



**1 EC TYPE-EXAMINATION CERTIFICATE**

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

**3 Certificate Number:** Sira 03ATEX2126

**4 Equipment:** Gas Alert 100-H<sub>2</sub>S and Gas Alert 100-CO Gas Detectors

**5 Applicant:** BW Technologies Limited

**6 Address:**  
2840-2<sup>nd</sup> Avenue SE  
Calgary  
Alberta  
T2A 7X9  
Canada

**7** This equipment and any acceptable variation thereto is 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 equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number R52A9235A.

**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 50014:1997 plus A1 and A2

EN 50020:2002

EN 50284:1999

**10** If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

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

**12** The marking of the equipment shall include the following:



II 1G

EEx ia IIC T4 ( $T_{amb}$  -30°C to +45°C) Gas Alert 100-H<sub>2</sub>S

EEx ia IIC T4 ( $T_{amb}$  -15°C to +45°C) Gas Alert 100-CO

M D Shearman  
Certification Manager

Project Number 52A9235  
Date 2 April 2003  
C. Index 12

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**Sira Certification Service**

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## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

Sira 03ATEX2126

#### 13 DESCRIPTION OF EQUIPMENT

The Gas Alert 100-H<sub>2</sub>S and Gas Alert 100-CO are portable single gas detectors for the detection of hydrogen sulphide or carbon monoxide respectively. They comprise a gas sensor, a printed circuit board, a single lithium cell, an LCD display and a sounder, all housed inside a plastic enclosure. The lithium manganese dioxide cell used is a 3 V Renata Type CR2450N.

#### 14 DESCRIPTIVE DOCUMENTS

14.1	Drawing No.	Sheet	Rev.	Date	Title
	G92D-19A	1 of 1	A	03 Aug 02	GasAlert 100 exploded assembly
	G92D-20C	1 of 1	C	24 Mar 03	GA100 assembly overall dimensions
	G92D-17A	1 of 1	A	19 Jul 02	PCB assembly
	G92A-41A	1 of 1	A	19 Dec 02	Encapsulated fuse
	G92E-00M.prj	1 and 2	-	19 Feb 03	GA100 Schematic
	G92E-10M.pcb	1 of 8	-	27 Nov 02	PCB artwork, bottom overlay, mechanical 1
	G92E-10M.pcb	2 of 8	-	27 Nov 02	PCB artwork, bottom copper, mechanical 1
	G92E-10M.pcb	3 of 8	-	27 Nov 02	PCB artwork, mid layer 4, mechanical 1
	G92E-10M.pcb	4 of 8	-	27 Nov 02	PCB artworks, mid layer 3, mechanical 1
	G92E-10M.pcb	5 of 8	-	27 Nov 02	PCB artworks, mid layer 2, mechanical 1
	G92E-10M.pcb	6 of 8	-	27 Nov 02	PCB artworks, mid layer 1, mechanical 1
	G92E-10M.pcb	7 of 8	-	27 Nov 02	PCB artworks, top copper, mechanical 1
	G92E-10M.pcb	8 of 8	-	27 Nov 02	PCB artworks top overlay, mechanical 1
	111268①	1 to 4	-	25 Mar 03②	H <sub>2</sub> S Parts list
	111981①	1 to 4	-	25 Mar 03②	CO Parts list
	G92A-02A	1 of 1	B	29 Nov 02	GA100 H <sub>2</sub> S label
	G92A-02B	1 of 1	B	29 Nov 02	GA100 CO label
	G92A-01A_110916	1 of 1	A	03 Jul 02	Gas Alert 100 Model serial number, H <sub>2</sub> S
	G92A-01A_111917	1 of 1	A	03 Jul 02	Gas Alert 100 Model serial number, CO

① This drawing number also represents the revision level.

② This is the date that the drawing was stamped by Sira.

#### 14.2 Report No. R52A9235A

#### 15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

None

#### 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 Report No. R52A9235A.

#### 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.

17.3 The Gas Alert 100-H<sub>2</sub>S and Gas Alert 100-CO Gas Detectors shall only be fitted with a 3 V Renata Type CR2450N, lithium manganese dioxide cell.

Date 2 April 2003

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## EC TYPE-EXAMINATION CERTIFICATE VARIATION

**CERTIFICATE NUMBER** Sira 03ATEX2126 **Dated** 2 April 2003

**VARIATION NUMBER** 1 (ONE) **Dated** 14 October 2003

### VARIATION TO EQUIPMENT

To permit:

- 1 The resistors R125, R220 and R221 to have alternative values.
- 2 The software code and revision number to be updated.
- 3 The Op amp U2 to be an alternative type.

### DESCRIPTIVE DOCUMENTS

Number	Sheet	Rev	Date	Description
G92E-00P.prj	1 and 2	P	14 Jul 03	GA100 Schematic
111268	1 to 4	ECO1962	29 Sep 03①	H <sub>2</sub> S Parts list
111981	1 to 4	ECO1962	29 Sep 03①	CO Parts list

① This is the date that the drawing was stamped by Sira.

### ADDITIONAL CONDITIONS OF CERTIFICATION

None

**File No** 52A10594

**Report No.** R52A10594A

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C Ellaby  
Certification Officer



## EC TYPE-EXAMINATION CERTIFICATE VARIATION

**CERTIFICATE NUMBER** Sira 03ATEX2126 **Dated** 2 April 2003

**VARIATION NUMBER** 2 (TWO) **Dated** 3 November 2004

### VARIATION TO EQUIPMENT

To permit:

- 1 The component that is identified as U200 to be replaced by an alternative type of integrated circuit.

### DESCRIPTIVE DOCUMENTS

Number	Sheet	Rev	Date	Description
G92E-00Q.prj	1 to 2	Q	27 Oct 04	GA100 Schematic
111268	1 to 4	ECO 1962>2743	28 Oct 04①	H <sub>2</sub> S Parts list
111981	1 to 4	ECO 1962>2743	28 Oct 04①	CO Parts list

① This is the date that the drawing was stamped by Sira.

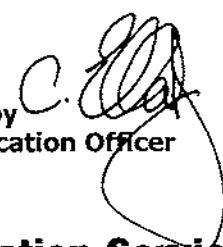
### ADDITIONAL CONDITIONS OF CERTIFICATION

None

**File No** 52V12502

**Report No.** V52V12502A

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C Ellaby  
Certification Officer

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## EC TYPE-EXAMINATION CERTIFICATE VARIATION

**CERTIFICATE NUMBER** Sira 03ATEX2126 **Dated** 2 April 2003

**VARIATION NUMBER** 3 (THREE) **Dated** 1 September 2005

### VARIATION TO EQUIPMENT

To permit:

- 1 The parts list to be reorganised to distinguish more clearly between the safety critical components and the components not relied upon for safety.
- 2 The values of some of the components that are not relied upon for safety to be changed.
- 3 The introduction of an alternative method of marking and affixing the labels.

### DESCRIPTIVE DOCUMENTS

<b>Drawing No</b>	<b>Sheet</b>	<b>Rev.</b>	<b>Date</b>	<b>Description</b>
111268	1 to 4	ECO 3786	14 Jul 05①	H <sub>2</sub> S Parts list
111981	1 to 4	ECO 3786	14 Jul 05①	CO Parts list
G92A-10C	1 of 1	C	29 Apr 05	GA100 H <sub>2</sub> S label
G92A-09C	1 of 1	C	29 Apr 05	GA100 CO label
G92A-11C	1 of 1	C	29 Apr 05	GA 100 Model serial number, H <sub>2</sub> S
G92A-01C	1 of 1	C	29 Apr 05	GA 100 Model serial number, CO

① This is the date that the drawing was stamped by Sira.

### ADDITIONAL CONDITIONS OF CERTIFICATION

None

**File No.** 52A13482

**Report No.** R52A13482A

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**C Ellaby**  
Certification Officer