



KITCHEN HEAT RECOVERY AIR HANDLING UNIT



KOMFORT EC SKE270-1.5



OPERATION MANUAL



BLAUBERG
Ventilatoren

CONTENTS

3	Introduction
3	General
3	Safety rules
3	Transportation and storage rules
3	Manufacturer's warranty
4	Design
4	Operating logic
5	Delivery set
5	Technical data
6	Mounting
7	Condensate drainage
8	Connection to power mains
9	Unit control
14	Maintenance
16	Troubleshooting and fault handling
18	Acceptance certificate
18	Connection certificate
18	Warranty card

BLAUBERG Ventilatoren GmbH Company is happy to offer your attention a new heat recovery air handling unit **KOMFORT EC SKE270-1.5** with integrated kitchen hood.

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 heat recovery air handling unit KOMFORT EC SKE270-1.5 with integrated kitchen hood is designed for efficient and energy saving ventilation of domestic 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 available for round Ø125 mm air ducts.

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

Hazardous parts access and water ingress protection rating:

- Unit motors - IP 44;
- Assembled unit connected to air ducts - IP 22.

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.

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.



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.

DESIGN

The double-skinned unit casing is made of polymer-coated steel plates, internally heat- and sound insulated with a 15 mm polypropylene foam layer. The unit includes an integrated kitchen hood with control buttons on the front panel. The mounting brackets on the casing ensure easy installation. 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 front service panel of the casing ensures easy access to the unit internals for service works including cleaning, filter replacement, etc.

The unit is equipped with high-efficient external rotor EC motors and centrifugal impellers with forward curved blades. The integrated EC motors have the best power consumption to air capacity ratio and meet the latest demands concerning energy saving and high-efficient ventilation. EC motors are featured with high performance, low noise level and totally controllable speed range. The impellers are dynamically balanced.

The unit is equipped with a high-efficient counter-flow polystyrene heat exchanger with a large surface area. The air flows are fully separated within the heat exchanger. Odour and contaminants contained in the extract air are not transferred to the supply air flow. The electronic frost protection system is used to prevent the heat exchanger freezing in cold seasons. In case of heat exchanger freezing danger communicated by the temperature sensor the supply fan is stopped to let warm extract air warm 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 intake air duct upstream of the heat exchanger is from -7 °C up to -15 °C the unit is switched into automatic control mode, i.e. the supply fan turns off for 5 minutes and operates for 25 minutes. If the outdoor temperature is below -15 °C the supply fan turns off for 5 minutes and operates for 15 minutes.

The drain pan under the heat recovery unit is used for condensate collection and drainage.

The unit is equipped with an electric heater for operation during cold seasons at low outside temperature. The integrated electric heater is activated to warm up supply air up to +30 °C if set indoor air temperature may not be reached by means of heat recovery only. Once the set temperature is reached the electric heater turns automatically off. The electric heater is equipped with two integrated overheat protection thermostats, one of safety type actuated at +50 °C with automatic restart and the other one of alarm type actuated at +90 °C with manual restart.

The built-in G4 pocket supply filter and G4 pocket extract filter provide efficient air filtration. Optionally, a F7 supply filter may be used. The kitchen hood has a multilayer fat aluminium filter.

The unit includes an integrated controller, 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.

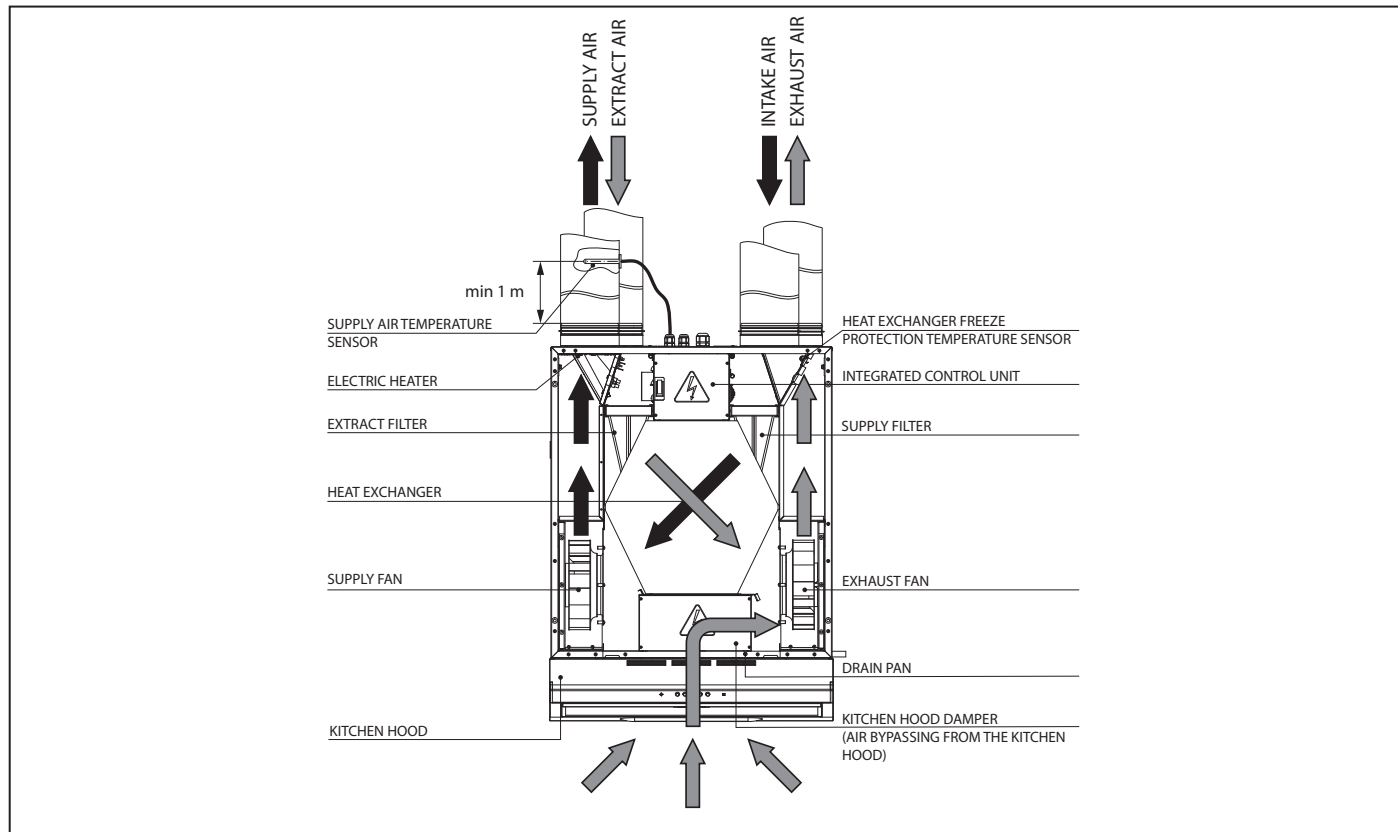


Fig. 1. Unit design and operating logic.

OPERATING LOGIC

Clean cold air from outside flows to the heat exchanger, where from it is moved to the room with the supply fan.

Warm stale air is extracted from the room with the exhaust fan and is moved through the air ducts to 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 intake air. The air flows are fully separated within the heat exchanger.

Heat recovery minimizes heat losses caused by traditional window

ventilation and saves energy.

In summer the heat exchanger performs reverse and transfers cold air from the cooled extract air for warming up intake air. This contributes to better performance of the air conditioner in ventilated premises.

During operation of the kitchen hood the extract air is exhausted through the bypass air duct and does not come in contact with the heat exchanger.

DELIVERY SET

- ✓ Air handling unit - 1 item;
- ✓ Operation manual - 1 item;
- ✓ Wall-mounted control panel - 1 item;
- ✓ Remote controller - 1 item;
- ✓ Duct temperature sensor - 1 item;
- ✓ Packing - 1 item;
- ✓ Fixing kit - 1 item.

TECHNICAL DATA

Table 1. Technical data of the unit

Parameters	KOMFORT EC SKE270-1.5		
Speed	1	2	3
Unit voltage [V / 50-60 Hz]	1~ 230		
Max. fan power [W]	16	94	187
Fan current [A]	0,1	0,6	1,1
Electric heater power [kW]	1,5		
Electric heater current [A]	6,5		
Total unit power [kW]	1,69		
Max. unit current [A]	7,6		
Max. air capacity [m ³ /h]	40	190	270
RPM	1280	2240	3200
Sound pressure level at 3 m distance [dB(A)]	28	39	42
Transported air temperature [°C]	-25 up to +60 °C		
Casing material	polymer coated steel		
Insulation	15 mm polypropylene foam		
Filter: extract	pocket G4		
Filter: supply	pocket G4 (F7)*		
Replaceable filter*	FPT-EC SKE270 G4 FPT-EC SKE270 F7		
Connected air ducts diameter [mm]	125		
Weight [kg]	38		
Heat recovery efficiency [%]	from 85 up to 98		
Heat exchanger type	counter-flow		
Heat exchanger material	polystyrene		

** option

* extra replaceable filters are special accessories and available on separate order.



WARNING

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

Table 2. Technical data of the wall-mounted control panel

Parameters	
Ambient temperature [°C]	0 up to +40
Relative humidity [%]	5 up to 90 (no condensation)
Cable cross section [mm ²]	0.18 up to 0.35
Material	ABS plastic
Dimensions, height-width-depth [mm]	86x86x14
Cable length [m]	up to 10
Ingress protection rating	IP30

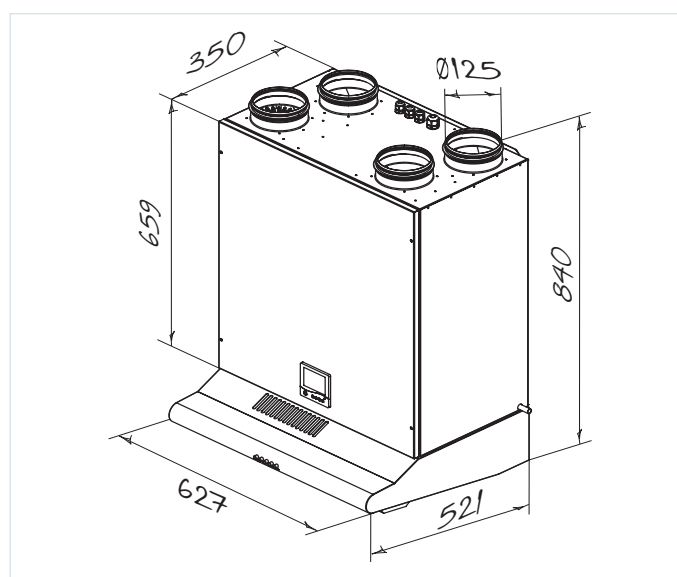


Fig. 2. Unit overall dimensions

MOUNTING



WARNING

Safety precautions:

The unit must be mounted to a rigid and stable structure.
 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.

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 detachable 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.

The unit mounting is as follows, fig. 3:

□ fix the wall mounted fixing bracket with the anchor bolts at the required height using the fixing components from the delivery set.

□ hang up the unit on the wall-mounted fixing bracket.

To ensure correct supply air heating function install a duct temperature sensor at least 1 m away from the supply air duct to spigot connection.

The duct supply air temperature sensor is mounted as follows:

□ Drill a Ø9 mm hole in the air duct.

□ Install a sensor in the hole.

□ Fix the sensor in place.

Ensure airtight connection of the sensor and the air duct joint.

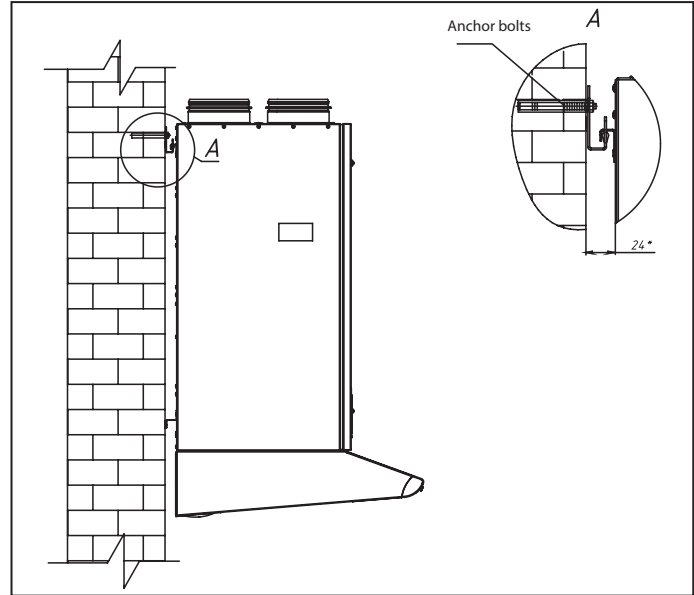


Fig. 3. Unit mounting

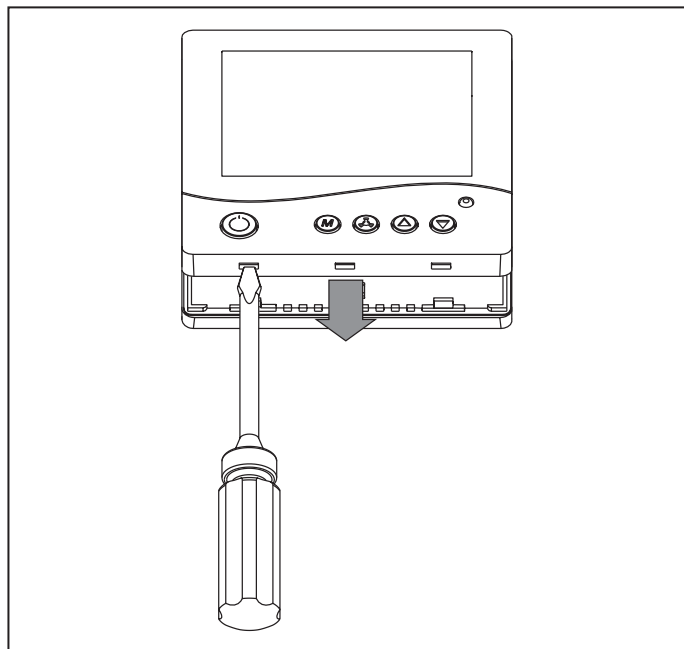


Fig. 4. Removal of the control panel back cover

Installation of the wall-mounted control panel:

□ Unlock the latches with a screw driver through the openings in the bottom of the wall-mounted control panel, fig. 4.

□ Remove the back cover.

□ Disconnect the cable from the terminal block.

□ Route the cable in the wall to the control panel installation site.

□ Fix the control panel back cover to the wall, fig. 5.

□ Connect the cable to the terminal block.

□ Install the front part of the control panel on the latches.

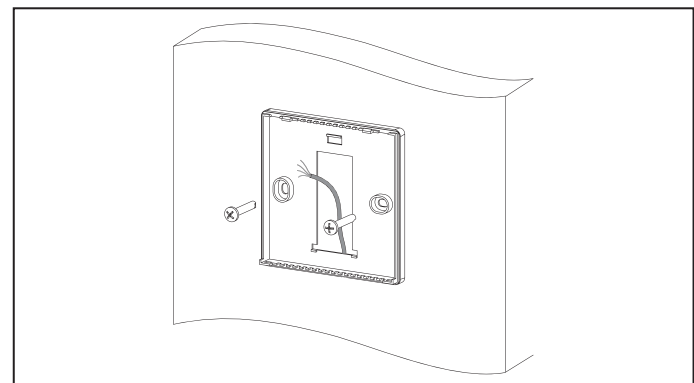


Fig. 5. Control panel back cover mounting to the wall

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.

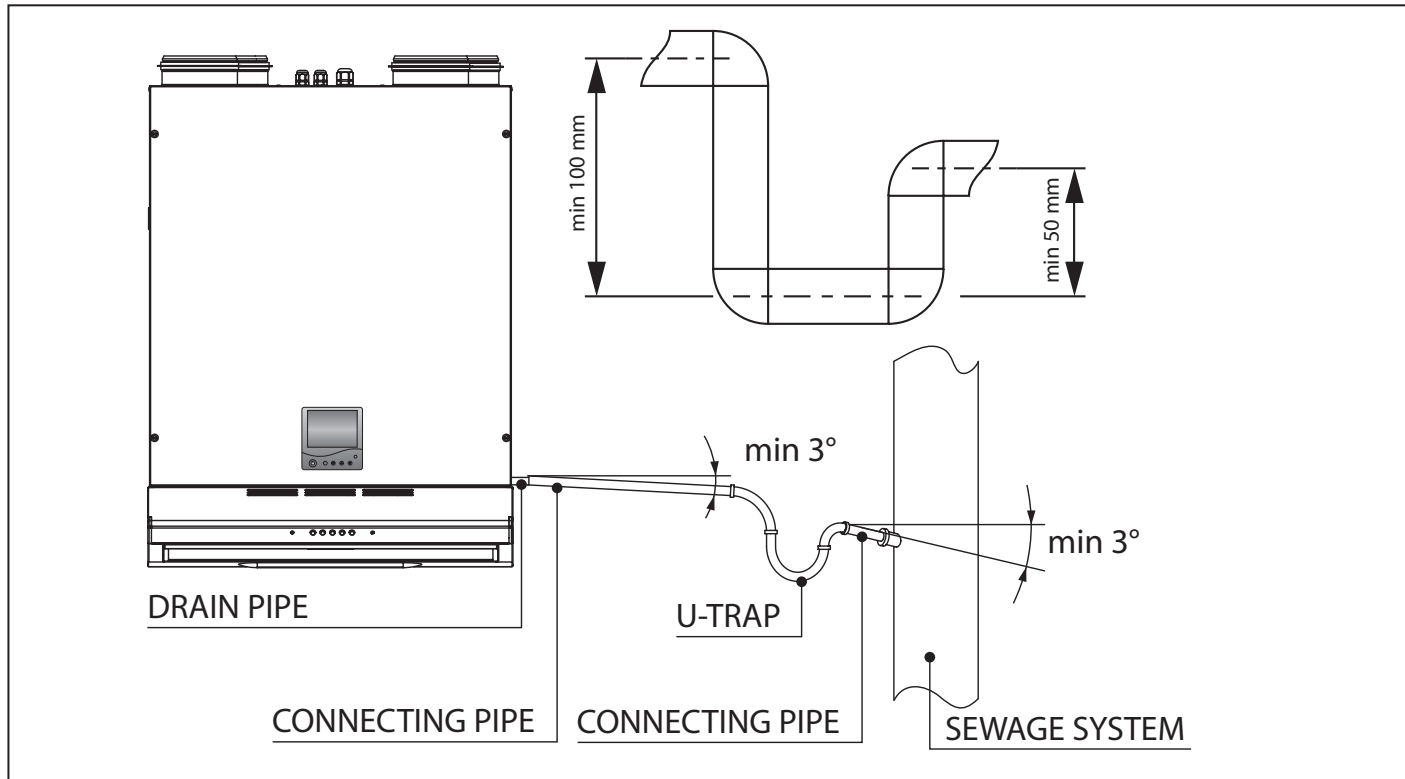


Fig. 6. Condensate drainage mounting

**WARNING**

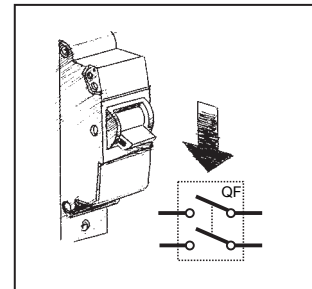
In case of several unit mounting connect each unit to an individual U-trap. Direct condensate discharge with no connection to the drain system is not allowed.

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.
 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 before finishing all the operations.



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

The unit is delivered ready to plug-in and is connected to power supply via a pre-wired power cable with a euro 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 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 unit has extra electric connection options. Designation of the contacts on the sticker of the X3 terminal block are enclosed in brackets, fig. 7:

- **PK contact** for connection of a fire extinguishing system
- **H contact** for connection of a humidity sensor or CO2 sensor

While connecting the automatic fire extinguishing system remove the jumper between the X3:1 and X3:2 terminals of the X3 terminal block. In case of fire a normally closed dry contact breaks the control circuit and cuts off power supply to the unit.

Connect the humidity sensor or CO2 sensor to the X3:3, X3:4 terminals of the X3 terminal block. If the sensor is activated, the normally opened dry contact closes and switches the unit to maximum speed.

Connect extra contacts according to the electric wiring diagram, fig. 7. Route the wires through the electric lead-in in the upper part of the air handling unit.

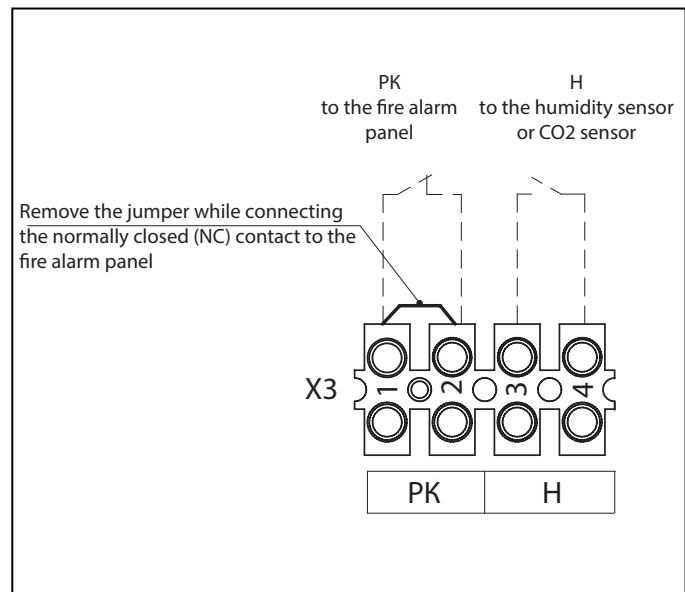


Fig. 7. External wiring diagram

UNIT CONTROL

The unit is controlled from the wall-mounted control panel and the remote control, fig. 8.

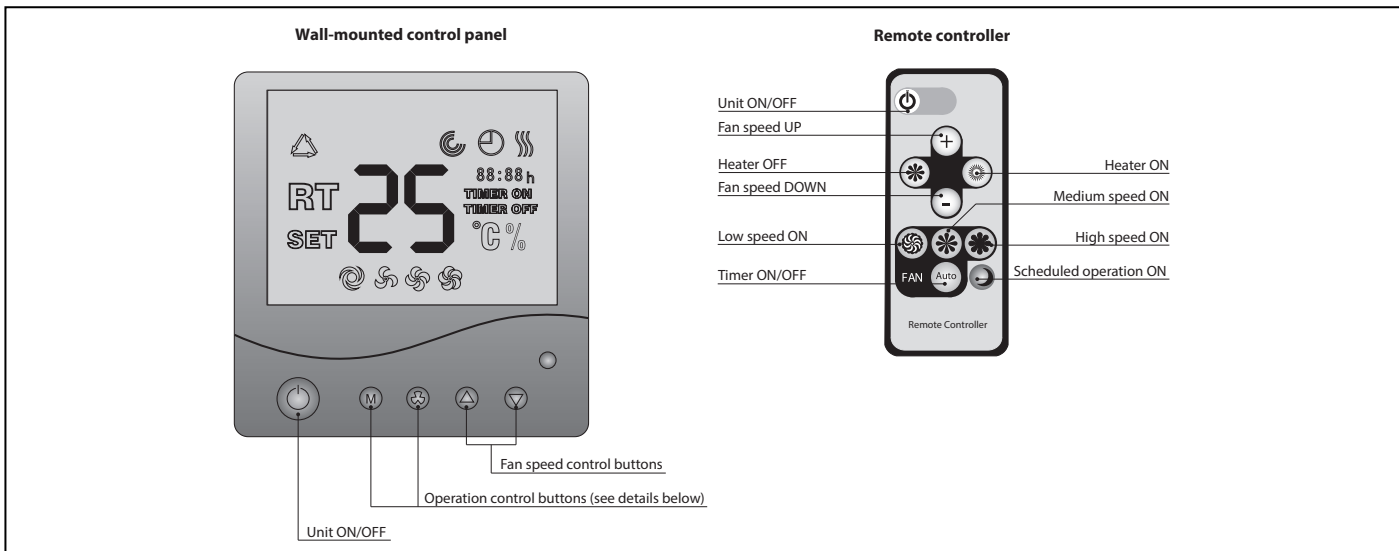


Fig. 8. Wall-mounted control panel and remote controller

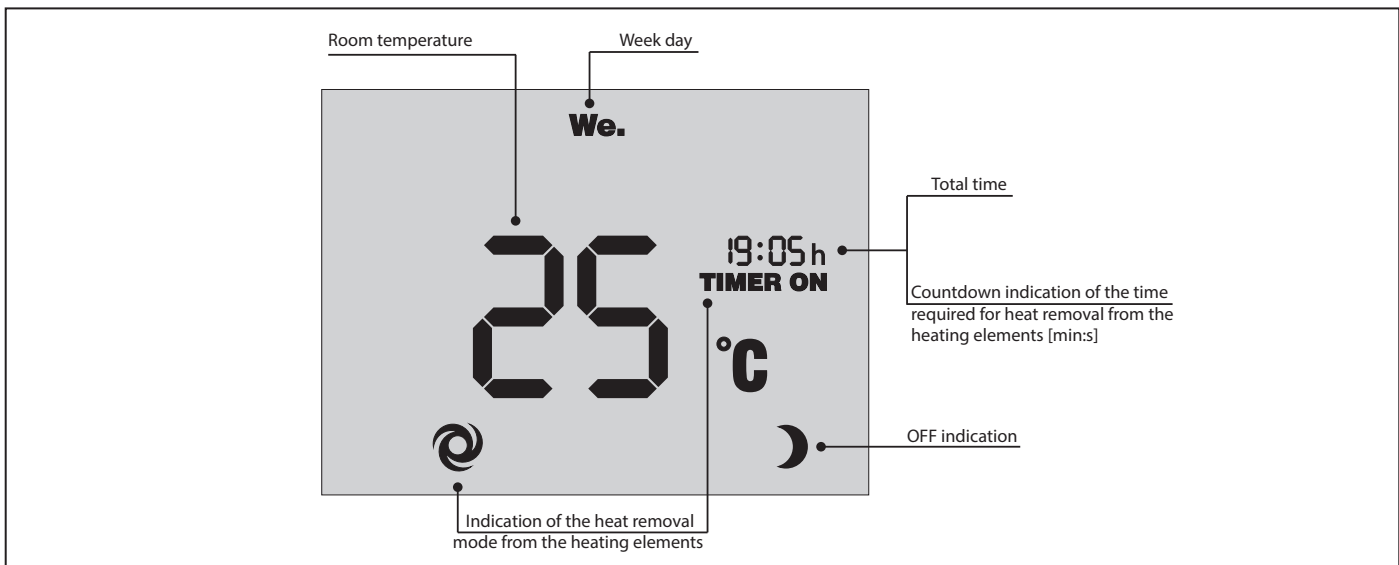


Fig. 9. Wall-mounted control panel display in OFF mode

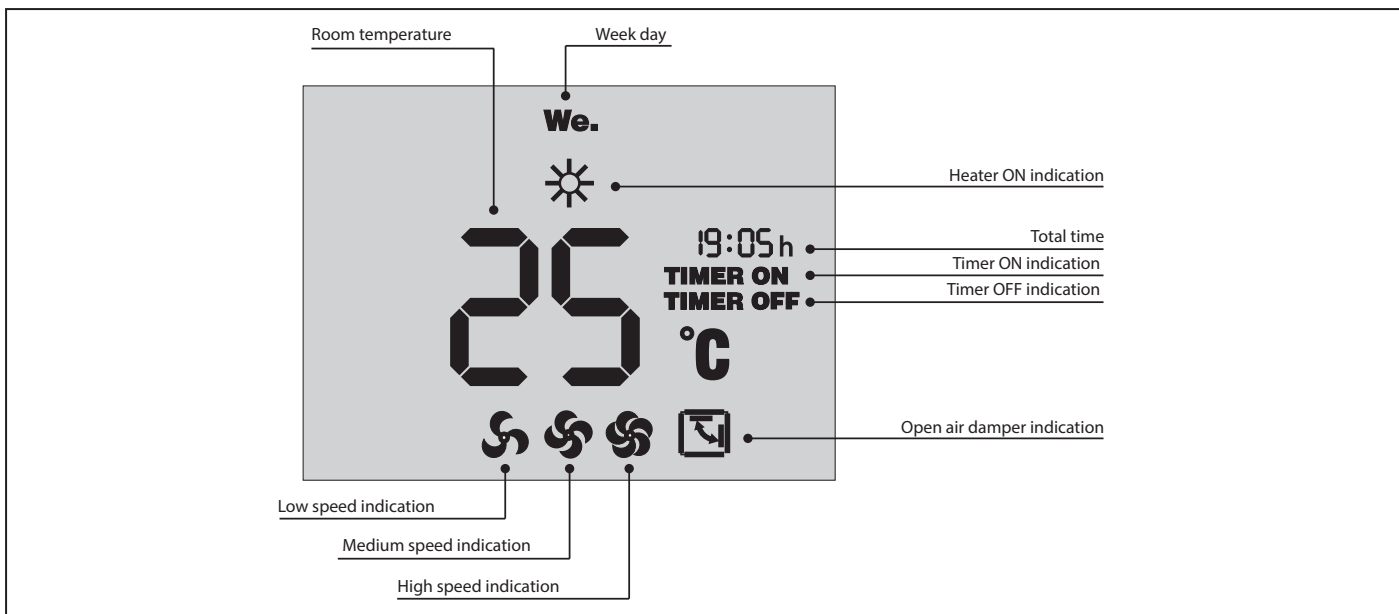


Fig. 10. Wall-mounted control panel display in ON mode

Table 3. Unit control and setup.
























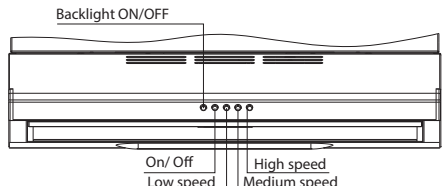
Function		Button/Button combination		Indication
1	Unit activation/deactivation			
Using the remote controller.				Fig. 9 Fig. 10
Using the wall-mounted control panel.				
2	Speed selection Low speed - 40 m³/h, medium speed - 90 m³/h, high speed - 270 m³/h.			
Speed setting up from the wall-mounted control panel (low-medium-high).				Fig. 10
Speed step-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.				
3	Supply air heating Supply air is pre-heated with the heater that warms up and maintains the set supply air temperature. Air temperature is set in the temperature setup mode for the duct temperature sensor. The setup procedure is described in clause 7, «Duct temperature sensor setup».			
Heater activation/deactivation from the wall-mounted control panel.		press and hold 	press 	
Heater activation from the remote controller.				
Heater deactivation from the remote controller.				
WARNING!!! The unit continues operating within 2 minutes after the turning off to ensure heat removal from the heating elements.				
4	Timer 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:			
using the wall-mounted control panel: press the button once to set 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
Timer deactivation using the wall-mounted control panel.		press and hold for 3 seconds 		TIMER OFF
Timer activation using the remote controller. The only available timer setting is 20 minutes.		Auto 		TIMER ON
Timer deactivation using the remote controller: turn the unit off and restart it.				
5	Kitchen hood control Operation of the kitchen hood disables heat recovery as air extracted from the kitchen flows in the bypass air duct. Operation of the unit in the kitchen hood mode has higher priority as compared to control panel settings and the control panel. The control panel is not active during the kitchen hood operation.			
Press a required speed button (low, medium, high speed) on the kitchen hood panel to turn the unit on.				 <p>Backlight ON/OFF</p> <p>On/ Off Low speed</p> <p>High speed Medium speed</p>
Press a respective button to turn the kitchen hood off. After turning the kitchen hood off the unit changes to a set operation mode according to the control panel settings.				

Table 3. Unit control and parameter setting (continued)

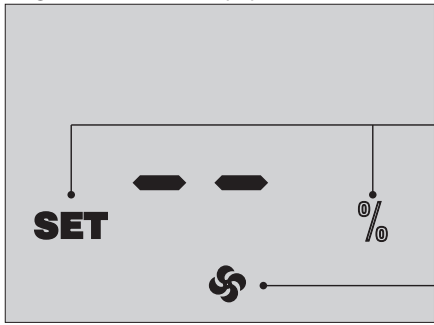








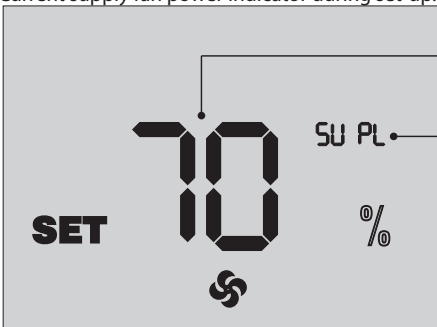




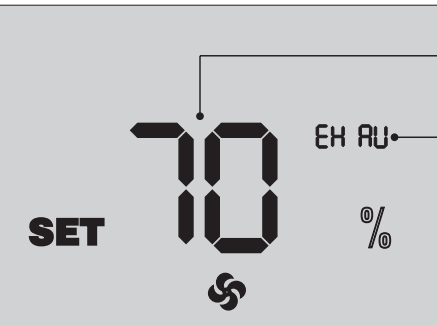


Function	Button/Button combination	Indication	
<p>ATTENTION! Changing the unit parameters results in loss of factory settings for the fan power! ATTENTION! The fan power adjustment is possible from the wall-mounted control panel only!</p>			
<p>6 Fan speed adjustment The fan power is adjusted during the fan speed setup mode. Changeover to the fan speed setup mode is possible only when the unit is OFF.</p>			
<p>Changeover to the fan setup speed mode.</p> 	<p>press and hold</p> 	<p>press and hold for 3 seconds</p> 	<p>SET %</p>
Adjusted speed selection			
Supply fan power step-up/down. Each pressing increases/decreases the fan power by 1%.	<p>press and hold</p> 	<p>press:</p> <ul style="list-style-type: none"> - stepping up  - stepping down  	-
Current supply fan power indicator during set-up.	<p>when pressed</p> 		-
Extract fan power step-up/down. Each pressing increases/decreases the fan power by 1%.	<p>press and hold</p> 	<p>press:</p> <ul style="list-style-type: none"> - stepping up  - stepping down  	-
Current extract fan power indicator during set-up.	<p>when pressed</p> 		-
Exiting the fan speed setup mode.		-	
Reset to factory settings. Enter the fan power adjustment mode. The factory fan speed settings: low speed - 40%, medium speed - 70%, high speed - 100%.	<p>press and hold for 3 seconds</p> 	-	

Table 3. Unit control and parameter setting (continued)

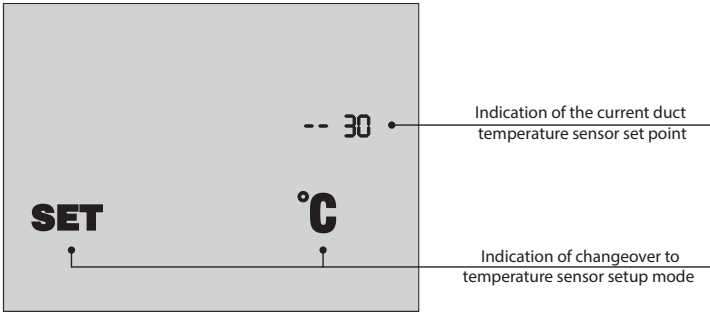




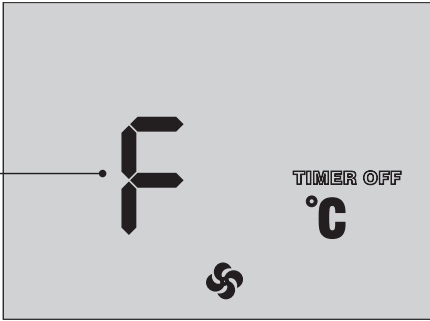










Function	Button/Button combination	Indication
ATTENTION! The duct temperature sensor may be adjusted from the wall-mounted control panel only when the unit is OFF!		
7 Duct temperature sensor set-up. Enter the duct temperature sensor setup mode to edit the supply air temperature downstream of the heater.		
Changeover to the temperature sensor setup mode. 	press synchronously 	SET °C
Duct temperature sensor set point setting from +16 °C up to +30 °C with 2 °C increment.		-
Show current temperature sensor set point		-
Exit the duct temperature sensor adjustment mode.		-
8 Filter replacement indicator. After 3000 operating hours the control panel display shows the warning filter cleaning or replacement indicator instead of the operating temperature to communicate the need of filter cleaning or replacement. Clean or replace the filters and then reset the motor meter.		
	-	F
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 	-
9 Date and time setting.		
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  or press 	-
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  or press 	-
Setting of the set point	press 	-
Exit the date and time setup mode	press 	-

Table 3. Unit control and parameter setting (continued)

Function		Button/Button combination		Indication
10	Scheduled operation. Each week day has four entries that determine the time for switching the unit to a set fan speed as well as the time for the heater activation or deactivation. The timer function always prevails over scheduled operation function. By default the scheduled operation is set for the warm season and the heater is OFF. While adjusting the scheduled operation for the cold season set the heater ON parameter.			
	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"> • Entry number - each week day has four entries. • Week day - setting week day. • Heater operation status - setting the heater operating status for a current entry. • Fan speed - setting the fan speed for a current entry. • Time - time setting for a current entry. 	press or		-
	Entry copying for the next day. ATTENTION! The Sunday parameters may not be copied for Monday.	press and hold 	press 	-
Exiting the scheduled operation setup mode using the remote control panel or the remote controller.	or		-	

Table 4. Scheduled operation programming example

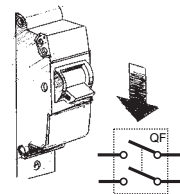
Week day	Entry number											
	1			2			3			4		
	Start time	Speed	Heater operation status	Start time	Speed	Heater operation status	Start time	Speed	Heater operation status	Start time	Speed	Heater operation status
Mo.	07:00	2	Off	08:00	1	Off	17:00	2	Off	22:00	1	Off
Tu.	07:00	2	Off	08:00	1	Off	17:00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

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 supply air.

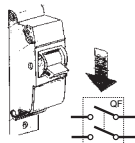
Clean the filter with a vacuum cleaner or flush it with water. After two consecutive cleanings the filter must be replaced. Install dry filters only! Contact a local distributor for the filters stated above in the section «Technical data».

Dirty filters are not considered as a warranty case!

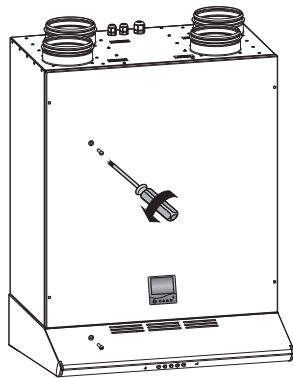
Replace immediately humid and mouldy filters!

Filter removing as follows:

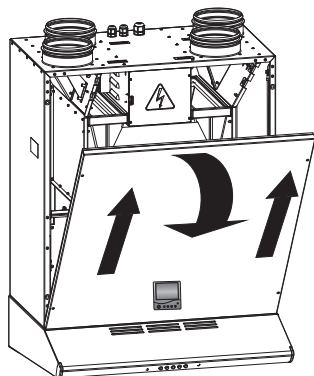
- Make sure the unit is disconnected from power mains.



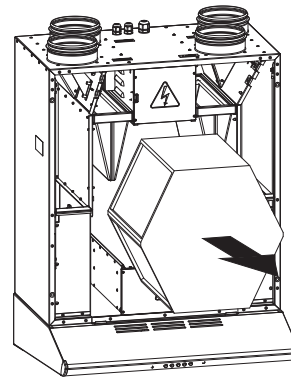
- Remove the screws.



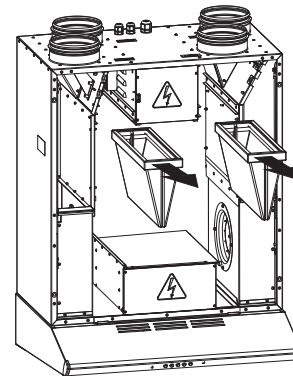
- Open the unit front panel and disconnect the control panel. After that remove the two M6 screws to release the stopper. Lean the service panel against the unit and lift it upwards to remove.



- Pull the band to remove the heat exchanger from the unit.



- Pull the filters to remove. Perform the actions in the reverse order after cleaning or replacement of the filters.

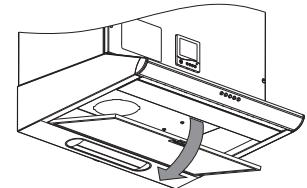
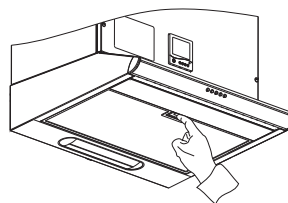


2. Fat filter servicing (as required).

Let the fat filter soak in a neutral detergent solution until the fat is completely dissolved. After that flush the filter, let it dry out and install a dry filter in the kitchen hood.

Fat filter removal:

- Press the latch. Pull carefully the fat filter downwards and remove it.



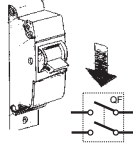
Perform the actions in the reverse order after completion of the maintenance.

3. Heat exchanger maintenance (once per year).

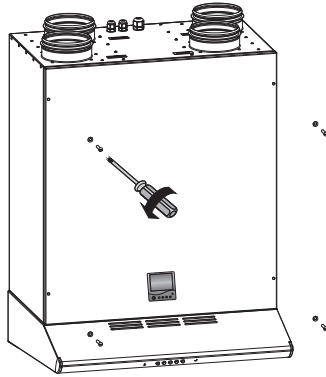
The heat exchanger must be regularly cleaned to maintain high heat recovery efficiency even in case of the regular filter cleaning.

To remove the heat exchanger:

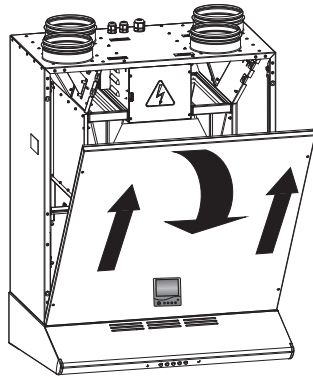
- Make sure the unit is disconnected from power mains.



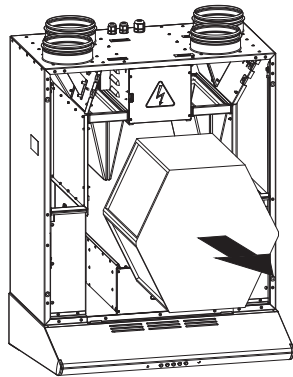
- Remove the screws.



- Open the unit front panel and disconnect the control panel. After that remove the two M6 screws to release the stopper. Lean the service panel against the unit and lift it upwards to remove.



- Remove the heat exchanger from the unit and flush it with warm detergent solution. Install the dry heat exchanger back to the unit.



Perform the actions in the reverse order after completion of the maintenance.

4. 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.

5. 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.

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

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

7. 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.

8. Exhaust grilles and intake diffuser maintenance (as required).

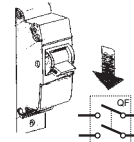
Remove the exhaust grille and the intake diffuser and flush those with warm detergent solution. Check the air ducts for air tightness periodically.

9. Control unit maintenance (as required).

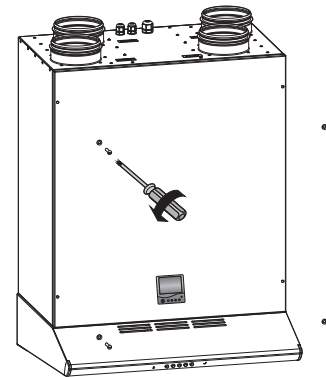
WARNING! The control unit maintenance must be performed by a qualified technician, duly authorized for unassisted operations at the electrical units up to 1000V after careful reading of the operation manual.

Control unit maintenance as follows:

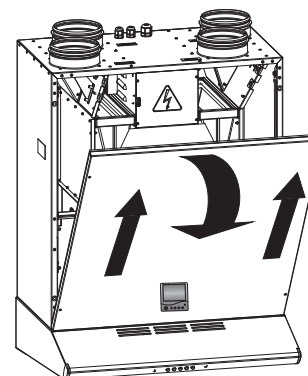
- Make sure the unit is disconnected from power mains.



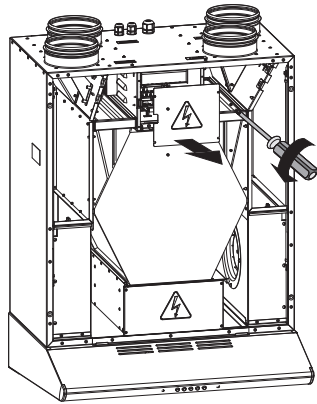
- Remove the screws.



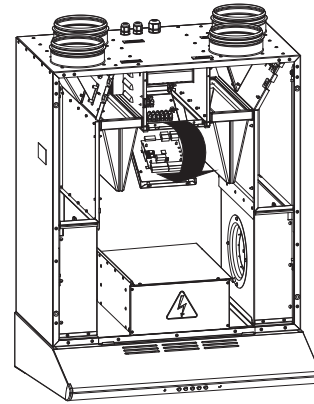
- Open the unit front panel and disconnect the control panel. After that remove the two M6 screws to release the stopper. Lean the service panel against the unit and lift it upwards to remove.



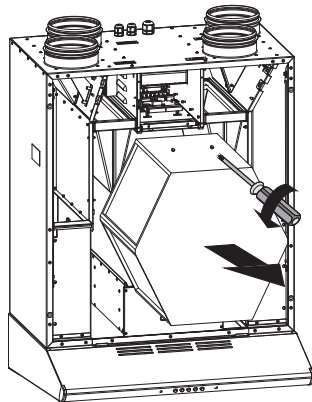
□ Remove the four screws and take off the protecting cover.



□ Support the control unit swivel panel with hand while removing the screws that fix the swivel panel of the control unit.



□ Pull the band to remove the heat exchanger from the unit.



□ After that release the service panel to enable access to the control unit. After maintenance perform all the operations reverse.

TROUBLESHOOTING AND FAULT HANDLING

In case of alarm the unit is turned off and the wall-mounted display shows the alarm indicators, fig. 11. The possible alarms are listed in the table 5. 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 1000 V after careful reading of the operation manual.

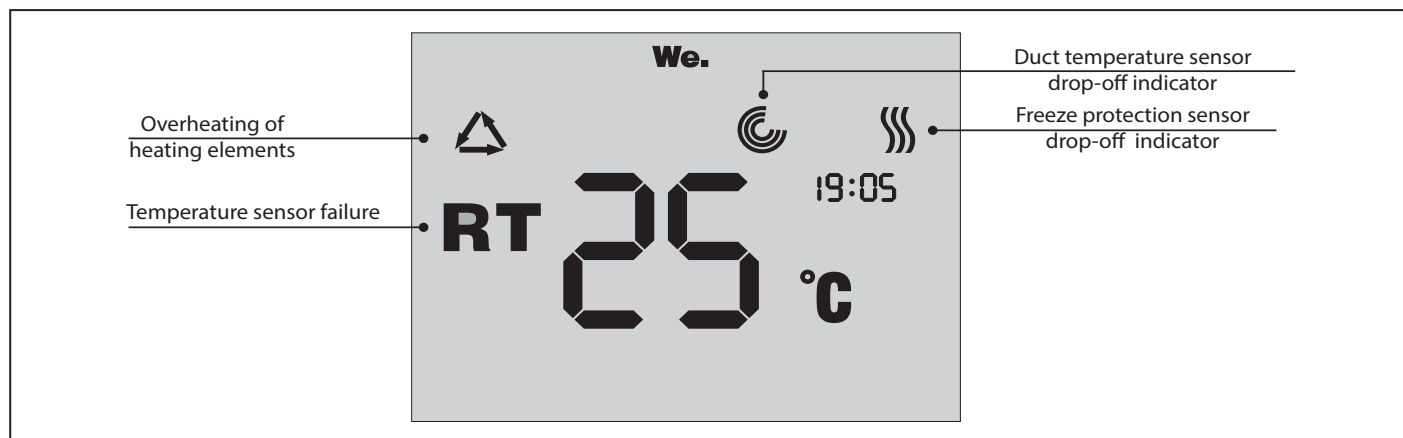


Fig. 11. Alarm indication on the wall-mounted control panel

Table 5. Unit alarm list

ALARM	INDICATION	REMEDY
Overheating of the heating elements		Overheating of the heating elements. Reset the alarm overheat thermostat manually.
Temperature sensors failure	RT	Short circuit of one or two temperature sensors. Remove the short circuit.
Duct temperature sensor dropping off	RT	Remove the duct temperature sensor drop-off.
Freeze protection sensor dropping off	RT	Remove the freeze protection sensor drop-off.

Table 6. Alarm list and troubleshooting

Fault	Possible reason	Troubleshooting
The fan does not start when the unit is on	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.
Automatic switch tripping	Short circuit in power grid.	Turn the unit off and contact the seller for troubleshooting.
Low air flow	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.
	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.
Low supply air temperature	The extract filter is soiled.	Clean or replace the extract filter.
	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.
Noise, vibration	The impeller is soiled.	Clean the impeller.
	The screw connection is loose.	Tighten the screws.
	No flexible anti-vibration connectors.	Install the flexible anti-vibration connectors.
Condensate leakage	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.

ACCEPTANCE CERTIFICATE

Kitchen heat recovery air handling unit

KOMFORT EC SKE270-1.5

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

Kitchen heat recovery air handling unit

KOMFORT EC SKE270-1.5

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

Company:

Name:

Date Signature

WARRANTY CARD

KOMFORT EC SKE270-1.5

SELLER

SALES DATE

REPRESENTATIVE IN EU

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D-81379 Munich,
Germany



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KOMFORT EC SKE270-1.5 v.2(4) / EN