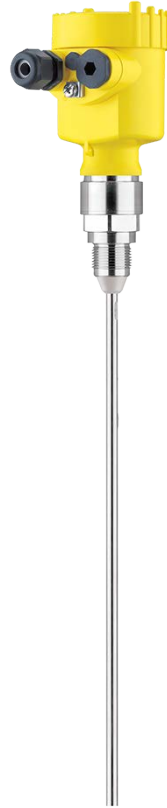




Ordinary Location VEGAFLEX 81, 82, 83, 86

FM17NUS0011



Document ID: 49270



VEGA

CERTIFICATE OF CONFORMITY

1. ELECTRICAL EQUIPMENT PER US REQUIREMENTS

2. **Certificate No:** FM17NUS0011

3. **Equipment:** VEGAFLEX 80 Series
(Type Reference and Name) Level Transmitter

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:

3050485 dated 14th November 2013

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

FM 3810:2021, NEMA 250:2008, ANSI/IEC 60529:2020, ANSI/UL 61010-1:2012, ANSI/ISA 122701:2011

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:

Electrically Safe for use in ordinary (non-hazardous) industrial locations, indoors and outdoors, NEMA Type 4X/6P and IP66/67/68, Dual Seal.

10. Description of Equipment:

General - The VEGAFLEX 80 Series Level Transmitters employ guided wave radar in order to determine the distance between the surface of a filling material and the sensor by means of high frequency microwave impulses in the GHz range. It emits high frequency microwave impulses that are directed along a measuring rod, respectively measuring cable. The electronic equipment uses the duration of the signals reflected by the surface of the filling material in order to calculate the distance to the surface of the filling material.

Construction - The VEGAFLEX 80 Series consist of one or two encapsulated electronics inserts assembled in a single or double-chambered housing. The housings are constructed out of Stainless Steel or Aluminum. All versions of the enclosure provide two options for covers: one with a window for the PLICSCOM internal display;

Certificate issued by:



J.E. Marquedant
VP, Manager - Electrical Systems

24 January 2025

Date

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

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and the standard solid cover without a window. The standard enclosure contains a single cover on the top, while the double chamber enclosure contains a cover on the top for the electronics and an additional cover mounted on the front that covers the wiring compartment. The internal PLICSCOM display can be mounted on the top, as the standard enclosure, or on the front of the double chamber enclosure. All enclosures include either two ½ NPT or two M20 metric threaded entries that allow the equipment to be wired in accordance with applicable installation requirements.

Ratings - The VEGAFLEX 80 Level Measurement Series are intended to operate at:
 9.6 to 35 VDC for 2-wire 4-20 mA/HART "Electronics" model codes A and H;
 90 to 253 VAC, 50/60 Hz for 4-wire 4-20 mA/HART "Electronics" model code B;
 9.6 to 48 VDC, 20 to 42 VAC, 50/60 Hz for 4-wire 4-20 mA/HART "Electronics" model code I;
 9 to 32 VDC for Foundation Fieldbus "Electronics" model code F;
 9 to 32 VDC for Profibus PA "Electronics" model code P;
 8-30 V DC, max. 5 VDC Modbus signal for Modbus "Electronics" model codes U and W.

All VEGAFLEX 80 Level Measurement Series models have IP66/67 and NEMA Type 4X ratings. Type 6P and IP68 ratings are additionally available for "Housing" model codes 3, 4, 5, 8, A, D, H, S, V and W but Type 6P and IP66/68 ratings are not available for "Electronics" model codes B and I. A Dual Seal rating is available only for "Housing" model codes D, R, S and W.

11. Specific Conditions of Use:

None

12. Test and Assessment Procedure and Conditions:

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

13. Schedule Drawings

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

14. Certificate History

Details of the supplements to this certificate are described below:

| Date | Description |
|------------------|---|
| 14 November 2013 | Original Issue. |
| 22 May 2017 | <u>Supplement 03:</u> Report Reference: – RR209464 dated 22 nd May 2017. Description of the Change: Drawing and model code listing changes to incorporate additional "Indicator Control Module (PLICSCOM)" display electronics options F, K, U, L, S, E and H. Update to new certificate format. Changes do not affect safety. |

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| Date | Description |
|-----------------|---|
| 16 January 2018 | <p><u>Supplement 04:</u> Report Reference: – RR211145 dated 16th January 2018. Description of the Change: Minor electronics and construction updates, including additional model code listing changes. Added certification standards and Type/IP and Dual Seal ratings that were previously incorrectly omitted. Changes do not affect safety.</p> |
| 30 March 2021 | <p><u>Supplement 05:</u> Report Reference: – RR224392 dated 30th March 2021. Description of the Change: 1. FM3810 updated to latest edition (2018) 2. ANSI/ISA 61010-1 updated to edition 3 (2012) 3. Model Code updates</p> |
| 4 August 2022 | <p><u>Supplement 06:</u> Report Reference: – RR233446 dated 4th August 2022. Description of the Change: 1. FM3810 updated to latest edition (2021)</p> |
| 24 January 2025 | <p><u>Supplement 7:</u> Report Reference: RR244315 dated 24 January 2025. Description of the Change(s): 1. Addition of alternate process seals 2. ANSI/IEC 60529:2004 updated to ANSI/IEC 60529:2020 3. Certificate updated to latest format</p> |

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FM Approvals**ANNEX****FX 81(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.****Description of Equipment:*****FX 81(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.***

a = Optional electable parameter for internal information, one digit alphanumeric variable referring to non-electrical properties

b = Scope: F or V

c = Approval: X or M

d = Version/Material: One digit alphanumeric variable for combination of version and material:

Version: Coax with single or multiple hole (ø21.3mm or 42.2mm),

Exchangeable rod (ø8mm – 12mm)

Exchangeable cable (ø2mm – 4mm) without weight, with gravity or centering weight

Exchangeable coated cable (ø4mm) with uncoated centering weight

Material: 304L, 316, 316L, Alloy 400 (2.4360), Alloy C22 (2.4602), Alloy C276 (2.4819),

Duplex (1.4462), PFA coating

ef = Process Fitting/Material: Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

g = Seal/Process Temperature: One digit alphanumeric variable for suitable seals seal suitable for application including given process temperature, required IP or NEMA rating and environmental conditions.

h = Electronics: A, B, F, H, I, P, U or W

i = Supplementary Electronics: X or Z

j = Housing: 3, 4, 5, 8, A, C, D, F, G, H, J, L, M, S, T, V, or W

k = Cable Entry/Connection: 1, D, N, Q or single digit representing suitably NRTL rated connection or cable gland

l = Indicating/Adjustment Module PLICSCOM: A, B, F, K, U, L, S, H or X

m = Additional certificates: One digit alphanumeric variable referring to non-electrical properties

* Type 6P and IP68 ratings are available only for "Housing" model codes 3, 4, 5, 8, A, D, H, S, V and W

** Type 6P and IP68 ratings are not available for "Electronics" model codes B and I

*** Dual Seal rating is available only for "Housing" model codes D, S and W

FX 82(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.**Description of Equipment:*****FX 82(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.***

a = Optional electable parameter for internal information, one digit alphanumeric variable referring to non-electrical properties

b = Scope: F or V

c = Approval: X or M

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d = Version/Material: One digit alphanumeric variable for combination of version and material:
 Exchangeable cable (ø6-11mm) with gravity weight/PA coated.(gravity weight is uncoated,
 Exchangeable rod (ø16mm)
 Material: 316, 316L, Alloy C22 (2.4602), PA coating
 ef = Process Fitting/Material: Two digit alphanumeric variable for connections, which comply with an
 international, national or industrial standard with pressure ratings.
 g = Seal/Process Temperature: One digit alphanumeric variable for suitable seals seal suitable for application including
 given process temperature, required IP or NEMA rating and environmental conditions.
 h = Electronics: A, B, F, H, I, P, U or W
 i = Supplementary Electronics: X or Z
 j = Housing: 3, 4, 5, 8, A, C, D, F, G, H, J, L, M, S, T, V, or W
 k = Cable Entry/Connection: 1, D, N, Q or single digit representing suitably NRTL rated connection or cable gland
 l = Indicating/Adjustment Module PLICSCOM: A, B, F, K, U, L, S, H or X
 m = Additional Certificates: One digit alphanumeric variable referring to non-electrical properties.
 * Type 6P and IP68 ratings are available only for "Housing" model codes 3, 4, 5, 8, A, D, H, S, V and W
 ** Type 6P and IP68 ratings are not available for "Electronics" model codes B and I
 *** Dual Seal rating is available only for "Housing" model codes D, S and W

FX 83(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.

Description of Equipment:

FX 83(a).bcdefghijklm. VEGAFLEX Series Level Measurement Equipment.

a = Optional electable parameter for internal information, one digit alphanumeric variable referring to non-electrical properties

b = Scope: F or V

c = Approval: X or M

d = Version/Material: One digit alphanumeric variable for combination of version and material:

Version : Exchangeable rod (ø8mm), (Ra<0.76 µm),

Exchangeable rod (ø8mm), can be autoclaved (Ra<0.76µm),

Exchangeable rod (ø8mm), electropolished (Ra<0.38µm),

Exchangeable rod (ø8mm), electropolished, can be autoclaved (Ra<0.38µm),

Coated cable (ø4mm/PFA) with gravity weight,

Coated rod (ø10mm/PFA)

Material: 1.4435 (BN2), 316, 316L, PFA coating

ef = Process Fitting/Material: Two digit alphanumeric variable for connections, which comply with an international, national or industrial standard with pressure ratings.

g = Seal/Process Temperature: One digit alphanumeric variable for suitable seals seal suitable for application including given process temperature, required IP or NEMA rating and environmental conditions.

h = Electronics: A, B, F, H, I, P, U or W

i = Supplementary Electronics: X or Z

j = Housing: 3, 4, 5, 8, A, C, D, F, G, H, J, L, M, S, T, V, or W

k = Cable Entry/Connection: 1, D, N, Q or single digit representing suitably NRTL rated connection or cable gland

l = Indicating/Adjustment Module PLICSCOM: A, B, F, K, U, L, S, H or X

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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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