[1]

UNITED KINGDOM CONFORMITY ASSESSMENT

UK-TYPE EXAMINATION CERTIFICATE

[2]

Product or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1

[3] UK-Type Examination Certificate No.: **UL21UKEX2284X Rev. 1**

[4] Product: **Radar sensor types VEGAPULS 21, 31, 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 are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International (UK) Ltd, Approved Body number 0843, in accordance with Regulation 44 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), 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 Schedule 1 of the Regulations.
The examination and test results are recorded in the confidential report **UKRCC- 4790597538.1.1**

[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 60079-26:2015

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

[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 UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations 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:

VEGAPULS 21, 31:

Ex II 1 G, 1/2 G Ex ia IIC T4 Ga or Ga/Gb

VEGAPULS C 21, C 22, C 23:

Ex II 1 G, 1/2 G Ex ia IIC T4 Ga or Ga/Gb

Ex II 1 D, 1/2 D Ex ia IIIC T134°C Da, Da/Db

Certification Officer
Andrew Moffat

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UKEx Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Regulations. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2021-11-26

Re-issued: 2022-11-11

Approved Body UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK
Phone : +44 (0)1256 312100

[13] [14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2284X Rev. 1

[15] **Description of Product**

Radar sensor types VEGAPULS 21, 31, 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 a plastic enclosure converts the reflected microwave echo, indicating the filling level, into an 2-wire 4…20mA HART 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 either equipped with a fixed cable (VEGAPULS C 21, C 22, C 23) of 5m, 10 m, 25m or selectable length with a G1", 1" NPT or R1" threaded connection or a 2 wire terminal (VEGAPULS 21, 31) via a M20x1.5 or ½" NPT cable entry.

VEGAPULS 21 and 31 are electrically identical where type 21 is equipped without a display module and a blind cover and type 31 is equipped with a display module and a windowed cover.

[15.1] Temperature range
Ambient temperature range for VEGAPULS 21, 31: -40 ºC to +70 ºC
Ambient temperature range for VEGAPULS C 21, C 22, C 23: -40 ºC to +80 ºC
Process temperature range: -40 ºC to +80 ºC

[15.2] Electrical data

VEGAPULS C 21, C 22, C 23:
Supply and output circuit (+ (Brown wire), - (Blue wire)):
in type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
Ui = 30 V; Ii = 131 mA; Pi = 983 mW; Ci = 0.18 nF/m; Li =0.65 µH/m
VEGAPULS 21, 31:
Supply and output circuit (+ (terminals 1), - (terminal 2)):
in type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
Ui = 30 V; Ii = 131 mA; Pi = 983 mW; Ci ≈ 0 nF; Li ≈ 0 µH

Routine tests
None.

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

[16] Descriptive Documents
The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this UK-Type Examination Certificate.

[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.

[18] Conditions of certification:
None

[19] Essential Health and Safety Requirements (Regulations Schedule 1)
In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

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Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2284X Rev. 1

[20] Drawings and Documents

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Type-Plate UL21UKEX2284X VEGAPULS C 21, C 22, C 23	VEGAZW-6-77262	00	2021-10-13
Type-Plate UL21UKEX2284X VEGAPULS 21, 31	VEGAZW-6-77263	00	2021-10-13
Safety instructions VEGAPULS C 21, C 22, C 23	62412	-	2021-10-06
Safety instructions VEGAPULS 21, 31	62414	-	2021-10-06
Application Document for models of VEGAPULS C 21, C 22, C 23 and VEGAPULS 21, 31 with the protection type: intrinsic safety	VEGAZW-6-52267	04	2019-10-08
VEGAPULS 21/31	GE4049	01	2019-04-16
VEGAPULS C 21	GE4055	-	2019-02-08
VEGAPULS C 22	GE4063	-	2019-08-28
VEGAPULS C 23	GE4056	-	2019-02-08
PULSC20-H circuit diagram	SB1505-3	3	2019-07-24
PULSC20-H component layer	BB1505-3	3	2019-07-24
PULSC20-H trace layout	LP1505-3	3	2019-07-24
BR-PL-2DIS circuit diagram	SB1512-1	1	2019-03-13
BR-PL-2DIS component layer	BB1512-1	1	2019-02-07
BR-PL-2DIS trace layout	LP1512-1	1	2019-02-07
BR-PL-2DIS circuit diagram	SB1512-1	3	2019-07-24
PULS30-H circuit diagram	SB1540-3	3	2019-07-24
PULSC30-H component layer	BB1540-3	3	2019-07-24
PULSC30-H trace layout	LB1540-3	3	2019-07-24
Layout Description PULS 21, 31, C 21, C 22, C 23	VEGAZW-6-54520	04	2019-10-08
Refer to UKRCC- 4790597538.1.1 addendum for actual titles in [ ] parenthesis.			
[Application Document for Alternate construction based on models C21/C23 with the protection type: intrinsic safety]	VEGAZW-6-56840	02	2019-12-05
[Application Document supplement the Intrinsic Safety Certificates with Alternate construction based on model 31]	VEGAZW-6-65310	01	2020-10-23
[VEGAPULS C 21 Alternate Construction]	GE4155	0	2019-06-25
[VEGAPULS C 23 Alternate Construction]	GE4156	0	2019-06-25
[VEGAPULS 31 Alternate Construction]	GE4294	0	2020-07-02
Submergence Shield	25410056	3	2018-03-01

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UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1

[3] UK Type Examination Certificate No.: **UL21UKEX2284X Rev. 0**

[4] Product: **Radar sensors types VEGAPULS 21, 31, C 21, C 22, C 23**

[5] Manufacturer: **VEGA Grieshaber KG**

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

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[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

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Ex II 1 G, 1/2 G Ex ia IIC T4 Ga or Ga/Gb

Ex II 1 D, 1/2 D Ex ia IIIC T134°C Da, Da/Db

Certification Manager
David Lloyd

Date of issue: 2021-11-26

Approved Body UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK
Phone : +44 (0)1256 312100

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Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2284X Rev. 0

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Routine tests
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[15.3] The instructions provided with the product shall be followed in detail to assure safe operation.

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[20] Drawings and Documents

Technical Documents			
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Type-Plate UL21UKEX2284X VEGAPULS 21, 31	VEGAZW-6-77263	00	2021-10-13
Safety instructions VEGAPULS C 21, C 22, C 23	62412	-	2021-10-06
Safety instructions VEGAPULS 21, 31	62414	-	2021-10-06
Application Document for models of VEGAPULS C 21, C 22, C 23 and VEGAPULS 21,	VEGAZW-6-52267	04	2019-10-08

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Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2284X Rev. 0

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
31 with the protection type: intrinsic safety			
VEGAPULS 21/31	GE4049	01	2019-04-16
VEGAPULS C 21	GE4055	-	2019-02-08
VEGAPULS C 22	GE4063	-	2019-08-28
VEGAPULS C 23	GE4056	-	2019-02-08
PULSC20-H circuit diagram	SB1505-3	3	2019-07-24
PULSC20-H component layer	BB1505-3	3	2019-07-24
PULSC20-H trace layout	LP1505-3	3	2019-07-24
BR-PL-2DIS circuit diagram	SB1512-1	1	2019-03-13
BR-PL-2DIS component layer	BB1512-1	1	2019-02-07
BR-PL-2DIS trace layout	LP1512-1	1	2019-02-07
BR-PL-2DIS circuit diagram	SB1512-1	3	2019-07-24
PULSC30-H component layer	BB1540-3	3	2019-07-24
PULSC30-H trace layout	LP1540-3	3	2019-07-24
Layout Description PULS 21, 31, C 21, C 22, C 23	VEGAZW-6-54520	04	2019-10-08