



EU-TYPE-EXAMINATION CERTIFICATE (Translation)

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

PTB 14 ATEX 2007 X

Issue: 03

- (4) Product: Level measuring devices based on microwave technology
VEGAPULS PS69(*)**.AC****HX/Z****(*)** and
VEGAPULS PS64(*)**.AC****HX****(*)**
- (5) Manufacturer: VEGA Grieshaber KG
- (6) Address: Am Hohenstein 113, 77761 Schiltach, Germany
- (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 20-29119.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018, 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:



II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Gb, Gc

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, July 28, 2020

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.

Physikalisch-Technische Bundesanstalt  Bundesallee 100  38116 Braunschweig  GERMANY



SCHEDULE

(13)

(14) **EU-Type Examination Certificate Number PTB 14 ATEX 2007 X, Issue: 03**

(15) Description of Product

The level measuring devices based on microwave technology type series VEGAPULS PS69(*).AC****HX****(*) (*) with electronic modules PS60HW resp. PS69HW or VEGAPULS PS69(*).AC****HZ****(*) (*) with additional current output module PLICSZEZSA, as well as VEGAPULS PS64(*).AC****HX****(*) (*) with electronic module PS64HW are used for monitoring and control of filling levels in explosion hazardous areas, where devices of Category 1 or 1/2 or 2 are required.

The housing can be equipped with display module PLICSCOM or PLICSCOM(*).B/W/U/C* (TÜV 15 ATEX 161127 U issue 01) or module VEGACONNECT for parametrization or visualization. Optionally the external display module VEGADIS61/81 can be connected.

The level measuring devices consist of an electronic housing including the operation module PS60HW resp. PS69HW resp. PS64HW optional with module PLICSZEZSA providing an additional 4...20 mA current output for VEGAPULS PS69(*).AC****HZ****(*) (*) and the communication module, the process connection assemblies and the sensor and additional antenna variants.

Type key:

PS64(*) . * * * * * H X * * * * (*) (*)
 a b

ab: Area of validity.

- AC** = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.
- AO** = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb with ship approval
- AU** = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb + Overfill protection (WHG, VLAREM)
- AH** = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb or ATEX II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T* Da, Da/Db, Da/Dc, Db IP66 (with separate certificate)
- VC** = Combination ATEX, FM, CSA, IECEx, II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb
- VO** = Combination ATEX, FM, CSA, ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb with ship approval

The complete type key must be observed from the safety instruction documents.

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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 TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

PS69(*). * * * * * H Z/X * * * * * (*) (*)
 a b

ab:	Area of validity.	
AC	=	ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.
AH	=	ATEX II 1 G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb or ATEX II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T... (see safety instructions) Da, Da/Db, Da/Dc, Db
VC	=	Combination ATEX, FM, CSA, IECEx II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb

The complete type key must be observed from the safety instruction documents.

Category 1-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Category 1-equipment.

Category 1/2-equipment

The electronic housing is installed in potentially explosive atmospheres requiring Category 2-equipment. The process connection is installed across the boundary wall between an area requiring Category 1- and Category 2-equipment. The sensor is installed in the potentially explosive atmosphere for Category 1-equipment.

Category 2-equipment

The level measuring devices 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:

Type series VEGAPULS PS64(*) AC****HX*****(*) (*):

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 PS64 must be observed from the safety instruction document no. 52999, clause 12.

Type series VEGAPULS PS69(*) AC****HX*****(*) (*):

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 PS69 must be observed from the safety instruction document no. 49373, clause 12.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

Category 1-equipment

For applications requiring Category 1-equipment, the media process pressure has to be between 80 kPa and 110 kPa (0,8 bar and 1,1 bar).

For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer. For further information refer to the safety instruction document.

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 level measuring devices 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's indications are applicable and must be considered. For further information refer to the safety instruction document.

Category 2-equipment

The maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions.

The allowed operational temperatures and pressures without explosive atmosphere must be considered from the manufacturer's documentation and safety instructions. For further information refer to the safety instruction document.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

Electrical data:

Supply and signal circuit I:

(Terminals 1[+], 2[-] in the connection compartment of the 2-chamber housing)
VEGAPULS PS69(*)..AC****HX*****(*)
and PS64(*)..AC****HX*****(*)

In type of protection Intrinsic Safety Ex ia IIC

For connection to a certified intrinsically safe circuit with linear characteristics.

Maximum values :

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

The effective inner capacitance is negligible small.

The effective inner inductance is $L_i = 10 \mu\text{H}$.

In the version with permanently mounted connection cable,

$C_{i\text{-wire/wire}} = 159 \text{ pF/m}$,

$C_{i\text{-wire/screen}} = 270 \text{ pF/m}$ and

$L_i = 0.55 \mu\text{H/m}$ must be taken into account.

Supply and signal circuit II:

(Terminals 7[+], 8[-] in the connection compartment of the 2-chamber housing)
VEGAPULS PS69(*)..AC****HZ*****(*)

In type of protection Intrinsic Safety Ex ia IIC

For connection to a certified intrinsically safe circuit with linear characteristics.

Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 901 \text{ mW}$

The effective inner capacitance is negligible small.

The effective inner inductance is $L_i = 5 \mu\text{H}$.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

Display and adjustment circuit:
Terminals 5, 6, 7, 8 in electronic compartment or plug connection of the VEGAPULS PS69(*)..AC****HX/Z*****(*)(*) and PS64(*)..AC****HX*****(*)(*)

In type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe circuit of the associated external indicating unit VEGADIS 61/81(PTB 02 ATEX 2136 X).
The rules for the interconnection of intrinsically safe circuits between the level measuring devices type series VEGAPULS PS 69*** / PS 64*** and the external display and adjustment unit VEGADIS61/81 are complied with if the total inductance and total capacitance of the connecting line between the level measuring devices type series VEGAPULS PS 69*** / PS 64*** and the external display unit VEGADIS 61/81 ($L_{\text{cable}} = 212\mu\text{H}$ and $C_{\text{cable}} = 1.98\mu\text{F}$) is not exceeded.

When using the supplied connection cable between the level measuring devices type series VEGAPULS PS 69*** / PS64*** and the external indicating unit VEGADIS 61/81, the following values for the cable inductance L_i and cable capacitance C_i must be taken into account.

$$L_i = 0.62 \mu\text{H/m}$$

$$C_{\text{wire/wire}} = 132 \text{ pF/m}$$

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

Display and adjustment circuit:
spring contacts in electronic compartment or connection compartment of the VEGAPULS PS69(*)..AC****HX/Z*****(*)(*) and PS64(*)..AC****HX*****(*)(*)

In type of protection intrinsic safety Ex ia IIC
For connection to the indicating and adjustment module PLICSCOM or PLICSCOM(*)..*B/W/U/C* (TUV 15 ATEX 161127 U issue 01) or VEGACONNECT (PTB 07 ATEX 2013 X).

The metal elements of the level measuring devices based on microwave technology type series VEGAPULS PS69*** / PS64*** are electrically connected to the earth terminals.

The intrinsically safe circuits are safely electrically isolated from elements that may be earthed.

The intrinsically safe signal and supply circuits are safely galvanic isolated from each other.

Modifications to existing issue no. 1 of EU-Type Examination Certificate:

Application of EN IEC 60079-0:2018

Adaptation of the "Special Conditions".

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

(16) Test Report PTB Ex 20-29119

(17) Specific conditions of use

- 1) If used as a category-1 equipment the level measuring devices based on microwave technology type series VEGAPULS 69*** / VEGAPULS PS64*** with integrated electronic assembly which include the material aluminum/titanium, shall be installed in such a way that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.
- 2) The level measuring devices with plastic enclosure, with metal enclosure with inspection window or none grounded metallic parts as well as components of the antennas out of plastic include surfaces that can become charged electrostatically (note warning label and the safety instructions No.: 49373, 52999).
- 3) When used as a category-1 or categorie-1/2 equipment, the level measuring devices shall be connected to the equipotential bonding conductor (contact resistance $\leq 1M\Omega$) (e.g. using the earth terminal) in order to prevent metal elements from being charged electrostatically.
- 4) In applications requiring category 1- or category 1/2-equipment, all parts of the level measuring devices that come in contact with media, shall only be used in such media against which the materials are sufficiently resistant.
- 5) With the level measuring devices in the version with rinsing connection it is to be made certain that using the level measuring devices as an equipment of category 1/2 the degree of protection IP 67 at the connection to the reflux valve is guaranteed. After removing the reflux valve or the rinsing system at the reflux valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.
- 6) The level measuring devices in the version with swiveling holder used as a category 1/2 equipment shall be installed in such a way, that the degree of protection IP 67 is kept after alignment of the antenna by means of the swiveling holder and after fastening the screw connection of the clamp flange.
- 7) For applications that require category 1/2G devices, the following level measuring devices can be supplied with an intrinsically safe supply and signal circuit that meets the Type of Protection Intrinsic Safety with Level of Protection "ib":

VEGAPULS PS64(*).ICD/U/G/I****HX*****(*)^(*)
VEGAPULS PS64(*).IOD/U/G/I****HX*****(*)^(*)
VEGAPULS PS64(*).IUD/U/G/I****HX*****(*)^(*)
VEGAPULS PS64(*).IHD/U/G/I****HX*****(*)^(*)
VEGAPULS PS64(*).VCD/U/G/I****HX*****(*)^(*)
VEGAPULS PS64(*).VOD/U/G/I****HX*****(*)^(*)
VEGAPULS PS69(*).ICU****HX*****(*)^(*)
VEGAPULS PS69(*).ICU****HZ*****(*)^(*)
VEGAPULS PS69(*).IHU****HX*****(*)^(*)
VEGAPULS PS69(*).IHU****HZ*****(*)^(*)
VEGAPULS PS69(*).VCU****HX*****(*)^(*)
VEGAPULS PS69(*).VCU****HZ*****(*)^(*)

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 03

For the level measuring devices type series VEGAPULS PS69(*)... type code position a "scope V" and position b "approval H" additional certificates were issued.

For the level measuring devices type series VEGAPULS PS64(*)... type code position a "scope V" and position b "approval O, U, H" additional certificates were issued.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, July 28, 2020


Dr.-Ing. F. Lienesch
Direktor und Professor





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 14 ATEX 2007 X

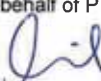
Issue: 02

- (4) Product: Level measuring devices based on microwave technology VEGAPULS PS69(*).AC****HX/Z****(*) and VEGAPULS PS64(*).AC****HX****(*)
- (5) Manufacturer: VEGA Grieshaber KG
- (6) Address: Am Hohenstein 113, 77761 Schiltach, Germany
- (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 18-27103.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013, EN 60079-26:2015, EN 60079-11:2012
- (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:

 **II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Gb, Gb**

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, April 26, 2018


Dr.-Ing. F. Lienssen
Direktor und Professor



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SCHEDULE

(13)

(14) **EU-Type Examination Certificate Number PTB 14 ATEX 2007 X, Issue: 02**

(15) Description of Product

The level measuring devices based on microwave technology type series VEGAPULS PS69(*).AC****HX****(*)(*) with electronic modules PS60HW resp. PS69HW or VEGAPULS PS69(*).AC****HZ****(*)(*) with additional current output module PLICSZEZSA, as well as VEGAPULS PS64(*).AC****HX****(*)(*) with electronic module PS64HW are used for monitoring and control of filling levels in explosion hazardous areas, where devices of Category 1 or 1/2 or 2 are required.

The housing can be equipped with display module PLICSCOM or PLICSCOM(*).B/W/U/C* (TÜV 15 ATEX 161127 U) or module VEGACONNECT for parametrization or visualization. Optionally the external display module VEGADIS61/81 can be connected.

The level measuring devices consist of an electronic housing including the operation module PS60HW resp. PS69HW resp. PS64HW optional with module PLICSZEZSA providing an additional 4...20 mA current output for VEGAPULS PS69(*).AC****HZ****(*)(*) and the communication module, the process connection assemblies and the sensor and additional antenna variants.

Type key:

PS64(*). * * * * * H X * * * * * (*) (*)
 a b

ab: Area of validity

- AC = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.
- IC = IECEx Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.
- AO = ATEX with ship approval.
- AH = 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.
- AU = ATEX with additional overfill protection. (WHG/VLAREM).
- VC = ATEX, FM, CSA, IECEx

The complete type key must be observed from the safety instruction documents.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

PS69(*). * * * * * H Z/X - - * * * * (*) (*)
a b

ab: Area of validity.

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

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

AH = 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.

VC = ATEX, FM, CSA, IECEx.

Category 1-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Category 1-equipment.

Category 1/2-equipment

The electronic housing is installed in potentially explosive atmospheres requiring Category 2-equipment. The process connection is installed across the boundary wall between an area requiring Category 1- and Category 2-equipment. The sensor is installed in the potentially explosive atmosphere for Category 1-equipment.

Category 2-equipment

The level measuring devices 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:

Type series VEGAPULS PS64(*)AC**HX*****(*)(*)**:

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 PS64(*)AC****HX*****(*)(*) must be observed from the safety instruction document no. 52999, clause 12.

Type series VEGAPULS PS69(*)AC**HX*****(*)(*)**:

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 PS69(*)AC****HX*****(*)(*) must be observed from the safety instruction document no. 49373, clause 12.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

Category 1-equipment

For applications requiring Category 1-equipment, the media process pressure has to be between 80 kPa and 110 kPa (0,8 bar and 1,1 bar).

For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer. For further information refer to the safety instruction document.

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 level measuring devices 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's indications are applicable and must be considered. For further information refer to the safety instruction document.

Category 2-equipment

The maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions.

The allowed operational temperatures and pressures without explosive atmosphere must be considered from the manufacturer's documentation and safety instructions. For further information refer to the safety instruction document.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

Electrical data:

Supply and signal circuit I:
(Terminals 1[+], 2[-] in the connection
compartment of the 2-chamber housing)
VEGAPULS PS69(*).AC****HX*****(*)(*
and PS64(*).AC****HX*****(*)(*).

In type of protection intrinsic safety Ex ia IIC
For connection to a certified intrinsically safe circuit
with linear characteristics.

Maximum values :

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

The effective inner capacitance is negligible small.
The effective inner inductance is $L_i \leq 10 \mu\text{H}$.
In the version with permanently mounted connection
cable,
 $C_{i\text{-wire/wire}} = 159 \text{ pF/m}$,
 $C_{i\text{-wire/screen}} = 270 \text{ pF/m}$ and
 $L_i \leq 0.55 \mu\text{H/m}$ must be taken into account.

Supply and signal circuit II:
(Terminals 7[+], 8[-] in the connection
compartment of the 2-chamber housing)
VEGAPULS PS69(*).AC****HZ*****(*)(*

In type of protection intrinsic safety Ex ia IIC
For connection to a certified intrinsically safe circuit
with linear characteristics.

Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 901 \text{ mW}$

The effective inner capacitance is negligible small.
The effective inner inductance is $L_i \leq 5 \mu\text{H}$.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

Display and adjustment circuit:
Terminals 5, 6, 7, 8 in electronic compartment or plug connection of the VEGAPULS PS69(*)**.AC****HX/Z*****(*)**(*) and PS64(*)**.AC****HX*****(*)**(*)**.**

In type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe circuit of the associated external indicating unit VEGADIS 61/81(PTB 02 ATEX 2136 X).
The rules for the interconnection of intrinsically safe circuits between the level measuring devices type series VEGAPULS PS 69*** / PS 64*** and the external display and adjustment unit VEGADIS61/81 are complied with if the total inductance and total capacitance of the connecting line between the level measuring devices type series VEGAPULS PS 69*** / PS 64*** and the external display unit VEGADIS 61/81 ($L_{\text{cable}} = 212\mu\text{H}$ and $C_{\text{cable}} = 1.98\mu\text{F}$) is not exceeded.

When using the enclosed connection cable between the level measuring devices type series VEGAPULS PS 69*** / PS64*** and the external indicating unit VEGADIS 61/81, the following values for the cable inductance L_i and cable capacitance C_i must be taken into account.

$L_i = 0.62\mu\text{H/m}$

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

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

Display and adjustment circuit:
spring contacts in electronic compartment or connection compartment of the VEGAPULS PS69(*)**.AC****HX/Z*****(*)**(*) and PS64(*)**.AC****HX*****(*)**(*)**.**

In type of protection intrinsic safety Ex ia IIC
For connection to the indicating and adjustment module PLICSCOM or PLICSCOM(*)**.B/W/U/C*** (TUV 15 ATEX 161127 U) or VEGACONNECT (PTB 07 ATEX 2013 X).

The metal elements of the level measuring devices based on microwave technology type series VEGAPULS PS69*** / PS64*** are electrically connected to the earth terminals.

The intrinsically safe circuits are safely electrically isolated from elements that may be earthed.

The intrinsically safe signal and supply circuits are safely galvanic isolated from each other.

Modifications to existing issue no. 1 of EU-Type Examination Certificate:

The changes concern the internal electronic with alternate HF-module and modified PLL boards.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

Declaration of type key in the annex of certificate and types in section electrical data in the safety instructions with the variants of VEGAPULS PS64(*)*.AVU/H****H*****(*)*(*) and VEGAULS PS69(*)*.AVH****H*****(*)*(*) in protection type "Ex ia". These are identical with the already included variants of VEGAPULS PS64(*)*.AVC/O****H*****(*)*(*) and VEGPULS 69(*)*.AC****H*****(*)*(*) in protection type "Ex ia", but fulfill at the same time the requirements of further supplementary approvals (overfill protection, protection by enclosure).

The inclusion of the 11/2" threaded antenna variant for VEGAPULS PS69***, already included for VEGAPULS PS64***.

The additional aseptic-process connections for VEGAPULS PS64***.

The additional process connections for the operation at low process medium temperatures down to minus 196 °C.

Special flange adapting an ASME 4" 150lbs flange to a DIN/EN DN100 PN16 flange.

Consideration of EU Type Examination Certificate no. TÜV 15 ATEX 161127 U, issue no. 00 for the display – and adjustment module PICSCOM(*)*.B/W/U/C**.

(16) Test Report PTB Ex 18-27103

(17) Specific conditions of use

- 1) If used as a category-1 equipment the level measuring devices based on microwave technology type series VEGAPULS 69*** / VEGAPULS PS64*** with integrated electronic assembly which include the material aluminum/titanium, shall be installed in such a way that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.
- 2) The level measuring devices with plastic enclosure, with metal enclosure with inspection window as well as components of the antennas out of plastic include surfaces that can become charged electrostatically (note warning label).
- 3) When used as a category-1 or categorie-1/2 equipment, the level measuring devices shall be connected to the equipotential bonding conductor (contact resistance $\leq 1M\Omega$) (e.g. using the earth terminal) in order to prevent metal elements from being charged electrostatically.
- 4) In applications requiring category 1- or category 1/2-equipment, all parts of the level measuring devices that come in contact with media, shall only be used in such media against which the materials are sufficiently resistant.
- 5) With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of category 1/2 the degree of protection IP 67 at the connection to the return valve is guaranteed.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 02

After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.

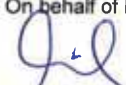
6) The level measuring devices in the version with swiveling holder used as a category 1/2 equipment shall be installed in such a way, that the degree of protection IP 67 is kept after alignment of the antenna by means of the swiveling holder and after fastening the screw connection of the clamp flange.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, April 26, 2018



Dr.-Ing. F. Lienesch
Direktor und Professor





EU-TYPE-EXAMINATION CERTIFICATE

(Translation)

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

PTB 14 ATEX 2007 X

Issue: 01

- (4) Product: Level measuring devices based on microwave technology
VEGAPULS PS69(*)**.AC****HX/Z****(*)**(*) and
VEGAPULS PS64(*)**.AC****HX****(*)**(*)
- (5) Manufacturer: VEGA Grieshaber KG
- (6) Address: Am Hohenstein 113, 77761 Schiltach, Germany
- (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 16-26034.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013, EN 60079-26:2015, EN 60079-11:2012
- (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:



II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Gb/Gb, Gb

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, July 25, 2016

On behalf of PTB


Dr.-Ing. F. Liesch
Regierungsdirektor



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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 14 ATEX 2007 X, Issue: 01**

(15) Description of Product

The level measuring devices based on microwave technology type series VEGAPULS PS69(*).AC****HX*****(*)(*) with electronic modules PS60HW resp. PS69HW or VEGAPULS PS69(*).AC****HZ*****(*)(*) with additional current output module PLICSZEZSA, as well as VEGAPULS PS64(*).AC****HX*****(*)(*) with electronic module PS64HW are used for monitoring and control of filling levels in explosion hazardous areas, where devices of Category 1 or 1/2 or 2 are required.

The housing can be equipped with display module PLICSCOM or PLICSCOM(*)*.BW/U (TÜV 15 ATEX 161127 U) or module VEGACONNECT for parametrization or visualization. Optionally the external display module VEGADIS61/81 can be connected.

The level measuring devices consist of an electronic housing including the operation module PS60HW resp. PS69HW resp. PS64HW optional with module PLICSZEZSA providing an additional 4...20 mA current output for VEGAPULS PS69(*).AC****HZ*****(*)(*) and the communication module, the process connection assemblies and the sensor and additional antenna variants.

Type key:

PS64(*). $\frac{*}{a} \frac{*}{b} \frac{*}{-} \frac{*}{-} \text{HX*****(*)} (*)$

from: approval variant

AC	=	ATEX
IC	=	IECEX
VC	=	ATEX, IECEX, FM, CSA
A/I/VO	=	Ship

PS69(*). $\frac{*}{a} \frac{*}{b} \frac{*}{-} \frac{*}{-} \text{HZ/X*****(*)} (*)$

from: approval variant

AC	=	ATEX
IC	=	IECEX
VC	=	ATEX, IECEX, FM, CSA

The complete type key must be observed from the safety instruction documents.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 01

Category 1-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Category 1-equipment.

Category 1/2-equipment

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

Category 2-equipment

The level measuring devices 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:

Type series VEGAPULS PS64(*) .AC****HX****(*) (*):

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 PS64(*) .AC****HX****(*) (*) must be observed from the safety instruction document no. 52999, clause 9.

Type series VEGAPULS PS69(*) .AC****HX****(*) (*):

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 PS69(*) .AC****HX****(*) (*) must be observed from the safety instruction document no. 49373, clause 4.

Category 1-equipment

For applications requiring CATEGORY Ga-equipment, the media process pressure has to be between 80 kPa and 110 kPa (0,8 bar and 1,1 bar). The permissible ambient temperatures specified are based on the 80% rule in section 6.4.2 of EN 1127-1.

For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer. For further information refer to the safety instruction document.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 01

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 level measuring devices are operated with higher temperatures than indicated in the table above, 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 of the table above.

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

Category 2-equipment

When the level measuring devices are operated with higher temperatures than indicated in the table above, 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 of the table above.

The allowed operational temperatures and pressures must be considered from the manufacturer's documentation and safety instructions. For further information refer to the safety instruction document.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 01

Electrical data:

Supply and signal circuit I:
(Terminals 1[+], 2[-] in the connection
compartment of the 2-chamber housing)
VEGAPULS PS69(*).AC****HX*****(*) (*)
and PS64(*).AC****HX*****(*) (*)

In type of protection intrinsic safety Ex ia IIC
For connection to a certified intrinsically safe circuit.
Maximum values :
U_i = 30 V
I_i = 131 mA
P_i = 983 mW

The effective inner capacitance is negligible small.
The effective inner inductance is $L_i \leq 10 \mu\text{H}$.
In the version with permanently mounted connection
cable,
C_{i-wire/wire'} = 159 pF/m,
C_{i-wire/screen'} = 270 pF/m and
L_i $\leq 0.55 \mu\text{H/m}$ must be taken into account.

Supply and signal circuit II:
(Terminals 7[+], 8[-] in the connection
compartment of the 2-chamber housing)
VEGAPULS PS69(*).AC****HZ*****(*) (*)

In type of protection intrinsic safety Ex ia IIC
For connection to a certified intrinsically safe circuit.
Maximum values:
U_i = 30 V
I_i = 131 mA
P_i = 901 mW
The effective inner capacitance is negligible small.
The effective inner inductance is $L_i \leq 5 \mu\text{H}$.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 01

Display and adjustment circuit:
Terminals 5, 6, 7, 8 in electronic
compartment or plug connection of the
VEGAPULS PS69(*)**.AC****HX/Z*****(*)(*)**
and PS64(*)**.AC****HX*****(*)(*)**.

In type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe circuit of the
associated external indicating unit VEGADIS
61/81 (PTB 02 ATEX 2136 X).
The rules for the interconnection of intrinsically safe
circuits between the level measuring devices type
series VEGAPULS PS 69*** / PS 64*** and the
external display and adjustment unit VEGADIS61/81
are complied with if the total inductance and total
capacitance of the connecting line between the level
measuring devices type series VEGAPULS PS 69***
/ PS 64*** and the external display unit VEGADIS
61/81 ($L_{\text{cable}} = 212\mu\text{H}$ and $C_{\text{cable}} = 1.98\mu\text{F}$) is not
exceeded.

When using the enclosed connection cable between
the level measuring devices type series VEGAPULS
PS 69*** / PS64*** and the external indicating unit
VEGADIS 61/81, the following values for the cable
inductance L_i and cable capacitance C_i must be
taken into account.

$L_i = 0.62\mu\text{H/m}$

$C_{i_{\text{wire/wire}}} = 132\text{pF/m}$

$C_{i_{\text{wire/screen}}} = 208\text{pF/m}$

Display and adjustment circuit:
spring contacts in electronic compartment or
connection compartment of the
VEGAPULS PS69(*)**.AC****HX/Z*****(*)(*)**
and PS64(*)**.AC****HX*****(*)(*)**.

In type of protection intrinsic safety Ex ia IIC
For connection to the indicating and
adjustment module PLICSCOM or
PLICSCOM(*)**.*B/W/U** (TUV 15 ATEX 161127 U) or
VEGACONNECT (PTB 07 ATEX 2013 X).

The metal elements of the level measuring devices based on microwave technology type series
VEGAPULS PS69*** / PS64*** are electrically connected to the earth terminals.

The intrinsically safe circuits are safely electrically isolated from elements that may be earthed.

The intrinsically safe signal and supply circuits are safely galvanic isolated from each other.

Changes to EC – Type Examination Certificate:

These changes concern the application of the standards and changes in the internal structure, as well
as an adaptation of the electrical rated data.

An alternative use of the electronic module PS69HW for type series VEGAPULS69 ***, as well as for
type series VEGAPULS64 *** with electronics module (PS64HW) and additional antenna variants, as
well as the alternative use of the display and control module PLICSCOM(*)**.*B/W/U**.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 X, Issue: 01

(16) Test Report PTB Ex16-26034

(17) Specific conditions of use

- 1) If used as a category-1 equipment the level measuring devices based on microwave technology type series VEGAPULS 69*** / VEGAPULS PS64*** with integrated electronic assembly which include the material aluminum/titanium, shall be installed in such a way that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.
- 2) The level measuring devices with plastic enclosure, with metal enclosure with inspection window as well as components of the antennas out of plastic include surfaces that can become charged electrostatically (note warning label).
- 3) When used as a category-1 or categorie-1/2 equipment, the level measuring devices shall be connected to the equipotential bonding conductor (contact resistance $\leq 1M\Omega$) (e.g. using the earth terminal) in order to prevent metal elements from being charged electrostatically.
- 4) In applications requiring category 1- or category 1/2-equipment, all parts of the level measuring devices that come in contact with media, shall only be used in such media against which the materials are sufficiently resistant.
- 5) With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of category 1/2 the degree of protection IP 67 at the connection to the return valve is guaranteed. After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.
- 6) The level measuring devices in the version with swiveling holder shall be installed in such a way that using the level measuring devices 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.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 2007 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
On behalf of PTB:

Braunschweig, July 25, 2016


Dr.-Ing. F. Henese
Regierungsreferent

