



Central Control Unit SEC-20-BF (with humidity sensor)

Assembly Manual

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Notes

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



Danger: indicates a danger with a high risk which can cause death or serious injuries if it is not avoided.



Warnung: indicates a danger with a low level of risk which can cause slight or moderate injuries if it is not avoided.



Vorsicht: indicates a danger with a low level of risk which can cause slight or moderate injuries if it is not avoided.



Note: failure to adhere to the instruction or guideline 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 installation) 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 Installation 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 in this 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 ventilation 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 ventilation 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 the General Terms and Conditions!

A SEVi 160/200 ventilation system includes at least 2 SEVi 160/200 fans and a SEC-20-BF control unit. Ideally, an even number of devices (max. 6) is to be installed (exception: SEVi 160 DUO (max. 3)). The ventilation system is operated by a direct voltage of 12 V.

Notes:

- The ventilation system is always controlled via the control unit.
- The humidity level (can be activated optionally) is always determined at the control unit
- The system must not be operated in rooms with high dust rate.
- The system must not be operated in rooms in which decomposing gases are used.
- The system is not suited for drying out buildings.
- The ventilation system shall only be started up after the completion of the construction works.
- The ventilation system is to be closed during the construction works.
- Temperature range of application: 0°C to 40°C, max. 95% RH

2. Standard scope of delivery

<ul style="list-style-type: none"> - operator control unit SEC-20-BF - switch-mode power supply - 2 x flush-mounted socket with a depth of 62 mm with device screws - double frame 	
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3. Assembly



Note:

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

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

Important for operation with humidity feature:

- The permanent accessibility of the components must be guaranteed.
- Installation in humidors: The power-supply unit and the operator control unit belonging to it must not be installed in the zones 0, 1 and 2 according to the German regulation DIN 57100/VDE 100 Part 701!
- The operator control must not be installed and operated directly next to heat sources (heating unit, cooker or oven) at which the temperature can exceed 40°C (no direct sunlight either)!
- The operator control can be installed in the direct humidity area (next to washbasin, tub or shower)!



Danger:

All works shall only be carried out when the system is in de-energized condition!

Adhere to the installation instructions of this manual. Moreover, a connection plan is added to the operator control unit.

- tools required: slot cutter, drill bit for installing flush-mounted sockets, screw drivers

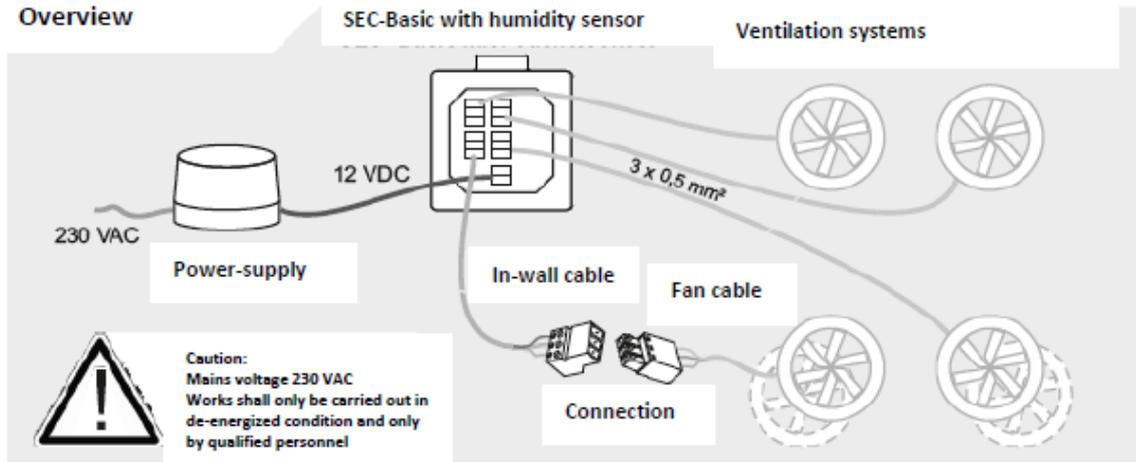


Note: When installing the devices it is absolutely necessary to ensure star-shaped wiring!

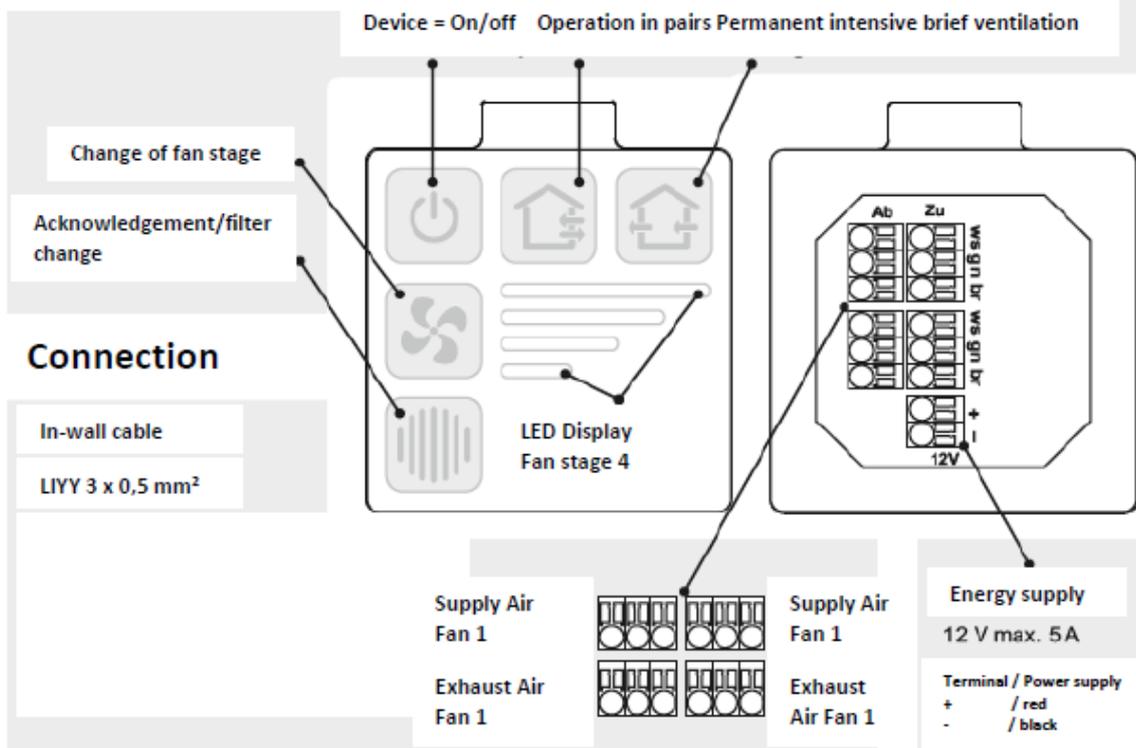
SEC-Basic with humidity sensor

Manual and humidity-managed control of up to six ventilation systems
 Power supply and speed control of the ventilation systems connected
 Operating mode selection, ventilation level selection and filter runtime counting
 Assembly in standard flush-mounted sockets

Overview



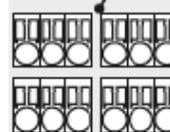
Operating elements



Connection

In-wall cable
 LIYY 3 x 0,5 mm²

Supply Air
 Fan 1
 Exhaust Air
 Fan 1



Supply Air
 Fan 1
 Exhaust
 Air Fan 1

Energy supply
 12 V max. 5 A
 Terminal / Power supply
 + / red
 - / black

CE Konformitätserklärung CE Declaration of Conformity
 Die SEVentilation GmbH bescheinigt die Konformität für das Produkt:
 The SEVentilation GmbH here with declares conformity of the product:
SEC-Basic mit Feuchtsensor (SWD0019E20A)
 mit den folgenden Bestimmungen:
 with applicable regulations:

EMV-Richtlinie 2014/30/EU
 EMC-Directive 2014/30/EU
 RoHS-Richtlinie 2011/65/EU
 RoHS-Directive 2011/65/EU

angewendete harmonisierte EMV-Störfestigkeit EN 61000-6-1: 2007-10
 Normen:
 applied harmonised standards:
 EMC-Immunity EN 61000-6-1:2007-10
 EMV-Störaussendung EN 61000-6-3:2011-09
 EMC-Emission EN 61000-6-3:2011-09

Hersteller:
 Manufacture:
 SEVentilation GmbH
 E.-Thälmann -Str. 12
 07768 Kahla

Datum, Name, Unterschrift: 27.01.2016,
 Date, Name, Signature: Dipl.-Wirt.-Ing (FH) Nico Schellenberg

Beispieldetail

151.854_DB-SWD0019E20A-1

3.1 Connectivity options

The central control unit SEC-20-BF can be used for operating the fans of the SEVi 200 and SEVi 160 series. Moreover, the SEVi 160DUO MINI (available from autumn 2016) can be operated by using the SEC-20-BF.

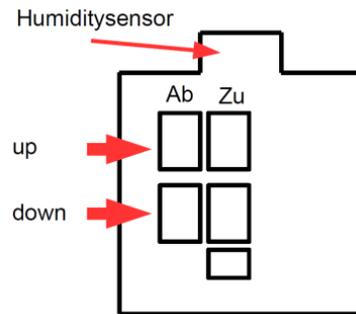
Furthermore, the central control unit can be used as a humidity sensor.



Specific feature: Die terminal assignment of the spring-type terminals depends on the fan models to be operated!

The fan terminals on the rear side of the operator control unit are separated in air incoming side (Zu) and air discharge side (Ab) on the one hand, and on the other hand in top (oben) and bottom (unten).

Air income and air discharge refer to the start direction or the intensive brief ventilation operation. A fan which is connected on the air incoming side, will work according to the air incoming mode in intensive brief ventilation or permanent ventilation operation; a fan which is connected on the air discharge side will transport the consumed air correspondingly.



The bottom connecting terminals must be used for operating the SEVi 160DUO MINI ventilation system.



Note: SEVi 160 fans (**without SEVi 160DUO MINI**) can be operated in the configurations 1 - 3 by using the top and bottom terminals!

The sole operation of the SEVi 160DUO MINI or the simultaneous operation of SEVi 160 systems and SEVi 160DUO MINI fans requires the selection of one of the configurations 4 - 7 and the appropriate assignment of the connecting terminals!

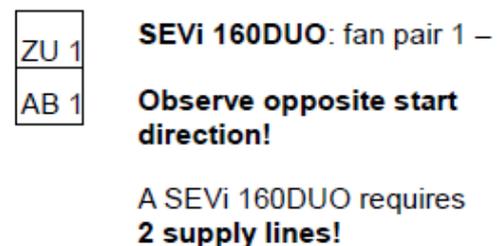
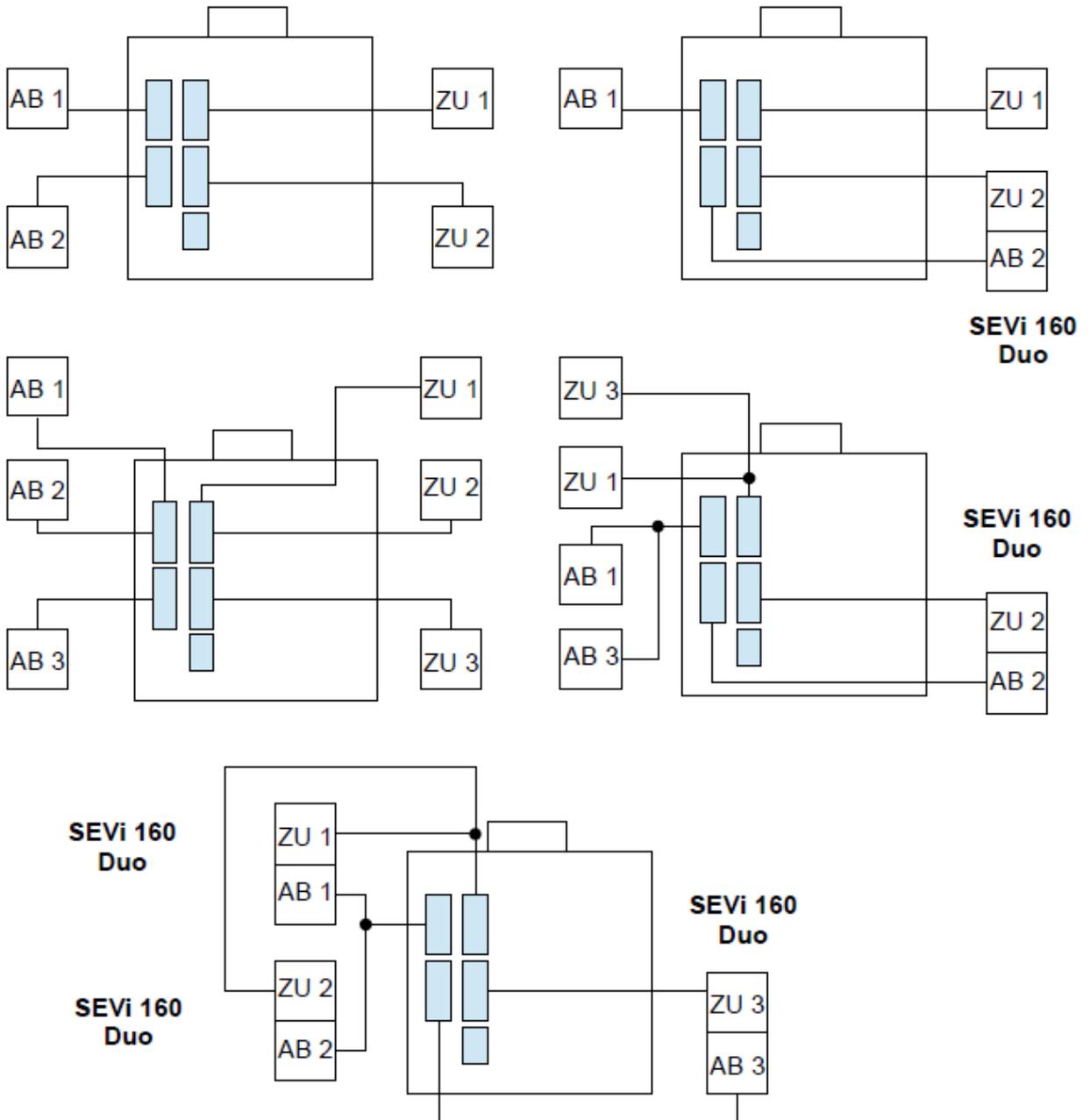
Depending on the device types used and the operating modes desired, the configurations indicated on pages 13/14 under 3.7 are to be set.



Note: An individual cable (LIYY 3 x 0.5 mm² or 3 x 0.75 mm²) is to be laid from **each fan (SEVi160/200)** to the distributor board! **Two cables must** be laid for the **double fans SEVi 160 DUO and SEVi 160DUO Mini!**

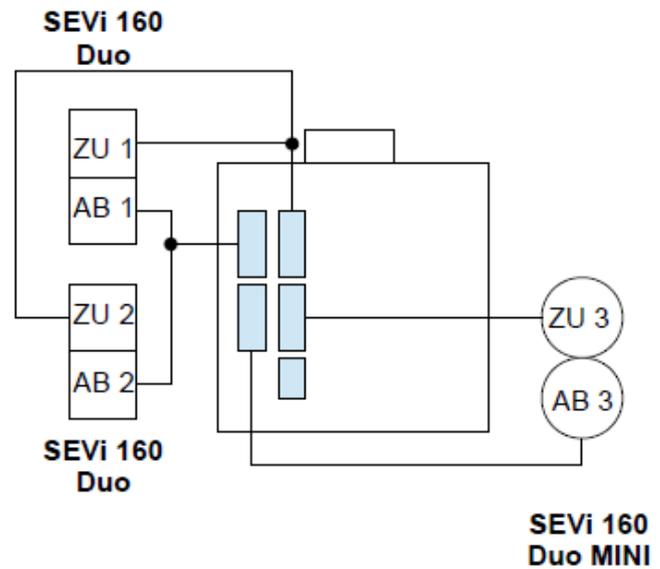
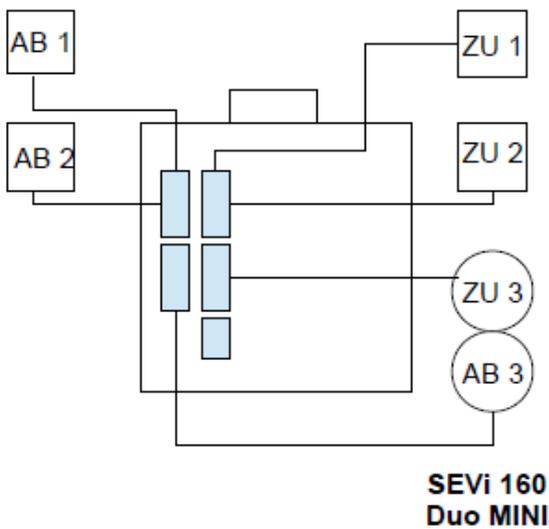
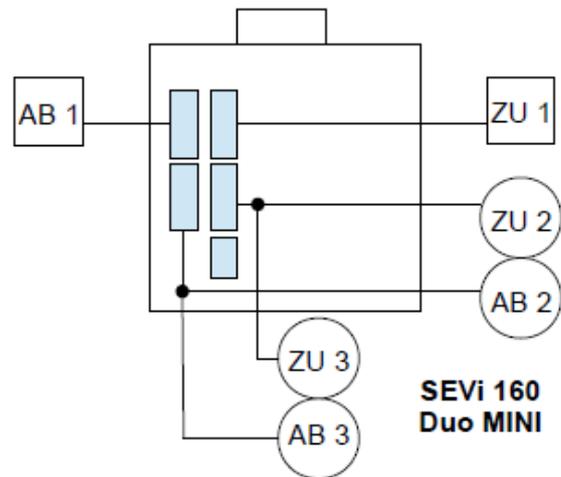
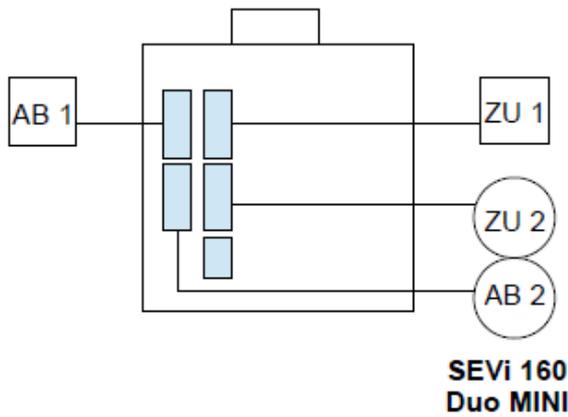
max. length of the in-wall cable: 30 m

3.2 Terminal assignments of SEVi 160 and SEVi 160DUO



Note: An individual cable (LIYY 3 x 0.5 mm² or 3 x 0.75 mm²) is to be laid from **each fan (SEVi 160/200)** to the distributor board! **Two cables must be laid for the double fan SEVi 160DUO!**

3.3 Terminal assignments of SEVi 160/SEVi 160DUO and SEVi 160DUO MINI



ZU 1 SEVi 160 single device 1
- start direction supply air

AB 1 SEVi 160 single device 1
- start direction exhaust air

ZU 1
AB 1

SEVi 160DUO: fan pair 1

Observe opposite start direction!

A SEVi 160DUO requires **2 supply lines!**

AB 1
ZU 1

SEVi 160DUO MINI: Fan pair 1

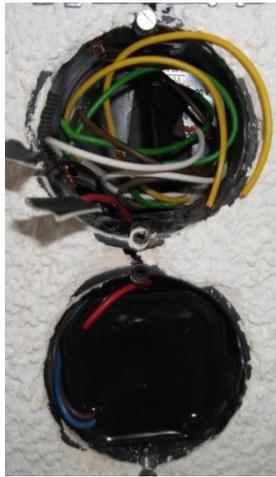
Observe opposite start direction!

A SEVi 160DUO MINI requires **2 supply lines!**



Note: An individual cable (LIYY 3 x 0.5 mm² or 3 x 0.75 mm²) is to be laid from **each fan (SEVi 160/200)** to the distributor board! **Two cables must be laid for the double fans SEVi 160 DUO and SEVi 160 DUO MINI!**

3.4 Assembly process

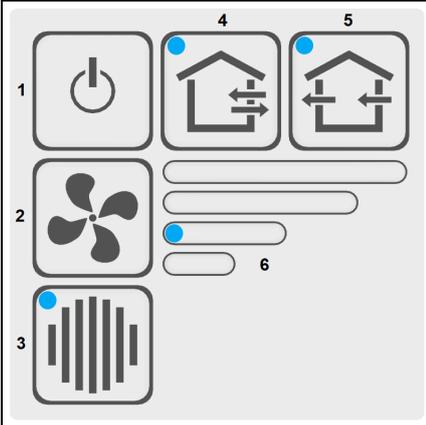
<p>1. Install the flush-mounted sockets upper socket for the operator control unit (fan connection) and lower socket for switch-mode power supply</p> <p>(Assembly of the double frame also vertically possible; please see page 16 for surface-mounted solution!)</p> <p>2. Install the switch-mode power supply Install it such that the 12 V output and the 230 V input are not on the same side of the switch-mode power supply! (Position 230 V below!)</p> <p>Lay the 12 V connection upwards.</p>	
<p>3. Mount the lower part of the blind frame The lateral openings must not be positioned above the flush-mounted socket with the power supply!</p> <p>Connect the in-wall cables(min. 3x0.5 mm²) of the fans at the operator control unit according to the existing fan types (see page 7)</p> <p>4. Lead the connected operator control with humidity-sensor unit diagonally through the opening in the upper part of the blind frame; position the operator control unit placed in the upper part and push it on the lower part.</p> <p>Note:</p> <p>To release the operator control unit, grasp the cover frame in the lower half and remove it carefully in vertical direction until the operator control unit can be taken from the lower part together with the upper part; try it several times if required.</p> <p style="color: red;">Do not use any tool for this purpose!</p>	

3.5 Fan connection

- Connecting plug to the ventilator (fan)

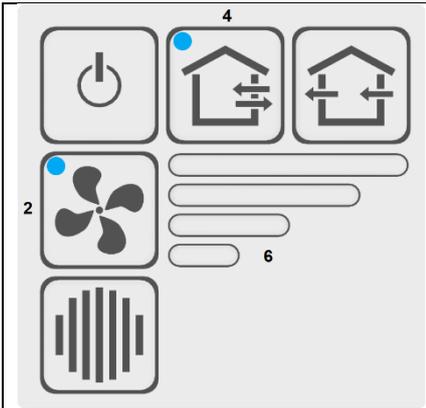
Connection in-wall cable and ventilator		Terminal/Cable ↔ Fan br/brown red gn/green violet ws/white blue
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3.6 Functional overview

	<p>(1) 1 Device On/Off:</p> <p>(2) Selection of the fan stage:</p> <p>(3) Acknowledgement/filter change:</p>	<p>When the device is switched off, the fan continues to run for a short period of time.</p> <p>If this key is pressed repeatedly, the fan stages 1 – 4 are run through. The fan stage currently set is shown in the LED display (6).</p> <p>The end of the maintenance interval for the dust filter is signaled by the LED. The display will be reset if the key is pressed for ca. 5 seconds after the filter change.</p>
<p>(4) Operation in pairs: Heat recovery mode, normal operating condition in the fan stages 1 – 4*.</p> <p>*depending on the device type, see 3.7</p>	<p>(5) Permanent intensive brief ventilation operation: If this key is pressed, the ventilation system jumps to a permanent intensive brief ventilation mode which allows the ventilation of a room without opening the windows. For this purpose, stage 4* is set automatically.</p> <p>* depending on the device type, see 3.7</p>	
<p>Snooze function: The control unit is provided with a snooze function by means of which the system can be started with a delay of 60 minutes.</p> <ul style="list-style-type: none"> • Set the desired operating mode and fan stage. • Keep the keys 3 and 5 pressed for at least 3 sec. (press key 3 first) -> only the LED of the operating mode set (4 or 5) is lit. <p>Press the keys (2), (4) or (5) to terminate the snooze phase prematurely.</p>		

3.7 Device types for the SEC-20-BF

Determining the device type- The SEC-20-BF offers the possibility to connect different device types of the SEVi series with different configurations. Depending on the device type, various programmes are implemented in the software. They are described in the following.

	<p>To select them, the keys (4) "Alternating operation" and (2) "Fan stage" are to be pressed simultaneously for ca. 5 seconds.</p> <p>Then, the LED display (6) flashes (see Table).</p> <p>To change the configuration, the key (2) "Fan stage" is pressed to select another configuration (the corresponding LEDs flash).</p> <p>You can exit the selection mode by keeping the keys (4) "Alternating operation" and (2) "Fan stage" pressed again for ca. 5 seconds.</p>
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When using the DUO "Mini" devices, it must be ensured that the DUO Mini is installed on the lower terminal strip. If the corresponding configuration is then set, different values run on the upper and lower terminal strips. If no DUO "Mini" is used, all 4 terminals can be selected with the corresponding configuration!

configuration	Device type	comment	Indicated by led
1	SEVi 200 / SEVi 160 (until 06/2021) sound-optimized operation at stage 1		
2	SEVi 160 (DIBt version until 06/2021)		
3	SEVi 160 (until 06/2021) sound-optimized operation at stage 1 in combination with SEVi 160DUO Mini exhaust - Stage 4 is designed as a pure air discharge solution in which the two fans are operated at the highest air discharge stage (irrespective of the connection on the operator control unit).	Sufficient air must come in for pure air discharge operation! 	
4	SEVi 160 (DIBt Version until 06/2021) in combination with SEVi 160DUO Mini exhaust - Stage 4 is designed as a pure air discharge solution in which the two fans are operated at the highest air discharge stage (irrespective of the connection on the operator control unit).	Sufficient air must come in for pure air discharge operation! 	
5	SEVi 160 (DIBt Version until 06/2021) in combination with SEVi 160DUO Mini – 4 – stage heat recovery function.		
6	SEVi 160 (DIBt Version from 07/2021)		
7	SEVi 160 ^{ECO}		
8	SEVi 160 (DIBt Version from 07/2021) in combination with SEVi 160DUO Mini – 4 – stage heat recovery function.		
9	SEVi 160 (DIBt Version from 07/2021) in combination with SEVi 160DUO Mini exhaust - Stage 4 is designed as a pure air discharge solution in which the two fans are operated at the highest air discharge stage (irrespective of the connection on the operator control unit).	Sufficient air must come in for pure air discharge operation! 	

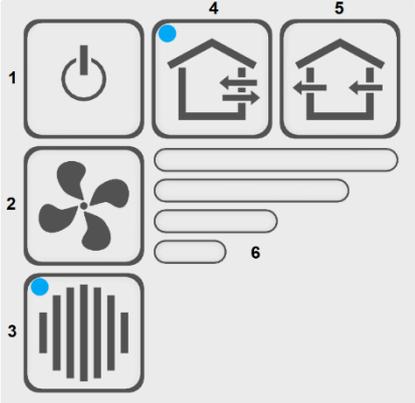
3.8 Activating/changing the humidity feature

The SEC-20-BF central control unit can be operated optionally with or without humidity control.

The humidity control distinguishes between five different conditions:

Condition	Indication via LED in the setting mode	Humidity threshold (RH%)
Humidity control off	All LEDs off	-
1	LED fan stage 1 flashes	50
2	LED fan stage 2 flashes	55
3	LED fan stage 3 flashes	60
4	LED fan stage 4 flashes	70

To activate the humidity control or to set another humidity threshold, the following steps are to be taken:



Keep the keys “Alternating operation – (4)” and “Filter change – (3)” pressed for 5 seconds. The control changes to the activate/deactivate mode.

The condition currently set is indicated by the LED of the fan stages (see table).

The desired condition of the humidity control can be selected by pressing the key “Fan stage – (2)”.

Press the keys “Alternating operation – (4)” and “Filter change – (3)” anew for at least 5 seconds to save the setting selected. Then, the control unit returns again to normal operation.



Note to humidity control:

In the activated mode of the humidity control, the room humidity is continuously measured. If the value which has been set for the humidity threshold is exceeded, the fan stage of the fans connected is increased by one stage until fan stage 4 is reached. The stages are gradually increased at 15-minute intervals.

If the value measured is lower than the humidity threshold set (minus a hysteresis of about 5%), the fan stage is decreased gradually again down to stage 1.

The manual change of the fan stage is still possible. However, the manual setting will be corrected at 15-minute intervals if the humidity control is switched on.

Delivery status: configuration 1, humidity control off

3.9 Combination with surface-mounted housing(optionally available)

If a surface-mounted solution is selected for the control unit installation, the surface-mounted housing supplied as accessory can be used.



In order to ensure that the double frame fits, only the circumferential strip must be removed.

! **Important!**

The surface-mounted housing must be provided with a separating element in the centre to ensure the proper functioning of the humidity analysis!

Afterwards, the four screws can be used for fixing the lower part on the surface-mounted housing.

EC Declaration of Conformity

The company

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

declares under its sole responsibility that the products:

of type: **SEVi 200 / SEVi 200U / SEVi 200L / SEVi 160 / SEVi 160DUO / SEVi 160U / SEVi 160DUO MINI / 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 Standards EMC – 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 household and similar electrical appliances)

according to the provisions 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 160DUO / SEVi 160DUO MINI / 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, 10/12/2015



Dipl.Wirt.Ing. (FH)* Nico Schellenberg

**Graduate Industrial Engineer*

The manufacturer reserves the right to change technical details!