

# CERTIFICATE OF CONFORMITY



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

2. **Certificate No:** FM16US0260  
3. **Equipment:** VEGAPULS 64 & 69 Series Level Transmitters  
(Type Reference and Name) Level Measuring Equipment

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:

3054428 dated 17<sup>th</sup> July 2015

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: 2011, FM Class 3615: 2006, FM Class 3616: 2011, FM Class 3810: 2005,  
ANSI/NEMA 250: 2008, ANSI/IEC 60529: 2004, ANSI/ISA 61010-1: 2012, 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.

10. Equipment Ratings:

Explosionproof for Class I, Division 1, Groups A, B, C and D; Dust-ignitionproof for Class II, Division 1, Groups E, F and G; Class III, Division 1; hazardous (classified) locations, indoors and outdoors (Type 4X/6P, IP66/67 and IP66/68), Dual Seal, with an ambient temperature rating of -40°C to +60°C.

**Certificate issued by:**

J. E. Marquedant  
Manager, Electrical Systems

5 September 2016  
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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11. The marking of the equipment shall include:

Class I Division 1, Groups A, B, C, D; T6 Ta = -40°C to +60°C;

Class II, Division 1, Groups E, F, G, Class III, Division 1; T6 Ta = -40°C to +60°C

Type 4X/6P, IP66/67 or IP66/68, Dual Seal

12. **Description of Equipment:**

**General** - The level measuring instruments VEGAPULS 64 and 69 serve for the detection of the distance between the product surface and the sensor in areas with flammable gases or flammable, dust generating bulk solids. The measurement principles for the VEGAPULS 64 and 69 are identical, using high-frequency microwave signals in the GHz range to detect the distance between the sensor and the product surface level. VEGAPULS 64 is specialized for level measurement of liquids, whereas VEGAPULS 69 is mainly used for level measurement of bulk solids.

**Construction** - The equipment housing is made of stainless steel or aluminum as a single chamber or double chamber housing. O-rings are installed for environmental and ingress protection. The single chamber housings contain one potted electronics module with input power terminals as well as all electronics. The double chamber housings contain two potted electronics modules separated by a 2 or 4-wire feedthrough, with terminal connections made to the module in the smaller compartment and sensing electronics located within the larger compartment. Both housings have a cylindrical entry opposite the electronics compartment cover, in order to attach the sensor and antenna. The two chambers of the double chamber housings are qualified separately as explosionproof compartments when they are separated with a suitable feedthrough, and are additionally qualified as one combined explosionproof housing without separation between compartments. The enclosures optionally include a glass window cover for incorporation of an indication and adjustment module. For non-explosionproof models, a cover with a plastic window is also available.

For non-explosionproof models, a metallic and silicon breather element is optionally threaded into the enclosure for pressure compensation. When installed in a two-chamber housing in a Dual Seal rated configuration, the breather element is located between the primary and secondary seals, and serves as the required means to annunciate and vent leakage due to a primary seal failure.

The signal emitted by the device is guided by either a polymeric PP horn antenna or metallic PEEK antenna system, depending on the application and working pressures. The antenna system comes with a rinsing connection, as well as an optional ball surface swiveling adapter to change the orientation of the sensor for more accurate level measurement.

**Ratings** - The VEGAPULS 64 and 69 are rated for working process pressure ranges of up to -1...+20 BAR, depending on the antenna material option. The ambient operating temperature range is -40°C to +60°C for a T6 temperature rating. Refer to manufacturer's instructions regarding suitability for process temperature ranges of up to -40°C to +200°C, depending on the antenna length and process sealing materials. The electrical ratings of the VEGAPULS 64 and 69 are 12 to 35VDC for electronics model code H, 90 to 250VAC 50/60Hz for electronics model code B, 9.6 to 48VDC or 20 to 42VAC 50/60Hz for electronics model code I, 8 to 30VDC for electronics model code U, and 9 to 32VDC for electronics model codes P and F.

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## **VEGAPULS PS64(\*)*.a-b-c-de-f-g-h-i-j-k-l-m-(\*)*(\*)**. Level Transmitter

DIP / II, III / 1 / EFG / T6 Ta = -40°C to +60°C;

Type 4X/6P; IP66/68; Dual Seal\*\*

a = certification: F

b = approval: R

c = antenna / material: B, D, U, G, I

de = process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards

f = seal / process temperature: A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q, R, S or one letter code for seal suitable for application including given process temperature

g = electronics: H

h = additional electronics: X

i = housing / protection: A, H, D, S, V, W

j = cable entry / connection: D, 1, N, Q

k = display / adjustment module PLICSCOM: A, B, F, K, L, U, S, X

l = additional equipment: V, X

m = certificates: M, X

*\*Optional alphanumeric character not relevant to safety*

*\*\*Dual Seal rating only available for housing / protection D, S, W*

## **VEGAPULS PS69(\*)*.a-b-c-de-f-g-h-i-j-k-l-m-(\*)*(\*)**. Level Transmitter

DIP / II, III / 1 / EFG / T6 Ta = -40°C to +60°C;

Type 4X/6P\*\*; IP66/67/68\*\*; Dual Seal\*\*\*

a = certification: F

b = approval: R

c = antenna / material: B, C

de = process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards

f = seal / process temperature: A, B, C, D, E, F, or one letter code for seal suitable for application including given process temperature

g = electronics: H, B, I, P, F, U

h = additional electronics: X, Z

i = housing / protection: A, H, D, S, V, W

j = cable entry / connection: D, 1, N, Q

k = display / adjustment module PLICSCOM: A, B, F, K, L, U, S, X

l = additional equipment: R, V, X

m = certificates: M, X

*\*Optional alphanumeric character not relevant to hazardous location ratings nor safety*

*\*\*Type 6P and IP68 rating not available with electronics B, I*

*\*\*\*Dual Seal rating only available for housing / protection D, S or W*

## **VEGAPULS PS64(\*)*.a-b-c-de-f-g-h-i-j-k-l-m-(\*)*(\*)**. Level Transmitter

XP / I / 1 / ABCD / T6 Ta = -40°C to +60°C;

DIP / II, III / 1 / EFG / T6 Ta = -40°C to +60°C

Type 4X/6P; IP66/68;

a = certification: F

b = approval: E, Q

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c = antenna / material: D, U, G, I  
de = process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards  
f = seal / process temperature: A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q, R, S or one letter code for seal suitable for application including given process temperature  
g = electronics: H  
h = additional electronics: X  
i = housing / protection: A, H, D, S, V, W  
j = cable entry / connection: D, 1, N, Q  
k = display / adjustment module PLICSCOM: A, B, F, K, L, U, S, X  
l = additional equipment: V, X  
m = certificates: M, X

*\*Optional alphanumeric character not relevant to safety*

## **VEGAPULS PS69(\*).a-b-c-de-f-g-h-i-j-k-l-m-(\*)(\*). Level Transmitter**

XP / I / 1 / ABCD / T6 Ta = -40°C to +60°C;  
DIP / II, III / 1 / EFG / T6 Ta = -40°C to +60°C;  
Type 4X/6P\*\*; IP66/67/68\*\*

a = certification: F  
b = approval: E  
c = antenna / material: B, C  
de = process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards  
f = seal / process temperature: B, C, D, E or one letter code for seal suitable for application including given process temperature  
g = electronics: H, B, I, U, P, F  
h = additional electronics: X, Z  
i = housing / protection: A, H, D, S, V, W  
j = cable entry / connection: D, 1, N, Q  
k = display / adjustment module PLICSCOM: A, B, F, K, L, U, S, X  
l = additional equipment: R, V, X  
m = certificates: M, X

*\*Optional alphanumeric character not relevant to safety*

*\*\*Type 6P and IP68 rating not available with electronics B, I*

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

None

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

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

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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
17 <sup>th</sup> July 2015	Original Issue.
5 <sup>th</sup> September 2016	<u>Supplement 3:</u> Report Reference: – RR206182 dated 5 <sup>th</sup> September 2016 Description of the Change: Drawing revisions and model code listing updates for antenna option I and seal options R, S, which are not critical components to maintain types of protection nor safety.

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