DNV·GL

Certificate No:
TAA00001K2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Transmitter

with type designation(s)
VEGABAR (*)81(*)..., (*)82(*)..., (*)83(*)..., (*)86(*)..., (*)87(*)...

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

***depending on the order code 'n'**

Issued at **Hamburg** on **2018-01-05**
This Certificate is valid until **2023-01-04**.
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: **262.1-027769-1**
Certificate No: **TAA00001K2**

Product description

Process pressure transmitter suitable for pressure measurement of gases, vapours and liquids. Measurement of gauge pressure, absolute pressure or vacuum.

VEGABAR (*)81(*).a b d f h i j k l m n o p q
VEGABAR (*)82(*).a b d f g h i j k l m n o p q
VEGABAR (*)83(*).a b d g h i j k l m n o p q
VEGABAR (*)86(*).a b c d e f g h i k l m n o p q
VEGABAR (*)87(*).a b c d e h i j k l m n o p q

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

a	**Scope**: **A, I, F, C or others**
b	**Approval: M, N, O, P, Q**
c	**for 86/87: Version / Process temperature: B** Suspension cable FEP / -20...100°C, **C** Suspension cable PUR / -20...80°C, **D** Connection tube 316L / -20...80°C up to 0,5 m **for 81 Pressure Transmitter Liquid / Process temperature: 1-digit alphanumeric code** **for 83 Process Pressure Sealing: 1-digit alphanumeric code**
d	**Process fitting / Material: 2-digit alphanumeric code** for TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any complying with an international or national standard
e	**for 86, 87: Transmitter options:** **1-digtit alphanumeric code for versions: X** without, **P** with PE plastic coating, **G** Thread G½-G¼, **N** Thread 1/2 NPT hole Ø 11mm, **K** Thread G1", **A** Transmitter of PVDF full material, **V** G1½ (DIN 3852-A) PN3, **W** Impact protection
	for 81 Isolating liquid process Temperature: 1-digit alphanumeric code
	for 83 Process Temperature/Seal: 1-digit alphanumeric code
f	**Sealing concept: 1-digit alphanumeric code for** Single**,** Double resp. Form seal (for 82 and 86 only) **for 81: Diaphragm material: 1-digit alphanumeric code**
g	**Process seal / Process temperature: 1-digit alphanumeric code for FKM, EPDM, FFKM** - seal for temperatures -40…150 °C (depending on version)
h	**Pressure: A** Absolute**, G** Relative, **K** Relative / Climate-compensated
i	**Measuring range: 1-digit alphanumeric code** for pressure range -1...100.0 bar (-100... 10000kPa) or other national standard units (depending on version)
j	**Accuracy class: H** 0.050%, **E** 0.1 %, **S** 0.2%
k	**Electronics:** **Z** Two-wire 4...20mA **H** Two-wire 4...20mA/HART® **A** Two-wire 4...20mA/HART® with SIL – Qualification **S** Slave electronics for electronic differential pressure **T** Slave electronics for electronic differential pressure with SIL-Qualification **P** Profibus PA
l	**Supplementary Electronics: X w**ithout **, Z** Additional Current Output
m	**Housing: K** Plastic**, A** Aluminum**, D** Aluminum double chamber, **V** Stainless steel (precision casting) 316L **W** Stainless steel double chamber (precision casting)**, R** Plastic double chamber

n	**Housing Version/Protection: I, D*, P, N*, M*, A, S, K, L (*Enclosure location class: D)**
o	**Cable Entry/Connection: M, S, T, K, U, V, L, O, D, 6, N, J, 8, P, C, B, I, F, G, H, W, 1, 2, Q, Z**
p	**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
q	**Certificate: M** yes (e.g. FDA; EN 10204-3.1; NACE), **X** no

Place of manufacture:

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
GERMANY

VEGA Americas, Inc.
4241 Allendorf Drive
Cincinnati, OH 45209
USA

Approval conditions

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.

Application/Limitation

For the PLICSCOM-module reference is made to the type approval certificate no. TAA000019V.

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 Excertificate issued by a notified/recognized Certification Body.

Type Approval documentation

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