



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 09.0006X**

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Certificate history:

Status: **Current**

Issue No: 2

Issue 1 (2011-03-18)

Issue 0 (2009-03-02)

Date of Issue: 2023-09-22

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

Equipment: **Signal conditioning instrument VEGAMET 391**

Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: **[Ex ia Ma] I or**

[Ex ia Ga] IIC or

[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)

TÜVNORD

Digital unterschrieben
von Meyer Andreas
Datum: 2023.09.22
16:33:14 +02'00'

Date:
(for printed version)

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IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 09.0006X**

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Date of issue: 2023-09-22

Issue No: 2

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

Manufacturing
locations: **India VEGA India Level and
Pressure Measurement Pvt. Ltd.**
Plot No. 1, Gat No. 181
Village - Phulgaon, Tal. Haveli
Pune 412216
India

VEGA Americas, Inc.
3877 Mason Research Parkway
Ohio
Mason 45036
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 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

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/ExTR09.0007/02](#)

Quality Assessment Report:

[DE/TUN/QAR06.0002/12](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 09.0006X**

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Date of issue: 2023-09-22

Issue No: 2

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Description:

The signal conditioning instrument VEGAMET 391 is used for the safe galvanic separation of the intrinsically safe circuit from all non-intrinsically safe circuits.

The apparatus supplies passive, intrinsically safe 0/4-20 mA two wire measuring value transducers and transforms the signals of the transducers into a normalized 0/4-20 mA output signal.

The output signal, the relay outputs and the communication via the digital interfaces are used for the control and monitoring of filling levels.

Electrical and thermal data:

Refers to the attachment to IECEx TUN 09.0006X issue No.2

SPECIFIC CONDITIONS OF USE: YES as shown below:

With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX** via HART-connecting cable, the electrical output data of the intrinsically safe supply and signal circuit are incorrectly given in the previous issues No.0 and 1 of the certificate of conformity IECEx TUN 09.0006, therefore these data are no longer valid and are to be replaced by the values in this issue No.2 of the certificate of conformity IECEx TUN 09.0006X.

The supply voltage has also been corrected.



IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 09.0006X**

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Date of issue: 2023-09-22

Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Proof of conformity of the signal conditioning instrument VEGAMET 391 to IEC 60079-0:2017 and IEC 60079-11:2011
- Additional manufacturing location added.
- With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX** via HART-connecting cable, the electrical output data of the intrinsically safe supply and signal circuit are incorrectly given in the previous issues No.0 and 1 of the certificate of conformity IECEx TUN 09.0006, therefore these data are no longer valid and are to be replaced by the values in this issue No.2 of the certificate of conformity IECEx TUN 09.0006X.
- The supply voltage has also been corrected.
- The external inductance L_o and the external capacitance C_o are determined only by using the program ispark, version 7.1 from 2015-07-03 copyright @ PTB 2002

This results that the certificate is marked with the sign "X" after the certificate number.

Note that the signal conditioning instrument VEGAMET MET391.C**** is named in this issue No.2 as VEGAMET 391

Annex:

[Attachment to IECEx TUN 09.0006X issue No.2.pdf](#)

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Attachment to IECEx TUN 09.0006X issue No.: 2

General product information:

Description:

The signal conditioning instrument VEGAMET 391 is used for the safe galvanic separation of the intrinsically safe circuit from all non-intrinsically safe circuits.

The apparatus supplies passive, intrinsically safe 0/4-20 mA two wire measuring value transducers and transforms the signals of the transducers into a normalized 0/4-20 mA output signal.

The output signal, the relay outputs and the communication via the digital interfaces are used for the control and monitoring of filling levels.

Type code and Marking:

VEGAMET 391	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC

Electrical data:

Supply voltage

(Connections KI3[25, 26])

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

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

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

$U_m = 253 \text{ V a.c.}$

Supply and signal circuit

(Connections KI1[1, 2])

In type of protection Intrinsic Safety Ex ia I/IIC/IIB(IIIC) with following maximum values:

$U_o = 24.2 \text{ V}$

$I_o = 110 \text{ mA}$

$P_o = 662 \text{ mW}$

Characteristic line: linear

Effective internal capacitance C_i

Negligibly small

Effective internal inductance L_i

Negligibly small

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]	60	20	1	0.2	0.1
	C_o [µF]	1.8	2.5	2.8	4.3	4.5

Ex ia IIC	L_o [mH]	1.6	1	0.5	0.2	0.1
	C_o [µF]	0.052	0.066	0.086	0.12	0.122

Ex ia IIB (IIIC)	L_o [mH]	17	1	0.5	0.2	--
	C_o [µF]	0.55	0.63	0.75	0.91	--

With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX**
via HART-connecting cable (IECEx PTB 20.0007X).
(Connections KI1[3, 4])

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Attachment to IECEx TUN 09.0006X issue No.: 2

Supply and signal circuit (Connections KI1[1, 2])	In type of protection intrinsic safety Ex ia I/IIC/IIB(IIIC) with following maximum values: U _o = 24.2 V I _o = 113.7 mA P _o = 668 mW Characteristic line: linear Negligibly small Negligibly small
Effective internal capacitance C _i Effective internal inductance L _i	Negligibly small Negligibly small

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]	56	20	1	0.5	0.1
	C _o [µF]	1.8	2.5	2.8	3.3	4.5
Ex ia IIC	L _o [mH]	1.4	1	0.5	0.2	0.1
	C _o [µF]	0.054	0.065	0.085	0.12	0.122
Ex ia IIB (IIIC)	L _o [mH]	15	1	0.5	0.2	--
	C _o [µF]	0.55	0.63	0.75	0.91	--

Relay circuits (Relay output 1: Connections KI3 [31, 32, 33] relay output 2: Connections KI3 [34, 35, 36] relay output 3: Connections KI2 [13, 14, 15] relay output 4: Connections KI2 [16, 17, 18] relay output 5: Connections KI2 [19, 20, 21] relay output 6: Connections KI2 [22, 23, 24])	For connection to non-intrinsically safe circuits with following maximum values per relay: a. c. current: 253 V; 2 A; 125 VA d. c. current: 60 V; 1 A; 54 W
Current output (Connections KI3 [28, 29])	For connection to non-intrinsically safe circuits with following maximum values: 0/4 ... 20 mA U _m = 253 V a.c.
Communication circuit RS232 connection (Bushing at lower part of housing or	For connection to a RS232 interface U _m = 50 V
Ethernet connection (Bushing at lower part of housing)	For connection to an Ethernet interface U _m = 50 V
USB connection (MINI USB bushing at lower part of housing)	For connection to an USB interface U _m = 16 V

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Attachment to IECEx TUN 09.0006X issue No.: 2

Digital switch input circuits
(Digital input 1:
connections KI1 [8, 12]
Digital input 2:
connections KI1 [9, 12]
Digital input 3:
connections KI1 [10, 12]
Digital input 4:
connections KI1 [11, 12])

For connection to non-intrinsically safe circuits with
following maximum values:
Low level: $U = -3 \text{ V} \dots +5 \text{ V d.c.}$
High level: $U = +11 \text{ V} \dots +30 \text{ V d.c.}$
 $U_m = 36 \text{ V}$

The intrinsically safe supply and 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 during operation: $-20 \text{ °C} \leq T_a \leq +60 \text{ °C}$

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

- Proof of conformity of the signal conditioning instrument VEGAMET 391 to IEC 60079-0:2017 and IEC 60079-11:2011
- Additional manufacturing location added.
- With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX** via HART-connecting cable, the electrical output data of the intrinsically safe supply and signal circuit are incorrectly given in the previous issues No.0 and 1 of the certificate of conformity IECEx TUN 09.0006, therefore these data are no longer valid and are to be replaced by the values in this issue No.2 of the certificate of conformity IECEx TUN 09.0006X. The supply voltage has also been corrected.
- The external inductance L_o and the external capacitance C_o are determined only by using the program ispark, version 7.1 from 2015-07-03 copyright @ PTB 2002

This results that the certificate is marked with the sign "X" after the certificate number.

Note that the signal conditioning instrument VEGAMET MET391.C**** is named in this issue No.2 as VEGAMET 391

Specific Conditions of Use:

None.



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 09.0006 Issue No.: 1

Status: Current

Certificate history:
Issue No. 1 (2011-3-18)
Issue No. 0 (2009-3-2)

Date of Issue: 2011-03-18 Page 1 of 4

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

Electrical Apparatus: **Signal conditioning instrument VEGAMET type MET391.C******
Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: **[Ex ia Ga] IIC and [Ex ia Ma] I and [Ex ia Da] IIC**

Approved for issue on behalf of the IECEx
Certification Body:

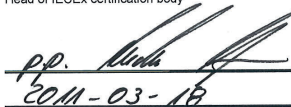
Karl-Heinz Schwedt

Position:

Head of IECEx certification body

Signature:
(for printed version)

Date:


2011-03-18

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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 09.0006

Date of Issue: 2011-03-18

Issue No.: 1

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

Manufacturing location(s):
Ohmart/VEGA Corporation
4241 Allendorf Drive
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 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 : 2007-10 Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	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
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'ID'

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/ExTR09.0007/01](#)

Quality Assessment Report:

[DE/TUN/QAR06.0002/01](#)



IECEx Certificate of Conformity

Certificate No.: IECEx TUN 09.0006

Date of Issue: 2011-03-18

Issue No.: 1

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The signal conditioning instrument VEGAMET type MET391.C**** is an associated electrical apparatus and is used for the safe galvanic separation of the intrinsically safe circuit from all non-intrinsically safe circuits.

The apparatus supplies passive, intrinsically safe 0/4-20 mA two wire measuring value transducers and transforms the signals of the transducers into a normalized 0/4-20 mA output signal.

The output signals, the relay outputs and the communication via the digital interfaces are used for the control and monitoring of filling levels.

The maximum permissible ambient temperature is 60°C.

CONDITIONS OF CERTIFICATION: NO



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

See annexe

Annexe: annexe_1st supplement_COC_VEGAMET MET391_.pdf

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Attachment to IECEx TUN 09.0006 Issue 1

IECEX TR:	File reference:
DE/TUN/ExTR09.0007/01	11 217 079695
IECEX QAR:	File reference:
DE/QAR/TUN/06.0002/02	QAR TUN 04.0002

In the future, the signal conditioning instrument VEGAMET MET391.C**** may also be manufactured according to the documents listed in the test report.
The changes refer to the components (non ex relevant) on the pc boards, the transformer's construction, the electrical data (values of C_o and L_o for group I) and the marking.

This reads:
[Ex ia Ga] IIC and [Ex ia Ma] I and [Ex ia Da] IIIC

Electrical data

Supply and signal circuit in type of protection „Intrinsic Safety“
Ex ia IIC/IIB/I resp. Ex ia IIIC
(Connections KI1[1, 2]) max. values:
U_o = 24.2 V
I_o = 110 mA
P_o = 662 mW
characteristic line: linear

Ex ia	IIC		IIB		I	
max. permissible ext. inductance	0.2 mH	0.5 mH	0.5 mH	1.0 mH	0.5 mH	10 mH
max. permissible ext. capacitance	110 nF	82 nF	540 nF	460 nF	1000 nF	930 nF

With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX** via HART-connecting cable

(Connections KI1[3, 4])
Supply and signal circuit in type of protection „Intrinsic Safety“
Ex ia IIC/IIB/I resp. Ex ia IIIC
(Connections KI1[1, 2]) max. values:
U_o = 24.2 V
I_o = 113 mA
P_o = 667 mW
characteristic line: linear

Ex ia	IIC		IIB		I	
max. permissible ext. inductance	0.2 mH	0.5 mH	0.5 mH	1.0 mH	0.5 mH	10 mH
max. permissible ext. capacitance	110 nF	81 nF	540 nF	460 nF	1000 nF	930 nF

The maximum values of the tables are also allowed to be used simultaneously as concentrated capacitances and as concentrated inductances.

The intrinsically safe supply and signal circuit is also allowed to be connected to apparatus in explosion hazardous areas caused by dust.
Then, the supply and signal circuit may be executed in type of protection Intrinsic Safety Ex ia IIC or Ex ia IIB.

All other details remain unchanged.