Operating Instructions

Display, adjustment and communication module

XCOM

Document ID: 1099492

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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, safety and the exchange of parts. 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 instruction 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** 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.

1 **Sequence of actions**
Numbers set in front indicate successive steps in a procedure.

Disposal
This symbol indicates special instructions for disposal.

2 For your safety

2.1 Authorised personnel

All operations described in this documentation must be carried out only by trained and authorized personnel.

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

2.2 Intended use

Depending on the device version, the pluggable XCOM is used for operation, diagnosis and/or status indication for X 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.

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 operating company 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 operating company has to implement suitable measures to make sure the instrument is functioning properly.

During the entire duration of use, the operating company 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.

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 us. Arbitrary conversions or modifications are explicitly forbidden. For safety reasons, only the accessory specified by us must be used.

To avoid hazards, please observe the safety symbols and warnings affixed to the instrument. Particular attention should be paid to the following safety symbol and warning:

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Warning

Protection against electrostatic discharge (ESD)

This instrument contains electrostatically sensitive components. Before opening the sensor housing, you must discharge yourself (e.g. by touching an earthed metal part) to remove any static charge from your body.

3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- XCOM
- Documentation
  - Operating instructions XCOM
  - Ex-specific "Safety instructions" (with Ex versions)
  - Radio licenses
  - If necessary, further certificates

Note:
Optional instrument features are also described in this operating instructions. The respective scope of delivery results from the order specification.

Instrument versions

The XCOM is available in two device versions.

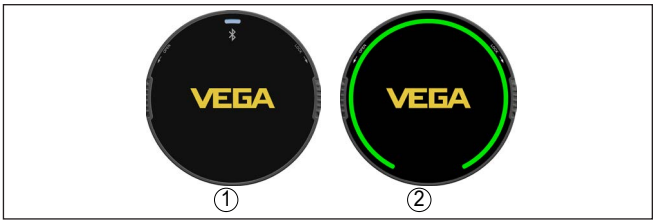

Fig. 1: Instrument versions

1 XCOM B: Communication module
2 XCOM S: Display and communication module

	Instrument version	
	XCOM B	XCOM S
Status indication	–	●
Bluetooth	●	O

● *included*
O optional
– not included

Communication module
This version allows wireless operation of the sensor via smartphone/tablet or PC/notebook.

Display and communication module
The circular status indicator provides a visual indication of the current sensor status. The 256 colours of the status indicator can be customised.

Optionally, the device is equipped with Bluetooth. The Bluetooth function enables wireless operation of the sensor via smartphone/tablet or PC/notebook.

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Ex approval

The XCOM is available with or without Ex ia approval. The different versions are distinguished by the colour of the device underside.

Colour	Description
Blue	With Ex ia approval
Black	Without Ex ia approval

Type label

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

- Instrument type
- Information about approvals
- Configuration information
- Serial number of the instrument
- QR code for device identification
- Manufacturer information

Documents and software

To find order data, documents or software related to your device, you have the following options:

- Move to "**www.vega.com**" and enter in the search field the serial number of your instrument.
- Scan the QR code on the type label.
- Open the VEGA Tools app and enter the serial number under "***Documentation***".

3.2 Principle of operation

Application area

Depending on the device version, the pluggable XCOM is used for operation, diagnosis and/or status indication.

Range of functions

The range of functions is determined by the sensor and depends on the respective software version of the sensor.

Voltage supply

Power is supplied directly via the sensor. The electrical connection is made via contact pins on the sensor electronics and the contact paths on the XCOM. No further connection is required.

The status indication is powered by the sensor. Prerequisite for this is an operating voltage at a certain level. The exact voltage specifications can be found in the operating instructions manual of the respective sensor.

Power management

The XCOM includes Power Management. Power Management manages the energy provided by the sensor.

If there is insufficient power, the display and operating functions are adjusted according to defined priorities.

3.3 Adjustment

Bluetooth

The Bluetooth-enabled device versions allow wireless operation with smartphones/tablets or PCs/notebooks.

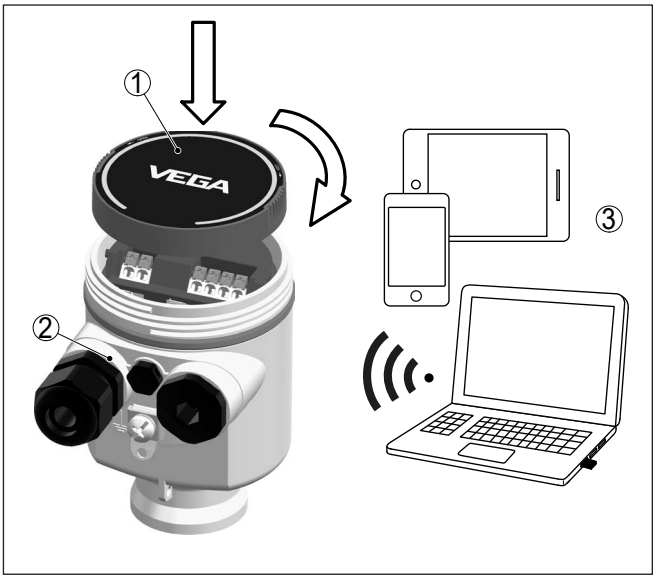

Fig. 2: Bluetooth connection to operating devices

1 XCOM
2 Sensor
3 Adjustment devices

Information:
If your PC/notebook does not have an integrated Bluetooth function or if this does not meet the required Bluetooth standard, an external Bluetooth USB adapter can be used.

3.4 Packaging, transport and storage

Packaging

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.

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.

Transport

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.

Transport inspection

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 "*Technical data - Ambient conditions*"
- Relative moisture 20 … 85 %

4 Setup

4.1 Insert XCOM

Insert/remove XCOM

The XCOM can be inserted into or removed from the sensor at any time. It is not necessary to interrupt the power supply to the sensor. Power is supplied by the sensor; no additional connection to the XCOM is required.

Only devices with the appropriate approval may be used for Ex ia applications. An XCOM with Ex ia approval can be identified by its blue device underside.

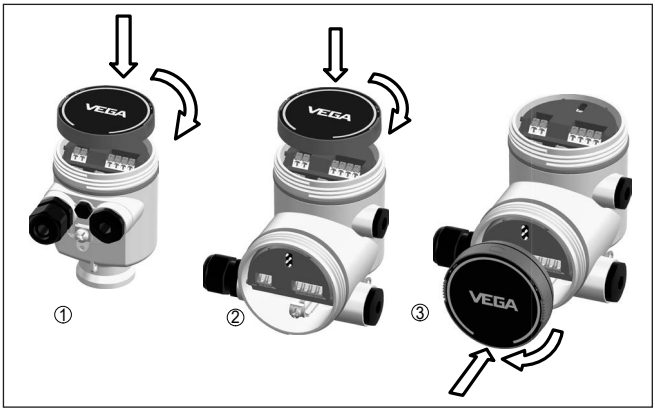

Fig. 3: Insertion into sensor housing

1 Single chamber housing
2 Double chamber housing - Electronics compartment
3 Double chamber housing - Connection compartment

Proceed as follows:

1. Unscrew housing cover from the sensor
2. Place XCOM on the electronics and turn it to the right until it clicks into place
3. Screw housing lid with inspection window tightly back on

Disassembly is carried out in reverse order.

Note:
Do not operate the sensor without the housing cover. If you want to permanently retrofit a sensor with an XCOM, a raised cover with an inspection window is required.

4.2 Switch-on phase

After being inserted into the sensor, the XCOM goes through a start-up phase. The start-up phase or start-up behaviour varies depending on the device type.

Communication module
The Bluetooth LED lights up or flashes red. Once all values are available from the sensor and Bluetooth is switched on, the Bluetooth connection can be established. When the Bluetooth function is activated, the Bluetooth LED flashes blue once.

Display and communication module
The status indication lights up red. As soon as all values are available from the sensor, the colour changes according to the sensor status or flashes briefly to indicate that Bluetooth is switched on.

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5 Setup with Bluetooth

5.1 Preparations

System requirements

Ensure that the following minimum system requirements are met, depending on the adjustment instruments:

	Smartphone/Tablet	PC/Notebook
Operating system	iOS 13 or later Android 8.0 or later	Windows 10 or later
Bluetooth	5.0	5.0
Software	VEGA Tools app	DTM Collection

Download the VEGA Tools app from the "*Apple App Store*", "*Google Play Store*" or "*Baidu Store*" to your smartphone or tablet.

Download the DTM Collection and the associated PACTware adjustment software from our homepage onto your PC or notebook.

Information:
If your PC/notebook does not have an integrated Bluetooth function or if this does not meet the required Bluetooth standard, an external Bluetooth USB adapter can be used.

Activate Bluetooth

Ensure that the Bluetooth function on the XCOM is activated. To do this, the switch on the underside must be set to "LOW" or "HIGH". The factory setting is "OFF".

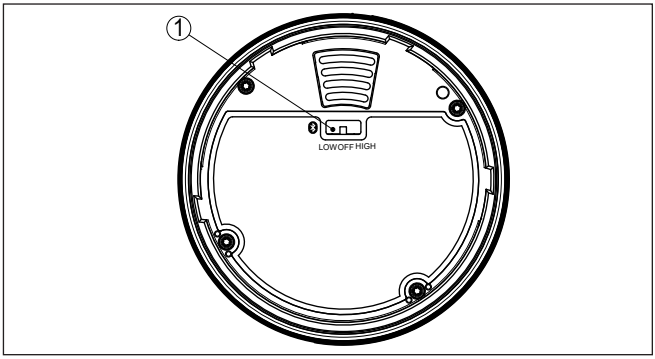

Fig. 4: Switch for Bluetooth functions

Image	Function
	Instrument version with Bluetooth

Labelling	Function
LOW	Bluetooth security mode for reduced Bluetooth range is enabled

Labelling	Function
OFF	Bluetooth deactivated
HIGH	Bluetooth with maximum range is enabled

Bluetooth security mode

In safe mode, the emitted power of the Bluetooth signal is reduced. This reduces the range within which the Bluetooth connection can be used.

The emitted power can be adjusted using the adjustment devices and is saved in the settings of the connected sensor. This has the advantage that when an XCOM is connected to another sensor, it automatically reads and uses the emitted power stored there.

Safety mode is activated using the switch (bottom of XCOM).

5.2 Connecting

Connecting

Proceed as follows:

1. Start the operating app or PACTware and search for Bluetooth-enabled devices in the vicinity.
2. All devices found are listed. Select the desired device from the device list.
3. While the connection is being established, the coloured indicator flashes blue four times.

Authenticate

When establishing the connection for the first time, the operating tool and the sensor must authenticate each other with the Bluetooth acces code. After the first correct authentication, each subsequent connection is made without a new authentication query.

Enter Bluetooth access code

The menu window for entering the Bluetooth access code will appear automatically; to authenticate, enter the three-word password for the connected sensor. You will find the password on the outside of the device housing and on the "PINs and Codes" information sheet. The information sheet is supplied with the sensor.

Note:
If an incorrect password is entered, the code can only be entered again after a delay time. This time gets longer after each incorrect entry.

Connected

After connection, the sensor adjustment menu is displayed on the adjustment instrument.

If the Bluetooth connection is interrupted, e.g. due to a too large distance between the two devices, this is displayed on the operating device. The message disappears when the connection is restored.

5.3 Parameter adjustment

Enter parameters

Further setup and parameterization are described in the operating instructions of the sensor. The appropriate operating instructions are

included with the respective product resp. can be downloaded from our website.

In addition, the software tools VEGA Tools App and PACTware/DTM offer assistance.

6 Maintenance and service

6.1 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 that do not damage the housing, type plate or seals, e.g. a cloth dampened with water
- Use only cleaning methods corresponding to the housing protection rating

6.2 Software update

The software update of the device software is carried out via Bluetooth.

The following components are required:

- Instrument
- Voltage supply
- Adjustment device with VEGA Tools app or PACTware/DTM
- File of the current instrument software

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

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.

6.3 How to proceed if a repair is necessary

On our homepage you will find detailed information on how to proceed in the event of a repair.

So that we can carry out the repair quickly and without queries, generate a instrument return form there with the data of your device.

The following is required:

- The serial number of the instrument
- A short description of the fault
- Where applicable, details of the medium and process conditions

Print the generated instrument return form.

Clean the instrument and pack it damage-proof.

Send the printed instrument return form and possibly a safety data sheet together with the device.

You will find the address for the return on the generated instrument return form.

7 Dismount

7.1 Disposal

Pass the instrument on to a specialised recycling company and do not use the municipal collecting points.

Remove any batteries in advance, if they can be removed from the device, and dispose of them separately.

If personal data is stored on the old device to be disposed of, delete it before disposal.

If you have no way to dispose of the old instrument properly, please contact us concerning return and disposal.

8 Certificates and approvals

8.1 Radio licenses

Bluetooth
The Bluetooth radio module in the device has been tested and approved according to the current edition of the applicable country-specific norms or standards.

The confirmations as well as regulations for use can be found in the document "*Radio licenses*" supplied or on our homepage.

8.2 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.

8.3 Conformity

The device complies with the legal requirements of the applicable country-specific directives or technical regulations. We confirm conformity with the corresponding labelling.

The corresponding conformity declarations can be found on our homepage.

8.4 NAMUR recommendations

NAMUR is the automation technology user association in the process industry in Germany. The published NAMUR recommendations are accepted as the standard in field instrumentation.

The device fulfils the requirements of the following NAMUR recommendations:

- NE 21 – Electromagnetic compatibility of equipment
- NE 53 – Compatibility of field devices and display/adjustment components

For further information see **www.namur.de**.

8.5 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.

Help us to meet these requirements and observe the environmental instructions in the chapters "*Packaging, transport and storage*", "*Disposal*" of this instructions manual.

9 Supplement

9.1 Technical data

Note for approved instruments

The technical data in the respective safety instructions which are included in delivery are valid for approved instruments (e.g. with Ex approval). These data can differ from the data listed herein, for example regarding the process conditions or the voltage supply.

All approval documents can be downloaded from our homepage.

General data	
Housing material	PC
Weight	56 g (0.12 lbs)
Dimensions	
– Diameter	67 mm (2.64 in)
– Height	20 mm (0.79 in)
Device underside	
– Colour - With Ex ia approval	Blue
– Colour - Without Ex ia approval	Black

Status indication	
Colour	256 colours, adjustable

Bluetooth	
Adjustment element	mechanical 3-step switch
– Switch positions	LOW, OFF and HIGH
Bluetooth standard	5.x
Effective range[1)]	up to 100 m (328 ft)

Ambient conditions	
Ambient temperature	-40 … +80 °C (-40 … +176 °F)
Storage and transport temperature	-40 … +80 °C (-40 … +176 °F)
Altitude above sea level	up to 5000 m (16404 ft)
Relative humidity	max. 100 %

Electrical protective measures	
Protection rating	
– unassembled	IP20, NEMA 1
– Mounted in the housing without lid	IP40, NEMA 1
Functional safety	SIL non-reactive

1) Depending on the local conditions

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9.2 Industrial property rights

VEGA product lines are global protected by industrial property rights. Further information see www.vega.com.

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进一步信息请参见网站<www.vega.com。

9.3 Licensing information for open source software

Open source software components are also used in this device. A documentation of these components with the respective license type, the associated license texts, copyright notes and disclaimers can be found on our homepage.

9.4 Trademark

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

Printing date:

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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VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

Phone +49 7836 50-0
E-mail: info.de@vega.com
www.vega.com