1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 12ATEX2110X** Issue: **5**

4 Equipment: **Multi-Sensor Flow Monitor S2**

5 Applicant: **Detectronic Limited**

6 Address: Regent Street
Whitewalls Industrial Estate
Colne
Lancashire BB8 8LJ
UK

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

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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:

IEC 60079-0:2011 IEC 60079-11:2011 EN 60079-26:2006

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-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 IIB T4 Ga
Ta = -40°C to +60°C

Project Number 1965

Signed:

Title: Director of Operations

CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 12ATEX2110X**
Issue 5

13 **DESCRIPTION OF EQUIPMENT**

The Multi-Sensor Flow Monitor S2 is used in flow monitoring applications in 'dirty water', such as sewage. It combines a data logger with a GSM modem and provides terminations for several, suitably-approved, intrinsically safe sensors. The equipment, which comprises a plastic enclosure housing two printed circuit boards, an interface board and a processor board, has the following power supplies:

- An intrinsically safe external battery pack that is 12.6 V maximum, typically an Detectronic '9W3000' battery pack, certificate number Sira 08ATEX2229X;
- An internal battery pack, this may be either a Technolog '9E3000' single 3.9 V peak non-rechargeable 'D' cell (intrinsically safe as assessed in Sira report R27498A/00) or a Technolog '9V3000' containing two 3.9 V cells in parallel (Sira 08ATEX2238U).

The equipment has the following entity parameters at the user ports:

	VEL	PRESS/LEV	CSO	COMMs	EXT PWR (12.6 V)
Ui	0	0	0	0	12.6 V
Ci	5.8 µF	0	0	0	0
Li	2400 µH	90 µH	0	0	0
Uo	12.6 V	11.55 V	7.14 V	5.88 V	-
Io	237 mA	229 mA	164 mA	26 mA	-
Po	746 mW	720 mW	291 mW	39 mW	-
Co	1.6 µF	10.8 µF	43 µF	43 µF	-
Lo	100 µH	100 µH	100 µH	100 µH	-

Variation 1 - This variation introduced the following changes:

i. The critical component list was corrected to recognise that diodes D22, D29, D62, D63, D64 and D65 are safety related diodes as assessed in report no. R27498A/00.
ii. The value of R151 was changed from 950 kΩ to 101 kΩ.

Variation 2 - This variation introduced the following changes:

i. The removal of the automatic RF antenna switching circuitry was approved.
ii. The re-routing of the internal antenna cable was acknowledged.
iii. Artwork changes were endorsed.

Variation 3 - This variation introduced the following changes:

i. The combination of the IECEx and ATEX marking into a single drawing.
ii. An addition to the marking to indicate the internal antenna connector.

Variation 4 - This variation introduced the following change:

i. The Applicants address was changed from 1 Turner Road, Lomeshaye Industrial Estate, Nelson, Lancashire BB9 7DR, to Regent Street, Whitewalls Industrial Estate, Colne, Lancashire BB8 8LJ.

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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 number	Comment
0	13 April 2012	R27498B/00	The release of prime certificate.
1	15 November 2012	R29332B/00	The introduction of Variation 1.
2	31 May 2013	R30510B/00	The introduction of Variation 2.
3	19 June 2013	R31228B/00	The introduction of Variation 3.
4	10 February 2014	R33058A/00	The introduction of Variation 4.
5	15 October 2019	1965	• Transfer of certificate Sira 12ATEX2110X from Sira Certification Service to CSA Group Netherlands B.V.. • EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. *(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)*

14.3 Certificate number Sira 12ATEX2106X Issue 3

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

15.1 There is provision for the installer to connect an external antenna, which is not covered by this certificate. The Multi-Sensor Flow Monitor S2 meets the requirements for isolation between the external pins of the antenna connector and the internal circuit. It is the responsibility of the installer to ensure that the antenna meets all the requirements of IEC 60079-14, such as precautions against electrostatic discharge.

15.2 The circuit ground is deliberately connected to the connector shells of the VEL and PRESS/LEV ports, so the equipment does not meet the requirements of the 500 V dielectric strength test in IEC 60079-11. This shall be taken into consideration during installation. However, the connector to the external antenna meets the requirements of the test.

15.3 Only a 9E3000 or a 9V3000 internal battery pack, manufactured by Technolog, is permitted as a replacement. These battery packs are intrinsically safe and may be replaced by the user in the hazardous area whilst the equipment is live.

15.4 Under certain extreme circumstances, any exposed plastic parts of the enclosure and the battery packs (when being replaced) may generate an ignition-capable level of electrostatic charge. Therefore, the user/installer shall implement precautions to prevent the build up of electrostatic charge e.g. locate the equipment where a charge-generating mechanism (such as wind-blown dust) is unlikely to be present, clean all plastic parts with a damp cloth, etc.

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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.

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Certificate Annexe

Certificate Number: **Sira 12ATEX2110X**

Equipment: **Multi-Sensor Flow Monitor S2**

Applicant: **Detectronic Limited**

Issue 0

Drawing	Sheets	Rev	Date (Sira stamp)	Title
CJ85011	1 of 1	A	13 Apr12	Detectronic MSFM ATEX label

Issues 1 and 2 No new drawings were introduced

Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CJ85010	1 of 1	A	19 Jun 13	Detectronic MSFM label

Note: Drawing CJ85010 replaces CJ85011

Issue 4

Drawing	Sheet	Rev.	Date (Sira stamp)	Description
CJ85010	1 of 1	B	10 Feb 14	Label

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