

# Operating Instructions

Interface adapter between PC and  
communication-capable VEGA  
instruments

## VEGACONNECT

Wired interface adapter with connection box  
USB - HART/I<sup>2</sup>C



Document ID: 66081



# VEGA

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# 1 About this document

## 1.1 Function

This instruction provides all the information you need for mounting, connection and setup as well as important instructions for maintenance, fault rectification, the exchange of parts and the safety of the user. Please read this information before putting the instrument into operation and keep this manual accessible in the immediate vicinity of the device.

## 1.2 Target group

This operating instructions manual is directed to trained personnel. The contents of this manual must be made available to the qualified personnel and implemented.

## 1.3 Symbols used



### Document ID

This symbol on the front page of this instruction refers to the Document ID. By entering the Document ID on [www.vega.com](http://www.vega.com) you will reach the document download.



**Information, note, tip:** This symbol indicates helpful additional information and tips for successful work.



**Note:** This symbol indicates notes to prevent failures, malfunctions, damage to devices or plants.



**Caution:** Non-observance of the information marked with this symbol may result in personal injury.



**Warning:** Non-observance of the information marked with this symbol may result in serious or fatal personal injury.



**Danger:** Non-observance of the information marked with this symbol results in serious or fatal personal injury.



### Ex applications

This symbol indicates special instructions for Ex applications.



### List

The dot set in front indicates a list with no implied sequence.



### Sequence of actions

Numbers set in front indicate successive steps in a procedure.



### Battery disposal

This symbol indicates special information about the disposal of batteries and accumulators.

## 2 For your safety

### 2.1 Authorised personnel

All operations described in this documentation must be carried out only by trained, qualified personnel authorised by the plant operator.

During work on and with the device, the required personal protective equipment must always be worn.

### 2.2 Appropriate use

The instrument is an interface adapter for connecting a Windows PC to communication-capable sensors.

You can find detailed information about the area of application in chapter "*Product description*".

Operational reliability is ensured only if the instrument is properly used according to the specifications in the operating instructions manual as well as possible supplementary instructions.

For safety and warranty reasons, any invasive work on the device beyond that described in the operating instructions manual may be carried out only by personnel authorised by the manufacturer. Arbitrary conversions or modifications are explicitly forbidden.

### 2.3 Warning about incorrect use

Inappropriate or incorrect use of this product can give rise to application-specific hazards, e.g. vessel overfill through incorrect mounting or adjustment. Damage to property and persons or environmental contamination can result. Also, the protective characteristics of the instrument can be impaired.

### 2.4 General safety instructions

This is a state-of-the-art instrument complying with all prevailing regulations and directives. The instrument must only be operated in a technically flawless and reliable condition. The operator is responsible for the trouble-free operation of the instrument. When measuring aggressive or corrosive media that can cause a dangerous situation if the instrument malfunctions, the operator has to implement suitable measures to make sure the instrument is functioning properly.

During the entire duration of use, the user is obliged to determine the compliance of the necessary occupational safety measures with the current valid rules and regulations and also take note of new regulations.

The safety instructions in this operating instructions manual, the national installation standards as well as the valid safety regulations and accident prevention rules must be observed by the user.

For safety and warranty reasons, any invasive work on the device beyond that described in the operating instructions manual may be carried out only by personnel authorised by the manufacturer. Arbitrary conversions or modifications are explicitly forbidden. For safety

reasons, only the accessory specified by the manufacturer must be used.

To avoid any danger, the safety approval markings and safety tips on the device must also be observed.

## **2.5 Safety instructions for Ex areas**

For applications in explosion-proof areas (Ex), only devices with corresponding Ex approval may be used. Observe the Ex-specific safety instructions. These are an integral part of the operating instructions and are enclosed with every device with Ex approval.

## 3 Product description

### 3.1 Configuration

#### Scope of delivery

The scope of delivery encompasses:

- Interface adapter VEGACONNECT 4
- Connection box with two connection cables
- USB cable type A to type C
- HART resistance
- 2 x suspension catch
- Magnetic pen
- Bluetooth USB adapter
- Documentation
  - This operating instructions manual
  - Ex-specific "Safety instructions" (with Ex versions)
  - If necessary, further certificates

#### Constituent parts

VEGACONNECT consists of the following components:

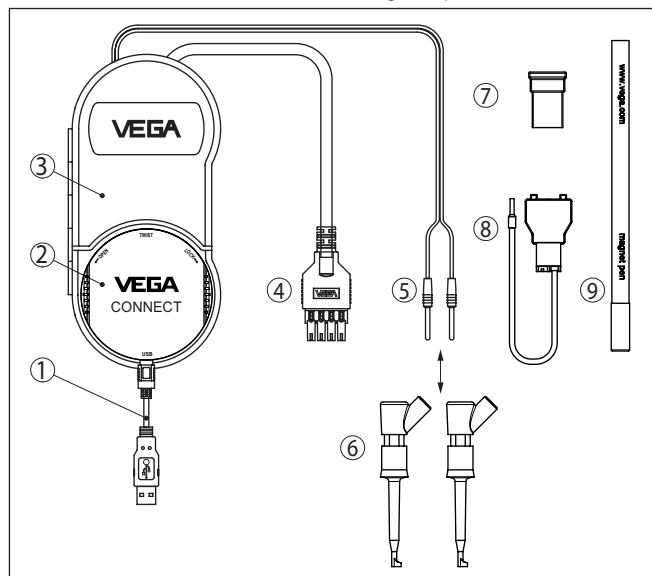


Fig. 1: Configuration VEGACONNECT

- 1 USB cable type A to type C
- 2 VEGACONNECT 4
- 3 Connection box with storage space
- 4 I<sup>2</sup>C bus cable
- 5 HART cable with 2 mm pins
- 6 2 x suspension catch for cable with 2 mm pins
- 7 Bluetooth USB adapter
- 8 HART resistance
- 9 Magnetic pen

On the back of the connection box there is a fold-out hook to hang the device on a pipe, for example, if there is no place to put it. In addition,

two magnets are embedded in the housing to attach the connection box to ferromagnetic objects.

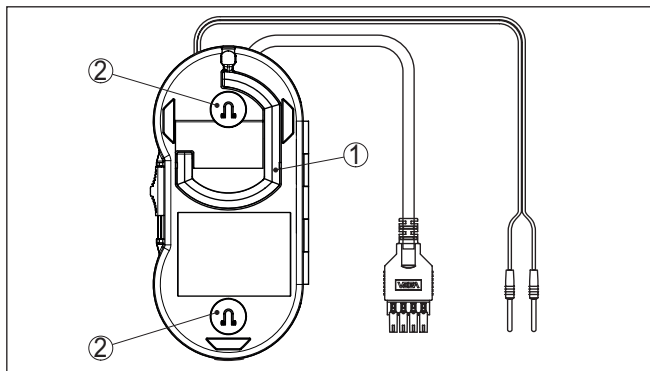


Fig. 2: Configuration VEGACONNECT

- 1 Fold out hook for hanging the VEGACONNECT
- 2 Magnets for attaching to metallic objects

## Type label

The type label contains the most important data for identification and use of the instrument:

- Instrument type
- Information about approvals
- Technical data
- Serial number of the instrument
- QR code for device documentation
- Manufacturer information

## Documents and software

Move to "[www.vega.com](http://www.vega.com)" and enter in the search field the serial number of your instrument.

There you can find the following information about the instrument:

- Order data
- Documentation
- Software

Alternatively, you can find all via your smartphone:

- Scan the QR-code on the type label of the device or
- Enter serial number manually in the VEGA Tools app (available free of charge in the respective stores)

## 3.2 Principle of operation

VEGACONNECT is a wired interface adapter for connection of communication-capable VEGA instruments to the USB interface of a PC with Windows operating system. It can also be used as a universal HART modem for HART sensors from other manufacturers. An adjustment software such as PACTware with VEGA DTMs is required for parameter adjustment of these instruments.

## Application area

The VEGACONNECT can be connected to all communication-capable VEGA instruments with respective interface. All currently available electronics versions are supported.

Connection cable, adapter and terminals for connection to the different instrument series are attached to all VEGACONNECT. These adapters can be kept in the storage space of the connection box.

<b>Bluetooth USB adapter</b>	The Bluetooth USB adapter enables the wireless adjustment of VEGA sensors with a Windows PC. For this, a PLICSCOM with Bluetooth option integrated in the sensor or an instrument with integrated Bluetooth function are required. In this case, the VEGACONNECT is not used, here the connection box is only a preserving possibility for the Bluetooth USB adapter. You can find further information of this application in the operating instruction of PLICSCOM or the instrument with integrated Bluetooth function.
<b>Magnetic pen</b>	The magnet pen enables the adjustment of the buttons of a Bluetooth-PLICSCOM with closed housing lid with inspection window. In this case, the VEGACONNECT is not used, here the connection box is only a preserving possibility for the magnet pen. You can find further information of this application in the operating instruction of PLICSCOM.
<b>Functional principle</b>	The interface adapter is connected via the USB interface to a PC. It converts signals and protocols of the USB interface into the appropriate signal/protocol of the connected instrument.
<b>Voltage supply</b>	The voltage supply is provided via the USB interface of the PC.

### 3.3 Adjustment

The adjustment is carried out via a Windows PC with a parameter adjustment software such as PACTware with respective DTM. There are no adjustment elements on the instrument itself.

### 3.4 Packaging, transport and storage

<b>Packaging</b>	<p>Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test based on ISO 4180.</p> <p>The packaging consists of environment-friendly, recyclable cardboard. For special versions, PE foam or PE foil is also used. Dispose of the packaging material via specialised recycling companies.</p>
<b>Transport</b>	Transport must be carried out in due consideration of the notes on the transport packaging. Nonobservance of these instructions can cause damage to the device.
<b>Transport inspection</b>	The delivery must be checked for completeness and possible transit damage immediately at receipt. Ascertained transit damage or concealed defects must be appropriately dealt with.



### Storage

Up to the time of installation, the packages must be left closed and stored according to the orientation and storage markings on the outside.

Unless otherwise indicated, the packages must be stored only under the following conditions:

- Not in the open
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration

### Storage and transport temperature

- Storage and transport temperature see chapter " *Supplement - Technical data - Ambient conditions*"
- Relative humidity 20 ... 85 %

## 4 Connection

### 4.1 Connection to the PC

#### Connection



#### Note:

First install the software package "DTM Collection" before connecting the VEGACONNECT to the PC.

An USB interface (1.1/2.0/3.0) is compulsory for connection of VEGACONNECT to a Windows PC. The connection is provided with the supplied USB cable. Voltage supply of VEGACONNECT is provided via the USB interface.

#### DTM Collection

To operate the VEGACONNECT, a suitable Windows driver is required, which is included in our software package "DTM Collection". This software package can be downloaded free of charge from our homepage. To ensure the support of all device functions, you should always use the latest version.

When installing the driver package "VEGA-DTM for Communication", the suitable instrument driver is installed automatically. When connecting VEGACONNECT, the driver installation is finished automatically and is ready for operation without a restart.

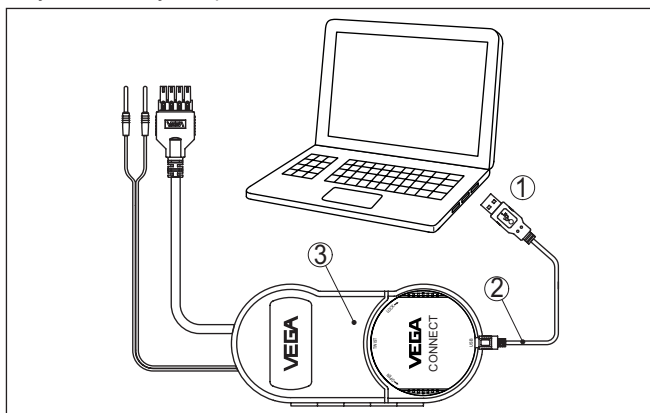


Fig. 3: Electrical connection

- 1 USB connection of the PC
- 2 USB cable type A to type C
- 3 Connection box with VEGACONNECT 4

### 4.2 Connection of the sensor/controller

The VEGACONNECT can be connected to almost any communication-capable VEGA instrument via different ways.

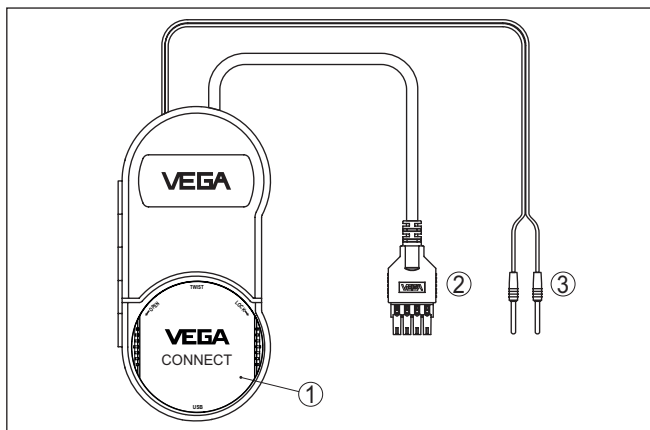


Fig. 4: Connection possibilities

- 1 Connection by insertion into a plics® sensor
- 2 Connection to 600 series controllers (I²C interface)
- 3 Connection to the 4 ... 20 mA cable (HART protocol)

#### Connection by insertion into the sensor

The VEGACONNECT can be inserted directly into all instruments of the plics® series. In this case, the VEGACONNECT is removed from the connection box and inserted into the plics® instrument instead of the display and adjustment module.

#### Connection via HART

The connection via the sensor cable can be made with any HART device. Depending on the power supply/processing system, an additional HART resistor is required. The supplied HART resistor can be used for this purpose (for details see "Connection examples - Connection via HART interface").

#### Connection via I²C bus

The VEGACONNECT can be connected to the I²C bus interface of all series 600 controllers (for details see "Connection examples - Connection via I²C interface").

## 5 Connection examples

### 5.1 Connection by insertion into the device

#### plics® sensor

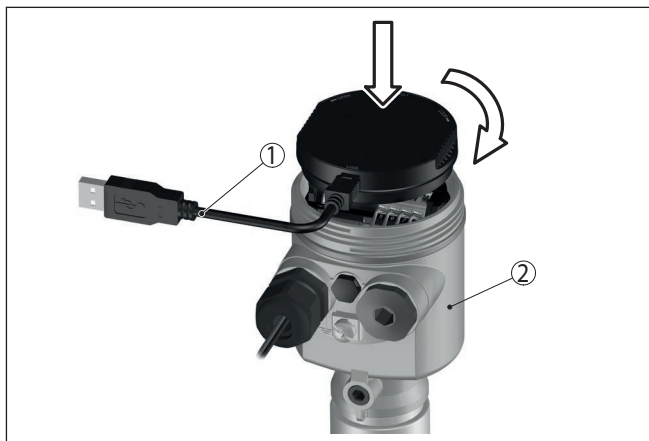


Fig. 5: Insertion into a plics® sensor

- 1 USB cable for connection to the PC
- 2 plics® device

#### HART sensor with VEGADIS 81

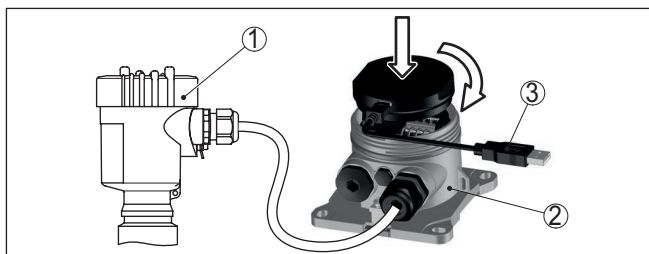


Fig. 6: Insertion into VEGADIS 81

- 1 HART sensor
- 2 VEGADIS 81
- 3 USB cable for connection to the PC

## HART sensor with VEGADIS 82

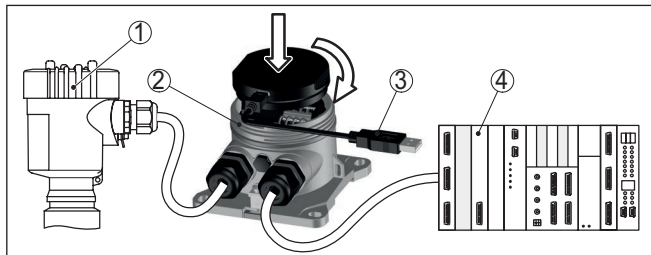


Fig. 7: Insertion into VEGADIS 82

- 1 HART sensor
- 2 VEGADIS 82
- 3 USB cable for connection to the PC
- 4 Processing system/PLC/Voltage supply

## 5.2 Connection via HART interface

### HART communication

If the resistance of the connected processing system is less than  $230\ \Omega$ , the digital adjustment signal is extremely damped or short-circuited. Digital communication with the PC is then no longer possible. With low impedance processing systems, a resistance of at least  $230\ \Omega$  must be integrated into the 4 ... 20 mA connection cable. The connection of VEGACONNECT can be either carried out in parallel to the sensor or via the resistor.



#### Note:

A HART resistor is already integrated in some controllers. These devices have additional connection sockets for direct connection of the 2 mm pins.

When using VEGAMET 624/625, VEGASCAN 693 controllers, the connection cannot be carried out via the sensor cable. The parameter adjustment of the controller as well as of the sensor can be carried out via the I<sup>2</sup>C connection sockets.

## HART sensor on a PLC

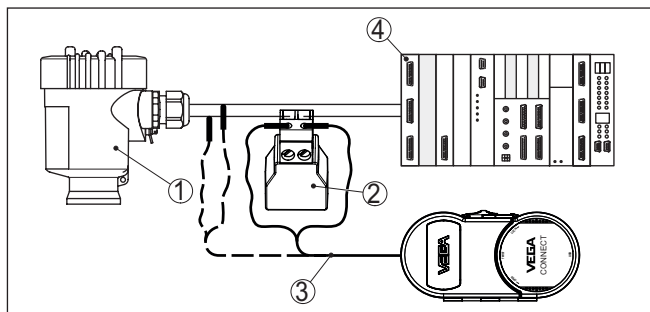


Fig. 8: Connection plics® series via HART

- 1 HART sensor
- 2 HART resistance 270  $\Omega$  (optional depending on processing)
- 3 Connection cable with 2 mm pins and terminals
- 4 Processing system/PLC/Voltage supply

**Information:**

The VEGACONNECT is connected directly via the 2 mm sockets of the supplied HART resistor. Alternatively, the VEGACONNECT can also be connected in parallel to the sensor (dashed line).

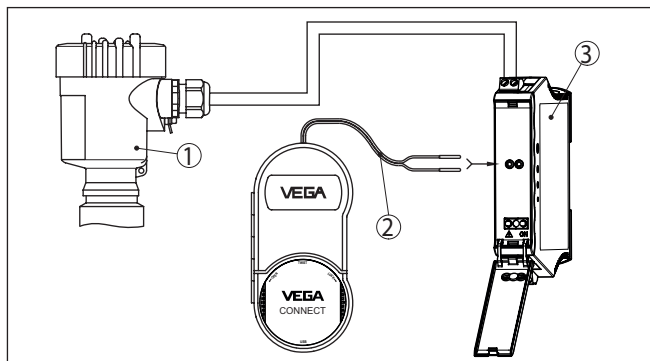
HART sensor with  
VEGATRENN

Fig. 9: Connection plics® series via HART to a VEGATRENN

- 1 HART sensor
- 2 Connection cable with 2 mm pins
- 3 VEGATRENN 141, 142, 151, 152

## HART sensor with VEGAMET

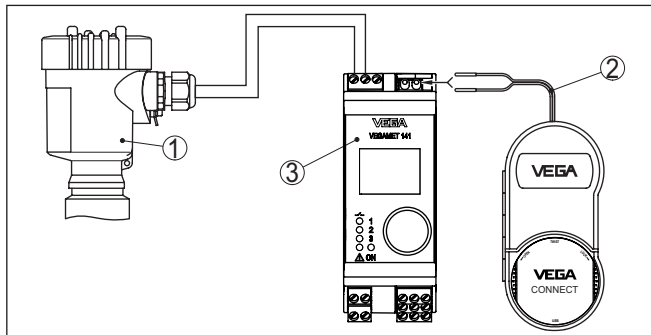


Fig. 10: Connection plics® series to a VEGAMET

- 1 HART sensor
- 2 Connection cable with 2 mm pins
- 3 VEGAMET

## 5.3 Connection via I<sup>2</sup>C interface

### Controllers 600 series

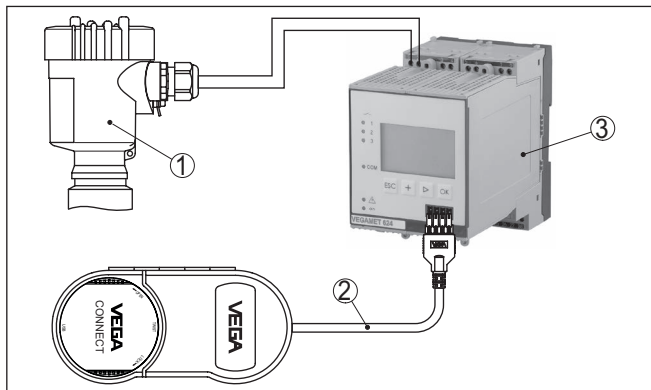


Fig. 11: Connection 600 series controllers via I<sup>2</sup>C interface

- 1 Sensor
- 2 I<sup>2</sup>C connection cable
- 3 VEGAMET/VEGASCAN 600 series



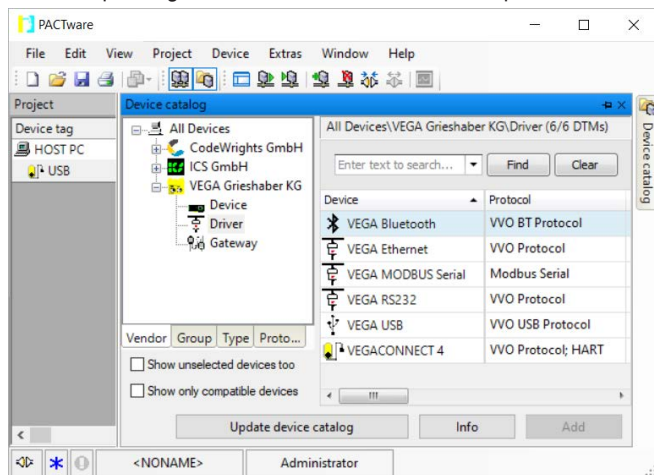
### Note:

Communication with the sensor is carried out also via the front I<sup>2</sup>C interface of the controller. The connection of VEGACONNECT directly to the 4 ... 20 mA sensor cable is not possible.

## 6 Setup

### 6.1 Adjustment

The use and operation are described in the operating instructions of the corresponding sensor/controller and its online help.



#### Information:

You find the VEGACONNECT DTM in the device catalogue under the group "Driver". When adding a HART sensors, the window "Channel selection" appears in addition in which you have to select the connection (connection via HART or I<sup>2</sup>C).



## 7 Diagnostics and servicing

### 7.1 Maintenance

#### Maintenance

If the device is used properly, no special maintenance is required in normal operation.

#### Cleaning

The cleaning helps that the type label and markings on the instrument are visible.

Take note of the following:

- Use only cleaning agents which do not corrode the housings, type label and seals
- Use only cleaning methods corresponding to the housing protection rating

### 7.2 Software update

An update of the device software is possible via the USB interface.

The following components are required:

- PC/Notebook with PACTware/DTM
- Current instrument software as file

You can find the current instrument software as well as detailed information on the procedure in the download area of our homepage.



#### Caution:

Instruments with approvals can be bound to certain software versions. Therefore make sure that the approval is still effective after a software update is carried out.

You can find detailed information in the download area on our homepage.

### 7.3 How to proceed if a repair is necessary

You can find an instrument return form as well as detailed information about the procedure in the download area of our homepage. By doing this you help us carry out the repair quickly and without having to call back for needed information.

In case of repair, proceed as follows:

- Print and fill out one form per instrument
- Clean the instrument and pack it damage-proof
- Attach the completed form and, if need be, also a safety data sheet outside on the packaging
- Ask the agency serving you to get the address for the return shipment. You can find the agency on our homepage.

## **8 Recycling and disposal**

### **8.1 Disposal**

The device is made of recyclable materials. For this reason, it should be disposed of by a specialist recycling company. Observe the applicable national regulations.

## 9 Certificates and approvals

### 9.1 Approvals for Ex areas

Approved versions for use in hazardous areas are available or in preparation for the device or the device series.

You can find the relevant documents on our homepage.

### 9.2 EU conformity

The device fulfils the legal requirements of the applicable EU directives. By affixing the CE marking, we confirm the conformity of the instrument with these directives.

The EU conformity declaration can be found on our homepage.

### 9.3 Environment management system

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001. Please help us fulfil this obligation by observing the environmental instructions in chapters "*Packaging, transport and storage*", "*Disposal*" of these operating instructions.

## 10 Supplement

### 10.1 Technical data

#### Note for approved instruments

The technical data in the respective safety instructions are valid for approved instruments (e.g. with Ex approval). In some cases, these data can differ from the data listed herein.

All approval documents can be downloaded from our homepage.

#### Materials and weights

##### Materials

– Housing connection box	PBT/PC Blend
– VEGACONNECT 4	PPE
Weight incl. cables/accessory	333 g (0.74 lbs)

#### Electrical data

Voltage supply from USB interface	5 V
Max. power consumption	500 mW
Galvanic separation between	– HART - USB – I <sup>2</sup> C bus - USB

#### Ambient conditions

Permissible ambient temperature	-20 ... +60 °C (-4 ... +140 °F)
Storage and transport temperature	-40 ... +80 °C (-40 ... +176 °F)

#### Electrical protective measures

##### Protection rating

– Junction box	IP20, NEMA TYPE 1
– VEGACONNECT 4	IP40, NEMA TYPE 1

#### Connection cable

##### USB cable

– Connection to	USB interface of the PC
– Cable length	200 cm (78 in)
– Plug connection	Plug USB-A - Plug USB-C
– Cable insulation	min. 0.65 mm (0.256 in)

##### I<sup>2</sup>C bus cable

– Connection to	I <sup>2</sup> C bus interface
– Cable length	30 cm (11,8 in)
– Plug connection	I <sup>2</sup> C bus plug

##### Cable with 2 mm pins

– Connection to	CONNECT sockets, HART resistor/cable
– Cable length	150 cm (59 in)
– Plug connection	2 x 2 mm male connector

## HART resistance

Resistor	270 $\Omega$
Tolerance	5 %
Power	1 W

## Bluetooth USB adapter

Technical data see attached instruction manual

## 10.2 Dimensions

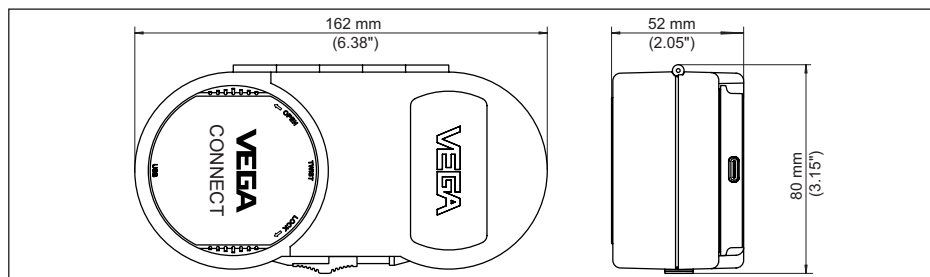


Fig. 12: Dimensions VEGACONNECT

### 10.3 Industrial property rights

VEGA product lines are global protected by industrial property rights. Further information see [www.vega.com](http://www.vega.com).

VEGA Produktfamilien sind weltweit geschützt durch gewerbliche Schutzrechte.

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进一步信息请参见网站 < [www.vega.com](http://www.vega.com)。

### 10.4 Trademark

All the brands as well as trade and company names used are property of their lawful proprietor/originator.

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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.

Subject to change without prior notice

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66081-EN-211221

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