



Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** TÜV 09 ATEX 555127 X **Issue:** 00

(4) for the product: Signal conditioning instrument VEGAMET 391

(5) of the manufacturer: **VEGA Grieshaber KG**

(6) Address: Am Hohenstein 113, 77761 Schiltach, Germany

Order number: 8003032460

Date of issue: See date of signature

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential ATEX Assessment Report No. 22 203 296675.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018/AC:2020-02**

**EN 60079-11:2012**

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 **See "Type code and Marking"**

TÜV NORD CERT GmbH, Am TÜV 1, 45307 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The deputy of the head of the notified body

**TUVNORD** Digital  
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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 09 ATEX 555127 X**

**Issue 00**

(15) **Description of product:**

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	I (M1) [Ex ia Ma] I
	II (1) G [Ex ia Ga] IIC
	II (1) D [Ex ia Da] IIIC

**Electrical data:**

Supply voltage  
(Connections Kl3[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 Kl1[1, 2])

In type of protection Intrinsic Safety Ex ia I/IIC/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:

<b>Ex ia I</b>	$L_o$ [mH]	60	20	1	0.2	0.1
	$C_o$ [ $\mu$ F]	1.8	2.5	2.8	4.3	4.5

<b>Ex ia IIC</b>	$L_o$ [mH]	1.6	1	0.5	0.2	0.1
	$C_o$ [ $\mu$ F]	0.052	0.066	0.086	0.12	0.122

<b>Ex ia IIB (IIIC)</b>	$L_o$ [mH]	17	1	0.5	0.2	--
	$C_o$ [ $\mu$ F]	0.55	0.63	0.75	0.91	--

**Schedule to EU-Type Examination Certificate No. TÜV 09 ATEX 555127 X**

**Issue 00**

With additionally connected VEGA interface converter VEGACONNECT type CONNECT.CX\*\* via HART-connecting cable (PTB 07 ATEX 2013 X).  
(Connections KI1[3, 4])

Supply and signal circuit  
(Connections KI1[1, 2])

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

$U_o = 24.2 \text{ V}$   
 $I_o = 113.7 \text{ mA}$   
 $P_o = 668 \text{ mW}$   
Characteristic line: linear

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:

<b>Ex ia I</b>	$L_o$ [mH]	56	20	1	0.5	0.1
	$C_o$ [ $\mu$ F]	1.8	2.5	2.8	3.3	4.5

<b>Ex ia IIC</b>	$L_o$ [mH]	1.4	1	0.5	0.2	0.1
	$C_o$ [ $\mu$ F]	0.054	0.065	0.085	0.12	0.122

<b>Ex ia IIB (IIIC)</b>	$L_o$ [mH]	15	1	0.5	0.2	--
	$C_o$ [ $\mu$ F]	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  
 $U_m = 253 \text{ V a.c.}$

Communication circuit  
RS232 connection  
(Bushing at lower part of housing  
or

For connection to a RS232 interface  
 $U_m = 50 \text{ V}$

**Schedule to EU-Type Examination Certificate No. TÜV 09 ATEX 555127 X**

**Issue 00**

Ethernet connection (Bushing at lower part of housing)	For connection to an Ethernet interface $U_m = 50 \text{ V}$
USB connection (MINI USB bushing at lower part of housing)	For connection to an USB interface $U_m = 16 \text{ V}$
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:  $-20 \text{ °C} \leq T_a \leq +60 \text{ °C}$

(16) Drawings and documents are listed in the ATEX Assessment Report No. 22 203 296675

(17) **Specific Conditions for Use:**

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 EC-Type Examination Certificate TÜV 09 ATEX 555127 and its supplement, therefore these data are no longer valid and are to be replaced by the values in this issue 00 of the EU-Type Examination Certificate TÜV 09 ATEX 555127 X. The supply voltage has also been corrected.

(18) **Essential Health and Safety Requirements:**

No additional ones.

- End of EU-Type Examination Certificate -

Translation

(1) **EC-Type Examination Certificate**

**TUV NORD**

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**



(3) **Certificate Number** TÜV 09 ATEX 555127

(4) for the equipment: Signal conditioning instrument VEGAMET type MET391.C\*\*\*\*

(5) of the manufacturer: VEGA Grieshaber KG

(6) Address: Am Hohenstein 113  
D-77761 Schiltach

Order number: 8000555127

Date of issue: 2009-02-27

- (7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, notified body No. 0044 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 09 203 555127.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006  
EN 61241-11:2006

EN 60 079-26:2004

EN 60079-11:2007

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment or protective system must include the following:

II (1) G [Ex ia] IIC II (1) D [Ex iaD] I (M1) [Ex ia] I

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The head of the certification body

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This certificate may only be reproduced without any change, schedule included.  
Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH

(13) **SCHEDULE**

(14) **EC-Type Examination Certificate No. TÜV 09 ATEX 555127**

(15) Description of equipment

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 signal, 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.

Electrical data

Supply voltage  
(Connections K13[25, 26] )

U = 20 ... 72 V d. c.  
U = 20 ... 253 V a. c.  
U<sub>m</sub> = 253 V a. c.

Supply and signal circuit  
(Connections K11[1, 2] )

in type of protection „Intrinsic Safety“ Ex ia IIC/IIB/  
max. values:

U<sub>o</sub> = 24.2 V  
I<sub>o</sub> = 110 mA  
P<sub>o</sub> = 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 K11[3, 4] )

Supply and signal circuit  
(Connections K11[1, 2] )

in type of protection „Intrinsic Safety“ Ex ia IIC/IIB  
max. values:

U<sub>o</sub> = 24.2 V  
I<sub>o</sub> = 113 mA  
P<sub>o</sub> = 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

Schedule EC-Type Examination Certificate No. TÜV 09 ATEX 555127 X

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.

Relay circuits	maximum values per relay:
(Relay output 1:	a. c. current: 253V, 2A, 125 VA
connections K13[31, 32, 33]	d. c. current: 60V, 1A, 54 W
relay output 2:	
connections K13[34, 35, 36]	
relay output 3:	
connections K12[13, 14, 15]	
relay output 4:	
connections K12[16, 17, 18]	
relay output 5:	
connections K12[19, 20, 21]	
relay output 6:	
connections K12[22, 23, 24] )	

Current output	0/4 ... 20 mA
(Connections K13[28, 29] )	$U_m = 253 \text{ V a. c.}$

Communication circuits:

RS232 connection	for connection to a RS232 interface
(Bushing at lower part of housing	$U_m = 50 \text{ V}$
or	

Ethernet connection	for connection to an Ethernet interface
(Bushing at lower part of housing)	$U_m = 50 \text{ V}$

USB connection	for connection to an USB interface
(MINI USB bushing at lower part of housing)	$U_m = 16 \text{ V}$

Digital switch input circuits	max. values:
(Digital input 1:	low level: $U = -3\text{V} \dots +5\text{V d. c.}$
connections K11[8, 12]	high level: $U = +11\text{V} \dots +30\text{V d. c.}$
Digital input 2:	$U_m = 36 \text{ V}$
connections K11[9, 12]	
Digital input 3:	
connections K11[10, 12]	
Digital input 4:	
connections K11[11, 12] )	

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

Schedule EC-Type Examination Certificate No. TÜV 09 ATEX 555127 X

(16) The test documents are listed in the test report No. 09 203 555127.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones



**Translation**

**1. SUPPLEMENT**

**to Certificate No.** TÜV 09 ATEX 555127  
**Equipment:** Signal conditioning instrument VEGAMET type MET391.C\*\*\*\*  
**Manufacturer:** VEGA Grieshaber KG  
**Address:** Am Hohenstein 113  
77761 Schiltach  
**Order number:** 8000393496  
**Date of issue:** 2011-03-18

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 Co and Lo for group I) and the marking.

This reads:

II (1) G [Ex ia Ga] IIC und I (M1) [Ex ia Ma] I und II (1) D [Ex ia Da] IIIC

The equipment according to this supplement meets the requirements of these standards:

EN 60079-0:2009                      EN 60079-11:2007                      EN 60079-26:2007  
EN 61241-11:2006

All other details remain unchanged.

(16) The test documents are listed in the test report No. 11 203 079694.

(17) Special conditions for safe use

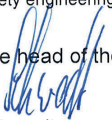
None

(18) Essential Health and Safety Requirements

no additional ones

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The head of the certification body



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