

# Automation upgrade

## Pingvin eco EDA -> eAir

### NOTE!

Fan rotation guards must be disabled in the new eAir settings.

## Warning!

**According to regulations, an ordinary electricity consumer is only allowed to perform some minor service tasks.**

**According to Finnish regulations,  
a list of the allowed tasks can be found at the Tukes home page ([www.tukes.fi](http://www.tukes.fi)).**

Always make sure that the power supply is turned off before opening the service door.  
Wait two minutes before beginning the maintenance work. The fans rotate for some time by themselves, and the heating element may be hot even if the power supply of the ventilation unit is switched off. Electrical housing may be opened only by a trained electrician.

**Electrical installations must comply with local regulations.**

**Continuously check and compare the electrical diagrams at the end  
of this instruction as the upgrade progresses!**



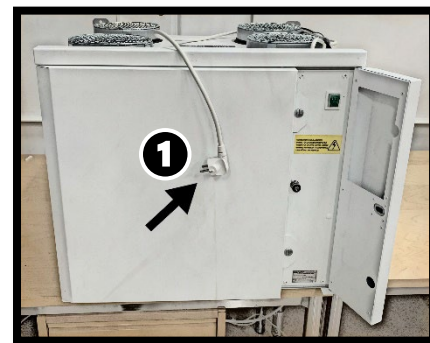
## Table of contents

Upgrade .....	3
Electrical diagrams EDA.....	27
Electrical diagrams eAir .....	31
Parts list eAir E .....	35
Parts list eAir W.....	36
Notes .....	37

Open **the small door (1)** by pressing on it.



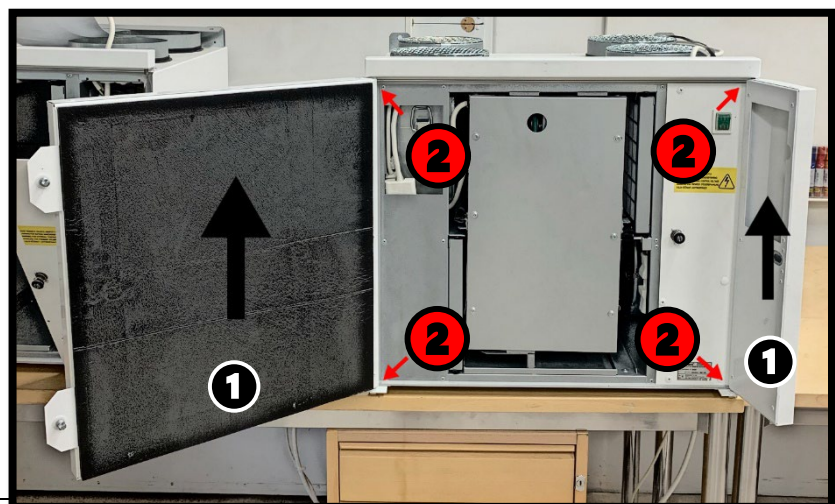
Disconnect **the power cord (1)** (and other power supplies if available).



Open the service door by turning **the two locks (1)** counterclockwise. If there is a remote panel installed in the small door, cut the cord and remove the remote panel or leave it in place. Either way, the panel can't be used anymore.



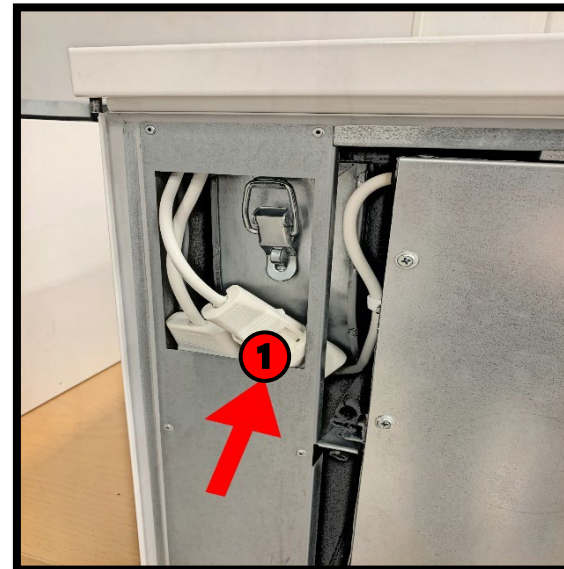
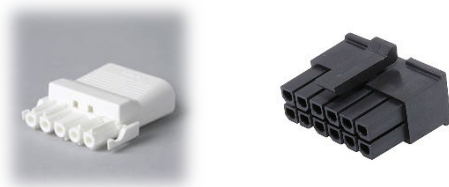
Remove **the doors (1)** by lifting and pulling. The doors will detach from **the pins (2)**.



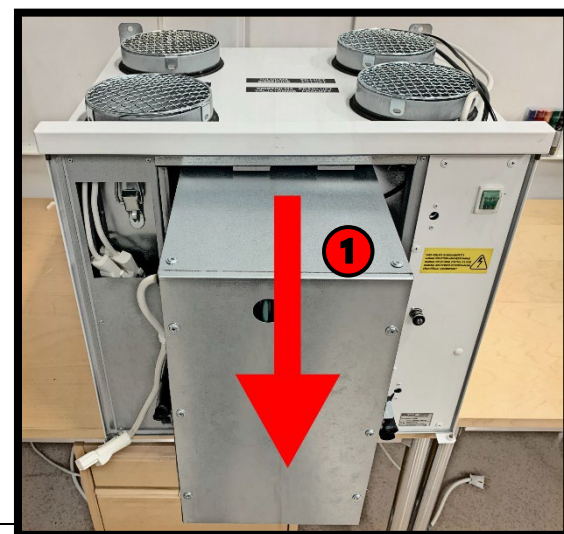
Remove **the filters (1)** by pulling.



Disconnect **the connector (1)** from the heat exchanger.  
*Depends on year of manufacture.*



Remove **the heat exchanger (1)** by pulling.

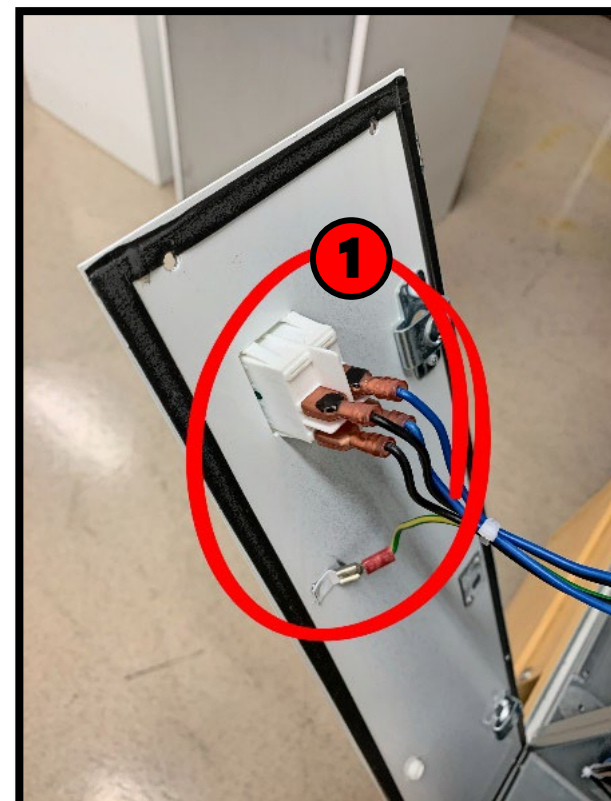


Open the electrical box by removing **the screws (1)**.



**NOTE! Ensure that no voltage is occurring in the electrical box before proceeding!**

Disconnect **all wires from the main switch and the ground wire (1)** from the cover.

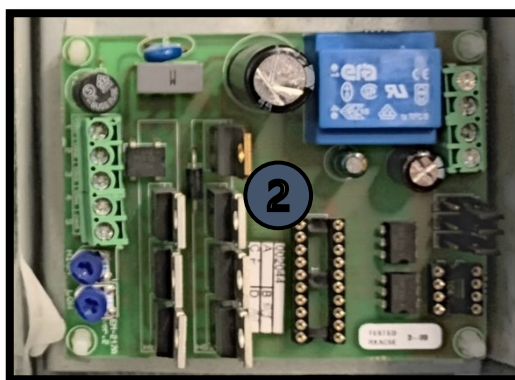


Mark all wires/sensors according to the marking on the main board and disconnect them from **the EDA main board (1)**.

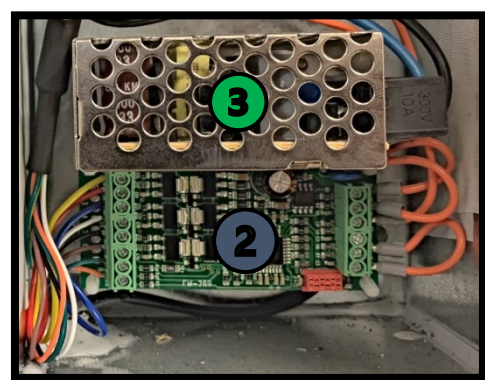
1



Mark all wires according to the marking on the circuit board and disconnect them from **the HRW circuit board (2)** and **possible transformer (3)**.  
*Type of HRW depends on year of manufacture.*

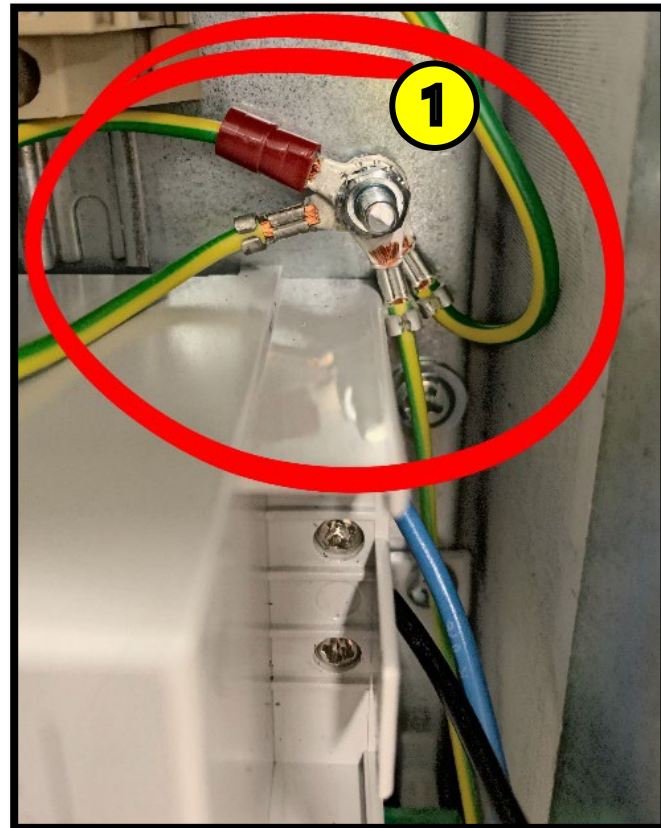


*AC HRW circuit board.*

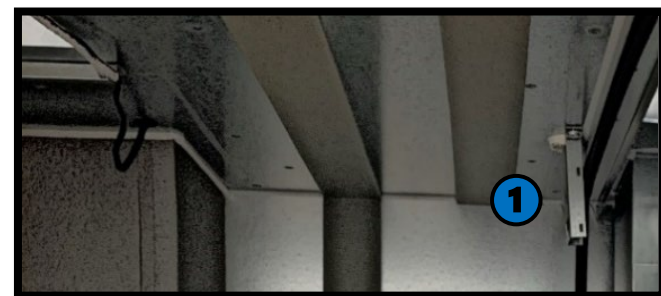


*DC HRW circuit board.*

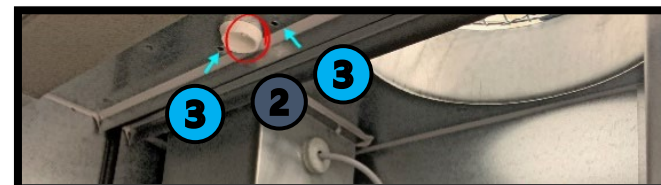
Disconnect **all ground wires (1)** from the automation base ground point.



Remove **the extract air sensor (1)**.  
Cut and remove the cable.



Install **a new cable sealing (2)** (40030101).  
Reattach **the old screws (3)**.



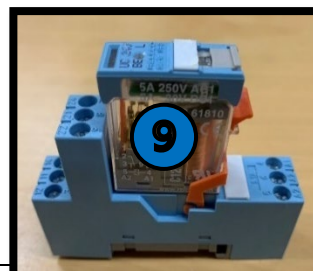
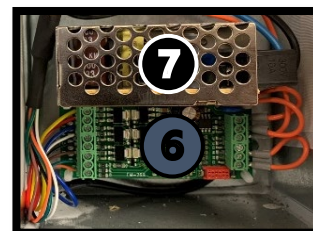
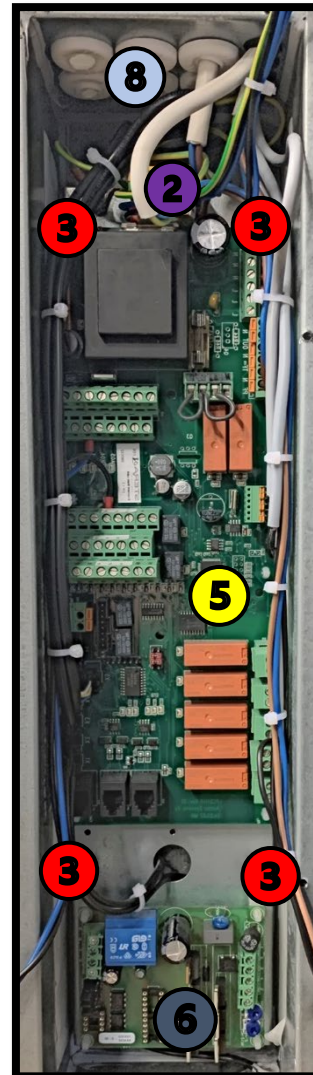
Disconnect **the power supply wires (2)** from the terminals.

Remove **the screws (3)**, and remove the automation base, incl. terminal blocks and **EDA main board (5)**.

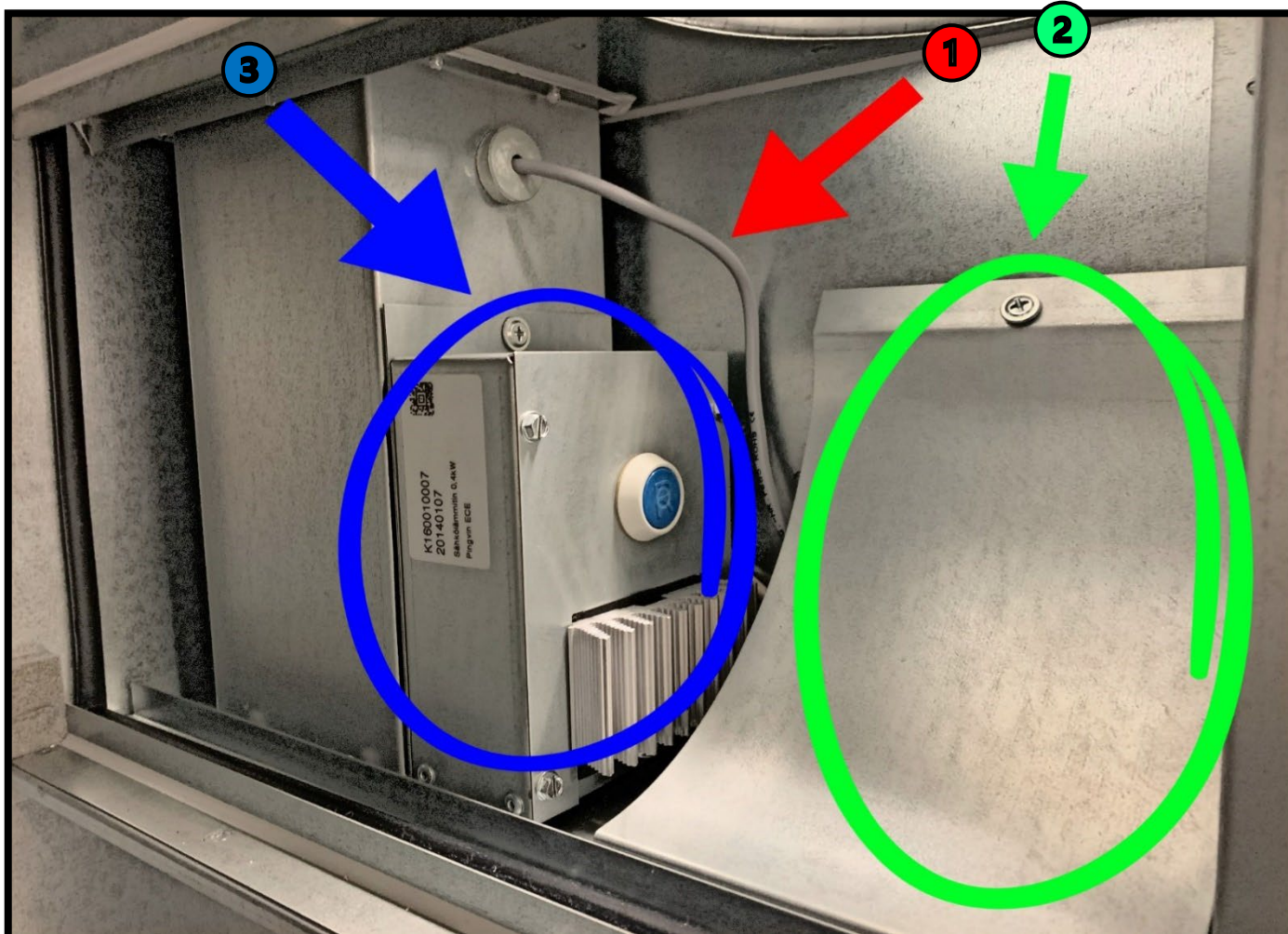
Replace **the used cable sealings with new ones (8)** (40030101).

Remove **the HRW circuit board (6)** and **the possible transformer (7)**. Save the PCB supports (4 pcs).

If there is a **blue relay (9)** installed, **remove the relay along with the wires and replace the old electrical after heater with a new one (page 9)**.





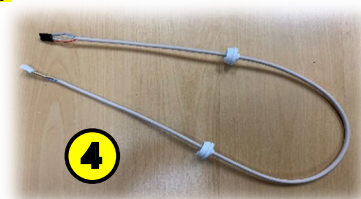


Ignore **the sensor (1)**. No sensor here if the unit has a water coil after heater or cooling coil (CG) installed.  
 Remove **the flow helper (2)** (one screw).  
 Remove **the after heater (3)** (one screw). *Ignore if the unit has a water coil after heater installed.*

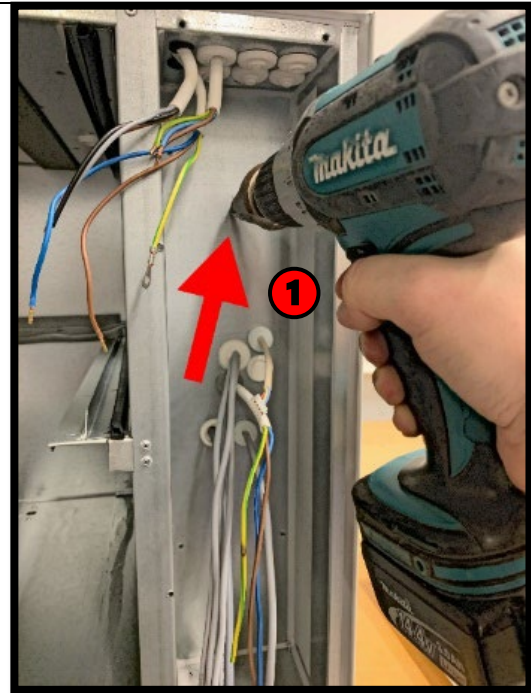
**NOTE!** Install the new after heater (10023244 / 10023243) if there was a **blue relay** installed in the electrical box.

**Otherwise:**

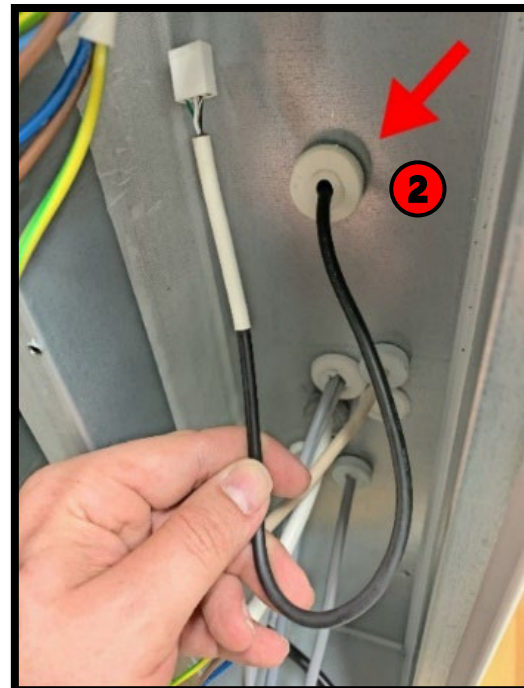
Open **the after heater (3)** (four screws).  
 Remove the old triac control cable and install **the new triac control cable (4)** (40030313).  
 Install the other end of the triac control cable into the electrical box.  
 Reinstall the **after heater (3)** and the **flow helper (2)**.



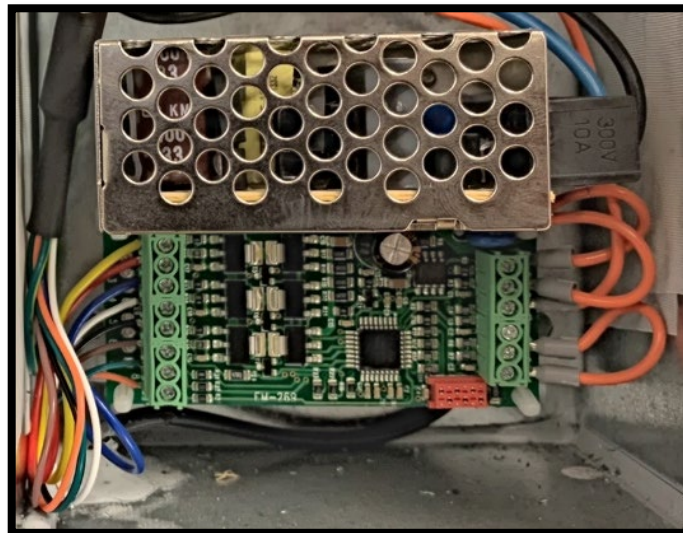
Drill **a 18mm hole (1)** as marked in the picture.



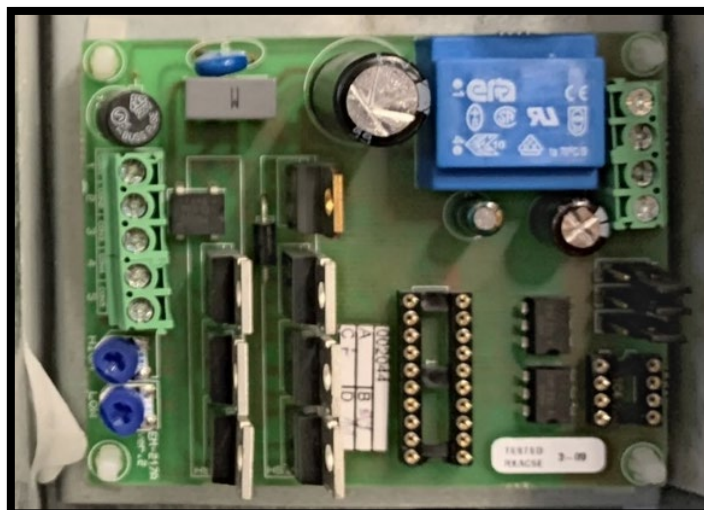
Install **the extract air sensor (2)** (40029224) with a cable sealing, through the drilled hole in the electrical box.



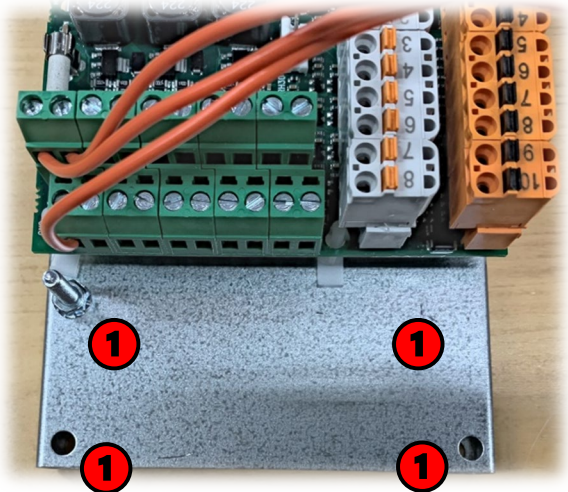
**If the unit has a DC HRW installed, jump to page 16**



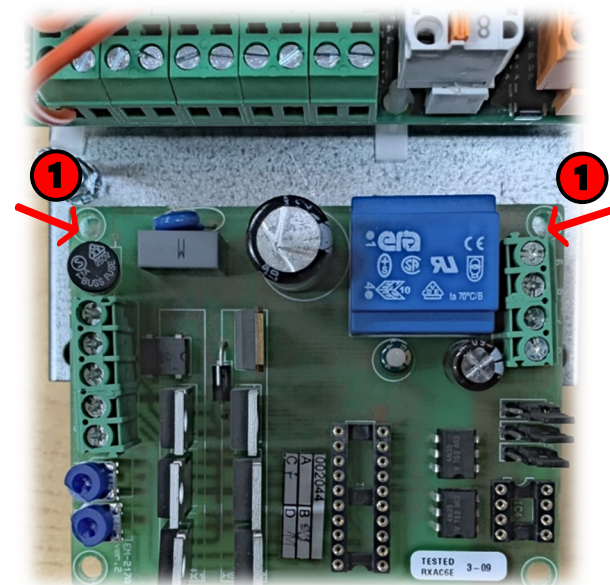
**If the unit has an AC HRW installed, follow the instructions on *the next page***



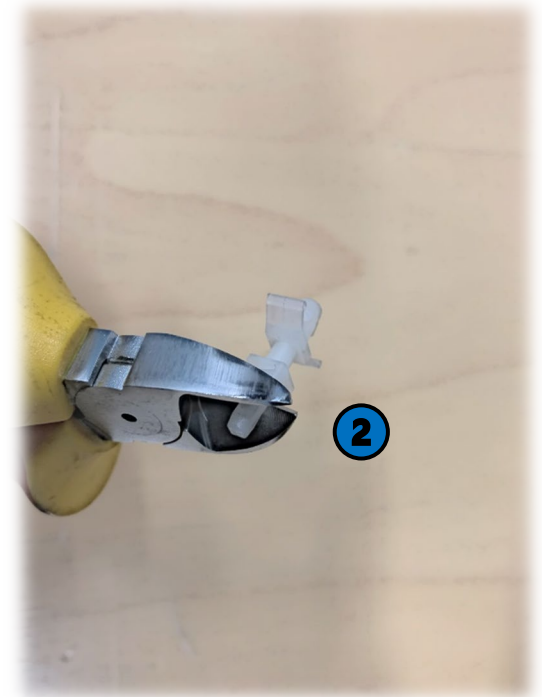
Remove **the PCB supports (1)** from the new automation base.



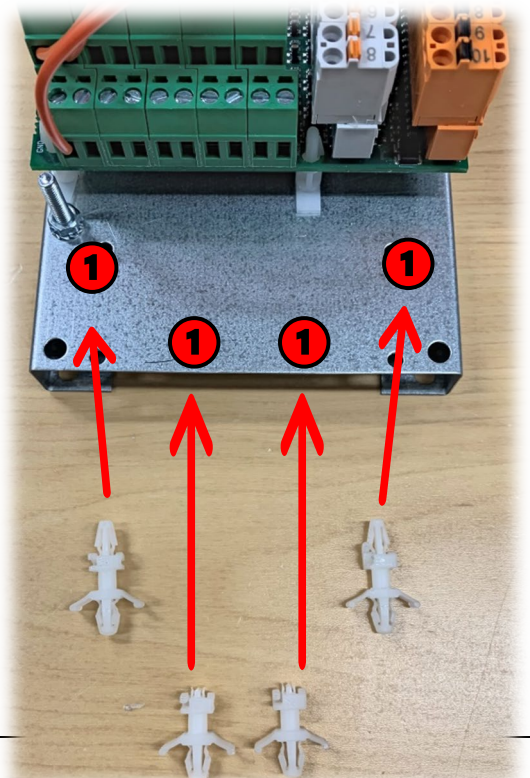
Mark **the holes (1)** to the automation base.



Cut **two of the new PCB supports (2)** (40030936).



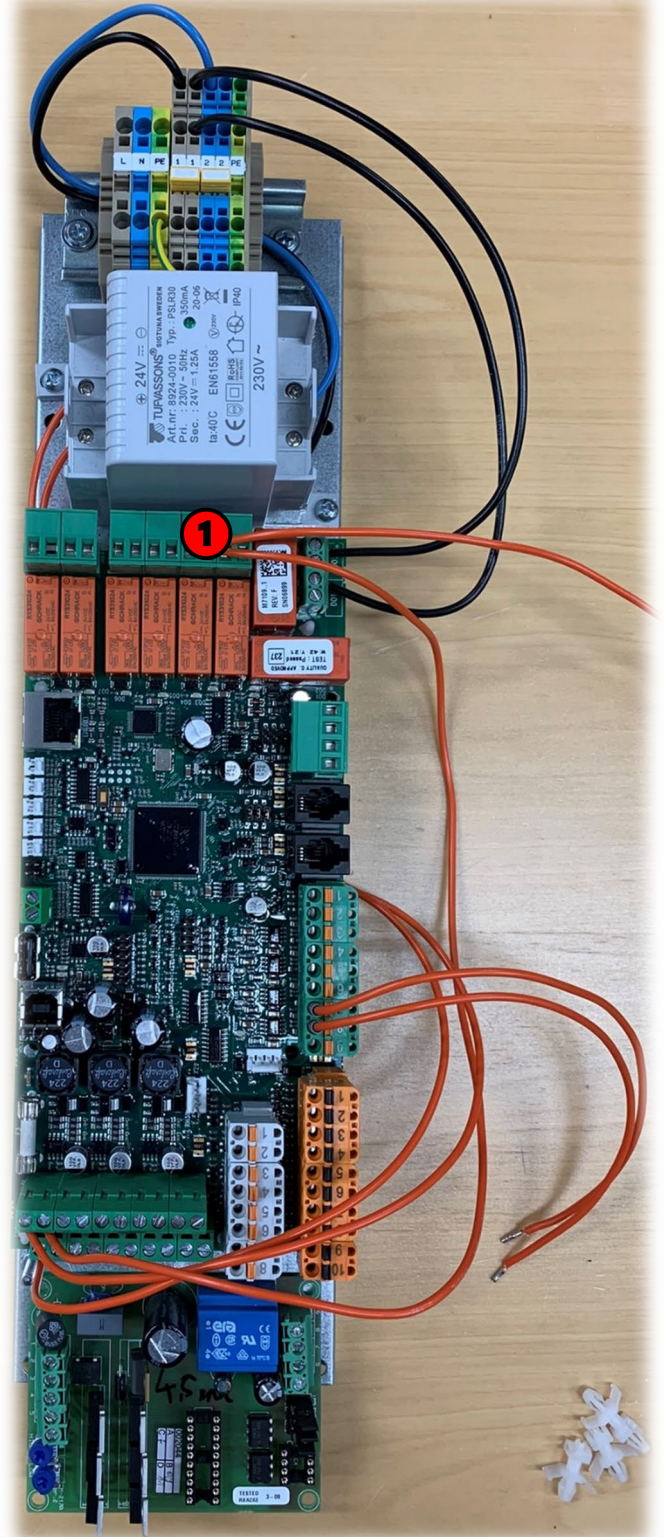
Drill **four 4,5mm holes (1)** according to the previous markings as shown in the picture.



Install **the new PCB supports (1)** (40030936).

Attach the AC HRW circuit board to the PCB supports.

Disconnect and remove  
the wires connected to "DO4" (1).



Connect **the black wire** (40028774)  
**to connection terminal "1" and to "DO4" (1).**

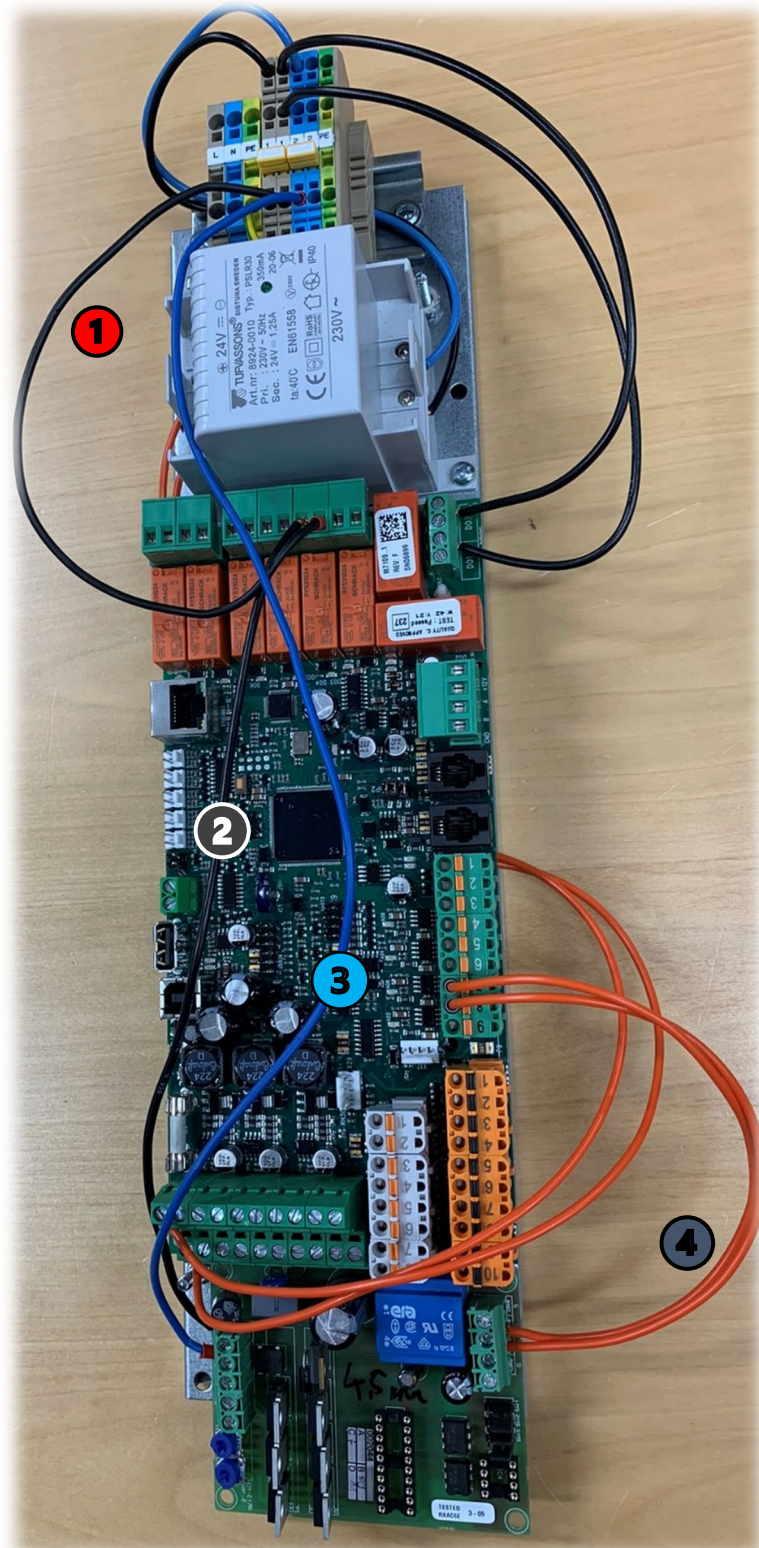
Connect **the black wire** (40028780)  
**to "DO4" and to the AC HRW circuit board  
connector "1" (2).**

Connect **the blue wire** (40028781)  
**to connection terminal "2" and to the  
AC HRW circuit board connector "2" (3).**

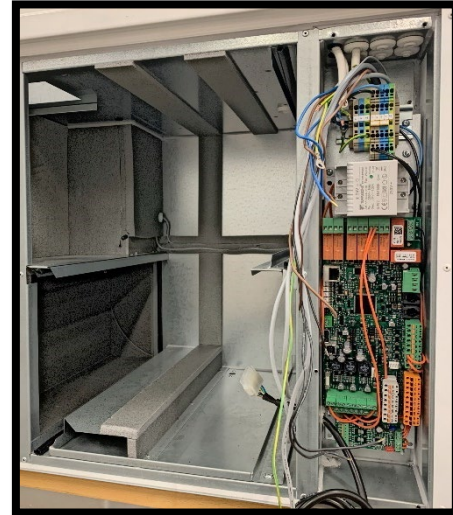
Connect **the wire from eAir main board  
connector "7" to AC HRW circuit board "8".**

Connect **the wire from eAir main board  
connector "8" to AC HRW circuit board "7".**

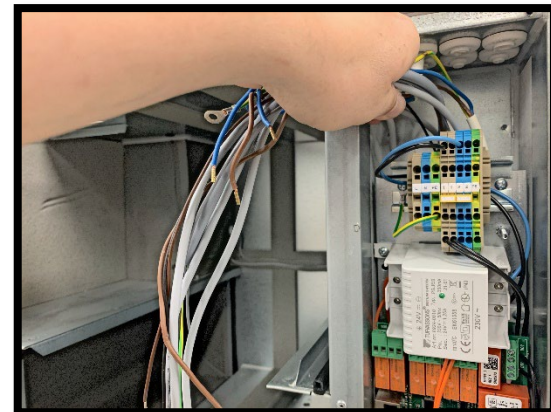
4



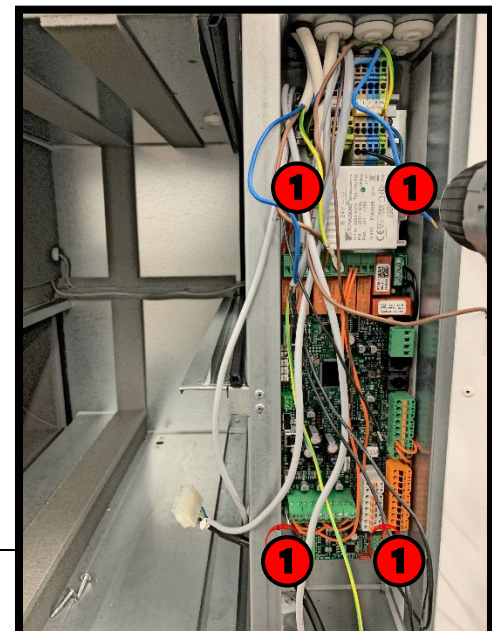
Install **the new automation** in the electrical box.



Make sure no **installed cable / sensor** get stuck behind the automation base and that they are available in front of the main board.



Attach **the automation base** (40029647) to the electrical box with **four self tapping screws (1)** (40031530).



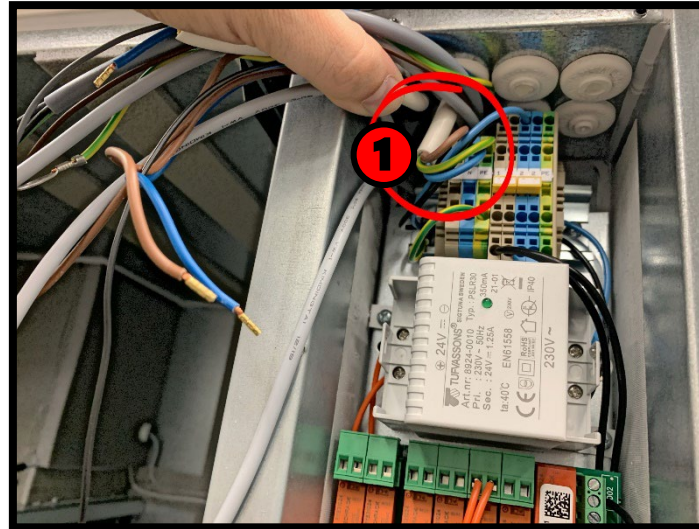


Connect **the power cord to the terminals (1)**.

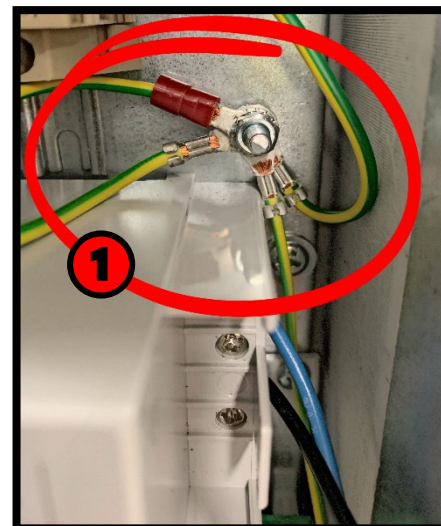
L: Brown

PE: Green/yellow

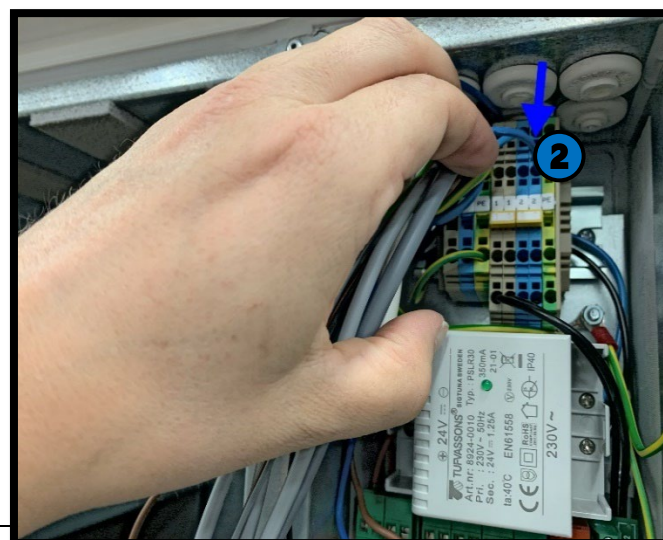
N: Blue



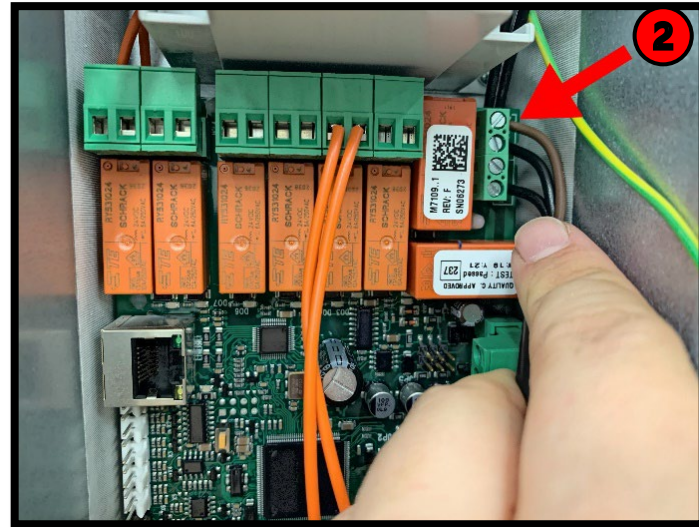
Connect **all ground wires** to **the automation base ground point (1)**.  
 Supply air fan, extract air fan, after heater, ground terminal.  
 Totally four wires. **Three wires if no electrical after heater installed.**  
 Connect the cover ground wire to the ground terminal (PE).  
 Tighten with **the nut (40031489)**.



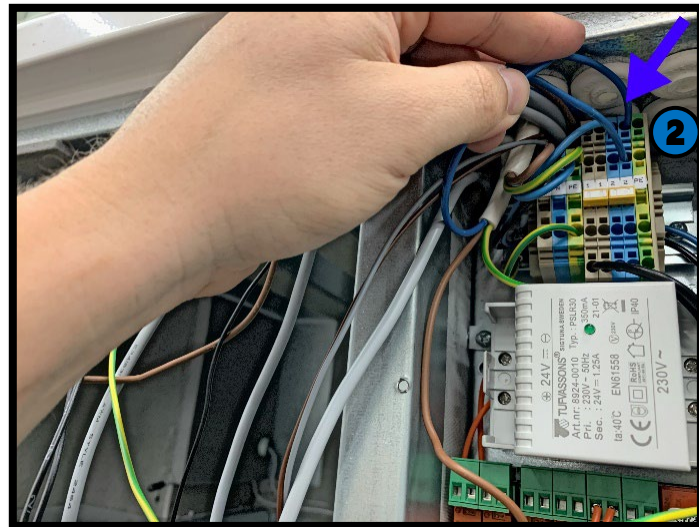
Connect **the blue wire** from the electrical after heater to **the blue "2" connection terminal (2)**.  
 Ignore if the unit has a water coil after heater installed.



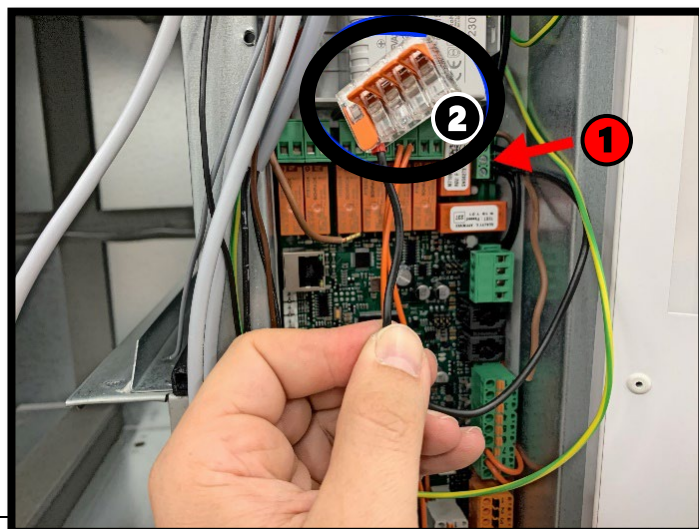
Connect *the brown wire* from the electrical after heater to **"DO2" (2)**.  
*If there is a water coil after heater installed, the circulation pump power wire (L) would be connected here.*



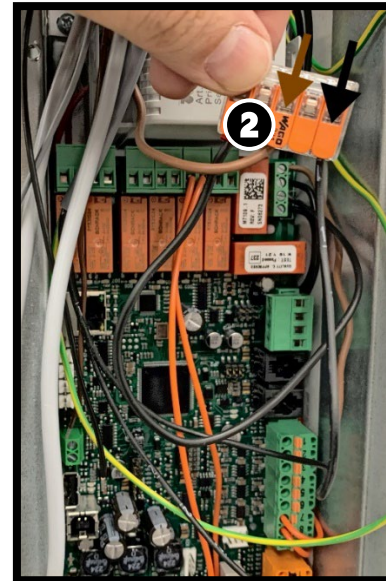
Connect *the blue wires / or the wires marked "2"* from the fan power cables to *the blue "2" connection terminal (2)*.



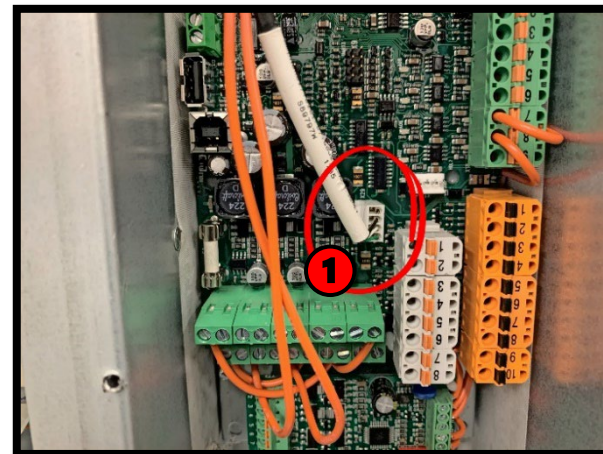
Connect *the black wire (40028774)* to **"DO1" (1)** and to *the connection terminal (2) (40029982)*.



Connect **the brown wires / or the wires marked "1"** from the fan power cables to **the connection terminal (2)** (40029982).

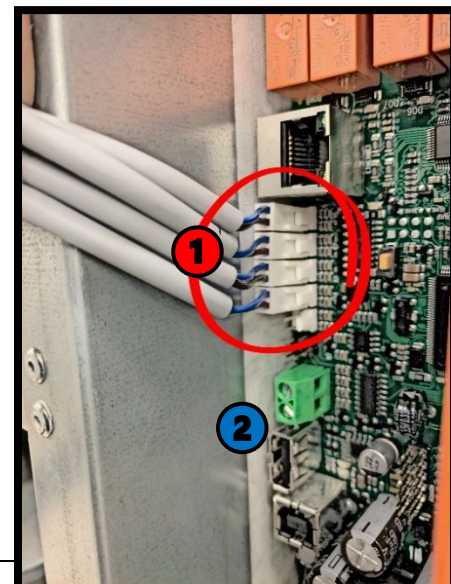


Connect **the extract air sensor (1)** (40029224) to the main board (X29).



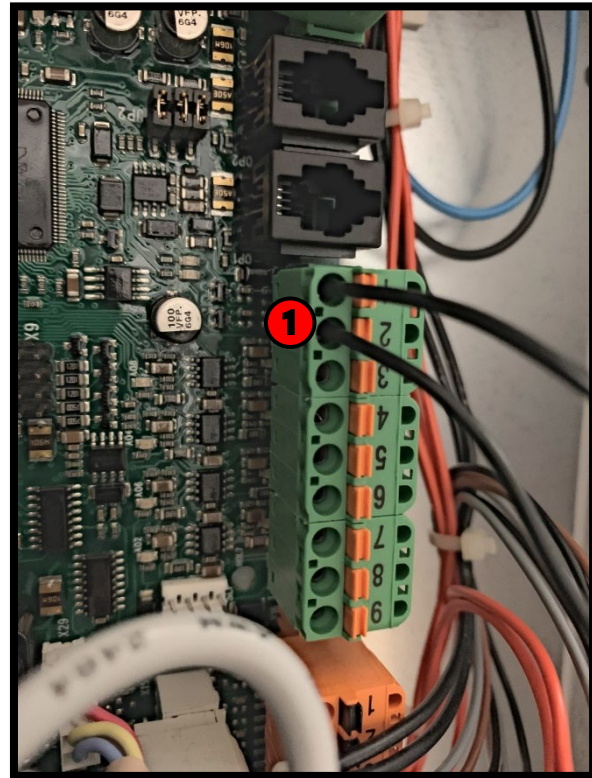
Connect **the sensors (1)** to the main board according to the markings.

- X1, TE01: Outside air
- X2, TE05: HRW supply air
- X3, TE10: Supply air
- X4, TE32: Waste air
- X12, TE45: Return water sensor (2),  
if the unit has a water coil after heater installed.



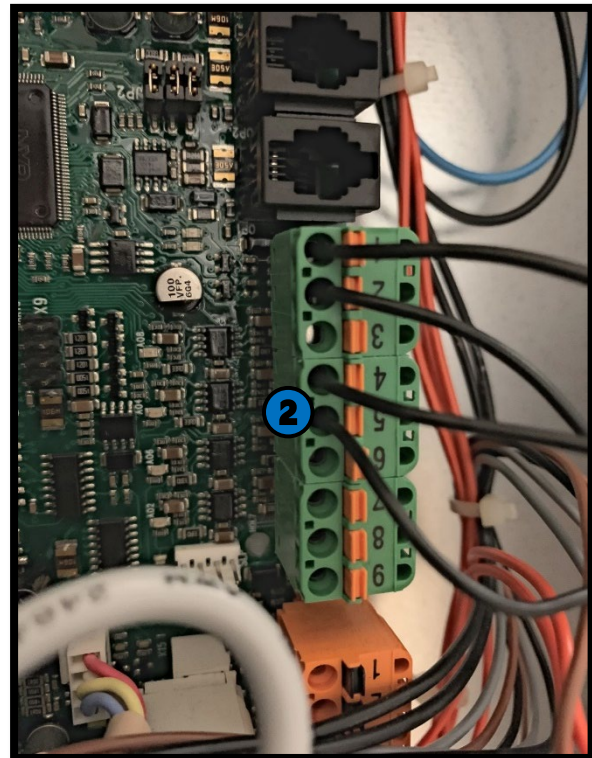
Connect **the wires from the supply air fan control cable (1)** to the main board.

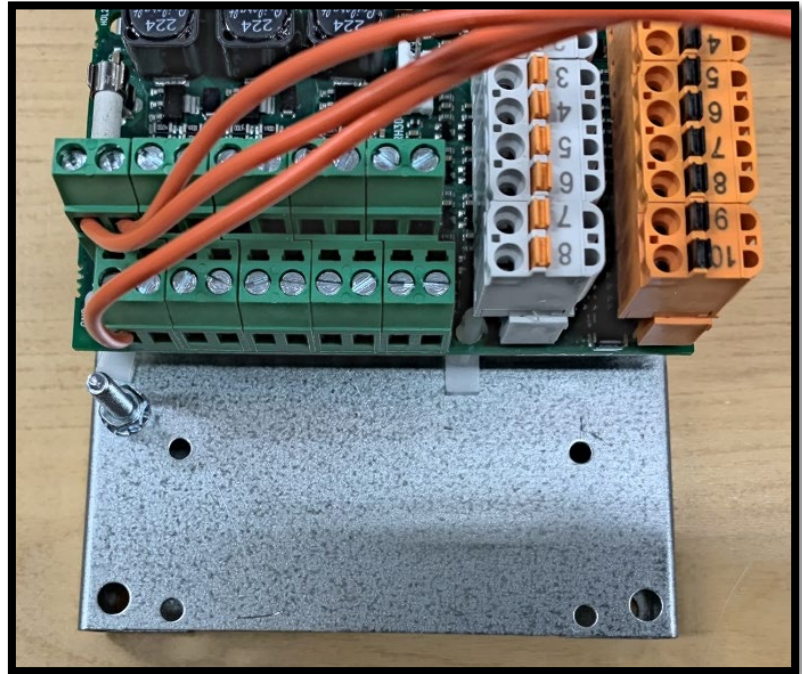
- 1: 1
- 2: 2



Connect **the wires from the extract air fan control cable (2)** to the main board.

- 4: 1
- 5: 2

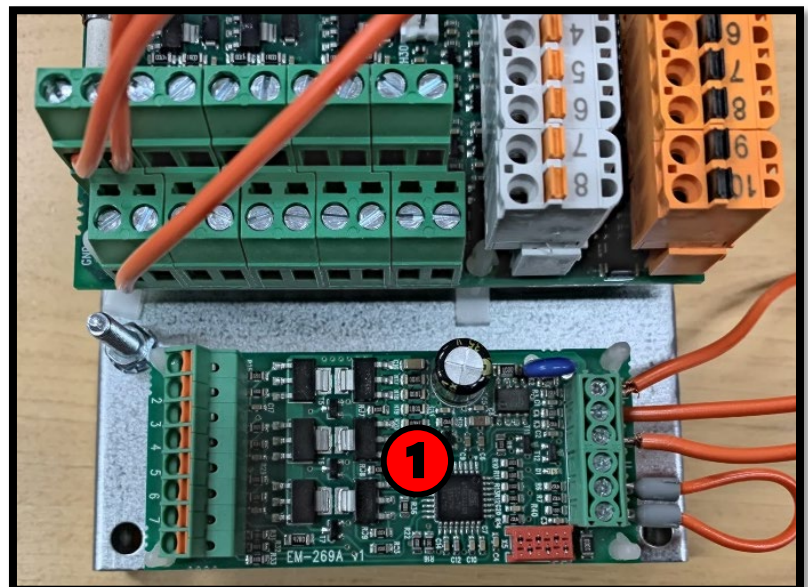




**If DC HRW:**

Install **the old DC HRW circuit board (1)** to the new automation base / or leave it in place if installed separately in the electrical box, and connect it to the main board (**page 22 & 32**).

*The old transformer won't be used anymore!*



**If DC HRW:**

Connect **the wires from the HRW cable to the HRW control board (1).**

1: Yellow

2: Red

3: Blue

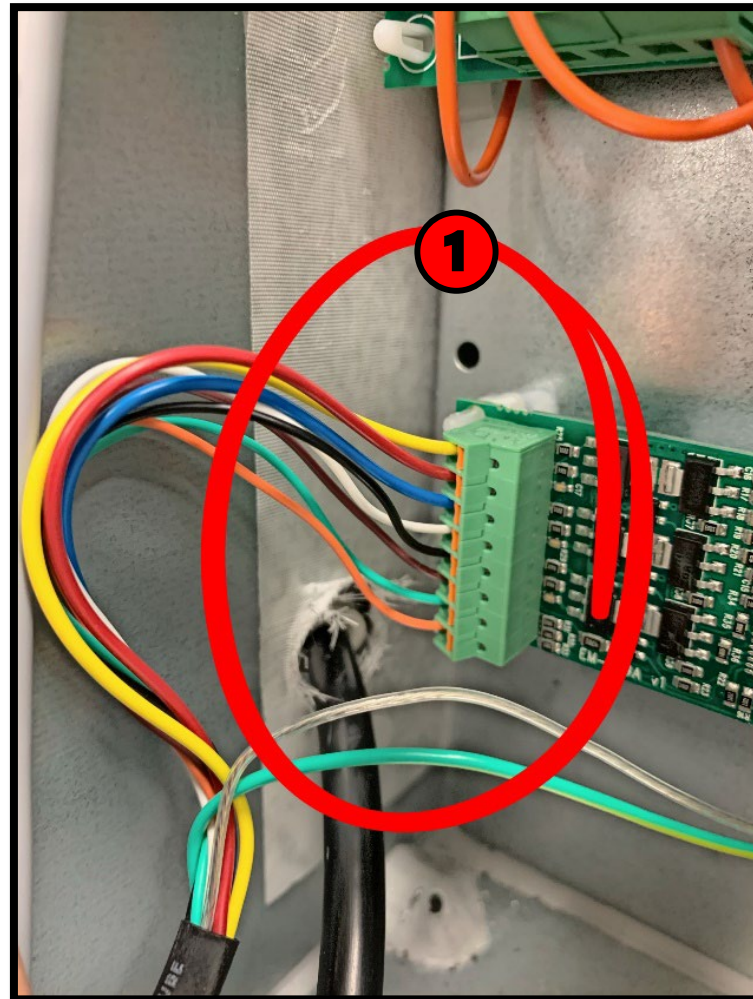
4: White

5: Black

6: Brown

7: Green

8: Orange



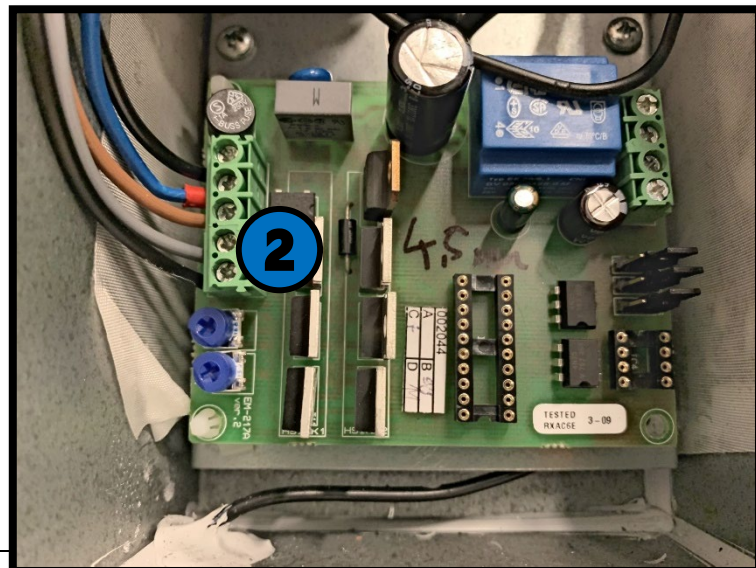
**If AC HRW:**

Connect **the wires from the HRW cable to the HRW control board (2).**

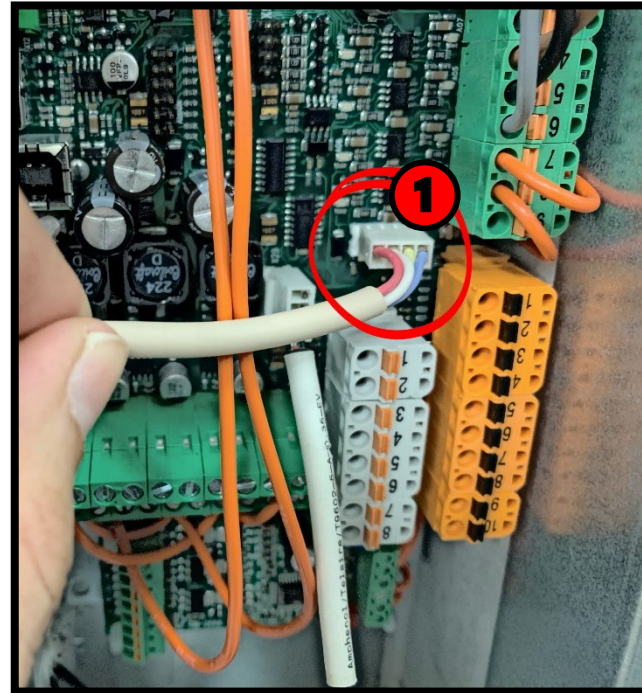
3: Brown / (1)

4: Gray / (2)

5: Black / (3)

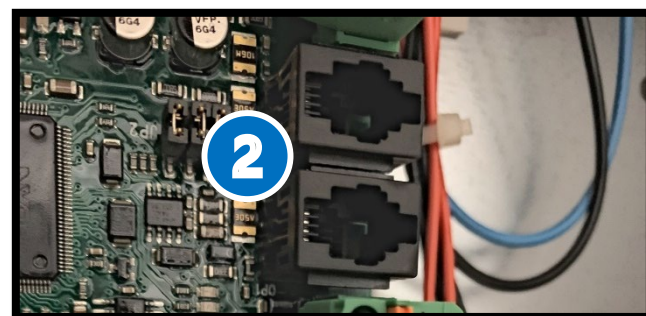


Connect **the after heater control cable (1)** to the main board (X17).  
*Ignore if no electrical after heater installed.*



**Connect other components (for example actuator for cooling coil or after heater water coil) according to the electrical diagrams (pages 31-34).**

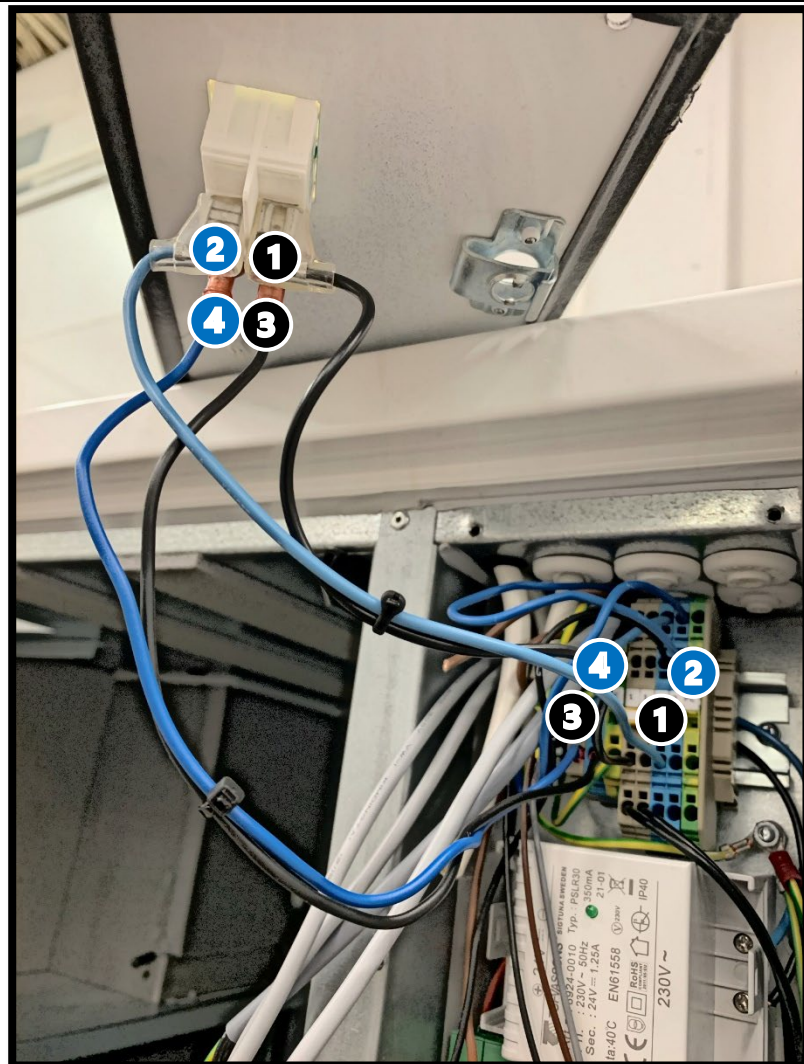
Connect **the display cable to the main board (2).**



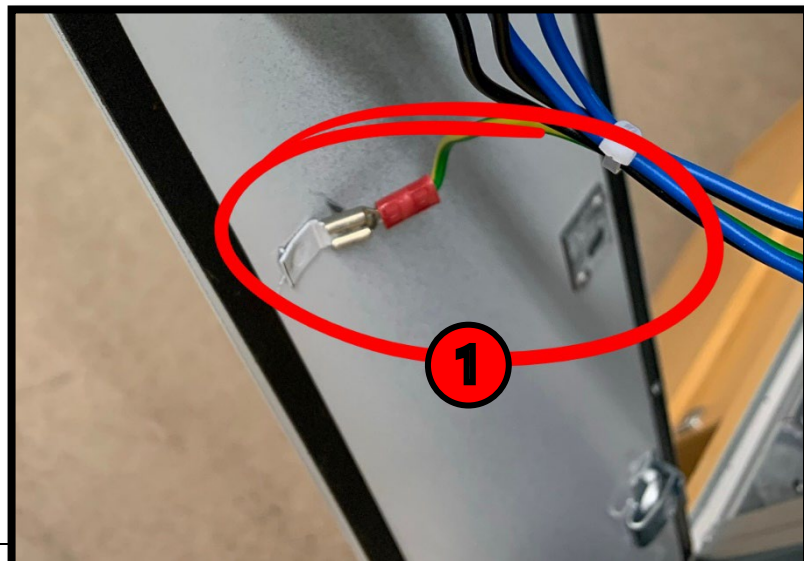
Connect **the pairs of wires with flat connectors** (40028776, 40028777) to the main switch and to the connection terminals.

L: Black (3)  
N: Blue (4)

1: Black (1)  
2: Blue (2)

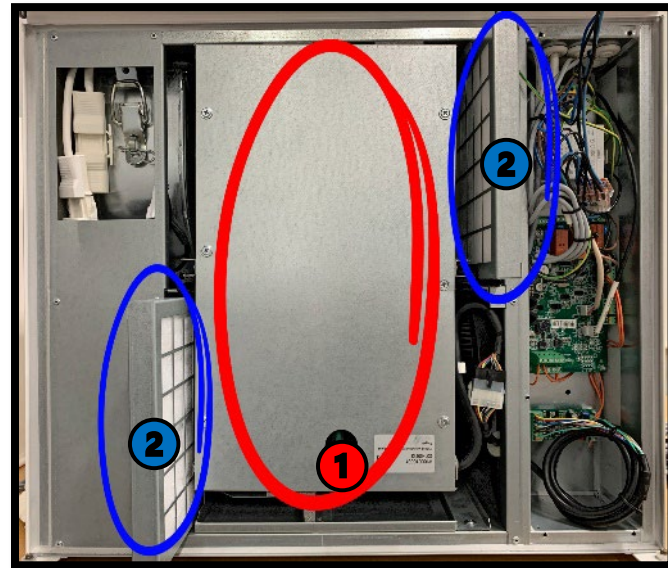


Connect **the ground wire (1)** to the cover.





Install *the HRW (1)* and *the filters (2)*.



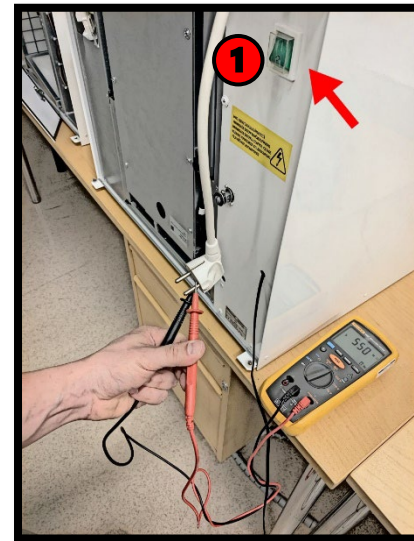
Disconnect and remove the old display.  
Install *the new display (3)* (40031114) in a desired place.



Install *the WiFi module (4)* (40034288).



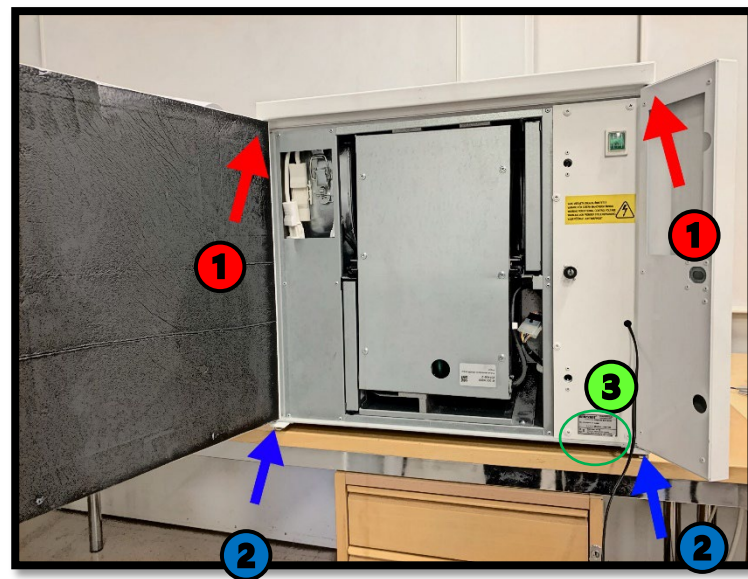
Turn on **the main switch (1)** and perform insulation and ground continuity test according to regulations.



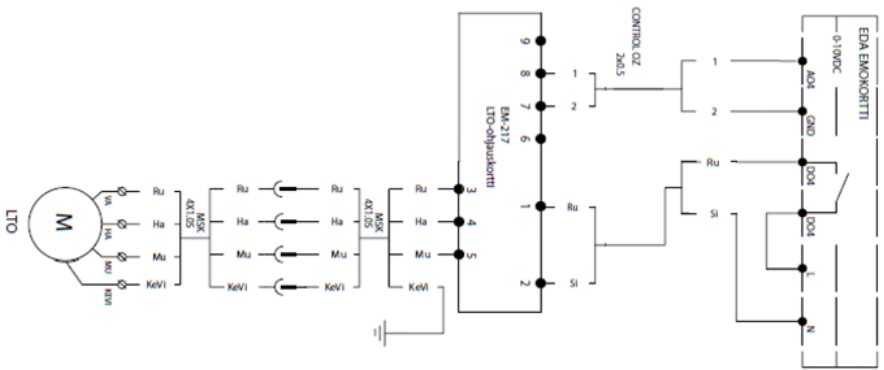
Install the doors by lifting **(upper part first) (1)** so that the lower edge rises above **the pins (2)** and gets into place.

Install **the new type plate sticker (3)**.

Close the doors.





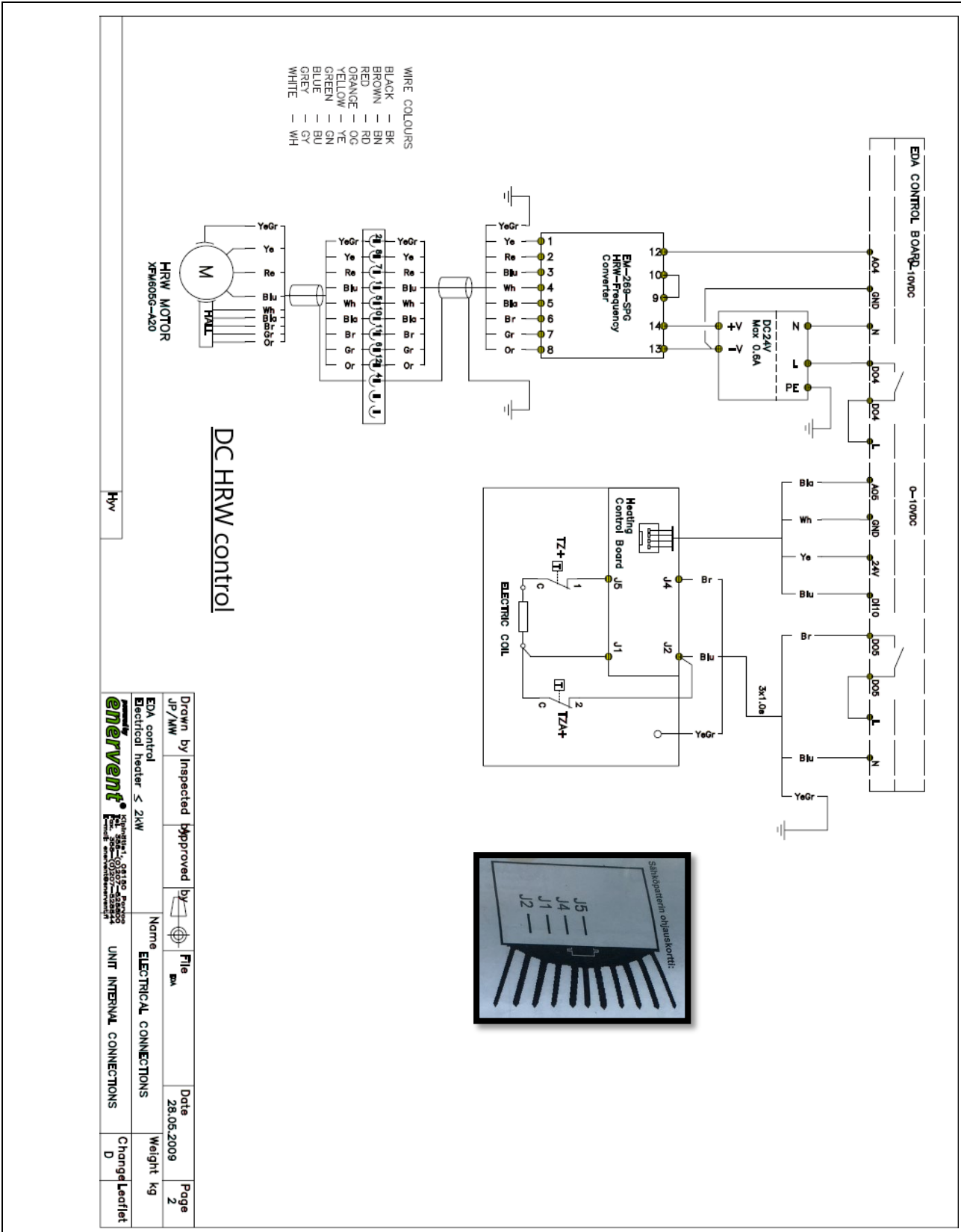


AC HRW control

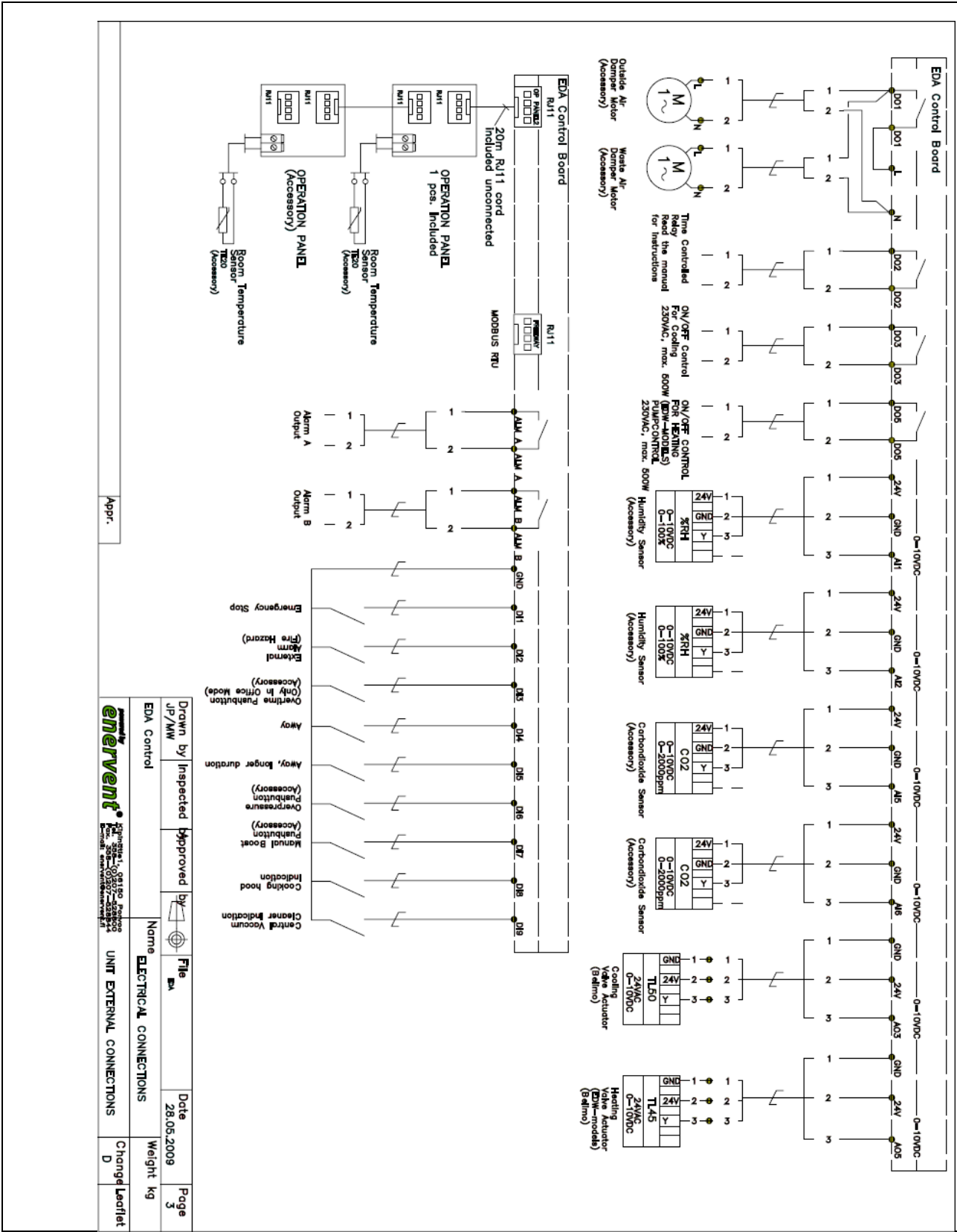
Hyv

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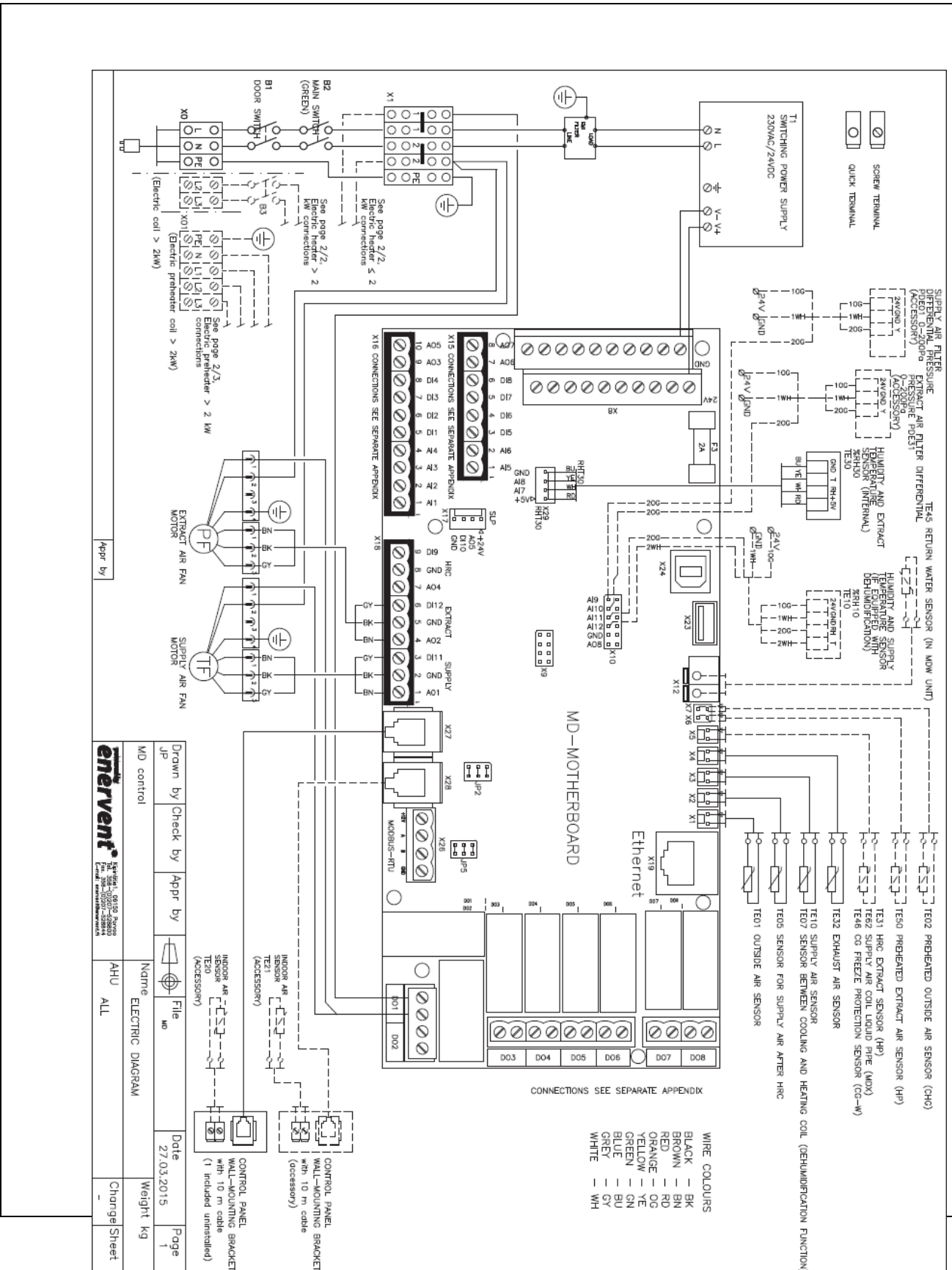
Enervent  
T +358 20  
FO-nummer: 29287244

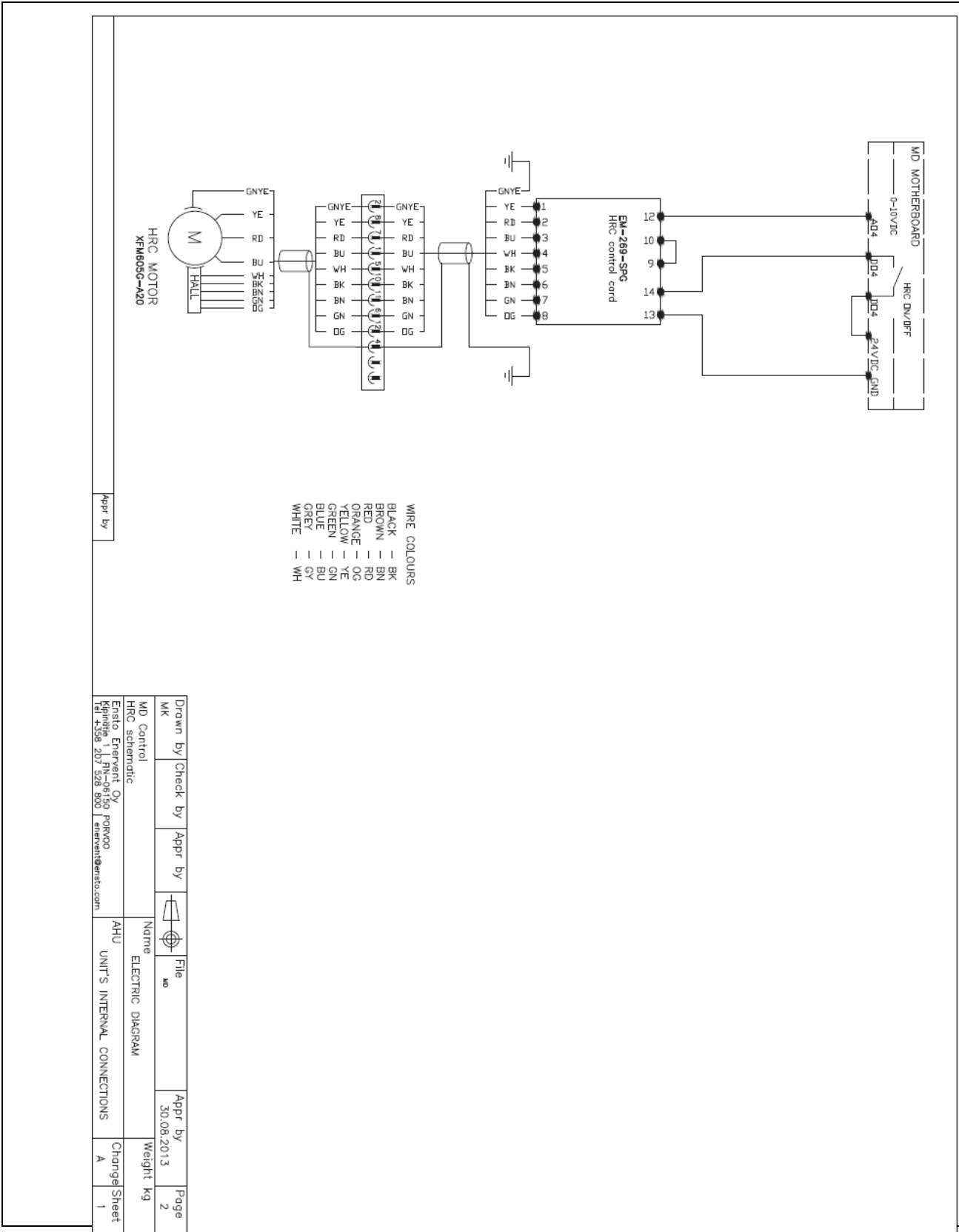


Drawn by	Inspected	Approved by	File	Date	Page
EDP/MW			en	28.05.2009	2
Name			ELECTRICAL CONNECTIONS		
Electrical header ≤ 2kW			UNIT INTERNAL CONNECTIONS		
enervent			Change Leaflet		
			D		

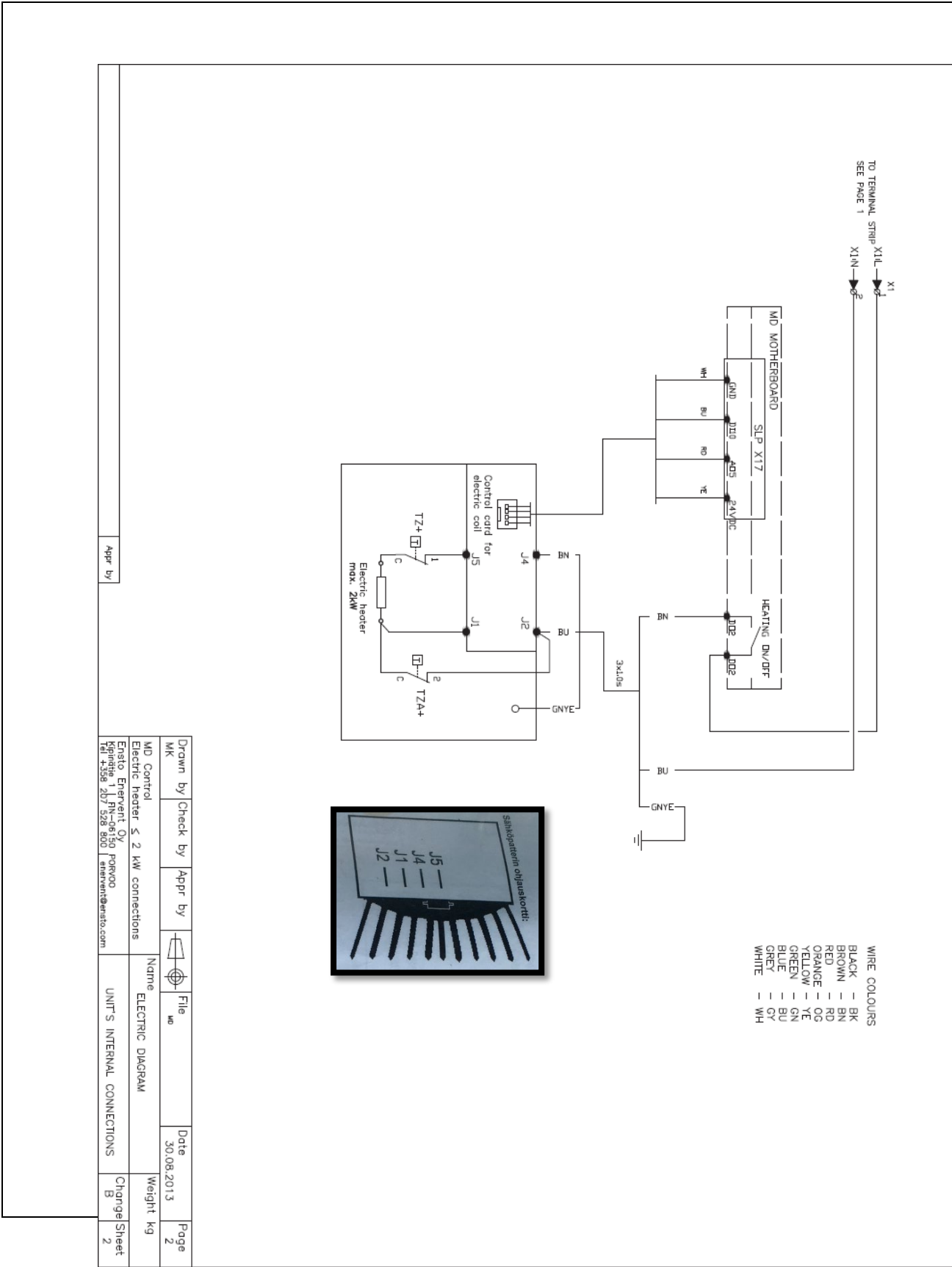


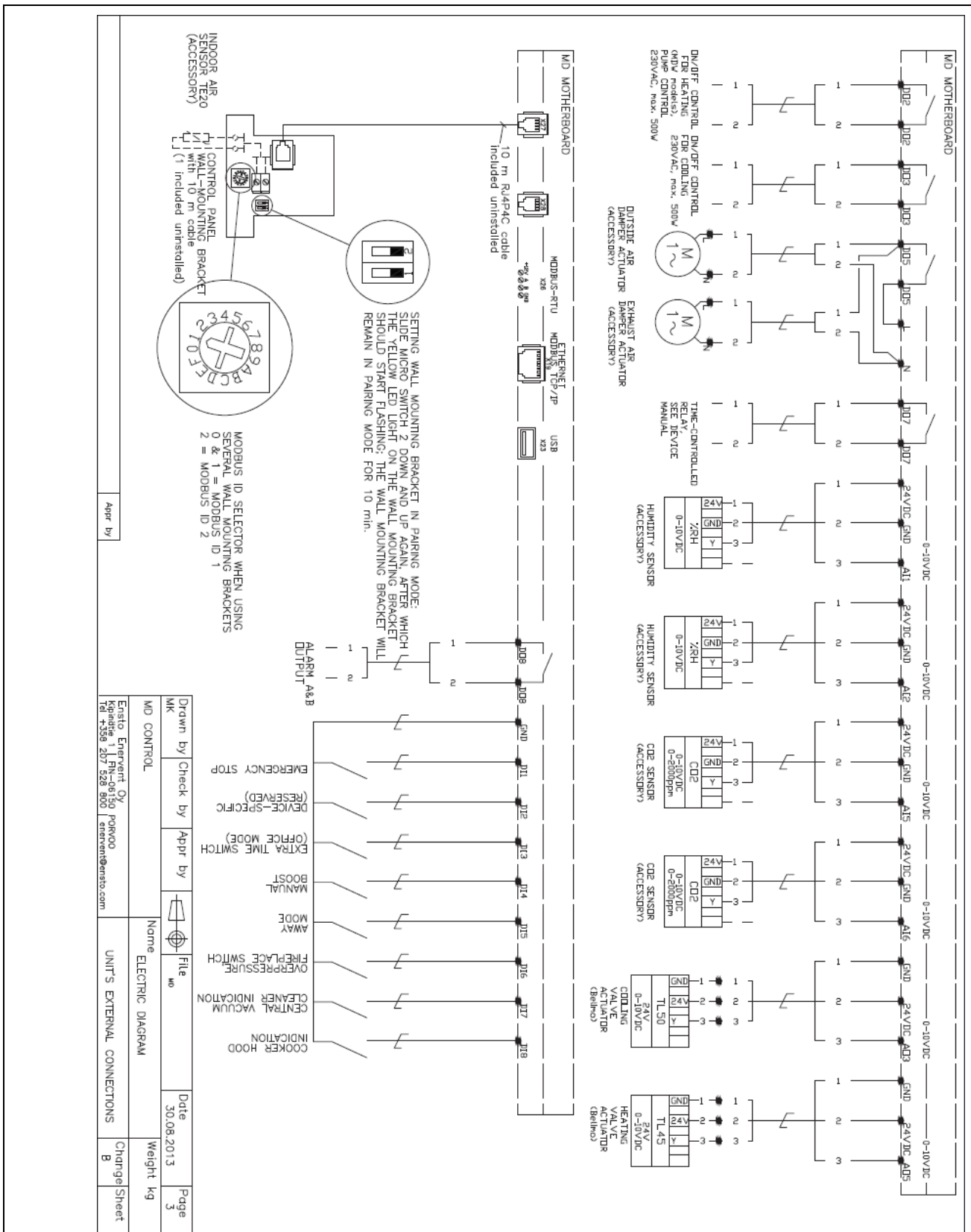
Drawn by	Inspected	Approved	by	File	Date	Page
J.P./M.W.				EDA Control	28.05.2009	3
Name				ELECTRICAL CONNECTIONS		
UNIT EXTERNAL CONNECTIONS				Change Leadlet		
Appr.				D		

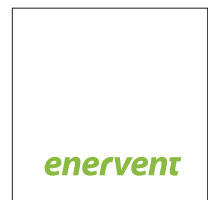




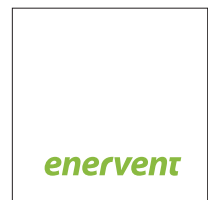








<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
<b>MANDATORY PARTS</b>		
10023854	CONTROL UPDATE KIT PINGVIN ECO EDA → EAIR	1
<b>OPTIONAL PARTS</b>		
10023244	ELECTRICAL HEATER 0,4kW RIGHT	1
	or	
10023243	ELECTRICAL HEATER 0,4kW LEFT	1
<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
10023854	CONTROL UPDATE KIT PINGVIN ECO EDA → EAIR	
<b>Automation</b>		
40030936	PCB support KGLS-6S	5
40030937	PCB support LCBSM-6-01	4
40031695	Screw DIN 7981 ZN 3,9x9,5	4
40031631	Screw DIN 7985 ZN M4x20	1
40031537	Washer 6798-A ZN M4x8	3
40031489	Nut DIN 934/8 ZN M4	1
40028772	Wire 65mm orange 0,75mm <sup>2</sup>	1
40028773	Wire 340mm orange 0,75mm <sup>2</sup>	6
40028774	Wire 255mm 1mm <sup>2</sup> black	3
40028779	Wire 255mm 1mm <sup>2</sup> blue	1
40031093	eAir main board	1
40029985	eAir main board connectors	1
40029195	Power supply Tufvassons PSLR24	1
40028788	Ground wire 100mm	1
40029647	Automation base	1
40029344	Terminal package	1
<b>Components</b>		
40030100	Cable sealing VET 5-7	5
40030101	Cable sealing VET 7-10	6
40029224	Humidity/temperature sensor Amphenol 600mm	1
40029982	WaGo 221-415	1
40031530	Screw ZN 4,2x25	5
40028774	Wire 255mm 1mm <sup>2</sup> black	3
40028780	Wire 600mm 1mm <sup>2</sup> black	1
40028781	Wire 600mm 1mm <sup>2</sup> blue	1
40028776	Wire 250mm black (main switch)	2
40028777	Wire 250mm blue (main switch)	2
40031537	Washer 6798-A ZN M4x8	1
40031489	Nut DIN 934/8 ZN M4	1
40030997	Cable tie 2,5x200mm	10
40031114	eAir panel package	1
40030313	Triac cable 1000mm 4-pole	1
40034288	WiFi module package	1
<b>Manuals etc. (depends on model)</b>		
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1



### MANDATORY PARTS

10023854 CONTROL UPDATE KIT PINGVIN ECO EDA → EAIR 1

Code Description Pcs.  
10023854 CONTROL UPDATE KIT PINGVIN ECO EDA → EAIR

#### **Automation**

40030936	PCB support KGLS-6S	5
40030937	PCB support LCBSM-6-01	4
40031695	Screw DIN 7981 ZN 3,9x9,5	4
40031631	Screw DIN 7985 ZN M4x20	1
40031537	Washer 6798-A ZN M4x8	3
40031489	Nut DIN 934/8 ZN M4	1
40028772	Wire 65mm orange 0,75mm <sup>2</sup>	1
40028773	Wire 340mm orange 0,75mm <sup>2</sup>	6
40028774	Wire 255mm 1mm <sup>2</sup> black	3
40028779	Wire 255mm 1mm <sup>2</sup> blue	1
40031093	eAir main board	1
40029985	eAir main board connectors	1
40029195	Power supply Tufvassons PSLR24	1
40028788	Ground wire 100mm	1
40029647	Automation base	1
40029344	Terminal package	1

#### **Components**

40030100	Cable sealing VET 5-7	5
40030101	Cable sealing VET 7-10	6
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40030997	Cable tie 2,5x200mm	10
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40034288	WiFi module package	1

#### **Manuals etc. (depends on model)**

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Notes: