Supplementary operating instructions
VEGAFLEX - External housing
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1 About this document

1.1 Function
This supplementary manual, together with the attached operating instructions manual, has all the information you need for quick setup and safe operation. Please read this manual before you start setup.

1.2 Target group
This operating instructions manual is directed to trained personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3 Symbolism used

Information, tip, note
This symbol indicates helpful additional information.

Caution: If this warning is ignored, faults or malfunctions can result.
Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.
Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.

Ex applications
This symbol indicates special instructions for Ex applications.

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

Action
This arrow indicates a single action.

Sequence
Numbers set in front indicate successive steps in a procedure.
2 For your safety

2.1 Authorised personnel

All operations described in this operating instructions manual must be carried out only by trained specialist personnel authorised by the operator.

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

2.2 Appropriate use

A external housing is part of a sensor.

2.3 Safety instructions for Ex areas

Please note the Ex-specific safety information for installation and operation in Ex areas. These safety instructions are part of the operating instructions manual and come with the Ex-approved instruments.

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 "Storage and transport"
- Chapter "Disposal"
3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- Level sensor with external housing
- High frequency connection cable (HF)
- Documentation
  - a device operating instructions manual
  - This supplementary instruction
  - Ex specific safety instructions (with Ex versions), if necessary further certificates

Components

The instrument version "Cable outlet IP 68, external housing plastic" consists of a sensor housing, the instrument housing and a confectioned HF connection cable.

Fig. 1: Components of the external housing for plics® devices, N-plug

A Sensor housing
B Instrument housing
1 Screwed cover
2 Base element
3 Housing socket
4 Wall mounting plate
5 Sensor housing - VEGAFLEX 62
6 Sensor housing - VEGAFLEX 61, 63, 65
The electrical connection must be carried out on the instrument housing.

The instrument housing consists of a base body, the screwed cover for the electronics or connection compartment and the housing socket.

Depending on the order, the screwed cover of the instrument housing is available with or without inspection window for the indicating and adjustment module PLICSCOM.

The HF connection cable of the external housing can influence the measurement properties of VEGAFLEX. When the length of the sensor exceeds the length of the HF connection cable, then the the min. dielectric figure is $\varepsilon_r > 2$ independent of the instrument version. If the HF connection cable is longer, there are no limitations.

### 3.2 Principle of operation

#### Area of application

The external housing is suitable for the following plics sensors:

- VEGAFLEX 61
- VEGAFLEX 62
- VEGAFLEX 63
- VEGAFLEX 65

The external housing cannot be retrofitted.

### 3.3 Storage and transport

#### Packaging

Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test according to DIN EN 24180.

The packaging of standard instruments 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.

#### Storage and transport temperature

- Storage and transport temperature see "Supplement - Technical data - Ambient conditions"
- Relative humidity 20 … 85 %
4 Mounting

4.1 General instructions

In the following cases, we recommend using an instrument version with external housing:

- if the standard housing is too big
- if strong vibrations can damage the electronics

In Ex applications, only a housing with appropriate Ex approval must be used.

4.2 Mounting preparations

**Tools**

The following tools are required for mounting the external housing:

- Allen key size 4
- Fork wrench, wrench size 19

**Mounting material**

We recommend using further material when mounting the wall mounting plate.

- 4 screws, depending on the mounting surface

4.3 Mounting steps - instrument housing

**Wall mounting**

1. Mark the holes according to the following drilling template
2. Depending on the mounting surface, fasten the wall mounting plate with 4 screws
Tip:
Mount the wall mounting plate so that the cable entry of the socket housing points downward. Rain and condensation water can thus drain off. The socket housing can be displaced by 180° to the wall mounting plate.

Turn the cable gland of the instrument housing downward. The basic body of the instrument housing can be turned by 330° without any tools.

Warning:
The four screws of the socket housing must only be hand-screwed. A torque > 5 Nm (3.688 lbf ft) can damage the wall mounting plate.

4.4 Mounting - sensor housing

Mount the sensor to the bottom, depending on the process fitting

Note:
When mounting the sensor, note the instructions in the operating instructions manual of the sensor.
5 Connect the sensor to the external housing

5.1 Preparing the connection

Follow the instructions in the operating instructions manual of the sensor.

5.2 Connection procedure

**Note:**
Only use the corresponding HF connection cable in the correct length.

Make sure that the markings (serial no.) correspond on the individual parts (sensor housing, instrument housing and HF connection cable).

The confectioned HF connection cable has a straight N-plug on one end and on the other end an N-angled plug. Both plugs can be connected to any side.

1. Remove the protective cover on the plug connector of the sensor housing.
2. Insert the plug (straight plug or angle plug) of the HF connection cable on the sensor housing and hand-screw the hexagon nut.
3. Tighten the hexagon nut of the plug with the fork wrench (SW 19) with max. 3 Nm (2.212 lbf ft).
4. Secure the hexagon nut of the plug with the securing strap. For this purpose, place the securing strap on one surface of the hexagon nut and tighten it with an Allen key (size 4).
5 Remove the protective cover on the plug connector of the instrument housing.

6 Insert the plug (straight plug or angle plug) of the HF connection cable on the instrument housing and hand-screw the hexagon nut.

7 Tighten the hexagon nut of the plug with the fork wrench (SW 19) with max. 3 Nm (2.212 lbf ft).

The electrical connection of the electronics module is described in the operating instructions manual of the sensor.
6 Setup

6.1 Setup

The setup is carried out according to the operating instructions manual of the respective sensor.
7 Maintain

7.1 Instrument repair

If a repair of the instrument is necessary, please proceed as follows:

You can download a return form (23 KB) from our Internet homepage www.vega.com under: "Downloads - Forms and certificates - Repair form".

By doing this you help us carry out the repair quickly and without having to call back for needed information.

- Print and fill out one form per instrument
- Clean the instrument and pack it damage-proof
- Attach the completed form and probably a safety data sheet to the instrument
- Send the instrument to the address of the agency serving you. In Germany, send it to the company headquarters in Schiltach.
8 Dismounting

8.1 Dismounting steps
Take note of chapters "Mounting" and "Connect sensor to the external housing" and carry out the listed steps in reverse order.

8.2 Disposal
The instrument consists of materials which can be recycled by specialised recycling companies. We have purposely designed the electronic modules to be easily separable. Mark the instrument as scrap and dispose of it according to national government regulations (e.g. in Germany according to electronic scrap ordinance).

Materials: see chapter "Technical data"

If you cannot dispose of the instrument properly, please contact us about disposal methods or return.
9 Supplement

9.1 Technical data

Technical data

Following you find all data deviating from the standard instrument. All other technical data are specified in the operating instruction of the respective sensor.

<table>
<thead>
<tr>
<th>General data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material 316L corresponds to 1.4404 or 1.4435</td>
</tr>
</tbody>
</table>

Materials, non-wetted parts
- Sensor housing (metal housing) 316L
- Instrument housing (external housing) plastic PBT (Polyester)
- Housing socket plastic PBT (Polyester)
- Wall mounting plate plastic PBT (Polyester)
- Seal between housing socket and wall mounting plate TPE (fixed connected)
- Seal between housing and housing cover (instrument version) Silicone
- Ground terminal 316L
- HF connection cable PE
- Connection plug (HF connection cable) Cu alloy (nickle-plated)

Weight
- External plastic housing 660 g (23 oz)
- Sensor 0.4 … 2 kg (0.882 … 4.41 lbs) depending on the process fitting

Sensor length (L)
- VEGAFLEX 61, 63, 65 see operating instructions manual of the respective sensor
- VEGAFLEX 62 1 … 45 m (3.281 … 147.6 ft)
Length HF connection cable to external housing
2, 5 or 10 m (6.562, 16.4, 32.81 ft)

Min. dielectric figure of the medium
- VEGAFLEX 61, 62, 63, 65 $\varepsilon_r > 1.6$
- if sensor length $L >$ cable length HF connection cable $\varepsilon_r > 2$

### Process conditions

<table>
<thead>
<tr>
<th>Process pressure</th>
<th>depending on the process fitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature - HF connection cable</td>
<td>-40 … +85 °C (-40 … +185 °F)</td>
</tr>
</tbody>
</table>

Ambient, storage and transport temperature on the instrument housing
- without indicating and adjustment module
  - -40 … +80 °C (-40 … +176 °F)
- with indicating and adjustment module
  - -20 … +70 °C (-4 … +158 °F)

### Electromechanical data

<table>
<thead>
<tr>
<th>Cable entry/plug$^1$</th>
<th>1 x cable gland M20 x 1.5 (cable: $\varnothing$ 6 … 12 mm), 2 x blind stopper M20 x 1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>or: 1 x closing cap $\frac{1}{2}$ NPT, 2 x blind stopper $\frac{1}{2}$ NPT</td>
</tr>
<tr>
<td></td>
<td>or: 1 x plug (depending on the version), 2 x blind plugs M20 x 1.5</td>
</tr>
</tbody>
</table>

- Housing socket
  - 1 x N-socket
- Sensor housing
  - 1 x N-socket

Spring-loaded terminals
for wire cross-section up to 2.5 mm$^2$
(AWG 14)

### Electrical protective measures

<table>
<thead>
<tr>
<th>Protection</th>
<th>IP 66/IP 68 (1 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor housing</td>
<td>IP 66/IP 67</td>
</tr>
<tr>
<td>Instrument housing - Instrument socket</td>
<td></td>
</tr>
</tbody>
</table>

$^1$ Depending on the version M12 x 1, according to DIN 43650, Harting, Amphenol-Tuchel, 7/8” FF.
9.2 Dimensions

Sensor housing (threaded versions) and external housing (instrument housing)

Fig. 4: Sensor housing (threaded versions) and external housing (instrument housing)
1  Sensor housing - VEGAFLEX 62 (threaded version)
2  Sensor housing - VEGAFLEX 61, 63, 65 (threaded version)
Sensor housing (flange versions) and external housing (instrument housing)

Fig. 5: Sensor housing (flange versions) and external housing (instrument housing)
1 Sensor housing - VEGAFLEX 62 (flange version)
2 Sensor housing - VEGAFLEX 61, 63, 65 (flange version)
Fig. 6: Housing versions - Instrument housing (with integrated PLICSCOM the housing is 9 mm/0.35 in higher)
1 Plastic housing