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 CML 22.0090X**

Certificate history:
Issue 0 (2023-05-19)

Status: **Current**

Issue No: 1

Date of Issue: 2024-02-09

Applicant: **ANALYTICAL INDUSTRIES Inc.**
2855 Metropolitan Place, Pomona
CA 1767
USA
United States of America

Equipment: **Portable Gas Analyzer, Online Gas Analyzer and Loop Powered Gas Analyzer**

Optional accessory:

Type of Protection: **Flameproof Ex "d" and Intrinsic Safety Ex "ia"**

Marking:

Portable Gas Analyser	Online Gas Analyser	Loop Powered Gas Analyzer
Ex ia IIC T4 Ga Ta= -20°C to +50°C	Ex db ia IIC T4 Gb *Ex db ia IIB+H2 T4 Gb Ta= -20°C to +50°C	Ex ia IIC T4 Ga Ta= -20°C to +50°C

*This marking is to be used when the Type FA/BR Range of Flame Arrestors and Breathers are used due to the limitation of only being suitable for IIB+H2 and not IIC.

Approved for issue on behalf of the IECEx Certification Body: **L A Brisk**

Position: **Assistant Certification Manager**

Signature: (for printed version)

Date: (for printed version) 09 Feb 2024

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.
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Certificate issued by:

Eurofins E&E CML Limited
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New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

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Manufacturer: **ANALYTICAL INDUSTRIES Inc.**
2855 Metropolitan Place, Pomona
CA 1767
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Manufacturing locations: **ANALYTICAL INDUSTRIES Inc.**
2855 Metropolitan Place, Pomona
CA 1767
USA
United States of America

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 60079-11:2011 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 Reports:

GB/CML/ExTR22.0229/00 GB/CML/ExTR22.0229/01

Quality Assessment Report:

GB/CML/QAR23.0005/00

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

Portable Gas Analyzer (Models GPR-1000, GPR-1100, GPR-1200, GPR-1200 MS2, GPR-2000, GPR-7100)

Online Gas Analyzer (Models GPR-1500, GPR-1800, GPR-2500, GPR-2800 and GPR-7500 followed by AIS or IS, may be followed by -LD)

Loop Powered Gas Analyzer (Models GPR-1500, GPR-2500)

See Annex for full descriptions and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See Annex for Specific Conditions of Use.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1
This issue introduces the following changes:

1. Correction to marking due to Type FA/BR Range of Flame Arrestors and Breathers Drain limitations
2. Correction to typographical errors

Annex:

IECEx 22.0090X Iss. 1 Certificate Annex_1.pdf

Annexe to:	**IECEx CML 22.0090X Issue 1**
Applicant:	**Analytical Industries Inc**
Apparatus:	**Portable Gas Analyzer, Online Gas Analyzer and Loop Powered Gas Analyzer**

Description

Portable Gas Analyzer

The Portable Gas Analyzer type is housed within an aluminium enclosure. The Portable Gas Analyzer (Models GPR-1000, GPR-1100, GPR-1200, GPR-1200 MS2, GPR-2000, GPR-7100) is for mobile measurements of either Oxygen or H2S.

The Portable Gas Analyzer is battery powered by a lead acid battery. It has a connection for a suitable SD card which is changed in the safe area. It has a recharging port for the battery, to be used in the safe area only. There is a 0-1V Analogue connection port which can be supplied via a safety barrier which has the following parameters:

0 – 1V Analogue Port J5
Ui = Um* = 28 V

Uo = 4.6V
Io = 2mA
Po = 2mW
Ci = 12 nF
Co = 71nF

The Battery Charger connection
Um = 9.45 V

Note * when connected to the Analogue port in the safe area, refer to the Special condition of use.
One of the following sensors can be connected to the Portable Gas analyzer:

The key difference between the models is that they can have a single sensor connected from the table below, there are also different sensitivity setting of sensor which will not affect the certification.

Oxygen Sensor	H2S Sensors
GPR-11-32-4	OSV-72-7H
GPR-11-60-4	OSV-72-7HH
GPR-12-100-M	
GPR-12-333	
GPR-12-333-H	
GPR-12-2000-MS2	
XLT-11-24-4	
XLT-12-100-M	
XLT-12-333	

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Online Gas Analyzer

The Online Gas Analyzer type circuitry is housed within an aluminium enclosure and suitably certified flameproof enclosures. The Online Gas Analyzer (Models GPR-1500, GPR-1800, GPR-2500, GPR-2800 and GPR-7500 followed by AIS or IS, may be followed by -LD) is for stationary measurements. The Online Gas Analyzers are used for a fixed installation.

The Online Gas Analyzer is powered from a safety interface housed in a flameproof enclosure, with the following parameters.

Um = 250 V

The key difference between the models is that they can have a single sensor connected from the table below, there are also different sensitivity settings of sensor which will not affect the certification. There are also different variations of power below that of the Um of 250 V.

Oxygen Sensor	H2S Sensors
GPR-11-32	OSV-72-7H
GPR-11-60	OSV-72-7H-LD
GPR-12-333	OSV-72-7HH
GPR-12-333-H	OSV-72-7HH-LD
XLT-11-24	
XLT-12-333	
XLT-12-333-LD	

Component	**Certificate Numbers**	**Standards Applied**	**Differences Considered**
Enclosure Adalet	DEMKO 07 ATEX 0622294 U IECEx UL 08.0005 U	IEC 60079-0:2017 EN 60079-0:2012+A11:2013 IEC 60079-1:2014-06 EN 60079-1:2014 IEC 60079-31:2013 EN 60079-31:2014	None

Component	Certificate Numbers	Standards Applied	Differences Considered
Reducer Eaton	ITS 16ATEX 101339 X IECEx ITS 16.0013X	IEC 60079-0:2011 EN 60079-0:2012+A11:2013 IEC 60079-1:2014-06 EN 60079-1:2014 IEC 60079-31:2013 EN 60079-31:2014 IEC 60079-7:2015 EN 60079-7:2015 +A1:2018	Non applicable
Sealing Fitting Cortem	CESI 03 ATEX085 X IECEx CES 14.0019X	IEC 60079-0:2011 EN 60079-0:2012+A11:2013 IEC 60079-1:2007-04 EN 60079-1:2014 IEC 60079-31:2008 EN 60079-31:2014	Non applicable
Adaptor Eaton	ITS 16ATEX101336X IECEx ITS 16.0011X	IEC 60079-0:2011 EN 60079-0:2012+A11:2013 IEC 60079-1:2014-06 EN 60079-1:2014 IEC 60079-31:2013 EN 60079-31:2014 IEC 60079-7:2015 EN 60079-7:2015	Non applicable
Flame Arrestor Michell Instruments	CML 20ATEX1302U IECEx CML 20.0168U	IEC 60079-0:2017 EN IEC 60079-0:2018 IEC 60079-1:2014-06 EN 60079-1:2014 IEC 60079-31:2013 EN 60079-31:2014	None

Loop Gas Analyzers

The Loop-powered Gas Analyzer (GPR-1500, GPR-2500) circuitry is housed within an aluminium enclosure. Loop-powered Gas Analyzer are used for a fixed installation.

The Loop-powered Gas Analyzer is powered from an intrinsically safe barrier with the following parameters:

Ui = 28 V
Ii = 93 mA

The key difference between the models is that they can have a single sensor connected from the table below, there are also different sensitivity settings of the sensor which will not affect the certification.

Oxygen Sensor
GPR-11-32-4
GPR-11-60-4
GPR-12-333
GPR-12-333-H
XLT-12-333
XLT-11-24-4

Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

Portable Gas Analyzer

i. All versions of the enclosure are manufactured from Aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.

ii. When located in a hazardous area, the Portable Gas Analyzer 0-1 V analogue port shall only be connected to a suitably certified intrinsically safe connection with Uo equal to or less than the Ui of the port (28VDC). For example, this can be achieved by connecting to a diode safety barrier located in the non-hazardous area

iii. When located in a non-hazardous area, the Portable Gas Analyzer 0-1 V analogue port shall either be connected to a suitably certified intrinsically safe connection as per ii above, or to non-intrinsically safe equipment that has a maximum output voltage less than or equal to the Um of the port (28VDC) and which complies with one of the following:

- Is a SELV or PELV system
- A safety isolating transformer complying with the requirements of IEC 61558-2-6 or technically equivalent standard
- Apparatus complying with the IEC60950 series, IEC61010-1, or a technically equivalent standard

Fed directly from cells or batteries

Online Gas Analyzer

i. All versions of the enclosure are manufactured from Aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.

ii. The Online Gas Analyzers have non-metallic parts incorporated in the enclosure of this equipment which may generate an ignition-capable level of electrostatic charge, under certain extreme circumstances. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

iii. The Online Gas Analyzer is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This shall be taken into account when installing the equipment.

Loop Gas Analyzer

i. All versions of the enclosure are manufactured from Aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.

ii. The Loop-powered Gas Analyzers have non-metallic parts incorporated in the enclosure of this equipment which may generate an ignition-capable level of electrostatic charge, under certain extreme circumstances. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

iii. The Online Gas Analyzer is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This shall be taken into account when installing the equipment.