IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx BVS 06.0001X

Issue No: 2

Certificate history:
Issue No. 2 (2019-04-24)
Issue No. 1 (2015-07-13)
Issue No. 0 (2006-03-03)

Status: **Current**

Date of Issue: **2019-04-24**

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

Equipment: **Vibrating level switch type VEGAVIB VB6*(*).GI******

Optional accessory:

Type of Protection: **Dust ignition protection by enclosure "t"**

Marking:

Ex ta IIIC T* Da or
Ex ta/tb IIIC T* Da/Db or
Ex tb IIIC T* Db
IP66

Approved for issue on behalf of the IECEx Certification Body: Dr Franz Eickhoff

Position: Deputy Head of Certification Body

Signature:
(for printed version)

Date: 2019-04-24

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.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

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

Additional Manufacturing location(s):

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 apparatus 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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical 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/BVS/ExTR06.0031/02

Quality Assessment Report:

DE/TUN/QAR06.0002/08

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description

The Vibrating Level Switch type VEGAVIB VB6*(*).GI****** is used for level monitoring, controlling and regulating in silos with dust generating material.
The probe of the Vibrating Level Switch vibrates at its mechanical resonant frequency. In case the probe is covered with material, the vibration is damped and a signal is generated.

Subject and Type

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

The prospective short-circuit current I_{cp} must not exceed the specified value.
In case of extremely ignitable dusts (MIE < 3 mJ) the equipment must not be used in areas where intensive charging processes are to be expected.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Update to standard IEC 60079-0:2017

Change of marking

Change of drawing details

Slight Change of electronic components

Annex:

BVS_06_0001X_Vega_Annex_issue_2_1.pdf

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Annex

Subject and Type

Vibrating level switch type
VEGAVIB VB6*(*).GI * * * * * *

- Further criteria, without relevance for explosion protection
- cable entry
  M = M20x1.5
  N = 1/2NPT
- enclosure - type of protection
  A = aluminium enclosure IP66
  * = special color
- electronics
  C = contactless switch AC/DC 20...253 V
  R = relay output DC 20...72 V / AC 20...253 V
  T = floating transistor (NPN/PNP) DC 10...55V
  Z = two-wire (intrinsic safe version)
  N = NAMUR EN60947-5-7-6
- process connection see manual
- version/temperature range/ material
  A = standard/-40 °C…150 °C /1.4435(316L)
  B = with adapter/ -40 °C…250 °C/1.4435(316L)
  C = detection of solids in water/-40 °C…150 °C/1.4435(316L)
  E = with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion / -40 °C...+150 °C
  F = with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion / -40 °C...+250 °C
  G = detection of solids in water, with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion/ -40 °C...+150 °C
- GI = Ex ta, ta/tb, tb IIIC T…IP66, Da, Da/Db, Db
- optional version differentiation, without relevance for explosion protection
- 1, 3, 5, 7

Vibrating level switch type
VEGAVIB VB6*(*).GI * * * * * *

- Further criteria, without relevance for explosion protection
- cable entry
  - M = M20x1.5
  - N = 1/2NPT
- enclosure - type of protection
  - A = aluminium enclosure IP66
  - * = special color
- electronics
  - C = contactless switch AC/DC 20...253 V
  - R = relay output DC 20...72 V / AC 20...253 V
  - T = floating transistor (NPN/PNP) DC 10...55 V
  - Z = two-wire (intrinsic safe version)
  - N = NAMUR EN60947-5-7-6
- process connection see manual
- version/temperature range/ material
  - T = rope PUR/-40 °C...80 °C/1.4435(316L)
  - C = detection of solids in water / -20 °C...+80 °C
  - K = cable PUR / -20 °C...+80 °C / with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion
  - L = cable FEP / -40 °C...+150 °C/ with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion
  - M = detection of solids in water / -20 °C...+80 °C / with Carbocer coating; minimizing buildup, no protection against corrosion/abrasion
- GI = Ex ta, ta/tb, tb IIIC T...IP66, Da, Da/Db, Db
- optional version differentiation, without relevance for explosion protection
- 2, 6

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Annex

Parameters

Electrical data

Type VEGAVIB VB6*(*).GI**C*** with electronics insert VB60C built in

supply voltage	DC/AC	20 ... 253	V
output	contactless switch		
current	<	5	mA
load current	min.	10	mA
	max.	400	mA
Maximum short circuit current I_{cn}		100	A

Type VEGAVIB VB6*(*).GI**R*** with electronics insert VB60R built in

supply voltage	AC	20 ... 253	V (3A)
or	DC	20 ... 72	V
power consumption	1 up to 8 VA, max. 1.6		W
relay circuit			
max. values:	253 V, 3 A,	500	VA
	253 V, 1 A,	41	W
Maximum short circuit current Icn	35		A

Type VEGAVIB VB6*(*).GI**T*** with electronics insert VB60T built in

supply voltage	DC	10 up to 55	V
power consumption	max.	0.5	W
load current	max.	400	mA
Maximum short circuit current I_{cn}		100	A

Type VEGAVIB VB6*(*).GI**Z*** with intrinsically safe electronics insert VB60Z built in

Supply and signal circuit — in type of protection Intrinsic Safety Ex ia IIC only for connection to a certified intrinsically safe circuit with the following maximum values:

U_i=	30	V
I_i =	131	mA
P_i=	983	mW

effective internal capacitance negligible
effective internal inductance negligible

Type VEGAVIB VB6*(*).GI**N*** with intrinsically safe electronics insert VB60N built in

supply and signal circuit — in type of protection Intrinsic Safety Ex ia IIC/IIB or Ex ib IIC/IIB only for connection to a certified intrinsically safe circuit with the following maximum values:

U_i=	20	V
I_i =	103	mA
P_i=	516	mW

effective internal capacitance negligible
effective internal inductance L_i < 5 µH

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Annex

Thermal data

The max. surface temperature is the higher one of the values listed below.

Permitted process temperature at the probe

Type VEGAVIB VB61/3/5/7(*).GIA/C*****	-40 °C up to +150 °C
Type VEGAVIB VB61/3/5/7(*).GIB*****	-40 °C up to +250 °C
Type VEGAVIB VB61/3/5/7(*).GIE/G*****	-40 °C up to +150 °C
Type VEGAVIB VB61/3/5/7(*).GIF*****	-40 °C up to +250 °C
Type VEGAVIB VB62/6(*).GIT*****-40 °C up to + 80 °C	
Type VEGAVIB VB62/6(*).GIC/K/M*****	-20 °C up to + 80 ° C
Type VEGAVIB VB62/6(*).GIL*****-40 °C up to +	150 °C

Max. surface temperature T at the probe process temperature +6K

Permitted ambient temperature at the electronics enclosure -40 °C up to + 60 °C (zone 20 or zone 21)

Maximum surface temperature at the electronics enclosure (zone 20)

type VEGAVIB VB6*(*).GI**C/R/T*** with thermo fuse limited to	+98 °C
type VEGAVIB VB6*(*).GI**N***ambient temperature +	23 K
type VEGAVIB VB6*(*).GI**Z***ambient temperature +	43 K

Maximum surface temperature at the electronics enclosure (zone 21)

type VEGAVIB VB6*(*).GI**C/R/T*** with thermo fuse limited to	+98 °C
type VEGAVIB VB6*(*).GI**N***ambient temperature +	23 K
type VEGAVIB VB6*(*).GI**Z***ambient temperature +	36 K

Degrees of protection according to IEC 60529 IP66