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 21 ATEX E 063 X**

4 Product: **Mass flow transmitter type UMC4-RM**

5 Manufacturer: **Heinrichs Messtechnik GmbH**

6 Address: **Robert-Perthel-Straße 9, 50739 Köln, Germany**

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 21.2098 EU.

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

EN IEC 60079-0:2018	**General requirements**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety "e"**
EN 60079-11:2012	**Intrinsic Safety "i"**

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)3G Ex ec [ia Ga] IIC T6...T3 Gc

For details see clause 15.3 "Parameters

DEKRA Testing and Certification GmbH
Bochum, 2021-09-14

Signed: Jörg-Timm Kilisch

Managing Director

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 21 ATEX E 063 X

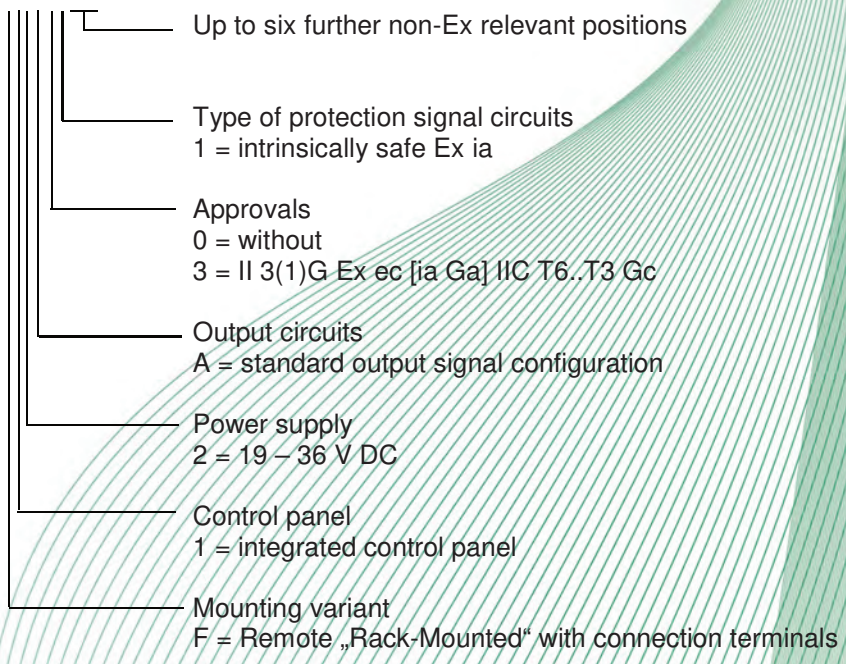
15 **Product description**

15.1 **Subject and type**

Mass flow transmitter type UMC4-RM

The model code of the UMC4-RM consists of the fixed prefix UMC4- followed by letters and numbers that indicate the different versions:

Type UMC4-*********



15.2 **Description**

The mass flow transmitter is used in combination with a mass flow sensor for measurement of mass flow of liquids and gases in pipes and is designed in type of protection Increased Safety “ec”. The electronics are protected by a sheet metal housing with protection class IP20.

The transmitter shall be installed in an enclosure that provides a minimum ingress protection of IP54 in accordance with EN IEC 60079-0.
The connection to the sensor is made via a ten-core cable.

The signal output circuits (terminals 11 – 20) are designed in type of protection Intrinsic Safety “ia”.

The Exciter circuit (terminals 9 and 10), the temperature sensor circuit (terminals 5 up to 8) and the sensor circuits (terminals 1 - 2 and 3 - 4) are also designed intrinsically safe “ia”.

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15.3 Parameters

15.3.1 Power circuit (terminals L, N and PE)

Nominal voltage		DC	19 - 36	V
Max. voltage	U_m	DC	60	V

15.3.2 Sensor circuits type of protection Ex ia IIC

15.3.2.1 Exciter circuit (terminals 9 and 10)
Linear output characteristic

Voltage	U_o	DC	12.15	V
Current	I_o		90	mA
Power	P_o		271	mW
Max. external inductance	L_o		5	mH
Max. external capacitance	C_o		1320	nF

15.3.2.2 Temperature sensor circuit (terminals 5 up to 8)
Linear output characteristic

Voltage	U_o	DC	12.15	V
Current	I_o		3.84	mA
Power	P_o		12	mW
Max. external inductance	L_o		1000	mH
Max. external capacitance	C_o		1305	nF

15.3.2.3 Sensor circuit (terminals 1 - 2 and 3 - 4)
Linear output characteristic (values for each circuit)

Voltage	U_o	DC	12.15	V
Current	I_o		16	mA
Power	P_o		48	mW
Max. external inductance	L_o		140	mH
Max. external capacitance	C_o		1305	nF

15.3.3 Current output 1 (terminals 11 – 12) and Current output 2 (terminals 13 - 14)
Passive circuit in type of protection Ex ia IIC (values for each circuit)

Voltage	U_i	DC	30	V
Current	I_i		150	mA
Power	P_i		1.3	W
Effective internal inductance	L_i		0.1	mH
Effective internal capacitance	C_i		20	nF

15.3.4 Impuls output (terminals 16 - 17) and Status output (terminals 19 -20)
Floating optocoupler output circuit type of protection Ex ia IIC

Voltage	U_i	DC	30	V
Current	I_i		50	mA
Power	P_i		700	mW
Effective internal inductance	L_i	negligible		
Effective internal capacitance	C_i	negligible		

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15.3.5 Ambient temperature range T_a

Allowed temperature at the place of installation depending on the temperature class as shown in the following table:

Temperature at the place of installation	Temperature class
-20 °C ≤ T_a ≤ 30 °C	T6
-20 °C ≤ T_a ≤ 45 °C	T5
-20 °C ≤ T_a ≤ 60 °C	T4
-20 °C ≤ T_a ≤ 60 °C	T3

16 Report Number

BVS PP 21.2098 EU, as of 2021-09-14

17 Special Conditions for Use

The correlation between ambient temperature range and temperature class is shown in clause 15.3 “Parameters”.

It must be ensured that between sensor and transmitter potential equalisation is guaranteed.

All cables are to be installed in such a way that the connection terminals are protected against tensile load.

The control panel shall only be operated when a potentially explosive atmosphere can be excluded.

The mass flow transmitter shall be installed in an appropriate enclosure that provides a minimum ingress protection of IP54 in accordance with EN IEC 60079-0.

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, 2021-09-14
BVS-Hn/Mu A20200537

Managing Director

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