

# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**

2. **Certificate No:** FM20CA0015X  
3. **Equipment:** VEGAPULS C 21, C 22 & C 23 Series  
(Type Reference and Name) Level Transmitters

4. **Name of Listing Company:** Vega Grieshaber KG

5. **Address of Listing Company:** Am Hohenstein 113  
Schiltach D-77761  
Germany

6. The examination and test results are recorded in confidential report number:

PR456805 dated 22<sup>nd</sup> June 2020

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CSA C22.2 No. 25:R2014, CSA C22.2 No. 213:2017, CAN/CSA C22.2 No. 60079-0:2019,  
CAN/CSA C22.2 No. 60079-11:2014, CAN/CSA C22.2 No. 60079-18:2016,  
CAN/CSA C22.2 No. 60079-31:2015, CAN/CSA-C22.2 No. 61010-1:2012, CSA C22.2 No. 0.5:2016,  
CSA C22. No. 94.2:2015 & CAN/CSA C22.2 No. 60529:2016

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. **Equipment Ratings:**

Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, Class III, T4; Non-Incendive for Class I, Division 2, Groups A, B, C & D, for Temperature Class T4; Protection by Enclosure as Ex ta IIIC (T121°C or T142°C) Da Ta = -20°C to +67°C and Ex tb IIIC (T134°C or T155°C) Db Ta = -20°C to +80°C, and Intrinsically Safe and Encapsulated Ex ib mb IIIC T4 Gb Ta = -20°C to +80°C, hazardous (classified) locations, indoor and outdoor, Type 4X/6P and IP66/IP68 (IPX8: 3 bar, 24 hr).

**Certificate issued by:**

  
E. Marquedant  
VP, Manager - Electrical Systems

23 October 2020  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA

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# SCHEDULE



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11. The marking of the equipment shall include:

For the VEGAPULS C 21 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C  
CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C  
Ex ib mb IIC T4 Gb Ta = -20°C...+80°C  
Ex ta IIIC T\* Da Ta = -20°C...+67°C  
Ex tb IIIC T\* Db Ta = -20°C...+80°C  
IP66/68, Type 4X/6P  
Install per Document 64735

Um = 35V (for 4...20mA/HART electronics)  
Um = 30V (for MODBUS electronics)

For the VEGAPULS C 21, C 22 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C  
CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C  
IP66/68, Type 4X/6P

\* For EPL Da & EPL Db, Temperature Class depends on Electronics:  
Two-wire 4...20mA / HART: T121°C for EPL Da, T134°C for EPL Db  
MODBUS: T142°C for EPL Da, T155°C for EPL Db

12. **Description of Equipment:**

**General** – The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are level measurement transmitters based on the FMCW (frequency modulated continuous wave) measurement principle, an indirect method of distance measurement. The devices use high-frequency microwave signals in the GHz range to detect the distance between the sensor and the product surface level.

**Construction** – The VEGAPULS C 21, C 22 & C 23 Series Level transmitters have non-metallic enclosures that are gray in color. The inside of the enclosures with the electronics are filled with encapsulation. The top part of the enclosure includes an integral cable and NPT male threaded entry for wiring. The top part of the VEGAPULS C 21 and C 23 enclosures may include a R1, G1, or 1" NPT male thread for connection to an industrial process, in which case an additional ½" NPT adapter is included integral to the equipment for wiring purposes. The bottom of the VEGAPULS C 21 and C 22 enclosures includes R 1½", G 1½", or 1½" NPT male thread intended for connection to an industrial process. The enclosures may offer means for wall or ceiling mounting which do not penetrate the enclosure. Gaskets and o-rings are provided for environmental sealing of the integral cable and there are no other seams nor joints present on the enclosures.

The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for process temperature ranges equal to the respective ambient temperature ranges, for process pressures of -1...+3 bar, and for Type 4X & 6P and Degree of Protection IP66/IP68 (3 bar, 24 hr).

**Electrical Ratings** – The equipment is intended for wiring to a limited energy circuit as defined by CAN/CSA C22.2 No. 61010-1. The 4...20mA/HART electronics options operate at 12...35 VDC, and the MODBUS electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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## **VEGAPULS C 21. Level Transmitter.**

- Thread type process side / top side / wiring side:  
G 1 ½ / G1 or NPT 1 / None or ½ NPT  
R 1 ½ / R1 or NPT 1 / None or ½ NPT  
1 ½ NPT / 1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

## **VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

## **VEGAPULS C 23. Level Transmitter.**

- Thread type top side / wiring side:  
1G / ½ NPT  
1R / ½ NPT  
1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

FM Approved equipment models also include additional options that are not related to compliance with the applicable standards as listed on the certificate; for example but not limited to: measurement range, overfill protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

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## 13. Specific Conditions of Use:

1. 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.
2. The equipment shall be wired using the NPT threads identified on the enclosure using the 1 NPT threads for Zones, either the 1 NPT or ½ NPT threads for Divisions, and in accordance with the applicable area electrical code. The integral cable shall be mechanically protected and terminated in a suitably rated terminal or junction facility.

## 14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

## 15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

## 16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
22 <sup>nd</sup> June 2020	Original Issue.
10 <sup>th</sup> August 2020	<u>Supplement 1:</u> Report Reference: - RR224208 dated 10 <sup>th</sup> August 2020. Description of the Change: Minor documentation updates in order to update safety instructions drawing ID from 62413 to 64753.
23 <sup>rd</sup> October 2020	<u>Supplement 2:</u> Report Reference: - PR457765 dated 23 <sup>rd</sup> October 2020. Description of the Change: Correct safety instructions drawing 64753 to 64735.

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### Certificate issued by:

  
J.E. Marquedant  
VP, Manager - Electrical Systems

10 August 2020  
Date

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Ex ta IIIC T\* Da Ta = -20°C...+67°C

Ex tb IIIC T\* Db Ta = -20°C...+80°C

IP66/68, Type 4X/6P

Install per Document 64753

Um = 35V (for 4...20mA/HART electronics)

Um = 30V (for MODBUS electronics)

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\* For EPL Da & EPL Db, Temperature Class depends on Electronics:

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- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 23. Level Transmitter.**

- Thread type top side / wiring side:  
1G / ½ NPT  
1R / ½ NPT  
1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
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R1½
- Thread type wiring side:  
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## **SCHEDULE**



Canadian Certificate Of Conformity No: FM20CA0015X

### **13. Specific Conditions of Use:**

- 1. 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.*
- 2. The equipment shall be wired using the NPT threads identified on the enclosure using the 1 NPT threads for Zones, either the 1 NPT or ½ NPT threads for Divisions, and in accordance with the applicable area electrical code. The integral cable shall be mechanically protected and terminated in a suitably rated terminal or junction facility.*

### **14. Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

### **15. Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

### **16. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
22 <sup>nd</sup> June 2020	Original Issue.

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F 348 (Mar 16)

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# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM20US0038X
3. **Equipment:** VEGAPULS C 21, C 22 & C 23 Series  
**(Type Reference and Name)** Level Transmitters
4. **Name of Listing Company:** Vega Grieshaber KG
5. **Address of Listing Company:** Am Hohenstein 113  
Schiltach D-77761  
Germany

6. The examination and test results are recorded in confidential report number:

PR456805 dated 22<sup>nd</sup> June 2020

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3611:2018, ANSI/UL 121201:2017, FM Class 3616:2011,  
FM Class 3810:2018, ANSI/UL 61010-1:2012, ANSI/UL 60079-0:2019, ANSI/UL 60079-11:2014,  
ANSI/UL 60079-18:2019, ANSI/ISA 60079-31:2015, ANSI/UL 50E:2015, ANSI/IEC 60529:R2011

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, T4, Class III; Non-Incendive for Class I, Division 2, Groups A, B, C & D, for Temperature Class T4; Protection by Enclosure for Zone 20, AEx ta IIIC (T121°C or T142°C) Da Ta = -20°C to +67°C and for Zone 21, AEx tb IIIC (T134°C or T155°C) Db Ta = -20°C to +80°C; and Intrinsically Safe and Encapsulated for Zone 1, AEx ib mb IIC T4 Gb Ta = -20°C to +80°C, hazardous (classified) locations, indoor and outdoor, Type 4X/6P and IP66/IP68 (IPX8: 3 bar, 24 hr).

**Certificate issued by:**

J.E. Marquedant  
VP, Manager - Electrical Systems

23 October 2020  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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# SCHEDULE



US Certificate Of Conformity No: FM20US0038X

11. The marking of the equipment shall include:

For the VEGAPULS C 21 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C  
CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C  
Zn 1 AEx ib mb IIC T4 Gb Ta = -20°C...+80°C  
Zn 20 AEx ta IIIC T\* Da Ta = -20°C...+67°C  
Zn 21 AEx tb IIIC T\* Db Ta = -20°C...+80°C  
IP66/68, Type 4X/6P  
Install per Document 64735

Um = 35V (for 4...20mA/HART electronics)  
Um = 30V (for MODBUS electronics)

For the VEGAPULS C 21, C 22 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C  
CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C  
IP66/68, Type 4X/6P

\* Temperature Class depends on Electronics:  
Two-wire 4...20mA / HART: T121°C for Zone 20, T134°C for Zone 21  
MODBUS: T142°C for Zone 20, T155°C for Zone 21

12. **Description of Equipment:**

**General** – The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are level measurement transmitters based on the FMCW (frequency modulated continuous wave) measurement principle, an indirect method of distance measurement. The devices use high-frequency microwave signals in the GHz range to detect the distance between the sensor and the product surface level.

**Construction** – The VEGAPULS C 21, C 22 & C 23 Series Level transmitters have non-metallic enclosures that are gray in color. The inside of the enclosures with the electronics are filled with encapsulation. The top part of the enclosure includes an integral cable and NPT male threaded entry for wiring. The top part of the VEGAPULS C 21 and C 23 enclosures may include a R1, G1, or 1" NPT male thread for connection to an industrial process, in which case an additional ½" NPT adapter is included integral to the equipment for wiring purposes. The bottom of the VEGAPULS C 21 and C 22 enclosures includes R 1½", G 1½", or 1½" NPT male thread intended for connection to an industrial process. The enclosures may offer means for wall or ceiling mounting which do not penetrate the enclosure. Gaskets and o-rings are provided for environmental sealing of the integral cable and there are no other seams nor joints present on the enclosures.

The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for process temperature ranges equal to the respective ambient temperature ranges, for process pressures of -1...+3 bar, and for Type 4X & 6P and Degree of Protection IP66/IP68 (3 bar, 24 hr).

**Electrical Ratings** – The equipment is intended for wiring to a limited energy circuit as defined by ANSI/UL 61010-1. The 4...20mA/HART electronics options operate at 12...35 VDC, and the MODBUS electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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## SCHEDULE



US Certificate Of Conformity No: FM20US0038X

### **VEGAPULS C 21. Level Transmitter.**

- Thread type process side / top side / wiring side:  
G 1 ½ / G1 or NPT 1 / None or ½ NPT  
R 1 ½ / R1 or NPT 1 / None or ½ NPT  
1 ½ NPT / 1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 23. Level Transmitter.**

- Thread type top side / wiring side:  
1G / ½ NPT  
1R / ½ NPT  
1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

FM Approved equipment models also include additional options that are not related to compliance with the applicable standards as listed on the certificate; for example but not limited to: measurement range, overfill protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

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# SCHEDULE



US Certificate Of Conformity No: FM20US0038X

**13. Specific Conditions of Use:**

- 1. 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.*
- 2. The equipment shall be wired using the NPT threads identified on the enclosure using the 1 NPT threads for Zones, either the 1 NPT or ½ NPT threads for Divisions, and in accordance with the applicable area electrical code. The integral cable shall be mechanically protected and terminated in a suitably rated terminal or junction facility.*

**14. Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

**15. Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

**16. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
22 <sup>nd</sup> June 2020	Original Issue.
10 <sup>th</sup> August 2020	<u>Supplement 1:</u> Report Reference: - RR224208 dated 10 <sup>th</sup> August 2020. Description of the Change: Minor documentation updates in order to update safety instructions drawing ID from 62413 to 64753.
23 <sup>rd</sup> October 2020	<u>Supplement 2:</u> Report Reference: - PR457765 dated 23 <sup>rd</sup> October 2020. Description of the Change: Correct safety instructions drawing number 64753 to 64735.

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# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM20US0038X
3. **Equipment:** VEGAPULS C 21, C 22 & C 23 Series  
**(Type Reference and Name)** Level Transmitters
4. **Name of Listing Company:** Vega Grieshaber KG
5. **Address of Listing Company:** Am Hohenstein 113  
Schiltach D-77761  
Germany

6. The examination and test results are recorded in confidential report number:

PR456805 dated 22<sup>nd</sup> June 2020

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3611:2018, ANSI/UL 121201:2017, FM Class 3616:2011,  
FM Class 3810:2018, ANSI/UL 61010-1:2012, ANSI/UL 60079-0:2019, ANSI/UL 60079-11:2014,  
ANSI/UL 60079-18:2019, ANSI/ISA 60079-31:2015, ANSI/UL 50E:2015, ANSI/IEC 60529:R2011

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, T4, Class III; Non-Incendive for Class I, Division 2, Groups A, B, C & D, for Temperature Class T4; Protection by Enclosure for Zone 20, AEx ta IIIC (T121°C or T142°C) Da Ta = -20°C to +67°C and for Zone 21, AEx tb IIIC (T134°C or T155°C) Db Ta = -20°C to +80°C; and Intrinsically Safe and Encapsulated for Zone 1, AEx ib mb IIC T4 Gb Ta = -20°C to +80°C, hazardous (classified) locations, indoor and outdoor, Type 4X/6P and IP66/IP68 (IPX8: 3 bar, 24 hr).

**Certificate issued by:**

*J.E. Marquardt*

J.E. Marquardt  
VP, Manager - Electrical Systems

10 August 2020  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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# SCHEDULE



US Certificate Of Conformity No: FM20US0038X

11. The marking of the equipment shall include:

For the VEGAPULS C 21 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C

CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C

Zn 1 AEx ib mb IIC T4 Gb Ta = -20°C...+80°C

Zn 20 AEx ta IIIC T\* Da Ta = -20°C...+67°C

Zn 21 AEx tb IIIC T\* Db Ta = -20°C...+80°C

IP66/68, Type 4X/6P

Install per Document 64753

Um = 35V (for 4...20mA/HART electronics)

Um = 30V (for MODBUS electronics)

For the VEGAPULS C 21, C 22 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C

CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C

IP66/68, Type 4X/6P

\* Temperature Class depends on Electronics:

Two-wire 4...20mA / HART: T121°C for Zone 20, T134°C for Zone 21

MODBUS: T142°C for Zone 20, T155°C for Zone 21

12. **Description of Equipment:**

**General** – The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are level measurement transmitters based on the FMCW (frequency modulated continuous wave) measurement principle, an indirect method of distance measurement. The devices use high-frequency microwave signals in the GHz range to detect the distance between the sensor and the product surface level.

**Construction** – The VEGAPULS C 21, C 22 & C 23 Series Level transmitters have non-metallic enclosures that are gray in color. The inside of the enclosures with the electronics are filled with encapsulation. The top part of the enclosure includes an integral cable and NPT male threaded entry for wiring. The top part of the VEGAPULS C 21 and C 23 enclosures may include a R1, G1, or 1" NPT male thread for connection to an industrial process, in which case an additional ½" NPT adapter is included integral to the equipment for wiring purposes. The bottom of the VEGAPULS C 21 and C 22 enclosures includes R 1½", G 1½", or 1½" NPT male thread intended for connection to an industrial process. The enclosures may offer means for wall or ceiling mounting which do not penetrate the enclosure. Gaskets and o-rings are provided for environmental sealing of the integral cable and there are no other seams nor joints present on the enclosures.

The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for process temperature ranges equal to the respective ambient temperature ranges, for process pressures of -1...+3 bar, and for Type 4X 6P and Degree of Protection IP66/IP68 (3 bar, 24 hr).

**Electrical Ratings** – The equipment is intended for wiring to a limited energy circuit as defined by ANSI/UL 61010-1. The 4...20mA/HART electronics options operate at 12...35 VDC, and the MODBUS electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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## SCHEDULE



Member of the FM Global Group

US Certificate Of Conformity No: FM20US0038X

### **VEGAPULS C 21. Level Transmitter.**

- Thread type process side / top side / wiring side:  
G 1 ½ / G1 or NPT 1 / None or ½ NPT  
R 1 ½ / R1 or NPT 1 / None or ½ NPT  
1 ½ NPT / 1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 23. Level Transmitter.**

- Thread type top side / wiring side:  
1G / ½ NPT  
1R / ½ NPT  
1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

FM Approved equipment models also include additional options that are not related to compliance with the applicable standards as listed on the certificate; for example but not limited to: measurement range, overfill protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

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# SCHEDULE



Member of the FM Global Group

US Certificate Of Conformity No: FM20US0038X

## 13. Specific Conditions of Use:

1. 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.
2. The equipment shall be wired using the NPT threads identified on the enclosure using the 1 NPT threads for Zones, either the 1 NPT or ½ NPT threads for Divisions, and in accordance with the applicable area electrical code. The integral cable shall be mechanically protected and terminated in a suitably rated terminal or junction facility.

## 14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

## 15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

## 16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
22 <sup>nd</sup> June 2020	Original Issue.
10 <sup>th</sup> August 2020	<u>Supplement 1:</u> Report Reference: - RR224208 dated 10 <sup>th</sup> August 2020. Description of the Change: Minor documentation updates in order to update safety instructions drawing ID from 62413 to 64753.

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# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM20US0038X
3. **Equipment:** VEGAPULS C 21, C 22 & C 23 Series  
**(Type Reference and Name)** Level Transmitters
4. **Name of Listing Company:** Vega Grieshaber KG
5. **Address of Listing Company:** Am Hohenstein 113  
Schiltach D-77761  
Germany

6. The examination and test results are recorded in confidential report number:

PR456805 dated 22<sup>nd</sup> June 2020

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3611:2018, ANSI/UL 121201:2017, FM Class 3616:2011,  
FM Class 3810:2018, ANSI/UL 61010-1:2012, ANSI/UL 60079-0:2019, ANSI/UL 60079-11:2014,  
ANSI/UL 60079-18:2019, ANSI/ISA 60079-31:2015, ANSI/UL 50E:2015, ANSI/IEC 60529:R2011

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10. Equipment Ratings:

Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, T4, Class III; Non-Incendive for Class I, Division 2, Groups A, B, C & D, for Temperature Class T4; Protection by Enclosure for Zone 20, AEx ta IIIC (T121°C or T142°C) Da Ta = -20°C to +67°C and for Zone 21, AEx tb IIIC (T134°C or T155°C) Db Ta = -20°C to +80°C; and Intrinsically Safe and Encapsulated for Zone 1, AEx ib mb IIC T4 Gb Ta = -20°C to +80°C, hazardous (classified) locations, indoor and outdoor, Type 4X/6P and IP66/IP68 (IPX8: 3 bar, 24 hr).

**Certificate issued by:**

J.E. Marquedant  
VP, Manager - Electrical Systems

22 June 2020

Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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F 347 (Mar 16)

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# SCHEDULE



US Certificate Of Conformity No: FM20US0038X

11. The marking of the equipment shall include:

For the VEGAPULS C 21 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C

CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C

Zn 1 AEx ib mb IIC T4 Gb Ta = -20°C...+80°C

Zn 20 AEx ta IIIC T\* Da Ta = -20°C...+67°C

Zn 21 AEx tb IIIC T\* Db Ta = -20°C...+80°C

IP66/68, Type 4X/6P

Install per Document 62413

Um = 35V (for 4...20mA/HART electronics)

Um = 30V (for MODBUS electronics)

For the VEGAPULS C 21, C 22 & C 23:

CI II Div 1 Gp EFG, CI III T4 Ta = -20°C...+80°C

CI I Div 2 Gp ABCD T4 Ta = -20°C...+80°C

IP66/68, Type 4X/6P

\* Temperature Class depends on Electronics:

Two-wire 4...20mA / HART: T121°C for Zone 20, T134°C for Zone 21

MODBUS: T142°C for Zone 20, T155°C for Zone 21

12. **Description of Equipment:**

**General** – The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are level measurement transmitters based on the FMCW (frequency modulated continuous wave) measurement principle, an indirect method of distance measurement. The devices use high-frequency microwave signals in the GHz range to detect the distance between the sensor and the product surface level.

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**Electrical Ratings** – The equipment is intended for wiring to a limited energy circuit as defined by ANSI/UL 61010-1. The 4...20mA/HART electronics options operate at 12...35 VDC, and the MODBUS electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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F 347 (Mar 16)

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## SCHEDULE



US Certificate Of Conformity No: FM20US0038X

### **VEGAPULS C 21. Level Transmitter.**

- Thread type process side / top side / wiring side:  
G 1 ½ / G1 or NPT 1 / None or ½ NPT  
R 1 ½ / R1 or NPT 1 / None or ½ NPT  
1 ½ NPT / 1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

### **VEGAPULS C 23. Level Transmitter.**

- Thread type top side / wiring side:  
1G / ½ NPT  
1R / ½ NPT  
1 NPT / None or ½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS

FM Approved equipment models also include additional options that are not related to compliance with the applicable standards as listed on the certificate; for example but not limited to: measurement range, overfill protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA

T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmaprovals.com](mailto:information@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)

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# SCHEDULE



US Certificate Of Conformity No: FM20US0038X

**13. Specific Conditions of Use:**

- 1. 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.*
- 2. The equipment shall be wired using the NPT threads identified on the enclosure using the 1 NPT threads for Zones, either the 1 NPT or ½ NPT threads for Divisions, and in accordance with the applicable area electrical code. The integral cable shall be mechanically protected and terminated in a suitably rated terminal or junction facility.*

**14. Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

**15. Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

**16. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
22 <sup>nd</sup> June 2020	Original Issue.

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