systemair

Installation, Operation and Maintenance Instructions EN

Topvex FC

Table of contents

1 Introduction

1.1 Product description

The product is a compact air handling unit that is supplied with counterflow heat exchanger, electrical cabinet, control system, CAV control, filters and EC motors as standard.

Supply air sensor is supplied with the product.

Topvex FC is a air handling unit for suspended ceiling supplied with bypass defrosting.

The VAV control, Access NaviPad control panel, safety switch and other control equipment are available as accessories.

The air handling unit is not supplied with duct joints. A duct connection kit is available as accessory.

A duct transition from rectangular duct connection to circular duct connection is available as accessory.

1.2 Intended use

The product is used for heat recovery ventilation, connected to a circular or rectangular duct system.

The product is intended for installation in indoor environments with ambient temperatures of between 0-50 °C. Applicable installation locations are for example storage rooms, laundry rooms or attics.

The product is not applicable for transportation of air that contains explosive, flammable or aggressive media. The product is not applicable for locations where there is a risk of explosion.

1.3 Document description

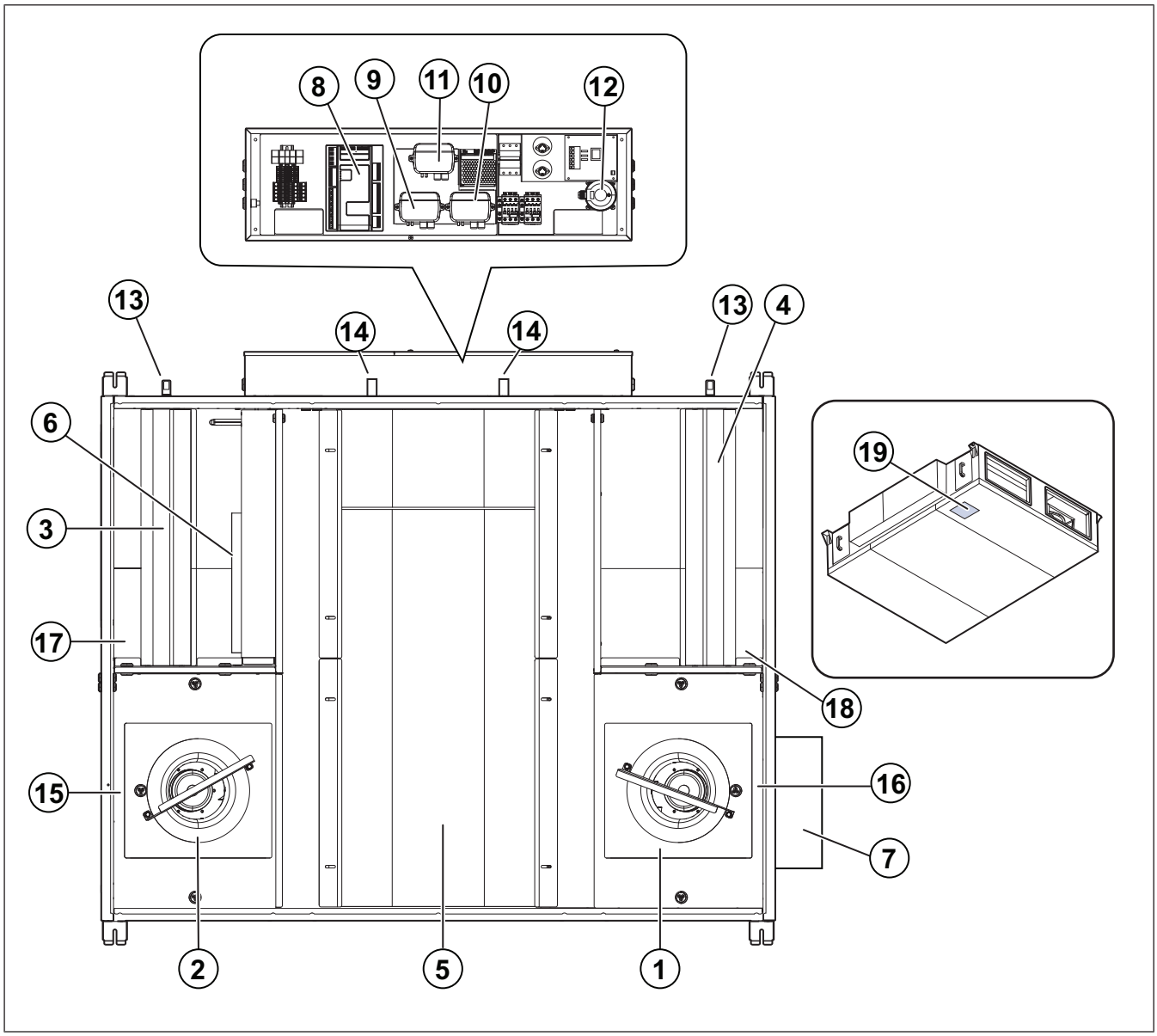
This document contains instructions for installation of the product. The procedures must be done by approved personnel only.

Speak to Systemair for more information on how to install the product in different installation locations.

1.4 Product overview

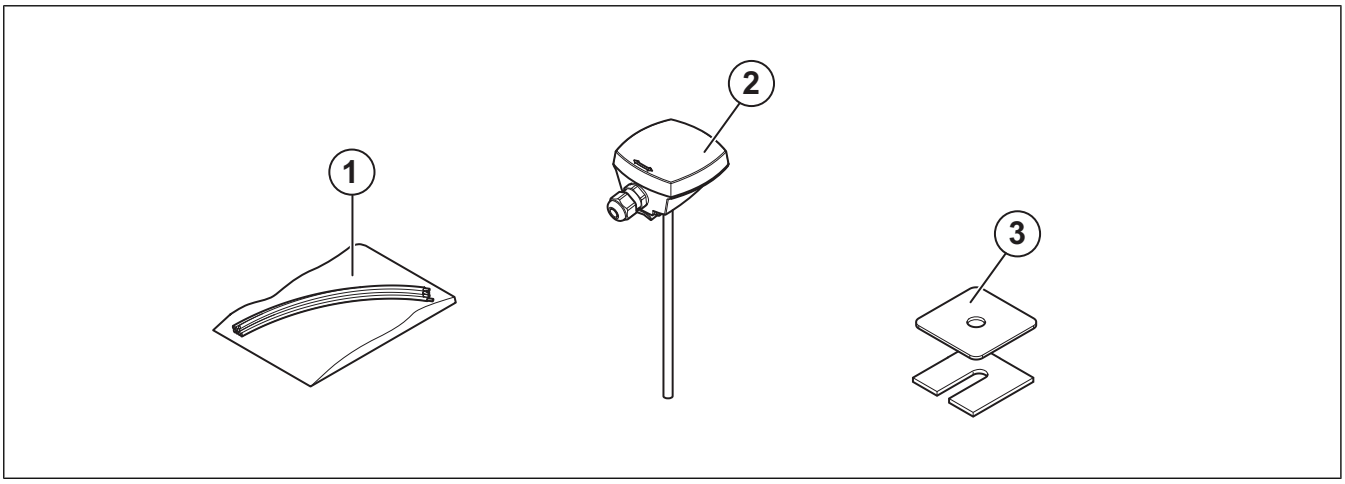
Note:

The illustration shows a right connected product.



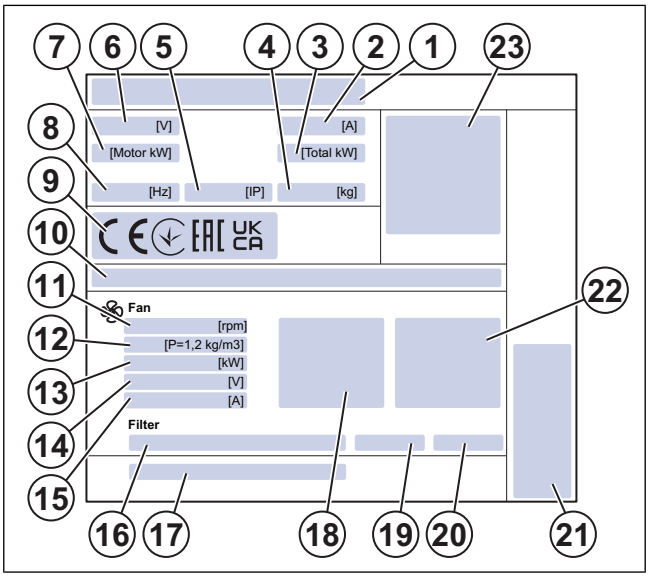
1. Supply air fan
2. Extract air fan
3. Filter for supply air
4. Filter for extract air
5. Heat exchanger
6. By-pass damper
7. Heating coil
8. Access control unit
9. Pressure transmitter (PDT1) for extract air filter and supply air fan.
10. Pressure transmitter (PDT2) for supply air filter and extract air fan.
11. Pressure transmitter (PDT3) for defrosting heat exchanger.
12. Air flow sensor (AFS) only for units with electric heating coil
13. Filter hatch handle
14. Condensation drain
15. Extract air temperature sensor (ETS)
16. Efficiency air temperature sensor (EFS)
17. Outdoor air temperature sensor (OS)
18. Exhaust air temperature sensor (EHS)
19. Name plate

1.5 Overview of supplied parts



1. Cable kit for external power supply
2. Supply air sensor
3. Washer and vibration damper

1.6 Name plate



1. Product name
2. Ampere, A
3. Total kW
4. Weight, kg
5. IP class, enclosure class
6. Voltage, V
7. Motor kW
8. Frequency, Hz
9. Certifications
10. Product key
11. Maximum fan speed, rpm
12. K-factor fan
13. Motor power, kW
14. Motor voltage, V
15. Motor current, A
16. Filter class
17. Part number/production number/production date
18. Supply air values
19. Supply filter class
20. Extract filter class
21. Manufacturer and country of production
22. Extract air values
23. Scannable code[1]

1. Use a mobile device to scan the scannable code and go to the Systemair documentation portal for more documentation and document translations.

1.6.1 Type designation

Product name	Topvex FC
Product size	10
	15
	20
	25
Location of supply air connection	R (Right)
	L (Left)
Heater types	HW (Water heater)
	EL (Electric heater)
	None
Defrosting type	B (Bypass)
Fan impeller	Standard (Composite)

Product size	Electrical heater (kW)	Voltage (V)	Phases (~)
10	2.4	230	1
15	3.6	230	1
20	4.8	400	3
25	6.3	400	3

1.7 Product liability

Systemair is not liable for damages that the product causes in these conditions:

- The product is incorrectly installed, operated or maintained.
- The product is repaired with parts that are not original spare parts from Systemair.
- The product is used together with accessories that are not original accessories from Systemair.

2 Safety

2.1 Safety definitions

Warnings, cautions and notes are used to point out specially important parts of the manual.

Warning

If you do not obey these instructions, there is a risk of death or injury.

Caution

If you do not obey these instructions, there is a risk of damage to the product, other materials or the adjacent area.

Note:

Information that is necessary in a given situation.

2.2 Safety instructions

Warning

Read the warning instructions that follow before you do work on the product.

- Read this manual and make sure that you understand the instructions before you do work on the product.
- Obey local conditions and laws.
- The product must not be put into operation until the machine or ventilation system in which it is included in obeys relevant directives.
- If an operation stop of the product for more than 48 hours is planned, we recommend to not use cooling recovery. This is to prevent microbial growth in the condensation water in the supply air.
- The ventilation contractor and the operator are responsible for correct installation and intended use.
- Keep this manual at the location of the product.
- Do not install or operate the product if it is defective.
- Do not remove or disconnect safety devices.
- Make sure that you can read all warning signs and labels on the product when it is installed. Replace labels that have damage.
- Only permit approved personnel to work on the product and to be in the adjacent area during all work on the product.
- Make sure that you know how to stop the product quickly in an emergency.
- Use applicable safety devices and personal protective equipment during all work on the product.
- Before you do work on the product, disconnect the power supply and wait until the product stops.
- If the maintenance is not correctly and regularly done, there is risk of injury and damage to the product.
- Only do the maintenance as given in this manual. Speak to Systemair technical support if other servicing is necessary.
- Always use spare parts from Systemair.

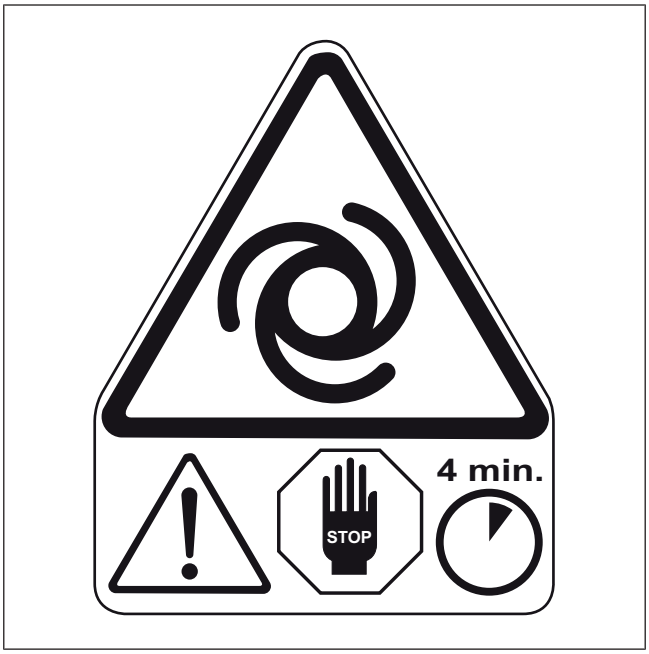
- Sound levels exceeding 70 dB(A) may occur depending on model and size. Visit www.systemair.com for more detailed information about your product.
- The product is not to be used by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Do not allow children to play with the device.

2.3 Personal protective equipment

Use personal protective equipment during all work on the product.

- Approved eye protection
- Approved protective helmet
- Approved hearing protection
- Approved protective gloves
- Approved protective shoes
- Approved work clothing

2.4 Safety labels on the product



3 Transportation and storage

Warning

Make sure that the product does not become damaged or wet during transportation. A damaged or wet product can cause fire or electric shock.

Warning

Be careful during transportation of the product. The product is heavy and there is a risk of injury if it falls.

- Before the product is moved to the installation location, examine the packaging for damages.
- Do not loosen packing belt or the transport screws until the product is on location for installation.
- If lifting equipment is used, make sure that the lifting equipment can hold the weight of the product. Refer to the name plate for information. Do not lift the product by the packaging.

Warning

Do not walk below a lifted product.

- Load and unload the product carefully.
- Keep the product in a dry and clean location during storage. Make sure that the ambient temperature during storage is between –10 and +30 °C. A stable ambient temperature prevents damage from condensation.
- Keep the product in storage for maximum 1 year.
- Put covers on the duct connections during storage.

3.1 To move the product with a forklift truck

Warning

Make sure that the forks of the forklift truck or a pallet lift has sufficient length and width.

Warning

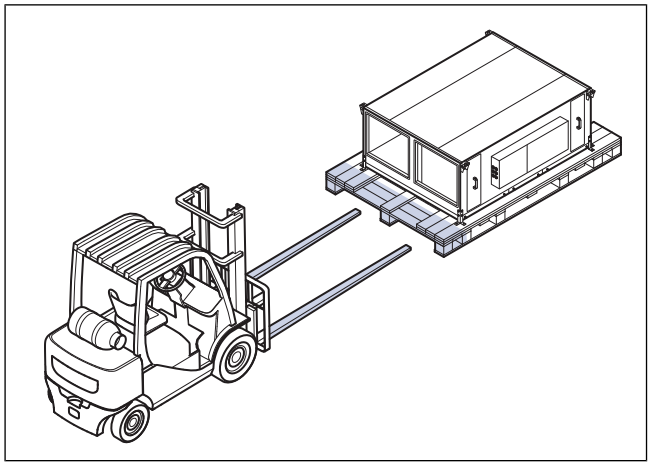
The product is heavy, take the weight of the product into consideration during transport. Refer to 12.2 Product weight data.

Caution

Do not lift the product with a forklift truck without the pallet, the forks could cause damages to the hatches.

The product is delivered prepared for installation in ceilings, with the hatches pointing down to the pallet.

1 Use a forklift truck to move the product on the pallet.



4 Installation

4.1 To do before the installation of the product

- Make sure that you have the necessary installation accessories:
  - Refer to chapter 13 Accessory overview for an overview of the accessories.
  - If you install the product with free suction or free discharge, it is necessary to install a protection grille. Make sure that the safety distance agrees with the standard ISO 12499.
- Examine the packaging for transportation damage and remove the packaging from the product carefully.
- Examine the product and all components for damage.
- Make sure that the information on the name plate agrees with the order confirmation.
- Install the product in a location where there is space for commissioning, troubleshooting and maintenance.
- Make sure that the installation location is clean and dry, for full safety during electrical work.
- Make sure that the installation surface has sufficient capacity to hold the weight of the product.
- Make sure that the duct connection agrees with the air flow direction of the ventilation system. Refer to the air flow direction arrows in 4.3.1 Duct connection overview.
- Make sure that all cable glands are tight against the cables to prevent leaks.
- If possible, do not put the product directly against the wall. If the product is to be installed directly against the wall, put insulation on the wall to decrease vibrations and unwanted noise.
- If the product is installed in an outdoor environment, do not let the product be out of power.
- If a product with bypass damper is installed in lower temperatures than -5 °C, use the stop defrost function or install a preheater in the outdoor duct.
- Obey local laws and conditions for installation.
- Make sure that all equipment is supplied with product.
- Put the outdoor air intake on the northern east side of the building, away from other exhaust outlets.
- Install the loose parts located in one of the ducts.

4.2 To install in ceiling

Warning

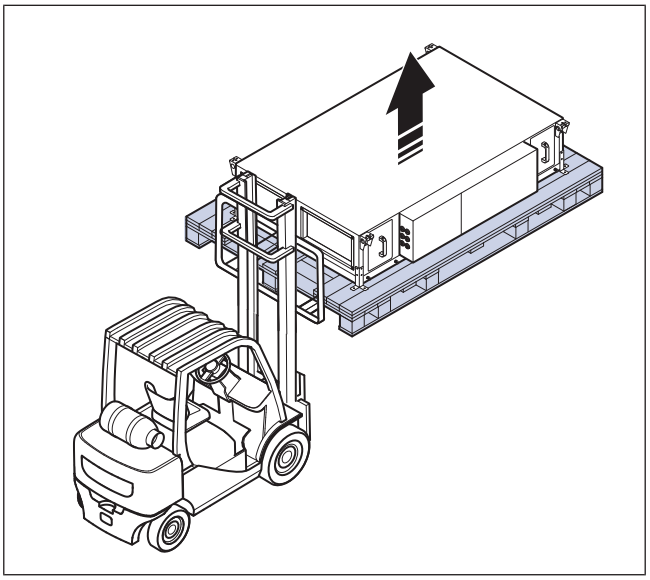
Use equipment suitable for work at height, and make sure that there is sufficient space for the operation.

1 Install threaded bars with a dimension of minimum M8 in the ceiling. Threaded bars and nuts are not supplied by Systemair. Make sure that the installation equipment can hold the weight of the product.

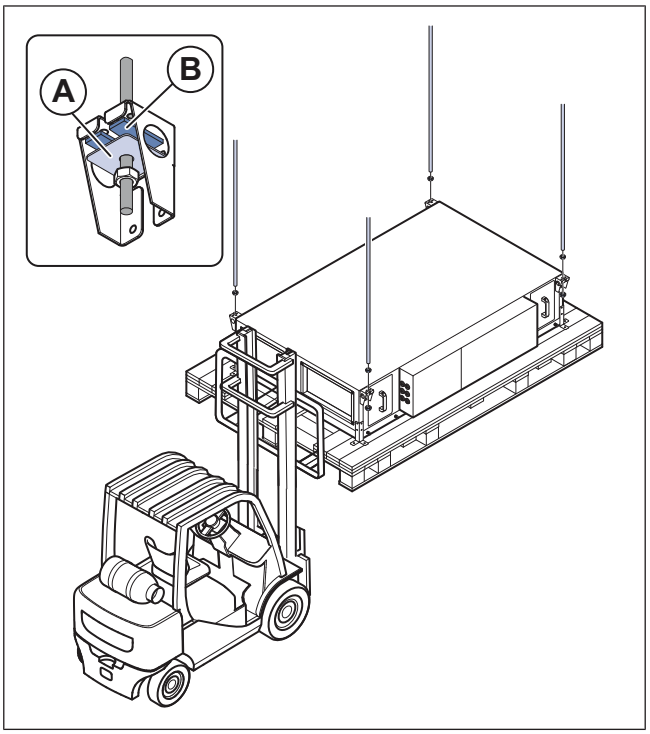
2 Lift the product to the ceiling attached to the pallet.

Warning

Do not remove the disposable mounting bracket from the pallet until the product is installed to the ceiling.



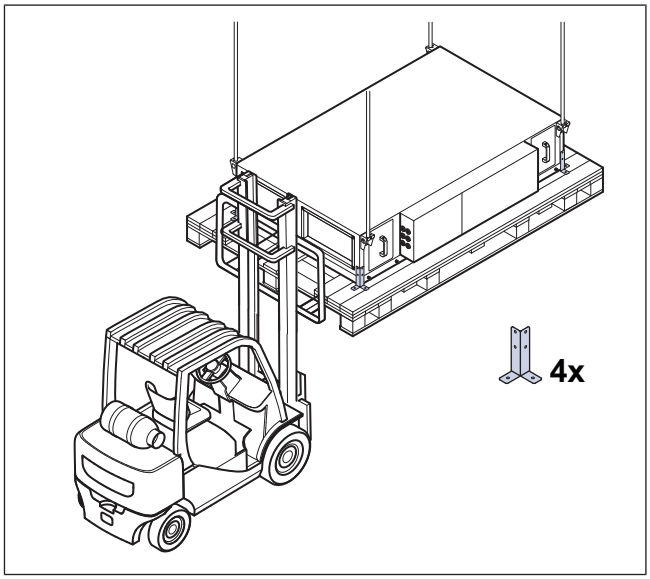
3 Attach the threaded bars and the enclosed washers (A) to the mounting brackets on the product casing. Small vibration dampers (B) are supplied with the product.



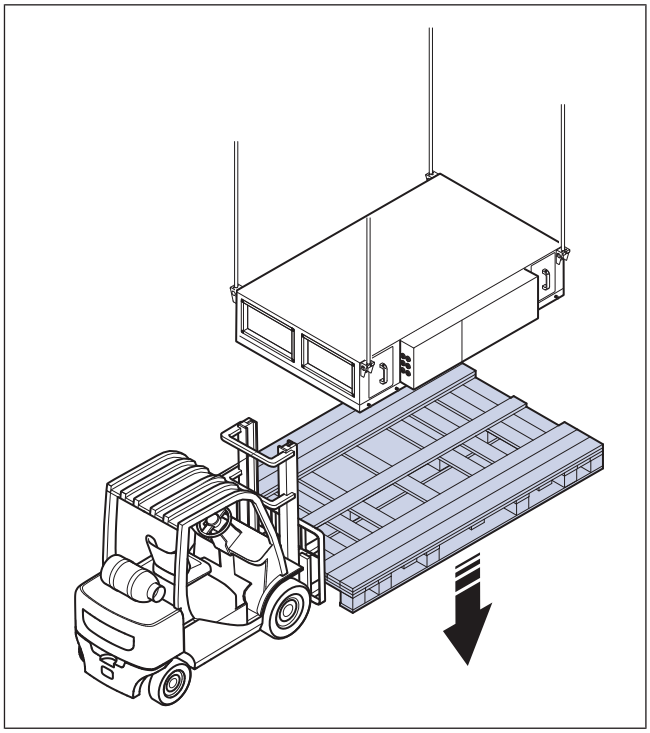
4 Unscrew the 4 disposable mounting brackets from the product.

Warning

Make sure that the pallet does not fall down and cause injury.

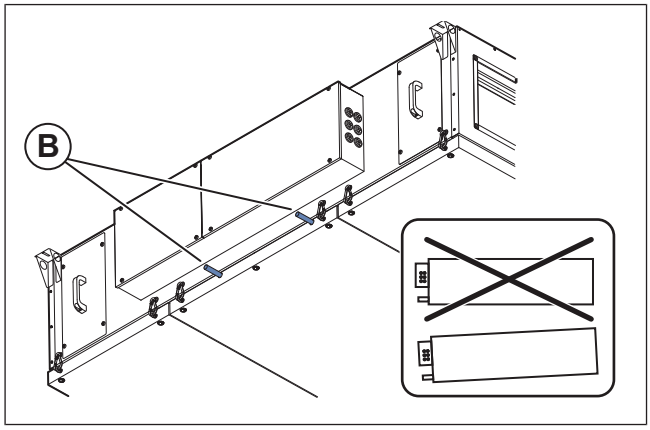


5 Lower the pallet with the forklift.



4.2.1 To lean the product to the drainage connection

1 Install the product with 1-3° lean in the direction to the drainage connections (B).



2 The drainage connection is covered with transport protection.

Note:

A water-lock kit and a drain pump are available as accessories.

- If a water-lock kit or a drain pump is used, remove the protection from the drainage connection.
- If no drainage equipment is used, seal the drainage connection carefully.

4.3 To connect the product to the ducts

Warning

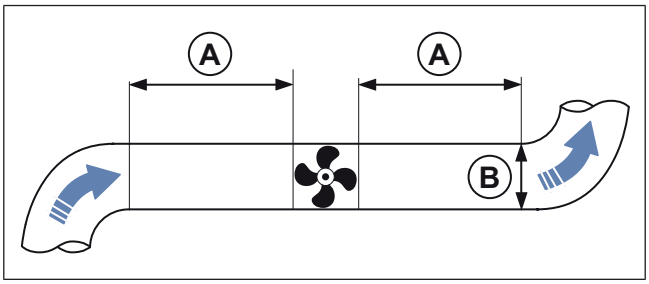
Rotating fan impeller. Make sure that the product is not energized until all the ducts are connected or protected with a grille.

1 Systemair recommends to install the ducts together with flexible connection DS. Use guide rails to install the flexible connection on the duct joints. Guide rails are not supplied by Systemair.

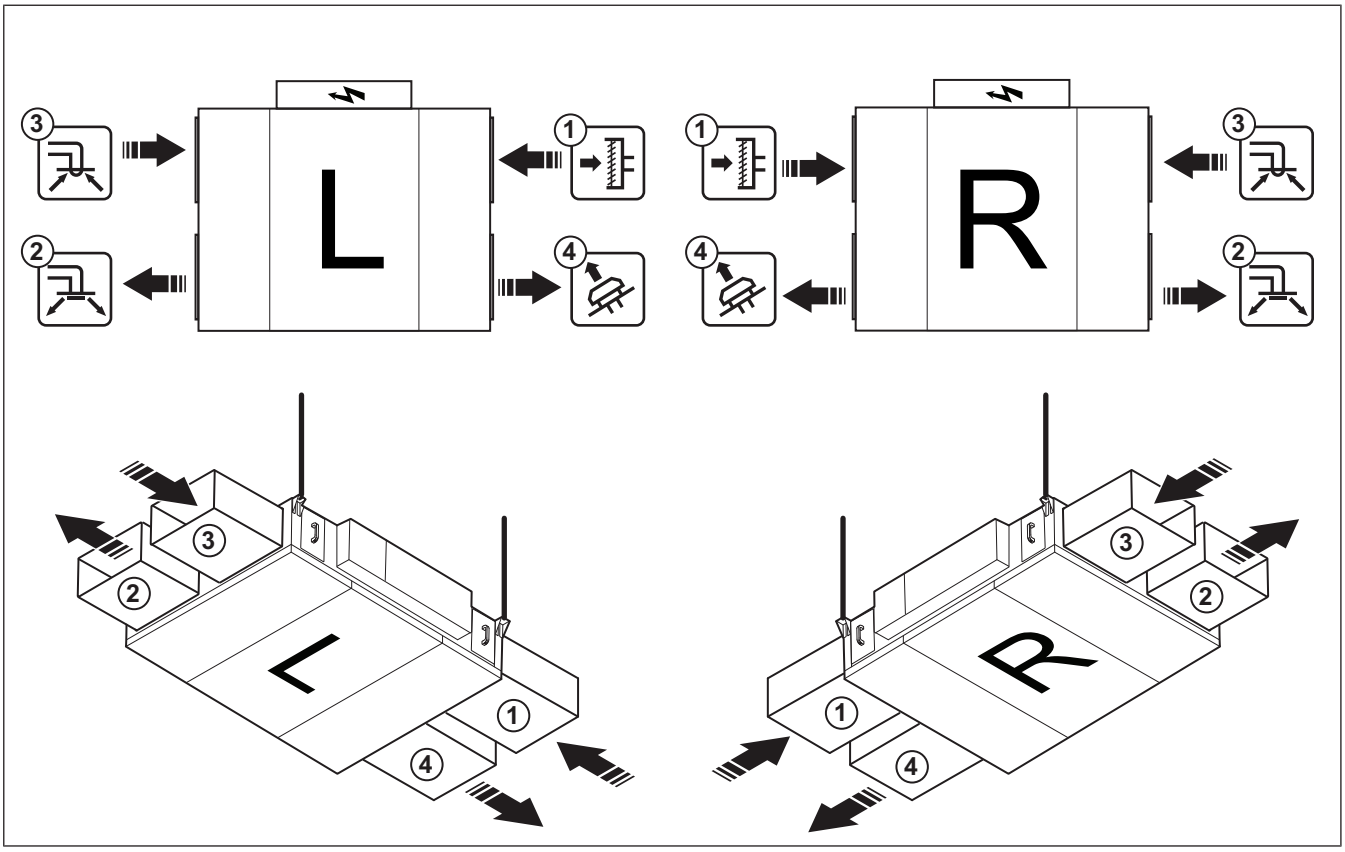
2 If you install the product near a duct bend, do these steps to prevent vibrations, unwanted noise and decreased air pressure:

a. Measure the distance (A) between the product and the duct bend.

b. Make sure that the distance (A) is a minimum of 2.5 x the diameter (B) of the duct system. For circular ducts, (B) is the nominal diameter. For rectangular ducts, (B) is the hydraulic diameter.



4.3.1 Duct connection overview



1 Outdoor air

2 Supply air

3 Extract air

4 Exhaust air

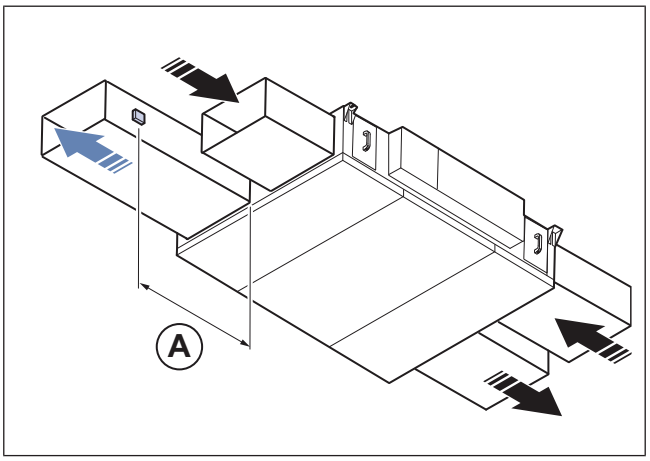
4.4 To install the supply air sensor

1 If a heater or cooler is used, install the heater or cooler. Make sure that the distance between the supply air sensor and the heater is a minimum of 1.5 m.

2 Use a drill to make a hole for the supply air sensor in the supply air duct. Make sure that the distance (A) between the hole and the product is 3 m.

Note:

The illustration shows a left connected product.



3 Install the supply air sensor in the hole with the supplied screws.

4 Pull the cable from the supply air sensor to the control unit in the electrical cabinet.

4.5 To put insulation on the ducts

If the product is installed in areas with low outdoor temperatures, put insulation on the duct to prevent condensation.

1 Put a minimum of 100 mm insulation on the outdoor air duct and exhaust air duct.

Caution

Use more insulation in areas with very low outdoor temperatures. There is a risk of condensation if the insulation is not sufficient.

2 Put insulation on the supply air duct and extract air duct.

3 Make sure that there is insulation near the duct joints of the product.

4 Install a protection grille on the exhaust outlet if there is risk of injury on the fan impeller.

Warning

Rotating fan impeller. Make sure that the product is not energized until all the ducts are connected or protected with a grille.

4.6 To connect the water heating coil

Caution

Be careful when you connect water pipes. There is a risk of damage to the material of the water heating coil.

Note:

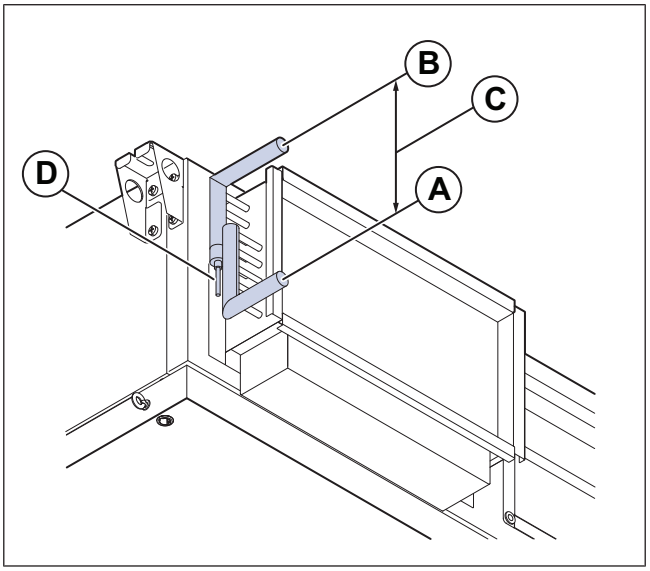
A frost protection sensor and a venting nipple is installed on the water heating coil.

Note:

The illustration shows a product which has the water heating coil installed on the left side of the product. The position of water pipes is the opposite on a product with the water heating coil installed on the right side of the product. The frost protection sensor (D) is always on the outlet.

This instruction is only applicable to products supplied with built-in water heating coil.

1 Connect the inlet water pipe to the connection (A). Connect the outlet water pipe to the connection (B). Make sure that you use a pipe of the correct dimension, refer to 4.6.1 Technical data for water heating coil. Refer to 4.6.1 Technical data for water heating coil for the dimension (C) between the pipe connections.



2 Tighten the connections with a spanner. To prevent damage of the water heating coil, use a pipe wrench to hold the pipe connections.

4.6.1 Technical data for water heating coil

Pipe dimensions				
Product size	10	15	20	25
Connection (inch)	DN15 ½	DN15 ½	DN15 ½	DN15 ½
Type of threads	Internal thread	Internal thread	Internal thread	Internal thread
CC measure for pipe (mm)	194.5	244.5	244.5	344

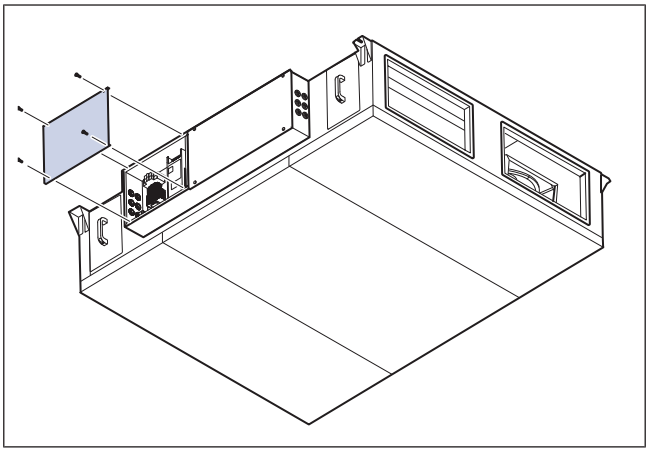
5 Electrical connection

5.1 To do before the electrical connection

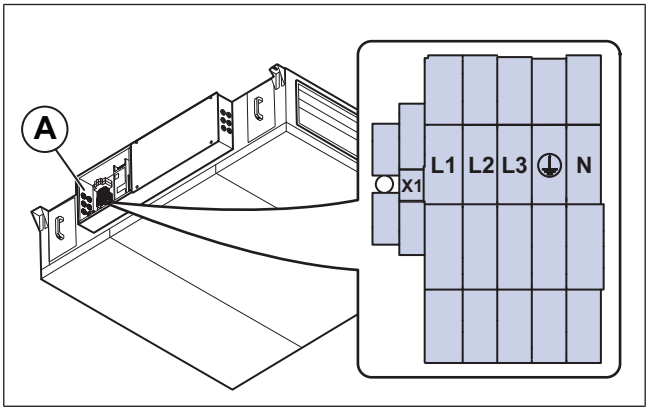
- Make sure that the electrical connection agrees with the product specification on the name plate.
- Make sure that the environment for electrical connection is clean and dry.
- Make sure that the wiring diagram agrees with the terminals in the electrical cabinet and in the control cabinet. The wiring diagram is found through the scannable code on the product name plate, or at www.systemair.com.

5.2 To connect the product to the power supply

- Complete the electrical connection for the product. Refer to the wiring diagram that is found through the scannable code on the product name plate, or at www.systemair.com.
- Make sure that the cross section of the protective earthing is equal to or larger than the cross section of the phase conductor.
- Install a circuit breaker in the permanent electrical installation, with a contact opening of a minimum 3 mm at each pole.
- If a residual current device (RCD) is installed, make sure that it is an all-current sensitive RCD. Consider if the product has a frequency converter, uninterruptible power supply (UPS), or an EC motor. EC motors have a leakage current to earth that is <=3.5 mA.
- Loosen the 4 screws for the hatch to the electrical cabinet and remove the hatch.



- Pull the power supply cable through the cable grommet (A) and connect the mains power supply to the correct terminals. Refer to the wiring diagram.

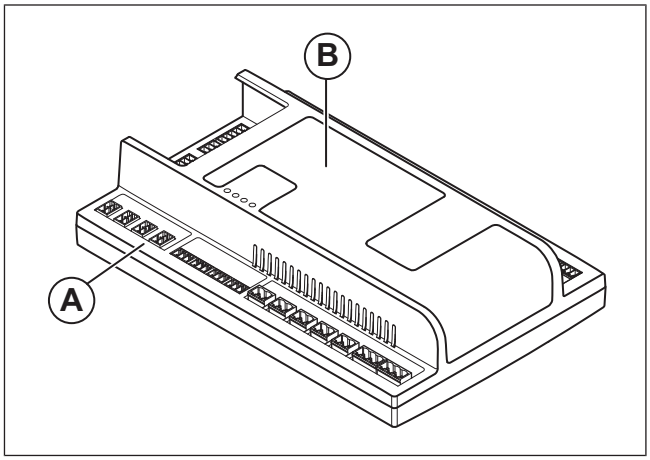


Note:

The cable area can be different depending on the cable type. For more information, refer to the wiring diagram.

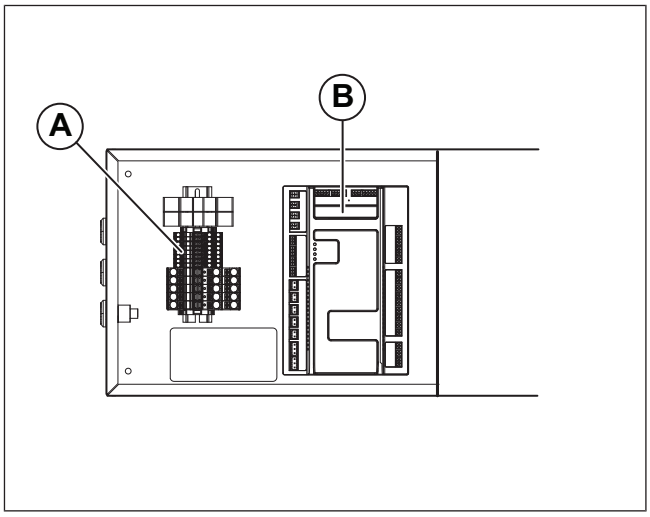
5.3 To connect the supply air sensor

1 Connect the supply air sensor to the correct terminals (A) on the control unit (B).



Control unit	TG-KH/PT1000 Duct sensor
T81: UI1	1
T81: REF	2

5.4 To connect accessories



1 If an isolated power supply is necessary for external components, do these steps:

a. Connect the supplied cable kit with 5 1.5 mm^2 cables to the terminals (A) and to the applicable terminals on the control unit (B).

b. For more information, refer to the wiring diagrams.

2 Connect the accessories correctly, refer to the tables in 5.4.1 External accessory connection.

- Use the Ext-link – RS485 connection, including 24VDC, for external accessories.
- Use the BMS – RS485 connection for building management system.

5.4.1 External accessory connection

Table 1 Analog inputs

Control unit		Accessory	Notes
T1:0	1	Smoke detector (Calectro UG-3-0)	Dedicated input for smoke detection
T1:+	2		
T14:24V	+24V	CO2/Humidity sensor	24V DC Power max. 550mA
T14:AI6	0..10V		Analog input
T14:0V	-0V		0V DC Power
T15:24V	+24V	Duct pressure sensor for extract air	24V DC Power max. 550mA
T15:AI5	0..10V		Analog input
T15:0V	-0V		0V DC Power
T16:24V	+24V	Duct pressure sensor for supply air	24V DC Power max. 550mA
T16:AI4	0..10V		Analog input
T16:0V	-0V		0V DC Power

Table 2 Digital inputs

Control unit		Accessory	Notes
T27:DI6	NO	Preheater alarm	NO Contact
T27:REF	COM		
T28:DI5	NO	Cooling feedback	NO Contact
T28:REF	COM		
T29:DI4	NO	Fire damper actuator feedback	NO Contact
T29:REF	COM		
T30:DI3	NO	External fire alarm	NO Contact
T30:REF	COM		
T31:DI2	NO	Extended run	NO Contact
T31:REF	COM		
T32:DI1	NO	External stop	NO Contact
T32:REF	COM		

Table 3 Digital outputs

Control unit		Accessory	Notes
T61:DO1	L	Cooling pump start	DO Relay Max 4A
T61:N	N		
T61:PE	PE		
T62:DO2	+24V	Outdoor damper	DO Relay Max 4A
T62:COM	X1:24V	Terminal row X1	24VDC supply from X1
X2:0V	0V	Outdoor damper	0V supply from X1
T63:DO3	+24V	Exhaust air damper	DO Relay Max 4A

Table 3 Digital outputs (continued)

Control unit		Accessory	Notes
T63:COM	X1:24V	Terminal row X1	24VDC supply from X1
X1:0V	0V	Exhaust air damper	0V supply from X1
T64:DO4	-	Fire damper control	DO Relay Max 4A
T64:COM	-		Signal circuit of the fire damper
T65:DO5	-	Run indication	DO Relay Max 4A
T65:COM	-		Signal circuit of the run indication
T66:DO6	L	Heating pump start[1]	DO Relay Max 4A
T66:COM	X1:L	Terminal row X1	230VAC supply from X1[2]
X1:N	N	Heating pump start	N supply from X1
X1:PE	PE	Heating pump start	PE supply from X1

1. Only applicable for air handling units with water heating coil and units without heater.
2. For 230V supply, the cable kit supplied in the delivery is necessary.

Table 4 Analog outputs

Control unit		Accessory	Notes
T71:0V	0V	Valve actuator heating[1]	0V DC Power
T71:AO1	0..10V		Analog output
T71:24V	+24V		24V DC Power max. 750mA
T72:0V	0V	Valve actuator cooling	0V DC Power
T72:AO2	0..10V		Analog output
T72:24V	+24V		24V DC Power max. 750mA
T74:0V	0V	Preheater	0V DC Power
T74:AO4	0..10V		Analog output
T74:24V	+24V		24V DC Power max. 750mA

1. Only applicable for air handling units with water heating coil and units without heater.

Table 5 Universal inputs

Control unit		Accessory	Notes
T81:0V		PT1000 Temperature sensor of the supply air	0V DC Power
T81:24V			24V DC Power max. 550mA
T81:REF	M		Reference
T81:UI1	B		Universal input
T82:0V		PT1000 Temperature sensor of the outdoor air	0V DC Power
T82:24V			24V DC Power max. 550mA
T82:REF	M		Reference
T82:UI2	B		Universal input

Table 5 Universal inputs (continued)

Control unit		Accessory	Notes
T83:0V		PT1000 Temperature sensor room	0V DC Power
T83:24V			24V DC Power max. 550mA
T83:REF	M		Reference
T83:UI3	B		Universal input
T84:0V		PT1000 Temperature sensor preheater	0V DC Power
T84:24V			24V DC Power max. 550mA
T84:REF	M		Reference
T84:UI4	B		Universal input

Table 6 Communication

Control unit	Description	Comment
BMS/GND	GND	BMS RS485 Reference
BMS/B	B-	BMS RS485 B-
BMS/A+	A+	BMS RS485 A+
Ext-link/0	0V	External components RS485 Power supply
Ext-link/24V	24V	External components RS485 Power supply
Ext-link/GND	GND	External components RS485 ref.
Ext-link/B	B-	External components RS485 B-
Ext-link/A+	A+	External components RS485 A+

6 Commissioning

The commissioning report is found at www.systemair.com.

6.1 To do before the commissioning

- Make sure that the installation and electrical connection are correctly done.
- Visually examine the product and accessories for damage.
- Make sure that the safety devices are correctly installed.
- Make sure that there are no blockages in the air inlet and the air outlet.
- Make sure that installation material and unwanted objects are removed from the product and the ducts.
- Make sure that the product lean with 1-3° towards the drainage connection.
- Close the product hatches.

6.2 To do the commissioning

1. Airflow reduction in bypass defrosting is preconfigured to 50% of the nominal airflow. If the setting of the nominal airflow is reduced, it will have effect on the airflow over the electric heater in bypass defrosting. Make sure that the airflow is above 1.5 m/s over the electric heater.
2. Record the necessary data in the commissioning report.

7 Operation

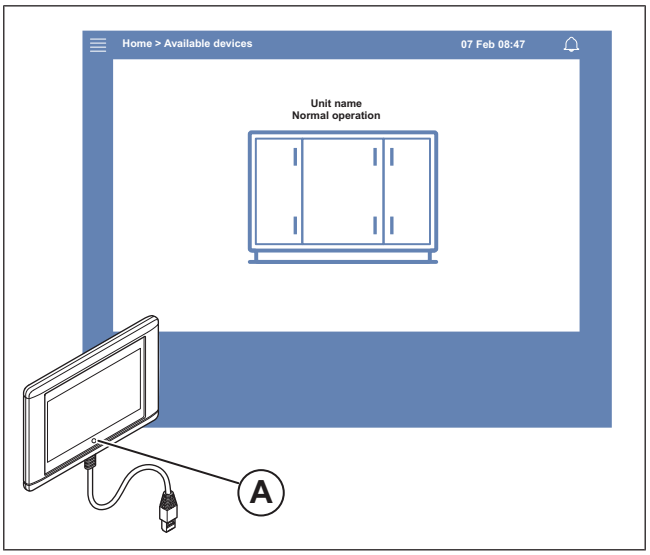
Operate the product with Access NaviPad control panel or Access connect by Systemair.

Download the Access connect by Systemair on Google Play for Android or App Store for iOS. Systemair recommends to use a tablet with minimum size 7".

Note:

NaviPad is available as an accessory. Systemair recommends to connect one NaviPad.

7.1 NaviPad



Do this at first start-up of the product:

1 Select language.

2 Set the time and date.

3 Select the product to pair with the HMI from the *Device list* shown on the screen. Use the serial number on the control unit to identify the product in the *Device list*.

Note:

If more than 1 product are to be connected to the same network, refer to the Access Configuration Manual at www.systemair.com.

A LED-light in the NaviPad button (A) shows the product status.

- Green light: No alarms, status ok.
- Red light that flashes:
  - Active or returned alarm.
  - Lost connection with a product.
- Solid red light: Acknowledged or blocked alarm that has not been reset.

7.2 Access Connect AHU List

Do this at first start up of the product:

1 The product name and control unit serial number is shown.

2 Alarm status is shown.

3 Select the product to connect to.

4 Confirm to join the Wi-Fi network.

5 The language settings in the tablet determines which language is shown in the app.

6 After connection to the product, the preset language is English. Refer to 7.11.1 To change the language.

7.3 Overview of the Access application software menu

The content in the description column in the menu overview is depending on the air handling unit's configuration.

Symbol	Menu level 1	Menu level 2	Description
	Home	• Running mode • Extended run • Outdoor temperature • Temperature set-point value	–
	Data & Settings	Operation overview	General overview of the air handling unit's operation status.
		In-/output status	• Unit operation • I/O • Fan control • Heating/Cooling sequences • Manual setting of temperature sensor • Locking of fans at adjustment • Raw values • Device status
		Energy insight	Logs and presents energy data.
		Temperature control	• Limit values • Setpoint for current control type • Min/max limitation
		Fan control	• Setpoint for different fan speed • Fan compensation e.g. outdoor compensated fan curves • Start delay of fans, shut of dampers etc.
		Demand control	• Air quality control • Support control • Free cooling
		Fire/Smoke	• Fire dampers • Smoke detector status • Fire damper test
		Filter monitoring	• Filter calibration • Filter alarm limits
		Alarm list	A list of the active alarms, alarm history and alarm snapshot.
	Flow chart	–	A dynamic flow chart of the current product configuration. Refer to 7.10.1 To use the flow chart.
	Language	–	Settings for language
	Time settings	–	• Date / Time • Schedule

Symbol	Menu level 1	Menu level 2	Description
	Configuration	Service stop	• ON/OFF
		System settings	• Communication • Communication devices • Preference unit settings • Save and restore settings • Software
		Functions	• Function activation • Temperature control • Fan control • Fan compensation curves • Fire/Smoke • Filter monitoring • Extended operation • Extra indications & outputs • Extra sensors & inputs • Flow chart setup • Energy insight
		I/O allocation settings	• Analog inputs • Digital inputs • Analog outputs • Digital outputs
		Alarms	Alarm delay at start up, search alarm number and configuration of alarms.
		PID controllers	• Heating • Exchanger • Cooling • Supply air fan • Extract air fan • Defrosting
	System information	–	• Unit information • Access control unit • Communication
	Alarms	–	Alarm list
	Login menu	• Login • Log out • New password • Confirm password	–

7.4 Overview of Access application home page

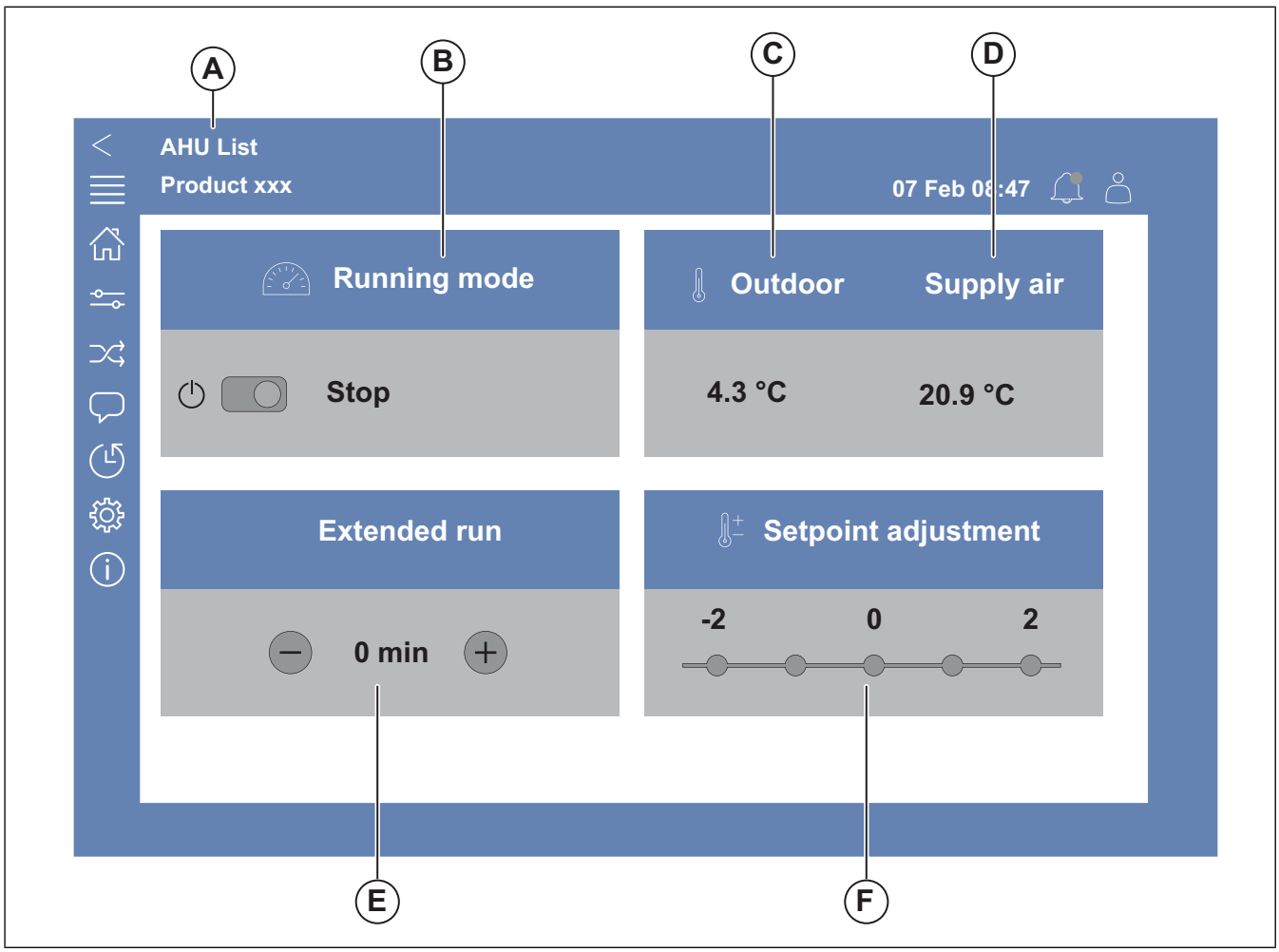


Fig. 1 Home page

(A) only in Access Connect by Systemair to return to available products, refer to 7.5 HMI operation.

(B) Running mode

(C) Outdoor

(D) Supply air

(E) Extended run

(F) Setpoint adjustment

7.5 HMI operation

- Press the screen to navigate in the menus, start or stop a function or change a setting.
- Use the keyboard to type text. The keyboard shows at the bottom of the screen when it is applicable.
- To change a setting, press the value and change to the new setting in the menu that is shown. Press *OK* to keep the setting.
- Press the screen to start the screen if it is in sleep mode (Only for NaviPad).

To change to a different connected product, do the following steps:

1 NaviPad:

- Press and hold the NaviPad button for more than 1 second to go to the system overview dashboard. Available products are shown on the screen.

2 Access Connect by Systemair

- Press AHU list (A), refer to Fig. 1 Home page. Available products are shown on the screen.

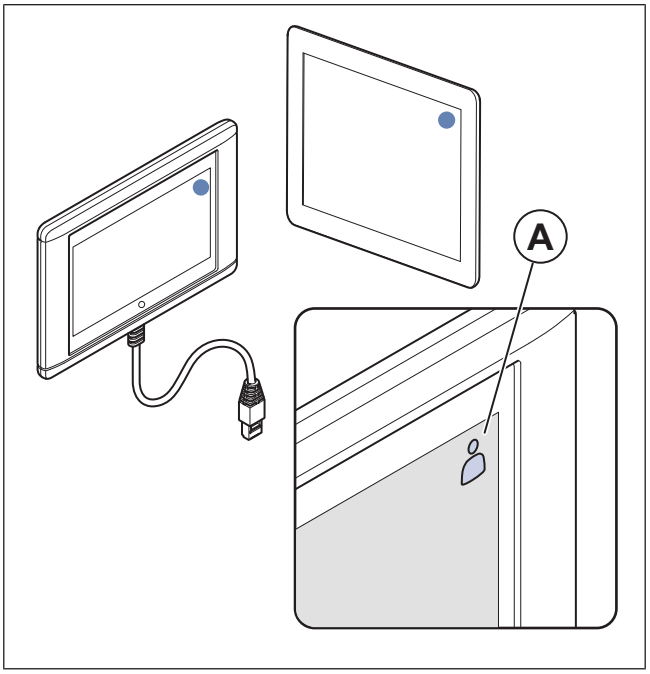
7.6 To use the configuration wizard

1 Press the picture of the product that is to be configured.

2 The configuration start-up wizard starts. Do the configuration start-up wizard or refer to 7.13.1 To do a configuration, to do the configuration at a different time.

7.7 To login to the HMI with the applicable user mode

1 Open the Login window, press the symbol (A).



2 Select *Operator* or *Service* from drop down list.

3 Type the password of the correct user mode, refer to 7.7.1 User modes.

4 Press *Login*.

7.7.1 User modes

Note:

The user modes has different read and write rights. Text and values that can be changed are shown in blue.

User mode	Password	Possible actions
End user mode	N/A	Some user rights.
Operator mode	1111	Almost full user rights.
Service-mode	0612	Full user rights.

Note:

The administrator mode is only for factory personnel.

Caution

Make sure to change the default passwords for Operator and Service to unique passwords, to prevent unwanted access the control system.

7.8 IP Address settings

Access control system provides two options for assigning IP address, Dynamic Host Configuration Protocol, DHCP and Static IP. The air handling units from Systemair is supplied with DHCP.

One IP address for Access control unit and one IP address for Access NaviPad is required.

DHCP: A DHCP server available on the external network automatically supply IP addresses to the control unit and to NaviPad. If the air handling unit is not connected to an external network, the control unit and NaviPad will automatically be assigned IP addresses in accordance with the Auto-IP standard (169.254.a.b/255.255.0.0).

Static IP: Static IP addresses are assigned to the control unit and to NaviPad.

Note:

Do the change from default DHCP to static IP address in accordance with your local IT organisation to make sure that the IP address agrees with the network IP address plan.

Refer to Access Communication Manual on www.systemair.com for more information.

The connection can temporarily be lost until the IP address is changed on both the control unit and the NaviPad.

7.9 Data & Settings

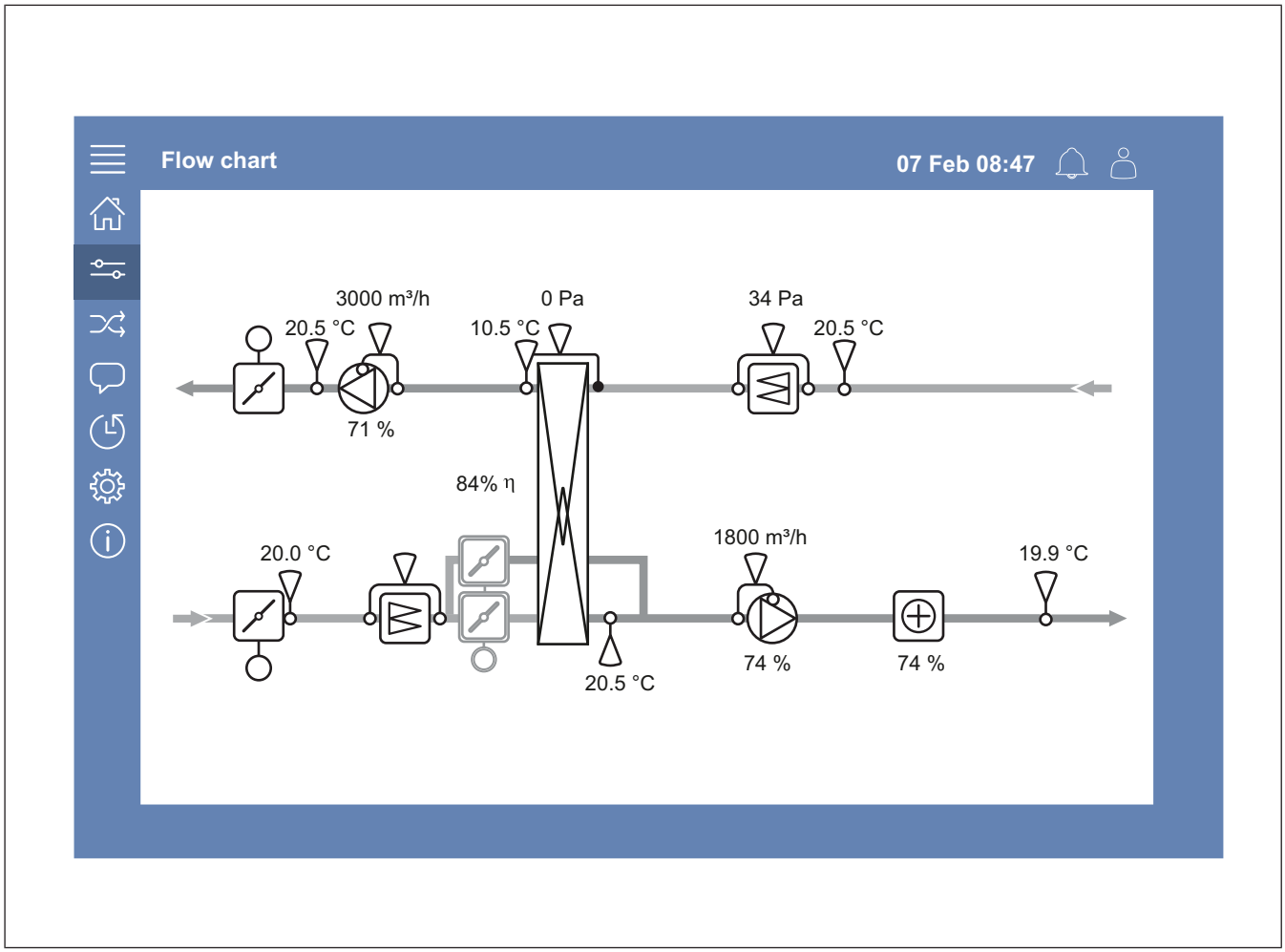
In the Data & Settings menu there is an overview of the product operation status.

7.10 Flow chart

7.10.1 To use the flow chart

Note:

The flow chart illustration shows an example of the positions of the components. The correct positions of the component is different on different product types.



View sensors and components with their values shown in real time.

Press on a blue item or value to get access to related settings and information.

7.11 Language

7.11.1 To change the language

NaviPad

- To set the language for all connected products, do these steps:
  a. Login with Operator or Service mode.
  b. Press and hold the NaviPad button for more than 1 second.
  c. Press the menu button.
  d. Press the Language menu button.
  e. Select language.
  f. Press *Set language*.

Both NaviPad and Access Connect

- To set the language in only 1 product, do these steps:
  a. Login with Operator or Service mode.
  b. Go to the Access application home page.
  c. Go to the Language menu.
  d. Select language.
  e. Log out and Login to keep the setting.

7.12 Time settings

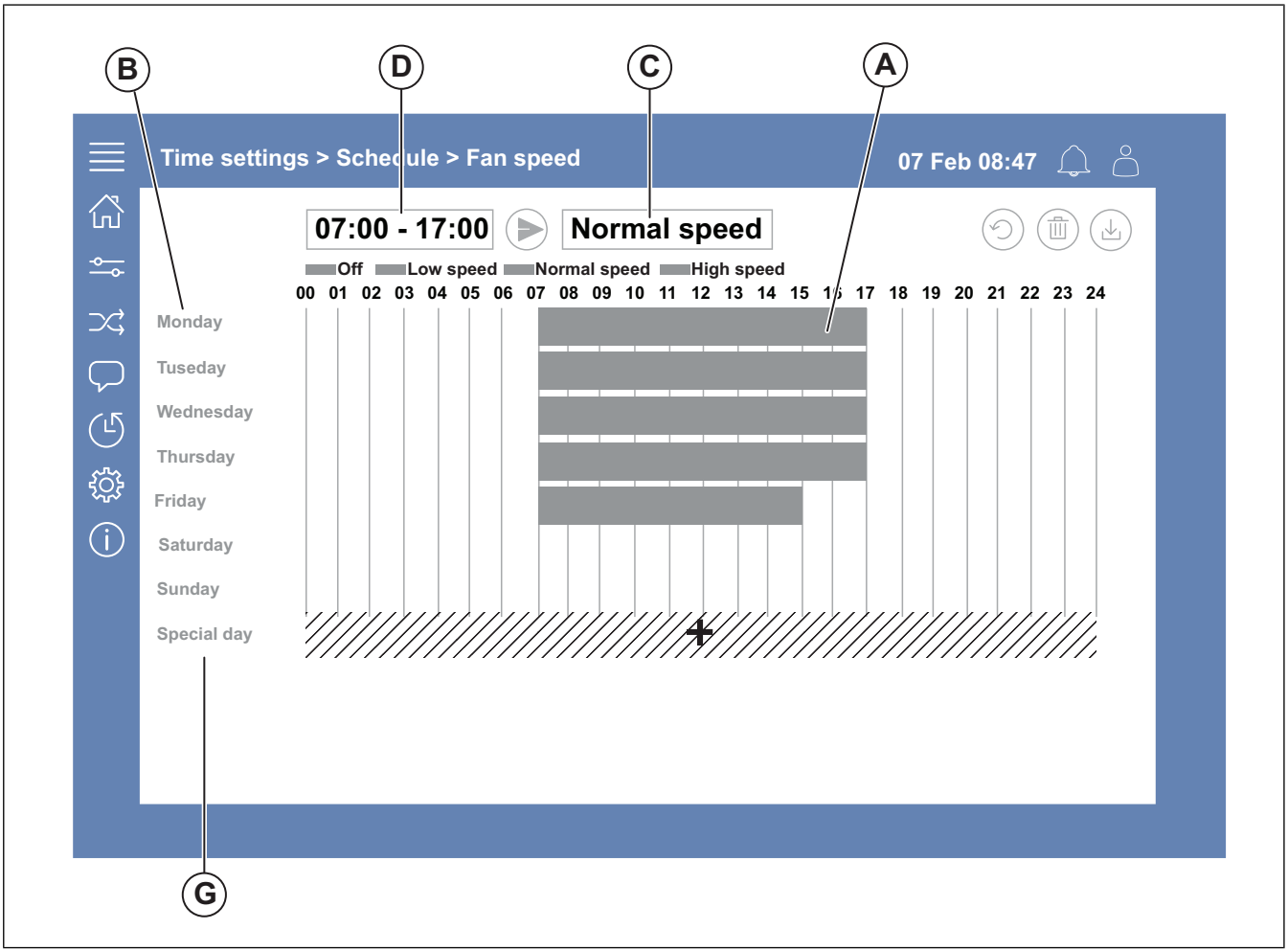
7.12.1 To set the operation time

1 Login with Operator mode or Service mode.

2 Go to the *Time settings* menu.

3 Go to *Schedule*.

4 Go to *Fan speed*.



5 Press the time bar (A) for selected weekday (B). Select *Off*, *Low speed*, *Normal speed* or *High speed* in the drop down menu (C).

6 Pull the time bar (A) to set the start and stop time, or select the time in (D). Set the start and stop time for maximum 8 periods for each speed.

- To set a 24 hour operation, set the start and stop time to 00:00-24:00.

7 For specific operation times on holidays (G), do these steps:

a. In Schedule press *Fan speed*.
b. Press *Special day*
c. Set the date, date range, week or calender.
d. Select the start date and the stop date for the special days.
e. Press *Low speed*, *Normal speed* or *High speed* and set the operation time for special days.

7.13 Configuration

7.13.1 To do a configuration

1 Login with Service mode.

2 Go to the Configuration menu to start a step by step configuration for your accessories. Do these steps to configure accessories:

a. Press *Configuration*.

b. Press *Functions*.

c. Press the function and set to ON. Necessary settings for the function is made in the *Data & Settings* menu.

d. Press the selected function.

e. If the function requires a I/O allocation, go to I/O allocation settings to adjust inputs and outputs.

Note:

For more information about configuration, refer to the Access Configuration Manual at www.systemair.com.

7.14 System information

7.14.1 To add or adjust system information

1 Login with Service mode.

2 Go to *System information*.

3 Press *System information setup*.

4 Add or adjust the applicable information, for example unit name or contact information.

7.15 Alarms

Note:

If an alarm is active, the alarm symbol has a red mark.

Alarm levels			
Symbol	**Level**	**Operation**	**Status**
	A	Must be acknowledged before unit can go in to operation again	• Alarmed • Acknowledged • Blocked
	B	Must be acknowledged	• Alarmed • Acknowledged • Blocked
	C	Returns automatically when the cause of the alarm is corrected	• Alarmed • Acknowledged • Blocked • Returned

7.15.1 To operate the alarms

1 Login with Operator or Service mode.

2 Press the alarm symbol.

3 Press the active alarm.

4 Select *Acknowledge*, *Block* or *Unblock*.

- Acknowledge the alarm. This temporarily hides the alarm. If the cause is not corrected, the alarm comes back.
- Block the alarm. This hides the alarm if it is not necessary to correct the cause of the alarm.

Caution

If the cause of the alarm is not corrected, there is a risk of damage to the product.

- Unblock the alarm. This shows an alarm that has been blocked.

7.16 To connect the HMI if the connection to the product is lost

NaviPad

1 Press the screen.

2 Press the menu button in the top left corner of the NaviPad.

3 Press *Advanced HMI Settings*.

4 A dialog box for advanced login shows, Login with password 1111.

5 Press *Available devices*.

6 A list of available products will show, select the correct product in the list. A maximum of 9 products can be connected.

Access connect by Systemair

1 If the connection to the product is lost, the app will return to the AHU-list.

2 If the app does not return to the AHU-list:

- The distance between the product and the tablet is too long or objects are blocking the signal. Move closer to the product.

7.17 To use a computer to show the user interface

1 Make sure that the computer and the control unit is connected to the same local network with the same IP subnet.

2 Use below options to find the IP address of the control unit.

- Go to System information with the NaviPad or the app Access Connect.
- Scan the network with a computer.

3 Write the IP address of the product in the address field of a web browser.

7.18 To stop the product for maintenance

1. Login with service mode.
2. Go to the Configuration menu.
3. Press *Service stop*.
4. When the product has stopped, set the safety switch to OFF.
5. Make sure that the product has stopped before you do the maintenance.

8 Maintenance

Warning

Set the service stop switch to OFF before maintenance is done unless the instructions says differently. Refer to 7.18 To stop the product for maintenance.

Warning

Use equipment suitable for work at height, and make sure that there is sufficient space for the operation.

Warning

Be careful around the hot surface on the heating coil.

Warning

Be careful around parts that can move.

8.1 Maintenance schedule

The intervals are calculated from continuous operation of the product.

Maintenance task	Usual operation conditions		Unusual operation conditions. [1]		
	Each 6 months	Each year	Each 3 months	Each 6 months	Each year
Visually examine the product and its components for damage, corrosion and dirt.		X		X	
Examine the fan impeller for damage and imbalance.		X		X	
Clean the product and the ventilation system.		X		X	
If the product is installed with fasteners, do a check of all fasteners and make sure that they are fully tightened.		X			X
If vibration dampers are installed, make sure that they operate correctly and examine them for damage and corrosion.		X			X
Make sure that the electrical protective equipment and the mechanical protective equipment operates correctly.		X			X
Make sure that you can read the name plates of the product.		X		X	
Examine all cable connections for damage. Make sure that the cable glands are tight against the cables.		X			X
If flexible connections are installed, examine them for damage.	X			X	
Replace the filters.	X		X		
Clean the air intake grille.		X		X	
If the product has a water heater, open the water circuit to bleed the system.		X			
Clean the heat exchanger.		X		X	
Clean the louvres.		X		X	
Clean the outdoor air intakes.		X		X	
Clean the ducts.		X		X	

1. The unusual operation conditions are classified as follows: If a stable ambient temperature is higher than 30 °C or lower than -10° C, if the temperature changes are large or if very contaminated air is transported.

8.2 To open the hatches

Fan module and heat exchanger hatches are secured to the product with a safety wire attached to the product casing.

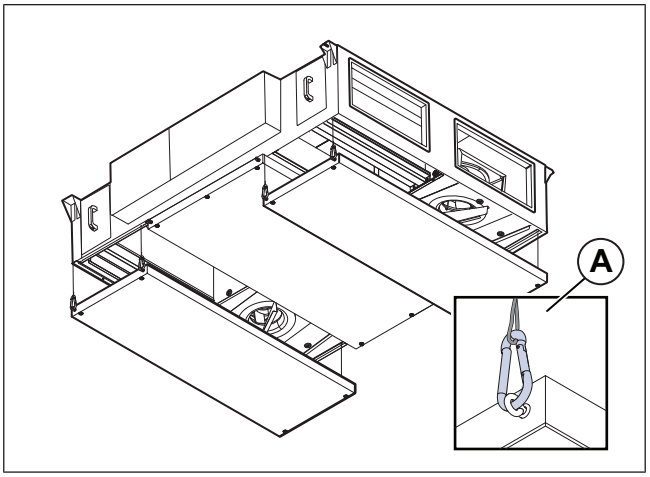
1 To remove the hatch, do these steps:

1. Loosen the screws with a screw driver and a magnetic drill bit extension.

Warning

Do not loosen the safety wire before loosen the screws to the hatch. Risk of injury to persons if the hatch falls.

2. Unlock the safety wires (A).
3. Remove the hatches.



8.3 To clean the product

Caution

- Do not clean the product with steel brushes or sharp objects.
- Do not bend the fan impeller blades.
- Be careful not to move the balance weights on the fan impeller.
- Do not use a detergent that contains ammonia.

The fan module and the heat exchanger can be removed if it is necessary to clean a part. Refer to 8.5 To replace the fan module and 8.6 To replace the heat exchanger.

- Clean the heat exchanger with hot soap water.
- Clean the fan impeller with a dry cloth or soft brush. Use white spirit to remove rough dirt.
- Clean the water heating coil with a high-pressure washer with misting jets or with compressed air.

Caution

Clean carefully to prevent damage to the aluminum fins of the coil.

- Clean the heating rods of the electrical heating coil with compressed air, vacuum cleaner or a brush.
- Remove the diffusers and ventilation grilles and clean them in hot soap water. Make sure that the diffusers and grilles are installed correctly when clean.
- Clean the ducts with a brush. Pull the brush through the diffuser, the grille openings or the inspection hatches in the duct system.

8.4 To replace the filters

Topvex FC has panel filter on supply and extract air side.

Warning

Wear a protective mask to prevent that dust and dirty particles goes into the lungs.

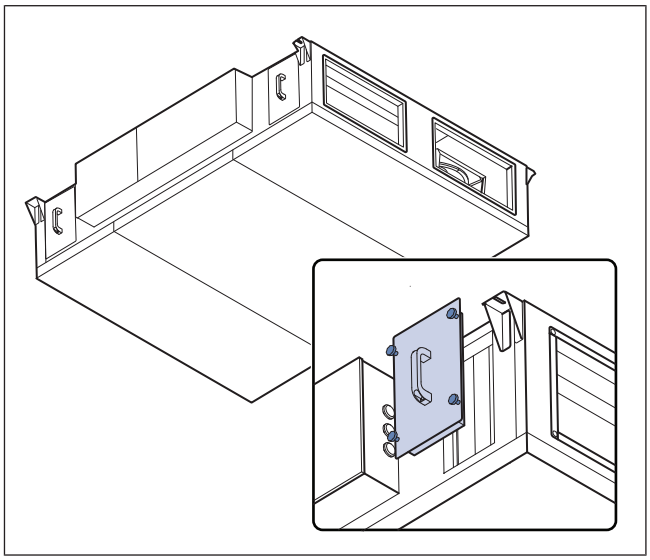
Replace the filters with one of the below options:

Through the filter hatches

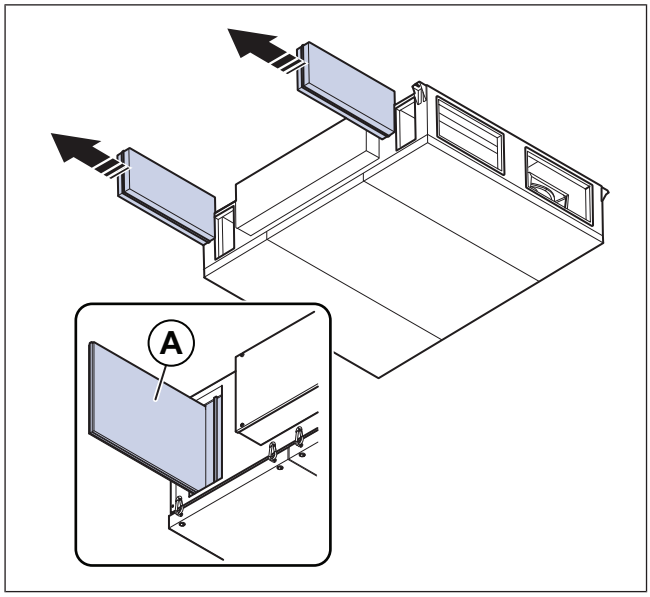
1 Loosen the screws on the hatches to the filters and remove the hatches.

Warning

Be careful so that the filter hatch does not fall down and cause injury.



2 Replace the filter.



3 Attach the filter hatches and tighten the screws.

Note:

Prefilter (A) is available as accessory.

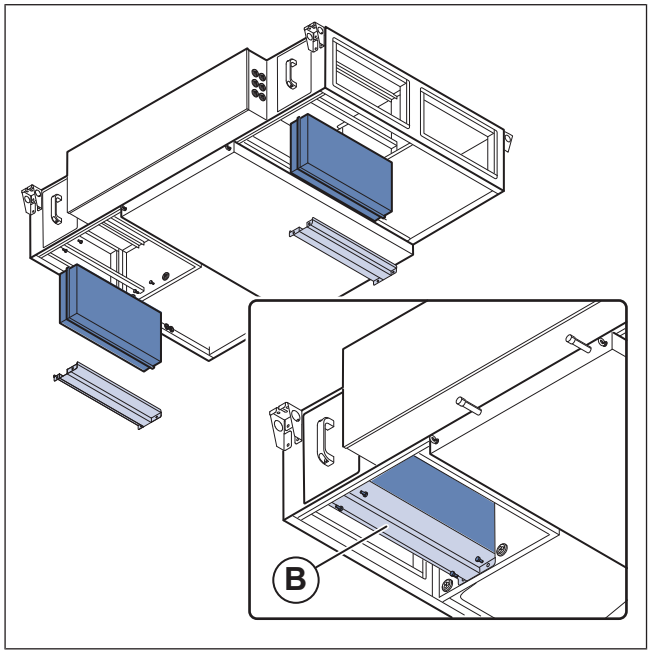
Through the fan module hatches

Warning

Do not loosen the safety wire before loosen the screws to the hatch. Risk of injury to persons if the hatch falls.

1 Open the fan module hatch, refer to 8.2 To open the hatches.

2 Loosen the 4 screws to the filter rail (B) and remove the filter rail.



3 Replace the filters.

4 Attach the filter rail, tighten the screws and close the hatches.

8.5 To replace the fan module

Warning

Do not loosen the safety wire before loosen the screws to the hatch. Risk of injury to persons if the hatch falls.

1 Open the hatches, refer to 8.2 To open the hatches.

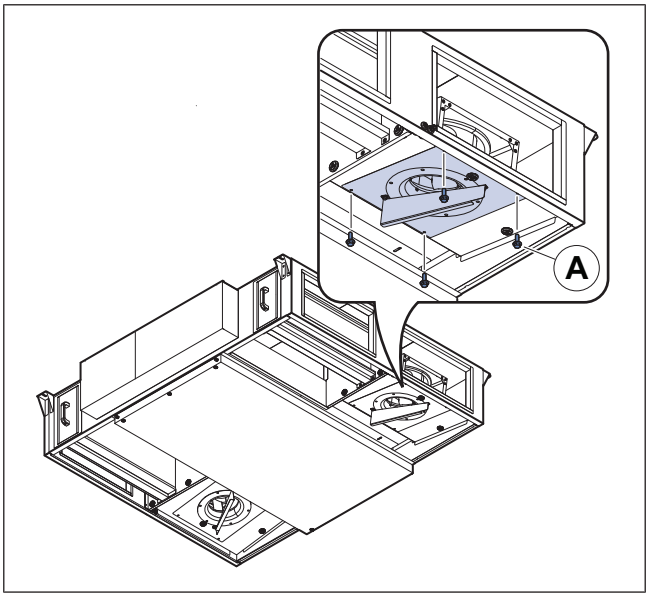
2 Disconnect the two quick connection cables to the fan.

3 Disconnect the blue tube to the fan.

4 Loosen the 4 screws (A) on the fan module.

Warning

Be careful so that the fan module does not fall down and cause injury.



5 Remove the fan module.

6 Install the new fan module.

7 Connect the blue tube to the fan.

8 Fasten the 4 screws (A) on the fan module.

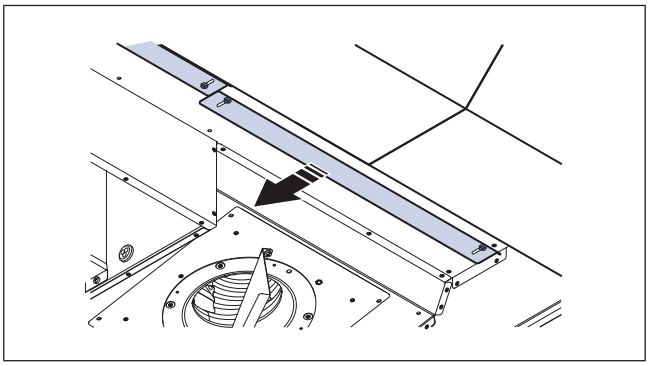
8.6 To replace the heat exchanger

Warning

Minimum of 2 persons are necessary to remove the exchanger safely.

1 Open the hatches, refer to 8.2 To open the hatches.

2 Loosen the screws on the locking plates on each side of the heat exchanger.

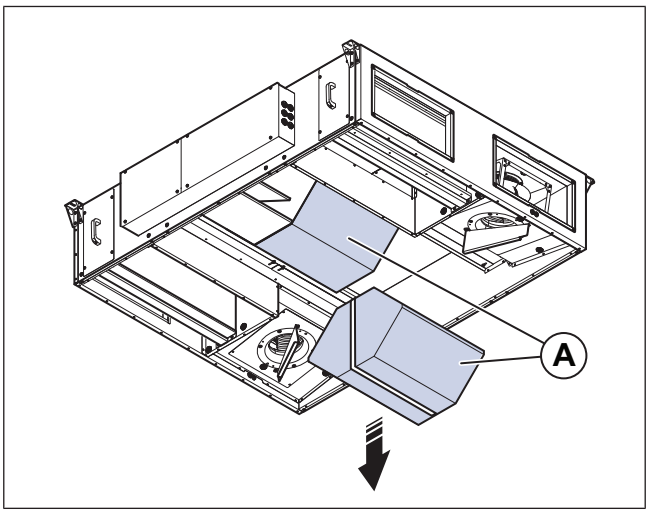


3 Push the locking plates to the side to release the heat exchanger.

Warning

The heat exchanger is heavy, be very careful when the heat exchanger is moved. There is risk of injury to persons or damage to the heat exchanger.

4 Pull the heat exchanger (A) in the straps downwards to remove the heat exchanger. Be careful to not drop the heat exchanger.

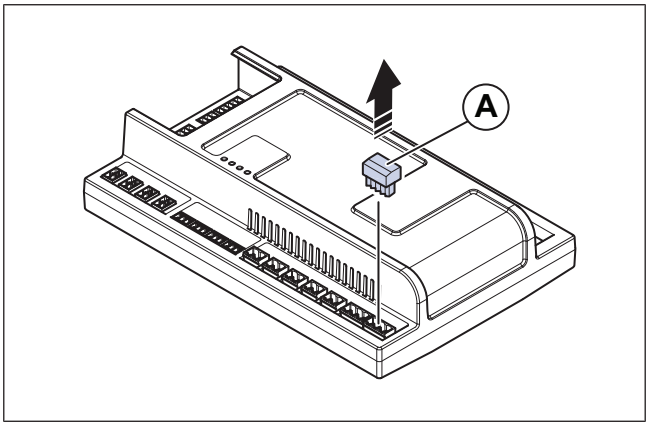


The illustration shows Topvex FC 20. Size 20 and 25 have 2 heat exchangers, size 10 and 15 has one heat exchanger.

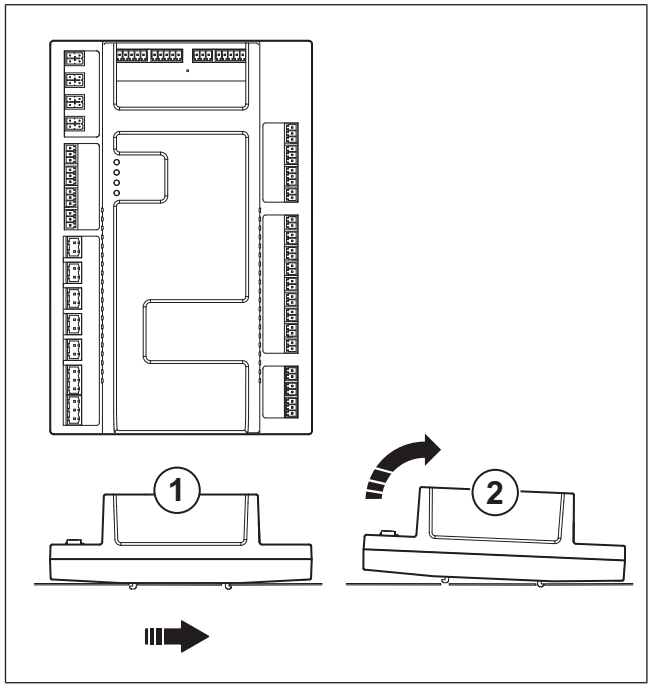
8.7 To disconnect the control unit

1 Disconnect the product from the power supply.

2 Disconnect the cable connectors (A) from the control unit. Make sure that you know the cable connectors positions before they are disconnected.



3 Push (1) and lift (2) the control unit in the direction of the arrows.



8.8 To replace the battery of the control unit

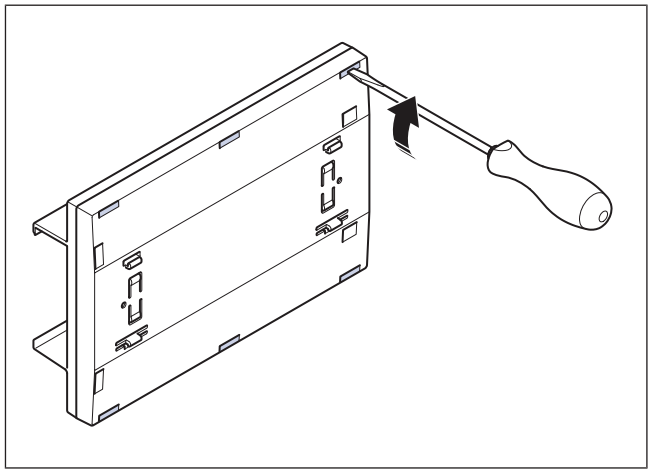
Warning

ESD protection for example an earthing sleeve must be used.

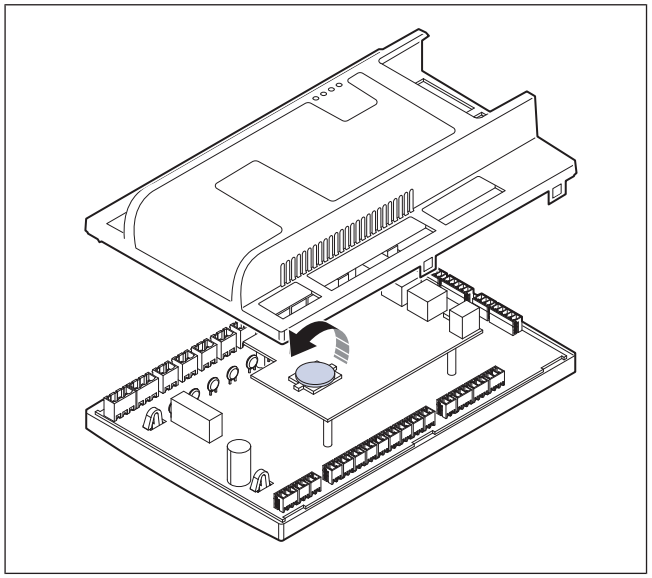
Caution

A back-up capacitor keeps data for 10 minutes after the power is disconnected. If the replacement time is more than 10 minutes, the data of the controller can be deleted. If the product is not connected to the power supply before the replacement, the back-up capacitor does not operate correctly.

1 Release the 6 locking clips, to open the control unit.



2 Remove the old battery and put the new battery in position, refer to the poles. Refer to 12.1 Technical data overview for the correct battery type.



3 Close the control unit.

4 Install the control unit in the electrical cabinet.

5 Connect the cable connectors to the control unit.

8.9 To replace the by-pass damper

Note:

The illustration shows a right connected product.

1 Open the extract air fan module hatch.

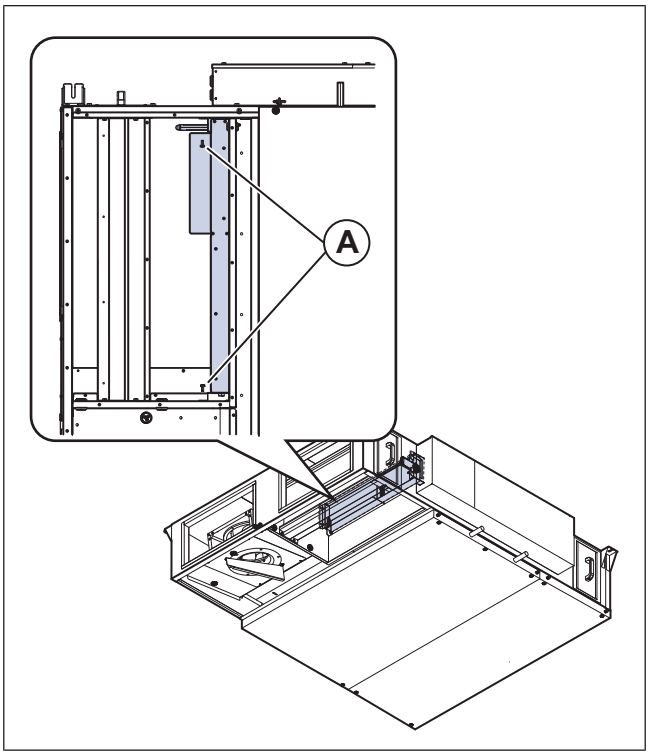
2 Remove the by-pass damper.

a. Disconnect the quick connection cable for the damper control.

b. Loosen the 4 screws (A) to the damper and remove the damper.

c. Put the new damper in position and tighten the screws.

d. Connect the quick connection cable for the damper control.



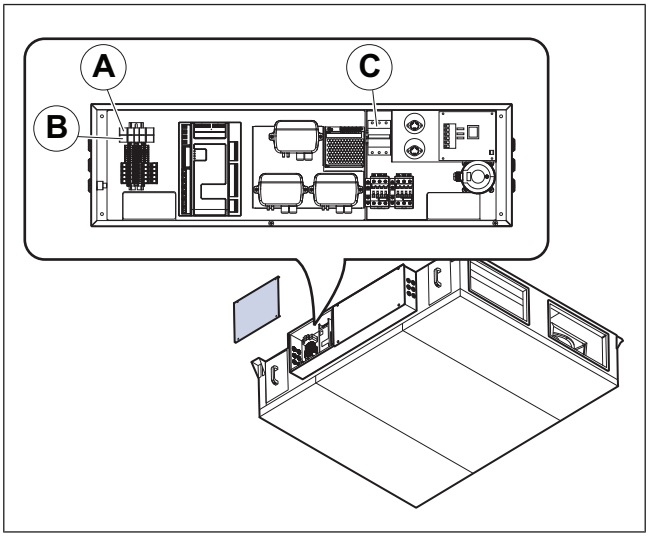
8.10 To reset tripped fuses

1 To reset a tripped fuse, set the released switch to ON. A red colour shows that the fuse is energized.

a. Reset the fuse for the controls (A).

b. Reset the fuse for the fans (B).

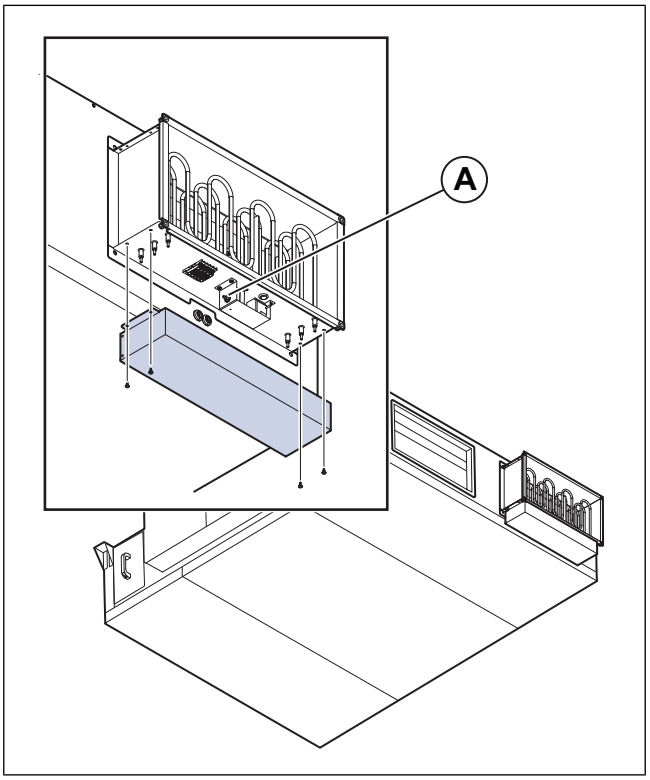
c. Reset the fuse for the electrical heating coil (C)



8.11 To reset the manual overheat protection for electric heating coil

1 Loosen the 4 screws to the hatch to the electrical heating coil and remove the hatch.

2 Push the red button (A) on the electrical heater.



3 Attach the hatch to the electrical heating coil and tighten the screws.

8.12 Spare parts

- When you send an order for spare parts, include the serial number of the product. The serial number is found on the name plate.
- For more information about spare parts, contact technical support.
- Always use spare parts from Systemair.
- To find spare parts, refer to the scannable code on the name plate.

9 Troubleshooting

Note:

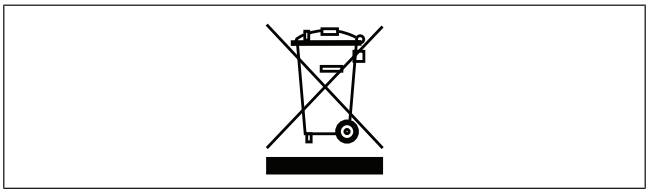
If you cannot find a solution to your problem in this section, speak to Systemair technical support.

Problem	Cause	Solution
The product does not start.	There is an alarm.	Do a check of the alarm messages.
	The time, week, schedule, automatic/ manual settings are incorrectly set.	Make sure that the settings in the control panel are correct.
	A fuse has tripped.	Reset the fuse.
The airflow is not sufficient.	There is an alarm.	Do a check of the alarm messages.
	The speed control is not correctly set.	Set the speed control correctly.
	Reduced speed input is on.	Set reduced speed input to off.
	Damaged or dirty filters.	Examine the filters. Replace the filters if it is necessary.
	The exhaust air damper is closed.	If the product has an exhaust air damper, make sure that it opens.
	Dirty diffusers and louvres.	Clean the diffusers and louvres. Make sure that there is not a blockage in the openings.
	The heat exchanger and/or the fans are dirty.	Clean the heat exchanger and the fans.
	There is a blockage in the roof unit or air intake.	Remove the blockage.
	Dirty or damaged ducts.	Examine the ducts, clean the ducts if it is necessary and replace damaged parts.
The supply air is cold.	There is an alarm.	Do a check of the alarm messages.
	The fans are not in operation.	Do a check of the alarm messages.
	The temperature is set too low.	Do a check of the temperature settings in the HMI.
	The extract air filter is dirty or damaged.	Replace the extract air filter.
	The overheating thermostat has tripped.	Let the electrical heater cool down, push the red button on the electrical heater. Refer to 8.11 To reset the manual overheat protection for electric heating coil.
	On units with water heating coil, the water inlet temperature is too low.	Examine the source of the water supply heating.
There is unusual noises when the product starts or operates.	The product is not correctly installed.	Make sure that the product is level.
	The fan impellers are dirty.	Clean the fan impellers.
	The fans are loose.	Tighten the screws for the fans.
	There is a blockage in the roof unit or air intake.	Remove the blockage.

Problem	Cause	Solution
No communication symbol on the NaviPad.	The IP number has changed.	Connect the NaviPad and the product. Refer to 7.16 To connect the HMI if the connection to the product is lost.
	There is more than 2 connected NaviPad units.	Disconnect NaviPad units until there is a maximum of 2 connected NaviPad units.
The NaviPad button flashes red in intervals but no unacknowledged alarms.	There is more than 2 connected NaviPad units.	Disconnect NaviPad units until there is a maximum of 2 connected NaviPad units.
Red frame shows in the NaviPad menu.	There is more than 2 connected NaviPad units.	Disconnect NaviPad units until there is a maximum of 2 connected NaviPad units.
No communication in Access connect by Systemair	Exceeded Wi-Fi signal range.	Move closer to the air handling unit.

10 Disposal

The product follows the WEEE directive. This symbol on the product or the packaging of the product shows that this product is not domestic waste. The product must be recycled at an approved disposal location for electrical and electronic equipment.



10.1 To disassemble and discard the parts of the product

1 Disconnect and disassemble the product in the opposite sequence of electrical connection and installation.

2 Recycle the product parts and the packaging at an applicable disposal location.

3 Obey the local and national requirements for disposal.

11 Warranty

For warranty claims, send a written maintenance plan and the commissioning report to Systemair. The warranty is only applicable for these conditions:

- The product is correctly installed and operated.
- The instructions in the product documentation are obeyed.
- Maintenance instructions are obeyed.
- Products installed in an outdoor environment must be in continuous operation or continuously electrified.
- Outdoor air dampers and exhaust air dampers with spring return must be closed if the product is not in operation.
- No modifications has been done to the product without approval of Systemair.

12 Technical data

12.1 Technical data overview

Max. temperature of transported air, °C	Refer to the data sheet in the online catalogue at www.systemair.com.
Max. ambient temperature, °C	
Sound pressure, dB	
IP class	
Voltage, current, frequency, enclosure class, weight	Refer to 1.6 Name plate for more information.
Motor data	Refer to the motor name plate or the technical documentation from the motor manufacturer.
Battery type	CR2032
Filter type	Panel filter
Filter quality of supply air filter	ePM1 60% (F7)
Filter quality of extract air filter	ePM10 60% (M5)

12.2 Product weight data

Note:

If the unit of weight is not specified, the data is given in kilograms.

	Topvex FC 10	Topvex FC 15	Topvex FC 20	Topvex FC 25
Fan module SF	8.8	9.8	10.6	10.4
Fan module EF	8.8	9.8	10.6	10.4
Fan module hatch	10.4x2	13.4x2	15.6x2	16.7x2
Heat exchanger	12	11x2	15x2	21x2
Heat exchanger hatch	17.4	22.1	23.4	26.9
Damper	1.6	2.2	2.8	3.4
Filter	1	1.4	1.9	2.3
Heating coil, EL	3.8	4.3	4.9	5.5
Heating coil, Water	3.2	3.8	4.4	5.1
Pallet	35	40	45	50
Total weight[1]	155	217	238	288

1. Product without heating coil

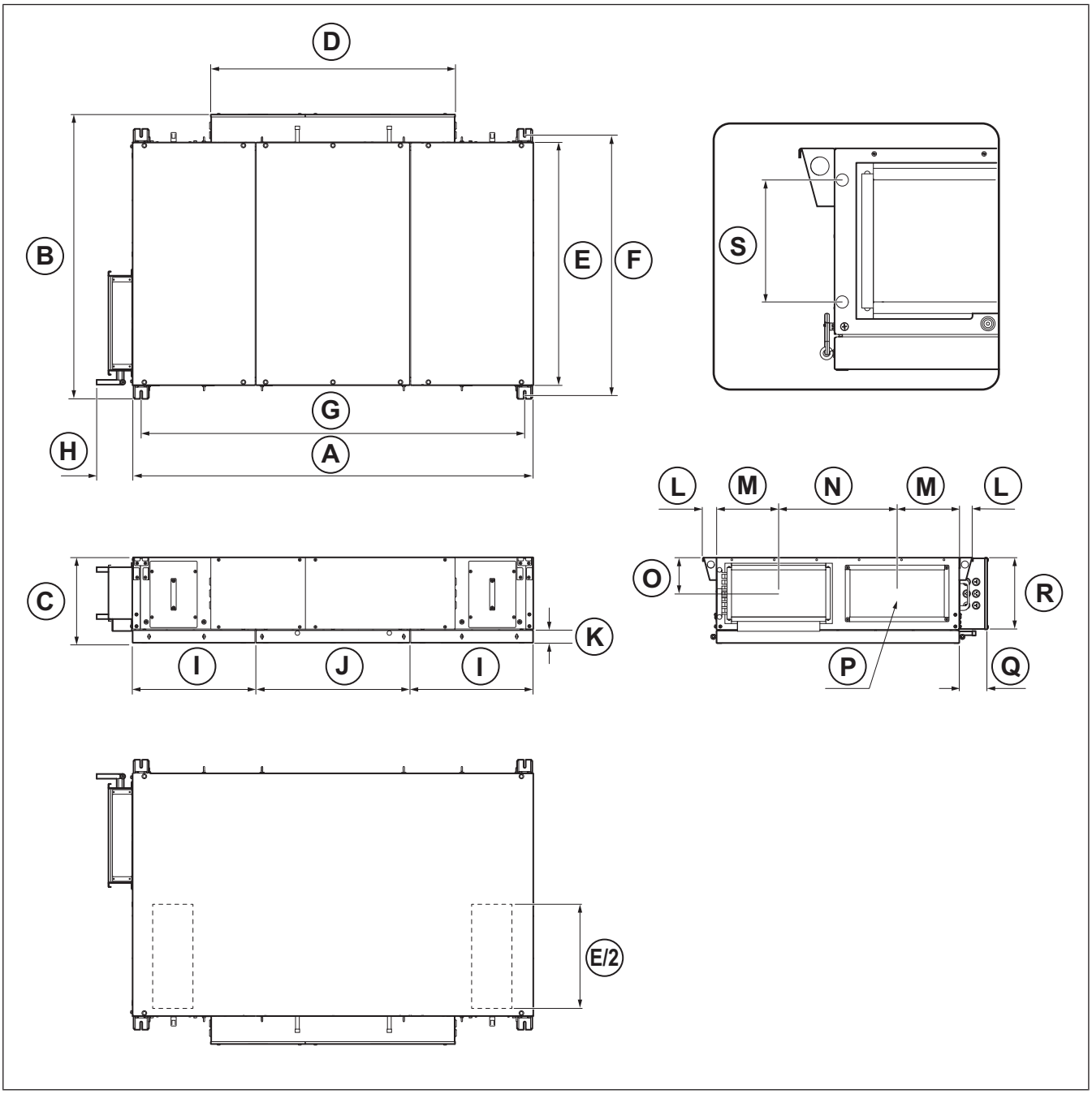
12.3 Product dimensions

Note:

If the unit of measure is not specified, the dimensions are given in millimetres.

Note:

The illustration shows a left connected product.



The illustration shows a product with water heating coil.

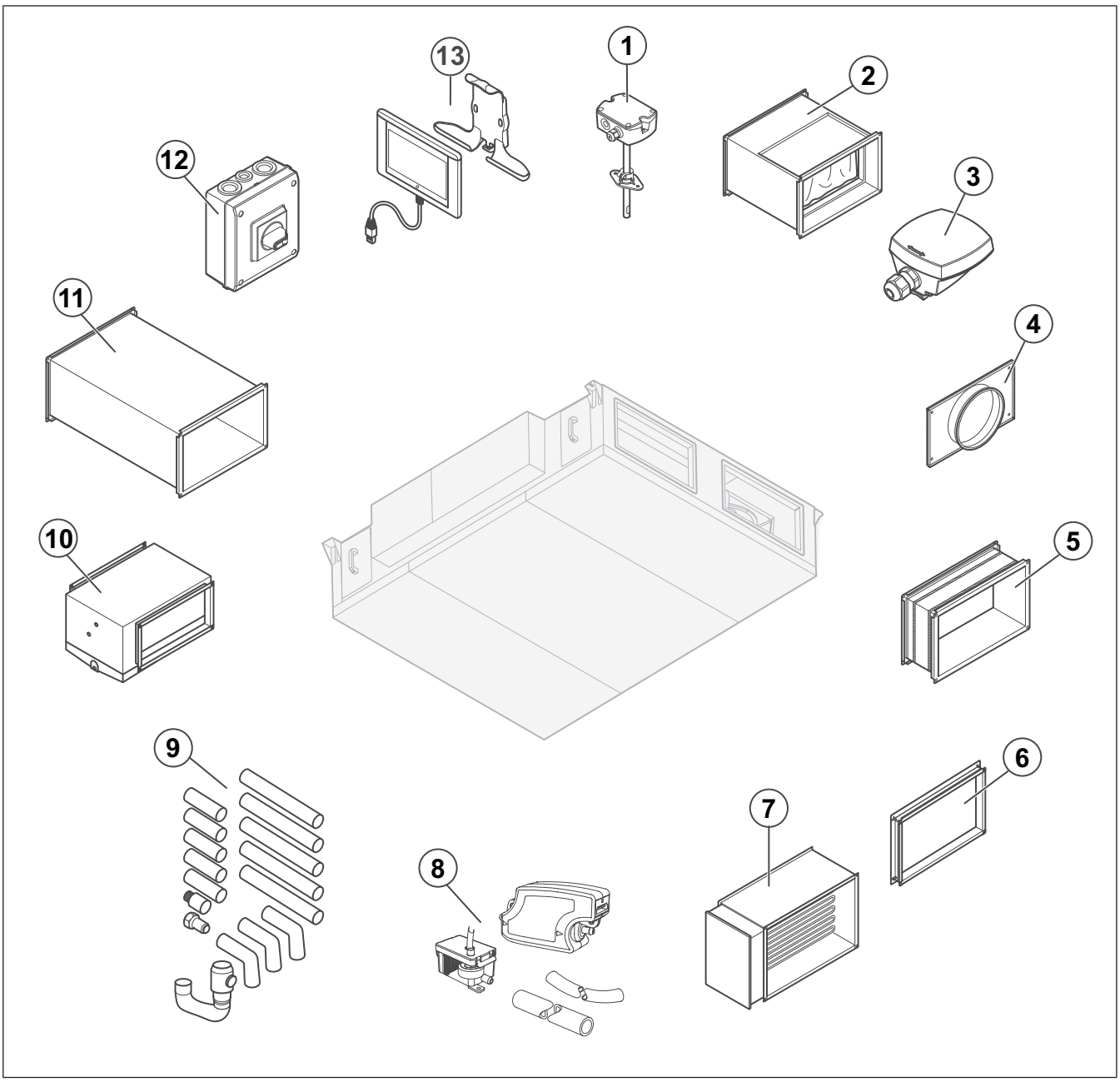
Topvex FC	A	B	C	D	E	F	c/cG	H[1]	I	J
10	1700	1213	360	1036	1030	1086	1627	150	520	651
15	1800	1582	401	1036	1400	1456	1727	150	509	773
20	1900	1673	484	1036	1490	1546	1827	150	559	773
25	2200	1625	598	1036	1450	1506	2127	150	625	940

1. The dimension is the same for both electrical and water heating coil.

Topvex FC	K	L	M	N	O	P	Q	R	S[1]
10	53	59.5	264	503	152	400x200	118	303	194.5
15	53	59.5	345	709	177	500x250	118	303	244.5
20	53	59.5	345	803	223	500x250	118	303	244.5
25	53	59.5	358	733	247	600x350	118	303	344

1. The dimension between the pipe connections.

13 Accessory overview



1. CTDT2: Duct sensor CO2 and temperature
2. FFK: Filter cassette
3. TG-AH3/PT1000: Surface temperature sensor for ducts
4. Duct transition kit: Rectangular to circular connection
5. DS: Flexible connection
6. Duct kit
7. RB: Electrical duct heaters
8. Maxi 35: Condensate pump
9. Water lock and pipe kit
10. DXRE/PGK: Duct cooler
11. LDR: Silencer
12. Safety switch
13. NaviPad and holder

Note:

The selection of accessories shown are not supplied with the product. For more information and other available accessories, refer to www.systemair.com or speak to your local sales representative.

14 EU Declaration of conformity

We, the manufacturer

Manufacturer	Systemair Production AB
Address	Industrivägen 3 739 30 Skinnskatteberg Sweden

declare under our sole responsibility that the products

Machine	Air handling unit
Type/Model	Topvex FC

fulfils the relevant provisions of following directives and standards

Machinery Directive 2006/42/EC

EN ISO 12100:2010

Safety of machinery – General principles for design - Risk assessment and risk reduction

EN ISO 13857:2019

Safety of machinery – Safety distances to prevent hazard zones being reached by upper or lower limbs

EN 60204-1:2018

Safety of machinery – Electrical equipment of machines – Part 1: General requirements

EN 60335-1:2012

Household and similar electrical appliances – Safety Part 1: General requirements.

EN 60335-2-40:2003

Safety of household and similar electrical appliances - Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers.

EN 50106:2008

Safety of household and similar appliances – Particular rules for routine tests referring to appliances under the scope of EN 60 335-1.

EN 60529:2014

Degrees of protection provided by enclosures (IP Code).

Directive electromagnetic compatibility (EMC) 2014/30/EU

ETSI EN 301 489-1 V2.1.1

Electro Magnetic Compatibility (EMC) standard for radio equipment and services Part 1: Common technical requirements.

Draft ETSI EN 301 489-17 V3.2.0 (2017-03)

Part 1: Common technical requirements.

IEC 62311: 2019

Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

EN 62233:2008

Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure

EN 61000-6-1-2019[2]

Electromagnetic compatibility (EMC) – Part 6-1 Generic standards – Immunity for residential, commercial and light-industrial environment.

EN 61000-6-3:2007

Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standards for residential, commercial and light-industrial environments.

Radio Equipment Directive (RED) 2014/53/EU

EN 300 328 V2.2.2

Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

RoHS Directive 2011/65/EU and amendment (EU) 2015/863

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Ecodesign Directive 2009/125/EC

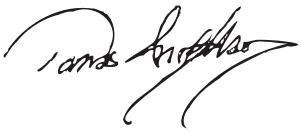
327/2011 Requirements for fans above 125W

1253/2014 Requirements for ventilation units above 30W

EN 13053:2019

Ventilation for buildings – Air handling units – Rating and performance for units, components and sections.

Persons authorized to compile the technical file:

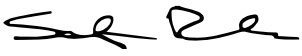


Tomas Angelhag

Head Of Engineering

This declaration relates exclusively to the machinery in the state in which it was placed on the market and excludes components which are added or operations carried out subsequently by the final user.

Skinnskatteberg, Sweden 2024-12-10



Sofia Rask

Managing Director

2. This version is not fully in accredited scope. Products is formally assessed against the standard mentioned in the Official Journal of the European Union but also considering the never version.

15 UK Declaration of conformity

We, the manufacturer

Manufacturer	Systemair Production AB
Address	Industrivägen 3 739 30 Skinnskatteberg Sweden

declare under our sole responsibility that the products

Machine	Air handling unit
Type/Model	Topvex FC

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EN 60529:2014

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Electromagnetic Compatibility Regulations 2016

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EN 61000-6-3:2007

Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standards for residential, commercial and light-industrial environments.

Radio Equipment Regulations 2017

EN 300 328 V2.2.2

Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019

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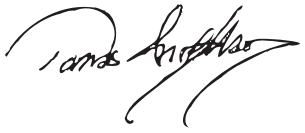

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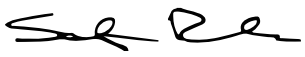

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