

# **AIR HANDLING UNIT WITH HEAT RECOVERY**



**KOMFORT EC L S6**



**EN**

**OPERATION MANUAL**

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**BLAUBERG Ventilatoren GmbH** is happy to offer your attention the air handling unit with heat recovery KOMFORT EC L S6.

## INTRODUCTION

The present operation manual contains a technical description, technical data sheets, operation and mounting guidelines, safety precautions and warnings for safe and correct operation of the unit.

Read carefully and understand the operation manual, especially the safety requirements, before the unit mounting and start up.

Keep the operation manual available as long as you use the unit.

## GENERAL

The air handling unit with heat recovery KOMFORT EC L S6 is designed for efficient and energy saving ventilation of domestic and public premises.

The unit is not a ready to use product but a component part of central air conditioning and ventilation network.

The unit is designed for wall mounting.

The unit is rated for indoor application at ambient temperature from +1 °C up to +40 °C and relative humidity not exceeding 80 % with the transported air temperature from -25 °C up to +60 °C.

Hazardous parts access and water ingress protection rating:

- unit motors – IP44;
- assembled unit connected to air ducts – IP22.

The unit design is regularly improved, so some models can slightly differ from those ones described in this service instruction.

## SAFETY RULES

All operations related to the unit electrical connections, servicing and repair works are allowed only after the unit disconnection from power mains.

The unit is rated as a Class I electrical appliance.

All mounting and servicing operations are allowed by duly qualified personnel.

Please follow the safety regulations and working instructions (DIN EN 50 110, IEC 364).

Make sure the impeller and the casing are not damaged before connecting the unit to power mains. The casing internals must be free of any foreign objects which can damage the impeller blades.

The unit maintenance and repair is allowed only after power cut-off and full stop of the rotating parts.

Misuse of the unit or any unauthorized modification are not allowed.

The unit is designed for connection to ac single-phase power mains, see «Technical Data».

The unit is rated for permanent operation.

Take steps to prevent ingress of smoke, carbon monoxide and other combustion products into the room through open chimney flues or other fire-protection devices. Sufficient air supply must be provided for proper combustion and exhaust of gases through the chimney of fuel burning equipment to prevent back drafting. The maximum permitted pressure difference per living units is 4 Pa.



### WARNING

*The unit is not allowed for use by children and persons with reduced physical, mental or sensory capacities, without proper practical experience or expertise, unless they are controlled or instructed on the product operation by the person(s) responsible for their safety. Supervise the children and do not let them play with the product.*



### WARNING

*Do not dispose in domestic waste. The unit contains in part material that can be recycled and in part substances that should not end up as domestic waste. Dispose of the unit once it has reached the end of its working life according to the regulations valid in your country.*

The transported air must not contain any dust or other solid impurities, sticky substances or fibrous materials.

The unit is not rated for operation in a flammable or explosive medium.

Fulfil the operation manual requirements to ensure a trouble-free and long service life of the unit.

## TRANSPORTATION AND STORAGE RULES

Transportation of the unit is allowed by any vehicle provided the unit is transported in the original package and is protected against weather and mechanical damages.

Use hoist machinery for handling and transportation to prevent possible mechanical damages of the unit. Fulfil the requirements for transportation of the specified cargo type during cargo-handling operations.

Store the unit in a dry and cool place in the original packing.

The storage environment must not be subjected to any aggressive and/or chemical evaporations, admixtures, foreign objects that may provoke corrosion and damage connection tightness.

Store the unit in an environment with minimized risk of mechanical damages, temperature and humidity fluctuations.

Do not expose the unit to the temperatures below +5 °C and above +40 °C.

Connection of the unit to power mains is allowed after the unit has been kept indoor for minimum two hours.

## MANUFACTURER'S WARRANTY

The unit complies with the requirements according to the EU norms and directives, to the relevant EU-Low Voltage Equipment Directives, EU-Directives on Electromagnetic Compatibility.

We hereby declare that the unit complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This certificate is issued following test carried out on samples of the product referred to above. Assessment of compliance of the product with the requirements relating to electromagnetic compatibility was based on the following standards.

The manufacturer hereby warrants normal operation of the unit over the period of two years from the retail sale date provided observance of the installation and operation regulations.

In case of failure due to manufacturing fault during the warranty period the consumer has the right to exchange it.

The replacement is offered by the Seller.

If case of no confirmation of the sale date, the warranty period shall be calculated from the manufacturing date.

The manufacturer shall not be liable for any damage resulting from any misuse of or gross mechanical interference with the unit.

The manufacturer is not responsible for the damages resulted due to the use of third party equipment or to third party equipment.

**DESIGN**

The unit has a compact double-skinned aluzinc casing, internally heat- and sound insulated with a 25 mm mineral wool layer. The casing is equipped with adjustable levelling feet on the bottom panel that enable the unit installation on the floor. The KOMFORT EC L300 S6, L1/300 S6 and L400 S6 models include a fixing bracket for wall mounting. The spigots for connection to the air ducts are located at the side of the unit and are equipped with rubber seals for airtight connection to the air ducts. The service access to filters is on the side panel which can be installed on the left or on the right, seen on the supply air flow direction, during the unit mounting. The unit is equipped with high-efficient external rotor EC motors. The KOMFORT EC L300 S6, L1/300 S6 and L400 S6 units are equipped with constant flow fans and forward curved blades. This fan design ensures set air flow even in case of variable resistance in the ventilation system, i.e. in case of using a higher filter class. The KOMFORT EC L600 S6 unit is equipped with high-efficient external rotor EC motors and impellers with backward curved blades. EC motor technologies meet the latest engineering demands for saving energy and for high-efficient ventilation. The motors are equipped with integrated overheating protection with automatic restart and ball bearings for longer service life.

The plate cross-flow polystyrene heat exchanger is used for heat recovery in the unit. The drain pan under the heat exchanger block is used for condensate collection and drainage. The integrated freeze protection system is used to prevent the heat exchanger freezing. In case of a freezing danger communicated by the temperature sensor the supply fan is turned off. The warm extract air warms up the heat exchanger. After that the supply fan is turned on and the unit reverts to the normal operation mode. If air temperature in the exhaust air duct downstream of the heat exchanger is below +3 °C the supply fan is turned off. As air temperature rises above +3 °C the unit reverts to the previous operation mode. Two built-in panel filters with filtering class G4 provide efficient supply and extract air filtration. Optionally a supply F7 filter may be used. The unit includes an integrated control system, a multifunctional control panel with LCD display and a remote controller. The delivery set includes a 10 m long cable for connection of the control panel to the unit.

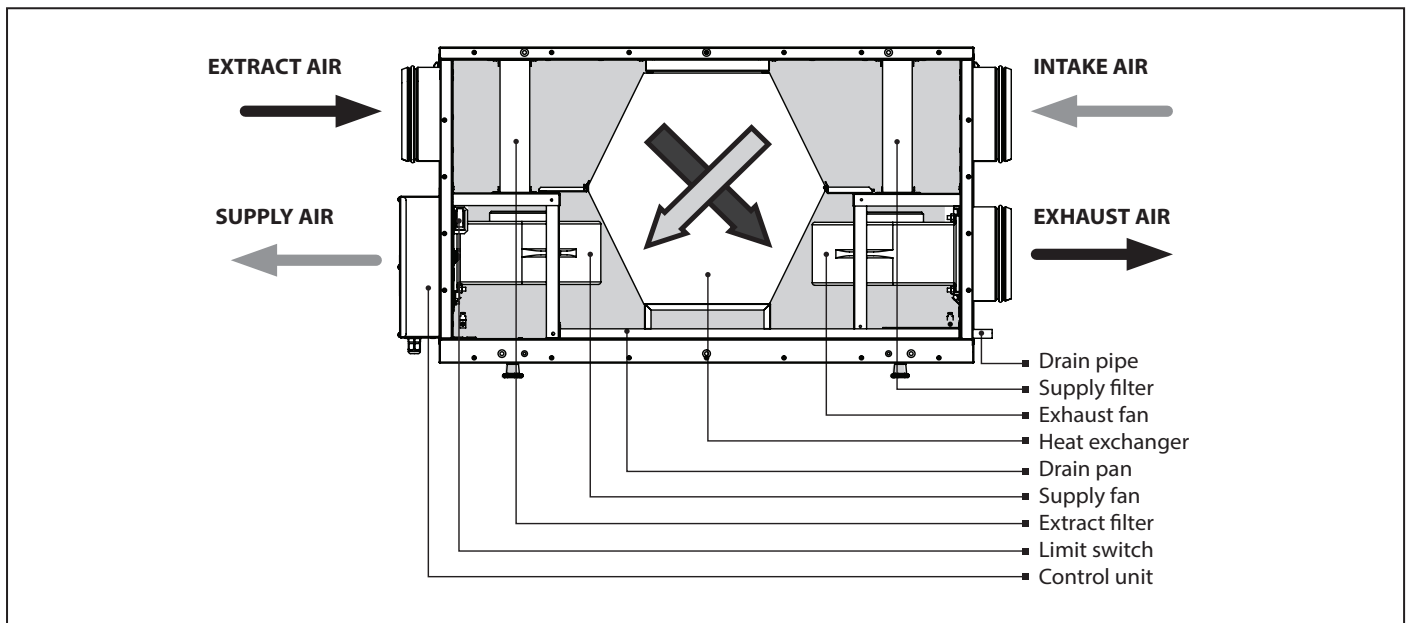


Fig. 1. Unit design and operating logic

**OPERATING LOGIC**


Cold fresh air from outside flows through the heat exchanger and is moved to the room with the supply fan. Warm extract air is extracted from the room with the exhaust fan and is moved through the heat exchanger, where it transfers its heat energy to the intake air. After that it is exhausted outside. Heat energy of warm and humid extract air is transferred to the cold fresh air. The air flows are fully separated while flowing through the heat exchanger.

In summer the heat exchanger performs reverse and transfers cold from the cooled extract air to the warm fresh air. This contributes to better performance of the air conditioner in ventilated premises. In summer, when the indoor and outdoor temperature difference is low heat recovery is not reasonable. In this case the heat exchanger can be temporary replaced with a summer block for warm seasons. Available upon separate order.

**DELIVERY SET**

- ✓ Air handling unit – 1 item;
- ✓ Operation manual – 1 item;
- ✓ Wall-mounted control panel – 1 item;
- ✓ Remote control – 1 item;
- ✓ Packing – 1 item.

**WARNING**

 Make sure the unit has no visible transport damages while accepting the goods. Check the ordered and the delivered goods for compliance.

### TECHNICAL DATA

Table 1. Technical data of the unit

Parameters	KOMFORT EC L300 S6	KOMFORT EC L1/300 S6	KOMFORT EC L400 S6	KOMFORT EC L600 S6
Unit voltage [V /50/60 Hz]	1~ 230			
Max. unit power [W]	140		210	334
Max. unit current [A]	1.2		1.6	2.2
Max. air capacity [m <sup>3</sup> /h]	300		400	810
RPM [min <sup>-1</sup> ]	2300		2600	2860
Sound pressure level at 3 m distance [dB(A)]	24-45		30-45	
Transported air temperature [°C]	-25 up to +60 °C			
Casing material	Zinc aluminium			
Insulation	25 mm mineral wool			
Extract filter	G4			
Supply filter	G4; (F7)*			
Connected air duct diameter [mm]	150	160	200	250
Weight [kg]	36		67	83
Heat recovery efficiency [%]	86 up to 98			81 up to 98
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene			

\* specially ordered accessories

Table 2. Air handling unit accessories

Model	G4 replaceable filter	F7 replaceable filter	Summer block
KOMFORT EC L300 S6	FP-EC L300 G4	FP-EC L300 F7	SB-EC L300
KOMFORT EC L1/300 S6			
KOMFORT EC L400 S6	FP-EC L400 G4	FP-EC L400 F7	SB-EC L400
KOMFORT EC L600 S6	FP-EC L600 G4	FP-EC L600 F7	SB-EC L600

Table 3. Unit overall dimensions

Model	Dimensions [mm]								
	ØD	B	B1	B2	H	H1	H2	L	L1
KOMFORT EC L300 S6	150	455	130	140	525	105	220	945	830
KOMFORT EC L1/300 S6	160	455	130	140	525	105	220	945	830
KOMFORT EC L400 S6	200	570	165	230	540	135	225	925	830
KOMFORT EC L600 S6	250	840	215	390	660	160	295	1010	890

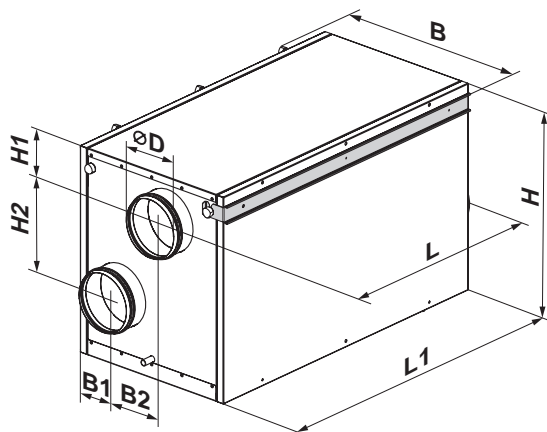


Fig. 2. Overall dimensions

**MOUNTING**



**WARNING**

**Safety precautions**

The unit must be mounted to a rigid and stable structure.  
 The unit must be suspended using anchor bolts. Before starting mounting check that the mounting structure has sufficient loading capacity for the unit weight.  
 The unit mounting is allowed only after power cut-off and full stop of the rotating parts.

**Restrictions**

Do not operate the unit beyond the determined temperatures, in aggressive and in explosive medias. Do not connect the clothes dryer or other similar equipment to the ventilation system.  
 Do not use the unit for air/dust mixture handling.

While mounting the unit consider the need to ensure sufficient service access to the unit, Fig. 3.

The unit must be mounted to a smooth-faced wall. Mounting of the unit to an uneven surface results in the unit casing distortion and will prevent the unit proper functioning.

The installation place must have connection to the sewage drain system.

While planning the ductwork layout avoid too long air duct sections, numerous bends and reducers because it may reduce air flow.

The mounted air ducts must not be deformed.

Provide airtight connection of the air ducts to the unit spigots and fittings.

The unit mounting position must provide condensate drainage and access to the terminal box for electric connection and access to the service panel for maintenance and filter replacement.

While mounting install a ventilation grille, an outer hood, a disk valve or any other protecting device at outlet from the air duct with a mesh width not exceeding 12.5 mm.

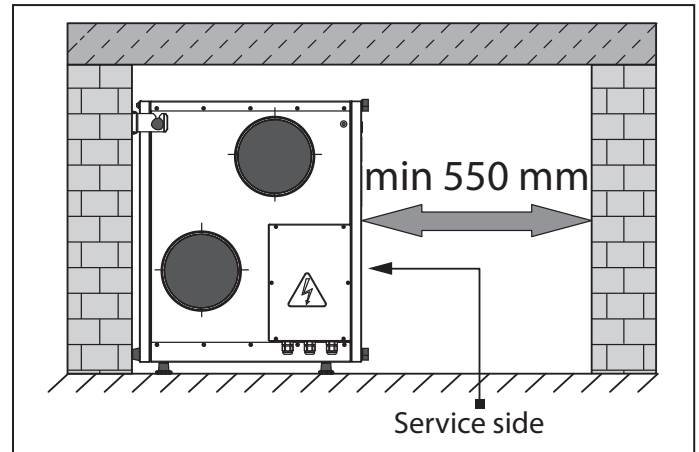


Fig. 3. Unit mounting

The unit service side location may be changed to suit minimum service access requirements and to facilitate mounting. The service side change instruction

is shown in Fig. 4 and Table 4.

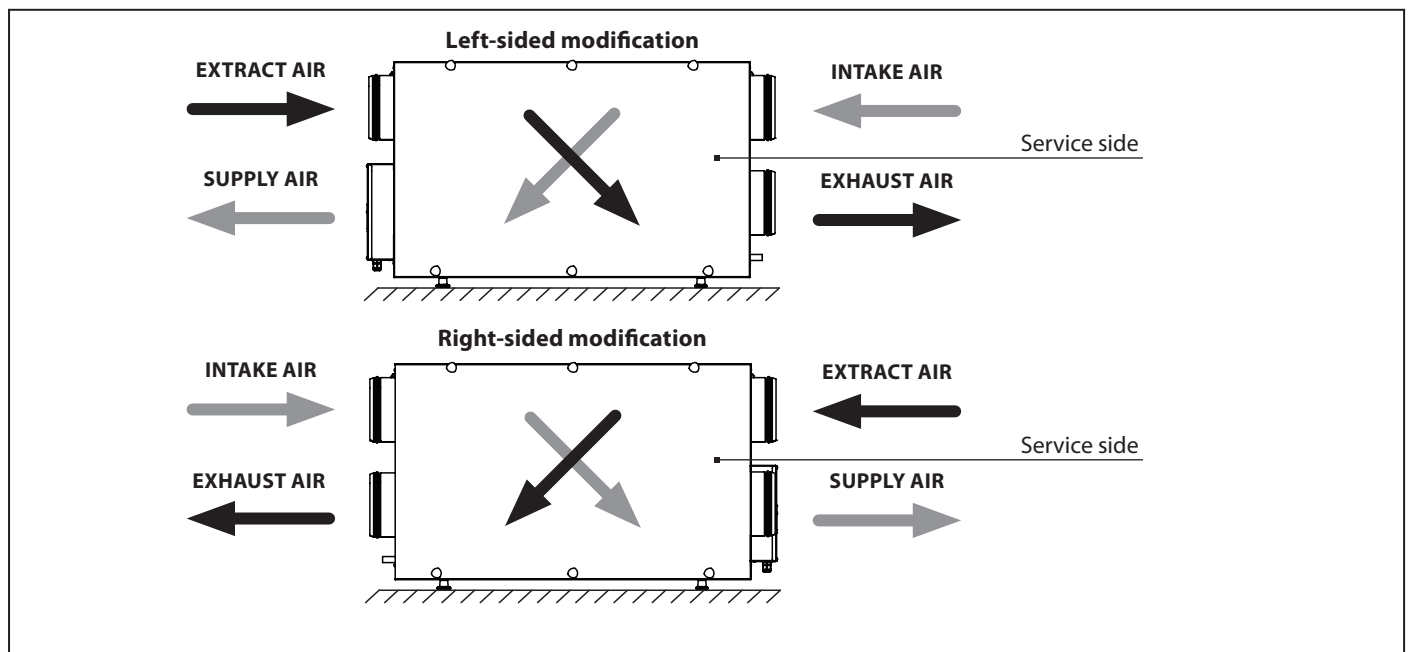
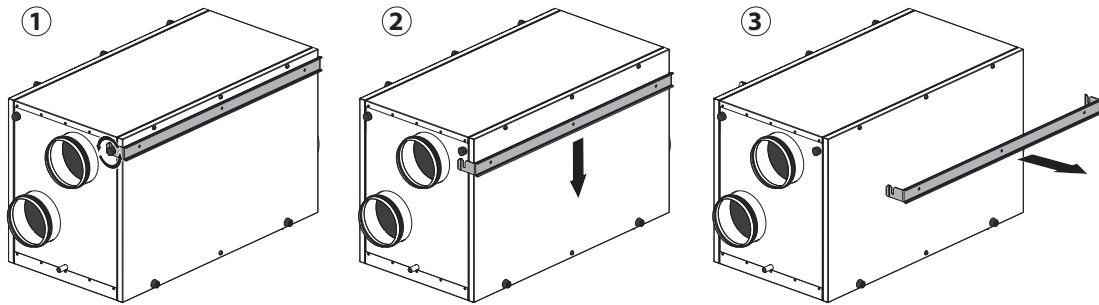


Fig. 3. Service side change

Table 4. Service side change

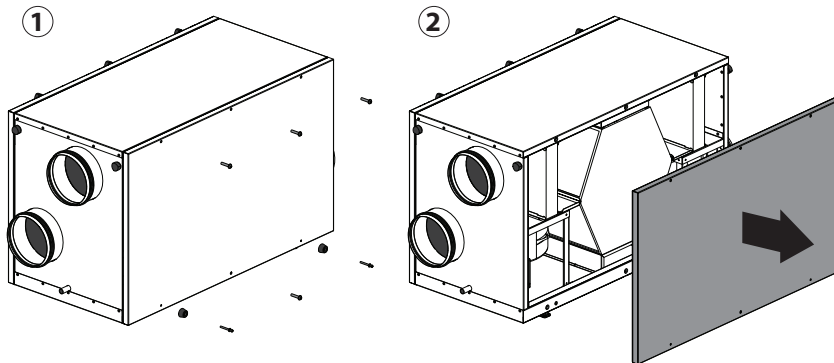
**1. Fixing bracket dismantling on current service side:**

1. Loosen two triangular screws that retain the fixing bracket. 2. Pull the fixing bracket downwards to remove it from grooves. 3. Dismount the fixing bracket and tighten the triangular screws.



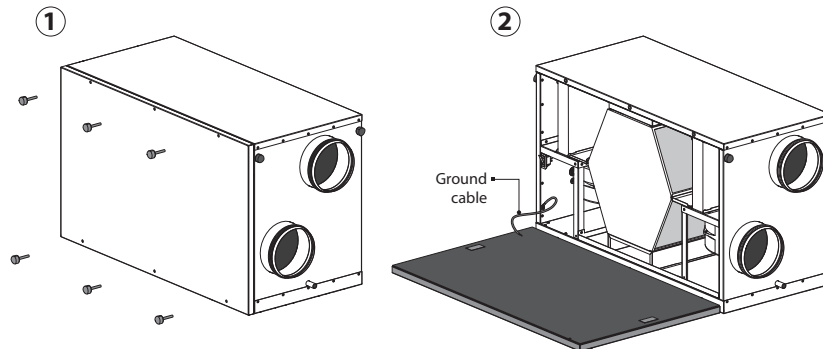
**2. Control panel dismantling on current service side:**

1. Remove 6 screws. 2. Open the back panel and disconnect the ground cable. Then remove the back panel.



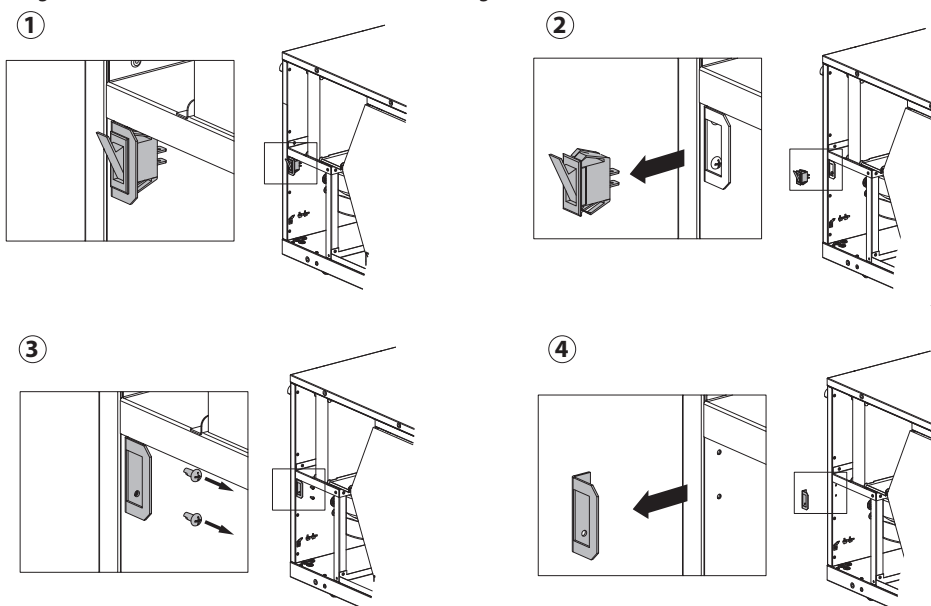
**3. Cover dismantling on current service side:**

1. Remove six triangular screws. 2. Open the cover and disconnect the ground cable. Remove the cover.



**4. Limit switch dismantling on current service side:**

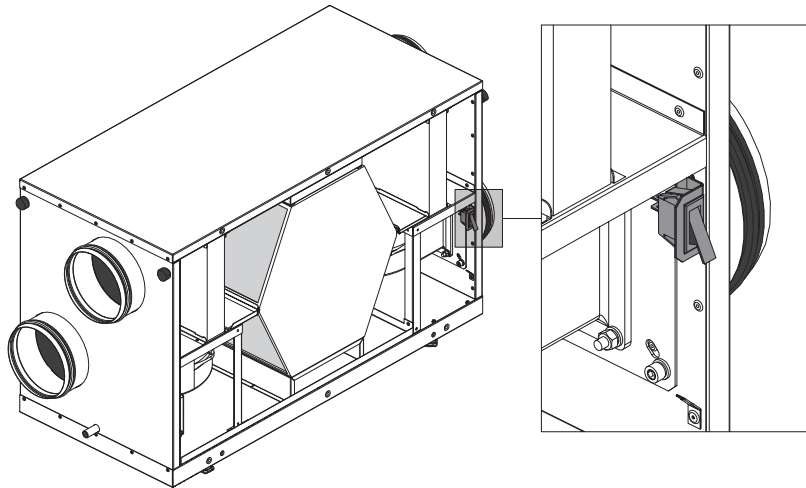
1. Remove the spade terminals and disconnect the limit switch from the wires. 2. Press the fixing lugs to pull the limit switch out of the mounting bracket. 3. Remove two retaining screws from the limit switch. 4. Remove the fixing bracket from the unit.



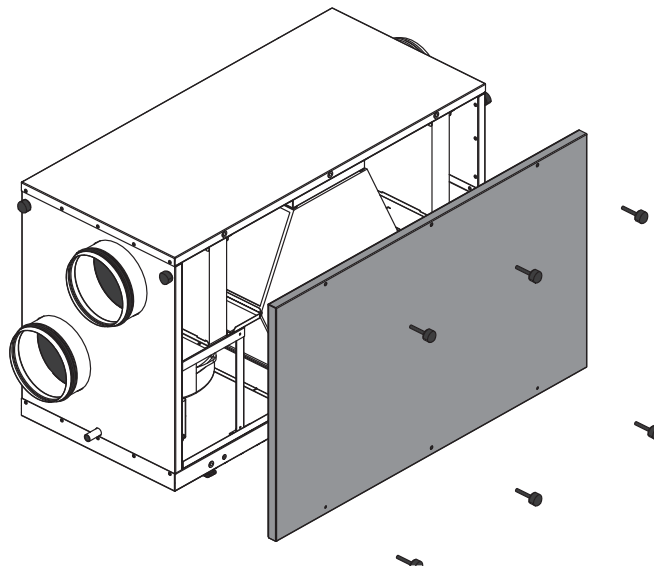


**5. Limit switch mounting on selected service side:**

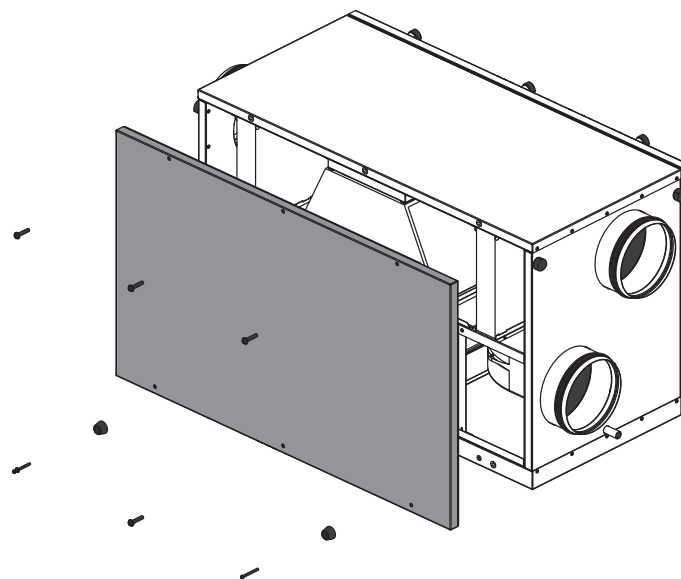
1. Fix the limit switch fixing bracket with two screws. 2. Fix the limit switch in the fixing bracket. 3. Cover the wires with spade terminals to connect the limit switch.

**6. Cover mounting on selected service side:**

1. Connect the ground cable to the service panel on selected service side. 2. Install the service cover and fix with six triangular screws.

**7. Back panel mounting:**

Install the service panel and fix it with six screws.



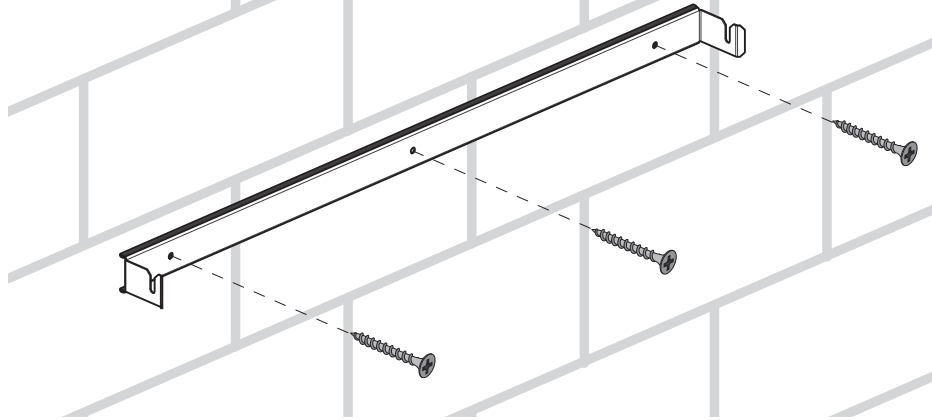


The unit design allows mounting to the ceiling, to the wall and to the floor. The unit is suspended to the ceiling by means of the belts (not included into the delivery set). The unit is mounted to the wall with a specially designed fixing bracket, Table 5 and the unit is installed on the floor using adjustable levelling feet.

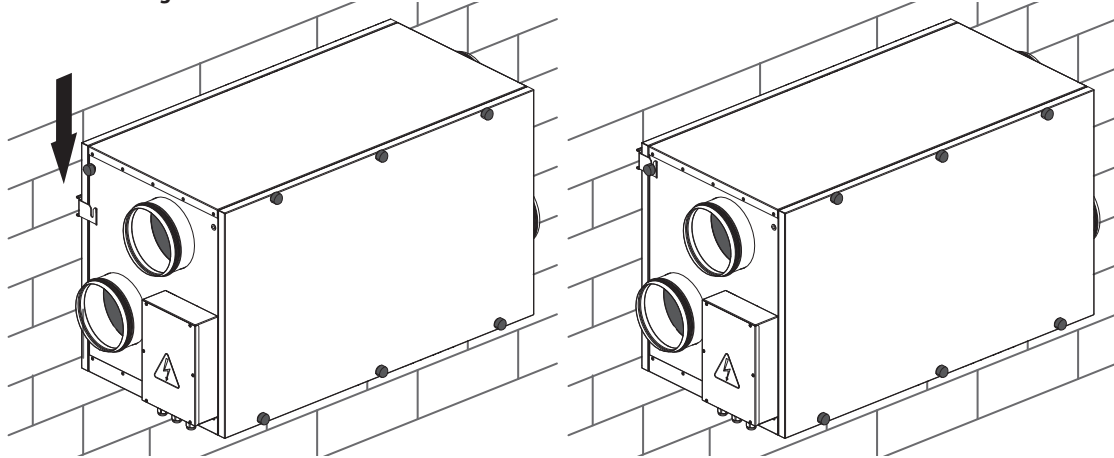
**Note:** wall mounting is not applicable for KOMFORT EC L600 S6.

Table 5. Wall mounting

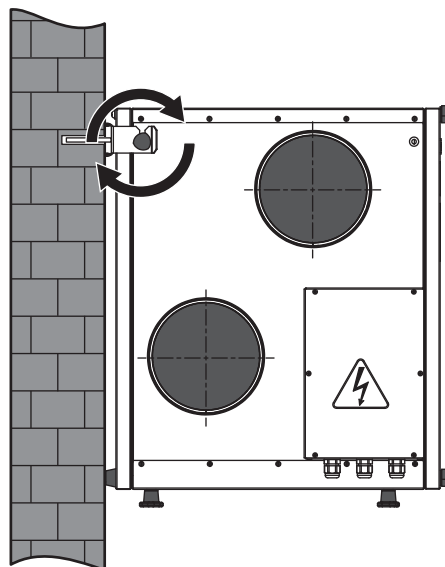
**1. Fix the fixing bracket on the wall. While mounting the fixing bracket consider the wall material and the unit weight.**



**2. Install the unit on the fixing bracket.**



**3. Tighten the triangular screws on the fixing bracket.**



The unit mounting on the floor is shown in fig. 4.  
The unit is mounted to the ceiling by means of the belts. Make sure the belt load carrying capacity corresponds to the unit weight. The belts are attached

to the unit using triangular screws either through the holes or through a clamp. The suspended unit mounting example is shown in fig. 5.

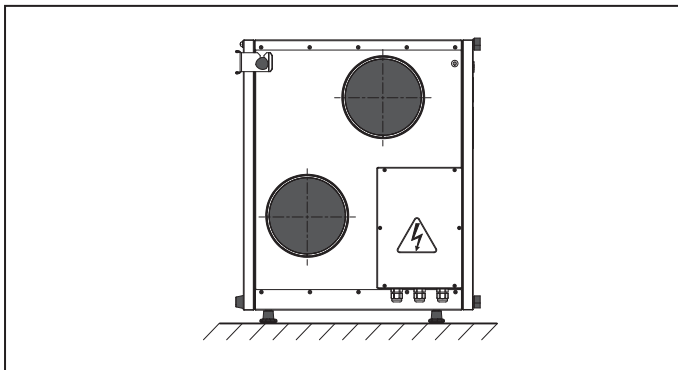


Fig. 4. Unit mounting to the floor

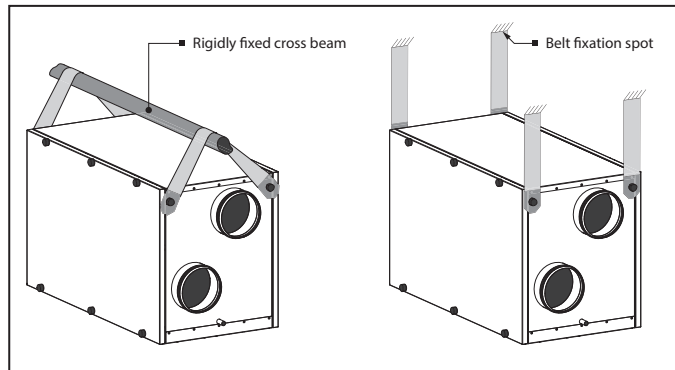


Fig. 5. Unit suspended mounting

**CONDENSATE DRAIN**

The drain pan is equipped with a drain pipe for condensate removal outside the unit.  
Connect the drain pipe, the U-trap (not included into the delivery set) and a sewage system with metal, plastic or rubber drain hoses, fig. 6.  
While laying the hoses provide the slope downward min. 3 %.  
Fill the system with water prior to connecting it to power supply. The U-trap must always be filled with water.  
Before starting the unit fill the drain system with water and keep the U-trap

always filled with water. Provide free drainage for the condensed water, otherwise it is accumulated inside the unit which may result in the equipment damage and condensate outflow to the room.  
**The condensate drain system is suitable for indoor frost-free application with the ambient temperature above 0 °C.**  
**If the expected ambient temperature is below 0 °C provide heating for the drain system.**

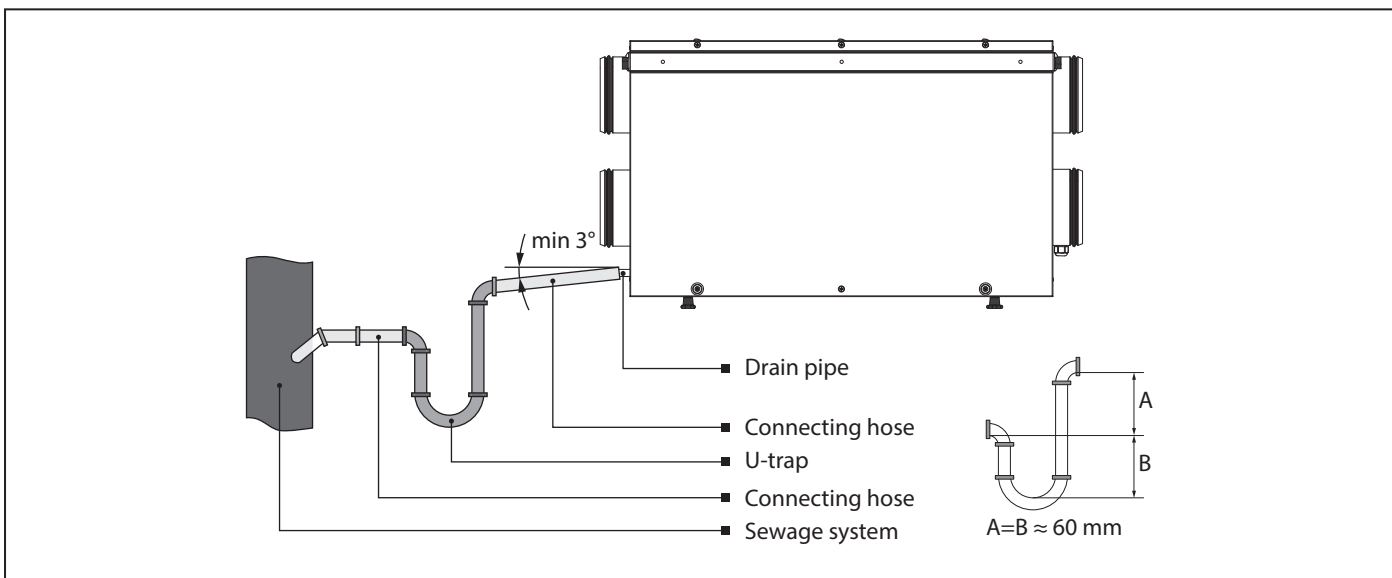


Fig. 6. Condensate drainage

**WARNING**  
In case of several unit mounting connect each unit to an individual U-trap. Direct condensate withdrawal with no connection to the drain system is not allowed.

**CONTROL PANEL MOUNTING**

1. Unlock the latches with a screw driver through the openings in the bottom.
2. Remove the back cover.
3. Disconnect the cable from the terminal block.
4. Route the cable in the wall to the control panel installation site.
5. Fix the control panel back cover to the wall.
6. Connect the cable to the terminal block.
7. Install the front part of the control panel on the latches.

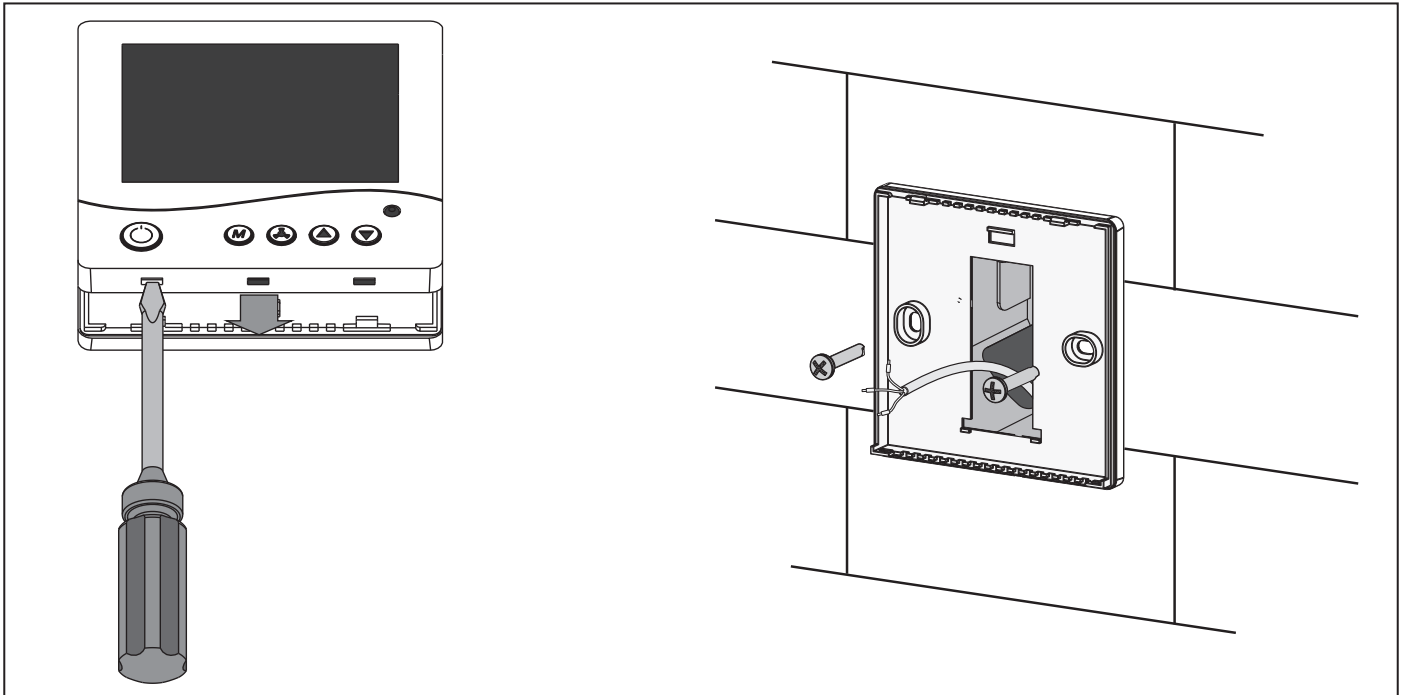


Fig. 7. Control panel mounting

**CONNECTION TO POWER MAINS****WARNING**

Read the operation manual prior to any electric installations. Connection of the unit to power mains is allowed by a qualified electrician only.

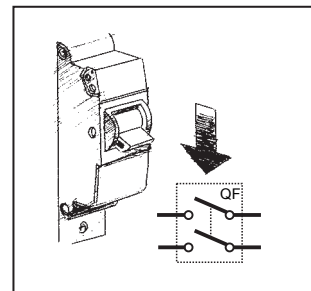
The rated electrical parameter are stated on the rating plate. No modifications of internal connections are allowed and will result in void warranty service.

Connect the unit only to power mains with valid electric standards.

Follow the respective electric standards, safety rules (DIN VDE 0100), TAB der EVUs. The house cabling system must be equipped with an automatic switch at the external input. Connect the unit to power mains through the automatic switch. The contact gap on all poles at least 3 mm (VDE 0700 T1 7.12.2 / EN 60335-1).

The automatic switch trip current must be not below the rated current consumption, refer Table 1. Install the automatic switch to ensure prompt access.

Cut power supply to the unit off by turning the automatic electric switch QF to OFF position prior to any operations. Take steps to prevent activation of the automatic switch.



The unit is rated for connection to single-phase alternating current power mains 230 V / 50/60 Hz.

The unit is connected to power supply via a pre-wired power cable with a plug. In case of need to connect a longer cable follow the wiring diagram below. The electric connections must be performed with insulated, durable and heat-resistant conductors (cables, wires) with a matching cross section.

While selecting the conductors with respective cross section consider the wire type, the maximum permissible conductor heating temperature, its insulation, length and layout.

Use copper wires only!

The unit must be grounded in compliance with the valid electrical standards of the user country!

The fixed electrical wiring must be equipped with an automatic switch that is used for connection of the unit to power mains with a gap on all poles at least 3 mm. The automatic switch trip current must be not below the rated current consumption.

The recommended rated automatic switch trip current is 2 A. The Recommended cable cross section is 0.75 mm<sup>2</sup>.

The unit has extra electric connection options. Designation of the contacts on the sticker of the X3 terminal block are enclosed in brackets, fig. 8:

- PK contact for connection of the fire alarm panel.

While connecting the automatic fire alarm system remove the jumper between the terminals 1 and 2. In case of fire a normally closed dry contact opens the control circuit from the central fire alarm panel.

- H contact for connection of the humidity sensor or CO<sub>2</sub> sensor.

The humidity sensor or CO<sub>2</sub> sensor is connected to the terminals 3 and 4. If the sensor is activated, the normally opened dry contact is closed and the unit switches to maximum speed.

- Y-N, Y-L, Y-C contact for connection of the three-point control damper.

The air damper actuator is connected to the terminals 5, 6, 7. One more air damper may be connected to the same terminals.

Connect extra contacts according to the electric wiring diagram, fig. 8.

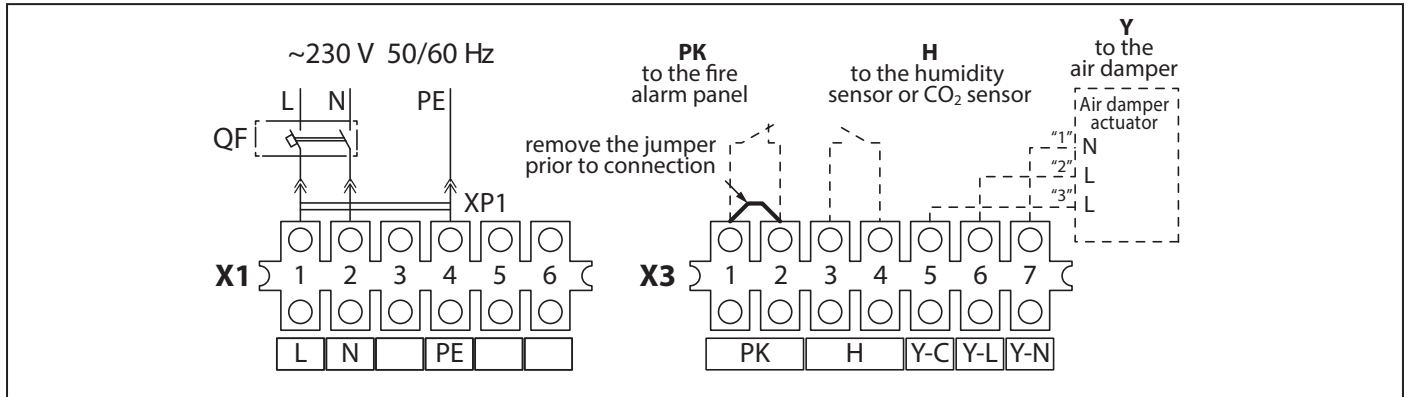


Fig. 8. External wiring diagram

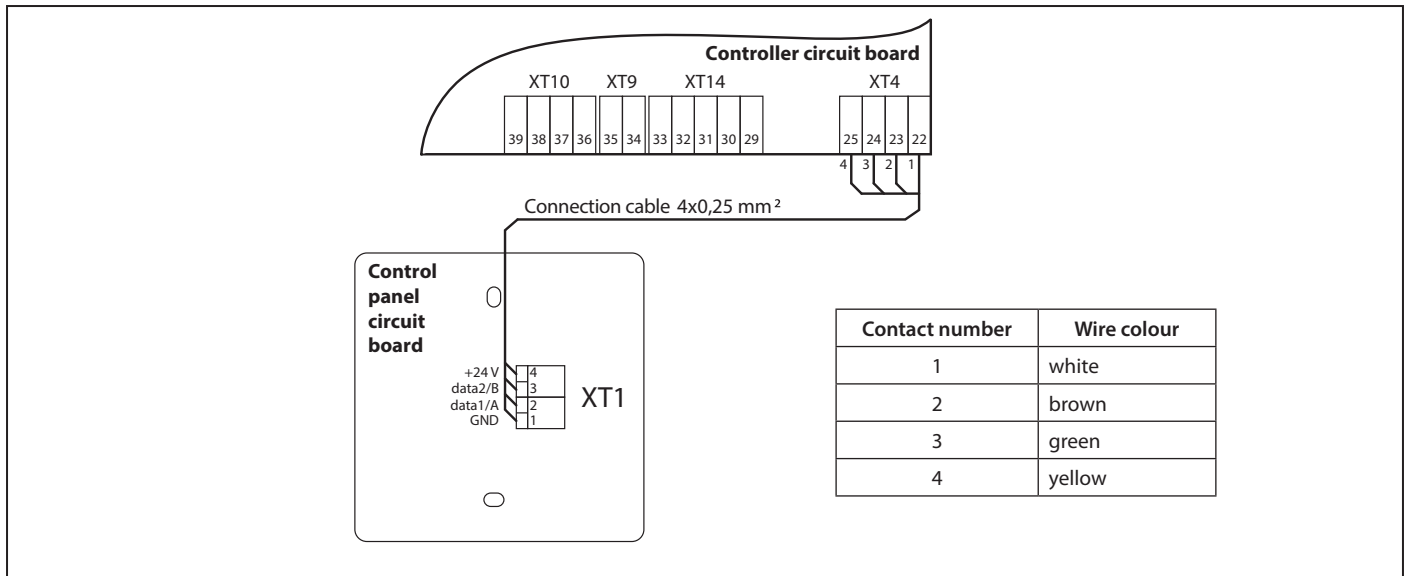


Fig. 9. Control panel wiring diagram

**UNIT CONTROL**

The unit is controlled from the wall-mounted control panel and the remote control, fig. 10.

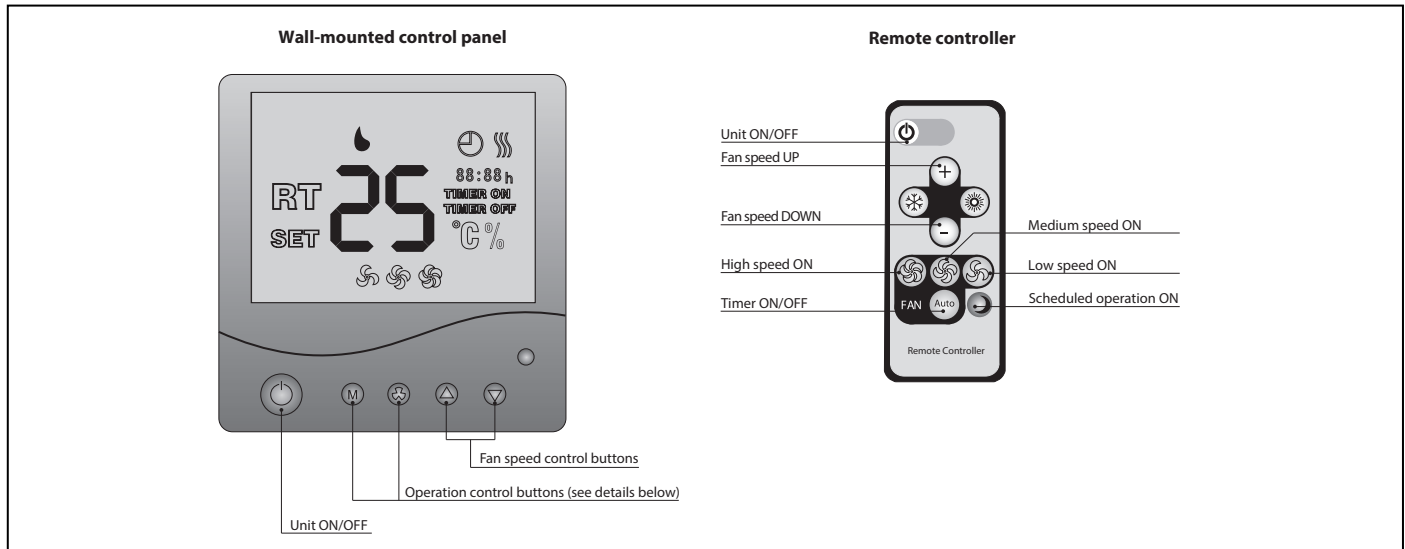


Fig. 10. Wall-mounted control panel and remote controller

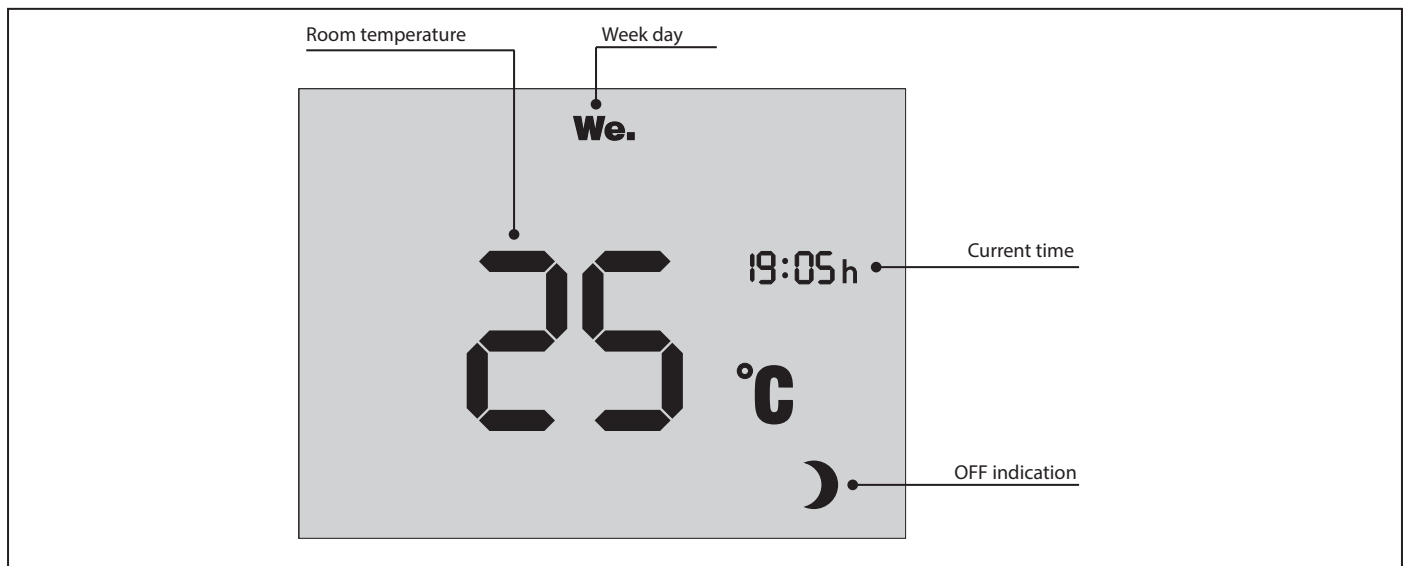


Fig. 11. Wall-mounted control panel display in OFF status

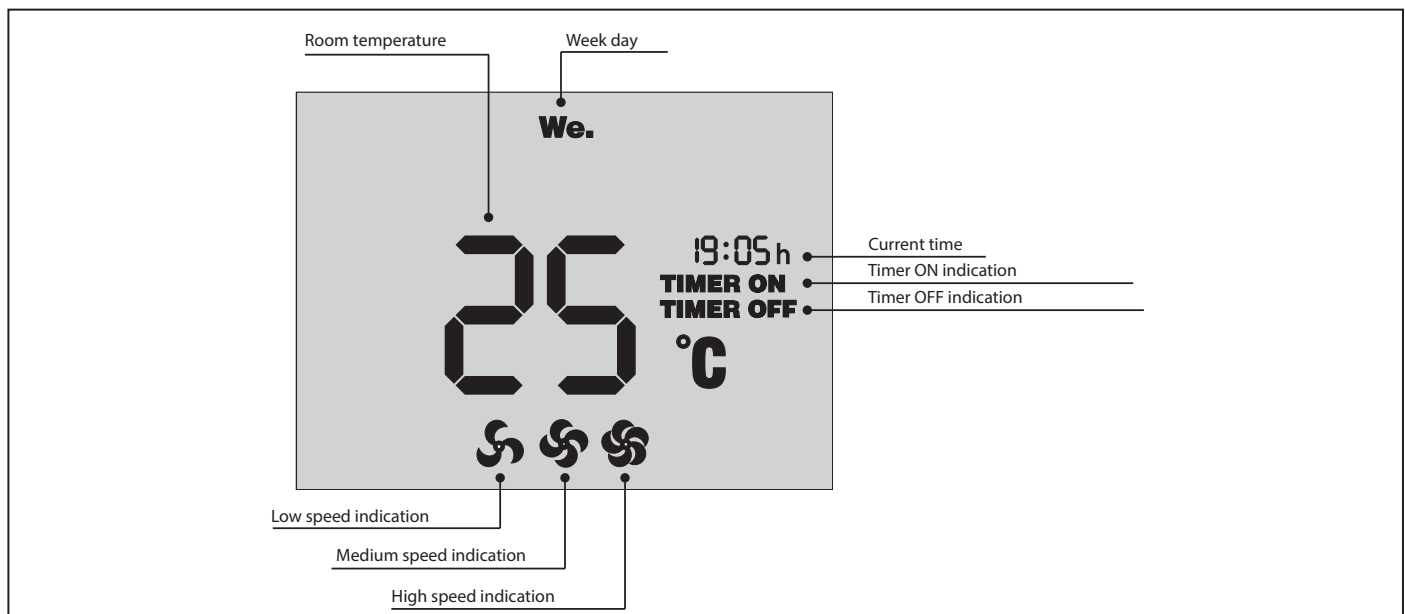


Fig. 12. Wall-mounted control panel display in ON status

Table 6. Unit control and setup


















Function		Button/Button combination		Indication
<b>1</b>	<b>Unit activation/deactivation.</b>			
Using the wall-mounted control panel.				Fig. 11 Fig. 12
Using the remote controller.				
<b>2</b>	<b>Speed selection.</b> Low speed 133 m³/h, medium speed 270 m³/h, high speed 331 m³/h.			
Speed setting up from the wall-mounted control panel (low-medium-high).				Fig. 12
Speed setting down from the wall-mounted control panel (low-medium-high).				
Speed step-up from the remote controller (low-medium-high).				
Speed step-down from the remote controller (low-medium-high).				
Low speed activation from the remote controller.				
Medium speed activation from the remote controller.				
High speed activation from the remote controller.				
<b>3</b>	<b>Timer.</b> The timer ensures automatic changeover from a current operation mode into high speed mode and revert to the previous operation mode in set time period. To activate/deactivate timer:			
<b>Timer activation using the wall-mounted control panel:</b> pressing one time sets the timer for 20 minutes, each subsequent pressing prolongs the timer operation for 10 minutes, till maximum 60 minutes.		press and hold 	press 	TIMER ON
<b>Timer deactivation using the wall-mounted control panel:</b>		press and hold for 3 seconds 		TIMER OFF
<b>Timer activation using the remote controller:</b> the only available timer setting is 20 minutes.		Auto 		TIMER ON
<b>Timer deactivation using the remote controller:</b> turn the unit off and restart it.				

Table 6. Unit control and setup (continued)

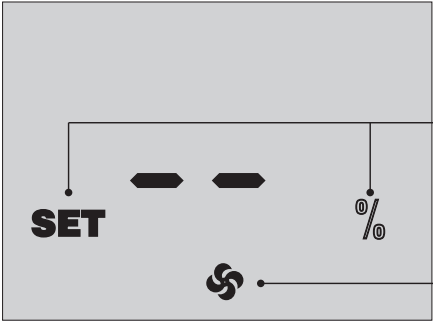








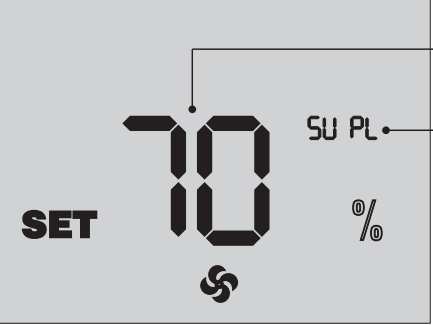




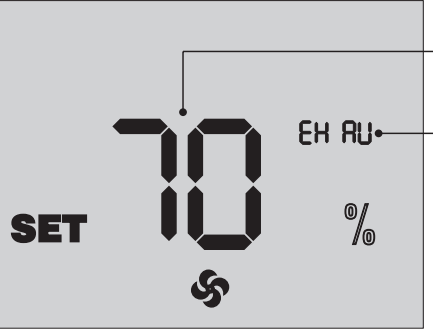


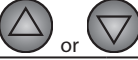
Function	Button/Button combination		Indication
<b>ATTENTION! Changing the unit parameters results in loss of factory settings for the fan power! ATTENTION! The fan power adjustment is possible from the wall-mounted control panel only!</b>			
<b>4 Fan speed adjustment.</b> The fan power is adjusted during the fan speed setup mode. Changeover to the fan speed setup mode is possible only when the unit is OFF.			
Changeover to the fan speed setup mode. 	press and hold 	press and hold for 3 sec 	
Adjusted speed selection			
Supply fan power step-up/down. Each pressing increases/decreases the fan power by 1%.	press and hold 	press: – stepping up  – stepping down 	-
Current supply fan power indication during adjustment 	when pressed 		-
Extract fan power step-up/down. Each pressing increases/decreases the fan power by 1%.	press and hold 	press: – stepping up  – stepping down 	-
Current extract fan power indication 	when pressed 		-
Exiting the fan speed setup mode.			-
Reset to factory settings. Enter the fan power adjustment mode. The factory fan power settings: low speed – 40 %, medium speed – 70 %, high speed – 100 %.	press and hold for 3 sec 		-



Table 6. Unit control and setup (continued)

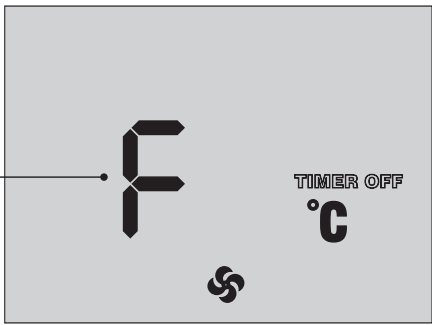









Function	Button/Button combination	Indication
<b>5 Filter replacement or cleaning indicator.</b> After 3000 operating hours the control panel display shows the warning filter cleaning or replacement indicator instead of the operating temperature. Clean or replace the filters and then reset the motor meter.		
		
Press the button on the control panel to turn the unit off and disconnect it from power supply. Replace the filters as stated in the „Maintenance“ section.		-
After the filter replacement connect the unit to power supply and press a respective button on the wall-mounted control panel or on the remote controller to start the unit.		-
Resetting motor hours	press synchronously 	-
<b>7 Date and time setting</b>		
Press a respective button on the wall-mounted control panel to turn the unit off.		-
Changeover to the date and time setup mode	press and hold 	-
Selection of the adjusted set point. The set point blinks during setup. The date and time set points are displayed as follows: 1. Minutes; 2. Hours; 3. Week day; 4. Date; 5. Month; 6. Year.	when pressed 	-
Setting of the set point	press 	-
Exit the date and time setup mode	press 	-

Table 6. Unit control and setup (continued)











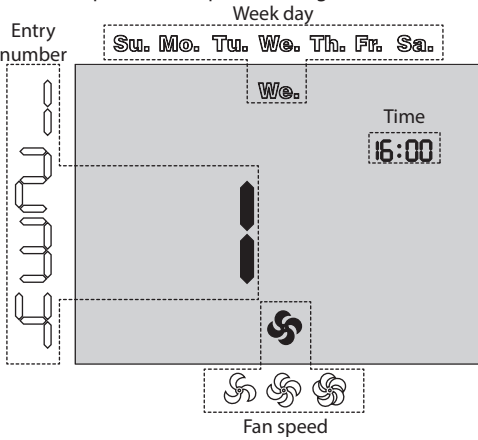









Function		Button/Button combination		Indication
8	<b>Scheduled operation.</b> Each week day has four entries that determine the time for switching the unit to a set fan speed. The timer function always prevails over scheduled operation function.			
	Activation of the scheduled operation mode from the wall-mounted control panel.	press and hold 	press 	
	Deactivation of the scheduled operation mode from the wall-mounted control panel.	press and hold 	press 	-
	Activation of the scheduled operation mode from the remote controller.			
	Deactivation of the scheduled operation mode from the remote controller.			-
	For access to the scheduled operation mode settings turn the unit off by pressing the respective button on the control panel or using the remote controller.	 or 		-
	Entering the scheduled operation setup mode using the wall-mounted control panel.			
	Selection of the scheduled operation mode parameters. The set point blinks during setup.	press and hold 	press  or 	-
Setting the required set point. Parameters for scheduled operation setup: <ul style="list-style-type: none"> <li>• <b>Entry number</b> – each week day has four entries.</li> <li>• <b>Week day</b> – setting week day.</li> <li>• <b>Fan speed</b> – setting the fan speed for a current entry.</li> <li>• <b>Time</b> – time setting for current entry</li> </ul>	press  or 		-	
Entry copying for the next day	press and hold 	press 	-	
Exiting the scheduled operation setup mode using the remote control panel or the remote controller.	 or 		-	

Table 7. Scheduled operation programming example

Week day	Entry number							
	1		2		3		4	
	Start time	Speed	Start time	Speed	Start time	Speed	Start time	Speed
Mo.	07:00	2	08:00	1	17:00	2	22:00	1
Tu.	07:00	2	08:00	1	17:00	2	22:00	1
We.	07:00	2	08:00	1	17:00	2	22:00	1
Th.	07:00	2	08:00	1	17:00	2	22:00	1
Fr.	07:00	2	08:00	1	17:00	2	22:00	1
Sa.	10:00	2	12:00	2	17:00	2	23:00	1
Su.	10:00	2	12:00	2	17:00	2	23:00	1

**TROUBLESHOOTING AND FAULT HANDLING**

In case of alarm the unit is turned off and the wall-mounted display shows the alarm indicators, fig. 13. The possible alarms are listed in the table 8. The alarms must be removed ONLY in a service centre or by a service expert, duly authorized for unassisted operations at the units up to 1000V after careful reading of the operation manual.

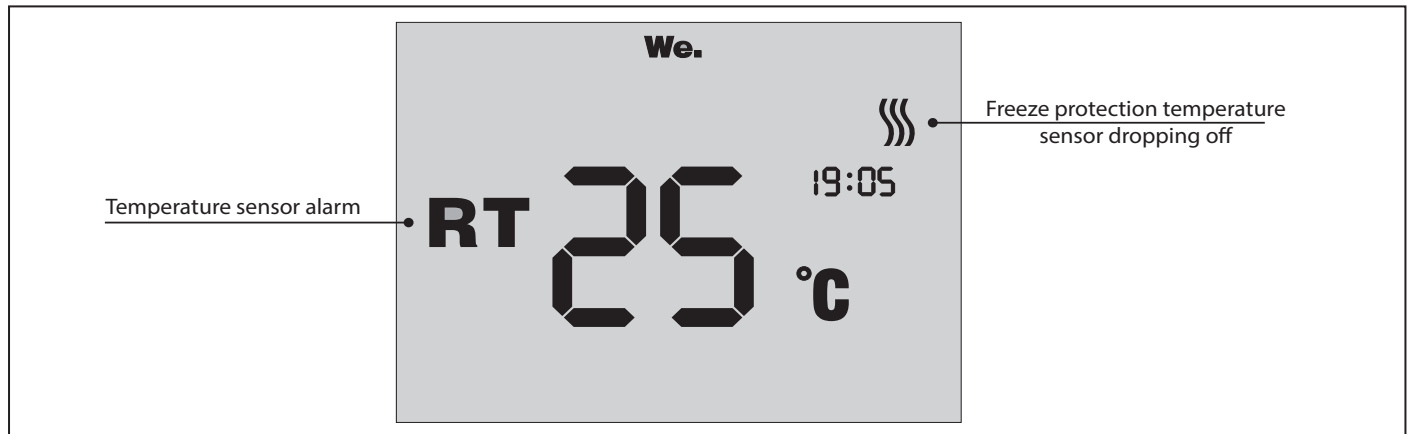


Fig. 13. Alarm indication on the wall-mounted control panel

Table 8. Alarm list

ALARM	ALARM REASON	INDICATOR	REMEDY
Damage of freeze protection temperature sensor	Short circuit	<b>RT</b>	Contact service centre
	Sensor dropping off	<b>RT</b> ☺	

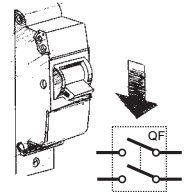
Table 9. Alarm list and troubleshooting

Fault	Possible reason	Troubleshooting
<b>The fan does not start when the unit is on.</b>	No power supply or wrong connection to power mains.	Connect the unit to power mains. Troubleshoot the connection error.
	Jammed motor, soiled impeller blades.	Remove the motor jam, clean the impeller blades.
<b>Automatic switch tripping</b>	Short circuit in power grid.	Turn the unit off and contact your seller for troubleshooting.
<b>Low air flow</b>	Too low set speed.	Set higher speed.
	The filters and the fans are soiled, the heat exchanger is soiled.	Clean or replace the filters, fans and heat exchanger.
<b>Low supply air temperature</b>	The air dampers, the supply diffusers or the exhaust grilles are closed or soiled.	Remove and clean the air dampers, the supply diffusers, the exhaust grilles to ensure free air flow.
	The extract filter is soiled.	Clean or replace the extract filter.
<b>Low supply air temperature</b>	The heat exchanger is iced.	Check the heat exchanger condition. Shutdown the unit if required and turn it on after the freezing danger is no longer imminent.
	The impeller is soiled.	Clean the impeller.
<b>Noise, vibration</b>	The screw connection is loose.	Tighten the screws.
	No flexible anti-vibration connectors.	Install the flexible anti-vibration connectors.
<b>Condensate leakage</b>	The drain system is clogged, damaged or wrong installed.	Clean the condensate drain system. Check the drain hose slope. Make sure the U-trap is filled with water and the drain system is frost-protected.

## TECHNICAL MAINTENANCE

### WARNING!

Cut power supply to the unit off by turning the automatic electric switch QF to OFF position prior to any maintenance operations.  
Take steps to prevent re-activation of the automatic switch.



Regular technical supervision and maintenance of the unit are required to ensure the product long service life and non-stop operation.  
Disconnect the unit from power mains prior to any maintenance operations.

**Warning! Consider the unit sharp edges! Fulfil maintenance operations in work gloves!**

Fulfil the unit maintenance 3–4 times per year.

The unit technical maintenance includes regular cleaning and other works:

#### 1. Filter maintenance (3–4 times per year).

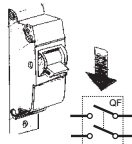
Dirty filters increase air resistance and decrease air capacity of the unit. Clean the filter with a vacuum cleaner or flush it with water. After two consecutive cleanings the filter must be replaced. Install dry filters only! Contact a local distributor for the filters stated above in the section „Technical data“.

**Dirty filters are not considered as a warranty case!**

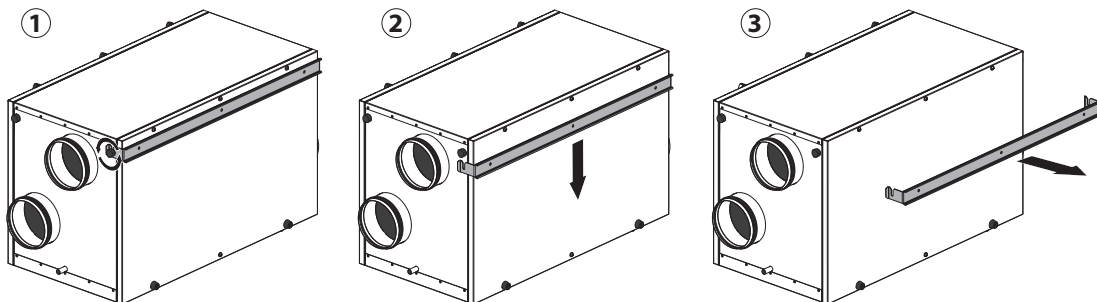
**Replace immediately humid and mouldy filters!**

Filter removing as follows:

- Make sure the unit is disconnected from power mains.



1. Remove the six triangular screws.
2. Remove the side panel.
3. Pull the filters to remove. Replace the extract and the supply filter. Perform the actions in the reverse order.

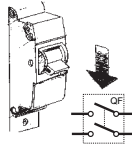


**2. Heat exchanger maintenance (once per year).**

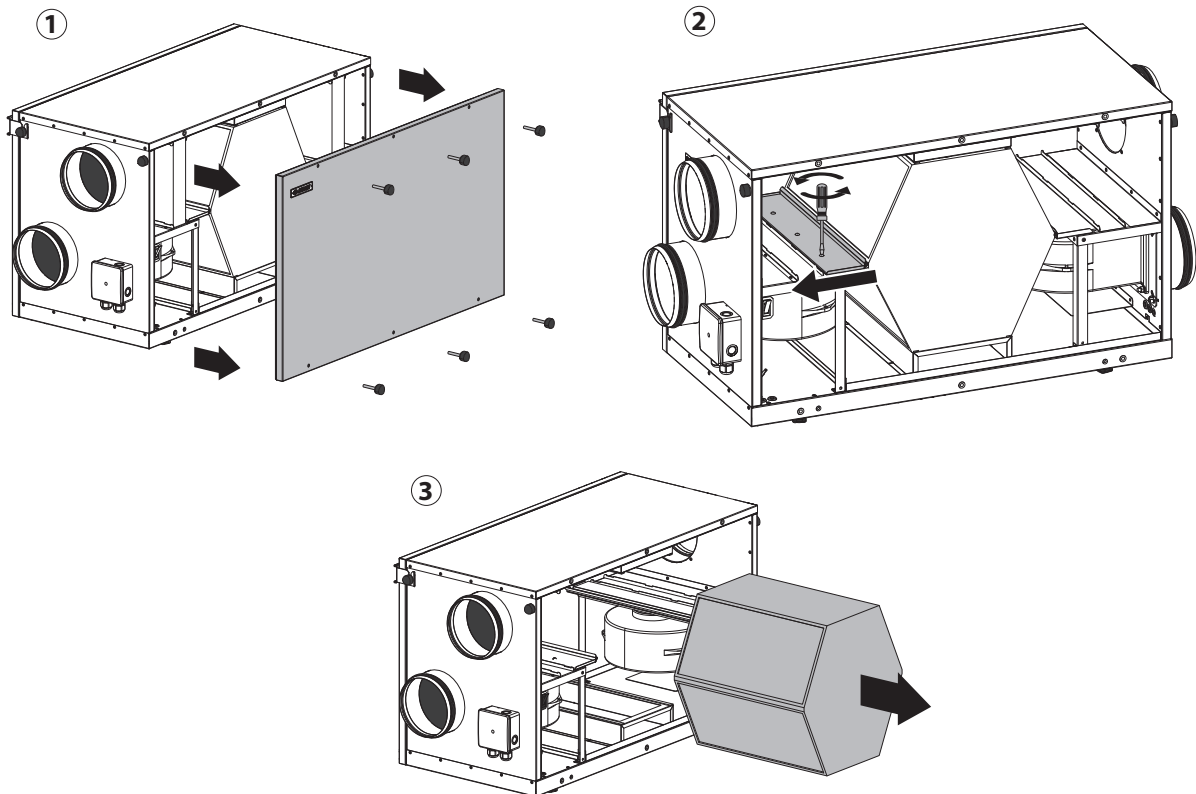
The heat exchanger must be regularly cleaned to maintain high heat exchanger efficiency even in case of the regular filter cleaning. Clean it with warm detergent solution. Remove the heat exchanger from the unit and flush it with warm detergent solution. Install the dry heat exchanger back to the unit.

To remove the heat exchanger:

- Make sure the unit is disconnected from power mains.



1. Remove the six triangular screws and take off the side panel. Remove the filters.
2. Loosen the three screws on the plate that retains the heat exchanger. Move the plate aside.
3. Pull the heat exchanger to withdraw it.

**3. Fan maintenance (once per year).**

The regular filter cleaning may not completely prevent the dust ingress into the unit, which results in the unit capacity decrease. Clean the fan with a soft cloth or a brush. Cleaning with water, abrasive detergents, sharp object or chemicals is not allowed.

**4. Condensate drain system maintenance (once per year).**

Extract air particles may accumulate in the condensate drain system and cause its clogging. Pour a drain pan under the unit with water to check free water flow. Clean a U-trap and the drain system if required.

**5. Supply air flow control (twice per year).**

Check the supply grille and remove foreign objects to maintain free air intake.

**6. Air ducts maintenance (once in 5 years).**

The regular unit maintenance in compliance with the above rules may not completely prevent dust ingress into the air ducts which may result in air flow decrease. The air duct maintenance consist in periodical cleaning or replacement.

**7. Exhaust grilles and intake diffuser maintenance (as required).**

Remove the exhaust grille and the intake diffuser and flush those with warm detergent solution. Check the ductworks thread connections periodically.

**ACCEPTANCE CERTIFICATE**

**The air handling unit with heat recovery**

KOMFORT EC L300 S6	
KOMFORT EC L1/300 S6	
KOMFORT EC L400 S6	
KOMFORT EC L600 S6	

**is recognizes as serviceable.**

The unit complies with the requirements according to the EU norms and directives, to the relevant EU-Low Voltage Equipment Directives, EU-Directives on Electromagnetic Compatibility. We hereby declare that the following product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This certificate is issued following test carried out on samples of the product referred to above.

Approval mark \_\_\_\_\_ Manufacturing date \_\_\_\_\_

**CONNECTION CERTIFICATE**

**The air handling unit with heat recovery**

KOMFORT EC L300 S6	
KOMFORT EC L1/300 S6	
KOMFORT EC L400 S6	
KOMFORT EC L600 S6	

is connected to power mains in compliance with the operation manual requirements by the professional:

Company: \_\_\_\_\_

Name: \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

**WARRANTY CARD**

KOMFORT EC L300 S6	
KOMFORT EC L1/300 S6	
KOMFORT EC L400 S6	
KOMFORT EC L600 S6	

**SELLER**

**SALES DATE**

**REPRESENTATIVE IN EU**

Blauberg Ventilatoren GmbH  
 Aidenbachstr. 52  
 D-81379 Munich, Germany









**BLAUBERG**  
*Ventilatoren*

