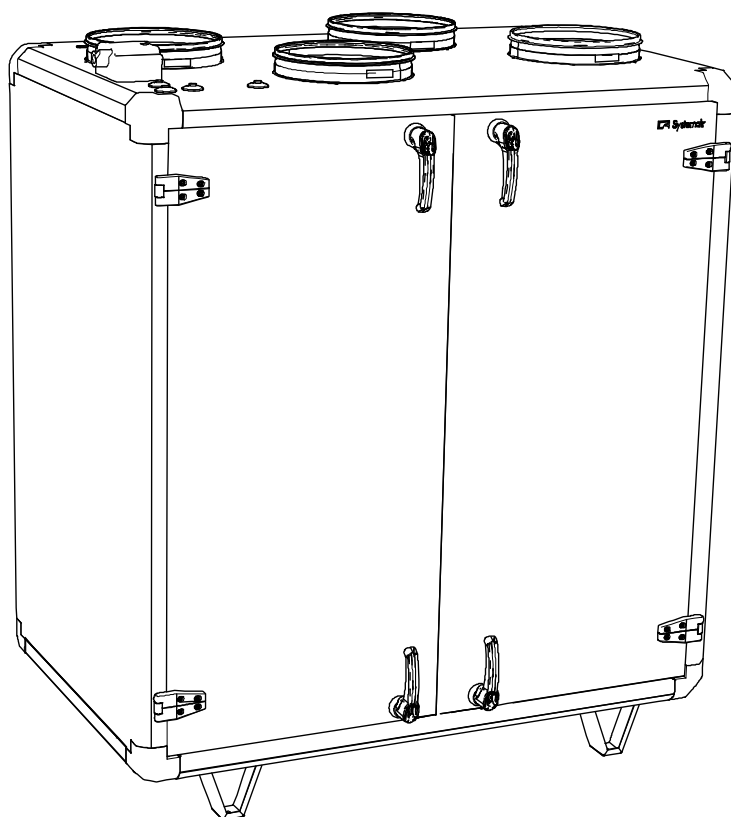


Topvex TR 03, TR04, TR06 Compact Air Handling Unit



GB Operation and Maintenance instructions

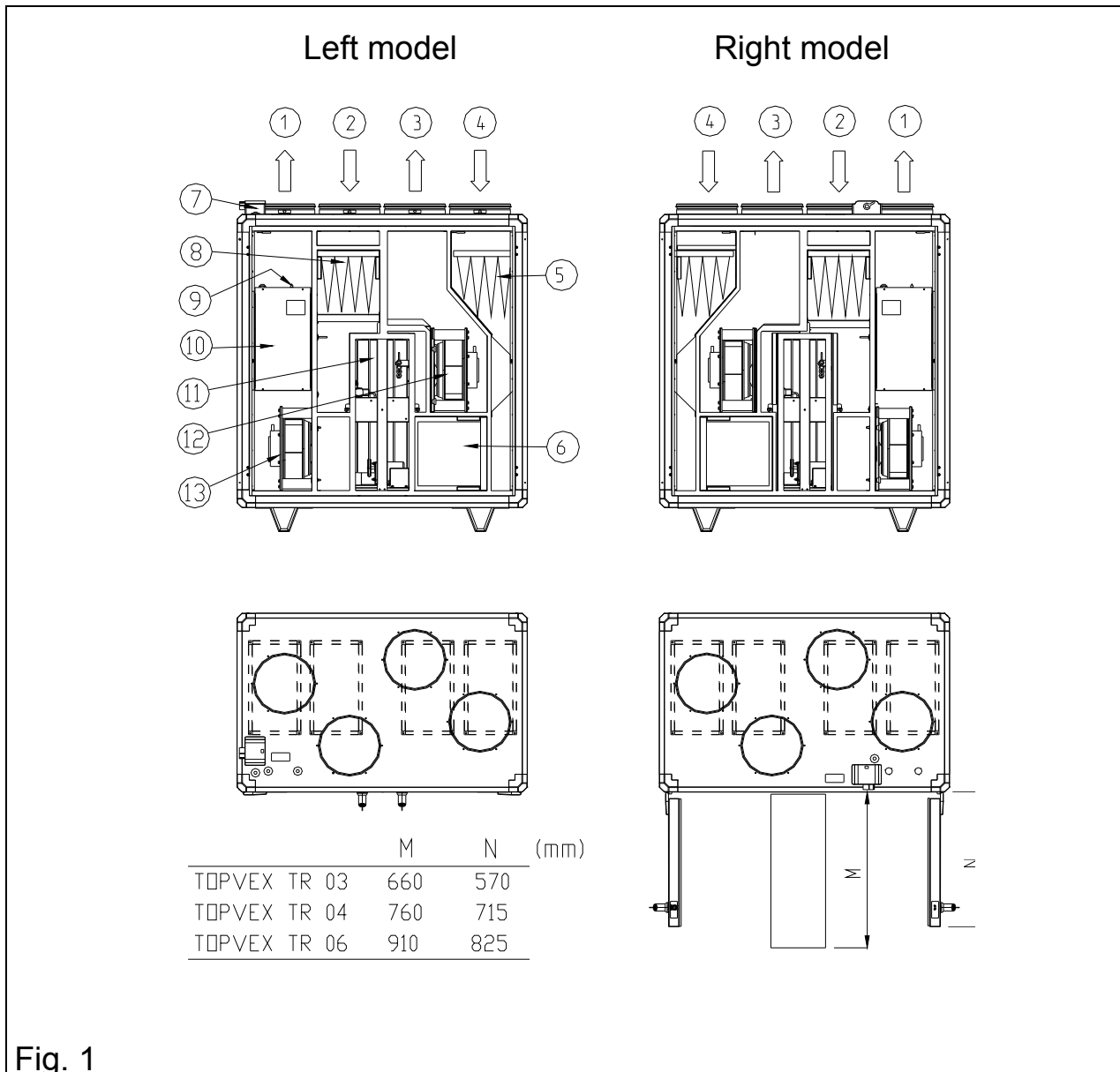
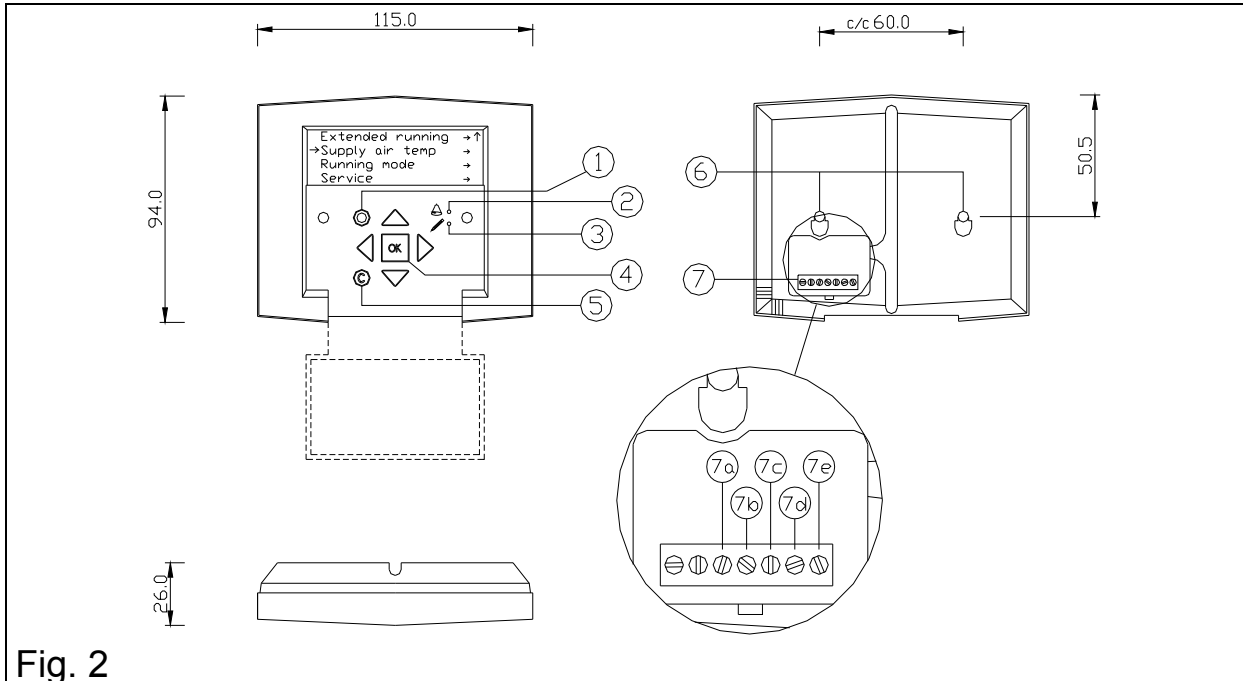


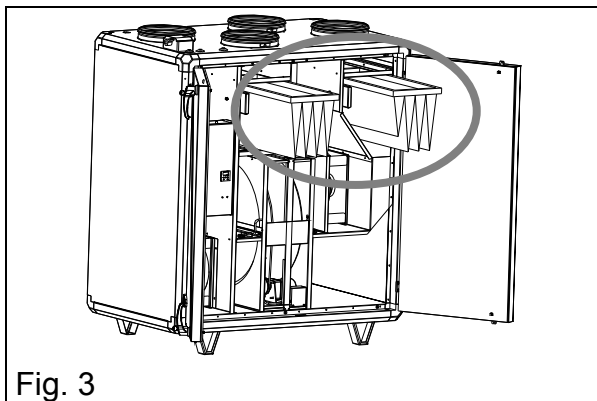
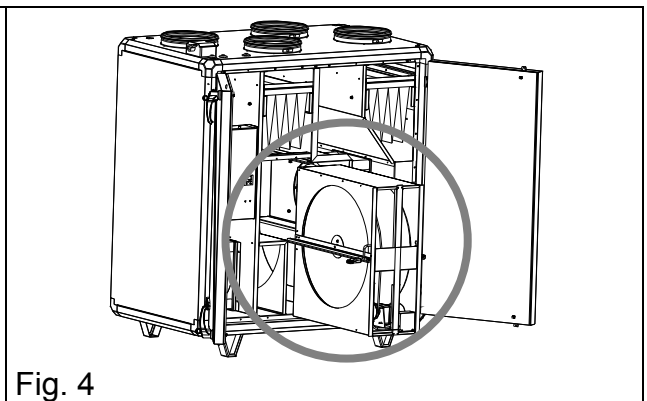
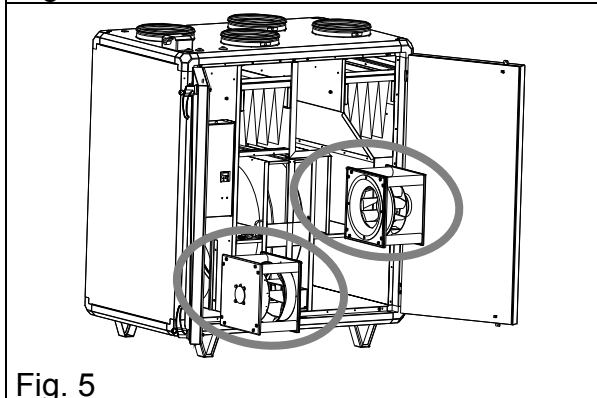
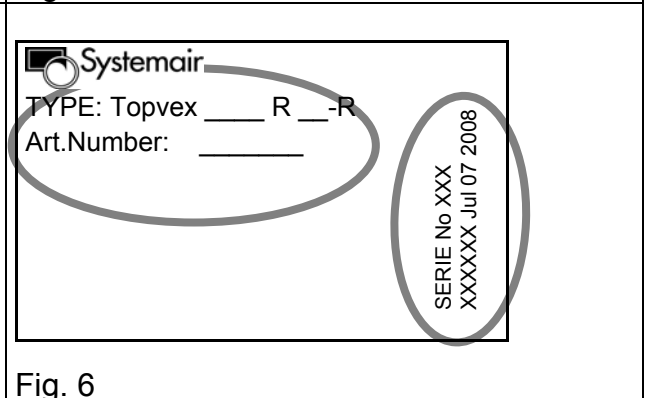
Fig. 1

Description

1.	Connection Supply air
2.	Connection Extract air
3.	Connection Exhaust air
4.	Connection Outside air
5.	Supply air filter (Topvex TR 04)
6.	Supply air filter (Topvex TR 03, 06)
7.	Safety switch
8.	Filter, extract air
9.	Reset button, over heat protection
10.	Connection box
11.	Heat exchanger
12.	Fan, extract air
13.	Fan, supply air


Fig. 2

Description	Description
1. Alarm button	7. Connection block
2. Alarm LED	7a. Yellow cable
3. Write enable LED	7b. Orange cable
4. OK button	7c. Red cable
5. Clearing button	7d. Brown cable
6. Mounting holes	7e. Black cable


Fig. 3

Fig. 4

Fig. 5

Fig. 6

Introduction

Installation, operation and maintenance manual concerns air handling unit type Topvex, manufactured by Systemair AB. It consists of basic information and recommendations concerning the design, installation, start-up and operation, which shall be obeyed to ensure the proper fail-free operation of the unit.

The key to proper and safe operating of the unit is to read this manual thoroughly, use the unit according to guidelines given in it and follow all safety requirements.

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Operation

General

Topvex unit with Electrical heater have 3 minutes of re-cooling after that it has been turned off.

N.B. If activating the fire alarm when the heater is on the fan stops immediate without re-cooling, this can cause the overheating protection to trip. See page 3 **Alarms –Overview** how to reset.

When changing a parameter in the control system it takes up to 1 minute for the change to be carried out.

Free cooling

The objective of the Free cooling function is to provide cool out door air if available during the night time when the unit is in OFF position to cool down the interior of the building. During this time the heat exchange rotor is stopped.

NB the following is only valid if the free cooling function is set to **Active** in the program menu.

The fans are started at **Start Cooling Hour** if the following criteria are met **simultaneously**:

- all time channels are in **OFF** position and that the unit goes back to normal operation the following day (set operation time during the following 24 hours)
- the average outdoor temperature is higher than the out door temperature limit
- the actual outdoor temperature is lower than the outdoor temperature set upper limit
- the actual outdoor temperature is higher then the out door temperature set lower limit
- the actual outdoor temperature is lower than the actual room temperature
- the actual room temperature is higher than the set room temperature limit.

The fans are stopped at the **Stop Cooling Hour** or if the following conditions are met:

- the room temperature is lower than the set room temperature limit **or**
- the outdoor temperature exceeds the set outdoor temperature upper limit **or**
- the outdoor temperature is lower than the lowest set outdoor temperature limit.

The unit checks the night temperature (indoor and outdoor temperature) during 3 minutes at 12.00 PM when the fans are started so that the sensors can perform a temperature measurement. If above conditions are met the free cooling function is started, if not the unit goes back to OFF position.

Set the menu language

Press the OK button while switching on the mains supply.

Press the OK button. Choose language with the UP/DOWN buttons. Confirm the choice with the OK button.

Press the LEFT button to go back in the menus.

The language can also be change in the **Language** menu, see *Control unit, manual* (page 7).

Control panel

How to operate

See fig 2.



The menus in the Corrigo E are organized in a horizontal tree structure. The UP/DOWN-buttons are used to move between menus at the present menu level. The RIGHT/LEFT buttons are used to move between menu levels. When changing parameters the UP/DOWN buttons are used to increase or decrease the value of the parameter and the RIGHT/LEFT buttons to move between digits within the parameter.

The OK button is used to confirm the choice of a parameter setting.

The C button is used to abort an initiated parameter change and restore the original value.

The ALARM button is used to access the alarm list.

Changing parameters

In some menus there are parameters that can be set. This will be indicated by the LED  flashing. To change a parameter, first press the OK button, the LED  changes to a steady light. A cursor will appear at the first settable value. If you wish to change the value, do so by pressing the UP/DOWN buttons. In numbers containing several digits you can move between the digits using the LEFT/RIGHT-buttons. When the desired value is displayed press OK. Settings outside the intervals is not registered, preset values counts. If there are further settable values displayed the cursor will automatically move to the next one. To pass a value without changing it, press RIGHT. To abort a change and return to the initial setting, press and hold the C-button until the cursor disappears.

Navigating the menus

The start display (the display normally shown) is at the root of the menu tree.

Pressing DOWN ▼ will move you through the menu choices, in this the lowest level. UP ▲ will move you back through the choices.

To enter a higher menu level, use UP or DOWN to place the display marker opposite the menu you wish to access and press RIGHT ►.

If you have sufficient log on privileges the display will change to the menu you have chosen.

At each level there may be several new menus through which you may move using the UP/DOWN buttons. Sometimes there are further sub menus linked to a menu or menu item. This is indicated by an arrow symbol at the right-hand edge of the display. To choose one, use RIGHT ► again. To back down to a lower menu level, use LEFT ◀.

Alarms

Alarm button (pos.1 in fig. 2) opens the alarm queue. Press this button and active and non-acknowledged alarms will be displayed in the menu window. The LED for alarms (pos.2 in fig. 2) is blinking if there are non-acknowledged alarms and steady if the alarms are still active but have been acknowledged. If there are multiple alarms use UP/DOWN buttons to move between them. An alarm can be acknowledged or blocked by using OK and UP/DOWN buttons. To abort and go back to start menu select Cancel and press LEFT button.

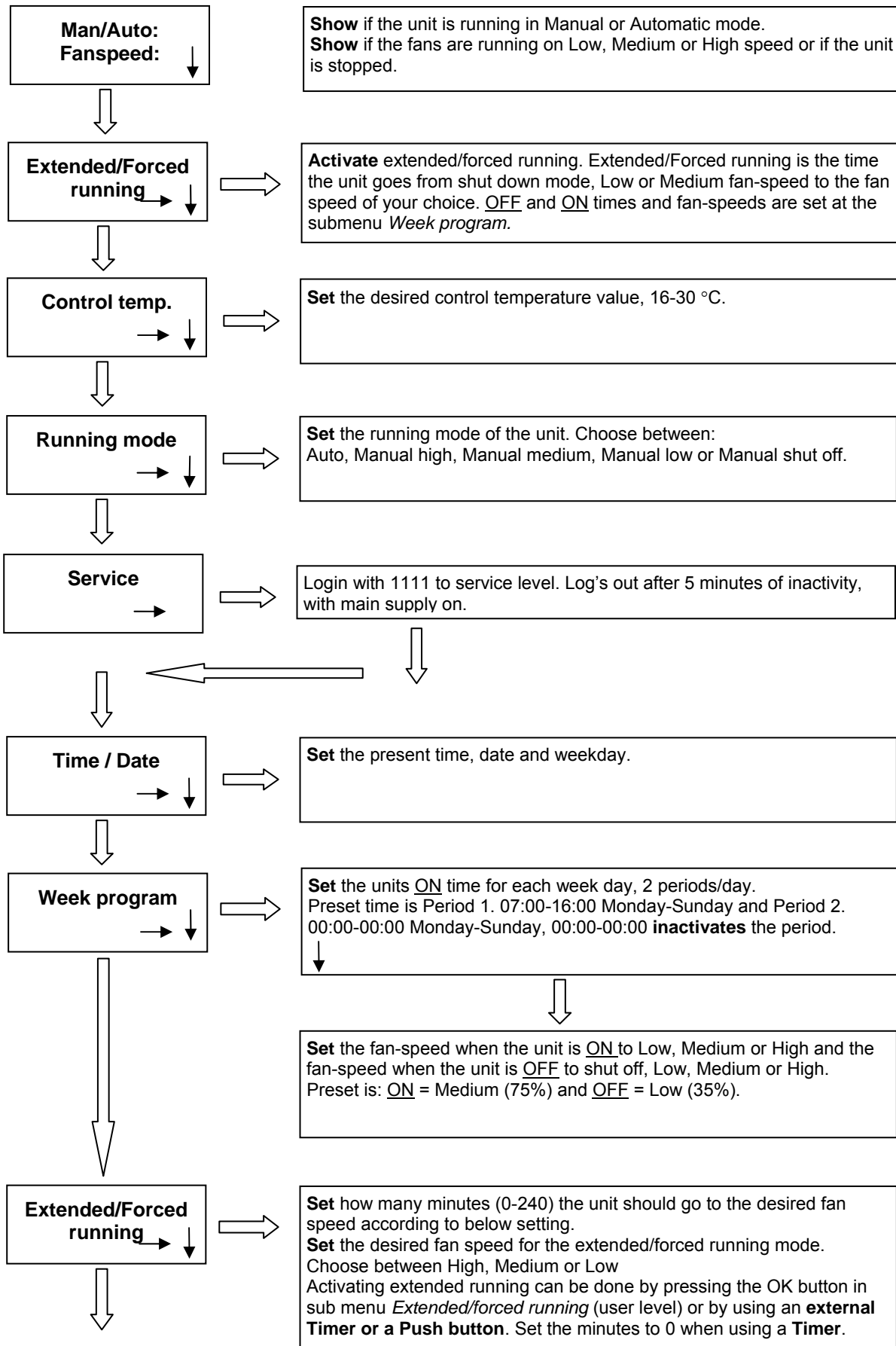
Alarms –Overview

Alarm fan motor	DI1	Thermal contact in the fan motor tripped. Reset in Control panel.
Overheat.	DI2	Thermal contact in the electric heater tripped (auto. reset: 60°C, manual reset: 110°C). Manual reset is done by pressing the red button, marked RESET, on top of the connection box (pos.9 in fig. 1).
Alarm VVX	DI4	Malfunction on the rotating heat exchanger. Check the rotor transmission belt.
Fire alarm	DI5	External fire alarm contact tripped. Reset in Control panel.
Filter to be changed	-	Set time has expired. Reset in Control panel.
Alarm frostprotect	-	Outlet water below 8°C (temp. not changeable). Hot water heater. Reset in Control panel.
Sensor error inlet	-	Supply air sensor interruption.
Sensor error exhaust		Extract air sensor interruption.
Sensor error outtemp.		Outdoor air sensor interruption.
Alarm output all alarms	DO5	Gives a signal (24V AC) whenever there is an A or B-alarm.
Internal backup battery error	-	Shows "Internal battery error" in the display

Control unit, manual

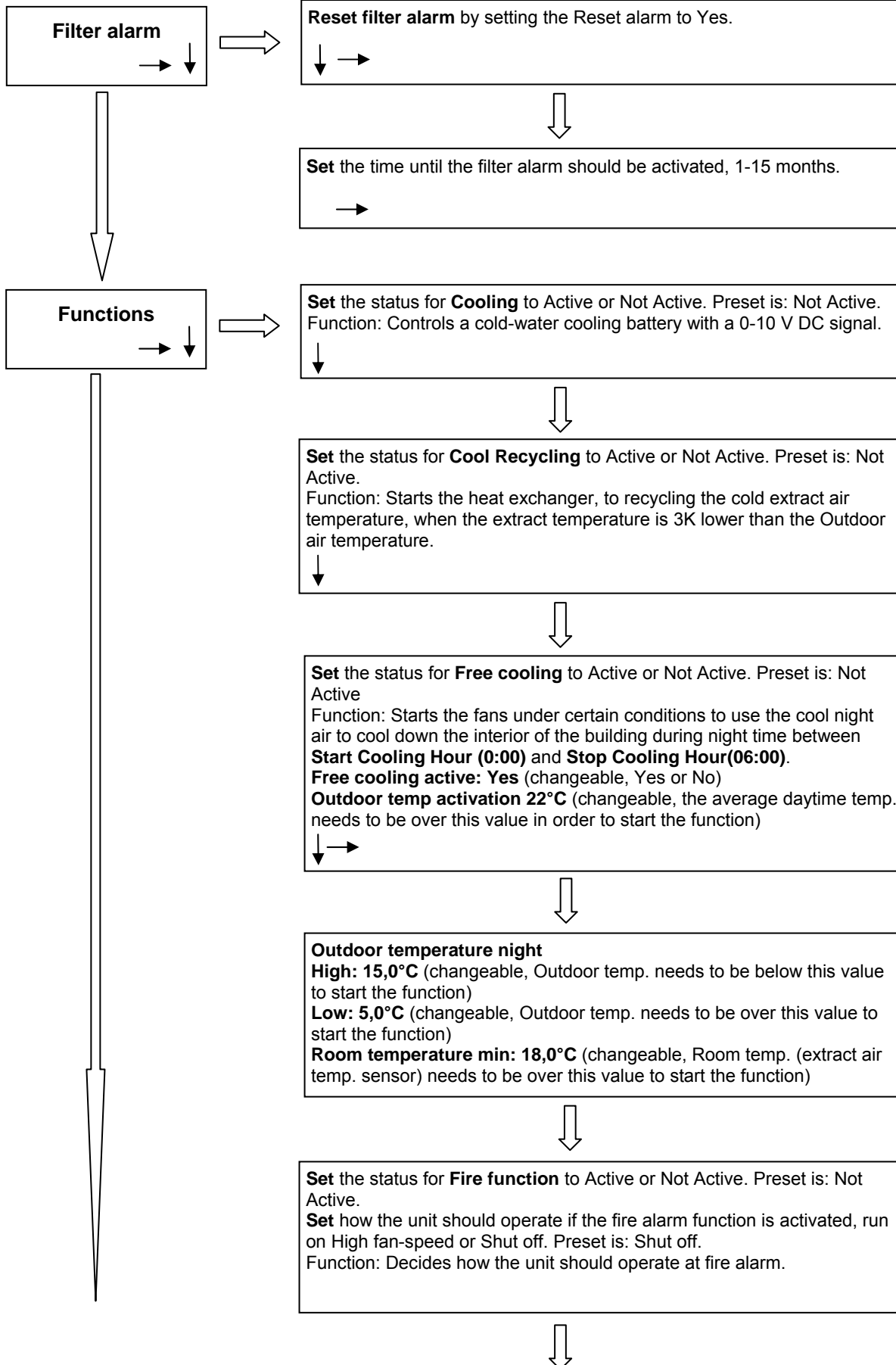
Display shows

Description



Display shows

Description



Display shows

Description

Set the **Air control** mode to:

- Supply.
- Supply & Outdoor compensation.

→
Set how much the control temp. should be compensated when the out door temperature is -20°C and $+15^{\circ}\text{C}$ (the compensation will be linear between these two points).

E.g. At -20 : 5°C .

E.g. At $+15$: -2°C .

Control temp. = 18°C .

Outdoor temperature -20°C gives a Control temp. of 23°C ($18+5$).

Outdoor temperature $+15^{\circ}\text{C}$ gives a Control temp. of 16°C ($18-2$).

- Extract.

→

Set the permitted maximum and minimum supply air temperature.

Min: 15°C (changeable, default is 15°C)

Max: 30°C (changeable, default is 30°C)

Fan speed control SAF (Note: applies for both supply air and extract air fan, next step "Fan speed ctrl. EAF" is not operational!)

High: 100% (changeable 0-100%)

Medium: 50% (changeable 0-100%)

Low: 5% (changeable 0-100%)

Automatic summer/wintertime changeover

Choose between "Yes" and "No", preset is "Yes".

In-/Outputs

Show the Analogue inputs.

AI1: Show the actual temperature of the supply air.

AI2: Show the actual temperature of the exhaust air.

AI3 applies only to HW units.

AI3: Show the actual temperature of the return water in the hot water battery (frost protection).

AI4: Show the actual outdoor temperature

↓ →

Show the status and settings of the digital inputs.

DI1: Fan alarm. Connected to the thermal contact in the fan motor. Stops the fan and disconnect the electrical heater when the alarm is activated.

DI2: applies only to EL units.

DI2: Overheating of the electrical heater. Connected to the thermal contact in the heater. Disconnects the heater when the alarm is activated.

DI3: Timer/P.B. Starts the Extended running when an external contact, Timer or Push button, closes. Only when the unit is running in Off mode.

DI4: Alarm VVX. Stop the fans and close the dampers (accessories) when the alarm is activated.

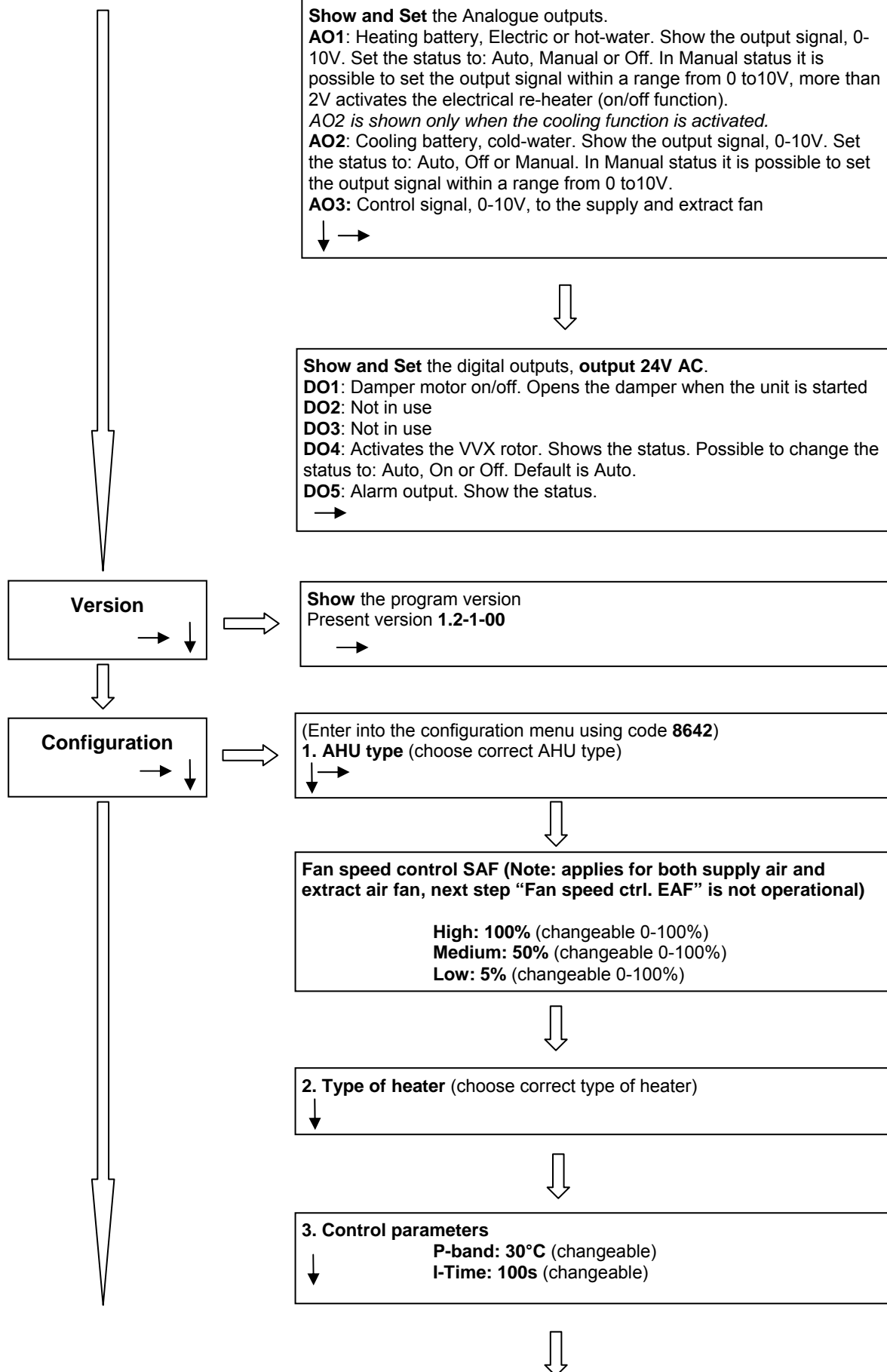
DI5: Is only shown when the Fire function is activated.

DI5: Fire alarm. Connects to an external fire central. Stops the unit or changes the fan speed to High if the alarm is activated.

↓ →

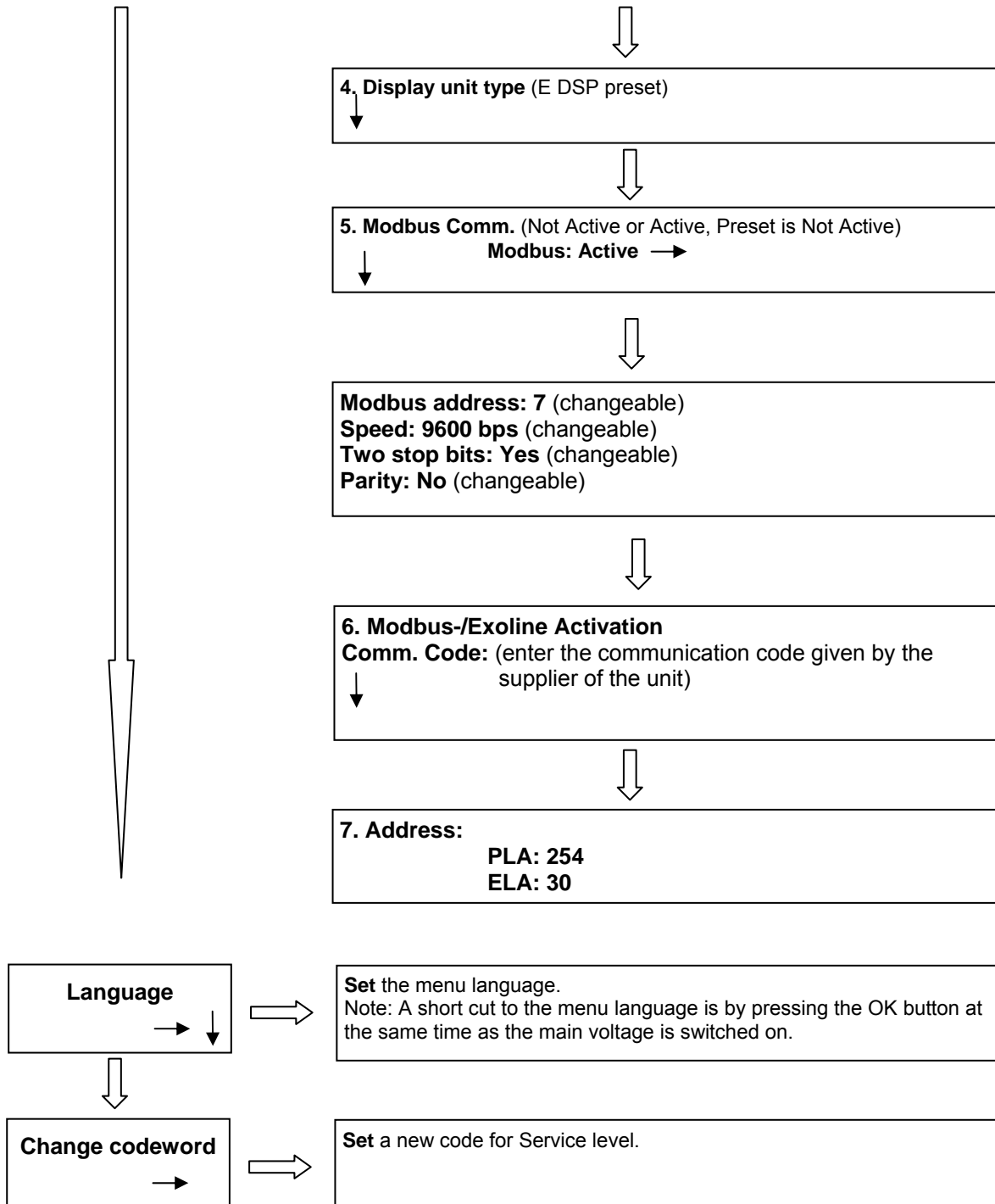
Display shows

Description



Display shows

Description



Warning

In order to avoid electrical shock, fire or other damage that might occur in connection with faulty use and operation of the unit, it is important to consider the following:

- The system must be installed according to the mounting instructions.
- Insulate mains supply before service or cleaning of the heat recovery unit.
- Tumble dryer must not be connected directly to the ventilation system.
- Make sure the filter is mounted in its place before running the system.
- Maintenance must be performed according to the instructions.

Maintenance

Maintenance of the Topvex should normally be carried out 3 – 4 times a year. Apart from general cleaning the following should be observed:

1. Changing Supply/Extract air filter (indicates as “filter to be changed” in the control panel, 1-2 times per year or as necessary) (fig.3)

The bag filter cannot be cleaned and must be changed as necessary. New filters can be ordered from Systemair. Operation time between filter changes must be re-set after filter change, see page 8 *Filter alarm*. To change the alarm activating time, see page 8 *Filter alarm*.

Initial pressure drop is approx. 70 Pa and the final pressure is approx. 220 Pa.

NB: For size Topvex TR 04 an extra space of 150mm to the wall from the side of the unit is needed to remove the supply air filter when the door is opened.

2. Checking the heat exchanger (Once a year), (fig.4)

After long times use dust may build up in the exchanger and block the airflow. It is vital to clean the exchanger regularly to maintain high efficiency. The heat exchanger can easily be taken out of the unit. Wash in hot soapy water or use pressure air. Do not use detergent containing ammonia.

Note! Make sure that the rotor motor is not exposed to moisture.

3. Checking the fans (once a year), (fig.5)

Even if the required maintenance, such as changing of filters is carried out, dust and grease may slowly build up inside the fan (pos.12 and 13 in fig. 1). This will reduce the efficiency.

The fans may be cleaned with a cloth or a soft brush. Do not use water. White spirit can be used to remove obstinate settlements. Allow drying properly before remounting.

4. Cleaning extract louvers and inlet diffusers (when necessary)

The system supplies outdoor air to the building and extracts the used indoor air via the duct system and diffusers/louvers. Diffusers and louvers are mounted in ceilings/walls in bedroom, living room, wet rooms, WC etc. Remove diffusers and louvers and wash in hot soapy water as required. (Diffusers/louvers must be put back with their original settings and positions in order not to unbalance the system).

5. Checking the outdoor air intake

Leaves and pollution could plug up the air intake grille and reduce the capacity. Check the air intake grille at least twice a year, and clean if necessary.

6. Checking the duct system (when necessary)

Dust and grease settlements may build up in the duct system even if filters are changed regularly. This will reduce the efficiency of the installation. The duct runs should therefore be cleaned/changed when necessary. Steel ducts can be cleaned by pulling a brush soaked in hot soapy water, through the duct via diffuser/louver openings or special inspection hatches in the duct system (if fitted).

NOTE! In addition roof cowl must be checked once a year and cleaned as necessary.

Troubleshooting

Should problems occur, please check or correct the following before contacting your service representative. Always check if there are any alarms active in the control panel.

1. Fan(s) do not start

- A.) Check that the fuses are not defect.
- B.) Check the settings in the control panel (times, week schedule, auto, manual operating etc.).
- C.) Check if there are any alarm messages.

2. Reduced airflow

- A.) Check the settings of Medium and Low fan speed.
- B.) Check that the Outdoor/Exhaust air damper, if used, opens.
- C.) Change of filters required?
- D.) Cleaning of diffusers/louvers required?
- E.) Cleaning of fans/exchanger block required?
- F.) Is roof unit/air intake clogged?
- G.) Duct system. Check visible duct runs for damage and/or build-up of dust/pollution.
- H.) Check diffuser/louver openings.

3. Cold supply air

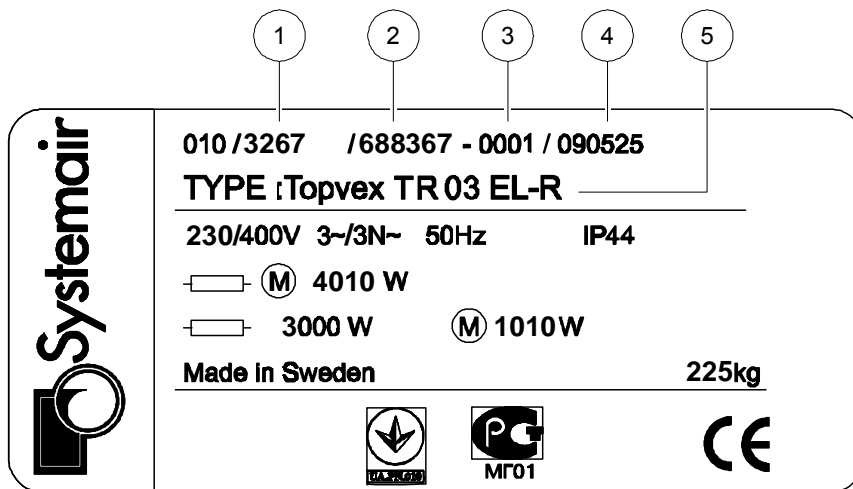
- A.) Check control temperature on the control panel.
- B.) Check if overheating thermostat is alert. If necessary, reset by pressing the red button, marked RESET, on top of the connection box (pos.9 in fig. 1).
- C.) Check if the extract filter must be changed.
- D.) Check that the heat exchanger is rotating.
- E.) Check if the fan thermo contact has tripped, shows as *Fan alarm* in the control panel. If necessary, reset it (see page 3 *Alarms*).

4. Noise/vibrations

- A.) Clean fan impellers.
- B.) Pull the fans out and check that the 2 screws holding the fans are tightened.

Service

Before calling your service representative, make a note of the specification and production number from the data plate on top of the unit, beside the safety switch.



Position	Description
1	Item number
2	Production order number
3	Consecutive number
4	Production date
5	Product code (specification)

Commissioning

It is possible to manually regulate the set airflow with 2 potentiometers situated in the electrical compartment (fig. 7). This enables the fan motors to be regulated individually down to maximum 25% from their set airflow, i.e. if the fan is running at 100% capacity (10V) it's possible to regulate it down to 75% of that particular set point (7,5V), i.e. if the fan is programmed to run at 5V control signal the same result would be 3,75V and so on.

NB! The potentiometers are meant to be used for commissioning of the unit to ensure a proper pressure balance between extract and supply inside the Topvex unit.

Explanation

- SF: Supply fan
- EF: Extract fan



fig. 7

Commissioning record

Company _____

Responsible _____

Customer	Date	Installation
Object/Unit	Item no.	Installation address
Model/size	Series no.	

Filter replaces interval set. ☐

Present time and date set. ☐

Week scheduler settings

Preset On-time is:

Period 1. 07:00-16:00 Monday-Sunday, Medium fan-speed.

Period 2. 00:00-00:00 Monday-Sunday. 00:00-00:00 inactivates the period.

Preset Off mode is:

Remaining time: Low fan-speed.

Weekday	Period	Running times (On)
Monday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Tuesday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Wednesday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Thursday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Friday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Saturday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___
Sunday	1	___ : ___ - ___ : ___
	2	___ : ___ - ___ : ___

Running mode On: Low ☐, Medium ☐, High ☐

Running mode Off (remaining time): Shut off ☐, Low ☐, Medium ☐, High ☐

Function	Preset value	Set value
Temperature.		
Control function Temp.	Supply <input checked="" type="checkbox"/> Supply outdoor <input type="checkbox"/> Extract <input type="checkbox"/>	Supply <input type="checkbox"/> Supply outdoor <input type="checkbox"/> Extract <input type="checkbox"/>
Control Temp.	<u>18,0</u> °C	_____ °C
Outdoor compensating		
Outdoor temp. -20,0 °C	Compensation: <u>20,0</u> °C	_____ °C
+15,0 °C	Compensation: <u>0,0</u> °C	_____ °C
Min. supply set point	<u>12,0</u> °C	_____ °C
Max. supply set point	<u>30,0</u> °C	_____ °C
Air flow		
Fan speed Low	<u>35%</u> of max. Fan speed	_____ %
Fan speed Medium	<u>75%</u> of max. Fan speed	_____ %
Fan speed Maximum	<u>100%</u> of max. Fan speed	_____ %
Extended/Forced running		
Running time	<u>240</u> Minutes *)	_____ Minutes *)
Filter alarm		
Replaces interval	<u>6</u> Months	_____ Months
Cooling		
Status	Not active	Active <input type="checkbox"/>
Cool Recycling		
Status	Not active	Active <input type="checkbox"/>
Free Cooling		
Status	Not active	Active <input type="checkbox"/>
Outdoor temp activation:	<u>22°C</u>	_____ °C
Outdoor temp night:	High: 15°C Low: 5°C	High: _____ °C Low: _____ °C
Room temp min:	<u>18°C</u>	_____ °C
Fire function		
Status	Not active	Active <input type="checkbox"/>
Running mode at activated fire alarm	Unit shut off	High fan speed <input type="checkbox"/>

*) Set the minutes to 0 when using an external Timer.

Notes

Systemair AB reserves the rights at any time, without prior notice, make changes and improvements to the contents of this manual.



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