

# CERTIFICATE OF CONFORMITY



1. HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS
2. Certificate No: FM21CA0082X
3. Equipment: VEGAPULS 6X Series Level Transmitters  
(Type Reference and Name)
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:  
PR459775revPR460903 dated 1<sup>st</sup> April 2022
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. 0.4:2017, CSA C22.2 No. 0.5:2016, CSA C22.2 No. 25:2017, CSA C22.2 No. 30:2020,  
CSA C22.2 No. 94.2:2015, CSA C22.2 No. 213:2017, CAN/CSA-C22.2 No. 60079-0:2019,  
CAN/CSA-C22.2 No. 60079-1:2016, CAN/CSA-C22.2 No. 60079-26:2016,  
CAN/CSA-C22.2 No. 60079-31:2015, CAN/CSA C22.2 No. 60529:2016,  
CAN/CSA C22.2 No. 61010-1:2012 and ISA 12.27.01:2011
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.

## Certificate issued by:

J.E. Marquedant  
VP, Manager - Electrical Systems

11 July 2022

Date

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

**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@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)



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10. Equipment Ratings:

Explosionproof for Class I, Division 1, Groups A, B, C, D; Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, and Class III; Non-Incendive for Class I & II, Division 2, Groups A, B, C, D, F & G; Flameproof Ex db IIC T6...T1 Ga/Gb and Ex db IIC T6...T1 Gb; Dust-Protected by Enclosure Ex ta IIIC and Ex tb IIIC, hazardous (classified) locations. Ambient temperature range is -40°C to 60°C for multiple Temperature Classes as described in Section 12. Environmental Type 4X/6P, Degree of Protection IP66/68, and/or Dual Seal.

11. The marking of the equipment shall include:

For "Explosion protection" option (\*)E

CL I, DIV 1, Gp ABCD, T6...T1\*  
Ex db IIC T6...T1 Ga/Gb  
Ex db IIC T6...T1 Gb  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68 \*\*  
see doc 66223

For "Explosion protection" option (\*)R

CL II, DIV 1, Gp EFG, CL III, T\*  
Ex ta IIIC T\* Da  
Ex tb IIIC T\* Db  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68, Dual Seal \*\*  
see doc 66222

For "Explosion protection" option (\*)J

CL I, DIV 1, Gp ABCD, T6...T1\*  
Ex db IIC T6...T1 Ga/Gb  
Ex db IIC T6...T1 Gb  
CL II, DIV 1, Gp EFG, CL III, T\*  
Ex ta IIIC T\* Da  
Ex tb IIIC T\* Db  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68 \*\*  
see doc 66223; see doc 66222

For "Explosion protection" option (\*)A \*\*\*

CL I, Div 2, Gp ABCD T6...T1\*; CL II, Div 2 Gp FG, T\*; CL III  
Type 4X/6P, IP66/68, Dual Seal \*\*  
see doc 66224

(\*) *Model code character(s) not relevant to FM Approval*

\* *Refer to Section 12 and the manufacturer's instructions for temperature ratings.*

\*\* *Dual Seal ratings are for Explosion protection options (\*)R and (\*)A only, and for Housing/Protection options D, S, W only. IPX8 is 2 meter depth, for 30 minute duration.*

\*\*\* *Housing/Protection option 8 is only for Explosion protection option (\*)A for NI ratings.*

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## 12. Description of Equipment:

### General

The VEGAPULS 6X Series (equipment) 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. The product is intended for use measuring liquids and bulk solids under various process conditions or with hygienic requirements.

### Construction

The equipment consists of a single or double chamber enclosure made of Aluminum or 316L Stainless Steel. The enclosure includes one or two threaded covers with an optional display window, as well as a cylindrical hole on the bottom for connection to the sensor antenna. Terminals are provided for field wiring inside the enclosure, with NPT or metric entries for fitting of cable glands or other wiring means suitable in order to maintain the environmental Type and Degree of Protection "IP" ratings. The enclosures are separately FM Approved components for the manufacturer under FM18US0041U and FM18CA0020U.

The equipment enclosure contains an encapsulated electronics module in each chamber, along with an optional "PLICSCOM" display. The signal emitted by the electronics is guided within the sensor by either a plastic horn antenna or metal framed lens antenna. The antennae options include threaded types as well as flanges with optional PTFE plating, depending on the application and working pressures as well as applicable industry and area standards and regulations.

### Ratings

The equipment is connected to a limited energy circuit and is rated for 12...35 VDC, 4...20 mA, maximum 1 Watt. The equipment is suitable for process pressures of -1...64 bar, depending on the antenna and material options in the model code.

The equipment is suitable for an ambient temperature range of -40...+60°C. The equipment maintains Temperature Class T6...T1 depending on the process temperatures, and adequate guidance is provided in the instructions for thermal protection. Safety instructions contain temperature guidance specific to the protection concept: document 66222 is for Dust-Ignitionproof, 66223 is for Explosionproof, and 66224 is for Non-Incendive installations.

The equipment listings covered by this certificate are as follows:

### **VEGAPULS PS6X(\*)-2-(\*)-W-a-b-c-d-e-f-g-h-i-j-(\*)-(\*)-(\*)-k. Level Transmitter**

a = Process fitting/Material: two-digit alphanumeric code for threaded connections, pipe connections and industrial flanges according to ASME, BS, DIN, EN, GOST, JIS and for other international, national and/or industrial standards

b = Antenna version: B, T, F or C

c = Additional equipment: X, K, V or 1

d = Material/Seal/Process temperature: AA, AB, AC, AD, AE, AF, AG, AH, AJ, AK, AL, AT, AU, AV, AW, AX, AY, AZ, A2, A3, A4 or A5

e = Housing/Protection: A, H, D, S, V, W or 8

f = Cable entry/Connection: D, 1, N or Q

g = Display and operation: X, A, F, B, K or L

h = Electronics: H or A

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i = Explosion protection:

(\*)E for XP only, (\*)R for DIP only, (\*)J for XP and DIP, or (\*)A for NI only

j = SIL certified: (\*) or X (not verified by FM Approvals)

k = Secondary Line of Defense: X or S (X not available for XP ratings)

(\*) = Model code character(s) not relevant to FM Approval

## 13. Specific Conditions of Use:

1. Refer to the manufacturer's instructions for guidance on temperature ratings.
2. Refer to the manufacturer's instructions for guidance in order to avoid electrostatic buildup and discharge hazards.
3. The flameproof joints are not intended to be repaired.
4. The temperature of cable entry point and branching point can be more than 70°C and 80°C, please see instruction/installation manual.
5. For EPL Ga/Gb, installation must be carried out in such a way that the generation of sparks as a result of impact and friction processes between Aluminum/Titanium and steel is excluded. This excludes stainless steel without rust particles.
6. Refer to the manufacturer's instructions for guidance in order to maintain degree of protection IP67 when the equipment forms an EPL Ga/Gb boundary.

## 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
1 <sup>st</sup> April 2022	Original Issue.
11 <sup>th</sup> July 2022	<u>Supplement 1:</u> Report Reference: PR463194 dated 11 <sup>th</sup> July 2022. Description of the Change: Evaluation conducted with satisfactory results in order to qualify equipment for additional "Zone" ratings, standards CAN/CSA-C22.2 No. 60079-0:2019, CAN/CSA-C22.2 No. 60079-1:2016, CAN/CSA-C22.2 No. 60079-26:2016, CAN/CSA-C22.2 No. 60079-31:2015 were added.

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# CERTIFICATE OF CONFORMITY



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

2. **Certificate No:** FM21US0115X  
3. **Equipment:** VEGAPULS 6X Series Level Transmitters  
(Type Reference and Name)

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:  
PR459775revPR460903 dated 1<sup>st</sup> April 2022

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

FM Class 3600:2022, FM Class 3611:2021 (ANSI/UL 121201:2017), FM Class 3615:2022,  
FM Class 3616:2022, FM Class 3810: 2021 (ANSI/UL 61010-1:2012), ANSI/UL 60079-0:2020,  
ANSI/UL 60079-1:2015, ANSI/UL 60079-26:2017, ANSI/UL 60079-31:2015,  
ANSI/UL 50E:2015, ANSI/IEC 60529:R2011 and ANSI/ISA 12.27.01:2011

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.

**Certificate issued by:**

J.E. Marquedant  
VP, Manager - Electrical Systems

11 July 2022  
Date

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

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## 10. Equipment Ratings:

Explosionproof for Class I, Division 1, Groups A, B, C, D; Dust-Ignitionproof for Class II, Division 1, Groups E, F & G, and Class III; Non-Incendive for Class I & II, Division 2, Groups A, B, C, D, F & G; Flameproof for Zone 0/1 AEx db IIC T6...T1 Ga/Gb and Zone 1 AEx db IIC T6...T1 Gb; Dust-Protected by Enclosure for Zone 20 AEx ta IIIC and Zone 21 AEx tb IIIC hazardous (classified) locations. Ambient temperature range is -40°C to 60°C for multiple Temperature Classes as described in Section 12. Environmental Type 4X/6P, Degree of Protection IP66/68, and/or Dual Seal.

## 11. The marking of the equipment shall include:

### For "Explosion protection" option (\*)E

CL I, DIV 1, Gp ABCD, T6...T1\*  
Zn 0/1 AEx db IIC T6...T1 Ga/Gb  
Zn 1 AEx db IIC T6...T1 Gb  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68 \*\*  
see doc 66223

### For "Explosion protection" option (\*)R

CL II, DIV 1, Gp EFG, CL III, T\*  
Zn 20 AEx ta IIIC T\* Da  
Zn 21 AEx tb IIIC T\* Db  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68, Dual Seal \*\*  
see doc 66222

### For "Explosion protection" option (\*)J

CL I, DIV 1, Gp ABCD, T6...T1\*  
Zn 0/1 AEx db IIC T6...T1 Ga/Gb  
Zn 1 AEx db IIC T6...T1 Gb  
CL II, DIV 1, Gp EFG, CL III, T\*  
Zn 20 AEx ta IIIC T\* Da  
Zn 21 AEx tb IIIC T\* Db  
Ta=-40°C...+60°C  
Type 4X/6P, IP66/68 \*\*  
see doc 66223; see doc 66222

### For "Explosion protection" option (\*)A \*\*\*

Cl I, Div 2, Gp ABCD T6...T1\*; Cl II, Div 2 Gp FG, T\*; Cl III  
Type 4X/6P, IP66/68, Dual Seal \*\*  
see doc 66224

(\*) *Model code character(s) not relevant to FM Approval*

\* *Refer to Section 12 and the manufacturer's instructions for temperature ratings.*

\*\* *Dual Seal ratings are for Explosion protection options (\*)R and (\*)A only, and for Housing/Protection options D, S, W only. IPX8 is 2 meter depth, for 30 minute duration.*

\*\*\* *Housing/Protection option 8 is only for Explosion protection option (\*)A for II ratings.*

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## 12. Description of Equipment:

### General

The VEGAPULS 6X Series (equipment) 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. The product is intended for use measuring liquids and bulk solids under various process conditions or with hygienic requirements.

### Construction

The equipment consists of a single or double chamber enclosure made of Aluminum or 316L Stainless Steel. The enclosure includes one or two threaded covers with an optional display window, as well as a cylindrical hole on the bottom for connection to the sensor antenna. Terminals are provided for field wiring inside the enclosure, with NPT or metric entries for fitting of cable glands or other wiring means suitable in order to maintain the environmental Type and Degree of Protection "IP" ratings. The enclosures are separately FM Approved components for the manufacturer under FM18US0041U and FM18CA0020U.

The equipment enclosure contains an encapsulated electronics module in each chamber, along with an optional "PLICSCOM" display. The signal emitted by the electronics is guided within the sensor by either a plastic horn antenna or metal framed lens antenna. The antennae options include threaded types as well as flanges with optional PTFE plating, depending on the application and working pressures as well as applicable industry and area standards and regulations.

### Ratings

The equipment is connected to a limited energy circuit and is rated for 12...35 VDC, 4...20 mA, maximum 1 Watt. The equipment is suitable for process pressures of -1...64 bar, depending on the antenna and material options in the model code.

The equipment is suitable for an ambient temperature range of -40...+60°C. The equipment maintains Temperature Class T6...T1 depending on the process temperatures, and adequate guidance is provided in the instructions for thermal protection. Safety instructions contain temperature guidance specific to the protection concept: document 66222 is for Dust-Ignitionproof, 66223 is for Explosionproof, and 66224 is for Non-Incendive installations.

The equipment listings covered by this certificate are as follows:

### **VEGAPULS PS6X(\*)-2-(\*)-W-a-b-c-d-e-f-g-h-i-j-(\*)-(\*)-(\*)-k. Level Transmitter**

a = Process fitting/Material: two-digit alphanumeric code for threaded connections, pipe connections and industrial flanges according to ASME, BS, DIN, EN, GOST, JIS and for other international, national and/or industrial standards

b = Antenna version: B, T, F or C

c = Additional equipment: X, K, V or 1

d = Material/Seal/Process temperature: AA, AB, AC, AD, AE, AF, AG, AH, AJ, AK, AL, AT, AU, AV, AW, AX, AY, AZ, A2, A3, A4 or A5

e = Housing/Protection: A, H, D, S, V, W or 8

f = Cable entry/Connection: D, 1, N or Q

g = Display and operation: X, A, F, B, K or L

h = Electronics: H or A

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US Certificate Of Conformity No: FM21US0115X

i = Explosion protection:

(\*)E for XP only, (\*)R for DIP only, (\*)J for XP and DIP, or (\*)A for NI only

j = SIL certified: (\*) or X (not verified by FM Approvals)

k = Secondary Line of Defense: X or S (X not available for XP ratings)

(\*) = Model code character(s) not relevant to FM Approval

## 13. Specific Conditions of Use:

1. Refer to the manufacturer's instructions for guidance on temperature ratings.
2. Refer to the manufacturer's instructions for guidance in order to avoid electrostatic buildup and discharge hazards.
3. The flameproof joints are not intended to be repaired.
4. The temperature of cable entry point and branching point can be more than 70°C and 80°C, please see instruction/installation manual.
5. For Zone 0/1, installation must be carried out in such a way that the generation of sparks as a result of impact and friction processes between Aluminum/Titanium and steel is excluded. This excludes stainless steel without rust particles.
6. Refer to the manufacturer's instructions for guidance in order to maintain degree of protection IP67 when the equipment forms a Zone 0/1 boundary.

## 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
1 <sup>st</sup> April 2022	Original Issue.
11 <sup>th</sup> July 2022	<u>Supplement 1:</u> Report Reference: PR463194 dated 11 <sup>th</sup> July 2022. Description of the Change: Evaluation conducted with satisfactory results in order to qualify equipment for additional Zone ratings, standards ANSI/UL 60079-0:2020, ANSI/UL 60079-1:2015, ANSI/UL 60079-26:2017, ANSI/UL 60079-31:2015 were added.

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