

Ship approvals

VEGABAR 12, 14

DNV GL - TAA00001NN

LR - 09/20010 (E3)

ABS - 19-HG1876137-PDA

ABS - 19-HG1876137-PDA-DUP

CCS - HB21PTB00055

RINA - ELE343018XG

RMROS - 18.40026.250

BV - 22370/C0 BV



Document ID: 35009



VEGA

Installation instruction

It is not allowed to supply the VEGABAR B1* directly from the ship mains.

It must be connected to signal conditioning instruments with appropriate ship approval.

DNV GL

Certificate No:
TAA00001NN

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Pressure Transmitter**

with type designation(s)

VEGABAR12, VEGABAR14

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 B

Issued at **Hamburg** on **2018-02-15**

This Certificate is valid until **2023-02-14**.

DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**



Digitally Signed By: Rinkel, Marco

for **DNV GL**

Location: Hamburg - On behalf of

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.



Form code: TA 251

Revision: 2016-12

www.dnvgl.com

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Product description

Model variants:
 BAR12.M **a e c**
 BAR14.M **a b c d**

a	Pressure / Measuring range
	1A ...Z9 absolute and relative pressure from 0...60 bar
b	Electrical connection / Protection
	A1 4-pole plug connection DIN 43650 resp. ISO 4400 A PG9 / IP 65 A2 4-pole plug hinged cover / IP 65 C1 direct cable outlet with 5m cable / IP 67 C2 direct cable outlet with cable / IP 68 (0.5 bar) M1 circular plug connection 4-pole, screwed plug M12 x 1/ IP65 M2 plug connection 4-pole M12x1 with 5m connection cable / IP 65 M3 circular plug connection 4-pole, screwed plug (drwg. MB3517) M12 x 1/ IP65 M4 circular plug connection 4-pole, screwed plug M12 x 1/ IP68
c	Process fitting / Material
	AA...ZZ several Tread connections
d	Seal measuring cell
	1...9 FKM, EPDM, FFKM
e	Electrical connection / Protection
	3-pole connection clamp / IP 20

Software: V1.xx

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

Cable installation inside tank only.

Connection outside tanks has to be realized by the shortest possible cable length and not longer than 6m.

Type Approval documentation

Test Reports: Hansecontrol No. 07-L-01487-01, 07-L-01487-02

Test Reports: VEGA No.: BAR13-G1...,1-03_BAR12_F1_GL, No. BAR13-G1...,1-05_BAR12_F1_GL

Test Reports: VEGA No.: BAR13-G1...,1-03(-05)_BAR12_F1_GL, 1-03_BAR14_IP68-Version_F1_1

Test Reports: Paconsult No. 07-1700, No. 07-1789

Circuit diagrams: SB1098-2-00-0, SB1283-1-00-0

Drawings: ZG2796/2937/ZG3232/2306/3207/3261, MB 3739/5792

Type Approval Assessment Report issued at Augsburg on 2018-02-08

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

Job Id: **262.1-028046-1**
Certificate No: **TAA00001NN**

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



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach Germany
DESCRIPTION	Pressure transmitter VEGABAR 12 and VEGABAR 14
TYPES	BAR12.M a e c BAR14.M a b c d
	Pressure / Measuring range a 1A...Z9 absolute and relative pressure from 0...60 bar
	Electrical connection / Protection b A1 4-pole plug connection DIN 43650 A PG9 / IP 65 A2 4-pole plug connection hinged cover / IP 65 C1 direct cable outlet with 5m cable / IP 67 C2 direct cable outlet / IP68 (0,5 bar) M1 circular plug connection 4-pole with screwed plug M12 x 1 / IP65 M2 plug connection 4-pole M12x1 with 5m connection cable / IP 65 M3 plug connection 4-pole M12x1 according drawing MB3517 / IP65 M4 plug connection 4-pole M12x1 / IP 68 (0.2 bar)
Certificate No.	09/20010 (E3)
Issue Date	21 March 2019
Expiry Date	22 March 2024
Sheet	1 of 2



Thorsten Wolff
Hamburg Technical Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

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is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

This is a copy of an electronic document. In the event of any conflict or ambiguity between the copy and the electronic document, which is retained and published by Lloyd's Register, the original electronic and certified version shall always prevail.



TYPES continuation

- Process fitting / Material
 c AA...ZZ several threaded connections
 Seal measuring cell
 d 1...9 FKM, EPDM and others
 e 3-pole connection clamp / IP 20; requirement class 3;
 software: V1.xx

APPLICATION

Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3, ENV4 and ENV5 as defined in Lloyd's Register Type Approval System, Test Specification Number 1 - 2002.

ADDITIONAL TESTS

Low temperature (-40°C/16 hrs)
 Enclosure test IP 65, 67 (as shown under types)

STANDARD

Manufacturer's specification

RATINGS

Power supply: 24 V DC
 Output: 4 to 20 mA

The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

The Design Appraisal Document No. HTS/ETS 37998-19 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No. 09/20010 (E3)
Issue Date 21 March 2019
Expiry Date 22 March 2024
Sheet 2 of 2



Thorsten Wolff
 Hamburg Technical Support Office
 Lloyd's Register EMEA

Lloyd's Register EMEA
 71 Fenchurch Street, London EC3M 4BS

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This is a copy of an electronic document. In the event of any conflict or ambiguity between the copy and the electronic document, which is retained and published by Lloyd's Register, the original electronic and certified version shall always prevail.

Part 3
Transmitters/Transducers

Producer/Licence No.	Item Description	Technical Details	Category/Additional Tests	Remarks	Cert. No.
VEGA Grieshaber KG Am Hohenstein 113 77761 Schillach Germany	Pressure transmitter VEGABAR 12 and VEGABAR 14 Types: BAR12.M a e c BAR14.M a b c d Pressure / Measuring range a 1A...Z9 absolute and relative pressure from 0...60 bar Electrical connection / Protection b A1 4-pole plug connection DIN 43650 A PG9/ IP 65 A2 4-pole plug connection hinged cover / IP 65 C1 direct cable outlet with 5m cable / IP 67 C2 direct cable outlet / IP68 (0.5 bar) M1 circular plug connection 4-pole with screwed plug M12 x 1/ IP65 M2 plug connection 4-pole M12x1 with 5m connection cable / IP 65 M3 plug connection 4-pole M12x1 according drawing M83517 / IP65 M4 plug connection 4-pole M12x1 / IP 68 (0.2 bar) Process fitting / Material C AA...ZZ several Tread connections Seal measuring cell d 1...9 FKM, EPDM and others e 3-pole connection clamp / IP 20; requirement class 3; software: V1.xx	Power supply: 24 Vdc Output: 4 to 20 mA	ENV1, ENV2, ENV3, ENV4, ENV5 (2002) Low temperature (-40°C/16 hrs), Enclosure test IP 65, 67 (as shown under types)	Expires: 22 March 2024 Manufacturer's Specification.	09/20010 (E3)

 1



CERTIFICATE NUMBER 19-HG1876137-PDA
EFFECTIVE DATE 09-Jul-2019
EXPIRATION DATE 08-Jul-2024
ABS TECHNICAL OFFICE
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

VEGA GRIESHABER KG

located at

AM HOHENSTEIN 113, D-77761 SCHILTACH, GERMANY

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Pressure Level Gauging Transmitter

Model VEGABAR BR14

This Product Design Assessment (PDA) Certificate remains valid until 08-Jul-2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping


Efstratios Maliatsos
Engineer / Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Certificate of Product Design Assessment Rev.3

Page 1 of 1

35009-EN-211112

VEGA GRIESHABER KG
 ZERTIFIKATSWESSEN
 AM HOHENSTEIN 113
 D-77761 SCHILTACH
 Germany
 Telephone: 49-7-836-50-0
 Fax: 49-7-836-50-8278
 Email: a.reinberger@vega.com
 Web: www.vega.com

Tier: 2 - PDA Issued

Product: Pressure Level Gauging Transmitter

Model: VEGABAR BR14

Intended Service:

Pressure measurement of gases, vapours and liquids on ACC, ACCU and ABCU classed vessels.
 Applicable for tank level measurements.

Description:

Transmitters transforming pressure into electric signals by capacity change of sapphire-ceramic diaphragm.

Rating:

Gauge and absolute pressure ranges: 0 ... 60 bar;

Ambient temperature range: -40°C ... 100°C;

Output signals: 4 ... 20 mA;

Power supply by approved unit, 24 V(DC), max. 30V(DC);

Degree of protection: IP 65, IP 67 with direct cable outlet;

For approved components assembling / order specifications click on link 'Additional Product Details'.

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. For passenger vessels, pressure/level gauges are not to be installed on flammable oil tanks where they require tank wall penetration below the tank top.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product
2. Each particular application and installation is to be specifically approved in conjunction with the relevant systems and tank arrangements.
3. In case this product is used within hazardous area, it is to be approved in each case according to Rules and Ex-certificate issued by a recognized certification body. For electrical equipment installed in hazardous areas, ATEX certification scheme is not currently recognized by the U.S. Coast Guard.

Notes/Drawing/Documentation:

- Drawing No. ZG3232 , Mechanical Drawing
- Drawing No. ZG2937, Mechanical Drawing
- Drawing No. ZG2306, Mechanical Drawing
- Drawing No. SB1098-2-00-0_BAR-E14-2-00-0, Electric Diagram
- Drawing No. SB1098-2-00-0-DP_Deckelprint-2-00-0, Electric Diagram
- Drawing No. ZG2796, Mechanical Drawing
- Drawing No. SB1283-1-00-0_BAR-CF2-1-00-0, Electric Diagram

Terms of Validity:

This Product Design Assessment (PDA) Certificate 19-HG1876137-PDA, dated 09/Jul/2019 remains valid until 08/Jul/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

As of 09/Jul/2019

Type Approved

Page 1 of 2

VEGA GRIESHABER KG
 ZERTIFIKATSWESEN
 AM HOHENSTEIN 113
 D-77761 SCHILTACH
 Germany
 Telephone: 49-7-836-50-0
 Fax: 49-7-836-50-8278
 Email: a.reinberger@vega.com
 Web: www.vega.com

Tier: 2 - PDA Issued

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:

2019 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-4/13.5.6(b), 4-6-4/15.3.4(b)

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA



CERTIFICATE NUMBER 19-HG1876137-PDA-DUP
EFFECTIVE DATE 11-Jul-2019
EXPIRATION DATE 08-Jul-2024
ABS TECHNICAL OFFICE
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

VEGA AMERICAS INC.

located at

4241 ALLENDORF DRIVE, CINCINNATI OH, United States 45209

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Pressure Level Gauging Transmitter

Model VEGABAR BR14

This Product Design Assessment (PDA) Certificate remains valid until 08-Jul-2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping


Efstratios Maliatsos
Engineer / Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Certificate of Product Design Assessment Rev.3

Page 1 of 1

electronically published by ABS Dalian.
reference T1886393, dated 11-JUL-2019.



Page 1 of 1

Task – T1885393
Duplicate Product Design Assessment (PDA-
DUP) - Renewal
Pressure Level Gauging Transmitter
PDA No. 19-HG1876137-PDA-DUP

Attention: Mr. Andreas Reinberger VEGA AMERICAS INC. (WCN 660854)

The documents shown in the attached list are reviewed in accordance with the applicable requirements indicated in the renewed PDA-DUP along with the service restrictions and comments.

We recommend that you monitor the ABS Rules, Guides and other standards used in the Assessment. These Rules, Guides and standards often change on an annual basis, and you must comply with the new Rules, Guides and standards in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules, Guides or specifications.

For any clarifications, contact Mr. Efstratios Maliatsos at +49-40-37858727, (emaliatsos@eagle.org).

Very truly yours,

Stefano Penco
Vice President of Engineering

Electronically Signed by: Efstratios Maliatsos

Documents List

Drawing No.	Rev. No.	Title	Status
Application for PDA Revalidation of 14-HG1212138-PDA-DUP	-	Application for PDA Revalidation of 14-HG1212138-PDA-DUP	Filed by ABS for Reference Only
NA-1	-	Declaration of Conformity	Filed by ABS for Reference Only

Electronic copies of the documents, appropriately stamped, are available in the ABS My Eagle Portal through Engineering Manager.

Include: PDA Certificate

ABS Global Engineering
Hermannstrasse 15, 20095 Hamburg, Germany

35009-EN-211112

VEGA AMERICAS INC.
4241 ALLENDORF DRIVE
CINCINNATI OH
United States 45209
Telephone: 513-272-0131
Fax: 513-272-0133
Email: americas@vega.com
Web: vega-americas.com

Tier: 3 - Type Approved, unit certification not required

Product: Pressure Level Gauging Transmitter

Model: VEGABAR BR14

Intended Service:

Pressure measurement of gases, vapours and liquids on ACC, ACCU and ABCU classed vessels.
Applicable for tank level measurements.

Description:

Transmitters transforming pressure into electric signals by capacity change of sapphire-ceramic diaphragm.

Rating:

Gauge and absolute pressure ranges: 0 ... 60 bar;
Ambient temperature range: -40°C ... 100°C;
Output signals: 4 ... 20 mA;
Power supply by approved unit, 24 V(DC), max. 30V(DC);
Degree of protection: IP 65, IP 67 with direct cable outlet;
For approved components assembling / order specifications click on link 'Additional Product Details'.

Service Restriction:

- Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- For passenger vessels, pressure/level gauges are not to be installed on flammable oil tanks where they require tank wall penetration below the tank top.

Comments:

- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product
- Each particular application and installation is to be specifically approved in conjunction with the relevant systems and tank arrangements.
- In case this product is used within hazardous area, it is to be approved in each case according to Rules and Ex-certificate issued by a recognized certification body. For electrical equipment installed in hazardous areas, ATEX certification scheme is not currently recognized by the U.S. Coast Guard.

Notes/Drawing/Documentation:

Drawing No. ZG3232 , Mechanical Drawing
Drawing No. ZG2937, Mechanical Drawing
Drawing No. ZG2306, Mechanical Drawing
Drawing No. SB1098-2-00-0_BAR-E14-2-00-0, Electric Diagram
Drawing No. SB1098-2-00-0-DP_Deckelprint-2-00-0, Electric Diagram
Drawing No. ZG2796, Mechanical Drawing
Drawing No. SB1283-1-00-0_BAR-CF2-1-00-0, Electric Diagram

Terms of Validity:

This Product Design Assessment (PDA) Certificate 19-HG1876137-PDA-DUP, dated 11/Jul/2019 remains valid until 08/Jul/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

VEGA AMERICAS INC.
 4241 ALLENDORF DRIVE
 CINCINNATI OH
 United States 45209
 Telephone: 513-272-0131
 Fax: 513-272-0133
 Email: americas@vega.com
 Web: vega-americas.com

Tier: 3 - Type Approved, unit certification not required

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
 2019 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-4/13.5.6(b), 4-6-4/15.3.4(b)

National:
 NA

International:
 NA

Government:
 NA

EUMED:
 NA

OTHERS:
 NA



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB21PTB00055

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

VEGA Grieshaber KG

地址/Address

Am Hohenstein 113, D-77761 Schiltach, Germany

产品名称/Product

压力变送器
Pressure Transmitter
传感器
Sensor

认可标准/Approval Standard

- 中国船级社《钢质海船入级规范》（2021）及其修改通报第4篇第1章
Chapter 1, Part Four of China Classification Society Rules for Classification of Sea-Going Steel Ships 2021 and its Amendments
- 中国船级社《钢质海船入级规范》（2021）及其修改通报第7篇第2章
Chapter 2, Part Seven of China Classification Society Rules for Classification of Sea-going Steel Ships 2021 and its Amendments

用于/Intended for

船舶与海上设施/Ships and Offshore Installations

产品明细/Product Description

传感器/Sensor (M0001)		
名称/Name	属性(值)/Value	单位/Unit
产品名称/Product Name	Pressure Transmitter	
型号/Type	VEGABAR 12, 14	



证书有效期至/This Certificate is valid until 2025年07月16日/Jul. 16,2025

发证机构/中国船级社 釜山分社
Issued by CCS-Kiamung Branch

签发日期 2021年10月22日
Date Oct. 22,2021

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效。电子证书含数字签名方为有效。本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向本社检验机构咨询。This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubtful about the authenticity of the certificate may inquire of the Society or its offices.

Form No: T01.

联系方式/Contact Us. 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)



UTN:P021-05070337

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No.: HB17A00018

产品认可试验报告/ Approval Test Report试验报告编号/ Test Report No.: see additional pages
试验报告日期/ Test Report Date:**认可后的产品检验方式/ Method of Product Inspection after Approval**

按规范只认可不进行产品检验的产品/The product approved only in term of the rules:
认可后的产品检验由制造厂按本社批准的产品检验计划进行检验, 经检验合格后由制造厂签发合格证明, 并连同该产品的本社认可证书复印件一并交付用户, 制造厂对产品符合公约、法规、本社规范和本社认可的标准规定负责。
After approval, product inspection should be carried out by the Manufacturer in accordance with the product inspection scheme approved by the Society. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。
After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.
2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。
The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.
3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。
Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.
4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。
Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.
5. 如果属于获得型式认可B 模式证书, 且无需颁发船用产品证书/等效证明文件的情况, 证书获得者应接受本社每年一次的定期审核。定期审核日为认可证书期满之日对应的每一周年日, 检查工作应在周年日的前后三个月内进行。
If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

备注/Remarks

本证书由原型式认可证书 (No. HB17T00024_05) 换新并替代原证书。
This certificate is renewed from and supersedes the previous Type Approval Certificate No. HB17T00024_05.

本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。

证书编号/Certificate No. **HB21PTB00055**

The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.
However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser
under contract will not be exempted.

中国船级社汉堡分社
CCS Hamburg Branch

注：本证书含有附页，共1页
Note: The certificate is attached with additional 1 page(s)

1. Product Description:

Name	Pressure Transmitter
Type	VEGABAR 12 VEGABAR 14
Power Source	8 ... 30 V DC (VEGABAR 12) 12 ... 36 V DC (VEGABAR 14)
Output	4 ... 20 mA two-wire electronics for voltage supply and measured value transmission on the same cable.
Accuracy	0.5% (VEGABAR 12) 0.3% (VEGABAR 14)
Measure Range	0 ... 4 bar (VEGABAR 12) -1 ... 60 bar (VEGABAR 14)
Process temperature	-20 ... +85 °C (VEGABAR 12) -40 ... +100 °C (VEGABAR 14)
Measuring Cell	Ceramic-capacitive measuring cell
Application	Used for measurement of gauge pressure, absolute pressure and vacuum. Measured products are gases, vapours and liquids.
Degree of protection	IP20 (VEGABAR 12) up to IP67 (VEGABAR 14)
Software version	V1.2.x

2. Approval Test Report

No	Test Report No.	Test Report Date	Laboratory / Address
1	2101-0137301R15A	2021.08.11	Hansecontrol Zertifizierungsgesellschaft GmbH / Schleidenstrasse 1, 22083 Hamburg, Germany
2	2101-0160701R02A	2021.09.03	
3	07-L-01487-01	2007.10.23	
4	07-L-01487-02	2008.02.27	
5	07-1700	2007.09.27	PAConsult GmbH / Birkenau 3, 22087 Hamburg, Germany
6	07-1789	2007.12.03	
7	1-03_BAR12_F1_1_GL	2008.10.31	VEGA Grieshaber KG / Am Hohenstein 113, 77761 Schiltach, Germany
8	1-05_BAR12_F1_1_GL	2008.10.31	
9	1-05_BAR12_F1_2_GL	2008.10.31	



TYPE APPROVAL CERTIFICATE No. ELE343018XG

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description Type</i>	Pressure transmitters VEGABAR 14
<i>Applicant</i>	VEGA GRIESHABER KG Am Hohenstein 113 77761 Schiltach GERMANY
<i>Manufacturer Place of manufacture</i>	VEGA GRIESHABER KG Am Hohenstein 113 77761 Schiltach GERMANY
<i>Reference standards</i>	- Rules for the Classification of Ships- Part C - Machinery, Systems and fire protection - Ch.3 ; Sect. 6 ; Tab. 1 .

Issued in **HAMBURG** on **December 4, 2018**. This Certificate is valid until **December 3, 2023**

RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure



RINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53851
Fax +39 010 5351000



TYPE APPROVAL CERTIFICATE

No. ELE343018XG

Enclosure - Page 1 of 1

VEGABAR 14

Product description:

The VEGABAR 14 is a pressure transmitter for measurement of gauge pressure, absolute pressure or vacuum with a ceramic measuring cell.

Main characteristics:

Rated voltage: 24V DC

Output signal: 4...20mA

Degree of protection: IP65 or IP67

Order code:

VEGABAR 14.M aa bb cc d e

aa - Measuring range:

1A...Z9 absolute and relative pressure from 0 to 60 bar

bb - Electrical connection / protection:

A1: 4-pole plug connection DIN 43650 A PG9 / IP65

A2: 4-pole plug hinged cover / IP65

C1: direct cable outlet with 5m cable / IP67

M1: circular plug connection 4-pole with screwed plug M12x1; IP65

M2: plug connection 4-pole M12x1 with 5m connection cable; IP65

M3: circular plug connection 4-pole, screwed plug (drwg MB3517) M12x1; IP65

M4: circular plug connection 4-pole, screwed plug M12x1; IP68

cc - Process Fitting / Material:

AA...ZZ: several tread connection

d - Seal measuring cell:

1...9: FKM, EPDM, FFKM

e - Electrical connection:

3- pole connection clamp / IP20

Documents:

Operating instruction: - 22441-EN-161104

Drawings: - ZG2796, ZG2937, ZG3232, ZG2306, ZG3207

Test Reports:

Paconsult GmbH: - 07-1700 dated 08/08/2007; 07-1789 dated 30/10/2007;

Hansecontrol: - 07-L01487-01 / 02

Remarks:

This certificate replaces the previous one n° ELE129513XG.

HAMBURG December 04, 2018



Handwritten signature



RINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53851
Fax +39 010 5351000

РОССИЙСКИЙ МОРСКОЙ РЕГИСТР СУДОХОДСТВА
RUSSIAN MARITIME REGISTER OF SHIPPING

Стр. 1 / 2
Page.

6.8.3



СВИДЕТЕЛЬСТВО О ТИПОВОМ ОДОБРЕНИИ
TYPE APPROVAL CERTIFICATE

Изготовитель
Manufacturer

VEGA Grieshaber KG
(DE143 030 199)

Адрес
Address

Am Hohenstein 113, 77761 Schiltach, Germany.

Изделие*
Product*

Преобразователи давления типа VEGABAR: BAR12, BAR14, BR17, B81, B82, B83, B86, B87.

Pressure transmitters of VEGABAR type: BAR12, BAR14, BR17, B81, B82, B83, B86, B87.

Код номенклатуры 15110102
Code of nomenclature

На основании освидетельствования и проведенных испытаний удостоверяется, что вышеупомянутое(ые) изделие(я) удовлетворяет(ют) требованиям Российского морского регистра судоходства.
This is to certify that on the basis of the survey and tests carried out the above mentioned item(s) complies(ly) with the requirements of Russian Maritime Register of Shipping.

Часть XV Автоматизация "Правил классификации и постройки морских судов" (2018); Раздел 12 Части IV "Правил технического надзора за постройкой судов и изготовлением материалов и изделий для судов" (2018)

Part XV Automation of "Rules for the Classification and construction of Sea-Going Ships" (2018); Section 12 of part IV of the "Rules for technical supervision during construction of ships and manufacture of materials and products for ships" (2018)

Настоящее Свидетельство о типовом одобрении действительно до 08.10.2023
This Type Approval Certificate is valid until

Настоящее Свидетельство о типовом одобрении теряет силу в случаях, установленных в Правилах технического надзора за постройкой судов и изготовлением материалов и изделий для судов.

This Type Approval Certificate becomes invalid in cases stipulated in Rules for the Technical Supervision during Construction of Ships and Manufacture of Shipboard Materials and Products.

Дата выдачи 08.10.2018
Date of issue

№ 18.40026.250

Российский морской регистр судоходства
Russian Maritime Register of Shipping



(подпись)
signature

Морозов В.В. / V.Morozov
(фамилия, инициалы)
name

*Дополнительную информацию см. на обороте.
Additional information see overleaf.

Технические данные
Technical data

Диапазон измеряемых давлений, кПа:	от -100 до 6000 (BAR12, BAR14); от -100 до 10000 (B82); от -100 до 100000 (BR17, B81, B83); от 0 до 2500 (B86, B87);
Диапазон рабочих температур, °C	от -40 °C до +80 °C
Выходные сигнал:	4...20 mA (BAR12, BAR14, BR17); 4...20 mA; 4...20 mA/HART; Profibus PA (B81, B82, B83, B86, B87)
Напряжение питания, В пост.тока:	24
Маркировка взрывозащиты:	ATEX: II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb; II 1/2G, 2G Ex d ia IIC T6...T1 Ga/Gb, Gb;
Степень защиты:	IP65, IP66, IP67, IP68 (100 kPa).
Measuring range of pressures, kPa :	from -100 to 6000 (BAR12, BAR14); from -100 to 10000 (B82); from -100 to 100000 (BR17, B81, B83); from 0 to 2500 (B86, B87);
Ambient temperature, °C	from -40 °C to +80 °C
Output signal:	4...20 mA (BAR12, BAR14, BR17); 4...20 mA; 4...20 mA/HART; Profibus PA (B81, B82, B83, B86, B87)
Power Supply, V DC:	24
Explosion protection:	ATEX: II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb; II 1/2G, 2G Ex d ia IIC T6...T1 Ga/Gb, Gb;
Degree of protection:	IP65, IP66, IP67, IP68 (100 kPa).

Техническая документация и дата ее одобрения Российским морским регистром судоходства
Technical documentation and the date of its approval by Russian Maritime Register of Shipping
Техническая документация одобрена письмом № 250-A-3085-274980 от 08.10.2018.

Technical documentation was approved by RS letter No. 250-A-3085-274980 of 08.10.2018.

Образец изделия испытан под техническим наблюдением Российского морского регистра судоходства.
Product's specimen has been tested under the technical supervision of Russian Maritime Register of Shipping.

Акт № 18.60057.250 от 08.10.2018
Report No. of

Область применения и ограничения
Application and limitations

Преобразователи давления типа VEGABAR: BAR12, BAR14, BR17, B81, B82, B83, B86, B87 предназначены для использования на морских судах, плавучих сооружениях, стационарных платформах.

Pressure transmitters of VEGABAR type: BAR12, BAR14, BR17, B81, B82, B83, B86, B87 are intended for using on sea-going ships, floating constructions and fixed offshore platforms.

Вид документа, выдаваемого на изделие
Type of document issued for product

Изделие должно поставляться с копией настоящего Свидетельства о типовом одобрении.

The product shall be delivered with a copy of this Type Approval Certificate.





Marine & Offshore

Certificate number: 22370/C0 BV

File number: AP 4049

Product code: 3891H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

VEGA Grieshaber KG

Schiltach - GERMANY

for the type of product

PRESSURE TRANSMITTERS / TRANSDUCERS

VEGABAR 12 and VEGABAR 14.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 31 / 33 (see 4.3)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 14 Feb 2025

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 14 Feb 2020,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarmb.com/veristarmb/jsp/viewPublicPdfTypepec.jsp?id=x0bqarb0do>
BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The VEGABAR series are pressure transmitters intended for gauge pressure measurement of neutral gases (VEGABAR 12) and intended for measurement of gauge pressure, absolute pressure or vacuum of gases, vapours and liquids (VEGABAR 14).

1.1 - Main Characteristics:

	VEGABAR 14	VEGABAR 12
Measuring Range:	Gauge pressure: 0 to 25 bar Absolute pressure: -1 to 60 bar	Gauge pressure: 0 to 2.5 bar
Temperature:	For Plug Connector type / Cable Outlet type:	
Ambient:	Plug / Cable: -20° to +85°C / -20° to +60°C	-20° to +85°C
Storage and Transport:	Plug / Cable: -40° to +100°C / -40° to +60°C	
Process Fitting:	Depending on type =>See Designation Below	G 1/8
Electrical Connection:	M12x1, DIN 43650-A, Cable	3-pole Clamp
Operating Voltage:	8 to 30 VDC	8 to 30 VDC
Output Signal:	2 wire - 4-20 mA	2 wire - 4-20 mA
Ingress Protection Index:	IP 65 with plug M12x1 or DIN 43650-A IP 67 with direct cable outlet IP 68 with direct cable outlet or screwed plug M12x1	IP 20
Firmware Version:	V1.xx	V1.xx

1.2 - Type designation:

VEGABAR 12.M a b c

a = Pressure / Measuring Range:

2 Alphanumeric char.

b = Seal Measuring Cell:

3-pole connection clamp / IP 20

c = Process Fitting / Material:

AA to ZZ several tread connections

VEGABAR 14.M a b c d

a = Pressure / Measuring Range:

2 Alphanumeric char.

b = Electrical Connection / Protection:

A1, A2, C1, C2, M1, M2, M3, M4

c = Process Fitting / Material:

AA to ZZ several Tread connections

d = Seal Measuring Cell:

1 to 9 FKM, EPDM, FFKM

2. DOCUMENTS AND DRAWINGS:

- Drawings: ZG2796 Rev. 1 dated 26.04.06; ZG2937 dated 26.11.03; ZG3232 dated 07.08.07;

- ZG2306 Rev. 6 dated 07.08.07; ZG2307 Rev. 3 dated 29.10.08; ZG3261 dated 01.10.08;

- Circuit diagrams: SB1283-1-00-0 dated 28.03.07; SB1098-2-01-0 Rev. 11827 dated 02.07.08

For C0 version:

- Operating Instructions: 2241-EN-190813 dated 2019-08-07; 3544-EN-110616 dated 2011-05-27

3. TEST REPORTS:

- Paconsult GmbH: 07-1700 dated 08.08.07; 07-1789 dated 03.12.07;

- Hanse Control GmbH: 07-L-01487-01 dated 23.10.07; 07-L-01487-02 dated 27.02.08;

- VEGA grieshaber KG: 1-05_BAR12_F1_1 dated 30.10.08; 1-03_BAR12_F1_1_GL dated 31.10.08;

1-05_BAR12_F1_2 dated 30.10.08; 1-05_BAR12_F1_2_GL dated 31.10.08;

QA orders dated 24.07.07, 09.07.99 and 12.05.00.

4. APPLICATION/LIMITATION:

4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - Bureau Veritas Environmental Category, **EC Code: 31** (VEGABAR 14), **EC Code: 33** (VEGABAR 12)

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zone and Deck Zone.

4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.

4.6 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **VEGA Grieshaber KG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **VEGA Grieshaber KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
GERMANY

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

7. OTHERS:

7.1 - It is the responsibility of **VEGA Grieshaber KG** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 22370/B0 BV issued on 11 Nov 2014 by the Society.

*** END OF CERTIFICATE ***

Printing date:

VEGA

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

© VEGA Grieshaber KG, Schiltach/Germany 2021

35009-EN-21112

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

Phone +49 7836 50-0
E-mail: info.de@vega.com
www.vega.com