

VEGA

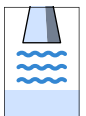
Safety instructions

VEGAPULS PS6*(*) .D(*)**J/N******

VEGAPULS PSSR68(*) .D(*)**J/N******

IECEX PTB 11.0081 X

Ex d ia IIC T6 ... T1 Ga/Gb, Gb



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Please note:

These safety instructions are part of the documentation:

- 41134 - Certificate of Conformity IECEx PTB 11.0081 X

1 Area of applicability

These safety instructions apply to the radar sensor VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** according to the Certificate of Conformity IECEx PTB 11.0081 X (certificate number on the type label) and to all instruments with the number of the safety instruction (41133) on the type label.

2 General information

The level measuring instrument VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** 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 PS6*/PSSR68(*).D(*)****J/N**** consist of an electronics housing with an "Ex-d" connection compartment with integrated barrier P3-DAKKU and an "Ex-i" connection compartment with integrated electronics module, a process connection element and a sensor, the antenna.

The indicating and adjustment module PLICSCOM can be optionally integrated in the "Ex-i" connection compartment.

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are suitable for use in hazardous atmospheres of all combustible materials of explosion group IIA, IIB and IIC for applications requiring instruments of type EPL-Ga/Gb or EPL-Gb.

If the VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are installed and operated in hazardous areas, the general Ex installation regulations IEC 60079-14 as well as these safety instructions must be observed.

The operating instructions as well as the corresponding valid Ex installation regulations or standards for electrical equipment must generally be observed.

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

2.1 EPL-Ga/Gb instrument

The electronics housing is installed in hazardous areas requiring instruments of type EPL-Gb. The process connection element is installed in the separating wall, which separates areas requiring instruments of type EPL-Ga or EPL-Gb. The antenna system with the mechanical fixing element is installed in hazardous areas requiring instruments of type EPL-Ga.

2.2 EPL-Gb instrument

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are installed in hazardous areas requiring a EPL-Gb instrument.

3 Technical data

3.1 Electrical data

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are designed with intrinsically and non-intrinsically safe circuits.

Electrical data for the "Ex-d" connection compartment, non-intrinsically safe circuits

Charging/Supply circuit: (5.5 mm mains coupling) Unom = 24 V DC (24 V standard battery charger)
Um = 250 V

Electrical data for the "Ex-i" connection compartment, intrinsically safe circuits

Indicating and adjustment circuit: (spring contacts in the "Ex i" connection compartment) Ignition protection type intrinsic safety Ex ia IIC
Only for connection to the indicating and adjustment module PLICSCOM or the VEGA interface converter VEGACONNECT.

The metallic parts of the VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are electrically connected with the earth terminals.

The intrinsically safe circuits of VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are reliably galvanically separated from PA (ground connection terminals) up to a peak value of the voltage of 500 V.

4 Application conditions

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

EPL-Ga/Gb instrument

Temperature class	Permissible ambient temperature on the sensor	Permissible ambient temperature on the electronics
T6	-20 ... +60 °C	-20 ... +50 °C
T5, T4, T3, T2, T1	-20 ... +60 °C	-20 ... +50 °C

For applications requiring instruments of category EPL-Ga/Gb the process pressure of the media must be between 0.8 ... 1.1 bar. If the sensors VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** are operated at temperatures higher than those specified in the above table, please make sure by means of 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 according to the above table. The application conditions during operation without explosive mixtures are specified in the operating instructions manual.

EPL-Gb instrument

Temperature class	Permissible ambient temperature on the sensor	Permissible ambient temperature on the electronics
T6	-60 ... +85 °C	-20 ... +50 °C
T5	-60 ... +100 °C	-20 ... +50 °C
T4	-60 ... +135 °C	-20 ... +50 °C
T3	-60 ... +200 °C	-20 ... +50 °C
T2	-60 ... +300 °C	-20 ... +50 °C
T1	-60 ... +450 °C	-20 ... +50 °C

If the sensors of VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** 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 operating instructions manual.

VEGAPULS PS62(*).D****J/N****, in the version for process temperatures up to -170 °C

EPL-Gb instrument

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-170 ... +85 °C	-20 ... +50 °C
T5	-170 ... +100 °C	-20 ... +50 °C
T4	-170 ... +135 °C	-20 ... +50 °C
T3	-170 ... +200 °C	-20 ... +50 °C
T2	-170 ... +300 °C	-20 ... +50 °C
T1	-170 ... +450 °C	-20 ... +50 °C

If the sensors of VEGAPULS PS62(*).D****J/N**** 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 when operating in the absence of explosive mixtures can be found in the operating instructions.

VEGAPULS PS63(*).D****J/N****, in the version for process temperatures up to -170 °C

EPL-Gb instrument

Temperature class	Temperature on the sensor	Ambient temperature on the electronics
T6	-170 ... +85 °C	-20 ... +50 °C
T5	-170 ... +100 °C	-20 ... +50 °C
T4	-170 ... +135 °C	-20 ... +50 °C
T3, T2, T1	-170 ... +200 °C	-20 ... +50 °C

If the sensors of VEGAPULS PS63(*).D****J/N**** 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 when operating in the absence of explosive mixtures can be found in the operating instructions.

5 Protection against static electricity

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** in the version with chargeable plastic parts, as e.g. metal housing with inspection window ("Ex-i" compartment) or plastic antennas, is provided with a caution label referring to 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 Versions with antenna extension

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** with antenna extension have to be mounted so that the extension is effectively secured against bending or oscillating as well as contact of the sensor to the vessel wall, under consideration of the vessel installations and flow conditions in the vessel.

7 Grounding

Do avoid danger of electrostatic charge of the metal parts, the VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** must be generally connected to the local potential equalization, e.g. via the ground terminal.

8 Impact and friction sparks

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** in aluminium version must be mounted in such a way that sparks from impact and friction between aluminium and steel (except stainless steel, if the presence of rust particles can be excluded) cannot occur.

The VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** in the titanium versions must be mounted in such a way that sparks from impact and friction between titanium and any other hard material cannot occur.

9 Material resistance

For applications requiring instruments of category EPL-Ga/Gb the VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** should only be used in media against which the wetted materials are sufficiently resistant.

10 Versions with ball valve

With the VEGAPULS PS6*/PSSR68(*).D(*)****J/N**** in the version with ball valve, make sure that the ball valve is closed before separating the flange connection and that the IP rating IP 67 is maintained when removing the instrument.

11 Accumulator charging procedure

The charging of the power pack must be carried out outside the hazardous area or if there is no explosive atmosphere by means of a 24 V DC power supply.

During the charging process of the power pack, the permissible ambient temperature in the area of the "Ex-d" connection compartment of the VEGAPULS PS6*(*)PSSR68(*)D(*)****J/N**** is $T_u = 0 \dots +45 \text{ }^\circ\text{C}$.

12 Ignition protection type flame proof enclosure Ex "d"

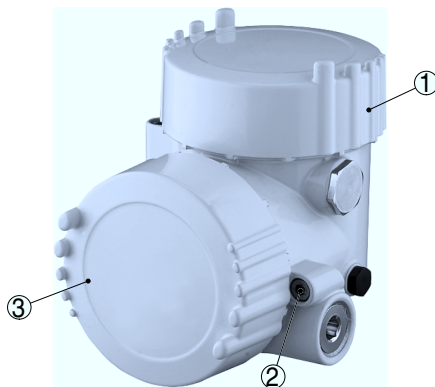
The mains coupling for connection of the charging facility (24 V standard charging power supply unit) is integrated in the connection compartment with ignition protection type pressure-tight encapsulation "d".

The gap between "Ex-d" connection compartment and cover is a flameproof gap.

Make sure before opening the cover of the "Ex-d" connection compartment (e.g. for charging process or service work), and also when the cover is open, that there is no explosive atmosphere present.

The cover of the "Ex-d" connection compartment must be screwed in completely before commissioning and secured by screwing out the lid locking screw all the way to the stop.

Double chamber housing with "Ex-d" connection compartment



- 1 "Ex-i" connection compartment with electronics module
- 2 Locking screw of the cover
- 3 "Ex d" connection compartment with integrated barrier

The cover of the "Ex-d" connection compartment with the caution label "Do not open when an explosive gas atmosphere is present" and the cover of the "Ex-i" connection compartment without caution label must not be exchanged. The covers must be mounted on the corresponding connection compartments.



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