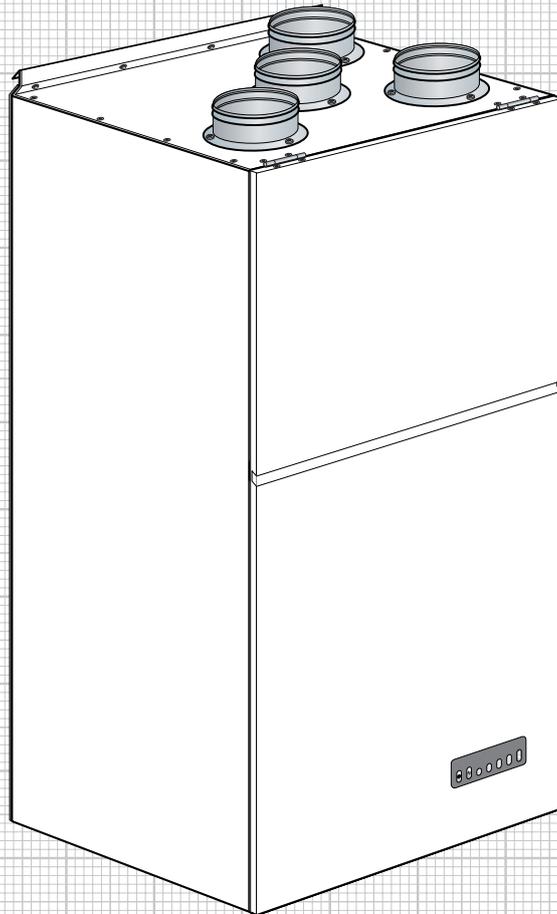


Installation instructions

# profi-air® 180/300 sensor spare parts



# Table of contents

<b>1 General information</b>	<b>3</b>	<b>7 Removal/installation of fans</b>	<b>20</b>
1.1 Introduction	3	7.1 Removal/installation of supply air fan	20
1.2 Safety	3	7.2 Removal/installation of exhaust air fan	22
<b>2 Exploded view/list of spare parts</b>	<b>4</b>	<b>8 Removal/installation of heat exchanger</b>	<b>24</b>
2.1 profi-air 180 sensor	4	<b>9 Removal/installation of control panel</b>	<b>25</b>
2.2 profi-air 300 sensor	4	<b>10 Removal/installation of switch for filter timer</b>	<b>26</b>
<b>3 Housing disassembly</b>	<b>6</b>	<b>11 Removal/installation of safety switch (profi-air 180 sensor only)</b>	<b>27</b>
3.1 Disassembly of bottom front panel	6	<b>12 Removal/installation of connector panel</b>	<b>28</b>
3.2 Disassembly of EPS front panel	8	<b>13 Terminal diagram</b>	<b>30</b>
<b>4 Removal/installation of control board</b>	<b>9</b>		
<b>5 Removal/installation of summer bypass actuator</b>	<b>12</b>		
<b>6 Removal/installation of sensors</b>	<b>15</b>		
6.1 Removal/installation of temperature sensors	15		
6.2 Removal/installation of humidity sensors	18		

# 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 180/300 sensor 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 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 or damage to profi-air 180/300 sensor.

### 1.2.1 Safety regulations

- Authorised and qualified personnel only can open profi-air 180/300 sensor in order to replace the parts as described in these installation instructions.

Repair of profi-air 180/300 sensor is to be carried out according to the applicable local construction, safety and installation regulations.

Non-authorised changes or modifications of profi-air 180/300 sensor and/or profi-air spare parts are not allowed.

### 1.2.2 Safety equipment and measures

- The profi-air 180/300 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 180/300 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**



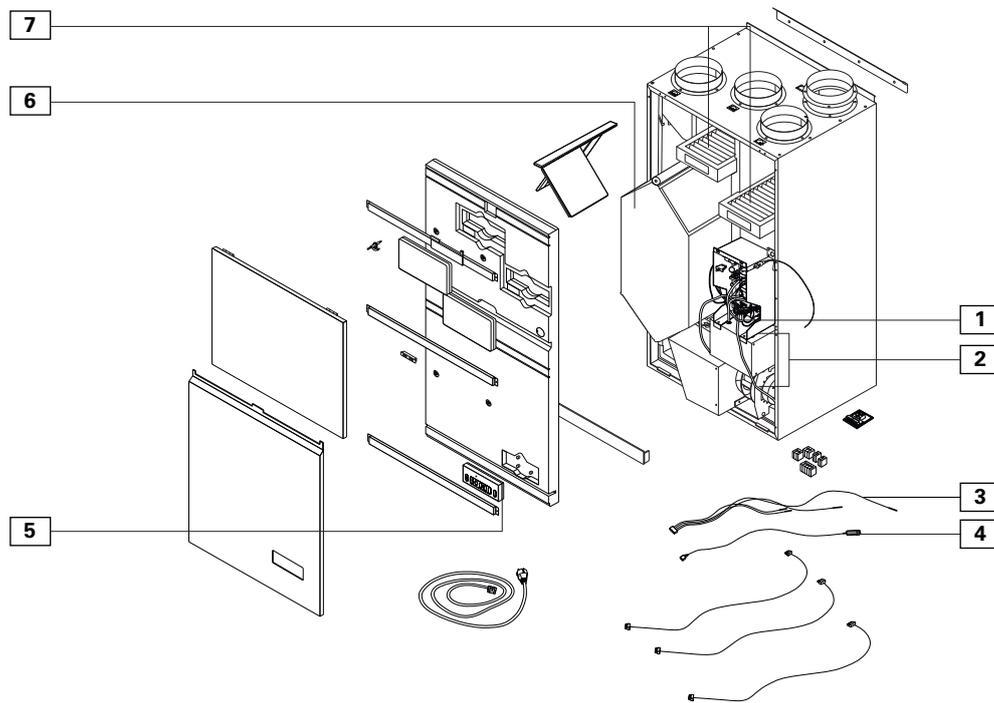
**Reference to other sections and/or guidelines of the manufacturer**



**Components prone to ESD**

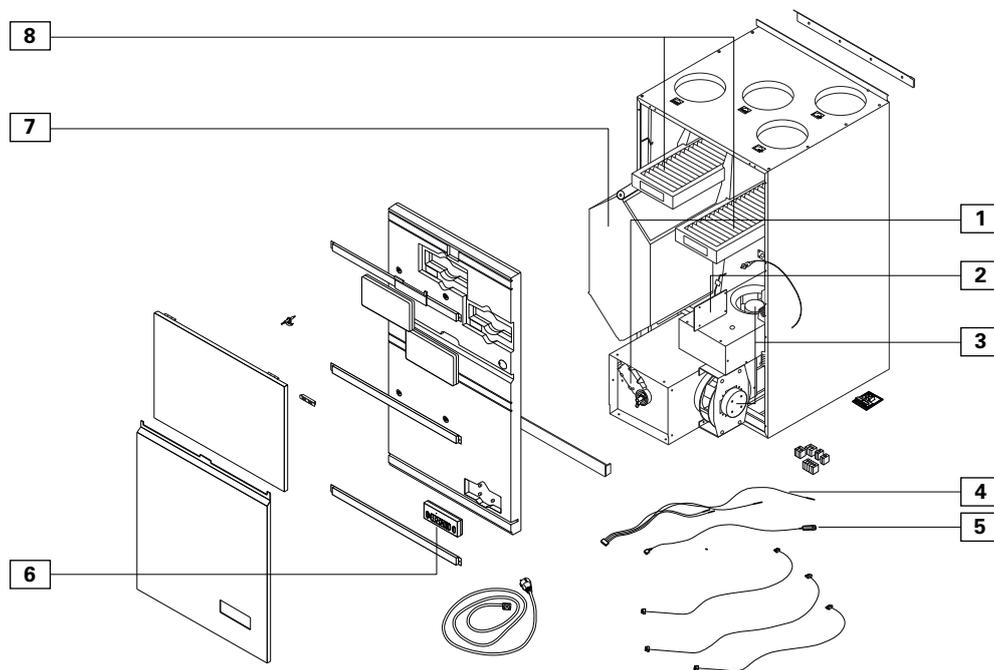
## 2 Exploded view/list of spare parts

### 2.1 profi-air 180 sensor



No.	Cat. no.	Item description	Spare part for	PU
1	78300941	Spare part profi-air 180 sensor control board	78300718	1
2	78300942	Spare part profi-air 180 sensor fan	78300718	1
3	78300923	Spare part profi-air sensor temperature sensor set	78300718 / 78300730	1
4	78300924	Spare part profi-air sensor humidity sensor	78300718 / 78300730	1
5	78300929	Spare part profi-air sensor control unit	78300718 / 78300730	1
6	78300949	Spare part profi-air sensor heat exchanger	78300718	1
7	78300880	Spare part profi-air 180 sensor filter set G4/G4	78300718	1
	78300881	Spare part profi-air 180 sensor filter set G4/F7	78300718	1

## 2.2 profi-air 300 sensor



No.	Cat. no.	Item description	Spare part for	PU
1	78300960	Spare part profi-air 300 sensor summer bypass actuator	78300730	1
2	78300962	Spare part profi-air 300 sensor control board	78300730	1
3	78300961	Spare part profi-air 300 sensor fan	78300730	1
4	78300923	Spare part profi-air sensor temperature sensor set	78300718 / 78300730	1
5	78300924	Spare part profi-air sensor humidity sensor	78300718 / 78300730	1
6	78300929	Spare part profi-air sensor control unit	78300718 / 78300730	1
7	78300969	Spare part profi-air 300 sensor heat exchanger	78300730	1
8	78300882	Spare part profi-air 300 sensor filter set G4/G4	78300730	1
	78300883	Spare part profi-air 300 sensor filter set G4/F7	78300730	1

## 3 Housing disassembly

### 3.1 Disassembly of bottom front panel

---



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



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



View of closed front.



Fold open the front panel upwards  
and latch the support at the left housing side wall.



Release the two fixing screws (cross-head PH 2) of the bottom front panel.



First, tilt the bottom front panel approx. 25° forward, and then lift it upwards from the lower guide.

### 3.2 Disassembly of EPS front panel

---



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



**To disassemble the EPS front panel, the bottom front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel.**



Tools required:  
– cordless screwdriver  
– bits (Allen key HOP 2)



First, you have to remove the 3 fastening rails.  
To do so, release the 2 Allen screws (HOP 2) and remove the rails.

**Note**

Recommended disassembly sequence:  
top - middle - bottom



Carefully remove the control unit from the EPS front panel.



Carefully remove the EPS front panel.



## 4 Removal/installation of control board



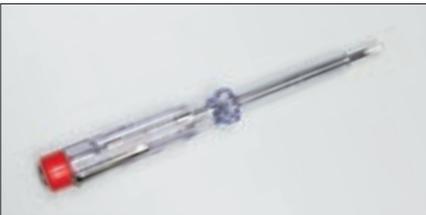
**Prior to removing the control board:  
De-energize the device (disconnect the mains plug)!**



**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 bottom front panel and the EPS front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



Tools required:  
– phase tester (small slotted screwdriver).



Release J1 terminal – AC power supply voltage (230 VAC).

### Note

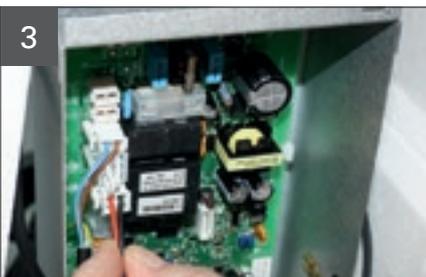
Prior to disconnecting the cables, mark/label these to ensure proper re-connection.



Release J3 terminal - exhaust air fan network connection (230 VAC).  
Release J5 terminal - supply air fan network connection (230 VAC).

### Note

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



Release J6 terminal - summer bypass (230 VAC).

### Note

Only for profi-air 300 sensor ventilation units.

### Note

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



Release J4 terminal - supply air fan signal wiring (0-10 V).  
Release J2 terminal - exhaust air fan signal wiring (0-10 V).

**Note**

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



Release J14 terminal - extract air humidity sensor.

**Note**

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



Release J10 terminal - filter reset.

**Note**

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



Release J7 terminal - temperature sensors.

**Note**

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



Release J12 terminal - control panel.

**Note**

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



Remove earthing terminals.

**Note**

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



Carefully release the 5 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 13 Terminal diagram.**

## 5 Removal/installation of summer bypass actuator



Only for profi-air 300 sensor ventilation units.



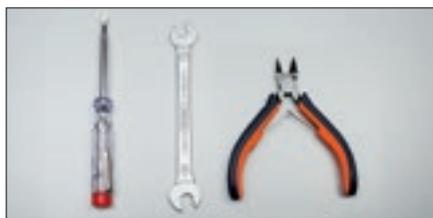
Prior to removing the summer bypass actuator:  
De-energize the device (disconnect the mains plug)!



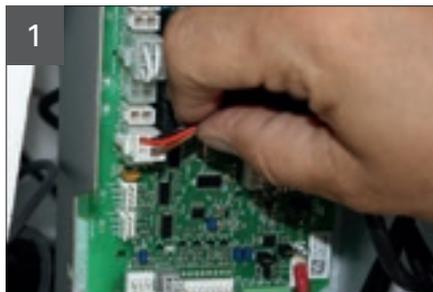
Exercise caution when handling the board:  
The board is prone to ESD and can be damaged by electrostatic discharge.



To remove the summer bypass actuator, the front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.



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



Release J6 terminal - summer bypass (230 VAC).

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

**Note**

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



Release connection cables at the actuator (phase tester or small slotted screwdriver).  
Strain relief - remove cable ties.

**Note**

Replace removed cable ties when installing.

**Note**

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



Remove the cable of the actuator.  
To do so, the cable must be removed from 3 cable feed-throughs.



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.



**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.**  
**Removed cable ties need to be replaced.**  
**To do so, refer to 13 Terminal diagram.**

## 6 Removal/installation of sensors

### 6.1 Removal/installation of temperature sensors



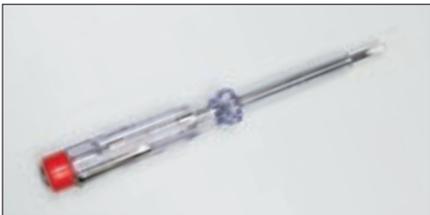
**Prior to removing the temperature sensors:  
De-energize the device (disconnect the mains plug)!**



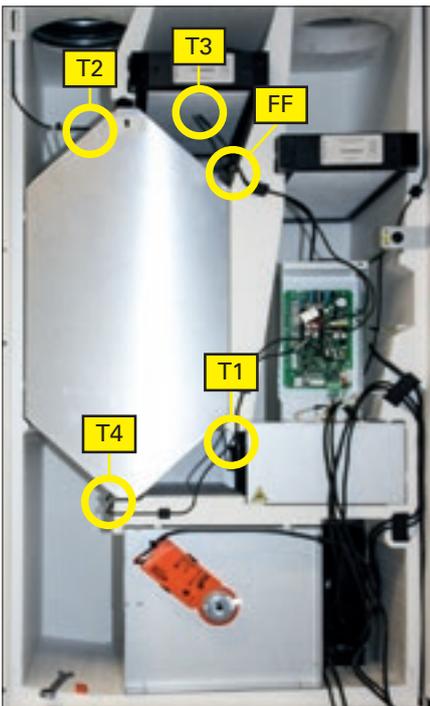
**Exercise caution when handling the board:  
The board is prone to ESD and can be damaged by electrostatic discharge.**



**To remove the temperature sensors, the bottom front panel and the EPS front panel must be removed first. To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



Tools required:  
– phase tester (small slotted screwdriver).



Overview of sensor positions:

T1 - fresh air temperature sensor  
T2 - supply air temperature sensor  
T3 - extract air temperature sensor  
T4 - exhaust air temperature sensor  
FF - extract air humidity sensor



Pull out J7 terminal - 8-pole flat plug (phase tester).

**Note**

Always replace all 4 temperature sensors.



Removing the supply air temperature sensor (T2):

First, you need to pull out the cable ties fixing the supply air temperature sensor (T2) in the heat exchanger (approx. 20th lamella).

Then, the cable must be released from the circumferential cable routing.



Removing the extract air temperature sensor (T3):

Release cable from the cable routing.





Removing the fresh air temperature sensor (T1):

Release cable from the cable routing.



Removing the exhaust air temperature sensor (T4):

Release the clamp using a screwdriver, and then release the cable from the cable routing.



**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. Removed cable ties need to be replaced. To do so, refer to 13 Terminal diagram.**

## 6.2 Removal/installation of humidity sensors



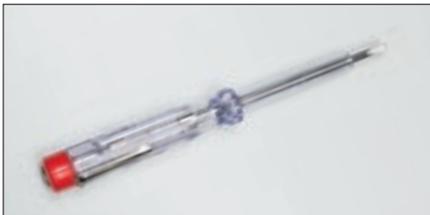
**Prior to removing the humidity sensor:  
De-energize the device (disconnect the mains plug)!**



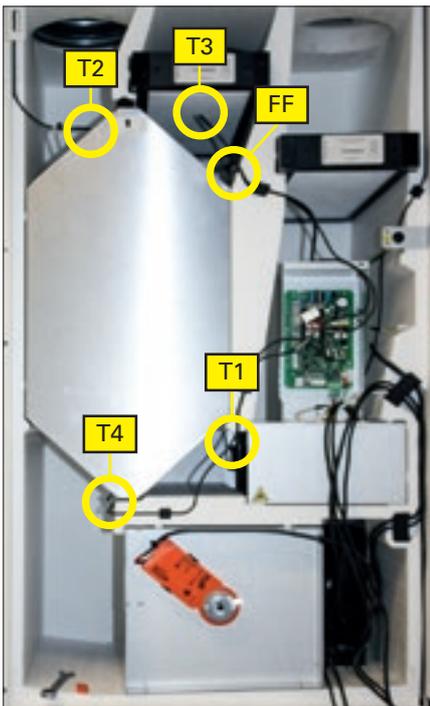
**Exercise caution when handling the board:  
The board is prone to ESD and can be damaged by electrostatic discharge.**



**To remove the humidity sensors, the bottom front panel and the EPS front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



Tools required:  
– phase tester (small slotted screwdriver)



Overview of sensor positions:

T1 - fresh air temperature sensor  
T2 - supply air temperature sensor  
T3 - extract air temperature sensor  
T4 - exhaust air temperature sensor  
FF - extract air humidity sensor



Release J14 terminal - extract air humidity sensor.

**Note**

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



Release cable from the cable routing.



Release the clamp using a screwdriver.



**Installation of the new humidity sensor 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 13 Terminal diagram.**

## 7 Removal/installation of fans

### 7.1 Removal/installation of supply air fan



**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 supply air fan, the bottom front panel and the EPS front panel must be removed first.**  
To do so, refer to 3.1 Disassembly of front panel and 4.1 Releasing control board support.  
Additionally, all connections on the control board must be released.  
To do so, refer to 4 Removal/installation of control board step 1 to 9.

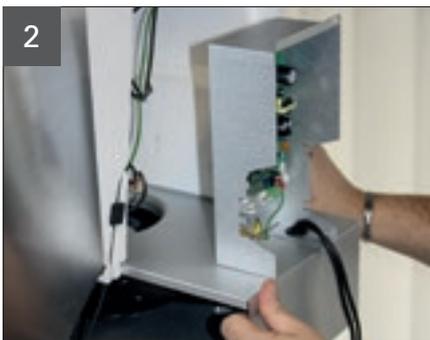


Tools required:

- phase tester (small slotted screwdriver)
- wire cutter
- cordless screwdriver
- bit Torx T20



After having released all connections on the control board as described in Chapter 4 steps 1-9, you can start disassembling the supply air fan.



Carefully pull out the fan housing including board housing from the EPS core of the ventilation unit.



Remove the 2 housing screws.



Remove the board housing.

**Note**

Pay attention to the cables of the supply air fan.



Remove the 2 screws from the fan housing.

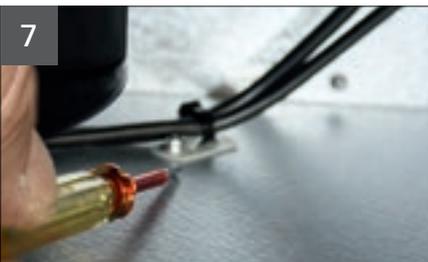


Strain relief at the outside of the fan housing – remove cable ties.

Remove fan housing cover.

**Note**

Replace removed cable ties when installing.



Strain relief at the inside of the fan housing – remove cable ties.

**Note**

Replace removed cable ties when installing.



Release the 4 fixing screws of the fan on the rear of the fan housing.

Carefully remove the fan.

**Note**

After having installed the new fan in the housing, check if the rotor fits properly on the injection nozzle.



**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 13 Terminal diagram.**

## 7.2 Removal/installation of exhaust air fan



**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 exhaust air fan, the bottom front panel and the EPS front panel must be removed first. To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel. Additionally, you must release the connections of the summer bypass and the exhaust air fan on the control board. To do so, refer to 4 Removal/installation of control board, steps 2 to 4.**



Tools required:

- phase tester (small slotted screwdriver)
- wire cutter
- cordless screwdriver
- bit Torx T20



First, you must release the following connections on the control board:

- Release J3 terminal/exhaust air fan network connection (230 VAC).
- Terminal J6/summer bypass  
(for profi-air 300 sensor only)
- Release J4 terminal/exhaust air fan control cable (0 -10 V).



Afterwards, release the appropriate cables from the cable feed-through.



Carefully pull out the plastic seal of the condensate tray from the EPS core of the ventilation unit.



Carefully pull out the fan housing from the EPS core of the ventilation unit.



Release the 4 screw connections between the mounting bracket of the fan and the fan housing.



Release the 4 fixing screws of the fan from the mounting bracket.

Carefully remove the fan.

**Note**

After having installed the new fan in the housing, check if the rotor fits properly on the injection nozzle.



**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 13 Terminal diagram.**

## 8 Removal/installation of heat exchanger



**Prior to removing the heat exchanger:**  
**De-energize the device (disconnect the mains plug)!**



**To remove the heat exchanger, the bottom front panel and the EPS front panel must be removed first.**  
**To do so, refer to 3.1 Disassembly of front panel and 3.2 Disassembly of EPS front panel.**



First, you need to pull out the cable ties fixing the supply air temperature sensor (T2) in the heat exchanger (approx. 20th lamella).



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

**Note**

Attention: Remove the sealing (at the top of the heat exchanger) as well, and re-insert it when installing the heat exchanger.

**Note**

Leakage of condensate water may occur.



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

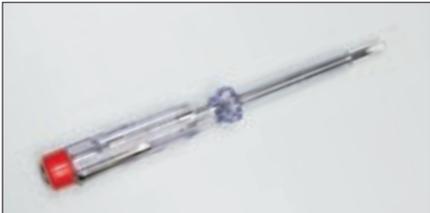
## 9 Removal/installation of control panel



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



**To remove the control panel, the bottom front panel must be removed first.  
To do so, refer to 3.1 Disassembly of front panel.**



Tools required:  
– phase tester (small slotted screwdriver)



Remove the control panel from the EPS front cover.



Open the rear cover of the control unit.

Unplug the 4-pole Modbus cable.

### Note

Note the set values of the two potentiometers on the rear of the control panel.



After having connected the new control panel,  
re-energize the unit (connect the mains plug!)

Activate the commissioning mode (to do so, see  
profi-air 180/300 sensor installation instructions).

Set the noted values of the two potentiometers  
on the rear of the new control panel.

Deactivate the commissioning mode.

### Note

We recommend measuring the total air volume after setting the potentiometers.



**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.  
Removed cable ties need to be replaced.  
To do so, refer to 13 Terminal diagram.**

## 10 Removal/installation of switch for filter timer



**Prior to removing the filter timer:  
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 switch for the filter timer, the bottom front panel and the EPS front panel must be removed first. To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



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



1

Release J10 terminal – filter reset.

### Note

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



2

Carefully remove the switch for the filter timer from its support using needle-nosed pliers. To do so, compress the detents behind the mounting panel.



**Installation of the new switch for the filter timer 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 13 Terminal diagram.**

## 11 Removal/installation of safety switch (profi-air 180 sensor only)



**Prior to removing the safety switch:  
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 safety switch, the bottom front panel and the EPS front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



Tools required:  
– phase tester (small slotted screwdriver)  
– Torx T20 screwdriver



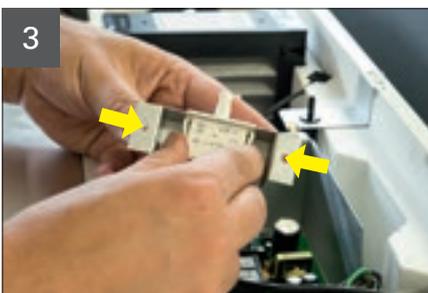
1 Release both screws at the mounting panel.



2 Release the terminals on the rear of the safety switch.

### Note

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



3 The safety switch has 2 retaining clips (see arrows), which must be released.



**Installation of the new safety switch 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 13 Terminal diagram.**

## 12 Removal/installation of connector panel



**Prior to removing the connector 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 connector panel, the bottom front panel and the EPS front panel must be removed first.  
To do so, refer to 3.1 Disassembly of bottom front panel and 3.2 Disassembly of EPS front panel.**



Tools required:  
– phase tester (small slotted screwdriver)  
– cordless screwdriver with bit Torx T25



Release the 6 screws on the connector panel.



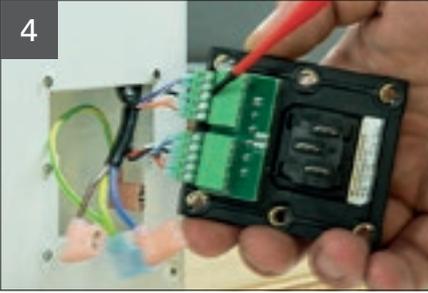
Carefully pull out the connector panel.



Release the power line on the connector panel.

### Note

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



Release both Modbus cables on the connector panel.

**Note**

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



The following steps will be necessary if you want to exchange the connection cable as well:

1. Disassemble the bottom front panel and/or EPS front panel.
2. Unplug the cables to be exchanged on the control panel, safety switch (profi-air 180 sensor only) and/or control unit.
3. Remove the cable to be exchanged from the cable feedthroughs.

**Note**

- Catalogue number 78300952 (profi-air 180 sensor only) power cable connection between connector panel and control board
- Catalogue number 78300926 (profi-air 300 sensor only) power cable connection between connector panel and control board
- Catalogue number 78300925 – Modbus cable connection between connector panel and control unit
- Catalogue number 78300927 – Modbus cable connection between connector panel and control board and/or safety switch

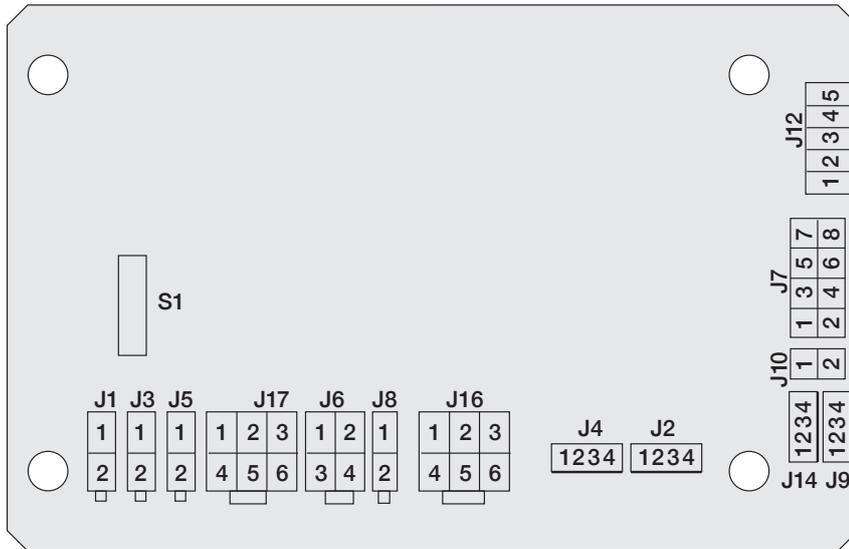
**Note**

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



**Installation of the new connector panel and/or cables 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 13 Terminal diagram.**

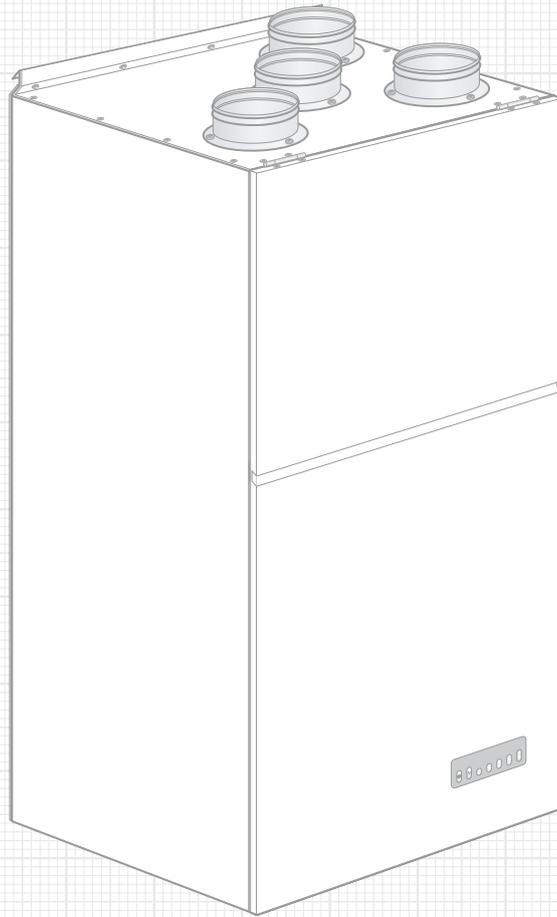
# 13 profi-air 180/300 sensor terminal diagram



Resistance table for temperature sensors	
Temperature °C	Resistance value [kΩ] (+/- 1 %)
-30	25,388
-25	19,402
-20	14,961
-15	11,644
-10	9,133
-5	7,198
0	5,716
5	4,571
10	3,682
15	2,987
20	2,437
25	2,000
30	1,651

No.	Connection description	No.	Value
J1	AC mains inlet	1 2	L – 230 VAC +/-15 %, 50/60 Hz N – 230 VAC +/-15 %, 50/60 Hz
J2	Exhaust air fan control	1 2	Tachometer PWM
J4	Supply air fan control	3 4	10 VDC 0 V
J3	Exhaust air fan power	1	L – 230 VAC +/-15 %, 50/60 Hz
J5	Supply air fan power	2	N – 230 VAC +/-15 %, 50/60 Hz
J6	Bypass power AC	1 2 3 4	L – forward L – backwards N – jumper NC
J7	Temperature sensors	1/2 3/4 5/6 7/8	T1 – NTC – 2 kΩ at 25 °C T2 – NTC – 2 kΩ at 25 °C T3 – NTC – 2 kΩ at 25 °C T4 – NTC – 2 kΩ at 25 °C
J10	Filter reset	1 2	+12 V ext. Reset
J12	Control panel	1 2 3 4 5	+12 V ext. 0 V ext. Ground RS-485 data + RS-485 data –
J14	Extract air humidity sensor	1 2 3 4	+3.3 V SCK (serial clock) SDA (serial data) 0 V
S1	Mainboard fuse		250 V/4A time-lag/5 x 20 mm





# FRÄNKISCHE

FRÄNKISCHE Rohrwerke Gebr. Kirchner GmbH & Co. KG | Hellinger Str. 1 | 97486 Königsberg/Germany  
Phone +49 9525 88-2200 | Fax +49 9525 88-92200 | [marketing@fraenkische.de](mailto:marketing@fraenkische.de) | [www.fraenkische.com](http://www.fraenkische.com)

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