

	RNATIONAL EL Certification Scl for rules and details	ECTROTECHNI heme for Explo of the IECEx Scheme visi	ICAL C sive At	OMMISSION mospheres
Certificate No.:	IECEx BVS 11.0094X	issue N	No.:1	Certificate history:
Status:	Current			Issue No. 1 (2014-4-25) Issue No. 0 (2011-12- 19)
Date of Issue:	2014-04-25	Page 1 o	of 4	
Applicant:	Heinrichs Messtech Robert-Perthel-Strasse 50739 Cologne Germany	nnik GmbH 9		
Electrical Apparatus: Optional accessory:	Mass flow meter conv	verter with control unit U	MC3-***** a	and type BE2
Type of Protection:	Equipment protection safety "i", Equipment	by flameproof enclosur protection by increased	es "d", Equ safety "e"	ipment protection by intrins
Marking:	Ex d [ia Ga] IIB/IIC T6- for mass flow meter cor Ex ia IIC T6 Ga for control unit	T3 Gb nverter		
Approved for issue on b Certification Body:	behalf of the IECEx	HCh. Simanski		
Position:		Head of Certification Bo	ody	
Signature: for printed version)		1. Q. L.	ient.	
Date:		25. 4. 201	4	
. This certificate and so 2. This certificate is not 3. The Status and authe	chedule may only be reprod transferable and remains the transferable and remains the transferate matricity of this certificate matricity of this certificate matricity of the transferation of transferation of the transferation of the transferation of transferation of the transferation of tr	duced in full. he property of the issuing l ay be verified by visiting the	body. e Official IEC	CEx Website.
ertificate issued by:				
D	EKRA EXAM GmbH innendahlstrasse 9 44809 Bochum			DEKRA
	Germany		DEKRA	EXAM GmbH



Certificate No.:	IECEx BVS 11.0094X	
Date of Issue:	2014-04-25	Issue No.: 1
		Page 2 of 4
Manufacturer:	Heinrichs Messtechnik GmbH Robert-Perthel-Strasse 9 50739 Cologne Germany	
Additional Manufacturing location (s):		
This certificate is issued as verific	ation that a sample(s), representative of produc	ction, 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"

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/ExTR11.0126/01

Quality Assessment Report:

DE/BVS/QAR11.0001/02



Certificate No .:

IECEx BVS 11.0094X

Date of Issue:

2014-04-25

Issue No.: 1

Page 3 of 4

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 of protection "d" and the electronic devices fixed inside. The terminal compartment can be type of protection "d".

The control unit can also be fixed in this housing or can be mounted separately.

Parameters

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

Special conditions for safe use

- The used cable entries and the used blanking elements have to be certified for this purpose. 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.
- The external control device type BE has to be mounted inside an enclosure degree of protection min. IP20 and is designed for use in an ambient temperature range of -40 °C up to +70 °C. The separate mounted control unit is designed only for use in EPL Gb.
- 3. The mass flow meter converter is suitable for use in an ambient temperature range from -40 °C to +80 °C. The correlation between ambient temperature range, process temperature, temperature class and surface temperature is shown in the manufacturer's instructions.
- 4. The joint widths of the flameproof joint of this equipment are in parts longer, and its gaps are in parts shorter than required by table 2 of IEC 60079-1:2007. If any of the parts forming the joint shall be repaired, the dimensions of the manufacturer's documentation have to be kept.
- 5. When using the mass flow meter converter in an ambient temperature range that exceeds either -20 °C or +60 °C temperature-resistant cables and conductors have to be used as well as cable entries and blanking elements that are certified for use at 90 °C.



Certificate No .:

Date of Issue:

IECEx BVS 11.0094X

2014-04-25

Issue No.: 1

Page 4 of 4

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

The mass flow meter converter with control unit has been assessed in accordance with the current standard versions.





Certificate No.:

IECEx BVS 11.0094X, Issue No.: 1 Annex

Page 1 of 4

Parameters

1	Power circuit (terminals L, N and PE) Nominal voltage max. voltage Nominal voltage max. voltage Nominal voltage max. voltage	U _m U _m U _m	AC 90 AC AC AC DC 19 DC	0 - 230 265 24 30 9 - 36 36	<pre></pre>
2	Non intrinsically safe circuits for type UMC3-****2 Current output 1 (terminals 41 - 42) Current output 2 (terminals 43 - 44) Binary output 1 passive (terminals 46 - 47) Binary output 1 active (terminals 45 and 48) Binary output 2 passive (terminals 49 - 50) Binary output 3 passive (terminals 53 - 54) Binary input (terminals 51 - 52) Profibus DP (terminals 37 - 38)				
	max. voltage max. current of the power supply	U _m	AC/DC	; 60 500	V mA
3	Sensor circuits type of protection Ex ia II				
3.1	Exciter circuit (terminals 9 and 10) Voltage Current Power linear output characteristic	U。 I。 P。	DC	19.5 90 400	V mA mW
	Level of protection Ex ia IIC max. external inductance max. external capacitance	L _o C _o		5 240	mH nF
	Level of protection Ex ia IIB max. external inductance max. external capacitance	L _o C _o		18 1490	mH nF
3.2	Temperature sensor circuit (terminals 5 up to 8) Voltage Current Power linear output characteristic	U。 I。 P。	DC	19.5 6.4 31	V mA mW
	Level of protection Ex ia IIC max. external capacitance max. external inductance	L _o C _o		870 225	mH nF
	Level of protection Ex ia IIB max. external inductance max. external capacitance	L _o C _o		1000 1475	mH nF





Cer	tificate No.:	IECEx BVS 11.009 Annex Page 2 of 4	94X, Issue No.: 1			
3.3	Sensor circuit (termin Values for each circu Voltage Current Power linear output characte	als 1 - 2 and 3 - 4) it eristic	U。 I。 P。	DC	19.5 25 128	V mA mW
	Level of protection Ex max. external inducta max. external capacit	ria IIC nce ance	L _o C _o		58 154	mH nF
	Level of protection Ex max. external inducta max. external capacit	ria IIB nce ance	L _o C _o		210 1404	mH nF
4	Current output 1 (term Current output 2 (term for type UMC3-*****1, Voltage Current Power linear output characte	ninals 11 – 12) and ninals 13 - 14) level of protection Ex ia ristic	a U _o I _o P _o	DC	19.2 84 400	V mA mW
	Level of protection Ex max. external inducta max. external capacita	ia IIC nce ance	L _o C _o		5 230	mH nF
	Level of protection Ex max. external inductar max. external capacita	ia IIB nce ance	L _° C _°		19.8 1.53	mΗ μF





Cert	ificate No.:	IECEx BVS 11.0094 Annex Page 3 of 4	X, Issue No.: 1	l		
5	Binary output 1 (term Binary output 2 (term Binary output 3 (term floating opto coupler for type UMC3-****1 Voltage Current Power Effective internal indu Effective internal cap	inals 16 - 17) inals 19 -20) and inals 33 -34) output circuit , level of protection Ex ia II uctance acitance	C U _i I _i P _i L _i C _i	DC	30 200 3 0.2 20	V mA W mH nF
6	Binary input (termina for type UMC3-****1 Voltage Current Power linear output characte	ls 21 - 22) , level of protection Ex ia eristic	U。 I。 P。	DC	30 15 113	V mA mW
	Level of protection Ex max. external inducta max. external capacit	k ia IIC Ince ance	L _o C _o		160 64.8	mH nF
	Level of protection Ex max. external inducta max. external capacit	k ia IIB Ince ance	L _° C _°		560 558.8	mH nF
7	Communication circu	its				
7.1 7.1.1	Type UMC3-***D*** (Communication circu Level of protection Ex for use as field device Voltage Effective internal indu Effective internal cap	terminals 39 – 40) it Profibus PA < ia IIC e in a fieldbus system in ac uctance acitance	cordance with FIS Ui Li Ci	SCO with DC	17.5 neg 1.2	V ligible nF
7.1.2 7.2	for connection to an i Voltage Current Power Effective internal indu Effective internal cap Type UMC3-***J*** (t Communication circu for connection to a circ	ntrinsically safe communic actance erminals 55 – 56) it FOUNDATION-Fieldbus rcuit with the following max	ation circuit Ui Ii Pi Li Ci	DC	32 280 2 neg 1.2	V mA W ligible nF
7.2.1	Level of protection Ex Voltage Current Effective internal indu Effective internal cap	c ia IIC uctance acitance	U _i I _i L _i C _i	DC	24 250 10 neg	V mA µH ligible
7.2.1	Level of protection Ex Voltage Current Effective internal indu	cia IIB uctance acitance	U _i I _i L _i C _i	DC	17.5 380 10 neg	V mA µH Iligible





Certificate No.:

IECEx BVS 11.0094X, Issue No.: 1 Annex

Page 4 of 4

7.3	RS485-IS (Profibus DP/Modbus), terminals Type of protection Ex ia IIC	s 35 and 36				
	Voltage	U_	DC	4 1	V	
	Current			59	mÅ	
	Power	P		61	mW	
	linear output characteristic			01		
	for the connection of an intrinsically safe ci	rcuit with the following	maximum v	alue:		
	Voltage	Ui	DC	4.5	V	
	Effective internal inductance	L		nea	ligible	
	Effective internal capacitance	Ċ		neg	ligible	
8	Ambient temperature range	T.				
8.1	for the remote mounted control device type	BE	- 40 °C	up to + 7	0 °C	
8.2	Ambient temperature range	Ta				
	for the mass flow meter converter mounted	I closed to the process	depending of	on the pro	cess	
	temperature, the installation (use of a dista class shown in the following tables	nce element with a leng	gth of 100 m	nm) and th	ie tempe	rature

8.2.1 for types UMC3-A***1*, UMC3-A***2*, UMC3-A***4*,

UMC3-B***1*,	UMC3-B***2* and UMC3-B***4*	

Distance element	Process tempe-	Ambient tempe-	Temperature
	rature -20 °C up	rature -20 °C up	class for use
	to	to	in EPL Gb
without	45 °C	45 °C	T6
without	0° C	55 °C	Τ5
with	130 °C	55 °C	T4
with	150 °C	50 °C	Т3

8.2.2 for types UMC3-A***5*, UMC3-A***6*, UMC3-B***5* and UMC3-B***6*

Distance	Process tempe-	Ambient tempe-	Temperature
element	rature -40 °C up	rature -40 °C up	class for use in
	to	to	EPL Gb
without	80 °C	60 °C	T6
without	80 °C	80 °C	T5
without	100 °C	75 °C	T5
with	130 °C	55 °C	T4
with	150 °C	50 °C	Т3

8.2.3 for remote mounted converter types UMC3-C***1*, UMC3-C***2*, UMC3-****4*, UMC3-D***1*, UMC3-D***2*, UMC3-D***4*, UMC3-E***1*, UMC3-E***2*, UMC3-E***4*, UMC3-F***1*, UMC3-F***2* and UMC3-F***4*

-20 °C up to +60 °C

8.2.4 for remote mounted converter types UMC3-C***5*, UMC3-C***6*, UMC3-D***5*, UMC3-D***6*, UMC3-E***5*, UMC3-E***6*, UMC3-F***5*and UMC3-F***6* for temperature class T6 -40 °C up to +60 °C for temperature class T5 -40 °C up to +80 °C