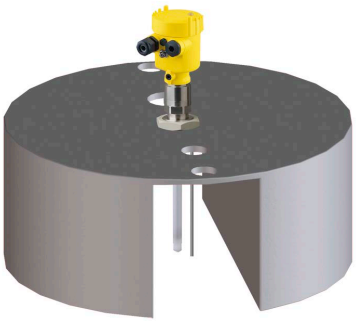
Supplementary instructions

Float for oil/water detection

for VEGACAP 63



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Contents

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1 About this document

1.1 Function

This supplementary instructions manual is valid in conjunction with the operating instructions of the instrument. It gives you all necessary information for a quick setup and safe operation of the instrument with accessory. Therefore read both instructions manuals before you start setup.

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.

→ **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 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 float for oil/water detection is part of a sensor. It is used for detection of light liquids on water.

2.3 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:

- Floating body for a point level sensor
- Nut G1½ (plastic)
- Adapter with pin
- Ground rod
- Documentation
  - To this supplementary operating instructions

Constituent parts

The instrument version "*Point level sensor with float*" consists of a float and the point level sensor.

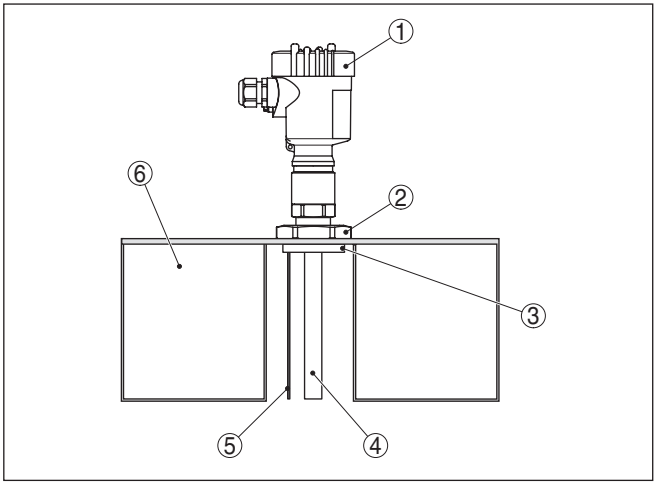

Fig. 1: Components of the float probe

1 Probe (mounted in the centre)
2 Nut (plastic)
3 Adapter (316L) with pin
4 Electrode
5 Ground electrode (screwed into the adapter)
6 Float

3.2 Principle of operation

Area of application

The float is suitable for the following plics® sensors:

- VEGACAP 63

Functional principle

The probe detects non-conductive light liquids (< 1 kg/dm³) on water, e.g. in water or oil separating basins.

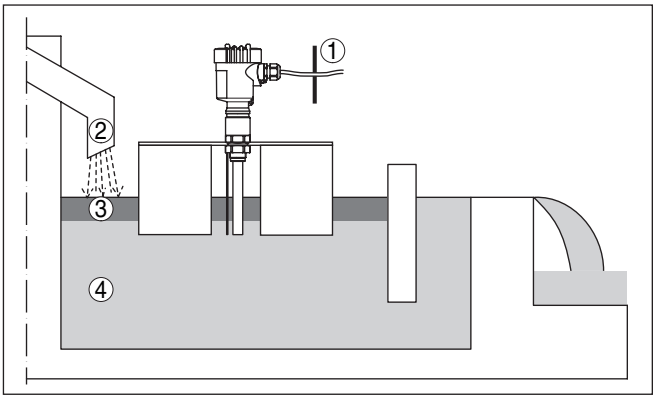

Fig. 2: Measuring system for oil/water detection

1 Cable holder for relief
2 Inlet - Water/Oil mixture
3 Oil layer
4 Water

The measuring system floats on the water and due to the own weight the electrode of the probe immerses up to a certain depth.

If there is e.g. oil on the water surface, the measuring system floats. The immersion depth of the electrode in water reduces. Hence the capacitance of the probe changes. The capacitance change is converted into a switching command.

An oil layer can be already detected from a thickness of 4 mm.

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 based on ISO 4180.

The outer packaging of standard instruments consists of environment-friendly, recyclable cardboard. PE foam or PE foil is also used for packing the instrument. Dispose of the packaging material via specialised recycling companies.

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

Guidance

To prevent the float from touching the vessel wall, it can be guided vertically.

Use two thin vertical rods or two vertically strained wires at a distance of 306 mm (12 in) which you lead through the holes in the float plate.

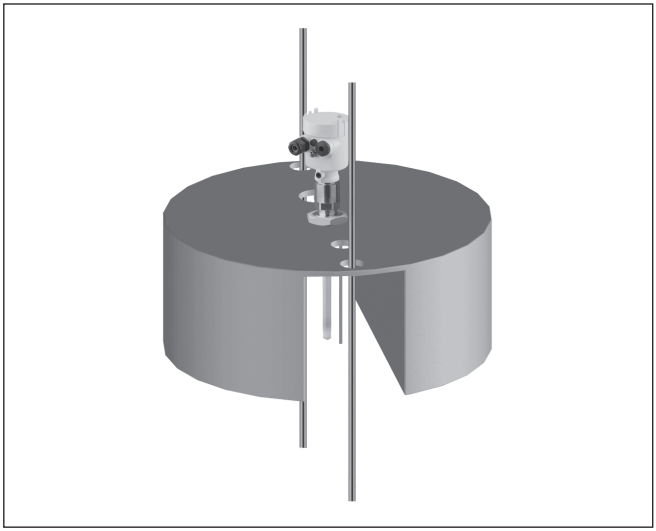

Fig. 3: Guidance of the float

Connection cable

The connection cable can influence the float position of the measuring system and therefore adulterate the measuring result.

If possible, use a light, flexible connection cable and fasten the cable with a cable holder. In case of considerable height differences of the float, you should use a light helix cable.

Product movements

Product movements can influence the measurement. In this case, use a controller with adjustable damping to avoid fluctuations of the measured value.

Static charges

There is a danger of static charging on the plastic floating body.

Avoid friction

No dry cleaning

Do not mount in areas with flowing, non-conductive products

5 Connect the sensor

5.1 Preparing the connection

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

Note:
The connection cable can influence the floating position of the measuring system. For this reason, use a light, flexible connection cable and fasten the cable on a cable holder.

5.2 Connection procedure

The electrical connection is described in the operating instructions of the sensor.

6 Setup

6.1 Setup

Setup is carried out according to the operating instructions manual of the respective sensor/controller.

Make sure that the measuring system is in the water for setup.

Tip:
If setup is not possible in the original vessel, then fill a suitable vessel (ø approx. 400 mm, height approx. 150 mm) with water and place the measuring system with float inside the vessel. The measuring result can be transferred to the original vessel.

Proceed as follows:

1. Connect probe and controller
2. Switch on voltage supply
3. Turn the A/B switch on the controller to position B

   The relay deenergizes if an oil layer is detected (safe state)

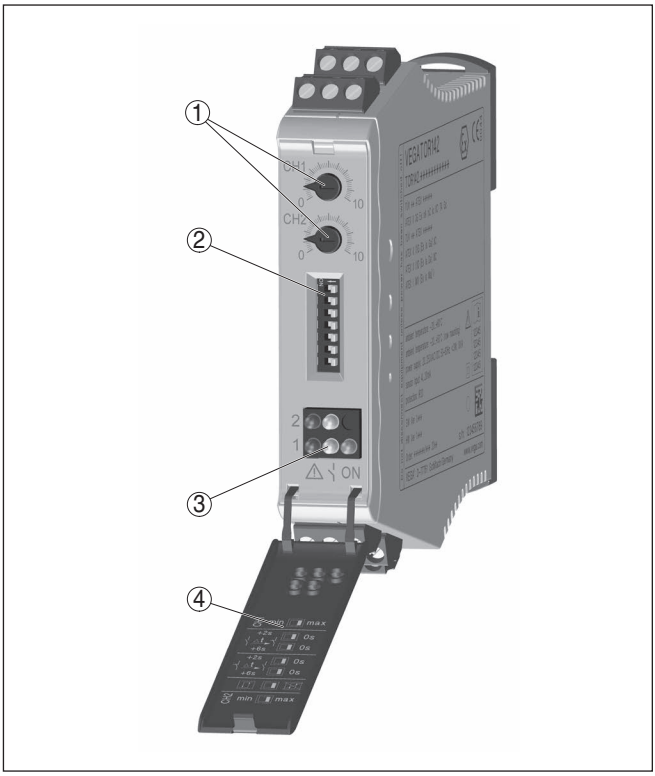

Fig. 4: Suitable controllers - VEGATOR 141, 142

1 Potentiometer for switching point adjustment
2 DIL switch block
3 Signal lamps (LEDs)
4 Hinged front cover

4. Set potentiometer (1) to 0. The relay control lamp (2) lights.
5. Turn the potentiometer (1) slowly clockwise until the relay control lamp (3) extinguishes.
6. Turn the potentiometer (1) very slowly anticlockwise until the relay control lamp (3) lights.

   Hence the measuring system is set very sensitively. An of oil layer of 3 - 4 mm is sufficient to switch the relay.

Information:
To make the measuring system less sensitive, you have to turn the potentiometer anticlockwise.

The more the potentiometer is turned back, the higher the light liquid layer has to be to switch the relay.

We recommend connecting the level switch in such a way that the switching circuit is open when there is a level signal, line break or failure (safe state).

An open switch symbol corresponds hence in the following drawing to the detection of a liquid.

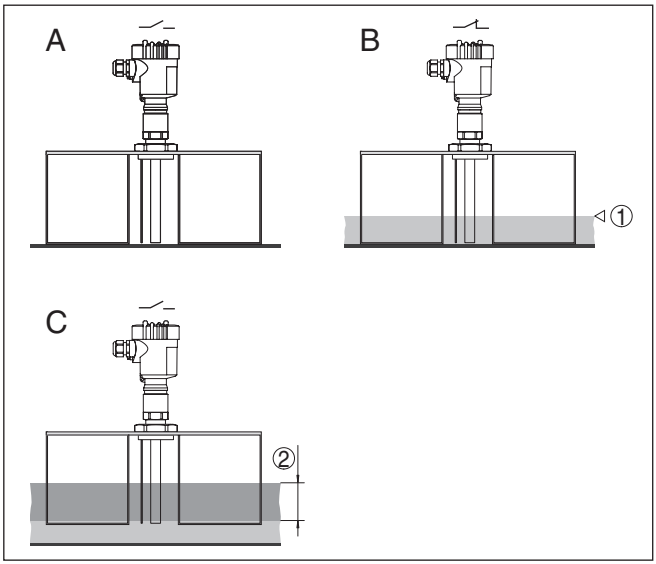

Fig. 5: Switching status of the measuring system

A No liquid present
B Water
C Oil layer on water
1 Liquid level water
2 Liquid level oil > 4 mm (> 0.157 in)

7 Maintenance

7.1 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: 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.

8 Dismount

8.1 Dismounting steps

Note chapter "*Mounting*" and carry out the described steps in reverse order.

8.2 Disposal

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

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.

General data

Material 316L corresponds to 1.4404 or 1.4435

Materials, wetted parts

– Float	PVC
– Nut	PPH
– Adapter	316L
– Ground rod	316L

Weights

– Float	approx. 2400 g (85 oz)

Suitable point level sensor - VEGACAP 63

– Order length L - Point level sensor	160 mm
– Housing material	Plastic
– Electronics version	Two-wire electronics (Z)
– Process fitting	G ¾ A
Suitable controllers	VEGATOR 141, 142

Process conditions

Process temperature	-30 … +60 °C (-22 … +140 °F)

Approvals

The floating body can be used in Ex area zone 1 (ATEX II 2G).

There is a danger of static charging on the plastic floating body.

- Avoid friction
- No dry cleaning
- Do not mount in areas with flowing, non-conductive products

9.2 Dimensions

Measuring system for oil/water detection

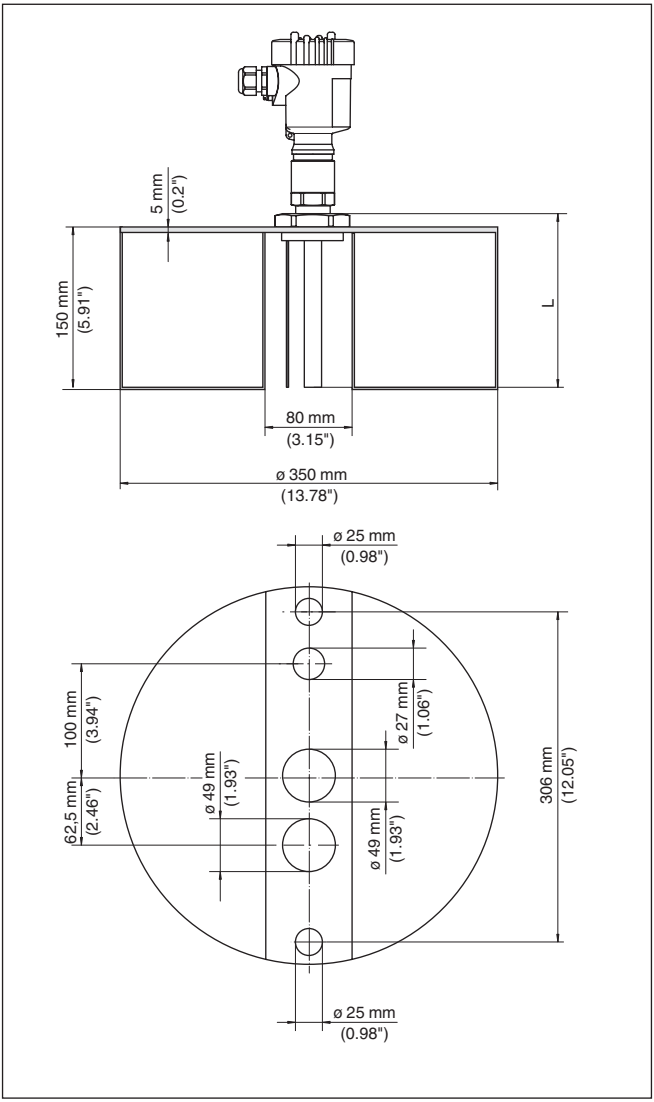

Fig. 6: Measuring system for oil/water detection with VEGACAP 63 point level sensor

L Order length of the VEGACAP 63 level sensor (L = 160 mm)

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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