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HEAT RECOVERY AIR HANDLING UNIT



Komfort EC S5B270 S14

EN

USER MANUAL



BLAUBERG/UK

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This user manual is intended for technical, maintenance, and operating staff. The manual includes technical details, operating principles, and installation requirements for the Komfort EC D5B180 S14 units. Installers must have the necessary qualifications and experience to install and operate the unit and should be able to work in accordance with workplace safety rules as well as construction norms and industry standards. The information in this user manual is correct at the time of printing. The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time to incorporate the latest technological developments. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means in any information search system or translated into any language in any form without the prior written permission of Blauberg.

SAFETY REQUIREMENTS

Please read the user manual carefully prior to installing and operating this unit. All user manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit. The warnings contained in the user manual must be considered seriously since they contain vital personal safety information. Failure to follow the rules and safety precautions noted in this user manual may result in injury or unit damage. After carefully reading the manual, keep it available for the entire service life of the unit. A copy of this user manual should be handed to the end user after installation.



- Isolate the unit from the mains prior to installation or maintenance.



- Exercise caution whilst unpacking the unit and its components.



- The unit must be earthed.



- While installing the unit, follow the safety regulations with regards to the use of power tools.



- Do not change the power cable length. Do not bend the power cable. Avoid damaging the power cable. Do not put any foreign objects on top of the power cable.



- Do not use damaged equipment or cables when connecting the unit to mains power.



- Do not touch the unit's controls with wet hands. Do not carry out the installation or maintenance with wet hands.



- Do not allow children to operate the unit.



- Do not store any explosive or highly flammable substances in close proximity to the unit.



- Do not open the unit during operation.



- Do not intentionally block the air ducts.



- Do not sit on the unit and avoid placing foreign objects on it.



- Do not lay the power cable of the unit in close proximity to heating equipment.



- Do not operate the unit outside the temperature range stated in the users manual. Do not operate the unit in aggressive or explosive environments.



- Do not wash the unit with water. Protect the electric parts of the unit against ingress of water.



- isolate the unit before commencing any maintenance operations.



- In the event of any unusual sound, odour or smoke emission from the unit, isolate and contact the seller



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- Use the unit only for its intended purpose.



THE PRODUCT MUST BE DISPOSED SEPERTATELY AT THE END OF ITS SERVICE LIFE. DO NOT DISPOSE THE UNIT AS UNSORTED MUNICIPAL WASTE.

PURPOSE

The ability to save energy by means of heat recovery means that the unit is an important component in any energy-efficient property. The unit is designed to ensure continuous mechanical air exchange as well as to recover the heat energy that would otherwise be lost in the extracted air and use it to warm up the filtered supply air.



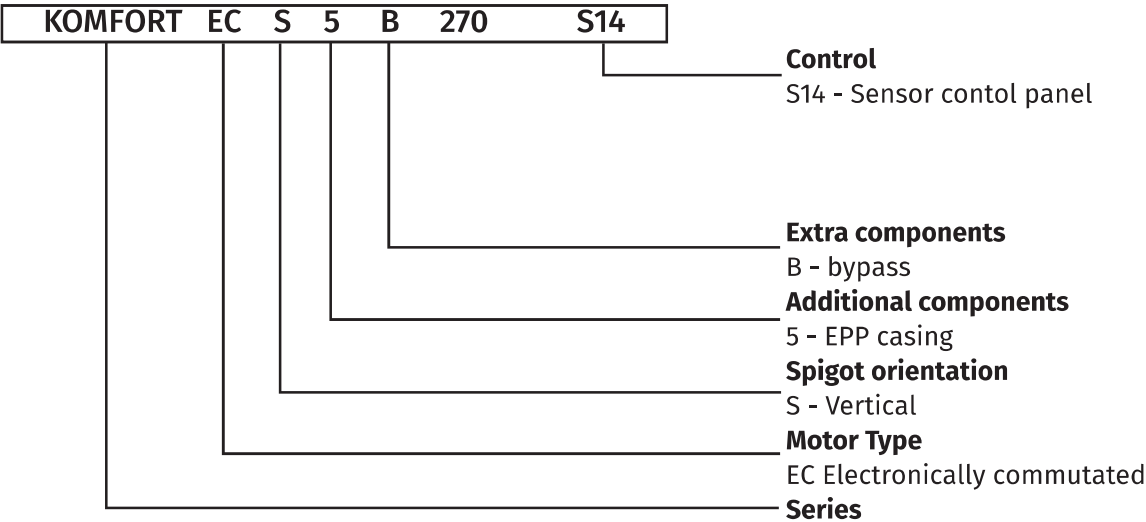
THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING. THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING. THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS.

The unit is rated for continuous operation.
Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

NAME	NUMBER
Air hadling unit	1 pc.
User’s manual	1 pc.
Contol panel user’s manual	1 pc.
Control panel	1 pc.
Installation kit	1 pc.
Packing box	1 pc.

DESIGNATION KEY



TECHNICAL DATA

The unit is designed for indoor application with the ambient temperature ranging from +1 °C up to +40 °C and relative humidity up to 80 %.

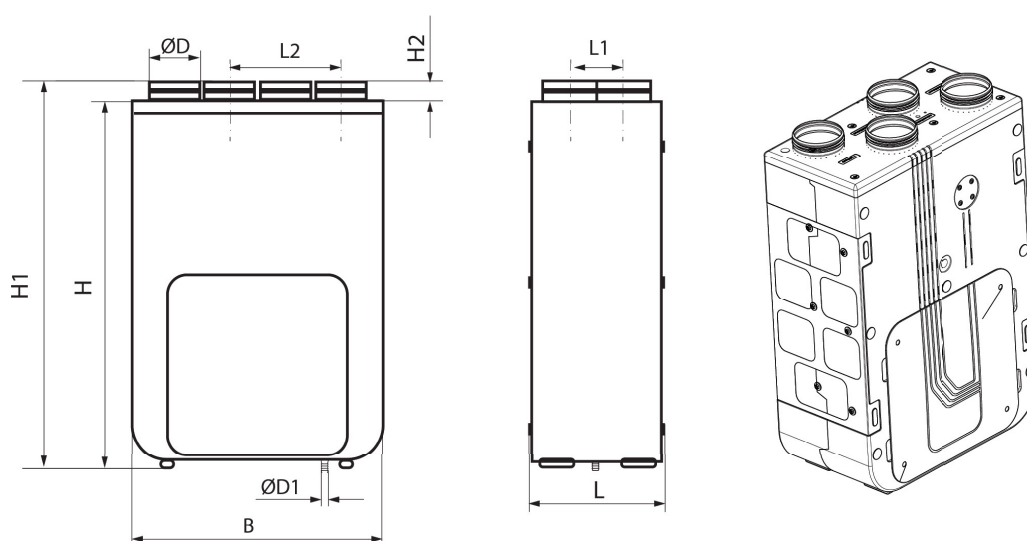
The unit is rated as a Class I electrical appliance.

Hazardous parts access and water ingress protection rating:

- IP44 for the unit motors
- IP22 for the assembled unit connected to the air ducts

The unit design is constantly being improved, thus some models may be slightly different from those described in this manual.

MODEL	KOMFORT EC S5B270 S14
Unit Voltage [V/50 (60) Hz]	1 ~ 220 - 240
Max. fan Power [W]	162
Max. unit current (without a heater) [A]	1.2
Max. Air capacity [m³/h]	300
Sound pressure level at a distance of 3m [dBA]	34
Max. transported air temperature [°C]	from -25 to +50
Casing material	EPP
Heat insulating material	EPP 15.. 26mm
Filtering class of the extract filter	G4
Filtering class of the supply filter	G4 (Optionally G8)
Connected spigot diameter	125
Weight [kg]	13
Heat recovery efficiency [%]	87-98
Heat exchanger type	counter-flow
Heat exchanger material	polystyrene
SEC class	A+



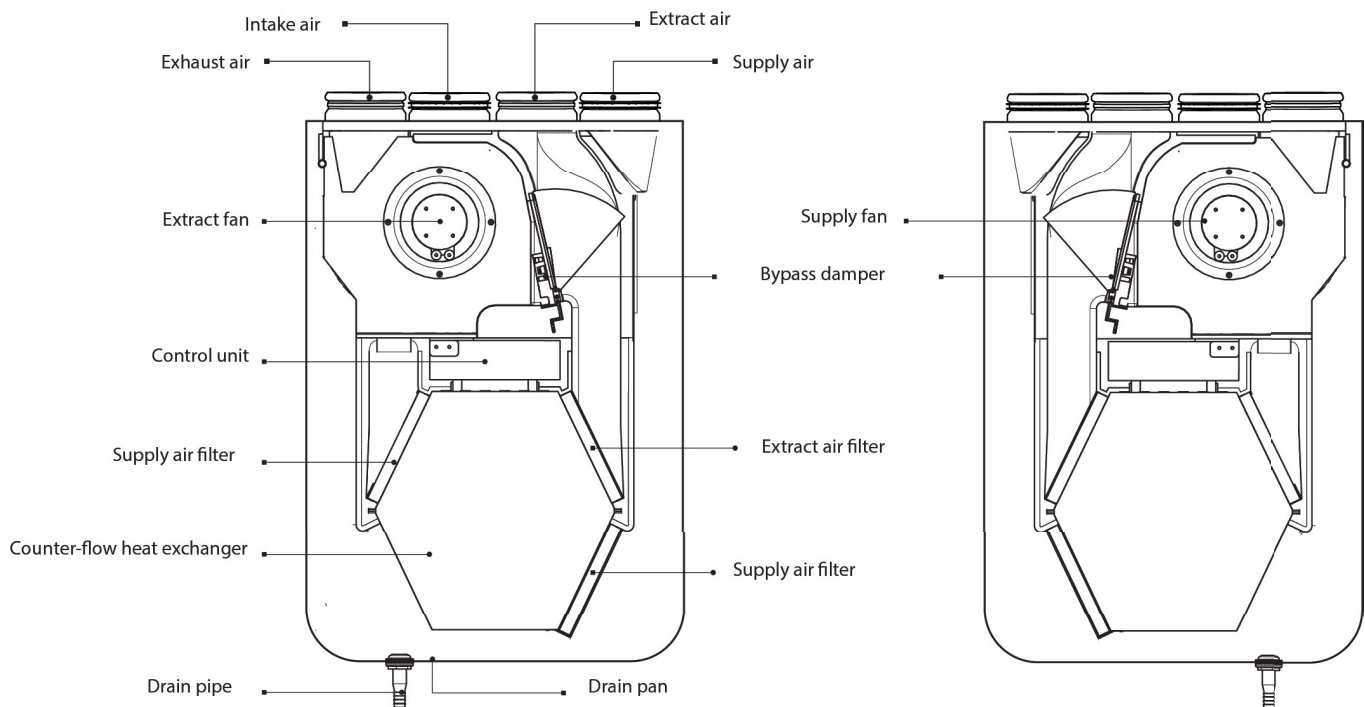
Model	Dimensions [mm]								
	ØD	ØD1	B	L	L1	L2	H	H1	H2
Komfort EC S5B270 S14	125	15	590	316	118	288	852	893	41

DESIGN AND OPERATING PRINCIPLE

The unit has the following operating logic:

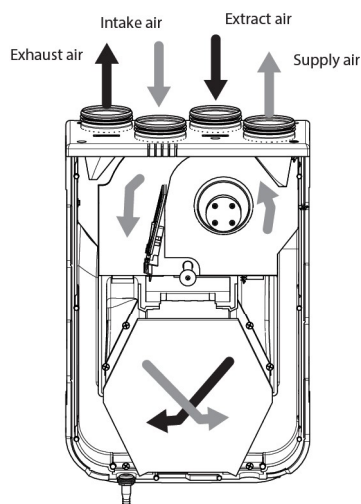
Warm, stale air is extracted from your “wet” rooms (Kitchen, bathroom, en-suite, utility room etc.) This stale air then flows through the heat exchanger, via a filter before terminating on the outside of the property. Simultaneously, fresh air is drawn in from outside, which in turn flows through the heat exchanger, via a filter before being introduced into your living spaces (Bedrooms, lounge, dining area, study etc.) The heat exchanger allows the warmth from the extracted air to heat the incoming flow of air, without the two airflows ever coming in to contact with one another. This ability to provide a constant supply of fresh air whilst extracting stale air and not losing a significant amount of the property’s heat energy can greatly reduce heating costs whilst creating a very healthy and pleasant living environment. The unit is equipped with detachable plates that allow access to the two filters for cleaning and eventual replacement. Condensation is drained away from the condensate sump via overflow pipes.

UNIT DESIGN



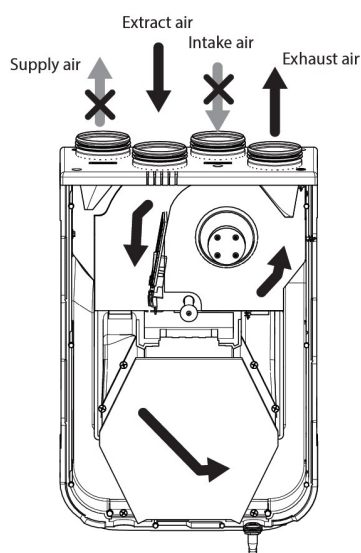
The service side of the unit is equipped with detachable plates fixed by screws for filter cleaning and replacement operations. The control unit is positioned inside the unit casing. The power cable and grounding cable are connected to the control unit via the electric lead-ins placed at the side of the unit. The difference between the supply and extract air flow temperature leads to condensate generation. Condensate is collected in the drain pan and is removed outside through the drain pipes.

UNIT OPERATION MODES



Heat recovery mode.

Warm, stale air is extracted from your “wet” rooms (Kitchen, bathroom, en-suite, utility room etc.) This stale air then flows through the heat exchanger, via a filter before terminating on the outside of the property. Simultaneously, fresh air is drawn in from outside, which in turn flows through the heat exchanger, via a filter before being introduced into your living spaces (Bedrooms, lounge, dining area, study etc.) The heat exchanger allows the warmth from the extracted air to heat the incoming flow of air, without the two airflows ever coming in to contact with one another. This ability to provide a constant supply of fresh air whilst extracting stale air and not losing a significant amount of the property’s heat energy can greatly reduce heating costs whilst creating a very healthy and pleasant living environment.

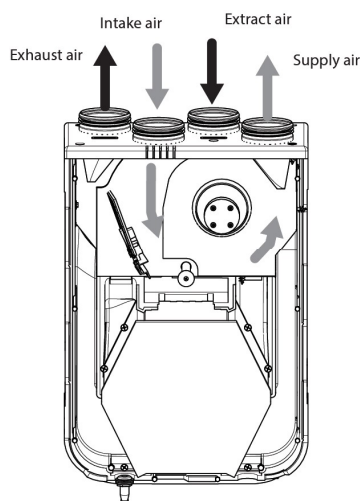


Freeze protection mode.

The heat exchanger freeze protection function of the unit is implemented with a temperature sensor installed in the exhaust air duct downstream of the heat exchanger. In case of a freezing danger the supply fan is turned off and the heat exchanger is warmed up with warm extract air flow.

The recommended sensor or thermostat operating temperature is +3 °C (exhaust air temperature). If necessary, this setting can be changed within the software.

After temperature increase the unit returns to the previous operation mode.



Summer Cooling mode.

The bypass damper allows the supply air to completely bypass the heat recovery process by rerouting it around the heat exchanger rather than through it. This allows for ventilation to continue through the hotter months of the year.

INSTALLATION AND SET-UP



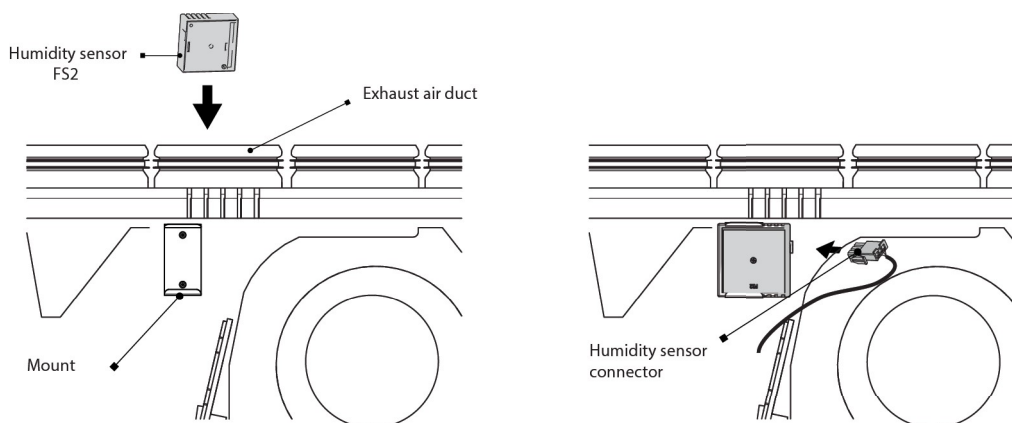
READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

FS2 HUMIDITY SENSOR INSTALLATION AND CONNECTION

The FS2 humidity sensor is not included in the delivery set and can be ordered separately.

The humidity sensor must be installed prior to unit mounting.

Install the humidity sensor through the extract spigot into the mount on the extract air duct panel and connect the humidity sensor plug to the respective socket on the control unit, refer to the External wiring diagram.



UNIT INSTALLATION

To get the best performance of the unit and to minimize turbulence-induced air pressure losses, connect the straight air duct section to the spigots while installing.

Minimum straight air duct length:

- equal to 1 air duct diameter on the intake side
- equal to 3 air duct diameters on outlet side

If the air ducts are too short or not connected, protect the unit parts from ingress of foreign objects.

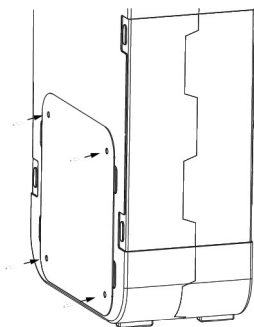
To prevent uncontrollable access to the fans, the spigots may be covered with a protecting grille or other protecting device with mesh width not more than 12.5 mm.

While installing the unit, ensure convenient access for subsequent maintenance and repair.

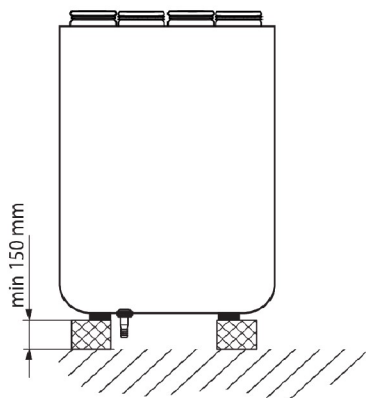
The unit must be mounted on a flat floor.

Installing the unit to an uneven surface could lead to the unit's casing distortion and operation disturbance.

Do not expose the unit to direct sunlight.

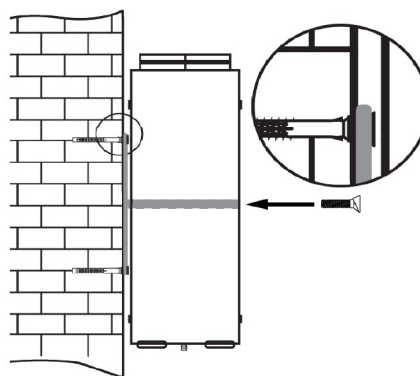


The plate opposite to the service side must be fixed with screws (included in the delivery set) before installation.



Unit floor mounting

Install the unit on the pre-mounted floor supports, minimum 150 mm height, to ensure sufficient access for the drain pipe connection to the U-trap and for condensate drain system installation.



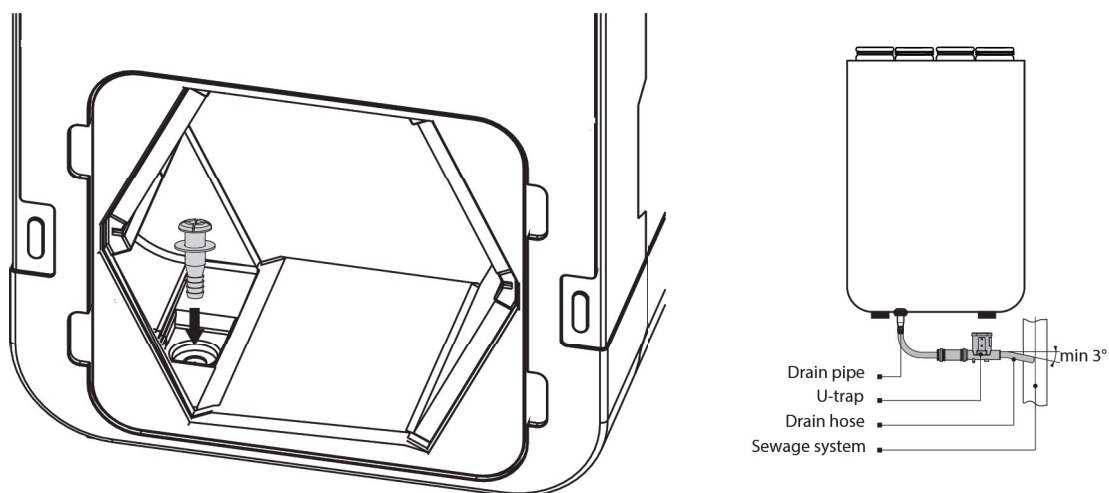
Unit wall mounting

Fasteners (dowels, self-tapping screws) for wall mounting are not included in the delivery set and should be ordered separately.

While choosing fasteners consider the material of the mounting surface as well as the weight of the unit, refer to the Technical data section. Fasteners for unit installation should be selected by a qualified technician. Secure the wall bracket at required height. Hang the unit on the wall bracket and secure it with a screw.

CONDENSATE DRAINAGE

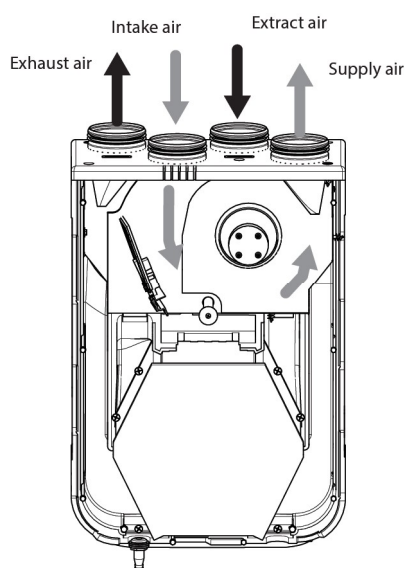
Condensate drainage is required for the Komfort EC S5B270 S14 unit series. The Komfort EC S5B270 S14 units are equipped with a heat exchanger with an enthalpy membrane at the core. No condensate is formed in heat exchangers of this type, therefore, no condensate drainage is required. The hole for the drain pipe connection is located at the bottom of the unit. Open the service panel, remove the heat exchanger and filters, drill a hole (22 mm in diameter) in a plastic pan in the exhaust air duct and install the drain pipe (supplied) in the hole. Then connect the drain pipe to the sewage system using the SG-32 U-trap kit (purchased separately). The pipe slope downwards must be at least 3°.



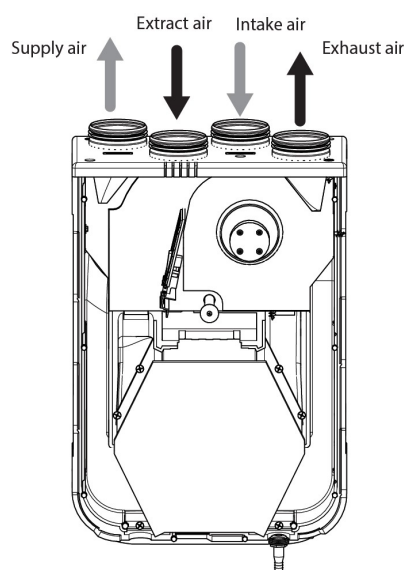
The condensate drainage system is designed for normal operation in premises with air temperatures above 0 °C! If the expected ambient air temperatures are below 0 °C, the condensate drainage system must be equipped with heat insulation and pre-heating facilities.

SERVICE SIDE CHANGE

Right-Handed Installation



Left-Handed installation



Make sure of the correct unit service side selection. Unit mounting position should enable free excess to the opening plate for maintenance and service operations. The plate opposite to the service side must be fixed with screws (included in the delivery set).

CONNECTION TO POWER MAINS



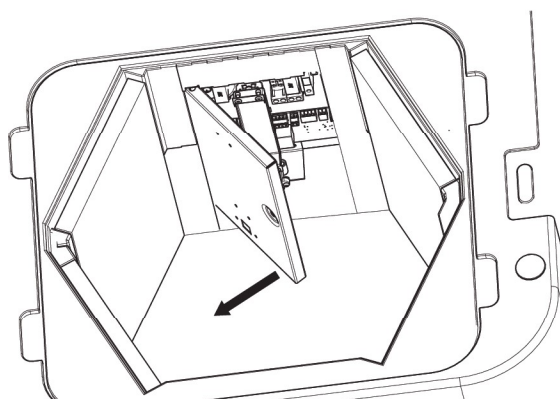
ISOLATE THE UNIT PRIOR TO UNDERTAKING ANY INTERNAL MAINTENANCE OR PROCEDURES. THE UNIT MAY ONLY BE ELECTRICALLY CONNECTED BY A QUALIFIED ELECTRICIAN. THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE SHOWN ON THE RATING PLATE.



ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY

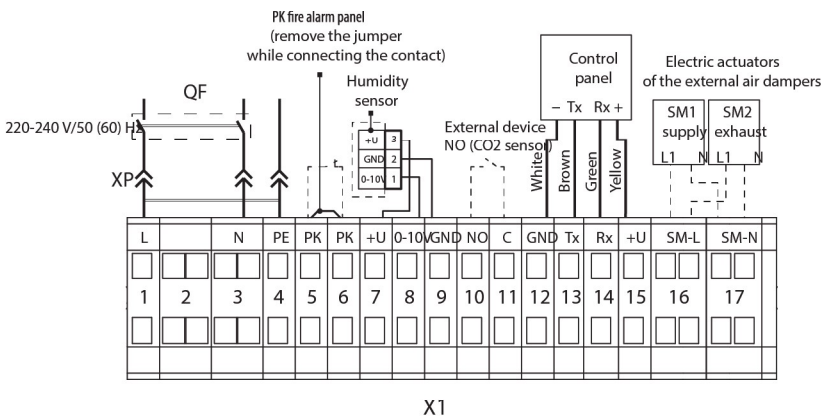
The air-handling unit is rated for connection to single-phase AC 220-240 V/50 (60) Hz power mains. Connect the unit to power mains using the power cord with the IEC plug (included in the delivery set). The external power input must be equipped with an automatic circuit breaker built into the stationary wiring to open the circuit in the event of overload or short-circuit. The position of the external circuit breaker must ensure free access for quick power-off of the unit. The trip current must be in compliance with the consumption current, refer to Technical data.

Complete the electrical connections through the terminal block in the control unit as shown in the external wiring diagram.



Access to the control unit

EXTERNAL CONTROL UNITS WIRING DIAGRAM



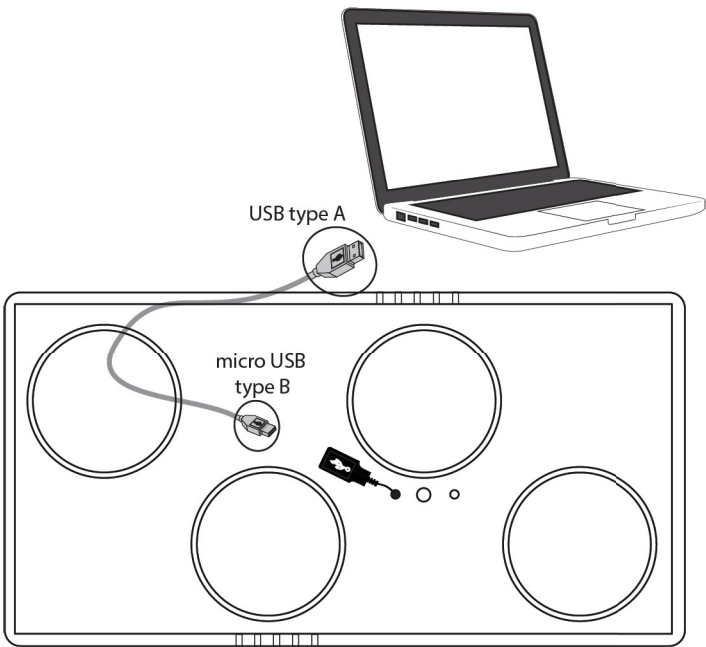
Designation	Name	Model	Wire**
N.o	External control device contacts	LF230	2 x 0.75 mm ²
SM1*	Supply air damper actuator	LF230	2 x 0.75 mm ²
SM2*	Extract air damper actuator	LF230	2 x 0.75 mm ²
PK*	Contact from fire alarm panel	NO	2 x 0.75 mm ²

* Is not included in the delivery set.
** Maximun connecting cable length is 20m.

UNIT CONTROL

OPERATION USING SOFTWARE

To work with the pre-installed software, connect the unit to a laptop or to a PC via a USB cable with a Type A and Type B connectors. The USB cable is not included in the delivery set.



Parameter	Factory setting		Control range
	Supply	Extract	
Zero speed (Unit is off) [%]	0	0	0-100
Low speed [%]	40	40	0-100
Medium speed [%]	70	70	0-100
High speed [%]	100	100	0-100
Unit speed with the closed dry contact of the external control unit [%]	100	100	0-100
Filter cleaning (replacement) interval [h]	2160 (3 months)		0-10000
Humidity level [%]	60		30-80

The list of the adjustable parameters can be expanded in new versions of the software.
Setting, troubleshooting and upgrading of the software version is made by the service technician.
To download the software follow the link <http://blauberg.co.uk/download>.
Select the document type “**Software**” and then using the search bar find the software for the automation **S14**.
Download the software file.

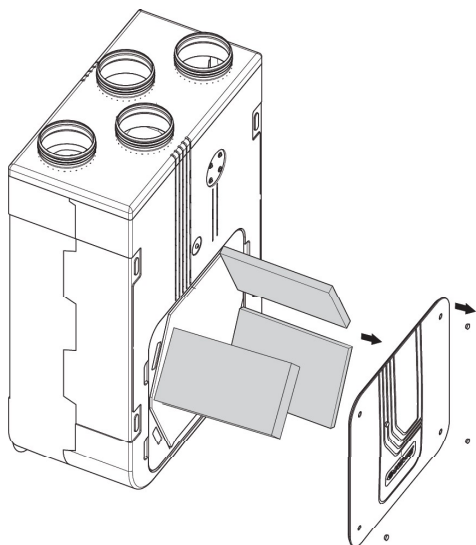
TECHNICAL MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS

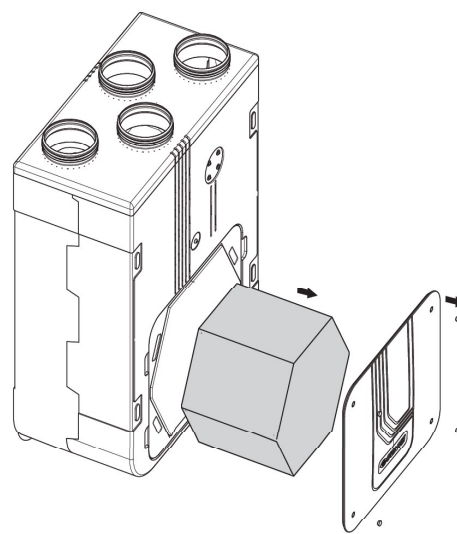
FOLLOW THE SAFETY REGULATIONS WHEN CARRYING OUT MAINTENANCE.

Maintenance operations of the unit are required 3-4 times per year. It includes general cleaning of the unit and the following operations:



1. Filter maintenance (3-4 times per year).

Dirty filters increase air resistance in the system and reduce supply air volume. The filters require cleaning not less than 3-4 times per year. Vacuum cleaning is allowed. After two consecutive cleanings filters must be replaced. For new filters, contact the Seller. To clean or replace the filters, detach the removable plates located on the service side of the unit. After cleaning install the filters and the detachable plates in the reverse order.



2. Heat exchanger maintenance (once per year).

Some dust may accumulate on the heat exchanger even in case of regular maintenance of the filters. To maintain the high heat recovery efficiency, regular cleaning is required. Before removing the heat exchanger, detach the removable plate located on the service side of the unit.

To clean the heat exchanger pull it out, drain the water through the pipes, then flush the heat exchanger with warm detergent solution. After cleaning install the dry heat exchanger with the drain pan back to the unit.

3. Drain system maintenance (once per year)

The condensate drainage (drain line) may get clogged by dirt and dust particles contained in the exhaust air. Pour some water inside the drain pan to check the pipe for clogging. Clean the U-trap and the drain pipe if required.

4. Technical maintenance of air duct system (every 5 years).

Even regular fulfilling of all the maintenance operations prescribed above may not completely prevent dirt accumulation in the air ducts, which reduces the unit capacity. Duct maintenance means regular cleaning or replacement.

5. Control unit maintenance (if necessary).

The control unit maintenance must be performed by an expert qualified for unassisted operations with electrical installations with the voltage up to 1000 V after careful reading of the user's manual.

POSSIBLE REASONS AND TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
The fan(s) does not start when the unit is on	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot the connection error.
	The motor is jammed, the impeller blades are soiled.	Turn the unit off. Troubleshoot the motor jam and the impeller clogging. Clean the blades. Restart the unit.
	Alarm in the system.	Turn the unit off. Contact the seller.
Automatic circuit breaker trips following the unit turning on	Overcurrent as a result of short circuit in the electric circuit.	Turn the unit off. Contact the seller.
Low air flow	Low set fan speed.	Set higher speed.
	The filters and the fans are clogged, the heat exchanger is clogged.	Clean or replace the filters, clean the fans, and the exchanger.
	Ventilation system elements (air ducts, diffusers, louver shutters, grilles) are clogged, damaged, or closed.	Clean or replace the ventilation system elements, such as air ducts, diffusers, louver shutters, grilles.
Cold supply air	The extract filter is soiled.	Clean or Replace extract filter.
Noise, Vibration	The Impeller(s) is soiled.	Clean the impeller(s).
	The fan or casing screw connection is loose.	Tighten the screw connection of the fans or the casing all the way.
	No anti-vibration connectors on air duct pipe flanges.	Install anti-vibration connectors.
Water leakage (only for the Komfort EC S5B270-E units)	The drainage system is soiled, damaged, or installed incorrectly.	Clean the drain line if necessary. Check the line slope angle. Make sure that the U-trap is filled with water and the drain pipes are frost protected.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original box in a dry, well ventilated area.
- Storage temperature 5 °C - 40 °C.
- Storage environment must not contain aggressive or hazardous chemicals.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the type of cargo.
- Ensure that the mode of transport will give adequate protection against the elements and any other possible damage.
- Avoid impact, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures allow the unit to warm up at room temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Council Directive 2014/30/EU, Low Voltage Directive 2014/35/EU and CE-marking Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above. The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations.

Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation.

The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase.

The unit model must comply with the one stated in the user's manual.

Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

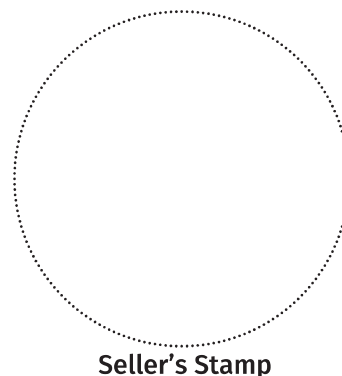


CERTIFICATE OF ACCEPTANCE

Unit Type	Air handling unit
Model	Komfort EC S5B270____S14
Serial Number	
Manufacture date	
Quality Inspector's Stamp	

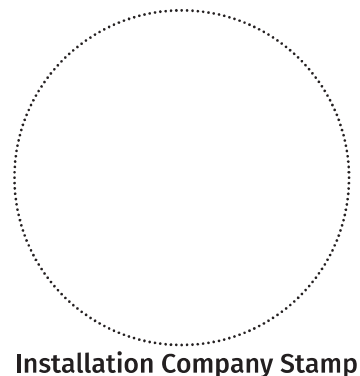
SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



INSTALLATION CERTIFICATE

The Komfort EC S5B270____S14 unit has been connected to power mains pursuant to the requirements stated in the present user's manual.	
Seller	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature	



WARRANTY CARD

Unit Type	Air handling unit
Model	Komfort EC S5B270____S14
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

