



# 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](http://www.iecex.com)

Certificate No.:	<b>IECEx BVS 20.0039X</b>	Page 1 of 5	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 2	Issue 1 (2022-02-21) Issue 0 (2020-07-14)
Date of Issue:	2023-06-05		
Applicant:	<b>ABB AG</b> Stierstädter Strasse 5 60488 Frankfurt Germany		
Equipment:	<b>Gas analyzer type AO2040-Fidas24 Ex</b>		
Optional accessory:			
Type of Protection:	<b>Intrinsic safety "i"; Pressurized enclosure "p"</b>		
Marking:	Ex pxb ib IIC T3 Gb Ex pxb ib [ib] IIIC T195 °C Db or Ex pxb ib IIC T3 Gc Ex pxb ib [ib] IIIC T195 °C Dc		

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr Franz Eickhoff**

Position:

**Senior Lead Auditor, Certification Manager and officially  
recognised expert**

Signature:  
(for printed version)

  
2023-06-05

Date:  
(for printed version)

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Certificate issued by:

**DEKRA Testing and Certification GmbH**  
Certification Body  
Dinnendahlstrasse 9  
44809 Bochum  
Germany





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Manufacturer: **ABB AG**  
Stierstädter Strasse 5  
60488 Frankfurt  
**Germany**

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

[IEC 60079-2:2014](#) Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"  
Edition:6

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:

[DE/BVS/ExTR20.0042/02](#)

Quality Assessment Report:

[DE/BVS/QAR09.0006/12](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

### Subject and Type

Gas analyzer type AO2040-Fidas24 Ex 24041-xxxx<sup>1)</sup>

1) 1 – EPL Gb

2/3 – EPL Gc

7 – EPL Db

8 – EPL Dc

### Description

The gas analyser type AO2040-Fidas24 Ex is used for continuous measurement of hydrocarbon concentration.

The gas analyser type AO2040-Fidas24 Ex consist of a base enclosure with mounted terminal box in type of protection pressurized enclosure "p". The enclosure front door is equipped with operating- and display unit (LP-display, LED display and keyboard foil) in type of protection intrinsically safety "i".

If the gas analyser is used in areas with EPL Db/Dc, a separately key switch is used for the technical release by the user according to the cleaning requirements of the equipment.

Additionally, a monitoring unit for controlling of the analyser system, different electrical equipment (terminals and power supply) and an analyser module are installed inside of the enclosure.

Measuring gas will be burned in measuring block which is supplied by burn air and burn gas (H<sub>2</sub>) for the determination of the hydrocarbon concentration.

The measuring block is equipped with two reversible temperature limiters. If one limiter switch off the heating circle will be switched off. For the reset of those temperature limiters, the system has to be powered off manually.

For the monitoring and control of the pressurized enclosure a separately certified purge unit F870S (IECEx BVS 10.0095) is used.

### Parameters

#### Electrical parameters

Rated voltage AC 115 V / 230 V ± 10 % (50 / 60 Hz ± 3 Hz)

Rated power 242 VA

Ambient temperature range +5 °C ... +45 °C

Maximum input voltage U<sub>m</sub> AC 253 V

Intrinsically safe parameters (output circuits (key switch) level of protection Ex ib (EPL Db IECEx BVS 10.0095 Pressurization system type F870S)):

Voltage U<sub>0</sub> DC 5.4 V

Current I<sub>0</sub> 6.2 mA

Power P<sub>0</sub> 8.3 mW

Max. external inductance L<sub>0</sub> 0.5 mH

Max. external capacitance C<sub>0</sub> 100 nF



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## Pneumatic parameters

Protective gas supply	$p_e = 4000 \pm 500$ hPa (air)
Purge time	$\geq 250$ s
Flow rate during pre-purge	1 l/s
Flow rate during normal operation	1080 l/h
Min./max. Overpressure	0.8 ... 15 hPa
Containment System	$p_e = 1200 \pm 100$ hPa (max. pressure $H_2$ ) 10 l/h (Flow rate $H_2$ )

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. The analysis of explosive gas mixture is not permitted.
2. The analysis of gas mixture is only allowed for a pressure limit up to 1100 hPa.
3. For the necessary shutdown of the gas analyser by default of the pressurized enclosure, a separately certified cut-off relay has to be used (only for EPL Gb / Db).
4. The measurement function for the explosion protection is not part of this examination.
5. The intrinsically safe circuit is connected to earth. Along the intrinsically safe circuit, potential equalization must exist.
6. The analyzer is capable of discharging the exhaust gas against an outlet pressure of 1250 hPa only for the process gas outlet part ( see operation manual for details).



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Alternative burn gas pipe material
- Inrush current limiter and temperature fuse added
- Alternative gasket for magnetic block and between distribution block and isolating plate
- Clarification of test report