

**Sicherheitshinweise / Safety
Instructions / 안전지침**
ATEX / UKEX / IECEx / KTL
**VEGACONNECT,
VEGACONNECT 4**

Eigensicherheit

Intrinsic safety

본질안전 방폭구조



Document ID: 66123



VEGA

1	ATEX	3
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- EU-Baumusterprüfbescheinigung PTB 07 ATEX 2013 X (Document ID: 66124)
- UK-Type Examination Certificate UL22UKEX2588X (Document ID: 1013456)
- Certificate of Conformity IECEX PTB 20.0007 X (Document ID: 66125)
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DE Sicherheitshinweise

EN Safety instructions

FR Consignes de sécurité

ES Instrucciones de seguridad

VEGACONNECT VEGACONNECT 4

Eigensicherheit



CE 0044



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ATEX

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Ergänzende Dokumentation:

- Betriebsanleitungen VEGACONNECT 4
- EU-Baumusterprüfbescheinigung PTB 07 ATEX 2013 X (Document ID: 66124)
- EU-Konformitätserklärung (Document ID: 48006)

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1 Geltung

Diese Sicherheitshinweise gelten für die Geräte:

- VEGACONNECT
- VEGACONNECT 4

Gemäß der EU-Baumusterprüfbescheinigung PTB 07 ATEX 2013 X (Bescheinigungsnummer auf dem Typschild) und für alle Geräte mit dem Sicherheitshinweis 66123.

Die Zündschutzkennzeichnung sowie die zugrundeliegenden Normenstände können aus oben genannten Zertifikaten entnommen werden:

Zündschutzkennzeichen:

- II (1)G [Ex ia Ga] IIC
- II (1)D [Ex ia Da] IIIC

2 Gerätekonfiguration/-eigenschaften

Die detaillierten Gerätekonfigurationen können mit Hilfe der Seriennummersuche auf unserer Homepage abgerufen werden.

Gehen Sie auf "www.vega.com" und geben Sie im Suchfeld die Seriennummer Ihres Gerätes ein.

Alternativ finden Sie alles über Ihr Smartphone:

- VEGA Tools-App aus dem "Apple App Store", "Google Play Store" oder "Baidu Store" herunterladen
- DataMatrix-Code auf dem Typschild des Gerätes scannen oder
- Seriennummer manuell in die App eingeben

3 Allgemeines

Das VEGACONNECT, VEGACONNECT 4 ist ein Schnittstellenadapter zur Anbindung kommunikationsfähiger VEGA-Geräte an die USB-Schnittstelle eines Windows-PCs. Alternativ kann es auch als universelles HART-Modem für Sensoren anderer Hersteller eingesetzt werden. Die Signale und Protokolle der USB-Schnittstelle werden in das industrielle HART- oder I²C-Protokoll umgesetzt. Mit einem zusätzlichen Anzeige- und Bedienmodul kann es auch als Handheld verwendet werden.

Das VEGACONNECT besteht aus einer Anschlussbox, in welche das Kommunikationsmodul VEGACONNECT 4 eingesetzt ist. Hierbei arbeitet es je nach angeschlossenem Sensor als HART- oder I²C-Schnittstellenadapter.

Alternativ kann das Kommunikationsmodul VEGACONNECT 4 direkt an den eigensicheren Stromkreis in VEGA-Geräte der plics®-Serie eingesetzt werden. In dieser Ausführung arbeitet es als I²C-Schnittstellenadapter.

Folgende Varianten sind für das VEGACONNECT bescheinigt:

Schnittstellenadapter in Anschlussbox (VEGACONNECT)

Als zugehöriges Betriebsmittel dient es als HART- oder I²C-Schnittstellenadapter. In die Anschlussbox wird das Kommunikationsmodul VEGACONNECT 4 eingesetzt.

Schnittstellenadapter in VEGA-Gerät (VEGACONNECT 4)

Als zugehöriges Betriebsmittel dient es als I²C-Schnittstellenadapter. Das Kommunikationsmodul VEGACONNECT 4 wird direkt in ein VEGA-Gerät eingesetzt.

Wird das VEGACONNECT als zugehöriges Betriebsmittel eingesetzt, darf es nur außerhalb des explosionsgefährdeten Bereiches betrieben werden. Ist keine explosionsfähige Atmosphäre vorhanden, ist auch der Einsatz innerhalb dieses explosionsgefährdeten Bereiches erlaubt.

4 Anwendungsbereich, Einsatz in Gas- und Staubatmosphären

Zugehöriges Betriebsmittel

Die VEGACONNECT, VEGACONNECT 4 dürfen außerhalb von explosionsgefährdeten Bereichen als Zugehörige Betriebsmittel errichtet und betrieben werden.

5 Besondere Betriebsbedingungen für sicheren Betrieb

Die nachfolgende Übersicht listet alle besonderen Eigenschaften des VEGACONNECT, VEGACONNECT 4, welche eine Kennzeichnung mit dem Symbol "X" hinter der Zertifikatsnummer erforderlich machen.

Betriebsart, Kommunikation

Die Details hierzu sind dem Kapitel "*Aufbau/Errichtung der Kommunikationsvarianten*" dieser Sicherheitshinweise zu entnehmen.

Das VEGACONNECT, VEGACONNECT 4 darf in Anwendungen mit USB-Kommunikation nur außerhalb des explosionsgefährdeten Bereiches betrieben werden oder es muss sichergestellt sein, dass während des Betriebs keine explosionsfähige Atmosphäre vorhanden ist.

Das VEGACONNECT, VEGACONNECT 4 darf in den Anwendungen mit USB-Kommunikation nur für Servicezwecke an einem eigensicheren Stromkreis betrieben werden.

Anschluss

Das I²C-BUS-Anschlusskabel und HART-Anschlusskabel darf nicht gleichzeitig verwendet werden. Der Bluetooth USB-Adapter und der HART-Widerstand dürfen nur außerhalb des explosionsgefährdeten Bereiches betrieben werden.

6 Sicherer Betrieb

Allgemeine Betriebsbedingungen

- Gerät nicht außerhalb der elektrischen, thermischen und mechanischen Angaben des Herstellers betreiben

Anschlussbedingungen

- Die Anschlussleitung des VEGACONNECT ist fest und so zu verlegen, dass sie hinreichend gegen Beschädigungen geschützt ist
- Beträgt die Temperatur an den Einführungsstellen mehr als 70 °C müssen entsprechende temperaturbeständige Anschlussleitungen verwendet werden

Maximale USB-Eingangsspannung Um

Die Versorgung des Notebooks oder USB-Modems darf am nicht-eigensicheren USB-Anschluss des VEGACONNECT den Eingangswert von U_m nicht überschreiten; z. B. durch Akkubetrieb vom Notebook.

7 Wichtige Hinweise für die Montage und Wartung

Allgemeine Hinweise

Für die Montage, die elektrische Installation, die Inbetriebnahme und die Wartung des Gerätes müssen folgende Voraussetzungen erfüllt werden:

- Das Personal muss über die Qualifikation entsprechend seiner Funktion und Tätigkeit verfügen
- Das Personal muss im Explosionsschutz ausgebildet sein
- Das Personal muss mit den entsprechenden gültigen Vorschriften vertraut sein, z. B. Projektierung und Errichtung entsprechend der EN 60079-14

- Bei Arbeiten am Gerät (Montage, Installation, Wartung) ist sicherzustellen, dass keine explosionsfähige Atmosphäre vorhanden ist, wenn möglich, Versorgungsstromkreise spannungslos schalten
- Gerät entsprechend den Herstellerangaben, der EU-Baumusterprüfbescheinigung und entsprechend den gültigen Vorschriften, Regeln und Normen installieren
- Veränderungen am Gerät können den Explosionsschutz und somit die Sicherheit beeinträchtigen, daher ist es nicht zulässig, dass Reparaturen durch den Endverbraucher durchgeführt werden
- Veränderungen dürfen nur durch von der Firma VEGA autorisiertes Personal durchgeführt werden
- Nur zugelassene Ersatzteile verwenden
- Für den Ein- und Anbau von in den Zulassungsunterlagen nicht enthaltenen Komponenten sind nur solche zugelassen, die dem auf dem Deckblatt angegebenen Normenstand technisch entsprechen. Sie müssen für die Einsatzbedingungen geeignet sein und eine gesonderte Bescheinigung besitzen. Die besonderen Bedingungen der Komponenten sind zu beachten und die Komponenten sind ggf. mit in die Typprüfung einzubeziehen. Dies gilt auch für die bereits in der technischen Beschreibung genannten Komponenten.

Montage

Bei der Gerätemontage ist zu beachten:

- Mechanische Beschädigungen am Gerät sind zu vermeiden
- Mechanische Reibungen sind zu vermeiden

Wartung

Zur Sicherstellung der Funktion des Gerätes wird eine periodische Sichtkontrolle empfohlen auf:

- Sichere Montage
- Keine mechanischen Beschädigungen oder Korrosion
- Durchgescheuerte oder anderweitig beschädigte Leitungen
- Keine lockere Verbindungen der Leitungsanschlüsse, Potenzialausgleichsanschlüsse
- Korrekte und eindeutig gekennzeichnete Leitungsverbindungen

Eigensicherheit "i"

- Gültige Vorschriften für die Zusammenschaltung von eigensicheren Stromkreisen beachten
- Das Gerät ist ausschließlich für den Anschluss an bescheinigte, eigensichere Betriebsmittel geeignet
- Beim Anschluss eines eigensicheren Betriebsmittels an einem nicht-eigensicheren Stromkreis, darf das Betriebsmittel nicht mehr in eigensicheren Stromkreisen eingesetzt werden
- Beim Anschluss eines eigensicheren Betriebsmittels mit Zündschutzkennzeichen Ex ia an einen Stromkreis mit dem Schutzniveau Ex ib ändert sich das Zündschutzkennzeichen des Betriebsmittels in Ex ib. Nach dem Einsatz als Betriebsmittel mit Ex ib-Speisung, darf das Betriebsmittel nicht mehr in Stromkreisen mit Schutzniveau Ex ia eingesetzt werden.

8 Elektrische Daten

Einsatz als zugehöriges Betriebsmittel

Die nachfolgenden Daten sind gültig für die Varianten VEGACONNECT, VEGACONNECT 4 in der Funktion als Schnittstellenadapter. Das VEGACONNECT beinhaltet einen nicht eigensicheren (USB) und zwei eigensichere Stromkreise (I²C/HART). Der I²C- und HART-Stromkreis sind sicherheitstechnisch galvanisch verbunden und dürfen nicht gleichzeitig angeschlossen werden.

Spannungsversorgung über USB-Schnittstelle (nicht eigensicherer Stromkreis)

Max. Betriebsspannung	6 V DC
Bemessungsspannung U_m	30 V AC/DC

Signalstromkreis I²C/HART (eigensichere Stromkreise) Ex ia IIC

Kommunikation:	
I ² C-Schnittstelle	Anschluss via I ² C Stecker oder Schleifkontakte
HART-Schnittstelle	Anschluss via 2 mm Stecker

Max. Klemmenspannung U_o :	6 V
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Max. Klemmenspannung U_i:	
I ² C-Schnittstelle	6 V
HART-Schnittstelle	30 V

Max. Strom I_o:	
I ² C-Schnittstelle	59,4 mA
HART-Schnittstelle	3,7 mA

Max. Leistung P_o:	
I ² C-Schnittstelle	89,1 mW
HART-Schnittstelle	5,6 mW

Max. Leistung P_i:	
I ² C-Schnittstelle	360 mW
HART-Schnittstelle	-

Wirksame innere Kapazität C_i:	
I ² C-Schnittstelle	0 nF
HART-Schnittstelle	1,2 nF

Wirksame innere Induktivität L_i:	
I ² C-Schnittstelle	0 mH
HART-Schnittstelle	0 mH

Zulässige äußere Kapazität C_o:	
I ² C-Schnittstelle	40 μ F
HART-Schnittstelle	40 μ F

Zulässige äußere Induktivität L_o:	
I ² C-Schnittstelle	10 mH
HART-Schnittstelle	1000 mH

Trennung eigensicherer: nicht eigensicherer Stromkreis	
Scheitelwert der Nennspannung	375 V

9 Thermische Daten

Umgebungsbedingungen	
Umgebungstemperatur ¹⁾	-20 ... +60 °C (-4 ... +140 °F)

Elektrische Schutzmaßnahmen	
Schutzart	IP40

10 Aufbau/Errichtung der Kommunikationsvarianten

Das VEGACONNECT 4 eingebaut in die Anschlussbox (VEGACONNECT) oder in einem VEGA-Gerät darf in den Anwendungen mit USB-Kommunikation nur für Servicezwecke an einem eigensicheren Stromkreis betrieben werden. Hierbei muss das VEGACONNECT, VEGACONNECT 4 außerhalb des explosionsgefährdeten Bereiches betrieben werden oder es muss sichergestellt sein, dass während des Betriebs keine explosionsfähige Atmosphäre vorhanden ist.

Das I²C- und HART-Anschlusskabel darf nicht gleichzeitig angeschlossen sein.

VEGACONNECT, Kommunikation via I²C-Bus

Anwendungsmöglichkeit 1

Das VEGACONNECT mit angeschlossenem Notebook, SPS oder Modem darf nur im sicheren Bereich außerhalb des explosionsgefährdeten Bereiches betrieben werden.

1) Ist das VEGACONNECT 4 direkt in einen Sensor eingebaut, ist zusätzlich die Temperaturklassentabelle des entsprechenden Sensors zu beachten.

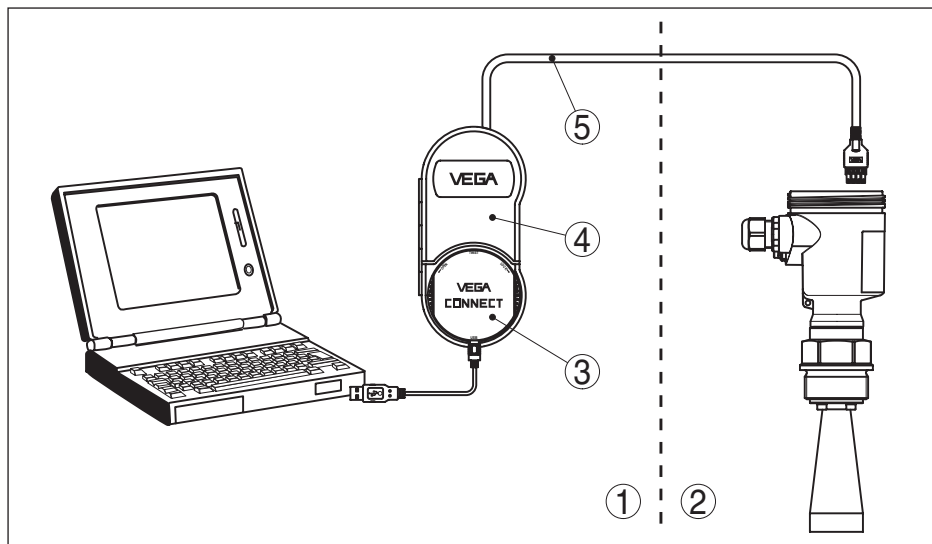


Abb. 1: Einsatz als zugehöriges Betriebsmittel im sicheren Bereich

- 1 Sicherer Bereich
- 2 Explosionsgefährdeter Bereich (Zone 0, Zone 1, Zone 2, Zone 20, Zone 21 oder Zone 22)
- 3 VEGACONNECT 4
- 4 Anschlussbox
- 5 I²C-Kabel

Anwendungsmöglichkeit 2

Das VEGACONNECT mit angeschlossenem Notebook, SPS oder Modem darf nur dann im explosionsgefährdeten Bereich der Zone 1 betrieben werden, wenn keine explosionsfähige Atmosphäre vorhanden ist.

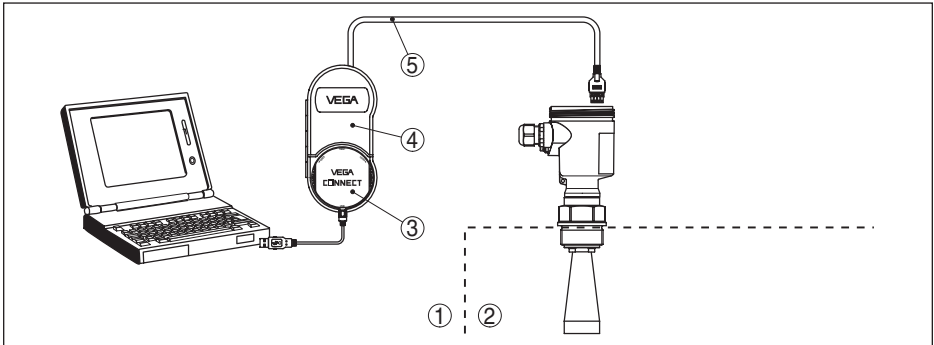


Abb. 2: Einsatz als zugehöriges Betriebsmittel im explosionsgefährdeten Bereich (Zone 1 und Zone 21) ohne explosionsfähige Atmosphäre

- 1 Explosionsgefährdeter Bereich (Zone 1 oder Zone 2 oder Zone 21 oder Zone 22) ohne explosionsfähige Atmosphäre
- 2 Explosionsgefährdeter Bereich (Zone 0 oder Zone 1 oder Zone 20 oder Zone 21)
- 3 VEGACONNECT 4
- 4 Anschlussbox
- 5 I²C-Kabel

VEGACONNECT 4, Kommunikation via I²C-Bus

Das VEGACONNECT mit angeschlossenem Notebook, SPS oder Modem darf nur dann im explosionsgefährdeten Bereich der Zone 1 betrieben werden, wenn keine explosionsfähige Atmosphäre vorhanden ist.

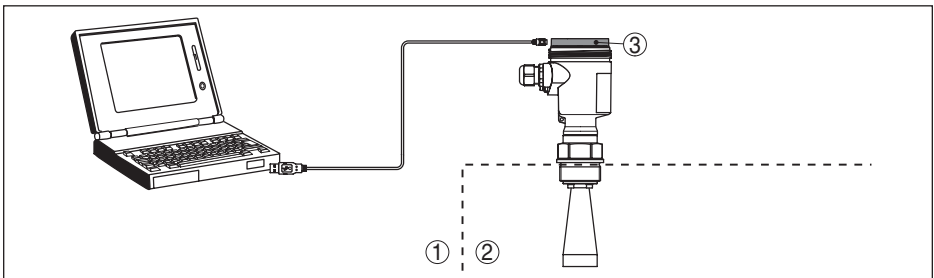


Abb. 3: Einsatz als zugehöriges Betriebsmittel im explosionsgefährdeten Bereich (Zone 1 und Zone 21) ohne explosionsfähige Atmosphäre

- 1 Explosionsgefährdeter Bereich (Zone 1 oder Zone 2 oder Zone 21 oder Zone 22) ohne explosionsfähige Atmosphäre
- 2 Explosionsgefährdeter Bereich (Zone 0 oder Zone 1 oder Zone 20 oder Zone 21)
- 3 VEGACONNECT 4 eingebaut in VEGA-Sensor

VEGACONNECT, Kommunikation via HART

Das VEGACONNECT mit angeschlossenem Notebook, SPS oder Modem darf nur im sicheren Bereich außerhalb des explosionsgefährdeten Bereiches betrieben werden. Der Anschluss erfolgt via HART-Kommunikation an dem eigensicheren Signal- und Versorgungsstromkreis.

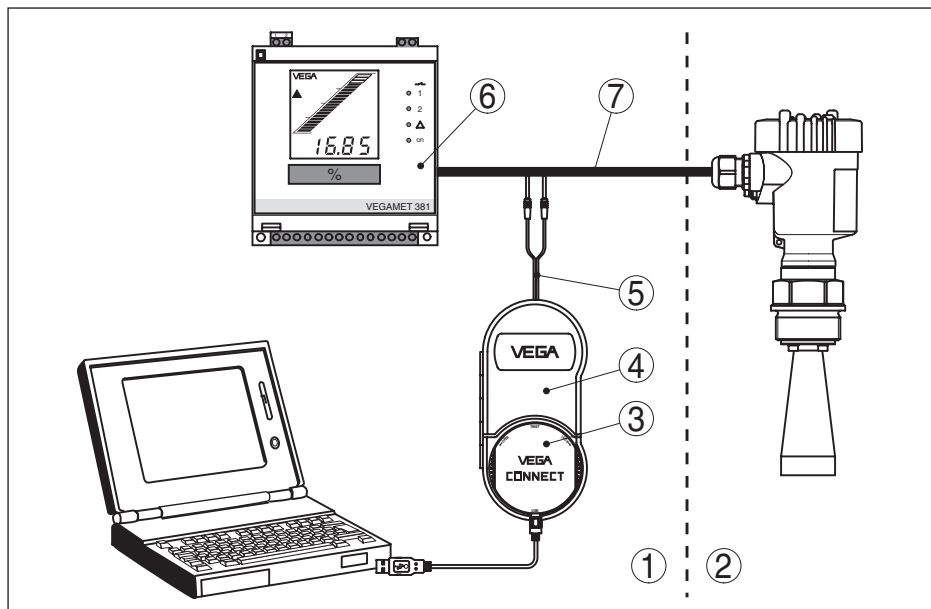


Abb. 4: Einsatz als zugehöriges Betriebsmittel im sicheren Bereich

- 1 Sicherer Bereich
- 2 Explosionsgefährdeter Bereich (Zone 0, Zone 1, Zone 2, Zone 20, Zone 21 oder Zone 22)
- 3 VEGACONNECT 4
- 4 Anschlussbox
- 5 HART-Kabel
- 6 Speisegerät, z. B. VEGAMET, VEGATRENN, SPS
- 7 Eigensicherer Signal- und Versorgungsstromkreis

Werksmäßig wird ein HART-Widerstand mitgeliefert.

Der HART-Widerstand darf nur außerhalb des explosionsgefährdeten Bereiches betrieben werden. Ist keine explosionsfähige Atmosphäre vorhanden, ist auch der Einsatz innerhalb eines explosionsgefährdeten Bereiches erlaubt.

Wird ein anderer HART-Widerstand benutzt, gelten die gleichen Einsatzbedingungen.

11 USB-Anschlusskabel

Wird das mitgelieferte USB-Anschlusskabel durch ein anderes ersetzt, ist darauf zu achten, dass die Isolationsdicke dieses Kabels größer als 0,65 mm ist.

12 Besondere Bedingungen

Werkmäßig wird ein Bluetooth-USB-Adapter mitgeliefert.

Der Bluetooth-USB-Adapter darf nur außerhalb des explosionsgefährdeten Bereiches betrieben werden. Ist keine explosionsfähige Atmosphäre vorhanden, ist auch der Einsatz innerhalb eines explosionsgefährdeten Bereiches erlaubt.

Wird ein anderer Bluetooth-USB-Adapter benutzt gelten die gleichen Einsatzbedingungen.

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Supplementary documentation:

- Operating Instructions VEGACONNECT 4
- EU type approval certificate PTB 07 ATEX 2013 X (Document ID: 66124)
- EU declaration of conformity (Document ID: 48006)

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1 Area of applicability

These safety instructions apply to the devices:

- VEGACONNECT
- VEGACONNECT 4

According to EU type approval certificate PTB 07 ATEX 2013 X (certificate number on the type label) and for all instruments with safety instruction 66123.

The classification as well as the respective standards are stated in the above certificates:

Type of protection marking:

- II (1)G [Ex ia Ga] IIC
- II (1)D [Ex ia Da] IIIC

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to "www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the "*Apple App Store*", "*Google Play Store*" or "*Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGACONNECT, VEGACONNECT 4 is an interface adapter for connection of communication capable VEGA instruments to the USB interface of a Windows PC. Alternatively it can also be used as a universal HART modem for sensors of other manufacturers. The signals and protocols of the USB interface are converted into the industrial HART or I²C protocol. With an additional indicating and adjustment module it can also be used as a handheld.

The VEGACONNECT consists of a junction box into which the communication module VEGACONNECT 4 is installed. Here, it works either as HART or I²C interface adapter depending on the connected sensor.

Alternatively the communication module VEGACONNECT 4 can be directly used on intrinsically safe circuits in VEGA instruments of plics® series. In this version it operates as I²C interface adapter.

The following versions are certified for VEGACONNECT:

Interface adapter in junction box (VEGACONNECT)

As appropriate instrument it is used as HART or I²C interface adapter. The communication module VEGACONNECT 4 is inserted in the junction box.

Interface adapter in VEGA device (VEGACONNECT 4)

As appropriate instrument it is used as I²C interface adapter. The communication module VEGACONNECT 4 is directly inserted in a VEGA device.

If VEGACONNECT is used as appropriate instrument, it should only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed

4 Application area, use in gas and dust atmospheres

Associated apparatus

The VEGACONNECT, VEGACONNECT 4 may be installed and operated outside of hazardous areas as associated equipment.

5 Specific conditions of use for safe operating mode

The following overview is listing all special properties of VEGACONNECT, VEGACONNECT 4, which make a labelling with the symbol "X" behind the certificate number necessary.

Operating mode, communication

You can find the details in chapter " *Mounting/Installation of the communication versions*" of these safety instructions.

VEGACONNECT, VEGACONNECT 4 must only be operated in applications with USB communication outside the hazardous area or it must be ensured that no explosive atmosphere is present during operation.

VEGACONNECT, VEGACONNECT 4 must be operated in the applications with USB communication only for service purposes on an intrinsically safe circuit.

Connection

The I²C BUS connection cable and HART connection cable must not be used at the same time.

The Bluetooth USB adapter and the HART resistor may only be operated outside the potentially explosive area.

6 Safe operating mode

General operating conditions

- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer

Connection conditions

- The connection cable of VEGACONNECT has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used

Maximung USB input voltage U_m

The supply of the notebook or USB modem must not exceed the input value of U_m on the non-intrinsically safe USB connection of VEGACONNECT; e.g. by battery operation from the notebook.

7 Important information for mounting and maintenance

General instructions

The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to EN 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.

- The instrument has to be mounted according to the manufacturer specifications, the EU type approval certificate and the valid regulations and standards
- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user
- Modifications must only be carried out by employees authorized by VEGA company
- Use only approved spare parts
- Components for installation and connection not included in the approval documents are only permitted if these correspond technically to the latest standard mentioned on the cover sheet. They must be suitable for the application conditions and have a separate certificate. The special conditions of the components must be noted and if necessary, the components must be integrated in the type test. This applies also to the components already mentioned in the technical description.

Mounting

Keep in mind for instrument mounting

- Mechanical damage on the instrument must be avoided
- Mechanical friction must be avoided

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

- Observe the valid regulations for the interconnection of intrinsically safe circuits.
- The instrument is only suitable for connection to certified, intrinsically safe instruments
- When connecting an intrinsically safe instrument to a non-intrinsically safe circuit, the instrument must be no longer used in intrinsically safe circuits
- When connecting an intrinsically safe instruments with classification mark Ex ia to a circuit with protection level Ex ib, then the classification mark of the instrument changes to Ex ib. After the use as instrument with Ex ib power supply, the instrument must no more be used in circuits with protection level Ex ia.

8 Electrical data

Use as appropriate instrument

The following data are valid for the versions VEGACONNECT, VEGACONNECT 4 in the function as interface adapter. The VEGACONNECT contains a non intrinsically safe (USB) and two intrinsically safe circuits (I²C/HART). The I²C and HART circuit are galvanically connected and must not be connected simultaneously.

Voltage supply via USB interface (non intrinsically safe circuit)

Max. operating voltage	6 V DC
Reference voltage U _m	30 V AC/DC

Signal circuit I²C/HART (intrinsically safe circuits) Ex ia IIC

Communication:	
I ² C interface	Connection via I ² C plug or sliding contacts
HART interface	Connection via 2 mm plug
Max. terminal voltage U_o:	
	6 V
Max. terminal voltage U_i:	
I ² C interface	6 V
HART interface	30 V
Max. current I_o:	
I ² C interface	59.4 mA
HART interface	3.7 mA
Max. power P_o:	
I ² C interface	89.1 mW
HART interface	5.6 mW
Max. power P_i:	
I ² C interface	360 mW
HART interface	-
Effective internal capacitance C_i:	
I ² C interface	0 nF
HART interface	1.2 nF
Effective internal inductance L_i:	
I ² C interface	0 mH
HART interface	0 mH
Permissible external capacitance C_o:	
I ² C interface	40 µF
HART interface	40 µF
Permissible external inductance L_o:	
I ² C interface	10 mH
HART interface	1000 mH
Separation of intrinsically safe: non intrinsically safe circuit	
Peak value of nominal voltage	375 V

9 Thermal data

Ambient conditions	
Ambient temperature ²⁾	-20 ... +60 °C (-4 ... +140 °F)
Electrical protective measures	
Protection rating	IP40

10 Mounting/installation of the communication versions

For applications with USB communication the VEGACONNECT 4 integrated in the junction box (VEGACONNECT) or in a VEGA device, must be operated on an intrinsically safe circuit only for service purposes. Here, the VEGACONNECT, VEGACONNECT 4 must be operated outside the explosive area, or it must be guaranteed that there is no explosive atmosphere during operation.

The I²C- and HART connection cable must not be wired simultaneously.

VEGACONNECT, communication via I²C bus

Application variety 1

The VEGACONNECT with connected notebook, PLC or modem must only be operated within the safe area outside the explosive area.

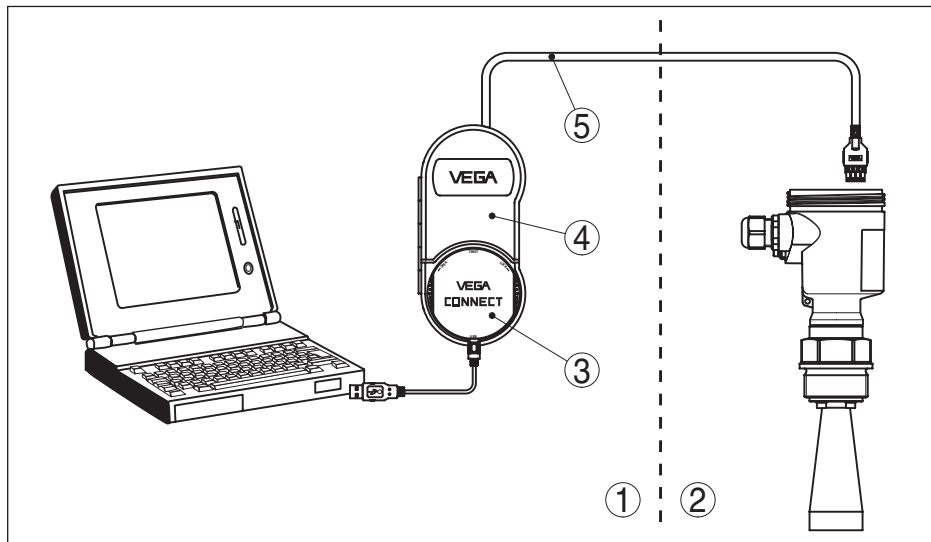


Abb. 5: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

2) If VEGACONNECT 4 is directly mounted into a sensor, please also observe the temperature class table of the respective sensors.

Application variety 2

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

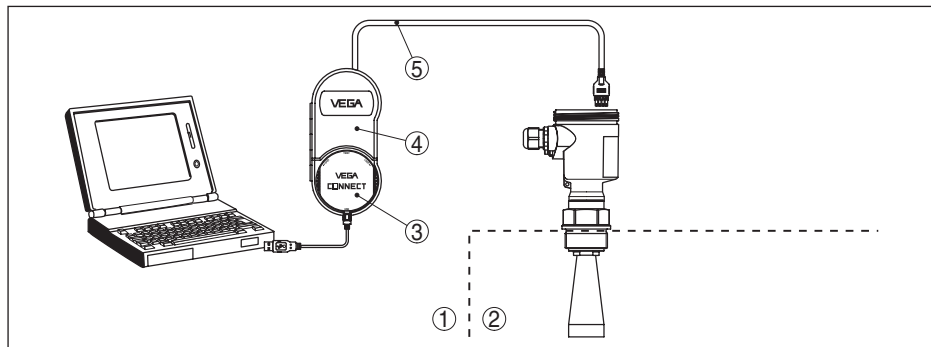


Abb. 6: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

VEGACONNECT 4, communication via I²C bus

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

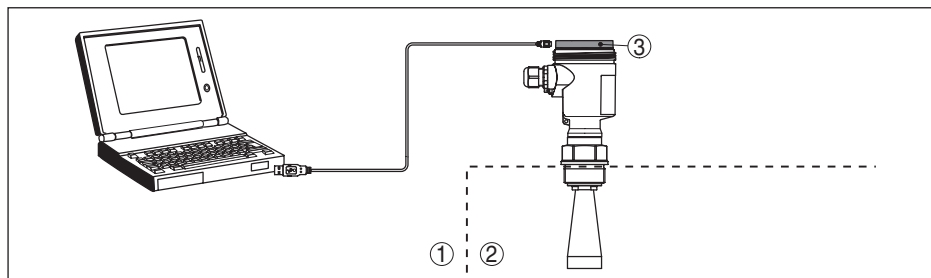


Abb. 7: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4 integrated in VEGA sensor

VEGACONNECT, communication via HART

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the safe area outside the explosive area. The connection is carried out via HART communication on the intrinsically safe signal and power supply.

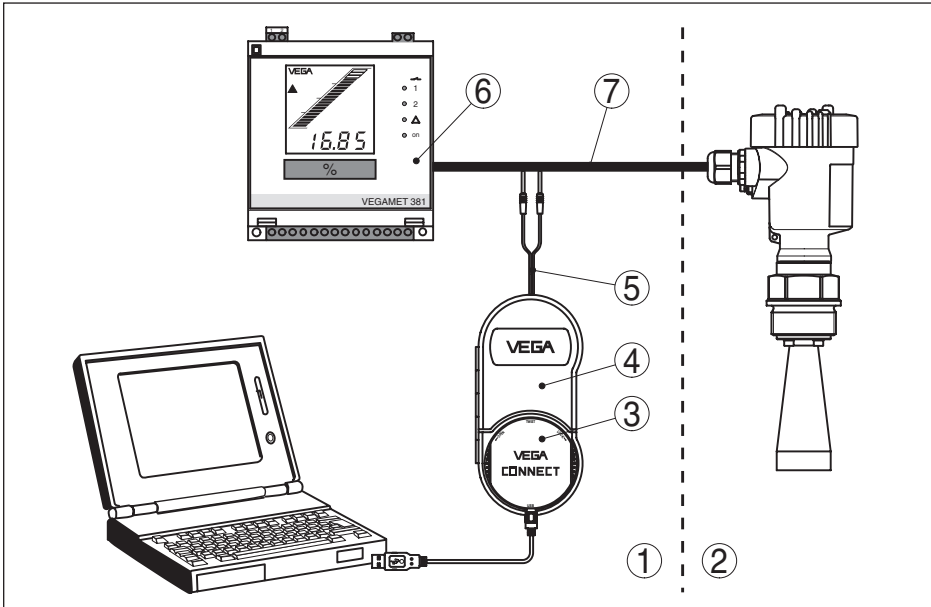


Abb. 8: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 HART cable
- 6 Power supply unit e.g. VEGAMET, VEGATRENN, PLC
- 7 Intrinsically safe signal and power supply circuit

A HART resistor is supplied as standard.

The HART resistor may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another HART resistor is used, the same operating conditions apply.

11 USB connection cable

If the supplied USB connection cable is replaced by another one, make sure that the insulation thickness of the cable is over 0.65 mm.

12 Special conditions

A Bluetooth USB adapter is supplied as standard.

The Bluetooth USB adapter may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another Bluetooth USB adapter is used, the same operating conditions apply.

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Documentation complémentaire:

- Notices de mise en service VEGACONNECT 4
- Certificat de contrôle UE de type PTB 07 ATEX 2013 X (Document ID: 66124)
- Déclaration de conformité UE (ID du document : 48006)

Date de rédaction : 2021-03-19

DE	Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen
EN	Safety instructions for the use in hazardous areas
FR	Consignes de sécurité pour une application en atmosphères explosibles
IT	Normative di sicurezza per l'impiego in luoghi con pericolo di esplosione
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión
PT	Normas de segurança para utilização em zonas sujeitas a explosão
NL	Veiligheidsaanwijzingen voor gebruik op plaatsen waar ontploffingsgevaar kan heersen
SV	Säkerhetsanvisningar för användning i explosionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfære
FI	Turvallisuusohjeet räjähdyksvaarallisissa tiloissa käyttöä varten
EL	Υποδείξεις ασφαλείας για τη χρησιμοποίηση σε περιοχές που υπάρχει κίνδυνος έκρηξης

DE	Die vorliegenden Sicherheitshinweise sind im Download unter www.vega.com standardmäßig in den Sprachen deutsch, englisch, französisch und spanisch verfügbar. Weitere EU-Landes-sprachen stellt VEGA nach Anforderungen zur Verfügung.
EN	These safety instructions are available as a standard feature in the download area under www.vega.com in the languages German, English, French and Spanish. Further EU languages will be made available by VEGA upon request.
FR	Les présentes consignes de sécurité sont disponibles au téléchargement sous www.vega.com en standard en allemand, en anglais, en français et en espagnol. VEGA met à disposition d'autres langues de l'Union Européenne selon les exigences.
ES	Las indicaciones de seguridad presentes están disponibles en la zona de descarga de www.vega.com de forma estándar en los idiomas inglés, francés y español. VEGA pone a disposición otros idiomas de la UE cuando son requeridos.

1 Validité

Les présentes consignes de sécurité concernent les appareils suivants :

- VEGACONNECT
- VEGACONNECT 4

Conformément au certificat de contrôle de type UE PTB 07 ATEX 2013 X (numéro du certificat sur la plaque signalétique) et pour tous les appareils portant le numéro de la consigne de sécurité 66123.

L'identification de protection contre l'inflammation ainsi que les états normalisés sur lesquels elle se fonde figurent dans les certificats mentionnés ci-dessus :

Mode de protection :

- II (1)G [Ex ia Ga] IIC
- II (1)D [Ex ia Da] IIIC

2 Configuration / propriétés des appareils

Vous pouvez consulter la configuration détaillée de l'appareil au moyen de la recherche de numéros de série sur notre page d'accueil.

Rendez-vous sur "www.vega.com" et indiquez dans la zone de recherche le numéro de série de votre appareil.

Vous trouverez en alternative tout sur votre smartphone :

- Télécharger l'application VEGA Tools depuis l'"*Apple App Store*", le "*Google Play Store*" ou le "*Baidu Store*"
- Numériser le code DataMatrix situé sur la plaque signalétique de l'appareil ou
- Entrer le numéro de série manuellement dans l'application

3 Généralités

L'appareil VEGACONNECT, VEGACONNECT 4 est un adaptateur d'interfaces servant à la connexion des appareils VEGA communiquants à une interface USB d'un PC Windows. Vous pouvez également l'utiliser comme modem HART pour les capteurs d'autres fabricants. Les signaux et protocoles de l'interface USB seront convertis en protocole HART ou I²C. Avec un module de réglage et d'affichage supplémentaire, il peut également être utilisé comme un ordinateur de poche.

La VEGACONNECT se compose d'une boîte de raccordement dans laquelle sera inséré le module de communication VEGACONNECT 4. Ici, le module fonctionnera suivant le capteur raccordé comme adaptateur d'interface HART ou I²C.

Comme alternative, le module de communication VEGACONNECT 4 peut être utilisé directement dans le circuit courant de sécurité intrinsèque des appareils VEGA de la série plics®. Dans cette version, le module fonctionnera comme adaptateur d'interface I²C.

Les variantes suivantes sont certifiées pour la VEGACONNECT :

Adaptateur d'interfaces dans la boîte de raccordement (VEGACONNECT)

En tant que matériel associé, elle sert de adaptateur d'interface HART ou I²C. Le module de communication VEGACONNECT 4 sera inséré dans la boîte de raccordement.

Convertisseur d'interfaces dans un appareil VEGA (VEGACONNECT)

En tant que matériel associé, elle sert de adaptateur d'interface I²C. Le module de communication VEGACONNECT 4 sera utilisé directement dans un appareil VEGA.

Si la VEGACONNECT est utilisée comme matériel associé, elle ne devra fonctionner qu'en dehors de l'atmosphère explosible. S'il n'y a aucune atmosphère explosive, son utilisation à l'intérieur de

cette atmosphère explosible sera permise.

4 Domaine d'application, utilisation dans des atmosphères gazeuses et poussiéreuses

Matériel associé

Les VEGACONNECT, VEGACONNECT 4 peuvent être mises en place et exploitées hors des zones antidéflagrantes comme matériel associé.

5 Conditions d'utilisation particulières pour fonctionnement sécurisé

L'aperçu ci-après liste toutes les caractéristiques spécifiques au VEGACONNECT, VEGACONNECT 4 nécessitant une caractérisation par le symbole "X" après le numéro de certificat.

Mode de fonctionnement, Communication

Les détails sont indiqués au chapitre " *Montage/installation des variantes de communication*" des présentes consignes de sécurité.

La VEGACONNECT, VEGACONNECT 4 ne doit être utilisée dans des applications avec communication USB qu'en dehors de l'atmosphère explosible ou il faut s'assurer qu'il n'y a pas d'atmosphère explosible pendant le fonctionnement.

Dans les applications avec communication USB, la VEGACONNECT, VEGACONNECT 4 ne doit être raccordée à un circuit courant en sécurité intrinsèque qu'à des fins de maintenance.

Raccordement

Le câble de raccordement du BUS I²C et le câble de raccordement HART ne doivent pas être utilisés simultanément.

L'adaptateur Bluetooth USB et la résistance HART ne doivent être utilisés qu'en dehors de la zone à risque d'explosion.

6 Fonctionnement sécurisé

Conditions de service générales

- Ne pas utiliser l'appareil hors des spécifications électriques, thermiques et mécaniques du fabricant

Conditions de raccordement

- Le câble de raccordement du VEGACONNECT doit être posé de manière fixe et de telle manière qu'il soit suffisamment protégé contre les endommagements.
- Si la température au niveau des entrées de câble dépasse 70 °C, il faudra utiliser du câble de raccordement adéquat et résistant aux températures sur site

Tension d'entrée USB maximale U_m

L'alimentation de l'ordinateur portable ou du modem USB ne doit pas dépasser la valeur d'entrée de U_m sur la connexion USB en sécurité non intrinsèque de la VEGACONNECT ; par exemple en cas de fonctionnement sur batterie de l'ordinateur portable.

7 Instructions importantes pour le montage et l'entretien

Remarques générales

Pour le montage, l'installation électrique, la mise en service et l'entretien de l'appareil, les conditions suivantes doivent être réunies :

- Le personnel doit disposer des qualifications correspondant à ses fonctions et activités
- Le personnel doit être formé à la protection contre les explosions
- Le personnel doit être familier des dispositions en vigueur, par ex. sur la conception, sélection et construction d'installations électriques selon la norme EN 60079-14
- Lors des opérations sur l'appareil (montage, installation, entretien), il est impératif de s'assurer de l'absence totale d'atmosphère explosible, et si possible mettre les circuits électriques d'alimentation hors tension.
- Installer l'appareil conformément aux indications du fabricant, au certificat de contrôle de type UE et aux réglementations en vigueur.
- Les modifications de l'appareil peuvent affecter la protection anti-déflagrante et ainsi la sécurité, il n'est donc pas autorisé que les réparations soient effectuées par l'utilisateur final
- Le personnel de la Société VEGA est le seul habilité à procéder à des modifications
- Utiliser uniquement des pièces de rechange homologuées
- Seuls des composants qui satisfont techniquement la situation des normes indiquée sur la page de garde sont autorisés pour le montage et l'ajout de composants non inclus dans les dossiers d'agrément. Ils doivent être appropriés pour les conditions d'utilisation et être assortis d'un certificat spécial. Respecter impérativement les conditions particulières des composants, lesquels doivent le cas échéant être intégrés dans le contrôle du type. Cela concerne également les composants mentionnés dans la description technique.

Montage

Lors du montage de l'appareil, respecter les consignes suivantes :

- Éviter les dommages mécaniques à l'appareil
- Éviter les frottements mécaniques

Maintenance

Pour garantir le fonctionnement de l'appareil, un contrôle visuel périodique est recommandé concernant :

- Fiabilité du montage
- Aucune détérioration mécanique ou corrosion
- Câbles usés ou autrement détériorés
- Aucune connexion lâche des raccordements de conduite, raccordements de compensation de potentiel
- Connexions de câbles correctes et clairement marquées

Sécurité intrinsèque "i"

- Respecter les règles en vigueur pour l'interconnexion des circuits courant à sécurité intrinsèque
- L'appareil est exclusivement destiné au raccordement sur des matériels certifiés à sécurité intrinsèque
- En cas de raccordement d'un matériel à sécurité intrinsèque sur un circuit courant sans sécurité intrinsèque, il est interdit de continuer à utiliser le matériel dans des circuits courants à sécurité intrinsèque
- Lors du raccordement d'un matériel à sécurité intrinsèque avec marquage ATEX Ex ia à un circuit courant avec le niveau de protection Ex ib, le marquage ATEX du matériel passe en Ex ib. Après la mise en oeuvre comme matériel avec alimentation Ex ib, il est interdit de mettre le matériel en oeuvre dans des circuits courant avec le niveau de protection Ex ia.

8 Caractéristiques électriques

Application comme matériel associé

Les caractéristiques suivantes sont valables pour les variantes VEGACONNECT, VEGACONNECT 4 dans la fonction de adaptateur d'interfaces. La VEGACONNECT comprend un circuit courant non

de SI (USB) et deux circuits courant de SI (I²C/HART). A l'égard des règlements de sécurité, les circuits I²C et HART sont reliés galvaniquement et ne doivent pas être raccordés en même temps.

Alimentation de tension via interface USB (circuit courant non de sécurité intrinsèque)

Max. tension de service	6 V DC
Tension assignée U_m	30 V AC/DC

Circuit courant signal I²C/HART (circuits courant de sécurité intrinsèque) Ex ia IIC

Communication :	
Interface I ² C	Raccordement via connecteur I ² C ou contacts à frottements
Interface HART	raccordement via connecteur 2 mm

Tension aux bornes max. U_o :	6 V
---------------------------------	-----

Tension aux bornes max. U_i :	
Interface I ² C	6 V
Interface HART	30 V

Courant maxi. I_o :	
Interface I ² C	59,4 mA
Interface HART	3,7 mA

Puissance maxi. P_o :	
Interface I ² C	89,1 mW
Interface HART	5,6 mW

Puissance maxi. P_i :	
Interface I ² C	360 mW
Interface HART	-

Capacité interne effective C_i :	
Interface I ² C	0 nF
Interface HART	1,2 nF

Inductance interne effective L_i :	
Interface I ² C	0 mH
Interface HART	0 mH

Capacité externe tolérée C_o :	
Interface I ² C	40 μ F
Interface HART	40 μ F

Inductance externe tolérée L_o :	
Interface I ² C	10 mH
Interface HART	1000 mH
Séparation entre circuit de sécurité intrinsèque : circuit non de sécurité intrinsèque	
Valeur de crête de la tension nominale	375 V

9 Caractéristiques thermiques

Conditions ambiantes	
Température ambiante ³⁾	-20 ... +60 °C (-4 ... +140 °F)
Mesures de protection électrique	
Type de protection	IP40

10 Montage/installation des variantes de communication

La VEGACONNECT 4 installée dans la boîte de raccordement (VEGACONNECT) ou dans un appareil VEGA ne doit être connectée à un circuit courant de sécurité intrinsèque dans les applications avec communication USB que pour des opérations de maintenance et de dépannage. Dans ce cas, la VEGACONNECT, VEGACONNECT 4 doit fonctionner en dehors de l'atmosphère explosible ou il faut qu'il soit garanti qu'il ne règne aucune atmosphère explosive pendant le fonctionnement de l'appareil.

Les câbles de raccordement I²C et HART ne doivent pas être raccordés simultanément.

VEGACONNECT, communication via bus I²C

Possibilité d'application 1

La VEGACONNECT avec notebook, API ou modem raccordé ne doit fonctionner que dans une zone de sécurité en dehors de l'atmosphère explosible.

3) Si la VEGACONNECT 4 est directement intégrée dans un capteur, il faudra en plus respecter le tableau des classes de température du capteur respectif.

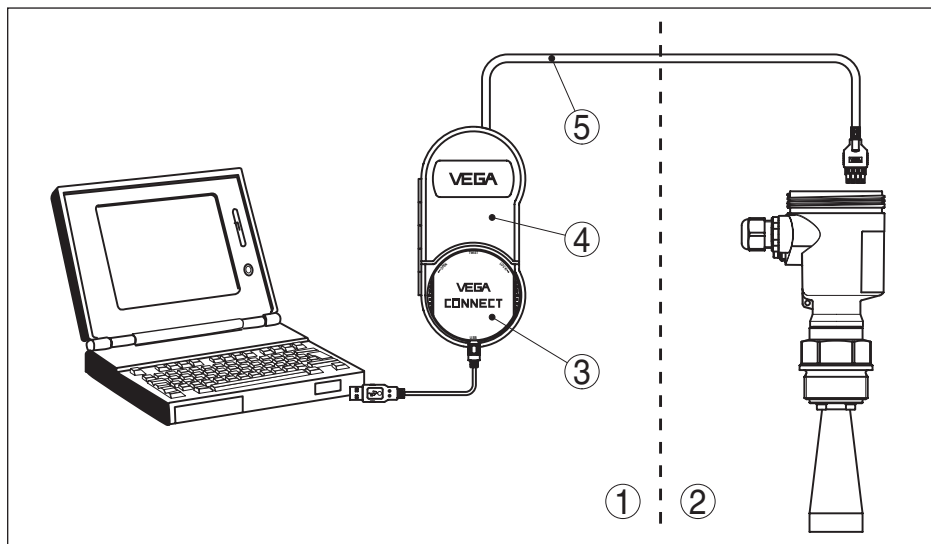


Abb. 9: Application comme matériel associé en zone de sécurité

- 1 Zone de sécurité
- 2 Atmosphère explosible (zone 0, zone 1, zone 2, zone 20, zone 21 ou zone 22)
- 3 VEGACONNECT 4
- 4 Boîte de raccordement
- 5 Câble I²C

Possibilité d'application 2

La VEGACONNECT avec notebook, API ou modem raccordé ne pourra fonctionner en atmosphère explosible de la zone 1 que s'il n'y a aucune présence d'atmosphère explosive.

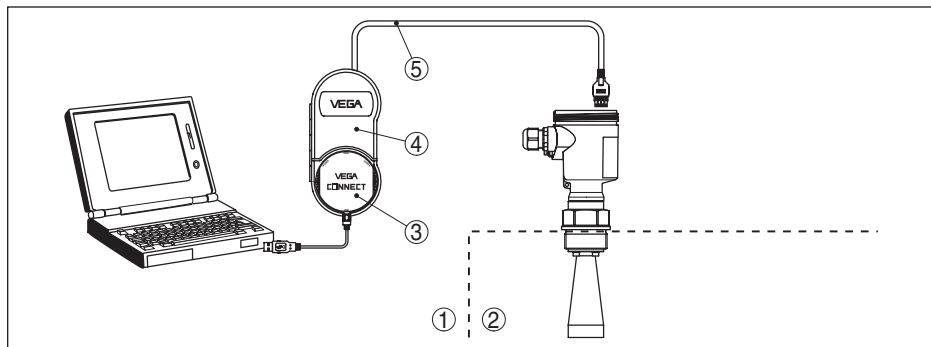


Abb. 10: Application en tant que matériel associé en atmosphère explosible (zone 1 et zone 21) sans atmosphère explosive

- 1 Atmosphère explosible (zone 1 ou zone 2 ou zone 21 ou zone 22) sans atmosphère explosive
- 2 Atmosphère explosible (zone 0 ou zone 1 ou zone 20 ou zone 21)
- 3 VEGACONNECT 4
- 4 Boîte de raccordement
- 5 Câble I²C

VEGACONNECT 4, communication via bus I²C

La VEGACONNECT avec notebook, API ou modem raccordé ne pourra fonctionner en atmosphère explosible de la zone 1 que s'il n'y a aucune présence d'atmosphère explosive.

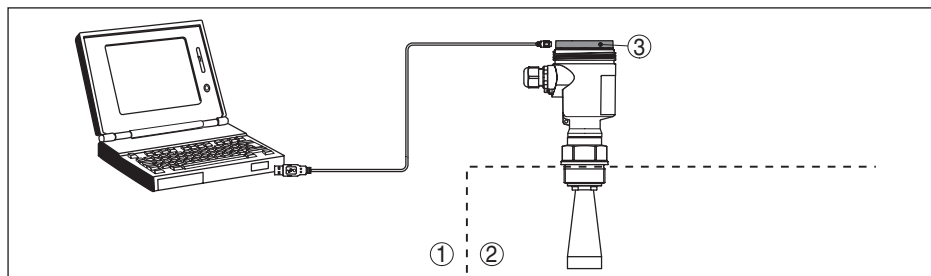


Abb. 11: Application en tant que matériel associé en atmosphère explosible (zone 1 et zone 21) sans atmosphère explosive

- 1 Atmosphère explosible (zone 1 ou zone 2 ou zone 21 ou zone 22) sans atmosphère explosive
- 2 Atmosphère explosible (zone 0 ou zone 1 ou zone 20 ou zone 21)
- 3 VEGACONNECT 4 intégrée dans un capteur VEGA

VEGACONNECT, communication via HART

La VEGACONNECT avec notebook, API ou modem raccordé ne pourra fonctionner que dans la zone de sécurité en dehors de l'atmosphère explosible. Le raccordement s'effectuera via communication HART au circuit courant d'alimentation et de signal de sécurité intrinsèque.

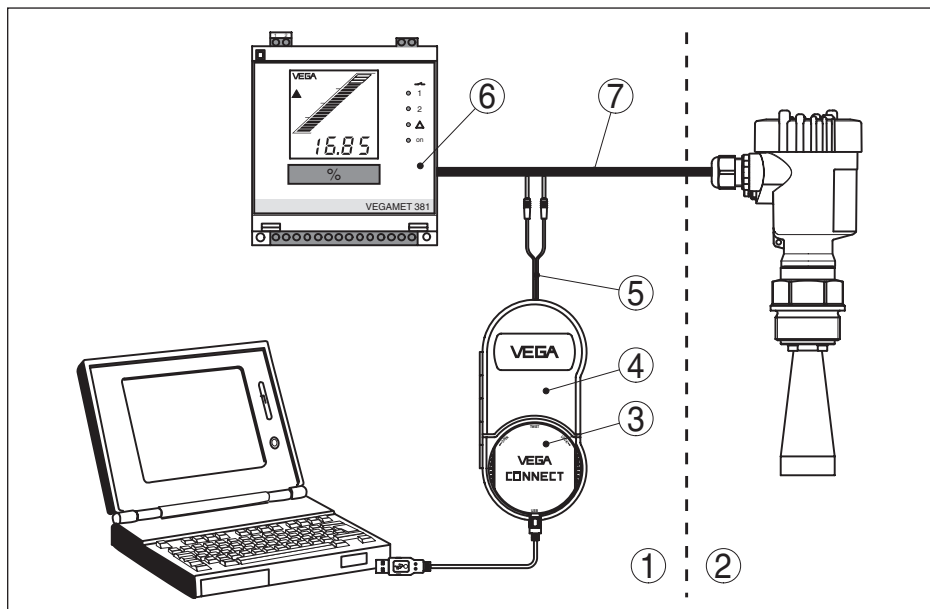


Abb. 12: Application comme matériel associé en zone de sécurité

- 1 Zone de sécurité
- 2 Atmosphère explosive (zone 0, zone 1, zone 2, zone 20, zone 21 ou zone 22)
- 3 VEGACONNECT 4
- 4 Boîte de raccordement
- 5 Câble HART
- 6 Bloc d'alimentation p.ex. VEGAMET, VEGATRENN, API
- 7 Circuit signal et d'alimentation de sécurité intrinsèque

Une résistance HART est fournie en standard.

La résistance HART, elle ne devra fonctionner qu'en dehors de l'atmosphère explosive. S'il n'y a aucune atmosphère explosive, son utilisation à l'intérieur de cette atmosphère explosive sera permise.

Si une autre résistance HART est utilisée, les mêmes conditions d'utilisation s'appliquent.

11 Câble de raccordement USB

Si le câble de raccordement USB livré avec l'appareil est remplacé par un autre, il faudra veiller à ce que l'épaisseur d'isolation de cet autre câble soit supérieure à 0,65 mm.

12 Conditions particulières

Un adaptateur Bluetooth-USB est fournie en standard.

L'adaptateur Bluetooth-USB, elle ne devra fonctionner qu'en dehors de l'atmosphère explosive. S'il n'y a aucune atmosphère explosive, son utilisation à l'intérieur de cette atmosphère explosive sera permise.

Si un autre adaptateur Bluetooth-USB est utilisée, les mêmes conditions d'utilisation s'appliquent.

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Documentación adicional:

- Manuales de instrucciones VEGACONNECT 4
- Certificado de control de tipos UE PTB 07 ATEX 2013 X (Document ID: 66124)
- Declaración de conformidad EU (Document ID: 48006)

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FR	Consignes de sécurité pour une application en atmosphères explosibles
IT	Normative di sicurezza per l'impiego in luoghi con pericolo di esplosione
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión
PT	Normas de segurança para utilização em zonas sujeitas a explosão
NL	Veiligheidsaanwijzingen voor gebruik op plaatsen waar ontploffingsgevaar kan heersen
SV	Säkerhetsanvisningar för användning i explosionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfære
FI	Turvallisuusohjeet räjähdysvaarallisissa tiloissa käyttöä varten
EL	Υποδείξεις ασφαλείας για τη χρησιμοποίηση σε περιοχές που υπάρχει κίνδυνος έκρηξης

DE	Die vorliegenden Sicherheitshinweise sind im Download unter www.vega.com standardmäßig in den Sprachen deutsch, englisch, französisch und spanisch verfügbar. Weitere EU-Landes-sprachen stellt VEGA nach Anforderungen zur Verfügung.
EN	These safety instructions are available as a standard feature in the download area under www.vega.com in the languages German, English, French and Spanish. Further EU languages will be made available by VEGA upon request.
FR	Les présentes consignes de sécurité sont disponibles au téléchargement sous www.vega.com en standard en allemand, en anglais, en français et en espagnol. VEGA met à disposition d'autres langues de l'Union Européenne selon les exigences.
ES	Las indicaciones de seguridad presentes están disponibles en la zona de descarga de www.vega.com de forma estándar en los idiomas inglés, francés y español. VEGA pone a disposición otros idiomas de la UE cuando son requeridos.

1 Vigencia

Las presentes instrucciones de seguridad son validas para los equipos:

- VEGACONNECT
- VEGACONNECT 4

Según el certificado de examen de tipo UE PTB 07 ATEX 2013 X (Número de certificación en la placa de tipos) y para todos los instrumentos con la instrucción de seguridad 66123.

La marca de protección e y las normas correspondientes se encuentran en los certificados mencionados anteriormente:

Símbolo de protección e:

- II (1)G [Ex ia Ga] IIC
- II (1)D [Ex ia Da] IIIC

2 Configuración/propiedades del equipo

Las configuraciones detalladas de los equipos se pueden consultar con ayuda de la búsqueda de números de serie en nuestra página web.

Vaya a "www.vega.com" e introduzca el número de serie de su dispositivo en el campo de búsqueda.

Opcionalmente, también podrá encontrar todo lo relacionado con su smartphone:

- Descargar las aplicaciones VEGA Tools desde " *Apple App Store*", " *Google Play Store*" o " *Baidu Store*"
- Escanear DataMatrix-Code de la placa de tipos del instrumento o
- Entrar el número de serie manualmente en el App

3 Informaciones generales

El VEGACONNECT, VEGACONNECT 4 es un adaptador de interfaces para el enlace de instrumentos VEGA con capacidad de comunicación a la interfase USB de un ordenador Windows. También puede emplearse opcionalmente como módem HART universal para sensores de otros fabricantes. Las señales y protocolos de la interfase USB se transforman en el protocolo industrial HART o I²C. Con un módulo adicional de visualización y ajuste, también se puede usar como dispositivo portátil.

El VEGACONNECT se compone de una caja de conexión, donde está montado el módulo de comunicación VEGACONNECT 4. El mismo trabaja como adaptador de interfaces HART o I²C en dependencia del sensor conectado.

Opcionalmente el módulo de comunicación VEGACONNECT 4 puede emplearse directamente en el circuito con seguridad intrínseca en los instrumentos VEGA de la serie plics®. En esa versión el mismo trabaja como adaptador de interfaces I²C.

Las variantes siguientes están certificadas para el VEGACONNECT:

Adaptador de interfaces en caja de conexión (VEGACONNECT)

Como medio de producción correspondiente el mismo sirve como adaptador de interfaces HART o I²C. En la caja de conexión se emplea el módulo de comunicación VEGACONNECT 4.

Convertidor de interface en el instrumento VEGA (VEGACONNECT 4)

Como medio de producción correspondiente el mismo sirve como adaptador de interfaces I²C. El módulo de comunicación VEGACONNECT 4 se emplea directamente en un instrumento VEGA.

Si el VEGACONNECT se emplea como medio de producción correspondiente, solamente se puede operar fuera de la zona con peligro de explosión. Si no existe ninguna atmósfera explosiva, se permite también el empleo dentro de esa zona con peligro de explosión.

4 Campo de aplicación, uso en atmósferas de gas y polvo

Material correspondiente

Los VEGACONNECT, VEGACONNECT 4 pueden instalarse y utilizarse como equipo asociado fuera de las zonas peligrosas.

5 Condiciones de operación especiales para un funcionamiento seguro

La siguiente tabla muestra todas las propiedades especiales del VEGACONNECT, VEGACONNECT 4 que requieren una marca con el símbolo "X" después del número de certificado.

Modo de operación, Comunicación

Los detalles se pueden encontrar en el capítulo " *Montaje/instalación de las variantes de comunicación*" de estas instrucciones de seguridad.

El VEGACONNECT, VEGACONNECT 4 sólo puede ser operado en aplicaciones con comunicación USB fuera de la zona de peligro o hay que asegurar que no exista una atmósfera explosiva durante el funcionamiento.

El VEGACONNECT, VEGACONNECT 4 debe ser operado en las aplicaciones con comunicación USB solamente para fines de servicio en un circuito intrínsecamente seguro.

Conexión

El cable de conexión del BUS I²C y el cable de conexión HART no deben utilizarse al mismo tiempo.

El adaptador USB Bluetooth y la resistencia HART sólo pueden funcionar fuera de la zona potencialmente explosiva.

6 Funcionamiento seguro

Condiciones de operación generales

- No operar ningún instrumento fuera de las especificaciones eléctricas, térmicas y mecánicas del fabricante

Condiciones de conexión

- Hay que tender y fijar cable de conexión del VEGACONNECT de forma tal que quede completamente protegido contra daños.
- Si la temperatura en las piezas de entrada es mayor de 70 °C, hay que emplear líneas de conexión adecuadas resistentes a la temperatura

Tensión máxima de entrada USB U_m

La alimentación del portátil o del módem USB no debe sobrepasar el valor de entrada de U_m en la conexión USB de seguridad no intrínseca del VEGACONNECT; por ejemplo, mediante el funcionamiento con batería del portátil.

7 Indicaciones importantes para el montaje y mantenimiento

Instrucciones generales

Para el montaje, la instalación eléctrica, la puesta en marcha y el mantenimiento del instrumento hay cumplir los requisitos siguientes:

- El personal debe tener las calificaciones de acuerdo a su función y actividad
- El personal tiene que estar entrenado en la protección contra explosión

- El personal debe estar familiarizado con la normativa vigente, por ejemplo, planificación y construcción de acuerdo con la norma EN 60079-14
- Cuando trabaje en el dispositivo (instalación, instalación, mantenimiento), asegúrese de que no haya atmósfera potencialmente explosiva; si es posible, desconecte los circuitos de la fuente de alimentación.
- Instale el dispositivo de acuerdo con las instrucciones del fabricante, el certificado de examen de tipo UE y las reglamentaciones, reglas y normas aplicables.
- Cambios en el instrumento pueden afectar la protección contra explosión y por lo tanto la seguridad, la seguridad, por lo tanto, no está permitido que el usuario final realice reparaciones
- Modificaciones solamente pueden ser realizada por personal autorizado por la empresa VEGA.
- Usar solo piezas de repuesto aprobadas
- Para el montaje y desmontaje de componentes no incluidos en los documentos de homologación, sólo se admiten aquellos componentes que corresponden técnicamente al estado estándar indicado en la portada. Deben ser adecuados para las condiciones de utilización y disponer de un certificado individual. Deben observarse las condiciones especiales de los componentes y, en caso necesario, estos deben incluirse en el ensayo de tipo. Esto también se aplica a los componentes mencionados anteriormente en la descripción técnica.

Montaje

Durante el montaje del instrumento, por favor tenga en cuenta:

- Hay que evitar daños mecánicos en el instrumento
- Hay que evitar fricción mecánica

Mantenimiento

Para asegurar el funcionamiento del instrumento se recomienda realizar un control visual periódico de los siguientes puntos:

- Montaje seguro
- Ningún deterioro mecánico o corrosión
- Líneas desgastadas o dañadas de otra manera
- Ninguna conexión floja de las conexiones de los cables, conexiones de compensación de potencial
- Conexiones de líneas marcadas de forma clara y correcta

Seguridad intrínseca "i"

- Observar las normas vigentes para la interconexión de circuitos de seguridad intrínseca.
- El equipo sólo es adecuado para la conexión a instrumentos de seguridad intrínseca certificados
- Cuando se conecta un instrumento de seguridad intrínseca a un circuito sin seguridad intrínseca, el equipo no se puede utilizar más en circuitos de seguridad intrínseca
- Cuando se conecta un equipo de seguridad intrínseca con el símbolo de protección contra ignición Ex ia a un circuito eléctrico con nivel de protección Ex ib, el símbolo de protección contra ignición del equipo cambia a Ex ib. Después del uso como equipo con alimentación Ex ib, el equipo no puede utilizar más en circuitos con nivel de protección Ex ia.

8 Datos eléctricos

Empleo como medio de producción correspondiente

Los datos siguientes son válidos para las variantes VEGACONNECT, VEGACONNECT 4 en la función como adaptador de interfaces. El VEGACONNECT contiene un circuito (USB) sin seguridad intrínseca y dos con circuitos seguridad intrínseca (I²C/HART). Los circuitos I²C y HART están unidos galvánicamente por razones de seguridad y no deben ser conectados simultáneamente.

Alimentación de tensión a través de la interface USB (circuito sin seguridad intrínseca)

Max. tensión de alimentación	6 V DC
Tensión de referencia U_m	30 V AC/DC

Circuito de señales I²C/HART (circuito con seguridad intrínseca) Ex ia IIC

Comunicación:	
Interface I ² C	Conexión mediante enchufe I ² C o contactos deslizantes
Interface HART	Conexión mediante enchufe de 2 mm

Máx. tensión en los terminales U_o :	6 V
--	-----

Máx. tensión en los terminales U_i:	
Interface I ² C	6 V
Interface HART	30 V

Corriente máx. I_o:	
Interface I ² C	59,4 mA
Interface HART	3,7 mA

Potencia máx. P_o:	
Interface I ² C	89,1 mW
Interface HART	5,6 mW

Potencia máx. P_i:	
Interface I ² C	360 mW
Interface HART	-

Capacidad interna efectiva C_i:	
Interface I ² C	0 nF
Interface HART	1,2 nF

Inductividad interna efectiva L_i:	
Interface I ² C	0 mH
Interface HART	0 mH

Capacidad externa permisible C_o:	
Interface I ² C	40 μ F
Interface HART	40 μ F

Inductividad externa permisible L_o:	
Interface I ² C	10 mH
Interface HART	1000 mH

Separación circuito con seguridad intrínseca: circuito de corriente sin seguridad intrínseca	
Valor de pico de la tensión nominal	375 V

9 Datos térmicos

Condiciones ambientales	
Temperatura ambiente ⁴⁾	-20 ... +60 °C (-4 ... +140 °F)

Medidas de protección eléctrica	
Tipo de protección	IP40

10 Montaje/instalación de las variantes de comunicación

El VEGACONNECT montado en la caja de conexión (VEGACONNECT) o en un instrumento VEGA solamente se puede operar con fines de servicio en un circuito con seguridad intrínseca en las aplicaciones con comunicación USB. Aquí hay que operar el VEGACONNECT, VEGACONNECT 4 fuera de la zona con peligro de explosión o tiene que estar asegurado, que no exista ninguna atmósfera explosiva durante el funcionamiento.

Los cables de conexión I²C y HART no pueden conectarse simultáneamente.

VEGACONNECT, Comunicación vía bus I²C

Posibilidad de empleo 1

El VEGACONNECT con Notebook, PLC o módem conectado puede ser utilizado solamente en zonas seguras fuera de la zona bajo peligro de explosión.

4) Si el VEGACONNECT 4 está montado directamente en un sensor, hay que tener en cuenta adicionalmente la tabla de clases de temperaturas del sensor correspondiente.

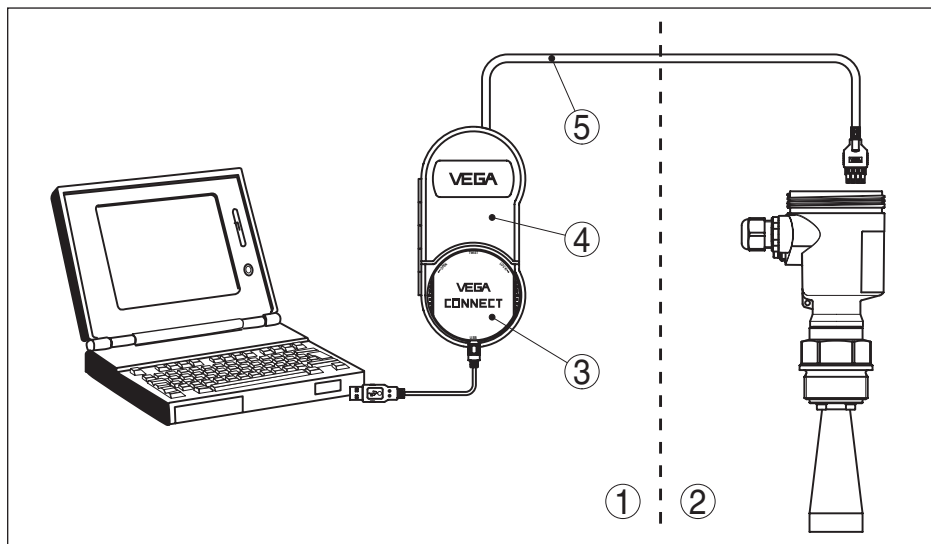


Abb. 13: Empleo como medio de producción correspondiente en zona segura

- 1 Zona segura
- 2 Zona con riesgo de explosión (zona 0, zona 1, zona 2, zona 20, zona 21 o zona 22)
- 3 VEGACONNECT 4
- 4 Caja de conexión
- 5 Cable I²C

Posibilidad de empleo 2

El VEGACONNECT con Notebook, PLC o módem conectado puede ser utilizado solamente en áreas con peligro de explosión de la zona 1, si no existe ninguna atmósfera explosiva.

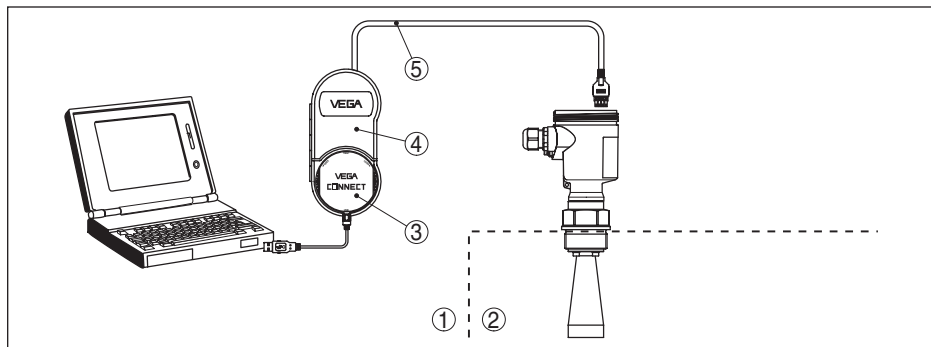


Abb. 14: Empleo como medio de producción correspondiente en zona con riesgo de explosión (zona 1 y zona 21) con atmósfera explosiva

- 1 Zona con riesgo de explosión (zona 1 o zona 2 o zona 21 o zona 22) sin atmósfera explosiva
- 2 Zona con riesgo de explosión (zona 0 o zona 1 o zona 20 o zona 21)
- 3 VEGACONNECT 4
- 4 Caja de conexión
- 5 Cable I²C

VEGACONNECT 4, Comunicación vía bus I²C

El VEGACONNECT con Notebook, PLC o módem conectado puede ser utilizado solamente en áreas con peligro de explosión de la zona 1, si no existe ninguna atmósfera explosiva.

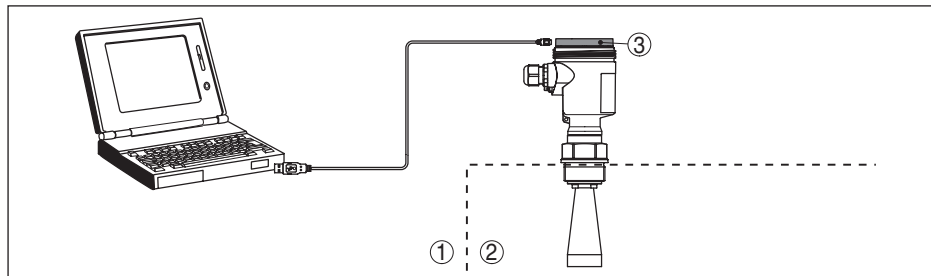


Abb. 15: Empleo como medio de producción correspondiente en zona con riesgo de explosión (zona 1 y zona 21) con atmósfera explosiva

- 1 Zona con riesgo de explosión (zona 1 o zona 2 o zona 21 o zona 22) sin atmósfera explosiva
- 2 Zona con riesgo de explosión (zona 0 o zona 1 o zona 20 o zona 21)
- 3 VEGACONNECT 4 montado en sensor VEGA

VEGACONNECT, Comunicación vía HART

El VEGACONNECT con Notebook, PLC o módem conectado puede ser utilizado solamente en zonas seguras fuera de la zona bajo peligro de explosión. La conexión se realiza mediante comunicación HART-a los circuito de señales y de alimentación de corriente de seguridad intrínseca.

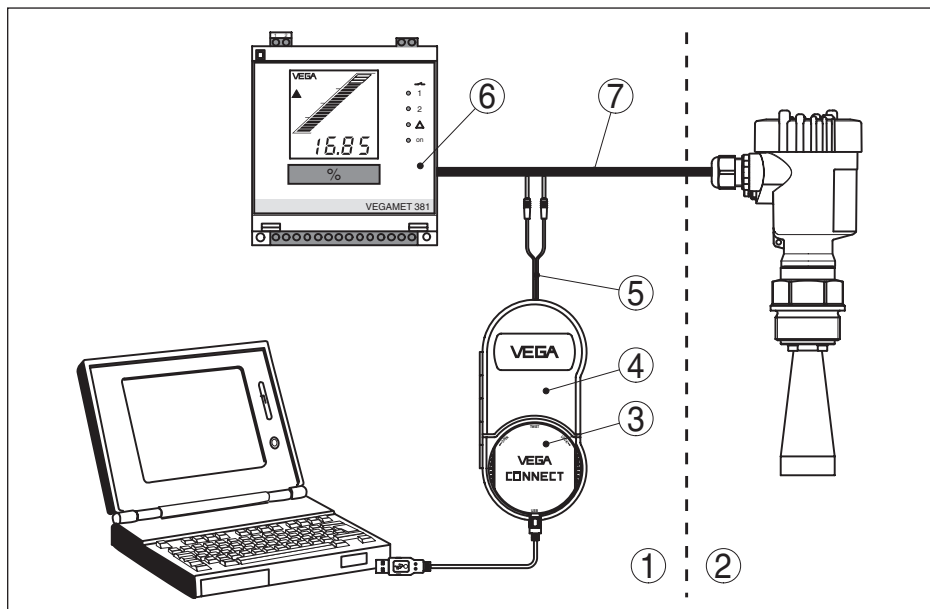


Abb. 16: Empleo como medio de producción correspondiente en zona segura

- 1 Zona segura
- 2 Zona con riesgo de explosión (zona 0, zona 1, zona 2, zona 20, zona 21 o zona 22)
- 3 VEGACONNECT 4
- 4 Caja de conexión
- 5 Cable HART
- 6 Fuente de alimentación p. Ej. VEGAMET, VEGATRENN, SPS
- 7 Circuito de señal y alimentación con seguridad intrínseca

Se suministra una resistencia HART como estándar.

La resistencia HART sólo puede operar fuera de la zona con peligro de explosión. Si no existe ninguna atmósfera explosiva, se permite también el empleo dentro de esa zona con peligro de explosión.

Si se utiliza una resistencia HART diferente, se aplican las mismas condiciones de funcionamiento.

11 Cable de conexión USB

Si se sustituye el cable de conexión USB suministrado por otro, hay que atender, que el grueso del aislamiento de dicho cable sea mayor de 0,65 mm.

12 Condiciones especiales

Se suministra un adaptador Bluetooth-USB como estándar.

El adaptador Bluetooth-USB sólo puede operar fuera de la zona con peligro de explosión. Si no existe ninguna atmósfera explosiva, se permite también el empleo dentro de esa zona con peligro de explosión.

Si se utiliza un adaptador Bluetooth-USB diferente, se aplican las mismas condiciones de funcionamiento.

Druckdatum:

VEGA

Die Angaben über Lieferumfang, Anwendung, Einsatz und Betriebsbedingungen der Sensoren und Auswertsysteme entsprechen den zum Zeitpunkt der Drucklegung vorhandenen Kenntnissen.
Änderungen vorbehalten

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ATEX

Safety instructions VEGACONNECT VEGACONNECT 4

Intrinsic safety



0891

Document ID: 66123

VEGA

UKEX

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Supplementary documentation:

- Operating Instructions VEGACONNECT 4
- UK-Type Examination Certificate UL22UKEX2588X (Document ID: 1013456)
- UK Declaration of Conformity (Document ID: 66273)

Editing status: 2022-06-21

1 Area of applicability

These safety instructions apply to the devices:

- VEGACONNECT
- VEGACONNECT 4

According to UK-Type Examination Certificate UL22UKEX2588X (certificate number on the type label) and for all instruments with safety instruction 66123.

The classification as well as the respective standards are stated in the above certificates:

Type of protection marking:

- II (1)G [Ex ia Ga] IIC
- II (1)D [Ex ia Da] IIIC

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to "www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the "*Apple App Store*", "*Google Play Store*" or "*Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGACONNECT, VEGACONNECT 4 is an interface adapter for connection of communication capable VEGA instruments to the USB interface of a Windows PC. Alternatively it can also be used as a universal HART modem for sensors of other manufacturers. The signals and protocols of the USB interface are converted into the industrial HART or I²C protocol. With an additional indicating and adjustment module it can also be used as a handheld.

The VEGACONNECT consists of a junction box into which the communication module VEGACONNECT 4 is installed. Here, it works either as HART or I²C interface adapter depending on the connected sensor.

Alternatively the communication module VEGACONNECT 4 can be directly used on intrinsically safe circuits in VEGA instruments of plics® series. In this version it operates as I²C interface adapter.

The following versions are certified for VEGACONNECT:

Interface adapter in junction box (VEGACONNECT)

As appropriate instrument it is used as HART or I²C interface adapter. The communication module VEGACONNECT 4 is inserted in the junction box.

Interface adapter in VEGA device (VEGACONNECT 4)

As appropriate instrument it is used as I²C interface adapter. The communication module VEGACONNECT 4 is directly inserted in a VEGA device.

If VEGACONNECT is used as appropriate instrument, it should only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed

4 Application area, use in gas and dust atmospheres

Associated apparatus

The VEGACONNECT, VEGACONNECT 4 may be installed and operated outside of hazardous areas as associated equipment.

5 Specific conditions of use for safe operating mode

The following overview is listing all special properties of VEGACONNECT, VEGACONNECT 4, which make a labelling with the symbol "X" behind the certificate number necessary.

Operating mode, communication

You can find the details in chapter " *Mounting/Installation of the communication versions*" of these safety instructions.

VEGACONNECT, VEGACONNECT 4 must only be operated in applications with USB communication outside the hazardous area or it must be ensured that no explosive atmosphere is present during operation.

VEGACONNECT, VEGACONNECT 4 must be operated in the applications with USB communication only for service purposes on an intrinsically safe circuit.

Connection

The I²C BUS connection cable and HART connection cable must not be used at the same time.

The Bluetooth USB adapter and the HART resistor may only be operated outside the potentially explosive area.

6 Safe operating mode

General operating conditions

- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer

Connection conditions

- The connection cable of VEGACONNECT has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used

Maximung USB input voltage U_m

The supply of the notebook or USB modem must not exceed the input value of U_m on the non-intrinsically safe USB connection of VEGACONNECT; e.g. by battery operation from the notebook.

7 Important information for mounting and maintenance

General instructions

The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to IEC 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.

- The instrument has to be mounted according to the manufacturer specifications, the Certificate of Conformity and the valid regulations and standards
- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user
- Modifications must only be carried out by employees authorized by VEGA company
- Use only approved spare parts
- Components for installation and connection not included in the approval documents are only permitted if these correspond technically to the latest standard mentioned on the cover sheet. They must be suitable for the application conditions and have a separate certificate. The special conditions of the components must be noted and if necessary, the components must be integrated in the type test. This applies also to the components already mentioned in the technical description.

Mounting

Keep in mind for instrument mounting

- Mechanical damage on the instrument must be avoided
- Mechanical friction must be avoided

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

- Observe the valid regulations for the interconnection of intrinsically safe circuits.
- The instrument is only suitable for connection to certified, intrinsically safe instruments
- When connecting an intrinsically safe instrument to a non-intrinsically safe circuit, the instrument must be no longer used in intrinsically safe circuits
- When connecting an intrinsically safe instruments with classification mark Ex ia to a circuit with protection level Ex ib, then the classification mark of the instrument changes to Ex ib. After the use as instrument with Ex ib power supply, the instrument must no more be used in circuits with protection level Ex ia.

8 Electrical data

Use as appropriate instrument

The following data are valid for the versions VEGACONNECT, VEGACONNECT 4 in the function as interface adapter. The VEGACONNECT contains a non intrinsically safe (USB) and two intrinsically safe circuits (I²C/HART). The I²C and HART circuit are galvanically connected and must not be connected simultaneously.

Voltage supply via USB interface (non intrinsically safe circuit)

Max. operating voltage	6 V DC
Reference voltage U _m	30 V AC/DC

Signal circuit I²C/HART (intrinsically safe circuits) Ex ia IIC

Communication:	
I ² C interface	Connection via I ² C plug or sliding contacts
HART interface	Connection via 2 mm plug
Max. terminal voltage U_o:	
I ² C interface	6 V
Max. terminal voltage U_i:	
I ² C interface	6 V
HART interface	30 V
Max. current I_o:	
I ² C interface	59.4 mA
HART interface	3.7 mA
Max. power P_o:	
I ² C interface	89.1 mW
HART interface	5.6 mW
Max. power P_i:	
I ² C interface	360 mW
HART interface	-
Effective internal capacitance C_i:	
I ² C interface	0 nF
HART interface	1.2 nF
Effective internal inductance L_i:	
I ² C interface	0 mH
HART interface	0 mH
Permissible external capacitance C_o:	
I ² C interface	40 µF
HART interface	40 µF
Permissible external inductance L_o:	
I ² C interface	10 mH
HART interface	1000 mH
Separation of intrinsically safe: non intrinsically safe circuit	
Peak value of nominal voltage	375 V

9 Thermal data

Ambient conditions	
Ambient temperature ¹⁾	-20 ... +60 °C (-4 ... +140 °F)
Electrical protective measures	
Protection rating	IP40

10 Mounting/installation of the communication versions

For applications with USB communication the VEGACONNECT 4 integrated in the junction box (VEGACONNECT) or in a VEGA device, must be operated on an intrinsically safe circuit only for service purposes. Here, the VEGACONNECT, VEGACONNECT 4 must be operated outside the explosive area, or it must be guaranteed that there is no explosive atmosphere during operation.

The I²C- and HART connection cable must not be wired simultaneously.

10.1 VEGACONNECT, communication via I²C bus

Application variety 1

The VEGACONNECT with connected notebook, PLC or modem must only be operated within the safe area outside the explosive area.

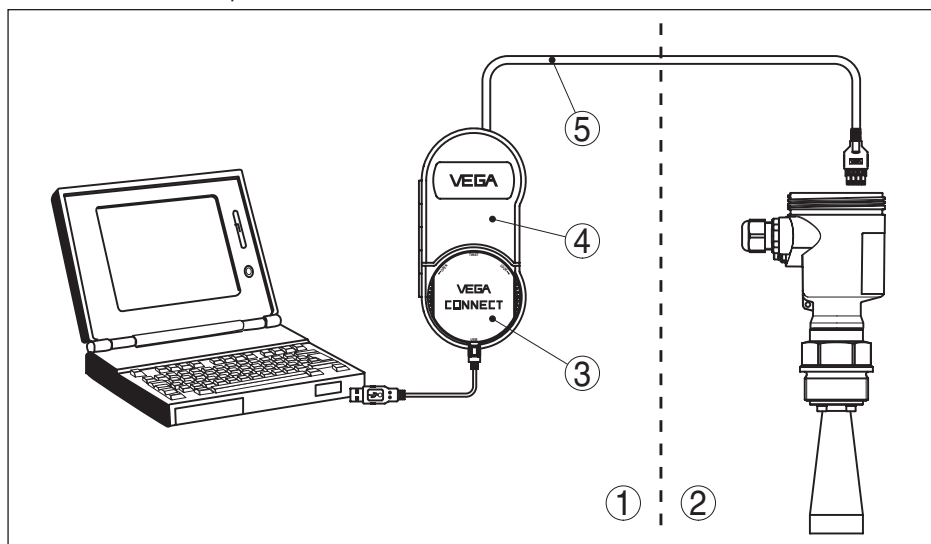


Fig. 1: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

1) If VEGACONNECT 4 is directly mounted into a sensor, please also observe the temperature class table of the respective sensors.

Application variety 2

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

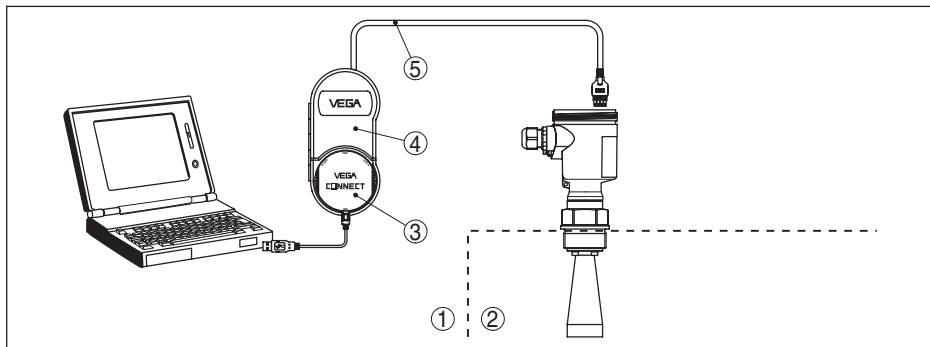


Fig. 2: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

10.2 VEGACONNECT 4, communication via I²C bus

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

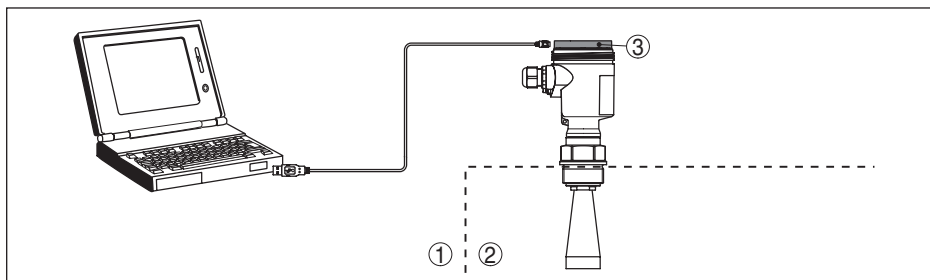


Fig. 3: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4 integrated in VEGA sensor

10.3 VEGACONNECT, communication via HART

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the safe area outside the explosive area. The connection is carried out via HART communication on the intrinsically safe signal and power supply.

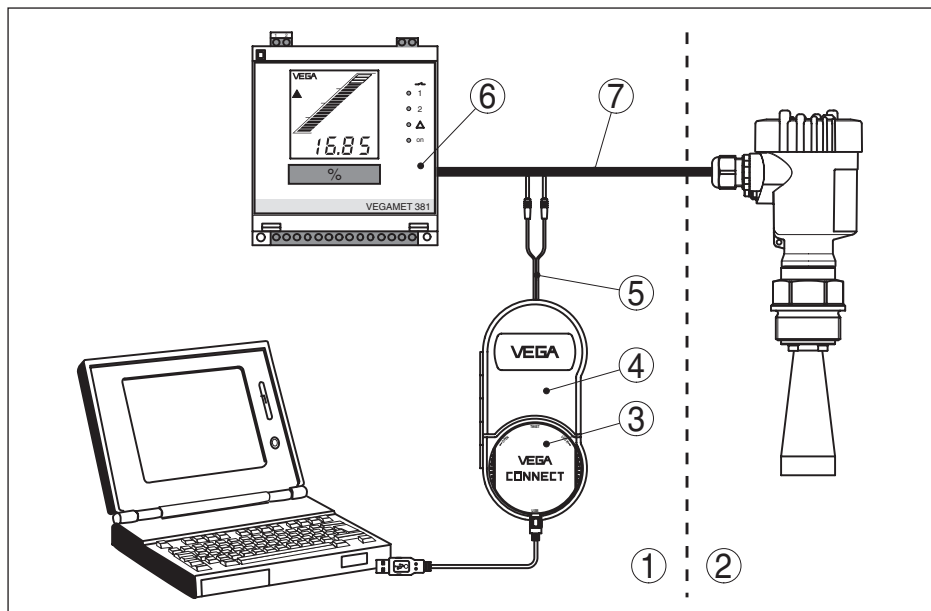


Fig. 4: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 HART cable
- 6 Power supply unit e.g. VEGAMET, VEGATRENN, PLC
- 7 Intrinsically safe signal and power supply circuit

A HART resistor is supplied as standard.

The HART resistor may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another HART resistor is used, the same operating conditions apply.

11 USB connection cable

If the supplied USB connection cable is replaced by another one, make sure that the insulation thickness of the cable is over 0.65 mm.

12 Special conditions

A Bluetooth USB adapter is supplied as standard.

The Bluetooth USB adapter may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another Bluetooth USB adapter is used, the same operating conditions apply.

Printing date:

VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

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Safety instructions

VEGACONNECT

VEGACONNECT 4

Intrinsic safety



Document ID: 66123

VEGA

IECEX

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Supplementary documentation:

- Operating Instructions VEGACONNECT 4
- Certificate of Conformity IECEx PTB 20.0007 X (Document ID: 66125)

Editing status: 2021-03-19

1 Area of applicability

These safety instructions apply to the devices:

- VEGACONNECT
- VEGACONNECT 4

According to Certificate of Conformity IECEx PTB 20.0007 X (certificate number on the type label) and for all instruments with safety instruction 66123.

The classification as well as the respective standards are stated in the above certificates:

Type of protection marking:

- [Ex ia Ga] IIC
- [Ex ia Da] IIIC

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to "www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the "Apple App Store", "Google Play Store" or "Baidu Store"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGACONNECT, VEGACONNECT 4 is an interface adapter for connection of communication capable VEGA instruments to the USB interface of a Windows PC. Alternatively it can also be used as a universal HART modem for sensors of other manufacturers. The signals and protocols of the USB interface are converted into the industrial HART or I²C protocol. With an additional indicating and adjustment module it can also be used as a handheld.

The VEGACONNECT consists of a junction box into which the communication module VEGACONNECT 4 is installed. Here, it works either as HART or I²C interface adapter depending on the connected sensor.

Alternatively the communication module VEGACONNECT 4 can be directly used on intrinsically safe circuits in VEGA instruments of plics® series. In this version it operates as I²C interface adapter.

The following versions are certified for VEGACONNECT:

Interface adapter in junction box (VEGACONNECT)

As appropriate instrument it is used as HART or I²C interface adapter. The communication module VEGACONNECT 4 is inserted in the junction box.

Interface adapter in VEGA device (VEGACONNECT 4)

As appropriate instrument it is used as I²C interface adapter. The communication module VEGACONNECT 4 is directly inserted in a VEGA device.

If VEGACONNECT is used as appropriate instrument, it should only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed

4 Application area, use in gas and dust atmospheres

Associated apparatus

The VEGACONNECT, VEGACONNECT 4 may be installed and operated outside of hazardous areas as associated equipment.

5 Specific conditions of use for safe operating mode

The following overview is listing all special properties of VEGACONNECT, VEGACONNECT 4, which make a labelling with the symbol "X" behind the certificate number necessary.

Operating mode, communication

You can find the details in chapter " *Mounting/Installation of the communication versions*" of these safety instructions.

VEGACONNECT, VEGACONNECT 4 must only be operated in applications with USB communication outside the hazardous area or it must be ensured that no explosive atmosphere is present during operation.

VEGACONNECT, VEGACONNECT 4 must be operated in the applications with USB communication only for service purposes on an intrinsically safe circuit.

Connection

The I²C BUS connection cable and HART connection cable must not be used at the same time.

The Bluetooth USB adapter and the HART resistor may only be operated outside the potentially explosive area.

6 Safe operating mode

General operating conditions

- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer

Connection conditions

- The connection cable of VEGACONNECT has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used

Maximung USB input voltage U_m

The supply of the notebook or USB modem must not exceed the input value of U_m on the non-intrinsically safe USB connection of VEGACONNECT; e.g. by battery operation from the notebook.

7 Important information for mounting and maintenance

General instructions

The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to IEC 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.

- The instrument has to be mounted according to the manufacturer specifications, the Certificate of Conformity and the valid regulations and standards
- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user
- Modifications must only be carried out by employees authorized by VEGA company
- Use only approved spare parts
- Components for installation and connection not included in the approval documents are only permitted if these correspond technically to the latest standard mentioned on the cover sheet. They must be suitable for the application conditions and have a separate certificate. The special conditions of the components must be noted and if necessary, the components must be integrated in the type test. This applies also to the components already mentioned in the technical description.

Mounting

Keep in mind for instrument mounting

- Mechanical damage on the instrument must be avoided
- Mechanical friction must be avoided

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

- Observe the valid regulations for the interconnection of intrinsically safe circuits.
- The instrument is only suitable for connection to certified, intrinsically safe instruments
- When connecting an intrinsically safe instrument to a non-intrinsically safe circuit, the instrument must be no longer used in intrinsically safe circuits
- When connecting an intrinsically safe instruments with classification mark Ex ia to a circuit with protection level Ex ib, then the classification mark of the instrument changes to Ex ib. After the use as instrument with Ex ib power supply, the instrument must no more be used in circuits with protection level Ex ia.

8 Electrical data

Use as appropriate instrument

The following data are valid for the versions VEGACONNECT, VEGACONNECT 4 in the function as interface adapter. The VEGACONNECT contains a non intrinsically safe (USB) and two intrinsically safe circuits (I²C/HART). The I²C and HART circuit are galvanically connected and must not be connected simultaneously.

Voltage supply via USB interface (non intrinsically safe circuit)

Max. operating voltage	6 V DC
Reference voltage U _m	30 V AC/DC

Signal circuit I²C/HART (intrinsically safe circuits) Ex ia IIC

Communication:	
I ² C interface	Connection via I ² C plug or sliding contacts
HART interface	Connection via 2 mm plug
Max. terminal voltage U_o:	
I ² C interface	6 V
Max. terminal voltage U_i:	
I ² C interface	6 V
HART interface	30 V
Max. current I_o:	
I ² C interface	59.4 mA
HART interface	3.7 mA
Max. power P_o:	
I ² C interface	89.1 mW
HART interface	5.6 mW
Max. power P_i:	
I ² C interface	360 mW
HART interface	-
Effective internal capacitance C_i:	
I ² C interface	0 nF
HART interface	1.2 nF
Effective internal inductance L_i:	
I ² C interface	0 mH
HART interface	0 mH
Permissible external capacitance C_o:	
I ² C interface	40 µF
HART interface	40 µF
Permissible external inductance L_o:	
I ² C interface	10 mH
HART interface	1000 mH
Separation of intrinsically safe: non intrinsically safe circuit	
Peak value of nominal voltage	375 V

9 Thermal data

Ambient conditions	
Ambient temperature ¹⁾	-20 ... +60 °C (-4 ... +140 °F)
Electrical protective measures	
Protection rating	IP40

10 Mounting/installation of the communication versions

For applications with USB communication the VEGACONNECT 4 integrated in the junction box (VEGACONNECT) or in a VEGA device, must be operated on an intrinsically safe circuit only for service purposes. Here, the VEGACONNECT, VEGACONNECT 4 must be operated outside the explosive area, or it must be guaranteed that there is no explosive atmosphere during operation.

The I²C- and HART connection cable must not be wired simultaneously.

10.1 VEGACONNECT, communication via I²C bus

Application variety 1

The VEGACONNECT with connected notebook, PLC or modem must only be operated within the safe area outside the explosive area.

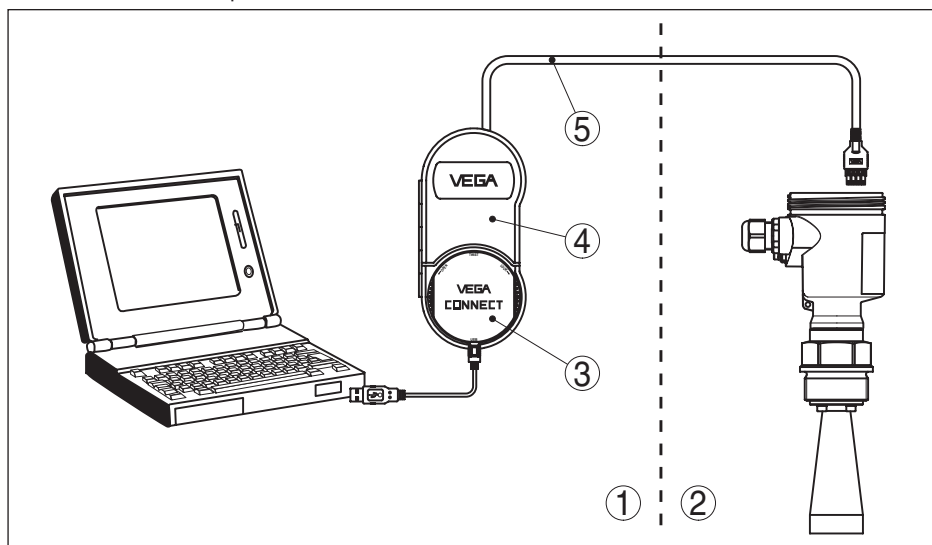


Fig. 1: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

1) If VEGACONNECT 4 is directly mounted into a sensor, please also observe the temperature class table of the respective sensors.

Application variety 2

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

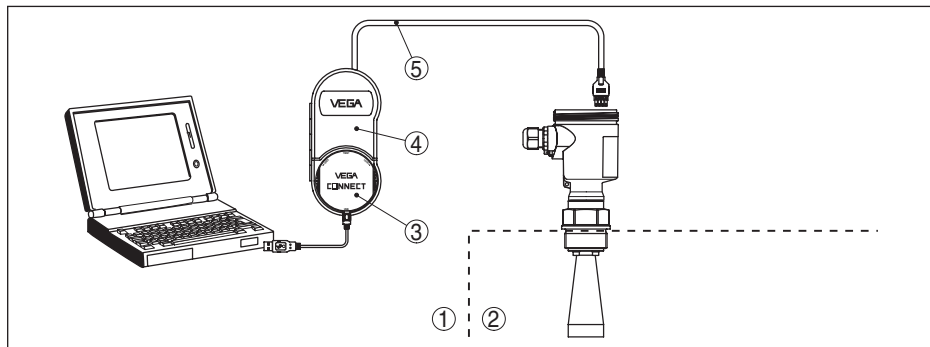


Fig. 2: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 I²C cable

10.2 VEGACONNECT 4, communication via I²C bus

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the explosive area of zone 1, if an explosive atmosphere can be excluded.

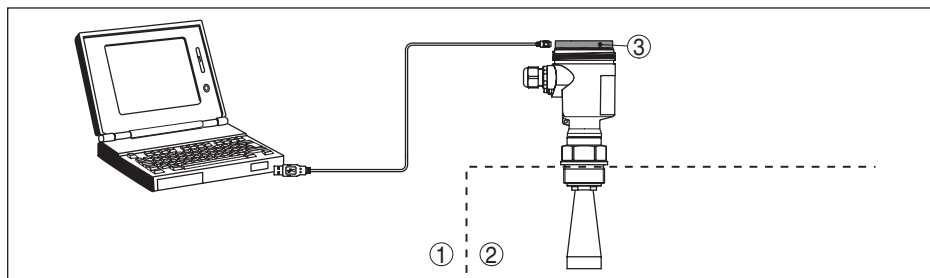


Fig. 3: Use as appropriate instrument in the explosive area (zone 1 and zone 21) without explosive atmosphere

- 1 Explosive area (zone 1 or zone 2 or zone 21 or zone 22) without explosive atmosphere
- 2 Hazardous area (zone 0 or zone 1 or zone 20 or zone 21)
- 3 VEGACONNECT 4 integrated in VEGA sensor

10.3 VEGACONNECT, communication via HART

The VEGACONNECT with connected notebook, PLC or modem must only be operated in the safe area outside the explosive area. The connection is carried out via HART communication on the intrinsically safe signal and power supply.

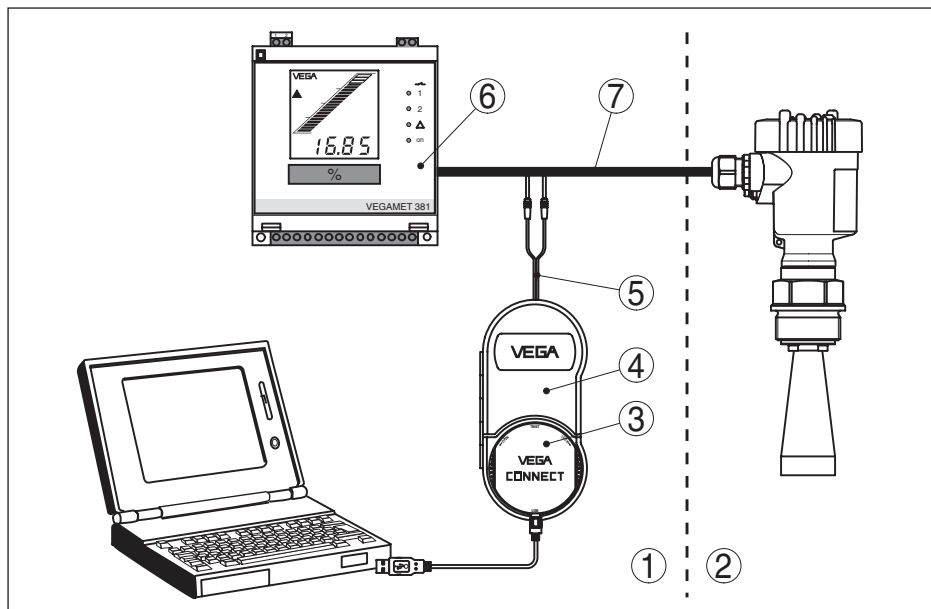


Fig. 4: Use as appropriate instrument in the safe area

- 1 Safe area
- 2 Hazardous area (zone 0, zone 1, zone 2, zone 20, zone 21 or zone 22)
- 3 VEGACONNECT 4
- 4 Junction box
- 5 HART cable
- 6 Power supply unit e.g. VEGAMET, VEGATRENN, PLC
- 7 Intrinsically safe signal and power supply circuit

A HART resistor is supplied as standard.

The HART resistor may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another HART resistor is used, the same operating conditions apply.

11 USB connection cable

If the supplied USB connection cable is replaced by another one, make sure that the insulation thickness of the cable is over 0.65 mm.

12 Special conditions

A Bluetooth USB adapter is supplied as standard.

The Bluetooth USB adapter may only be operated outside the hazardous area. If there is no explosive atmosphere, the use within this hazardous area is also allowed.

If another Bluetooth USB adapter is used, the same operating conditions apply.

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IECEX



안전지침

VEGACONNECT

VEGACONNECT 4

본질안전 방폭구조



Document ID: 66123

VEGA

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보충 문서:

- 사용 설명서 VEGACONNECT 4
- 적합성 인증서 KTL 23-KA4BO-0156X...-0163X (Document ID: 1019029)

편집 일자: 2023-01-10

1 적용 범위

본 안전수칙은 다음 기기에 해당합니다:

- VEGACONNECT
- VEGACONNECT 4

적합성 인증서 KTL 23-KA4BO-0156X...-0163X (타입 레벨의 인증서 번호)에 따른 안전 수칙 번호가 66123 인 모든 기기.

방폭구조의 등급 표시와 해당 규정은 상기에 언급한 인증서를 참조하십시오:

방폭구조의 등급표시:

- [Ex ia Ga] IIC
- [Ex ia Da] III C

2 기기 설정/특성

상세한 기기의 설정은 본사 홈페이지에 제품번호 검색을 통하여 확인할 수 있습니다.

"www.vega.com"로 가서 검색창에 귀하 제품의 일련번호를 입력하십시오.

혹은 귀하의 스마트폰을 통해서 찾아볼 수 있습니다:

- "Apple App Store", "Google Play Store" 혹은 "Baidu Store"에서 VEGA 톨 앱을 다운로드하십시오
- 기기의 타입 레벨에 표기된 DataMatrix 코드를 스캔하거나 혹은
- 일련번호를 수동으로 앱에 입력하십시오

3 일반

VEGACONNECT, VEGACONNECT 4은 통신 가능한 VEGA 기기를 윈도우 PC의 USB 인터페이스에 연결하기 위한 인터페이스 어댑터입니다. 또한 다른 제조업체 센서를 위한 범용 HART 모뎀으로도 사용할 수 있습니다. USB 인터페이스의 신호 및 프로토콜은 산업용 HART 또는 I²C 프로토콜로 변환됩니다. 추가 디스플레이 및 조정 모듈을 사용하면 핸드헬드로 기기로도 사용할 수 있습니다.

VEGACONNECT는 통신 모듈 VEGACONNECT 4가 삽입되어 있는 연결 상자로 구성됩니다. 연결된 센서에 따라 HART 또는 I²C 인터페이스 어댑터로 작동합니다.

또는 통신 모듈 VEGACONNECT 4를 plics® 시리즈 VEGA 기기의 본질안전 회로에 직접 연결할 수 있습니다. 이 버전에서는 I²C 인터페이스 어댑터로 작동합니다.

VEGACONNECT용으로 인증된 버전은 다음과 같습니다:

연결 상자(VEGACONNECT)의 인터페이스 어댑터 관련 장비로서 HART 또는 I²C 인터페이스 어댑터 역할을 합니다. 연결 상자에는 통신 모듈 VEGACONNECT 4가 연결됩니다.

VEGA 기기(VEGACONNECT 4)에서 인터페이스 어댑터 관련 장비로서 I²C 인터페이스 어댑터 역할을 합니다. 통신 모듈 VEGACONNECT 4는 VEGA 기기에 직접 연결됩니다.

VEGACONNECT를 관련 장비로 사용하는 경우, 폭발 위험 구역 외에서만 작동할 수 있습니다. 폭발성 대기가 존재하지 않는 경우 이러한 폭발 위험 구역 내에서의 사용도 허용됩니다.

4 적용 범위, 가스 및 분진 환경에서 사용

관련계기

VEGACONNECT, VEGACONNECT 4는 폭발 위험이 없는 분야에서 관련기기로 설치되어 작동될 수 있습니다.

5 안전한 작동을 위한 특수 조건

다음 목록은 증명서 번호 위에 "X" 표시를 필요로 하는 VEGACONNECT, VEGACONNECT 4의 모든 특성을 열거합니다.

작동 모드, 통신

이에 대한 자세한 내용은 본 안전지침의 "통신 유형 구조/설치" 챕터에서 찾을 수 있습니다.

USB 통신을 사용하는 경우 VEGACONNECT, VEGACONNECT 4는 폭발 위험 구역 외에서만 작동하거나, 작동 중에 폭발성 대기가 존재하지 않도록 보장해야 합니다.

USB 통신을 사용하는 경우 VEGACONNECT, VEGACONNECT 4는 서비스 목적으로만 본질안전 회로에서 작동할 수 있습니다.

연결

I²C 버스 연결 케이블과 HART 연결 케이블을 동시에 사용해서는 안됩니다.

블루투스 USB 어댑터 및 HART 저항기는 폭발 위험 구역 외에서만 작동할 수 있습니다.

6 안전한 작동

일반 작동 조건

- 기기를 제조사의 전기적, 열적 및 기계적 자료 이외의 조건에서 사용하지 마십시오

연결 조건

- VEGACONNECT의 연결 케이블은 손상되지 않도록 단단하게 고정되어야 합니다.
- 인입부품에서 온도가 70°C 이상인 경우 적합한 내온도성 연결 케이블을 사용해야 합니다.

최대 USB 입력 전압 U_m

노트북 또는 USB 모뎀의 전압 공급은 VEGACONNECT의 비본질안전 USB 연결부에서 U_m 의 입력값을 초과해서는 안 됩니다; 예: 노트북의 충전 배터리 작동

7 조립 및 보수에 관한 중요 정보

일반 정보

기기의 조립, 전기 설치, 작동 및 보수유지를 위해 다음의 조건을 충족해야 합니다:

- 작업자는 그의 기능과 업무에 해당하는 자격이 있어야 합니다.
- 작업자는 방폭에 있어 교육받은 사람이어야 합니다.
- 작업자는 IEC 60079-14에 의거한 계획과 설치 등 해당 유효한 규정을 잘 알고 있어야 합니다
- 기기에 조립, 설치, 보수 유지 등과 같은 작업을 할 때 폭발성 환경이 아닌지 확인해야 합니다, 가능하면 공급 회로를 무전압 상태로 두십시오
- 기기를 제조사의 사양, 제품 인증서에 따라, 그리고 해당 유효 규정 및 기준에 의거하여 설치하십시오
- 기기에 변경을 하면 폭발 방지 안전성에 영향을 미칠 수 있으므로 최종 사용자가 수리하는 것은 허용되지 않습니다.
- 변형은 VEGA사의 권한 있는 전문인력에 의해서만 실행해야 합니다
- 승인된 예비 부품만을 사용하십시오
- 제품 인증서에 포함되어 있지 않은 설치 및 연결용 부품의 경우, 표지에 표기된 최근 기준에 기술적으로 부응하는 것만 사용할 수 있습니다. 이들은 사용 조건에 적합해야 하며 별도의 증명서가 있어야 합니다. 부품들의 특수한 조건을 준수해야 하며 경우에 따라 부품들은 타입 검사에 함께 고려되어야 합니다. 이는 또한 이미 기술 자료에서 언급된 부품의 경우에도 해당됩니다.

조립

기기 조립 시 주의 사항:

- 기기에 기계적인 손상을 피하십시오
- 기기에 기계적인 마찰을 피하십시오

유지 보수

기기의 기능을 보장하기 위해 정기적으로 육안 검사를 하는 것이 좋습니다.

- 안전한 조립
- 기계적인 손상이나 부식이 없어야 합니다
- 마모된 혹은 기타 손상된 케이블
- 케이블 연결 및 전위 보상 연결이 느슨하지 않아야 합니다
- 올바르고 정확히 표시된 케이블 연결

본질안전 방폭구조 "I"

- 본질안전 회로의 상호 연결에 관한 규정을 준수하십시오
- 본 기기는 인증된 본질안전 제품에 연결하는 데에만 적합합니다

- 본질안전 제품을 비본질안전 회로에 연결할 경우, 제품을 더 이상 본질안전 회로에 사용해서는 안 됩니다
- 방폭구조 등급표시가 Ex ia인 본질안전 제품을 보호등급 Ex ib인 회로와 연결할 경우 제품의 방폭구조 등급표시는 Ex ib로 바뀝니다. Ex ib 전원의 제품으로 사용하고 나서 제품을 다시 보호등급이 Ex ia인 회로에 다시 사용해서는 안 됩니다.

8 전기적 자료

관련 장비로 사용

다음 데이터는 인터페이스 어댑터 기능의 유형 VEGACONNECT, VEGACONNECT 4에 적용됩니다. VEGACONNECT에는 비본질안전(USB) 회로와 본질안전 회로 2 개(I²C/HART)가 포함되어 있습니다. I²C 및 HART 회로는 안전기술상 전기적으로 연결되어 있으며 동시에 연결되어서는 안 됩니다.

USB 인터페이스를 통한 전압 공급 (비본질안전 회로)

최대 작동전압	6 V DC
기준 전압 U _m	30 V AC/DC

신호 회로 I²C/HART (본질안전 회로) Ex ia IIC

통신:	
I ² C 인터페이스	I ² C 커넥터 또는 슬라이딩 접점을 통한 연결
HART-인터페이스	2 mm 커넥터를 통한 연결

최대 단자전압 U ₀ :	6 V
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최대 단자전압 U _i :	
I ² C 인터페이스	6 V
HART-인터페이스	30 V

최대 전류 I ₀ :	
I ² C 인터페이스	59.4 mA
HART-인터페이스	3.7 mA

최대 용량 P ₀ :	
I ² C 인터페이스	89.1 mW
HART-인터페이스	5.6 mW

최대 용량 P _i :	
I ² C 인터페이스	360 mW
HART-인터페이스	-

효율적인 내부 정전 용량 C _i :	
I ² C 인터페이스	0 nF
HART-인터페이스	1.2 nF

효율적인 내부 인덕턴스 L _i :	
I ² C 인터페이스	0 mH
HART-인터페이스	0 mH

허용 외부 용량 C ₀ :	
I ² C 인터페이스	40 µF
HART-인터페이스	40 µF
허용 외부 인덕턴스 L ₀ :	
I ² C 인터페이스	10 mH
HART-인터페이스	1000 mH
본질안전형 분리: 비본질안전 회로	
공칭 전압의 피크 값	375 V

9 열적 자료

주변 조건	
주변 온도 ¹⁾	-20 ... +60 °C (-4 ... +140 °F)
전기적 보호 조치	
보호등급	IP40

10 통신 유형의 구조/설치

연결 상자(VEGACONNECT) 또는 VEGA 기기에 설치된 VEGACONNECT 4는 USB 통신을 사용하는 경우 본질 안전 회로에서 서비스 목적을 위해서만 작동할 수 있습니다. 이때 VEGACONNECT, VEGACONNECT 4은 폭발 위험 구역 외에서 작동하거나 작동 중에 폭발성 대기가 존재하지 않도록 보장해야 합니다.

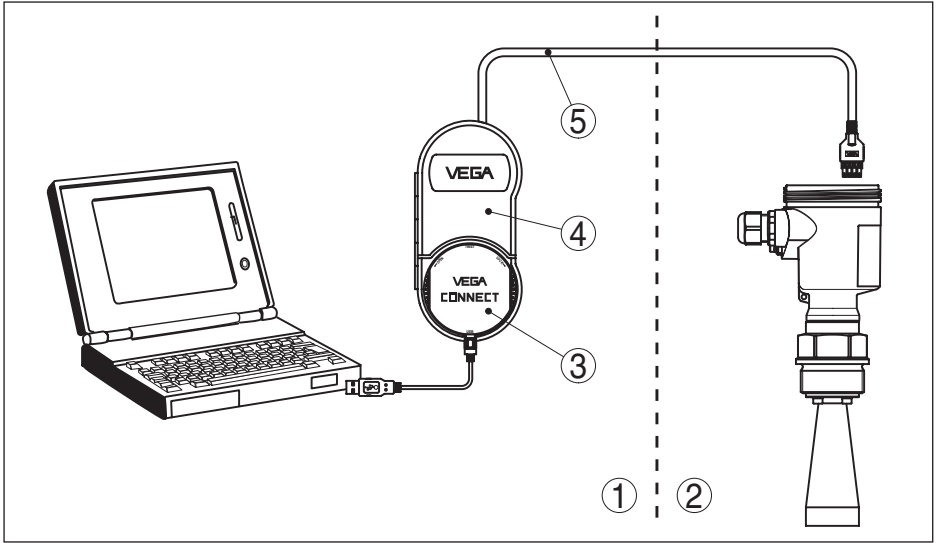
I²C 및 HART 연결 케이블을 동시에 연결해서는 안 됩니다.

10.1 VEGACONNECT, I²C 버스를 통한 통신

사용 옵션 1

노트북, PLC 또는 모뎀이 연결된 VEGACONNECT는 폭발 위험 구역 외의 안전 구역에서만 작동할 수 있습니다.

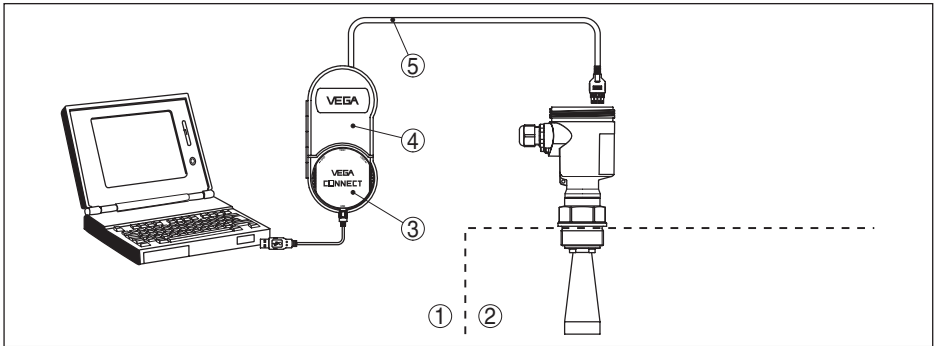
¹⁾ VEGACONNECT 4가 센서에 직접 설치되어 있는 경우, 추가적으로 해당 센서의 온도 등급 표를 준수해야 합니다.



- 1 안전 구역
- 2 폭발 위험 구역 (지역 0, 지역 1, 지역 2, 지역 20, 지역 21 또는 지역 22)
- 3 VEGACONNECT 4
- 4 연결 상자
- 5 I²C 케이블

사용 옵션 2

노트북, PLC 또는 모뎀이 연결된 VEGACONNECT는 폭발성 대기가 존재하지 않는 경우에만 지역 1의 폭발 위험 구역에서 작동할 수 있습니다.

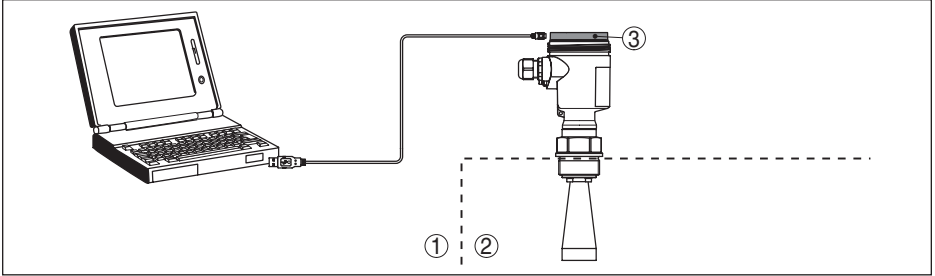


- 1 폭발성 대기가 없는 폭발 위험 구역 (지역 1 또는 지역 2 또는 지역 21 또는 지역 22)
- 2 폭발 위험 구역 (지역 0 또는 지역 1 또는 지역 20 또는 지역 21)
- 3 VEGACONNECT 4
- 4 연결 상자
- 5 I²C 케이블

10.2 VEGACONNECT 4, I²C 버스를 통한 통신

노트북, PLC 또는 모뎀이 연결된 VEGACONNECT는 폭발성 대기가 존재하지 않는 경우에만 지역 1의 폭발 위험

구역에서 작동할 수 있습니다.

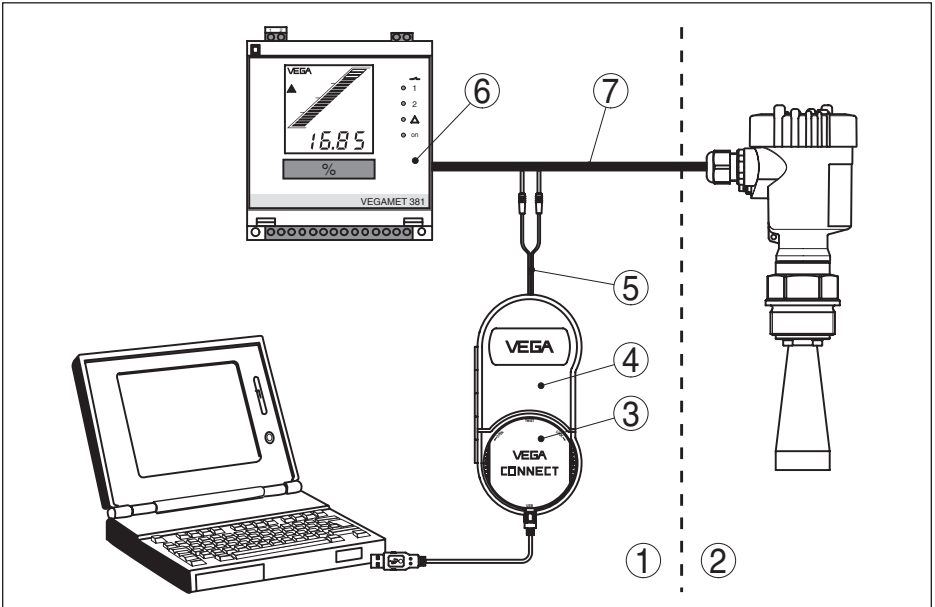


도면. 3: 폭발성 대기가 없는 폭발 위험 구역(지역 1 및 지역 21)에서 관련 장비로 사용

- 1 폭발성 대기가 없는 폭발 위험 구역 (지역 1 또는 지역 2 또는 지역 21 또는 지역 22)
- 2 폭발 위험 구역 (지역 0 또는 지역 1 또는 지역 20 또는 지역 21)
- 3 VEGA 센서에 설치된 VEGACONNECT 4

10.3 VEGACONNECT, HART를 통한 통신

노트북, PLC 또는 모뎀이 연결된 VEGACONNECT는 폭발 위험 구역 외의 안전 구역에서만 작동할 수 있습니다. HART 통신을 통해 본질안전 신호 및 공급 회로에 연결됩니다.



도면. 4: 안전 구역에서 관련 장비로 사용

- 1 안전 구역
- 2 폭발 위험 구역 (지역 0, 지역 1, 지역 2, 지역 20, 지역 21 또는 지역 22)
- 3 VEGACONNECT 4
- 4 연결 상자
- 5 HART 케이블
- 6 전원 공급 장치, VEGAMET, VEGATRENN, PLC 등
- 7 본질안전 신호 및 공급 회로

공장 출하 시 HART 저장기가 함께 제공됩니다.

HART 저항기는 폭발 위험 구역 외에서만 작동할 수 있습니다. 폭발성 대기가 존재하지 않는 경우, 폭발 위험 구역 내에서의 사용도 허용됩니다.

다른 HART 저항기를 사용하는 경우 동일한 사용 조건이 적용됩니다.

11 USB 연결 케이블

동봉된 USB 연결 케이블을 다른 케이블로 교체할 경우, 이 케이블의 절연 두께가 0.65 mm 이상이 되도록 유의하십시오.

12 특수 조건

공장 출고 시 블루투스 USB 어댑터가 함께 제공됩니다.

블루투스 USB 어댑터는 폭발 위험 구역 외에서만 작동할 수 있습니다. 폭발성 대기가 존재하지 않는 경우, 폭발 위험 구역 내에서의 사용도 허용됩니다.

다른 블루투스 USB 어댑터를 사용하는 경우 동일한 사용 조건이 적용됩니다.



Printing date:

센서와 평가 시스템의 공급 내역, 사용법, 사용 및 작동 조건에 관한 내용은 인쇄 시점의 정보입니다.
변경 가능

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