



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 14.0031X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2018-09-25)
Date of Issue:	2022-08-19		Issue 0 (2014-10-22)
Applicant:	VEGA Grieshaber KG Am Hohenstein 113, 77761 Schiltach Germany		
Equipment:	Signal conditioning instrument VEGATOR TOR 141.**X/S**** and VEGATOR TOR 142.*****		
Optional accessory:			
Type of Protection:	Intrinsic safety "ia", Increased safety "ec" and type of protection "nC"		
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)

Digital unterschrieben
von Meyer Andreas
Datum: 2022.08.19
17:54:49 +02'00'

Date:
(for printed version)



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Certificate issued by:

TÜV NORD CERT GmbH
Hanover Office
- --- / 1, 30519 Hannover





IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 14.0031X**

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Date of issue: 2022-08-19

Issue No: 2

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

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

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

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/TUN/ExTR14.0038/02](#)

Quality Assessment Report:

[DE/TUN/QAR06.0002/11](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 14.0031X**

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Date of issue: 2022-08-19

Issue No: 2

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Description:

The signal conditioning instruments VEGATOR 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** are used for the supply of passive, intrinsically safe 4...20 mA two wire 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:

VEGATOR 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.*****

Electrical and thermal data:

See Attachment to IECEx TUN 14.0031X issue No.2

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. For EPL Gc applications the signal conditioning instruments VEGATOR 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** 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 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** 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 141 type TOR141 . **S/X**** and VEGATOR 142 type TOR142.***** , 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.



IECEx Certificate of Conformity

Certificate No.:

IECEx TUN 14.0031X

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Date of issue:

2022-08-19

Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Proof of conformity of the signal conditioning instruments VEGATOR 141 type TOR141.**S/X***

VEGATOR 142 type TOR142.***** 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

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 14.0031X issue No.2.pdf](#)

Page 1 of 2
Attachment to IECEEx TUN 14.0031X issue No.: 2

General product information:

Description:

The signal conditioning instruments VEGATOR 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** are used for the supply of passive, intrinsically safe 4...20 mA two wire 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:

VEGATOR 141 type TOR141.**S/X****
 VEGATOR 142 type TOR142.*****

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

Electrical data:

Supply
 (Terminals 16/17)

For connection to non-intrinsically safe circuits with the following maximum values:

$U = 24 \dots 230 \text{ V a.c. } (-15 \dots +10\%)$
 $U = 24 \dots 65 \text{ V d.c. } (-15 \dots +10\%)$
 $U_m = 253 \text{ V a.c.}$

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:

$U_n = 253 \text{ V a.c. ; } I_n = 3 \text{ A}$
 $U_n = 60 \text{ V d.c. ; } I_n = 1 \text{ A}$

Signal circuits
 (Terminals 1/2, 4/5)

In type of protection intrinsic safety Ex ia I/IIC/IIIB(IIIC)
 With following maximum values per circuit:

$U_o = 22.4 \text{ V}$
 $I_o = 113.5 \text{ mA}$
 $P_o = 636 \text{ mW}$
 Characteristic line: linear
 Negligibly small
 Negligibly small

Effective internal capacitance C_i
 Effective internal inductance L_i

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]	58	20	0.5	0.2	0.1
	C_o [μF]	2	3.1	3.8	4.8	5.5

Ex ia IIC	L_o [mH]	1.9	1	0.5	0.2	0.1
	C_o [μF]	0.058	0.076	0.097	0.13	0.156

Ex ia IIB (IIIC)	L_o [mH]	16	10	1	0.5	0.2
	C_o [μF]	0.6	0.69	0.74	0.86	1.09

Page 2 of 2
Attachment to IECEEx TUN 14.0031X issue No.: 2

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: $-20^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$

Details of change (applicable only when revising an existing ExTR package):

Proof of conformity of the signal conditioning instruments VEGATOR 141 type TOR141.**S/X****

VEGATOR 142 type TOR142.***** 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

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:

1. For EPL Gc applications the signal conditioning instruments VEGATOR 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** 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 141 type TOR141.**S/X**** and VEGATOR 142 type TOR142.***** 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 141 type TOR141 .**S/X**** and VEGATOR 142 type TOR142.*****¹, 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.



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 TUN 14.0031X

Issue No: 1

Certificate history:

Issue No. 1 (2018-09-25)

Issue No. 0 (2014-10-22)

Status: Current

Date of Issue: 2018-09-25

Page 1 of 4

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

Equipment: Signal conditioning instrument VEGATOR TOR 141.**X/S**** and VEGATOR TOR
142.*****

Optional accessory:

Type of Protection: Intrinsic safety and type of protection "n"

Marking: Ex nA nC Ic [ia Ga] [ia IIIC Da] [ia I Ma] IIC T4 Gc

or

[Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia Ma] I

Approved for issue on behalf of the IECEx
Certification Body:

Christian Roder

Position:

Head of IECEx Certification Body

Signature:

(for printed version)

Date:

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Certificate issued by:

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Hanover Office
Am TÜV 1, 30519 Hannover
Germany





IECEx Certificate of Conformity

Certificate No: IECEx TUN 14.0031X

Issue No: 1

Date of Issue: 2018-09-25

Page 2 of 4

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

Additional Manufacturing location(s):

VEGA Americas
4241 Allendorf Drive
Cincinnati, Ohio 45209
United States of America

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STANDARDS:

The 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	Explosive atmospheres - Part 0: General requirements
Edition:6.0	
IEC 60079-11 : 2011	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0	
IEC 60079-15 : 2010	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4	

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/TUN/ExTR14.0038/01

Quality Assessment Report:

DE/TUN/QAR06.0002/08



IECEx Certificate of Conformity

Certificate No: IECEx TUN 14.0031X

Issue No: 1

Date of Issue: 2018-09-25

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The signal conditioning instruments type

VEGATOR TOR141. IAX**** VEGATOR TOR141. IAS****

VEGATOR TOR142. IA****

and

VEGATOR TOR141. IC/O/UX**** VEGATOR TOR141. IC/O/US****

VEGATOR TOR142. IC/O/U****

are used for the supply of passive, intrinsically safe 4 ... 20 mA two wire 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.

The permissible ambient temperature range is -20 °C ... +60 °C.

For all other data refer to the attachment.

SPECIFIC CONDITIONS OF USE: YES as shown below:

According to EN/IEC 60079-15, section 6.3.1, the following is valid for this apparatus:

a)The apparatus has to be mounted in a housing tested according to IEC 60079-0, that meets the requirements of degree of protection IP54.

or

b)The apparatus has to be mounted in a housing tested according to IEC 60079-0, that meets the requirements of degree of protection IP4X. Then, the apparatus may exclusively be mounted in locations providing adequate protection against the entry of solid foreign objects or liquids.

The apparatus may be installed in an area of not more than pollution degree 2.



IECEx Certificate of Conformity

Certificate No: IECEx TUN 14.0031X

Issue No: 1

Date of Issue: 2018-09-25

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

Issue 1

The marking of the apparatus was changed.

The nominal operating data for power supply were clarified.

All other details remain unchanged.

Annex:

[Attachment_VEGATOR141_142 IC_IA_IECEx TUN 14.0031 X Issue 1.pdf](#)



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 TUN 14.0031X issue No.:0 Certificate history:

Status: Current

Date of Issue: 2014-10-22 Page 1 of 3

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

Electrical Apparatus: Signal conditioning instrument VEGATOR TOR 141.**X/S**** and VEGATOR TOR
142.*****

Optional accessory:

Type of Protection: Intrinsic safety and type of protection "n"

Marking: [Ex ia Ga] IIC
[Ex ia Da] IIIC
[Ex ia Ma] I

Ex nA nC ic IIC T4 Gc

Approved for issue on behalf of the IECEx
Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx certification Body

Signature:
(for printed version)

2014-10-22

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Certificate issued by:

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





IECEx Certificate of Conformity

Certificate No.: IECEx TUN 14.0031X

Date of Issue: 2014-10-22

Issue No.: 0

Page 2 of 3

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

Additional Manufacturing location(s):

VEGA Americas 4241 Aleldorf Drive Cincinnati, Ohio 45209 United States of America	VEGA Grieshaber KG Am Hohenstein 113, 77761 Schiltach Germany
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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 Explosive atmospheres - Part 0: General requirements

Edition: 6.0

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

Edition: 6.0

IEC 60079-15 : 2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

Edition: 4

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/TUN/ExTR14.0038/00

Quality Assessment Report:
DE/TUN/QAR06.0002/05



IECEx Certificate of Conformity

Certificate No.: IECEx TUN 14.0031X

Date of Issue: 2014-10-22

Issue No.: 0

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

See annexe

CONDITIONS OF CERTIFICATION: YES as shown below:

See annexe

