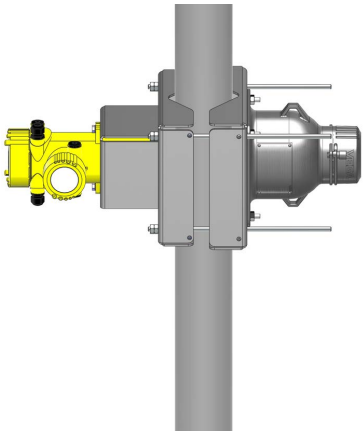
Supplementary instructions

Mounting bracket KV 31

For tubes with ø 50 … 220 mm

Horizontal sensor mounting



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Contents

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1 Product description

1.1 With source holder VEGASOURCE 31, 35

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

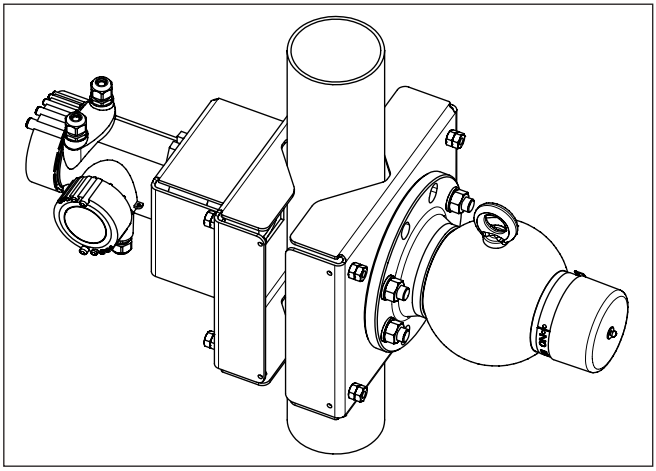

Fig. 1: Mounting bracket with horizontally mounted sensor

Scope of delivery

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

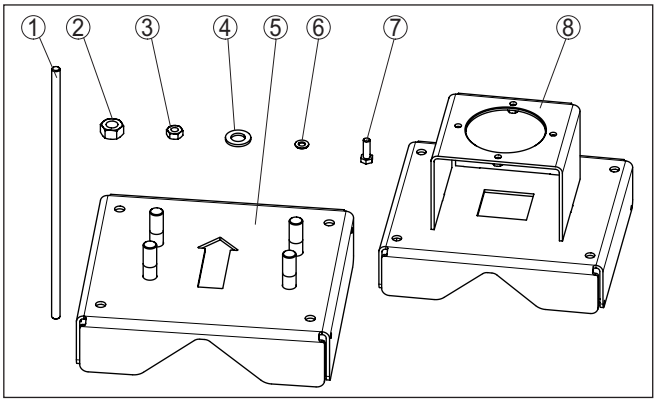

Fig. 2: Mounting bracket for pipes irradiated at right angles KV 31, horizontal sensor mounting

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 piece)*
6 *Washer for M10 (8 pieces)*
7 *Hexagon screw M8 (2 pieces)*
8 *Clamp, Sensor side (MINITRAC), (1 piece)*

1.2 With source holder VEGASOURCE 81, 82

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

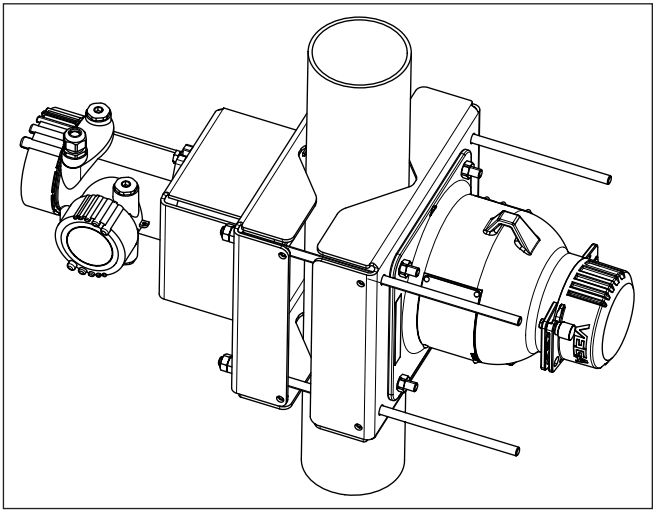

Fig. 3: Mounting bracket with horizontally mounted sensor

Scope of delivery

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

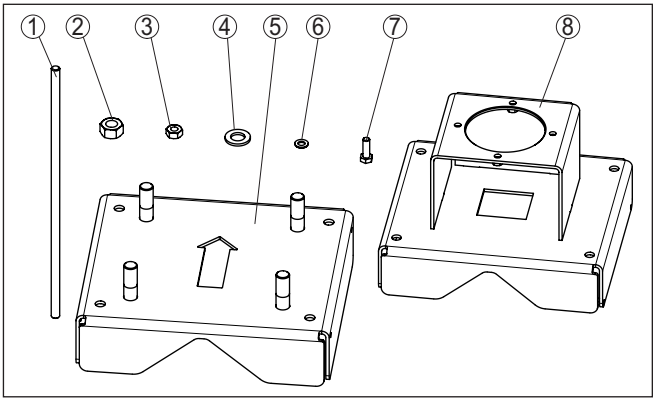

Fig. 4: Mounting bracket for pipes irradiated at right angles KV 31, horizontal sensor mounting

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 piece)*
6 *Washer for M10 (8 pieces)*
7 *Hexagon screw M8 (2 pieces)*
8 *Clamp, Sensor side (MINITRAC), (1 piece)*

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1.3 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.

- Temperature increase at the sensor due to direct sunlight - Passive sun protection
- 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

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2 Mounting with source container VEGASOURCE 31, 35

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:

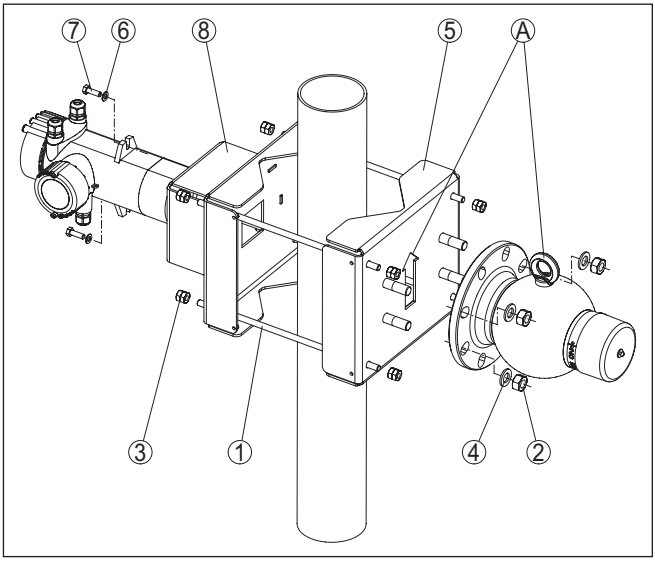

Fig. 5: Mounting bracket with horizontally mounted sensor (with VEGASOURCE 31, 35)

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 piece)
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

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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 empty 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:

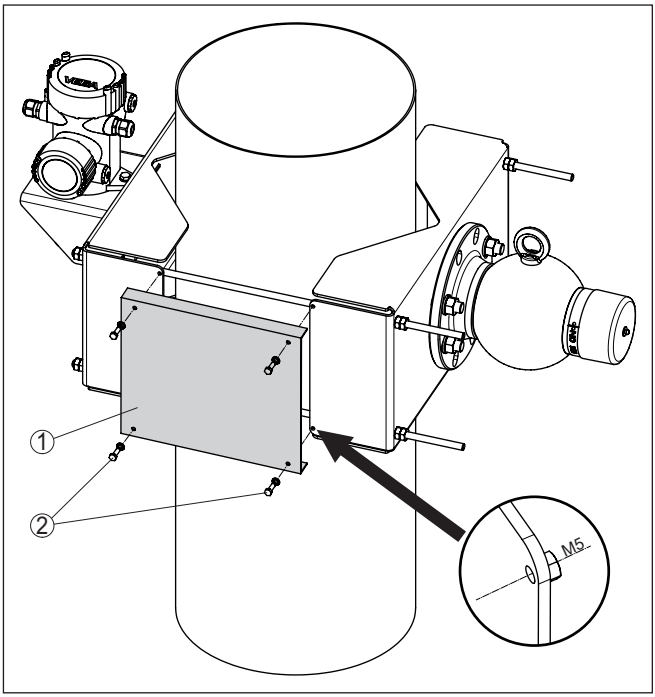

Fig. 6: Fit protective grids on both sides of the mounting bracket (with VEGASOURCE 31, 35)

1 Protective grid
2 Screws M5 (pieces)

2.2 Heat protection kit

Optional 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:

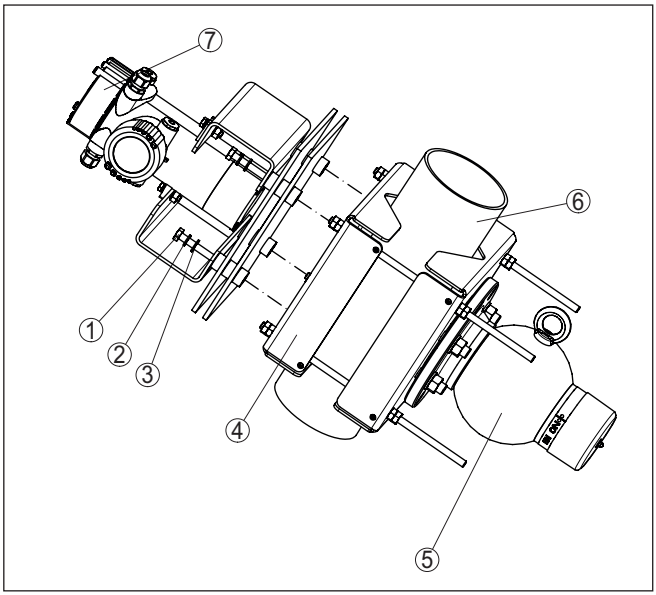

Fig. 7: Mounting bracket with heat protection kit (with VEGASOURCE 31, 35)

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*

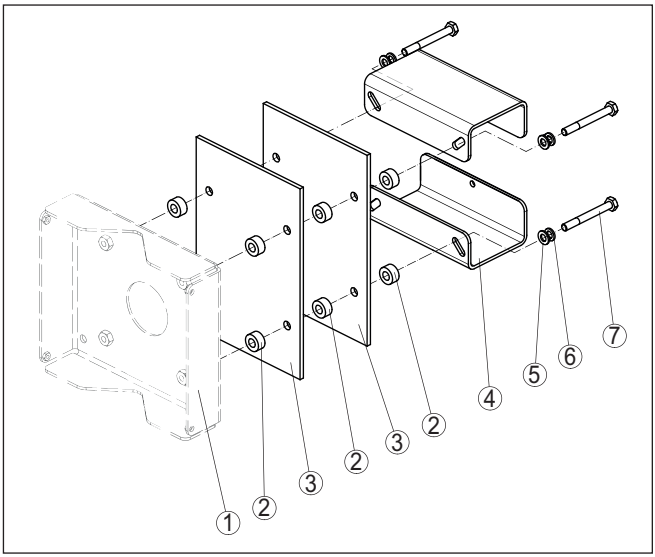

Fig. 8: Mounting of the heat protection plates

1 *Bracket, sensor side (MINITRAC)*
2 *Plastic washer M10 (12 pieces)*
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 an ambient temperature of 120 °C (248 °F).

For the sensor side a special bracket (4) 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:

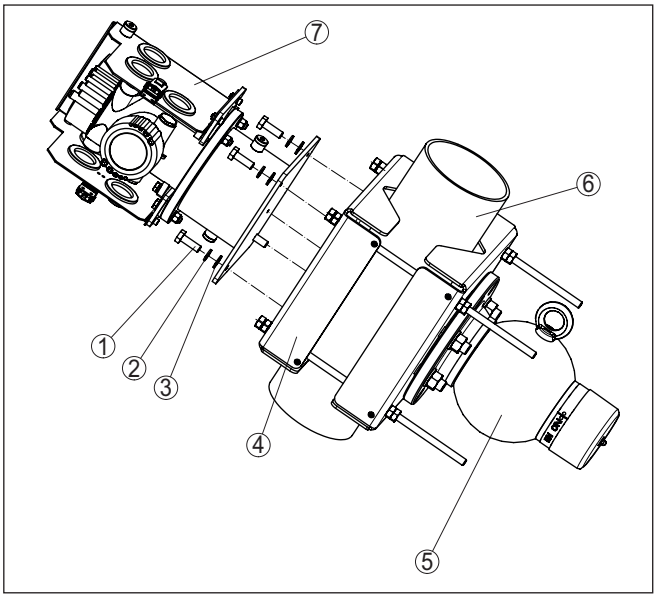

Fig. 9: Mounting bracket with air cooling (with VEGASOURCE 31, 35)

1 *Hexagon screw M10 x 30 or $^{3}/_{8}$" x 3½ (4 pcs.)*
2 *Spring ring for M10 or $^{3}/_{8}$" (4 pieces)*
3 *Washer for M10 or $^{3}/_{8}$" (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 an ambient temperature of 100 °C (212 °F).

A special bracket (4) 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:

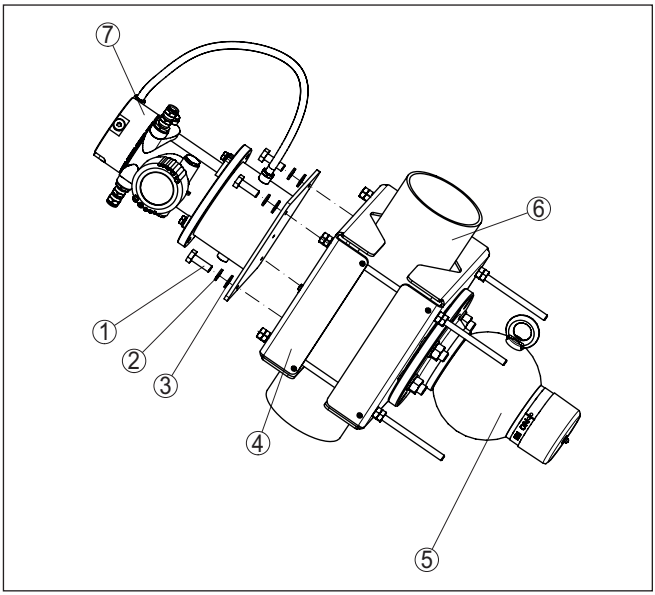

Fig. 10: Mounting bracket with water cooling (with VEGASOURCE 31, 35)

1 *Hexagon screw M10 x 30 or 3/8" x 3½ (4 pcs.)*
2 *Spring ring for M10 or 3/8" (4 pieces)*
3 *Washer for M10 or 3/8" (4 pieces)*
4 *Bracket, sensor side (MINITRAC)*
5 *Source holder*
6 *Tube*
7 *Level sensor MINITRAC with housing cooling and housing cooling lid*

3 Mounting with source container VEGASOURCE 81, 82

3.1 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:

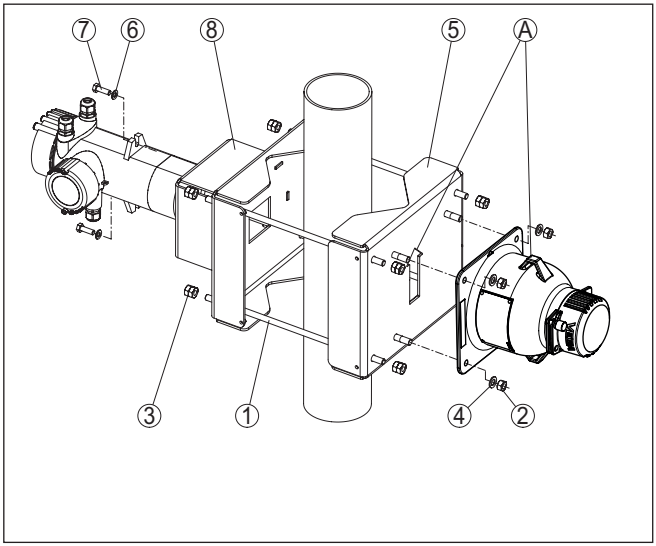

Fig. 11: Mounting bracket with horizontally mounted sensor (with VEGASOURCE 81, 82)

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 piece)
6 Washer for M10 (8 pieces)
7 Hexagon screw M8 (2 pieces)
8 Clamp, Sensor side (MINITRAC), (1 piece)
A Arrow cutout of the clamp and the lug 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 empty 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:

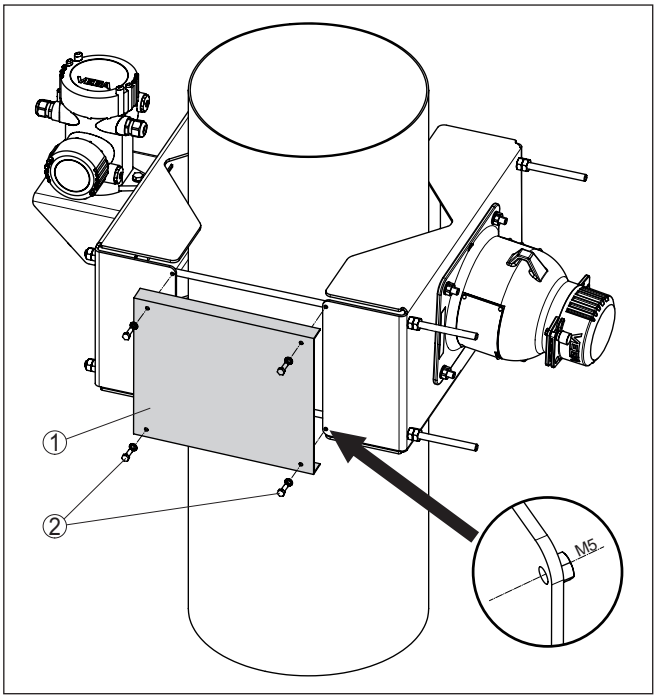

Fig. 12: Fit protective grids on both sides of the mounting bracket (with VEGASOURCE 81, 82)

1 Protective grid
2 Screws M5 (pieces)

3.2 Heat protection kit

Optional 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:

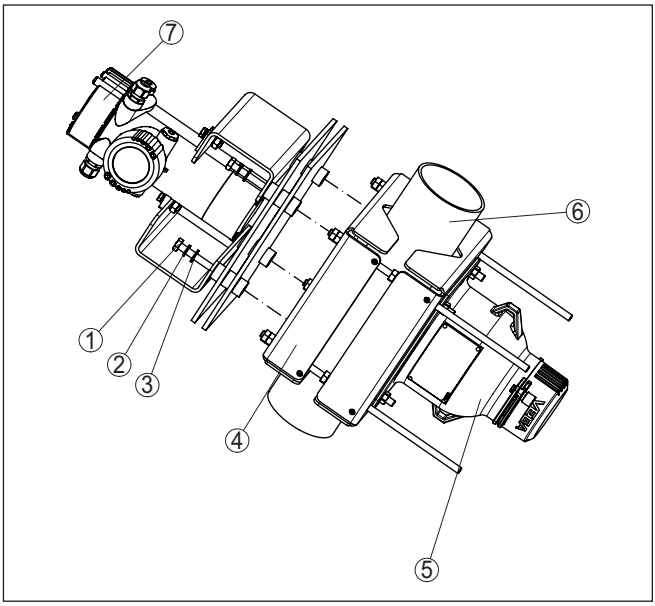

Fig. 13: Mounting bracket with heat protection kit (with VEGASOURCE 31, 35)

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*

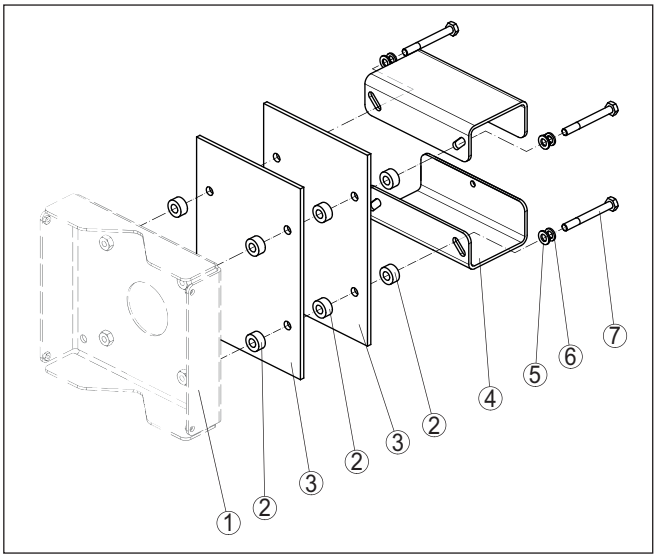

Fig. 14: Mounting of the heat protection plates

1 *Bracket, sensor side (MINITRAC)*
2 *Plastic washer M10 (12 pieces)*
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.)*

3.3 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 an ambient temperature of 120 °C (248 °F).

For the sensor side a special bracket (4) 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:

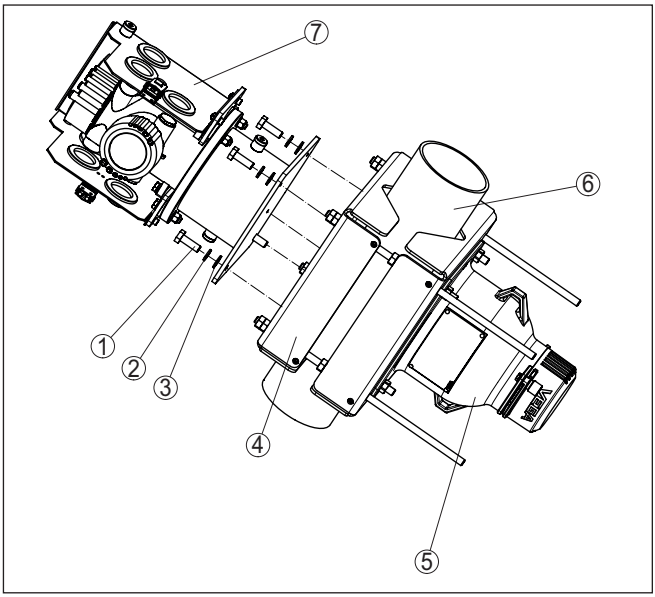

Fig. 15: Mounting bracket with air cooling (with VEGASOURCE 31, 35)

1 *Hexagon screw M10 x 30 or $^{3}/_{8}$" x 3½ (4 pcs.)*
2 *Spring ring for M10 or $^{3}/_{8}$" (4 pieces)*
3 *Washer for M10 or $^{3}/_{8}$" (4 pieces)*
4 *Bracket, sensor side (MINITRAC)*
5 *Source holder*
6 *Tube*
7 *Level sensor MINITRAC with open housing cooling box*

3.4 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 an ambient temperature of 100 °C (212 °F).

A special bracket (4) 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:

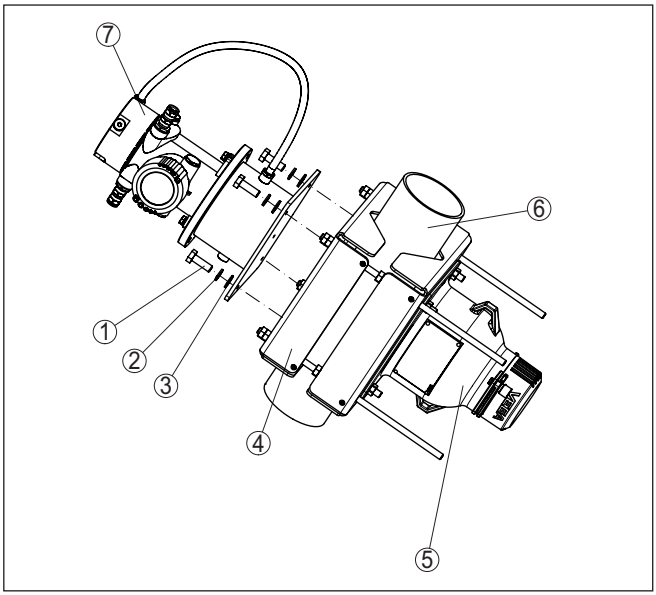

Fig. 16: Mounting bracket with water cooling (with VEGASOURCE 31, 35)

1 *Hexagon screw M10 x 30 or $^{3}/_{8}$" x 3½ (4 pcs.)*
2 *Spring ring for M10 or $^{3}/_{8}$" (4 pieces)*
3 *Washer for M10 or $^{3}/_{8}$" (4 pieces)*
4 *Bracket, sensor side (MINITRAC)*
5 *Source holder*
6 *Tube*
7 *Level sensor MINITRAC with housing cooling and housing cooling lid*

3.5 Passive sun shade

When radiometric sensors are permanently or temporarily subjected to direct sunlight, the sensor can heat up to impermissible temperatures. In direct sunlight the temperature on the sensor can increase by 20 K. Faulty measurements and, in the worst case, permanent damage to the sensor can result.

The best way to avoid the additional temperature increase through sunlight is to cover the sensor with a suitable roof structure. In cases where this is not possible or too expensive, the passive sun shade is a good solution. It reduces the increased sensor temperature due to sunlight by 10 K.

The passive sun shade is suitable for radiometric sensors type FIBERTRAC, SOLITRAC, MINITRAC and POINTRAC.

The housing sun shade protects the sensor housing with the electronics against direct solar radiation and prevents the electronics from overheating.

The passive sun shade for the sensor types FIBERTRAC and SOLITRAC consists of two modules, the housing sun shade and sun protection hose.

The additional housing protection hose is a reflective, aluminium coated hose to protect the scintillator against sun radiation or radiation heat.

→ For mounting follow the supplementary instructions "*Sun protection - PROTRAC*".

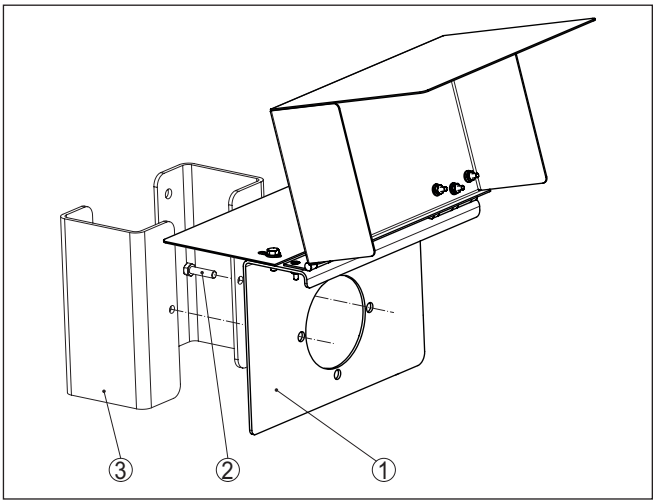

Fig. 17: Mounting of the housing sun shade

1 Housing sun shade
2 Fastening screws (provided by the customer)
3 Bracket, U-shape (included in the scope of delivery of the sensor)

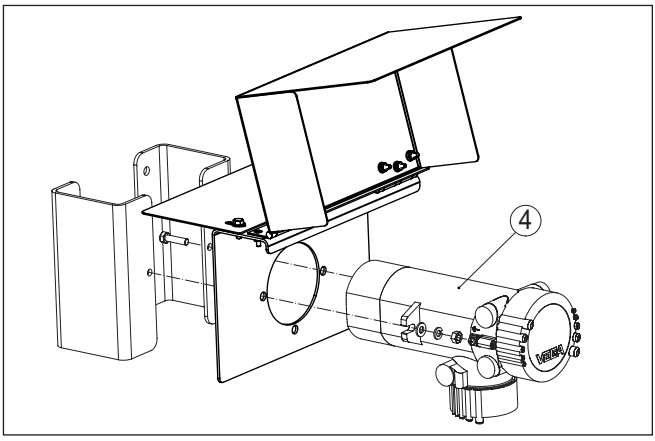

Fig. 18: Mounting the sensor (POINTRAC, MINITRAC)

4 Sensor (POINTRAC, MINITRAC)

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4 Supplement

4.1 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

4.2 Dimensions

4.2.1 Dimensions with source container VEGASOURCE 31, 35

KV 31, horizontal sensor mounting

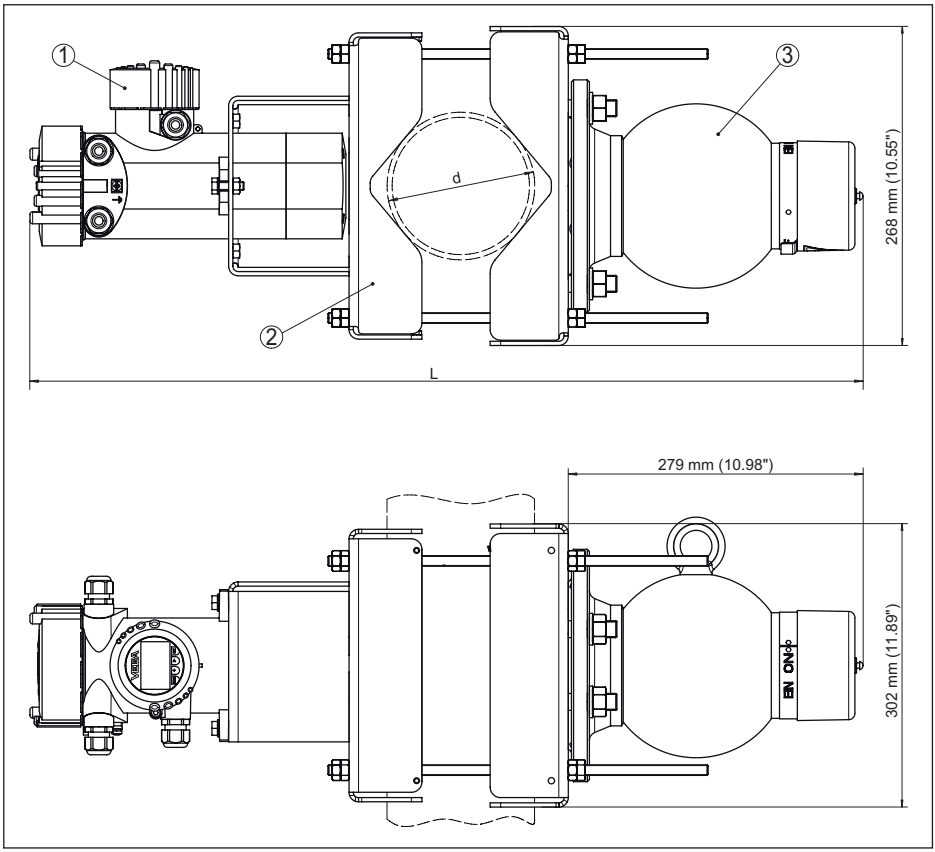

Fig. 19: Mounting bracket with horizontally mounted sensor (with VEGASOURCE 31, 35)

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)

Tube DN (in)	Tube diameter (d)	Total length (L)
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

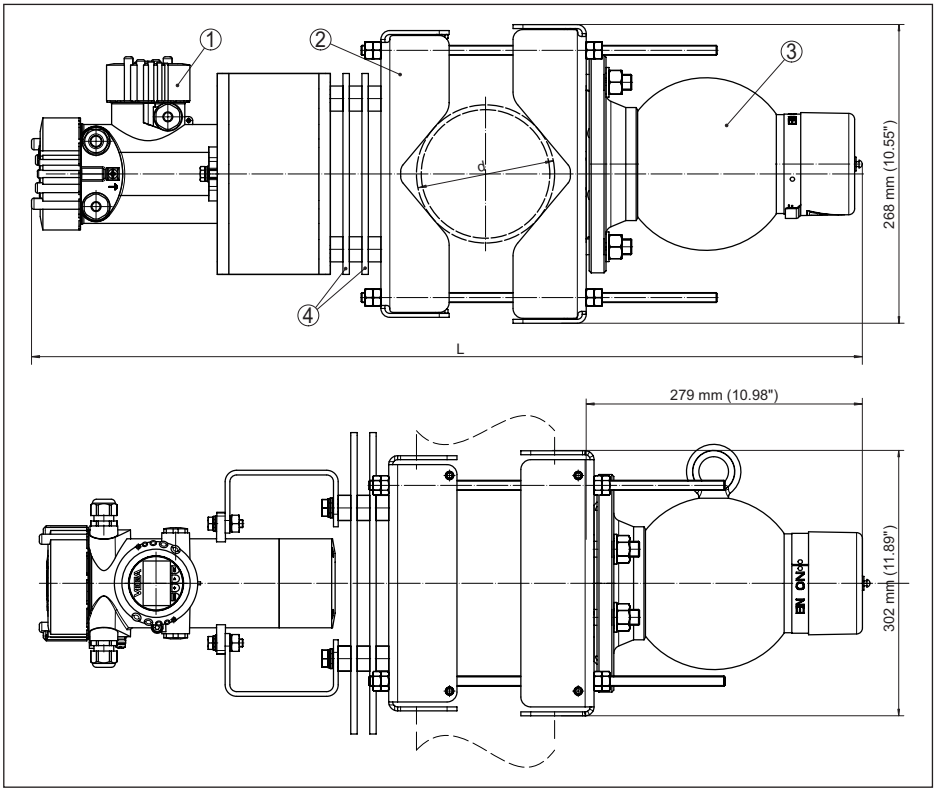

Fig. 20: Mounting bracket with horizontally mounted sensor and heat protection kit (with VEGASOURCE 31, 35)

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)

Tube DN (in)	Tube diameter (d)	Total length (L)
DN 200 (8 in)	ø 219.1 mm (8.63 in)	944 mm (37.2 in)

KV 31, horizontal sensor mounting with air cooling

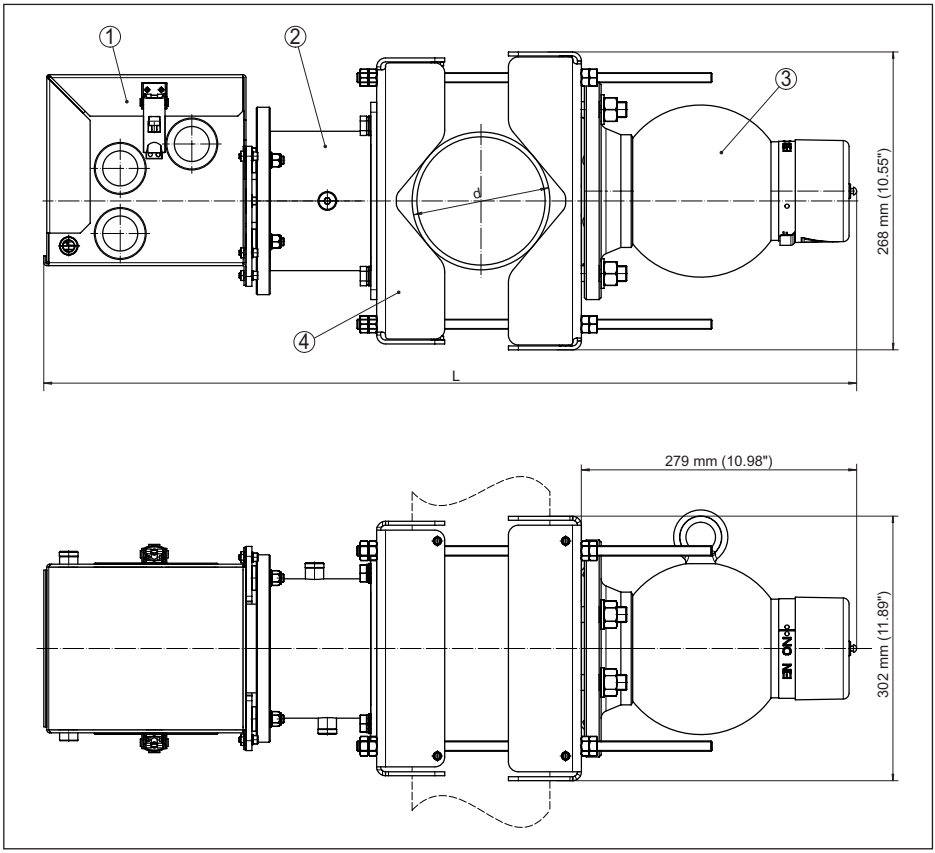

Fig. 21: Mounting bracket with horizontally mounted sensor and air cooling (with VEGASOURCE 31, 35)

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)

Tube DN (in)	Tube diameter (d)	Total length (L)
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

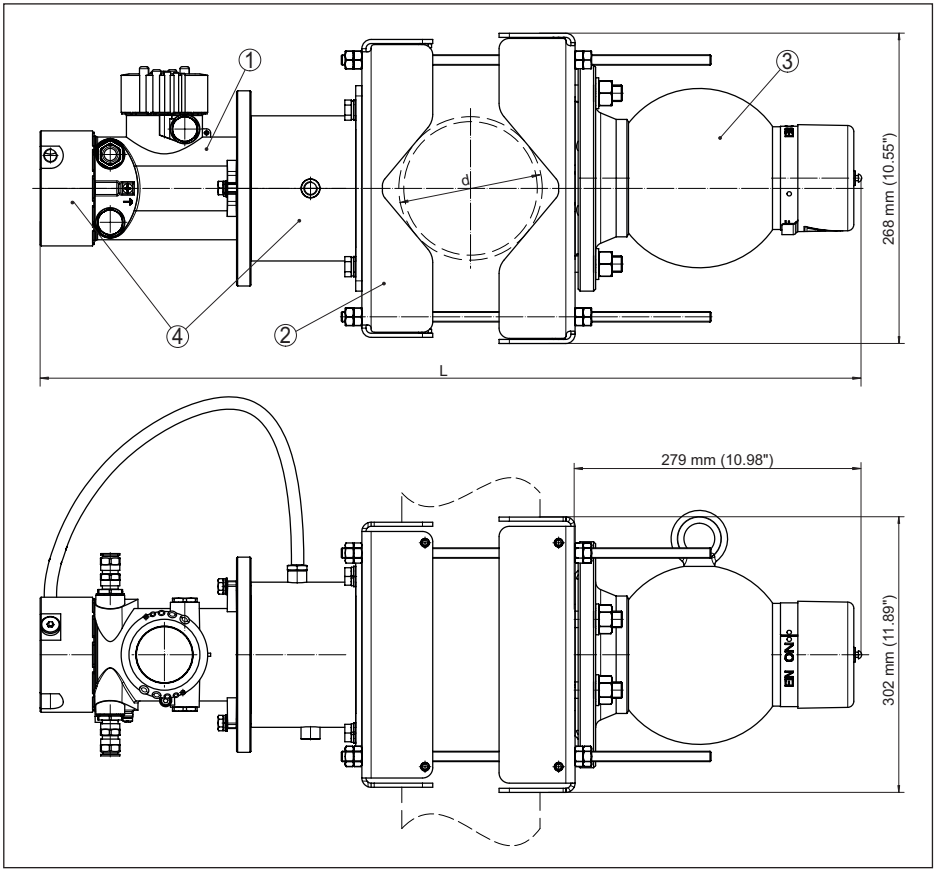

Fig. 22: Mounting bracket with horizontally mounted sensor and water cooling (with VEGASOURCE 31, 35)

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)

Tube DN (in)	Tube diameter (d)	Total length (L)
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)

4.2.2 Dimensions with source container VEGASOURCE 81, 82

Note:

When calculating the length, also take into account optional attachment parts such as the pneumatic changeover, cooling devices, etc.

Depending on the version of the source container, the dimension "L" is extended.

For dimensional information on the versions, please refer to the operating instructions of the source container.

KV 31, horizontal sensor mounting

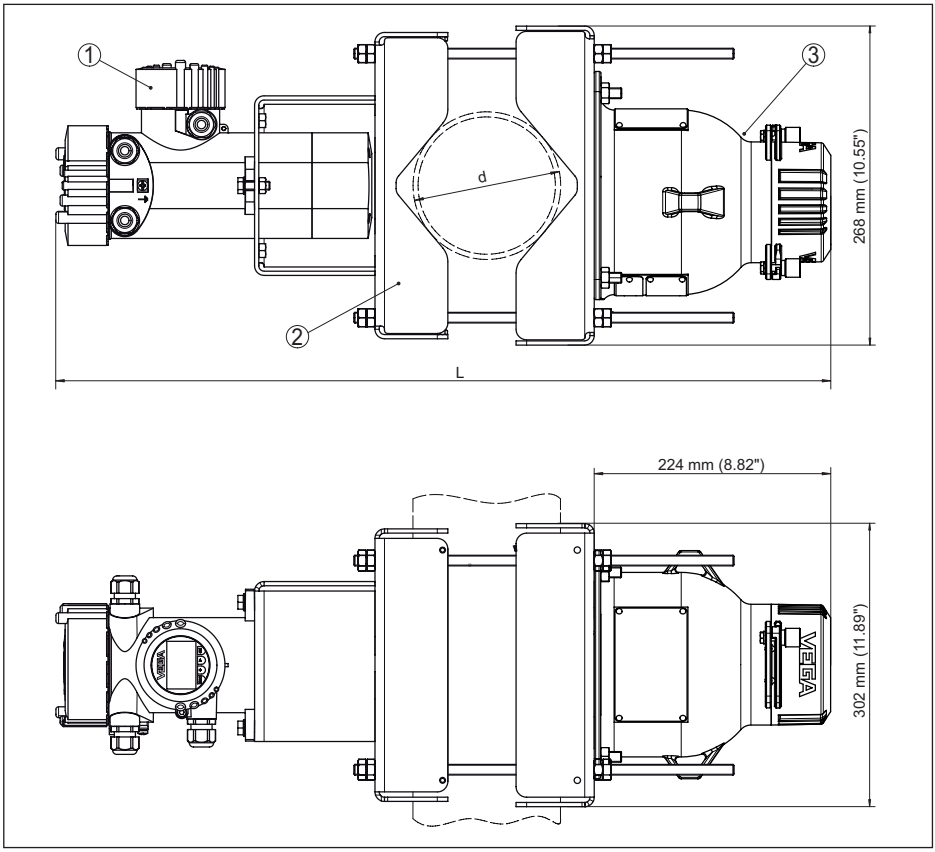

Fig. 23: Mounting bracket with horizontally mounted sensor (with VEGASOURCE 81, 82)

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)	617 mm (24.29 in)
DN 100 (4 in)	ø 114.3 mm (4.5 in)	682 mm (26.85 in)
DN 125 (5 in)	ø 139.7 mm (5.5 in)	715 mm (28.15 in)
DN 150 (6 in)	ø 168.3 mm (6.63 in)	748 mm (29.45 in)
DN 200 (8 in)	ø 219.1 mm (8.63 in)	813 mm (32.01 in)

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KV 31, horizontal sensor mounting with heat protection kit

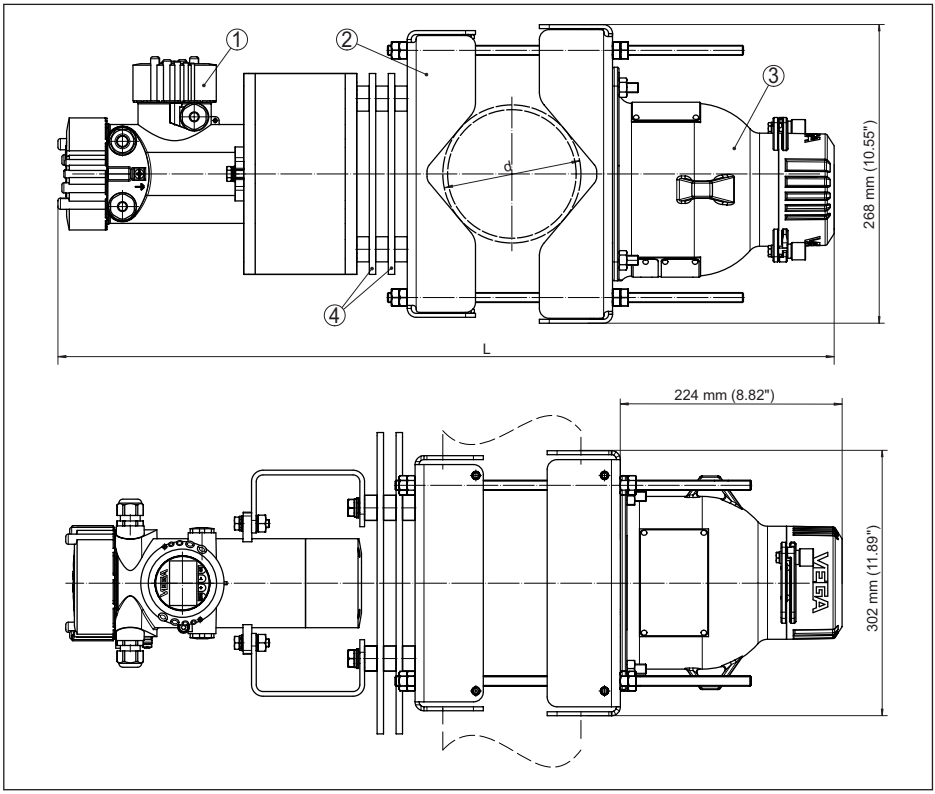

Fig. 24: Mounting bracket with horizontally mounted sensor and heat protection kit (with VEGASOURCE 81, 82)

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)	683 mm (26.89 in)
DN 80 (3 in)	ø 88.9 mm (3.50 in)	720 mm (28.35 in)
DN 100 (4 in)	ø 114.3 mm (4.5 in)	753 mm (29.65 in)
DN 125 (5 in)	ø 139.7 mm (5.5 in)	786 mm (30.94 in)
DN 150 (6 in)	ø 168.3 mm (6.63 in)	820 mm (32.28 in)
DN 200 (8 in)	ø 219.1 mm (8.63 in)	889 mm (35.00 in)

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KV 31, horizontal sensor mounting with air cooling

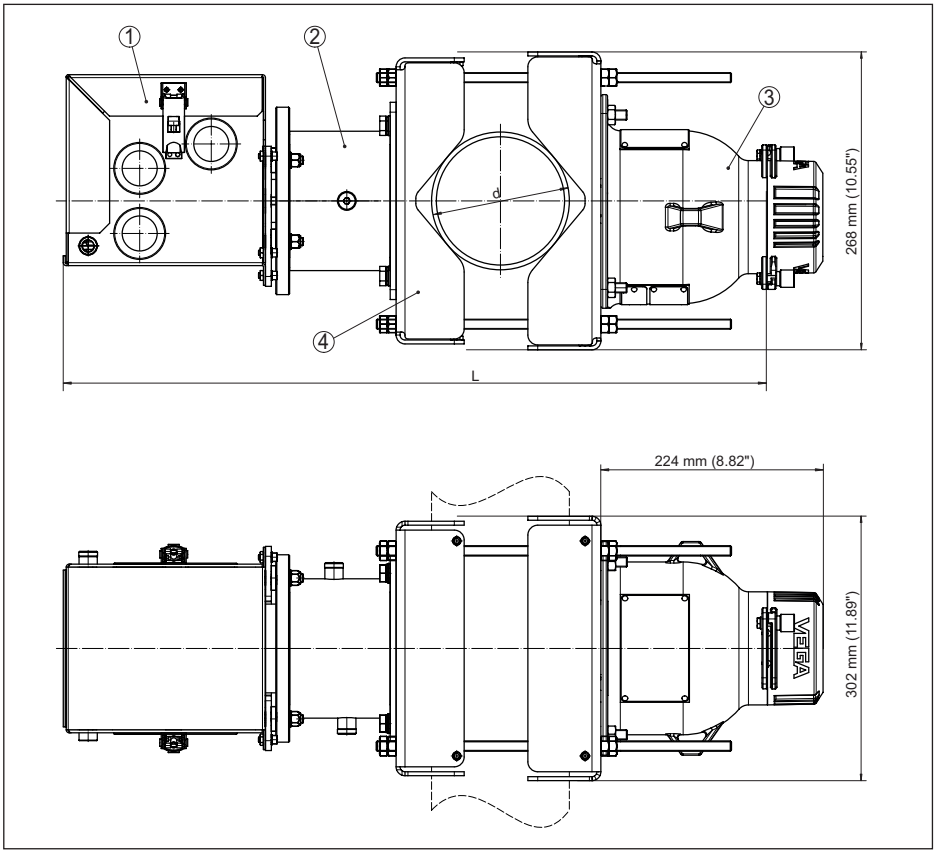

Fig. 25: Mounting bracket with horizontally mounted sensor and air cooling (with VEGASOURCE 81, 82)

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)	683 mm (29.1 in)
DN 80 (3 in)	ø 88.9 mm (3.50 in)	720 mm (30.5 in)
DN 100 (4 in)	ø 114.3 mm (4.5 in)	753 mm (31.8 in)
DN 125 (5 in)	ø 139.7 mm (5.5 in)	786 mm (33.1 in)
DN 150 (6 in)	ø 168.3 mm (6.63 in)	820 mm (34.5 in)
DN 200 (8 in)	ø 219.1 mm (8.63 in)	889 mm (37.2 in)

KV 31, horizontal sensor mounting with water cooling

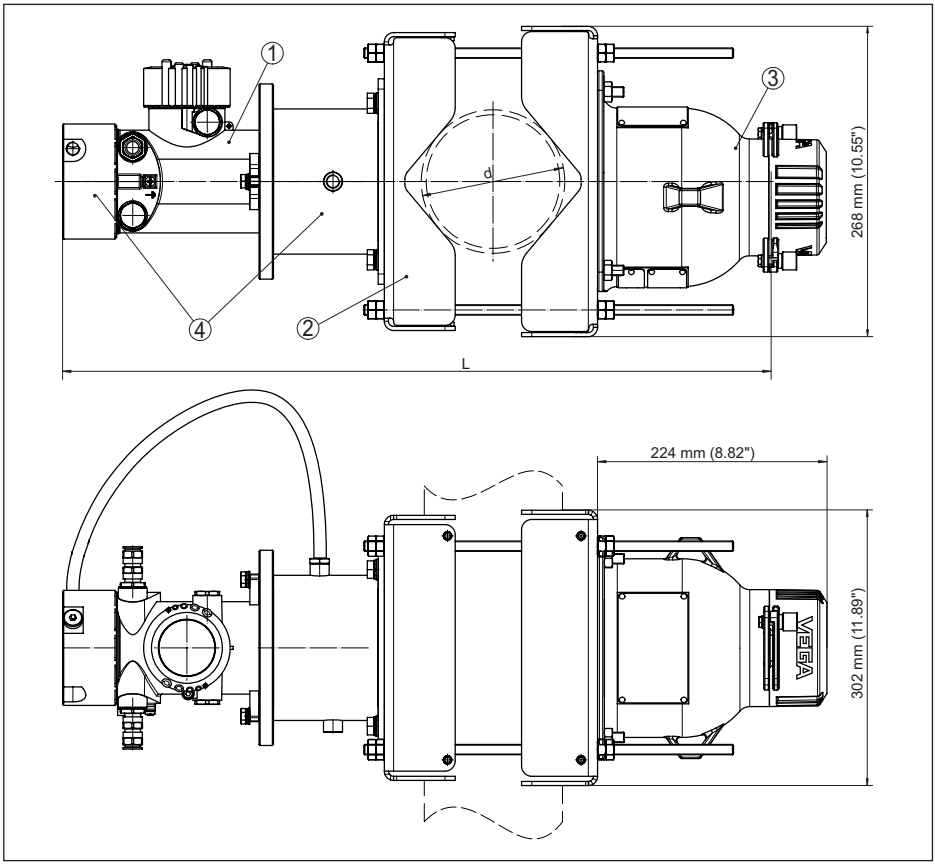

Fig. 26: Mounting bracket with horizontally mounted sensor and water cooling (with VEGASOURCE 81, 82)

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)	683 mm (26,89 in)
DN 80 (3 in)	ø 88.9 mm (3.50 in)	720 mm (28.35 in)
DN 100 (4 in)	ø 114.3 mm (4.5 in)	753 mm (29.65 in)
DN 125 (5 in)	ø 139.7 mm (5.5 in)	786 mm (30.95 in)
DN 150 (6 in)	ø 168.3 mm (6.63 in)	820 mm (32.28 in)
DN 200 (8 in)	ø 219.1 mm (8.63 in)	889 mm (35.00 in)

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