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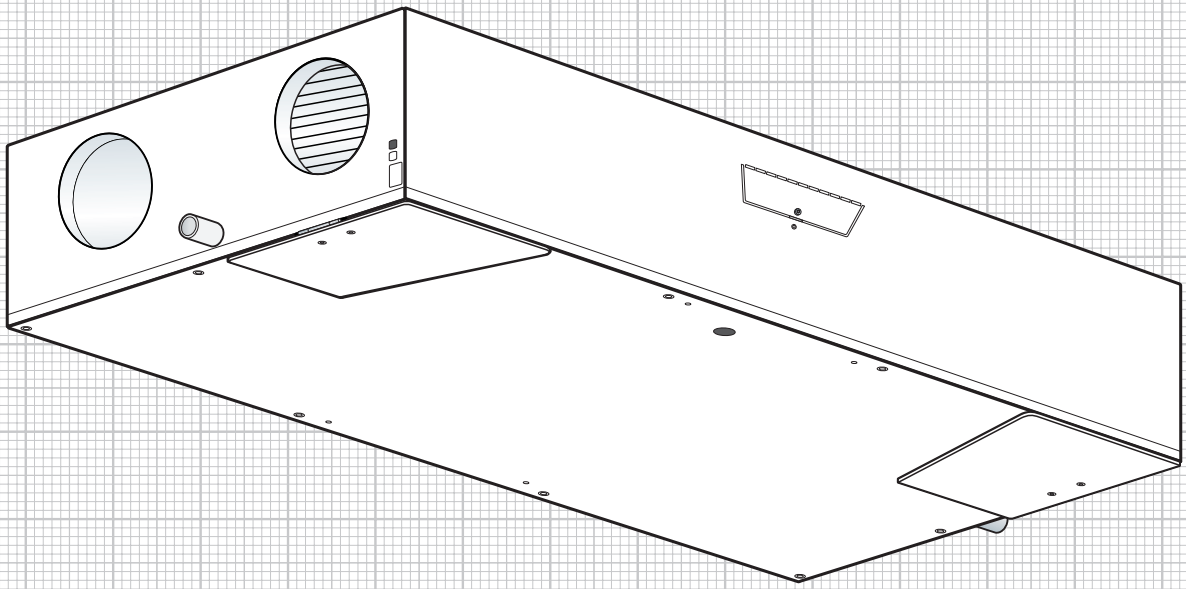
Installation instructions

profi-air® 180 flat spare parts



Building Technology
www.fraenkische.com

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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 180 flat ventilation unit 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 device 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 and/or damage to profi-air 180 flat.

1.2.1 Safety regulations

- Authorised and qualified personnel only can open profi-air 180 flat sensor in order to replace the parts as described in these installation instructions.
- Repair of profi-air 180 flat sensor is to be carried out according to the applicable local construction, safety and installation regulations.
- Non-authorised changes or modifications of profi-air 180 flat sensor and/or profi-air spare parts are not allowed.

1.2.2 Safety equipment and measures

- The profi-air 180 flat sensor 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 180 flat sensor 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:

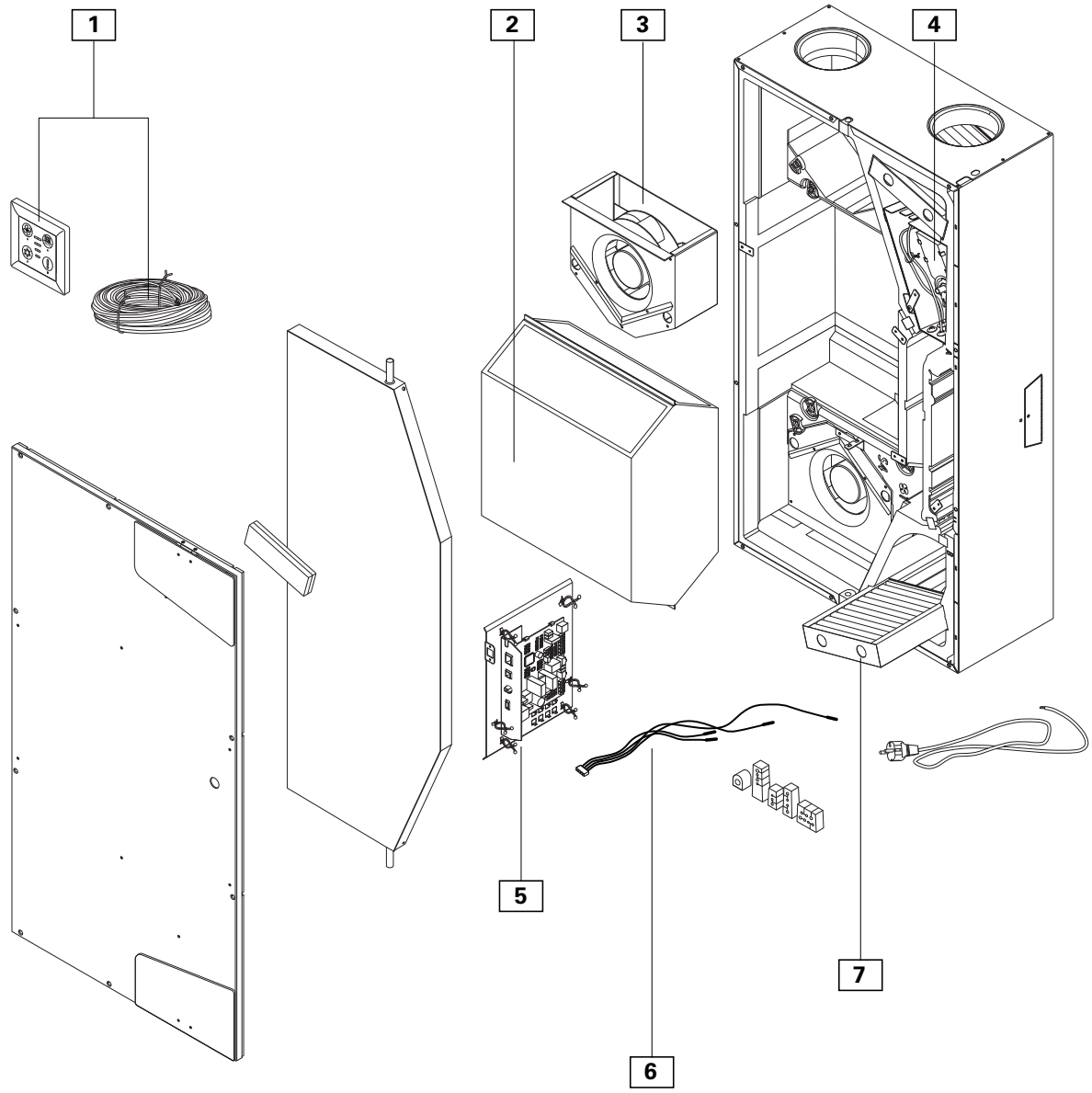
- damage to equipment
- errors while operating the device if the instructions are not followed correctly
- other material damage

Additional notices

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 description	Spare part for	PU
1	78300910	Spare part profi-air 180 flat control unit	78305718	1
2	78300903	Spare part profi-air 180 flat heat exchanger	78305718	1
3	78300904	Spare part profi-air 180 flat fan	78305718	1
4	78300912	Spare part profi-air 180 flat summer bypass actuator	78305718	1
5	78300905	Spare part profi-air 180 flat control board	78305718	1
6	78300906	Spare part profi-air 180 flat set of temperature sensors	78305718	1
7	78300884	Spare part profi-air 180 flat filter set G4 / G4	78305718	1
	78300885	Spare part profi-air 180 flat filter set G4 / F7	78305718	1

3 Housing disassembly

3.1 Disassembly of front panel

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

The front panel is attached by means of screws only and shall thus be secured against falling down during disassembly.

1

Tools required:
– cordless screwdriver
– bits (cross-head PH 2)

2

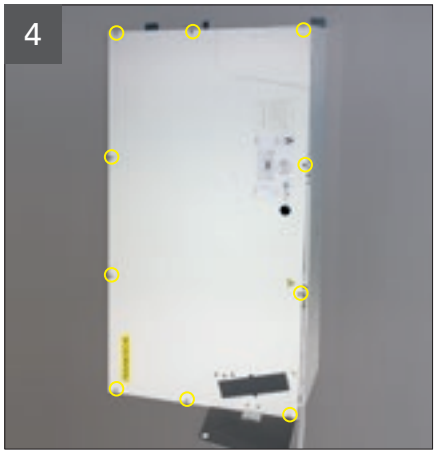
Important

De-energize the device prior to disassembly of the front panel (disconnect the mains plug).

3

Open both service flaps of filters and remove the respective cross-head screws (PH 2) located behind them.

4



Remove the other 8 screws.

Remove the front panel.

Important

The front panel is attached by means of these 10 screws only – be sure to secure the front panel against falling down during disassembly.

3.2 Disassembly of condensate drip tray

Condensate water may occur in the condensate drip tray or condensate hose. Please collect it when removing the condensate hose.

To disassemble the condensate drip tray, the front panel must be removed first. To do so, refer to 3.1 Disassembly of front panel.

Tools required:
– screwdriver (cross-head)

1

2

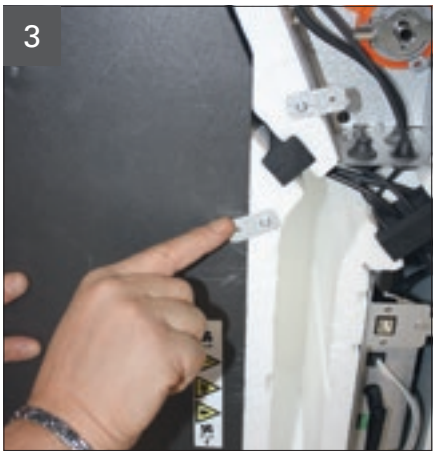
Release the hose clamp (screwdriver).

Pull out the condensate hose.

Note

Leakage of condensate water may occur.

3



Turn the 4 safety brackets of the condensate drip tray to the side.

Carefully remove the condensate drip tray.

4 Removal / installation of control board

4.1 Releasing control board support

Prior to releasing the control board support:
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 support, the front panel must be removed first.
To do so, refer to 3.1 Disassembly of front panel.

Turn the safety bracket of the
control board support to the side.

2

Release the connection of the external control panel.

3

Carefully pull out the control board support along the guiding fixture of the EPS core.

4

Note

The control board support is not secured any further.
Please hold it in the depicted position.
This must particularly be observed during
ceiling installation of the ventilation unit.

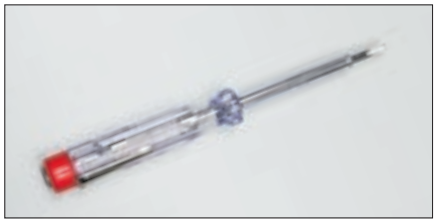
If works take longer, we advice that the control board support be secured at the housing, e.g., by means of cable ties.

4.2 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 and the control board support must be released first. To do so, refer to 3.1 Disassembly of front panel and 4.1 Releasing control board support.

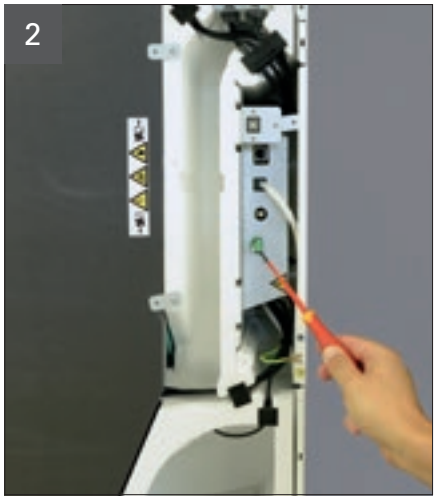


Tools required:
– phase tester (small slotted screwdriver)

Unscrew the antenna.

Note

Option required with installed wireless remote control only.



J1 terminal - digital input (bridge for condensate pump)
– remove the plug.

Note

Re-connect the plug at the new board. If there is no plug, the ventilation unit will not start.

3

Release J2 terminal – AC power supply voltage (230 VAC).
If required, release J4 terminal – defroster heater.

Note

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

4

Release J6 terminal - fan 1 network connection (230 VAC).
Release J7 terminal - fan 2 network connection (230 VAC).

Note

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

5

Release J8 terminal - summer bypass (230 VAC).

Note

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

6

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.

7

Release J9 terminal - temperature sensors.

If required, release J5 terminal – internal humidity sensor.
If required, release J23 terminal – internal VOC sensor.

Note

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

8

Remove USB data connector.

Note

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

9

Remove earthing terminals.

Note

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

10

Carefully release the 4 mounting clips and remove the board.

Installation of a new 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 9 Terminal diagram.

5 Removal / installation of summer bypass actuator

Prior to removing the summer bypass actuator:
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 summer bypass actuator, the front panel must be removed first.
If it is necessary to replace the cable of the actuator as well, release the control board support, too.
To do so, refer to 3.1 Disassembly of front panel / 4.1 Releasing control board support.

Tools required:
– phase tester (small slotted screwdriver)
– wrench (SW 8)
– wire cutter

Release J8 terminal - summer bypass (230 VAC).

Note

If it is necessary to replace the servomotor only,
steps 1 and 3 are not required.

Release connection cables at the actuator
(phase tester or small slotted screwdriver).

Note

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

Remove the cable of the actuator.
To do so, release cable ties and pull
the cable through the cable feed-through.

Release the fixing screw (wrench SW8).

Set the magnet to the released position (labelling: "magnetic gear release") of the actuator (the magnet is included in the scope of delivery of the replacement actuator).

The actuator is then de-coupled and the shaft can be easily turned by hand.

Release the lateral mounting clips.

Evenly pull the actuator from the shaft.

Note

When installing a new actuator, please make sure that the new actuator is set to the same limit stop value as the removed old actuator.

Installation of the new actuator 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 9 Terminal diagram.

6 Removal / installation of temperature sensors

Prior to removing the temperature sensors:
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 condensate drip tray must be removed, and the control board support must be released first. To do so, refer to 3.1 Disassembly of front panel, 3.2 Disassembly of condensate drip tray and 4.1 Releasing control board support.

Tools required:
– phase tester (small slotted screwdriver)
– wire cutter

1

Pull out J9 terminal – 8-pole flat plug (phase tester).

Note

Always replace all 4 temperature sensors.

2

Remove all 4 temperature sensor cables from the board.

Note

To remove the cables of the temperature sensors,
some cable ties need to be removed first (wire cutter).
Replace these cable ties when installing new temperature sensors.

3

Installation position of temperature sensor 4

Note

Operating mode A - exhaust air temperature sensor T 4
Operating mode B - supply air temperature sensor T 2

4

Installation position of temperature sensor 3

Note

Operating mode A - extract air temperature sensor T 3
Operating mode B - fresh air temperature sensor T 1

5

Installation position of temperature sensor 2

Note

Operating mode A - supply air temperature sensor T 2
Operating mode B - exhaust air temperature sensor T 4

6

Installation position of temperature sensor 1

Note

Operating mode A - fresh air temperature sensor T 1
Operating mode B - extract air temperature sensor T 3

Installation of the new temperature sensors 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 9 Terminal diagram.

7 Removal / installation of fans

Prior to removing the fans:
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 and the condensate drip tray must be removed, and the control board support must be released first. To do so, refer to 3.1 Disassembly of front panel, 3.2 Disassembly of condensate drip tray and 4.1 Releasing control board support.

Tools required:
– phase tester (small slotted screwdriver)
– wire cutter
– cordless screwdriver
– bit Torx T20

1

Disconnect the mains line of the fan to be replaced.
Terminal J6 and/or J7

Note

Operating mode A - terminal J6: extract air fan
terminal J7: supply air fan
Operating mode B - terminal J6: supply air fan
terminal J7: extract air fan

2

Disconnect the signal wiring of the fan to be replaced.
Terminal J16 and/or J17

Note

Operating mode A - terminal J16: extract air fan
terminal J17: supply air fan
Operating mode B - terminal J16: supply air fan
terminal J17: extract air fan

3

Remove cable ties (wire cutter).

Note

To remove the cables of fans, some cable ties need to be removed first (wire cutter).
Replace these cable ties when installing new fans.

Thread the disconnected cables from the cable feed-through.

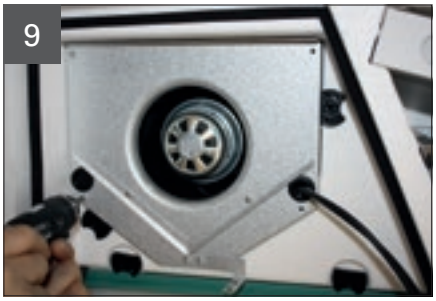
Thread the temperature sensor out of the support at the fan.

The fan housing is secured with two safety levers. Turn the safety levers until the fan can be pulled out.

Carefully pull out the fan housing.

Now extract the fan from the fan housing.

9



The 6 screws at the front cover of the fan housing need to be removed first (Torx T20).

10

Remove the cover.

11

Release cable ties (wire cutter).

Note

Replace these cable ties after installing the new fan.

12

Release the 4 inner screws on the rear side of the fan housing (Torx T20).

Installation of the new fan is carried out in reverse order.
Please be sure to re-install and re-connect all cables exactly as you found them.
Removed cable ties need to be replaced. To do so, refer to 9 Terminal diagram.

8 Removal / installation of heat exchanger

Prior to removing the heat exchanger:
Switch off the device at the main switch and disconnect the mains plug at the device!

To remove the heat exchanger, the front panel and the condensate drip tray must be removed first.
To do so, refer to 3.1 Disassembly of front panel and 3.2 Disassembly of condensate drip tray.

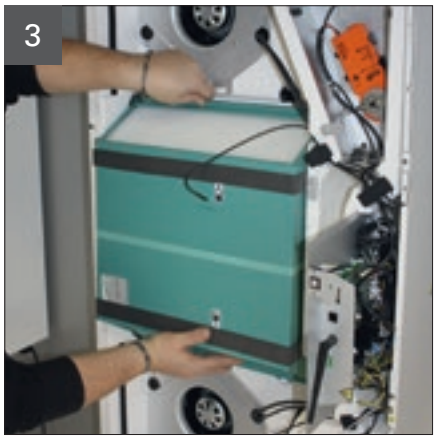
1

Open the 4 safety levers at the heat exchanger.

2

See labels for the installation direction of the heat exchanger.

3



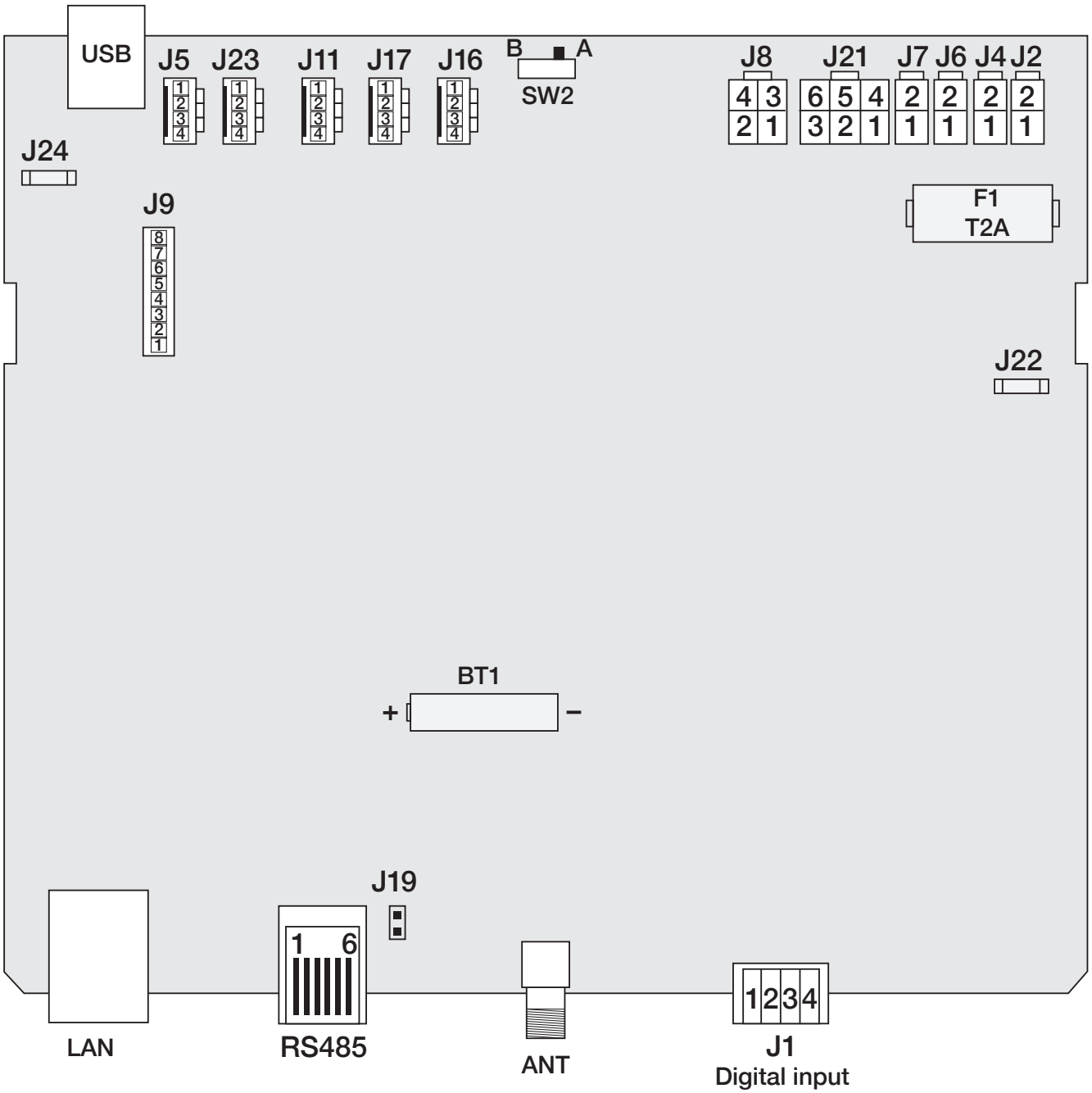
Carefully extract the heat exchanger from the ventilation unit.

Note

Leakage of condensate water may occur.

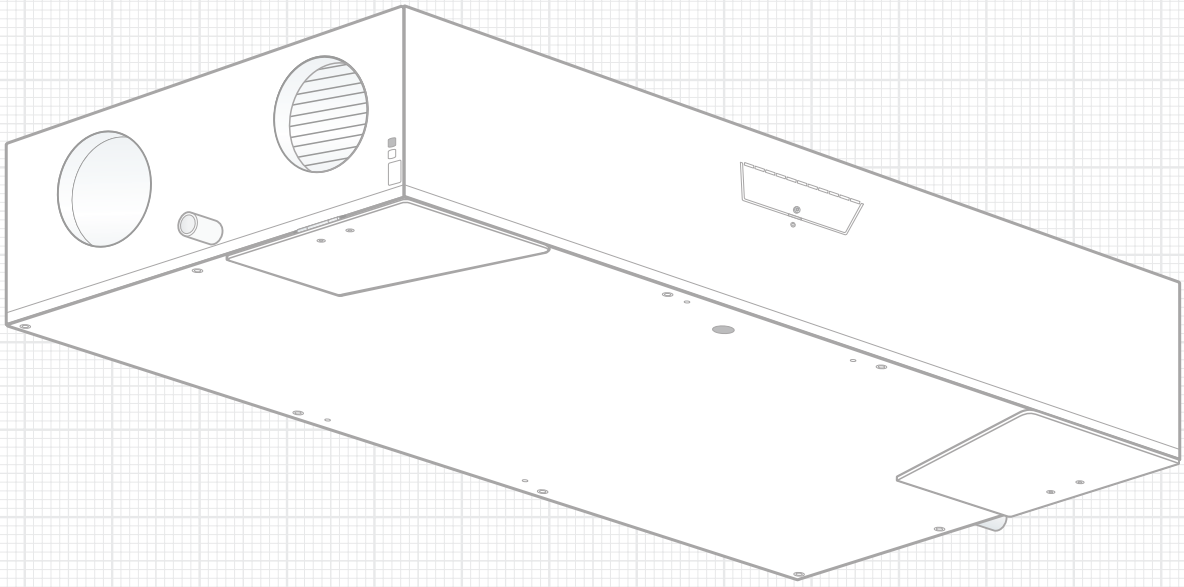
Installation of the new heat exchanger is carried out in reverse order.

9 Terminal diagram



No.	Connection description	No.	Value
J1	Digital input	2	Input 1 programmable with software profi-air cockpit pro
		4	
		3	Input 2 programmable with software profi-air cockpit pro
		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 flink / 5 x 20 mm
J22 / J24	Protective conductor (PE)		
ANT	Connection for wireless remote control antenna		

Notizen



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