IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 11.0088X issue No.:1	Certificate history: Issue No. 1 (2013-7-1) Issue No. 0 (2011-11-25)
Status:	**Current**	
Date of Issue:	**2013-07-01**	Page 1 of 4
Applicant:	**Heinrichs Messtechnik GmbH** Robert-Perthel-Strasse 9 50739 Köln **Germany**	
Electrical Apparatus: *Optional accessory:*	**Mass flow meter converter Type UMC4-********	
Type of Protection:	**Flameproof enclosure 'd', Equipment protection by intrinsic safety "i", Equipment with equipment protection level (EPL) Ga**	
Marking:	Ex d [ia Ga] IIC T4-T3 Gb	
Approved for issue on behalf of the IECEx Certification Body:	H.-Ch. Simanski	
Position:	Head of Certification Body	
Signature: *(for printed version)*		
Date:	1.7.2013	

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 the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA EXAM GmbH

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Manufacturer: **Heinrichs Messtechnik GmbH**
Robert-Perthel-Strasse 9
50739 Köln
Germany

Additional Manufacturing location (s):

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical 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/ExTR11.0117/01

Quality Assessment Report:

DE/BVS/QAR11.0001/01

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Schedule

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

Description

The mass flow meter converter is used in combination with a mass flow sensor for measurement of mass flow of liquids and gases in pipes.
The converter consists of an enclosure type XD-ID100win (IECEx FTZU 10.0019U) and the electronic devices fixed inside.
The signal circuits can be executed either as intrinsically safe Ex ia (terminals 11 – 20) in type UMC4-*****1 or as non-intrinsically safe (terminals 41 – 50) in type UMC4-*****2.
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 always intrinsically safe, level of protection Ex ia.

Type designation

See Annex

Parameters

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

1 As cable entries separately certified flameproof cable glands have to be used.

2 If the mass flow meter converter is connected by conduit entries they have to be certified for this purpose and the associated stopping boxes have to be mounted immediately to the enclosure.

3 The correlation between ambient temperature range, process temperature and temperature class is shown in the manufacturer's instructions.

4 If sensor and mass flow meter are installed separately, it must be ensured that between sensor and flow meter potential equalisation is arranged.

5 For type UMC4-E***** the cable to the sensor has to be installed in a way that tensile force is omitted.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The mass flow meter converter has been assessed in acc. with actual standard versions.

Annexe: BVS_11_0088x_Heinrichs_Annex.pdf

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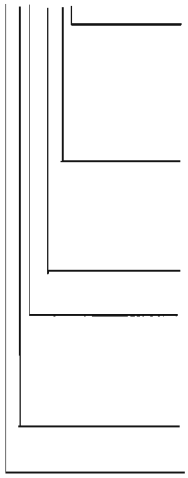
Certificate No.: **IECEx BVS 11.0088X Annex**

Type designation

Mass flow meter converter type UMC4-******
Type UMC4-*1*A**



Type of protection signal circuits
0 = without
1 = intrinsically safe Ex ia
2 = non-intrinsically safe

Certificate
0 = without
2 = Ex d [ia Ga] IIC T4-T3 Gb

A = Output circuits

Power supply
1 = 90 – 265 V AC
2 = 19 – 36 V DC, 24 V AC

1 = inclusive control unit

Mounting option
B = Compact version
D = Remote version with connection box
E = Remote version with permanently connected cable

Parameters

1 Power circuit (terminals L, N and PE)

Type UMC4-**1***				
Nominal voltage		AC	90 - 265	V
Max. voltage	Um	AC	265	V
Type UMC4-**2***				
Nominal voltage		AC	24	V
Max. voltage	Um	AC	60	V
Nominal voltage		DC	19 - 36	V
Max. voltage	Um	DC	60	V

2 Passive non intrinsically safe circuits
Type UMC4-*****2
Current output 1 (terminals 41 - 42)
Current output 2 (terminals 43 - 44)
Impulse output (terminals 46 - 47)
Status output (terminals 49 - 50)

Max. voltage	Um	AC/DC	60	V
Max. current of the power supply			500	mA

3	Sensor circuits type of protection Ex ia II				
3.1	Exciter circuit (terminals 9 and 10)				
	Voltage	Uo	DC	12.15	V
	Current	Io		90	mA
	Power	Po		271	mW
	Linear output characteristic				
	Type of protection Ex ia IIC				
	Max. external inductance	Lo		5	mH
	Max. external capacitance	Co		1320	nF
	Type of protection Ex ia IIB				
	Max. external inductance	Lo		18	mH
	Max. external capacitance	Co		8400	nF
3.2	Temperature sensor circuit (terminals 5 up to 8)				
	Voltage	Uo	DC	12.15	V
	Current	Io		3.84	mA
	Power	Po		12	mW
	Linear output characteristic				
	Type of protection Ex ia IIC				
	Max. external inductance	Lo		1000	mH
	Max. external capacitance	Co		1305	nF
	Type of protection Ex ia IIB				
	Max. external inductance	Lo		1000	mH
	Max. external capacitance	Co		8385	nF
3.3	Sensor circuit (terminals 1 - 2 and 3 - 4)				
	Values for each circuit				
	Voltage	Uo	DC	12.15	V
	Current	Io		16	mA
	Power	Po		47	mW
	Linear output characteristic				
	Type of protection Ex ia IIC				
	Max. external inductance	Lo		140	mH
	Max. external capacitance	Co		1305	nF
	Type of protection Ex ia IIB				
	Max. external inductance	Lo		510	mH
	Max. external capacitance	Co		8385	nF

For type UMC4-E***** the following values for the permanent connected cable have to be regarded:

Cable capacitance	100	pF/m
Cable inductance	0.7	µH/m

3.4 Current output 1 (terminals 11 – 12) and
Current output 2 (terminals 13 - 14)
Type of protection Ex ia II
Passive circuit
Values for each circuit

Voltage	Ui	DC	30	V
Current	Ii		150	mA
Power	Pi		1.3	W
Effective internal inductance	Li		0.1	mH
Effective internal capacitance	Ci		20	nF

3.5 Impulse output (terminals 16 - 17) and
Status output 2 (terminals 19 -20)
Floating optocoupler output circuit type of protection Ex ia IIC

Voltage	Ui	DC	30	V
Current	Ii		200	mA
Power	Pi		3	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

3.6 Ambient temperature range Ta

Depending on the process temperature and the temperature class shown in the following table:

Process temperature -20 °C up to	Ambient temperature -20 °C up to	Temperature class
100 °C	60 °C	T4
130 °C	55 °C	T4
150 °C	50 °C	T3

If the converter is mounted remote from the process the ambient temperature range is -20 °C up to +60 °C.