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 BVS 21.0069X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2021-09-23		
Applicant:	**Heinrichs Messtechnik GmbH** Robert-Perthel-Strasse 9 50739 Köln **Germany**		
Equipment:	**Mass flow transmitter type UMC4-RM**		
Optional accessory:			
Type of Protection:	**Intrinsic Safety "i", Increased Safety "e"**		
Marking:	Ex ec [ia Ga] IIC T6…T3 Gc		

Approved for issue on behalf of the IECEx Certification Body: **Dr Franz Eickhoff**

Position: **Lead Auditor and officially recognised expert**

Signature: (for printed version)

Date: 2021-09-23

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:

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

DEKRA
On the safe side.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 21.0069X** Page 2 of 3

Date of issue: 2021-09-23 Issue No: 0

Manufacturer: **Heinrichs Messtechnik GmbH**
Robert-Perthel-Strasse 9
50739 Köln
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 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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/BVS/ExTR21.0060/00

Quality Assessment Report:

DE/BVS/QAR11.0001/08

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Subject and Type

See Annex

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 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”.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
PCB Spring-Cage Terminal block, type ZFKDS 1,5C (Phoenix Contact)	IECEx PTB 06.0096U, Issue 1	IEC 60079-0:2011 [2] IEC 60079-7:2015 [2]
Modular PCB terminal blocks, type 236-*** (WAGO)	IECEx PTB 06.0042U, Issue 2	IEC 60079-0:2011 [2] IEC 60079-7:2015 [2]

[1] No applicable technical differences
[2] Technical differences evaluated and found satisfactory

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:
The correlation between ambient temperature range and temperature class is shown in the General product information “Parameters” (see Annex).

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 IEC 60079-0.

Annex:

BVS_21_0069X_Heinrichs_Messtechnik _Annex.pdf

IECEx Certificate of Conformity

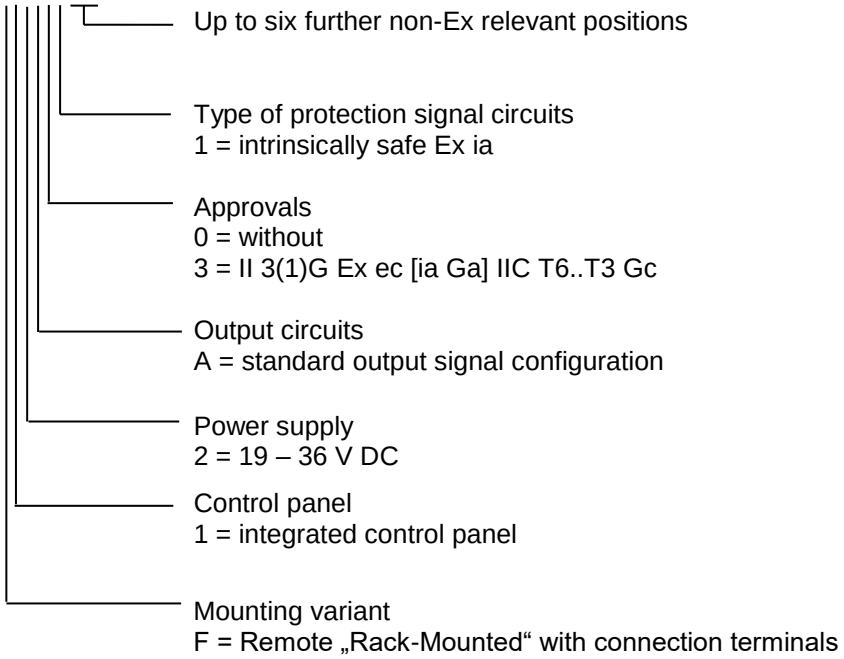
Certificate No.: **IECEx BVS 21.0069X**
Annex

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-*********



Parameters

1	Power circuit (terminals L, N and PE)				
	Nominal voltage		DC	19 - 36	V
	Max. voltage	U_m	DC	60	V
2	Sensor circuits type of protection Ex ia IIC				
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
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

Certificate No.: **IECEx BVS 21.0069X**

Annex

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

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

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		

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