

Supplementary instructions

Mounting bracket KV 31

For tubes with \varnothing 50 ... 200 mm

Horizontal sensor mounting



Document ID: 38481



VEGA

Contents

- 1 Product description**
 - 1.2 High temperatures..... 4
- 2 Mounting**
 - 2.1 Installation of the mounting bracket..... 5
 - 2.2 Heat protection kit 7
 - 2.3 Air cooling 8
 - 2.4 Water cooling 9
- 3 Supplement**
 - 3.1 Technical data 11
 - 3.2 Dimensions 12
 - 3.3 Industrial property rights..... 16
 - 3.4 Trademark 16

1 Product description

The KV 31 is a mounting bracket for the radiation-based measuring system MINITRAC. It is suitable for pipes irradiated at right angles.

For horizontal sensor mounting

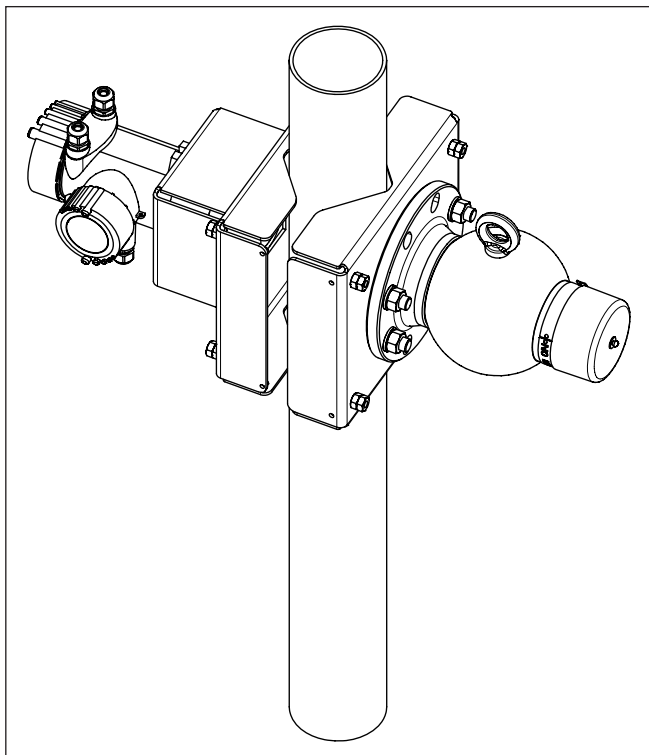


Fig. 1: Mounting bracket with horizontally mounted sensor

Scope of delivery

The following parts belong to the scope of delivery of KV 31.

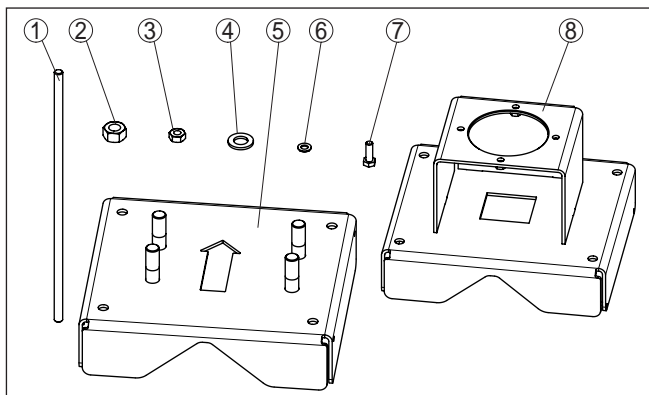


Fig. 2: Mounting bracket for pipes irradiated at right angles KV 31 - horizontal sensor mounting

- 1 Threaded rod M10 x 360 mm (M10 x 14.17 in), (4 pieces)
- 2 Hexagon nut M16 (4 pieces)
- 3 Hexagon nut M10 (16 pieces)
- 4 Washer for M16 (4 pieces)
- 5 Clamp - Source holder side (1 Stück)
- 6 Washer for M10 (8 pieces)
- 7 Hexagon screw M8 (2 pieces)
- 8 Clamp - Sensor side (MINITRAC), (1 piece)

1.2 High temperatures

To protect the sensor against high temperatures, the mounting bracket can be equipped optionally with different heat protective measures.

Check the conditions on site (hot surface or ambient temperature) and select the appropriate option.

Contact our specialists, if you are not sure.

- Surface temperature of the tube - 100 °C (212 °F) - Heat protection kit with insulating boards
- Ambient temperature on the sensor - 100 °C (212 °F) - water cooling
- Ambient temperature on the sensor - 120 °C (248 °F) - air cooling with vortex cooler

2 Mounting

2.1 Installation of the mounting bracket

Operating instructions

Take note of the operating instructions of the corresponding sensor MINITRAC and the source holder.

Mounting brackets for horizontal mounting

Take note of the following mounting instructions:

- Mount the bracket first, then the sensor and the source holder
- The arrow cutouts in the clamp (source container side) and in the transport lug of the source holder must point in the same direction (A) after mounting
- Make sure that the two clamps (5 and 8) of the bracket are parallel to each other. Do this by measuring the distances between the clamps
- To avoid injuries, shorten the threaded rods (1) of the brackets to a suitable length after mounting

Horizontal sensor mounting

Mount the bracket according to the following assembly drawing:

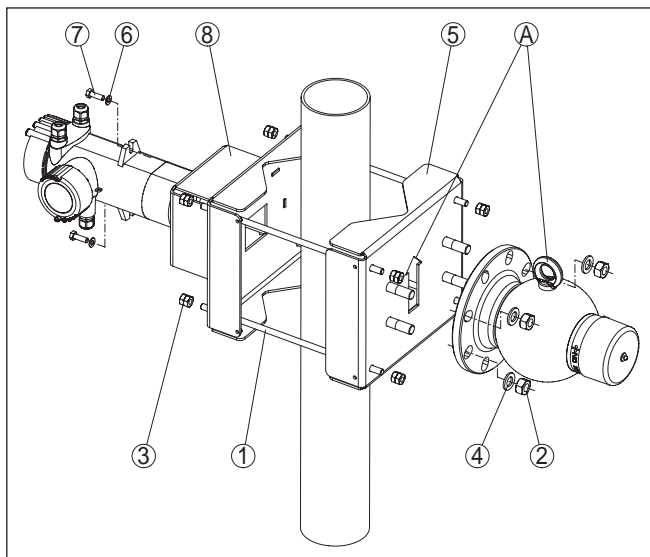


Fig. 3: Mounting bracket with horizontally mounted sensor

- 1 Threaded rod M10 x 360 mm (4 pieces)
- 2 Hexagon nut M16 (4 pieces)
- 3 Hexagon nut M10 (16 pieces)
- 4 Washer for M16 (4 pieces)
- 5 Clamp - Source holder side (1 Stück)
- 6 Washer for M10 (8 pieces)
- 7 Hexagon screw M8 (2 pieces)
- 8 Clamp - Sensor side (MINITRAC), (1 piece)
- A Arrow cutouts of the clamp and eyebolt point in the same direction

1. Make sure that the two clamps of the bracket are parallel to each other. Do this by measuring the lateral distances between the clamps.
2. Tighten the nuts of the threaded rod evenly. Keep the tube diameter and the stability of the tube material in mind. Avoid deformation of the tube through an overtightening of the mounting bracket.
If you have the impression that the tube cannot permanently carry the weight of the mounting bracket, sensor and source container, mount a suitable support below the mounting bracket.
3. Shorten the threaded rods after mounting to avoid injuries.

Install a protective grid

If there are gaps or intervening spaces around the installation, provide protective fences or grids to keep hands away from the dangerous area. Such areas must be marked accordingly.

Install a protective grid on both sides of the mounting bracket. A sheet metal cover or a correspondingly shaped plastic sheet can also be used.

Corresponding holes for screws of size M5 are provided on the mounting bracket.

Mount the protective grid according to the following assembly drawing:

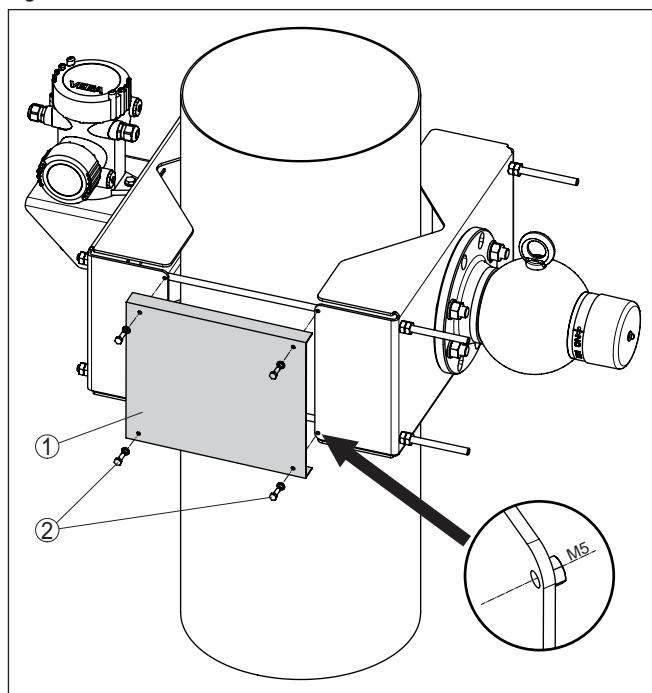


Fig. 4: Install the protective grid on both sides of the mounting bracket

- 1 Protective grid
- 2 Screws M5 (4 pieces)

Optional heat protection kit

2.2 Heat protection kit

Tubes or vessels with hot products lead to high temperatures on the sensor due to heat radiation.

A heat protection kit with several insulating boards can be used on the mounting bracket as an option to protection against radiation heat.

The heat protection kit protects the sensor reliably against heat up to a surface temperature of the tube of 100 °C (212 °F).

For the sensor side a special bracket must be used for this purpose. Hence the heat protection kit must be also taken into account while ordering. A retrofitting is not possible.

→ Mount the heat protection kit according to the following illustrations:

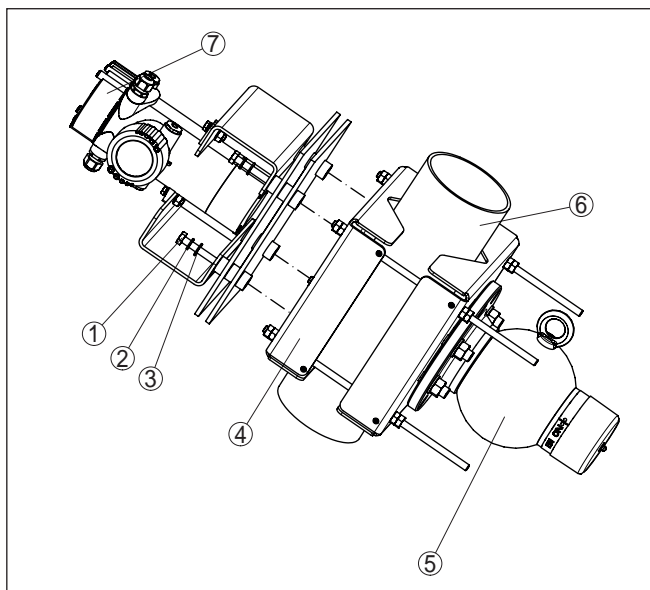


Fig. 5: Mounting bracket with heat protection kit

- 1 Screw M10 x 90 (4 pcs.)
- 2 Spring ring M10 (4 pieces)
- 3 Washer M10 (4 pieces)
- 4 Bracket - sensor side (MINITRAC)
- 5 Source holder
- 6 Tube
- 7 Level sensor MINITRAC

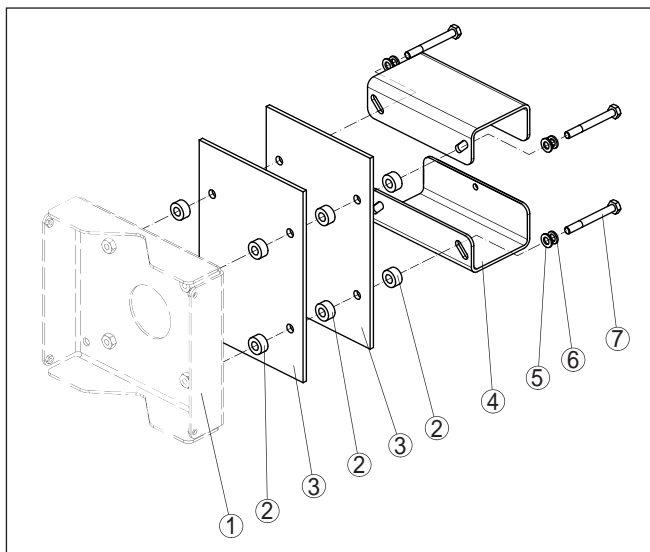


Fig. 6: Mounting of the heat protection plates

- 1 Bracket - sensor side (MINITRAC)
- 2 Plastic washer M10 (12 pcs.)
- 3 Plastic washer 305 x 305 (2 pcs.)
- 4 Clamp - U-shape (2 pcs.)
- 5 Washer M10 (4 pieces)
- 6 Spring ring M10 (4 pieces)
- 7 Screw M10 x 90 (4 pcs.)

2.3 Air cooling

Optional air cooling

Tubes or vessels with hot products lead to high temperatures on the sensor due to heat radiation.

An air cooling can be used on the mounting bracket as an option to protection against radiation heat.

Air cooling protects the sensor reliably against heat up to a tube surface temperature of 100 °C (212 °F).

For the sensor side a special bracket must be used for this purpose. Hence the air cooling must be also taken into account while ordering. A retrofitting is not possible.

Take note of the following mounting instructions:

→ Mount the air cooling according to the following illustration:

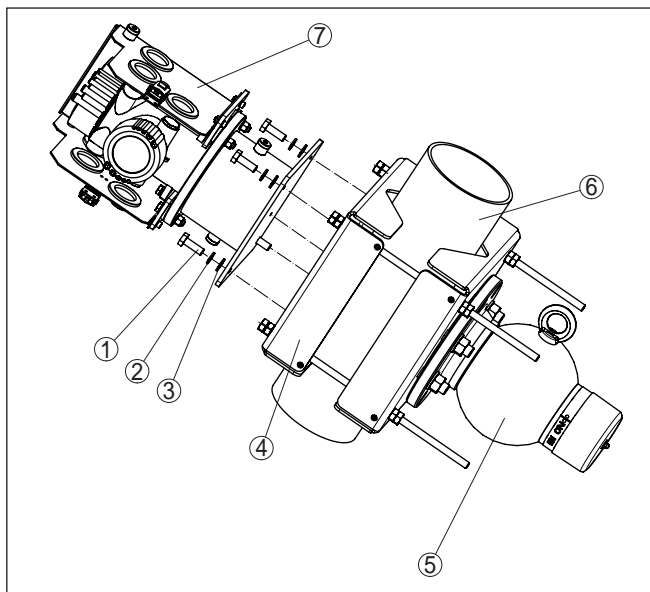


Fig. 7: Mounting bracket with air cooling

- 1 Screw M10 x 30 (4 pcs.)
- 2 Spring ring M10 (4 pieces)
- 3 Washer M10 (4 pieces)
- 4 Bracket - sensor side (MINITRAC)
- 5 Source holder
- 6 Tube
- 7 Level sensor MINITRAC with open housing cooling box

2.4 Water cooling

Optional water cooling

Tubes or vessels with hot products lead to high temperatures on the sensor due to heat radiation.

To protect against radiation heat, optional water cooling can be deployed on the mounting bracket.

Water cooling protects the sensor reliably against heat up to a tube surface temperature of 100 °C (212 °F).

A special bracket must be used for the sensor side. For that reason the water cooling must also be taken into account when ordering. Retrofitting is not possible.

Take note of the following mounting instructions:

→ Mount the water cooling according to the following illustration:

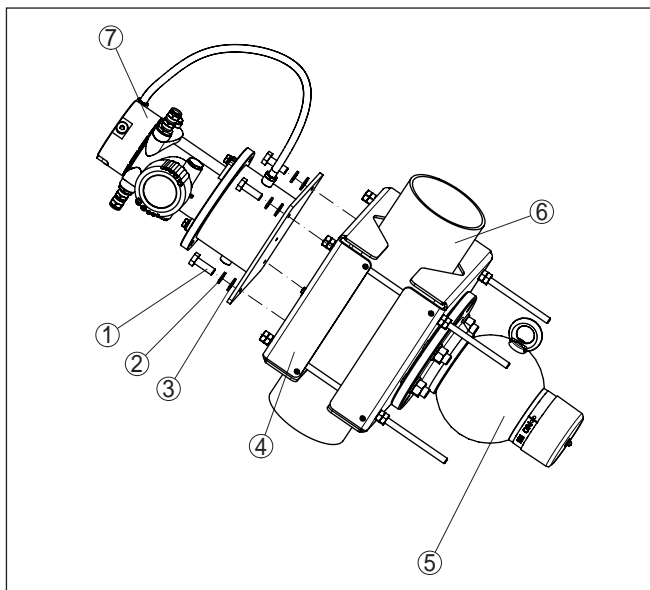


Fig. 8: Mounting bracket with water cooling

- 1 Screw M10 x 30 (4 pcs.)
- 2 Spring ring M10 (4 pieces)
- 3 Washer M10 (4 pieces)
- 4 Bracket - sensor side (MINITRAC)
- 5 Source holder
- 6 Tube
- 7 Level sensor MINITRAC with housing cooling and housing cooling lid

3 Supplement

3.1 Technical data

General data

Take note of the information in the operating instructions manual of the installed MINITRAC level sensor and the source holder

Material 316L corresponds to 1.4404 or 1.4435

Materials

- Mounting bracket 316L
- Threaded rods 316L

Weight 12.2 kg (26.9 lbs)

Torques

- Screws - Sensor mounting (M8) 15 Nm (11.06 lbf ft)
- Screws - Cooling options (M10) 15 Nm (11.06 lbf ft)
- Nuts (M16) 20 Nm (14.75 lbf ft)
- Threaded rods (M10) Dependent on the tube material and the thickness of the tube

3.2 Dimensions

KV 31, for horizontal sensor mounting

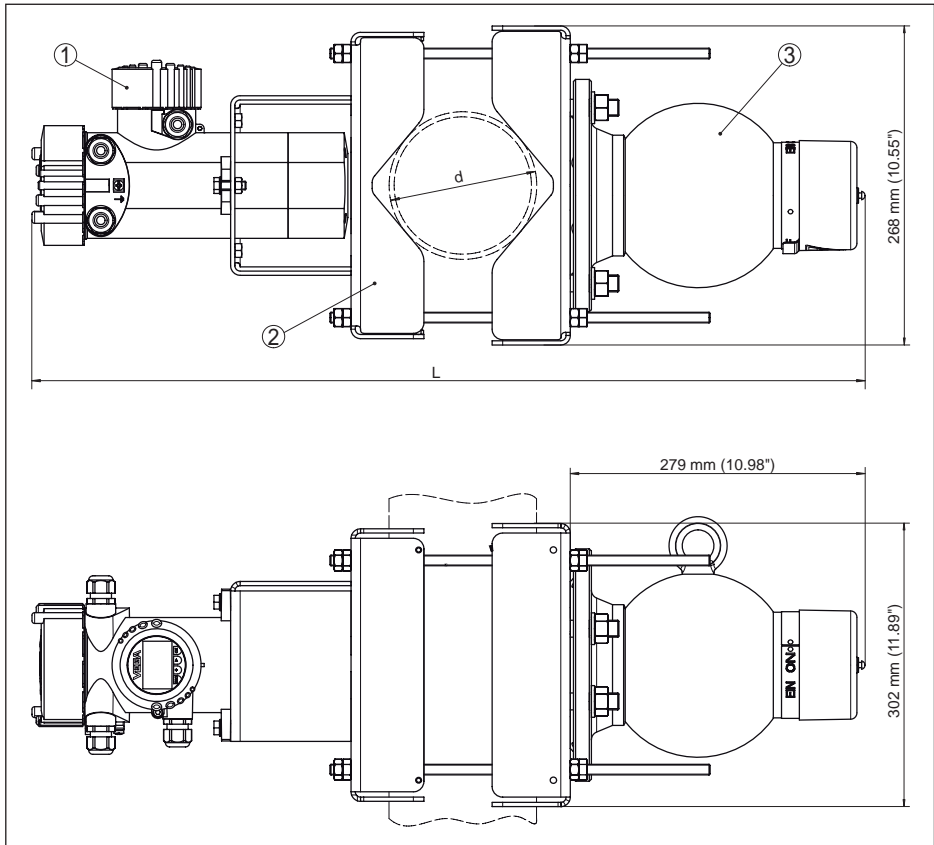


Fig. 9: Mounting bracket with horizontally mounted sensor

- 1 Level sensor MINITRAC
- 2 Mounting bracket - KV 31
- 3 Source holder
- L = total length of the measuring system (see following table)
- d = tube diameter (see following table)

| Tube DN (in) | Tube diameter (d) | Total length (L) |
|---------------|----------------------|-------------------|
| DN 50 (2 in) | ø 60.3 mm (2.37 in) | 672 mm (26.46 in) |
| DN 100 (4 in) | ø 114.3 mm (4.5 in) | 737 mm (29.02 in) |
| DN 125 (5 in) | ø 139.7 mm (5.5 in) | 770 mm (30.31 in) |
| DN 150 (6 in) | ø 168.3 mm (6.63 in) | 803 mm (31.61 in) |
| DN 200 (8 in) | ø 219.1 mm (8.63 in) | 868 mm (34.17 in) |

KV 31, horizontal sensor mounting - with heat protection kit

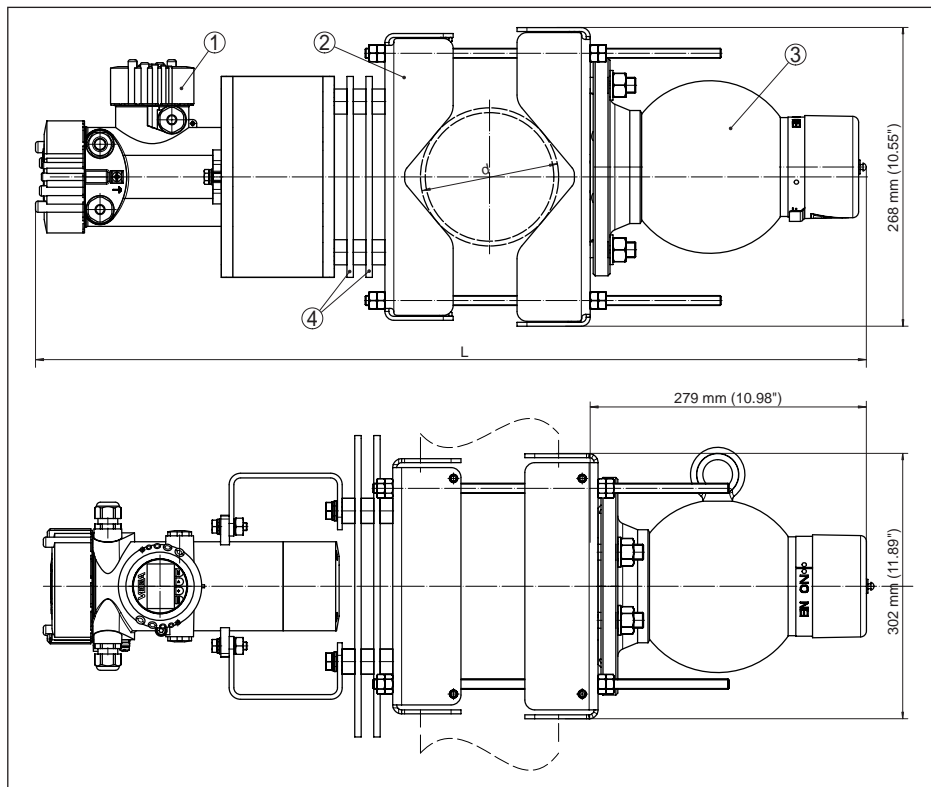


Fig. 10: Mounting bracket with horizontally mounted sensor and heat protection kit

- 1 Level sensor MINITRAC
- 2 Mounting bracket - KV 31
- 3 Source holder
- 4 Heat protection kit
- L = total length of the measuring system (see following table)
- d = tube diameter (see following table)

| Tube DN (in) | Tube diameter (d) | Total length (L) |
|---------------|----------------------|------------------|
| DN 50 (2 in) | ø 60.3 mm (2.37 in) | 738 mm (29.1 in) |
| DN 80 (3 in) | ø 88.9 mm (3.50 in) | 775 mm (30.5 in) |
| DN 100 (4 in) | ø 114.3 mm (4.5 in) | 808 mm (31.8 in) |
| DN 125 (5 in) | ø 139.7 mm (5.5 in) | 841 mm (33.1 in) |
| DN 150 (6 in) | ø 168.3 mm (6.63 in) | 875 mm (34.5 in) |
| DN 200 (8 in) | ø 219.1 mm (8.63 in) | 944 mm (37.2 in) |

KV 31, horizontal sensor mounting - with air cooling

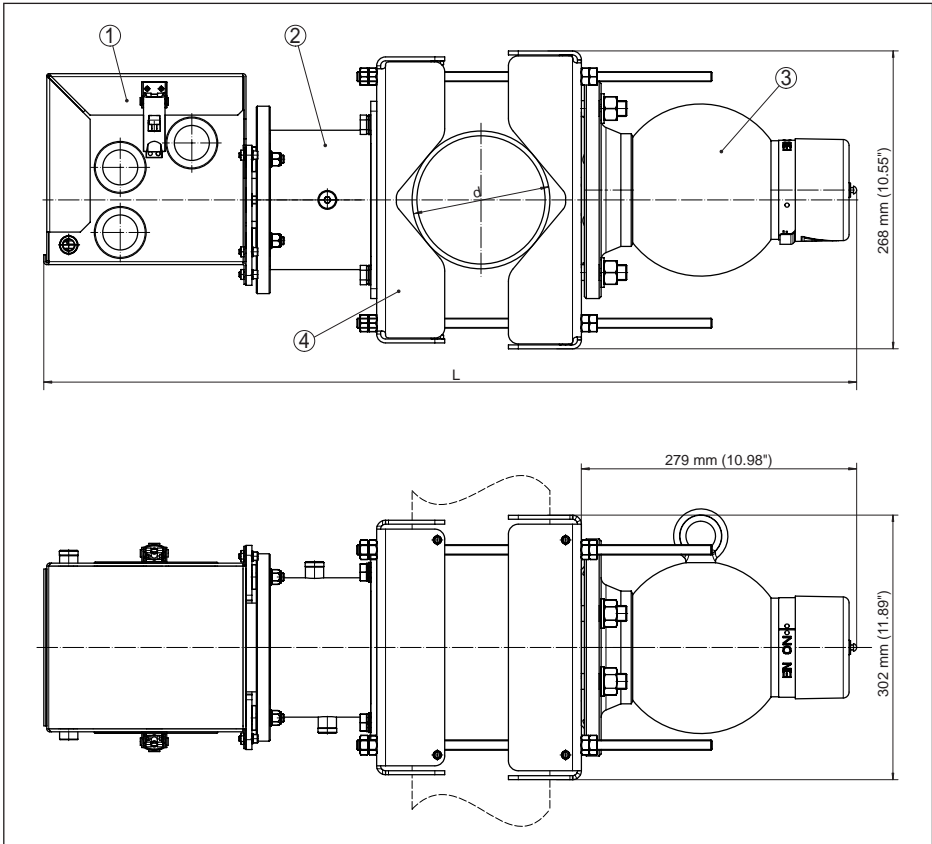


Fig. 11: Mounting bracket with horizontally mounted sensor and air cooling

- 1 Level sensor MINITRAC with closed housing cooling box
- 2 Housing cooling
- 3 Source holder
- 4 Mounting bracket - KV 31
- L = total length of the measuring system (see following table)
- d = tube diameter (see following table)

| Tube DN (in) | Tube diameter (d) | Total length (L) |
|---------------|----------------------|------------------|
| DN 50 (2 in) | ø 60.3 mm (2.37 in) | 738 mm (29.1 in) |
| DN 80 (3 in) | ø 88.9 mm (3.50 in) | 775 mm (30.5 in) |
| DN 100 (4 in) | ø 114.3 mm (4.5 in) | 808 mm (31.8 in) |
| DN 125 (5 in) | ø 139.7 mm (5.5 in) | 841 mm (33.1 in) |
| DN 150 (6 in) | ø 168.3 mm (6.63 in) | 875 mm (34.5 in) |
| DN 200 (8 in) | ø 219.1 mm (8.63 in) | 944 mm (37.2 in) |

KV 31, horizontal sensor mounting - with water cooling

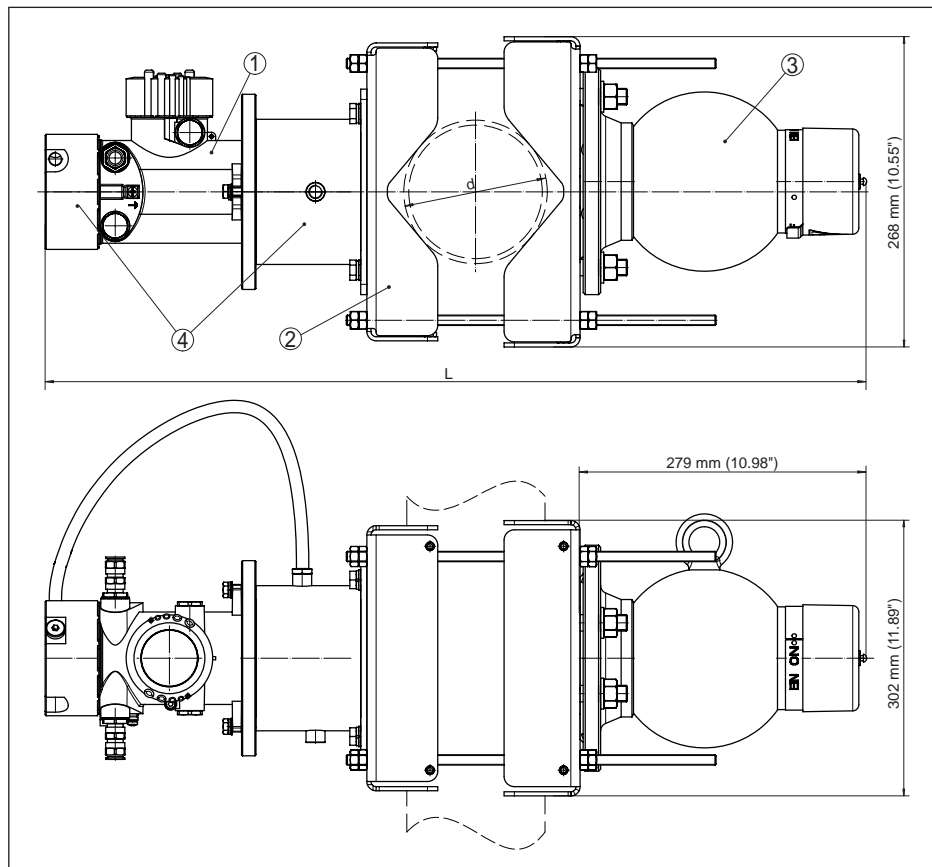


Fig. 12: Mounting bracket with horizontally mounted sensor and water cooling

- 1 Level sensor MINITRAC
- 2 Mounting bracket - KV 31
- 3 Source holder
- 4 Housing cooling lid and housing cooling
- L = total length of the measuring system (see following table)
- d = tube diameter (see following table)

| Tube DN (in) | Tube diameter (d) | Total length (L) |
|---------------|----------------------|------------------|
| DN 50 (2 in) | ø 60.3 mm (2.37 in) | 738 mm (29.1 in) |
| DN 80 (3 in) | ø 88.9 mm (3.50 in) | 775 mm (30.5 in) |
| DN 100 (4 in) | ø 114.3 mm (4.5 in) | 808 mm (31.8 in) |
| DN 125 (5 in) | ø 139.7 mm (5.5 in) | 841 mm (33.1 in) |
| DN 150 (6 in) | ø 168.3 mm (6.63 in) | 875 mm (34.5 in) |
| DN 200 (8 in) | ø 219.1 mm (8.63 in) | 944 mm (37.2 in) |

3.3 Industrial property rights

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

VEGA Produktfamilien sind weltweit geschützt durch gewerbliche Schutzrechte.

Nähere Informationen unter www.vega.com.

Les lignes de produits VEGA sont globalement protégées par des droits de propriété intellectuelle. Pour plus d'informations, on pourra se référer au site www.vega.com.

VEGA lineas de productos están protegidas por los derechos en el campo de la propiedad industrial. Para mayor información revise la pagina web www.vega.com.

Линии продукции фирмы ВЕГА защищаются по всему миру правами на интеллектуальную собственность. Дальнейшую информацию смотрите на сайте www.vega.com.

VEGA系列产品在全球享有知识产权保护。

进一步信息请参见网站www.vega.com。

3.4 Trademark

All the brands as well as trade and company names used are property of their lawful proprietor/originator.





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

© VEGA Grieshaber KG, Schiltach/Germany 2017



38481-EN-170724

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

Phone +49 7836 50-0
Fax +49 7836 50-201
E-mail: info.de@vega.com
www.vega.com