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 TUN 14.0004X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2018-09-25) Issue 0 (2014-02-18)
Date of Issue:	2021-12-21		

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 113, 77761 Schiltach
Germany

Equipment: **Signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.*******

Optional accessory:

Type of Protection: **Intrinsic safety, increased safety and type of protection n**

Marking: Ex ec nC [ia Ga] IIC T4 Gc

Ex ec nC [ia IIIC Da] IIC T4 Gc

Ex ec nC [ia I Ma] IIC T4 Gc

[Ex ia Ma] I

[Ex ia Ga] IIC

[Ex ia Da] IIIC

Approved for issue on behalf of the IECEx Certification Body: **Andreas Meyer**

Position: **Deputy Head of the IECEx Certification Body**

Signature: (for printed version)

Date:

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:

TÜV NORD CERT GmbH
Hanover Office
Am TÜV 1, 30519 Hannover
Germany

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Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113, 77761 Schiltach
Germany

Additional manufacturing locations: **VEGA Americas**
4241 Allendorf Drive
Cinncinnati, Ohio 45209
United States of America

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 Edition:7.0 — Explosive atmospheres - Part 0: Equipment - General requirements

IEC 60079-11:2011 Edition:6.0 — Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-15:2017 Edition:5.0 — Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

IEC 60079-7:2017 Edition:5.1 — Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

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/TUN/ExTR14.0005/02

Quality Assessment Report:

DE/TUN/QAR06.0002/10

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

Description:

The signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* are used for the supply of passive, intrinsically safe 1.2 mA/2.1 mA two wire NAMUR measuring sensors, the safe galvanic separation of the intrinsically safe circuits from all non-intrinsically safe circuits and the evaluation of the analogue transmitted measuring data.

Electrical and thermal data:

Refers to the attachment IECEx TUN 14.0004X issue No. 2

SPECIFIC CONDITIONS OF USE: YES as shown below:
1. For EPL Gc applications the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* have to be installed in a suitable enclosure according to IEC 60079-7 resp. IEC 60079-15 in such a way that a degree of protection of at least IP54 is achieved.

2.For EPL Gc applications the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* have to be erected in such a way that a pollution degree 2 or less, according to IEC 60664-1, is achieved.

3. For EPL Gc applications measures have to be taken, external to the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.*******, to provide a transient protection that ensures that the rated voltage, connected to the power supply terminals, is not exceeded by more than 40 %.

4. The connecting and disconnecting of non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Proof of conformity of the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** VEGATOR 112 type TOR112.******* to the current versions of the standards IEC 60079-0:2017/COR1:2020, IEC 60079-7:2017, IEC 60079-11:2011/COR1:2012 and IEC 60079-15:2017, Edition 5.0

Actuating the buttons behind the cover plate cannot increase the maximum intrinsically safe output current and the internal effective reactances, therefore the ignition protection type intrinsic safety is not affected. The "ic" circuit can therefore be omitted from the marking.

Annex:

Attachment to IECEx TUN 14.0004X issue No. 2.pdf

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General product information:
Description:
The signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* are used for the supply of passive, intrinsically safe 1.2 mA/2.1 mA two wire NAMUR measuring sensors, the safe galvanic separation of the intrinsically safe circuits from all non-intrinsically safe circuits and the evaluation of the analogue transmitted measuring data.

Type code and Marking:

	Ex ec nC [ia Ga] IIC T4 Gc Ex ec nC [ia IIIC Da] IIC T4 Gc Ex ec nC [ia I Ma] IIC T4 Gc
VEGATOR 111 type TOR111 .**S/X**** VEGATOR 112 type TOR112.*******	[Ex ia Ma] I [Ex ia Ga] IIC [Ex ia Da] IIIC

Electrical data:

Supply (Terminals 16/17)	For connection to non-intrinsically safe circuits with the following maximum values: U = 24...230 V a.c (-15 … +10%) U = 24… 65 V d.c (-15 … +10%) U_m = 253 V a.c
Relay outputs (Terminals Relay 1: 10/11/12 Relay 2: 13/14/15)	For connection to non-intrinsically safe circuits with the following maximum values: U_n = 253 V a.c ; I_n = 3 A U_n = 60 V d.c; I_n = 1 A
Signal circuits (Terminals 1/2, 4/5)	In type of protection intrinsic safety Ex ia I/IIC/IIB(IIIC) With following maximum values per circuit: U_o = 10.8 V I_o = 19.6 mA P_o = 52.8 mW Characteristic line: linear
Effective internal capacitance C_i	Negligibly small
Effective internal inductance L_i	Negligibly small

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The maximum permissible values for the external inductance L_o and the external capacitance C_o can be taken from the following tables:

Ex ia I	L_o [mH]	100	50	5	0.5	0.1
	C_o [µF]	12	13	19	35	58

Ex ia IIC	L_o [mH]	100	20	10	0.5	0.05
	C_o [µF]	0.33	0.55	0.63	1.1	2.1

Ex ia IIB (IIIC)	L_o [mH]	100	20	10	0.5	0.05
	C_o [µF]	3	3.9	4.4	8.3	15

The intrinsically safe signal circuit is safe galvanically separated from the non-intrinsically safe circuits up to a peak value of the voltage of 375 V.

Thermal data:
Permissible ambient temperature range: -20 °C ≤ Ta ≤ +60 °C.

Details of change (applicable only when revising an existing ExTR package):
Proof of conformity of the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** VEGATOR 112 type TOR112.******* to the current versions of the standards IEC 60079-0:2017/COR1:2020, IEC 60079-7:2017, IEC 60079-11:2011/COR1:2012 and IEC 60079-15:2017, Edition 5.0
Actuating the buttons behind the cover plate cannot increase the maximum intrinsically safe output current and the internal effective reactances, therefore the ignition protection type intrinsic safety is not affected. The "ic" circuit can therefore be omitted from the marking.

Specific Conditions of Use" / "~~Schedule of Limitations~~":

1. For EPL Gc applications the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* have to be installed in a suitable enclosure according to IEC 60079-7 resp. IEC 60079-15 in such a way that a degree of protection of at least IP54 is achieved.

2. For EPL Gc applications the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.******* have to be erected in such a way that a pollution degree 2 or less, according to IEC 60664-1, is achieved.

3. For EPL Gc applications measures have to be taken, external to the signal conditioning instruments VEGATOR 111 type TOR111 .**S/X**** and VEGATOR 112 type TOR112.*******, to provide a transient protection that ensures that the rated voltage, connected to the power supply terminals, is not exceeded by more than 40 %.

4. The connecting and disconnecting of non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.