Translation

1 # EU-Type Examination Certificate Supplement 11

Change to Directive 2014/34/EU

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 04 ATEX E 080 X**

4 Product: **Radar-Sensor type VEGAPULS PS6*(*).********, PSSR68(*).********

5 Manufacturer: **VEGA Grieshaber KG**

6 Address: **Am Hohenstein 113, 77761 Schiltach, Germany**

7 This supplementary certificate extends EC-Type Examination Certificate No. BVS 04 ATEX E 080 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 04.2081 EU.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013 **General requirements**
EN 60079-31:2014 **Protection by Enclosure "t"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

II 1D Ex ta IIIC T see manual Da
II 1/2D Ex ta/tb IIIC T see manual Da/Db
II 1/3D Ex ta/tc IIIC T see manual Da/Dc
II 2D Ex tb IIIC T see manual Db

DEKRA EXAM GmbH
Bochum, 2018-02-28

Signed: Jörg Koch
Certifier

Signed: Dr Michael Wittler
Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 04 ATEX E 080 X
Supplement 11

15 **Product description**

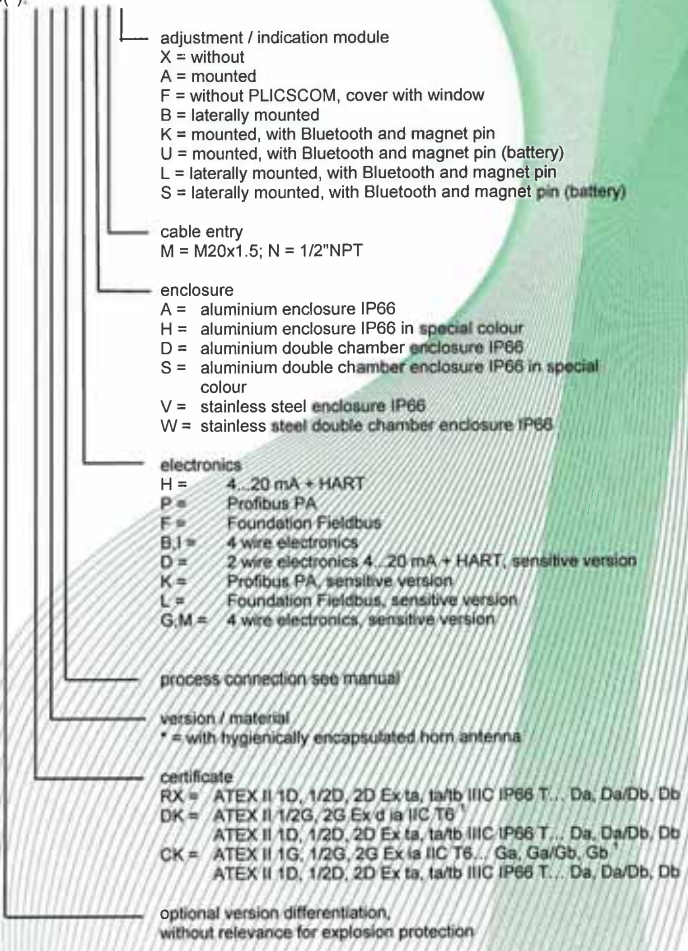
15.1 **Subject and type**

Radar sensor type (Hardware-Version ≥ 2.00; Software-Version ≥ 4.00)
VEGAPULS PS 62(*). * * * * * * * *

[1] The assessment for use in explosive gas atmospheres is **not** part of this test report.

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

Radar sensor type (Hardware-Version ≥ 2.00; Software-Version ≥ 4.00)
VEGAPULS PS 63(*). * * ** * * * *



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telephone +49.234.3696-105, fax +49.234.3696-110, zs-exam@dekra.com

Radar sensor type (Hardware-Version ≥ 2.00; Software-Version ≥ 4.00)
VEGAPULS PS 66(*). * * * * * * * *

adjustment / indication module
X = without
A = mounted
F = without PLICSCOM, cover with window
B = laterally mounted
K = mounted, with Bluetooth and magnet pin
U = mounted, with Bluetooth and magnet pin (battery)
L = laterally mounted, with Bluetooth and magnet pin
S = laterally mounted, with Bluetooth and magnet pin (battery)

cable entry
M = M20x1.5; N = 1/2"NPT

enclosure
A = aluminium enclosure IP66
H = aluminium enclosure IP66 in special colour
D = aluminium double chamber enclosure IP66
S = aluminium double chamber enclosure IP66 in special colour
V = stainless steel enclosure IP66
W = stainless steel double chamber enclosure IP66

electronics
H = 4...20 mA + HART
P = Profibus PA
F = Foundation Fieldbus
B,I = 4 wire electronics

sealing rings/process temperature
5 = EPDM / -40 °C...+150 °C
2 = FKM / -40 °C...+150 °C
3 = Kalrez 6375/ -20 °C...+150 °C
G = graphite and ceramics / with temperature adapter -60 °C...+250 °C
H = graphite and ceramics/ with temperature adapter -60 °C...+400 °C

process connection see manual

version / material
* = with horn antenna or parabolic antenna / 316 L (1.4435) or Alloy C22 (2.4602)

certificate
RX = ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db
DK = ATEX II 1/2G, 2G Ex d ia IIC T6 [1]
ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db
CK = ATEX II 1G, 1/2G, 2G Ex ia IIC T6... Ga, Ga/Gb, Gb [1]
ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db

optional version differentiation,
without relevance for explosion protection

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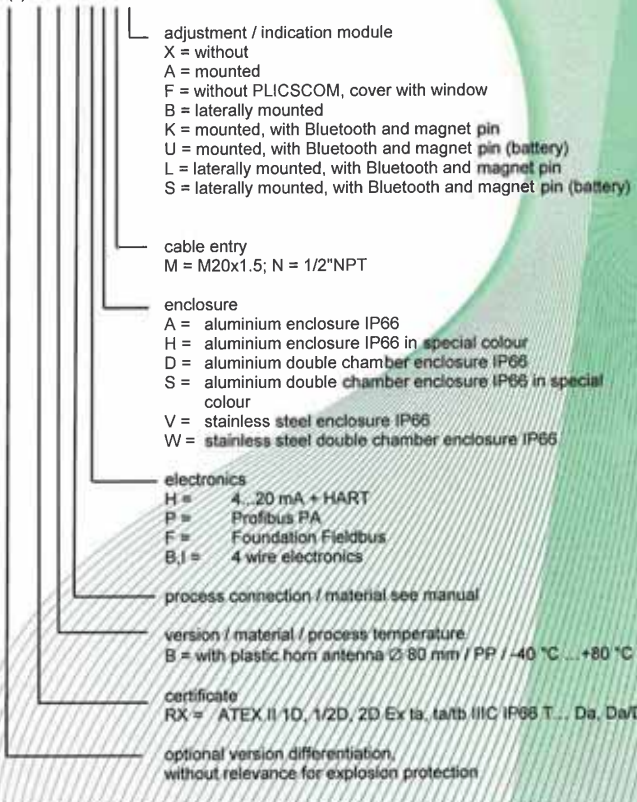
Radar sensor type (Hardware-Version ≥ 2.00; Software-Version ≥ 4.00)
VEGAPULS PS 67(*). * B ** * * *



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Radar sensor type (Hardware-Version ≥ 2.00; Software-Version ≥ 4.00)
VEGAPULS PSSR 68(*). * * * * * * * *
VEGAPULS PS 68(*). * * * * * * * *

adjustment / indication module
X = without
A = mounted
F = without PLICSCOM, cover with window
B = laterally mounted
K = mounted, with Bluetooth and magnet pin
U = mounted, with Bluetooth and magnet pin (battery)
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M = M20x1.5; N = 1/2"NPT

enclosure
A = aluminium enclosure IP66
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S = aluminium double chamber enclosure IP66 in special colour
V = stainless steel enclosure IP66
W = stainless steel double chamber enclosure IP66

electronics
H = 4...20 mA + HART
P = Profibus PA
F = Foundation Fieldbus
B,I = 4 wire electronics

sealing rings/process temperature

2 = FKM+ PTFE	-40 °C...+130 °C
3 = Kalrez 6375 + PTFE	-20 °C...+130 °C
4 = FKM (SHS FPM 70C3GLT) + PTFE not with steam	-40 °C...+200 °C
5 = FKM (Kalrez 6375) + PTFE	-20 °C...+200 °C
7 = FFKM (Kalrez 6230) + PTFE (FDA)	-15 °C...+130 °C
9 = FFKM (Kalrez 6230) + PTFE	-40 °C...+200 °C

process connection see manual

version / material
* = with horn antenna or parabolic antenna / 316 L (1.4435) or Alloy C22 (2.4602)

certificate
RX = ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db
DK = ATEX II 1/2G, 2G Ex d ia IIC T6 [1]
ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db
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optional version differentiation,
without relevance for explosion protection

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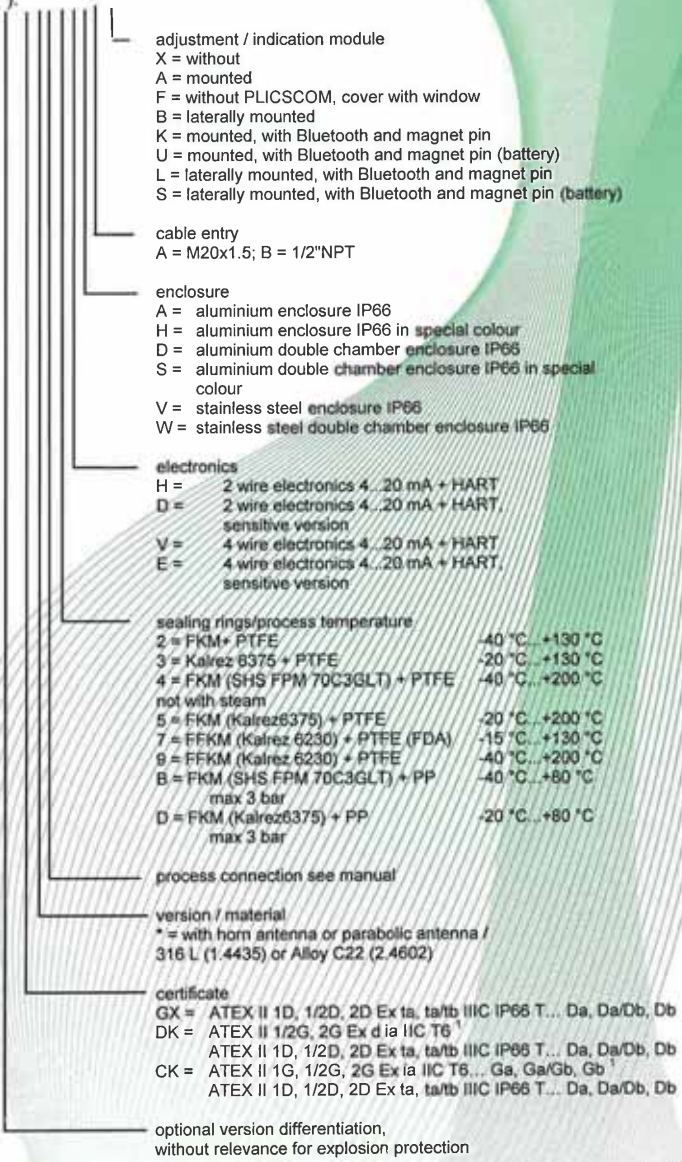
Radar sensor type (Hardware-Version ≤ 1.10; Software-Version ≤ 3.90)
VEGAPULS PS 62(*). * * * * * * * *



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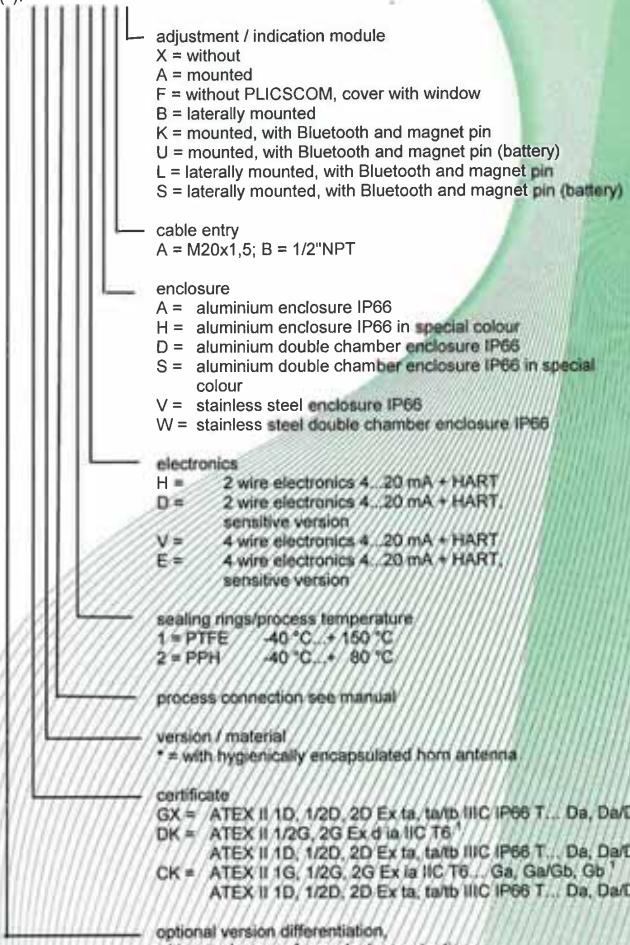

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A = M20x1,5; B = 1/2"NPT

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D = aluminium double chamber enclosure IP66
S = aluminium double chamber enclosure IP66 in special colour
V = stainless steel enclosure IP66
W = stainless steel double chamber enclosure IP66

electronics
H = 2 wire electronics 4...20 mA + HART
D = 2 wire electronics 4...20 mA + HART, sensitive version
V = 4 wire electronics 4...20 mA + HART
E = 4 wire electronics 4...20 mA + HART, sensitive version

sealing rings/process temperature
1 = PTFE -40 °C...+ 150 °C
2 = PPH -40 °C...+ 80 °C

process connection see manual

version / material
* = with hygienically encapsulated horn antenna

certificate
GX = ATEX II 1D, 1/2D, 2D Ex ta, ta/tb IIIC IP66 T... Da, Da/Db, Db
DK = ATEX II 1/2G, 2G Ex d ia IIC T6 [1]
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optional version differentiation,
without relevance for explosion protection

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D = 2 wire electronics 4...20 mA + HART, sensitive version
V = 4 wire electronics 4...20 mA + HART
E = 4 wire electronics 4...20 mA + HART, sensitive version

sealing rings/process temperature

5 = EPDM /	-40 °C...+150 °C
2 = FKM /	-40 °C...+150 °C
3 = Kalrez 6375/	-20 °C...+150 °C
G = graphite and ceramics /	-60 °C...+250 °C
H = graphite and ceramics /	-60 °C...+400 °C

process connection see manual

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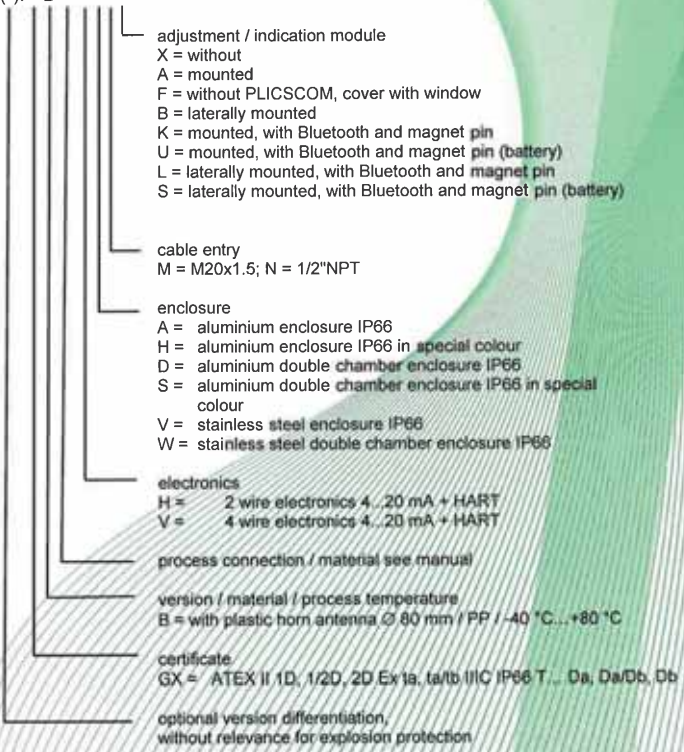

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D = 2 wire electronics 4...20 mA + HART, sensitive version
V = 4 wire electronics 4...20 mA + HART
E = 4 wire electronics 4...20 mA + HART, sensitive version

sealing rings/process temperature

2 = FKM+ PTFE	-40 °C...+130 °C
3 = Kalrez 6375 + PTFE	-20 °C...+130 °C
4 = FKM (SHS FPM 70C3GLT) + PTFE not with steam	-40 °C...+200 °C
5 = FKM (Kalrez 6375) + PTFE	-20 °C...+200 °C
7 = FFKM (Kalrez 6230) + PTFE (FDA)	-15 °C...+130 °C
9 = FFKM (Kalrez 6230) + PTFE	-40 °C...+200 °C

process connection see manual

version / material
* = with horn antenna or parabolic antenna / 316 L (1.4435) or Alloy C22 (2.4602)

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optional version differentiation,
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15.2 **Description**

With this supplement the certificate is changed to Directive 2014/34/EU.
(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

Reason for the supplement:

- Change to Directive 2014/34/EU
- Update to EN60079-0:2012+A11:2013
- Resumption of formerly certified device versions
- PLICSCOM3 added
- VEGAPULS PS69 removed from certificate

Description of Product

The Radar sensor type VEGAPULS PS6*(*).******** und PSSR68(*).******** is used to measure the distance between the surface of combustible dust generating material and the sensor. It can be installed in any zone or partition wall.
The Radar sensor can operate with different electronic inserts protected by VA/AL-housing and connected antenna, antenna extensions and rinsing connections are possible.
The electronics enclosure is separately approved (BVS 14 ATEX E 121 U).

15.3 **Parameters**

15.3.1 Hardware version ≥ 2.00 ; Software version ≥ 4.00

15.3.1.1 electrical data

VEGAPULS PS62/63(*).RX***D/H/K/L/P/F***
VEGAPULS PS67(*).RX**H/P/F***
VEGAPULS PS66/68(*).RX***H/P/F***
VEGAPULS PSSR68(*).RX***H/P/F***

Supply terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version	U = 9,6 ... 30 V DC U_m = 30 V DC

VEGAPULS PS62/63(*).RX ***B/G***
VEGAPULS PS66/68(*).RX***B***
VEGAPULS PSSR68(*).RX***B***
VEGAPULS PS67(*).RX**B***

supply AC (terminals 1, 2 in the terminal compartment)	90...253 V, 50/60 Hz U_m = 253 V AC
output (terminals 5[+], 7[-] in the terminal compartment)	4...20 mA with superposed HART-signal
passive signal current, input (terminals 6[+], 7[-] in the terminal compartment)	4...20 mA with superposed HART-signal

VEGAPULS PS62/63(*).RX***I/M***
VEGAPULS PS66/68(*).RX***I***
VEGAPULS PSSR68(*).RX***I***
VEGAPULS PS67(*).RX**I***

supply (terminals 1, 2 in the terminal compartment)	AC 20...42 V, 50/60 Hz or DC 9,6...48 V U_m = 253 V AC

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output (terminals 5[+], 7[-] in the terminal compartment)	4...20 mA with superposed HART-signal
passive signal current, input (terminals 6[+], 7[-] in the terminal compartment)	4...20 mA with superposed HART-signal

VEGAPULS PS62/63(*).RX***D/H/K/L/P/F***
VEGAPULS PS66/68(*).RX***H/P/F***
VEGAPULS PSSR68(*).RX***H/P/F***
VEGAPULS PS67(*).RX**H/P/F***

adjustment and indication circuit (terminals 5, 6, 7, 8 in the electronics	in type of protection Intrinsic Safety Ex ia IIC only for connection to the intrinsically safe circuit of the compartment) associated VEGA adjustment and indication unit VEGADIS61 according to PTB 02 ATEX 2136X and BVS 05 ATEX E 023 $L_{Kabel - cable} \leq 310$ µH $C_{Kabel - cable} \leq 2.0$ µF
adjustment and indication circuit (spring contacts in the electronics compartment)	in type of protection Intrinsic Safety Ex ia IIC only for connection to the intrinsically safe VEGA adjustment and indication unit (PLICSCOM) or VEGACONNECT4 (PTB 07 ATEX 2013X)

VEGAPULS PS62/63(*).RX***G/M/B/I***
VEGAPULS PS66/68(*).RX***B/I***
VEGAPULS PSSR68(*).RX***B/I***
VEGAPULS PS67(*).RX**B/I***

adjustment and indication circuit (spring contacts in the electronics compartment)	in type of protection Intrinsic Safety Ex ia IIC only for connection to the intrinsically safe VEGA adjustment and indication unit (PLICSCOM) or VEGACONNECT4 (PTB 07 ATEX 2013X)

15.3.1.2 Thermal data

15.3.1.2.1 Permitted process temperature at the probe

VEGAPULS PS62(*).***X****

X:		
	2 = FKM(SHS FPM 70C3 GLT) + PTFE /	-40 °C...+130 °C
	3 = Kalrez 6375 + PTFE /	-20 °C...+130 °C
	6 = Kalrez 2035 + PTFE /	-15 °C...+130 °C
	7 = Kalrez 6230 + PTFE /	-15 °C...+130 °C
	A = FKM(SHS FPM 70C3 GLT)+PEEK /	-40 °C...+200 °C
	C = Kalrez 2035 + PEEK /	-15 °C...+210 °C
	E = Kalrez 6230 + PEEK /	-15 °C...+250 °C
	F = Kalrez 6375 + PEEK /	-20 °C...+250 °C
	H = graphite and ceramics /	-196 °C...+450 °C

VEGAPULS PS63(*) *X*****

X:		
	N = PTFE /	-40 °C...+200 °C
	J = PTFE	-196 °C...+200 °C
	R = PTFE (8mm)	-40 °C...+200 °C
	L = PFA	-40 °C...+200 °C
	M = PFA (8mm)	-40 °C...+200 °C
	V = PTFE + FKM	-20 °C...+130 °C
	E = PTFE + EPDM	-40 °C...+130 °C
	U = PTFE (8mm)	-196 °C...+200 °C

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VEGAPULS PS66(*).****X****

X:	2 = FKM (A+P GLT FPM 70.16-06) /	-40 °C...+150 °C
	3 = Kalrez 6375 /	-20 °C...+150 °C
	5 = EPDM /	-40 °C...+150 °C
	G = graphite and ceramics / with temperature adapter	-60 °C...+250 °C
	H = graphite and ceramics / with temperature adapter	-60 °C...+400 °C

VEGAPULS PS67(*).*X*****

X:	B = PP /	-40 °C...+80 °C

VEGAPULS PS68.***X****

X:	2 = FKM (SHS FPM 70C3 GLT) + PTFE /	-40 °C...+130 °C

VEGAPULS PSSR68(*).***X****

X:	3 = Kalrez 6375 + PTFE /	-20 °C...+130 °C
	7 = Kalrez 6230 + PTFE /	-15 °C...+130 °C
	A = FKM (SHS FPM 70C3 GLT) + PEEK /	-40 °C...+200 °C
	C = Kalrez 2035 + PEEK /	-15 °C...+210 °C
	E = Kalrez 6230 + PEEK /	-20 °C...+250 °C
	F = Kalrez 6375 + PEEK /	-20 °C...+250 °C
	H = graphite and ceramics /	-196 °C...+450 °C

15.3.1.2.2 Permitted ambient temperature at the electronics enclosure -40 °C...+ 60 °C

15.3.1.2.3 Maximum surface temperature
The max. surfacetemperature is the higher one of the following:

Maximum surface temperature at the probe

process temperature + 2 K

Maximum surface temperature at the electronics enclosure for installation in zone 20

VEGAPULS PS62/63(*).RX ***D/K/L***	ambient temperature + 86 K
VEGAPULS PS62/63/66(*).RX ***H/P/F***	ambient temperature + 86 K
VEGAPULS PS/PSSR68(*).RX ***H/P/F***	ambient temperature + 86 K
VEGAPULS PS67(*).RX**H/P/F***	ambient temperature + 86 K
VEGAPULS PS62/63(*).RX***G/M***	with thermo fuse limited to 102 °C
VEGAPULS PS62/63/66(*).RX***B/I***	with thermo fuse limited to 102 °C
VEGAPULS PS/PSSR68(*).RX***B/I***	with thermo fuse limited to 102 °C
VEGAPULS PS67(*).RX**B/I***	with thermo fuse limited to 102 °C

Maximum surface temperature at the electronics enclosure for installation in zone 20/21, 20/22, 21

VEGAPULS PS62/63(*).RX ***D/K/L***	ambient temperature + 36 K
VEGAPULS PS62/63/66(*).RX ***H/P/F***	ambient temperature + 36 K
VEGAPULS PS/PSSR68(*).RX ***H/P/F***	ambient temperature + 36 K
VEGAPULS PS67(*).RX**H/P/F***	ambient temperature + 36 K
VEGAPULS PS62/63(*).RX***G/M***	with thermo fuse limited to 102 °C
VEGAPULS PS62/63/66(*).RX***B/I***	with thermo fuse limited to 102 °C
VEGAPULS PS/PSSR68(*).RX***B/I***	with thermo fuse limited to 102 °C
VEGAPULS PS67(*).RX**B/I***	with thermo fuse limited to 102 °C

15.3.1.3 Degrees of protection according to EN 60529 IP66

15.3.2 Hardware version ≤ 1.10; Software version ≤ 3.90

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15.3.2.1 Electrical data

15.3.2.1.1 VEGAPULS PS66/68.GX ***V***
VEGAPULS PS62/63.GX ***E/V***
VEGAPULS PS67.GX**V***

supply AC 20...253 V, 50/60 Hz or
(terminals 1, 2 in the terminal compartment)
DC 20...253 V
P_{max} ≤ 1 W

output
(terminals 3, 4 in the terminal compartment)

4...20 mA with superposed HART-signal

15.3.2.1.2 VEGAPULS PS66/68(*).GK***H***
VEGAPULS PS62/63(*).GK***D/H***

Supply and signal circuit
terminals 1 [+], 2 [-] in the electronics
circuit
compartment or in the terminal
compartment regarding the
two cell enclosure version

in type of protection Intrinsic Safety Ex ia IIC
only for connection to a certified intrinsically safe

with the following maximum values:
U_i = 30 V
I_i = 131 mA
P_i = 983 mW
linear characteristics
$L_i \approx 5$ µH
C_i negligible

15.3.2.2 Thermal data

15.3.2.2.1 Permitted process temperature at the probe

VEGAPULS PS62.***X**** VEGAPULS PS62(*).***X****	X:	2 = Viton	-30 °C...+130 °C
		3 = Kalrez 6375	-20 °C...+150 °C
		4 = Viton with temperature adapter	- 40 °C...+200 °C
		5 = Kalrez 6375 with temperature adapter	-20 °C...+200 °C
		7 = Kalrez 6230 + PTFE (FDA)	-15 °C...+130 °C
		9 = Kalrez 6230 + PTFE with temperature adapter	-15 °C...+200 °C
		B = FKM(SHS FPM 70C3 GLT)+PP	-40 °C...+80 °C max. 3 bar
		D = Kalrez 6375 + PP	-40 °C...+80 °C max. 3 bar
VEGAPULS PS63.***X**** VEGAPULS PS63(*).***X****	X:	N = PTFE /	-40 °C...+200 °C
		J = PTFE	-196 °C...+200 °C
		R = PTFE (8 mm)	-40 °C...+200 °C
		U = PTFE (8 mm)	-196 °C...+200 °C
		A = TFM-PTFE(8 mm)	-40 °C...+150 °C
		P = TFM-PTFE	-40 °C...+150 °C
		G = Alloy 400 (2.4360), TFM-PTFE(8 mm)	-10 °C...+150 °C
		W = PCTFE(8 mm)	-40 °C...+200 °C
		* other horn antennas	
VEGAPULS PS67.*X***** VEGAPULS PS67(*).*X*****	X:	B = PP	-40 °C...+80 °C
		* other horn antennas	

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VEGAPULS PS66.****X****	X:	2 = Viton	-30 °C...+130 °C
VEGAPULS PS66(*).****X****		3 = Kalrez 6375	-20 °C...+150 °C
		5 = EPDM (A+P 75.5/KW75F)	-40 °C...+150 °C
		G = graphite and ceramics with temperature adapter	-60 °C...+250 °C
		H = graphite and ceramics with temperature adapter	-60 °C...+400 °C
VEGAPULS PS68.***X****	X:	2 = Viton	-40 °C...+130 °C
VEGAPULS PS68(*).***X****		3 = Kalrez 6375	-20 °C...+150 °C
		4 = Viton with temperature adapter	-40 °C..+200 °C
		5 = Kalrez 6375 with temperature adapter	-20 °C..+200 °C
		7 = Kalrez 6230 + PTFE (FDA)	-15 °C...+130 °C
		9 = Kalrez 6230 + PTFE with temperature adapter	-15 °C..+200 °C

15.3.2.2.2 The max. surface temperature is the higher one of the following:

Permitted process temperature at the probe

process temperature +2 K

Permitted ambient temperature at the electronics enclosure

VEGAPULS PS62/63/66/67/68.GX ****H****	ambient temperature + 43 K
VEGAPULS PS62/63.GX ****D****	ambient temperature + 43 K
VEGAPULS PS62/63/66/67/68.GX****V****	with thermo fuse limited to 98 °C
VEGAPULS PS62/63.GX****E****	with thermo fuse limited to 98 °C

15.3.2.3 Degrees of protection according to EN 60529 IP66

16 **Report Number**

BVS PP 04.2081 EU, as of 2016-02-28

17 **Special Conditions for Use**

17.1 Variants of the radar sensor type VEGAPULS PS6*.CK/GK******* for which aluminium is used shall be installed in such a way that sparking as a result of impact or friction between aluminium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.

17.2 The radar sensor type VEGAPULS PS6*.CK/GK******* shall be installed in such a way that contact between the measuring sensor and the tank wall will be excluded with sufficient safety considering the tank installations and the flow conditions inside the tank. This applies, in particular, to the measuring sensors which are more than 3 m long.

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18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

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.

DEKRA EXAM GmbH
Bochum, dated 2018-02-28
BVS-Hor/Hk/Nu A 20170331

Certifier

Approver

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