

Ship approvals and installation instructions

VEGATOR 111, 112

VEGATOR 121, 122

VEGATOR 141, 142

DNV-GL - TAA00001T5

LR2004366TA

BV - 47590/A0

ABS - 18-HG1723369-PDA

RINA - ELE336917XG

RMROS - 18.40031.250

CCS - HB18PTB00002_07



Document ID: 49624



VEGA

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)

TOR 111..., TOR 112..., TOR 121..., TOR 122..., TOR 141..., TOR 142...

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	A

Issued at **Hamburg** on **2018-04-24**

This Certificate is valid until **2023-04-23**.

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

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Job Id: **262.1-028582-1**
 Certificate No: **TAA00001T5**

Product description

Signal conditioning instrument for level detection, VEGATOR Series 100

Type designation VEGATOR series:

TOR1ab.c d e f g h i

a	1-digit alphanumeric code 1 for Namur Electronics 2 for two-wire 8/16mA 4 for continuously measuring 4...20mA-sensors
b	1-digit alphanumeric code 1 for Single-Channel Conditioning Instrument 2 for Double-Channel Conditioning Instrument
c	1-digit alphanumeric code for scope A, I, F, C, R, G or B
d	1-digit alphanumeric code for Approval M for Ex - free area O for Ex - area (hazardous location)
e	Version X or S
f	1-digit alphanumeric code for SIL-Qualification X without S with
g	1-digit alphanumeric code for Housing / Protection K Plastic / IP20
h	1-digit alphanumeric code for Terminal blocks / Connections X detachable 2.5mm ² / Sensor: 1 x black, ... B detachable 2.5mm ² / Ex-Sensor: 1 x blue, ...
i	1-digit alphanumeric code for additional Certificates: M Yes X No

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

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.

Type Approval documentation

Test Report: Hansecontrol No. 1401-0160301R01

Test Report: Hansecontrol No. 1401-0160401R01

Test Report: Hansecontrol No. 1401-0160501R01

Test Report: Paconsult No. 14-6126

Test Reports of VEGA Inhouse Tests no. 1-9_TOR122_F1_1, no. 2-3_TOR112(122)(142)_F1_1

Technical Documents as referenced in "Application_DNV GL Maritime_VEGATOR Series 1** dated 30 September 2014".

Job Id: **262.1-028582-1**
 Certificate No: **TAA00001T5**

Referenced documents "Update No. 1 of DNV GL - Maritime Type Approval for Signal Conditioning Instruments VEGATOR 1**", dated 20.04.2018.

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



Page 1 of 2
 Certificate No: LR2004366TA
 Issue Date: 25/06/2020
 Expiry Date: 05/04/2025

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.

Manufacturer	Vega Grieshaber KG
Address	Am Hohenstein 113, Schiltach, 77761, Germany
Type	Transmitters/Transducers
Description	Signal conditioning instrument for level detection refer to the Appendix for details
Trade Name	VEGATOR 111, 112, 121, 122, 141, 142
Application	Marine applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2013.
Specified Standard	Manufacturer's specification
Ratings	Power supply: 24 VDC or 230 VAC/50Hz
Other Conditions	Equipment has to comply with IACS E10 Rev.7 when intended to be installed on ships contracted for construction on or after 1 January 2022.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Thorsten Wolff
 Senior Specialist to Lloyd's Register EMEA
 A member of the Lloyd's Register Group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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 '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.

TA01 1.0.0



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Certificate No: LR2004366TA
Issue Date: 25/06/2020
Expiry Date: 05/04/2025

Type Approval Certificate

The Design Appraisal Document No. HTS/ETS 40117-20 /TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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TAG01 1.0.0





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 Certificate No: LR2004366TA
 Issue Date: 25.06.2020
 Expiry Date: 05.04.2025

Appendix

TYPES

TOR 1ab.cdefghi

- a = 1 for Namur Electronics, Hysteresis fix,
 2 for two-wire 8/16mA, Hysteresis fix,
 4 for continuously measuring 4 to 20mA sensors, Hysteresis adjustable.
- b = 1 for Single-Channel Conditioning Instrument
 2 for Double-Channel Conditioning Instrument.
- c = Approval directive / Scope:
 A - ATEX / Europe,
 I - IEC / World-wide,
 R - Russia,
 C - CSA / Canada,
 U - Ukraine, K - Kazakhstan B - Belarus, D India
- d = M for Ex - free area,
 O for Ex - area (hazardous location).
- e = Version X or S
- f = digit alphanumeric code for SIL-Qualification:
 X without,
 S with.
- g = digit alphanumeric code for Housing / Protection:
 K Plastic / IP20.
- h = digit alphanumeric code for Terminal blocks/ Connections:
 X detachable 2.5mm² / Sensor: 1 x black,
 B detachable 2.5mm² / Ex-Sensor: 1 x blue.
- i = digit alphanumeric code for additional Certificates:
 M Yes,
 X No.

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 Certificate No: LR2004366TA
 Issue Date: 25.06.2020
 Expiry Date: 05.04.2025
 Reference: HTS/ETS 40117-20 /TW

LLOYD'S REGISTER TYPE APPROVAL – DESIGN APPRAISAL DOCUMENT
ISSUED BY: HAMBURG TECHNICAL SUPPORT OFFICE (HPC1462125)
ISSUED TO: VEGA GRIESHABER KG
FOR: SIGNAL CONDITIONING INSTRUMENT FOR LEVEL DETECTION
TYPES: VEGATOR 111, 112, 121, 122, 141, 142

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure TA14 Version 03 (July 2017) and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Unnumbered	Type Approval Application Checklist	30.04.2020
HPC1462124/40008-20/ TW/KW	Request for Marine Services – Type Approval	28.05.2020
HTS/ETS 31343-15 15/20025	Marine Design Appraisal Document for Certificate No. 15/20025	07.04.2015
HPC1862096	LR Type Approval Certificate	07.04.2015
2.43177-1-01-0	Production Quality Assessment Form	11.03.2019
GE3179-01	Notification of change no. 27606	undated
Unnumbered	Layout VEGATOR 111/112	18.08.2014
	Update No.1 of DNV GL-Maritime Type Approval for Signal Conditioning Instruments VEGATOR 1**	20.04.2018

TEST REPORTS

4-3_TOR112_N1_1	VEGA test report	26.11.2019
4-3_TOR142_N1_1	VEGA test report	26.11.2019
5-1_TOR121S_N1_1	VEGA test report	01.03.2017
GL-Prüfung_05-04-2018_1-	VEGA test report	05.04.2018
4-4_TOR121S_N1_2	VEGA test report	06.03.2017
4-3_TOR121S_N1_1	VEGA test report	01.03.2017
4-6_TOR121S_N1_1	VEGA test report	01.03.2017


 Thorsten Wolff
 Hamburg Technical Support Office
 Lloyd's Register EMEA

09203.1.2019/00
 Thorsten Wolff
 Senior Specialist
 Electrotechnical Systems
 Hamburg Technical Support Office
 Lloyd's Register EMEA
 T +49 (0)40 34970010-267
 E thorsten.wolff@lr.org

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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.



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Marine & Offshore
Division

Certificate number: 47590/A0 BV
File number: AP4721
Product code: 2643H

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
CONTROL AUXILIARIES
Signal Conditioning Unit
VEGATOR Series 100

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships
EC Code: 31

This certificate is issued to attest that BUREAU VERITAS 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: 28 Nov 2021

For BUREAU VERITAS,
At BV HAMBURG, on 28 Nov 2016,
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. 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 Division 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 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.veristarm.com/veristarmb/jsp/viewPublicPdfType.jsp?id=6bag11wew7>
BV Mod. Ad.E 530 October 2014

This certificate consists of 2 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

VEGATOR Series 111, 112, 121, 122, 141, 142 are signal conditioning units for level detection.

Main Characteristics :

Power Supply: 24 VDC or 230 VAC
 Input: 1 or 2 analogue (NAMUR, 8/16 mA, 4 ... 20 mA)
 Output: 1 or 2 operating relay
 Degree of Protection: IP20

2. DOCUMENTS AND DRAWINGS :

- 46105 dated 2014-06-04; 46106 dated 2014-06-04; 46107 dated 2014-06-04; 46838 dated 2014-06-04;
 46839 dated 2014-06-04
 - 46110; 46842; 46843
 - SB1430-1-03-0 dated 06.08.2014; SB1413-1-01-0 dated 30.04.2104; SB1362-1-04-0 dated 27.03.2014
 - GE3084 dated 05.12.2013; GE3180 dated 21.11.2013; GE3263 dated 13.02.2014

3. TEST REPORTS :

Hansecontrol Zertifizierungsgesellschaft mbH

- 1401-0160301R01 dated 14.08.2014; 1401-0160401R01 dated 14.08.2014; 1401-0160501R01 dated 14.08.2014

Paconsult GmbH

- 14-6126 dated 16th of July, 2014.

VEGA

- 1-9_TOR122_F1_1 dated 11.10.13

TÜV NORD

- TÜV 14 ATEX 145373 dated 2014-10-22; TÜV 14 ATEX 133903 X dated 2014-01-30;

TÜV 14 ATEX 134826 X dated 03.02.2014

4. APPLICATION / LIMITATION :

4.1 - Bureau Veritas Rules and Regulation 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

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The VEGATOR 100 Series Signal Conditioning Unit 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 Hohenstien 113
 D-77761 Schiltach
 GERMANY

5.4 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT :

- Maker's name or trademark.
 - Date of manufacture and/or serial number.
 - Equipment type or model identification under which it was type tested.
 - Ex marking, as relevant.

7. OTHERS :

It is VEGA Grieshaber KG responsibility 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.

*** END OF CERTIFICATE ***



CERTIFICATE NUMBER 18-HG1723389-PDA
EFFECTIVE DATE 22-March-2018
EXPIRATION DATE 21-March-2023
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 Electronic Level Limit Switch

Model VEGATOR TOR111, TOR112, TOR121, TOR122, TOR141, TOR142

This Product Design Assessment (PDA) Certificate remains valid until expiration date 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

Ulf Numirski
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)

VEGA GRIESHABER KG
 ZERTIFIKATSWESSEN
 AM HOHENSTEIN 113
 D-77761 SCHILTACH
 Germany
 Telephone: 49-7-836-50-278
 Fax: 49-7-836-50-8278
 Email: a.reinberger@de.vega.com
 Web: www.vega.com

Tier: 3 - Type Approved, unit certification not required

Product: Electronic Level Limit Switch
Model: VEGATOR TOR111, TOR112, TOR121, TOR122, TOR141, TOR142
Intended Service:
 Liquid level monitoring on AMS, ACC, ACCU and ABCU classed vessels.

Description:
 Electronic limit switch with level sensor input and relay or open collector output.
 Self monitoring of sensor/ cable input circuit.
 19" rack units (5XX models).
 DIN-rail mounting (6XX models).

Rating:
 Power Supply: 24 V DC or 24V ... 250V AC,
 Outputs: c/o-relay-contacts, 3A, 250V AC, 500 VA,
 Degree of protection: IP 20/30.
 (Ex) types: Class I, Division 2, Groups A, B, C, and D T4, Ex nA nC ic IIC T4 Gc, Class I, Zone 2, AEx nA nC ic IIC T4 Gc, [Ex ia Ga] IIC, [Ex ia Da] IIC (CSA Group, 70015644); II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIC, I (M1) [Ex ia Ma] I (TUV Nord, TUV 14 ATEX 133904)

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.

Comments:
 Each particular application in hazardous locations is to be specifically approved in conjunction with the relevant installation.

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. 1 9 EMC, Test Report, Flammability, Vega, 11/10/2013, Revision: 0, Pages: 1
 Drawing No. 4-6 Signal-Ltg + Sensor-Ltg, Signal-Ltg. / Sensor-Ltg., Revision: 0, Pages: 1
 Drawing No. 4 3 EMC, Test Report, EMC, Vega, 01/03/2017, Revision: 0, Pages: 1
 Drawing No. 4 4 EMC, Test Report, EMC, Vega, 06/03/2017, Revision: 0, Pages: 1
 Drawing No. 4 6 UB, Test Report, EMC, Vega, 01/03/2017, Revision: 0, Pages: 1
 Drawing No. BV1714-00, DC-DC-Transformer TOR1 Series, Revision: 00, Pages: 1
 Drawing No. BV1714-00, DC-DC-Transformer TOR1 Series, Revision: 0, Pages: 1
 Drawing No. GE3084, VEGATOR 111/112/121/122/141/142 Housing, Revision: 0, Pages: 1
 Drawing No. GE3085, Type Label VEGATOR 111/121, Revision: 0, Pages: 1
 Drawing No. GE3178-01, VEGATOR 111/112 Component Layout, Revision: 01, Pages: 1
 Drawing No. GE3179-01, VEGATOR 111/112 Trace Layout, Revision: 01, Pages: 1
 Drawing No. GE3180-01, VEGATOR 121/122 Component Layout, Revision: 01, Pages: 1
 Drawing No. GE3181-01, VEGATOR 121/122 Trace Layout, Revision: 0, Pages: 1
 Drawing No. GE3181-01, VEGATOR 121/122 Trace Layout, Revision: 01, Pages: 1
 Drawing No. GE3182, Type Label VEGATOR 121/122, Revision: 0, Pages: 1
 Drawing No. GE3263, VEGATOR 141/142 Component Layout, Revision: 0, Pages: 1
 Drawing No. GE3264, VEGATOR 141/142 Trace Layout, Revision: 0, Pages: 1
 Drawing No. GE3326, Type Label VEGATOR 141/142, Revision: 0, Pages: 1
 Drawing No. GE851, Isolation Transformer, Revision: 0, Pages: 1
 Drawing No. Paconsult Test Report 14-6126, Test Report, Vibration Climate, Paconsult, 17/07/2014, Revision: 0, Pages: 1

VEGA GRIESHABER KG
 ZERTIFIKATSWESSEN
 AM HOHENSTEIN 113
 D-77761 SCHILTACH
 Germany
 Telephone: 49-7-836-50-278
 Fax: 49-7-836-50-8278
 Email: a.reinberger@de.vega.com
 Web: www.vega.com

Tier: 3 - Type Approved, unit certification not required

Drawing No. SB1406-1-03-0, Circuit Diagram VEGATOR 111/112, Revision: 0, Pages: 1
 Drawing No. SB1406-1-03-0, Circuit Diagram VEGATOR 111/112, Revision: 03, Pages: 1
 Drawing No. SB1413-1-04-0, Circuit Diagram VEGATOR 121/122, Revision: 04, Pages: 1
 Drawing No. SB1413-1-04-0, Circuit Diagram VEGATOR 121/122, Revision: 0, Pages: 1
 Drawing No. SB1430-1-03-0, Circuit Diagram VEGATOR 141/142, Revision: 0, Pages: 1
 Drawing No. SB1430-1-03-0, Circuit Diagram VEGATOR 141/142, Revision: 03, Pages: 1
 Drawing No. TOR12x_Component Layout of PCB_GE3180, TOR12x_Component Layout of PCB_GE3180, Revision: 0, Pages: 1
 Drawing No. TOR14x_Component Layout of PCB_GE3263, TOR14x_Component Layout of PCB_GE3263, Revision: 0, Pages: 1
 Drawing No. TOR14x_Trace Layout of PCB_GE3264, TOR14x_Trace Layout of PCB_GE3264, Revision: 0, Pages: 1
 Drawing No. TUEV 14 ATEX133904, ATEX Certificate, 30/01/2014, Revision: 0, Pages: 1
 Drawing No. 70015644, Ex Certificate, CSA Groups, 25/01/2018, Revision: 0, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 18-HG1723389-PDA, dated 22/Mar/2018 remains valid until 21/Mar/2023 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.

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:

2018 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3 and 4, 4-8-4/27.5.1, 4-9-8/7/13.5

National:

NA

International:

N.A.

Government:

NA

EUMED:

NA

OTHERS:

NA

Electronically published by ABS Hamburg.
Reference T1723389, dated 22-MAR-2018.



Page 1 of 3

Task – T1723389
Product Design Assessment (PDA)
Electronic Level Limit Switch,
VEGATOR TOR111, TOR112, TOR121, TOR122, TOR141, TOR142
PDA No. 18-HG1723389-PDA

Attention: Mr. A. Reinberger, VEGA Grieshaber KG (WCN 288755)

The documents shown in the attached list are reviewed in accordance with the applicable requirements indicated in the PDA 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. Ulf Numirski at +49 40 378587 39, (UNumirski@eagle.org).

Very truly yours,

Stefano Penco
Vice President of Engineering

Electronically Signed by: Efstratios Maliatsos

ABS EUROPE LTD
Hermannstrasse 15, 20095 Hamburg, Germany

49624-EN-200820

Electronically published by ABS Hamburg.
Reference T1723389, dated 22-MAR-2018.



TOR12x_Component Layout of PCB_GE3180	0	TOR12x_Component Layout of PCB_GE3180	Reviewed
TUEV 14 ATEX 133904	0	ATEX Certificate, 30/01/2014	Reviewed
70015644	0	Ex Certificate, CSA Groups, 25/01/2018	Reviewed

Electronic copies of the documents appropriately stamped are available through the ABS Eagle Construct Engineering Manager (O2E), Web portal.

Include: PDA Certificate

ABS EUROPE LTD
Hermannstrasse 15, 20095 Hamburg, Germany

49624-EN-200820




TYPE APPROVAL CERTIFICATE
No. ELE336917XG

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</i>	Automation terminals
<i>Type</i>	VEGATOR 1xx series
<i>Applicant</i>	VEGA GRIESHABER KG AM HOHENSTEIN 113 77761 Schiltach GERMANY
<i>Manufacturer</i>	VEGA GRIESHABER KG
<i>Place of manufacture</i>	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 **May 24, 2018**. This Certificate is valid until **May 23, 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. ELE336917XG

Enclosure - Page 1 of 1

VEGATOR 1xx series

Product description:

The VEGATOR 1xx series are signal conditioning instruments for level detection for sensors with analogue measured data transmission mounted on a DIN rail. Simple monitoring and control functions can be realized.

Order code:

VEGATOR 1 a b . c d e f g h i

a = Type:

- 1 - Namur Electronics,
- 2 - two-wire 8/16mA,
- 4 - continuously measuring 4...20mA sensors

b = Number of input channels:

- 1 - Single-Channel,
- 2 - Double-Channel

c = Scope: A, B, C, F, G, I, R

d = Approval:

- M - Ex - free area ,
- O - Ex - area (hazardous location)

e = Version: X or S

f = SIL-Qualification:

- X - without,
- S - with SIL Qualification

g = Housing / Protection:

- K - Plastic / IP20

h = Terminal blocks/ Connections:

- X - detachable 2.5mm² / Sensor: 1 x black, ...
- B - detachable 2.5mm² / Ex-Sensor: 1 x blue, ...

i = Additional Certificates:

- M - Yes,
- X - No

Main data:

Ambient temperature: -20 to 60°C

Documents:

Operating instructions: - 46105-EN-170907; 46106-EN-170907; 46107-EN-140625; 46108-EN-140625; 46838-EN-140625;
- 46839-EN-140625; 57662-DE-180315

Drawings & Circuit diagrams: - GE851 Rev. 02; GE3178-01; GE3179-01; GE3180-01; GE3181-01; GE3084; GE3085;
- GE3263; GE3264; BV1712-01; BV1714-00; SB1406-1-03-0; SB1413-1-04-0; SB1430-1-03-0

Test reports:

Hermes Hansecontrol: - 1401-0160301R01 dated 11 September 2014; 1401-0160401R01 dated 11 September 2014;

- 1401-0160501R01 dated 11 September 2014;

Paconsult GmbH: - 14-6126 dated 21 August 2014;

VEGA Grieshaber KG: - 1-9_TOR122_F1_1 dated 11.10.13; 4-4_TOR121S_N1_1; 4-4_TOR121S_N1_2;

- 4-6_TOR121S_N1_1; 4-6_TOR121S_N1_2; VEGATOR 1__Series_Test_Supplement dated 02 Oct 2014;

Remarks:

- The products fulfill EC-Code: 3a1.

- The EMC requirements for installation on the Bridge and Deck Zones will be fulfilled by the equipment.

Hamburg May 24, 2018



for RINA



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*

Устройство формирования сигнала типа VEGATOR:
 TOR 111..., TOR 112..., TOR 121..., TOR 122..., TOR 141..., TOR 142...

Signal conditioning instrument of type: VEGATOR:
 TOR 111..., TOR 112..., TOR 121..., TOR 122..., TOR 141..., TOR 142...

Код номенклатуры 15110101
 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 наблюдения 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 наблюдения 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

№ 18.40031.250

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

Макс. потребляемая мощность, Вт:	2 (8 VA) TOR111/112/141/142, 3 (8 VA) TOR121/122;
Напряжение питания, В:	24...230 VAC (-15%,+10%) или 24...65 VDC (-15%,+10%);
Рабочая температура °C:	от минус 20 до плюс 60;
Выходной сигнал:	1 или 2 x рабочее реле SPDT, 253 VAC, 3 A, 500 VA / 50 VDC, 1 A, 54 W;
Входной сигнал:	1 или 2 x NAMUR (TOR111/112), 8/16 mA (TOR121/122), 4...20 mA (TOR141/142);
Маркировка взрывозащиты:	ATEX: II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I; II 3G Ex nA nC Ic IIC T4 Gc
Степень защиты:	IP20
Max. power consumption, W:	2 (8 VA) TOR111/112/141/142, 3 (8 VA) TOR121/122;
Supply voltage, V:	24...230 VAC (-15%,+10%) или 24...65 VDC (-15%,+10%);
Operating temperature, °C:	from -20 to +60;
Output signal:	1 or 2 x operating relay SPDT, 253 VAC, 3 A, 500 VA / 50 VDC, 1 A, 54 W;
Input signal:	1 or 2 x NAMUR (TOR111/112), 8/16 mA (TOR121/122), 4...20 mA (TOR141/142);
Explosion protection:	ATEX: II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I; II 3G Ex nA nC Ic IIC T4 Gc;
Degree of protection:	IP20

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 № 18.60063.250 от 08.10.2018
Report No. of

Область применения и ограничения
Application and limitations

Устройства формирования сигнала типа VEGATOR: TOR 111..., TOR 112..., TOR 121..., TOR 122..., TOR 141..., TOR 142...
предназначены для использования на морских судах, плавучих сооружениях, стационарных платформах.

Signal conditioning instrument of type: VEGATOR: TOR 111..., TOR 112..., TOR 121..., TOR 122..., TOR 141..., TOR 142...
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.



06/2015

18.40031.250



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB18PTB00002_07

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

电气元器件
Electrical Element
电工仪表
Electric Meter

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》(2018)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 2018 and its Amendments

用于/Intended for

船舶与海上设施/Ships and Offshore Installations

产品明细/Product Description

电工仪表/Electric Meter (M001)

名称/Name	属性(值)/Value	单位/Unit
产品名称/Product Name	Signal conditioning instrument for level detection	

证书有效期至/This Certificate is valid until 2023年06月30日/ Jun. 30, 2023

发证机构 中国船级社汉堡分社
Issued by CCS Hamburg Branch

签发日期 2019年04月18日
Date Apr. 18, 2019

本证书根据中国船级社规范和相关标准签发。所有证书为一个整体，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。任何单位和个人不得擅自复制或节选本证书的部分内容。有方对所持证书的真实性负责。可以向本社检验机构咨询。This Certificate is issued pursuant to the Rules of the Society and related regulations. 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 doubted 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:P019-835436

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Nº 16673242

49624-EN-200820

型号/Type	VEGATOR Series 100
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批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No.: NP15A00630

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No.: 1-9_TOR122_F1_1
 试验报告日期/ Test Report Date: 2013-10-11
 试验单位/ Laboratory: VEGA Grieshaber KG
 试验单位地址/ Test Address: Am Hohenstein 113, 77761 Schiltach, GERMANY

试验报告编号/ Test Report No.: 2-3_TOR112(122)(142)_F1_1
 试验报告日期/ Test Report Date: 2014-02-13
 试验单位/ Laboratory: VEGA Grieshaber KG
 试验单位地址/ Test Address: Am Hohenstein 113, 77761 Schiltach, GERMANY

试验报告编号/ Test Report No.: 14-6126
 试验报告日期/ Test Report Date: 2014-08-21
 试验单位/ Laboratory: pueconsult GmbH
 试验单位地址/ Test Address: Birkenau 3, D-22087 Hamburg, Germany

试验报告编号/ Test Report No.: 1401-0160301, 1401-0160401, 1401-0160501
 试验报告日期/ Test Report Date: 2014-09-11
 试验单位/ Laboratory: HANSECONTROL
 试验单位地址/ Test Address: SchleidenStr.1, D-22083 Hamburg, Germany

认可后的产品检验方式/ Method of Product Inspection after Approval

按照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, 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获本社批准。
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

证书编号/Certificate No. HB18PTB00002_07

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, 检查工作可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 periodical audit should be carried out within 3 months before and after the anniversary date which corresponds to the date of expiry of the relevant.

备注/Remarks

本证书由原型式认可证书 (No. HB15T00026_03) 换新并替代原证书。

This certificate is renewed from and supersedes the previous Type Approval Certificate No. HB15T00026_03.

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。

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2页

Note: The certificate is attached with additional 2 page(s)

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Nº 17911069



产品描述

Product Description

Signal conditioning instrument for level detection, VEGATOR Series 100
Type designation VEGATOR series 100:

TORlab.c d e f g h

- a = 1-digit alphanumeric code: "1" for Namur Electronics,
"2" for two-wire 8/16mA,
"4" for continuously measuring 4...20mA-sensors
- b = 1-digit alphanumeric code: "1" for Single-Channel Conditioning Instrument,
"2" for Double-Channel Conditioning Instrument
- c = 1-digit alphanumeric code for scope: A, I, F, C, M
- d = 1-digit alphanumeric code for Approval: "M" for Ex - free area ,
"O" for Ex - area (hazardous location)
- e = 1-digit alphanumeric code for SIL-Qualification: "X" without, "S" with
- f = 1-digit alphanumeric code for Housing / Protection: "K" Plastic / IP20
- g = 1-digit alphanumeric code for Terminal blocks/ Connections:
"X" detachable 2.5mm² / Sensor: 1 x black, ...
"B" detachable 2.5mm² / Ex-Sensor: 1 x blue, ...
- h = 1-digit alphanumeric code for additional Certificates: "M" Yes, "X" No

The Ex-Proof parameters of the approved products originate from Ex-Certificate received from manufacturer (Issuing Body, Ex-Certificate No., Standards for Ex-Proof see the following), not approved by CCS.

Issuing Body	Ex-Certificate No.	Standards for Ex-Proof	Explosion-proof mark
TUEV NORD CERT GmbH	IECEX TUN 14.0031X	IEC60079-0:2011; IEC60079-11:2011; IEC 60079-15:2010	Ex nA nC ic [ia Ga][ia IIIC Da][ia I Ma] IIC T4 Gc Or [Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia I Ma] I
TUEV NORD CERT GmbH	TUEV 14 ATEX 145373	EN60079-0:2012; EN60079-11:2012	Ex II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1)[Ex ia Ma] I
TUEV NORD CERT GmbH	TUEV 14 ATEX 145375X	EN60079-0:2012; EN60079-11:2012; EN60079-15:2010	Ex II 3 G Ex nA nC ic IIC T4 Gc
TUEV NORD CERT GmbH	TUEV 14 ATEX 133903X	EN60079-0:2012; EN60079-11:2012; EN60079-15:2010	Ex II 3 G Ex nA nC ic IIC T4 Gc
TUEV NORD CERT GmbH	TUEV 14 ATEX 134822	EN60079-0:2012+A11:2013; EN60079-11:2012	Ex II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1)[Ex ia Ma] I

—To be continued—

Nº 17911070

证书编号/Certificate No.: HB18PTB00002_07

1/2

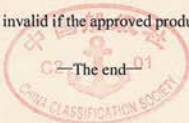


证书编号/Certificate No.: HB18PTB00002_07

附页/Additional Page

Issuing Body	Ex-Certificate No.	Standards for Ex-Proof	Explosion-proof mark
TUEV NORD CERT GmbH	IECEX TUN 14.0005X	IEC60079-0:2011; IEC60079-11:2011; IEC 60079-15:2010	Ex nA nC ic [ia Ga][ia IIIC Da][ia I Ma] IIC T4 Gc Or [Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia I Ma] I
TUEV NORD CERT GmbH	TUEV 14 ATEX 134826X	EN60079-0:2012+A11:2013; EN60079-11:2012; EN 60079-15:2010	Ex II 3G Ex nA nC ic IIC T4 Gc
TUEV NORD CERT GmbH	IECEX TUN 14.0004X	IEC60079-0:2011; IEC60079-11:2011; IEC 60079-15:2010	Ex nA nC ic [ia Ga][ia IIIC Da][ia I Ma] IIC T4 Gc Or [Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia I Ma] I
TUEV NORD CERT GmbH	TUEV 14 ATEX 133904	EN60079-0:2012; EN60079-11:2012	Ex II (1) G [Ex ia Ga] IIC, II(1) D [Ex ia Da] IIIC, I (M1) [Ex ia I Ma] I

This Type Approval Certification will be invalid if the approved products do not hold valid Ex-Certificate.



No. 17911071

证书编号/Certificate No.: HB18PTB00002_07

2/2



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 2020

49624-EN-200820

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

Phone +49 7836 50-0
Fax +49 7836 50-201
E-mail: info.de@vega.com
www.vega.com