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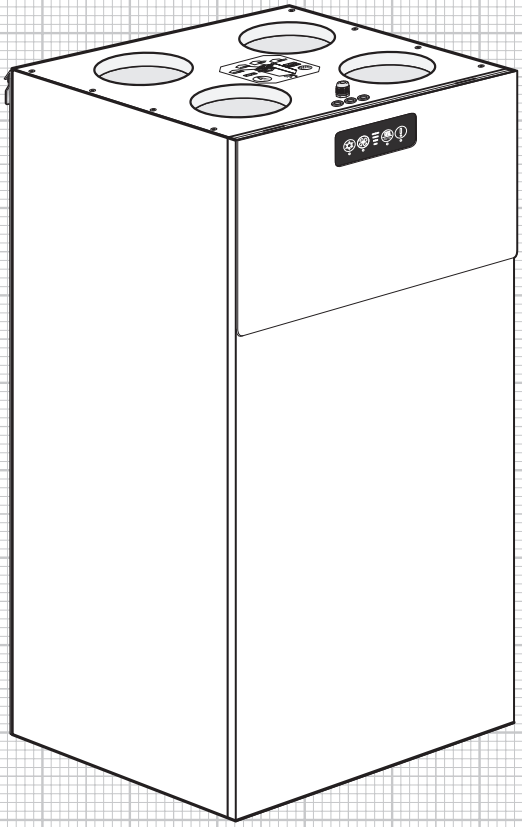
Installation instructions

profi-air® 250/360 flex spare parts



Building Technology
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1 General information

1.1 Introduction

The spare parts installation instructions shall help you to replace defective components and/or assemblies of the profi-air 250/360 flex ventilation units in order to restore full functionality. We therefore recommend that you read these instructions carefully before you carry out any activities on the unit.

1.2 Safety

If used as intended, the unit is safe and reliable to operate. The construction and design are state of the art and comply with all relevant DIN/VDE regulations and all safety provisions.
All safety regulations, warnings and notes of these spare parts installation instructions have to be observed; non-observance might result in personal injury or damage to profi-air 250/360 flex.

1.2.1 Safety regulations

- Authorised and qualified personnel only can open profi-air 250/360 flex in order to replace the parts as described in these installation instructions.
- Repair of profi-air 250/360 flex is to be carried out according to the applicable local construction, safety and installation regulations.
- Non-authorised changes or modifications of profi-air 250/360 flex and/or profi-air spare parts are not allowed.

1.2.2 Safety equipment and measures

- The profi-air 250/360 flex unit cannot be opened without tools.
- Make sure that the fans cannot be touched with hands as long as the system is connected to the power grid.
- In case of repair, the device may therefore be opened in the "dead" state only, and profi-air 250/360 flex may only be operated with the installed duct network.
- When working with the control board/additional board, please ensure appropriate protective measures against electrostatic discharges to prevent the components from being damaged.

1.2.3 Symbols used

Risk of personal injury

Risk of:

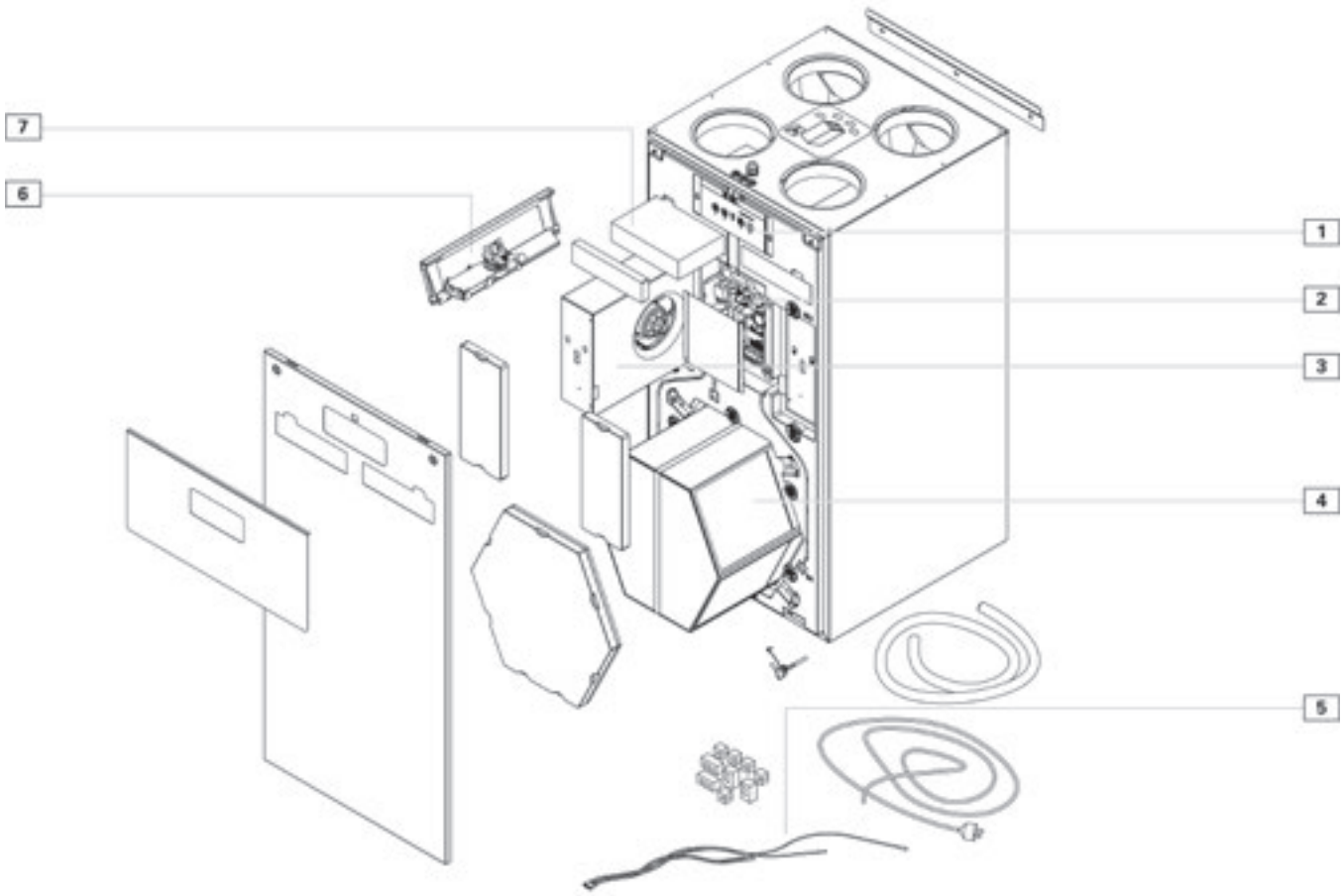
- damage to equipment
- errors while operating the device if the instructions are not followed
- other material damage

Additional notes

Reference to other sections and/or guidelines of the manufacturer

Components prone to ESD

2 Exploded view/list of spare parts



No.	Cat. no.	Item name	Spare part for	PU
1	78301902	Spare part profi-air flex control unit	78304725 / 78304736	1
2	78300905	Spare part profi-air flat/flex control board	78305718 / 78304725 / 78304736	1
3	78301904	Spare part profi-air 250 flex fan	78304725	1
	78301917	Spare part profi-air 360 flex fan	78304736	1
4	78301910	Spare part profi-air 250 flex heat exchanger	78304725	1
	78301916	Spare part profi-air 360 flex heat exchanger	78304736	1
5	78301912	Spare part profi-air flex temperature sensor	78304725 / 78304736	1
6	78301905	Spare part profi-air flex SB actuator	78304725 / 78304736	1
7	78300886	Spare part profi-air flex filter set G4/G4	78304725 / 78304736	1
	78300887	Spare part profi-air flex filter set G4/F7	78304725 / 78304736	1

3 Housing disassembly

Prior to disassembly of the front panel:
De-energize the device (disconnect the mains plug)!

Tools required:
– cordless screwdriver
– bits (TX20)

1

View of closed front.

2

Slightly lift the filter cover and move it upwards.

3

Release the two fixing screws (Torx TX 20) of the front panel.

4

First, tilt the front panel approx. 15° forwards, and then lift it upwards from the lower guide.

4 Removal/installation of control board

Prior to removing the control board:
De-energize the device (disconnect the mains plug)!

Exercise caution when handling the board:
The board is prone to ESD and can be damaged by electrostatic discharge.

To remove the control board, the front panel must be removed first.
To do so, refer to Section 3 Disassembly of front panel.

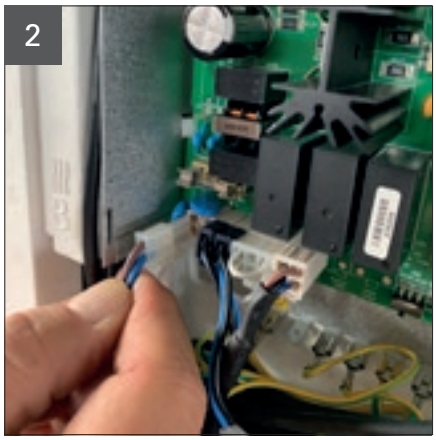
Tools required:
– phase tester (small slotted screwdriver)
– needle-nosed pliers

1

Remove the sheet metal cover of the control board.

To do this, first push the metal pins out of the grooves on one side. Then pull the sheet metal cover forwards.

2



Release J2 terminal – AC power supply voltage (230 VAC). J4 terminal – defroster heater (230 VAC) may need to be released as well.

Note

Prior to disconnecting the cables, mark/label these to ensure proper re-connection.

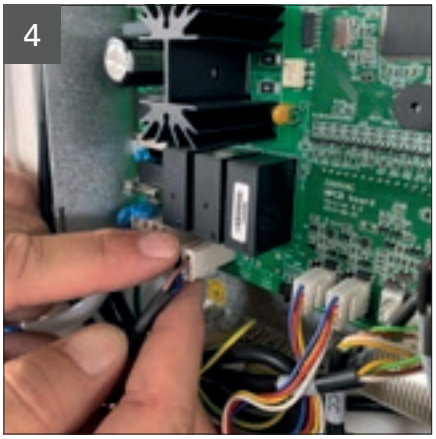
3

Release J4 terminal – fan 1 network connection (230 VAC).
Release J6 terminal – fan 2 network connection (230 VAC).

Note

Prior to disconnecting the cables, mark/label these to ensure proper re-connection.

4

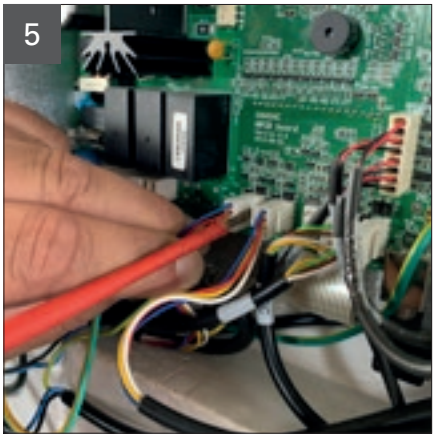


Release J8 terminal – summer bypass (230 VAC).

Note

Prior to disconnecting the cables, mark/label these to ensure proper re-connection.

5

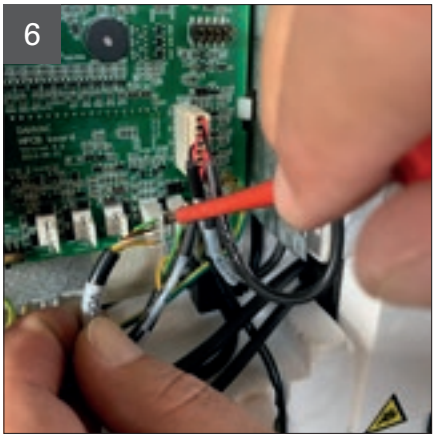


Release J16 terminal – fan 1 signal wiring (0-10 V).
Release J17 terminal – fan 2 signal wiring (0-10 V).

Note

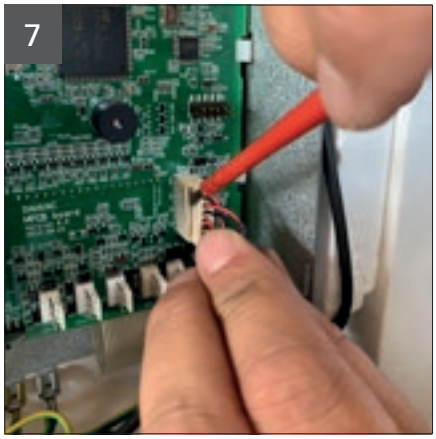
Prior to disconnecting the cables, mark/label these to ensure proper re-connection.

6



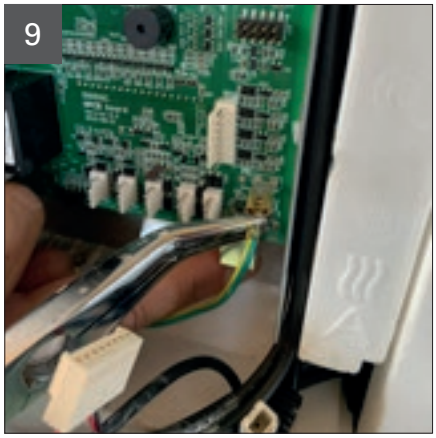
If a humidity sensor or a VOC sensor is installed in the ventilation unit, release the following terminals:

J23 terminal – internal VOC sensor
J5 terminal – internal humidity sensor



Release J9 terminal – temperature sensor.

Release USB plug – laptop connection option.

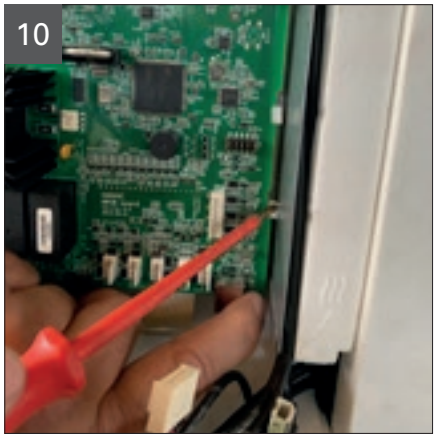


Release J24 terminal – protective conductor.

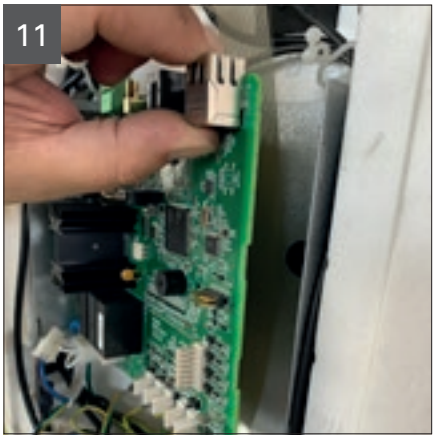
Depending on the device configuration, the following terminals may need to be released as well:

- J1 terminal – digital input
- LAN terminal – network connection
- RS485 terminal – Modbus connection for external control panel or connection box

The location of the terminals is provided in Section 9 Terminal diagram.



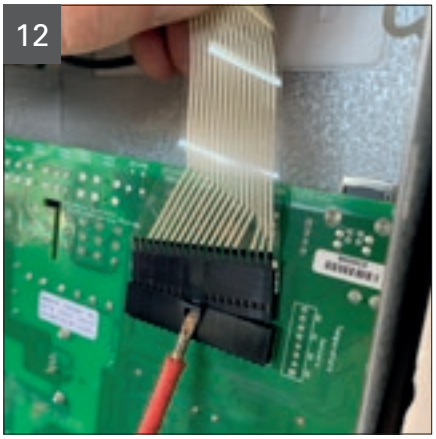
Release both mounting clips on the right side of the board.



Carefully remove the control board from the housing.

Note

Mind the plug with the ribbon cable for the control unit on the back.



Carefully detach the ribbon cable for the control unit on the back of the control board.

Installation of a new control board is carried out in reverse order. Please be sure to re-install and re-connect all cables exactly as you found them.

To do so, refer to Section 9 Terminal diagram.

5 Removal/installation of control panel

Prior to removing the control panel:
De-energize the device (disconnect the mains plug)!

Exercise caution when handling the board:
The board is prone to ESD and can be damaged by electrostatic discharge.

To remove the control panel, the front panel and the control board must be removed first. To do so, refer to Section 3 Disassembly of front panel and Section 4 Removal/installation of control board.

Tools required:
– small screwdriver PH1
– small screwdriver TX20
– needle-nosed pliers

As soon as the ribbon cable for the control unit on the back of the control board has been disconnected (see Section 4 Removal/ installation of control board), proceed with the next steps.

Slightly release the two fixing screws (TX20).

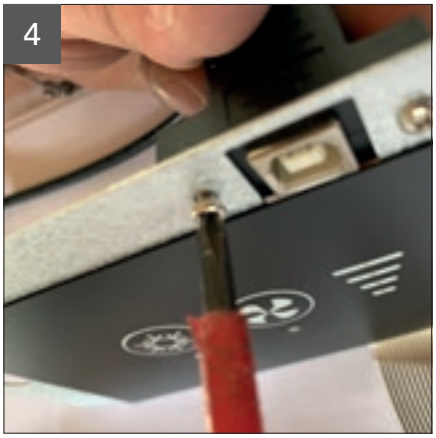
2

Slightly move the control unit upwards and lift it.

3

Release the protective conductor on the back of the control unit.

4



Release the fixing screws of the USB connection.

Installation of the new control panel is carried out in reverse order.
Please be sure to re-install and re-connect all cables exactly as you found them.
To do so, refer to Section 9 Terminal diagram.

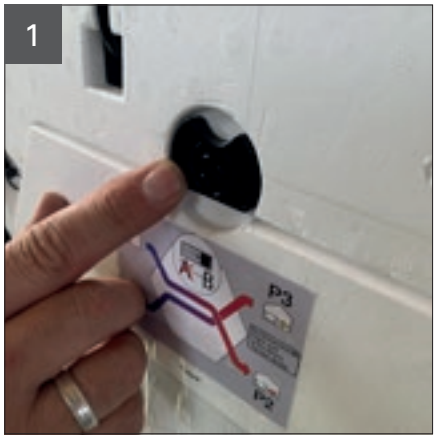
6 Removal/installation of heat exchanger

Prior to removing the temperature sensors:
De-energize the device (disconnect the mains plug)!

To remove the heat exchanger, the front panel must be removed first.
To do so, refer to Section 3 Disassembly of front panel.

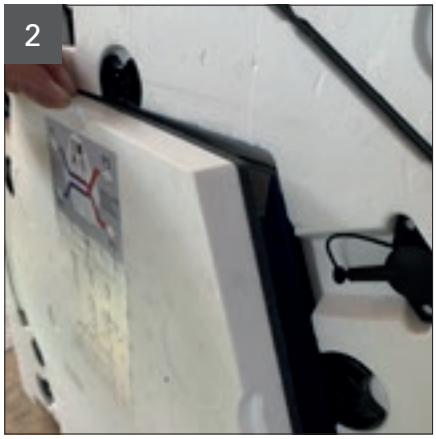
Position of the heat exchanger interlocks

1



Open the seven interlocks at the EPS casing.

2



Remove the EPS cover of the heat exchanger.

3

Carefully pull out the heat exchanger from the EPS housing of the ventilation unit.

Note

Leakage of condensate water may occur.

Note

The image shows the removal of an enthalpy heat exchanger.

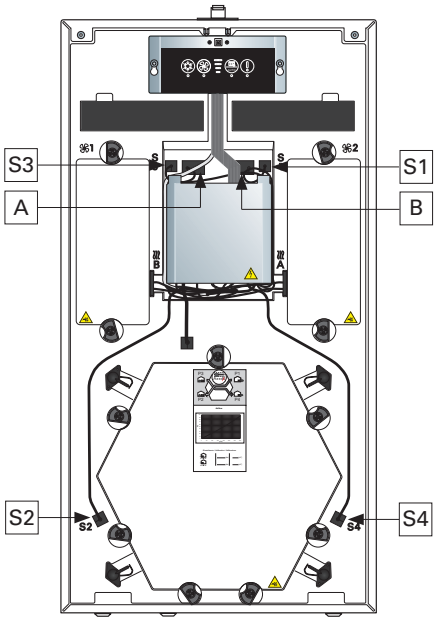
Installation of the heat exchanger is carried out in reverse order.

7 Removal/installation of temperature sensors

Prior to removing the temperature sensor:
De-energize the device (disconnect the mains plug)!

Exercise caution when handling the board:
The board is prone to ESD and can be damaged by electrostatic discharge.

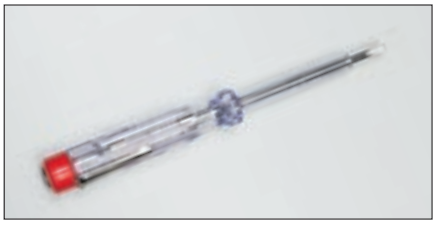
To remove the temperature sensors, the front panel and the heat exchanger must be removed first. To do so, refer to Section 3 Disassembly of front panel and Section 5 Removal/installation of heat exchanger.



Overview of sensor positions:

Name	Operating mode A (delivery condition)
S1	T1 fresh air temperature sensor
S2	T2 supply air temperature sensor
S3	T3 extract air temperature sensor
S4	T4 exhaust air temperature sensor
A	Optional humidity and/or VOC sensor
B	–

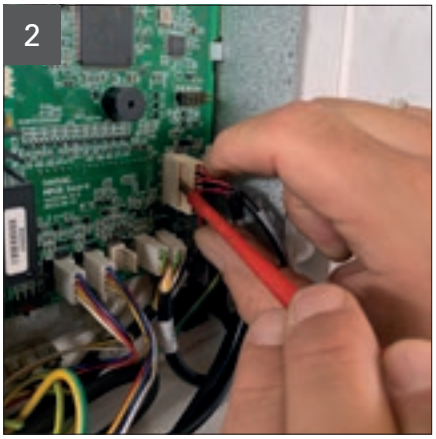
Name	Operating mode B
S1	T3 extract air temperature sensor
S2	T4 exhaust air temperature sensor
S3	T1 fresh air temperature sensor
S4	T2 supply air temperature sensor
A	–
B	Optional humidity and/or VOC sensor



Tools required:
- phase tester (small slotted screwdriver)

Remove the sheet metal cover of the control board.

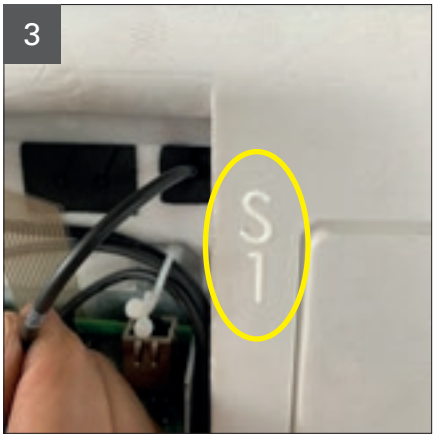
To do this, first push the metal pins out of the grooves on one side. Then pull the sheet metal cover forwards.



Pull out J9 terminal – 8-pole flat plug.

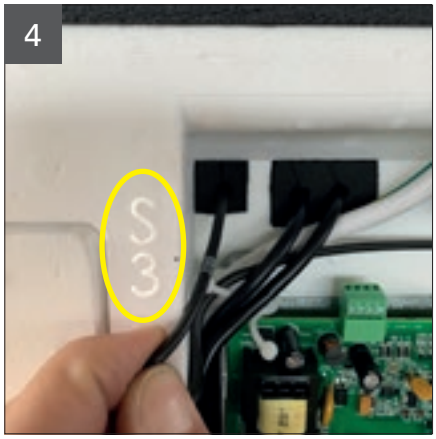
Note

Always replace all four temperature sensors.



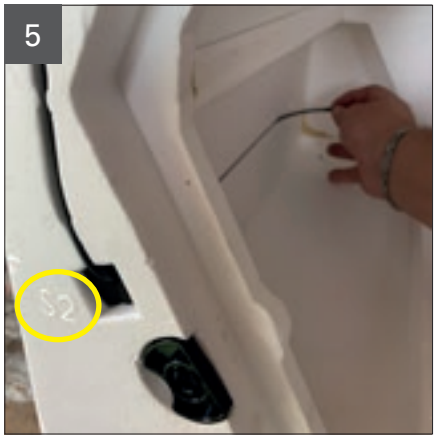
Removing the S1 sensor:

Pull the sensor cable through the cable feed-through.



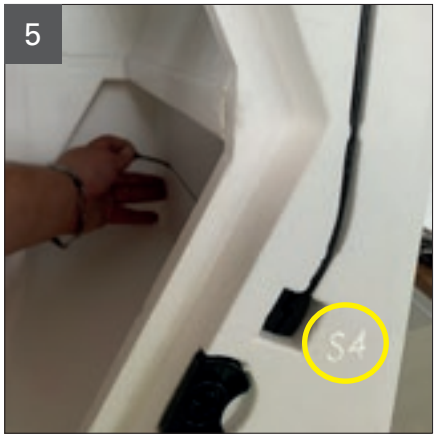
Removing the S3 sensor:

Pull the sensor cable out of the EPS guiding fixtures and through the cable feed-through.



Removing the S2 sensor:

Pull the sensor cable out of the EPS guiding fixtures and through the cable feed-through.



Removing the S4 sensor:

Pull the sensor cable out of the EPS guiding fixtures and through the cable feed-through.

Installation of the new temperature sensors is carried out in reverse order. Please be sure to re-install, re-connect and re-assemble all cables/cable sealings exactly as you found them.

To do so, refer to Section 9 Terminal diagram.

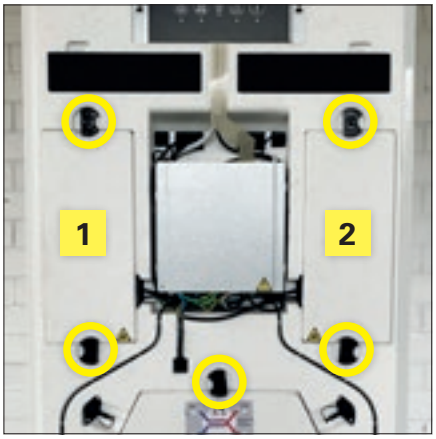
8 Removal/installation of fans

Prior to removing the fan:
De-energize the device (disconnect the mains plug)!

Exercise caution when handling the board:
The board is prone to ESD and can be damaged by electrostatic discharge.

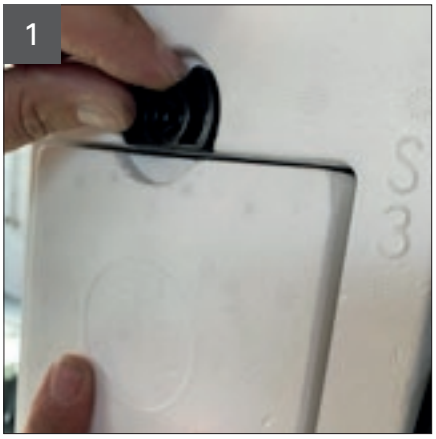
To remove the fans, the front panel must be removed first.
To do so, refer to Section 3 Disassembly of front panel.

Tools required:
- phase tester (small slotted screwdriver)
- needle-nosed pliers
- cordless screwdriver
- bit Torx T20



Positions of the fan interlocks:

Name	Operating mode A (delivery condition)	Operating mode B
1	Extract air fan	Supply air fan
2	Supply air fan	Extract air fan



Open the respective interlocks.

Note

The image shows the disassembly of fan 1.

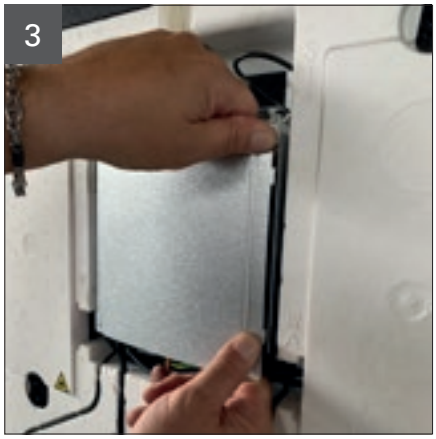
2

Remove the EPS cover of the heat exchanger.

Note

The image shows the disassembly of fan 1.

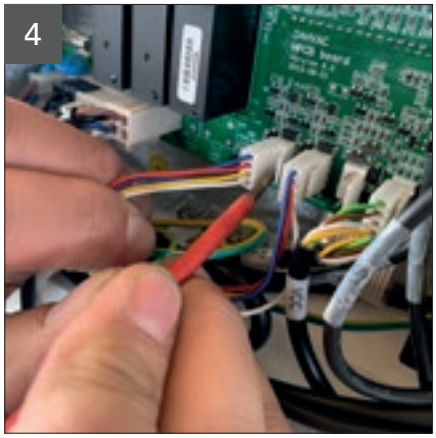
3



Remove the sheet metal cover of the control board.

To do this, first push the metal pins out of the grooves on one side.
Then pull the sheet metal cover forwards.

4



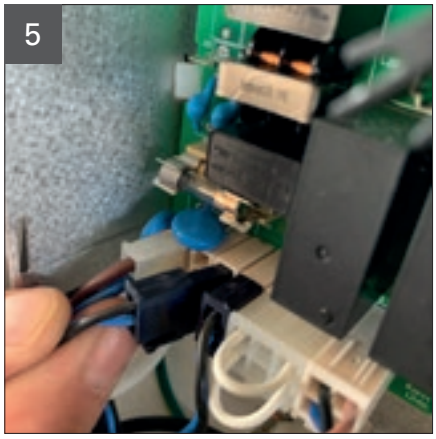
Disconnection of the respective control cable (0-10 V):

- J16 terminal for fan 1
- J17 terminal for fan 2

Note

The image shows the disassembly of fan 1.

5



Disconnection of the respective power supply (230 VAC):

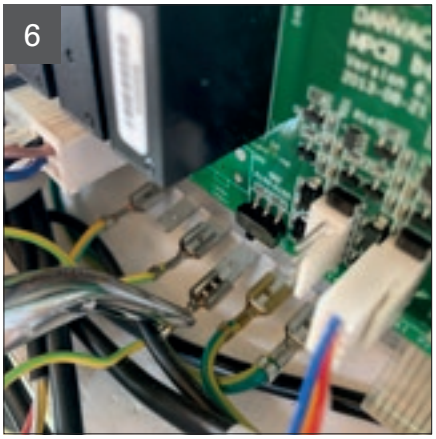
- J6 terminal for fan 1
- J7 terminal for fan 2

J4 terminal – defroster heater (230 VAC) may need to be released as well.

Note

The image shows the disassembly of fan 1.

6

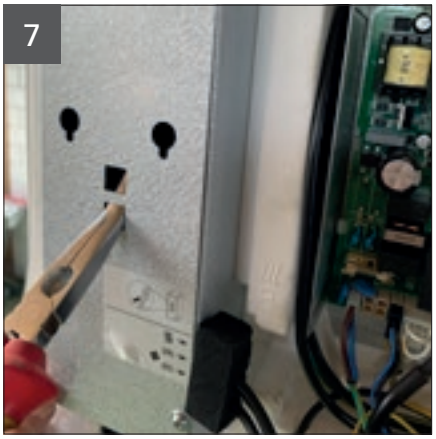


Disconnection of the respective PE protective conductor – terminal at the metal housing of the control board (bottom)

Note

The image shows the disassembly of fan 1.

7



Extract the fan housing.

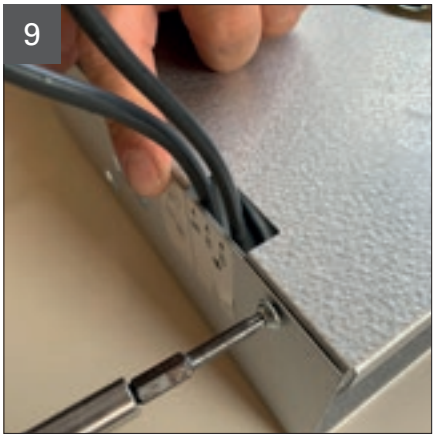
Note

The image shows the disassembly of fan 1.

8

Remove the cable sealing.

9



Release the lateral housing screws,
2x on the left, 2x on the right (TX 20).

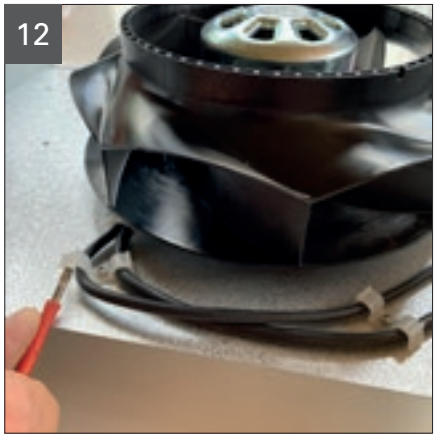
10

Release the housing screws on the back
2x (TX 20).

11

Lift the housing cover. Avoid damaging the cables.

12



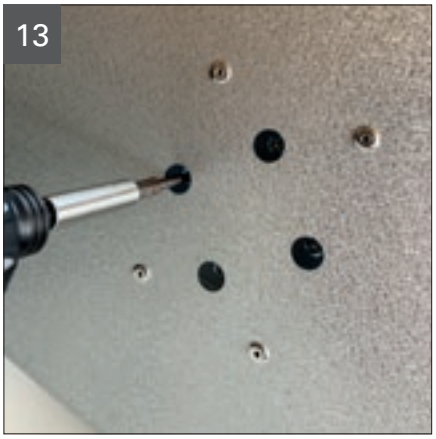
Slightly lift the cable holders and remove the cables.

Note

Pay attention to cable route during disassembly to properly re-install the cable later.

Note

The image shows the disassembly of fan 1.



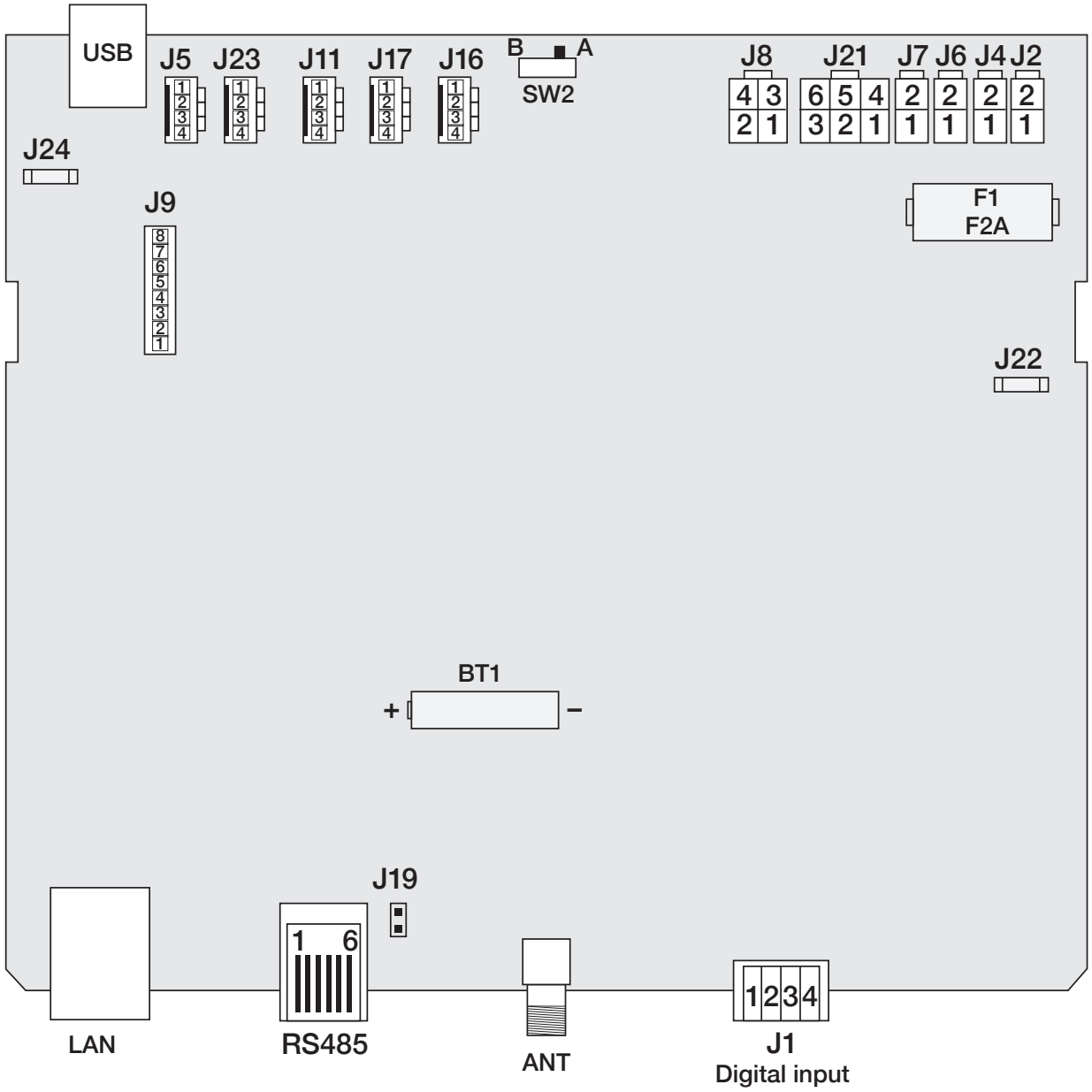
Release the four fixing screws of the fan on the back (TX 20).

Installation of the new fan is carried out in reverse order. Please be sure to re-install, re-connect and re-assemble all cables/cable sealings exactly as you found them.

To do so, refer to Section 9 Terminal diagram.

After the assembly of the fan housing has been accomplished, check whether the fan can rotate freely.

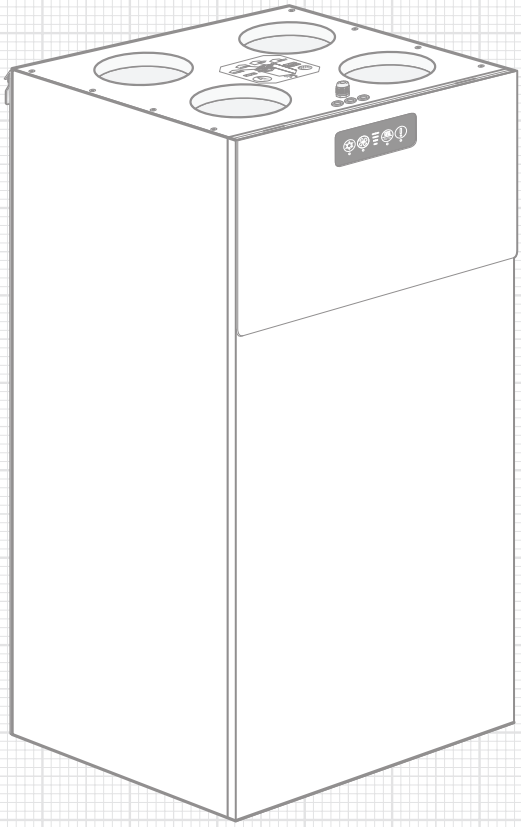
9 Terminal diagram



No.	Connection description	No.	Value
J1	Digital input	2	Input 1 can be programmed using the profi-air cockpit pro software
		4	
		3	Input 2 can be programmed using the profi-air cockpit pro software
		4	
J2	AC mains inlet	1	L – 230 VAC
		2	N – 230 VAC
J4	Defroster heater network connection	1	L – 230 VAC
		2	N – 230 VAC
J5	Connection for internal humidity sensor	1	Power
		2	SCK
		3	SDA
		4	GND
J6	Fan 1 network connection	1	L – 230 VAC
		2	N – 230 VAC
J7	Fan 2 network connection	1	L – 230 VAC
		2	N – 230 VAC
J8	Summer bypass flap connection	1	L / open – 230 VAC
		2	L / closed – 230 VAC
		3	Neutral
		4	–
J9	Connection for internal temperature sensors	1 / 2	S3
		3 / 4	S4
		5 / 6	S1
		7 / 8	S2
J16	Fan 1 signal wiring	1	Tachometer
		2	V Fan 0–10 V
		3	V Ref 10 V
		4	GND
J17	Fan 2 signal wiring	1	Tachometer
		2	V Fan 0–10 V
		3	V Ref 10 V
		4	GND
J23	Connection for internal VOC sensor	1	Power
		2	SCK
		3	SDA
		4	GND
RS485	Modbus connection for external control panel or connection box	1	Power
		2	GND
		3	Shield
		4	RS485_A
		5	RS485_B
		6	GND
F1	Mainboard fuse	6	250 V / 2A fast-acting / 5 x 20 mm
J22 / J24	Protective conductor (PE)		
ANT	Connection for wireless remote control antenna		

Notes

Notes



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