

Service instructions for qualified personnel

Mechanical Ventilation Heat Recovery Unit FOCUS (F) 200

(for units up to serial no. 3202-1)



FOCUS (F) 200
(from 2014)



focus (F) 200
(up to 2013)

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1 Type plate

The type plate clearly identifies the product. The information on the type plate is necessary for the safe use of the product and in case of service-related questions. The type plate is located on the side of the air connections of the HRU. The type plate must be permanently attached to the product.

 PAUL Wärmerrückgewinnung GmbH August-Horch-Straße 7 08141 Reinsdorf			U Z-51.3-272  		
Wärmerrückgewinnungsgerät			Made in Germany		
FOCUS 200					230 V
			Version RECHTS		50 Hz
Serien-Nummer:			Version LINKS		IP 30
Baujahr:			Gewicht	25 kg	0,14 kW

Type plate FOCUS 200

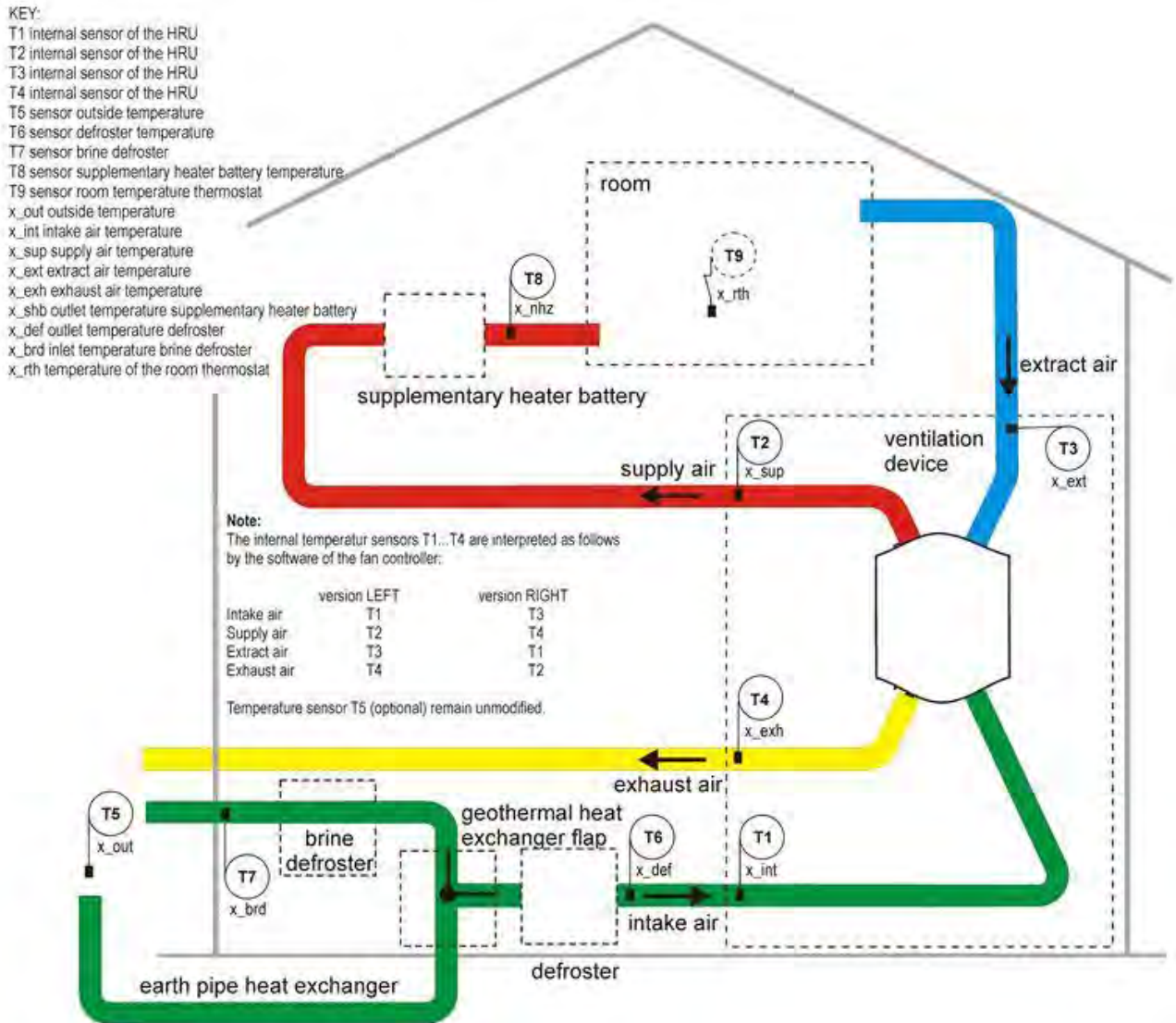
 PAUL Wärmerrückgewinnung GmbH August-Horch-Straße 7 08141 Reinsdorf			 		
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Baujahr:			Gewicht	25 kg	0,14 kW

Type plate FOCUS F 200

2 Principal configuration of the System



The basic configuration of the system is universally valid and does not represent the system outline of the project-related ventilation plant! It is designed for representation of the plant-specific system structure for sensors and ventilation equipment.



System outline FOCUS with sensors and ventilation equipment

3 Replacement of the filters

3.1 Replacement of the filters of the device

1. Disconnect the device from the power supply.



2. Remove the front plate from the device. Press both spring locks and unlock with it the front plate. Remove the front plate gradually according to the directions of the arrows. Open the front plate in a corner from maximally 15 ° and hang them from the tin fold of the housing.



3. Pull by means of strap the EPP foam cover of the filters and the heat exchanger from the foam housing. Thereby, take and pull the strap at one of the ends and counter-hold the device with the other hand at the same time.



4. Pull the filters out of the filter slide-in compartments by means of the filter strap.



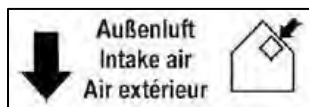
5. Package the filters in a sealed bag and put this in the residual waste.



6. Push the new filters in the filter slide-in compartments with regard to the flow direction. The filters are marked with an arrow according to the required flow direction.



Pollen filters are to be inserted in the filter slide-in compartment of the intake air connection! The intake air connection is marked with the symbol:



7. Close the filter insertion fields and the heat exchanger with the foam cover.

8. Hang the front plate in the tin fold of the housing, and press the front plate in the area of the spring locks to the housing to this in the spring locks engages.
9. Re-establish the mains connection.

3.2 Resetting the filter run-time

Once the filter has been changed, the timer for the filter run-time must be reset. Depending on the connected control element, the following steps must be carried out for that purpose.

1. Resetting the filter run-time by means of the LED control panel



Symbol / display	Description of the reset procedure
	If the remaining run-time of the filter is less than 10 days, the LED lit up in red above the key Filter change blinks briefly at an interval of 3 s. If the LED is permanently lit up in red, this indicates that the filter must be checked.
	By pressing this key for at least 3 s, the filter run-time is reset. The LED goes off. The timer starts the set filter run-time.

Table 1: Resetting the filter run-time by means of the LED control panel

2. Resetting the filter run-time by means of the TFT touch panel

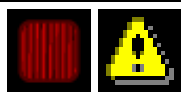

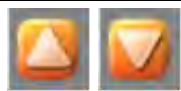
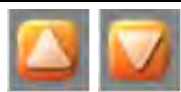



Symbol / display	Description of the reset procedure
	If the remaining run-time of the filter is less than 10 days, the colour of the filter symbol turns from grey to yellow. If the filter run-time has expired, the colour turns from yellow to red and a status signal is displayed in addition, signalling that the filter must be checked.
	By touching the button Menu mode, you reach the main menus.
	Select the main menu Settings by touching the Navigation buttons and confirm by pressing the Enter button.
	Select the submenu Filter by touching the Navigation buttons and confirm by pressing the Enter button.
	By touching the Checkmark button, resetting of the filter run-time is selected.
	Confirm by pressing the Enter button.
	By touching the Cancel / back button, exit the menu levels until the start menu appears.

Table 2: Step sequence resetting the filter run-time by means of the TFT touch panel

4 Replacement of the heat exchanger

1. Disconnect the device from the power supply.



2. Remove the front plate from the device. Press both spring locks and unlock with it the front plate. Remove the front plate gradually according to the directions of the arrows. Open the front plate in a corner from maximally 15 ° and hang them from the tin fold of the housing.



3. Pull by means of strap the EPP foam cover of the filters and the heat exchanger from the foam housing. Thereby, take and pull the strap at one of the ends and counter-hold the device with the other hand at the same time.



4. Pull the filters out of the filter slide-in compartments by means of the filter strap.



5. Now pull the heat exchanger by means of the strap from the EPP housing.



6. Spray silicone spray on the saeals of the heat exchanger.



- 

- Enthalpy heat exchanger ERV: eco: -10°C
 save: -7°C

5 Replacement of the master and slave board

1. Read the program with a PC or write down the settings of the TFT.
2. Disconnect the device from the power supply.



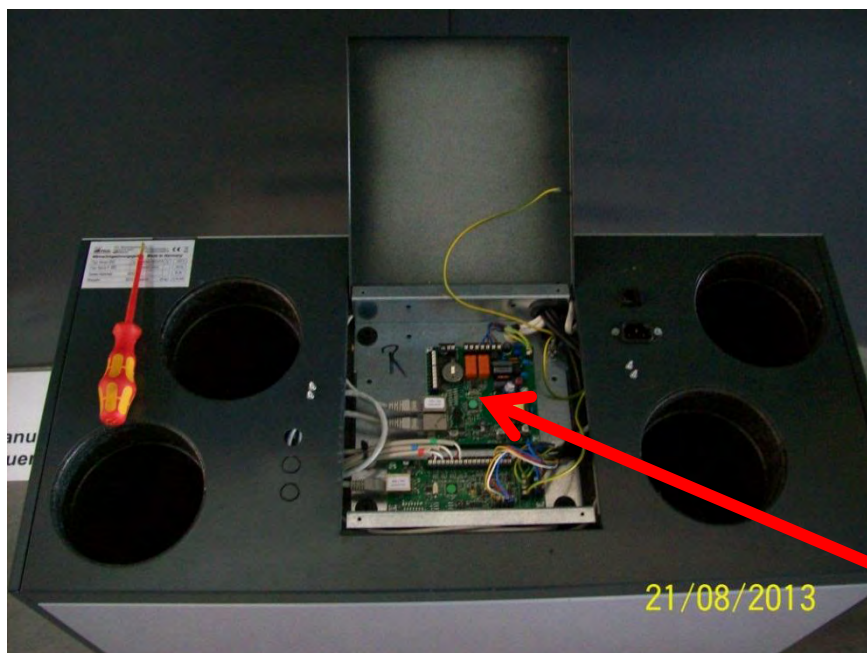
3. Apply for work on the electronics an ESD wrist strap.



4. Remove the electronics cover, open the 4 screws.

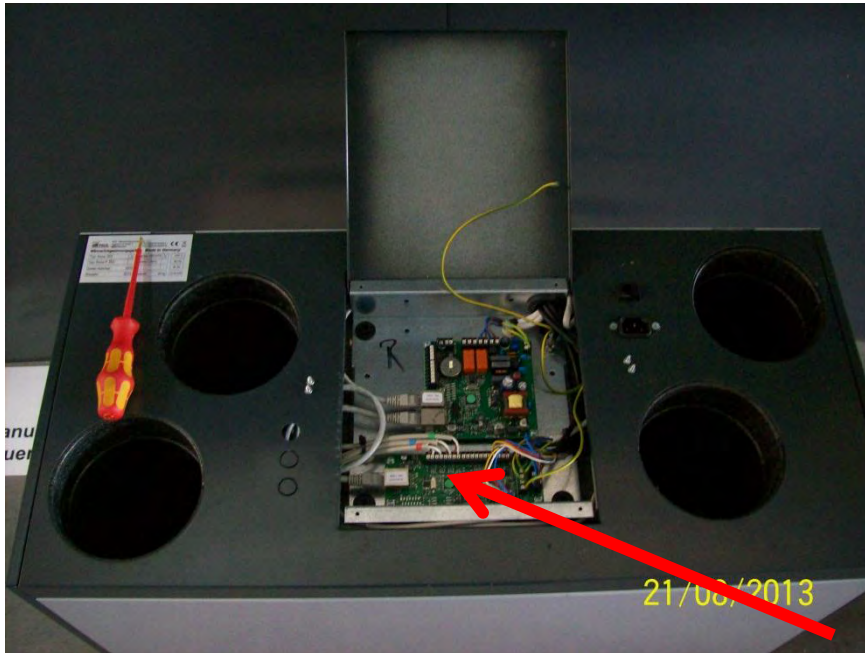


5. Remove the cable from the master board and remove it from the device.

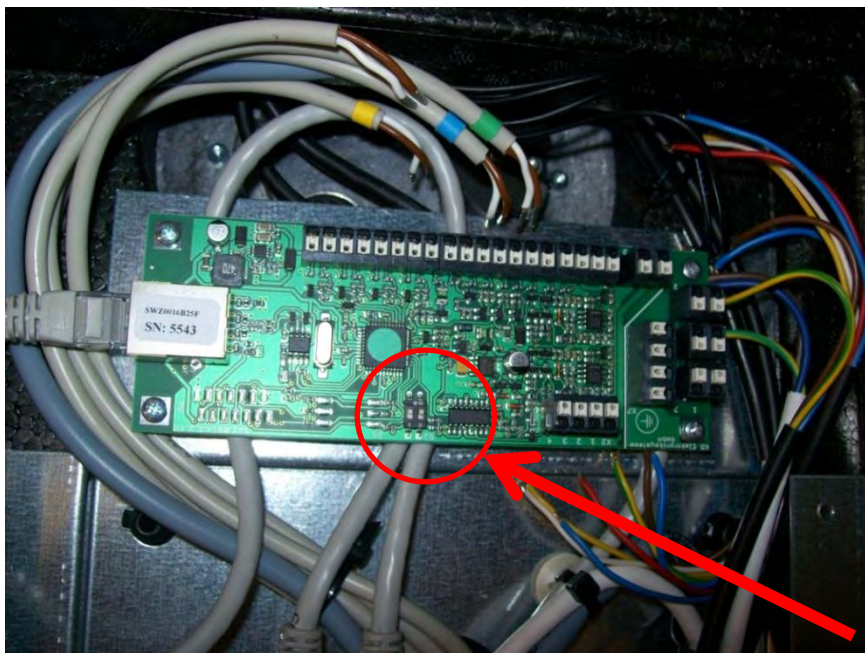


6. Install the new master board in the device. Be sure to install the cable according the circuit diagram (see appendix).

7. Remove the cable from the fan slave board and remove it from the device.

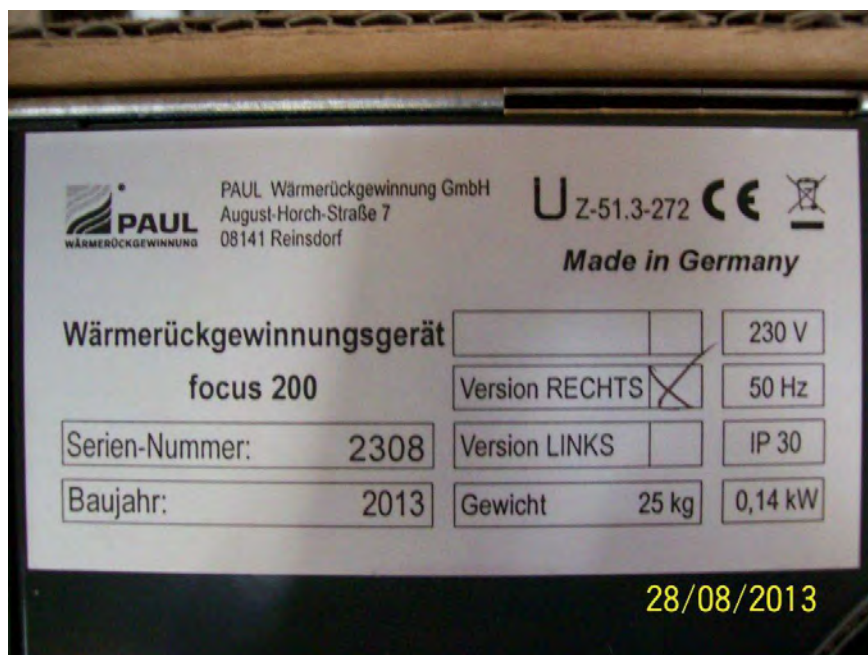


8. Set the correct device version using the DIP switches on the fan slave board.



DIP 1 = left device version „off“/ right device version „on“
DIP 2 = „on“

The device version can be found on the type plate of the unit.



9. Mount all parts in reverse order.
10. Re-establish the mains connection.
11. Program the device.

Important note!



Make sure that you install the correct board in the respective device.

Art.-Nr. 524002250 Master board SWZ.0015B29 (programmed for FOCUS 200)
 Art.-Nr. 521010720 Fan slave board SWZ.0016B25

6 Replacement of the fan

1. Disconnect the device from the power supply.



2. Apply for work on the electronics an ESD wrist strap.



3. Remove the front plate from the device. Press both spring locks and unlock with it the front plate. Remove the front plate gradually according to the directions of the arrows. Open the front plate in a corner from maximally 15 ° and hang them from the tin fold of the housing.



4. Lever the EPP fan cover from the housing by means of a spatula.



5. Pull the fan with a pliers out of the device.



6. Open the 3 torx screws and unplug the fan connector from.



7. Insert the fan into the housing of the ventilation device.



8. Plug the connector on the fan and attach him with the torx screws.



9. Slide the fan completely into the device.

10. Apply the sealant (NeoFermit) on the cut-out for the EPP fan cover.



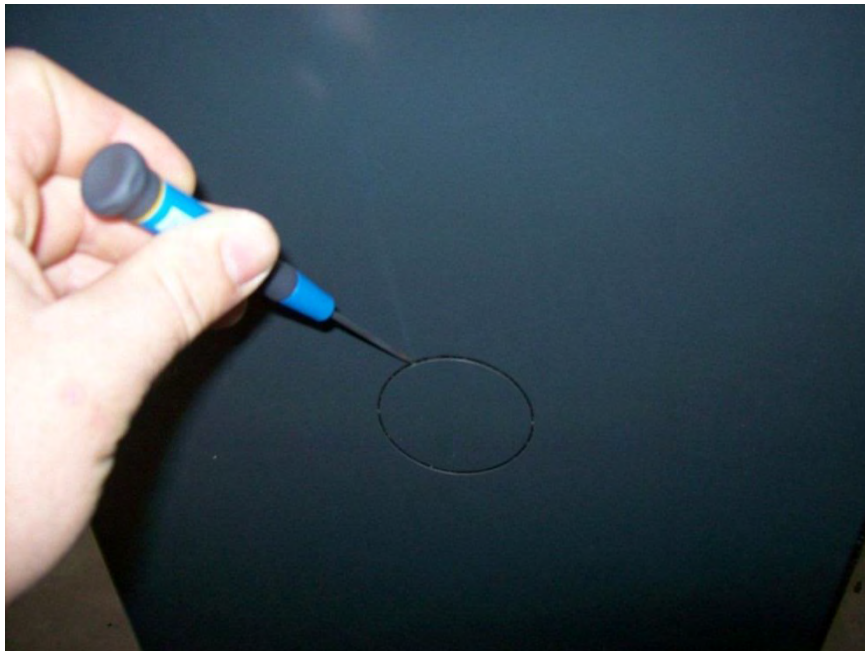
11. Insert the EPP fan cover into the ventilation device and remove the excess sealant
12. Mount all parts in reverse order.
13. Re-establish the mains connection.

7 Installation of a condensate drain

1. Disconnect the device from the power supply.



2. Remove the pre-cut hole with a screwdriver.



3. Drill with a 40 mm drill bit a hole in the EPP housing.



4. Apply the sealant to the inlet.



5. Insert the outlet into the device and fix it with the corresponding screw.



6. Remove the excess sealant.



7. Re-establish the mains connection.

8 Messages, errors and error handling

The device control is equipped with an internal system for error detection. The visualisation of the messages and the error forecast is made according to the display possibilities of the connected control panel.

8.1 Error signalling by means of the LED control panel

If an error occurs within the system, it is indicated by the LEDs. The breakdown of the supply or exhaust air fan, a sensor error and a dropping below the anti-freeze protection threshold is displayed as described in table 3.

In case another general error occurs, the LEDs <L8+L11+L12> are blinking and the LEDs L1...L7 display the error number in binary format. The following LED combinations marked with an “x” apply for the illustration of the binary error coding:



LED combinations							Meaning	LED signalling
L1	L2	L3	L4	L5	L6	L7		
x		x					Error – supply air temperature too low	
	x	x	x	x		x	Communication error of the fan slave	
x	x	x	x	x		x	Communication error of the defroster	
					x	x	Communication error of the heater battery	
x					x	x	Communication error of the flap of the ground pipe diverter	
		x			x	x	Communication error	

Table 3: Binary error coding with the LED control panel

8.2 Visualisation of errors with the TFT touch panel

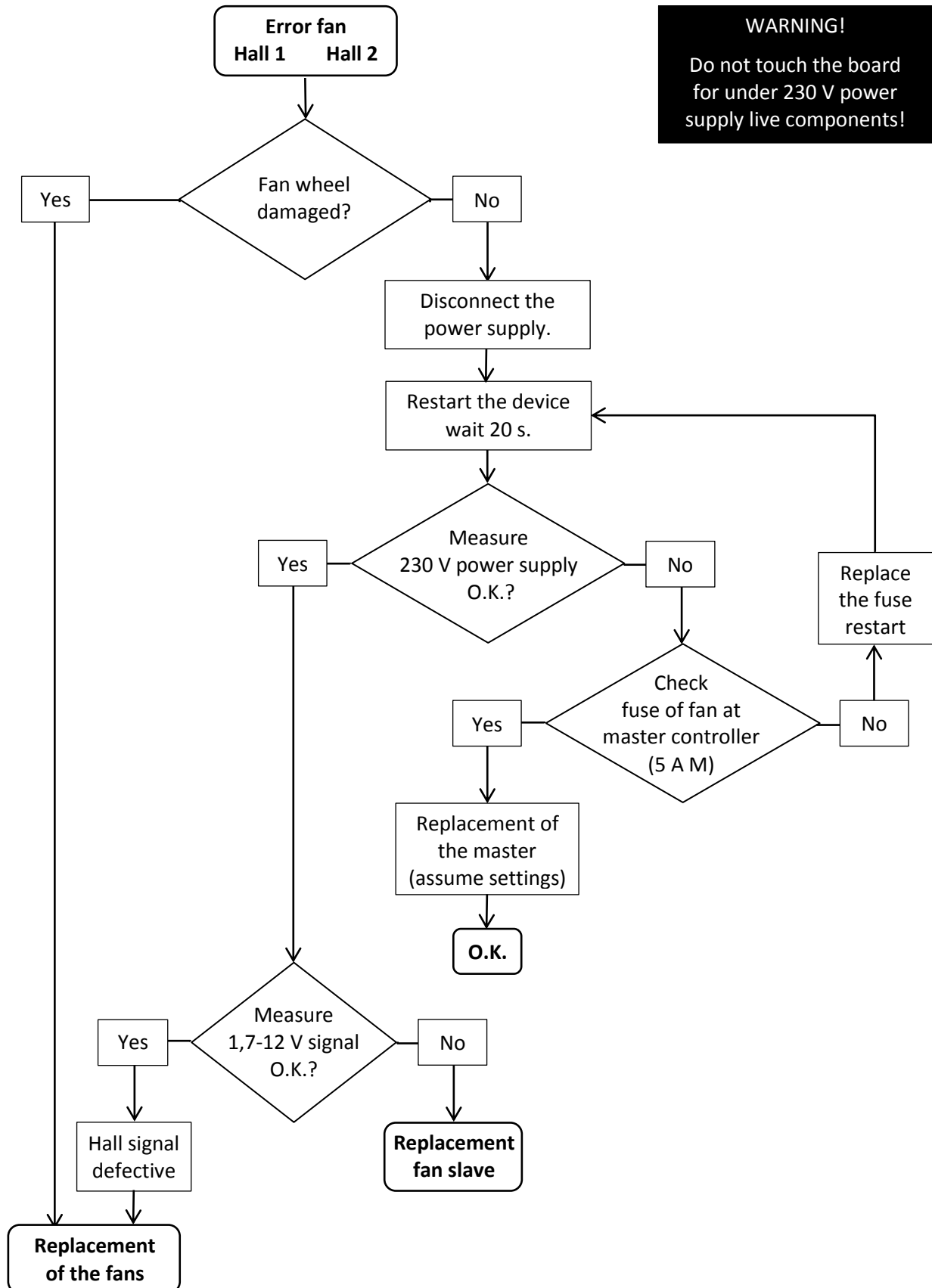
A plain text visualisation of errors is only possible with the TFT-Touch panel. If there is a message or an error it will be signalled at the right upper edge by a flashing warning triangle . Occurring messages are displayed in Menu/ Information/ Messages.

Error description / Message on display	Reason	Reaction	Control / Action
Error sensor 1	Sensor break or short circuit temperature sensor Version LEFT T1 Version RIGHT T3	Fans are turned off	Check or replace sensor
Error sensor 2	Sensor break or short circuit temperature sensor Version LEFT T2 Version RIGHT T4	Fans are turned off	Check or replace sensor
Error sensor 3	Sensor break or short circuit temperature sensor Version LEFT T3 Version RIGHT T1	Fans are turned off	Check or replace sensor
Error sensor 4	Sensor break or short circuit temperature sensor Version LEFT T4 Version RIGHT T2	Fans are turned off	Check or replace sensor
Supply air temperature too low	Minimum supply air temperature < setpoint; Factory setting 5 °C	Fans are turned off	Supply air temperature > setpoint + 1 K
Intake air temperature too low	Current intake air temperature < setpoint longer than 10 minutes	Fans are turned off	Intake air temp > setpoint; control after 1 h
Error fan 1 Hall	Version LEFT supply fan speed does not report Version RIGHT exhaust fan speed does not report	Fans are turned off	manual adjustment of fan speed
Error fan 2 Hall	Version LEFT exhaust fan speed does not report Version RIGHT supply fan speed does not report	Fans are turned off	manual adjustment of fan speed
Communication error	BUS components of the controller are not detected	Fans are turned off	Restart (Off / On of the device)
No external release	Release contact open	Fans are turned off, no control by external control unit	Close release contact

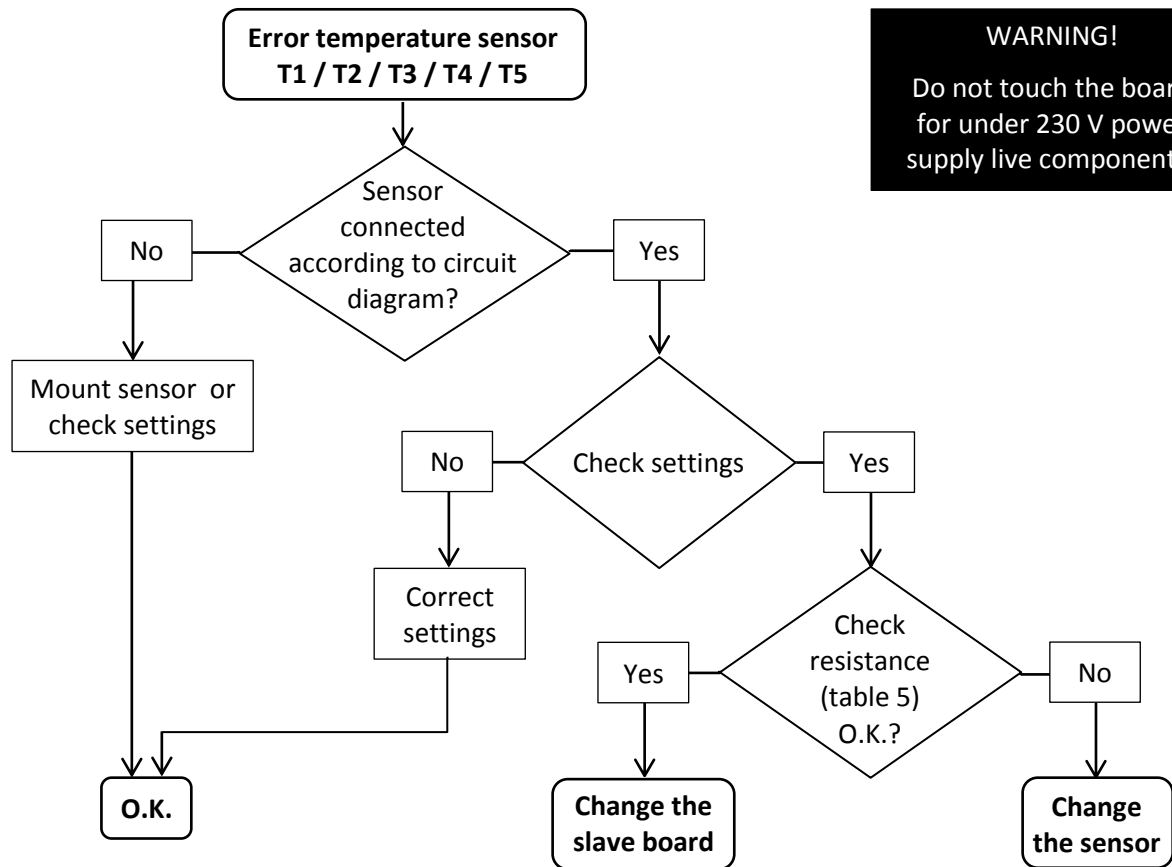
Table 4: Overview of messages, error visualisation and error treatment by means of the TFT touch panel

9 Error handling

9.1 Error fan



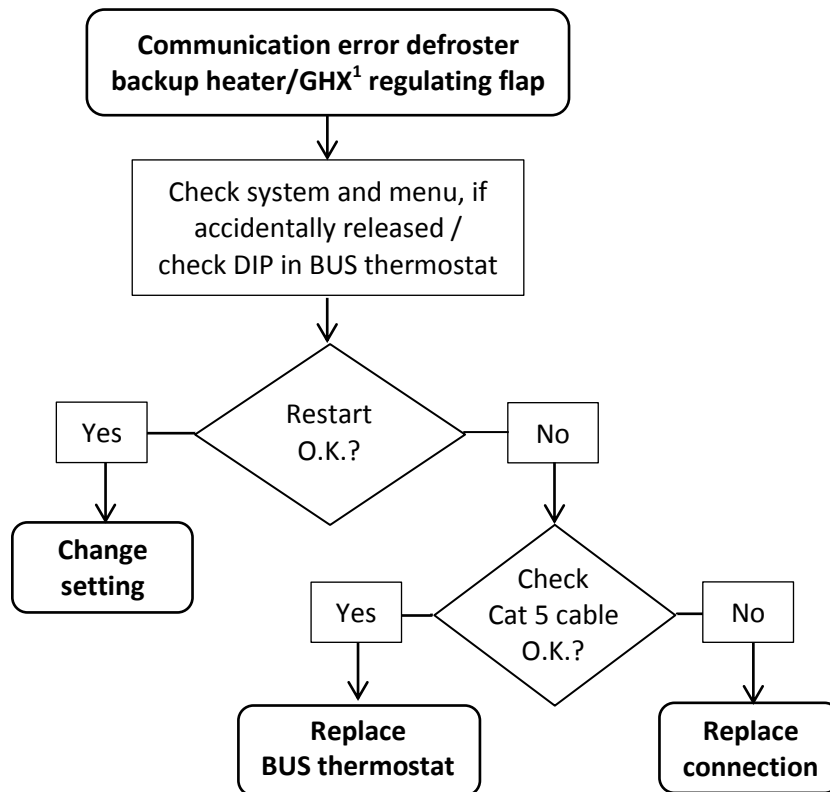
9.2 Error temperature sensor



Operating temp. T_{oper} (°C)	Resistance R_{25} (kΩ)
-25	129,30
-20	96,36
-15	72,50
-10	55,05
-5	42,16
0	32,56
5	25,34
10	19,87
15	15,70
20	12,49
25	10,00
30	8,059
35	6,535

Table 5: Resistance value

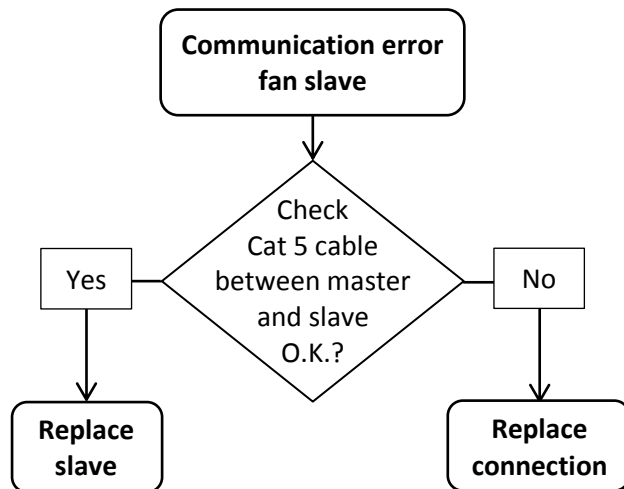
9.3 Communication error defroster

**WARNING!**

Do not touch the board for under 230 V power supply live components!

¹ GHX – Ground heat exchanger

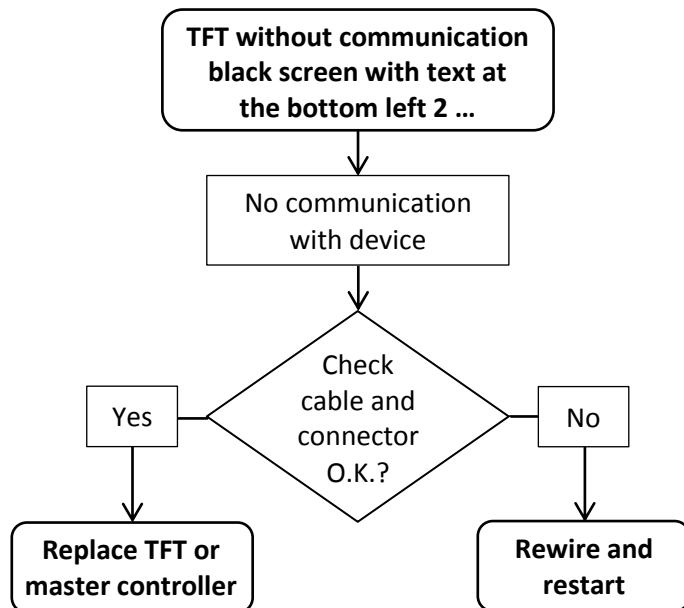
9.4 Communication error fan slave



WARNING!

Do not touch the board for under 230 V power supply live components!

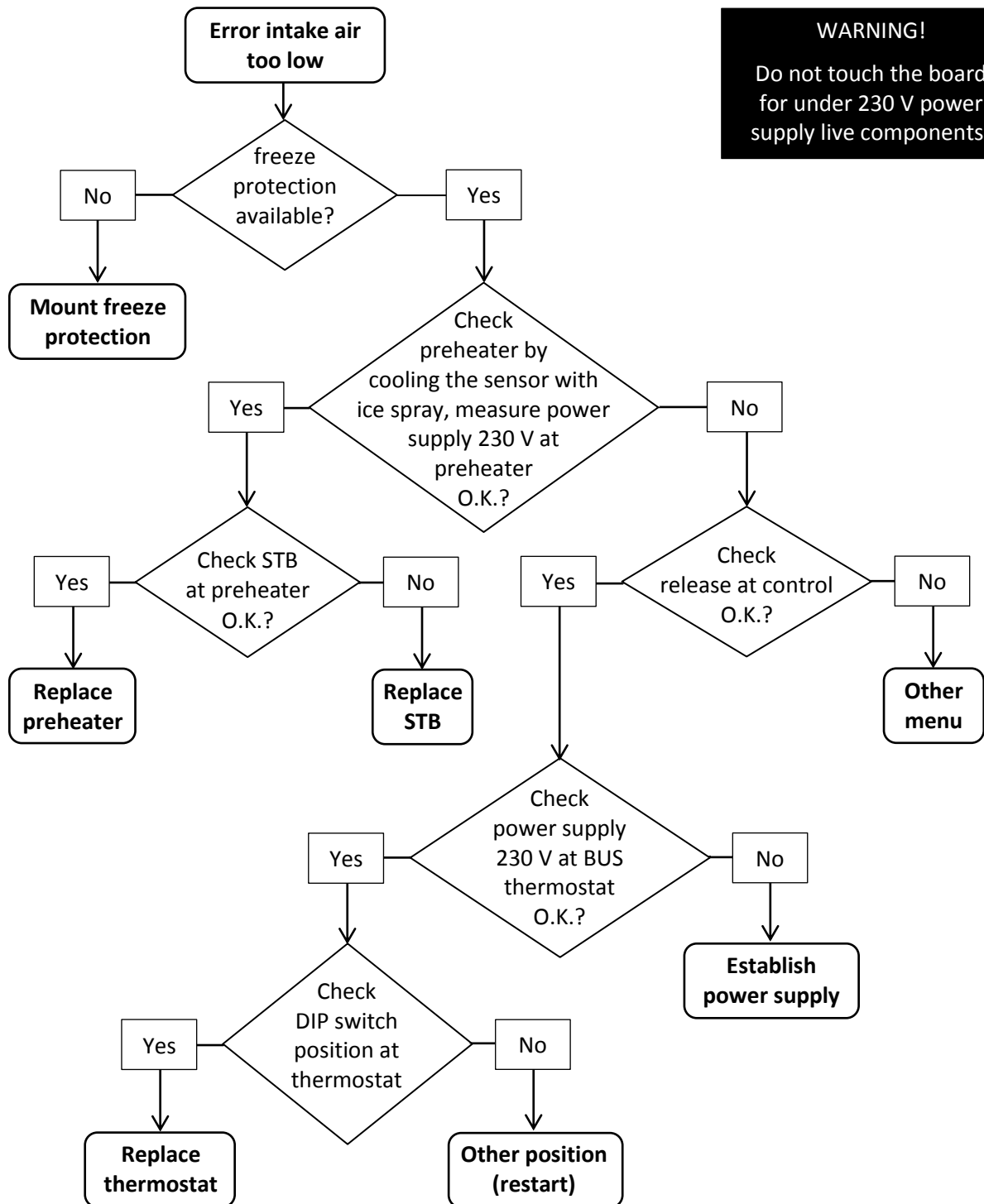
9.5 TFT without communication



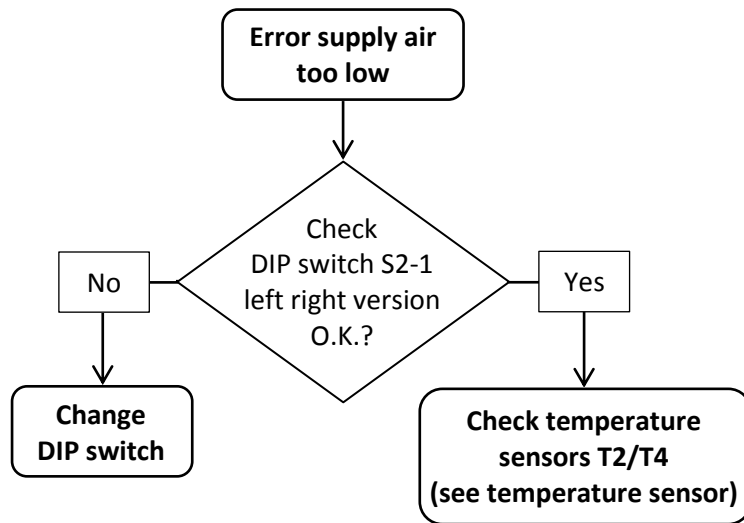
WARNING!

Do not touch the board
for under 230 V power
supply live components!

9.6 Error intake air too low



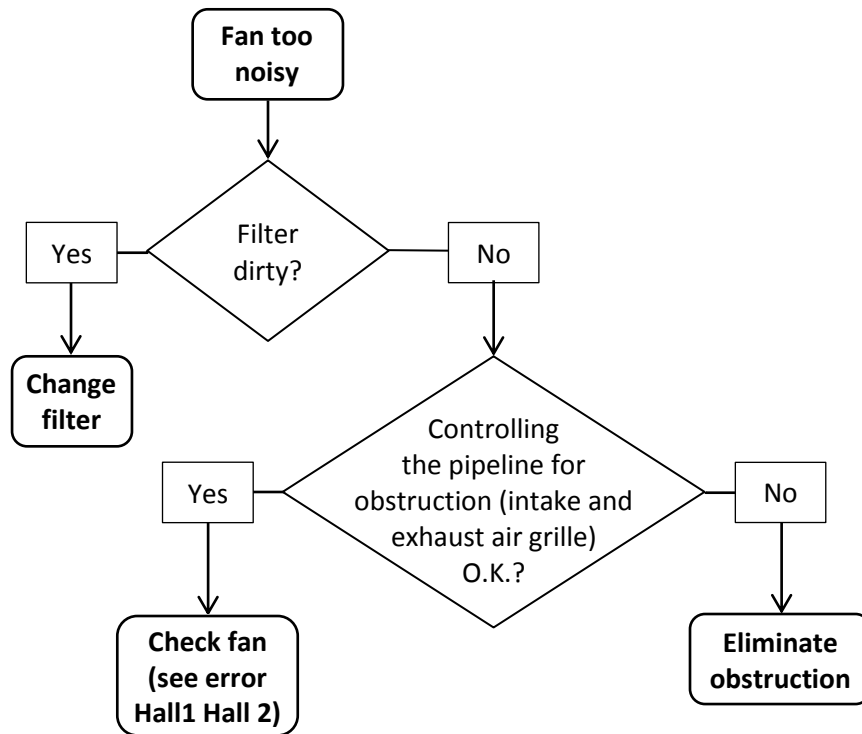
9.7 Error supply air too low



WARNING!

Do not touch the board
for under 230 V power
supply live components!

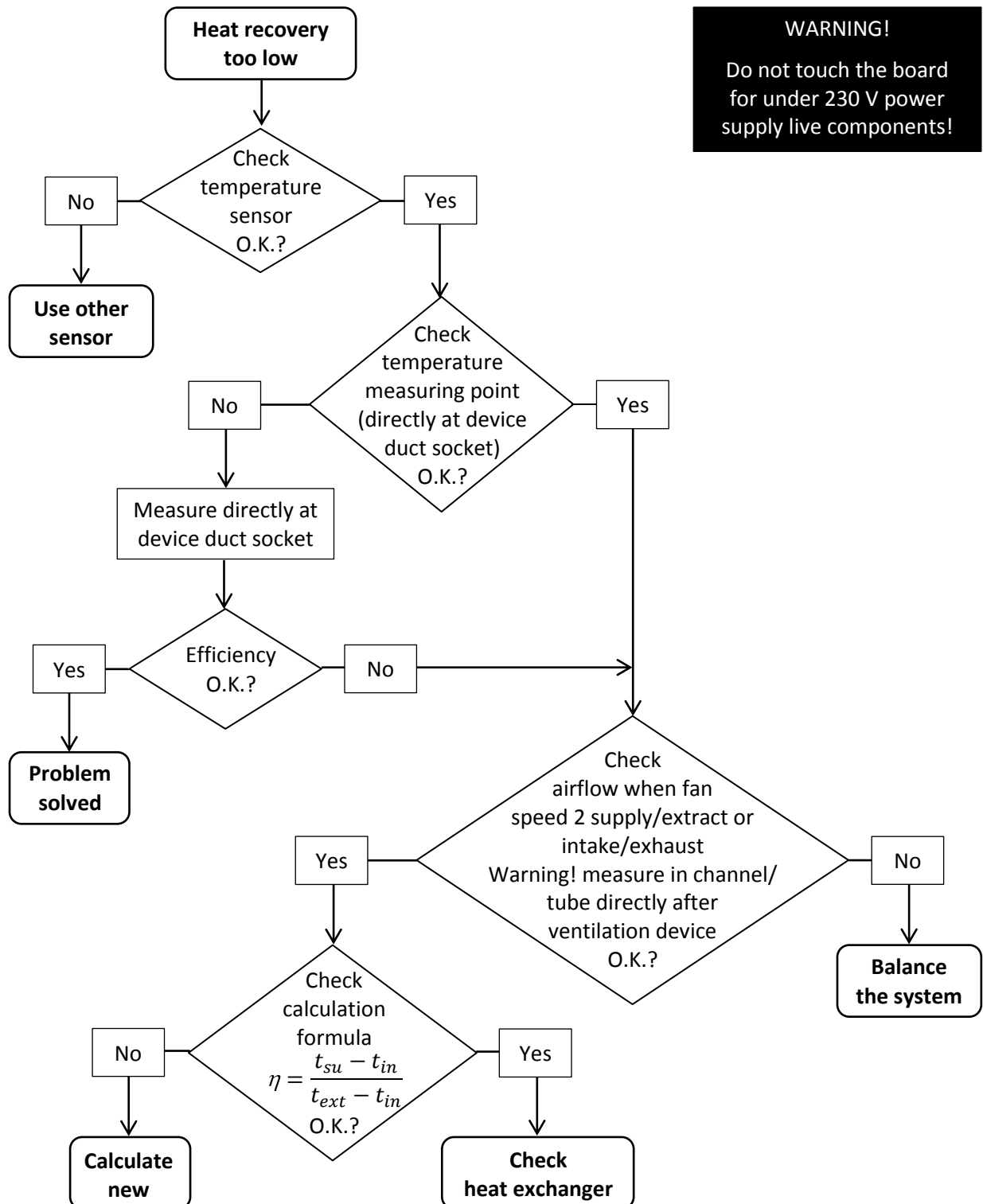
9.8 Fan too noisy



WARNING!

Do not touch the board for under 230 V power supply live components!

9.9 Heat recovery too low



9.10 Failure or problems without a message

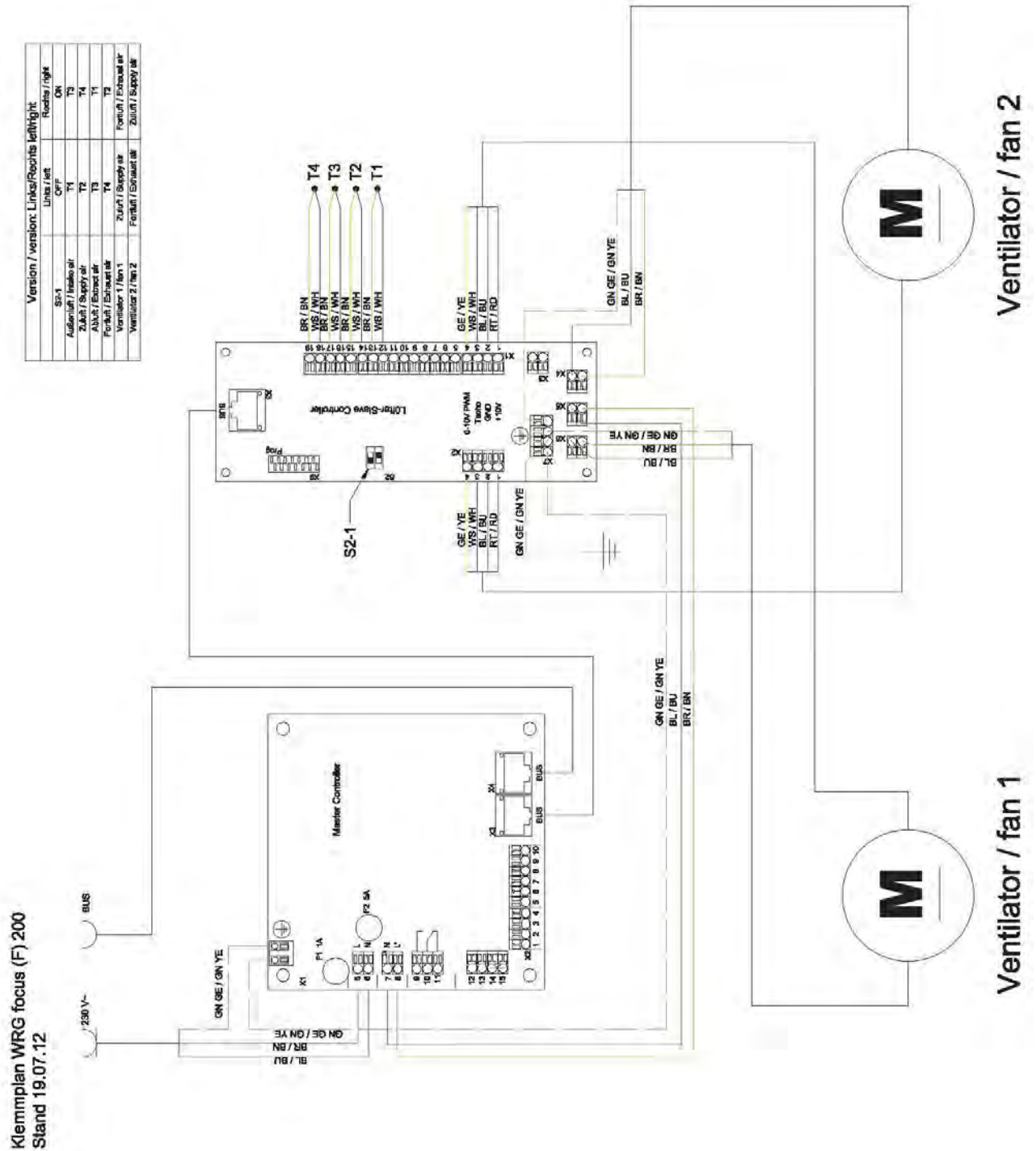
Below is an overview of failure or problems are shown without a message.

Problem / failure	Reason	Control / Action
Everything out	Power supply	Check the fuse at the control board. Is the fuse O.K., than the board is faulty.
	No power supply	Power supply has failed.
Unusual noises	Bearing of the fan is faulty	Replace the fan.
	Slurping noise – Siphon is empty – Siphon does not close	Fill the siphon. Mount the siphon new.
	Whistling noise – somewhere is an air gap	Caulk the air gap.
Condensate leaking	condensate drain is blocked	Clean the condensate drain.
	Condensate from intake air and exhaust air flows back into the device	Mount a siphon before the device in the pipeline.
	Condensate pan under the heat exchanger damaged or missing	Replace the condensate pan.

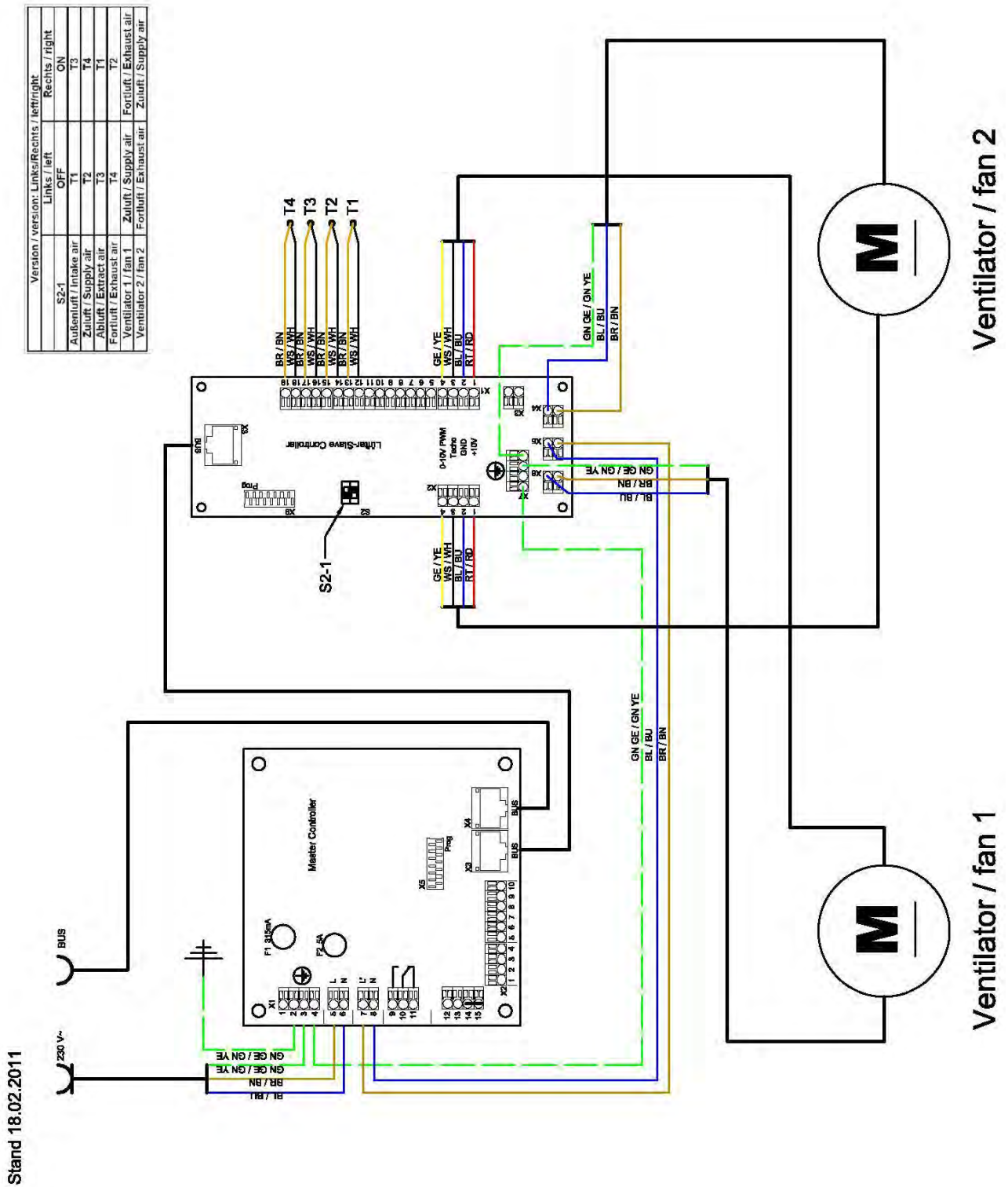
Table 6: Overview of failure or problems are shown without a message

Appendix

Appendix 1 Circuit diagram FOCUS – status: 2012-07-19



Appendix 2 Circuit diagram FOCUS – status: 2011-02-18



Notes



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Valid from 06/2015