1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **KIWA 19ATEX0027X** Issue: **3**

4 Equipment: **Radar Sensors Types VEGAPULS C 21, C 22, C 23**

5 Applicant: **VEGA Grieshaber KG**

6 Address: Am Hohenstein 113
77761 Schiltach
Germany

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-18:2015 + A1:2017 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2G Ex ib mb IIC T4 Gb
2-wire 4-20 mA HART:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 121°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 134°C Db
4-wire Modbus:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 142°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 155°C Db

Signed: M Halliwell

Title: Director of Operations

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **KIWA 19ATEX0027X**
Issue 3

13 **DESCRIPTION OF EQUIPMENT**

Radar sensors types VEGAPULS C 21, C 22, C 23 for use in explosive atmospheres caused by the presence of combustible gases or dusts, are used for monitoring and control of filling levels by means of microwave technology. The electronics, mounted in an plastic enclosure converts the reflected microwave echo, indicating the filling level, into an 2-wire 4-20mA HART or 4-wire Modbus signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).
The sensor is equipped with a fixed cable of 5m, 10 m, 25m or selectable length with a G1", 1"NPT or R1" threaded connection.

Ambient and process temperature range for Ex ib mb, Ex tb: -20 to 80 ºC
Ambient and process temperature range for Ex ta, ta/tb: -20 to 67 ºC

Electrical Data

2-wire 4-20 mA HART:
Supply and output circuit (+ (Brown wire), - (Blue wire)):
U_N = 12 … 35 V, < 1W
4-wire Modbus:
Supply (+ (Brown wire), - (Blue wire)) and output circuit (+ (Black wire), - (White wire)):
U_N = 8 … 30 V, < 1W

Instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

Variation 1 - This variation introduced the following changes:

i. Introduce alternate electronics for 4-20 mA HART similar to previously evaluated.
ii. Minor modification of the label drawing.
iii. Additional manufacturing location:
VEGA India Level and Pressure Measurement Pvt. Ltd., Plot No. 1, Gat No. 181, Village - Phulgaon, Tal. Haveli, Pune 412216, India.
iv. Change of manufacturing location:
From: VEGA Americas, Inc., 4241 Allendorf Drive, Cincinnati, Ohio 45209, United States of America.
To: VEGA Americas, Inc., 3877 Mason Research Parkway, Ohio, Mason 45036, United States of America.
v. The report is also to facilitate the transfer of certificates KIWA 19ATEX0027X from Kiwa Nederland B.V., Unit Kiwa ExVision, Wilmersdorf 50, 7327 AC Apeldoorn, The Netherlands to CSA Group.

Variation 2 - This variation introduced the following changes:

i. Introduction of alternative enclosure design according to drawing 1016899.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **KIWA 19ATEX0027X**
Issue 3

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
1	17 April 2020	180200754	The release of the prime certificate.
2	03 April 2023	R80149580A	The introduction of Variation 1.
3	07 June 2023	R80159632A	The introduction of Variation 2.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 For electrical and thermal data refer to Section 13.

15.2 The equipment shall be installed and maintained such that hazards caused discharge are excluded and that there is a low risk of mechanical danger.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

Certificate Annexe

Certificate Number: **KIWA 19ATEX0027X**

Equipment: **Radar Sensors Types VEGAPULS C 21, C 22, C 23**

Applicant: **VEGA Grieshaber KG**

Issue 1: - Refer to the report stated in Section 14.2.

Issue 2

Drawing	Sheets	Rev.	Date (Stamp)	Title
SB1585-4	1 to 4	4	31 Jan 23	PULSC20-H1 Sheet 1-4 (Circuit Diagram)
BB1585-4	1 of 1	4	31 Jan 23	PUSC20-H1 (Component Layout)
SB1667-1	1 of 1	1	31 Jan 23	PULS_DAC_H_Adapter (Circuit Diagram)
BB+LP1667-1	1 of 1	1	31 Jan 23	PULS_DAC_H-Adapter (Component & Trace Layout)

NOTE: All previous revisions of the modified drawings are still valid and can be used.

Drawing	Sheets	Rev.	Date (Stamp)	Title
VEGAZW-6-58290	1 to 13	10	07 Mar 23	Specification Type-Plate VEGAPULS C 21, C 22, C 23

NOTE: Above marking specification and label drawing is revised and previous revision is removed from the report.

Issue 3

Drawing	Sheets	Rev.	Date (Stamp)	Title
1016899	1 of 1	1	02 May 23	SENSOR Alternative housing
1023314	1 of 1	0	02 May 23	SENSOR alternative housing, dimensional drawing

1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **KIWA 19ATEX0027X** Issue: **2**

4 Equipment: **Radar Sensors Types VEGAPULS C 21, C 22, C 23**

5 Applicant: **VEGA Grieshaber KG**

6 Address: Am Hohenstein 113
77761 Schiltach
Germany

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-18:2015 + A1:2017 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2G Ex ib mb IIC T4 Gb
2-wire 4-20 mA HART:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 121°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 134°C Db
4-wire Modbus:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 142°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 155°C Db

Signed: M Halliwell

Title: Director of Operations

PRODUCTS RvA C 652

Project Number 80149581

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **KIWA 19ATEX0027X**
Issue 2

13 **DESCRIPTION OF EQUIPMENT**

Radar sensors types VEGAPULS C 21, C 22, C 23 for use in explosive atmospheres caused by the presence of combustible gases or dusts, are used for monitoring and control of filling levels by means of microwave technology. The electronics, mounted in an plastic enclosure converts the reflected microwave echo, indicating the filling level, into an 2-wire 4-20mA HART or 4-wire Modbus signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).
The sensor is equipped with a fixed cable of 5m, 10 m, 25m or selectable length with a G1", 1"NPT or R1" threaded connection.

Ambient and process temperature range for Ex ib mb, Ex tb: -20 to 80 ºC
Ambient and process temperature range for Ex ta, ta/tb: -20 to 67 ºC

Electrical Data

2-wire 4-20 mA HART:
Supply and output circuit (+ (Brown wire), - (Blue wire)):
U_N = 12 … 35 V, < 1W
4-wire Modbus:
Supply (+ (Brown wire), - (Blue wire)) and output circuit (+ (Black wire), - (White wire)):
U_N = 8 … 30 V, < 1W

Instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

Variation 1 - This variation introduced the following changes:

i. Introduce alternate electronics for 4-20 mA HART similar to previously evaluated.
ii. Minor modification of the label drawing.
iii. Additional manufacturing location:
VEGA India Level and Pressure Measurement Pvt. Ltd., Plot No. 1, Gat No. 181, Village - Phulgaon, Tal. Haveli, Pune 412216, India.
iv. Change of manufacturing location:
From: VEGA Americas, Inc., 4241 Allendorf Drive, Cincinnati, Ohio 45209, United States of America.
To: VEGA Americas, Inc., 3877 Mason Research Parkway, Ohio, Mason 45036, United States of America.
v. The report is also to facilitate the transfer of certificates KIWA 19ATEX0027X from Kiwa Nederland B.V., Unit Kiwa ExVision, Wilmersdorf 50, 7327 AC Apeldoorn, The Netherlands to CSA Group.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
1	17 April 2020	180200754	The release of the prime certificate.
2	03 April 2023	R80149580A	The introduction of Variation 1.

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

KIWA 19ATEX0027X
Issue 2

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 For electrical and thermal data refer to Section 13.

15.2 The equipment shall be installed and maintained such that hazards caused discharge are excluded and that there is a low risk of mechanical danger.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

Certificate Annexe

Certificate Number: **KIWA 19ATEX0027X**

Equipment: **Radar Sensors Types VEGAPULS C 21, C 22, C 23**

Applicant: **VEGA Grieshaber KG**

Issue 1: Refer to the report stated in Section 14.2.

Issue 2

Drawing	Sheets	Rev.	Date (Stamp)	Title
SB1585-4	1 to 4	4	31 Jan 23	PULSC20-H1 Sheet 1-4 (Circuit Diagram)
BB1585-4	1 of 1	4	31 Jan 23	PUSC20-H1 (Component Layout)
SB1667-1	1 of 1	1	31 Jan 23	PULS_DAC_H_Adapter (Circuit Diagram)
BB+LP1667-1	1 of 1	1	31 Jan 23	PULS_DAC_H-Adapter (Component & Trace Layout)

NOTE: All previous revisions of the modified drawings are still valid and can be used.

Drawing	Sheets	Rev.	Date (Stamp)	Title
VEGAZW-6-58290	1 to 13	10	07 Mar 23	Specification Type-Plate VEGAPULS C 21, C 22, C 23

NOTE: Above marking specification and label drawing is revised and previous revision is removed from the report.

CERTIFICATE

1 EU – Type Examination Certificate

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU

3 EU – Type Examination Certificate Number: **KIWA 19ATEX0027 X Issue: 1**

4 Product: **Radar sensors types VEGAPULS C 21, C 22, C 23**

5 Manufacturer: **VEGA Grieshaber KG**

6 Address: **Am Hohenstein 113, 77761 Schiltach**
Germany

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Kiwa Nederland B.V., Notified Body number 0063 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 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 confidential ATEX Assessment Report No. 180200754.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0 : 2018 **EN 60079-11 : 2012**
EN 60079-18 : 2015 + A1 : 2017 **EN 60079-31 : 2014**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of 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 product. These are not covered by this certificate.

12 The marking of the product shall include the following:

II 2G Ex ib mb IIC T4 Gb
2-wire 4-20 mA HART:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 121°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 134°C Db
4-wire Modbus:
II 1D,1/2D Ex ta, ta/tb IIIC T_{200} 142°C Da, Da/Db
II 2D Ex tb IIIC T_{200} 155°C Db

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Kiwa Nederland B.V.

Ron Scheepers
Management Director

Issue date: 17 April 2020

First issue:

This certificate shall, as far as applicable, be revised before the date of cessation of presumption of conformity of (one of) the included standards above as communicated in the Official Journal of the European Union.

13 **SCHEDULE**

14 **EU – Type Examination Certificate KIWA 19ATEX0027 X Issue No. 1**

15.1 **Description of Product**

Radar sensors types VEGAPULS C 21, C 22, C 23 for use in explosive atmospheres caused by the presence of combustible gases or dusts, are used for monitoring and control of filling levels by means of microwave technology. The electronics, mounted in an plastic enclosure converts the reflected microwave echo, indicating the filling level, into an 2-wire 4-20mA HART or 4-wire Modbus signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).
The sensor is equipped with a fixed cable of 5m, 10 m, 25m or selectable length with a G1", 1"NPT or R1" threaded connection.

Ambient and process temperature range for Ex ib mb, Ex tb: -20 to 80 ºC
Ambient and process temperature range for Ex ta, ta/tb: -20 to 67 ºC

15.2 **Electrical Data**

2-wire 4-20 mA HART:
Supply and output circuit (+ (Brown wire), - (Blue wire)):
U_N = 12 … 35 V, < 1W
4-wire Modbus:
Supply (+ (Brown wire), - (Blue wire)) and output circuit (+ (Black wire), - (White wire)):
U_N = 8 … 30 V, < 1W

15.3 **Instructions**

The instructions provided with the product shall be followed in detail to assure safe operation.

16 **ATEX Assessment Report Number**

180200754.

17 **Specific Conditions of Use**

- For electrical and thermal data refer to 15.1 and 15.2.
- The equipment shall be installed and maintained such that hazards caused by electrostatic discharge are excluded and that there is a low risk of mechanical danger.

18 **Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at section 9.

19 **Drawings and Documents**

As listed in ATEX Assessment Report No. 180200754.