



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 15ATEX2299X** Issue: **4**

4 Equipment: **GS7XX Series Gas Detector**

5 Applicant: **Gas Measurements Instruments Ltd**

6 Address: Inchinnan Business Park  
Renfrew PA4 9RG  
Scotland  
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:

EN 60079-0:2012/A11:2013

EN 60079-1:2014

EN 60079-11:2012

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:

Without Figaro TGS2610 sensor

With Figaro TGS2610 sensor



II 2G  
Ex db ia IIC T4 Gb  
Ta = -20°C to +50°C



II 2G  
Ex db ia IIB T3 Gb  
Ta = -20°C to +50°C

Project Number 0873

Signed: 

Title: Director of Operations

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Utrechtseweg 310,  
6812 AR, Arnhem,  
Netherlands



## SCHEDULE

### EU-TYPE EXAMINATION CERTIFICATE

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#### 13 DESCRIPTION OF EQUIPMENT

The GS7XX Series Gas Detector is a family of intrinsically safe (Ex ia) hand held gas sensing instruments accommodating a range of sensor options. In the range of permitted optional sensors, two types are component certified "ia" and two are component certified "d". The GS7XX range is portable equipment, for use within the temperature range -20°C to +50°C.

The equipment is housed in an electrostatically dissipative plastic enclosure with a top cover which incorporates an LCD window. The battery pack forms the base of the enclosure and must only be removed in a non-hazardous area. Internally there are five PCB assemblies, a Bluetooth module, a GPS module, an internal gas flow-path with a pump and motor, and a buzzer. A range of optional internal sensors and an optional sensor (Figaro type TGS2610) that may be fitted internally or in an externally mounted probe.

The GS7xx range is certified for use with for Gas Group IIC, Temperature Classification T4 except when the FIGARO TGS2610 LP gas detector sensor is fitted. With a FIGARO TGS2610 LP gas detector sensor fitted either internally or externally the GS7XX is certified for Gas Group IIB and Temperature Classification T3.

There are two battery pack options: An alkaline battery pack housing 3 Duracell MN1300 (or ID1300) cells in series, and a rechargeable battery pack containing 2 lithium ion cells in a parallel configuration with individual fuses. The cell type is SAFT MP 174565 Integration and the cells are not user replaceable. The rechargeable battery pack has external charging terminals and must only be charged in a non-hazardous area.

A dedicated charger cradle is provided, which delivers a charging current of up to 4.25A with the output voltage being limited to 6.78V. The charger cradle has an ambient temperature range of -20°C to +44°C.

The equipment has the following optional sensors:

Sensor	Device	Position
Barometer	MPL115A2	S1
PPM	TGS2610	SENS1
IR gas sensor	Optosense MIPEX-02 ITS 11 ATEX 27418U	SENS2
Moisture / Humidity	SHT1x	SENS3
Oxygen Sensor	Luminox LOX-02	SENS4
4-Series single toxic gas cell	Various	TOX1
4 series single toxic gas cell Or 4-Series dual toxic gas cell	Various	TOX2
4-Series single toxic gas cell Or 4-Series oxygen cell	Various	CELL1
IR dual gas sensor	Sensortech (IR15XX) SIRA99ATEX1121U	IR1
IR single gas sensor	Sensortech (IR1XXX) SIRA99ATEX1121U	IR2

The equipment has the following entity parameters:

Battery pack	Um	=	6.78V
Charging cradle	Um	=	250V ac
Charging cradle	Uo	=	6.78V

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**Variation 1** - This variation introduced the following changes:

- i. Addition of three alternative alkaline cell types, resulting in the addition of a Specific Condition of Use.
- ii. The addition of three packing pieces between the battery and the internal insulating plate.

**Variation 2** - This variation introduced the following changes:

- i. The resistance value of the following fuses is no longer required as a Condition of Manufacture:
  - 7+ Sensor PCB: F2, F3, 250mA: 0.6055Ω
  - 7+ Sensor PCB: F4, 375mA: 0.253Ω
  - 7+ Sensor PCB: F5, 75mA: 0.9312Ω
  - Main PCB: F1,F2, 75mA: 0.9312Ω

**Variation 3** – This variation introduced the following changes:

- i. Addition of an alternative secondary lithium-ion cell type, MP 174565ise in the existing dual cell rechargeable battery pack configuration within the intrinsically safe enclosure.
- ii. Addition of a new single cell circuit configuration of the rechargeable battery pack within the intrinsically safe enclosure. Comprising of a secondary lithium-ion cell type, MP 176065ise.
- iii. The recognition of a minor drawing modification to remove the reference to the cell charge rating. This is administrative and does not affect the aspects of the product relevant to explosion safety.
- iv. The addition of a specific condition of use to prohibit the removal, replacement, or recharging of the batteries or the rechargeable battery pack in a hazardous area.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	29 April 2016	R70045470A	The release of the prime certificate.
1	09 May 2016	R70069590A	This Issue covers the following changes: <ul style="list-style-type: none"> <li>• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(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.)</i></li> <li>• The introduction of Variation 1.</li> </ul>
2	23 June 2017	R70130049A	The introduction of Variation 2.
3	20 February 2019	R70178050A	The introduction of Variation 3.
4	15 October 2019	0873	Transfer of certificate Sira 15ATEX2299X from Sira Certification Service to CSA Group Netherlands B.V..

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- 15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)
- 15.1 Only external probes labelled with the certificate numbers Sira 15ATEX2299X are permitted to be connected to the GS7xx.
- 15.2 The resistance to ultraviolet light of the material used in the equipment enclosure has not been determined, therefore when the equipment is not in use, it must not be subject to prolonged exposure to daylight or light from luminaires.
- 15.3 The following alternative types of alkaline cells are permitted:  
ANSMANN INDUSTRIAL LR20  
ANSMAN XPOWER LR20  
PANASONIC EVOLTA LR20
- 15.4 It is not permitted to remove, replace or recharge the batteries or the rechargeable battery pack in a hazardous atmosphere.
- 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.

# Certificate Annexe



**Certificate Number:** Sira 15ATEX2299X  
**Equipment:** GS7XX Series Gas Detector  
**Applicant:** Gas Measurements Instruments Ltd

## Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Description
49200A.CERT	1 to 4	1	16 Sep 15	700 Series basic instrument assembly certification
49200-IS-BD	1 of 1	3	16 Sep 15	GS700 Series I.S. Block Diagram
49213A_CERT <sup>1</sup>	1 of 1	2	24 Oct 15	700 Series dry cell battery pcb assembly certification
49214A_CERT	1 of 1	1	16 Sep 15	Power cable assy. GS700 - CERT
49217A_CERT <sup>2</sup>	1 of 1	1	24 Oct-15	GS700 series probe assembly
49223A_CERT	1 of 1	1	16 Sep 15	Main PCB assy. GS700 Series - CERT
49227A_CERT	1 to 2	1	16 Sep 15	700 Series rechargeable PCB assy.
49232A_CERT <sup>2</sup>	1 of 1	1	24 Oct-15	External PPM probe connector assembly
49235A_CERT	1 of 1	1	16 Sep 15	700 Series pump assy. certification
49237A_CERT	1 of 1	1	16 Sep 15	GS700 Series buzzer cable assembly
49239A_CERT	1 of 1	1	16 Sep 15	GS700 GPS Module
49252A_CERT	1 of 1	1	16 Sep 15	7 Cell PCB assy GS700 series - CERT
49253A_CERT	1 of 1	1	16 Sep 15	Interconnect cable assy GS700 series -CERT
49419_CERT <sup>1</sup>	1 to 2	2	22 Mar 16	Certification/Serial No. & I.D. labels GS700 Series
49421_CERT	1 of 1	1	16 Sep 15	Alkalkine battery labels GS700 Series - CERT
49422_CERT	1 of 1	1	16 Sep 15	Rechargeable batt. Pack labels GS700 Series- CERT
49476_CERT <sup>2</sup>	1 of 1	1	22 Mar 16	Probe certification label
49485_CERT	1 of 1	1	16 Sep 15	700 Series battery pack label
49487_CERT	1 of 1	1	16 Sep 15	Serial No. Label GS700 charger
49510	1 of 1	4	16 Sep 15	GS700 Main PCB schematic
49510	1 to 7	5	02 Mar 16	GS700 Main PCB layout
49513	1 of 1	2	16 Sep 15	Pump control schematic
49513	1 to 5	2	16 Sep 15	GS700 pump pcb layout
49514	1 of 1	4	16 Sep 15	Rechargeable battery pack schematic
49514	1 to 4	4	16 Sep 15	GS700 ReChgBat PCB layout
49515	1 of 1	2	16 Sep 15	ALK battery PCB
49515	1 to 4	2	16 Sep 15	GS700 ALKBATT PCB layout
49518	1 of 1	1	16 Sep 15	Charger protection PCB schematic
49518	1 to 5	1	16 Sep 15	GS700 CHGERPROTECT PCB layout
49519 <sup>1</sup>	1 to 3	4	02 Mar 16	7+ Cell sensor pcb schematic
49519	1 to 7	3	16 Sep 15	GS700 7SENSOR PCB layout

<sup>1</sup> Indicates drawings updated from ITS Report 101377545CHE-001.

<sup>2</sup> Indicates new drawings.

## Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
49200A_CERT	1 to 4	2	21 Apr. 16	700 Series basic assembly
49421_CERT	1 of 1	2	21 Apr. 16	GS700 series alkaline battery labels

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# Certificate Annexe



**Certificate Number:** Sira 15ATEX2299X

**Equipment:** GS7XX Series Gas Detector

**Applicant:** Gas Measurements Instruments Ltd

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## Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
49510	1 of 1	6	09 May 17	GS700 Main PCB
49519	1 to 3	5	09 Jun 17	7+ Cell Sensor pcb

## Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
49200A_CERT	1 to 4	3	09 Nov 18	700 Series basic assembly
49422_CERT	1 of 1	2	09 Nov 18	GS700 rechargeable battery pack labels
49452_CERT	1 of 1	1	09 Nov 18	700 series single battery pack label
49514	1 of 1	5	09 Nov 18	Rechargeable battery pack schematic

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