



**Ordinary Location**  
**VEGAPULS 11, 21, 31**  
**VEGAPULS C 11, C 21, C 22,**  
**C 23**

FM19NCA0004

FM19NUS0009



Document ID: 64167



**VEGA**



# CERTIFICATE OF CONFORMITY

- ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
- Certificate No:** FM19NCA0004
- Equipment:  
(Type Reference and Name)** VEGAPULS 11, 21 & 31 Series  
VEGAPULS C 11, C 21, C 22 & C 23 Series  
Level Transmitters
- Name of Listing Company:** Vega Grieshaber KG
- Address of Listing Company:** Am Hohenstein 113  
Schiltach D-77761  
Germany
- The examination and test results are recorded in confidential report number:  
  
PR453585 dated 19<sup>th</sup> March 2020
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:  
  
CAN/CSA-C22.2 No. 61010-1:2012, CSA-C22.2 No. 94.2:2015, & CAN/CSA-C22.2 No. 60529:2016
- 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.
- Equipment Ratings:**  
  
Suitable for use in ordinary (non-hazardous) locations, indoor and outdoor, with Degree of Protection IP66/67, or IP66/68 (IPX8 @ 3 bar, 24 hr) as well as Type 4X and Type 6P.

**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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**10. Description of Equipment:****General**

The VEGAPULS 11, 21 & 31 Series and the VEGAPULS C 11, 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 – VEGAPULS 11, 21 & 31**

The VEGAPULS 11, 21, 31 Series Level Transmitters have non-metallic enclosures primarily yellow in color. The top part of the enclosure includes a solid yellow or transparent threaded window cover for accessing the wiring area and possibly viewing an optional display present on the final equipment that would use the enclosures. A single ½" NPT threaded entry or a single M20x1.5 entry with a suitably-rated cable gland is provided on the side of the enclosure for wiring entry and connection. The bottom of the enclosure is gray in color and includes a R 1½", G 1½", or 1½" NPT male thread intended for connection to an industrial process. All seams and joints present on the enclosure employ suitable gaskets and o-rings for environmental sealing.

**Construction – VEGAPULS C 11, C 21, C 22 & C 23**

The VEGAPULS C 11, C 21, C 22 & C 23 Series Level transmitters have non-metallic enclosures that are gray in color. The top part of the enclosure includes an integral cable and gland as well as an R 1", G 1", or 1" NPT male thread for connection to conduit via direct connection via the NPT thread option or via a suitable coupling. The bottom of the enclosure is gray in color, and for the C 11, C 21 and C 22 enclosures, includes an 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 gland and there are no other seams nor joints present on these enclosures.

**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 SDI-12 and Modbus electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

The VEGAPULS 11 & C 11 Series Level Transmitters are rated for an ambient operating temperature range of -40°C to +60°C, the VEGAPULS 21 & 31 Series Level Transmitters are rated for -40°C to +70°C, and the VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for -40°C to +80°C.

The VEGAPULS 11, 21 & 31 Series Level Transmitters are rated for Degree of Protection IP66/IP67 and Type 4X, and the VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are additionally rated for Type 6P and IP66/IP68 (3 bar, 24 hr).

All models are rated for process pressures up to 3 bar; process temperature ranges depend on the model, and such ratings are given with the FM Approved model code options listed on the following pages.

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

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
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**VEGAPULS 11. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA

Maximum Working Pressure Rating (MWPR): 3 bar  
Process Temperature Range: -40°C...+60°C

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, overflow protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

**VEGAPULS 21. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA / HART

Maximum Working Pressure Rating (MWPR): 3 bar  
Process Temperature Range: -40°C...+80°C

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, overflow protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

**VEGAPULS 31. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA / HART  
with display

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Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+80°C

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, smartphone communication capabilities, and optional local display interface.

**VEGAPULS C 11. Level Transmitter.**

- Thread type process side / wiring side:  
     G1½ / G1  
     1½ NPT / 1 NPT  
     R1½ / R1
- Cable material / length:  
     PVC / 1m  
     PVC / 5m  
     PVC / 10m  
     PVC / 25m  
     PVC / custom length
- Electronics:  
     Two-wire 4...20 mA

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+60°C

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.

**VEGAPULS C 21. Level Transmitter.**

- Thread type process side / wiring side:  
     G1½ / G1  
     1½ NPT / 1 NPT  
     R1½ / R1
- Cable material / length:  
     PUR / 1m  
     PUR / 5m  
     PUR / 10m  
     PUR / 25m  
     PUR / custom length
- Electronics:  
     Two-wire 4...20 mA / HART  
     MODBUS  
     SDI-12

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+80°C

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**VEGAPULS C 22. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
Without  
½ NPT
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS  
SDI-12

Maximum Working Pressure Rating (MWPR): 3 bar  
Process Temperature Range: -40°C...+80°C

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, overflow protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

**VEGAPULS C 23. Level Transmitter.**

- Thread type wiring side:  
G1  
1 NPT  
R1
- Cable material / length:  
PUR / 1m  
PUR / 5m  
PUR / 10m  
PUR / 25m  
PUR / custom length
- Electronics:  
Two-wire 4...20 mA / HART  
MODBUS  
SDI-12

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to Canadian Certificate Of Conformity No: FM19NCA0004

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C... +80°C

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, overflow protection, shipboard and/or foodstuff/pharmaceutical certification, and smartphone communication capabilities.

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

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

**12. Schedule Drawings**

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

**13. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
19 <sup>th</sup> March 2020	Original Issue.
23 <sup>rd</sup> October 2020	<p><u>Supplement 1:</u>                      Report Reference: – PR457765 dated 23<sup>rd</sup> October 2020.                      Description of the Change: Testing and evaluation satisfactorily conducted in order to qualify the addition of Type 4X ratings for the VEGAPULS 11, 21 &amp; 31 Series, as well as other minor documentation changes.</p>

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# CERTIFICATE OF CONFORMITY

**1. ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

**2. Certificate No:** FM19NUS0009

**3. Equipment:** VEGAPULS 11, 21 & 31 Series  
 (Type Reference and Name) VEGAPULS C 11, C 21, C 22 & C 23 Series  
 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:**

PR453585 dated 19<sup>th</sup> March 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 3810:2021, ANSI/UL 61010-1:2018, ANSI/UL 50E:2015, & ANSI/IEC 60529:R2011

**8. 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.**

**9. Equipment Ratings:**

Suitable for use in ordinary (non-hazardous) locations, indoor and outdoor, with Degree of Protection IP66/67, or IP66/68 (IPX8 @ 3 bar, 24 hr) as well as Type 4X and Type 6P.

**Certificate issued by:**

*J.E. Marquardt*  
 J.E. Marquardt  
 VP, Manager - Electrical Systems

8 December 2022  
 Date

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

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**Construction – VEGAPULS 11, 21 & 31**

The VEGAPULS 11, 21, 31 Series Level Transmitters have non-metallic enclosures primarily yellow in color. The top part of the enclosure includes a solid yellow or transparent threaded window cover for accessing the wiring area and possibly viewing an optional display present on the final equipment that would use the enclosures. A single ½" NPT threaded entry or a single M20x1.5 entry with a suitably-rated cable gland is provided on the side of the enclosure for wiring entry and connection. The bottom of the enclosure is gray in color and includes a R 1½", G 1½", or 1½" NPT male thread intended for connection to an industrial process. All seams and joints present on the enclosure employ suitable gaskets and o-rings for environmental sealing.

**Construction – VEGAPULS C 11, C 21, C 22 & C 23**

The VEGAPULS C 11, C 21, C 22 & C 23 Series Level transmitters have non-metallic enclosures that are gray in color. The top part of the enclosure includes an integral cable and gland as well as an R 1", G 1", or 1" NPT male thread for connection to conduit via direct connection via the NPT thread option or via a suitable coupling. The bottom of the enclosure is gray in color, and for the C 11, C 21 and C 22 enclosures, includes an 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 gland and there are no other seams nor joints present on these enclosures.

**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 SDI-12 and Modbus electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

The VEGAPULS 11 & C 11 Series Level Transmitters are rated for an ambient operating temperature range of -40°C to +60°C, the VEGAPULS 21 & 31 Series Level Transmitters are rated for -40°C to +70°C, and the VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for -40°C to +80°C.

The VEGAPULS 11, 21 & 31 Series Level Transmitters are rated for Degree of Protection IP66/IP67 and Type 4X, and the VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are additionally rated for Type 6P and IP66/IP68 (3 bar, 24 hr).

All models are rated for process pressures up to 3 bar; process temperature ranges depend on the model, and such ratings are given with the FM Approved model code options listed on the following pages.

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**VEGAPULS 11. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA

Maximum Working Pressure Rating (MWPR): 3 bar  
Process Temperature Range: -40°C...+60°C

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.

**VEGAPULS 21. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA / HART

Maximum Working Pressure Rating (MWPR): 3 bar  
Process Temperature Range: -40°C...+80°C

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**VEGAPULS 31. Level Transmitter.**

- Thread type process side:  
G1½  
1½ NPT  
R1½
- Thread type wiring side:  
½ NPT  
M20x1.5
- Electronics:  
Two-wire 4...20 mA / HART  
with display

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Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+80°C

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, overflow protection, shipboard and/or foodstuff/pharmaceutical certification, smartphone communication capabilities, and optional local display interface.

**VEGAPULS C 11. Level Transmitter.**

- Thread type process side / wiring side:  
     G1½ / G1  
     1½ NPT / 1 NPT  
     R1½ / R1
- Cable material / length:  
     PVC / 1m  
     PVC / 5m  
     PVC / 10m  
     PVC / 25m  
     PVC / custom length
- Electronics:  
     Two-wire 4...20 mA

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+60°C

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**VEGAPULS C 21. Level Transmitter.**

- Thread type process side / wiring side:  
     G1½ / G1  
     1½ NPT / 1 NPT  
     R1½ / R1
- Cable material / length:  
     PUR / 1m  
     PUR / 5m  
     PUR / 10m  
     PUR / 25m  
     PUR / custom length
- Electronics:  
     Two-wire 4...20 mA / HART  
     MODBUS  
     SDI-12

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+80°C

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**VEGAPULS C 22. Level Transmitter.**

- Thread type process side:
  - G1½
  - 1½ NPT
  - R1½
- Thread type wiring side:
  - Without
  - ½ NPT
- Cable material / length:
  - PUR / 1m
  - PUR / 5m
  - PUR / 10m
  - PUR / 25m
  - PUR / custom length
- Electronics:
  - Two-wire 4...20 mA / HART
  - MODBUS
  - SDI-12

Maximum Working Pressure Rating (MWPR): 3 bar  
 Process Temperature Range: -40°C...+80°C

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.

**VEGAPULS C 23. Level Transmitter.**

- Thread type wiring side:
  - G1
  - 1 NPT
  - R1
- Cable material / length:
  - PUR / 1m
  - PUR / 5m
  - PUR / 10m
  - PUR / 25m
  - PUR / custom length
- Electronics:
  - Two-wire 4...20 mA / HART
  - MODBUS
  - SDI-12

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 Process Temperature Range: -40°C...+80°C

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

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**12. Schedule Drawings**

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

**13. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
19 <sup>th</sup> March 2020	Original Issue.
23 <sup>rd</sup> October 2020	<p><u>Supplement 1:</u>                      Report Reference: – PR457765 dated 23<sup>rd</sup> October 2020.                      Description of the Change: Testing and evaluation satisfactorily conducted in order to qualify the addition of Type 4X ratings for the VEGAPULS 11, 21 &amp; 31 Series, as well as other minor documentation changes.</p>
8 <sup>th</sup> December 2022	<p><u>Supplement 2:</u>                      Report Reference: - RR235304 dated 8<sup>th</sup> December 2022.                      Description of the Change:</p> <ol style="list-style-type: none"> <li>1) Documentation updates due to component shortage</li> <li>2) FM3810 updated to latest edition (2021)</li> <li>3) ANSI/UL 61010-1:2012 updated to ANSI/UL 61010-1:2018</li> </ol>

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Printing date:

**VEGA**

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Subject to change without prior notice

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