



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Component intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 01ATEX1073U** Issue: **5**

4 Component: **VQ500 Series Gas Sensing Heads**

5 Applicant: **SGX Sensortech (IS) Ltd**

6 Address: **2 Hanbury Road
Widford Industrial Estate
Chelmsford
Essex CM1 3AE
UK**

7 This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2006

EN 60079-1:2007

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when incorporated into equipment. Any special conditions for safe use are listed in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

12 The marking of the component shall include the following:



II 2G
Ex d IIC Gb
Ta -40°C to +55°C



I M2
Ex d I Mb
Ta -40°C to +55°C

Project Number 29090

C Ellaby
Deputy Certification Manager

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SCHEDULE

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13 DESCRIPTION OF COMPONENT

The VQ500 Series Gas Sensing Heads are intended to detect flammable gases and contain two pellistors, one of which is for reference. The pellistors are potted, along with associated circuitry on a PCB, into a one-part stainless steel housing with electrical connections made via three pins, which pass through the potting compound. A stainless steel sinter is fused into the enclosure.

The sensing heads may be manufactured with or without a second PCB at the rear of the component.

The maximum input power, P_i , is 2.5 W.

Variation 1 - This variation introduced the following changes:

- i. To permit the ambient temperature range to be increased:
From: -20°C to +40°C
To: -40°C to +55°C
- ii. To permit the maximum input power, P_i , to be increased from 1.0 W to 2.5 W.

Variation 2 - This variation introduced the following changes:

- i. Re-assess the equipment for compliance with the latest European Standards. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2) and EN 50018:2000 were replaced by EN 60079-0:2006 and EN 60079-1:2007, the markings in section 12 were updated accordingly.
- ii. Minor drawing changes on product label.
- iii. To permit alternative materials of manufacturer for the housing and sinter components as detailed on drawing FM532571D, inclusive of additional minor drawing changes.

Variation 3 - This variation introduced the following changes:

- i. The label, drawing number N24106R, was amended to include a new product identity for the end user and an optional bar code.
- ii. Drawing numbers FM543263A & FM543379A were modified to define the exact measurement points for the potting thickness.
- iii. The Special Conditions for Safe Use, para 15.2 were amended.

Variation 4 - This variation introduced the following change:

- i. The Applicant'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.



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14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	27 September 2001	R51A7519A	The release of the prime certificate.
1	21 August 2002	R51A8315A	The introduction of Variation 1.
2	02 December 2004	R52V9860B	Prime certificate re-issued to permit the incorporation of variation 1 dated 21 Aug 02, to change the name of the applicant, correct the description, list new drawings and remove obsolete drawings.
3	18 June 2008	R51A16683B	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 3, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.The introduction of Variation 2.
4	28 January 2011	R24261A/00	The introduction of Variation 3.
5	05 October 2012	R29090A/00	The introduction of Variation 4.

15 SPECIAL CONDITIONS FOR SAFE USE

15.1 The sensing Head shall be used in conjunction with apparatus providing an intrinsically safe supply having a maximum output power (P_o) not greater than 2.5 W.

15.2 When this component is utilised in equipment that is intended to be used in group I applications, it shall be suitably protected to ensure that it will withstand an impact energy in excess of the 7 J low risk of impact value specified in EN 60079-0:2006 clause 26.4.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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Certificate Annexe

Certificate Number: Sira 01ATEX1073U
Component: VQ500 Series Gas Sensing Heads
Applicant: SGX Sensortech (IS) Ltd



Issue 0

Drawing	Sheet	Rev.	Date	Title
FM532571A	1 of 1	5	07 Sep 01	Sintered Disc Assembly
FM532571B	1 of 1	4	07 Sep 01	Sintered Disc Assembly
FM532571C	1 of 1	3	07 Sep 01	Sintered Disc Assembly
FM532571D	1 of 1	3	07 Sep 01	Sintered Disc Assembly
FM543262A	1 of 1	4	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard 'A'
FM543263A	1 of 1	4	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard "B"
FM543379A	1 of 1	3	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard "C"
FM544141A	1 of 1	4	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard "D"
H543679A	1 of 1	A	13 May 96	Pin
N24106R	1 of 1	3	22 Jun 01	Label

Issue 1

Drawing	Sheet	Rev	Date	Description
N24106R	1 of 1	4	18 Jul 02	Label

Issue 2

Drawing	Sheet	Rev	Date	Description
FM532571D	1 of 1	5	20 Mar 03	Sintered disc assembly
FM543263A	1 of 1	6	14 Sep 04	General assembly build standard B
FM543379A	1 of 1	5	14 Sep 04	General assembly build standard C
H532608B	1 of 1	3	14 Mar 03	Pin
N24106R	1 of 1	7	-	Label

Issue 3

Drawing	Sheet	Rev	Date	Description
FM532571D	1 of 1	6	03 Dec 04	Sintered Disc Assembly
N24106R	1 of 1	10	12 Jun 08	Label

The following drawings were withdrawn at this issue:

Drawing	Sheet	Rev	Date	Description
FM532571A	1 of 1	5	07 Sep 01	Sintered Disc Assembly
FM532571B	1 of 1	4	07 Sep 01	Sintered Disc Assembly
FM532571C	1 of 1	3	07 Sep 01	Sintered Disc Assembly
FM543262A	1 of 1	4	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard 'A'
FM544141A	1 of 1	4	07 Sep 01	400 & 500 Series Gas Sensors General Assembly Build Standard "D"

Issue 4

Drawing	Sheet	Rev	Date (Sira stamp)	Description
N24106R	2 of 2	11	26 Jan 11	Label
FM543263A	1 of 1	7	26 Jan 11	VQ 500 Series Gas Sensors General Assembly Build Standard B
FM543379A	1 of 1	6	26 Jan 11	VQ 500 Series Gas Sensors General Assembly Build Standard C

Issue 5

Drawing	Sheet	Rev	Date (Sira stamp)	Description
LBL - 0004	1 to 2	1	05 Oct 12	VQ500 Label

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