



# 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](http://www.iecex.com)

Certificate No.: IECEx SIR 19.0024X

Issue No: 0

Certificate history:

Issue No. 0 (2019-03-12)

Status: **Current**

Page 1 of 3

Date of Issue: **2019-03-12**

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

Equipment: **The Multi-Sensor Flow Monitor S2.5 (MSFM S2.5)**

Optional accessory:

Type of Protection: **Intrinsically Safe**

Marking:

Ex ia IIB T4 Ga  
Ta = -40°C to +60°C

Approved for issue on behalf of the IECEx  
Certification Body:

R A Craig

Position:

Certification Support Officer

Signature:  
(for printed version)

Date:

  
2019-03-12

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](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
CSA Group  
Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
United Kingdom

**sira**  
CERTIFICATION





# IECEX Certificate of Conformity

Certificate No: IECEX SIR 19.0024X Issue No: 0

Date of Issue: 2019-03-12 Page 2 of 3

Manufacturer: **Detectronic Ltd**  
Whitewalls Industrial Estate  
Regent Street  
Colne  
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 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 : 2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

*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/ExTR19.0068/00](#)

#### Quality Assessment Report:

[GB/SIR/QAR08.0019/09](#)



# IECEX Certificate of Conformity

Certificate No: IECEX SIR 19.0024X

Issue No: 0

Date of Issue: 2019-03-12

Page 3 of 3

## Schedule

### EQUIPMENT:

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

The Multi-Sensor Flow Monitor S2.5 (MSFM S2.5) is used in flow monitoring applications in 'dirty water' environments such as sewerage. It combines a data logger and a mobile 'phone modem module and provides for external connections for several suitably-approved intrinsically safe sensors/transducers. It features an internal antenna as well as the provision for the connection of an external antenna. It also features a SIM card. It comprises a plastic enclosure housing two printed circuit boards, a component-approved (IECEX SIR 18.0023U) intrinsically safe interface board and a partially encapsulated processor board. Two power supplies are required for operation.

Refer to the Annexe for additional information

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to the Annexe

### Annex:

[IECEX SIR 19.0024X Issue 0 Annexe.pdf](#)

**Annexe to:** IECEx SIR 19.0024X Issue 0

**Applicant:** Detectronic Ltd

**Apparatus:** The Multi-Sensor Flow Monitor S2.5 (MSFM S2.5)



MSFM S2.5 has the following internal power supply options:

- i. Internal user-replaceable non-rechargeable intrinsically safe '9E3000' battery pack (single 3.9V lithium cell).
- ii. Internal user-replaceable non-rechargeable intrinsically safe '9V3000' battery pack (dual 3.9V lithium cells in parallel, component-approved - IECEx SIR 08.0095U).

There is also the provision for the connection of a suitably approved intrinsically safe external battery pack that is 12.6V maximum.

The entity parameters are as follows:

	Ui (V)	Ii (A)	Pi (W)	Ci ( $\mu$ F)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co ( $\mu$ F)	Lo (mH)
CSO/ENC	0	-	-	0	0	7.14	162	288	0.6	1
COMMS	5.88	-	-	0	0	5.88	26	39	0.6	1
PULSE/PC (PC port- J7 – Pins 1&2)	0	-	-	-	0.9	8.61	36	76	54	108
PULSE/PC (Volt free port- J7 pin 4)	5.5	-	-	-	-	8.61	1	2	54	142221
VEL	0	-	-	-	-	8.61	270	799	50	1
PRESS/LEV	0	-	-	-	-	8.61	270	799	54	0.9
EXT PWR	12.6	2.708	6.142	0	0.019	0	-	-	-	-

### Specific Conditions of Use

- i. The Multi-Sensor Flow Monitor S2.5 has provision for the installer to connect an external antenna, which is not covered by the certificate. The circuit ground is connected to the exposed metal shell of this antenna connector, so the equipment does not meet the 500 Vac isolation requirements between circuit and enclosure. This shall be considered during installation.
- ii. 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 accordance with IEC 60079-11. This shall be taken into consideration during installation
- iii. Only a 9E3000 or a 9V3000 internal battery pack, 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.
- iv. Under certain extreme circumstances, the exposed plastic parts of the enclosure and the metallic connectors may store 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 and clean with a damp cloth. The metallic connectors have a capacitance of up to 13pF with respect to an earthed conductor.
- v. Some of the external metallic parts may be manufactured from light metal. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.
- vi. The 'EXT PWR' port shall be connected to a resistive supply with a source resistance of 4.431  $\Omega$  minimum.

**Date:** 12 March 2019

Page 1 of 2

**Form 9530 Issue 1**

### Sira Certification Service

Unit 6 Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900  
Fax: +44 (0) 1244 681330  
Email: [ukinfo@csagroup.org](mailto:ukinfo@csagroup.org)  
Web: [www.csagroupuk.org](http://www.csagroupuk.org)

**Annexe to:** IECEx SIR 19.0024X Issue 0

**Applicant:** Detectronic Ltd

**Apparatus:** The Multi-Sensor Flow Monitor S2.5 (MSFM S2.5)

---



## Conditions of Manufacture

- i. The Multi-Sensor Flow Monitor S2.5 incorporates a previously certified interface board (IECEX SIR 18.0023U) and a previously approved 9V3000 battery pack (IECEX SIR 08.0095U). It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with this device. The manufacturer shall inform Sira of any modifications to the device that may impinge upon the explosion safety design of the Multi-Sensor Flow Monitor S2.5.

**Date:** 12 March 2019

Page 2 of 2

**Form 9530 Issue 1**

## Sira Certification Service

Unit 6 Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900  
Fax: +44 (0) 1244 681330  
Email: [ukinfo@csagroup.org](mailto:ukinfo@csagroup.org)  
Web: [www.csagroupuk.org](http://www.csagroupuk.org)