

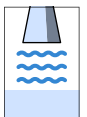
VEGA

Safety instructions

VEGAPULS PSWL61.C**H/P/F******

PTB 10 ATEX 2033 X

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



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Please note:

These safety instructions are part of the documentation:

- VEGAPULS WL 61
 - 38061 - 4 ... 20 mA/HART - two-wire
 - 38062 - Profibus PA
 - 38063 - Foundation Fieldbus
- 39362 - EC type approval certificate PTB 10 ATEX 2033 X

DE	Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen, verfügbar in den Sprachen deutsch, englisch, französisch und spanisch.
EN	Safety instructions for the use in hazardous areas are available in German, English, French and Spanish language.
FR	Consignes de sécurité pour l'utilisation en atmosphère explosible, disponibles dans les langues allemande, anglaise, française et espagnole.
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión, disponible en los siguientes idiomas alemán, inglés, francés y español.
CZ	Pokud nastanou potíže při čtení bezpečnostních upozornění v otisknutých jazycích, poskytneme. Vám na základě žádosti k dispozici kopii v jazyce Vaší země.
DA	Hvis De har svært ved at forstå sikkerhedsforskrifterne på de trykte sprog, kan De få en kopi på Deres sprog, hvis De ønsker det.
EL	Εάν δυσκολεύεστε να διαβάσετε τις υποδείξεις ασφαλείας στις γλώσσες που ήδη έχουν τυπωθεί, τότε σε περίπτωση ζήτησης μπορούμε να θέσουμε στη διάθεσή σας ένα αντίγραφο αυτών στη γλώσσα της χώρας σας.
ET	Kui teil on raskusi trükitud keeltes ohutusnõuete lugemisega, siis saadame me teie järelpärimise peale nende koopia teie riigi keeles.
FI	Laitteen mukana on erikielisiä turvallisuusohjeita. Voit tilata meiltä äidinkielistet turvallisuusohjeet, jos et selviä mukana olevilla kielillä.
HU	Ha a biztonági előírásokat a kinyomtatott nyelveken nem tudja megfelelően elolvasni, akkor lépjen velünk kapcsolatba: azonnal a rendelkezésére bocsátunk egy példányt az Ön országában használt nyelven.
IT	Se le Normative di sicurezza sono stampate in una lingua di difficile comprensione, potete richiederne una copia nella lingua del vostro paese.
LT	Jei Jums sunku suprasti saugos nuorodų tekstą pateiktomis kalbomis, kreipkitės į mus ir mes Jums duosime kopiją Jūsų šalies kalba.
LV	Ja Jums ir problēmas drošības noteikumus lasīt nodrukātajās valodās, tad mēs Jums sniegsim pēc pieprasījuma kopiju Jūsu valsts valodā.
MT	F'kaz li jkollok xi diffikulta` biex tifhem listruzzjonijiet ta` sigurta` kif ipprovduti, infurmana u ahna nibghatulek kopja billingwa tieghek.
NL	Als u moeite hebt met het lezen van de veiligheidsinstructies in de afgedrukte talen, sturen wij u op aanvraag graag een kopie toe in uw eigen taal.
PL	W przypadku trudności odczytania przepisów bezpieczeństwa pracy w wydrukowanych językach, chętnie udostępnimy Państwu kopię w języku obowiązującym w danym kraju.
PT	Caso tenha dificuldade de ler as instruções de segurança no idioma, no elas foram impressas, poderá solicitar junto a nós uma cópia em seu idioma.
SK	Pokiaľ nastanú problémy pri čítaní bezpečnostných pokynov vo vydaných jazykoch, poskytneme Vám na základe žiadosti k dispozícii kópiu v jazyku Vašej krajiny.
SL	Kadar se pojavijo težave pri branju varnostnih navodil v izdanih jezikih, vam bomo na osnovi zahtevka dali na razpolago kopijo v jeziku vaše države.
SV	Om du har problem att läsa säkerhetsanvisningarna på de här tryckta språken, ställer vi gärna på begäran en kopia på ditt språk till förfogande.

**EG-Konformitätserklärung
EC declaration of conformity
Déclaration CE de conformité**

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Deutschland

erklärt in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that our product
déclare sous sa seule responsabilité que le produit

VEGAPULS PSWL61.C**H/P/F******

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt
to which this declaration relates is in conformity with the following standards
auquel se réfère cette déclaration est conforme aux normes

EN 60079-0: 2009
EN 60079-11: 2007
EN 60079-26: 2007
EN 61326:1997/A1: 1998 (class A)
EN 61326: 1997 (class B)
EN 61010-1: 2004

gemäß den Bestimmungen der Richtlinien
following the provision of Directives
conformément aux dispositions des Directives

94/9/EG
2006/95 EG
2004/108 EWG

EG Baumusterprüfbescheinigung Nummer
EC-Type Examination Certificate Number
Numéro du certificat d'examen CE de type

PTB 10 ATEX 2033 X

Benannte Stelle/Kennnummer
Notified Body/Identification number
Organisme notifié/Numéro d'identification

TÜV Nord Cert./0044

Schiltach, 17.11.10



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1 Area of applicability

These safety instructions apply to the radar sensor VEGAPULS WL 61 of series VEGAPULS PSWL61.C****H/P/F**** according to EC type approval certificate PTB 10 ATEX 2033 X (certificate number on the type label) and for all instruments with the number of the safety instruction (39361) on the type label.

2 General information

The level measuring instrument VEGAPULS PSWL61.C****H/P/F**** is based on radar technology and is used to detect the distance between product surface and sensor by means of high frequency electromagnetic waves in the GHz range. The electronics uses the running time of the signals reflected by the product surface to calculate the distance to the product surface.

The VEGAPULS PSWL61.C****H/P/F**** consist of an electronics housing, a process connection element and a sensor, an antenna.

The measured products can also be combustible liquids, gases, mist or vapour.

The VEGAPULS PSWL61.C****H/P/F**** are suitable for use in hazardous atmospheres of all combustible materials of explosion group IIA, IIB and IIC for applications requiring instruments of category 1G, category 1/2G or category 2G.

If the VEGAPULS PSWL61.C****H/P/F**** are installed and operated in hazardous areas, the general Ex installation regulations EN 60079-14 as well as these safety instructions must be observed.

The operating instructions as well as the installation regulations or standards that apply for explosion protection of electrical systems must always be observed.

The installation of explosion-endangered systems must always be carried out by qualified personnel.

2.1 Category 1G instruments

The VEGAPULS PSWL61.C****H/P/F**** are installed in hazardous areas requiring an instrument of category 1G.

2.2 Category 1/2G instruments

The electronics housing is installed in hazardous areas requiring instruments of category 2G. The process connection element is installed in the separating wall, which separates areas requiring instruments of category 2G or 1G. The antenna system with the mechanical fixing element is installed in hazardous areas requiring instruments of category 1G.

2.3 Category 2G instruments

The VEGAPULS PSWL61.C****H/P/F**** are installed in hazardous areas requiring an instrument of category 2G.

3 Technical data

3.1 Electrical data

VEGAPULS PSWL61.C****H***

Power supply and signal circuit: (cores brown [+], blue [-])

In ignition protection type intrinsic safety Ex ia IIC
Only for connection to a certified, intrinsically safe circuit.

Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

The effective internal capacitance C_i is negligibly small.

The effective internal inductance is $L_i \leq 5 \mu\text{H}$.

With fix mounted connection cable, $C_{i \text{ wire/wire}} = 125 \text{ pF/m}$, $C_{i \text{ wire/screen}} = 315 \text{ pF/m}$ as well as $L_i = 0.75 \mu\text{H/m}$ have to be taken into account.

VEGAPULS PSWL61.C****P/F***

Power supply and signal circuit: (cores brown [+], blue [-])

In ignition protection type intrinsic safety Ex ia IIC
Only for connection to a certified, intrinsically safe circuit.

Maximum values:

$$U_i = 17.5 \text{ V}$$

$$I_i = 500 \text{ mA}$$

$$P_i = 5.5 \text{ W}$$

The instrument is suitable for connection to a Fieldbus system according to the FISCO model (EN 60079-27), e.g. Profibus PA

or

$$U_i = 24 \text{ V}$$

$$I_i = 250 \text{ mA}$$

$$P_i = 1.2 \text{ W}$$

The effective internal capacitance C_i is negligibly small.

The effective internal inductance is $L_i \leq 5 \mu\text{H}$.

With fix mounted connection cable, $C_{i \text{ wire/wire}} = 125 \text{ pF/m}$, $C_{i \text{ wire/screen}} = 315 \text{ pF/m}$ as well as $L_i = 0.75 \mu\text{H/m}$ have to be taken into account.

The intrinsically safe circuits are electrically separated from parts which can be grounded.

4 Application conditions

The max. permissible ambient temperatures depending on the temperature classes are specified in the following table.

Radar sensor VEGAPULS PSWL61.C****H***

Category 1G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T5	-20 ... +46 °C	-20 ... +46 °C
T4, T3, T2, T1	-20 ... +60 °C	-20 ... +60 °C

For applications requiring instruments of category 1G, the process pressure of the media must be between 0.8 ... 1.1 bar. With the stated permissible ambient temperatures, the 80% consideration of section 6.4.2/EN 1127-1 is taken into account. The application conditions during operation in areas with no explosive mixtures are stated in the manufacturer information.

Category 1/2G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-20 ... +60 °C	-40 ... +50 °C
T5	-20 ... +60 °C	-40 ... +65 °C
T4, T3, T2, T1	-20 ... +60 °C	-40 ... +80 °C

For applications requiring instruments of category 1/2G the process pressure of the media must be between 0.8 ... 1.1 bar. If the VEGAPULS PSWL61.C****H*** are operated at temperatures higher than those specified in the above table, please make sure through appropriate measures that there is no danger of ignition from the hot surfaces. The max. permissible temperature on the electronics/housing should not exceed the values specified in the above table. The application conditions during operation without explosive mixtures can be found in the manufacturer information.

Category 2G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-40 ... +80 °C	-40 ... +50 °C
T5	-40 ... +80 °C	-40 ... +65 °C
T4, T3, T2, T1	-40 ... +80 °C	-40 ... +80 °C

If the VEGAPULS PSWL61.C****H*** are operated at temperatures higher than those specified in the above table, please make sure through appropriate measures that there is no danger of ignition from the hot surfaces. The maximum temperature on the electronics/housing should not exceed the values specified in the above table. The permissible operating temperatures and pressures are stated in the manufacturer information.

Radar sensor VEGAPULS PSWL61.C****P/F***

Category 1G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T5	-20 ... +42 °C	-20 ... +42 °C
T4, T3, T2, T1	-20 ... +60 °C	-20 ... +60 °C

For applications requiring instruments of category 1G, the process pressure of the media must be between 0.8 ... 1.1 bar. With the stated permissible ambient temperatures, the 80% consideration of section 6.4.2/EN 1127-1 is taken into account. The application conditions during operation in areas with no explosive mixtures are stated in the manufacturer information.

Category 1/2G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-20 ... +60 °C	-40 ... +46 °C
T5	-20 ... +60 °C	-40 ... +61 °C
T4, T3, T2, T1	-20 ... +60 °C	-40 ... +80 °C

For applications requiring instruments of category 1/2G the process pressure of the media must be between 0.8 ... 1.1 bar. If the VEGAPULS PSWL61.C****P/F*** are operated at temperatures higher than those specified in the above table, please make sure through appropriate measures that there is no danger of ignition from the hot surfaces. The max. permissible temperature on the electronics/housing should not exceed the values specified in the above table. The application conditions during operation without explosive mixtures can be found in the manufacturer information.

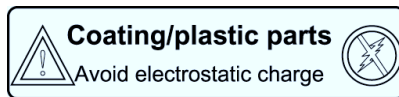
Category 2G instruments

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-40 ... +80 °C	-40 ... +46 °C
T5	-40 ... +80 °C	-40 ... +61 °C
T4, T3, T2, T1	-40 ... +80 °C	-40 ... +80 °C

If the VEGAPULS PSWL61.C****P/F*** are operated at temperatures higher than those specified in the above table, please make sure through appropriate measures that there is no danger of ignition from the hot surfaces. The max. permissible temperature on the electronics/housing should not exceed the values specified in the above table. The permissible operating temperatures and pressures are stated in the manufacturer information.

5 Protection against static electricity

The VEGAPULS PSWL61.C****H/P/F**** in versions with electrostatically chargeable plastic parts, such as e.g. plastic housing or plastic antenna, have a caution label pointing out the safety measures that must be taken with regard to electrostatic charges during operation.



Caution: Plastic parts! Danger of static charge!

- Avoid friction

- No dry cleaning
- Do not mount in areas with flowing, non-conductive products

6 Use of an overvoltage arrester

If necessary, the VEGAPULS PSWL61.C****H/P/F**** can be connected to an overvoltage arrester, e. g. type B62-36G or B62-30W from VEGA.

If the VEGAPULS PSWL61.C****H/P/F**** are used as category 1/2G instruments, overvoltage protection measures according to EN 60079-14 chapter 12.3 are not required.

When used as category 1G instrument, a suitable overvoltage arrester, e. g. type B62-36G or B62-30W from VEGA (TÜV 07 ATEX 553276), must be connected according to EN 60079-14, Chapter 12.3, for protection against voltage surges.

7 Material resistance

For applications requiring instruments of category 1G or 1/2G the VEGAPULS PSWL61.C****H/P/F**** must only be used in products against which the wetted materials are sufficiently resistant.

8 Grounding

For the VEGAPULS PSWL61.C****H/P/F**** in the version with mounting strap, the strap must be electrostatically (contact resistance $\leq 1 \text{ M}\Omega$) grounded.

9 VEGAPULS PSWL61.C**XG****

VEGAPULS PSWL61.C**XG**** (process fitting "Counter nut") must not be used as category 1/2 G instruments.

VEGA

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