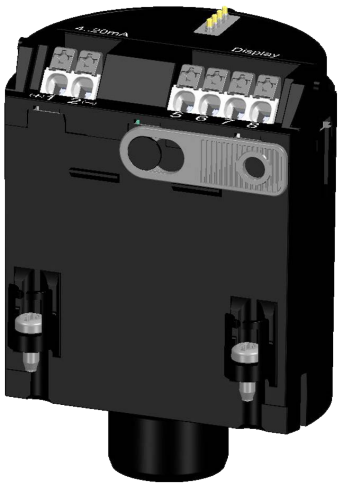
Operating Instructions

Main electronics

VEGAPULS 6X

Two-wire 4 … 20 mA/HART



Document ID: 66441

Contents

Safety instructions for Ex areas:
Take note of the Ex specific safety instructions for Ex applications. These instructions are attached as documents to each instrument with Ex approval and are part of the operating instructions.

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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 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, 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 components described in this manual are replacement components for existing sensors.

2.3 Approvals

For devices with approvals, the associated approval documents of the sensor must always be observed. These are included in the scope of delivery or can be downloaded from our homepage via the serial number.

2.4 Environmental instructions

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 this manual:

- Chapter " *Packaging, transport and storage*"
- Chapter " *Disposal*"

3 Product description

3.1 Configuration

Scope of this operating instructions

This operating instructions manual applies to electronics modules in instruments with the following hardware and software versions:

- Hardware from 1.0.0
- Software from 1.0.0

Scope of delivery

The scope of delivery encompasses:

- Electronics module
- Documentation
  - This operating instructions manual
  - Ex-specific " *Safety instructions*" (with Ex versions)
  - If necessary, further certificates

3.2 Principle of operation

Application area

The electronics module " *Main electronics*" is a replacement module for the sensor VEGAPULS 6X two-wire 4 … 20 mA/HART.

3.3 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 " *Supplement - Technical data - Ambient conditions*"
- Relative humidity 20 … 85 %

4 Mounting

4.1 General instructions

Safety during mounting

We recommended installing the electronics module with the instrument dismounted and brought to a suitable place, e.g. a workshop. If it is not possible to dismount the instrument, the electronics module can also be installed on site at the measuring point.

Warning:
Switch off voltage supply before starting the installation procedure. The electronics module may only be installed when the sensor is in a **de-energised state**. Non-observance will damage the electronics!

Ex approval

For sensors with Ex approval, make sure that the replacement electronics module has the same designation as the exchanged electronics module.

4.2 Mounting preparations

Assignment

The main electronics is mounted into the electronics compartment and are adapted to the respective sensor. Make sure that you are using a replacement electronics suitable for the instrument.

4.3 Installation procedure

Position in the housing - Single chamber

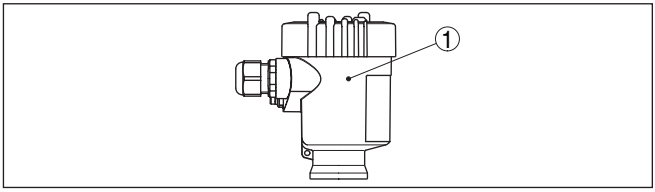

Fig. 1: Single chamber housing

1 Position of the mains electronics in the electronics compartment

Position in the housing - Double chamber

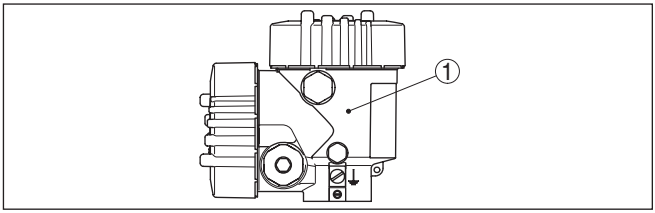

Fig. 2: Double chamber housing

1 Position of the mains electronics in the electronics compartment

Procedure

Proceed as follows:

1. Switch off voltage supply
2. Unscrew the lid of the electronics compartment

3. Detach the connection cables from the terminals according to the operating instructions manual of the respective sensor
4. Loosen the holding screws with a screwdriver (Torx size T 10 or slotted screwdriver size 4)

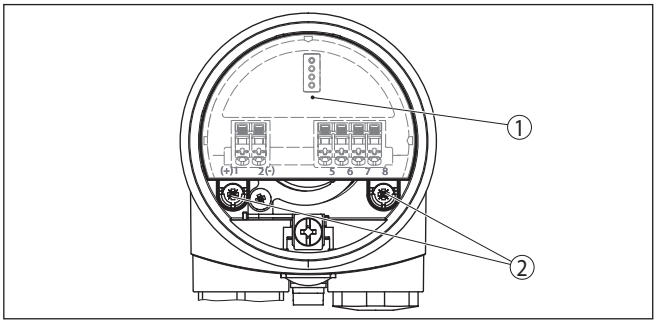

Fig. 3: Loosen the holding screws

1 Electronics module
2 Screws (2 pcs.)

5. Pull the previous electronics out with the dismounting tool.
6. Insert the new electronics module carefully.
7. Screw in the holding screws and tighten them
8. Insert the connection cables into the terminals again
9. Screw the housing lid back on

The electronics exchange is now finished.

As a rule, an exchange of electronics must be documented internally if Ex applications are involved.

5 Setup

5.1 Setup preparations

Electronics module with programming

After installing the new electronics module and connecting it to the power supply, the device is ready for the setup steps.

SIL

SIL-qualified devices are in the locked state, the settings are **not** checked and **not** verified. Initial setup followed by verification and locking is required.

Electronics module without programming

The device is ready for the setup steps after the new electronics module has been installed and connected to the power supply - but without the device data of the delivery status.

However, if the data should be available for operation, you must load it into the electronic module after installation.

Proceed as follows:

1. Enter the serial number of the device in the search field on our homepage
2. In the displayed order data of the device, go to " *Device-related documents*"
3. Download XML file " *DTM configuration file*" by clicking here
4. Transfer this file to the device via " *PACTware/DTM*", " *Maintenance/Electronics exchange*"

SIL

SIL-qualified devices are in the locked state, the settings are **not** checked and **not** verified. Initial setup followed by verification and locking is required.

5.2 Setup steps

Parameter adjustment

If the instrument is used in the same application after the electronics exchange, the previous parameter settings of the instrument must be restored. You can use the import function of the adjustment software PACTware with the device DTMs or the copy function of the display and adjustment module.

Note:
It is recommended to recreated an existing false signal suppression after an electronics exchange. If this is not possible, for example, because the vessel is filled, the false signal suppression can be imported also via the DTM. However, the false signal suppression should be updated or recreated next time when the vessel is empty.

6 Dismount

6.1 Dismounting steps

To remove the device, carry out the steps in chapters " *Mounting*" and " *Connecting to power suplly*" in reverse.

Warning:
When dismounting, pay attention to the process conditions in vessels or pipelines. There is a risk of injury, e.g. due to high pressures or temperatures as well as aggressive or toxic media. Avoid this by taking appropriate protective measures.

6.2 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.

7 Supplement

7.1 Technical data

Technical data

The technical data are listed in the operating instructions manual of the respective device.

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