Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

IA CERTIFICATE	MASC S/21-8016X	**Issue**	1
Issue Date	04 December 2023	**Expiry Date**	01 March 2026
**** Based on Certificate No**	IECEx BAS 13.0015X	**Issue / Variations / Amendment**	7
Requested by	MSA – The Safety Company 1000 Cranberry Woods Township, PA 16066 United States of America		
Manufacturer	Senscient Limited F1, Area Business Centre, Holy Rood Close Poole, Dorset, BH17 7FJ, United Kingdom		
Description	The ELDS Transmitter and Receiver Units are rated at 24V d.c. (labelled from 18V to 32V) with a maximum power dissipation of 12 watts for the Tx and 10W for Rx. Both units comprise a cylindrical enclosure manufactured in stainless steel with the transmitter unit being significantly longer than the receiver. The enclosure front cover includes a glass lens and is secured by 8 off M5 x 16 socket head cap screws of stainless-steel grade A4-70. The rear of the unit is closed by a circular threaded cover. The interior of the enclosures are effectively divided into two compartments, the largest of which houses an assembly of electronic, mechanical and optical devices to the form a transmitter or receiver unit dependant on the internal component configuration. See **Base certificate for full description.		
Equipment	ELDS Open Path Gas Detector System		
MARKING: **Original marking as per certificate ** remains applicable.** **IA number must be added.**	**Type:** **Ex Marking:** **IA Number:** **Warnings:**	ELDS Open Path Gas Detector System Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/67 Tamb -40°C to +60°C MASC S/21-8016X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
Quality Assurance report (QAR) / Notification (QAN):	GB/FME/QAR14.0002/08		

Compliance:

The equipment as described above has been allocated the rating Explosion Protected 'as above' utilizing the SANS/IEC Standards:

- SANS (IEC) 60079-0: 2019 Equipment - General requirements
- SANS (IEC) 60079-1: 2015 Equipment protection by flameproof enclosures "d"
- SANS (IEC) 60079-31: 2014 Equipment dust ignition protection by enclosure "t"

Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.

Special conditions of safe use "X":

- Refer to Annex A below for more details.

Conditions of manufacture:

- Refer to Annex A below for more details.

C. WELTHAGEN
TECHNICAL SPECIALIST

N. VILOJEN
TECHNICAL OFFICER

This certificate covers all units sold as long as the QAR/QAN remains valid.
According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:
SANS 10086 requirements;
Any conditions mentioned in the above certificate;
Any relevant requirements of the MHS Act;
Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

Mining And Surface Certification (Pty) Ltd
Unit 5 Lelyta Park, 45 Jurg Avenue, Hennopspark, Ext 87
Centurion 0157

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx BAS 13.0015X.	
Description (According to Base Certificate) **	
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."	
Standard compliance	See Base Certificate ******
Issue	Issue 1: Supplemented for QAR review as per ARP 0108.
Special conditions of safe use ("X")	• The Transmitter and Receiver units are to be mounted horizontally and protected from impact. • Other than the rear cover providing access to the terminals for connection purposes this unit is not intended to be opened in service and is to be returned to the manufacturer for service or repair. • The window holder fasteners are stainless steel grade A4-70.
Conditions of manufacture	• None.
Conditions of Certification	• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. • The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex-quality assurance notification/report for the equipment must remain valid.
Conclusion:	• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **. • The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).

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 BAS 13.0015X**

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Certificate history:

Issue 6 (2019-05-14)
Issue 5 (2019-03-25)
Issue 4 (2017-11-24)
Issue 3 (2016-09-28)
Issue 2 (2015-12-03)
Issue 1 (2014-09-05)
Issue 0 (2013-08-27)

Status: **Current**

Issue No: 7

Date of Issue: 2021-08-23

Applicant: **Senscient Limited**
F1, Area Business Centre
Holy Rood Close
Poole
Dorset
BH17 7FJ
United Kingdom

Equipment: **ELDS Open Path Gas Detector System**

Optional accessory:

Type of Protection: **Flameproof and Dust Protection by Enclosure**

Marking: **Ex db IIC T5 Gb**
Ex tb IIIC T100°C Db IP66/67
Tamb -40°C to +60°C

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **Technical Manager**

Signature:
(for printed version)

Date:
(for printed version)

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx BAS 13.0015X**

Date of issue: 2021-08-23 Issue No: 7

Manufacturer: **Senscient Limited**
F1, Area Business Centre
Holy Rood Close
Poole
Dorset
BH17 7FJ
United Kingdom

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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:

GB/BAS/ExTR13.0023/00
GB/BAS/ExTR14.0246/00
GB/BAS/ExTR15.0246/00
GB/BAS/ExTR17.0324/00
GB/BAS/ExTR18.0117/00
GB/BAS/ExTR19.0121/00
GB/BAS/ExTR21.0057/00

Quality Assessment Report:

GB/FME/QAR14.0002/06

IECEx Certificate of Conformity

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

The ELDS Transmitter and Receiver Units are rated at 24V d.c. (labelled from 18V to 32V) with a maximum power dissipation of 12 watts for the Tx and 10W for Rx.

Both units comprise a cylindrical enclosure manufactured in stainless steel with the transmitter unit being significantly longer than the receiver. The enclosure front cover includes a glass lens and is secured by 8 off M5 x 16 socket head cap screws of stainless steel grade A4-70. The rear of the unit is closed by a circular threaded cover.

The interior of the enclosures are effectively divided into two compartments, the largest of which houses an assembly of electronic, mechanical and optical devices to the form a transmitter or receiver unit dependant on the internal component configuration.

The transmitter unit contains an optical assembly, including a laser diode assembly, several control printed circuit boards (PCBs) and a small sealed sample of a calibration gas. A window heater is affixed to the internal window surface. The transmitter also incorporates a small brushless motor which drives a flat diffuser disc to aid optical performance.

The receiver unit contains an optical receiver assembly, a window heater and several signal processing printed circuit boards (PCBs).

An anti-tamper bar is fitted to each enclosure with a socket head cap screw securing the rear cover. This bar is fitted with a mounting boss, mounting facilities may be provided in the front cover via an adaptor ring.

An internal earthing point is provided adjacent to the supply terminals and external earth connection facilities are also provided.

The rear sections of the transmitter and receiver housings both incorporate connection facilities for the supply and signal cables and are provided with an M25 female thread in the side wall to accommodate a suitable cable entry device.

SPECIFIC CONDITIONS OF USE: YES as shown below:
1. The Transmitter and Receiver units are to be mounted horizontally and protected from impact.

2. Other than the rear cover providing access to the terminals for connection purposes this unit is not intended to be opened in service and is to be returned to the manufacturer for service or repair.

3. The window holder fasteners are stainless steel grade A4-70.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 7.1

Minor drawing change.

ExTR: **GB/BAS/ExTR21.0057/00**	File Reference: **21/0213**