



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 IBE 20.0015X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2021-05-21

Applicant: **FLEXIM Flexible Industriemesstechnik GmbH**
Boxberger Straße 4
12681 Berlin
Germany

Equipment: **Ultrasonic Flowmeter 831-Abc**

Optional accessory:

Type of Protection: **db eb ia tb**

Marking:

831-ANN	Ex db eb IIC T6 Gb	Ex tb IIIC T100 °C Db
831-AA1	Ex db eb ia IIC T6 Gb	Ex tb ia IIIC T100°C Db
831-AA2	Ex db eb ia [ia] IIC T6 Gb	Ex tb ia [ia] IIIC T100°C Db
831-AA3	Ex db eb [ia] IIC T6 Gb	Ex tb [ia] IIIC T100°C Db

Approved for issue on behalf of the IECEx
Certification Body:

Kai Willamowski

Position:

Head of department Certification Body

Signature:
(for printed version)

Date:

21.05.2021

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:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany





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Manufacturer: **FLEXIM Flexible Industriemesstechnik GmbH**
Boxberger Straße 4
12681 Berlin
Germany

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 60079-1:2014-06 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

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

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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/IBE/ExTR20.0023/00](#)

Quality Assessment Report:

[DE/IBE/QAR11.0003/06](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The ultrasonic transmitter type 831-Abc is designed to measure the flow velocity of mediums (gases or liquids) in pipes. It consists of a flameproof enclosure with electronics unit and Ex-e connection compartment as well as another Ex-e connection enclosure for connecting the separately certified ultrasonic sensors. For type 831-AAc, several signal inputs and signal outputs are designed in the type of protection Ex ia.

For group IIIC, protection is provided by the type of protection Ex tb.

Technical data:

- Ambient temperature range: -40 °C up to +60 °C
- Supply voltage (type 831-ANN): 100...230 V AC, 11...16 V DC, 20...32 V DC
- Supply voltage (type 831-AAc): 11...16 V DC, 20...32 V DC
- Power supply: 15 W

More details see Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The ultrasonic measuring instrument Type 831-Abc can be used in an extended ambient temperature range from -40 °C to +60 °C.
- Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 2 and 3 of IEC 60079-1.

Annex:

[Annex IECEXIBE20_0015X_1.pdf](#)



IECEx Certificate of Conformity - Annex



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Signal Outputs type of protection Ex eb (type 831-ANN):

- Current active and passive
- Frequency
- Pulse
- Binary

Signal Inputs type of protection Ex eb (type 831-ANN):

- Current active and passive
- Temperature

Communication interfaces type of protection Ex eb (type 831-ANN):

- BACnet MS/TP
- Modbus RTU
- HART
- RS485
- Profibus PA
- Foundation Fieldbus
- M-Bus
- USB (only for use outside explosive atmospheres)

Signal Outputs type of protection Ex ia (types 831-AA1 and 831-AA2):

- Current passive
- Pulse
- Binary
- Frequency, all:
 - o $U_m = 120 \text{ V}$
 - o $L_i = 50 \text{ nH}$
 - o $C_i = 1 \text{ nF}$

		or	or	or
U_i	27 V	28 V	29 V	30 V
I_i	115 mA	107 mA	100 mA	93 mA
P_i	776 mW	749 mW	725 mW	698 mW

Signal Inputs type of protection Ex ia (types 831-AA2 and 831-AA3):

- Current
 - o $U_m = 120 \text{ V}$
 - o $U_o = 29.2 \text{ V}$
 - o $I_o = 88 \text{ mA}$
 - o $P_o = 640 \text{ mW}$
 - o $C_o = 73 \text{ nF}$
 - o $L_o = 4.1 \text{ mH}$
- Temperature
 - o $U_m = 120 \text{ V}$
 - o $U_o = 9.2 \text{ V}$
 - o $I_o = 25 \text{ mA}$
 - o $P_o = 57 \text{ mW}$
 - o $C_o = 4283 \text{ nF}$

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- $L_o = 57 \text{ mH}$

Signal Communication interfaces type of protection Ex ia (types 831-AA1 and 831-AA2):

- Foundation Fieldbus
- Profibus PA, all:
 - $U_m = 120 \text{ V}$
 - $L_i = \text{negligibly low}$
 - $C_i = \text{negligibly low}$

Group	IIC	IIB
U_i	24 V	17.5 V
I_i	250 mA	380 mA
P_i	1500 mW	1663 mW

or

FISCO

- HART:
 - $U_m = 120 \text{ V}$
 - $L_i = 50 \text{ nH}$
 - $C_i = 1 \text{ nF}$

		or	or	or
U_i	27 V	28 V	29 V	30 V
I_i	115 mA	107 mA	100 mA	93 mA
P_i	776 mW	749 mW	725 mW	698 mW