



EU-TYPE-EXAMINATION CERTIFICATE

(Translation)

- (1)
- (2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**
- (3) EU-Type Examination Certificate Number:

PTB 03 ATEX 2163 X

Issue: 01

- (4) Product: Radar sensors type series
VEGAPULS PS62(*).DX****H/D/V/E****resp.
VEGAPULS PS66/68(*).DX****H/V****resp.
VEGAPULS PS61/63(*).DX****H/D/VE****resp.
VEGAPULS PS65(*).DX****H/V****resp.
VEGAPULS PS62(*).DX****H/D/B/I/G/M/P/F/K/L****resp.
VEGAPULS PS66/68/PSSR68(*).DX****H/B/I/P/F****resp.
VEGAPULS PS61/63(*).DX****H/D/B/I/G/M/P/F/K/L****resp.
VEGAPULS PS65(*).DX****H/B/I/P/F****
- (5) Manufacturer: VEGA Grieshaber KG
- (6) Address: Am Hohenstein 113, 77761 Schiltach, Deutschland
- (7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 Test Report PTB Ex 18-27090.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013 EN 60079-1:2014 EN 60079-11:2012 EN 60079-26:2015
- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. 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:



1/2 G or 2 G

Ex db ia IIC T6...T1 Ga/Gb Gb

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, November 19, 2018

On behalf of PTB:

Dr.-Ing. F. Lienesch
Direktor und Professor



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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.



SCHEDULE

(13)

(14) **EU-Type Examination Certificate Number PTB 03 ATEX 2163 X, Issue: 01**

(15) Description of Product

Radar sensors in hardware version ≤ 1.10 and software version ≤ 3.90 :

Type series VEGAPULS PS62(*).DX****H/D/V/E**** resp.

VEGAPULS PS66/68(*).DX****H/V**** resp. VEGAPULS PS61/63(*).DX****H/D/V/E**** resp.

VEGAPULS PS65(*).DX****H/V****.

Radar sensors in hardware version ≥ 2.00 and software version ≥ 4.00 :

Type series VEGAPULS PS62(*).DX****H/D/B/I/G/M/P/F/K/L **** resp.

VEGAPULS PS66/68/PSSR68(*).DX****H/B/I/P/F**** resp.

VEGAPULS PS61/63(*).DX****H/D/B/I/G/M/P/F/K/L **** resp.

VEGAPULS PS65(*).DX****H/B/I/P/F****.

The radar sensors consists of an electronic housing with the corresponding analyzing electronic system with integrated HART-electronic assemblies PS60HC resp. PS60HK resp. PS60HS resp. with integrated Profibus PA-electronic assemblies resp. PS60PAC resp. PS60PAK resp. PS60PAS resp. with integrated Foundation Fieldbus-electronic assemblies resp. PS60FFC resp. PS60FFK resp. PS60FFS, used in the "Ex-i" compartment of the barriers P2-2LH resp. P3-2LH resp. KLEMP2-2LHD resp. KLEMP2-2LPA/FFD resp. P2-4LH resp. P3-4LH and P3-2LPAFF (TÜV 09 ATEX 555501 U). The named barriers are built in the "Ex-d" compartment of the enclosure. The process connection element and the measuring sensor, the antenna are used for level measurement in potentially explosive atmospheres requiring category-1/2 or category-2 equipment. The enclosure may be optionally fitted with the control and display module "PLICSCOM" or PLICSCOM(*).*B/M/U* (TÜV 15 ATEX 161127 U) or VEGACONNECT or VEGADIS-ADAPT with digital outputs for connecting to the external display VEGADIS61/81 for parameterization or visualization.

Extract from the type key:

VEGAPULS PS62/66/68/SR68(*)

<u>D</u>	*	*	*	*	*	*	*	*	*	*
a	b	c	d	e	f	g	h	i	j	K

ab: Area of validity.

DX = ATEX II 1/2G, 2G Ex db ia IIC T6...T1 Ga/Gb, Gb

DA = ATEX with additional overfill protection

DM = ATEX with ship approval

DI = IECEx Ex db ia IIC T6...T1 Ga/Gb, Gb

DK = ATEX II 1/2G, 2G Ex ia IIC T6...T1 Ga/Gb, Gb +

ATEX II 1D 1/2D 2D Ex ta/tb tb IIIC T... Da, Da/Db, Db IP66

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IECEEx Ex db ia IIC T6...T1 Ga/Gb, Gb +

IECEEx Ex t IIIC T... Da, Da/Db, Db IP66

c: Version / Material

de: Process connection / Material

f: Seal / Process temperature

g: Electronics

H = Two- wire signal HART

D = Two- wire signal HART with increased sensitivity

V = Four- wire signal HART

E = Four- wire signal HART with increased sensitivity

Hardware version ≤ 1.10, Software version ≤ 3.90:

VEGAPULS PS62(*).DX**H/D/V/E******

VEGAPULS PS66/68(*).DX**H/V******

H = Two- wire signal HART

D = Two- wire signal HART with increased sensitivity

B, I = Four- wire signal HART

G,M = Four- wire signal HART with increased sensitivity

P = Profibus PA

F = Foundation Fieldbus FF

K = Profibus PA with sensitiv electronic

L = Foundation Fieldbus FF with sensitive electronic

Hardware version ≥ 2.00, Software version ≥ 4.00:

VEGAPULS PS62(*).DX**H/D/B/I/G/M/P/F/K/L ******

VEGAPULS PS66/68/SR68(*).DX**H/B/I/P/F******

h: Enclosure / Protection

i: Cable gland / Plug connection

j: Display / Adjustment module PLICSCOM

k: Additional equipment

The full type code can be found in the safety instructions.

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VEGAPULS PS61/63/65(*). D ^{*}_a ^{*}_b ^{*}_c ^{*}_d ^{*}_e ^{*}_f ^{*}_g ^{*}_h ^{*}_i ^{*}_j

ab: Geltungsbereich / area of validity

DX = ATEX II 1/2G, 2G Ex db ia IIC T6...T1 Ga/Gb, Gb

DA = ATEX with additional overfill protection

DM = ATEX with ship approval

DI = IECEx Ex db ia IIC T6...T1 Ga/Gb, Gb

VEGAPULS PS63(*). D ^{*}_a ^{*}_b ^{*}_c ^{*}_d ^{*}_e ^{*}_f ^{*}_g ^{*}_h ^{*}_i ^{*}_j

DK = ATEX II 1/2G, 2G Ex ia IIC T6...T1 Ga/Gb, Gb +

ATEX II 1D 1/2D 2D Ex ta ta/tb tb IIIC T... Da, Da/Db, Db IP66

IECEx Ex db ia IIC T6...T1 Ga/Gb, Gb +

IECEx Ex t IIIC T... Da, Da/Db, Db IP66

c: Version / Process temperature / Material

de: Process connection / Material

f: Electronics.

H = Two- wire signal HART

D = Two- wire signal HART with increased sensitivity

V = Four- wire signal HART

E = Four- wire signal HART with increased sensitivity

Hardware version ≤ 1.10, Software version ≤ 3.90:

VEGAPULS PS61/63(*).**DX***H/D/V/E*****

VEGAPULS PS65(*).**DX***H/V*****

H = Two- wire signal HART

D = Two- wire signal HART with increased sensitivity

B, I = Four- wire signal HART

G,M = Four- wire signal HART with increased sensitivity

P = Profibus PA

F = Foundation Fieldbus FF

K = Profibus PA with sensitiv electronic

L = Foundation Fieldbus FF with sensitive electronic

Hardware version ≥ 2.00, Software version ≥ 4.00:

VEGAPULS PS61/63(*).**DX***H/D/B/I/G/M/P/F/K/L*****

VEGAPULS PS65(*).**DX***H/B/I/P/F*****

g: Enclosure / Protection

h: Cable gland / Plug connection

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- i: Display / Adjustment module PLICSCOM
- j: Additional equipment

The full type code can be found in the safety instructions.

Category-1/2 equipment

The electronics housing is installed in potentially explosive atmospheres requiring category-2 equipment. The process connectors are installed in the partition separating areas requiring category-2 or category-1 equipment. The sensor is installed in the potentially explosive atmosphere for category-1 equipment.

Category-2 equipment

The radar sensors are installed in potentially explosive atmospheres requiring category 2 equipment. For the relationship between the temperature class, the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the electronic system, reference is made as follows:

Radar sensors in Hardware version ≤ 1.10 and Software version ≤ 3.90 :

Type series VEGAPULS PS62(*).DX****H/D/V/E**** resp. VEGAPULS PS66/68(*).DX****H/V**** resp. VEGAPULS PS61/63(*).DX****H/D/V/E**** resp. VEGAPULS PS65(*).DX****H/V****.

For the relationship between the temperature class, the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the different type series VEGAPULS PS6(*).D*** must be observed from the safety instruction document nos. 35316-DE, 35317-DE, 35318-DE, 35319-DE, 35320-DE and 35322-DE.

Radar sensors in Hardware version ≥ 2.00 and Software version ≥ 4.00 :

Type series VEGAPULS PS62(*).DX****H/D/B/I/G/M/P/F/K/L **** resp. VEGAPULS PS66/68/PSSR68(*).DX****H/B/I/P/F**** resp. VEGAPULS PS61/63(*).DX****H/D/B/I/G/M/P/F/K/L **** resp. VEGAPULS PS65(*).DX****H/B/I/P/F****.

For the relationship between the temperature class, the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the different type series VEGAPULS PS6(*).DX**** must be observed from the safety instruction document nos. 40476-DE, 40477-DE, 40478-DE, 40479-DE, 40480-DE and 40481-DE.

Category 1/2-equipment

The process pressure of the media for use with required category 1/2-equipment must be in the range of 80 kPa and 110 kPa (0,8 bar and 1,1 bar).

When the radar sensors are operated with higher temperatures than indicated in the safety instructions, it shall be guaranteed by suitable measures that no ignition hazard is caused by hot surfaces. In this case the maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions.

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In the process it shall be considered that the measuring sensor (even in case of failure) does not show any self-heating and that the operator is responsible for the safe operation of the plant regarding the pressures / temperatures of the materials used.

For operating conditions without explosive mixtures, the manufacturer indications are applicable and must be considered. For further information refer to the safety instruction document.

Category 2-equipment

When the radar sensors are operated with higher temperatures than indicated in the safety instructions, it shall be guaranteed by suitable measures that no ignition hazard is caused by hot surfaces. In this case the maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions. In the process it shall be considered that the measuring sensor (even in case of failure) does not show any self-heating and that the operator is responsible for the safe operation of the plant regarding the pressures / temperatures of the materials used.

For operating conditions without explosive mixtures, the manufacturer indications are applicable and must be considered. For further information refer to the safety instruction document.

Electrical data:

Hardware version ≤ 1.10 .

Software version ≤ 3.90 :

VEGAPULS PS62(*).DX****H/D**** resp.
VEGAPULS PS66/68(*).DX****H**** resp.
VEGAPULS PS61/63(*).DX****H/D**** resp.
VEGAPULS PS65(*).DX****H****

Supply circuit
 (terminals KI1 [+], KI2 [-] in the "Ex d"-
 terminal compartment)

U = 20 V ... 36 V DC
 U_m = 253 V AC
 I = 4 ... 20 mA Two-wire-Signal HART

VEGAPULS PS62(*).DX****V/E**** resp.
VEGAPULS PS66/68(*).DX****V**** resp.
VEGAPULS PS61/63(*).DX****V/E**** resp.
VEGAPULS PS65(*).DX****V****

Supply circuit
 (terminals KI1 [+], KI2 [-] in the "Ex d"-
 terminal compartment)

U = 20 V ... 253 V AC
 U_m = 253 V AC

Signal-circuit
 (terminals KL3 [+], KL4 [-] in the "Ex
 d"-terminal compartment)

I = 4 ... 20 mA Four- wire-Signal HART
 U_m = 253 V AC

VEGAPULS PS62(*).DX****H/D/V/E**** resp.
VEGAPULS PS66/68(*).DX****H/V**** resp.
VEGAPULS PS61/63(*).DX****H/D/V/E**** resp.
VEGAPULS PS65(*).DX****H/V****

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 03 ATEX 2163 X, Issue: 01

Control and display circuit (terminals 5,6,7,8 or plug-in bushing in the "Ex i" connection compartment)

In type of protection Intrinsic Safety Ex ia IIC.

Only for connection to the intrinsically safe supply and signal circuit of the external VEGADIS61/81 (PTB 02 ATEX 2136).

The rules for interconnection of intrinsically safe circuits between the radar sensors VEGAPULS PS6*(*)DX*** and the external VEGADIS61/81 display unit are complied with if the total inductance and capacitance of the connecting line between the radar sensors VEGAPULS PS6*(*)DX*** and VEGADIS61 ($L_{\text{cable}} = 100 \mu\text{H}$ and $C_{\text{cable}} = 2.8 \mu\text{F}$) is not exceeded.

By using of the provided VEGA connecting cable between VEGAPULS PS6*(*)DX*** and the external display unit VEGADIS61/81 the following cable inductance and cable capacitance are taken into consideration from a length $> 50 \text{ m}$:

$L_i' = 0,62 \mu\text{H/m}$

$C_{i \text{ core/core}} = 132 \text{ pF/m}$

$C_{i \text{ core/screen}} = 208 \text{ pF/m}$

$C_{i \text{ screen/screen}} = 192 \text{ pF/m}$

Control and display module circuit (spring contacts in the "Ex i" connection compartment)

In type of protection Intrinsic Safety Ex ia IIC.

Only for connection to the VEGA control and display module PLICSCOM or VEGACONNECT (PTB 07 ATEX 2013 X).

Communication circuit I²C-bus socket in the "Ex i" terminal compartment)

In type of protection Intrinsic Safety Ex ia IIC.

Only for connection to the intrinsically safe signal circuit of a VEGA interface converter VEGACONNECT (PTB 01 ATEX 2007, PTB 07 ATEX 2013X).

The metal elements of the radar sensors type series VEGAPULS PS6*(*)DX(*)***H/D/V/E**** are electrically connected to the earth terminals.

In the versions of the radar sensors VEGAPULS PS6*(*)DX(*)***H/D/V/E**** Hardware version ≤ 1.10 , Software version ≤ 3.90 the intrinsically safe circuits are earthed and connected to the external and internal earthing terminal.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 03 ATEX 2163 X, Issue: 01

Electrical data:

Hardware version ≥ 2.00 .

Software version ≥ 4.00 :

VEGAPULS PS62(*).DX****H/D**** resp.
VEGAPULS PS66/68/PSSR68(*).DX****H**** resp.
VEGAPULS PS61/63(*).DX****H/D**** resp.
VEGAPULS PS65(*).DX****H****

Supply circuit (terminals KI1
 [+], KI2 [-]
 in the "Ex d"-terminal
 compartment)

U = 14 V ... 36 V DC
 U_m = 253 V AC
 I = 4 ... 20 mA Two- wire-Signal HART

VEGAPULS PS62(*).DX****P/F/K/L**** resp.
VEGAPULS PS66/68/PSSR68(*).DX****P/F**** resp.
VEGAPULS PS61/63(*).DX****P/F/K/L**** resp.
VEGAPULS PS65(*).DX****P/F****

Supply circuit (terminals KI1
 [+], KI2 [-]
 in the "Ex d"-terminal
 compartment)

U = 14 V ... 32 V DC
 U_m = 253 V AC
 Profibus PA/FF

VEGAPULS PS62(*).DX****B/G**** resp.
VEGAPULS PS66/68/PSSR68(*).DX****B**** resp.
VEGAPULS PS61/63(*).DX****B/G**** resp.
VEGAPULS PS65(*).DX****B****

Supply circuit (terminals KI1
 [+], KI2 [-]
 in the "Ex d"-terminal
 compartment)

90 ... 250 V AC
 U_m = 253 V AC

VEGAPULS PS62(*).DX****I/M**** resp.
VEGAPULS PS66/68/PSSR68(*).DX****I**** resp.
VEGAPULS PS61/63(*).DX****I/M**** resp.
VEGAPULS PS65(*).DX****I****

Supply circuit (terminals KI1
 [+], KI2 [-]
 in the "Ex d"-terminal
 compartment)

U = 9,6 V ... 48 V DC or
 U = 20 V ... 42 V AC
 U_m = 253 V AC

VEGAPULS PS62(*).DX****B/I/G/M**** resp.
VEGAPULS PS66/68/PSSR68(*).DX****B/I**** resp.
VEGAPULS PS61/63(*).DX****B/I/G/M**** resp.
VEGAPULS PS65(*).DX****B/I****

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 03 ATEX 2163 X, Issue: 01

Active signal-circuit (terminals KL5 [+], KL7 [-] in the "Ex d"-terminal compartment) $I = 4 \dots 20 \text{ mA}$ Four-wire-Signal HART
 $U_m = 60 \text{ V AC/DC}$

Passive signal-circuit (terminals KL6 [+], KL7 [-] in the "Ex d"-terminal compartment) $I = 4 \dots 20 \text{ mA}$ Four-wire-Signal HART
 $U_m = 60 \text{ V AC/DC}$

VEGAPULS PS62(*).DX****H/D/P/F/K/L **** resp.
VEGAPULS PS66/68/PSSR68(*).DX****H/P/F**** resp.
VEGAPULS PS61/63(*).DX****H/D/P/F/K/L **** resp.
VEGAPULS PS65(*).DX****H/P/F****

Control and display circuit (terminals 5,6,7,8 or plug-in bushing in the "Ex i" connection compartment) In type of protection Intrinsic Safety Ex ia IIC. Only for connection to the intrinsically safe supply and signal circuit of the external VEGADIS61/81 (PTB 02 ATEX 2136).

The rules for interconnection of intrinsically safe circuits between the radar sensors VEGAPULS PS6(*).DX**** and the external VEGADIS61/81 display unit are complied with if the total inductance and capacitance of the connecting line between the radar sensors VEGAPULS PS6(*).DX**** and VEGADIS61 ($L_{\text{cable}} = 310 \mu\text{H}$ and $C_{\text{cable}} = 2 \mu\text{F}$) is not exceeded.

By using of the provided VEGA connecting cable between VEGAPULS PS6(*).DX**** and the external display unit VEGADIS61/81 the following cable inductance and cable capacitance are taken into consideration from a length $> 50 \text{ m}$:

$L_i' = 0,62 \mu\text{H/m}$
 $C_{i' \text{ core/core}} = 132 \text{ pF/m}$
 $C_{i' \text{ core/screen}} = 208 \text{ pF/m}$
 $C_{i' \text{ screen/screen}} = 192 \text{ pF/m}$

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VEGAPULS PS62(*)..DX**B//G/M**** resp.**
VEGAPULS PS66/68/PSSR68(*)..DX**B//**** resp.**
VEGAPULS PS61/63(*)..X**B//G/M**** resp.**
VEGAPULS PS65(*)..DX**B//******

Control and display module
circuit
(spring contacts in the "Ex i"
connection compartment)

In type of protection Intrinsic Safety Ex ia IIC.
Only for connection to the intrinsically safe supply and
signal circuit of the external VEGADIS61/81 (PTB 02
ATEX 2136) or for connection to the intrinsically safe
supply and signal circuit of the external VEGADIS61/81
(PTB 02 ATEX 2136) via the adapter VEGADIS-ADAPT.

The rules for interconnection of intrinsically safe circuits
between the radar sensors VEGAPULS PS6*(*)..D***
and the external VEGADIS61/81 display unit are
complied with if the total inductance and capacitance of
the connecting line between the radar sensors
VEGAPULS PS6*(*)..D*** and VEGADIS61 (L_{cable} = 310
μH and C_{cable} = 2 μF) is not exceeded.

By using of the provided VEGA connecting cable
between VEGAPULS PS6*(*)..DX*** and the external
display unit VEGADIS61/81 the following cable
inductance and cable capacitance are taken into
consideration from a length > 50 m:

$L_i' = 0,62 \mu\text{H/m}$
 $C_{i \text{ core/core}}' = 132 \text{ pF/m}$
 $C_{i \text{ core/screen}}' = 208 \text{ pF/m}$
 $C_{i \text{ screen/screen}}' = 192 \text{ pF/m}$

VEGAPULS PS62(*)..DX**H/D/P/F/K/L**** resp.**
VEGAPULS PS66/68/PSSR68(*)..DX**H/P/F**** resp.**
VEGAPULS PS61/63(*)..DX**H/D/P/F/K/L**** resp.**
VEGAPULS PS65(*)..DX**H/P/F****.**

Control and display module
circuit
(spring contacts in the "Ex i"
connection compartment)

in type of protection Intrinsic Safety Ex ia IIC.
Only for connection to the VEGA control and display
module PLICSCOM or VEGACONNECT
(PTB 07 ATEX 2013 X).

The metal elements of the radar sensors type series VEGAPULS PS6* are electrically connected
to the earth terminals.

In the versions of the radar sensors VEGAPULS PS6*(*)..DX(*)***D/H/K/L/P/F/**** the intrinsically
safe signal circuits are galvanically isolated from the supply circuit up to a peak value of the
nominal voltage of 375 V.

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In the versions of the radar sensors VEGAPULS PS62(*)..DX(*)***G/M/B/I****, Hardware version ≥ 2.00 and Software version ≥ 4.00 the intrinsically safe circuits are earthed and connected to the external and internal earthing terminal.

Modifications to the EC-Type-Examination Certificate:

Update to newest standard versions of EN 60079-0, EN 60079-1, EN 60079-11 and EN 60079-26:2015.

Modification of model coding in the EU- Type Examination Certificate in protection type "Ex db ia":

Radar sensors in Hardware version ≤ 1.10 and Software version ≤ 3.90 :

Type series VEGAPULS PS62(*)..DX****H/D/V/E**** resp. VEGAPULS PS66/68(*)..DX****H/V**** resp. VEGAPULS PS61/63(*)..DX***H/D/V/E**** resp. VEGAPULS PS65(*)..DX***H/V****.

Radar sensors in Hardware version ≥ 2.00 and Software version ≥ 4.00 :

Type series VEGAPULS PS62(*)..DX****H/D/B/I/G/M/P/F/K/L **** resp. VEGAPULS PS66/68/PSSR68(*)..DX****H/B/I/P/F**** resp. VEGAPULS PS61/63(*)..DX***H/D/B/I/G/M/P/F/K/L **** resp. VEGAPULS PS65(*)..DX***H/B/I/P/F****.

Consideration of the EU-Type Examination Certificate TÜV 15 ATEX 161127 U issue no. 00 for the inclusion of display – and adjustment module PLICSCOM or PLICSCOM(*)..*B/W/U* (TÜV 15 ATEX 161127 U) resp. via the adapter VEGADIS-ADAPT.in the "Ex-i" compartment with additional operating modes.

Consideration of issue 01 of the EU-Type Examination Certificate TÜV 09 ATEX 555501 U with changed glass feed through bushing for the electronic housing with "Ex-d" compartment.

(16) Test Report PTB Ex18-27090

(17) Specific conditions of use

- 1) The radar sensors type series VEGAPULS PS61/62/63/65/66/68(*)..DX(*)***H/D/V/E**** and VEGAPULS PS61/62/63/65/66/68/SR68(*)..DX(*)***H/D/B/I/G/M /P/K/F/L **** which include the material aluminum, shall be installed in such a way that sparking as a result of impact or friction between aluminum and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.
- 2) The radar sensors with metal enclosure with display window, with enclosure parts made of plastic as well as sensors including surfaces that can become charged electrostatically (note warning label).

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- 3) The radar sensors in the versions with standpipe or antenna extension shall be installed in such a way that contact between the antenna and the tank wall will be excluded with sufficient safety, considering the tank installations and the flow conditions inside the tank.
- 4) When used as category 1/2 equipment, the radar sensors shall be connected to the equipotential bonding conductor (contact resistance $\leq 1\text{M}\Omega$) (e.g. using the earthing terminal) in order to prevent metal elements from being charged electrostatically.
- 5) For applications where equipment of category 1/2 is required, all parts of the radar sensors which are in contact with the medium must only be used in such media, against which the materials are sufficiently resistant.
- 6) For the radar sensors in the version with ball valve, it must be observed that the ball valve is closed before the flange connection is disconnected.
- 7) For the radar sensors in the version with flushing connection, it must be observed that the Radar sensors, when operating as category 1/2 equipment, have protection class IP 67 at the connection to the non-return valve. After removing the check valve or the rinsing device on the non-return valve, the opening must be sealed with a suitable screw plug so that protection class IP 67 is maintained.
- 8) The radar sensors in the version with swiveling holder shall be installed in such a way that using the radar sensors as an equipment of category 1/2 after the alignment of the antenna by means of the swiveling holder and after screw connection of the clamp flange the degree of protection IP 67 is kept.
- 9) The flameproof terminal compartment with integrated electronics shall be connected by means of suitable cable entries and conduit systems, which meet the requirements of EN 60079-0 and EN 60079-1 and for which a separate examination certificate has been issued.
- 10) The connecting cables, the cable entries and sealing plugs or conduit-sealing devices must be suitable for the lowest ambient temperature.
- 11) Cable entries and sealing plugs of simple design shall not be used. Should the flameproof terminal compartment with integrated electronics be connected by means of a conduit entry which has been approved for this purpose, the required sealing device shall be provided directly at the housing.
- 12) Non-used openings of the flameproof terminal box of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to EN 60079-0 and EN 60079-1. The factory mounted filler plug, which is an inherent part of the flameproof terminal box, or the filler plug with the article no. 2.30690 are permissible.
- 13) The connecting line of the flameproof terminal compartment with integrated electronic shall be installed to provide for permanent wiring and sufficient protection against mechanical damage.
- 14) The terminal for the equipotential bonding of the flameproof terminal compartment is to be connected with the local equipotential bonding of the hazardous area.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 03 ATEX 2163 X, Issue: 01

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, November 19, 2018

On behalf of PTB:

Dr.-Ing. F. Lienesch
Direktor und Professor



