



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:** VEGAPULS 11, 21 & 31 Series
(Type Reference and Name) 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 19th 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

19 March 2020
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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to Canadian Certificate Of Conformity No: FM19NCA0004

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.

VEGAPULS 11, 21, 31 Series

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 in order to maintain the ratings for Degree of Protection IP66/IP67.

The VEGAPULS 11 Series Level Transmitters are rated for an ambient operating temperature range as well as a process temperature range of -40°C to +60°C, for process pressures from -1...+3 bar, and for Degree of Protection IP66/IP67.

The VEGAPULS 21 & 31 Series Level Transmitters are rated for an ambient operating temperature range of -40°C to +70°C and for a process temperature range of -40°C to +80°C, for process pressures from -1...+3 bar, and for Degree of Protection IP66/IP67.

VEGAPULS C 11, C 21, C 22 & C 23 Series

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.

The VEGAPULS C 11 Series Level Transmitters are rated for an ambient operating temperature range as well as a process temperature range of -40°C to +60°C, for process pressures from -1...+3 bar, and for Type 6P and IP66/IP68 (3 bar, 24 hr).

The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for an ambient operating temperature range as well as a process temperature range of -40°C to +80°C, for process pressures from -1...+3 bar, and for Type 6P and 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 SDI-12 and Modbus electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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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

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

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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 th March 2020	Original Issue.

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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:

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

FM Class 3810:2018, ANSI/UL 61010-1:2012, 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. Marquedant
VP, Manager - Electrical Systems

19 March 2020
Date

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The VEGAPULS 21 & 31 Series Level Transmitters are rated for an ambient operating temperature range of -40°C to +70°C and for a process temperature range of -40°C to +80°C, for process pressures from -1...+3 bar, and for Degree of Protection IP66/IP67.

VEGAPULS C 11, C 21, C 22 & C 23 Series

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.

The VEGAPULS C 11 Series Level Transmitters are rated for an ambient operating temperature range as well as a process temperature range of -40°C to +60°C, for process pressures from -1...+3 bar, and for Type 6P and IP66/IP68 (3 bar, 24 hr).

The VEGAPULS C 21, C 22 & C 23 Series Level Transmitters are rated for an ambient operating temperature range as well as a process temperature range of -40°C to +80°C, for process pressures from -1...+3 bar, and for Type 6P and 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 SDI-12 and Modbus electronics options operate at 8...30 VDC; all with less than 1 Watt maximum power consumption.

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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

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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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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, 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
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Printing date:

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All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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