



# 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](http://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

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Certificate issued by:

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

 **DEKRA**  
On the safe side.



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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](#)



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## 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 <sup>2</sup> IEC 60079-7:2015 <sup>2</sup>
Modular PCB terminal blocks, type 236-*** (WAGO)	IECEX PTB 06.0042U, Issue 2	IEC 60079-0:2011 <sup>2</sup> IEC 60079-7:2015 <sup>2</sup>

<sup>1</sup> No applicable technical differences

<sup>2</sup> 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](#)



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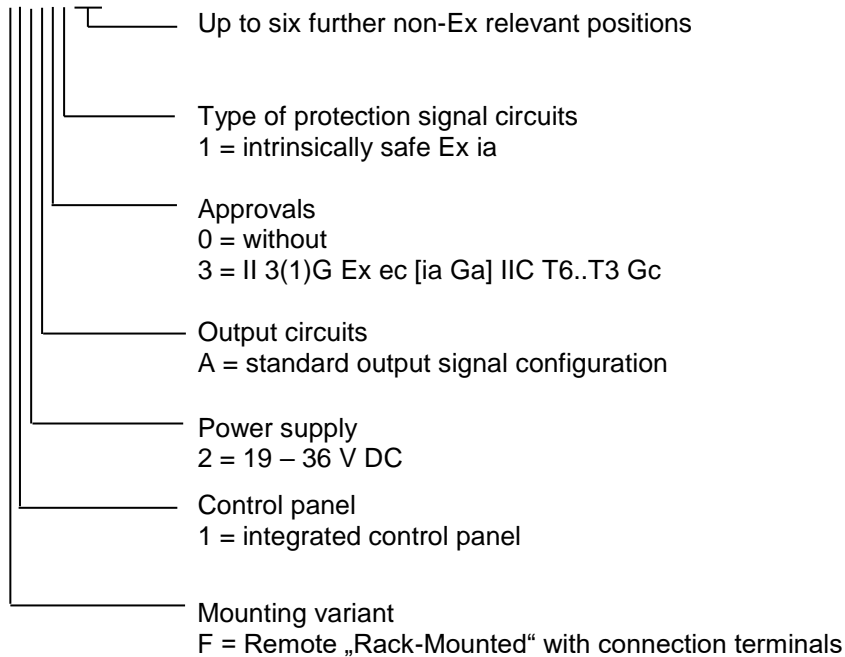
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**Subject and Type**

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 <sub>m</sub>	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 <sub>o</sub>	DC	12.15	V
	Current	I <sub>o</sub>		90	mA
	Power	P <sub>o</sub>		271	mW
	Max. external inductance	L <sub>o</sub>		5	mH
	Max. external capacitance	C <sub>o</sub>		1320	nF
2.2	Temperature sensor circuit (terminals 5 up to 8)				
	Linear output characteristic				
	Voltage	U <sub>o</sub>	DC	12.15	V
	Current	I <sub>o</sub>		3.84	mA
	Power	P <sub>o</sub>		12	mW
	Max. external inductance	L <sub>o</sub>		1000	mH
	Max. external capacitance	C <sub>o</sub>		1305	nF

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**Annex**

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- 2.3 Sensor circuit (terminals 1 - 2 and 3 - 4)  
Linear output characteristic (values for each circuit)
- |                           |                |    |       |    |
|---------------------------|----------------|----|-------|----|
| Voltage                   | U <sub>o</sub> | DC | 12.15 | V  |
| Current                   | I <sub>o</sub> |    | 16    | mA |
| Power                     | P <sub>o</sub> |    | 48    | mW |
| Max. external inductance  | L <sub>o</sub> |    | 140   | mH |
| Max. external capacitance | C <sub>o</sub> |    | 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 <sub>i</sub> | DC | 30  | V  |
| Current                        | I <sub>i</sub> |    | 150 | mA |
| Power                          | P <sub>i</sub> |    | 1.3 | W  |
| Effective internal inductance  | L <sub>i</sub> |    | 0.1 | mH |
| Effective internal capacitance | C <sub>i</sub> |    | 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 <sub>i</sub> | DC         | 30  | V  |
| Current                        | I <sub>i</sub> |            | 50  | mA |
| Power                          | P <sub>i</sub> |            | 700 | mW |
| Effective internal inductance  | L <sub>i</sub> | negligible |     |    |
| Effective internal capacitance | C <sub>i</sub> | negligible |     |    |
- 5 Ambient temperature range T<sub>a</sub>  
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
$-20\text{ °C} \leq T_a \leq 30\text{ °C}$	T6
$-20\text{ °C} \leq T_a \leq 45\text{ °C}$	T5
$-20\text{ °C} \leq T_a \leq 60\text{ °C}$	T4
$-20\text{ °C} \leq T_a \leq 60\text{ °C}$	T3