

# Supplementary instructions

## Mounting strap

For radar sensors

VEGAPULS 10, 20, 30 series

VEGAPULS Air series 40

as well as other VEGA sensors



Document ID: 63814



# VEGA

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**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 and come with the Ex-approved instruments.

Editing status: 2022-07-26

# 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 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](http://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.



#### 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 instruction 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 mounting straps are used for mounting VEGAPULS series 10, 20, 30, VEGAPULS Air 40 radar sensors as well as further VEGA sensors on the respective measuring point.

### 2.3 Warning about incorrect use

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, e.g. vessel overflow or damage to system components through incorrect mounting or adjustment.

### 2.4 General safety instructions

The safety information in the operating instructions manual of the respective device must be noted.

### 2.5 Mounting with Ex applications

The mounting straps must be installed in accordance with the manufacturer specification and the applicable national regulations, e.g. planning and installation in accordance with IEC/EN 60079-14.

### 2.6 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:

- Mounting strap
- Fixing material - cable/chain mounting:
  - Mounting chain 5 m, screw connector, cable ties (optional)
- Fixing material - wall/ceil mounting:
  - 4 pcs. hexagon screws  $\varnothing 6 \times 40$  mm with washers and spring rings
  - 4 pieces straddling dowel  $\varnothing 8 \times 40$  mm
  - Counter nut G1½" (with mounting strap with sensor holder 1½")
  - Self-adhesive drilling template
- Fixing material - Mounting on plastic vessel:
  - 4 pcs. adhesive pads
- Information sheet "Documents" with:
  - QR code with link to device documentation for direct scanning

**Types**

The mounting brackets are available in different designs:

- Cable mounting
- Ceil mounting
- Wall mounting
- Mounting on plastic vessel

The sensor holders of the mounting brackets are suitable for sensors with mounting thread G1 or G1½.

#### 3.2 Application area

**Cable mounting**

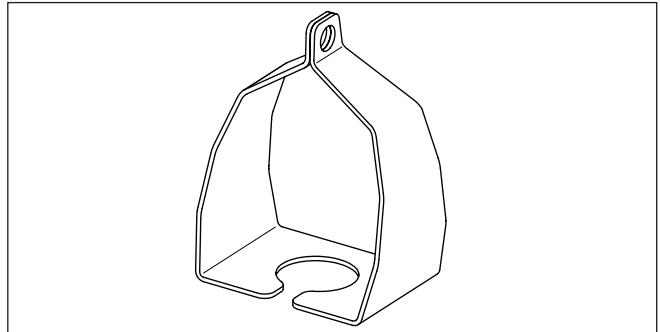


Fig. 1: Mounting strap for cable mounting

Sensor holder	Sensors	Art. no.
1"	VEGAPULS C 11, C 21, C 23	MBC.A

## Ceil mounting

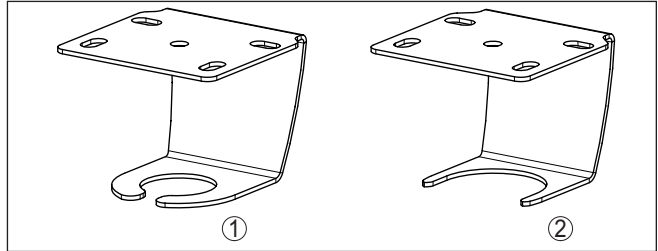


Fig. 2: Mounting strap for ceiling mounting

No.	Sensor holder	Sensors	Art. no.
1	1"	VEGAPULS C 11, C 21, C 23	MBB.A
2	1½"	VEGAPULS C 22	MBB.B

## Wall mounting - with fixed sensor holder

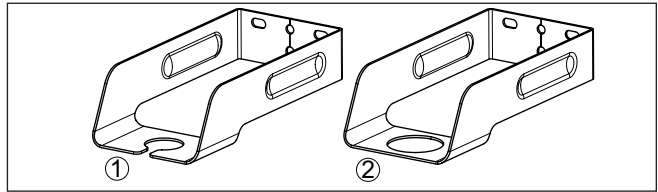


Fig. 3: Mounting strap for wall mounting - with fixed sensor holder

No.	Length to sensor centre	Sensor holder	Sensors	Art. no.
1		1"	VEGAPULS C 11, C 21, C 23	MBE.A
2	200 mm (7.874 in)	1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBE.B

## Wall mounting - with adjustable sensor holder

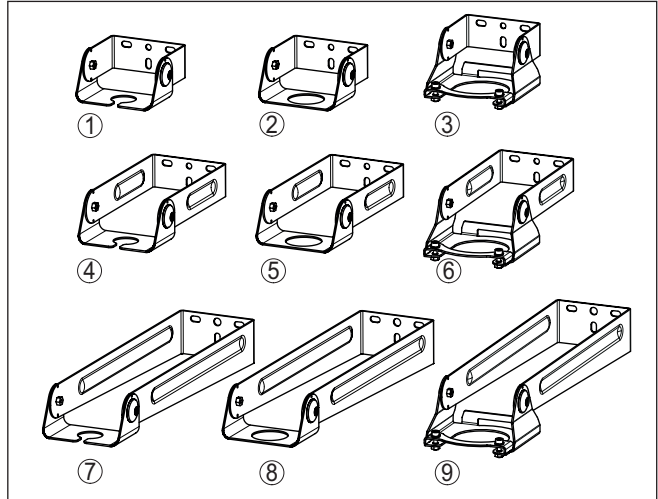


Fig. 4: Mounting strap for wall mounting - with adjustable sensor holder

No.	Length to sensor centre	Sensor holder	Sensors	Art. no.
1	80 mm (3.149 in)	1"	VEGAPULS C 11, C 21, C 23	MBA.AA
2		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBA.BA
3			VEGAPULS Air 42	MBA.CA
4	200 mm (7.874 in)	1"	VEGAPULS C 11, C 21, C 23	MBA.AB
5		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBA.BB
6			VEGAPULS Air 42	MBA.CB
7	400 mm (15.75 in)	1"	VEGAPULS C 11, C 21, C 23	MBA.AC
8		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBA.BC
9			VEGAPULS Air 42	MBA.CC

### Wall mounting - with adjustable bracket

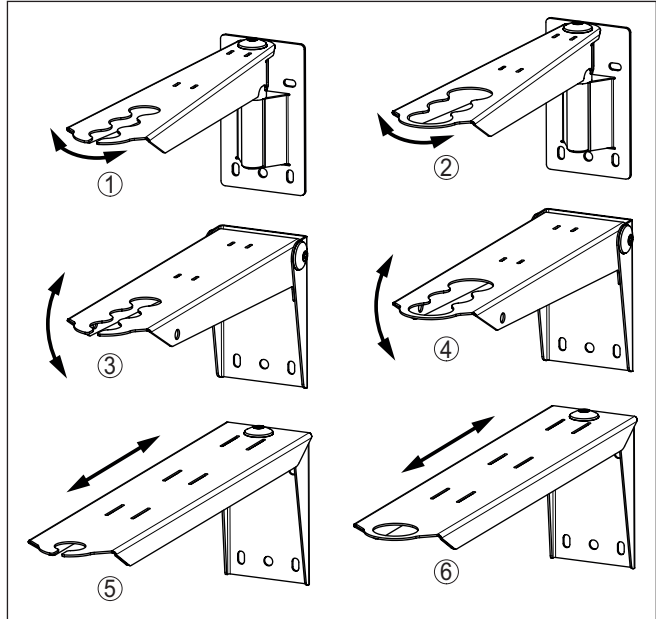


Fig. 5: Mounting strap for wall mounting - with adjustable bracket

No.	Series Length to sensor centre	Sensor holder	Sensors	Art. no.
1	Horizontally swiv- elling 400 mm (15.75 in)	1"	VEGAPULS C 11, C 21, C 23	MBD.AA
2		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBD.BA
3	Vertically foldable 400 mm (15.75 in)	1"	VEGAPULS C 11, C 21, C 23	MBD.AB
4		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBD.BB
5	Extendable 400 mm (15.75 in)	1"	VEGAPULS C 11, C 21, C 23	MBD.AC
6		1½"	VEGAPULS C 22, 11, 21, 31, Air 41	MBD.BC



**For plastic vessels - with adjustable sensor holder**

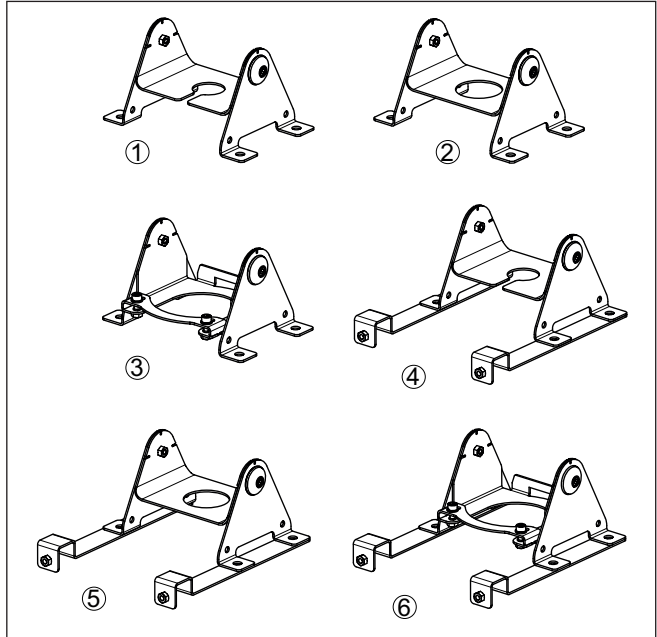


Fig. 6: Mounting strap for plastic vessels - with adjustable sensor holder

No.	Series	Sensor holder	Sensors	Art. no.
1	Standard	1"	VEGAPULS C 11, C 21, C 22, C 23	MBF.A
2		1½"	VEGAPULS 11, 21, 31, Air 41	MBF.B
3			VEGAPULS Air 42	MBF.C
4	With fixation on the frame of IBC containers	1"	VEGAPULS C 11, C 21, C 22, C 23	MBF.D
5		1½"	VEGAPULS 11, 21, 31, Air 41	MBF.E
6			VEGAPULS Air 42	MBF.F

## 4 Mounting

### 4.1 Mounting preparations

The following tool is required for mounting:

- Wrench (size 10) for the hexagon screws
- Wrench (size 41) for counter nut 1"
- Wrench (size 60) for counter nut 1½"
- Allen key size 5 for the moving parts

### 4.2 Cable/chain mounting

For cable mounting proceed as follows:

- Select a cable with sufficient load capacity for the weight of the bracket, sensor and connection cable
- Ensure suitability for the operating conditions
- Secure the cable, e.g. with a suitable snap hook in the opening of the mounting strap.

For chain mounting proceed as follows:

- Secure the chain with a screw connector in the opening of the mounting strap
- Fasten the connection cable with cable ties to the chain

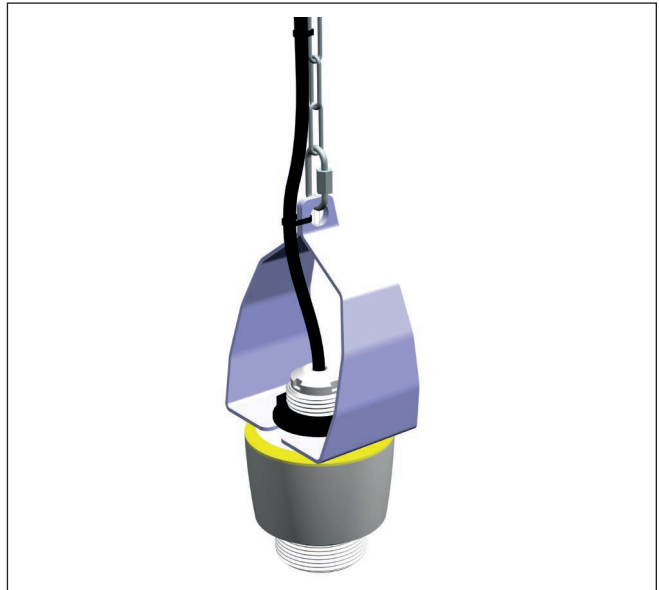


Fig. 7: Mounting strap for cable/chain mounting

### 4.3 Ceil mounting

Proceed as follows:

**Sensor holder for G1**

- Screw the mounting bracket to the ceiling
- Lead the connection cable or mounting thread of the sensor through the opening
- Tighten lock nut on the sensor, torque see operating instructions of the respective sensor



Fig. 8: Mounting strap for ceiling mounting - Sensor reception for G1

#### Sensor holder for G1½

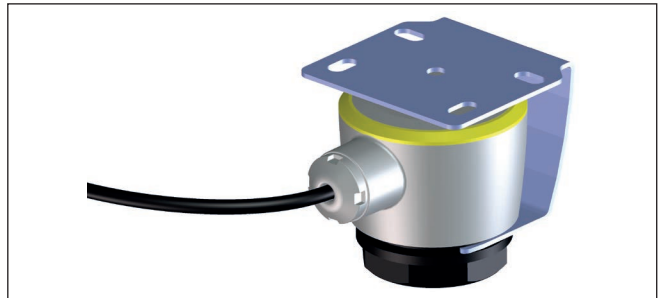


Fig. 9: Mounting strap for ceiling mounting - Sensor reception for G1½

### 4.4 Wall mounting - fixed or adjustable sensor holder

Proceed as follows:

- Screw the mounting bracket to the wall
- Lead the connection cable or mounting thread of the sensor through the opening
- Tighten lock nut on the sensor, torque see operating instructions of the respective sensor
- Align the sensor, tighten the hexagon socket screws, for swivel range and torque see chapter " *Technical data*" of this manual

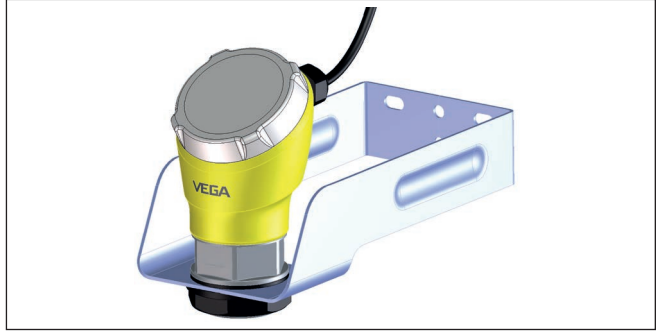
**Fixed sensor holder**

Fig. 10: Mounting strap with fixed sensor holder

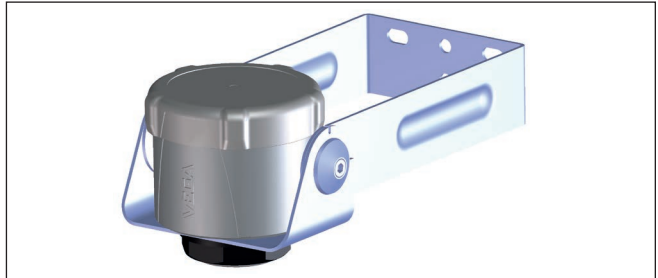
**Adjustable sensor holder**

Fig. 11: Mounting strap with adjustable sensor holder

#### 4.5 Wall mounting - horizontally swivelling, vertically foldable, extendable

Proceed as follows:

- Screw the mounting bracket to the wall
- Lead the connection cable or mounting thread of the sensor through the opening
- Tighten lock nut on the sensor, torque see operating instructions of the respective sensor
- Align sensor, tighten hexagon socket screws, for movement areas and torque see chapter " *Technical data*" or " *Dimensions*" of this manual

Horizontally swivelling

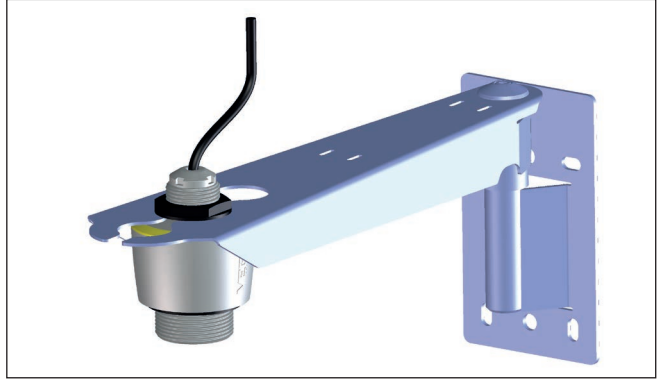


Fig. 12: Mounting strap for horizontally swivelling wall mounting



**Caution:**

The swivel range of this mounting bracket represents a hazardous area, e.g. due to impact or squeezing. To avoid this, do not reach into the swivel joint and do not work next to the mounting bracket. Secure the intended position by tightening the hexagon socket screw.

Vertically foldable

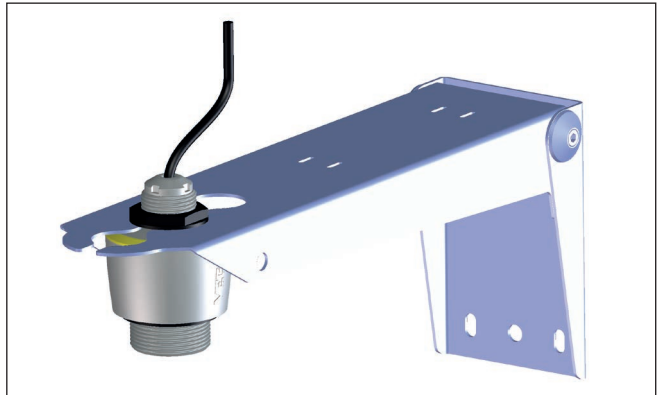


Fig. 13: Mounting strap for vertically foldable wall mounting



**Caution:**

The folding range of this mounting bracket represents a hazardous area, e.g. due to impact or squeezing. To avoid this, do not reach into the folding joint and do not work below the mounting bracket. Secure the intended position by tightening the hexagon socket screws.

## Extendable

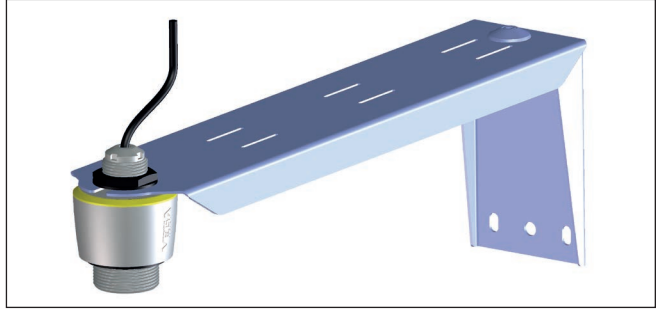


Fig. 14: Mounting strap for vertically foldable wall mounting

**Caution:**

When extending this mounting bracket, there is a risk of jamming in the guide rails. To avoid this, do not reach into the guide rails. Secure the intended position by tightening the hexagon socket screw.

#### 4.6 Mounting on plastic vessel

Proceed as follows:

- Lead the connection cable or mounting thread of the sensor through the opening
- Tighten lock nut, torque see operating instructions of the respective sensor
- Clean the vessel surface
- Stick the mounting strap to the vessel with the adhesive pads from the scope of delivery
- For version with fixation for IBC containers: additionally tighten fixing screws for the frame
- With version for VEGAPULS Air 42 tighten the screws on the mounting strap
- Align the sensor, tighten the hexagon socket screws, for swivel range and torque see chapter " *Technical data* " of this manual

## Standard

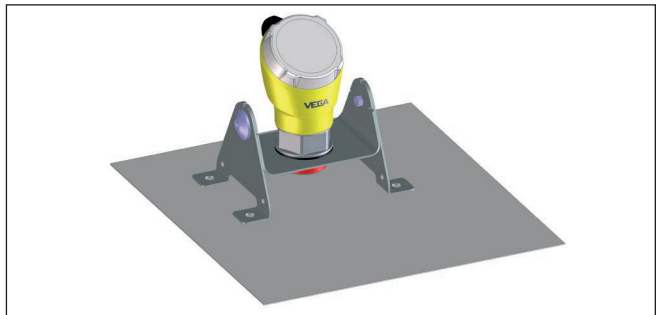


Fig. 15: Mounting strap for mounting on plastic vessel

**Fixation on the frame of the IBC container**

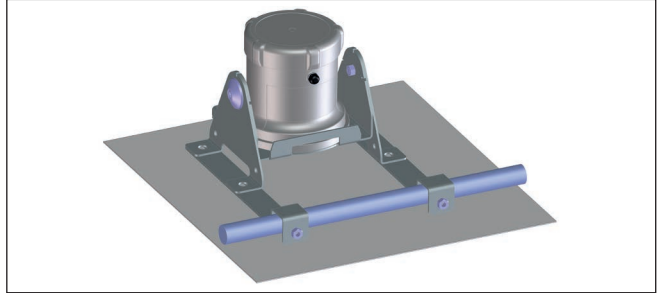


Fig. 16: Mounting strap for mounting on plastic vessel with fixation

**4.7 Tube mounting**

Proceed as follows:

- Screw the pipe clamps to the pipe at a suitable distance
- Screw mounting bracket to pipe clamps
- Lead the connection cable or mounting thread of the sensor through the opening
- Tighten lock nut, torque see operating instructions of the respective sensor
- Align the sensor, tighten the hexagon socket screws, for torque see chapter " *Technical data*" of this manual

**Pipe mounting vertical**

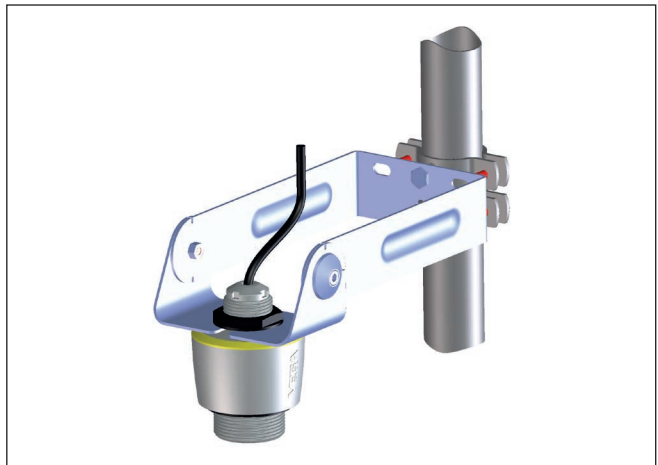


Fig. 17: Mounting bracket for pipe mounting vertically over pipe clamps provided by customer

**Horizontal pipe mounting**



*Fig. 18: Mounting bracket for pipe mounting horizontally over pipe clamps provided by customer*



## 5 Technical data

### General data

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Material

- Mounting strap 316L
- Fixing screws StSt
- Chain 316L

Chain length 5 m (16.4 ft)

Tensile load chain, screw connector max. 50 kg (110 lbs)

Weight

- Mounting strap, depending on the version 0.5 ... 0.7 kg (1.102 ... 1.543 lbs)
- Mounting chain approx. 0.06 kg/m (0.040 lbs/ft)

### Movement areas

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Wall mounting swivelling

- Angle to the front 90°
- Angle to the rear 15°

Wall mounting rotatable

- Angle to the left 85°
- Angle to the right 85°

### Torques

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Max. torque

- Hexagon socket screws, swivelling brackets 5 Nm (3.688 lbf ft)
- Hexagon socket screws, rotatable, hinged and extendable brackets 8 Nm (5.900 lbf ft)
- Hexagonal screws (depending on ceiling or wall properties) 5 Nm (3.688 lbf ft)

### Mechanical environmental conditions

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Max. static load capacity

- Ceil mounting 5 kg (11.02 lbs)
- Wall mounting 80 mm 20 kg (44.09 lbs)
- Wall mounting 200 mm 10 kg (22.05 lbs)
- Wall mounting 400 mm 5 kg (11.02 lbs)

Sinusoidal vibrations Class 4M5 acc. to IEC 60271-3-4

Impacts 50 g, 2.3 ms acc. to IEC 60271-3-6 (mechanical shock)

## 6 Dimensions

### 6.1.1 Cable mounting

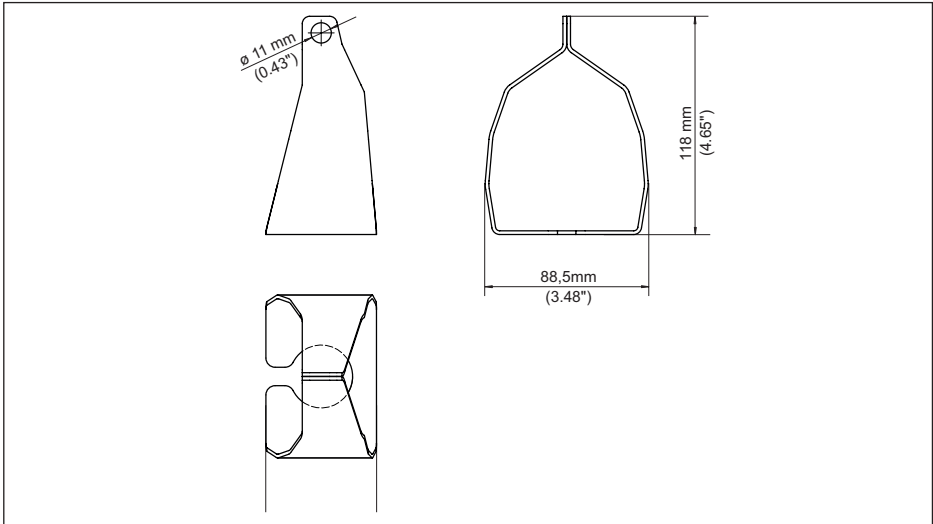


Fig. 19: Mounting strap for cable mounting

### 6.1.2 Ceil mounting

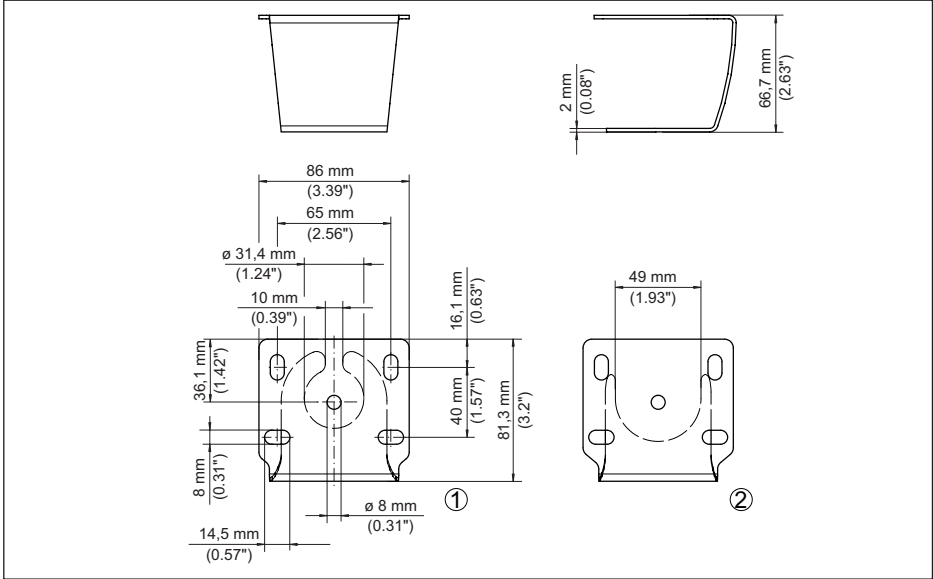


Fig. 20: Mounting strap for ceiling mounting

- 1 Sensor holder 1"
- 2 Sensor holder 1½"

### 6.1.3 Wall mounting

#### Sensor holder rigid

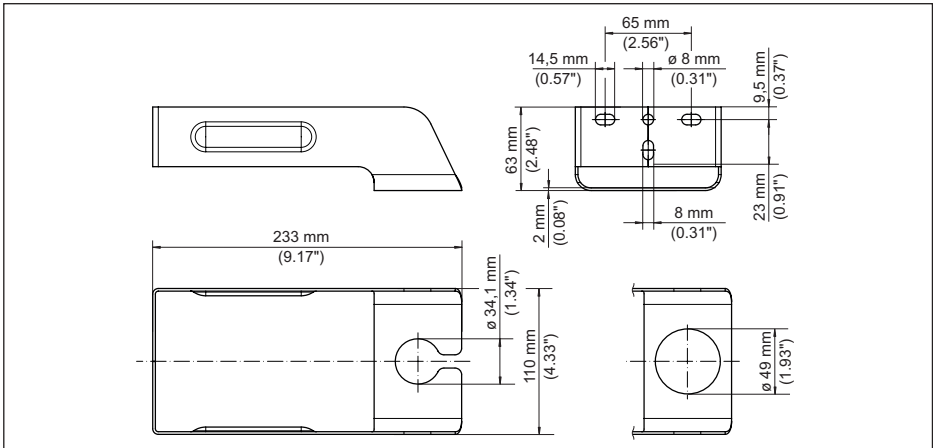


Fig. 21: Mounting strap for wall mounting, rigid - bracket 200 mm

- 1 Sensor holder 1"
- 2 Sensor holder 1½"

## Sensor holder adjustable - bracket 80 mm

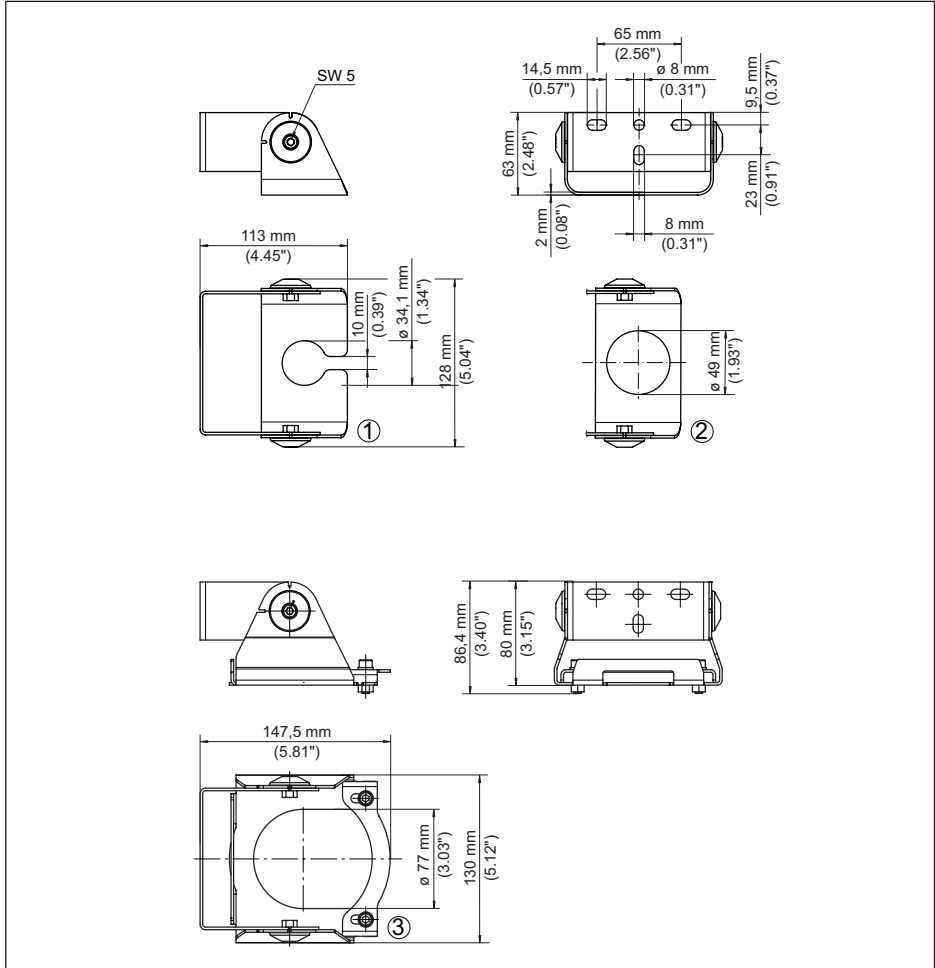


Fig. 22: Mounting strap for wall mounting, sensor holder adjustable - bracket 80 mm

- 1 Sensor holder 1"
- 2 Sensor holder 1½"
- 3 Sensor holder for compression flange

Sensor holder adjustable - bracket 200 mm

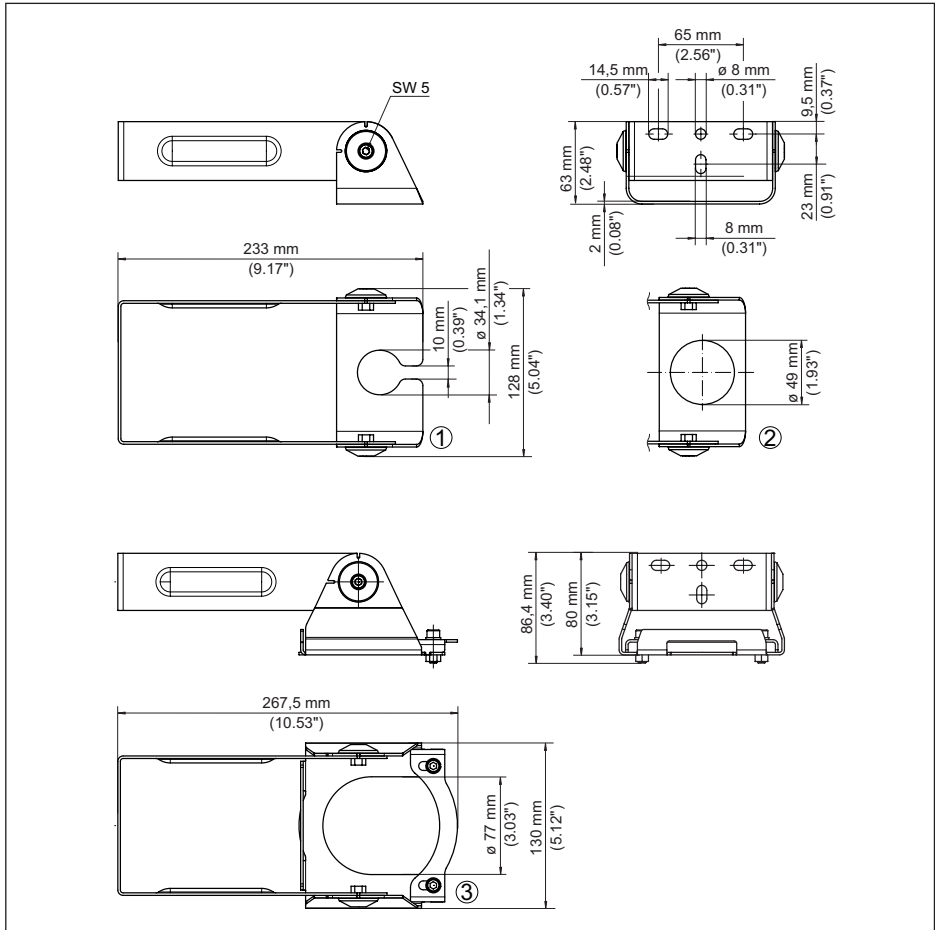


Fig. 23: Mounting strap for wall mounting, sensor holder adjustable - bracket 200 mm

- 1 Sensor holder 1"
- 2 Sensor holder 1½"
- 3 Sensor holder for compression flange

## Sensor holder adjustable - bracket 400 mm

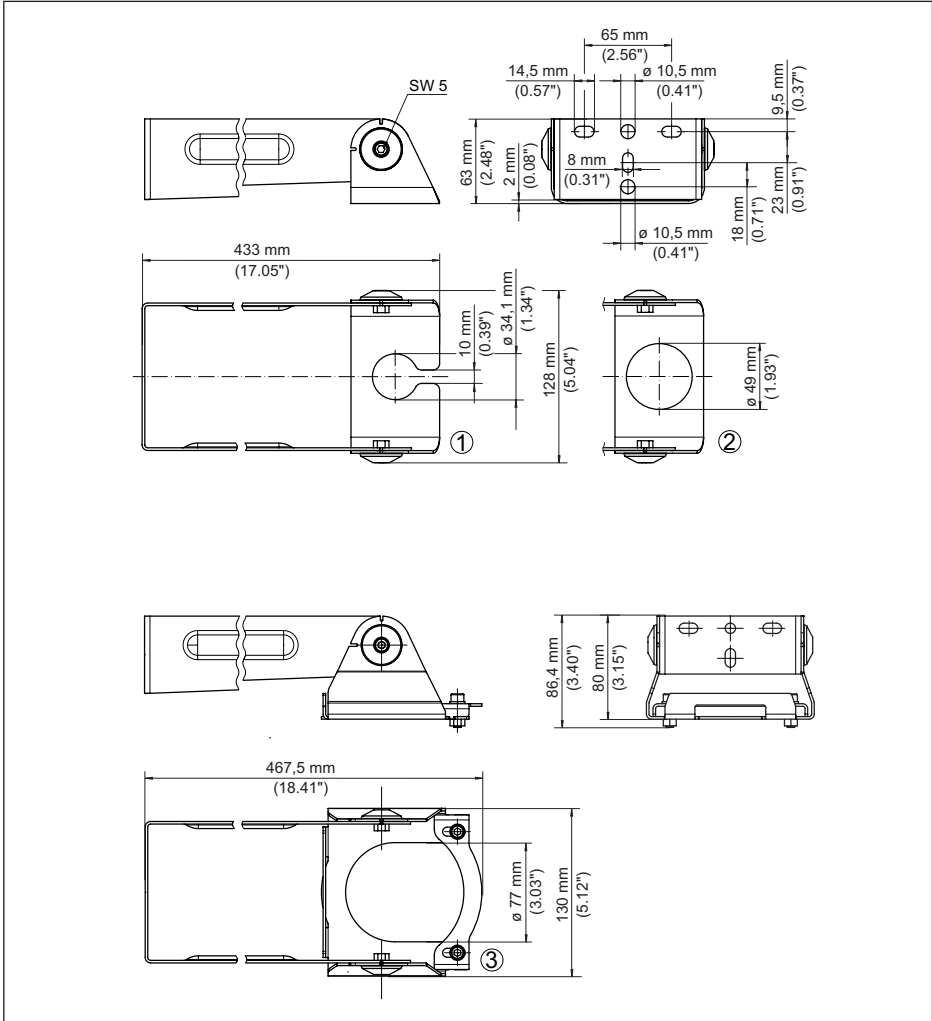


Fig. 24: Mounting strap for wall mounting, sensor holder adjustable - bracket 400 mm

- 1 Sensor holder 1"
- 2 Sensor holder 1½"
- 3 Sensor holder for compression flange

Mounting strap for wall mounting, horizontally swivelling

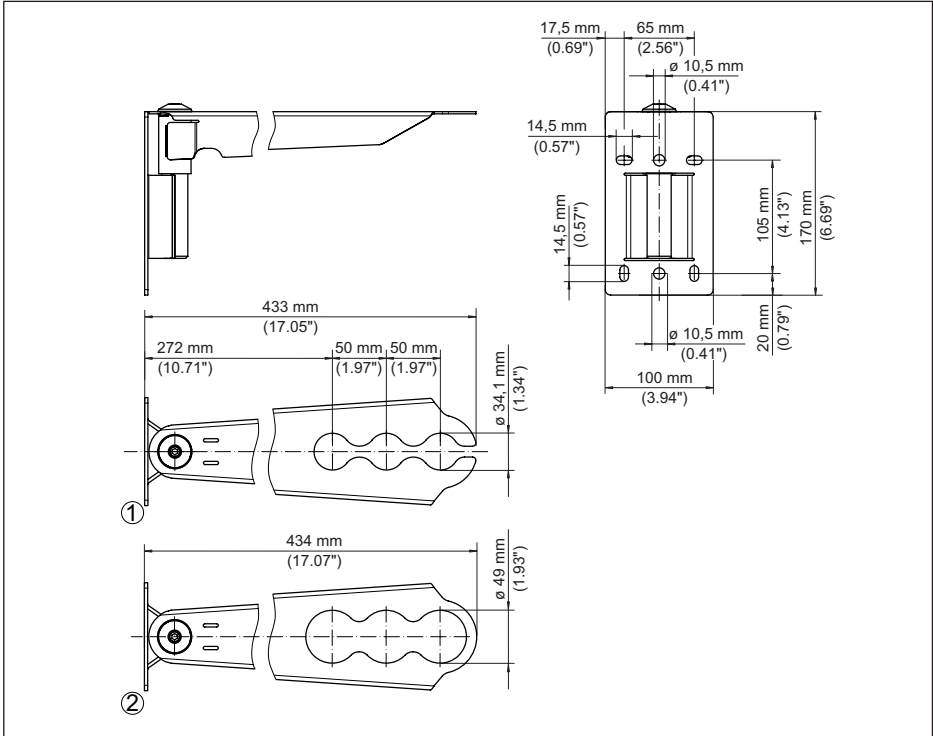


Fig. 25: Mounting strap for wall mounting, turnable

- 1 Sensor holder 1"
- 2 Sensor holder 1½"

## Mounting strap for wall mounting, vertically foldable

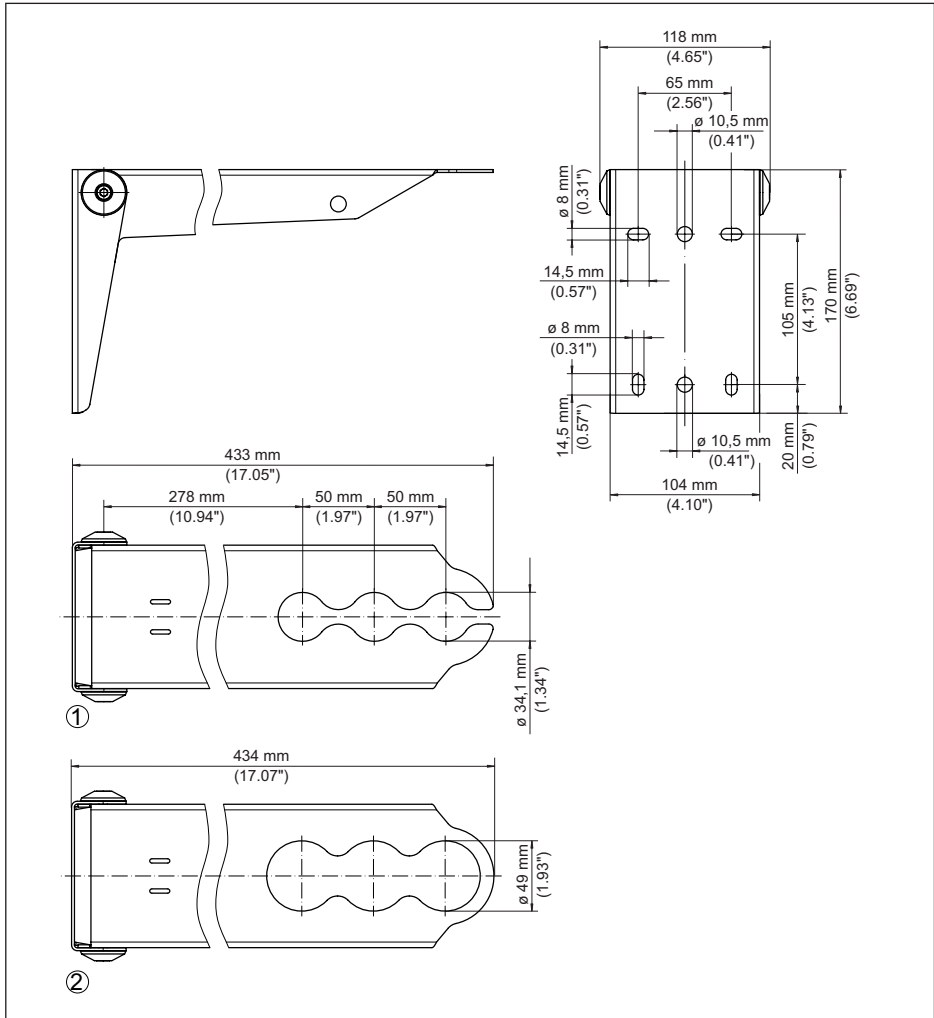


Fig. 26: Mounting strap for wall mounting, foldable

- 1 Sensor holder 1"
- 2 Sensor holder 1½"



Mounting strap for wall mounting, extendable

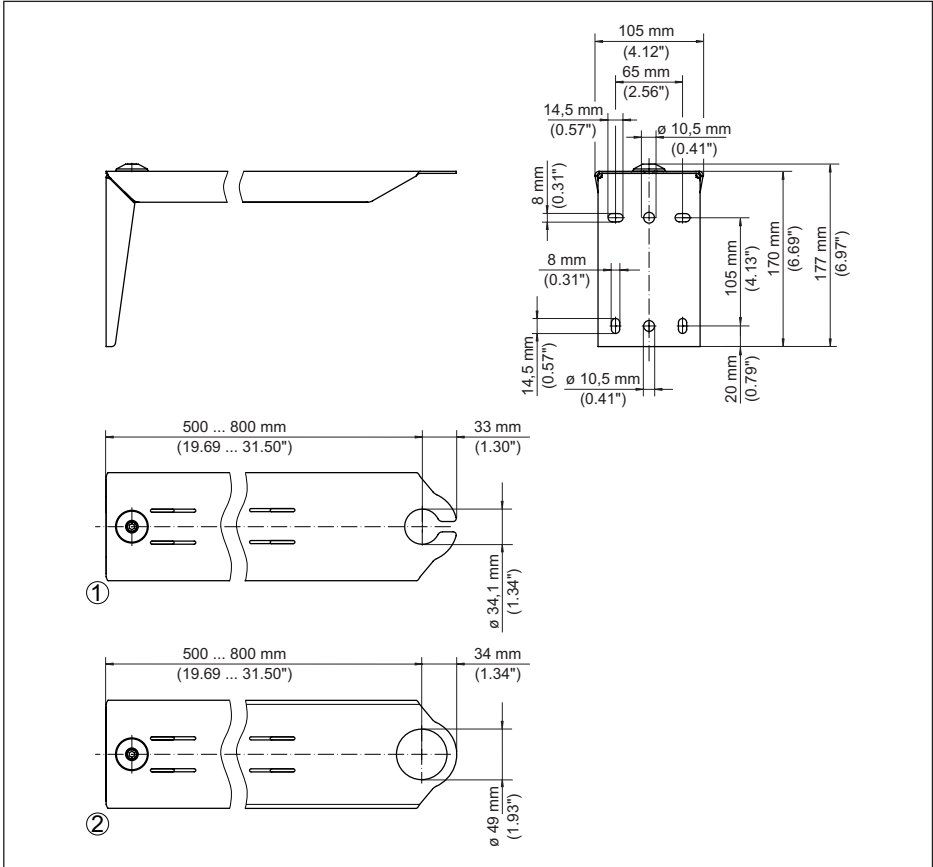


Fig. 27: Mounting strap for wall mounting, extendable

- 1 Sensor holder 1"
- 2 Sensor holder 1½"

## 6.1.4 Mounting strap for plastic vessel

### Standard

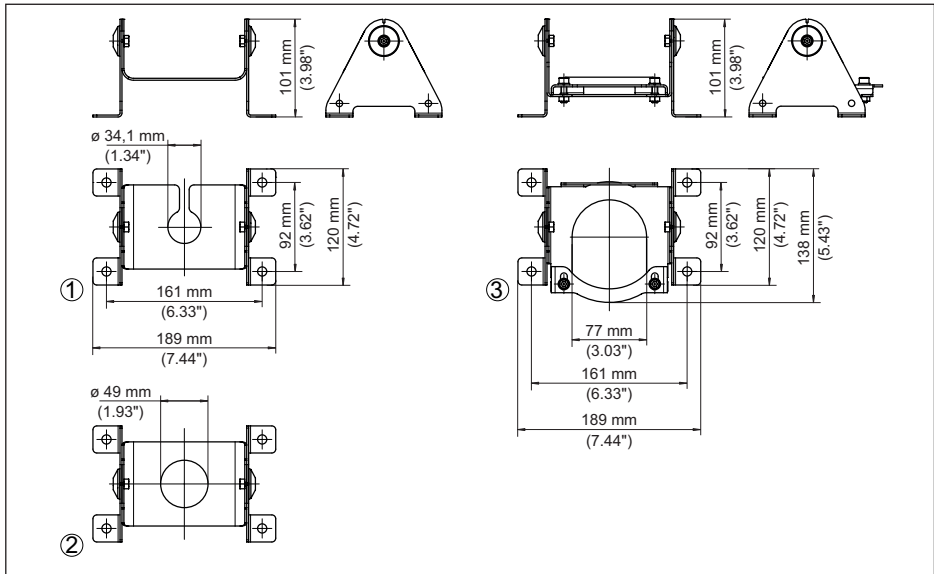


Fig. 28: Mounting strap for plastic vessel - Standard

- 1 Sensor holder 1"
- 2 Sensor holder 1½"
- 3 Sensor holder for compression flange

With fixation for IBC container

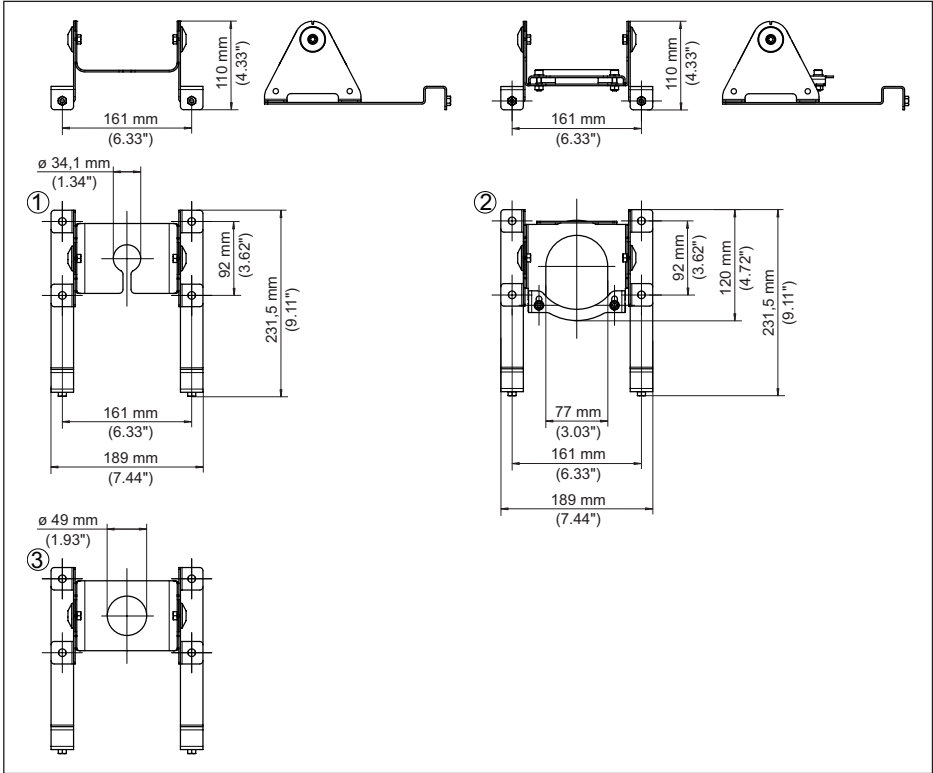


Fig. 29: Mounting strap for plastic vessel - with fixation for IBC container

- 1 Sensor holder 1"
- 2 Sensor holder 1½"
- 3 Sensor holder for compression flange

## 6.1.5 Reference plane of the sensors

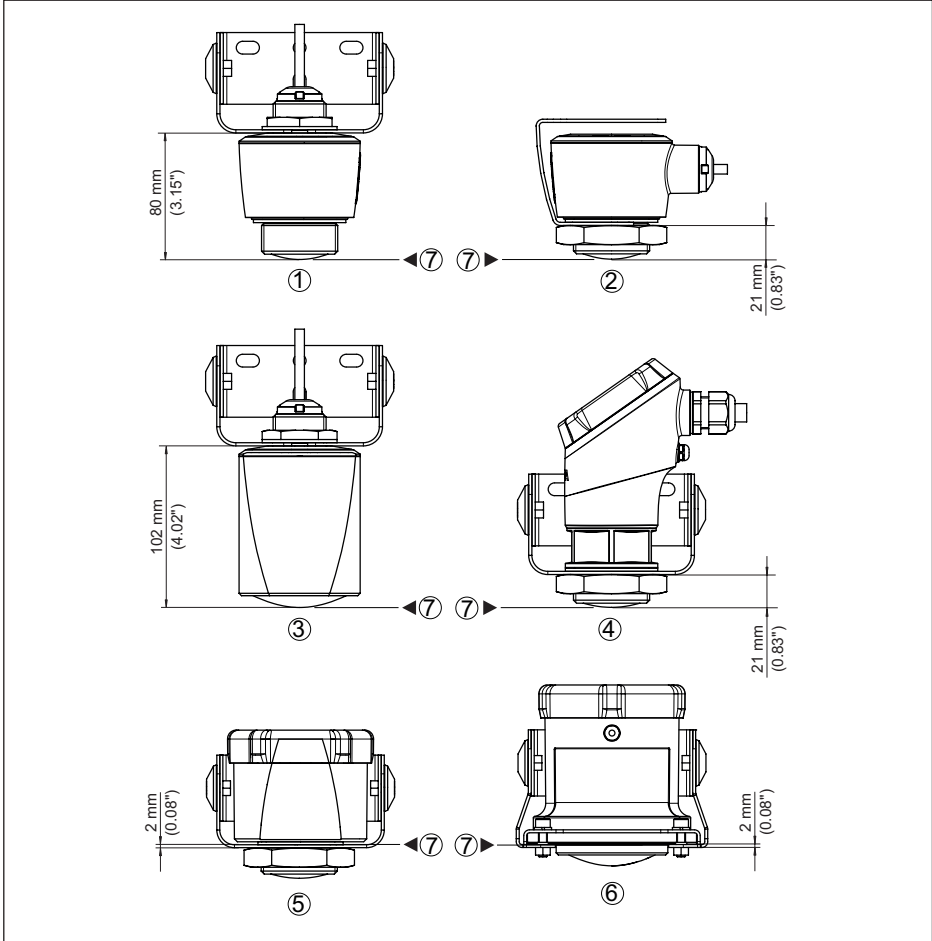
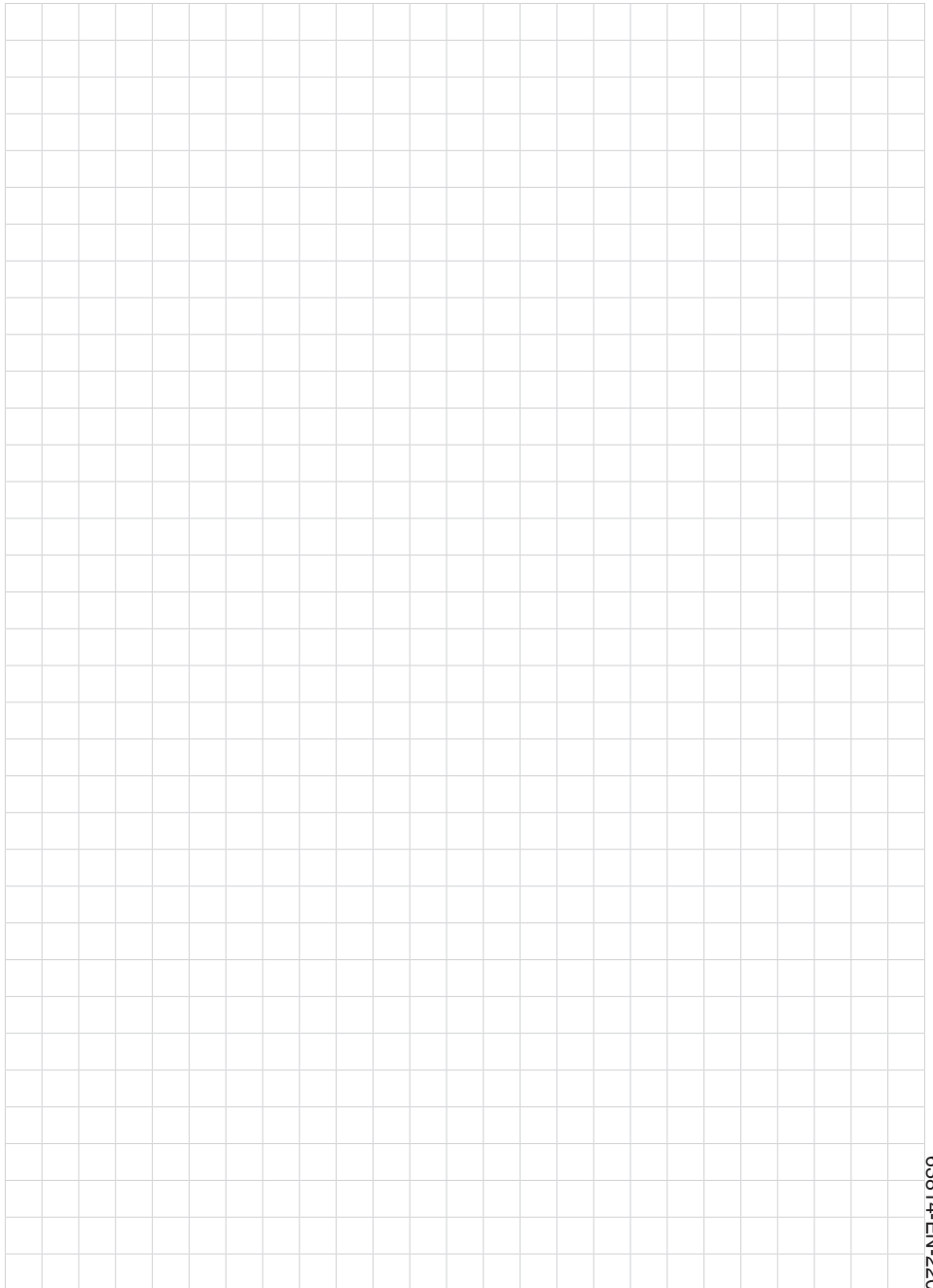


Fig. 30: Mounting bracket for ceiling and wall mounting - Distance of the sensor reference plane to the bottom of the sensor holder

- 1 VEGAPULS 11, 21, 31
- 2 VEGAPULS C 21
- 3 VEGAPULS C 22
- 4 VEGAPULS C 23
- 5 VEGAPULS Air 41
- 6 VEGAPULS Air 42
- 7 Sensor reference plane







Printing date:

**VEGA**

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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