -20°C to +55°C
- The IR1nGJS Series shall not be used with the following active detectors:
H545579A (carbon dioxide)
H545580A (methane)
H545581A (reference)
H548533A (hydrocarbon)
H549098A (acetylene)
H773980-series (various TO18 detectors)
- The thermal resistance of the IR1xxx-Series Gas Sensing Head does not exceed 25 K/W. This shall be taken into account when considering its surface temperature and the temperature classification of the equipment into which it is to be incorporated. Tests indicated that an internal ignition raises the temperature of the mesh by a further 4.2 K (including a 1.2 safety factor).
- The IR1xxxxxx-Series Gas Sensing Head shall be protected from impact in service. The Sensing Head shall be mounted in a protective enclosure such that an impact of 7 J in accordance with IEC 60079-0:2007 clause 26.4.2 from any direction shall not cause the impact head to make contact with the Sensing Head.
- The IR1xxxxxx is dust-proof (IP5X) but offers no protection against the ingress of water. Where protection in excess of IP50 is required, then the apparatus into which the IR1xxxxxx is installed shall provide the necessary ingress protection (for example by fitting an external semi-permeable membrane).
- When used as an intrinsically safe galvanically-isolating device, the IR1xxxxxx has the following safety description:

Lamp circuit	Detector circuit	Lamp + detector circuits
U _i = 7.2 V C _i = 0 L _i = 0	U _i = 10 V C _i = 0 L _i = 0	P _i = 2.5 W

Note: the following types shall not be used as an intrinsically safe, galvanically-isolating devices IR1-xEx, IR1-xFx, IR1-xGx, IR1-xHx, IR1-xTx and IR1nGJS.



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

Issue 1 to Issue 4 – for changes refer to Issue 4	
Issue 5 – this Issue introduced the following change:	
1.	The Applicant's and Manufacturer's name and address was changed from e2v Technologies (UK) Limited, 106 Waterhouse Lane, Chelmsford, Essex CM1 2QU, UK to SGX Sensortech (IS) Ltd 2 Hanbury Road, Widford Industrial Estate, Chelmsford, Essex CM1 3AE
Issue 6 – this Issue introduced the following change:	
1.	The introduction of a new extended ambient temperature from -20°C to +55°C becoming -40°C to +75°C
2.	Addition of Ci and Li values to the Schedule of Limitations dealing with the use of the IR1 in intrinsically safe applications
3.	The Schedule of Limitations and product description were amended to reflect the model numbers excluded from intrinsic safety applications

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