Translation

1 # EU-Type Examination Certificate

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 19 ATEX E 027 X**

4 Product: **Mass flow sensor type TA series**

5 Manufacturer: **Micro Motion Inc.**

6 Address: **7070 Winchester Circle, Boulder, Co. 80301, United States of America**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 19.2075 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-11:2012	**Intrinsic Safety "i"**
EN 60079-26:2015	**Equipment with equipment protection level (EPL) Ga**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

 **II 1/2G Ex ib IIC T6...T3 Ga/Gb** See table section 15 for details

DEKRA Testing and Certification GmbH
Bochum, 2019-06-05

Signed: Jörg-Timm Kilisch

Managing Director

DAkkS Deutsche Akkreditierungsstelle D-ZE-17438-02-00

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 19 ATEX E 027 X

15 **Product description**

15.1 **Subject and type**

Mass flow sensor
TA**********Z*****

a b c d e f g h i j k l m n o p

a b c d **Marking without influence to type of protection**
- Not relevant

e f g h **Marking without influence to type of protection**
- Not relevant

i **Letter for electronic interface**
R 9-wire polyurethane painted aluminium-box
H 9-wire extended mount polyurethane painted aluminium

j **Marking without influence to type of protection**
- Not relevant

k **Approval**
Z ATEX

l m n o p **Marking without influence to type of protection**
Not relevant

15.2 **Description**

The TA series sensors are used for flow measurement in combination with a Micro Motion Transmitter type 5700 (C,P)(2,3,5)(A,C,E,N,D)*(IA,EA)*** approved under BVS 14 ATEX E 132 X. The mass flow sensors consisting of magnetically excited oscillating tubes, contains as electrical components, coils, resistors, temperature sensors and terminals and connectors.

- When used with a non-extended mount, the variation gets the denomination **TA********R*Z*****
- When used with an extended mount, the variation gets the denomination **TA********H*Z*****

15.3 **Parameters**

15.3.1 Electrical parameters

15.3.1.1 Exciter circuit

For exciter circuit type EC1R (terminals 8 - 9)

Voltage	U_i	30	V
Current	I_i	90	mA
Power	P_i	0.4	W
Effective internal capacitance	C_i	negligible	
Effective internal inductance	L_i	4.38	mH

For exciter circuit type EC2R (terminals 8 - 9)
For the connection of an intrinsically safe circuit type of protection Ex ib IIC with linear output characteristic and the following max. values:

Voltage	U_o	30	V
Current	I_o	90	mA
Power	P_o	0.8	W

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15.3.1.2 Sensor circuit (terminals 1 - 2 and 3 - 4)

Voltage	U_i	DC	30	V
Current	I_i		50	mA
Power	P_i		0.3	W
Effective internal capacitance	C_i	negligible		
Effective internal inductance	L_i		14	mH
Output voltage	U_o	AC	0.3	V

15.3.1.3 Temperature sensor circuit (terminals 5 - 7 for type EC1R or type EC2R)

Voltage	U_i	DC	30	V
Current	I_i		100	mA
Power	P_i		0.1	W

15.3.2 Ambient temperature range T_a

depending on the installation, the process temperature and the temperature class:

Neck extension element	Process temperature (°C)	Ambient temperature range (°C)	Temperature class
without	45	-40 up to +45	T6
without	60	-40 up to +60	T5
without	100	-40 up to +80	T4
100 mm	120	-40 up to +80	T4
100 mm	180	-40 up to +80	T3

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17 Special Conditions for Use

17.1 Transmitter type 5700

17.1.1 For the application of the transmitter in an ambient temperature of less than -20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used. Enclosure entries can be used for double compression Ex-d IIC Gb / Ex tb IIIC Db cable glands such as but not limited to Hawke 501 / 453 intended for use with effective filled and circular armored or braided cable; volume of the Ex-d enclosure is less than 2 liters.

17.1.2 If certified conduit entries are used for the connection of the transmitter enclosure, the associated stopping boxes shall be installed immediately at the enclosure.

17.1.3 The window covers forms one unit and cannot be taken apart without destroying the cover parts. If a cover is damaged it must be replaced by a new cover.

17.1.4 The dimensions of the flameproof joints are in parts other than the relevant minimum or maximum values of IEC 60079-1. For information on the dimensions of the flameproof joints contact the manufacturer.

17.2 Sensor TA series

17.2.1 The transmitter is mounted separately from the sensor. Equipotential bonding between the transmitter and the sensor must be guaranteed. Electrical connections have to be in accordance with IEC/EN 60079-14.

17.2.2 For application of the sensor in an ambient less than -20 °C and higher than +60 °C cables and cable entries suitable for these conditions shall be used.

17.2.3 The measuring tubes built of corrosion-resistant steel may have a thickness of < 1 mm. During installation and operation it must be ensured that risks e.g. by the medium or by mechanical damages are excluded.

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18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2019-06-05
BVS-Fro/Mu A 20181049

Managing Director

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