

Ship approvals and installation instructions

VEGASWING 51

LR - 04/20029 (E5)

ABS - 18-HG1694673-3-PDA

CCS - HB18PTB00002_16

RINA - ELE228118XG

DNV GL - TAA00000RB

RMROS - 18.40029.250



Document ID: 29356



VEGA



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 Schillach Germany
DESCRIPTION	Level Switch
TYPE	VEGASWING SG51.XM S ab c P d ab = process fitting: thread G1/2A...G1A, 1/2NPT...1NPT, R1/2...R1 c = electronics C contact less switch T transistor outlet d = electrical connection M M12x1 V(*Q) - acc. to ISO 4400 (*QuickOn) P M12x1 incl. 5 m cable (IP 68 (0.2 bar)) K 4-pole plug connection ISO4400, with hinged lid (IP65)
APPLICATION	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3, ENV4 and ENV5 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - 2002.
Certificate No.	04/20029 (E5)
Issue Date	04 May 2019
Expiry Date	03 May 2024
Sheet	1 of 2
Lloyd's Register EMEA 71 Fenchurch Street, London EC3M 4BS	<div data-bbox="560 1075 917 1187" data-label="Image"> </div> <div data-bbox="675 1190 917 1249" data-label="Text"> <p>Thorsten Wolff Hamburg Technical Support Office Lloyd's Register EMEA</p> </div>

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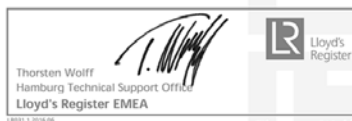
ADDITIONAL TESTS	Low temperature (-40°C/16 h) Enclosure test IP 66/67 and IP 68 (0.2 bar) Dry heat (80°C/16 h)
STANDARD	Manufacturer's specification
RATINGS	Power supply: 9.6 to 35 V DC for transistor outlet 20 to 253 V DC for contactless switch 20 to 253 V AC, 50/60Hz for contactless switch Output: max. 250 mA
PLACE OF PRODUCTION	VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach Germany VEGA Americas Inc. 4241 Allendorf Drive Cincinnati, Ohio 45209 USA

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 38154-19 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	04/20029 (E5)
Issue Date	04 May 2019
Expiry Date	03 May 2024
Sheet	2 of 2



Thorsten Wolff
Hamburg Technical Support Office
Lloyd's Register EMEA

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71 Fenchurch Street, London EC3M 4BS

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Design Appraisal Document

Lloyd's Register EMEA
Hamburg Technical Support Office
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20457 Hamburg
Telephone +49 (0)40 34 97 00 10-100
E-mail: hamburg-technical-support@lr.org

Date
04 May 2019

Please quote this reference number on all future communications
HPC 1462031/38154-19/TW/AC

THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2017
ISSUED TO: VEGA GRIESHABER KG
FOR: LEVEL SWITCH
TYPE APPROVAL CERTIFICATE NO. 04/20029 (E5)

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

APPROVAL DOCUMENTATION

Unnumbered	Application Checklist	28.01.2019
HPC1462031/37867-19/TW/KW	Request for Marine Services – Type Approval	22.02.2019
HTS/ETS 29631-14	Marine Design Appraisal Document for Certificate No. 04/20029(E4)	05.05.2014
04/20029 (E4)	Type Approval Certificate Extension	05.05.2014
41045-EN-160108	Operating Instructions	2016
41882	EU declaration of conformity	06.07.2017
70014715	Ordinary Location VEGASWING 51	2016
Unnumbered	Changes of the product or documentation of VEGASWING 51 since previous certificate 04/20029 (E4)	28.01.2019
40552-EN-160108	Operating Instructions vibrating level switch for liquids	2016
50107005/4	ISO 9001:2015 Certificate	19.10.2018
HPC1862096	Production Quality Assessment Form	11.03.2019
WO4007531	Production Quality Assessment Form	12.06.2015
Unnumbered	Product information GDM 3-17 VMQ rot/red	10.05.2013
Unnumbered	Product information GDME 3011 schwarz/black	05.02.2015

TEST REPORTS

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Form 6438MARREF (2016.05)

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Document no: HTS/ETS 38154-19
Issue number 0
Page 2 of 2

Date
04 May 2019

Please quote this reference number on all future communications
HPC 1462031/38154-19/TW/AC

1-05_SWING51_F1_1 VEGA Vibration test report

07.11.2012

DRAWINGS

DE80013073

SG51.XMSGACPK

10.04.2019



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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 LR Type Approval System Procedure.

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Part 3

Producer/Licence No.	Item Description	Technical Details	Category/Additional Tests	Remarks	Cert. No.
VEGA Grieshaber KG Am Hohenstein 113 77761 Schlifflach Germany	Level Switch VEGASWING SC51XM S ab c P d ab = process fitting: thread G1/2A...G1A, 1/2NPT...INPT, R1/2...R1 c = electronics C contactless switch T transistor outlet d = electrical connection M M12x1 V("Q) - acc. to ISO 4400 ("QuickOn) P M12x1 incl. 5 m cable (IP 68 (0.2 bar)) K 4-pole plug connection ISO400, with hinged lid (IP65)	Power supply Vdc : 9,6 to 35 for transistor outlet 20 to 253 for contactless switch Vac : 20 to 253 Hz : 50/60 for contactless switch Output: mA max. 250	ENV1, ENV2, ENV3, ENV4, ENV5 (2002) Low temperature (-40°C/16 h), Enclosure test IP 66/67 and IP 68 (0.2 bar) Dry heat (80°C/16 h)	Expires on 03 May 2024	04/20029 (E5)

[Handwritten signature]



CERTIFICATE NUMBER
18-HG1694673-PDA

DATE
05 Jan 2018

ABS TECHNICAL OFFICE
Hamburg Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

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

VEGA GRIESHABER KG

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: **Level Switch**

Model: **VEGASWING SG 51**

This Product Design Assessment (PDA) Certificate 18-HG1694673-PDA, dated 05/Jan/2018 remains valid until 04/Jan/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.

AMERICAN BUREAU OF SHIPPING

U. Numirski

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 documented product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3-5.9 Terms and Conditions of the Request for Product Type Approval and Agreements (2010).

AR25801105

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@vega.com
Web: www.vega.com

Tier: 3 - Type Approved, unit certification not required

Product: Level Switch
Model: VEGASWING SG 51
Intended Service:

Level detection of liquids in tanks on ACC, ACCU and ABCU classed vessels.

Description:

Monitoring of frequency changes of vibrating tuning fork due to submerging of sensor into fluid.

Rating:

Maximum pressure range: -1 ... 64 bar;
Ambient temperature ranges: -40°C ... 80°C;
Process temperature ranges: -40°C ... 100°C;
Output signals: maximum 250 mA;
Power supply by approved unit, 20 ... 253V(DC or AC) for C-Version, 9.6 ... 35V (DC) for T-Version;
Degree of protection: IP 66/67; IP68 (0.2 bar)
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, level switches are not to be installed on flammable oil tanks where they require tank wall penetration below the tank top.

Comments:

Each particular application and installation is to be specifically approved in conjunction with the relevant systems and tank arrangements.

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

Notes/Drawing/Documentation:

Drawing No. 11-3658, Test Report, Environmental, 25/07/2011, Paconsult, Revision: -, Pages: 1
Drawing No. 11-L-01717-01_51_C, Test Report, EMV, 08/08/2011, Hansecontrol Hermes, Revision: -, Pages: 1
Drawing No. 11-L-01718-01_51_T, Test Report, EMV, 08/08/2011, Hansecontrol Hermes, Revision: -, Pages: 1
Drawing No. 40552-EN-VEGASWINGG-51-Transistor-PNP, Operating Instructions, Revision: -, Pages: 1
Drawing No. 41045-EN-VEGASWING-51-contactless-electronic-switch, Operating Instructions, Revision: -, Pages: 1
Drawing No. VEGASWING SG51 XXSGACPV DE49783120-Drawing, Dimension Drawing, Revision: -, Pages: 1
Drawing No. VEGASWING SG51 XXSGATPV DE49628308-Drawing, Dimension Drawing, Revision: -, Pages: 1
Drawing No. VEGASWING _SG51 XXSGACPV DE49783120, Dimension Drawing, Revision: -, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 18-HG1694673-PDA, dated 05/Jan/2018 remains valid until 04/Jan/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.

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 Web: www.vega.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:

2018 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3 and 4, 4-6-1/3.23, 4-6-4/13.5.6(b), 4-6-4/15.3.4(b), 4-9-8/Table 1.

National:

NA

International:

SOLAS (Consolidated Edition 2014) II-2, Regulation 4, Paragraphs 2.2.3.5.2.1, 2.3.1.1 and 2.4 - for flammable oil tanks on passenger vessels

Government:

NA

EUMED:

NA

OTHERS:

NA

18-HG1694673-PDA
Issue date: 05 January 2018
Expiration date: 04 January 2023

Additional Product Details - Ready-Made Components Assembling / Order Specifications
'VEGA Grtshaber KG' Level Switches - Model VEGASWING SG51

Size	Sensor Fitting Thread	Electronics	Housing	Cable Entry
VEGASWING SG51	GB - G ¾ A NB - ¾ NPT GA - G 1 A NA - 1 NPT	C - Contact-less switch T - Transistor output	P - Stainless steel	M - M12x1,5 V - Plug Q - Quick-on plug P - M12x1 incl. 5m cable / IP68(0.2 bar)



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB18PTB00002_16

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.

品牌拥有方/ Licensor

授权制造企业/Manufacturer

VEGA Grieshaber KG
Am Hohenstein 113, D-77761 Schiltach, Germany

产品名称/Product

液位开关
Level Switch
传感器
Sensor

附加标志/Notations

无/Nil.

认可标准/Approval Standard

- 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
- 中国船级社《钢质海船入级规范》(2018)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 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

传感器/Sensor (M001)

名称/Name	属性(值)/Value	单位/Unit
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证书有效期至/This Certificate is valid until 2023年04月01日/ Apr. 01, 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

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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:P019-945923

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Nº 16673251

29356-EN-191128

证书编号/Certificate No. HB18PTB00002_16

产品名称/Product Name	Vibrating level switch for liquids	
型号/Type	VEGASWING 51	
电源/Power Source	详见附页/See additional page	
输出信号/Output Signal	max. 250	mA
外壳防护等级 /Degree of Protection of Enclosure	详见附页/See additional page	
适用介质/Applicable Medium	liquids from 0,7 ... 2,5 g / cm ³	
精度/Accuracy	ca. 2 (Hysteresis)	mm

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : HB19PPP2004

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : 915-dr.my-009701

试验报告日期/ Test Report Date : 2000-10-31

试验单位/ Laboratory: TÜEV Rheinland Anlagentechnik

试验单位地址/ Test Address: Koeln, Germany

试验报告编号/ Test Report No. : 267-03D

试验报告日期/ Test Report Date : 2004-02-03

试验单位/ Laboratory: paconsult GmbH

试验单位地址/ Test Address: Ulmenau 6-10, D-22087 Hamburg, Germany

试验报告编号/ Test Report No. : K162-04

试验报告日期/ Test Report Date : 2004-02-11

试验单位/ Laboratory: Hamburg University of Applied Sciences

试验单位地址/ Test Address: Berliner Tor 21, D-20099, Germany

试验报告编号/ Test Report No. : 04/3073-2-9

试验报告日期/ Test Report Date : 2004-03-04

试验单位/ Laboratory: EMV Services GmbH&Co. KG

试验单位地址/ Test Address: Harburger Schlossstrasse 6 12, D-21079 Hamburg, Germany

试验报告编号/ Test Report No. : 10102007

试验报告日期/ Test Report Date : 2007-10-10

试验单位/ Laboratory: VEGA Grieshaber KG

试验单位地址/ Test Address: Am Hohenstein 113, D-77761 Schiltach, Germany

试验报告编号/ Test Report No. : 1-04_SWING51T_F1_1

试验报告日期/ Test Report Date : 2011-07-14

试验单位/ Laboratory: VEGA Grieshaber KG

试验单位地址/ Test Address: Am Hohenstein 113, D-77761 Schiltach, Germany

试验报告编号/ Test Report No. : 11-3658

试验报告日期/ Test Report Date : 2011-07-25

试验单位/ Laboratory: panconsult GmbH

试验单位地址/ Test Address: panconsult GmbH

试验报告编号/ Test Report No. : 11-L-01717_01

试验报告日期/ Test Report Date : 2011-09-08

试验单位/ Laboratory: Hansecontrol Zertifizierungsgesellschaft mbH

试验单位地址/ Test Address: Hansecontrol Zertifizierungsgesellschaft mbH

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

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No. 17911160



证书编号/Certificate No. HB18PTB00002_16

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, 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. HB15T00015_01) 换新并替代原证书。

This certificate is renewed from and supersedes the previous Type Approval Certificate No. HB15T00015_01.

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1页

Note: The certificate is attached with additional 1 page(s)

第3页共3页/Page 3 of 3

No. 17911101



29356-EN-191128

产品描述 Product Description

1.Type Designation:(Normal Version) VEGASWING SG51.XMS a b c P d e

ab= process fitting / Material

Thread G3/4A, 3/4NPT, G1A, 1NPT,Bolting,SMS and others

c= electronics

C-contactless switch,

T-transistor output

d= electrical connection / Protection

M-M12x1,IP 67

V-according to ISO4400 including plug/ IP65

Q-according to ISO4400 including plug with quickOn connection / IP67

P-M12x1,IP 67 including 5m cable /IP68 (0.2 bar)

e= switching point

L-switching point as SWING71A (none Standard length)

2.Version with extended status indication

Type Designation: VEGASWING SG51.XM S ab c P d

ab= process fitting

Thread G3/4A, 3/4NPT, G1A, 1NPT,G1/2A,1/2NPT

c= electronics C-contactless switch, T-transistor output

d= electrical connection

M-M12x1,V-according to ISO4400 (Quick on)

P-M12x1,including 5m cable

Power supply: 9.6~35 V DC (T variant)

20~253 V AC50/60Hz or 20~253 V DC (C variant)

Output: max. 250mA load current

Signal lamps:green (in operation), yellow(switching status), red (failure)

Process pressure: max.64bar

Process temperature:-40~100°C

Degree of protection:IP66/67, IP68(0.2bar)

Ambient temperature range: -40~80°C



No. 17911102

证书编号/Certificate No.: HB18PTB00002_16 1/1





TYPE APPROVAL CERTIFICATE
No. ELE228118XG

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>	Electronic level switch with vibrating forks
<i>Type</i>	VEGASWING 51
<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, Table 1.

Issued in **HAMBURG** on **August 16, 2018**. This Certificate is valid until **August 15, 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. ELE228118XG

Enclosure - Page 1 of 1

VEGASWING 51

Product description:

The VEGASWING 51 series are point level sensor with tuning fork for level detection.

Order code: SG 51.XM S/T ab c P d (e)

ab = process fitting: thread G1/2A, 1/2NPT, G3/4A, 3/4 NPT, G1A, 1NPT

c = electronic: C; T

d = electrical connection: M; Q; P; V

e = switching point (option): L; K; S

Main characteristics:

Power supply: - 9.6 ... 36 VDC (T variant); 20 ...253 VAC 50/60Hz or 20...253VDC (C variant)

Output current: 250mA max load

Degree of protection: IP66 / 67 , IP68 (0.2 bar)

Signal lamps:

- Green - in operation
- Yellow - switching status
- Red - failure

Documents:

Operating Instructions: 41045-EN and 40552-EN

Drawing: - SB1377-1-01-0; SB1384-1-01-0; MB4804, MB 4805

Test Reports:

VEGA: - 1-04_SWING51T; 1-05_SWING51_F1_1; IP x8 0.2 bar _ 10/10/2007; SWING50T/C-4.7(-2.3,-F2)

Paconsult: - 11-3658

Hansecontrol: - 11-L-01717-01 and 11-L-01718-01

TÜV: - 09.0029 (10.00)

Hamburg University of Applied Sciences: - K162-04

Additional Place of manufacture:

VEGA Americas, Inc.

4241 Allendorf Drive

Cincinnati, OH 45209

USA

Remarks:

- The products fulfill EC-Code: 3a3/43.

- This certificate replace the certificate no.: ELE127915XG/004.

HAMBURG August 16, 2018



for *Rina*



RIINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53551
Fax +39 010 5351000

DNV·GL

Certificate No:
TAA00000RB

TYPE APPROVAL CERTIFICATE

This is to certify:
That the Level Switches

with type designation(s)
VEGASWING SG51.XM S/T...P...

Issued to
VEGA Grieshaber KG
Schiltach, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Location classes:

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

Temperature D
Humidity B
Vibration B
EMC B
Enclosure B, C, D

This Certificate is valid until **2021-09-20**.

Issued at **Hamburg** on **2016-09-21**

DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**



Digitally Signed By: Rinkel, Marco

for **DNV GL**
Signing Date: 2016-09-22

Location: Hamburg - for Duy Nam Le

Duy Nam Le
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.

Product description

Use for detecting of liquid levels in vessels by tuning fork principle.
 Type designation: VEGASWING51.XM S/T ab c P d e

- ab = process fitting: thread G3/4A, 3/4NPT, G1A, 1 NPT, G1/2A, 1/2 NPT
- c = electronics:
 - C - contact less switch
 - T - transistor output
- d = electrical connection / protection
 - M - M12x1 / IP67
 - V - acc. to ISO 4400 including plug / IP65
 - Q - acc. to ISO 4400 including plug with QuickOn connection / IP67
 - P - M12x1 incl. 5m cable / IP68 (0.2 bar)
- e = switching point:
 - L - switching point as SWING71A (none-standard length)
 - K - switching point according to drawing No. MB2443
 - S - switching point according to drawing No. ZB3202

Power supply: 9,6...36V DC (c = T)
 20...253V AC 50/60 Hz or
 20...253V DC (c = C)

Output: max. 250mA load current
 Signal lamps: green (in operation), yellow (switching status), red (failure)
 Process pressure: max. 64bar
 Process temperature: -40...+150°C (for version 'S' max. temp. +100°C)
 Ambient temperature range: -40°C...70°C (derating has to be observed)

Application/Limitation

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

Type Approval documentation

Test Reports: No. 267-03 D, No. 11-3658 of paconsult
 Test Protocol: No. K 162-04
 Test Reports: No. 11-L-01717-01 and No. 11-L-01718-01 of HermesHanseControlCert
 Test Reports: No. 1-04_SWING51T_F1_1 and No. 1-05_SWING51_F1_1of VEGA
 Test Reports: Nos. SWING50T/C-4.7(-2.3,-1.5-F2) of VEGA
 Construction drawings; Operating Instructions 40552-EN-110728, 41045-EN-160108
 Drawings: No. MB2443, No. ZB3202
 Certificate retention survey for A-12655, DNV Essen 2012-09-28

Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339, November 2015.

Marking of product

VEGASWING SG51

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:

Job Id: **262.1-005243-7**
Certificate No: **TAA00000RB**

- 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 once in the period of validity and at renewal of this certificate.

END OF CERTIFICATE

**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*

**Вибрационные сигнализаторы уровня для жидкостей типа:
VEGASWING 60: SG51, SWING 61, SWING 63, SG66.**

**Vibrating level switches for liquids, type VEGASWING 60:
SG51, SWING 61, SWING 63, SG66.**

Код номенклатуры
Code of nomenclature

15110101

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
Date of issue

08.10.2018

№ **18.40029.250**

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

Давление процесса, кПа: Температура процесса, °C:	от минус 100 до плюс 6400 (SG51, SWING61, 63); от минус 100 до плюс 16000 (SG66); от минус 40 до плюс 150 (SG51); от минус 50 до плюс 250 (SWING61, 63); от минус 196 до плюс 450 (SG66); от минус 40 до плюс 80;
Диапазон рабочих температур, °C Выходной сигнал:	SG51: бесконтактный переключатель 20...253VAC/DC; транзистор 9,6...35VDC; SWING 61,63: 2-провод. (8/16 mA) 12...36 VDC; реле (DPDT) 20...72VDC/20...253VAC (3A); бесконтактный переключатель 20...253VAC/DC; транзистор (NPN/PNP) 10...55 VDC; NAMUR; SG66: 2-провод. (8/16 mA) 9,6...35 VDC; транзистор (NPN/PNP) 9,6...55 VDC; реле (2x SPDT) 20...72VDC/20...253VAC(5A); ATEX: II 1G, 1/2G, 2G Ex Ia IIC T6...T1 Ga, Ga/Gb, Gb (SWING61, 63, SG66); II 1/2G Ex db IIC T6...T2 Ga/Gb (SWING 61,63); II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb (SG66) IP66, IP67.
Маркировка взрывозащиты:	
Степень защиты:	
Process pressure, kPa: Process temperature, °C: Operating temperature, °C Output signal:	-100...6400 (SG51, SWING61, 63); -100...16000 (SG66); from -40 to +150 (SG51); from -50 to +250 (SWING61, 63); from -196 to +450 (SG66); from -40 to +80; SG51: contactless switch 20...253VAC/DC; transistor 9,6...35VDC; SWING 61,63: 2-wire (8/16 mA) 12...36 VDC; relay (DPDT) 20...72VDC/20...253VAC (3A); contactless switch 20...253VAC/DC; transistor (NPN/PNP) 10...55 VDC; NAMUR; SG66: 2-wire (8/16 mA) 9,6...35 VDC; transistor (NPN/PNP) 9,6...55 VDC; relay (2x SPDT) 20...72VDC/20...253VAC(5A); ATEX: II 1G, 1/2G, 2G Ex Ia IIC T6...T1 Ga, Ga/Gb, Gb (SWING61, 63, SG66); II 1/2G Ex db IIC T6...T2 Ga/Gb (SWING 61,63); II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb (SG66) IP66, IP67.
Explosion protection:	
Degree of protection:	

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 № 18.60061.250 от 08.10.2018
Report No. of

Область применения и ограничения
Application and limitations

Вибрационные сигнализаторы уровня для жидкостей типа VEGASWING: SG51, SWING 61, SWING 63, SG66
предназначены для использования на морских судах, плавучих сооружениях, стационарных платформах.
Vibrating level switches for liquids, type VEGASWING: SG51, SWING 61, SWING 63, SG66 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.



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

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29356-EN-191128

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