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 12.0044X	issue No.:4
Status:	**Current**	
Date of Issue:	**2014-02-26**	Page 1 of 5

Certificate history:
Issue No. 4 (2014-2-26)
Issue No. 3 (2013-6-24)
Issue No. 2 (2013-6-12)
Issue No. 1 (2012-11-21)
Issue No. 0 (2012-4-23)

Applicant: **Detectronic Limited**
Regent Street
Whitewalls Industrial Estate
Colne
Lancashire BB8 8LJ
United Kingdom

Electrical Apparatus: **Multi-Sensor Flow Monitor S2**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: Ex ia IIB T4 Ga
Ta = -40°C to +60°C

Approved for issue on behalf of the IECEx Certification Body: C Ellaby

Position: Deputy Certification Manager

Signature:
(for printed version)

Date: 2014-02-26

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.

Certificate issued by:

SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

sira CERTIFICATION

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Date of Issue: **2014-02-26** Issue No.: 4

Manufacturer: **Detectronic Limited**
Regent Street,
Whitewalls Industrial Estate,
Colne,
Lancashire BB8 8LJ
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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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

Test Report:
GB/SIR/ExTR12.0088/00
GB/SIR/ExTR12.0295/00
GB/SIR/ExTR13.0165/00
GB/SIR/ExTR13.0187/00
GB/SIR/ExTR14.0028/00

Quality Assessment Report:

GB/SIR/QAR08.0019/02
GB/SIR/QAR08.0019/03
GB/SIR/QAR08.0019/04

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

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 IECEx SIR.08.0092X.
- 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 (IECEx SIR 08.0095U).

CONDITIONS OF CERTIFICATION: YES as shown below:

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.
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.
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.
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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EQUIPMENT(continued):

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	-

Conditions of manufacture

The Manufacturer shall comply with the following:

1. Some versions of the equipment are fitted with an internal battery pack, type 9V3000, and certified IECEx SIR 08.0095U. It is the responsibility of the manufacturer to continually monitor the status of the certification associated with this battery pack, and the manufacturer shall inform Sira of any modifications that may impinge upon the explosion safety design of the equipment.

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

Issue 1 – this Issue introduced the following changes:

1 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. GB/SIR/ExTR12.0088/00.

2 The value of R151 was changed from 950 kΩ to 101 kΩ.

Issue 2 – this Issue introduced the following changes:

1 The removal of the automatic RF antenna switching circuitry was approved.

2 The re-routing of the internal antenna cable was acknowledged.

3 Artwork changes were endorsed.

Issue 3 – this Issue introduced the following changes:

1. The combination of the IECEx and ATEX marking into a single drawing.

2. An addition to the marking to indicate the internal antenna connector

Issue 4 – this Issue introduced the following change:

1. 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.