DNV·GL

Certificate No:
TAA00001HB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Transmitter

with type designation(s)
VEGAFLEX FX 81(*)..., VEGAFLEX FX 82(*)..., VEGAFLEX FX 86(*)...

Issued to
VEGA Grieshaber KG
Schiltach, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C**

Issued at **Hamburg** on **2017-11-16**
This Certificate is valid until **2022-11-15**.
DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-014840-3**
Certificate No: **TAA00001HB**

Product description

VEGAFLEX Guided Microwave Radar for continuous level measuring.
VEGAFLEX applies a Time-Domain Reflectometer (TDR) sensor to detect the surface level of liquids and bulk solids.

VEGAFLEX FX81(*).a b c d e f g h i j
VEGAFLEX FX82(*).a b c d e f g h i j
VEGAFLEX FX86(*).a b c d e f g h i j

a = Approval directive / Scope:
A - Europe, **I** - World-wide, **F** - USA, **C** - Canada, **R** – Russia, **U** – Ukraine, **G** – Kazakhstan, **B** – Belarus, **N** – China, **M** – Brazil, **K** – Korea, **D** – India, **V** – Combination (Europe, world-wide)

b = Approval: M, O, P, Q, N

c = Version / Material:
Exchangeable cable ø2mm - 11mm with gravity respective center weight: **A, B, C, D, E, F, G, U, I, J, 7**
Exchangeable rod ø8mm, length up to to 3m in different Stainless Steel grades: **G, E, S, 6, W**
Exchangeable rod ø12mm, length up to 1,5 m in different Stainless Steel grades**: F, O, V**
Coax version ø21,3mm with single hole / in different Stainless Steel grades: **K, L, M, Q, H**

d = Process fitting / Material: 2-digit alphanumeric code to select: flange, thread and other industrial process connections

e = Seal / Second line of defense / Process temperature
For VEGAFLEX 81 and VEGAFLEX 82:
1-digit alphanumeric code for FKM, FFKM, EPDM, Silicone FEP, EPDM and others / with or without second line of defence / the specific conditions of use see manufacturers documentation
For VEGAFLEX 86:
Ceramic-graphite / with second line of defence / Process temperature: **1, 2 resp. 3 PEEK/FFKM**

f = Electronics:
H Two-wire 4...20mA/HART®
A Two-wire 4...20mA/HART® with SIL-Qualification
P Profibus PA

g = Supplementary electronics: X without

h = Housing / Protection: K, A, 3, D, 4, V, 5, W, B, R, Y, Q, X, S, H

i = Cable entry / Connection:
1-digit alphanumeric code to specify cable gland resp. plug

j = Indicating and adjustment module plicscom:
X without display/adjustment module
A with display/adjustment module PLICSCOM
F without display/adjustment module; lid with inspection window
B laterally mounted; with display/adjustment module PLICSCOM
K with display/adjustment module PLICSCOM; with Bluetooth; magnetic pen operation
L laterally mounted; with display/adjustment module PLICSCOM; with Bluetooth; magnetic pen operation

(*) 1- or 2-digit(s) alphanumeric code for customer specific labelling

Place of manufacture:

VEGA Grieshaber KG	VEGA Americas, Inc.
Am Hohenstein 113	4241 Allendorf Drive
77761 Schiltach	Cincinnati, OH 45209
GERMANY	USA

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

The coaxial tubes have to be guided at the end (not clamped).
For coaxial tube ∅21.3 mm, an additional guiding device is required every 1500 mm.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to DNV GL Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:
- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE