1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 18ATEX2059X** Issue: **0**

4 Equipment: **Portable Multi-Gas Detector SP-MGT-N**
Portable Multi-Gas Detector SP-MGT-P

5 Applicant: **Senko Co., Ltd**

6 Address: 73, Oesammi-ro 15 Beon-gil
Osan-si, Gyeonggi-do
18111
Republic of Korea

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

8 Sira Certification Service, notified body number 0518 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

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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 IIC T4 Ga*
Ex da ia IIC T4 Ga**
-20°C ≤ Ta ≤ +50°C
* Model SP-MGT-N
** Model SP-MGT-P

Project Number 70174445

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Deputy Certification Manager

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 18ATEX2059X**
Issue 0

13 **DESCRIPTION OF EQUIPMENT**

The SP-MGT series are portable, hand-held, multi-gas detectors, designed to continuously monitor and detect oxygen, carbon monoxide, hydrogen sulphide, and combustible hydrocarbons. The equipment has not been evaluated to the requirements of the IEC 60079-29 series of standards, therefore, "LEL" and "combustible gas detector performance" are not the subject of this certificate. The instrument samples the atmosphere in diffusion mode using an O_2 and a dual CO/H_2S electrochemical sensors. Combustible hydrocarbons are detected through the use of one of two available sensors, which define the model nomenclature and Ex marking of the equipment as follows:

- Model SP-MGT-N marked Ex ia IIC T4 Ga (when using combustibles sensor MIPEX-02-1-II-1.1 A)
- Model SP-MGT-P marked Ex da ia IIC T4 Ga (when using combustibles sensor KGS 701)

For model SP-MGT-P marked Ex da ia IIC T4 Ga, method of protection 'da' (and corresponding EPL Ga) are applied because of the ratings of the pellistor-type sensor used, Korea New Ceramics Co., KGS 701. This sensor is certified Ex da IIC Ga according to Certificate EPS 17ATEX 1107U.

For model SP-MGT-N, marked Ex ia IIC T4 Ga, the MIPEX-02-1-II-1.1 A infra-red combustibles sensor is certified Ex ia IIC Ga according Certificate ITS 11ATEX 27418U.

The instruments provide IR communications for changing alarm set points, calibration range, display configuration and download of accumulated internal data. The IR communications shall only be used in an area known to be non-hazardous.

The SP-MGT series provide audible, visual, and vibration alarms when measured concentrations of gases approach pre-set alarm values. The LCD display panel on the front of the instrument displays selected functions and sensor readings in real time. The instrument is powered by an integral battery pack containing a single lithium-ion cell. The battery pack circuitry is encapsulated and limits the battery pack output to intrinsically safe levels. The battery pack is rechargeable, but not replaceable by the end-user.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	03 December 2018	R70174445A	The release of the prime certificate.

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

15.1 The equipment shall only be carried, and must not be laid down unattended.

15.2 The equipment shall only be cleaned with a damp cloth.

15.3 If a charge-generating mechanism is present, the exposed metallic part on the enclosure is capable of storing a level of electrostatic charge that could become incendive for IIC gases. Therefore, the user / installer shall implement precautions, for example, those listed above, to prevent the build-up of electrostatic charge. This is particularly important if the equipment is brought into a Zone 0 location.

15.4 The equipment shall only be charged while in the non-hazardous area, using a charger specifically supplied for use with the unit (for example part number ICP12-060-1200D, manufactured by Shenzhen

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Shi Ying Yuan Electronics Co, LTD), approved as SELV or Class 2 equipment against IEC 60950, IEC 61010-1 or an equivalent IEC standard. The maximum voltage and current from the charger shall not exceed 6.3 Vdc plus tolerances and 1.2 A respectively, and shall be further limited by the charging system to Um = 6.3 Vdc. The ambient temperature during charging shall be in the range 0 °C to 45 °C.

15.5 The IR Communications feature of the product shall only be used in a non-hazardous area.

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 Sira 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.

17.3 Each fuse F1 (Littelfuse part number 0466.200) shall be measured by the equipment manufacturer to be a minimum of 0.868Ω, in a maximum measurement ambient of +25°C, before its installation into the equipment. Fuses measuring less than 0.868Ω shall not be used in the equipment.

17.4 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

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Certificate Annexe

Certificate Number: **Sira 18ATEX2059X**

Equipment: **Portable Multi-Gas Detector SP-MGT-N**
Portable Multi-Gas Detector SP-MGT-P

Applicant: **Senko Co., Ltd**

Issue 0

Drawing	Sheets	Rev.	Date	Title
1430MGTB530-400	1 to 1	1.1	31 Mar 17	CIR_Main_Block Diagram
1431MGTB531-400	1 to 2	0.9	31 Mar 17	CIR_Main_Circuit Diagram
1432MGTB532-400	1 to 2	1.0	11 Jan 18	CIR_SENSOR_Circuit Diagram
1433MGTB533-400	1 to 1	0.9	31 Mar 17	CIR_Battery Pack_Circuit Diagram
1434MGTB534-200	1 to 1	0.9	31 Mar 17	PCB_Main_Routing_Top
1435MGTB535-200	1 to 1	0.9	31 Mar 17	PCB_Main_Mask_Top
1436MGTB536-200	1 to 1	0.9	31 Mar 17	PCB_Main_Silk_Top
1437MGTB537-200	1 to 1	0.9	31 Mar 17	PCB_Main_Inner 2
1438MGTB538-200	1 to 1	0.9	31 Mar 17	PCB_Main_Inner 3
1439MGTB539-200	1 to 1	0.9	31 Mar 17	PCB_Main_Routing_Bottom
1440MGTB540-200	1 to 1	0.9	31 Mar 17	PCB_Main_Mask_Bottom
1441MGTB541-200	1 to 1	0.9	31 Mar 17	PCB_Main_Silk_Bottom
1442MGTB542-200	1 to 1	0.9	31 Mar 17	PCB_Main_Drill Drawing
1443MGTB543-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Routing_Top
1444MGTB544-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Mask_Top
1445MGTB545-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Silk_Top
1446MGTB546-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Inner 2
1447MGTB547-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Inner 3
1448MGTB548-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Routing_Bottom
1449MGTB549-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Mask_Bottom
1450MGTB550-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Silk_Bottom
1451MGTB551-200	1 to 1	1.0	11 Jan 18	PCB_Sensor_Drill Drawing
1452MGTB552-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Routing_Top
1453MGTB553-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Mask_Top
1454MGTB554-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Silk_Top
1455MGTB555-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Routing_Bottom
1456MGTB556-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Mask_Bottom
1457MGTB557-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Silk_Bottom
1458MGTB558-200	1 to 1	0.9	31 Mar 17	PCB_Battery Pack_Drill Drawing
1459MGTB559-100	1 to 1	1.1	31 Mar 17	ASS_ ASS'Y MAIN
1460MGTB560-300	1 to 1	1.1	31 Mar 17	DRA_FRONT COVER
1461MGTB561-300	1 to 1	1.1	31 Mar 17	DRA_REAR COVER
1462MGTB562-300	1 to 1	1.1	31 Mar 17	DRA_CALIBRATION CAP
1463MGTB563-300	1 to 1	1.1	31 Mar 17	DRA_LCD BRACKET
1464MGTB564-300	1 to 1	1.1	31 Mar 17	DRA_LCD SHEET BRACKET
1465MGTB565-100	1 to 1	1.1	31 Mar 17	ASS_BATTERY PACK
1466MGTB566-300	1 to 1	1.1	31 Mar 17	DRA_BATTERY PACK CASE
1467MGTB567-300	1 to 1	1.1	31 Mar 17	DRA_BATTERY PACK STICKER
1468MGTB568-100	1 to 1	1.1	31 Mar 17	ASS_CHARGER
1469MGTB569-300	1 to 1	1.1	31 Mar 17	DRA_CHARGER FRONT COVER
1470MGTB570-300	1 to 1	1.1	31 Mar 17	DRA_CHARGER REAR COVER
1471MGTB571-300	1 to 1	1.1	31 Mar 17	DRA_CHARGER CLIP-D
1472MGTB572-300	1 to 1	1.1	31 Mar 17	DRA_EPOXY STICKER
1473MGTB573-300	1 to 1	1.1	31 Mar 17	DRA_LCD PORON TAPE
1474MGTB574-300	1 to 1	1.1	31 Mar 17	DRA_LCD BACKLIGHT SHEET

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Certificate Annexe

Certificate Number: **Sira 18ATEX2059X**

Equipment: **Portable Multi-Gas Detector SP-MGT-N**
Portable Multi-Gas Detector SP-MGT-P

Applicant: **Senko Co., Ltd**

Drawing	Sheets	Rev.	Date	Title
1475MGTB575-300	1 to 1	1.1	31 Mar 17	DRA_POROUS PTFE
1476MGTB576-300	1 to 1	1.1	31 Mar 17	DRA_PACKING RUBBER
1477MGTB577-300	1 to 1	1.1	31 Mar 17	DRA_PACKING RUBBER TAPE
1478MGTB578-300	1 to 1	1.1	31 Mar 17	DRA_PIN
1479MGTB579-300	1 to 1	1.1	31 Mar 17	DRA_M3X3.5 INSERT
1481MGTB581-100	1 to 1	1.1	31 Mar 17	ASS_BELT CLIP
1482MGTB582-300	1 to 1	1.1	31 Mar 17	DRA_BELT CLIP-A
1483MGTB583-300	1 to 1	1.1	31 Mar 17	DRA_BELT CLIP-B
1484MGTB584-300	1 to 1	1.1	31 Mar 17	DRA_BELT CLIP-C
1485MGTB585-300	1 to 1	1.1	31 Mar 17	DRA_BELT CLIP-D
1486MGTB586-100	1 to 1	1.1	31 Mar 17	ASS_MAIN PBA
1487MGTB587-100	1 to 1	1.1	31 Mar 17	ASS_SESOR PBA
1488MGTB588-100	1 to 1	1.1	31 Mar 17	ASS_BATTERY PACK PBA
1489MGTB589-100	1 to 1	1.1	31 Mar 17	ASS_CHARGER SUB PCB
1480MGTB580-300	1 to 1	1.1	31 Mar 17	*DRA_LABEL
1490MGTB590-500	1 to 1	0.9	31 Mar 17	PAR_MAIN PART LIST
1491MGTB591-500	1 to 1	1.0	31 Mar 17	PAR_SENSOR PART LIST
1492MGTB592-500	1 to 1	0.9	31 Mar 17	PAR_BATTERY PACK PART LIST
1493MGTB593-100	1 to 1	0.9	31 Mar 17	ASS_BATTERY CABLE ASSY

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
1494MGTB594-300	1 to 1	1.1	15 Mar 18	DRA_LABEL_ATEX

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IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx CSA 18.0001X**

Certificate history:
Issue 1 (2018-11-13)
Issue 0 (2018-01-29)

Status: **Current**

Issue No: 2

Date of Issue: 2019-10-08

Applicant: **Senko Co., Ltd**
73, Oesammi-ro 15beon-gil, Osan-si, Gyeonggi-do, 18111, Korea
Korea, Republic of

Equipment: **Multi-gas detectors models SP-MGT-N and SP-MGT-P**

Optional accessory:

Type of Protection: **Ex da, Ex ia**

Marking: Ex ia IIC T4 Ga (SP-MGT-N)

Ex da ia IIC T4 Ga (SP-MGT-P)

Approved for issue on behalf of the IECEx Certification Body: **Dorin Stochitoiu**

Position: **Technical Advisor**

Signature:
(for printed version)

Date:

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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Toronto, Ontario M9W IR3
Canada

IECEx Certificate of Conformity

Certificate No.: **IECEx CSA 18.0001X**

Date of issue: 2019-10-08 Issue No: 2

Manufacturer: **Senko Co., Ltd**
73, Oesammi-ro 15beon-gil, Osan-si, Gyeonggi-do, 18111, Korea
Korea, Republic of

Additional manufacturing locations:

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 equipment 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 60079-1:2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11:2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26:2014-10 Edition:3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

This Certificate **does not** indicate compliance with 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 Reports:

CA/CSA/ExTR18.0002/00 CA/CSA/ExTR18.0002/01 CA/CSA/ExTR18.0002/02

Quality Assessment Report:

KR/KTL/QAR14.0003/03

IECEx Certificate of Conformity

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

The SP-MGT series are portable, hand-held, multi-gas detectors, designed to continuously monitor and detect oxygen, carbon monoxide, hydrogen sulphide, and combustible hydrocarbons. The equipment has not been evaluated to the requirements of the IEC 60079-29 series of standards, therefore, “LEL” and “combustible gas detector performance” are not the subject of this test report. The instrument samples the atmosphere in diffusion mode using an O_2 and a dual CO/H_2S electrochemical sensors. Combustible hydrocarbons are detected through the use of one of two available sensors, which define the model nomenclature and Ex marking of the equipment as follows:

Model SP-MGT-N marked Ex ia IIC T4 Ga (when using combustibles sensor MIPEX-02-1-II-1.1 A) Model SP-MGT-P marked Ex da ia IIC T4 Ga (when using combustibles sensor KGS 701)

The instruments provide IR communications for changing alarm set points, calibration range, display configuration and download of accumulated internal data. The IR communications shall only be used in an area known to be non-hazardous.

The SP-MGT series provide audible, visual, and vibration alarms when measured concentrations of gases approach pre-set alarm values. The LCD display panel on the front of the instrument displays selected functions and sensor readings in real time. The instrument is powered by an integral battery pack containing a single lithium-ion cell. The battery pack circuitry is encapsulated and limits the battery pack output to intrinsically safe levels. The battery pack is rechargeable, but not replaceable by the end-user.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The equipment shall be carried at the body while in the hazardous location, and must not be laid down unattended.
2. The equipment shall only be cleaned with a damp cloth.
3. If a charge-generating mechanism is present, the exposed metallic part on the enclosure is capable of storing a level of electrostatic charge that could become incendive for IIC gases. Therefore, the user / installer shall implement precautions, for example, those listed above, to prevent the build-up of electrostatic charge. This is particularly important if the equipment is brought into a Zone 0 location.
4. The equipment shall only be charged while in the non-hazardous area, using a charger specifically supplied for use with the unit (for example part number ICP12-060-1200D, manufactured by Shenzhen Shi Ying Yuan Electronics Co, LTD), approved as SELV or Class 2 equipment against IEC 60950, IEC 61010-1 or an equivalent IEC standard. The maximum voltage and current from the charger shall not exceed 6.3 Vdc plus tolerances and 1.2 A respectively, and shall be further limited by the charging system to U_m = 6.3 Vdc. The ambient temperature during charging shall be in the range 0 °C to 45 °C.
5. The IR Communications feature of the product shall only be used in a non-hazardous area.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1: Covers changes to the equipment and changes and corrections to the original report.

Issue 2: Assessment of the equipment to the additional requirements of IEC 60079-26:2014 Edition 3.