IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx PTB 21.0013X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2021-05-20		
Applicant:	**VEGA Grieshaber KG** Am Hohenstein 113 77761 Schiltach **Germany**		
Equipment:	**Vibration limit switch VEGAVIB**		
Optional accessory:			
Type of Protection:	**Flameproof enclosure "db"**		
Marking:	Ex db IIC T6...T1 Ga/Gb or Ex db IIC T6...T1 Gb		

Approved for issue on behalf of the IECEx Certification Body: **Dr. -Ing. D. Markus**

Position: **Head of Departament "Explosion Protection in Energy Technology"**

Signature: (for printed version) D. Markus

Date: 25.05.21

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
ny

PTB
Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

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Date of issue: 2021-05-20 Issue No: 0

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Additional manufacturing locations: **VEGA Americas, Inc**
4241 Allendorf Drive
Cincinnati, Ohio 45209
United States of America

India VEGA India Level and Pressure Measurement Pvt. Ltd.
Plot No. 1, Gat No. 181
Village - Phulgaon, Tal. Haveli
Pune 412216
India

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/PTB/ExTR20.0041/01

Quality Assessment Report:

DE/TUN/QAR06.0002/10

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Description

The vibration limit switch VEGAVIB, type VB61/63 (*).L****C/R/T/N/Z***, is used for level monitoring and control in potentially explosive areas, also in connection with flammable liquids, gases, and vapours. The vibration limit switch VEGAVIB, type VB61/63 (*).L****C/R/T/N/Z***, comprises a metal enclosure with integrated WE60* electronics system. Together with the measuring sensor it is designed to Flameproof Enclosure "d" type of protection. It is equipment that is intended to be installed in the wall delimiting the potentially explosive area of category 1. The measuring sensor is located in the category-1 or 2 area, and the electronics enclosure in the category-2 area.

For more information see annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Repairs on the flameproof joints may only be made in accordance with the manufacturer's structural specifications. Repairs on the basis of the values in table 2 or 3 of standard IEC 60079-1:2014 are not permitted.

The warning markings required for the vibration limit switch are:

WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS

WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

The user shall be informed of these conditions in an appropriate form, e.g. with a note included in the operating instructions.

Annex:

COCA210013X-00.pdf

Applicant:	VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach Germany
Equipment:	Vibration limit switch VEGAVIB type VB61/63 (*).L****C/R/T/N/Z***

Description:

The vibration limit switch VEGAVIB, type VB61/63 (*).L****C/R/T/N/Z***, is used for level monitoring and control in potentially explosive areas, also in connection with flammable liquids, gases, and vapours. The vibration limit switch, type VEGAVIB VB61/63 (*).L****C/R/T/N/Z***, comprises a metal enclosure with integrated WE60* electronics system. Together with the measuring sensor it is designed to Flameproof Enclosure "d" type of protection. It is equipment that is intended to be installed in the wall delimiting the potentially explosive area of category 1. The measuring sensor is located in the category-1 or 2 area, and the electronics enclosure in the category-2 area.

Electrical data:

Type VB61/63(*).L****C***, with integrated VB60C electronics assembly

Supply voltage: (terminals 1, 2)	U = 20 to 253V AC, 50/60 Hz or U = 20 to 253V DC, max. 1 W U_m = 253V AC
Output	contact-less switch
Power consumption	< 5 mA (via load circuit)
Load current	min. 10 mA, max. 400 mA

Type VB61/63(*).L****R***, with integrated VB60R electronics assembly

Supply voltage: (terminals 1, 2)	U = 20 to 253V AC, 50/60 Hz or U = 20 to 72V DC U_m = 253V AC
Power input	1 to 8 VA, max. 1.6 W
Relay circuit	Maximum values:
Contact assembly 1; (terminals 3, 4, 5)	AC: 253 V, 3 A, 500 VA
Contact assembly 2; (terminals 6, 7, 8)	DC: 253 V, 1 A, 41 W

Type VB61/63(*).L****T***, with integrated VB60T electronics assembly

Supply voltage: (terminals 1, 4)	10 to 55V DC U_m = 253V AC
Power input	max. 0.5 W
Load current, potential-free transistor output (terminals 2, 3)	max. 400 mA and 55V DC

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Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605

Type VB61/63(*).L****Z***, with integrated VB60Z electronics assembly

Supply voltage:
(terminals 1+, 2-)

U_i = 12 to 36V DC
Um = 253V

Type VB61/63(*).L****N***, with integrated VB60N electronics assembly

Supply voltage:
(terminals 1+, 2-)

U_i = 4 to 12.5V DC
U_m = 253V AC

Locking screw fittings:

The following locking screw fitting is used:

Locking screw fitting	Pressure	Permissible ambient temperature at the locking screw fitting
Type ARV-VB63.2* (GE2162, Index 1)	Between vacuum and 16 bar	-50 °C ≤ T_{amb} ≤ +150 °C

Permissible ambient temperatures depending on the temperature class

Temperature class	Permissible ambient temperature for the electronics	Permissible ambient temperature for the measuring sensor **without** temperature adapter	Permissible ambient temperature for the measuring sensor **with** temperature adapter
T6	-40 °C to +77 °C	-50 °C to +85 °C	-50 °C to +85 °C
T5	-40 °C to +80 °C	-50 °C to +100 °C	-50 °C to +100 °C
T4	-40 °C to +80 °C	-50 °C to +135 °C	-50 °C to +135 °C
T3	-40 °C to +80 °C	-50 °C to +150 °C	-50 °C to +200 °C
T2, T1[2)]	-40 °C to +80 °C	-50 °C to +150 °C	-50 °C to +250 °C

[2)] At 150 °C and higher only with temperature adapter

Nomenclature:

Certification

- **LI** IECEx Ex db IIC T6...T1 Ga/Gb, Gb
- **L*** IECEx Ex db IIC T6...T1 Ga/Gb, Gb + in combination with other approvals *[1)]

Design / process temperature

- **A** Standard / -50 to +150 °C
- **B** with adapter / -50 to +250 °C
- **C** solids detection in water /-50 to +150 °C
- **E** with Carbocer coat; scale-inhibiting, no corrosion/abrasion protection / -50 to +150 °C
- **F** with Carbocer coat; scale-inhibiting, no corrosion/abrasion protection / -50 to +250 °C
- **G** solids detection in water, with Carbocer coat, scale inhibiting, no corrosion/abrasion protection / -50 +150 °C

Process connection / material

- **GC** G1 PN16 thread, DIN3852-A / 316L
- **NC** 1NPT PN16 thread, ASME B1.20.1 / 316L
- **NR** 1NPT PN16 thread, ASME B1.20.1 / 316L (Ra<0.8µm)
- **GD** G1½ PN16 thread, DIN3852-A / 316L, switch point same as VEGAVIB 51
- **GT** G1½ PN16 thread, DIN3852-A / 316L (Ra<0.8µm), switch point same as VEGAVIB 51
- **ND** 1½ NPT PN16 thread, ASME B1.20.1 / 316L, switch point same as VEGAVIB 51
- **CD** 1½" PN16 (Ø 50.5 mm) clamp, DIN32676, ISO2852 / 316L
- **CT** 1½" PN16 (Ø 50.5 mm) clamp, DIN32676, ISO2852 / 316L (Ra<0.8µm)
- **RA** threaded DN40 PN40 pipe fitting, DIN11851 / 316L
- **RP** threaded DN40 PN40 pipe fitting, DIN11851 / 316L (Ra<0.8µm)
- **LA** aseptic F40PN16 connection; with groove union nut / 316L
- **TA** Varivent, type N DN40 (1.5"), D = 68 / 316L
- **C1** flanged DN40 PN40 terminal socket, type A, DIN11864-3 / 316L
- **BF** DN32 PN40 flange, type C, DIN2501 / 316L
- **DF** DN40 PN40 flange, type C, DIN2501 / 316L

**other industry-standard process connections available upon request

Electronics system

- **C** contact-less switch 20 to 253V AC/DC
- **R** relay (DPDT) 20 to 72V DC / 20 to 253V AC (3A)
- **T** transistor (NPN/PNP) 10 to 55V DC
- **Z** two-wire (8/16mA) 10 to 36V DC
- **N** NAMUR signal

Enclosure/ protection

- **A** aluminium, single compartment / IP66/IP67[1)]
- * other enclosures also with special coat of paint

Cable gland/screwed cable gland/plug connection

- **M** M20x1.5 / without / without
- **6** M20x1.5 / for armoured cable (6 to 12mm) with strain relief / w/o
- **7** M20x1.5 / type approved for cable (4 to 8.5mm) / w/o
- **N** ½ NPT / without / without
- **8** ½ NPT / for armoured cable (6 to 12mm) with strain relief / without
- **9** ½ NPT / type approved for cable (4 to 8.5mm) / w/o
- * other suitable threaded cable glands and plug connectors

Optional equipment

- **X**

VB61/63(*)	L*	*	**	*	*	*	*

[1)] The type approval for areas with for example potentially explosive dust or other approvals is **not** the subject matter of the above type approval

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Notes for manufacturing and operation:

Connection conditions

1. The vibration limit switch VEGAVIB, type VB61/63(*).L****C/R/T/N/Z***, must be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC 60079-1:2014, sections 13.4 and 13.5, and for which a separate test certificate has been issued.
2. Cable glands (Pg type glands) and blanking plugs of a simple design must not be used. If the VEGAVIB vibration limit switch is connected by means of a conduit entry fitting which has been approved for this purpose, the required sealing device shall be provided immediately at the enclosure.
3. Openings that are not used must be closed in compliance with the specifications in IEC 60079-1:2014, section 11.8.
4. The connecting cable of vibration limit switch VEGAVIB, type VB61/63(*).L****C/R/T/N/Z***, shall be fixed and routed so it will be adequately protected against mechanical damage.
5. If the temperature at the input parts exceeds 70 °C, temperature-resistant connecting cables shall be used.
6. If connection is made in the potentially explosive area, the connecting cables of the vibration limit switch VEGAVIB, type VB61/63(*).L****C/R/T/N/Z***, shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0:2017, section 1.

This information must accompany each device in an adequate form.

Components attached or installed (terminal compartments, bushings, Ex-type cable glands, connectors) shall be of a technical standard that at least complies with the specifications on the cover sheet, and they shall have a separate examination certificate. The operating conditions specified in the component certificates must be complied with.

Specific conditions of use:

Repairs on the flameproof joints may only be made in accordance with the manufacturer's structural specifications. Repairs on the basis of the values in table 2 or 3 of standard IEC 60079-1:2014 are not permitted.

The warning markings required for the vibration limit switch are:
WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS
WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

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