Mounting

AM 50

AIRMASTER

Revision	Date	Description
1.0	2022-11-15	First edition.
2.0	2023-05-01	New design update. Minor changes to section 5.6.2 to clarify shortening the Ø90 tube.
3.0	2025-05-02	Item 3.3 updated

IMPORTANT!

Read the manual thoroughly before using the product.
Keep this manual for later use.

Place of installation and serial number (S/N)	
Type	
Delivery date	
Mounting location	
S/N Air handling unit	
S/N Cooling Module	-

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1 Introduction

This manual is a guide for mounting an AM 50. The full documentation package contains a Mounting manual and an Operation and Maintenance manual.

Both manuals are available at www.airmaster-as.com

The manual should be passed along to and saved by the air handling unit's owner.

1.1 Target group

This manual is addressed to qualified personnel. Laypersons should not attempt to mount an AM 50 unit.

1.2 Warning Symbols

This manual may contain warning symbols. The symbols adhere to the ISO7010 standard. The visual depiction may vary depending on the type of media.

The symbols are described below:

	DANGER
	Danger to persons. Failure to comply with the instruction results in severe or fatal injuries to persons.

	WARNING
	Danger to persons. Failure to comply with the instruction can result in injuries to persons.

	NOTICE
	Avoiding material damage. Failure to comply with the instruction can damage the device and/or its environment.

	Information, tips, and recommendations.

1.3 Liability

The manufacturer cannot be held liable for damages, which occur due to usage in violation of this manual's instructions.

The manufacturer reserves the right to make changes without notice. All values stated are nominal values and may be affected by local conditions.

The warranty is voided, should this manual not be followed.

2 Safety Instructions

Read this manual before installing the air handling unit. Follow the manual to ensure the correct operation of the product. Breaching the instructions marked with a warning symbol carries a risk of personal injury or material damage.

DANGER

The air handling unit must not be installed in rooms with flammable and corrosive gas in the air.

WARNING

The air handling unit must not be installed in rooms with abrasive particles in the air.

WARNING

The electrical installation of the AM 50 may only be carried out by an authorized electrician or by Airmaster A/S.

The electrical installation should be implemented such that it is of no danger to people, domestic animals, or property, and that the electrical installation is functioning correctly.

We recommend that AM 50 is mounted directly to the electrical installation and that the supply is dimensioned and mounted accordingly. Alternatively, AM 50 can be connected to a light bulb socket or similar.

The installation must always follow the most recent version of this manual, which is available at www.airmaster-as.com

2.1 Responsibility

The installer is responsible for installing the air handling unit following existing rules and standards.

2.1.1 Personnel requirements

The mounting of the unit should be done by qualified personnel.

3 Product Identification

3.1 Product name and type

Product name	AM 50
Unit item number	9000050001
Type	Decentral air handling unit. Stand-alone unit.

Table 1 - Product name and type

3.2 Correct use

AM 50 is a decentralized room-based air handling unit with heat recovery. AM 50 provides a balanced exchange of air in living spaces and smaller rooms.

NOTICE

AM 50 is not designed for wet rooms or kitchens.

Should you wish to use the AM 50 in wet rooms or kitchens, the unit should be used in tandem with an air exhaust system in compliance with existing building regulations.

3.3 Capacity

AM 50 has six ventilation settings. Table 2 below shows settings, capacity, sound, and nominal current.

Settings	Capacity [m^3/h]	Sound pressure [dB(A)]	Nominal current [A]
1	15	25	0,05
2	21	30	0,06
3	28	35	0,08
4	37	40	0,10
5	46	45	0,13
6	54	47	0,17

Table 2 - Capacity, sound pressure, nominal current

AM 50 will automatically adapt its ventilation settings to the desired interval based on the relative humidity in the room.

3.4 Specifications

For further specifications beyond the ones mentioned above, consult the data sheet for AM 50 on Airmaster's website.
Direct link: Downloads, choose 'AM 50'.

3.4.1 Wall thickness

The wall thickness needed to install AM 50 should be a minimum of 250 mm, see Figure 1.

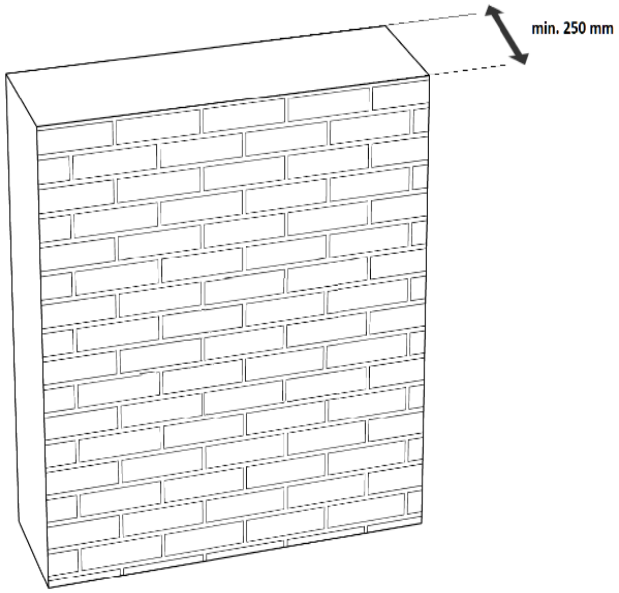

Figure 1 - Minimum wall thickness

3.4.2 Dimensions

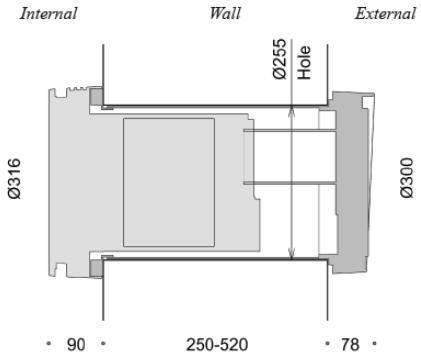

Figure 2 - Dimensions. All measurements in [mm]

3.4.3 Filter class

ISO ePM_{10} 50%

3.5 Manufacturer

Airmaster A/S, Industrivej 59, 9600 Aars, Denmark.

Phone: +45 98 62 48 22

E-mail: info@airmaster.dk

Web site: www.airmaster.dk

3.6 EU Declaration of Conformity

EU Declaration of Conformity can be found in **Error! Reference source not found.** on page **Error! Bookmark not defined.**. The most recent version is always available on our website.
Direct link: Declarations, choose ’EU Declaration of Conformity’.

3.7 Certificates

AM 50 is Eco Label certified, please see **Error! Reference source not found.** on page **Error! Bookmark not defined.**. The most recent version is always available on our website.
Direct link: Declarations, choose ’Eco label AM 50’.

3.8 Warranty

The unit comes with a 24-month warranty, for further information see Terms of Sale and Delivery.

4 Transportation and storage

AM 50 is packed in a cardboard box.

During transport, the box must be tied up in such a way that it will not move or shift. Make sure that the box is not dropped or otherwise damaged during handling.

The box should be stored in a dry area.

Gross weight (unit and box)	11,6 kg.
Net weight (unit)	9,1 kg.
Box dimensions (l*w*h)	71*35*37 cm.

Table 3 - Weight and dimensions

5 Installation

5.1 Installation accessories and tools

Before installing AM 50 you will need to have the following installation accessories ready:

- Elastic sealant
- DAFA sealing tape, illmod 600, 15/5-10 (grey color)
- 3x0,75 mm^2 cable.

It is not possible to do a correct installation without this equipment.

Tools: a core drill (Ø255 mm), a spirit level, a measuring rod/measuring tape, a saw for shortening plastic tubes, scissors/utility knife to cut isolation, scissors/cutting pliers to cut strips, and a wire stripper. Additionally, a TX10 and a flat-tip screwdriver.

5.2 Unpacking

AM 50 comes in a box, which contains:

1. Outside hood with 4 attached strips
2. 4pcs. loose strips
3. Ø90 mm tube
4. Ø250 mm tube
5. Wall cover
6. Ventilation unit
7. Internal cover
8. Sealing band.

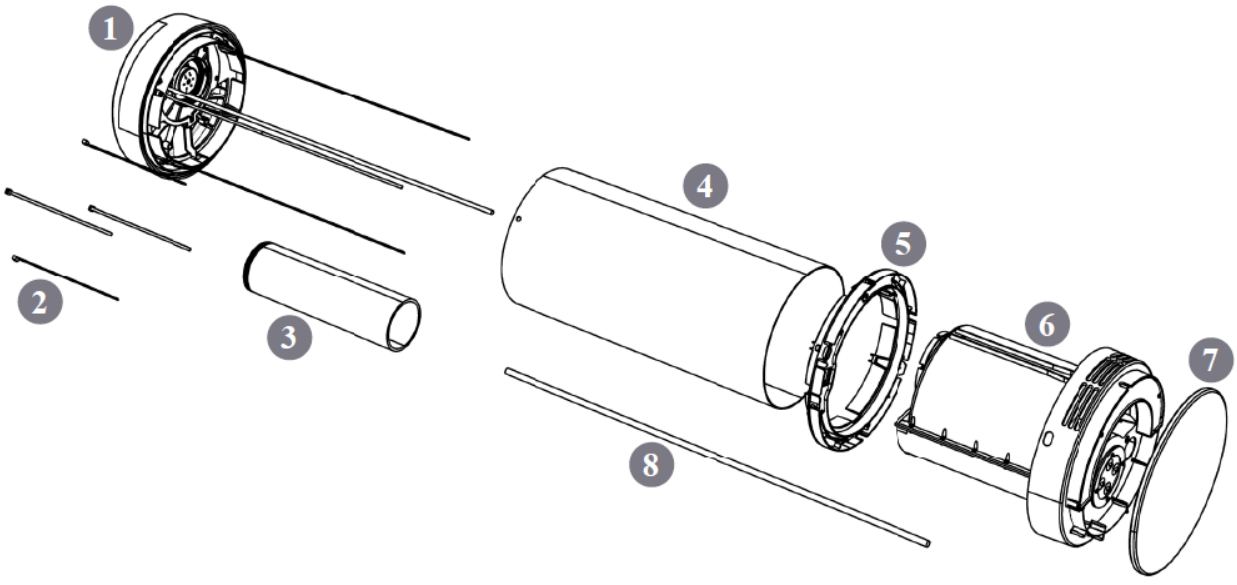

Figure 3 - Unpacking

Additionally:

- A piece of isolation for the Ø90 mm tube
- Manuals.

Make sure you have all the parts and check if any parts look damaged before starting the installation.
You may not do the installation if one or more parts are damaged or missing.

5.3 Minimum distance to the building parts

To ensure the maximum efficiency of AM 50, the provided minimum distances should be respected. The minimum distances ensure that the unit can easily distribute the air into the room pleasantly and mutedly.

A minimum distance of 450 mm from the ceiling is required, and the minimum distance from a wall must be 200 mm, see Figure 4 below.

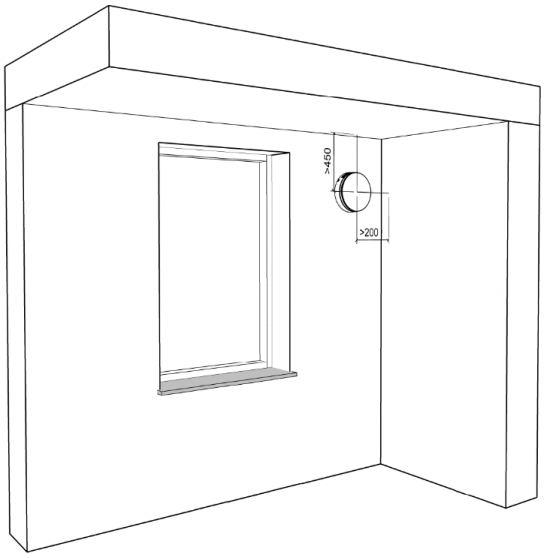

Figure 4 - Minimum distances to the building parts (in mm)

5.4 Mutual minimum distances

Should there be multiple units in the same room, they will require space between each other to not “disturb” each other. Likewise, it is necessary to have space between fixed installations and similar ones that could obstruct the inlet air zone.

The size of this space is dependent on the size of the room and the interior layout. Figure 5 below shows an example in which a table and a chair have been placed away from the wall to allow unhindered air circulation. If the table were placed up against the wall, the air would be reflected off the table surface, which would create a feeling of a draught if one were sitting by the table.

Figure 5 - Mutual minimum distances

It is important to be aware of obstacles, e.g., a big lamp hanging from the ceiling, which might affect the air current coming from the air handling unit.

5.5 Hole drilling

Drill a Ø255 mm hole in the wall, see Figure 6 below. AM 50 needs a 2-degree slant toward the façade. This is important to ensure that any condensation can leak out and to prevent rain from leaking inside.

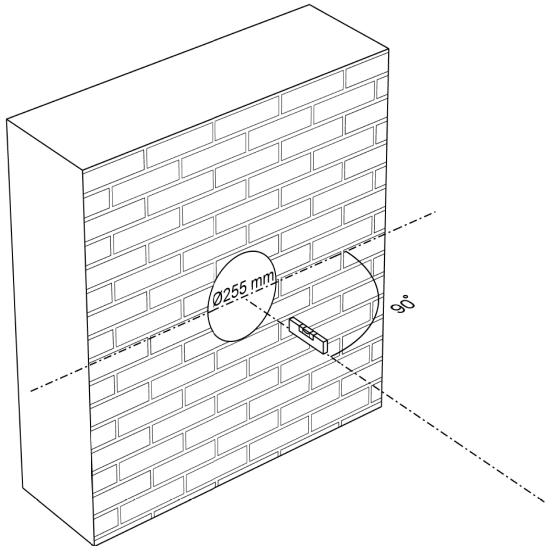

Figure 6 - Drilling the hole in the wall

5.6 Shortening the tubes

Start by measuring the wall thickness ‘A’ through the hole, see Figure 7 below.

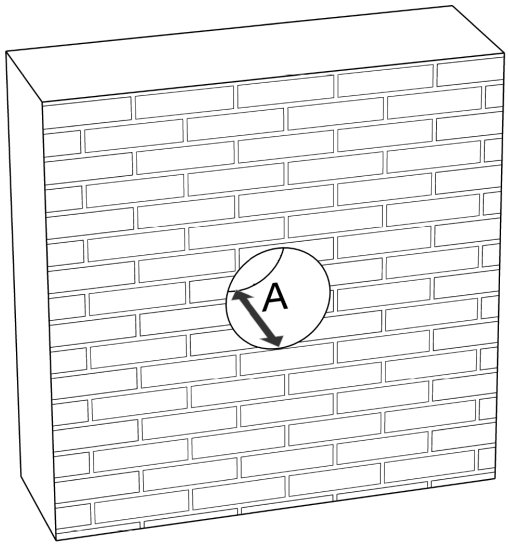

Figure 7 - Wall thickness for calculating the tube length

5.6.1 Ø250 mm

The Ø250 mm tube (4) is sawed the length of A + 10 mm, measured from the end of the tube with the 4 holes, see Figure 8 below.

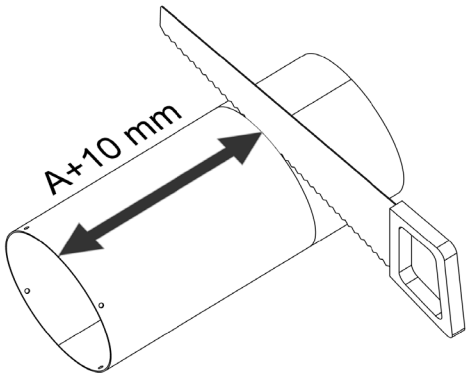

Figure 8 - Shortening of the Ø250 mm tube

Clean any dust and impurities off the tube and its sawed-off edge.

5.6.2 Ø90 mm

The Ø90 mm tube (3) is sawed the length of A - 215 mm, measured from the milled grooves, see Figure 9 below.

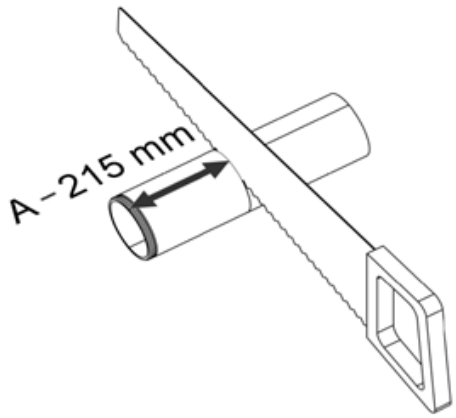

Figure 9 - Shortening of the Ø90 mm tube

Clean any dust and impurities off the tube and its sawed-off edge.

5.6.2.1 Isolation

The isolation for the Ø90 tube should be 30 mm shorter than the tube. You can use scissors or a utility knife to shorten the isolation.

5.7 Outside mounting

5.7.1 Preparation of outside hood

No tools are necessary.

1. The outward-facing side of the outside hood (1) is placed on a piece of cardboard from the packaging on top of a steady surface. The outside hood comes with pre-mounted strips.
2. Press the Ø90 tube (3) with the milled grooves against the inside of the hood so it clicks on. See Figure 10 below. Afterward, put the isolation down around the tube. It is important to push it all the way down toward the hood.

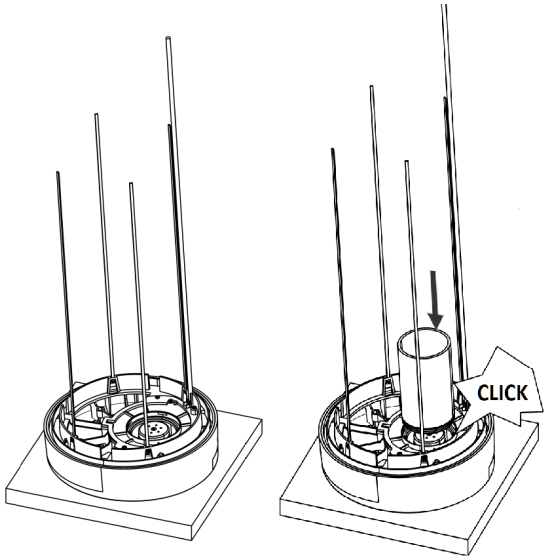

Figure 10 - Preparation of outside hood with Ø90 mm tube

3. Take the Ø250 mm tube (4) - holes facing downwards - then guide it outside the strips and the cable down toward the inside of the hood. Rotate the tube so the holes meet the spring catches on the hood and click the tube on. See Figure 11 below.

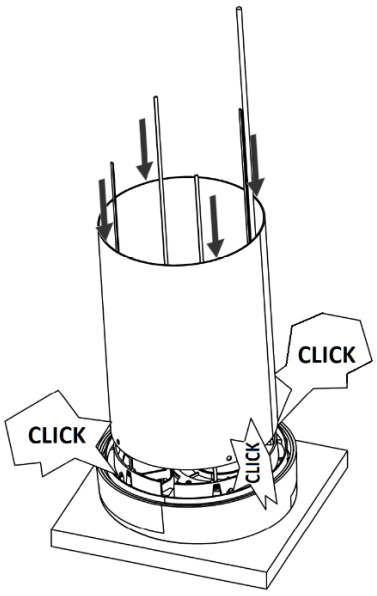

Figure 11 - Preparation of outside hood with Ø250 mm tube

5.7.2 Mounting of sealing band on the outside hood

The outside hood is prepared with the included sealing band (8). The sealing band should be placed on the outside of the Ø250 tube and inserted down into the outside hood, see Figure 12 below.

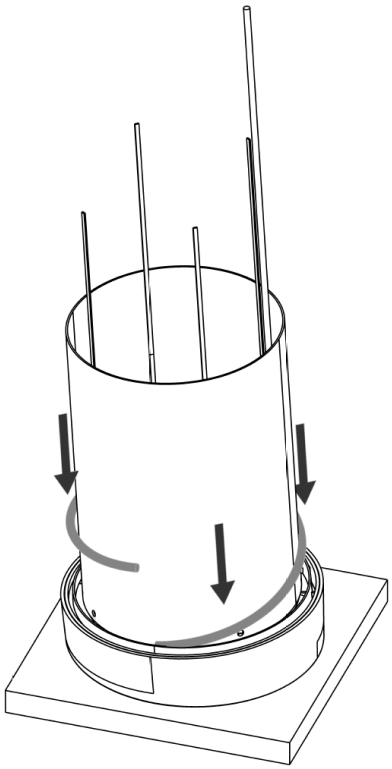

Figure 12 - Sealing band on the outside hood

5.7.3 Sealing tape on façade wall

The DAFA sealing tape – illmod 600, 15/5-10, is mounted on the edge of the hole on the façade to prevent water penetration into the wall.

The sealing tape must be joined at the bottom of the hole, see Figure 13 below.

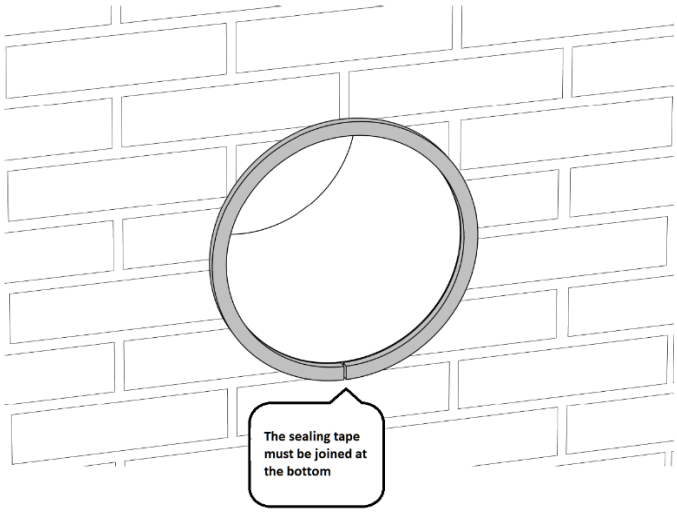

Figure 13 - Outside sealing tape

5.7.4 Applying sealant between sealing tape and façade wall

If the facade is irregular, e.g. a blank wall with recessed joints, the holes created by the joints under the sealing tape should be filled out with an elastic sealant, see Figure 14 below.

We recommend that you use a sealant with the same color as the joints.

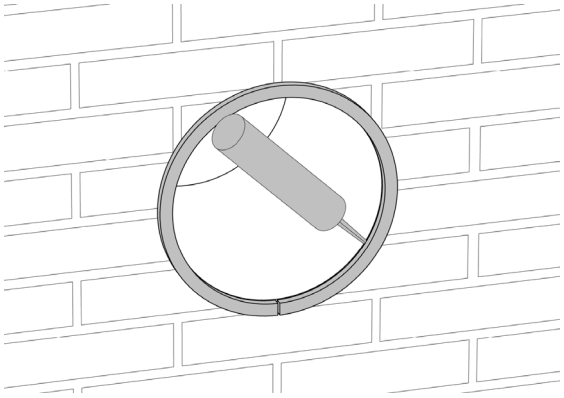

Figure 14 - Outside sealant application

5.7.5 Mounting of the outside hood

1. Push the outside hood into the wall from the outside, see Figure 15 below.
   Please notice that the outside-facing parts are not yet attached. Take the necessary precautions against dropping the parts.

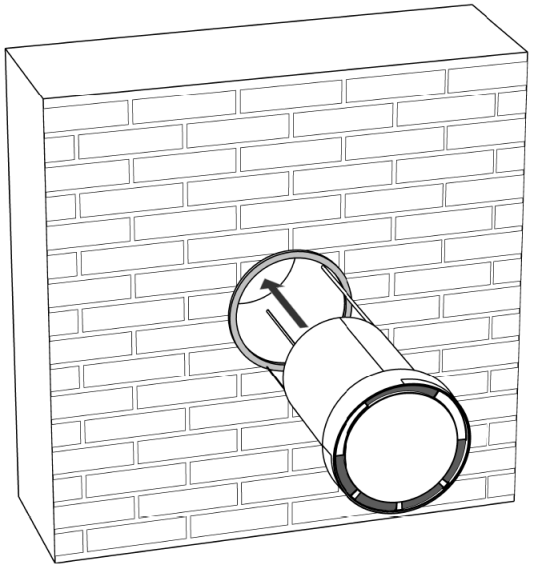

Figure 15 - Mounting of the outside hood

2. Rotate the outside hood until it is level, see Figure 16.

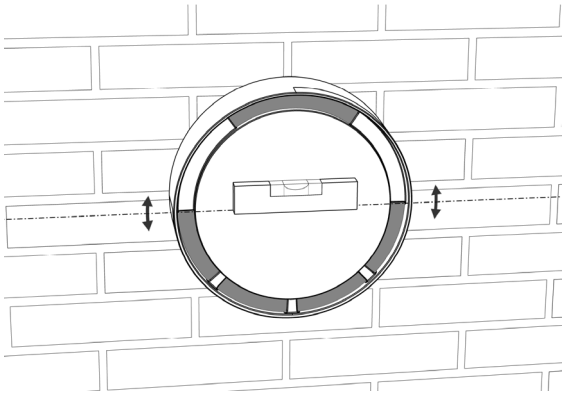

Figure 16 - Outside hood, level

3. Press the outside hood against the sealing tape.

The outside mounting is now complete. Now the internal mounting is carried out followed by the joining and fastening of the two units.

5.8 Internal mounting

	NOTICE
	It is necessary to access and decide whether the air handling unit should be mounted with a visible or hidden 230V cable routing before the internal mounting begins, see section 5.9 for further information. If a hidden cable routing is desired, you need to drill a hole in the wall cover (5) before it is mounted, see section 5.9.5 on page 30. We recommend that the 230V cable for the hidden routing is connected in the wall cover (5) before the sealant is applied and the wall cover is mounted.

5.8.1 Applying sealant

The space on the inside between the Ø250 tube and the wall is sealed with an elastic sealant, see Figure 17 below.

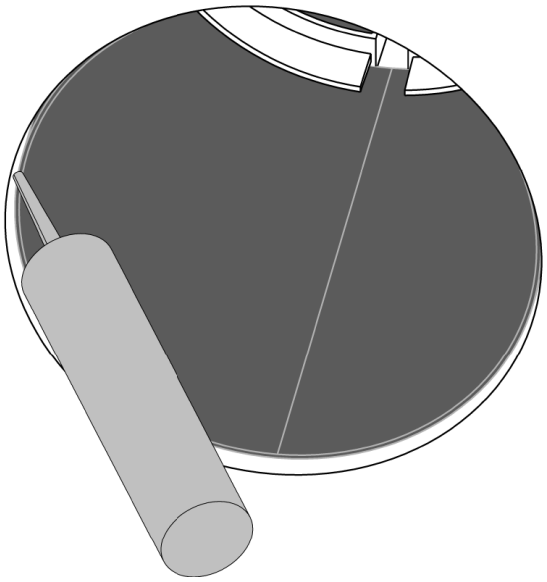

Figure 17 - Internal sealant

5.8.2 Preparing the wall cover

The wall cover (5) is mounted next. Before this can be done, the elastic sealant should be applied to the back of the wall cover, see Figure 18.

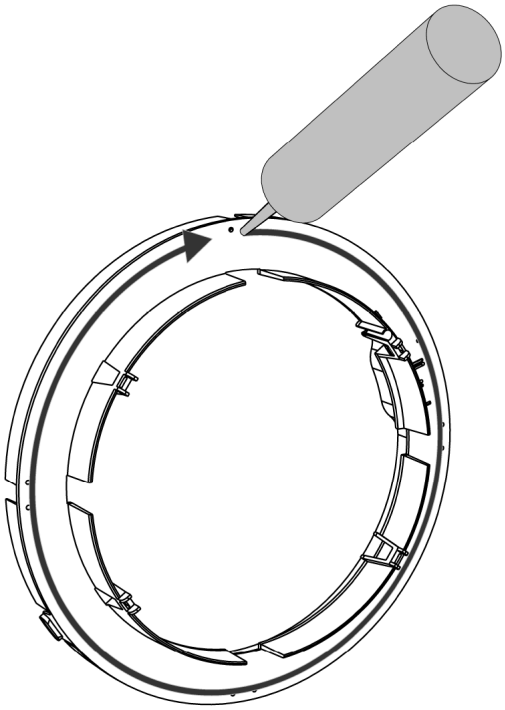

Figure 18 - Application of elastic sealant to the wall cover

5.8.3 Mounting the wall cover

While holding the 4 strips from the outside hood back, the wall cover's collar is inserted into the wall and the Ø250 mm tube (4). Press the wall cover against the wall and make sure it is level, see Figure 19 below. Any excess sealant is wiped off.

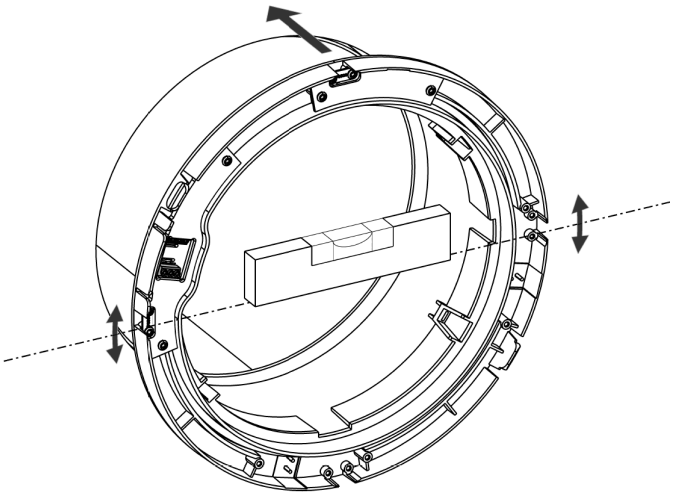

Figure 19 - Mounting of internal wall cover

5.8.4 Fixation and tensioning

The internal wall cover needs to be held in place and tensioned to the outside part which is done with the strips. All figures are located on the next page.

1. The four strips located on the outside hood are guided through the holes in the internal wall cover, see Figure 20.
   Make sure that they are not twisted, crossing each other, or the cables inside the tube.
2. Pull one of the included loose strips (2) on the end of each of the mounting strips, see Figure 21.
3. Tighten the wall cover against the wall by pulling on the mounting strips while the loose strips are pushed down, one after the other, see Figure 22.
4. With scissors or a knife, cut each of the loose strips as close to the head as possible, see Figure 23.
5. Bend the end of each of the mounting strips from the outside hood to allow cutting off the unnecessary length within the “funnel” of the wall covers, see Figure 24 and Figure 25.
6. The outside hood and the internal wall cover are now mechanically connected through the Ø250 mm tube and the strips.
   Check that the internal wall cover is still level and that there is a decline of approx. 2-degrees toward the façade. If necessary, force the wall cover to remain in position until the sealant dries. Remove any excess sealant.

The mounting of the outside and internal parts is now complete. Next, the electrical connection will be carried out. Afterward, the air handling unit will be mounted and tightened.

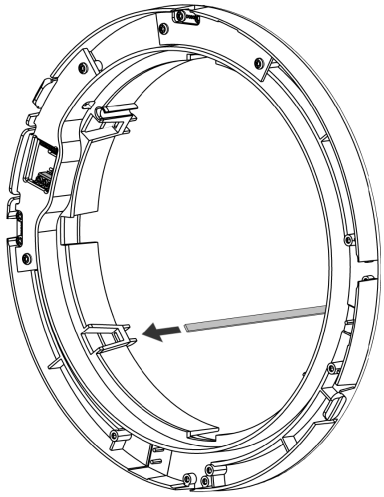

Figure 20 - Strips from the outside hood are guided into the internal wall cover

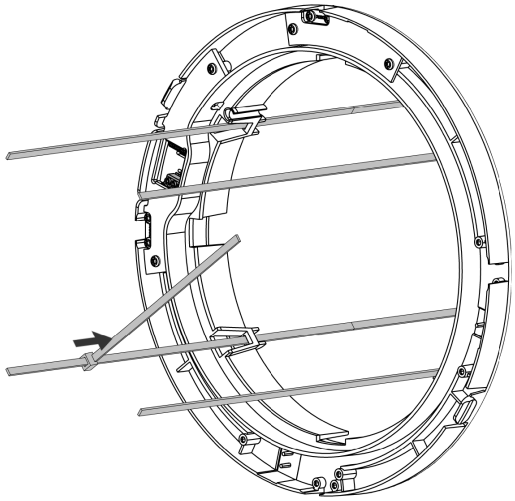

Figure 21 - One loose strip is connected to each of the strips

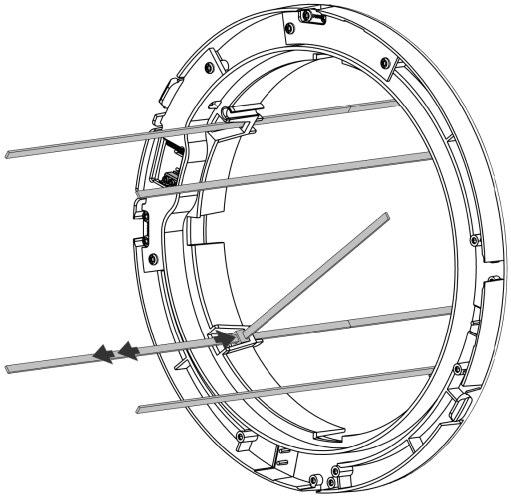

Figure 22 - The strips are pushed down

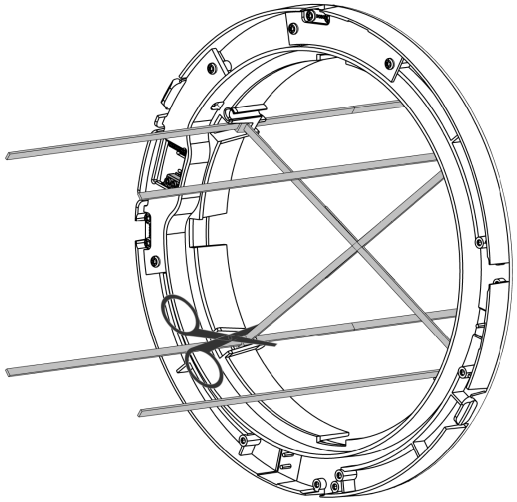

Figure 23 - Bend and cut the “mounted” strips

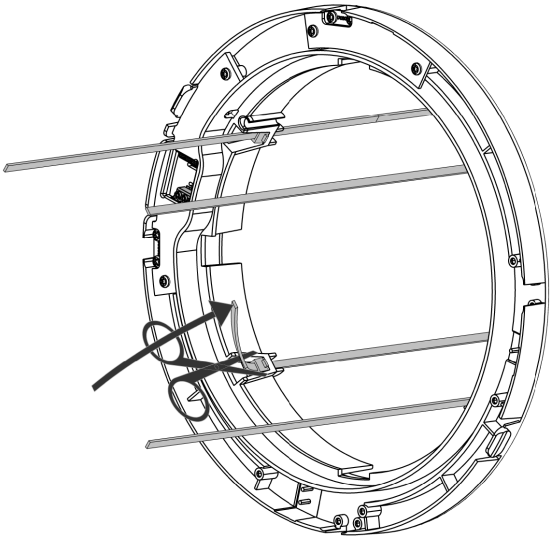

Figure 24 - Bend and cut the other strips

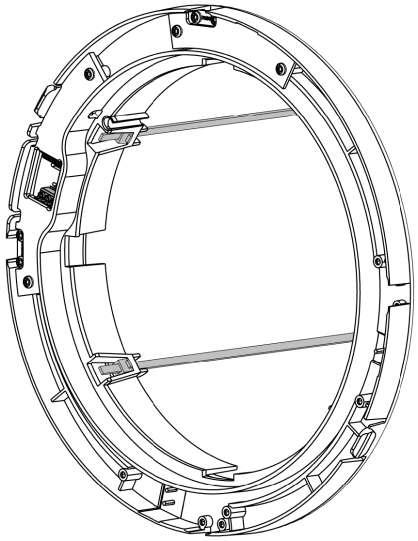

Figure 25 -The internal wall cover is assembled

5.9 Electrical connection

The standard electrical connection is carried out with a visible 230V cable from above. Should a visible cable routing from the right, left, or below be desirable, this is also possible. Likewise, it is possible to have hidden cable routing.

5.9.1 24V Cable connection and wiring

1. Remove the cover over the wire terminal in the upper left. Route the cable from the outside hood to the internal part; then lead the cable into the cable holder in the wall cover; and finally through the hole, see Figure 26 below.

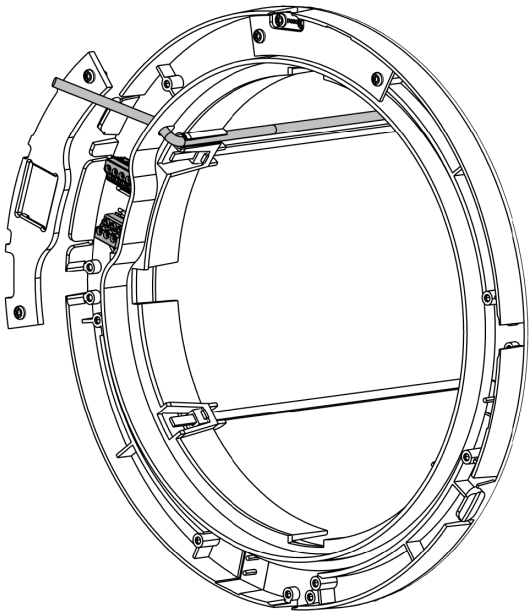

Figure 26 - 24V cable routing

2. Adjust the cable length and attach the cable to terminal 1 with the color codes provided in Figure 27 below.

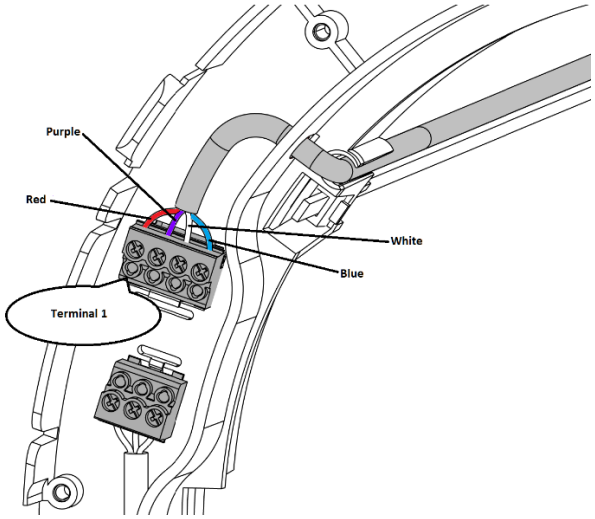

Figure 27 - 24V cable connection to terminal 1

3. **Thoroughly** seal the cable hole with sealant to avoid any air leaks in AM 50, see Figure 28 below.

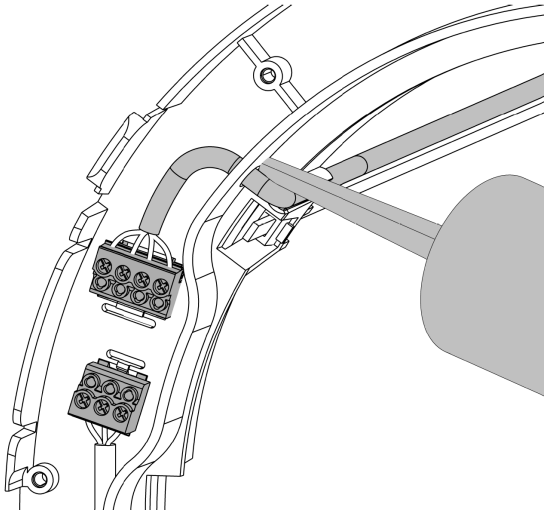

Figure 28 - Sealing cable hole

4. Reattach the cover over terminal 1 again.

Now begin connecting and wiring the 230V cable, either from above (section 5.9.2), from the right or below (section 5.9.3), or the left (section 5.9.4). It is also possible to do a hidden cable connection (section 5.9.5). See Figure 29 below.

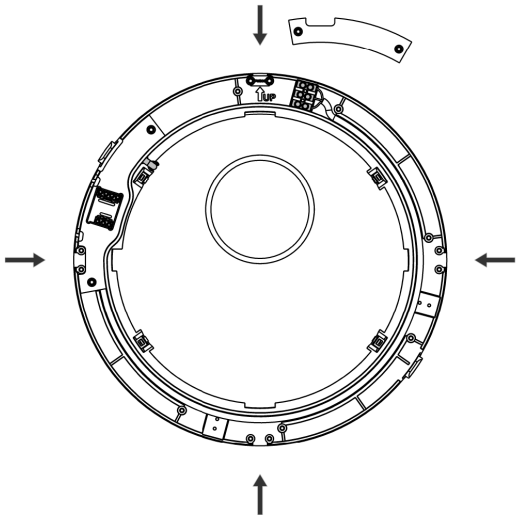

Figure 29 - 230V cable connecting; several options available

5.9.2 230V Cable connection, top (standard)

1. Detach the terminal 2 cover, see Figure 30 and Figure 31 below.
2. Attach the cable to terminal 2 with wire colors matching the internal wires, see Figure 31.
3. Tighten the cable clamp and reattach the cover.

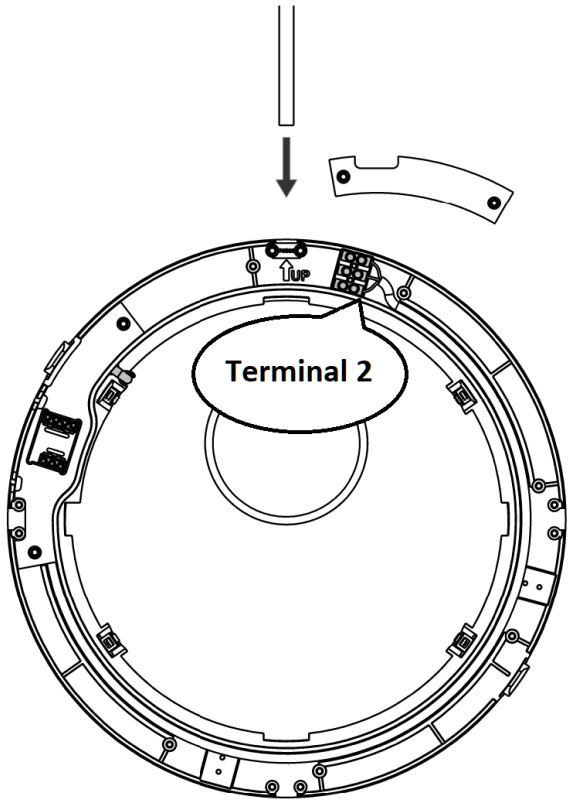

Figure 30 - Terminal 2

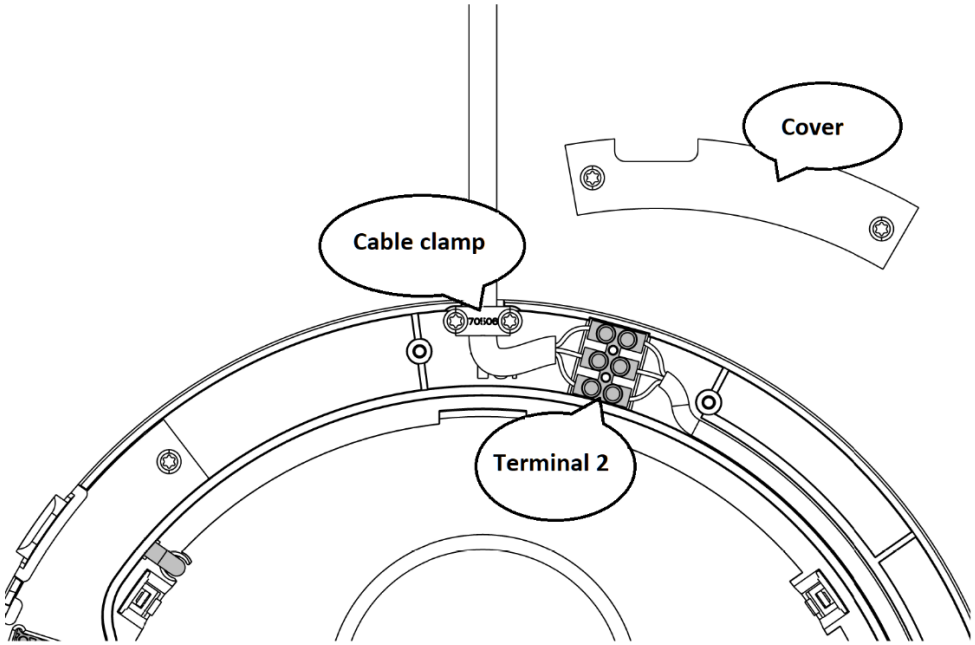

Figure 31 - 230V cable connection in Terminal 2

5.9.3 230V cable connection from the right or bottom

The cable connection from the right or the bottom is performed similarly. Below is the description for installing the cable on the right side.

1. Detach the cover over terminal 2, see Figure 30 and Figure 31.
2. Disconnect the cable from terminal 2.
3. Detach terminal 2 and connect it to the pins on the right side of the wall cover, see Figure 32 below.
4. Shorten the internal cable to fit the new placement of terminal 2, and attach it, see Figure 33 and Figure 34 below.
5. Connect the 230V cable in terminal 2 with wire colors matching the internal wires.
6. Move the cable clamp and cover from the wall cover's top, and attach them to their new location, see Figure 35.

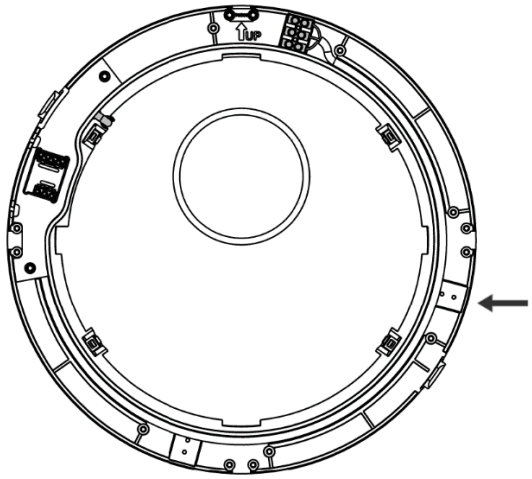

Figure 32 – New location of terminal 2 if cable connection to the right is required

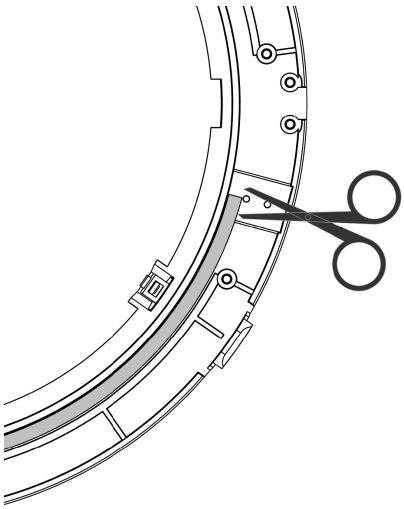

Figure 33 - Shorten the internal cable

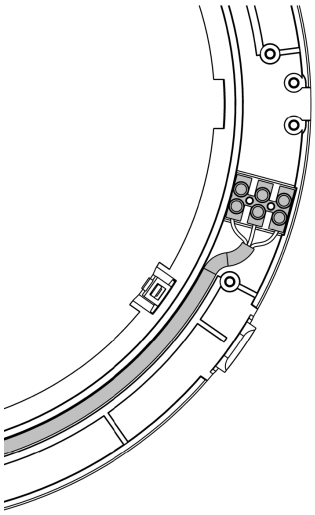

Figure 34 - Internal cable connected to terminal 2

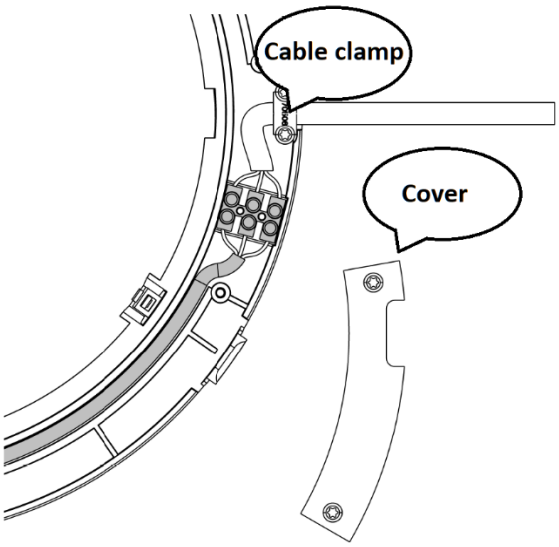

Figure 35 - 230V cable connection from the right with cable clamp

Should the cable come from below, connect terminal 2 on the pins at the bottom, see Figure 36 below. The cable clamp and cover are moved from the top to the bottom.

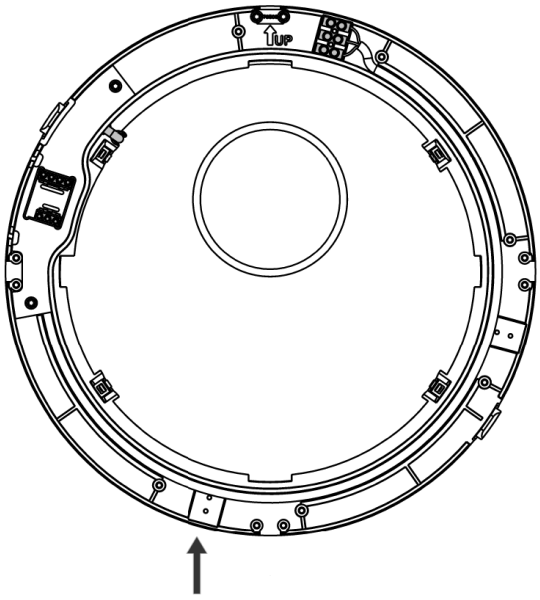

Figure 36 - Location of terminal 2 with cable routing from below

5.9.4 230V cable connection from the left

1. Detach the covers at the top and to the left, and remove the internal cable, see Figure 37 below.
2. Reattach the top cover again.
3. Connect the 230V cable to terminal 3 with the shown color codes, see Figure 38 below.
4. Move the cable clamp from the top of the cover and attach it by terminal 3, see Figure 39.
5. Reattach the left cover again.

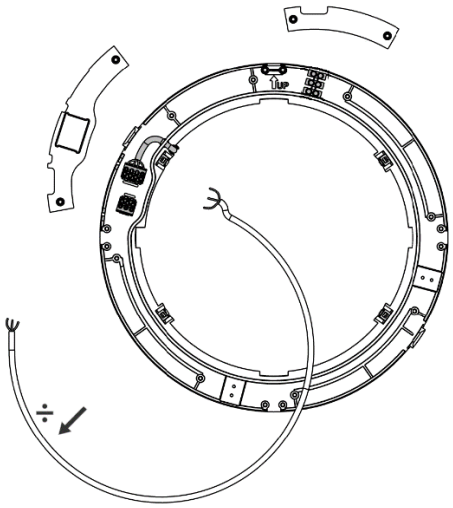

Figure 37 - Remove the internal cable

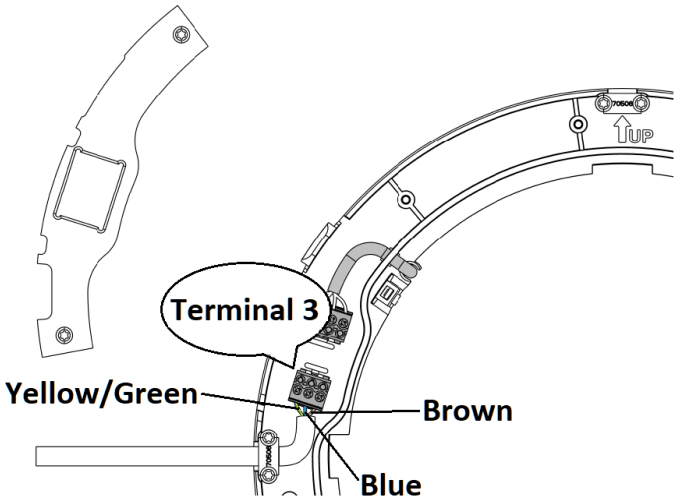

Figure 38 - Connecting the left side cable and wiring

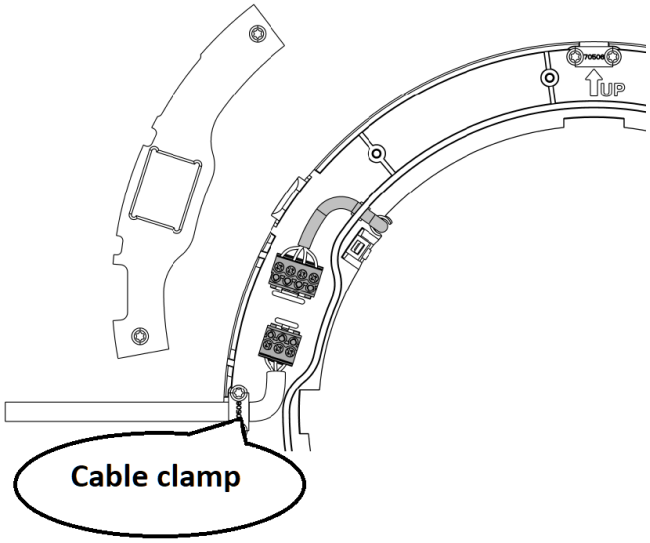

Figure 39 - Cable connection with cable clamp in terminal 3

5.9.5 230V hidden cable connection

Hidden cable routing is also possible. To hide the cable you need to drill a hole for the cable in the wall cover by/between the two screw towers, see Figure 40 below.

Once this is done the electrical installation is done as described for the visible cable connection, however, without the use of the cable clamp.

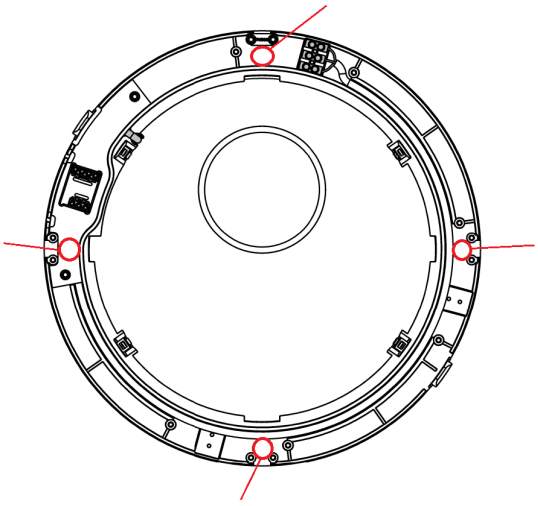

Figure 40 - Hidden 230V cable connection

5.10 Mounting the air handling unit

5.10.1 Half-hole for cable (Only for visible cable routing)

Before the air handling unit can be mounted, it is necessary to make a hole for the 230V cable.
Cut a half-hole for the cable in the back edge of the air handling unit's internal hood at the chosen cable orientation (top, right, left or below), see Figure 41 below.
The location of the half-hole is marked on the inside of the hood.

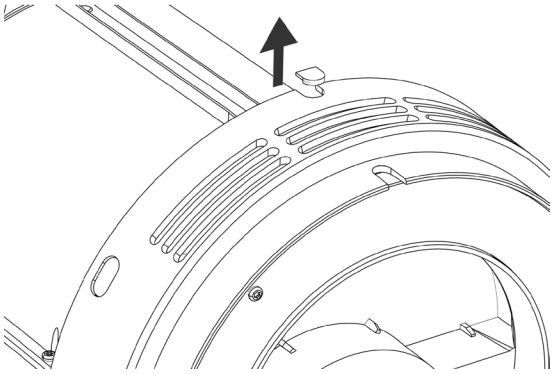

Figure 41 - Half-hole for the 230V cable, shown here with a connection from the top

5.10.2 Mounting and fixation of the ventilation unit

	WARNING
	The power must be turned off during the mounting.

1. The ventilation unit is carefully inserted into the tube in the wall with the plastic grooves facing up, see Figure 42 below.
   Should resistance be felt in the wall cover, then check that the strips have been cut quite close to the strip heads.

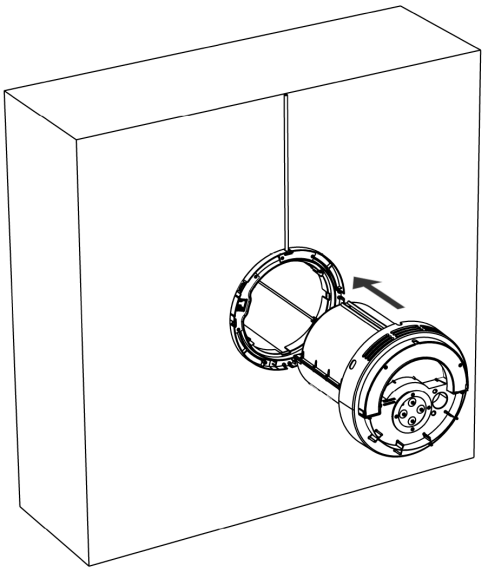

Figure 42 - The ventilation unit mounted in the tube

2. Push the ventilation unit in until it clicks onto the wall cover, see Figure 43 below.

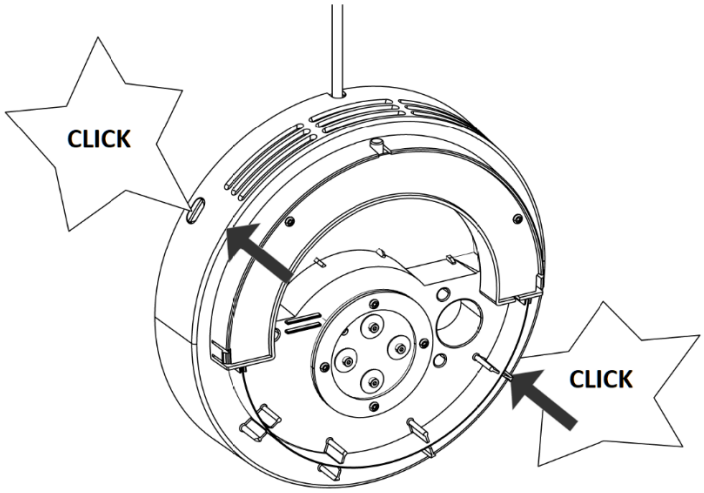

Figure 43 - The ventilation unit is clicked unto the wall cover

The ventilation unit can be detached by pressing down on the two buttons while slowly pulling it out of the hood.

5.10.3 Mounting the internal cover

The internal cover (7) is clicked onto the hood of the ventilation unit, see Figure 44 below.

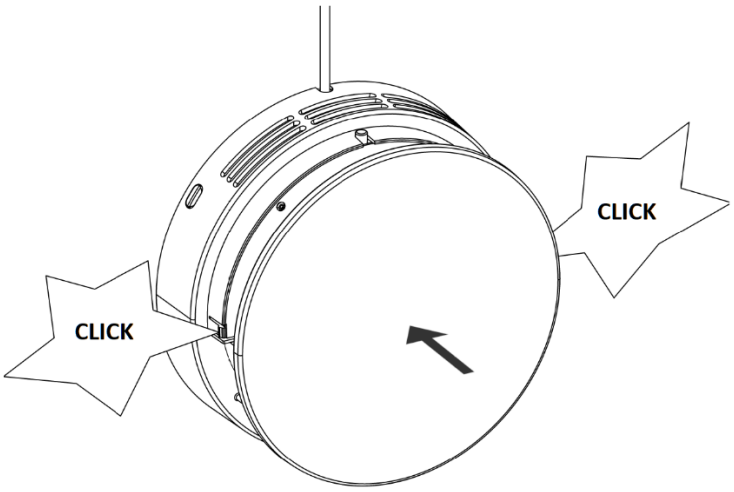

Figure 44 - The internal cover is mounted on the ventilation unit

The cover is detached by pulling it out from the wall.

The mounting is now complete. The installation needs to be tested before using the AM 50.

6 Testing the installation

AM 50 has 6 ventilation settings, each of which needs to be tested before you start using the installation.

- Setting 1: 15 m^3/h
- Setting 2: 21 m^3/h
- Setting 3: 28 m^3/h
- Setting 4: 37 m^3/h
- Setting 5: 46 m^3/h
- Setting 6: 59 m^3/h

While conducting the tests, you should both listen and feel if the air handling unit is running.

1. Turn on the power.
2. Press the button on the top to start AM 50, see Figure 45 below.
   AM 50 will now launch on the lowest ventilation setting. Let it run for ½-1 minutes on this setting. Feel if there is mild airflow coming from the grates at the top and listen if it is running.
3. Press the button once more. This will make the AM 50 go to ventilation setting 2. Let it run for ½-1 minutes on this setting. Feel and listen again.
4. Press the button once more to select the next ventilation setting. Let it run for ½-1 minutes on this setting. Continue in this manner until you have been through all 6 ventilation settings.
5. Press one last time on the button to turn off AM 50.

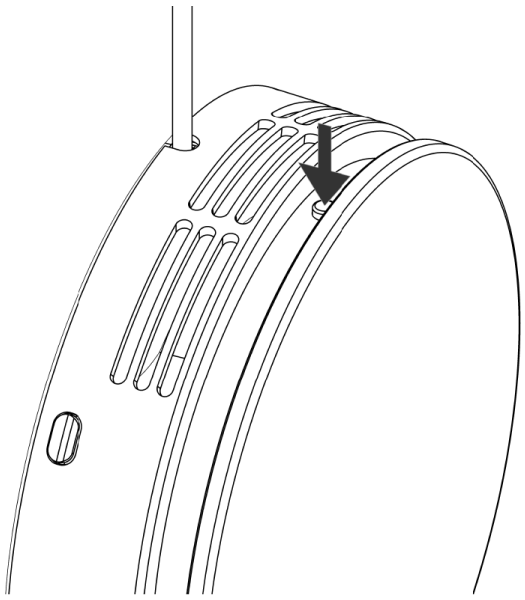

Figure 45 - Starting AM 50 (testing the installation)

AM 50 has now been tested and can be used.

Information about the operation and maintenance of the AM 50 can be found in the Operation and Maintenance manual.

7 Dismounting, disassembly, and disposal

7.1 Dismounting

Should the unit need to be dismounted, follow the installation in reverse.

	**WARNING**
	The power must be turned off before dismounting.

1. The ventilation unit is dismounted.
2. Electricity connection is disconnected.
3. The internal part is dismounted.
4. The outside part is dismounted.
5. The hole in the wall is closed.

7.2 Disassembly

Product information according to ”Commission Regulation (EU) No 1253/2014, annex IV – Information requirements for RVUs as referred to in Article 4(1)” can be found on our website.

Direct link: Declarations, choose ’Disassembly’.

It contains a description of the required tools and procedures for manual disassembly for the effective recycling of materials.

7.3 Disposal

	**NOTICE**
	Disposal should be carried out by authorized professionals following current applicable legislation and rules. The unit contains among others electrical and electronic components, which must be disposed of appropriately. The unit must not be disposed of as domestic waste.

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