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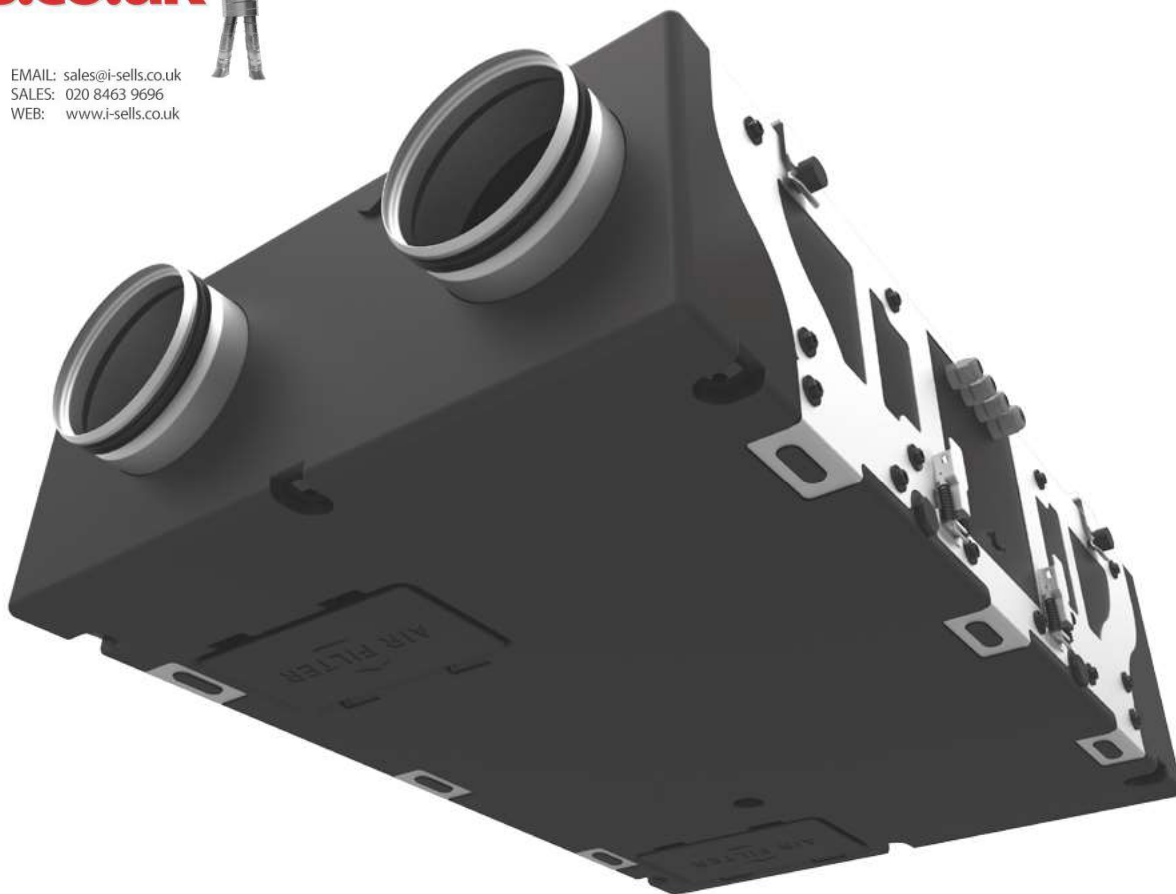
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AIR HANDLING UNIT



Komfort EC D5B180 S14
Komfort EC D5B180-E S14

EN

USER'S MANUAL



BLAUBERG
Ventilatoren

CONTENTS

Safety requirements..... 2
 Purpose..... 4
 Delivery set..... 4
 Designation key..... 4
 Technical data..... 5
 Unit design and operating principle 6
 Installation and set-up..... 8
 Connection to power mains 12
 Unit control 13
 Technical maintenance..... 14
 Storage and transportation regulations..... 16
 Manufacturer’s warranty 17
 Certificate of acceptance..... 19
 Seller information..... 19
 Installation certificate..... 19
 Warranty card..... 19

This user’s manual is a main operating document intended for technical, maintenance, and operating staff. The manual contains information about purpose, technical details, operating principle, design, and installation of the Komfort EC D5B180(-E) S14 unit and all its modifications. Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country. The information in this user’s manual is correct at the time of the document’s preparation. The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order 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 the Company.

SAFETY REQUIREMENTS

- Please read the user’s manual carefully prior to installing and operating the unit.
- All user’s 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’s manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user’s manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control, the user’s manual must be turned over to the receiving operator.

UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



- Unpack the unit with care.



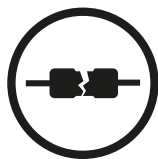
- The unit must be grounded!



- While installing the unit, follow the safety regulations specific to the use of electric tools.



- Do not change the power cable length at your own discretion. Do not bend the power cable. Avoid damaging the power cable. Do not put any foreign objects on the power cable.



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



- Do not touch the unit controls with wet hands. Do not carry out the installation and maintenance operations 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 block the air duct when the unit is switched on.



- 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 user's 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.



- Disconnect the unit from power mains prior to any technical maintenance.



- When the unit generates unusual sounds, odour, or emits smoke, disconnect it from power supply and contact the Seller.



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



- In case of continuous operation of the unit, periodically check the security of mounting.



- Use the unit only for its intended purpose.



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

PURPOSE

Due to the ability to save heating energy by means of energy recovery, the unit is an important element of energy-efficient premises. The unit is a component part and is not designed for stand-alone operation.

The unit is designed to ensure continuous mechanical air exchange in houses, offices, hotels, cafes, conference halls and other utility and public spaces as well as to recover the heat energy contained in the air extracted from the premises to warm up the filtered stream of 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 PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

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 handling unit | 1 pc. |
| User's manual | 1 pc. |
| Control panel user's manual | 1 pc. |
| Control panel | 1 pc. |
| Installation kit | 1 pc. |
| Packing box | 1 pc. |

DESIGNATION KEY

KOMFORT EC D 5 B 180 E S14

Control

A14 — sensor control panel

Heat exchanger type

E - energy recovery air handling unit

Rated air flow [m³/h]

Extra components

B - bypass

Casing design

5- EPP

Spigot orientation

D - suspended mounting, horizontal spigot orientation

Motor type

EC - electronically commutated

Series

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:

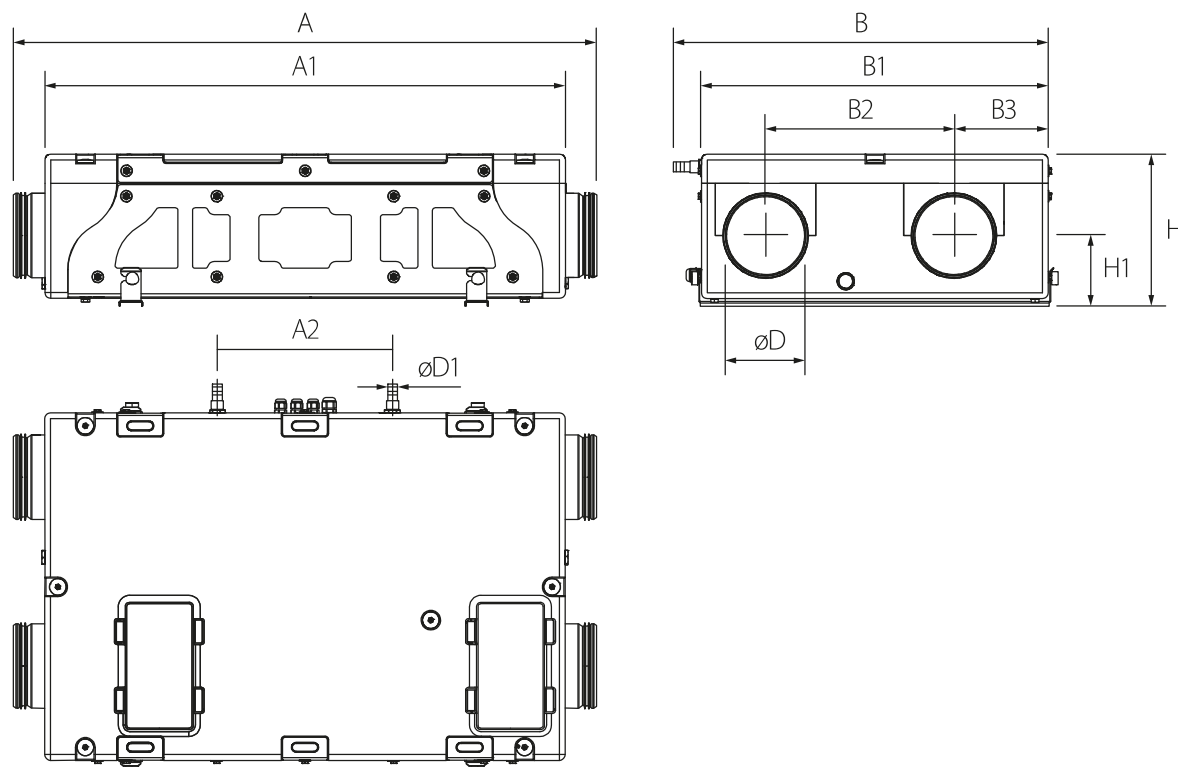
- IP44 for the unit motors
- IP22 for the assembled unit connected to the air ducts

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

TECHNICAL DATA

| MODEL | KOMFORT EC D5B180 | KOMFORT EC D5B180-E |
|--|--------------------|---------------------|
| Voltage [V/50 Hz] | 1~220 ~ 240 | |
| Maximum fan power [W] | 87 | |
| Maximum unit current without a heater [A] | 0.71 | |
| Max. air flow [m³/h] | 220 | |
| Sound pressure level at 3 m distance [dBA] | 33 | |
| Maximum transported air temperature [°C] | from -25 up to +60 | |
| Casing material | EPP | |
| Insulation | EPP (30-15 mm) | |
| Filtering class of the extract filter | G4 | |
| Filtering class of the supply filter | G4, F7 | |
| Weight [kg] | 14 | 14 |
| Heat recovery efficiency [%] | 86-98 | 79-94 |
| Heat exchanger type | counter-flow | |
| Heat exchanger material | polystyrene | enthalpy membrane |

* the unit is equipped with an enthalpy heat exchanger that doesn't require condensate drainage.

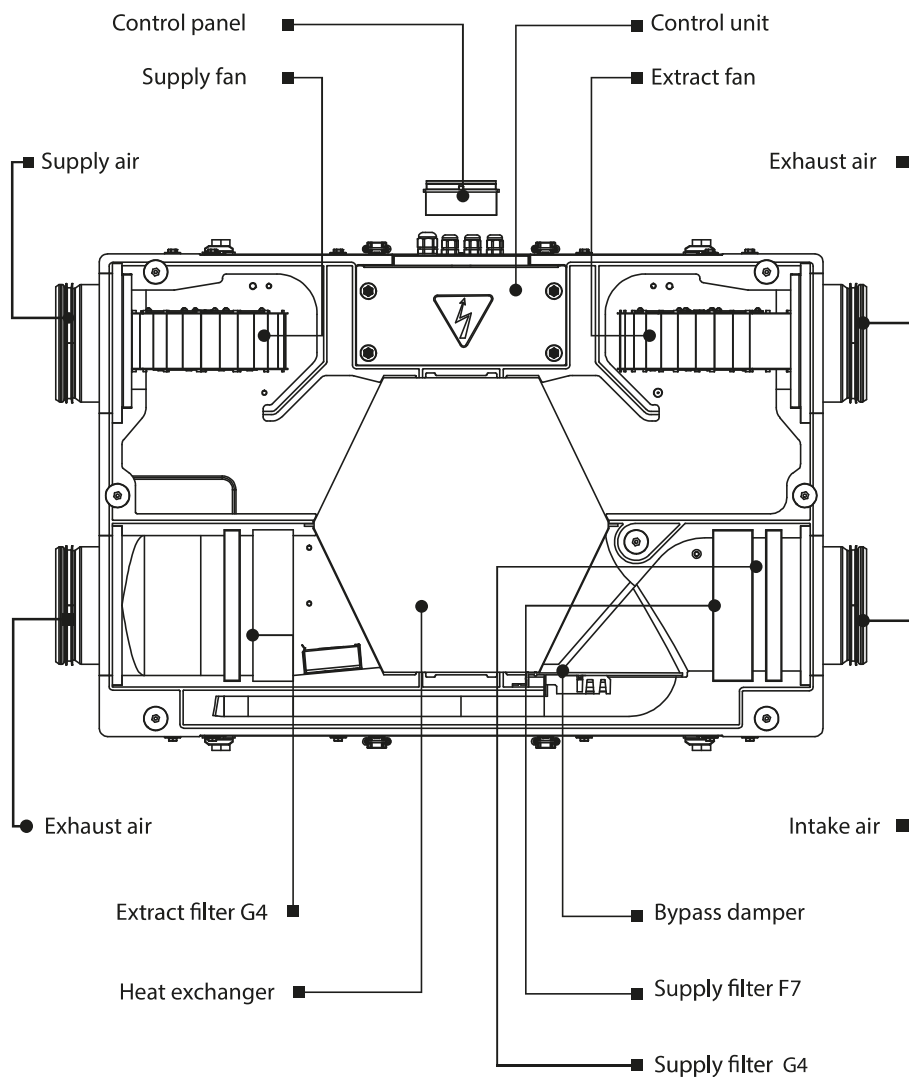


| MODEL | DIMENSIONS [MM] | | | | | | | | | | |
|---------------------------|-----------------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| | Ø D | Ø D1 | A | A1 | A2 | B | B1 | B2 | B3 | H | H1 |
| Komfort EC D5B180(-E) S14 | 150 | 18 | 1009 | 900 | 302 | 650 | 600 | 326 | 163 | 264 | 250 |

DESIGN AND OPERATING LOGIC

The unit has the following operating logic: warm stale extract air from the room flows into the unit, where it is filtered by the extract filter, then air flows through the heat exchanger and is exhausted outside by the extract fan. Cold fresh air from the outside flows into the unit, where it is cleaned by the supply filter.

Then the air flows through the heat exchanger and is directed to the room with the supply fan. Heat energy of warm extract air is transferred to clean intake fresh air from the outside and warms it up. The air flows are fully separated while flowing through the heat exchanger. Heat recovery minimizes heat losses, which reduces the cost of space heating in the cold season.

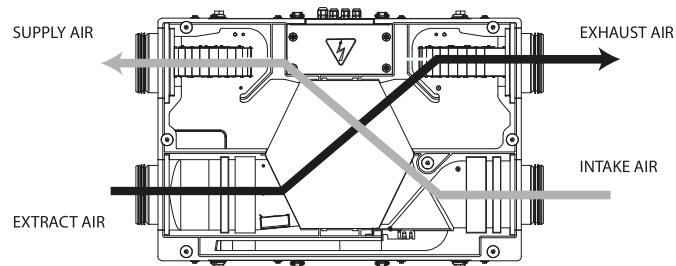


The service side of the unit is equipped with detachable plates fixed by screws for filter cleaning and replacement operations. The control unit is positioned inside the unit casing. The power cable and grounding cable are connected to the control unit via the electric lead-ins placed at the side of 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

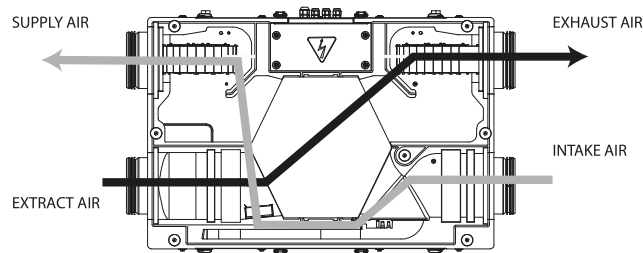
Heat recovery

Warm extract air from the room flows into the unit and is cleaned in the extract filter. Then the air is moved through the heat exchanger and is exhausted outside with the extract fan. Cold fresh air from outside flows into the unit, where it is cleaned in the supply filter. Then the air flows through the heat exchanger and is directed to the room with the supply fan. Supply air is heated in the heat exchanger by transferring the heat energy of warm and humid extract air to the cold fresh air. The air flows are fully separated while flowing through the heat exchanger. Heat recovery minimizes heat losses, which reduces the cost of space heating in the cold season.



Summer Cooling mode

The bypass damper is opened, the extract air that is removed from the premises is routed along the bypass duct and does not come in contact with the heat exchanger. The temperature of the air is not changed after passing through the heat exchanger.



MOUNTING AND SET-UP



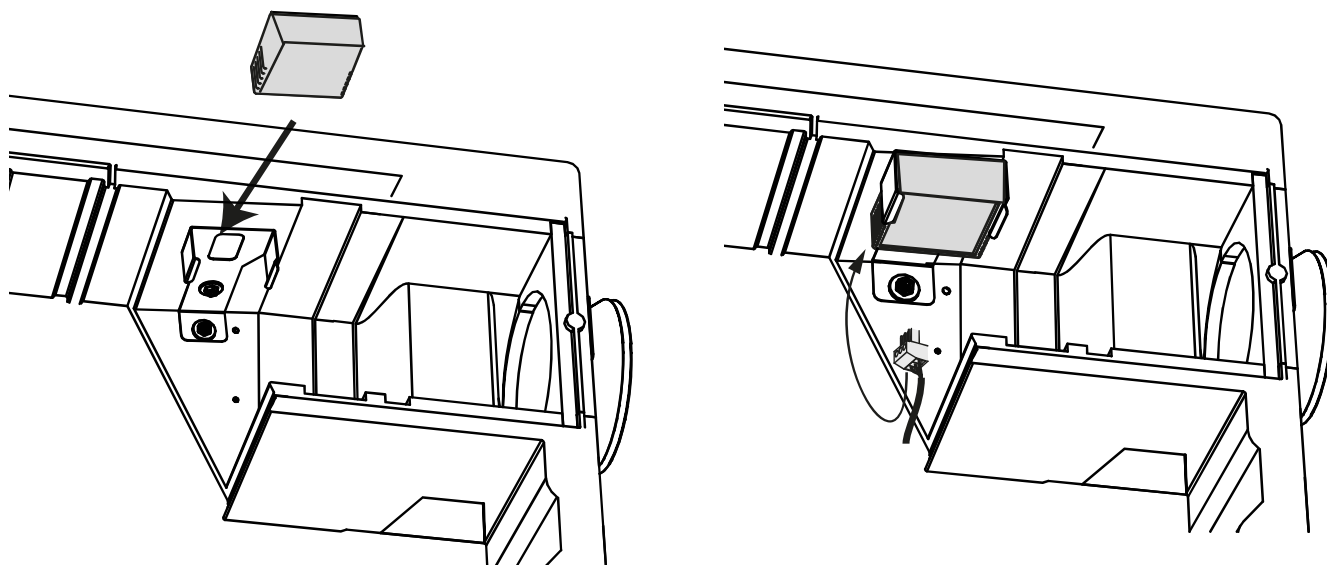
READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

FS2 HUMIDITY SENSOR INSTALLATION AND CONNECTION

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

The humidity sensor must be installed prior to unit mounting.

Install the humidity sensor into the mount on the inner side of the unit and connect the humidity sensor to the appropriate connector.



UNIT MOUNTING

To attain the best performance of the unit and to minimise turbulence-induced air pressure losses connect the straight air duct section to the spigots on both sides of the unit while mounting.

Minimum straight air duct length:

- equal to 1 air duct diameter on 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.

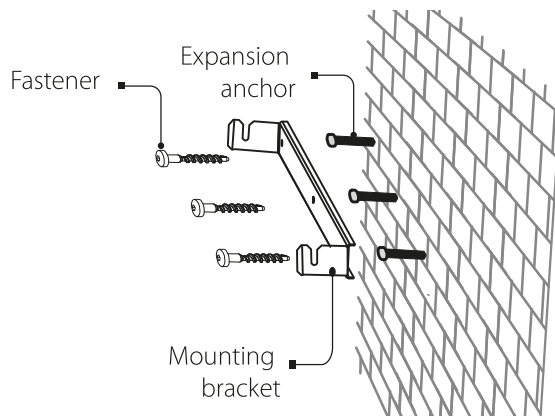
To prevent uncontrollable access to the fans the spigots may be covered with a protecting grille or other protecting device with mesh width not more than 12.5 mm.

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

The unit must be mounted on a plane wall (ceiling).

Mounting of the unit to an uneven surface can lead to the unit casing distortion and operation disturbance.

Fix the mounting brackets on the wall or the ceiling depending on the type of installation.



Fasteners for 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 mounting should be selected by the Customer Service technician. Unscrew the thumbscrews on the unit before attaching it to the mounting brackets. Set the unit thumbscrews into the mating cutouts in the mounting brackets and tighten the thumbscrews.

Unit mounting example

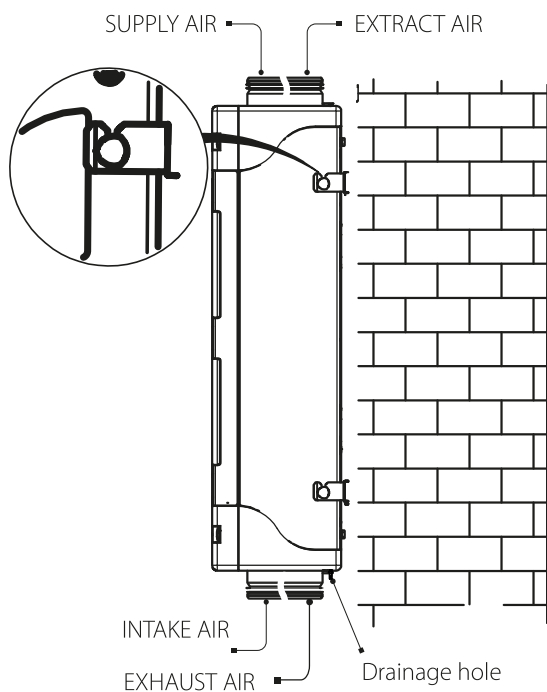


Diagram 1. Wall vertical installation

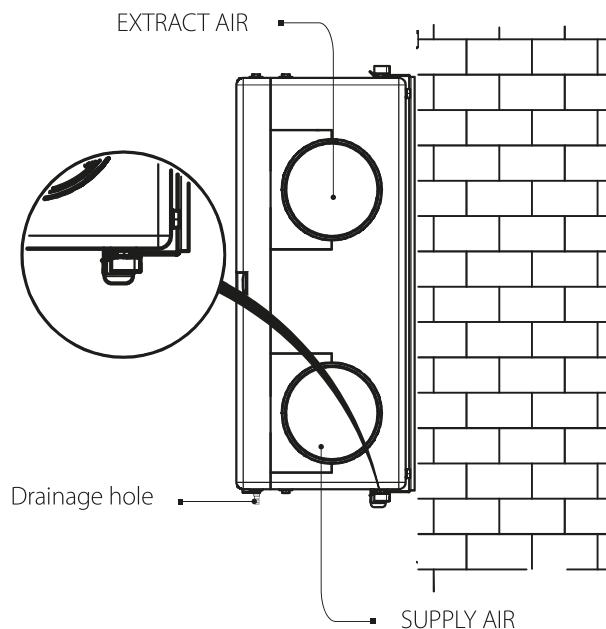


Diagram 2. Wall horizontal installation

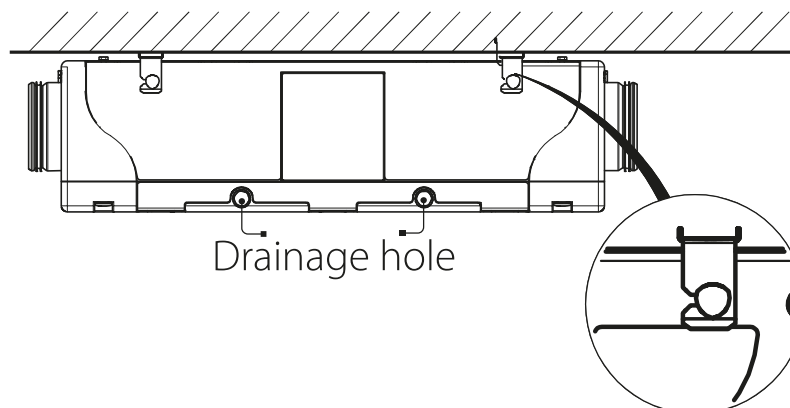


Diagram 3. Suspended mounting

Installation options according to diagrams 4-5 are possible for the Komfort EC D5B180-E modification.

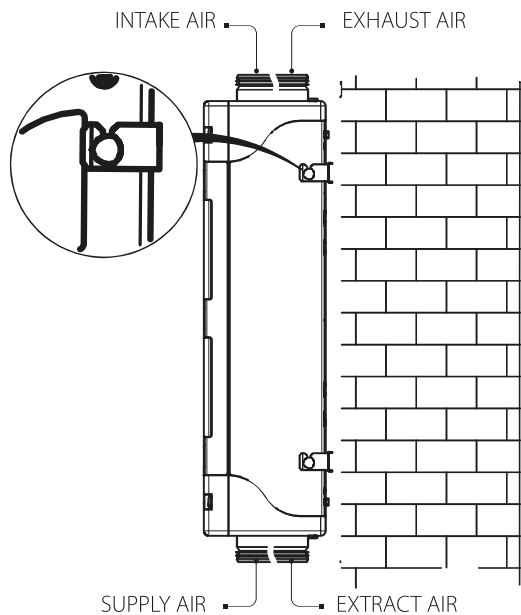


Diagram 4. Wall vertical installation

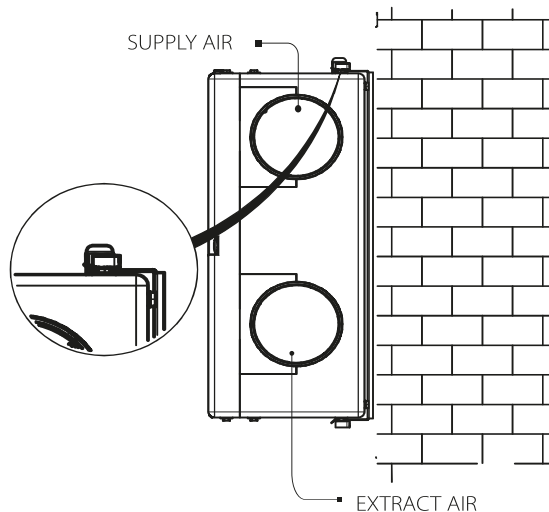


Diagram 5. Wall horizontal installation

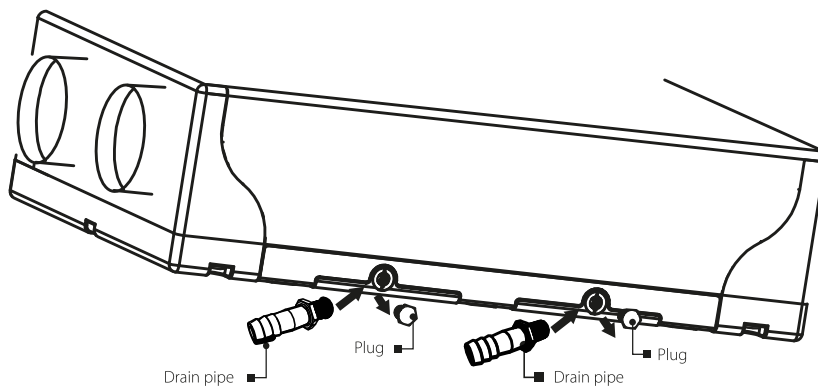
CONDENSATE DRAINAGE

The Komfort EC D5B180 heat recovery units require condensate drainage.

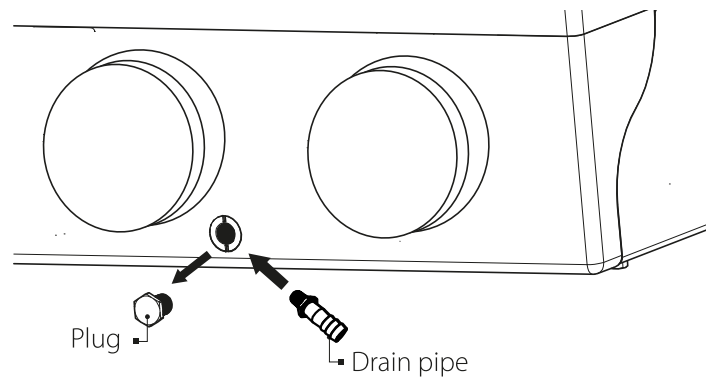
The hole for the drain pipes is in the cover of the unit.

Remove the plug from the hole, open the service panel and install the drain pipe from the delivery set into the hole.

The drain pipes should be installed only in the holes indicated on the diagrams. For suspended and wall mounted horizontal installation use two holes on the side of the unit, for a wall-mounted vertical installation use a hole at the bottom of the unit. Do not mount the drain pipes in the holes not indicated on the installation diagram.

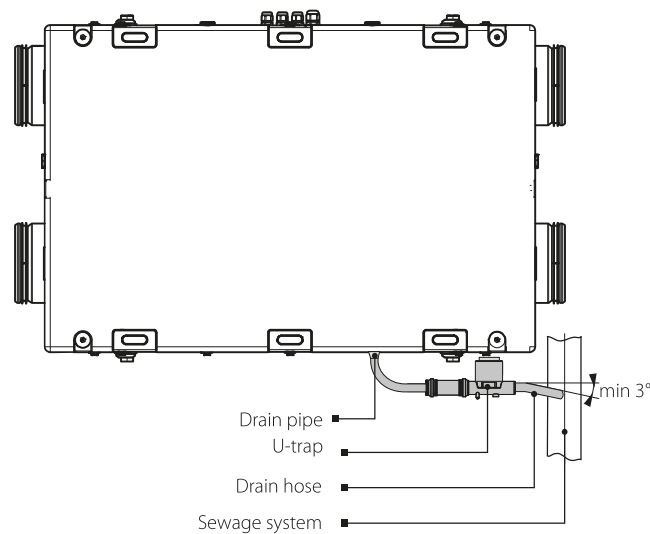


Drain hole location in case of installation according to the Diagrams 2 and 3



Drain hole location in case of installation according to the Diagram 1

Then connect the drain pipe to the sewage system using the SG-32 U-trap kit (available upon separate order). The pipes are required to have a minimum slope of 3°. Each drain pipe is connected to a different U-trap.



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.

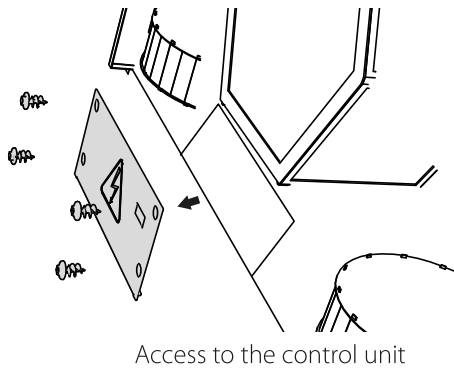
Condensate drainage is not required for the Komfort EC D5B180-E modification.

CONNECTION TO POWER MAINS

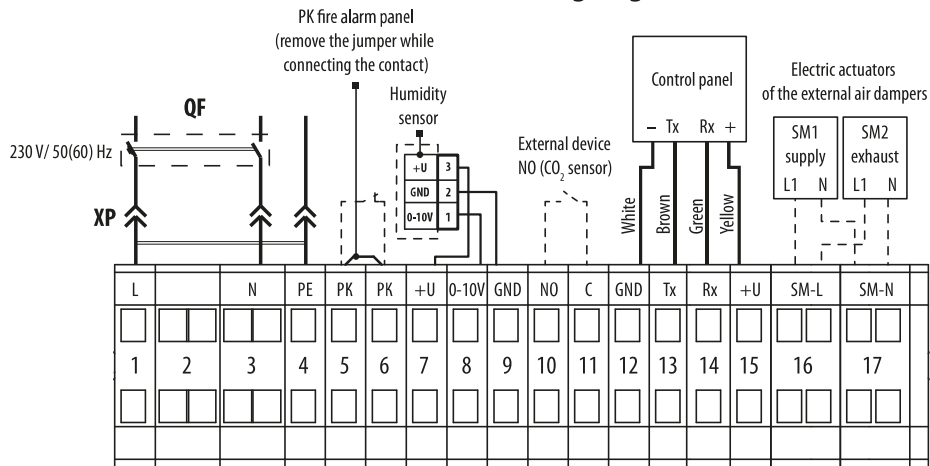
DISCONNECT THE UNIT FROM POWER MAINS PRIOR TO ANY OPERATIONS. THE UNIT MUST BE CONNECTED TO POWER MAINS BY A QUALIFIED ELECTRICIAN. THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE SHOWN ON THE RATING PLATE.

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. The unit must be connected to power mains using durable, insulated and heat-resistant conductors (cables and wires) with minimum cross section not less than 1 mm². 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 automatic circuit breaker must ensure free access for quick power-off of the unit. The circuit breaker trip current must correspond to the unit current consumption, refer to the Technical data section. Connect the cables to the control unit using the electric lead-ins on the side of the unit. Make the electric connections through the terminal block, located in the control unit, in compliance with the External wiring diagram.



External control units wiring diagram



X1

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

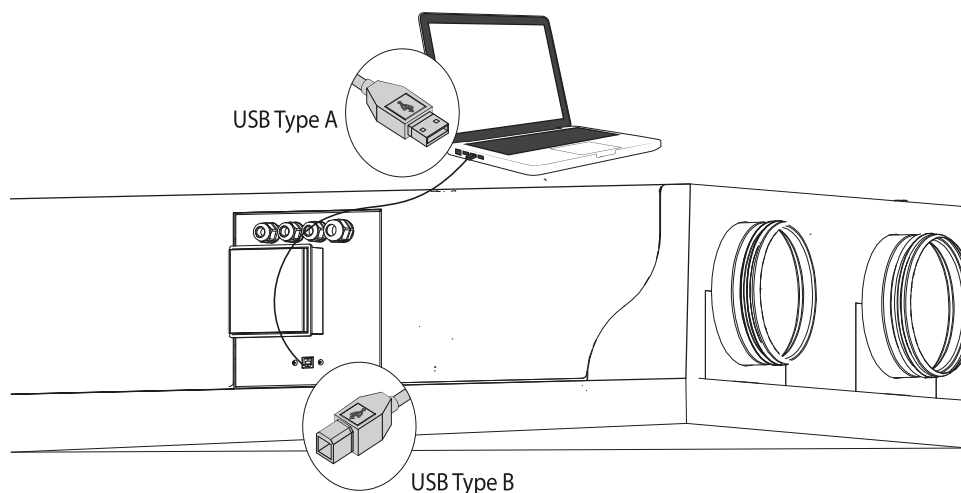
* Is not included in the delivery set.

** Maximum connecting cable length is 20 m!

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.



The software enables editing the fan parameters:

| Parameter | Factory setting | | Control range |
|---|-----------------|---------|---------------|
| | Supply | Extract | |
| Zero speed (the 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 <https://blaubergventilatoren.de/en/download>.

Select the document type "**Software**" and then using the search bar find the software for the automation **A14**. Download the software file.

TECHNICAL MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS.

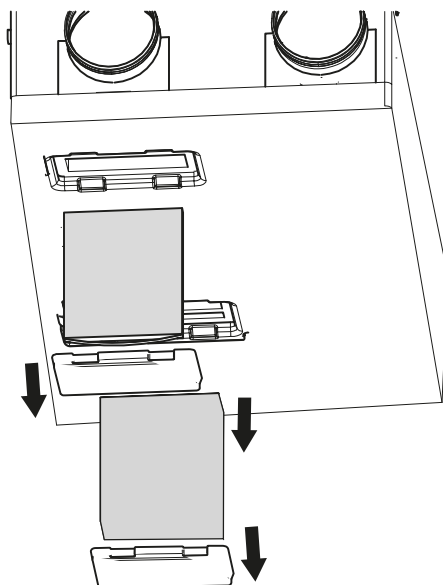
FOLLOW THE SAFETY REGULATIONS WHEN CARRYING OUT MAINTENANCE.

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

1. Filter maintenance.

Clogged 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 cleanings filters must be replaced. For new filters contact the Seller.

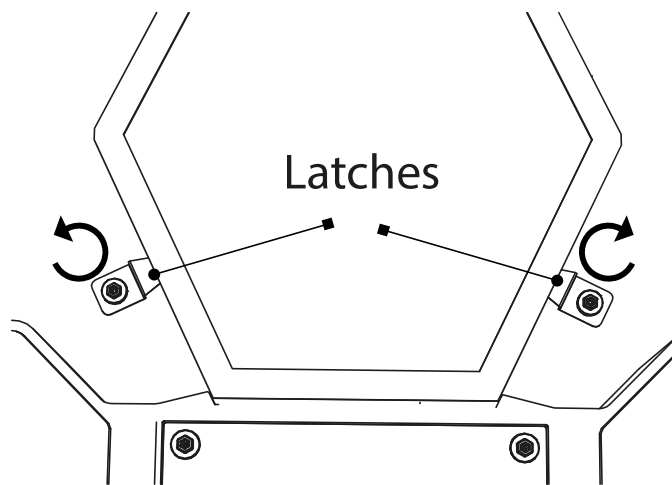
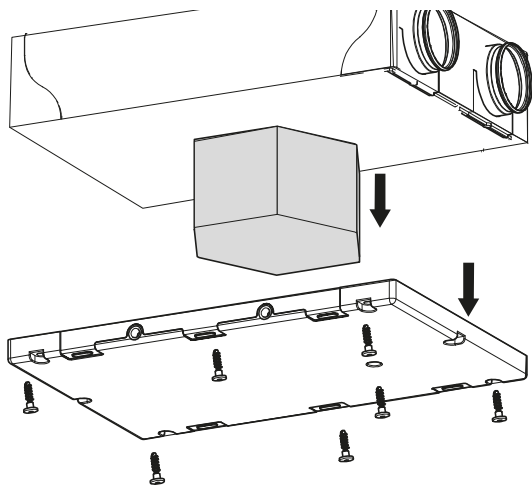
To clean or replace the filters remove the detachable plates located on the service side of the unit. After cleaning install the filters and the detachable plates in the reverse order.



2. Heat exchanger maintenance (once a 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. To clean the heat exchanger remove it from the unit and clean the heat exchanger by using compressed air or a vacuum cleaner. After cleaning, re-install the heat exchanger into the unit. Before removing the heat exchanger, unscrew the 7 screws and remove the cover.

The heat exchanger is connected with the drain pan by the fixing latches that should be removed only in case of heat exchanger removal.



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. Fan maintenance (once per year).

Even in case of regular maintenance of the filters, some dust may accumulate inside the fans and reduce the fan performance and supply air flow.

Clean the fans with a soft cloth, brush, or using compressed air.

Do not use water, aggressive solvents or sharp objects as they may damage the impeller.

4. Supply air flow control (twice per year).

The supply duct grille may get clogged with leaves and other objects reducing the unit performance and supply air delivery.

Check the supply grille twice per year and clean it as required.

5. Ductwork system maintenance (once in 5 years).

Even regular fulfilling of all the maintenance operations prescribed above may not completely prevent dirt accumulation in the air ducts, which leads to air pollution and reduces the unit capacity.

Duct maintenance means regular cleaning or replacement.

6. Control unit maintenance (if necessary).

The control unit is positioned inside the unit casing.

To access the control unit, remove the fixing screws on the panel and remove the control unit lid.

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 clogged. | 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 tripping 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 heat 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 the 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. |

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C up to +40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit can be transported only in the working position.
- Avoid sharp blows, 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.



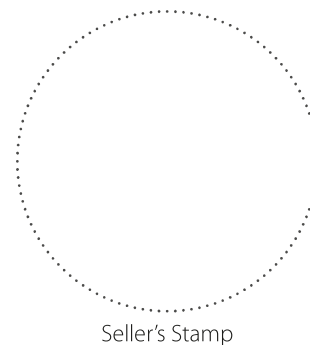
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

| | |
|----------------------------------|----------------------------|
| Unit Type | Air handling unit |
| Model | Komfort EC D5B180_____ S14 |
| Serial Number | |
| Manufacture Date | |
| Quality Inspector's Stamp | |

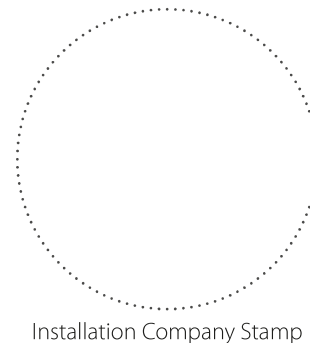
SELLER INFORMATION

| | |
|---|--|
| 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 | |



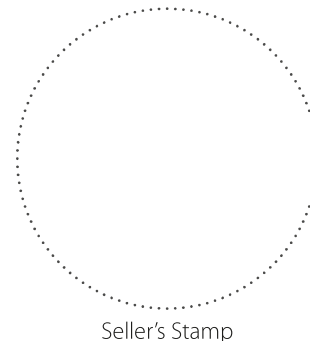
INSTALLATION CERTIFICATE

| | |
|--|-------------------|
| The Komfort EC D5B180_____ 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 D5B180_____ S14 |
| Serial Number | |
| Manufacture Date | |
| Purchase Date | |
| Warranty Period | |
| Seller | |





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