1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 11ATEX2014X** Issue: **0**

4 Equipment: **DM-100 is 4-20mA loop powered gas sensor**

5 Applicant: **Detcon Inc.**

6 Address: 3200 Research Forest Dr
Bldg A-1
The Woodlands
Texas 77381
USA

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 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 60079-11:2007 EN 60079-26:2007 EN 60079-18:2010
EN 60079-0:2009 (used for guidance in respect of marking)

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
Ex ia IIC T4 Ga
Ta = -40°C to 50°C

II 2G
Ex mb [ib] ib IIC T4 Gb
Ta = -40°C to 50°C

Project Number 24181

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Certificate Annexe

Certificate Number: **Sira 11ATEX2014X**

Equipment: **DM-100 is 4-20mA loop powered gas sensor**

Applicant: **Detcon Inc.**

sira CERTIFICATION

Issue 0

Drawing No.	Sheets	Rev#	Description, P/N
3604-1	1 of 1	2	DM-100 assembly drawing Assy. Drawing
3550	1 of 1	0	DM100 Sensor Housing, P/N 600-003550-000 fabricated
3552	1 of 1	0	DM100 Splashguard Adapter, P/N 600-003552-000 Fabricated
440-005138-000	1 of 1	3	DM100 Main Board P/N 440-005138-000 Schematic
440-005139-000	1 of 1	1	DM100 Interface pcb, P/N 440-005139-000 Schematic
440-005140-000	1 of 1	2	DM100 Cell Amplifier pcb, P/N 440-005140-000 Schematic
440-005138-000	1 to 2	3	DM100 Main Board P/N 440-005138-000 Comp.Assy
440-005138-000	1 to 11	3	DM100 Main Board P/N 440-005138-000 PCB Layout
440-005139-000	1 to 7	1	DM100 Interface pcb, P/N 440-005139-000 PCB Layout
440-005140-000	1 to 2	3	DM100 Cell Amplifier pcb, P/N 440-005140-000 PCB Layout
3618-1,-2,-3	1 to 2	1	DM 100 Sensor Cell Assembly P/N 371-xxxx0x-yyy Assy. Drawing
3556	1 of 1	2	DM-100 Approvals Label, P/N 400-003556-000 Anodized Art
	1 of 1	-	Installation guidelines for hazloc (from manual) Installation
3993	1 of 1	1	DM-100 Ex ia installation drawing Installation

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 11ATEX2014X**
Issue 0

13 **DESCRIPTION OF EQUIPMENT**

DM-100 is 4-20mA loop powered gas sensor designed to detect and monitor a wide range of toxic gases and oxygen deficiency. The basic sensor assembly consists of encapsulated electronic circuitry within a metallic outer enclosure, and include an intrinsically safe plug-in electrochemical gas cell protected by an optional plastic splash guard. The DM-100 sensor is connected through flying leads exiting the encapsulant.

There are two ratings considered possible for this product in hazardous location:

II 2 G Ex mb [ib] ib IIC T4, for ambient of -40°C to 50°C. This rating applies when the DM-100 flying leads are connected to external non-intrinsically safe circuits according to m protection and the protection of the integral ib gas sensor cell is assured by the integral [ib] barrier located within product circuitry. In this case Um=60V applies and external current limitation is required (eg. 62mA fuses, 1500A breaking capacity);

and

II 1 G Ex ia IIC T4, for ambient of -40°C to 50°C. This rating applies when the DM-100 flying leads are connected to external intrinsically safe circuits provided by a matching external associated apparatus. In this case only the 4-20mA input connection is permitted to a certified intrinsically safe external barrier or associated apparatus to match the DM-100 input entity parameters:

Ui	=	30V	Ci	=	0nF
Ii	=	300mA	Li	=	0mH
Pi	=	1W			

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	09 June 2011	R24181A/00	The release of the prime certificate.

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

15.1 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 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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