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Type Examination Certificate

for Electrical Equipment used in Potentially Explosive Atmosphere

Issued by Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK	
Applicant	FLEXIM Flexible Industriemesstechnik GmbH Boxberger Str. 4, 12681 Berlin, Germany
Manufacturer name	FLEXIM Flexible Industriemesstechnik GmbH Boxberger Str. 4, 12681 Berlin, Germany
Product name	Ultrasonic Flowmeter
Type/model code	831-ANN, 831-AA1, 831-AA2, 831-AA3
Type of protection	Intrinsic safety, Flameproof, Increased safety, Dust protection by enclosure
Group, Temperature Class and EPL	IIC, T6, Gb IIIC, T100°C, Db
The equipment shall be marked with the following	See attachment 1
Ratings	See attachment 2
Special condition for safe use	Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer.
Certificate number	CML 21JPN11387X
Term of validity	From 08-03-2022 to 07-03-2025 

This is to certify that the equipment specified above complies with the requirements stipulated in Ordinance on Examination of Machines and Other Equipment of the Ministry of Health, Labour and Welfare, Japan.

Issue date: 08-03-2022

Signature of chief examiner:



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Issue: 0

Attachment 1: 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

Attachment 2: Ratings

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-AA1, 831-AA2, 831-AA3):	11...16 V DC, 20...32 V DC
Power supply:	15 W

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 $U_m = 120 V$
 - o $L_i = 50 nH$
 - o $C_i = 1 nF$



		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 $C_o = 4283\text{ nF}$
 - o $L_o = 57\text{ mH}$

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

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

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

Or

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- HART:
 - o $U_m = 120\text{ V}$



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Issue: 0

- $L_i = 50 \text{ nH}$
- $C_i = 1 \text{ nF}$

		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