

SEVi 160 RC

Assembly and Operation Manual

Notes

Explanation of the safety-relevant symbols and terms used in this manual:



Danger: indicates a danger with a high risk level which, if not avoided, can result in death or serious injuries.



Warning: indicates a danger with a medium risk level which, if not avoided, can result in death or serious injuries.



Caution: indicates a danger with a low risk level which, if not avoided, can cause slight or moderate injuries.



Note: Failure to adhere to the instruction or manual can damage the device or affect the proper functioning of the device.

For the purpose of this manual, the term qualified personnel refers to persons who have the appropriate professional education to perform the activities required (e.g. electrical installation, heating and ventilation engineering) and know the relevant standards and regulations.

For proper disposal of packaging, separate it according to the specific material! If you want to dispose of the system, observe the current provisions! Contact the local authority for detailed information!



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1. General information concerning the Assembly Manual

Check the product for completeness (see packing slip) and transport damage immediately after receiving it! The product must be stored at a safe and dry place!



Adhere to the instructions of the Assembly Manual!

Please, observe the **approval regulations** and the applicable **construction provisions** as well as the **fire prevention regulation** and **accident prevention regulations** of the Employers' Liability Insurance Association when planning, installing and operating the system. When planning the ventilation system, details must be discussed with the responsible chimney sweeper and construction manager!

Before installation, contact your planner to get to know whether a RAL installation is required.

Assembly works and electrical installations are to be carried out by qualified personnel!

Use the system only in compliance with the applications described in this documentation and only in connection with components which have been recommended and approved by the company SEVentilation and are specified in this documentation.

Modifications or reconstructions of the system are not permitted. The correct and safe operation of the ventilation system is only possible, if it is properly transported, stored and mounted as well as carefully operated and maintained. This documentation is part of the ventilation system and must always be at hand. Observe all safety regulations included in this documentation.

The manufacturer shall not be held liable for damages caused by improper installation, connection and use of the system. The warranty will expire. The legal warranty periods shall apply according to the General Terms and Conditions!



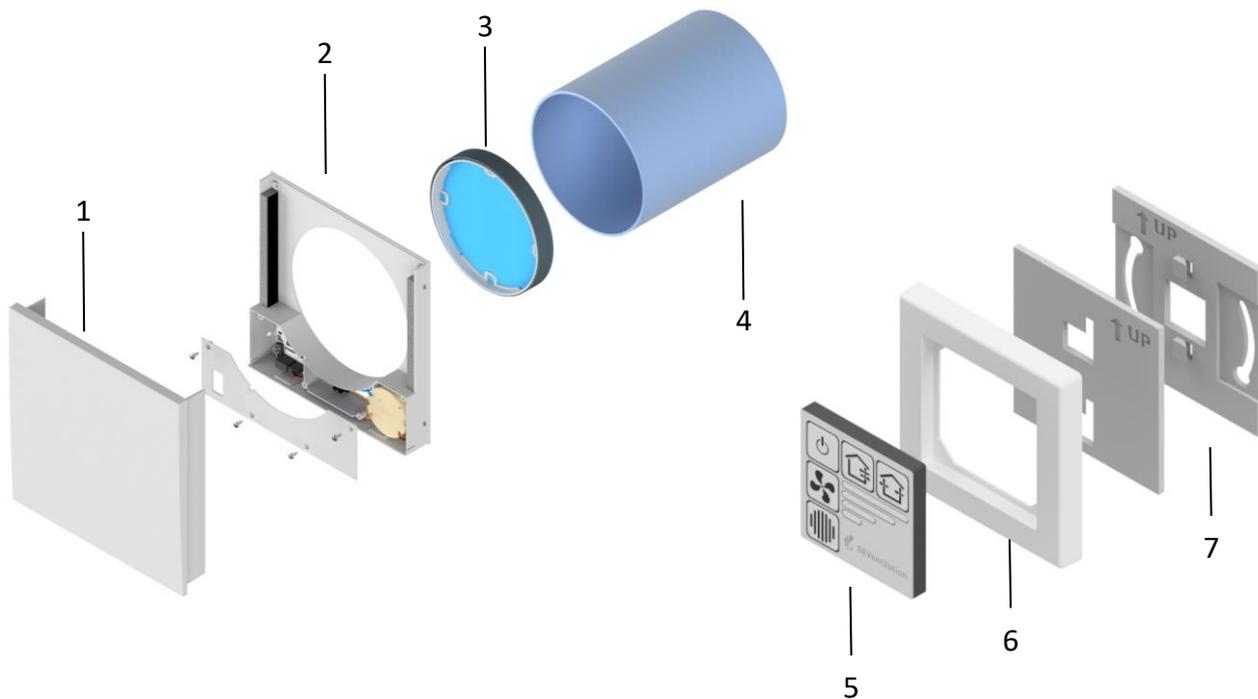
Danger: Work on electrical systems may only be carried out by persons who have the appropriate professional training to perform the activities required (e.g. electrical installation, heating and ventilation construction) as well as knowledge of the relevant standards and regulations.

1.1 Product description and instructions for use

The SEC-RC radio control allows the operation of SEVi ventilation units in a wireless network (mesh network) with up to 16 SEVi ventilation units. It is possible to integrate up to three operator control units (OCU) into one network, thus enabling operation from different locations of the object.

At least, one operator control unit (OCU) and two ventilation units are required.

The SEC-RC capability of SEVi ventilation units is only given in combination with the SEC-RC-IB interior panel designed for this purpose. It includes the required power supply unit and the receiver board (master or slave).



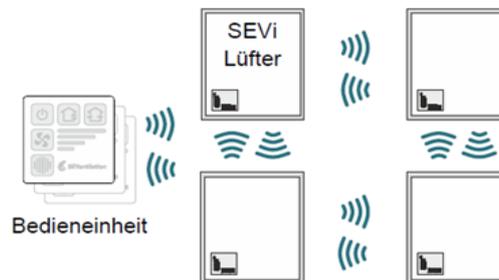
OBJECT	Designation
Interior panel	
1	Interior panel IB2424F (upper part with sound insulation mat)
2	Interior panel IB2424F (lower part with receiver module and power supply unit)
3	Filter element IB2424F (position in the fixation tube)
4	Fixation tube (depending on the version, it is included in the preparation or complete set of a SEVi 160 system)
Operator control unit (OCU)	
5	Operator control unit (membrane keyboard)
6	Cover frame (single frame)
7	Mounting plates (base and wall plate*)
	*The wall plate can be fixed directly to a wall or to an existing flush-mounted box.

The OCU can be mounted at any position in the object (radio contact to the receiver modules

provided). It is possible to mount it on a possibly already existing flush-mounted box or directly to a wall.

The OCU communicates with the receiver modules in a wireless way. It should be noted that the range may be limited under certain circumstances caused by the building.

Within a network, a main receiving module (master) exists as a central point. The other receiver modules (slaves) communicate with this master.



The operator control unit communicates with the master. The master receives its commands via the OCU and then passes them to the slaves. Mutual communication between individual slaves (master/slave or slave/slave) makes it possible to setup the network across the board, since signals received from a slave are also transmitted from the OCU to the master and thus to the other slaves.

Likewise, accumulated error or warning messages are sent back to the OCU via the master to generate a corresponding message for the user.

For the power supply, a 230 Volt connection must be provided at the fan mounting location.

®

! Notes

- The maximum range of the radio signals depends on the local conditions.
The distance between two radio modules (master/slave or slave/slave) is max. 15 m (for two standard interior walls of 240 mm of aerated concrete or drywall)
- A maximum of 16 ventilation units with up to 3 operator control units can be combined in a wireless network
- The ventilation system is always controlled at the operator control unit
- Do not operate the system in rooms with high dust levels
- Do not operate the system in rooms where decomposing gases are used
- The system not suitable for drying out buildings
- Initial setup of the ventilation system only after completion of the construction work
- Closure of the ventilation system during construction work
- Application range: -20 °C to +75 °C
- Operating temperature: 0 °C to + 50 °C
- Rel. humidity: max. 95 % (non-condensing)

2. Assembly

! Note:

Study the complete Assembly Manual carefully before starting the installation to avoid possible installation errors! The installation of the system requires prior thorough planning by the responsible construction manager!

Faulty installation can cause trouble in the operation of the system and can void the warranty. The system must be installed by qualified personnel!

All optionally listed components are not part of the standard scope of delivery and are available for an additional charge.

2.1 Positioning the wall opening

The place of installation is generally determined during the preparation of the ventilation planning. Please observe the minimum distances specified for the respective installation variants!

Minimum distance to adjacent objects (windows, doors, etc.)

! Check that the minimum distances are observed on both sides of the wall!

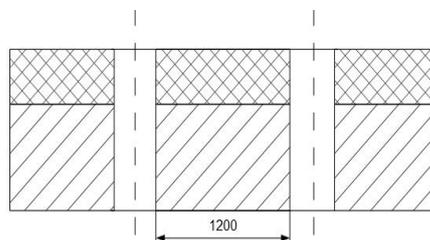
For orientation at window or door edges, the positioning aids from chapter 5 can be used; please observe the wall construction!

Inside: The distance from the center of the wall opening to the ceiling must not be less than 350 mm, since a free distance of about 250 mm to the top is required when the interior panel is mounted.

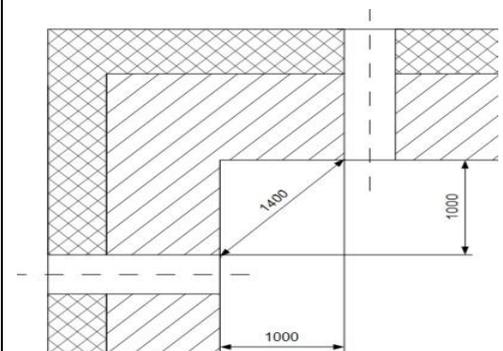
Outside: For the installation of the weather protection hood, a free distance upwards of 350 mm from the center of the wall opening (or 245 mm from the upper edge of the bottom part) is required (**Hood is slid downward!**). If a distance of 350 mm is not possible, please contact us for another solution.

Minimum distances between two ventilation units (e.g. when installed in the same wall)

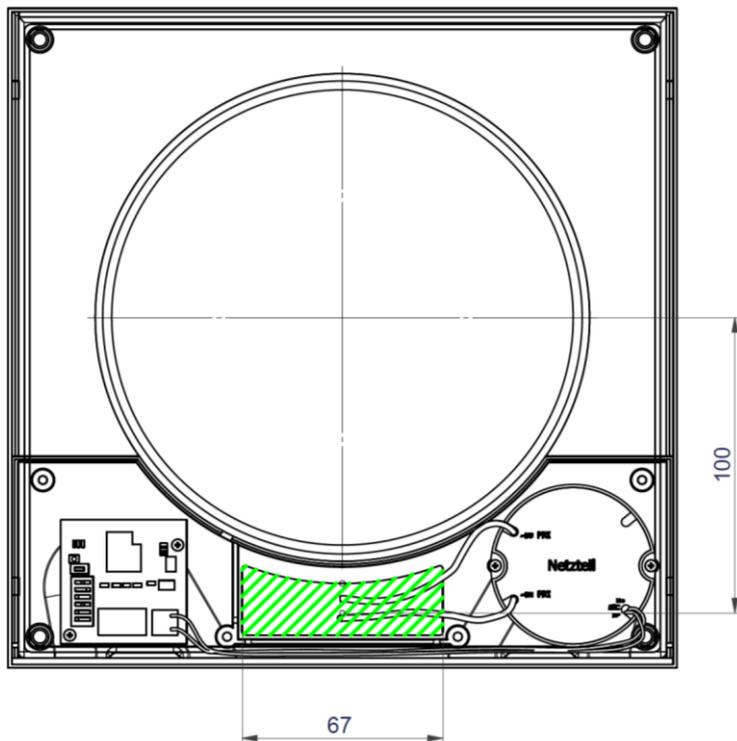
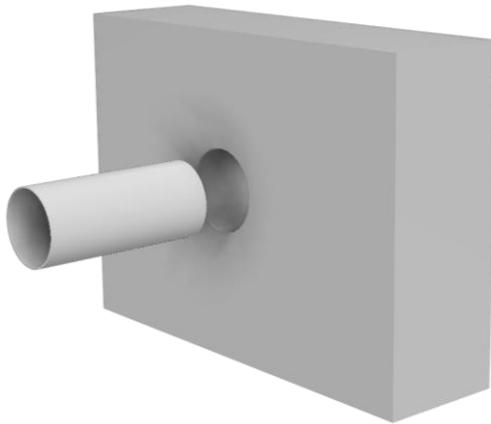
horizontal or vertical:



at right angles:



2.2 Assembly sequence



1. Produce the wall breakthrough by means of core hole drilling, at least 165-170 mm (180 mm possible with subsequent plastering work).

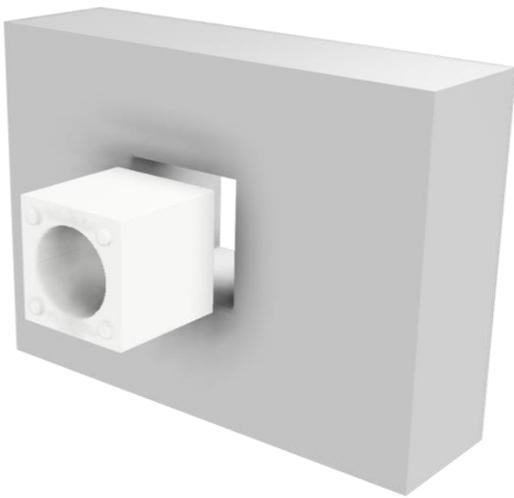
2. Adjust the fan to the total length: shorten the fixation tube to the required length using a saw or flex (**internal plaster – external plaster/additional 5 mm projection on the outside**). Insert the fixation tube with a slope from inside to outside of 1-2°!

After plastering, the pipe must be flush with the plaster on the inside.

The connection / transfer of the 230 V supply voltage is carried out in an area having a width of ca. 65 mm and a height of 15 mm and its center is 100 mm below the center of the core borehole.

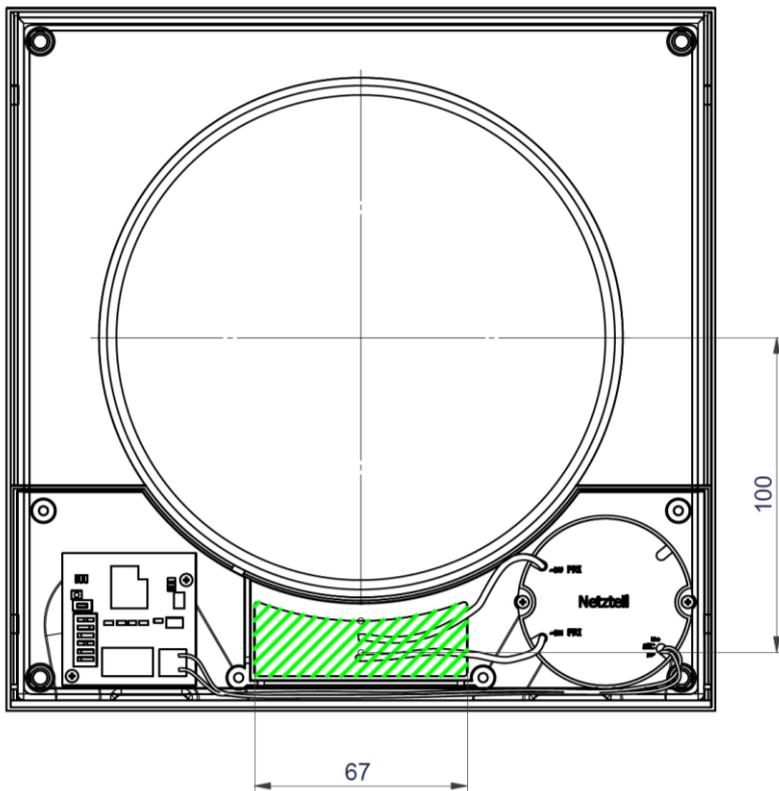


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3. Optional: Use of the shell construction support, creating the wall opening. If necessary, fix the fixation tube in the shell construction support with a mounting adhesive suitable for PP and EPS! Insert the shell construction support with a slope of 1-2 % from inside to outside.

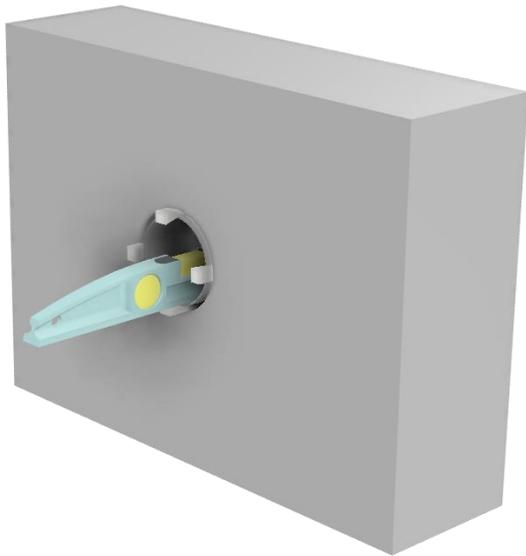
After assembly, the surface of the shell construction support must be adapted to the inner wall by plastering or similar work!



4. The connection or the transfer of the 230 V supply voltage is carried out in an area having a width of ca. 65 mm and a height of 15 mm and its center is 100 mm below the center of the core borehole.



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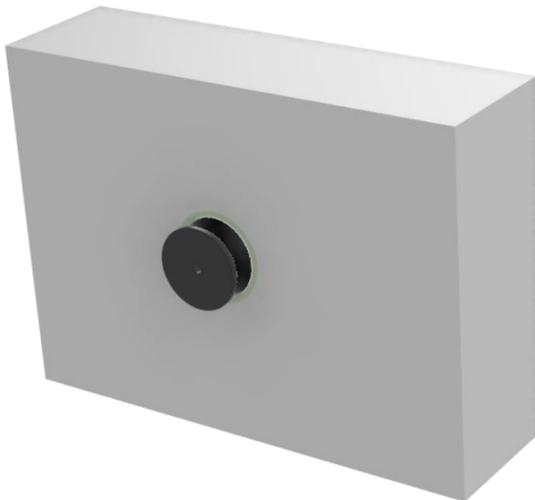


**Sound
insulation
foam
Z-MS**

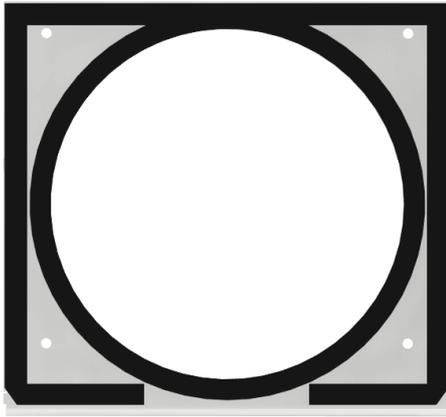
5. Insert fixation tube, align, tension-free, wedge; please insert pipe with a small slope of 1-2 % from inside to outside. (ensure an external pipe projection of 5 mm!)

6. Glue possible **vapor barrier** with fixation tube.

7. Foam with **sound insulation foam (SEVi Z-MS) all around, all-over.** To avoid deformations, insert the circular blank or the fan tray. (Not applicable when using the shell construction support.)

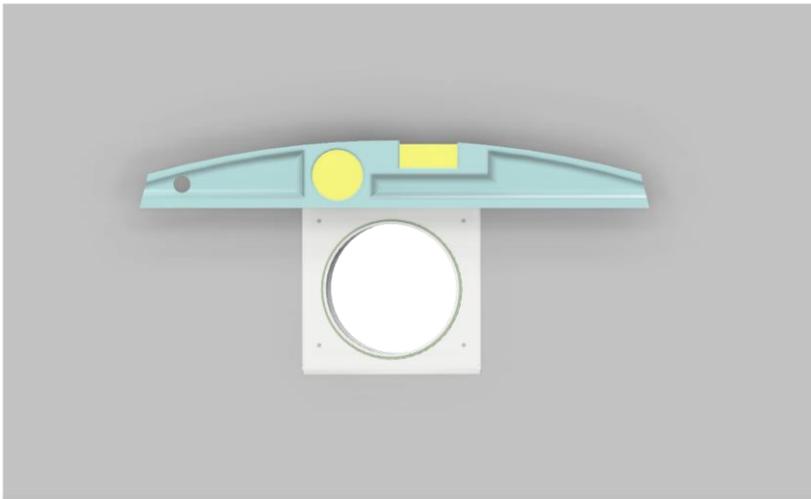


8. To avoid soiling inside the fan, a protective cover must be installed during the entire construction phase (e.g. SEVi plaster cover).

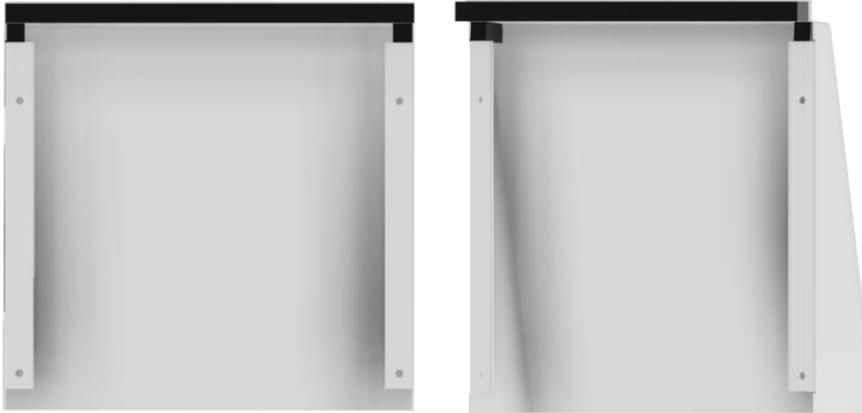


9. Apply the sealing tape to the back of the lower part of the weather protection hood (compensation between wall and lower part). A distance of approx. 60 mm must be left free in the center of the lower section. The inner sealing tape and outer sealing tape must not contact each other in this area!

Ensure that the **tube projects 5 mm** above the exterior plaster!

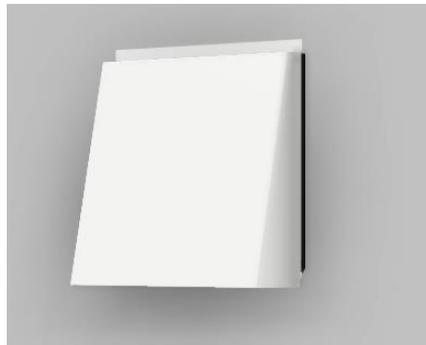


10. Mount the lower part horizontally at the facade (drip edge downwards to the outside). For doing this, put the lower part onto the protruding fixation tube, align it by using the level, mark boreholes and mount it with the wall structure by using appropriate anchor bolts and screws.



11. Fix the sealing tape at the back of the upper part (hood) and in the edges (strips with a length of about 1 cm each).

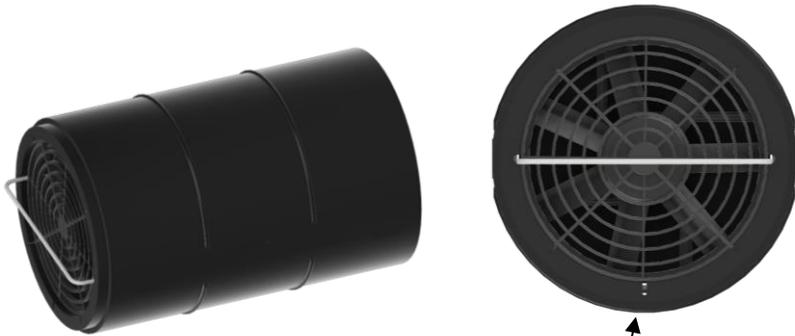
The optional sound insulation of the weather protection hood is glued centrally into the inside of the hood, unless it has already been prepared at the manufacturer's.



12. Slide the hood from above onto the lower part. After the assembly of the weather protection hood, the connection to the wall above and to the sides can be additionally sealed by a permanently elastic sealant, if required.

! Note: The stainless steel weather protection hood protects the ventilation system so that precipitation or rain cannot directly enter the system. Additional measures must be taken for increased requirements, e.g. in case of salty air, chlorine-containing air or rust film!

For highly insulated exterior facades, make sure that there is sufficient protection against algae formation!



Condensation discharge

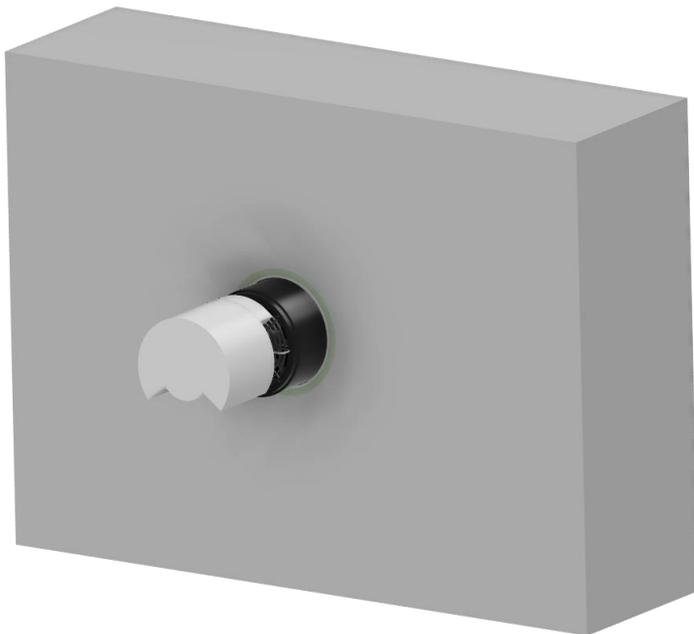
13. Inserting the fan drive: Insert the fan drive almost up to the end of the tube with the ceramic part showing to the exterior wall side!

! **Note:** The fan should not protrude from the tube!

In the case of sound insulated fan trays, the end with the sound-insulating foam must be carefully inserted into the fixation tube.

The **optionally available sound insulation elements** for the interior tube of the SEVi 160 PLUS or other sound insulation elements are to be positioned in the fixation tube after sliding in the fan drive.

! **Important:**
The condensate discharge (recognizable by the fan cables) must be at a **6 o'clock position!**



14. Assembly of the additional sound insulation inserts. Insert the sound insulation elements when the fan tray has been placed in the fixation tube.

Depending on the total tube length, one or more sound insulation elements are installed,

! Important:

The insert with the spacer element (not available for standard sound mats) must be inserted first (spacer element toward the fan. -> The spacer element ensures the distance of 30 mm between the fan tray and sound insulation element). The opening of the sound insulation elements for increased sound insulation is at the bottom!



The length of the sound insulation elements must be adjusted such that **20 mm remain free** on the room side so that the interior panel can be placed in the fixation tube.

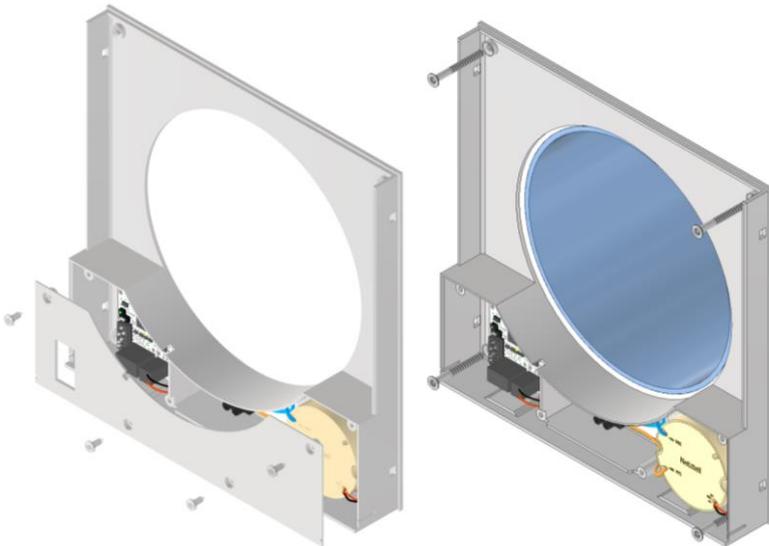
15. Mounting the interior panel:

Separate the upper part of the interior panel from the lower part.

Remove the protective cover of the electronics.

Position the lower part above the fixation tube and mark the boreholes. After drilling the holes, fix the lower part by screwing.

After the adjustment (master device and combination of devices with definition of the air supply and exhaust air direction-> see chapter 3) the power supply is established.



Attention! 230 V

Then, the electronic protection cover is mounted again.

Now insert the dust filter element in the fixation tube.

After mounting the lower part, the upper part is simply slid on.



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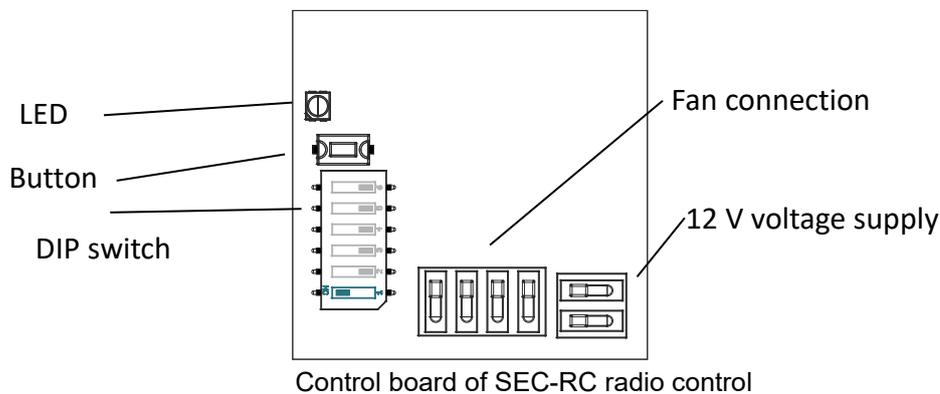
3. Initial setup / setting the SEC-RC radio control

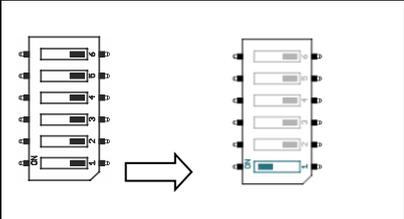
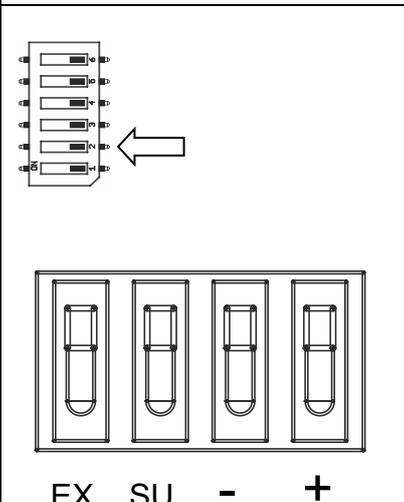
3.1 Preparing the control boards

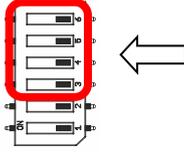
In order to build a network with the SEC-RC radio control components, a master device must be determined in the first step. This master device is mainly responsible for transmitting the signals from the OCU to the other devices (slaves).

It is recommended to select a centrally located device for the later network.

Each receiving module (slave) can be used as a master. The master function is assigned via DIP switches.



	<p>Defining a device as master – switch 1 (ON)</p> <p>Only one master may be within the network! For the other devices, switch 1 remains deactivated (OFF).</p>
	<p>Setting the start direction – switch 2</p> <p>The fans are supplied by the control board with a 12 V voltage (+/-) and a control signal. The control signal is responsible for the direction of rotation and the fan speed.</p> <p>Together with the DIP switch 2, the fans are set for paired operation.</p> <p>In delivery condition, the setting of DIP switch 2 is OFF and the connection for signal transmission corresponds to the "Supply air" start direction.</p>



Switches 3 to 6 are used to define the different types of ventilation devices.

Configurations

	Switch position ON				Device type/configuration
	3	4	5	6	
1					SEVi 160 (sound-optimized operation) until 12/2020
2	•				SEVi 160 until 12/2020
3		•			SEVi 160 exhaust air until 12/2020 – stage 4 is designed as a pure exhaust solution in which all fans connected are operated in the exhaust air mode regardless of their terminal assignment! Sufficient supply air must be ensured!
4	•	•			not assigned
5			•		not assigned
6	•		•		not assigned
7		•	•		not assigned
8	•	•	•		not assigned
9				•	not assigned
10	•			•	not assigned
11		•		•	A160/ZU160
12					not assigned
13					not assigned
14					not assigned
15					not assigned
16					not assigned

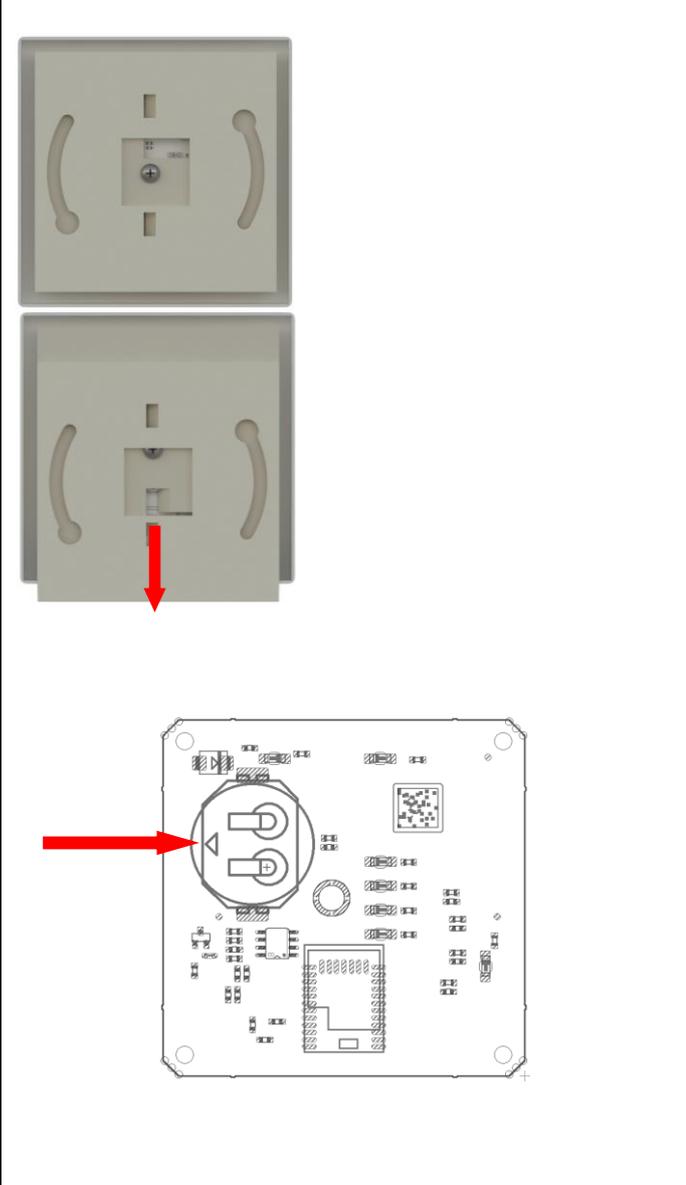


Note:

Upon delivery of the control boards, all DIP switches are set to the "OFF" position (slave and device configuration 1).

3.2 Preparing the operator control unit (OCU)

The OCU is energized by a CR2032 button cell. It is included with the OCU in the scope of delivery and must be used before setting up the system.

	<p>Place the OCU face down on a clean and non-scratching surface.</p> <p>To insert the button cell (CR 2032), the wall mounting plate must be removed from the OCU.</p> <p>To do this, slide the upper plate in the direction of the arrow and then remove it.</p> <p>The OCU can be separated from the support plate by loosening the screw.</p> <p>Remove the cover frame and the spacer.</p> <p>The</p> <p>Insert the button cell into the holder from the left. Observe polarity! "+" must point upwards!</p> <p>Reassemble the OCU in reverse order.</p> <p>Observe the position markings (↑UP) on the mounting plates and the OCU!</p>
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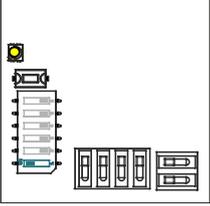
If no settings are made on the OCU, the OCU switches to energy saving mode approximately 5 seconds after the last button is pressed (LED fan stage and operating mode go out).

To change the fan speed or the operating mode, for example, the OCU must be "woken up" from the energy saving mode. The first keypress on any button ends the energy saving mode. Afterwards, the OCU reacts to the subsequent inputs / changes.

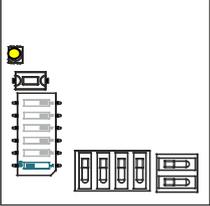
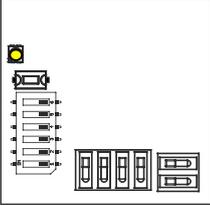
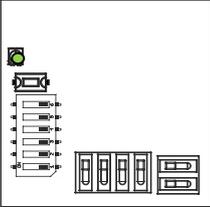
3.3 Pairing

3.3.1 Pairing OCU and master

Establish the power supply of the ventilation system.

<p>Master</p> 	<p>Start the connection establishment</p> <ul style="list-style-type: none"> • Press the button on the master for 5 seconds • LED flashes yellow <p>After activation, the master is in pairing mode for about 4 minutes.</p>
	<p>Press both buttons on OCU for at least 3 seconds until the blue LEDs flash alternately*.</p> <p>*If the OCU is not used, it switches off the LED after approximately 5 seconds. The OCU must first be "woken up" from this status by pressing any button.</p> <p>When the OCU has recognized the master, a connection is established and saved.</p>
 	<p>After successful connection, the LEDs light up for approximately 3 seconds.</p> <p>If the OCU signals a fast flashing sequence, the connection establishment has failed.</p> <p>Check the settings on the master and repeat the process.</p>

3.3.2 Pairing slave and master

<p>Master</p>  <p>Slave</p> 	<p>Start the connection establishment</p> <ul style="list-style-type: none"> • Press the button on the master for 5 seconds • LED flashes yellow <p>After activation, the master is in pairing mode for about 4 minutes.</p> <ul style="list-style-type: none"> • Press the button on the slave for 5 seconds • LED flashes yellow <p>A connection is established when the slave is within the range of the master.</p>
<p>Slave</p> 	<p>A successful connection establishment is signaled by the green LED.</p> <p>Follow the same procedure for further slaves.</p>

4. Messages / troubleshooting / fault reports

OCU					
LED		Signal	Possible cause	Troubleshooting	
			Flashing	OCU not paired	See page 19
			Flashing alternately	Pairing in progress	Wait for pairing
			Permanent flashing (ca. 3 seconds)	Pairing successful	No action required. System switches to normal status
			Fast flashing (ca. 3 seconds)	Pairing failed	Check devices and/or reduce distance
			LEDs flash (ca. 3 seconds)	Loss of connection between OCU and master	Check ventilation system with master setting -> see control unit for possible causes
			LEDs flash (ca. 3 seconds)	Loss of connection between master and one (or more) slave(s)	Check the function of the ventilation systems
			LED flashes	Filter change interval expired	Change the filter -> see maintenance instructions



Note: If no settings/changes are made on the OCU, it will switch to the energy saving mode to increase the life of the button cell.

After pressing any button once, the OCU displays the set fan stage and the current operating mode. If another button is pressed while the display is lit (e.g. fan stage or operating mode), the action be carried out accordingly.

If the PDC does not react as described, if a button is pressed once, it can be that the system is switched off (switch on by holding the button  for at least 5 seconds) or the button cell must be replaced (see page 18).

Control

LED		Master	Slave	Possible cause	Troubleshooting
Color	Signal				
Red	Flashes	Loss of connection to a slave*	Loss of connection to the master	Interruption of power supply to the system	Check power supply
				Impairment of signal transmission	Check for interfering objects

* Losses of connection are detected and signalized within two minutes. The master continues to try to establish the connection to

		the failed slave. If the fault corrects itself (e.g. in case of short-term local radio network interference or temporary interruption of the power supply to individual systems).			
Red	Duration 3 s	Connection establishment not possible		Maximum number of participants reached	Establishment of a second net
Yellow	Flashing	Connection mode active	Connection mode active	--	--
Yellow	Duration 3 s	Connection successful	--	--	--
Green	Flashing	No connection established	No connection established	System/components are not paired	Procedure as in 3.3 Pairing p. 19
Green	Permanent	Connection OK	Connection OK	--	--

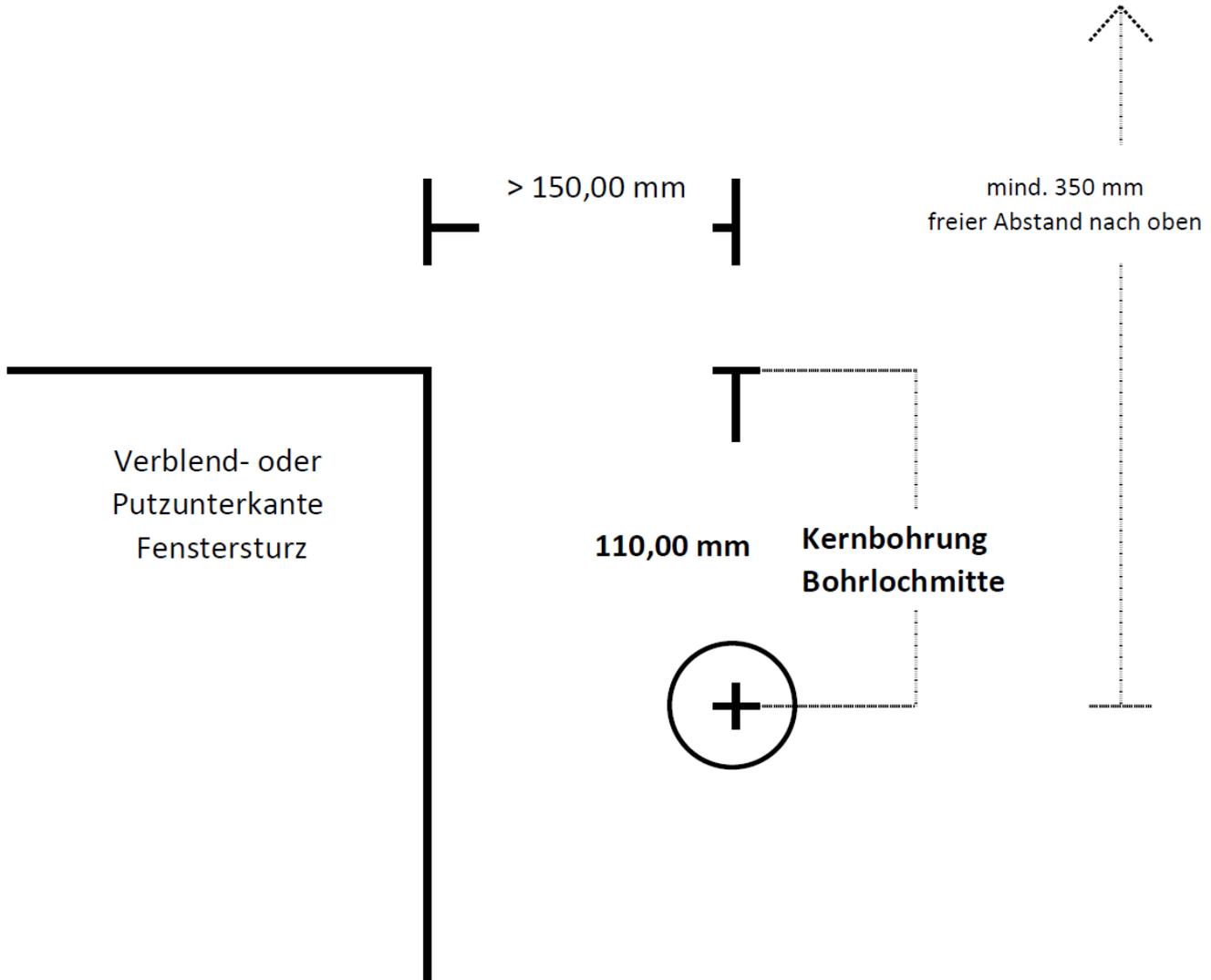
Ventilation unit		
Problem	Possible cause	Troubleshooting
Fan does not run	System switched off	Switch on the system
	Snooze mode activated	Stop snooze mode (press any button on OCU – if OCU is in energy saving mode, you must press it twice)
	No power supply	Check whether the LED on the fan flashes (upper part of the interior panel must be removed for this check)
	Wrong device type selected	Set system type -> see page 16
	Connection control board/fan interrupted	Check connection on board and plug connection to fan
Fan runs continuously despite control being switched off	Control signal is not transmitted to the fan	Check fan connection on the control board
Individual fans change (unwanted) the direction of rotation with a time delay	Wrong device type selected	Set device type -> see page 16
	Problems with signal transmission due to excessive distance or interfering elements (metal shelves, reinforced concrete walls)	Use range module

5. Positioning aids

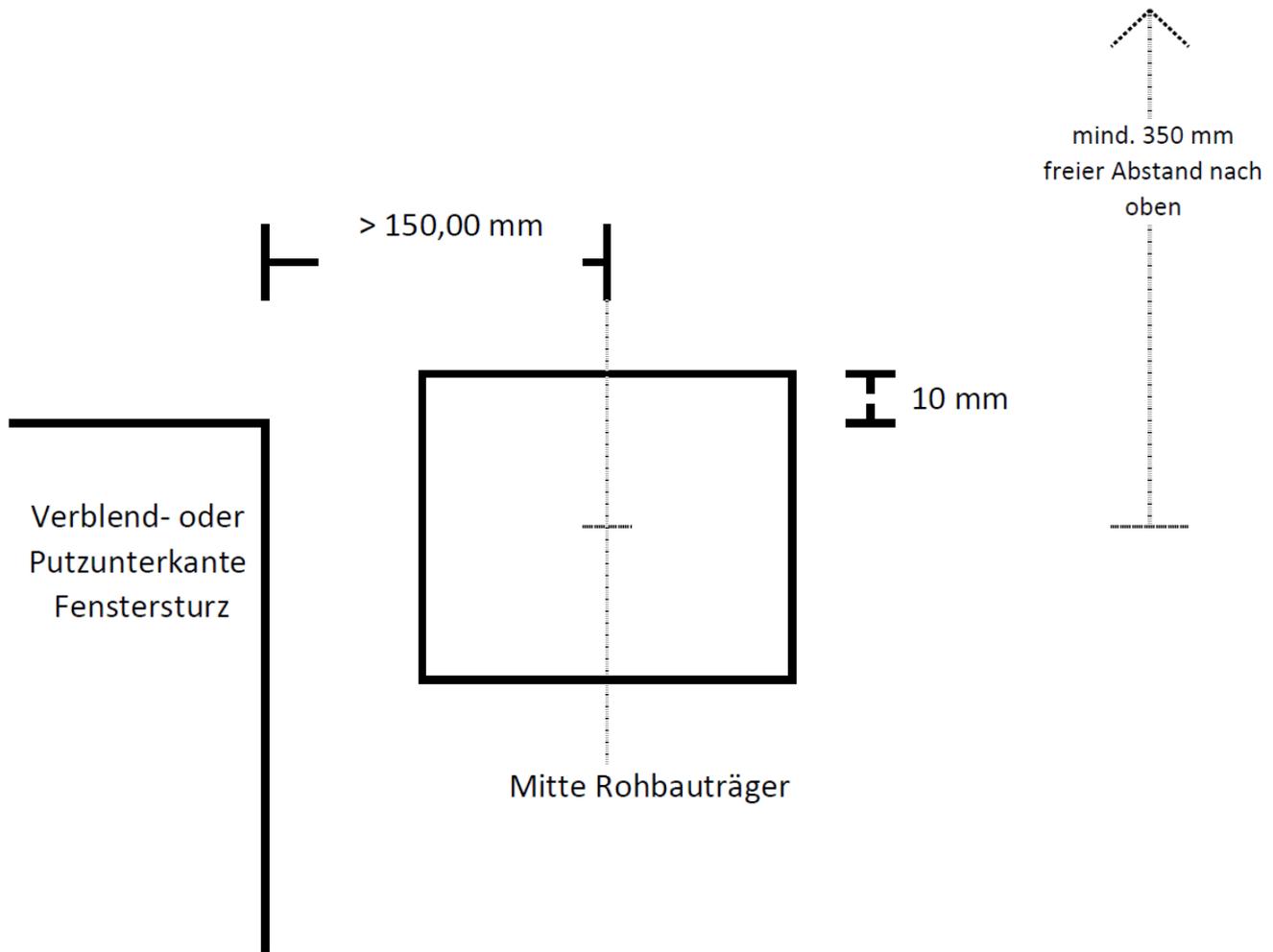
Minimum distance to adjacent objects (windows, doors, etc.)

Ensure that the minimum distances are kept on both sides of the wall! Please contact us, if you are not sure about the distances. Thanks to the large selection of internal and external end parts we can find a solution for almost any problem.

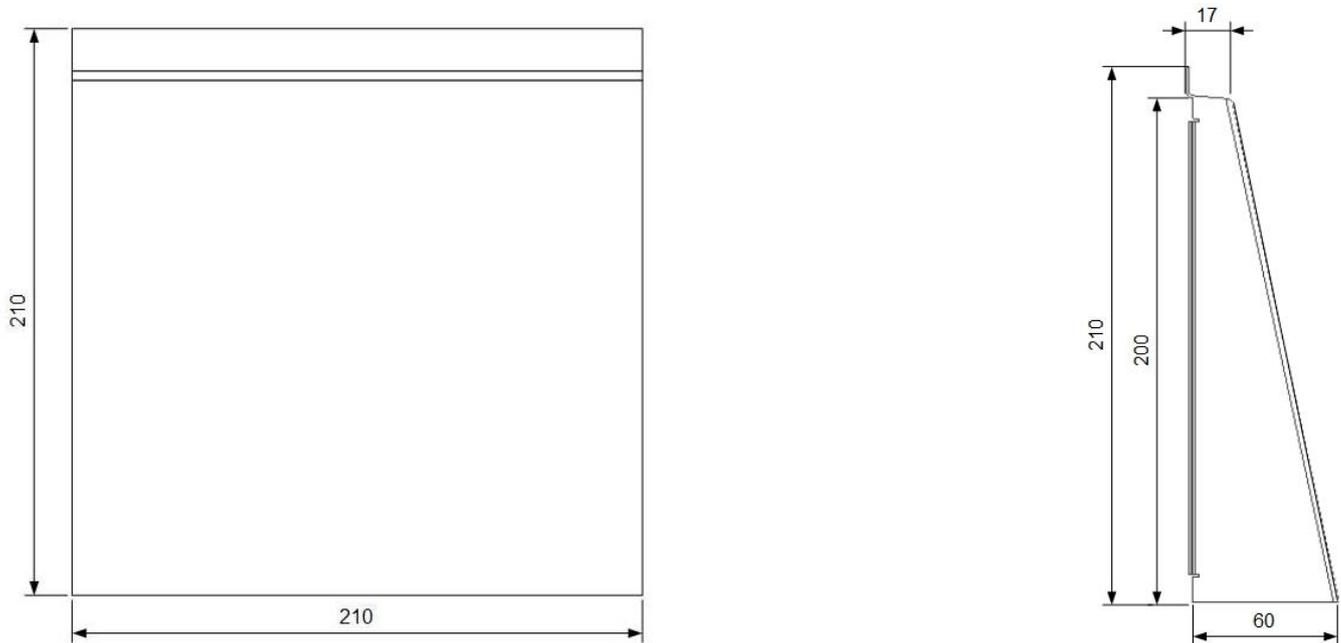
Core borehole



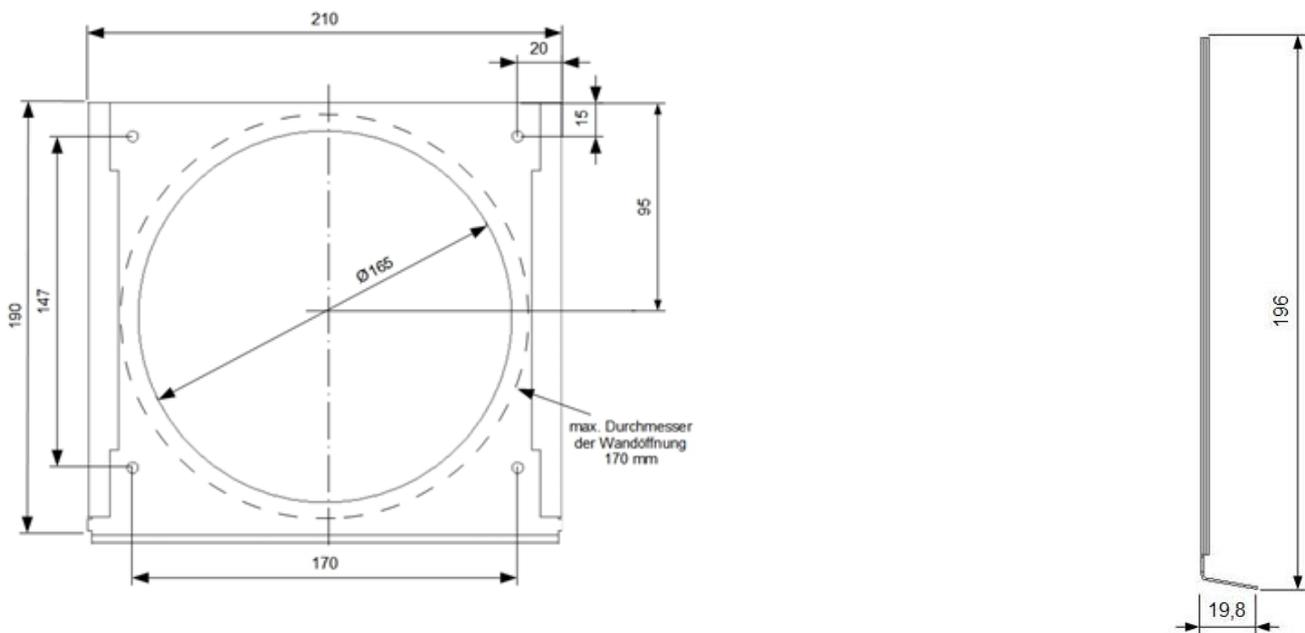
Shell construction support



Dimensioning weather protection hood – upper part

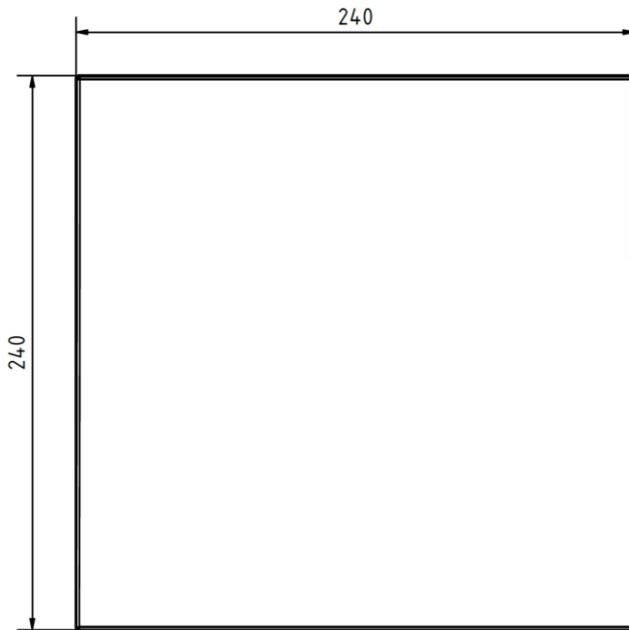


Dimensioning weather protection hood – lower part

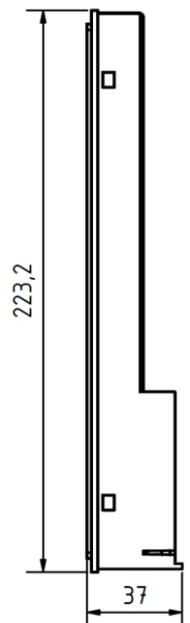
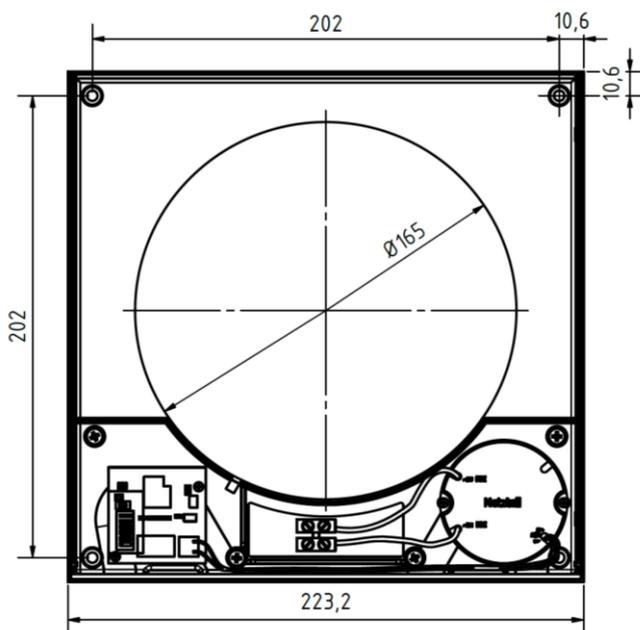


Dimensioning internal panel

- upper part



- lower part



EC Declaration of Conformity

The company

SEVentilation GmbH
E.-Thälmann-Str. 12-14
07768 Kahla
Germany

declares under its sole responsibility that the products:

type: **SEVi 200 / SEVi 200U / SEVi 200L / SEVi 160 / SEVi 160ULF / SEVi 160DUO / SEVi 160U / SEVi 160L / SEVi 160R / SEVi 160CE / SEVi 160RO / SEVi 160ALD / A160**
(decentral ventilation devices with and without heat recovery),

to which this declaration refers, comply with the following standards and normative documents:

EN 55014 -1; 2006

EN 55014 -2; 1997, +A1; 2001

EN 61000-6-1, 2007; Generic Standard EMV – Immunity

EN 61000-6-3, 2007; Generic Standards EMC – Emission Standard

EN 61000-3-2, 12.2001; Low-Frequency System Perturbation

EN 61000-3-3, 1.1998

EN 60335-1, EN 60335-2-65; (Safety of electrical appliances for household and similar purposes)

EN 55014 -1; 2006

according to the provisions stipulated in the Directive 2004/108/EC or (EMC 2008), the Directive 2006/95/EC (Low Voltage Directive) and the RoHS Directive 2002/95/EC.

The decentral ventilation systems: **SEVi 200 / SEVi 200U / SEVi 200L / SEVi 160 / SEVi 160ULF / SEVi 160DUO / SEVi 160U / SEVi 160L / SEVi 160R / SEVi 160CE / SEVi 160RO / SEVi 160ALD / A160** with and without heat recovery are used for the ventilation of apartments / accommodation units.

Kahla, December 10, 2015



Dipl.Wirt.Ing. (FH) Nico Schellenberg

Technical changes are reserved to the manufacturer!