



Translation

EC-Type Examination Certificate

- Directive 94/9/EC -

**Equipment and protective systems intended for use
in potentially explosive atmospheres**

BVS 04 ATEX E 079

- (4) **Equipment:** Vibrating level switch type VEGAVIB VB6*.*****
- (5) **Manufacturer:** VEGA Grieshaber KG
- (6) **Address:** D - 77757 Schiltach
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.
- (8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 04.2087 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
EN 50281-1-1:1998+A1 Dust explosion protection
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate
- (12) The marking of the equipment shall include the following:

 **II 1/2 D IP 66 T** see 15.3.2 or
II 2 D IP 66 T see 15.3.2

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 26. May 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services

(13)

Appendix to

(14)

EC-Type Examination Certificate

BVS 04 ATEX E 079

(15) 15.1 Subject and type

Vibrating level switch type
VEGAVIB VB6*****

	cable entry
	M = M20x1,5
	N = 1/2NPT
	enclosure type of protection
	A = aluminium enclosure IP66
	D = aluminium double chamber enclosure IP66
	V = stainless steel enclosure IP66
	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)
	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)
	CX = ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. to PTB 04 ATEX 2035X)
	CK = ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. to PTB 04 ATEX 2035X)
	ATEX II 1/2D, 2D IP66 T...
	LK = ATEX II 1/2G, 2G EEx d IIC T6 (acc. to PTB 04 ATEX 1044)
	ATEX II 1/2D, 2D IP66 T...
	GX = ATEX II 1/2D, 2D IP66 T...
	1, 3, 5, 7

Vibrating level switch type VEGAVIB VB6*.*.*.*.*

	cable entry
	M = M20x1,5
	N = 1/2NPT
	enclosure / type of protection
	A = aluminium enclosure IP66
	D = aluminium double chamber enclosure IP66
	V = stainless steel enclosure IP66
	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)
	process connection see manual
	version/temperature range/ material
	T = rope PUR/-40 °C...80 °C/1.4435(316L)
	standard/-40 °C...150 °C/1.4435(316L)
	CX = ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. to PTB 04 ATEX 2035X)
	CK = ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. to PTB 04 ATEX 2035X)
	ATEX II 1/2D, 2D IP66 T...
	GX = ATEX II 1/2D, 2D IP66 T...
	2, 6

15.2 Description

The Vibrating Level Switch type VEGAVIB VB6*.*.*.*.* 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 the a signal is generated.

15.3 Parameters

15.3.1 Electrical data

15.3.1.1 Type VEGAVIB VB6*.GX/LK**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

15.3.1.2 Type VEGAVIB VB6*.GX/LK**R** with electronics insert VB60R built in

supply voltage	AC	20... 253	V (3A)
or	DC	20...72	V
power consumption	1...8VA, max.	1,6	W
relay circuit			
max. values:	250 V, 3 A,	500	VA
	250 V, 1 A,	54	W

15.3.1.3 Type VEGAVIB VB6*.GX/LK**T**
with electronics insert VB60T built in

supply voltage	DC	10...55	V
power consumption	max.	0,5	W
load current	max..	400	mA

15.3.1.4 Type VEGAVIB VB6*.CX/CK**Z**
with intrinsically safe electronics insert VB60Z built in

Supply and signal circuit in type of protection Intrinsic Safety EEx 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

15.3.2 Thermal data

15.3.2.1 Permitted process temperature at the probe
Types VEGAVIB VB61/3/5/7.*A/C****
Types VEGAVIB VB61/3/5/7.*B****
Types VEGAVIB VB62/6.*T****

- 40 °C...+150 °C
- 40 °C...+250 °C
- 40 °C...+ 80 °C

15.3.2.2 Max. surface temperature T at the probe

process temperature + 3 K

15.3.2.3 Permitted ambient temperature at the electronics enclosure

- 40 °C...+ 60 °C

15.3.2.4 Maximum surface temperature at the electronics enclosure

Type VEGAVIB VB6*.*.*C/R/T**
with thermo fuse limited to

98 °C

Type VEGAVIB VB6*.*.*Z**

ambient temperature + 17K

15.3.3 Degrees of protection according to EN 60529

IP66

(16) Test and assessment report
BVS PP 04.2087 EG as of 26.05.2004

- (17) Special conditions for safe use
None

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 26. May 2004
BVS-Hk/Kw A 20040125

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special Services

**Translation****1st Supplement**

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
BVS 04 ATEX E 079**

Equipment: Vibrations-Grenz-Schalter type VEGAVIBVB6*.*****
Manufacturer: VEGA Grieshaber KG
Address: 77761 Schiltach

Description

The Vibrating level switch type VEGAVIB VB6*.***** can also be equipped with the electronics insert type VB60N and then gets the type destination VEGAVIB VB6*.CK/GX**N**.

Type VEGAVIB VB6*.CK/GX**N** are 2-wire sensors with a current step signal between 0.5 mA and 2.5 mA as a measuring signal and fulfil NAMUR requirements.

The Vibrating level switch type VEGAVIB VB63/67.CK/GX/LK***** can also be equipped with a lock fitting according to the documentation below.

The Vibrating level switch type VEGAVIB VB6*.CK**N** is intrinsically safe EEx ia IIC T6 according to PTB 05 ATEX 2077 X.

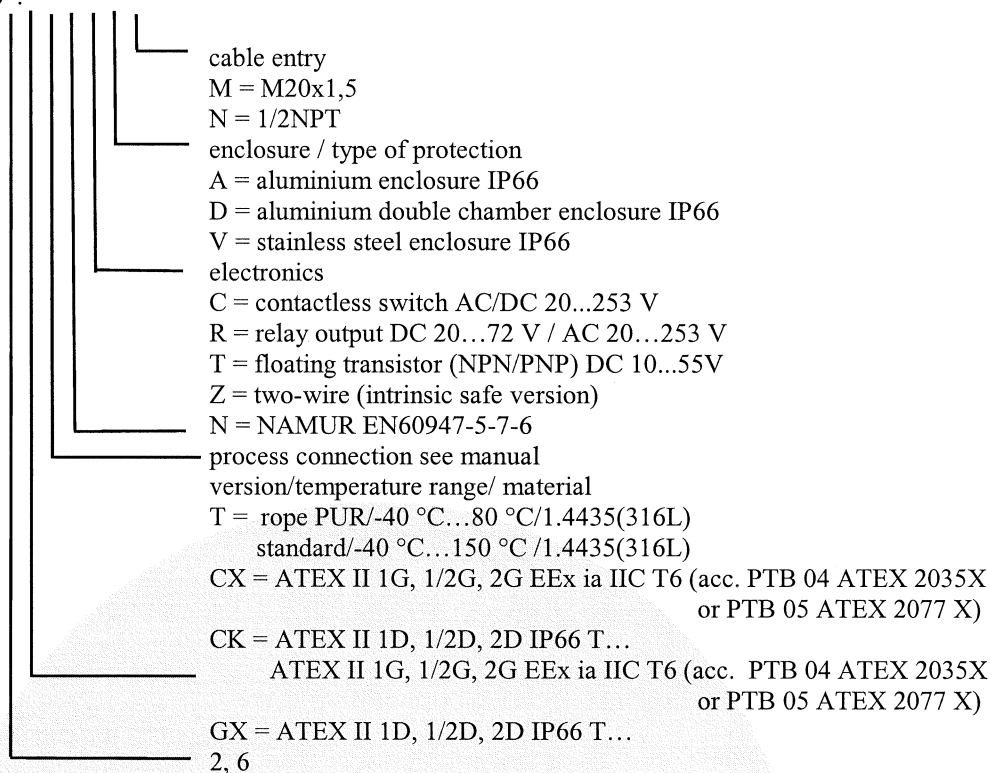
The Vibrating level switch type VEGAVIB VB6*.GX/LK**C/T/R** and type VEGAVIB VB6*.GX/CK**N/Z** meet as well category 1D.

Vibrating level switch type

VEGAVIB VB6*.*****

	cable entry
	M = M20x1,5
	N = 1/2NPT
	enclosure type of protection
	A = aluminium enclosure IP66
	D = aluminium double chamber enclosure IP66
	V = stainless steel enclosure IP66
	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)
	CX = ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. PTB 04 ATEX 2035X or PTB 05 ATEX 2077 X)
	CK = ATEX II 1D, 1/2D, 2D IP66 T... ATEX II 1G, 1/2G, 2G EEx ia IIC T6 (acc. PTB 04 ATEX 2035X or PTB 05 ATEX 2077 X)
	GX = ATEX II 1D, 1/2D, 2D IP66 T...
	LK = ATEX II 1/2G, 2G EEx d IIC T6 (acc. PTB 04 ATEX 1044) ATEX II 1D, 1/2D, 2D IP66 T...
	1, 3, 5, 7

Vibrating level switch type VEGAVIB VB6*.*.*.*.*



Electrical data

Type VEGAVIB VB6*.GX/LK**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

Type VEGAVIB VB6*.GX/LK**R** with electronics insert VB60R built in

supply voltage	AC	20... 253 V (3A)
or	DC	20...72 V
power consumption	1...8VA, max.	1,6 W
relay circuit		
max. values:	250 V, 3 A,	500 VA
	250 V, 1 A,	54 W

Type VEGAVIB VB6*.GX/LK**T** with electronics insert VB60T built in

supply voltage	DC	10...55 V
power consumption	max.	0,5 W
load current	max..	400 mA

Type VEGAVIB VB6*.CX/CK**Z** with intrinsically safe electronics insert VB60Z built in

Supply and signal circuit

in type of protection Intrinsic Safety EEx ia IIC
 only for connection to a certified intrinsically safe
 circuit with the following maximum values:

$U_i = 30 \text{ V}$
 $I_i = 131 \text{ mA}$
 $P_i = 983 \text{ mW}$

effective internal capacitance negligible
 effective internal inductance negligible

Type VEGAVIB VB6*.CX/CK**N** with intrinsically safe electronics insert VB60N built in

Supply and signal circuit

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

$U_i = 20 \text{ V}$
 $I_i = 103 \text{ mA}$
 $P_i = 516 \text{ mW}$

effective internal capacitance negligible
 effective internal inductance $L_i < 5 \mu\text{H}$

Thermal data

permitted process temperature at the probe

Type VEGAVIB VB61/3/5/7.*A/C****

-40 °C...+150 °C

Type VEGAVIB VB61/3/5/7.*B****

-40 °C...+250 °C

Type VEGAVIB VB62/6.*T****

-40 °C...+ 80 °C

Max. surface temperature T at the probe

process temperature + 3 K

permitted ambient temperature at the electronics enclosure

category 1D or category 2D

-40 °C...+ 60 °C

Maximum surface temperature at the electronics enclosure category 2D

Type VEGAVIB VB6*.*C/R/T**

with thermo fuse limited to

98 °C

Type VEGAVIB VB6*.*Z/N**

ambient temperature + 17K

Maximum surface temperature at the electronics enclosure category 1D

Type VEGAVIB VB6*.*C/R/T**

with thermo fuse limited to

98 °C

Type VEGAVIB VB6*.*Z/N**

ambient temperature + 12K

Degrees of protection according to EN 60529

IP66

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50281-1-1 :1998+A1 Dust explosion protection

The marking of the equipment shall include the following:



II 1/2 D IP 66 T see manual or
II 2 D IP 66 T see manual

Special conditions for safe use

none

Test and assessment report

BVS PP 04.2087 EG as of 07.06.2006

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 07. June 2006

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

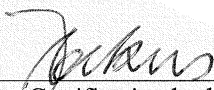
Special services unit

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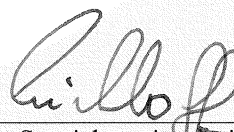
44809 Bochum, 07.06.2006

BVS-Hk/Mi A 20060124

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation

2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate BVS 04 ATEX E 079

Equipment: Vibrations-Grenz-Schalter type VEGAVIBVB6*.*****

Manufacturer: VEGA Grieshaber KG

Address: 77761 Schiltach, Germany

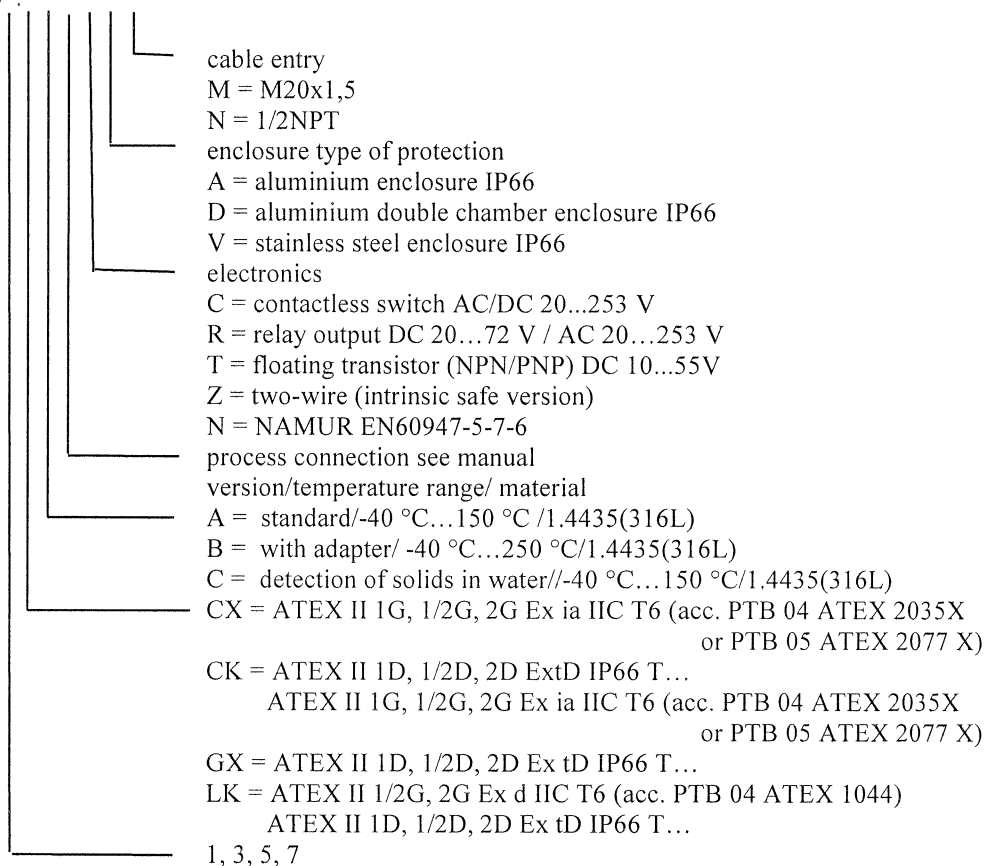
Description

The Vibrating Level Switch type VEGAVIB VB6*.***** is used for level monitoring, controlling and regulating in silos with dust generating material.

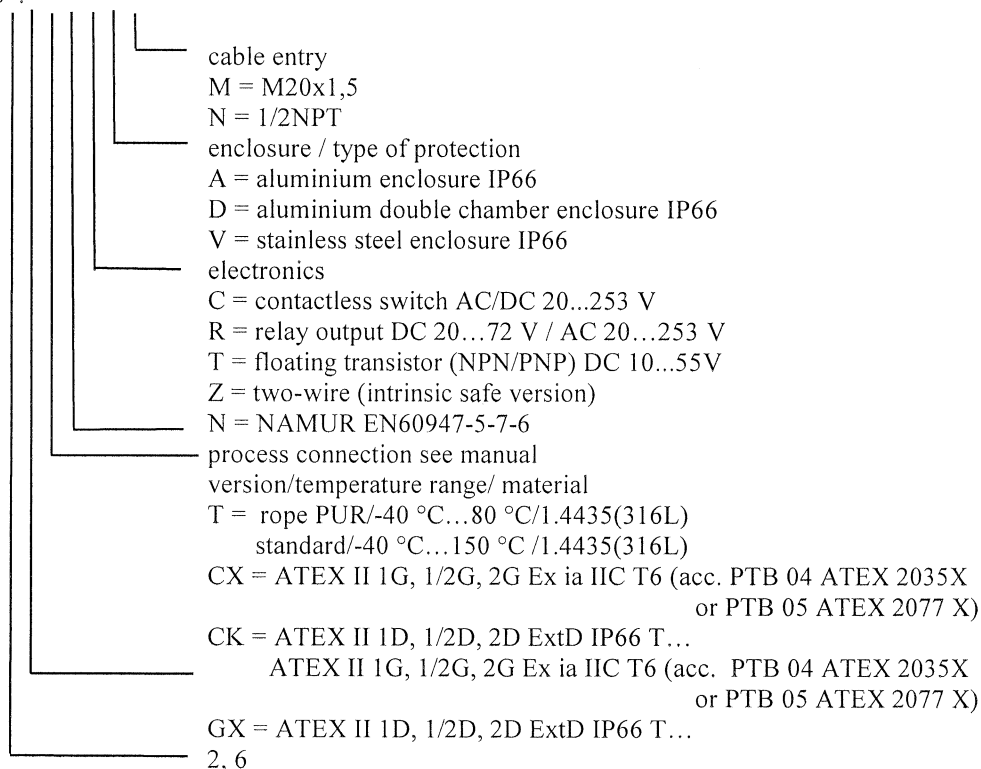
The probe of the Vibrating Level Switch vibrates at its mechanical resonant frequency. In case the probe is covered with material, the vibration is damped and a signal is generated.

The vibrating level switch meets the requirements of the standards EN 61241-0:2006 and EN 61241-1:2004.

Vibrating level switch type
VEGAVIB VB6*.*****



Vibrating level switch type VEGAVIB VB6*.*.*.*.*.*



Electrical data

Type VEGAVIB VB6*.GX/LK**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

Type VEGAVIB VB6*.GX/LK**R** with electronics insert VB60R built in

supply voltage	AC	20... 253	V (3A)
or	DC	20...72	V
power consumption	1...8VA, max.	1,6	W
relay circuit			
max. values:	250 V, 3 A,	500	VA
	250 V, 1 A,	54	W

Type VEGAVIB VB6*.GX/LK**T** with electronics insert VB60T built in

supply voltage	DC	10...55	V
power consumption	max.	0,5	W
load current	max.	400	mA

Type VEGAVIB VB6*.GX/CK**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:

$U_i = 30 \text{ V}$
 $I_i = 131 \text{ mA}$
 $P_i = 983 \text{ mW}$

effective internal capacitance negligible
 effective internal inductance negligible

Type VEGAVIB VB6*.GX/CK**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:

$U_i = 20 \text{ V}$
 $I_i = 103 \text{ mA}$
 $P_i = 516 \text{ mW}$

effective internal capacitance negligible
 effective internal inductance $L_i < 5 \mu\text{H}$

Thermal data

permitted process temperature at the probe

Type VEGAVIB VB61/3/5/7.GXA/C****

-40 °C...+150 °C

Type VEGAVIB VB61/3/5/7.GXB****

-40 °C...+250 °C

Type VEGAVIB VB62/6.GXT****

-40 °C...+ 80 °C

Max. surface temperature T at the probe

process temperature + 3 K

permitted ambient temperature at the electronics enclosure
category 1D or category 2D

-40 °C...+ 60 °C

Maximum surface temperature at the electronics enclosure category 2D

Type VEGAVIB VB6*.GX**C/R/T**

with thermo fuse limited to

98 °C

Type VEGAVIB VB6*.GX**Z/N**

ambient temperature + 17K

Maximum surface temperature at the electronics enclosure category 1D

Type VEGAVIB VB6*.GX**C/R/T**

with thermo fuse limited to

98 °C

Type VEGAVIB VB6*.GX**Z/N**

ambient temperature + 12K

Degrees of protection according to EN 60529

IP66

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 61241-0:2006 General requirements
EN 61241-1:2004 Protection by enclosures

The marking of the equipment shall include the following:

II 1 D Ex tD A20 IP 66 T see manual or
 **II 1/2 D Ex tD A20/21 IP 66 T** see manual or
II 2 D Ex tD A21 IP 66 T see manual

Special conditions for safe use
none

Test and assessment report
BVS PP 04.2087 EG as of 17.04.2008

DEKRA EXAM GmbH

Bochum, dated 17. April 2008

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 17. April 2008
BVS-Hk/Wa A 20070777

DEKRA EXAM GmbH



Certification body



Special services unit

