



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 SIR 20.0022X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-09-17

Applicant: **Blackline Safety**
Unit 100, 803 24 Avenue SE
Calgary
Alberta T2G 1P5
Canada

Equipment: **G7 EXO model numbers G7EXO-AZ2, G7EXO-EU2, G7EXO-NA2**

Optional accessory:

Type of Protection: **Intrinsically Safe ia**

Marking: Ex ia IIC T3 Ga
Ta = -20°C to +50°C

Approved for issue on behalf of the IECEx
Certification Body:

Neil Jones

Position:

Certification Manager

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:

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





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Certificate No.: **IECEX SIR 20.0022X**

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Manufacturer: **Blackline Safety**
Unit 100, 803 24 Avenue SE
Calgary
Alberta T2G 1P5
Canada

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 60079-0:2017 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 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/ExTR20.0172/00](#)

Quality Assessment Report:

[CA/CSA/QAR16.0006/03](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Transportable long-term area gas monitor instrument G7 EXO Models G7EXO-AZ2, G7EXO-EU2 and G7EXO-NA are 3 models of multi-gas monitor which continuously monitor toxic and combustible gas concentrations using a variety of sensors types using various measuring principles. The G7 EXO Models are equipped with integrated cellular modules supporting several forms of connectivity. The G7 EXO Models are intended for automated long-term area gas monitor.

Refer to the Annexe for additional information including safety parameters

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The enclosure is manufactured from Aluminium, magnesium, titanium or zirconium which may be used at the accessible surface of the equipment. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered when the EXO is being installed in Zone 0 locations for group II level of protection Ga.

Annex:

[IECEx SIR 20.0022X Issue 0 Annexe.pdf](#)

Annexe to: IECEx SIR 20.0022X Issue 0
 Applicant: Blackline Safety
 Apparatus: G7 EXO model numbers G7EXO-AZ2,
 G7EXO-EU2, G7EXO-NA2



The models G7EXO-AZ2, G7EXO-EU2 and G7EXO-NA share the same enclosure and firmware. Besides the different model designation on the nameplates, the differences between the models G7EXO-AZ2, G7EXO-EU2 and G7EXO-NA follow:

Country Dependent Cell Radio Modules

G7EXO-NA2:

MOD300 (cellular):

LTE: Band 12 (700 MHz), Band 5 (850 MHz), Band 4 (1700 MHz), Band 2 (1900 MHz)
 3G: Band 5 (850 MHz), Band 2 (1900 MHz)

G7EXO-EU2:

MOD300 (cellular):

LTE: Band 20 (800 MHz), Band 3 (1800 MHz), Band 7 (2600 MHz),
 2G: E-GSM 900 MHz, DCS 1800 MHz

G7EXO-AZ2:

MOD300 (cellular):

LTE: Band 28 (700 MHz), Band 8 (900 MHz), Band 3 (1800 MHz)
 3G: Band 1 (2100 MHz)

All models also contain the following communications modules on the main board (EXO Main):

U400: receive only radio module, no transmission capabilities
 U501: 2.4GHz BT/BLE/WiFi

The housing is constructed of Aluminum (ANSI 380.0-F). The front of the monitor has an LCD Display, with buttons to change menu items. There is also an Alarm Reset switch. All models are powered by a rechargeable Lithium polymer battery. The Lithium polymer battery must be replaced and charged outside the hazardous area.

Product overview:

Input Entity Parameters, Group IIC (Zone 0):

Parameters	EXO – Input Power Port for Solar Panel Input / Trickle Charger gas application
Terminals	External Side Connector Pin 1 – Input Power Pin 2 – GND Pin 3 – Debug Port Pin 4 – Debug Port
Voltage U_i	18Vdc
Current I_i	500mA
Power P_i	5.3W
Effective internal capacitance C_i	0nF
Effective internal inductance L_i	12.48uH

Annexe to: IECEx SIR 20.0022X Issue 0
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 G7EXO-EU2, G7EXO-NA2



Output Entity Parameters, Group IIC (Zone 0):

Parameters	EXO – Relay Outputs 1 & 2 gas application
Terminals	External Side Connector Pin 1 – Input for Low Side Switch Pin 2 – GND Pin 3 – Output(20V) Pin 4 – Output(5V)
Pin 1 Input Entity Parameters	
Voltage U_i	24VDC
Current I_i	3.33A
Power P_i	1.25W
Effective internal capacitance C_i	0 μ F
Effective internal inductance L_i	0H
Pin 3 Entity Parameters	
U_o	20.76VDC
I_o	268mA
P_o	1.39W
C_o	0.194 μ F
R_o	77.46 Ω
L_o	495 μ H
L_o/R_o	6.39 μ H/ Ω
Pin 4 Entity Parameters	
U_o	4.94VDC
I_o	0.108A
P_o	97mW
C_o	100 μ F
U_o/I_o	33.25 Ω
L_o	3.05 μ H
L_o/R_o	91.7 μ H/ Ω

Conditions of Manufacture

1. In accordance with IEC 60079-11:2011 clause 10.3, each manufactured sample of the equipment shall be subjected to an electric strength test using a test voltage of 500 Vac applied between all Relay1/Relay2 terminals and the enclosure for 60 seconds. Alternatively, a voltage of 20% higher may be applied for 1s. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.