



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 08ATEX1003** Issue: **11**

4 Equipment: **Type GTD-2000Ex, GTD-2000Tx and GI R-3000 Gas Detectors**

5 Applicant: **Gastron Co. Limited**

6 Address: **23, Gunpocheomdansaneop 1-ro
Gunpo-Si, Gyeonggi-Do 15881 South Korea**

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 IEC 60079-0 2018 EN 60079-1:2014 EN 60079-29-1:2016

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:

GTD-2000Ex



II 2G
Ex db IIC Gb T (see below)
T Class Ambient temperature
T6 Ta = -40°C to +60°C
T5 Ta = -40°C to +60°C
T4 Ta = -40°C to +80°C

GTD-2000Tx and GI R-3000



II 2G
Ex db IIC Gb T (see below)
T Class Ambient temperature
T6 Ta = -40°C to +60°C

T4 Ta = -40°C to +80°C



Signed: J A May

Title: Director of Operations

Project Number 80109086

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

**Sira 08ATEX1003
Issue 11**

13 DESCRIPTION OF EQUIPMENT

The GTD-2000Ex Combustible Gas Detector consists of an enclosure, Type GDH-1000 (Sira 08ATEX1305U), fitted with a Type GSA860Ex gas sensor (Sira 08ATEX1304U). The enclosure is also fitted with associated circuitry, termination facilities and a display visible through the GDH-1000 window. Cable entry is by means of the suitably certified cable entry device fitted into the GDH-1000 threaded aperture. The device is rated up to 24 V and 200 mA.

The GTD-2000Tx Toxic Gas Detector consists of an enclosure, Type GDH-1000 (Sira 08ATEX1305U), fitted with a Type GSA860Tx gas sensor (Sira 08ATEX1304U). The enclosure is also fitted with associated circuitry, termination facilities and a display visible through the GDH-1000 window. Cable entry is by means of the suitably certified cable entry device fitted into the GDH-1000 threaded aperture. The device is rated up to 24 V and 150 mA.

Performance tested for 0-100% LFL methane and 0-100% LFL propane.

Firmware version: GTD-2000Ex version 1.43 and GIR-3000 version 2.02.

The combustible gas detectors complies with EN 50271 (clause 4.8, safety integrity assessment excluded from the assessment).

Variation 1 - This variation introduced the following changes:

- i. The introduction of the GIR-3000 Gas Detector that comprises an enclosure, Type GDH-2000 (Sira 08ATEX1305U), fitted with a Type GSA920 Infra Red Combustible Gas Sensor (Sira 08ATEX1304U). The enclosure is also fitted with associated circuitry, termination facilities and a display visible through the GDH-2000 window. Cable entry is by means of the suitably certified cable entry device fitted into the GDH-2000 threaded aperture. The device is rated up to 400 mA @ 24 Vdc.

Variation 2 - This variation introduced the following changes:

- i. The Type GTD-2000Ex, GTD-2000Tx and GIR-3000 Gas Detectors utilise either the component approved Type GDH-1000 or GDH-2000 Enclosures, this variation recognises the introduction to use the optional material of construction (Stainless Steel) for these enclosures.

Variation 3 - This variation introduced the following changes:

- i. Following appropriate assessment the Type GTD 2000Ex Gas Detector was approved for use in the following ambient temperature ranges with temperature classes as specified below:

Temperature Class	Ambient temperature
T6	Ta = -40°C to +60°C
T5	Ta = -40°C to +60°C
T4	Ta = -40°C to +80°C



Project Number 80109086

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 08ATEX1003
Issue 11

- ii. The applicants address was changed from 75-10 Palgok 2-Dong, Sangrok-Gu, Ansan City, Kyunggi-Do to 18-8, Dogeumdanji 1-Gil, Palgogi-Dong, Sangrok-Gu, Ansan-Si, Gyeonggi-Do.

Variation 4 - This variation introduced the following changes:

- i. Following appropriate assessment, the Type GTD-2000Tx and GIR-3000 Gas Detectors were approved for use in the following ambient temperature ranges with temperature classes as specified below: The marking was amended accordingly.

Temperature Class	Associated ambient temperature (°C)
T6	Ta = -40°C to +60°C
T4	Ta = -40°C to +80°C

Variation 5 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents previously listed in section 9 of the certificate, EN 61779-1:2000 and EN 61779-4:2000, were replaced by EN 60079-29-1:2007.

Variation 6 - This variation introduced the following changes:

- i. The use of alternative metric threaded apertures, size M20x1.5 or M25x1.5, used in conjunction with the suitably certified cable entry devices, on model: GTD-2000Ex and GTD-2000Tx and GIR-3000 gas sensors were approved.
- ii. The recognition of minor drawing modifications; these amendments are administrative to align with the Component enclosure and type GSA920 Gas sensor forming part of the equipment, certified on certificate numbers Sira 08ATEX1305U, and Sira 08ATEX1304U respectively, and do not affect the aspects of the product that are relevant to explosion safety:

Variation 7 - This variation introduced the following changes:

- i. Rationalisation of scheduled drawings to remove those that have been replaced, and/or are no longer used to support manufacturing.
- ii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2006, EN 60079-1:2007 and IEC 60079-0:2007 Ed5 (for marking purposes), were replaced by EN 60079-0:2012/A11:2013 and EN 60079-1:2014, the markings were updated accordingly.
- iii. The product nameplate drawings was typographical corrected to show the performance marking "EN 60079-29-1" to recognise the Gas Detectors conform to the performance testing requirements of EN 60079-29-1:2007 under previous assessment.

Variation 8 - This variation introduced the following change:

- i. The company address was changed:



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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 08ATEX1003
Issue 11

From:
18-8, Dogeumdanji 1-Gil
Palgogi-Dong
Sangrok-Gu
Ansan-Si, Gyeonggi-Do
Korea

To:
23, Gunpocheomdansaneop 1-ro
Gunpo-Si
Gyeonggi-Do 15881
South Korea

Variation 9 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance, EN50271:2018 (except SIL1) has been added to section 9 of the certificate and a Note of Deviation was added.

Variation 10 - This variation introduced the following change:

- i. Replacement of EN 60079-0:2012 + A11:2013 with EN IEC 60079-0 2018.
- ii. Replacement of EN 60079-29-1:2007 with IEC 60079-29-1 2016 and amendment of product description according to requirements.
- iii. Removal of EN 50271 from the list of applicable standards.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated CSA Group Reports and Certificate History

Issue	Date	Report number	Comment
0	6 November 2008	R51A16417C	The release of the prime certificate.
1	20 January 2009	R51L19237A	The introduction of Variation 1.
2	14 March 2013	R30238A/00	The introduction of Variation 2.
3	20 January 2014	R29972A/00	The introduction of Variation 3.
4	17 March 2014	R29972B/00	The introduction of Variation 4.
5	31 March 2014	R33064A/00	The introduction of Variation 5.
6	24 June 2015	R70032864A	The introduction of Variation 6.



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EU-TYPE EXAMINATION CERTIFICATE

Sira 08ATEX1003
Issue 11

Issue	Date	Report number	Comment
7	04 May 2018	R70164004A	This Issue covers the following changes: <ul style="list-style-type: none">• 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>• The introduction of Variation 7.
8	04 April 2019	R70218488A	The introduction of Variation 8.
9	15 October 2019	0493	Transfer of certificate Sira 08ATEX1003 from Sira Certification Service to CSA Group Netherlands B.V.
10	14 October 2021	R80069800A	The introduction of Variation 9.
11	22 March 2022	R80109086A	The introduction of Variation 10.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

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 MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.



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Certificate Annexe



Certificate Number: Sira 08ATEX1003
Equipment: Type GTD-2000Ex, GTD-2000Tx and GI R-3000 Gas Detectors
Applicant: Gastron Co. Limited

Issues 0 to 6: The drawings listed with these Issues were rationalised and have been superseded by those detailed in Issue 7

Issue 7

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
G-Ex0046	1 of 1	5	17 Jan 18	GTD-2000Ex General assembly
G-Ex0047	1 of 1	0	29-Oct-08	GTD-2000Ex Marking details
G-Ex0048	1 of 1	6	17 Jan 18	GTD-2000Ex Certification label
G-Ex0049	1 of 1	5	17 Jan 18	GTD-2000Tx General assembly
G-Ex0050	1 of 1	0	29-Oct-08	GTD-2000Tx Marking details
G-Ex0051	1 of 1	4	17 Jan 18	GTD-2000Tx Certification label
G-Ex0052	1 of 1	5	17 Jan 18	GIR-3000 General assembly
G-Ex0053	1 of 1	0	04-Feb-09	GIR-3000 Marking details
G-Ex0054	1 of 1	6	17 Jan 18	GIR-3000 Certification label

Issue 8

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
G-Ex0048	1 of 1	7	02 Apr 19	GTD-2000Ex Certification Label
G-Ex0051	1 of 1	5	02 Apr 19	GTD-2000Tx Certification Label
G-Ex0054	1 of 1	7	02 Apr 19	GTD-3000 Certification Label

Issue 9 – No new drawings were introduced.

Issue 10

Drawing	Sheets	Rev.	Title
GT-30SRH01	5	1.0	GIR-3000_Software Revision History
GIR-3000_SRN_021	1	---	GIR-3000 Software Release Note.
GT-30SQP01	11	1.1	GIR-3000_Software Quality Plan
GT-30SRS01	29	1.0	GIR-3000_Software Requirements Specification
GT-30TM0	6	2.0	GIR-3000_Traceability Matrix
GT-30SDD01	24	1.2	GIR-3000_Software Design Description
GT-10SCS	197	1.1	Software Coding Standard
GT-30STS01	417	2.0	Software Test Specification GIR-3000(Including GSA-920)
GT-30SMTR01	370	1.0	GIR3000_Software Module Test Report
GT-30SITR01	64	1.0	GIR-3000_Software Integration Test Report
GT-30PATS01	125	1.1	GIR-3000_Product Acceptance Test Specification
GT-30PATR01	138	1.1	GIR-3000_Product Acceptance Test Report
GT-30IM01	48	3.2	GIR-3000_Instruction Manual
GT-20SRH01	3	1.1	GTD-2000_Software Revision History (spreadsheet)
GTD-2000_SRN_031	1	---	GTD-2000 Software Release Note
GT-20SQP01	12	1.1	GTD-2000_Software Quality Plan
GT-20SRS01	22	1.0	GTD-2000_Software Requirements Specification
GT-20TM01	4	2.0	GTD-2000_Traceability Matrix (spreadsheet)
GT-20SDD01	22	1.2	GTD-2000_Software Design Description



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Certificate Annexe



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Equipment: Type GTD-2000Ex, GTD-2000Tx and GI R-3000 Gas Detectors
Applicant: Gastron Co. Limited

Drawing	Sheets	Rev.	Title
GT-20STS01	258	2.0	GTD-2000_Software Test Specification
GT-20SMTR01	227	1.0	GTD-2000_Software Module Test Report
GT-20SITR01	40	1.0	GTD-2000_Software Integration Test Report
GT-20PATS01	67	1.1	GTD-2000_Product Acceptance Test Specification
GT-20PATR01	98	1.1	GTD-2000_Product Acceptance Test Report
GT-20IM01	49	3.6	GTD-2000_Instruction Manual

Note: the EN50271 the scope of the EN50271:2018 assessment mainly relates to software and therefore the stamped drawings from previous issues are assumed to be up to date and correct

Issue 11 – No new drawings were introduced.



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