

freeAir® 100

Manual

[G] General

[O] Operation

[I] Installation

[S] Service

Quick Start Guide

Switching On / Off

Press the on switch.

Start-up routine and self check can take a few minutes – turning it off can take a few seconds. All LEDs will blink (all colors).



Comfort Level

Press the  - Button repeatedly to change the Comfort Level.

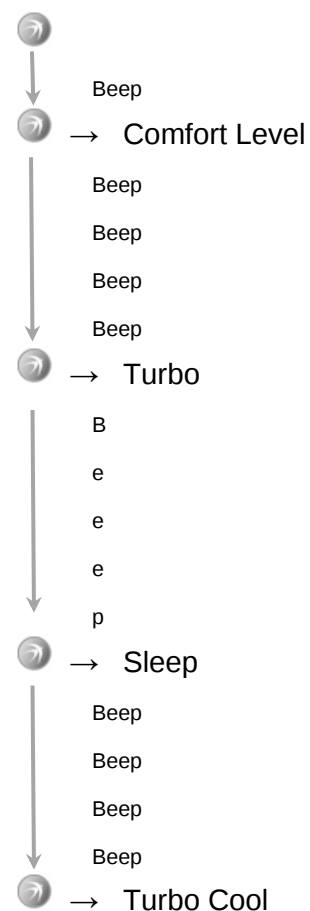
More blue LEDs mean a more active operation (minimum ventilation, humidity, CO2, cooling ... etc.). However, a change in Comfort Level does not have to lead to the immediate increase in fan speed.

Blinking or flashing blue LEDs indicate Service or Dehumidification Operation.

Turbo / Sleep / Turbo Cool

Push the  - Button until you hear 4 short beeps. This should be selected if you wish to air out rooms at the highest device setting for 30 minutes. Push and hold the  - Button longer and your freeAir100 will pause for 90 minutes.

To start Turbo Cool Function for a maximum duration of 3 hours push and hold the button yet longer for.



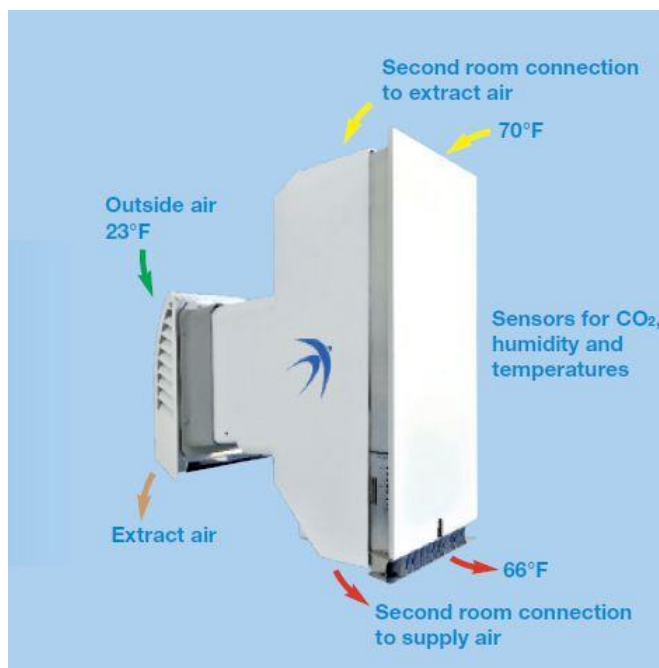
Dear customer

We thank you for choosing the freeAir ventilation system. Please thoroughly read and follow this manual.

After successful installation please select the desired Comfort Level to activate the device. Proper operation is now taken care of by the sensors and the intelligent controller of your freeAir 100.

Enjoy the ambiance offered by the right amount of fresh air.

Your bluMartin-Team



General

Safety – General

This manual is only valid for the fresh air system freeAir 100.

This manual is delivered as part of the device. Please keep this manual readily available.

Please make sure all persons operating the device are familiar with this manual. Please observe all instructions given in this manual.

Installation, commissioning and servicing must only be performed by sufficiently qualified persons.

Neglect to adhere to this manual will void the warranty.

Please also observe our general terms and conditions. Please see www.bluMartin.de/cos.

Safety – Icon

DANGER

This sign indicates danger by potentially deadly electrical shock.

DANGER

This sign indicates that instructions must be followed precisely in order to prevent personal or material damage.

Warning

To avoid any property damage please pay special attention to this sign.

Notes

This sign emphasizes important information.

Safety indications**DANGER**

- The device uses electrical power. Some parts of the device carry line voltage even several minutes after unplugging the device.
- Never open the device while appliance is plugged in.
- Electrical installation as well as electrical service work must only be performed by qualified personnel.
- Electrical installation has to be in accordance with the appropriate national association or electrical code.
- The device may only be operated in good condition and unaltered condition.
- All instructions and notes with respect to maintenance (see Service paragraph) are to be implicitly followed.
- Only operate if device is in good technical order.

In case of error or damages that constitute a safety issues turn the device off.

Prevent the device from being turned back on by unauthorized persons, and have the device immediately repaired by a qualified technician.

- Use original bluMartin GmbH repair and service parts only.

Intended use

The freeAir 100 is a decentralized fresh air ventilation system with heat recovery. The purpose of the device is to ventilate one or more rooms in apartments or houses. The device is installed in an outside wall.

Expended air is drawn from the room the device is installed in. The air is drawn from other rooms (such as kitchen or bathroom) in case the 2nd room extract option is installed.

Fresh and filtered air is returned to the room the device is installed in. The addition of the 2nd room supply option enables fresh and filtered air return to an additional room for instance a bed room.

Inappropriate use

The device is exclusively to be used for ventilation purposes.

It is not intended for drying buildings.

DANGER

Only air not containing flammable, explosive or corrosive components or air not containing any other dangerous or hazardous components must be used for ventilating purposes.

Disposal

Dispose of the freeAir100 in accordance with your local rules, regulations or guide lines.

Please pay special attention to correctly sorted metal, plastics and electronics.

Transport and Storage

Components of the freeAir 100 may only be transported in the intended packaging. Packaging must be protected from moisture.

Included in Shipping



Bare brickwork set (BOX + second room extract)



Outside hood



freeAir 100



Front plate

Technical Data

Dimensions inside front	28 x 58 cm (front plate); 30 x 63 (front cover II)
Wall thickness	32 to 53 cm incl. stuck (other dimensions with accessories)
Air stream	8 to 100 m ³ /h
Heat supply gradient	87 % (by PHI criteria and EN 13141-8)
Heat recovery	94 % (at 50 % relative humidity)
Heat exchanger	Cross counter flow; aluminum
Power grid connection	100 to 265 V AC; 45 to 65 Hz; internal fuse 3 A
Energy usage	Standby → 1 W; 20 m ³ /h → 4 W; 50 m ³ /h → 9 W; 100 m ³ /h → 38 W (max. tube length)
Coefficient of performance	typical 30 to 50 (energy production to energy usage)
Weight	10 kg
Noise level in room (distance of 1 m)	20 m ³ /h → 17 dB (A); 30 m ³ /h → 22 dB (A); 50 m ³ /h → 34 dB (A) with premium cover → 22 dB (A); 85 m ³ /h → with premium cover → 35 dB (A)
Noise dampening	Standby → 52 dB (DIN EN 10140-2; D _{n, e, w}); Operation → 46 dB (with premium cover max. 60 dB)
Control on demand	Intelligent 5-level Comfort Control
Air stream control	Automatic; continuously adjustable; constant capacity; balanced
CO ₂ control	Automatic
Moisture management	Automatic (typical 40 to 60 % relative humidity)
Summer cooling	Automatic and with Turbo Cool
Anti freeze protection	Automatic bypass-control at about -5°C outside
Material temperature range	-40 to +50°C outside and 0 to +40°C inside
Filter supply air (ISO 16890)	Protect ePM10 (pollen) or Protect plus ePM1 (allergy)
Filter exhaust air (ISO 16890)	Protect ePM10
Smart Home	Connect WiFi; Connect USB bluHome Connect (accessory for ModBus,KNX,BACnet,RS232)
Color	Front plate white or primed (ready to paint or arrange)
Approvals	DIBt: Z-51.3-287; Passiv house: 0641s03 and 1220s03

Product spec sheet – Directive 2009/125/EC

Supplier	bluMartin GmbH
Ventilation model	freeAir 100 – single room (non-ducted) freeAir 100 – multiple room (ducted)
SEC-Class	Single room: A+; -42.4 kWh/a m ² Multiple room: A+; -42.7 kWh/a m ²
Model-Type	Bidirectional residential ventilation unit
Drive-Type	Variable speed drive
Heat recovery	Recuperative
Thermal efficiency	87 %
Maximum flow rate	100 m ³ /h
Maximum power input	40 W
Sound power level	Single room: 70 m ³ /h → 48 dB (A); 20 m ³ /h → 28 dB (A) Multi room: 70 m ³ /h → 47 dB (A); 20 m ³ /h → 23 dB (A) (with premium cover 12 dB less)
Reference flow rate	70 m ³ /h
Reference pressure difference	65 Pa
Specific power input	Single room: 0.22 W/m ³ h Multi room: 0.24 W/m ³ h
Control factor	0.65 (local demand control)
Internal leakage	1.7 % (at 100 m ³ /h and 50 Pa)
External leakage	3.2 % (at 100 m ³ /h and 100 Pa)
Mixing rate	3.5 %
Visual filter warning	Red LED left and right side of device (dirty filters result in diminished air flow as well as over or under pressure)
Internet address	www.bluMartin.de
Sensitivity to pressure variations	3.0 %
Air tightness	3.2 m ³ /h (at 100 Pa)

Wessling, July 8th, 2020 Bernhard Martin

Operation

DANGER ⚠

Respect all references regarding safety and use of the freeAir 100 in part General [G]!

Display- and Operating Elements

on Main Switch

Use for turning the freeAir 100 on or off.

All LEDs will blink slow during start and self-test operation.

During a controlled „Shut Down“ LEDs will blink fast. Vent flaps are being shut.

Warning ⚠

Wait to restart until all LEDs are off.



🔄 - Button

Operation of your freeAir 100 is so simple – you only need this button as the only control element.

With this button you can control Comfort Level, start or stop the Turbo, select Sleep or Dehumidification mode (see below).

You can change the Comfort Level by pushing 🔄 - Button several times fast. The more blue LEDs are lit the more active the instrument controls (minimum ventilation, CO₂, humidity, cooling...).

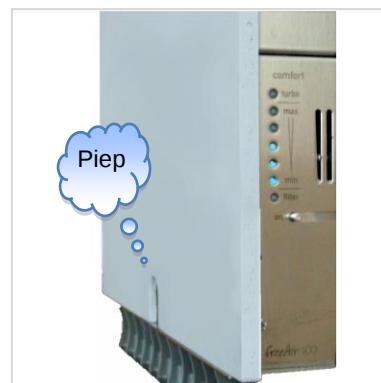
Changing Comfort Level may not immediately change fan speed.



Audible Signals

A continuous beep-sound indicates occurrence of excessive temperatures or harmful CO₂-Concentrations.

(See part [S] Service).



Yellow LED

This LED will blink slowly during Turbo operation.

The LED will blink fast during Turbo Cool operation.

Continuous illumination indicates:

- reduced minimum ventilation due to active defrost function eliminating room air humidification, or
- the freeAir pauses, because outside air is so humid that room air condensation could occur or because outside temperatures are below -22°C (-30°F).



Blue LEDs

The number of illuminated blue LEDs indicates the selected Comfort Level.

These LEDs will blink slowly during Sleep mode.

These LEDs will flash during Dehumidification mode.



Note

Blue LEDs will go dark after 3 minutes so as not to disturb you. Push the  - Button to “wake” them up.

Red LED

A fast blinking red LED indicates that the last filter change has been more than 8,700 hours ago (~ 1 year).

A slow blinking red LED indicates that the air stream through a dirty and partially clogged filter is impaired. A slow blinking red LED can also indicate air stream obstructions such as inappropriately dimensioned openings between spaces of supply and extract air.

Continuous illumination indicates control error. (See appendix [S] Service).



DANGER ⚠

- An overly dirty filter (indicated by the red LED) can reduce supply and extract air flow. This in turn can lead to diminished air quality and over or under pressure in connected rooms.
- Neglecting of filter change indicator may result in growth of harmful microbes.

Note

Excessive dust, inside or outside of the building during the building phase, may require a premature filter change.

The red LED will appear continuously if the WiFi of the freeAir has been activated using the freeAir Connect USB but is not connected to the local WiFi router.

This may be due to the wrong WiFi name or password, too far from the router or a problem with the router or the internet.

The WiFi function is available up from pcb version 9 (software version 2.02 and higher).

USB Port

The USB port on the left side of the device serves as a connection to the (free to our customers) freeAir-Connect USB software, for the activation of the WiFi function and respective updates.

Note

Please visit our website at www.bluMartin.de for updates under Service / Downloads.



Louver

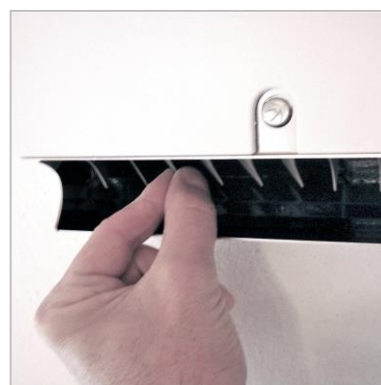
The louver in the left part of the air output side can be rotated to accommodate any desired blow direction.

Note

Air intentionally only discharges from the left side of the vent.

DANGER ⚠

Do not insert any foreign objects into the supply opening.



Front Cover

For particularly noise-sensitive installations, this front panel offers a noise reduction of 12 dB.

The Front Cover III is reducing the noise by 5 dB.

For the dismounting of the freeAir 100 lift the cover slightly and then pull out forwards.



Comfort Operation

After switching it on the freeAir 100 will operate in Comfort mode.

In this mode the device will operate automatically:

If installed correctly the device will supply all connected living areas with the right amount of fresh air. Minimum air flow, CO₂ content, relative and absolute humidity inside and out are all taken into account.

Push the  - Button several times to select Comfort Level 1 (one LED). This is the quietest level and should be selected if you like a quiet setting for instance for bed rooms.

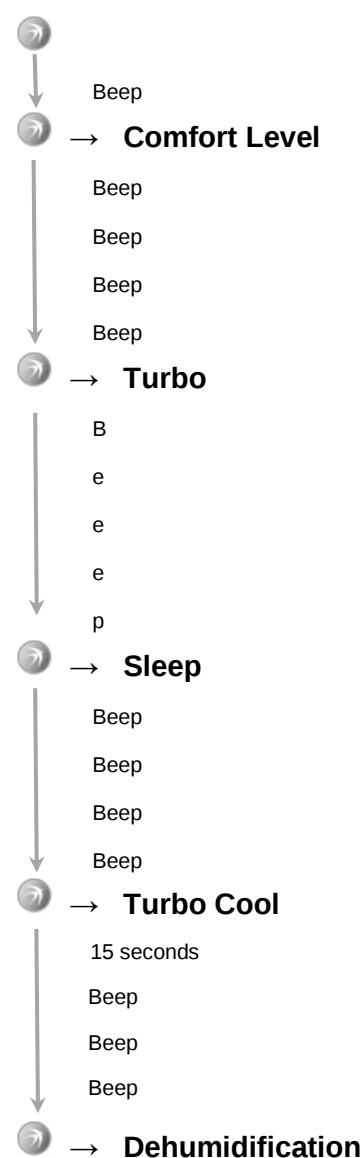
Level 3 (3 LEDs are lit) is the normal setting for living rooms.

Turbo Operation

Push the  - Button until you hear 4 short beeps. This model should be selected if you wish to air out rooms at the highest device setting for 30 minutes. Comfort operation will be restored automatically after 30 minutes. Comfort Level can also be restored via the  - Button.

Sleep Mode

Push and hold the  - Button until you hear 4 short beeps followed by a very long beep. Your freeAir100 will pause for 90 minutes before switching back to Comfort mode.



Turbo Cool Operation

The cooling function of your freeAir 100 is completely self-acting.

First, at high outside temperatures the heat exchanger operates as a cold exchanger, so the summer heat stays outside, if you keep the windows and doors closed as in winter.

When sufficient average summer temperatures are reached, after one day your freeAir 100 is switching into summer operation automatically. The device uses the fresh night air for cooling by opening the bypass flap, thereby increasing the airflow.

Start Turbo Cool operation (and hereby switching into the summer operation) by pushing and holding the  - Button till you hear 4 short beeps followed by a long beep followed again by 4 short beeps. This will open the bypass flap and switch the device to its highest power setting for 3 hours. In this setting your living space can be cooled down noticeably by fresh evening and night air after a hot day.

Turbo Cool operation is switched off automatically when outside air temperature is too hot.

Dehumidification Operation

Push and hold the  - Button for 15 seconds to activate this mode. This operation can be used in case of an application where the usual dehumidification level provided by the Comfort mode is not sufficient (for instance in a basement room). The freeAir100 will beep three times and blue LEDs will flash. Dehumidification will work at humidity levels as low as 45 % relative humidity.

Dehumidification is optimally controlled through constant measuring of absolute humidity both inside and outside effectively suppressing humidity import through outside air. Thereby the ventilation is increasing to assure evacuation of humidity, as soon as absolute humidity inside the building is higher than outside.

Installation – Bare Brickwork Set

Visit our website for more help and the installation video:

www.blumartin.de/installateure/



DANGER ⚠

Please see part General [G] for safety notes. Observe all notes with respect to safety and use of the freeAir 100.

2nd Room Connections

1. Please select the correct connector for a device designed for 2nd room connection:
 - Connecting ducting, conduits and valves must have low air stream resistance.
 - For 2nd room connection the below stated decrease in pressure must not be exceeded.
 - The supply air conduits must not exceed the below noted length.



Type of Conduit	Max. Air Flow for 2 nd Room Exhaust (= DIP switch setting)	Max. Pressure drop 2 nd Room Exhaust (at max. air flow)	=> Max. Length (pressure drop for turns and valves included)
1 x Flat-Flex 51 x 138 mm	30 m ³ /h	15 Pa	ca. 8 m
1 x Round-Flex Ø 75 mm	30 m ³ /h	15 Pa	ca. 2.5 m
2 x Round-Flex Ø 75 mm	60 m ³ /h	55 Pa	ca. 10 m
3 x Round-Flex Ø 75 mm	100 m ³ /h	65 Pa	ca. 10 m
1 x Round Ø 100 mm	100 m ³ /h	65 Pa	ca. 12 m

Notes

- The freeAir 100 compensates for air stream resistance, due to connected conduit or dirty filter, by increasing fan speed.
- Therefore supply and exhaust air stream remain constant and balanced.
- “Dirty Filter” error will be indicated once maximum fan speed is reached.
- Longer supply ducting will result in a change in balance between the air flow of the 1st and 2nd room in favor of the 1st room (normal 1 : 1).

2. Open the appropriate passage and attach the appropriate ductings or connectors by taking care to use an O-ring or sealant.

Note

In case of the bare brickwork set with BOX, just remove the plugs,
for the bare brickwork set without BOX the openings have to be cut.



3. Use the included adapter, if you wish to connect another Round-Flex 75 mm to the 2nd room exhaust adapter.

Note

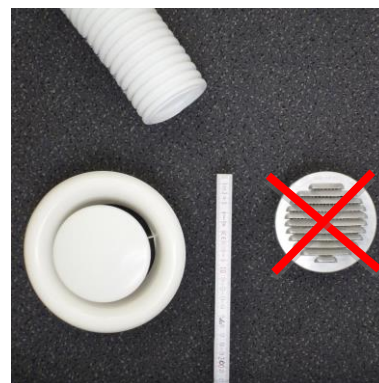
For the bare brickwork set with BOX, this adapter must be separated.

In case of the bare brickwork set without BOX,
a fourth Round-Flex-Duct can be added using a Flat-Flex-Round-Flex-Adapter.



4. Allow for sufficient openings between rooms (clearance between door frame and door leaf) and sufficiently sized supply and exhaust valves:

Air Flow	Minimal Cross Section Area
30 m ³ /h	30 cm ² (Valve Ø 125 mm)
60 m ³ /h	60 cm ² (Valve Ø 125 mm, fully opened)
100 m ³ /h	100 cm ² (Valve Ø 200 mm)



Installation Side

DANGER ⚠

- The freeAir 100 must not be installed in immediate vicinity of easy inflammable material or harmful chemicals.
- During planning consider all relevant local building, safety and fire codes. Especially in situations where indoor air is used for combustion (wood stove, fire place...etc.).

Warning ⚠

The freeAir 100 is not 100% suitable for tropical locations with high humidity. In such locations condensate could result on the inside part of the device (the freeAir will pause in these cases). The system has yet no design features allowing drainage from the inside.

Room temperature during operation should be between 0°C and 40°C.

Outside temperature should be between -40°C and +50°C.

Installation Side - Condensate Drain

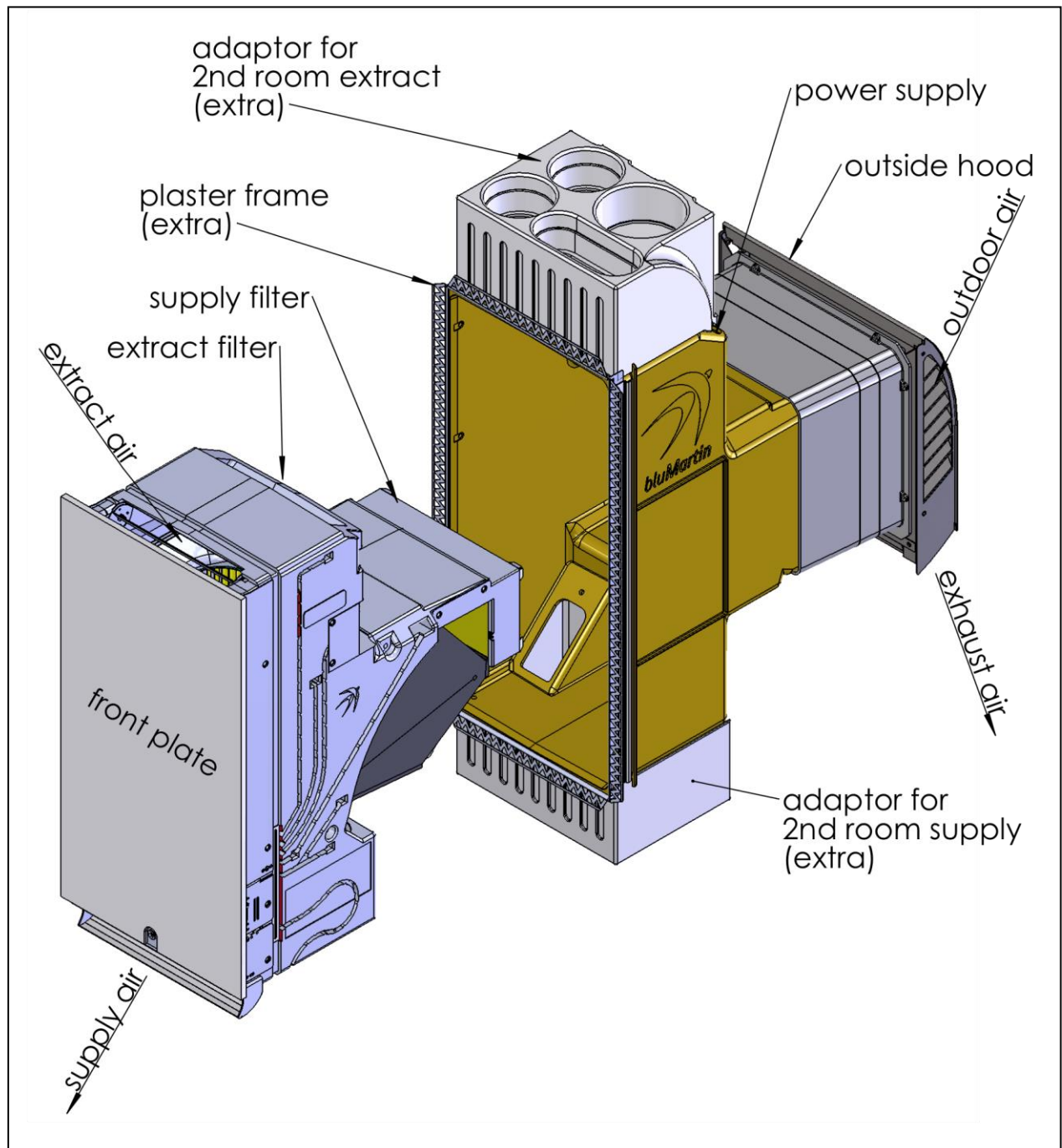
If designated condensate drain hose cannot be used, device location must be selected such that condensing water can freely drain to the outside. Make sure that neither falling icicles nor freezing run-off create any hazards.

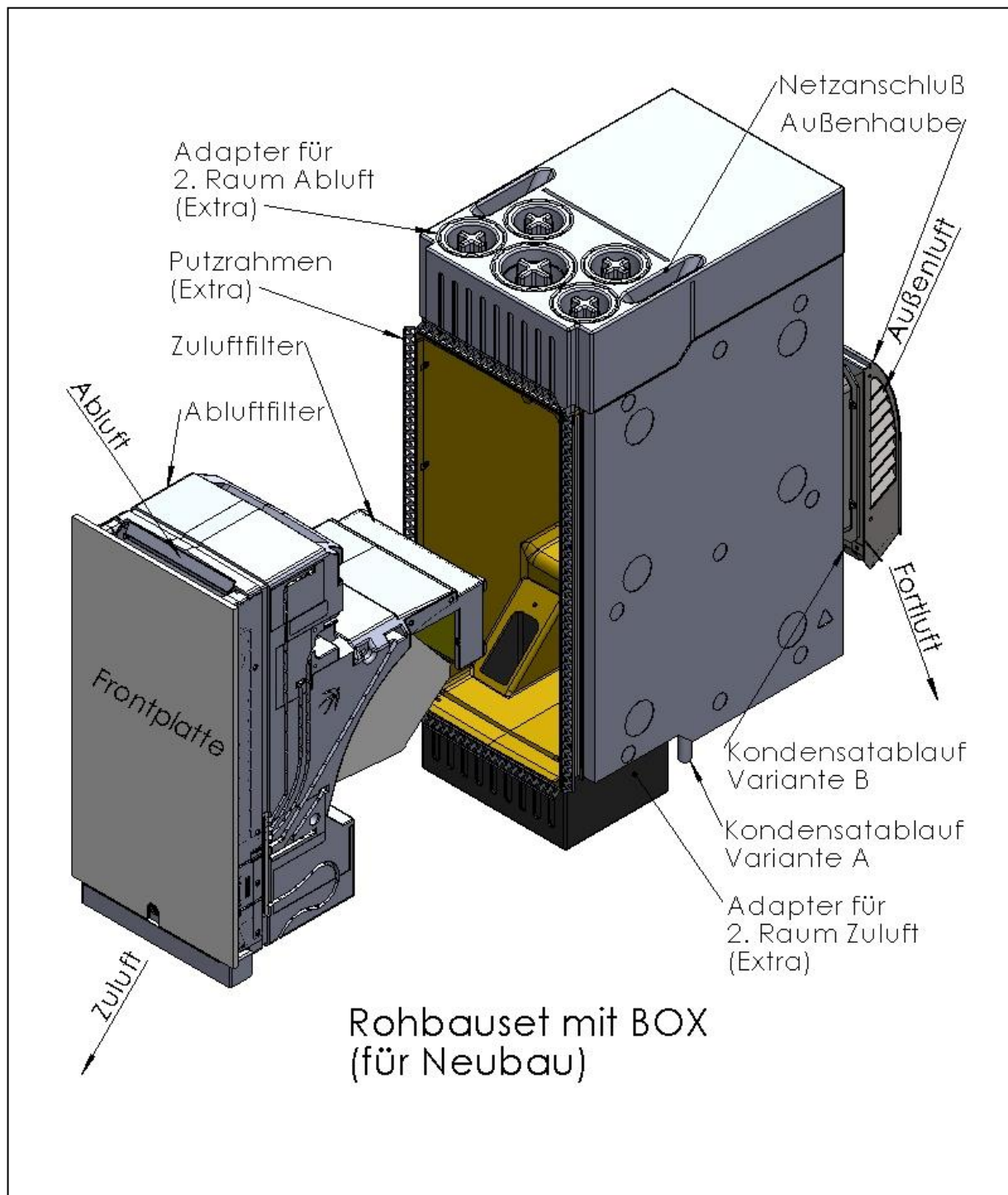


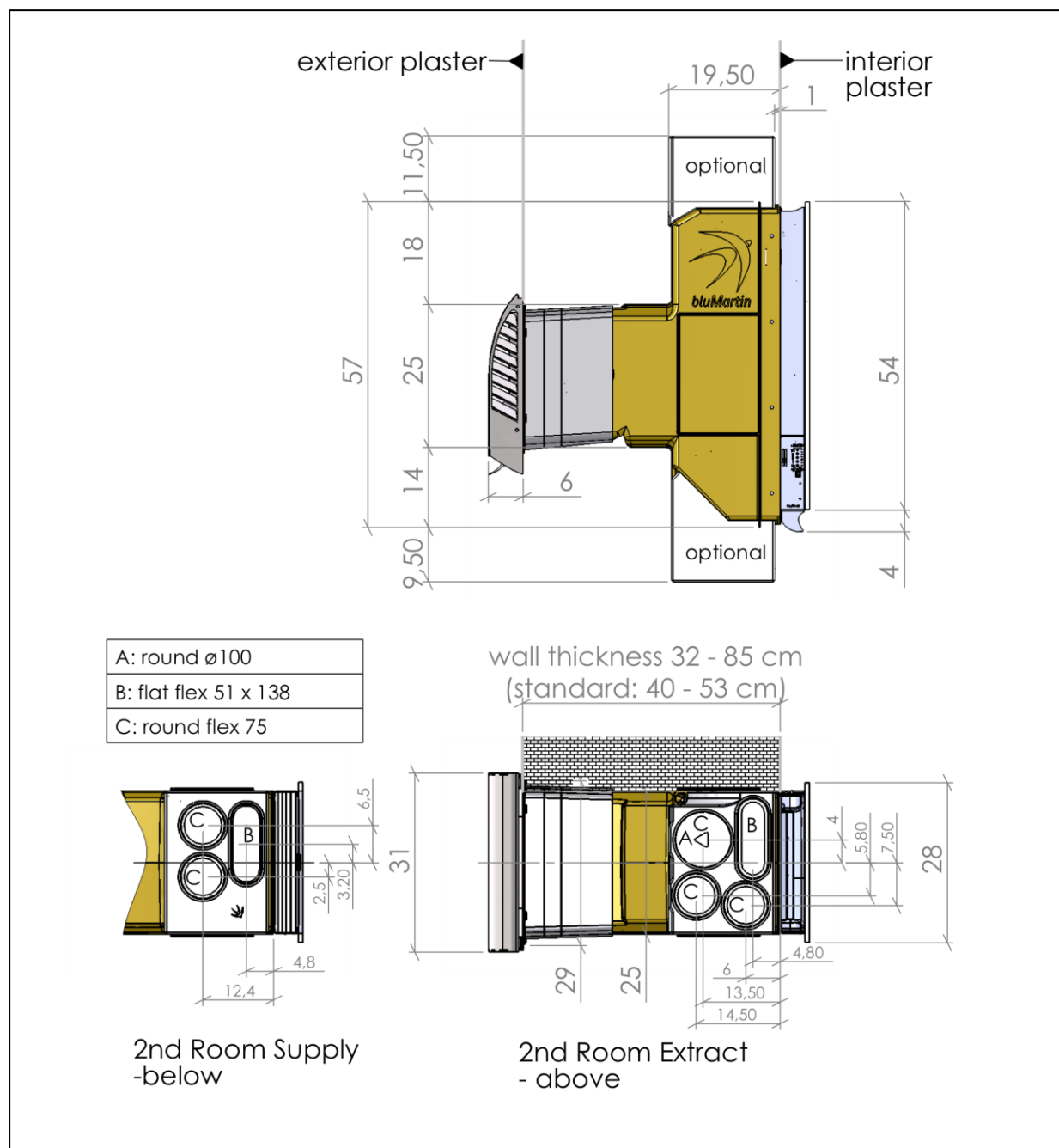
Notes

- The formation of ice can be reduced with the software option de-icing (only with the permission of the owner of the building).
- Even with the condensate drain connected, under certain conditions, small amounts of water droplets may emerge at the outside hood.

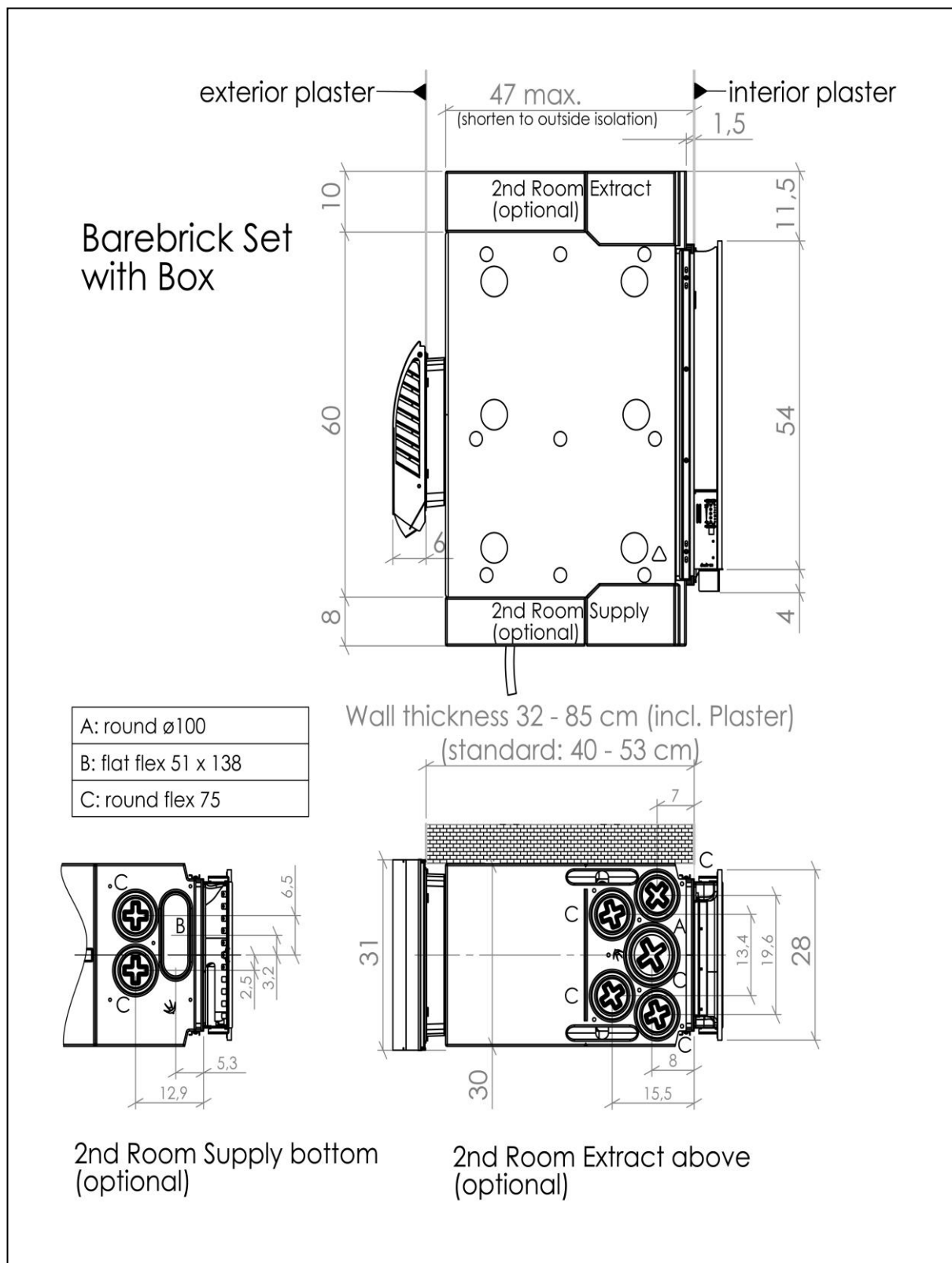
Drawings

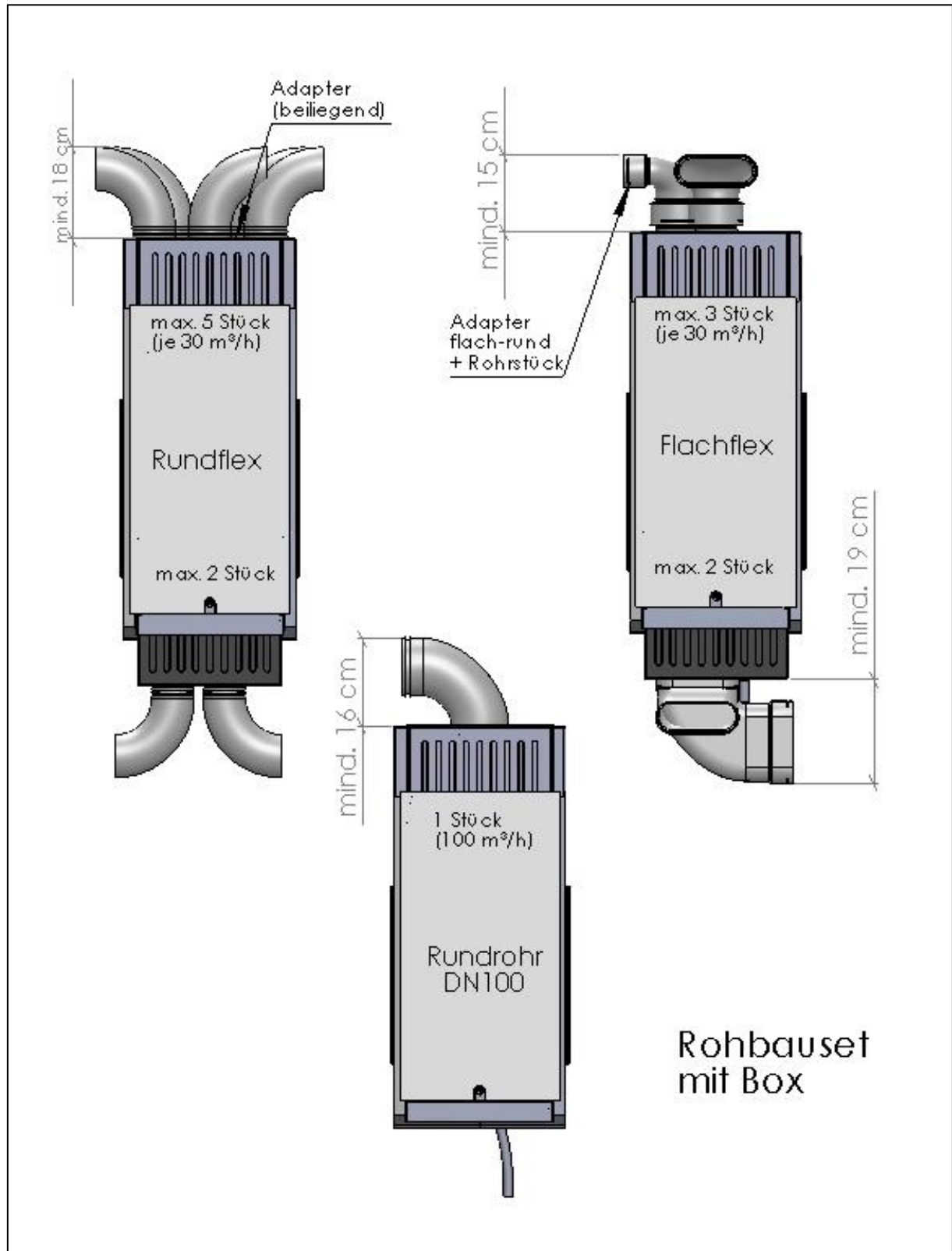


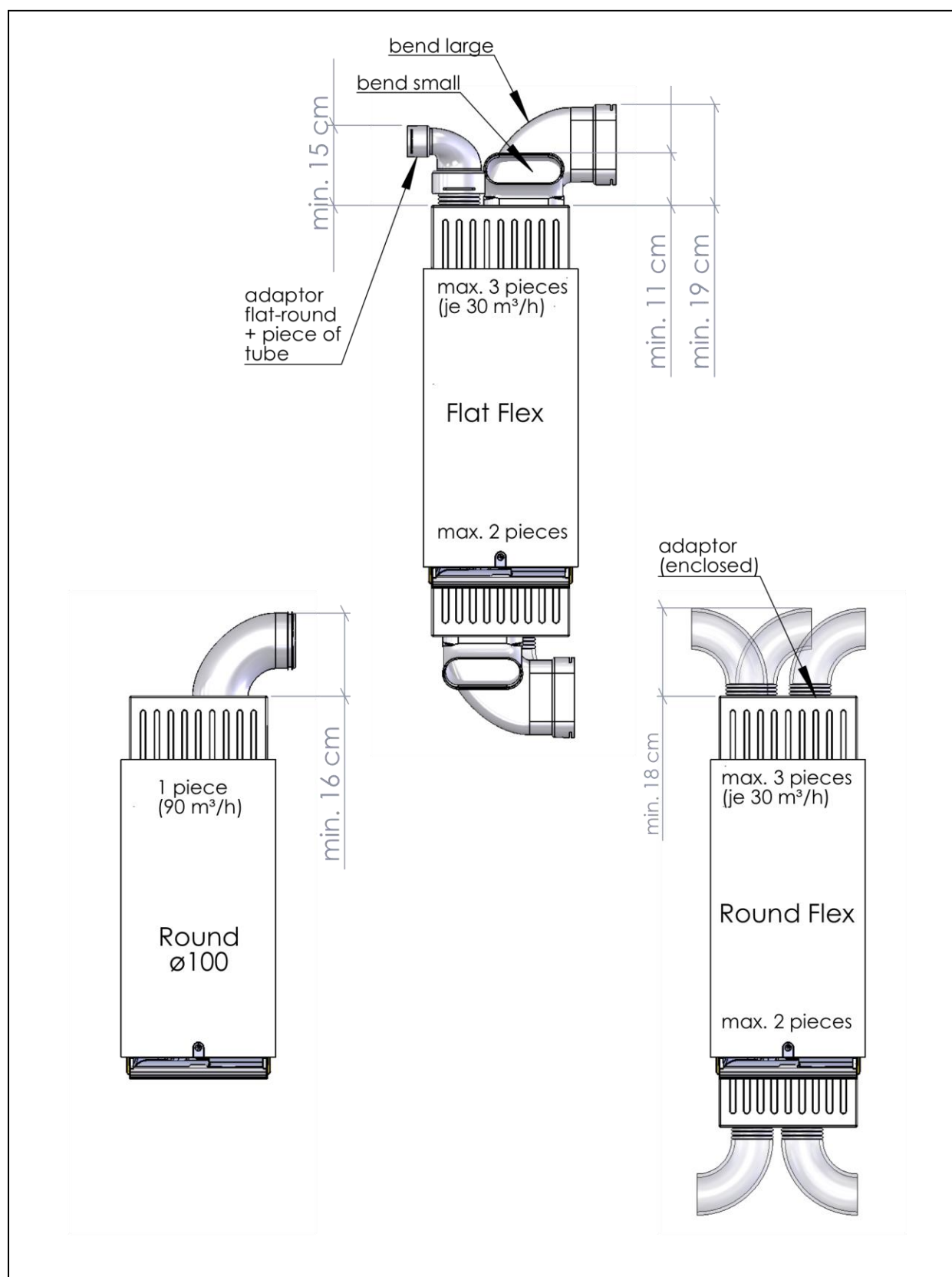


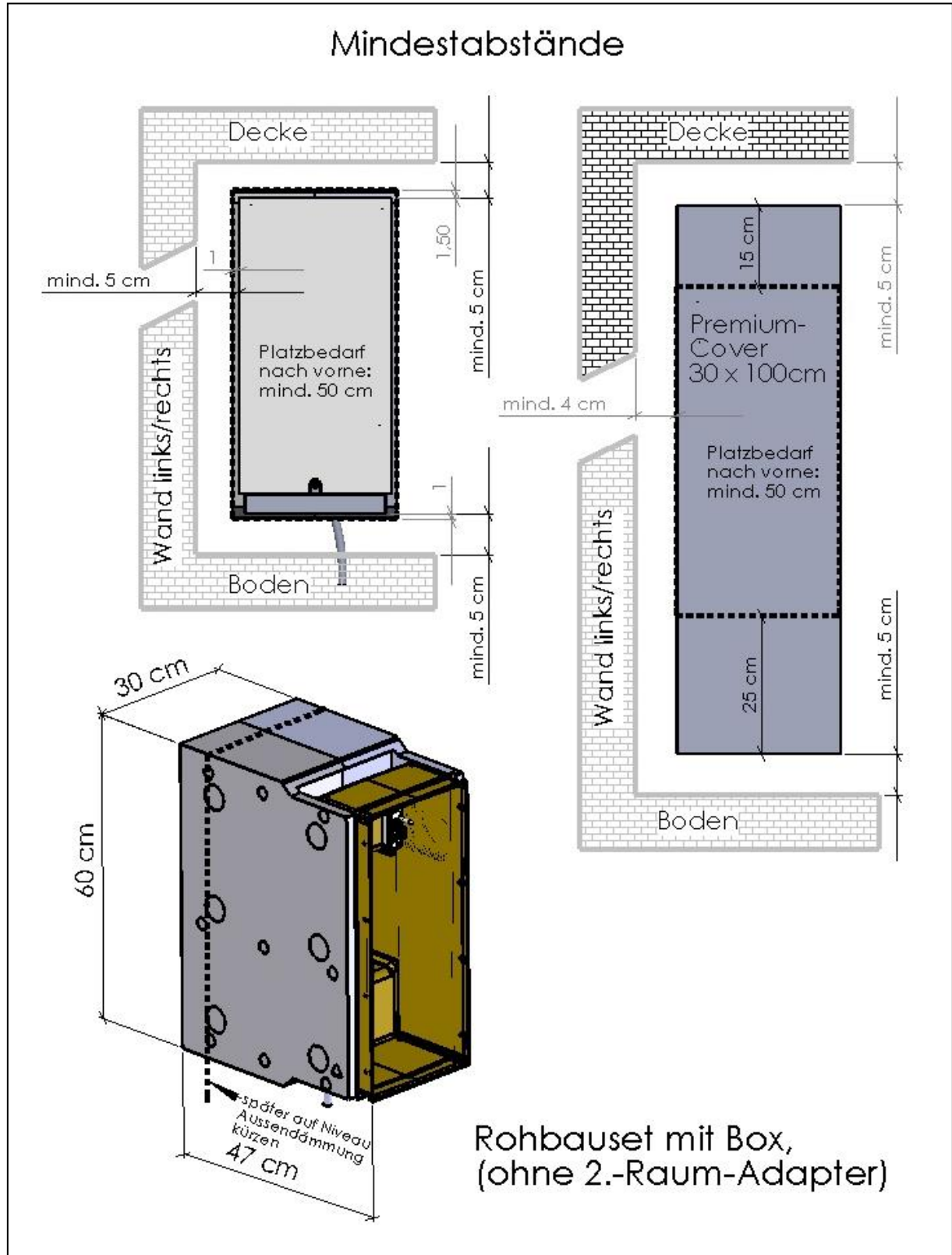


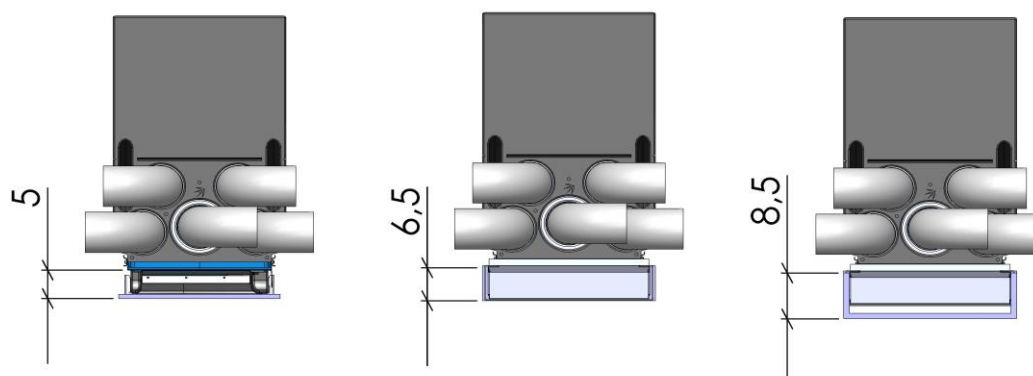
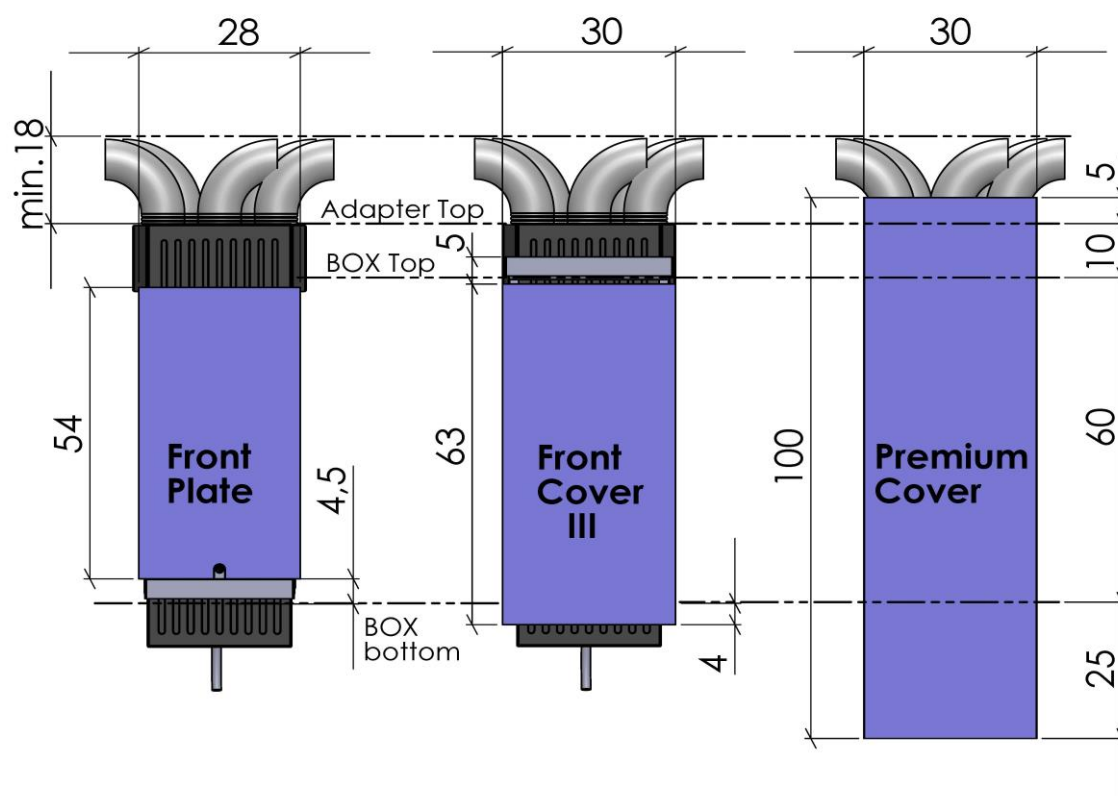
- | | | |
|---------------|---------------------------|---------------------------------------|
| • FA00.1012/5 | Outside hood - normal | – Wall thickness 40 to 53 cm |
| • FA00.1020/2 | Outside hood - deep | – Wall thickness 35 to 40 cm |
| • FA00.1025/7 | Outside hood - extra deep | – Wall thickness 32 to 40 cm |
| • FA00.1030 | Outside hood - basement | – Wall thickness 32 to 46 cm |
| • FA00.2003 | Extension (1x/2x) | – Wall thickness 53... 69... 85... cm |



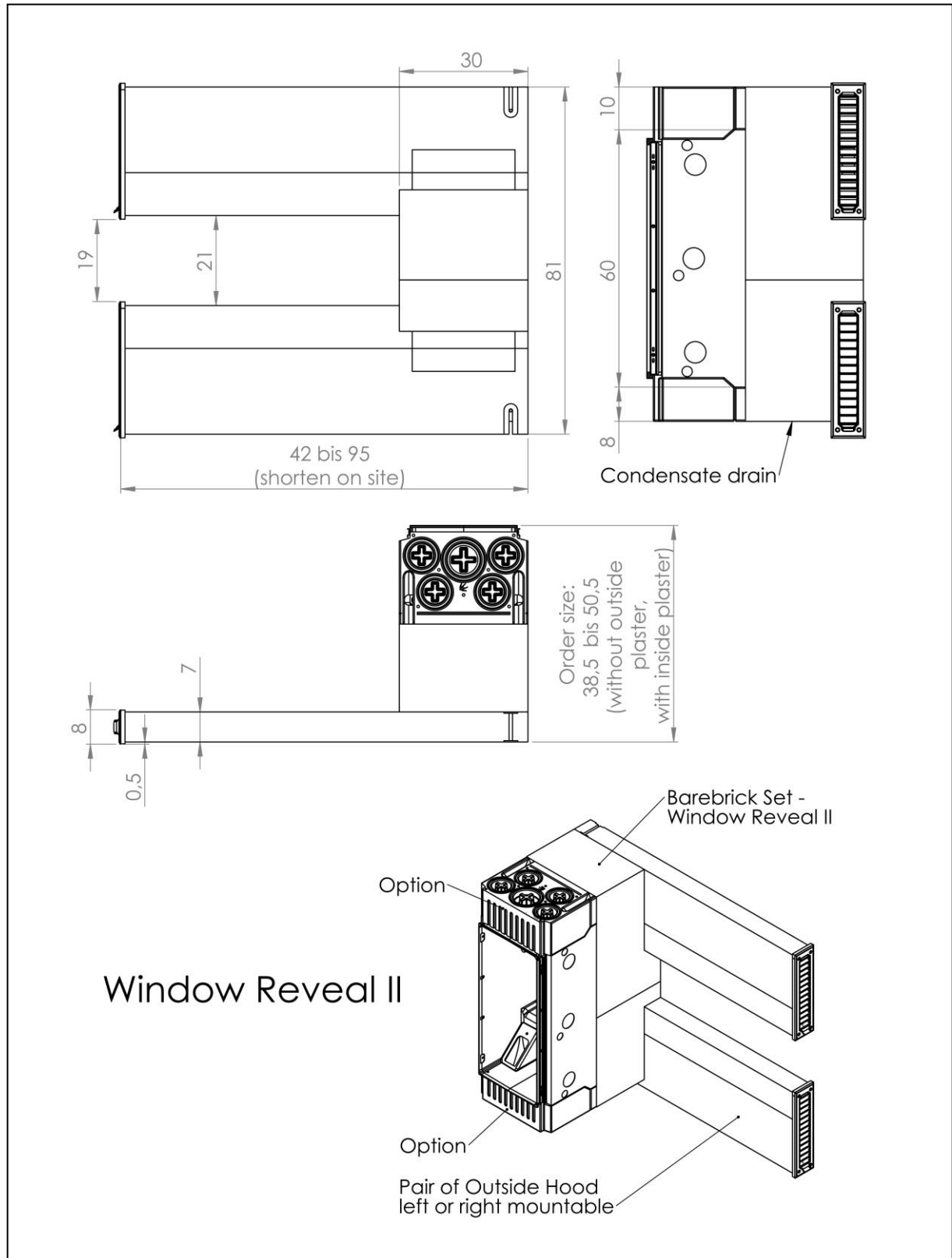








Front Plates

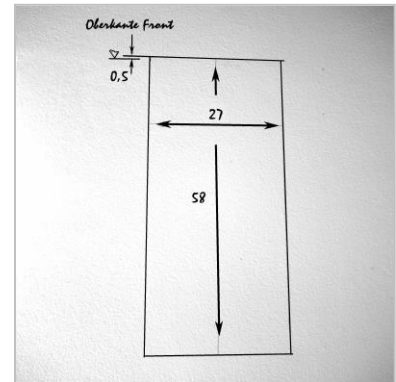


Bare Brickwork – Inside

1. Sketch a wall cut-out of 27 x 58 cm minimum on the appropriate spot on the wall.

Note

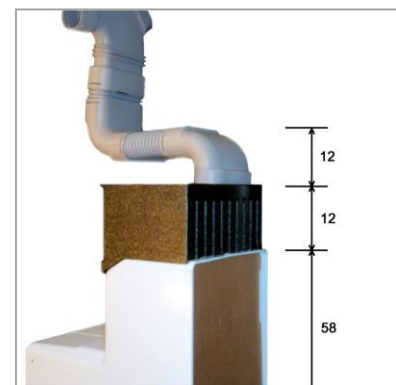
Technically speaking the higher up on the wall the device is installed the better the performance. However, for best aesthetics we recommend installing the device such that the top edge is level with the top edge of your window lintel.



2. An additional 12 cm space in height is required for the 2nd Room adapter and duct connection.

Note

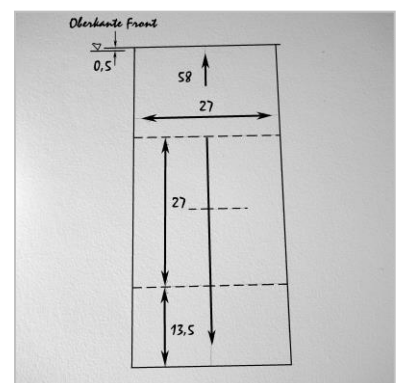
During construction protect the inside (air connections and cable ends) of all ducting from dust.



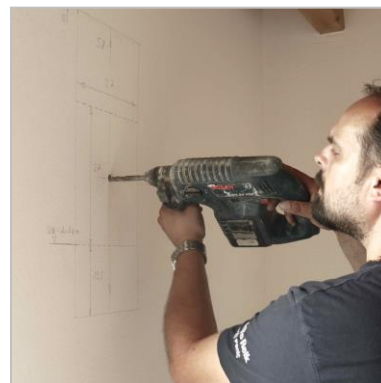
3. Sketch up the inside wall cut-out of 27 x 27 cm.

Note

27 cm is the minimum width.



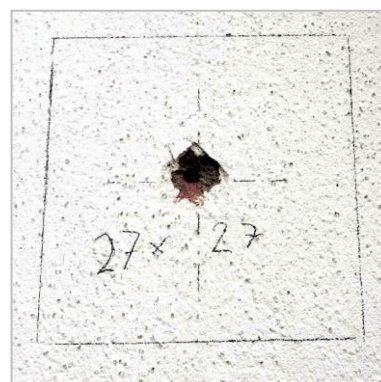
4. One option is to drill one or 4 pilot holes.



5. For retrofit applications, also mark the wall penetration (27 x 27cm) on the outside of the building.

Notes

- The flange width of the telescopic adapter is 30 cm.
- If you want to hang up the flange exactly on the plaster, the opening is 27.5 x 24.5 cm.



6. The use of the plaster frame is recommended especially in dry-wall construction. Assemble the frame, bend over the 4 flags and attach the frame to the wall box using 8 countersunk screws.

Note

The plaster frame may protrude up to 5 mm above the wall box.



7. After the wall cut-out is completed install the electrical cable (3 x 1.5 mm²) in the upper part of the wall box. Affix the wall box flush with plaster, perpendicularly and secure with wedges.



8. Please note that different stucco thicknesses result when matching wall curvature.

WARNING ⚠

- The wall box must be placed with millimeter accuracy, so the freeAir 100 will fit tightly sealed.
- Leading edge of the wall box must sit **flush with plaster**.
- Use sealing tape to assure a vapor proof connection between wall box and wall.



9. Use appropriate polyurethane foam to fasten corners of wall box.
Once the foam has hardened add additional layers of foam.
Take care not to allow expanding foam to deform the box.
Leave box bracing in place!



10. Push in the finger tabs to remove box bracing.



11. Only an authorized Electrician should connect the electrical wire (3 x 1.5 mm²) to power mains. If possible, use dedicated electrical circuits for the ventilation system.

DANGER ⚠

The connection of the grounding conductor must be carried out and checked professionally.

WARNING ⚠

The cable inlet needs to be sealed airtight.



12. Metal tab and connector must be installed straight, to allow the trouble-free installation of the freeAir 100 during a later installation step.



Condensate Drain - General

An essential task of your freeAir 100 is the regulation of the relative humidity to values between 30 and 60 %. Typically, the unit will dispose 1 to 10 liters of water per day in gaseous or liquid form from your living quarters.

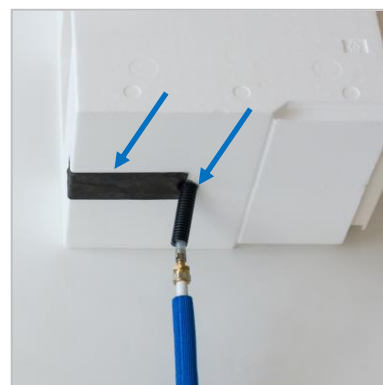
You can read out the measured values later using the freeAir Connect software via USB cable or WiFi from your freeAir 100 unit.

Other ventilation systems, which by design have no condensate drain, can only contribute to a lesser extend for dehumidification. The heat recovery of these devices is in principle lower by about 10%.

If you do not connect the intended condensate hose, the liquid condensate flows outwards over the outside hood. This happens especially in autumn and increases in still wet new buildings.

1. Pull the condensate hose into position.
To do this, expand the slot in the 2nd room supply air adapter (if available) with a knife.

Seal the remaining opening in the adapter or BOX (if present) airtight with sealing tape and sealant.



2. When installing the freeAir 100 later, open the condensate drain by pulling the closing plug. Use the enclosed tool.

WARNING ⚠

Under no circumstances should you remove the closing plug from the wall box, if you have not connected the condensate hose.



Condensate Drain – PVC-Hose

If, for example, you can arrange the condensate hose between the bricks and the exterior insulation or in a wall slot, it is common practice for a family house to use a PVC fabric hose. One possibility is to let the condensate seep at the end at a suitable place.

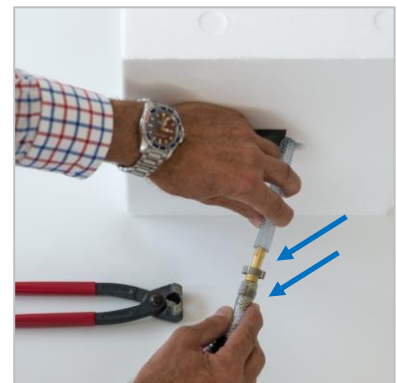
Hints

- The PCV fabric hose has no explicit approval for this application. However, the use has proven itself and can be described as state of the art.
- In case of possible icing of the hose, the condensate will be discharged via the outside hood.
- Protect the hose from damage by laying it in a 25 mm insulating pipe.

Connect the PVC fabric hose securely.

VDIE.0001: Condensate hose, PVC fabric 9/15mm;

VDIE.0002: Connector with clamps

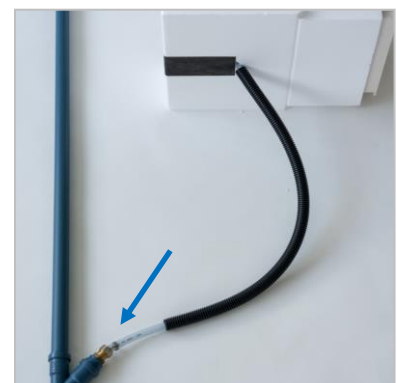


Condensate Drain - Pipe DN32

In apartment buildings, the direct connection to a DN32 manifold is ideal.

Install them frost-free, ensure the roof ventilation and provide a siphon as an odor trap prior to discharge into the sewage pipe.

VDMI.0001: Adaptor condensate hose ⇄ DN32



Condensate Drain – Aluminium Composite Pipe

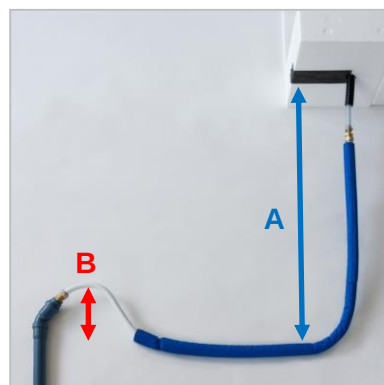
For laying in the screed, or as a continuation line or collecting line, the direct connection to an aluminium composite pipe with insulation is ideal.

1. Install them frost-free, ensure the roof ventilation and form a pipe siphon as an odor trap (minimum height $B = 5\text{ cm}$) prior to discharge into the sewage pipe.

VDMI.0002: Adaptor condensate hose ⇄ pipe

VDTP.0050: Alu composite pipe $\varnothing 16\text{ mm}$

VDMI.0010: Adaptor pipe ⇄ DN32



2. It also lends itself to the use of our preformed siphon.

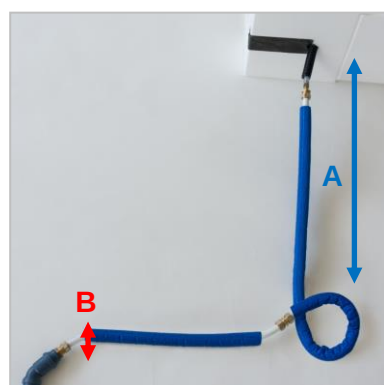
WARNING ⚠

Drive height **A** must be significantly larger than obstacle height **B** be.

VDMI.0015: Condensate set siphon with separating agent

VDTP.0050: Alu composite pipe $\varnothing 16\text{ mm}$

VDMI.0010: Adaptor pipe ⇄ DN32



3. When commissioning the freeAir 100 later, pour about 1 liter of water and the separating agent as an odor trap.

This is repeated with the annual service for flushing and testing the discharge.

FA00.1070: Flushing pump set for condensate line

FA00.7010: Siphon separating agent - concentrate syringe



Condensate Drain - Without

If you do not connect the planned condensate drain, the condensate flows outwards.

Condensate forms especially in autumn and increases in still wet new buildings (about 1 to 10 liters per day).

WARNING ⚠

Make sure, that there is no risk of falling icicles or freezing condensate on the floor.



1. If you cannot connect the condensate drain, first cut the hose and then stow it safely.



2. Seal the remaining opening in the BOX with sealing tape airtight.

WARNING ⚠

Never remove the closing plug from the wall box.



Bare Brickwork – Outside

1. After the masonry work, the wall box (if present) is sawed off flush with the outer wall or with the outer insulation.

Note

Do not cut the outside cap (red).



2. Remove the protective cover from the outside cap after all plaster and painting work is done.



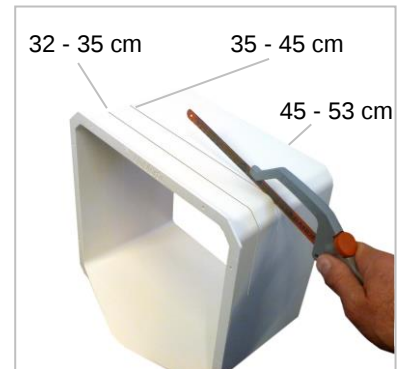
3. The outside protective cap can now be removed.



4. Shorten the telescopic adapter in case your wall thickness (including plaster) is less than 45 cm.

Note

You will need a deep or extra deep hood for wall thicknesses of less than 40 cm.



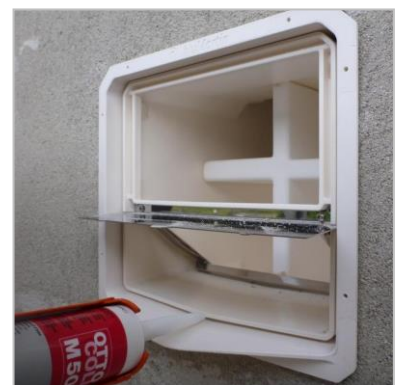
5. Install telescoping adapter flush with stucco. Use water prove sealant as shown.
To fix, you can screw the 2 pieces 3 mm countersunk.



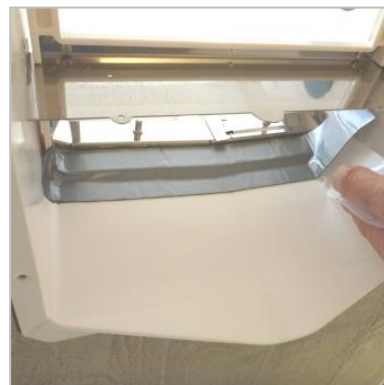
6. Seal the gap between the wall box and the telescoping adapter air and water prove.

ATTENTION ⚠

Only use sealants approved for ventilation systems such as Ottocoll M500 or similar.



7. In addition, seal the gap between the wall box and the telescoping adaptor water prove to the required level with the enclosed sealing tape.



8. The standard separating plate is pre-assembled for wall thicknesses (including stucco) of up to 44 cm.



32 - 44 cm

9. Attach extension for the separating plate at the inner position, in case existing wall thickness (including stucco) is between 44 cm and 49 cm.

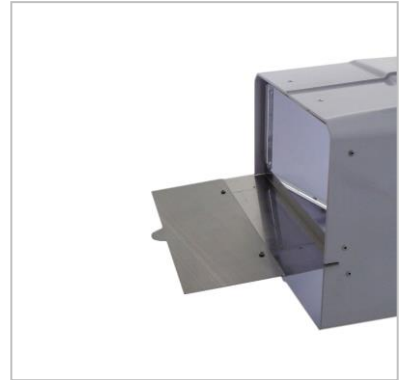


44 - 49 cm

10. Attach extension for the separating plate at the outer position, in case existing wall thickness (including stucco) is between 49 cm and 53 cm

Note

You will need additional telescopic adapter extensions for wall thicknesses of over 53 cm. The part number is FA00.2003.



49 - 53 cm

11. When installing the metal outside air divider make sure that the metal lip of the outside air divider seals properly against the interior air stream divider.



12. The metal outside air divider is attached to the telescoping adapter via 6 metal screws.

ATTENTION

The upper edge of the metal sheet must be waterproof connected to the plaster.

If the plaster is rough, it must be additionally sealed with a suitable sealant.



13. Hook-in the outside hood and attach with 2 M4 raised head screws.



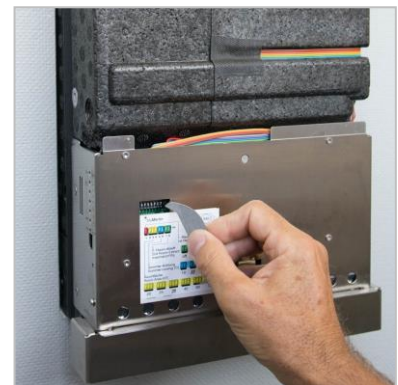
Note

Please see part Service [I] Installation–Unit for installation of the freeAir 100.

Installation – Unit

DIP Switches

Please take the time to adjust the DIP Switch settings correctly. You can use a pen or the condensate seal lifter as an aid. The freeAir 100 will work reliably and to the satisfaction of the users then.



Increased Min Vent (m³/h)

If, for example, you want to ensure that your device ventilates at least 20 m³/h in order to comply with the minimum ventilation according to DIN 1946-6, set the Room Area (see below) to 60 m² or 75 m². You can set even higher minimum air flow values on this DIP switch (up from pcb version 10; mid 2022).

Note

Do not set the 2nd Room Extract to 30 m³/h in this case.

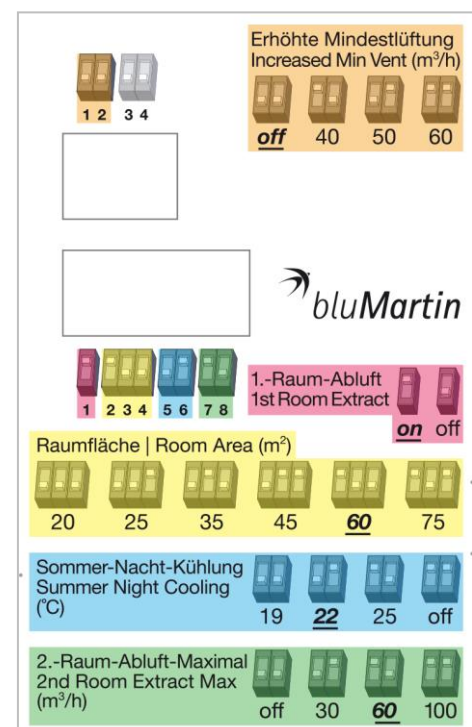
1st Room Extract (m³/h)

In case of 2nd Room Extract option (= 4th flap) this will allow the user to deactivate the hourly switch of extract air from 2nd to 1st room.

This makes sense in case your freeAir 100 is installed inside e.g. a wardrobe.

Note

In this case do set the 2nd Room Extract to 100 m³/h (if possible).



Room Area (m²)

Enter here the number of square meters to be ventilated. Please factor in all connected rooms. This input is the basis for minimum ventilation calculations.

Note

If you find the intermittent operation bothersome, adjust the room area to 60 m² or 75 m².

Summer Night Cooling (°C)

A special feature of your freeAir 100 is the active summer night cooling. In the warm season the device automatically activates a bypass in order to (mostly at night) cool down rooms with fresh outside air. The amount of air will be increased, if necessary. Select your desired temperature for the supply air room.

2nd Room Extract Max (m³/h)

The additional 2nd Room Extract module enables adjustment of max air flow of ventilation for exhaust of the 2nd room. Diameter, length and number of turns in the ducting as well as air inlet size limit the air stream (see table above):

- off: No exhaust ducting installed or extract opening blocked
- 30: One flex-duct connected (with extract valve Ø 125)
- 60: Two flex-ducts installed (with extract valve Ø 125 and completely open)
- 100: Three flex-ducts or spiral-seam pipe DN100 installed (with extract valve Ø 200)

Note

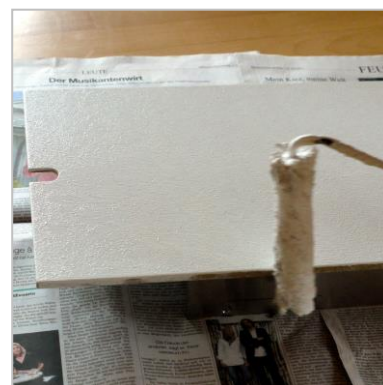
Incorrect adjustment or high air friction coefficient will lead to higher noise level and premature filter error warning.

DANGER ⚠

Please see part General [G] for safety notes. Observe all notes with respect to safety and use of the freeAir 100.

Front Plate Installation

1. If you have selected a front plate to be painted, first perform the surface treatment of the front plate, the premium cover or the front cover with the color of your choice (interior paint or lacquer).



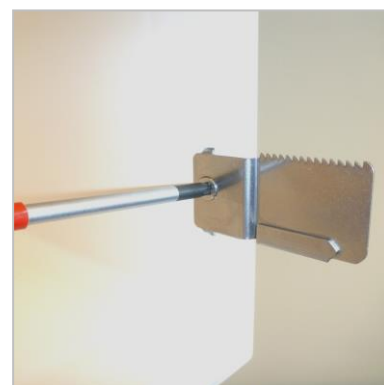
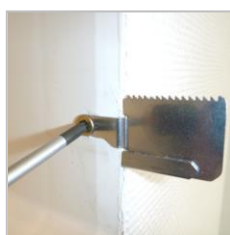
2. Carefully slide your device onto the front plate.
In case of the normal front cover slide the front plate onto the unit.
Then attach the front plate with 4 counter sunk (4 x 20) wood screws.



Cover Installation

1. Attach 4 pieces of locking plates on the sides and with the saw teeth pointing upwards on the wall box.

For older wall boxes there are locking plates available with the article no.: FA10.1150



2. In case of the premium cover glue the enclosed two sound insulation pads above and below the wall box flush and straight.

Notes

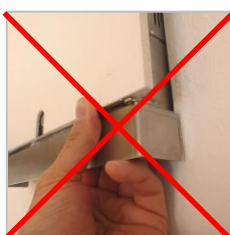
- The recesses in the pads are showing towards the wall box
- The arrow at the bottom serves as a marker when you mount the premium cover.



3. After inserting the device, the cover is inserted into the four detent plates and pressed against the wall.

Notes

- The air outlet must not be installed.
- For dismounting the cover lift it slightly.



Filter Installation

Attach the metal bracket for the inlet air filter using four 4x20 flat head screws.

Note

This metal bracket is not used in case of the window reveal II, because the filter will be inserted into the wall box then.

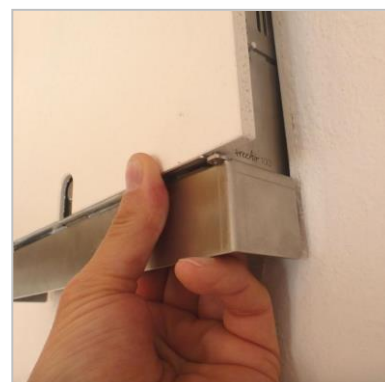


Air Outlet Installation

1. Slide the air outlet into the device.

Note

The air outlet is not mounted when using the premium cover or the normal front cover.



2. Attach the metal sheet using two M3x5 raised head screws.

Note

The air outlet directs the supplied air downwards the wall.

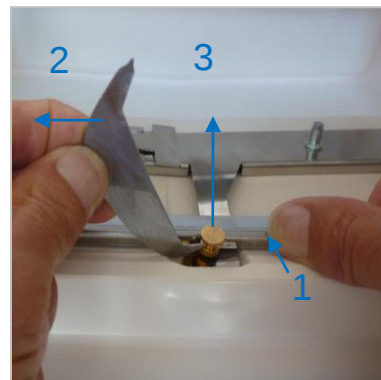


Unit Insertion

1. Remove the condensate drain plug with the attached lifter. To do this, push the drop sheet backwards with your thumb first.

Danger ⚠

Do not remove the plug, if a condensate drain is not connected to the hose of the wall box.



2. Clean the wall box and the outside hood with soapy water.
Provide for the free flow of condensate (round brass porthole behind).
Before replacing the unit, use the included silicone lubricant and apply a thin film to the seal at the leading edge of the wall box and at the gasket, so the device slides easily into the wall box.



3. Support the appliance with your right hand in front and bottom and slide it straight into the box. Slide by pressing the front panel on the unit until it stops.

Note

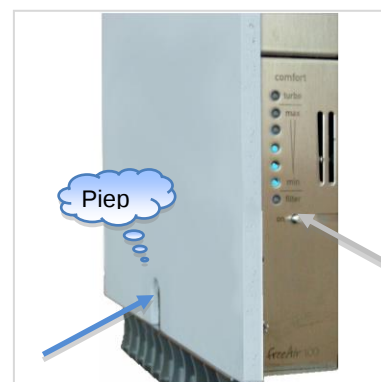
The device will only be operational if seated completely inside the wall box (if necessary beat with your hand on the front panel).



Device Test

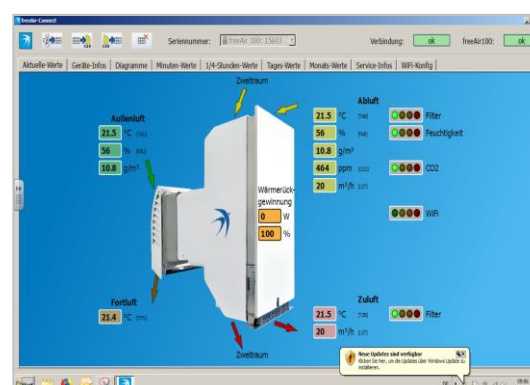
1. After correct installation turn the freeAir 100 on and wait a few minutes while the device executes a test routine.

Test Turbo operation once either only blue LEDs or no LEDs are illuminated.



2. We recommend connecting a laptop to the freeAir 100 with a USB cable and using the freeAir Connect software to check the displayed readings.

Wait a few minutes for the both filter lights to go from blinking to steady green. Then you can be sure, that the pressure losses in the ventilation ducts are low enough.



3. If desired, you can also activate the WiFi function and / or bluHome function of your freeAir 100 here.

Note

The WiFi function is available from software version 2.02 and higher (update from version 1.xx to 2.xx is not possible).

www.bluMartin.de/freeair-support/wohnraumluftung-freeair-wifi-konfiguration

Service

Notes

- The annual filter change does not require any tools.
- Original bluMartin replacement filters are available from the installer, from us (info@bluMartin.de) or from Amazon.
- You need a Torx-10- and a Torx-20 screw driver for installation and service tasks.

DANGER

Observe all references to safety and use of the freeAir 100 in part General [G].

Device Test

After correct installation turn the freeAir 100 on and wait a few minutes while the device executes a test routine.

Please also see section [I] Installation, part Device Test.

Connect Software

For control of device functions, for any update or to activate the WiFi function, we recommend:

- Laptop (Windows 7, 8 or 10)
 - USB cable (A plug to mini B plug)
 - Our free software freeAir-Connect and free updates for freeAir 100
- www.bluMartin.de/service/downloads



Change of filter (annually or if required)

1. Pull your freeAir 100 gently with both hands at the same time left and right at the center of the panel - **not at bottom (fragile!)** - from the wall box.

Note

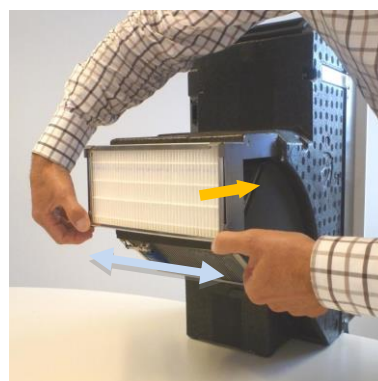
When removing the freeAir 100 from the wall box it is possible, that some condensate water will flow from the heat exchanger. Therefore, **do not place the unit onto the front**, as water may enter the control.



2. Push the two metal flaps apart and remove the dirty supply filter.
Please only use original bluMartin-filters.

Notes

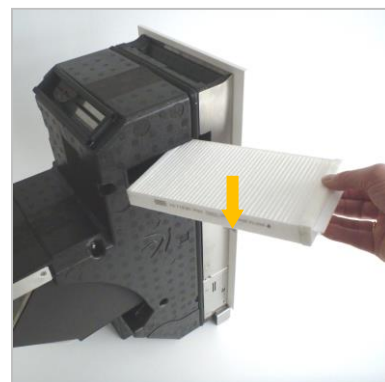
- With the window reveal variant is the filter at the back "hidden" above in the wall box.
- Class ePM1 filters will work four times longer, if you follow the **AIR FLOW** arrow.



3. Pull the extract filter out of the side of the device and insert a new original bluMartin-filter in the correct direction (note the arrow **AIR FLOW**).

Note

After a long shutdown period, a filter change for reasons of hygiene is necessary.



4. Clean the wall box and the outside hood from the inside with soapy water.
Provide for the free flow of condensate (if installed, round brass porthole behind).
Before replacing the unit use the (included with the filter) silicone lubricant and apply a thin film to the seal at the leading edge of the wall box, so the device slides easily into the wall box.



5. Support the appliance with your right hand in front and bottom and slide it straight into the box. Slide by pressing the front panel on the unit until it stops.

Note

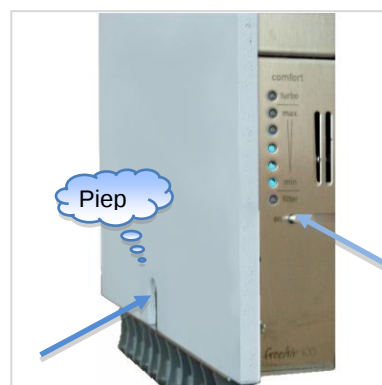
The device will only be operational if seated completely inside the wall box (if necessary beat with your hand on the front panel).



6. To reset the filter hour counter shortly change into Service mode. To do that turn first the device off (wait till all LEDs are off).
Push and hold the -button and switch the device on again.
Keep the -button pushed for about 5 seconds, until you hear a short beep.

Switch the unit off.

Only when all LEDs are out... switch on the device again.



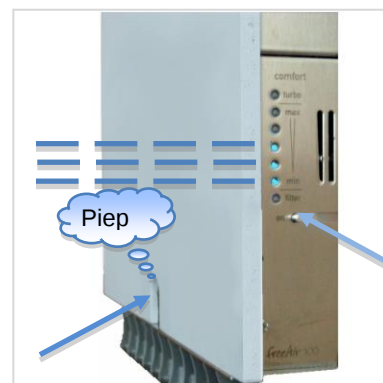
Service – Operation

For change to the service operation, switch off the device using the main power switch.

Push and hold the -button and turn the device back on at the main power switch. Keep holding the -Button until a short beep is audible.

LEDs will blink in Service Mode.

Instead of the Comfort Level, alternative air flow can be selected to 20, 30, 40, 50, 60, 70, 80 or 100 m³/h by using the -Button.

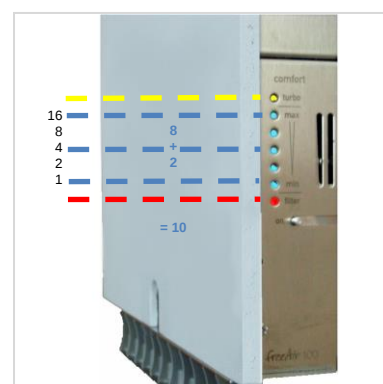


Notes

- Selecting the Service Operation will reset the filter hour counter to zero.
- After switching the device off and back on all functions will be restored to Comfort or Dehumidification operation.
- Prolonged holding of the -Button will launch Test Operation (the upper middle as well as the lower blue LEDs will be on).
- In Service Operation some functions such as defrost are not available. Therefore this operation should only be used during maintenance work.

While switching the device on – none illuminated LEDs indicate the firmware version digitally from the bottom up.

Here is an example for version 2.10.



Error Messages

Filter Run Time

Indicates that it has been more than 8.700 operational hours (or roughly one year) since the last filter change.

Note

After filter has been replaced select Service Operation to reset the hour counter.



Filter Contamination

One or both fans indicate an error because the air flow is restricted due to a dirty filter (this is not displayed until after 3 days).

This error message can also be triggered by other air flow obstructions such as (under dimensioned opening between supply and extract air or DIP-switch setting for extract air is set too high).



WiFi

The red LED will appear continuously if the WiFi of the freeAir has been activated using the freeAir Connect USB but is not connected to the local WiFi router.

This may be due to the wrong WiFi name or password, too far from the router or a problem with the router or the internet.

The WiFi option is available up from pcb version 9.



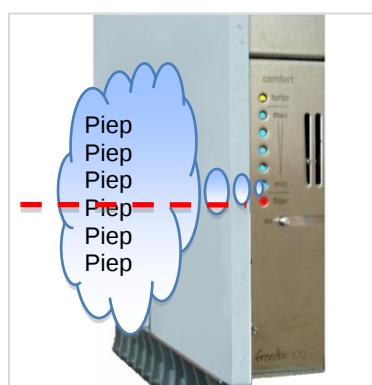
CO₂ Content

CO₂-content is measured to be above 3500 ppm.
An acoustic warning will sound for 30 seconds.



Fire Alarm

A temperature sensor indicates a temperature of above 80°C.
The device will power down and close air flaps.



Control Error

The device will power down and close air flaps.
Red LED is illuminated – yellow LED will flash:
By pushing the -Button the following described error causes are indicated.

Note

Error messages will be erased by switching the device off and back on at the main power switch.



Control Error Analysis

1. Control-Error will be indicated.

Note

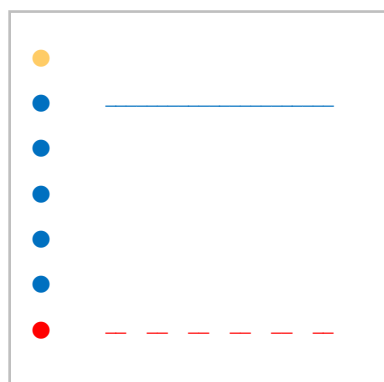
Filter change is only required when red LED is on by itself.



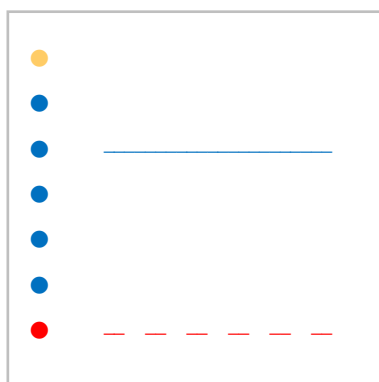
2. Push and hold -Button.



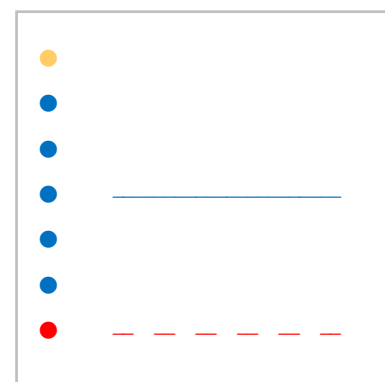
3. Cause of error display:



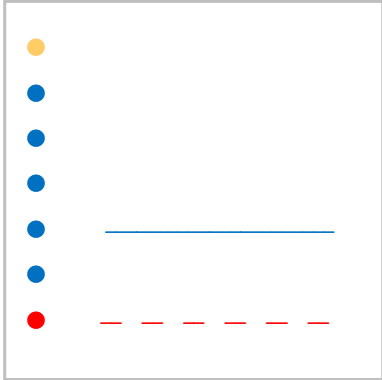
CO2 Sensor



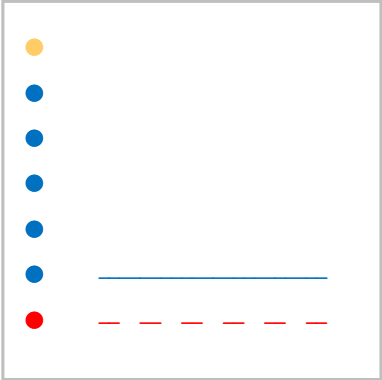
Temp. Sensor Outside Air



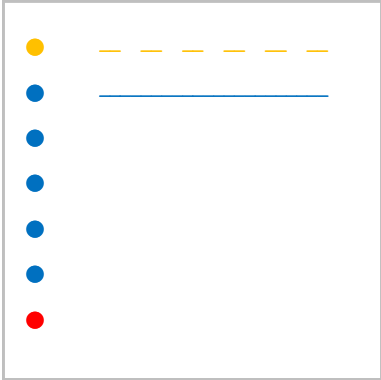
Temp. Sensor Exhaust Air



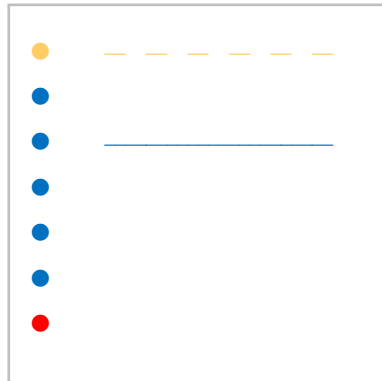
Temp. Sensor Extract Air



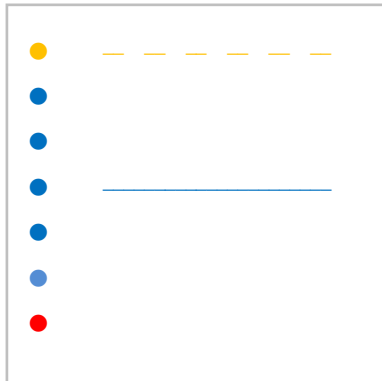
Temp. Sensor Supply Air



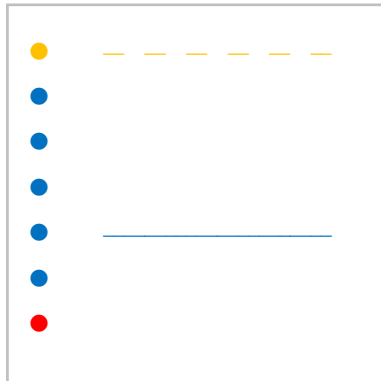
Humid Sensor Outside Air



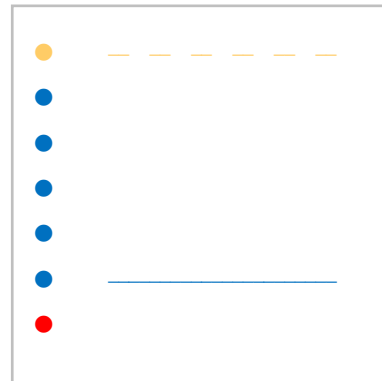
Humidity Sensor Extract Air



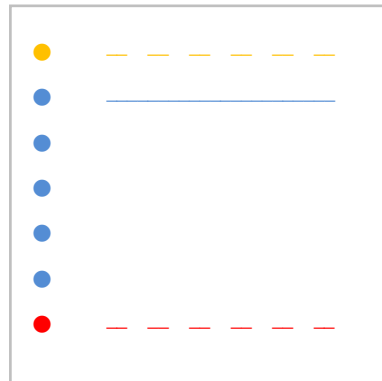
Air Pressure Sensor



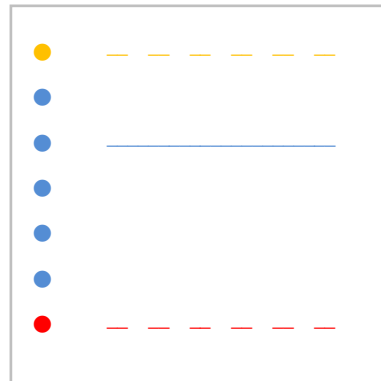
Fan Extract Air
>> See error correction



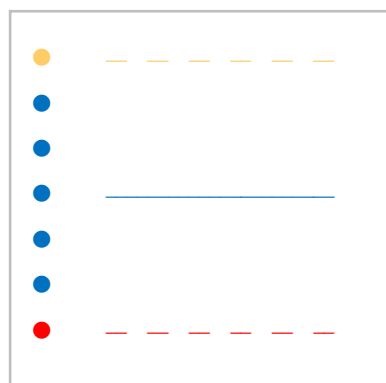
Fan Supply Air



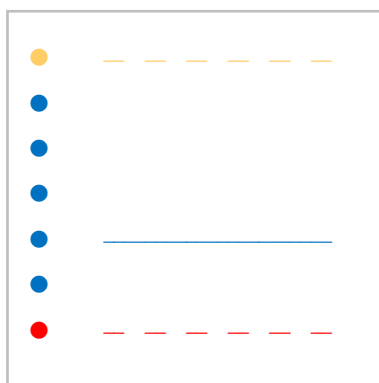
Flap Extract Air



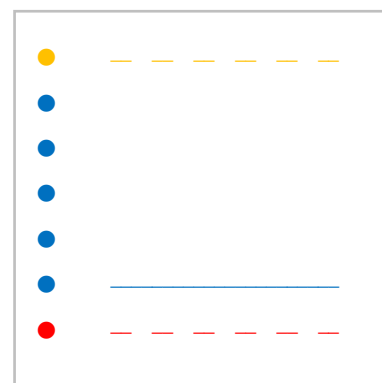
Flap Extract 2nd Room



Flap Supply Air



Flap Bypass



DIP Switch
>> See error correction

4. For troubleshooting visit the website
www.bluMartin.de/freeair-support/

5. Notify your service partner in case an error can't be cleared.
Indicate error cause as well as the freeAir 100 serial number.

Note

Returning the device has to be coordinated with your service partner. The device has to be shipped using the appropriate packaging.

Error Correction

Device can't be switched on

The freeAir 100 must be installed flush with the wall box. Clean the wall box and tap the front plate of the device to assure a tight fit. In case the device still does not turn on wait several minutes before switching the device back on.



Blue LEDs blinking (continuously)

Service- or Dehumidifying operation is active.

Service operation is activated by pushing and holding the -Button while the device is switched on. This can happen by accident or because of a mechanical jamming.

Uninstall the front cover and free the -Button.

Leave Service operation by switching the device off and back on.

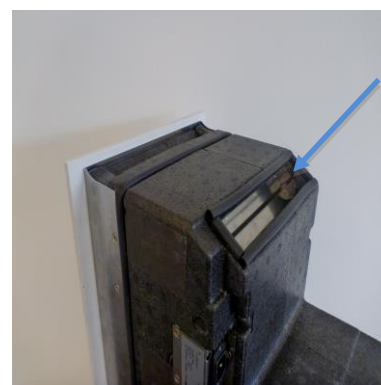


DIP Switches

Check to see whether a 2nd Room Extract connection had been selected even though the device is not equipped with one (no 4th air flap and seal present).

Also check to see whether 1st room extract is deselected even though the 2nd Room Extract is not set to 100 m³/h?

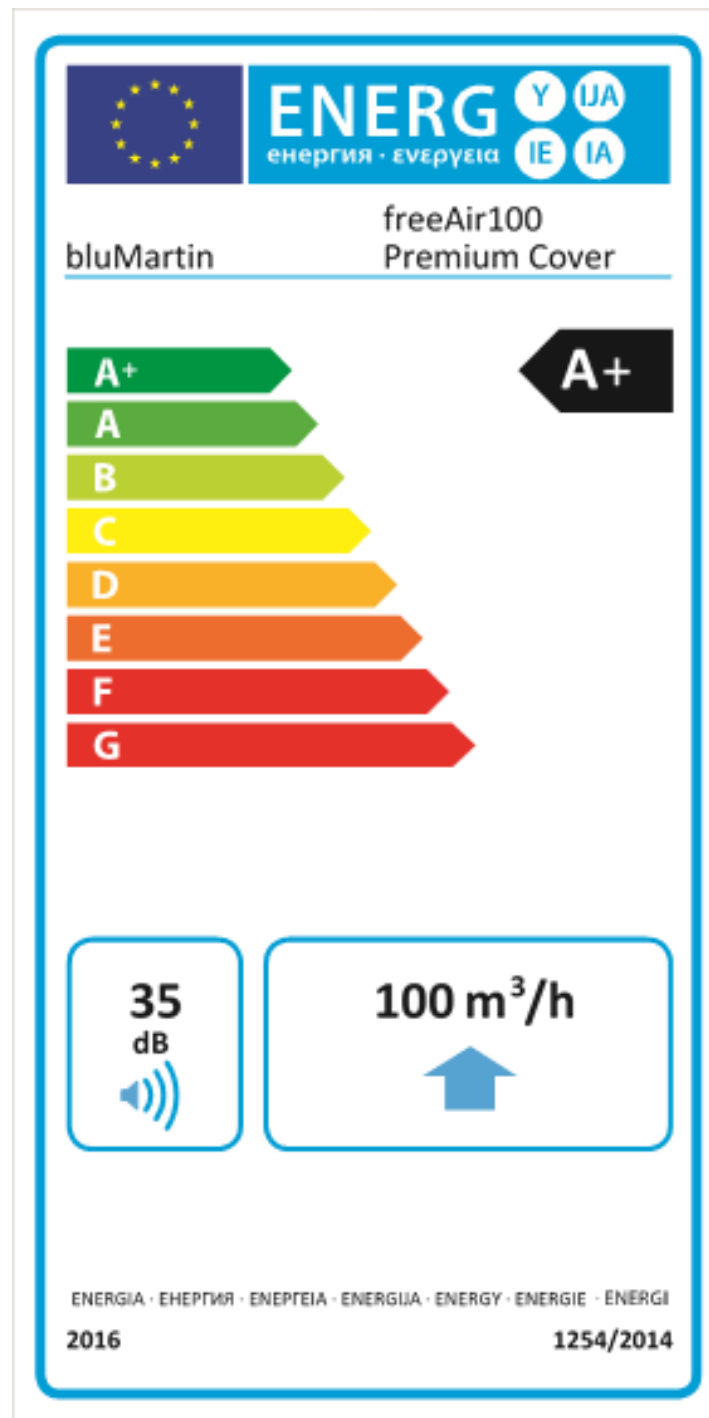
Perhaps you have activated the Increased Min Vent (possible from pcb version 10; mid 202), although 30 m³/h is selected at the 2nd Room Extract?



For troubleshooting visit the website:

www.bluMartin.de/freeair-support/





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