Operating Instructions

Pluggable display and adjustment module

PLICSCOM

Document ID: 36433

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 manual.

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1 About this document

1.1 Function

This operating instructions manual provides all the information you need for mounting, connection and setup as well as important instructions for maintenance and fault rectification. 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 specialist personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3 Symbols 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.

1 **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 operating instructions manual must be carried out only by trained specialist 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 pluggable display and adjustment module is used for measured value indication, adjustment and diagnosis.

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 the instrument can give rise to application-specific hazards, e.g. vessel overfill or damage to system components through incorrect mounting or adjustment. Also the protective characteristics of the instrument can be influenced.

2.4 General safety instructions

This is a state-of-the-art instrument complying with all prevailing regulations and guidelines. 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.

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.

The safety approval markings and safety tips on the device must also be observed.

2.5 CE conformity

The device fulfills the legal requirements of the applicable EC guidelines. By affixing the CE marking, we confirm successful testing of the product.

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You can find the CE Certificate of Conformity in the download section of our homepage.

2.6 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 fulfills 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.

2.7 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 fulfill 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 manual

This operating instructions manual applies to the following hardware and software versions of the display and adjustment module:

- Hardware from 1.0.0
- Software from 1.0.0

Instrument versions

The indicating/adjustment module consists of a display with full dot matrix as well as four keys for adjustment.

An LED background lighting is integrated in the display. It can be switched off or on via the adjustment menu.

As an option, the display and adjustment module is equipped with a heating. Hence reading is also possible at low temperatures up to -40 °C (-40 °F).

Scope of delivery

The scope of delivery encompasses:

- Display and adjustment module
- Documentation
  - This operating instructions manual
  - Supplementary instructions manual 31708 "*Heating for display and adjustment module*" (optional)

3.2 Principle of operation

Application area

The display and adjustment module is used for measured value indication, adjustment and diagnoses for level and pressure sensors.

Installation in the sensor housing

The display and adjustment module is mounted in the respective sensor housing. With instruments with double chamber housing, the display and adjustment module can be mounted either in the electronics or in the connection compartment.

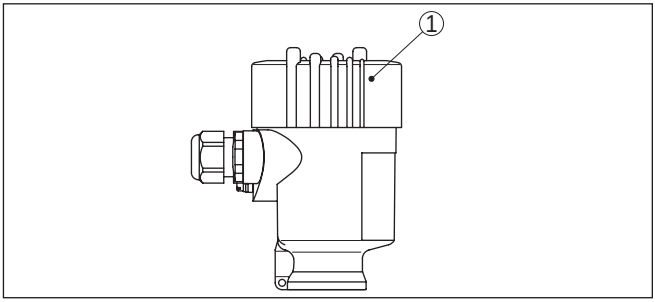

Fig. 1: Mounting the display and adjustment module in the single chamber housing

1 Mounting in the electronics compartment

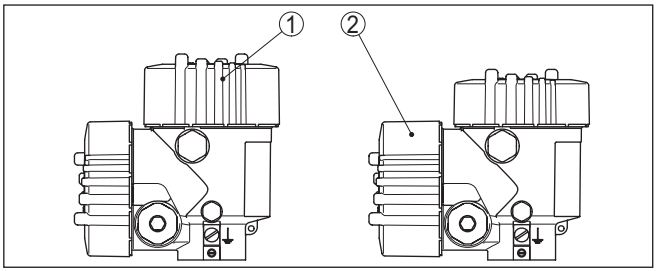

Fig. 2: Mounting the display and adjustment module in the double chamber housing

1 Mounting in the electronics compartment
2 Mounting in the connection compartment

The electrical connection is carried out via spring contacts in the sensor and contact surfaces in the display and adjustment module. After mounting, the sensor and indicating and adjustment module are also splash-water protected without housing cover.

Mounting in the external display and adjustment unit

The external display and adjustment unit is another installation option.

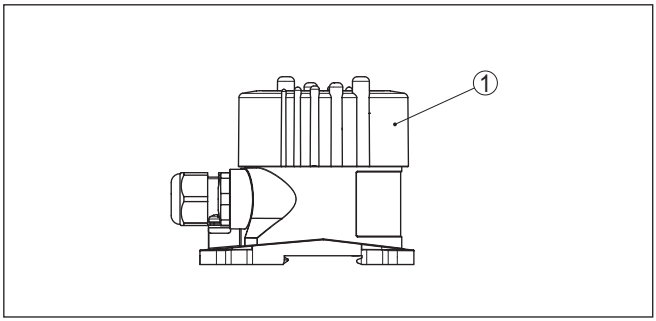

Fig. 3: Mounting the display and adjustment module in the external display and adjustment unit

1 Installation position

Parallel operation of display and adjustment modules

Depending on the hardware version (HW) and software version (SW) of the respective sensor, it is possible to operate the display and adjustment modules in the sensor and the external display and adjustment unit in parallel.

The differences are described below.

Sensors with HW < 2.0.0, SW < 3.99

With these sensors, the interface for the display and adjustment module and the external display and adjustment unit are connected internally. The position of the interface is shown in the following graphic:

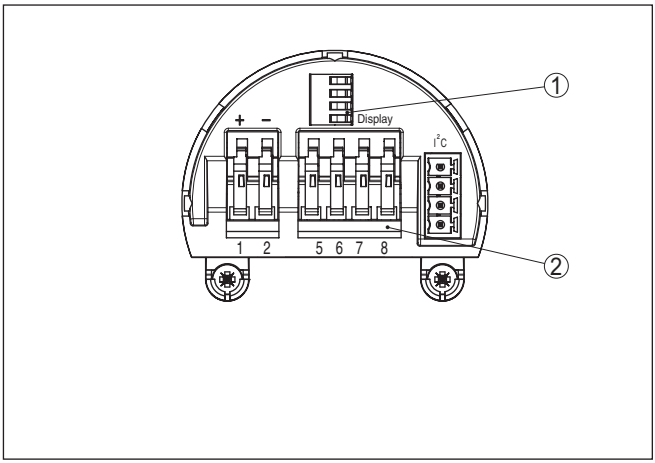

Fig. 4: Interfaces for display and adjustment (connected internally)

1 Spring contacts for display and adjustment module
2 Terminals for the external display and adjustment unit

Operating two display and adjustment modules in parallel, i.e. one in the sensor and one in the external display and adjustment unit, is thus not possible.

Radar sensors with HW ≥ 2.0.0, SW ≥ 4.0.0, sensors with guided radar and pressure transmitters with HW ≥ 1.0.0, SW ≥ 1.1.0
These sensors are equipped with separate interfaces for the display and adjustment module and the external display and adjustment unit. The position of the interface is shown in the following graphic:

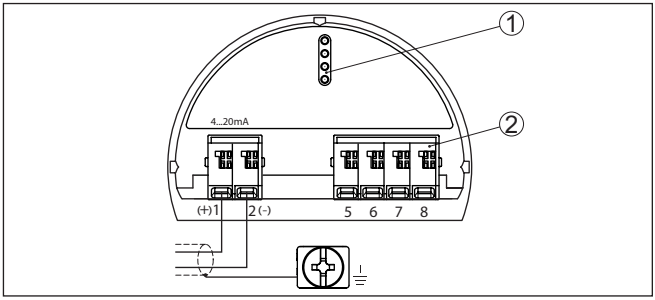

Fig. 5: Interfaces for display and adjustment (separately)

1 Spring contacts for display and adjustment module
2 Terminals for the external display and adjustment unit

Operating two display and adjustment modules in parallel in the sensor as well in the external display and adjustment unit is therefore possible. If the sensor is operated via one of the display and adjustment modules, then the message "*Adjustment blocked*" appears. Simultaneous adjustment is thus excluded.

Connection of more than one display and adjustment module on one interface or a total of more than two display and adjustment modules, however, is not supported.

Range of functions

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

Voltage supply

Power is supplied directly via the respective sensor or the external display and adjustment unit. An additional connection is not required.

The backlight is also powered by the sensor or via the external display and adjustment unit. Prerequisite for this is a supply voltage at a certain level. The exact voltage specifications can be found in the operating instructions manual of the respective sensor.

Heating

The optional heating requires its own operating voltage. You can find details in the supplementary instructions manual "*Heating for display and adjustment module*".

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 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.

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 Prepare setup

4.1 Insert display and adjustment module

The display and adjustment module can be inserted into the sensor and removed again at any time. You can choose any one of four different positions - each displaced by 90°. It is not necessary to interrupt the power supply.

Proceed as follows:

1. Unscrew the housing lid
2. Place the display and adjustment module on the electronics in the desired position and turn it to the right until it snaps in.
3. Screw housing lid with inspection window tightly back on

Disassembly is carried out in reverse order.

The display and adjustment module is powered by the sensor, an additional connection is not necessary.

Fig. 6: Installing the display and adjustment module in the electronics compartment of the single chamber housing

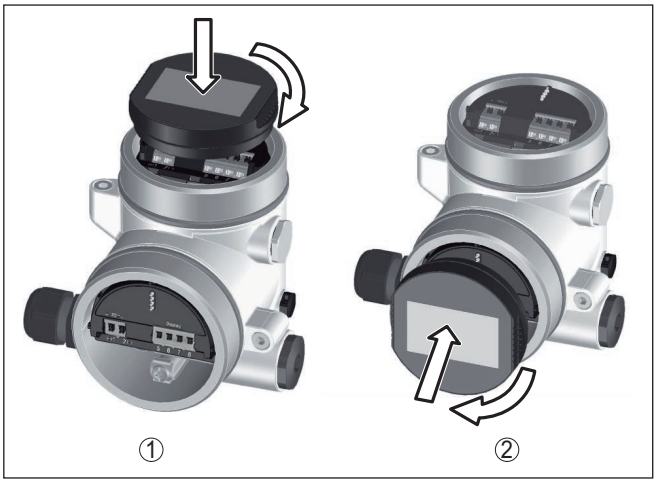

Fig. 7: Installing the display and adjustment module in the double chamber housing

1 In the electronics compartment
2 In the terminal compartment

Note:
If you intend to retrofit the instrument with a display and adjustment module for continuous measured value indication, a higher lid with an inspection glass is required.

4.2 Adjustment system

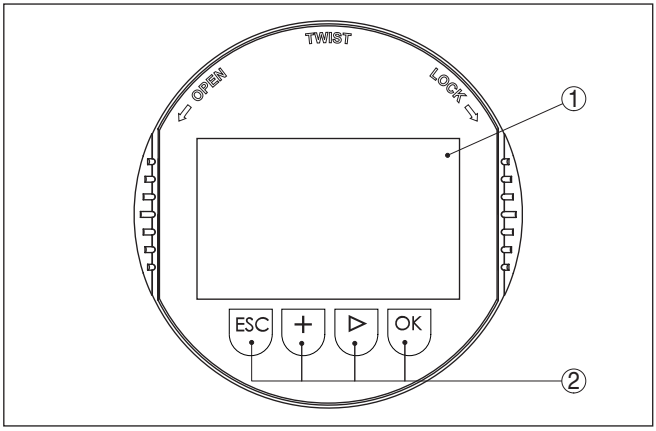

Fig. 8: Display and adjustment elements

1 LC display
2 Adjustment keys

Key functions

- ***[OK]*** key:

- Move to the menu overview
- Confirm selected menu
- Edit parameter
- Save value

- ***[->]*** key:
  - Presentation, change measured value
  - Select list entry
  - Select menu items in the quick setup
  - Select editing position
- ***[+]*** key:
  - Change value of the parameter
- ***[ESC]*** key:
  - Interrupt input
  - Jump to next higher menu

Adjustment system

You adjust the instrument via the four keys of the display and adjustment module. The individual menu items are shown on the LC display. You can find the functions of the individual keys in the previous illustration.

Time functions

By pushing the ***[+]*** and ***[->]*** keys once, the edited value or the cursor changes by one position. By pushing the keys longer than 1 s the change will be continuously.

By pushing the ***[OK]*** and ***[ESC]*** keys simultaneously for more than 5 s, a return to the basic menu is caused. The menu language is then switched over to "*English*".

Approx. 60 minutes after the last pressing of a key, an automatic reset to measured value indication is triggered. Any values not confirmed with ***[OK]*** will not be saved.

5 Maintenance and fault rectification

5.1 Maintenance

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

5.2 How to proceed if a repair is necessary

You can find an instrument return form as well as detailed information of the procedure in the download area on our homepage: www.vega.com.

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

If a repair is necessary, please 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
- Please contact the agency serving you to get the address for the return shipment. You can find the agency on our home page www.vega.com.

6 Dismount

6.1 Dismounting steps

Warning:
Before dismounting, be aware of dangerous process conditions such as e.g. pressure in the vessel or pipeline, high temperatures, corrosive or toxic products etc.

Take note of chapters "*Mounting*" and "*Connecting to power supply*" and carry out the listed steps in reverse order.

6.2 Disposal

The instrument consists of materials which can be recycled by specialised recycling companies. We use recyclable materials and have designed the parts to be easily separable.

Correct disposal avoids negative effects on humans and the environment and ensures recycling of useful raw materials.

Materials: see chapter "*Technical data*"

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

WEEE directive 2002/96/EG
This instrument is not subject to the WEEE directive 2002/96/EG and the respective national laws. Pass the instrument directly on to a specialised recycling company and do not use the municipal collecting points. These may be used only for privately used products according to the WEEE directive.

7 Supplement

7.1 Technical data

General data	
Weight	approx. 150 g (0.33 lbs)

Ambient conditions	
Ambient temperature	-15 … +70 °C (+5 … +158 °F)
Storage and transport temperature	-40 … +80 °C (-40 … +176 °F)

Display and adjustment module	
Display element	Display with backlight
Measured value indication	
– Number of digits	5
– Size of digits	W x H = 7 x 13 mm
Adjustment elements	4 keys
Protection rating	
– unassembled	IP 20
– mounted in the housing without lid	IP 40
Materials	
– Housing	ABS
– Inspection window	Polyester foil

7.2 Dimensions

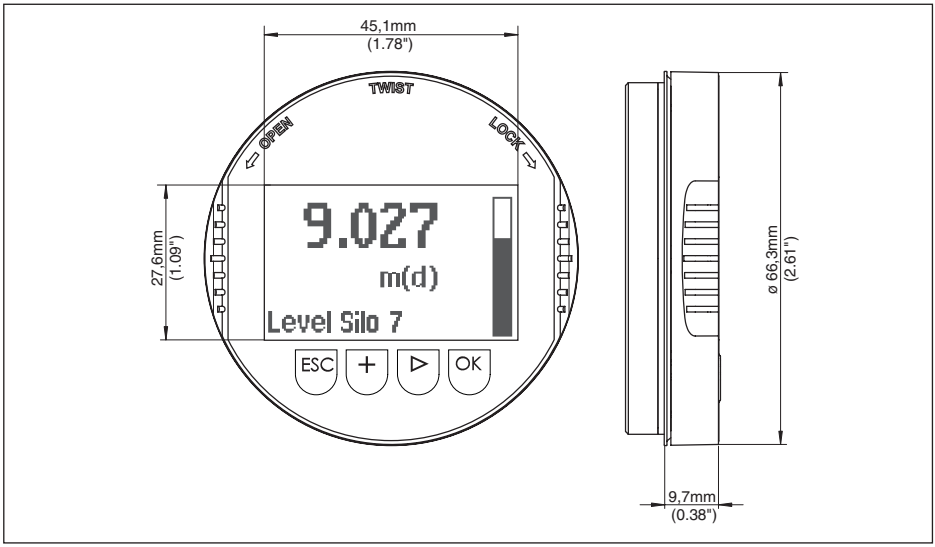

Fig. 9: Dimensions of display and adjustment module

7.3 Industrial property rights

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

Only in U.S.A.: Further information see patent label at the sensor housing.

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Nähere Informationen unter www.vega.com.

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进一步信息请参见网站<www.vega.com。

7.4 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:

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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