

Automation upgrade

Pingvin EDA -> eAir

NOTE!

F7 filters after heat recovery in the supply air chamber can't be used anymore after upgrade.

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).**

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!**

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



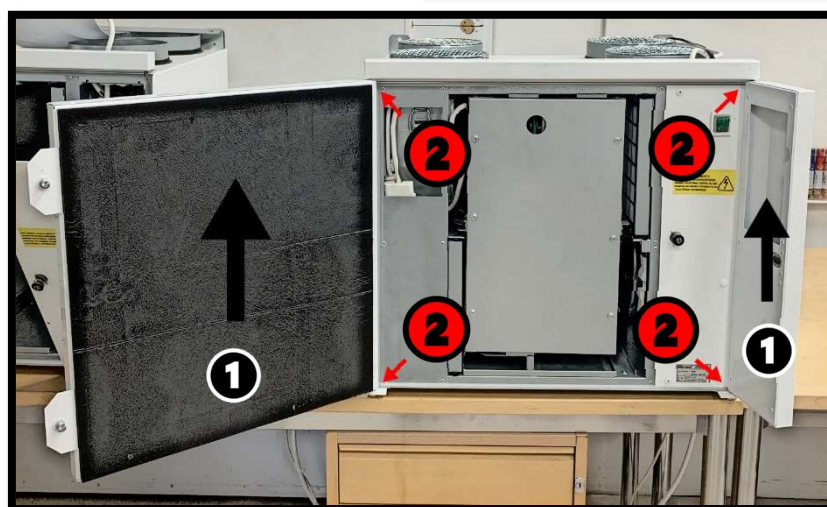
Disconnect **the power cord (1)** (and other power supplies if available).



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.



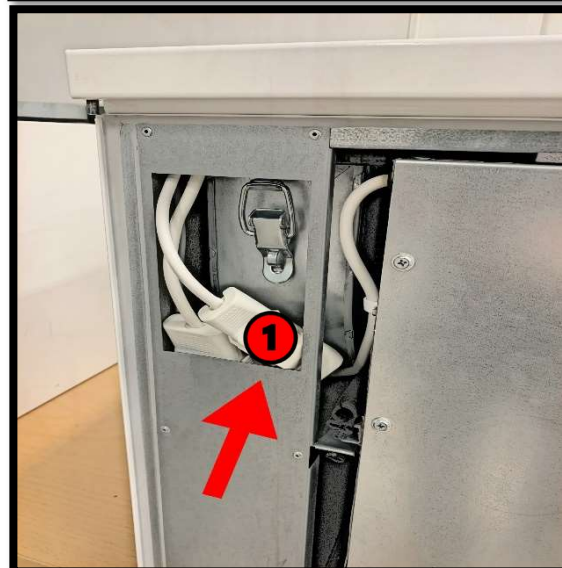
Remove **the doors (1)** by lifting and pulling. The doors will detach from **the pins (2)**.



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



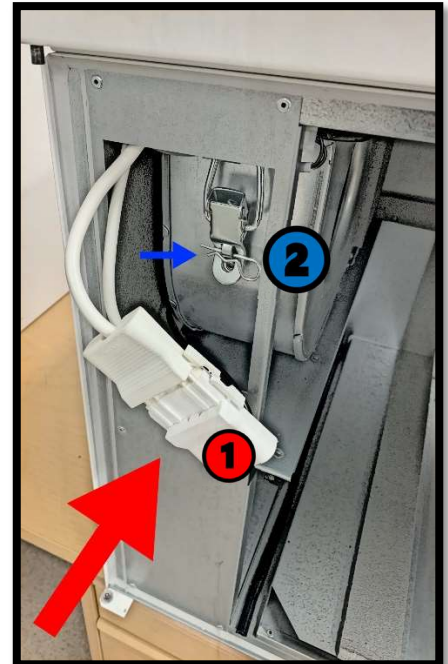
Disconnect **the connectors (1)** from the heat exchanger.



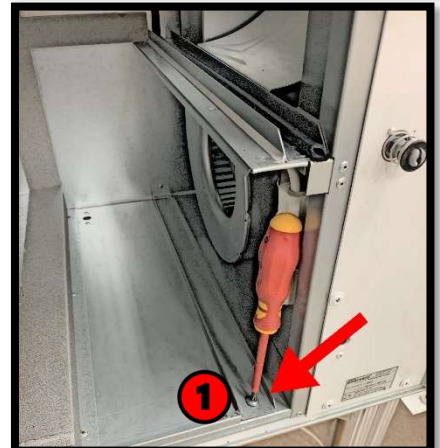
Remove **the heat exchanger (1)** by pulling.



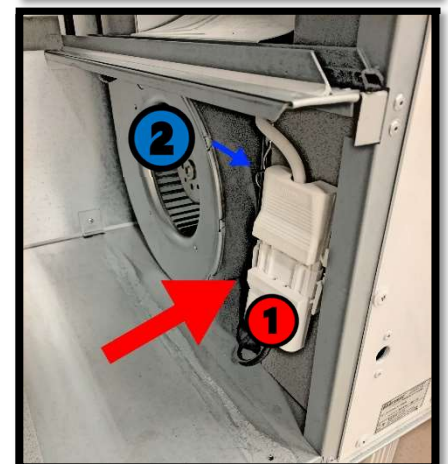
Disconnect **the power cord (1)**, release **the pin (2)** and remove the extract air fan.



Remove **the screw (1)** from the filter rail.



Disconnect **the power cord (1)**, release **the pin (2)** and remove the supply air fan.

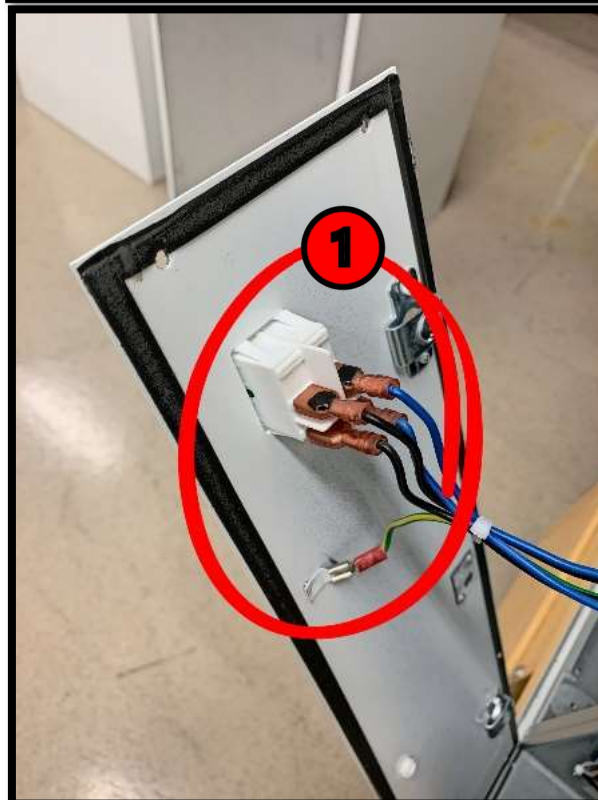


Open the electrical box by removing **the screws (1)**.



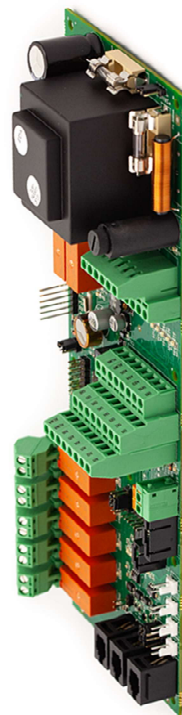
NOTE! Ensure that no voltage is occurring in the electrical box before proceeding!

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

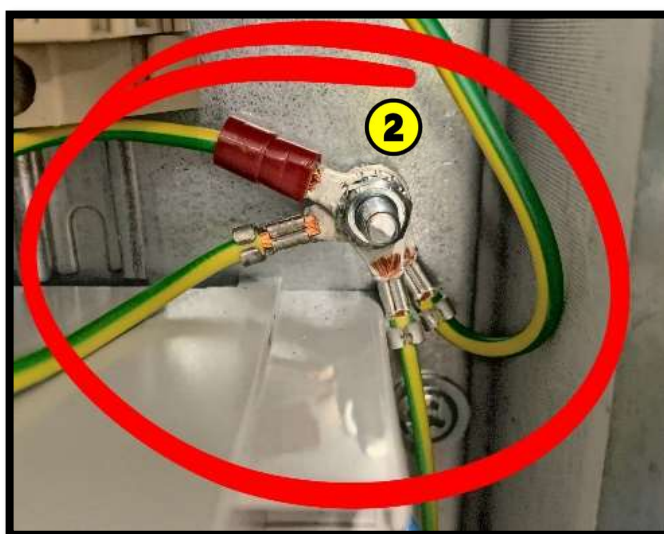


Mark all wires/sensors according to the marking on the main board and disconnect them from **the EDA main board (1)**.

1



Disconnect **all ground wires (2)** 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)**.

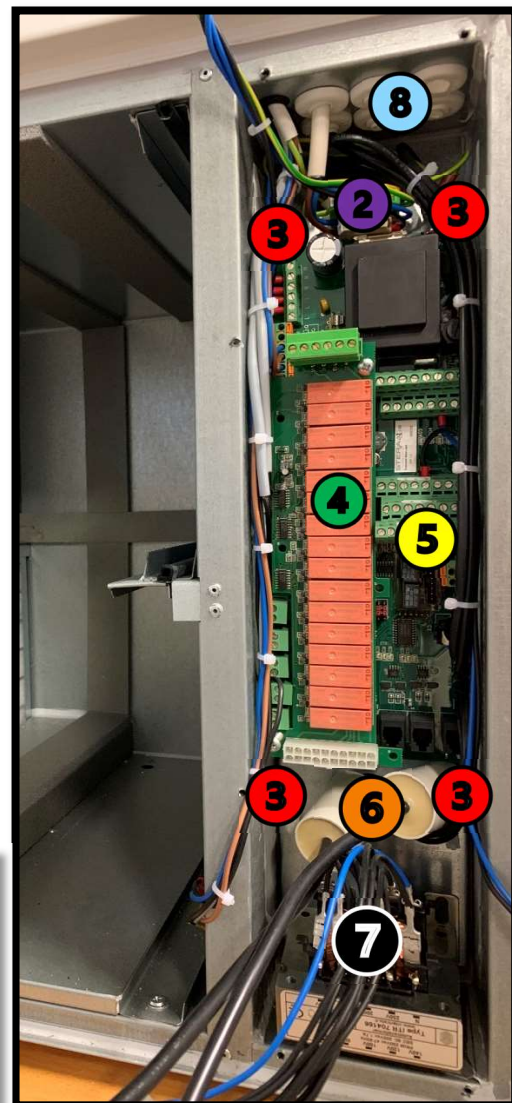


Disconnect **the power supply wires (2)**
from the terminals.

Remove **the screws (3)** and remove the automation base
incl. terminal blocks, **relay board (4)**, **EDA main board (5)**,
capacitors (6) and **transformer (7)**.

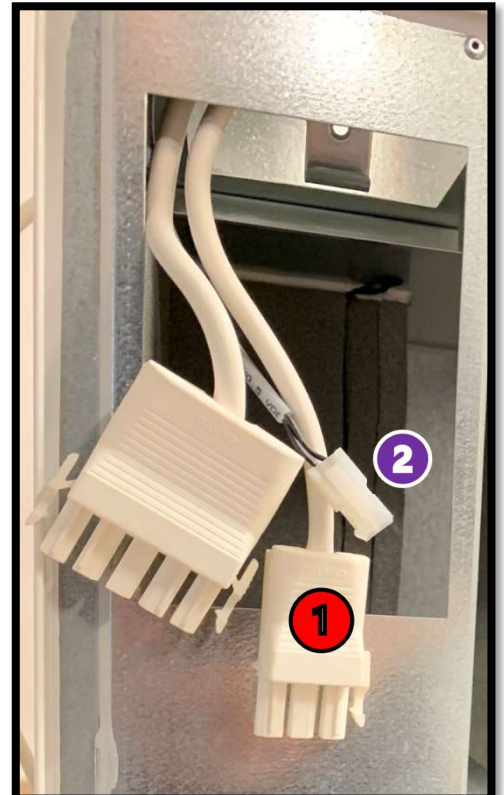
Replace **the used cable sealings with new ones (8)**
(40030101).

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 12).**

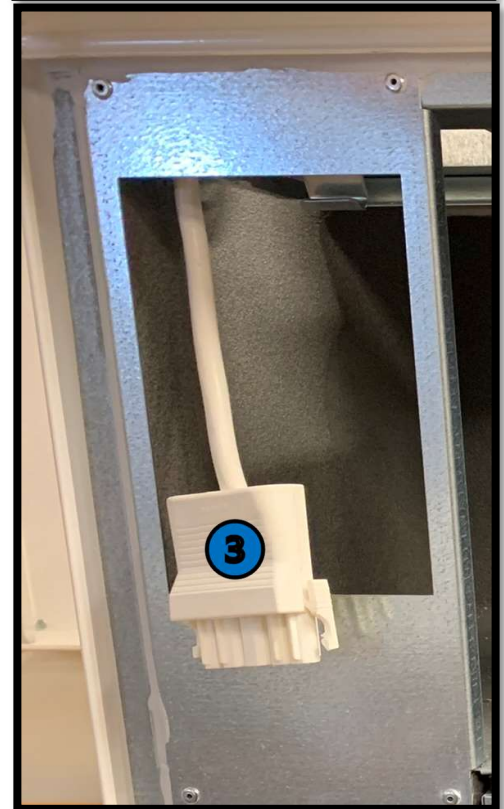


Remove the 3-pin connector from **the old HRW power cable (1)**.

Leave **the old HRW control cable (2)** as it is.
This will be the new extract air fan control cable.



Remove **the extract air fan cable (3)** by pulling.

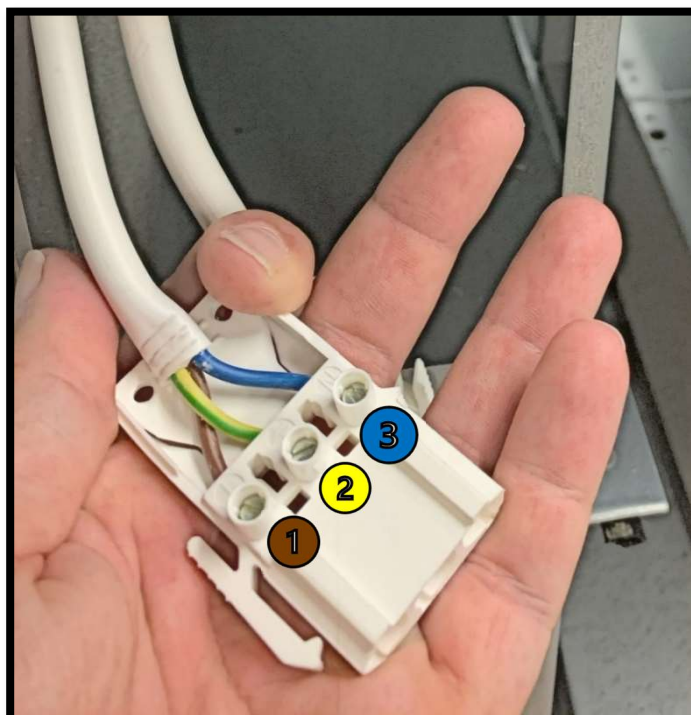


Connect **the new 3-pin connector (40029346)** to the old HRW power cable.
This will be **the new extract air fan power cable.**

1: Brown (1)

GND: Green/yellow (2)

N: Blue (3)

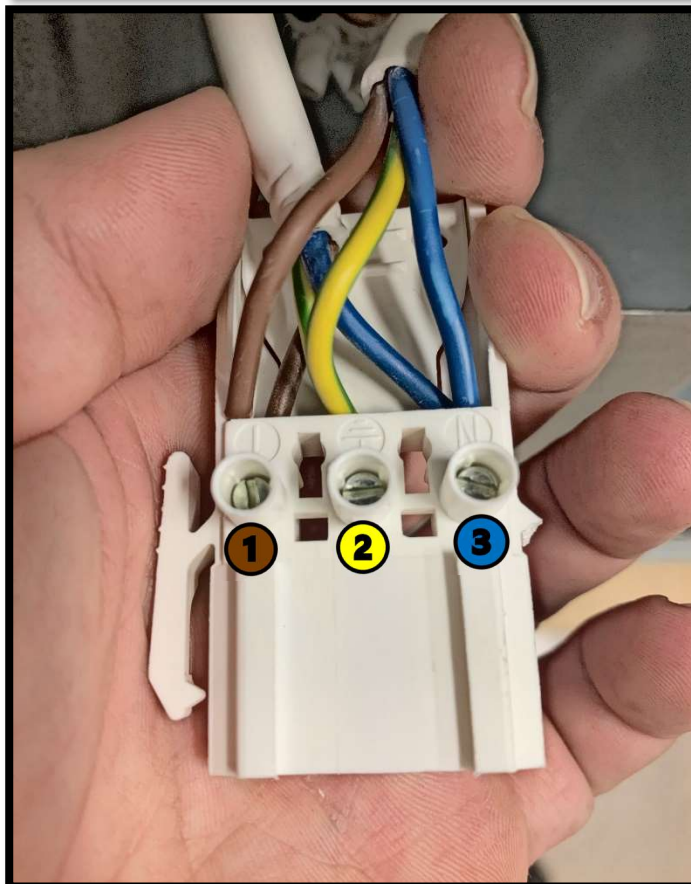


If there is a pre-heater installed inside the unit, connect it to this connector also.

1: Brown (1)

GND: Green/yellow (2)

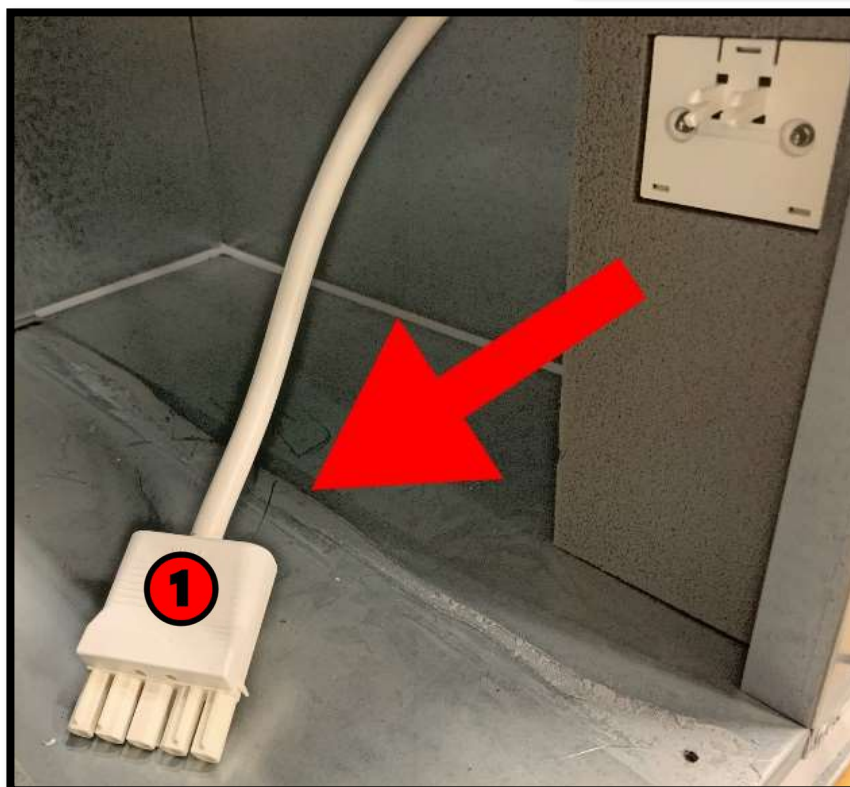
N: Blue (3)

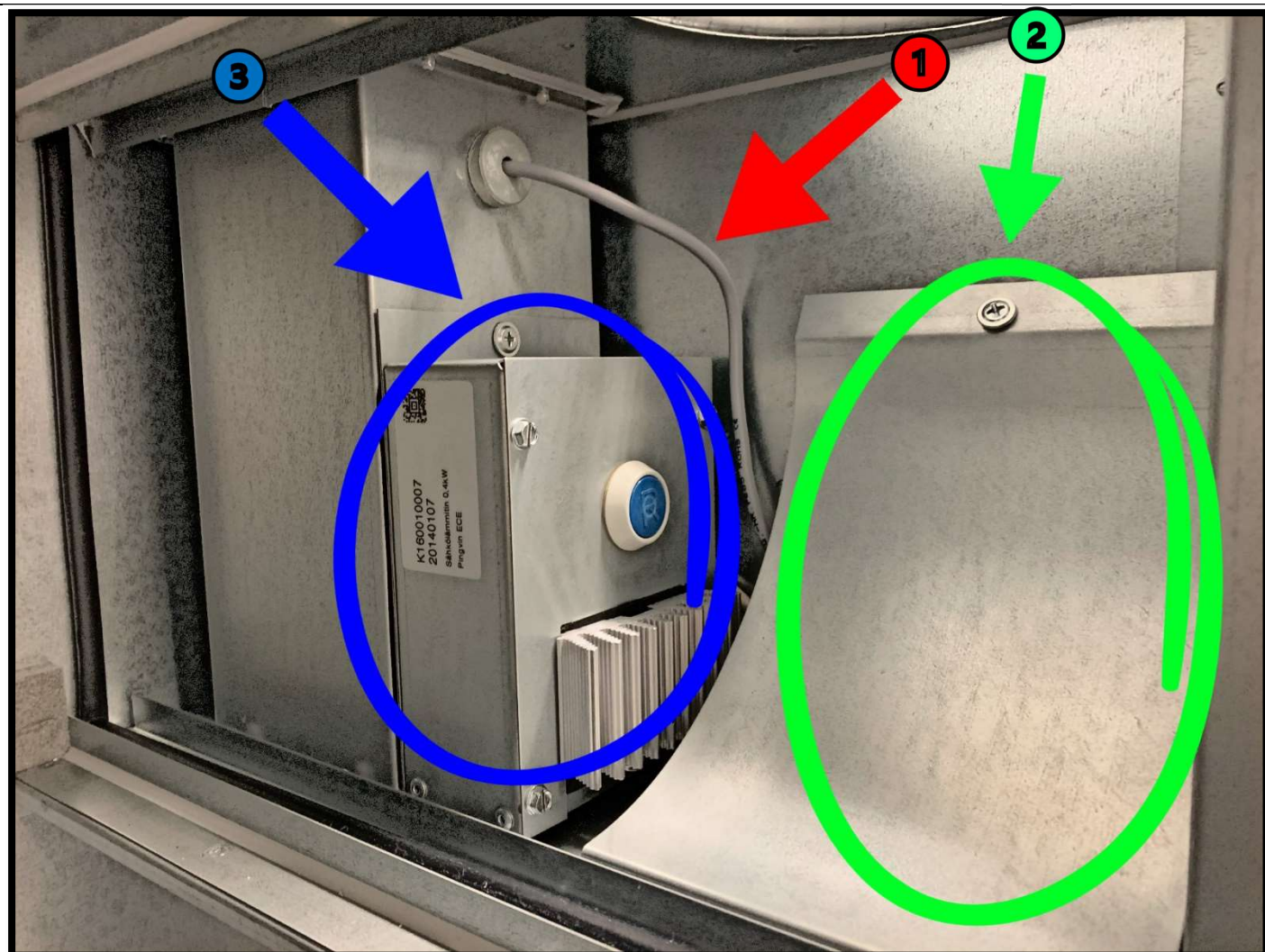


Attach **the adapters (1)** (40028768 & 40029530).



Remove **the supply air fan cable (1)**.



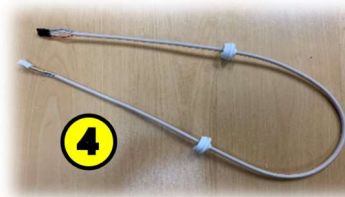


Ignore **the sensor (1)**. *No sensor here if the unit has a water coil after heater or cooling coil (CG) installed.*
 Remove **the flow helper (2)** (one screw).
 Remove **the after heater (3)** (one screw). *Ignore if the unit has a water coil after heater installed.*

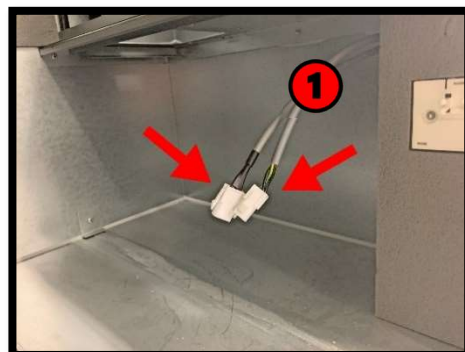
NOTE! Install the new after heater (10023244 / 10023243) if there was a **blue relay** installed in the electrical box.

Otherwise:

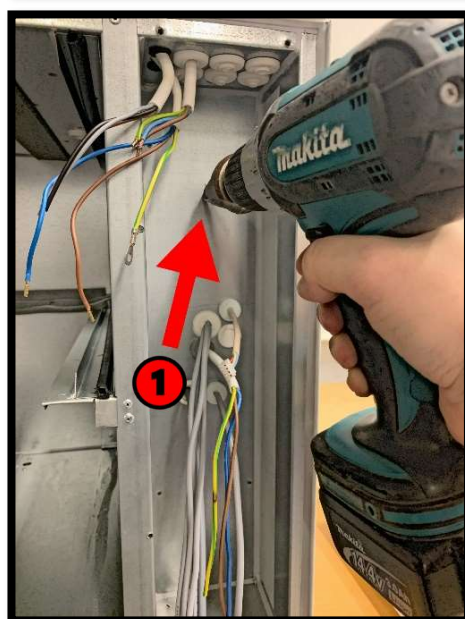
Open **the after heater (3)** (four screws).
 Remove the old triac control cable and install **the new triac control cable (4)** (40030313).
 Install the other end of the triac control cable into the electrical box.
 Reinstall the **after heater (3)** and the **flow helper (2)**.



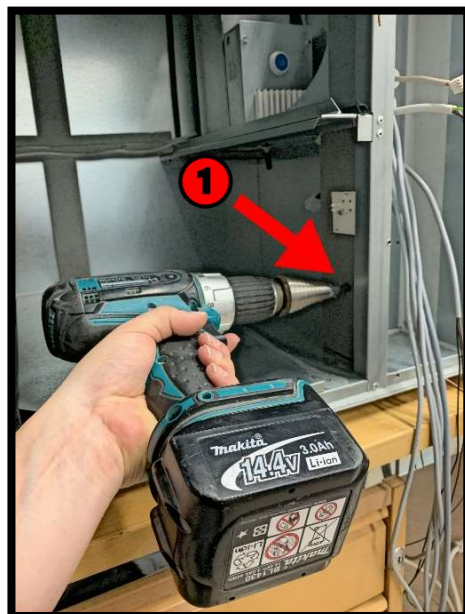
Install **the new supply air fan cables (1)**
(40028783) (40028785)
(through a cable sealing in the electrical box).



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



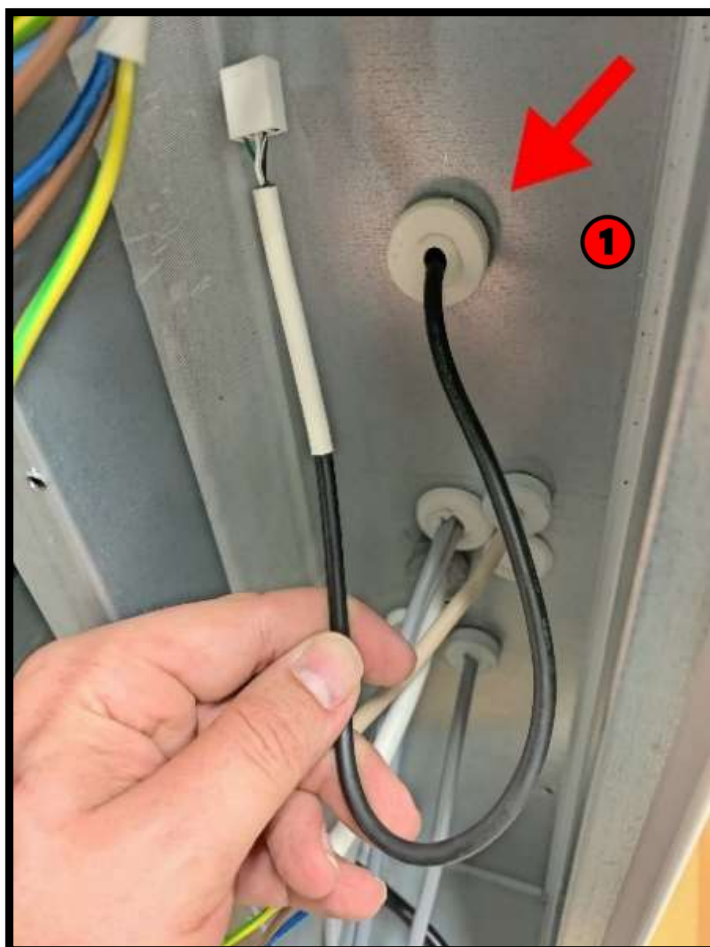
Drill **a 18mm hole (1)** as marked in the picture.



Install **the HRW cable (1)** (40033952)
(through a cable sealing in the electrical box).



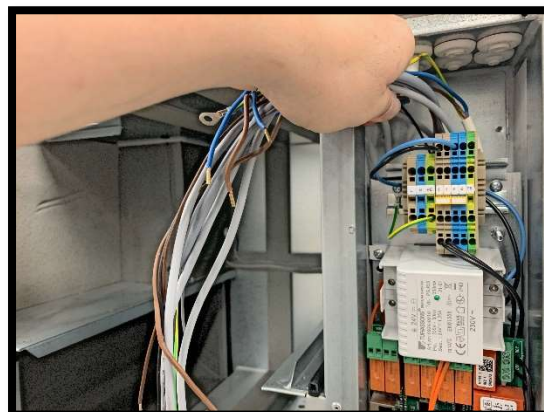
Install **the extract air sensor (1)**
(40029224) with a cable sealing,
through the drilled hole in the electrical box.



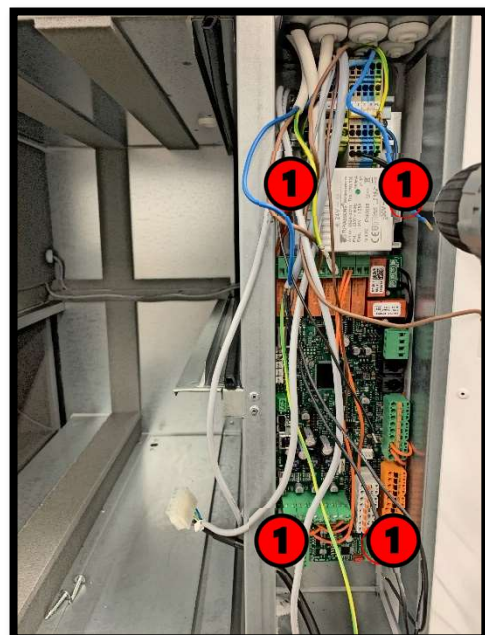
Install **the new automation** in the electrical box.



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).

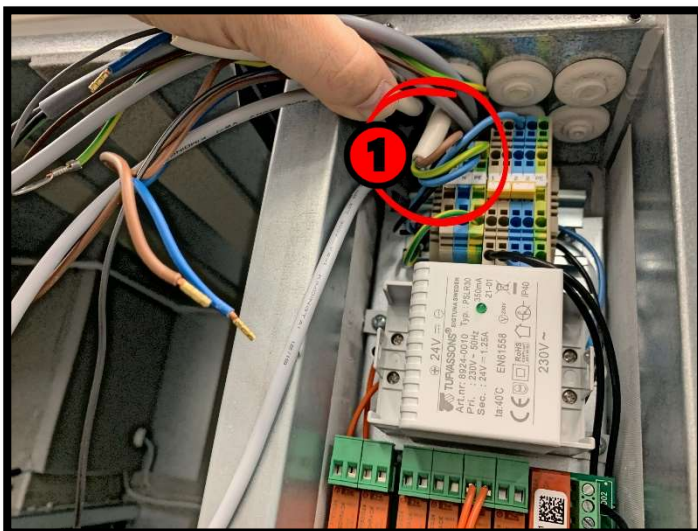


Connect **the power cord to the terminals (1).**

L: Brown

PE: Green/yellow

N: Blue



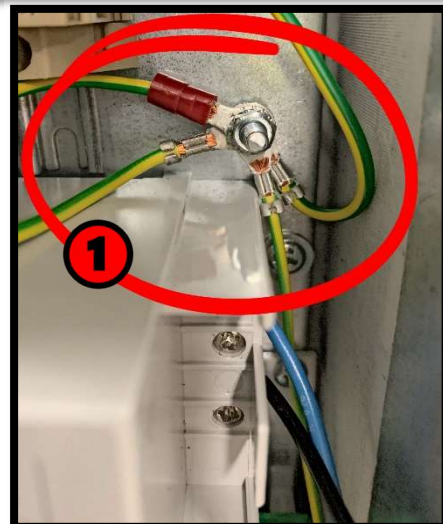
Connect **all ground wires** to **the automation base ground point (1).**

Supply air fan, extract air fan, after heater, ground terminal.

Totally four wires. **Three wires if no electrical after heater installed.**

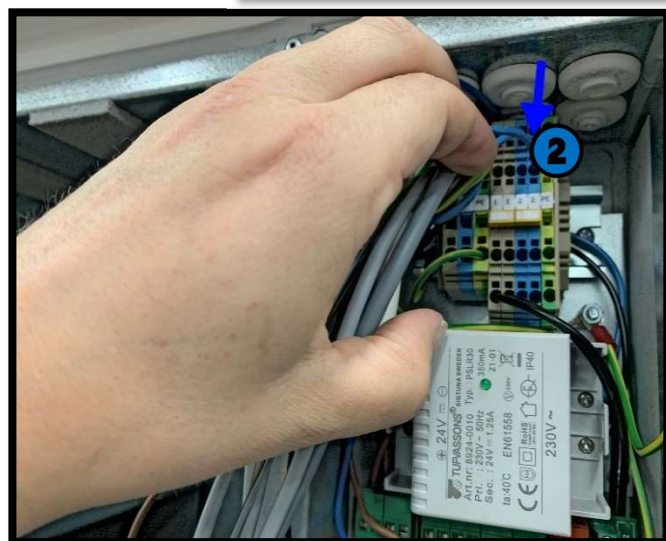
Connect the cover ground wire to the ground terminal (PE).

Tighten with **the nut (40031489).**

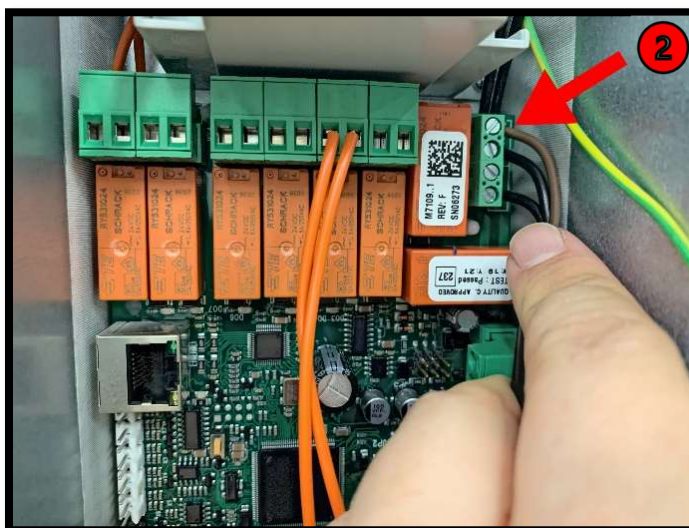


Connect **the blue wire** from the electrical after heater to **the blue "2" connection terminal (2).**

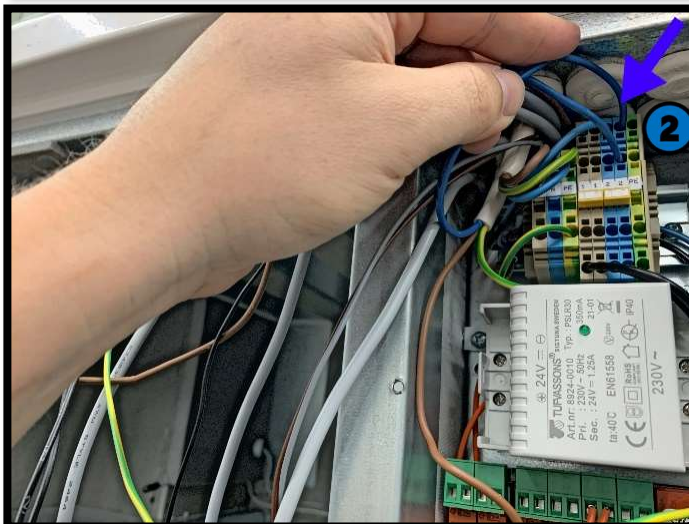
Ignore if the unit has a water coil after heater installed.



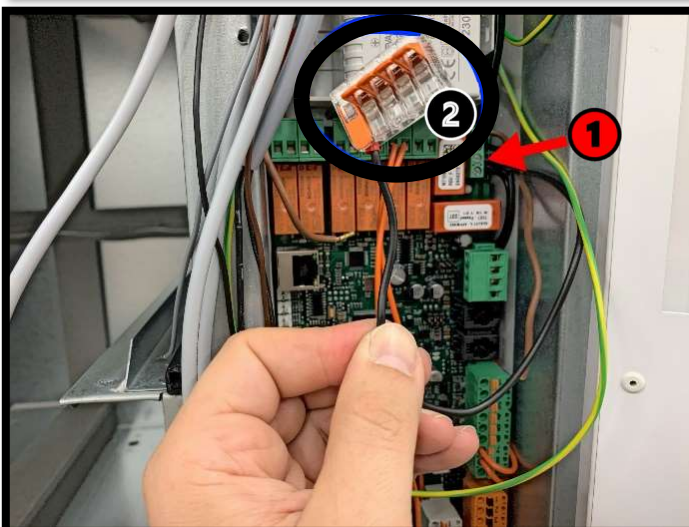
Connect **the brown wire** from the electrical after heater to **"DO2" (2)**.
If there is a water coil after heater installed, the circulation pump power wire (L) would be connected here.



Connect **the blue wire** from the extract air fan power cable to **the blue "2" connection terminal (2)**.



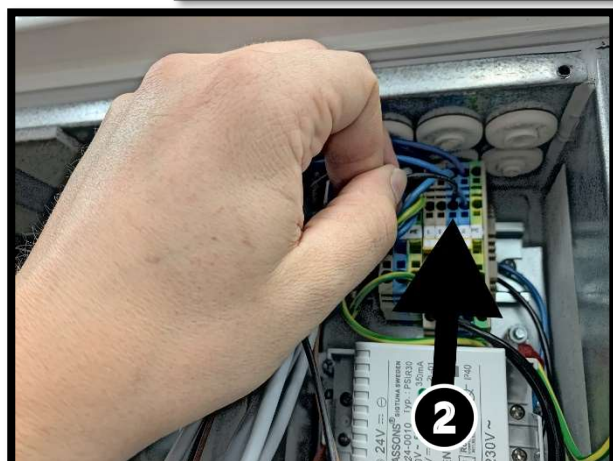
Connect **the black wire** (40028776) to **"DO1" (1)** and to **the connection terminal (2)** (40029982).



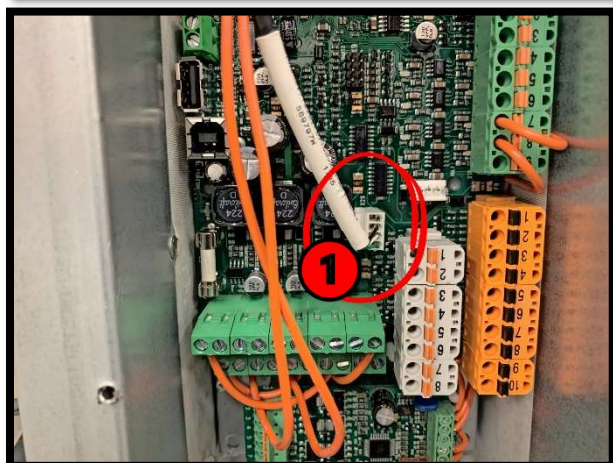
Connect **the brown wire (2)** from the extract air fan power cable and **the wire marked "1"** (1) in the supply air fan power cable to the connection terminal (40029982).



Connect **the wire marked "2"** (2) from the supply air fan power cable to the **blue connection terminal**.



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



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

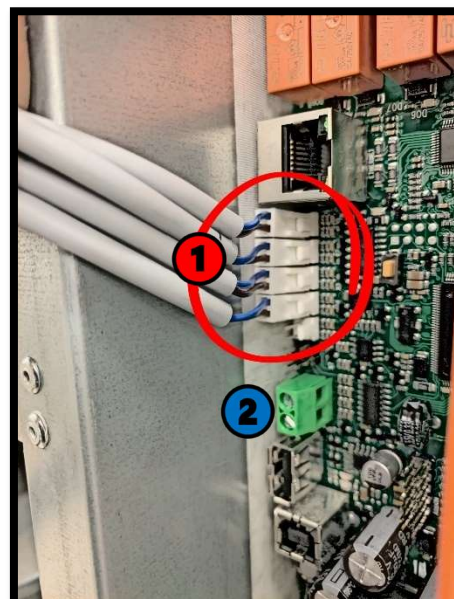
X1, TE01: Outside air

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.

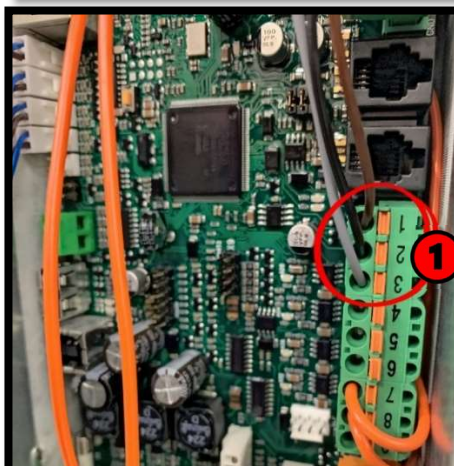


Connect **the wires from the supply air fan control cable (1)** (40029224) to the main board.

1: Brown

2: Black

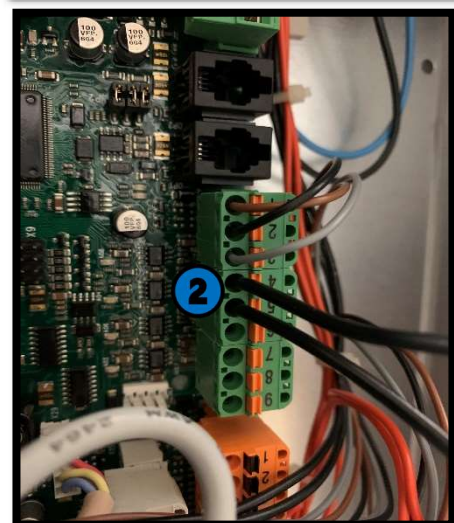
3: Gray



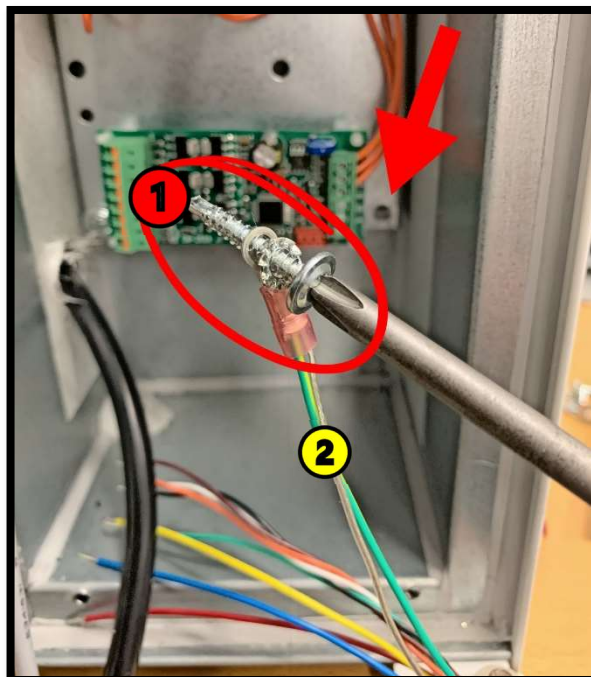
Connect **the wires from the extract air fan control cable (2)** to the main board.

4: 1

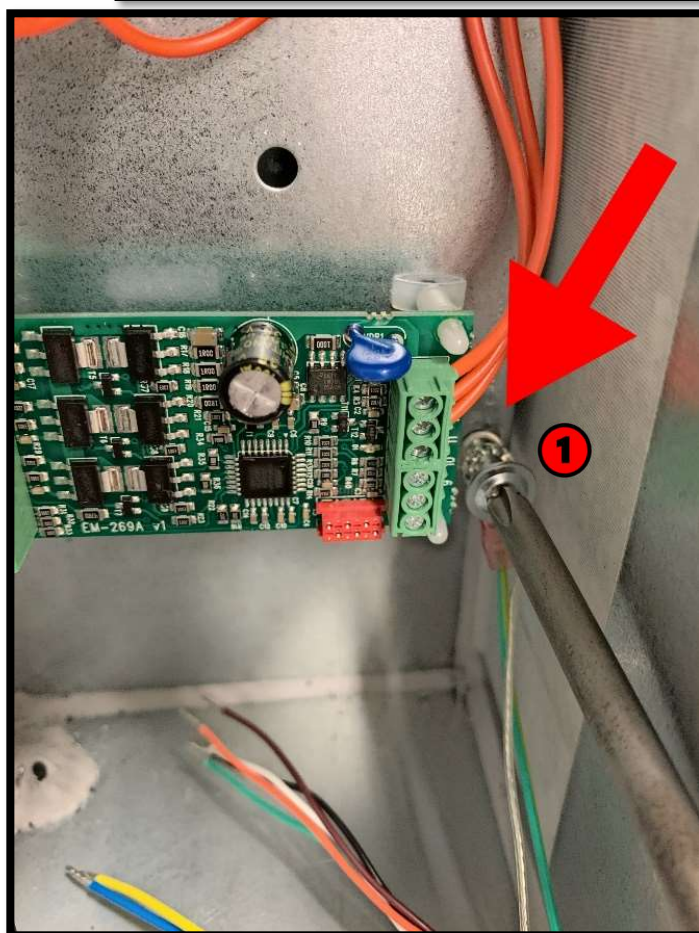
5: 2



Release **the screw (1)** and attach **the ground wire (2)** from the HRW cable to the screw, along with **a washer (40031537)**.



Reattach **the screw (1)** to the automation base.



Connect **the wires from the HRW cable (40033952) to the HRW control board (1).**

1: Yellow

2: Red

3: Blue

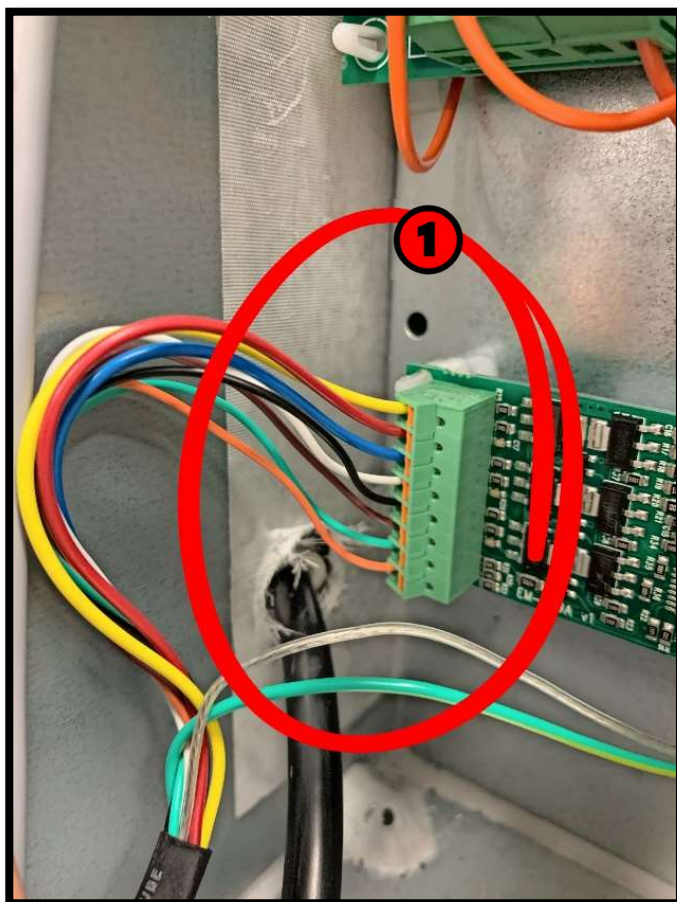
4: White

5: Black

6: Brown

7: Green

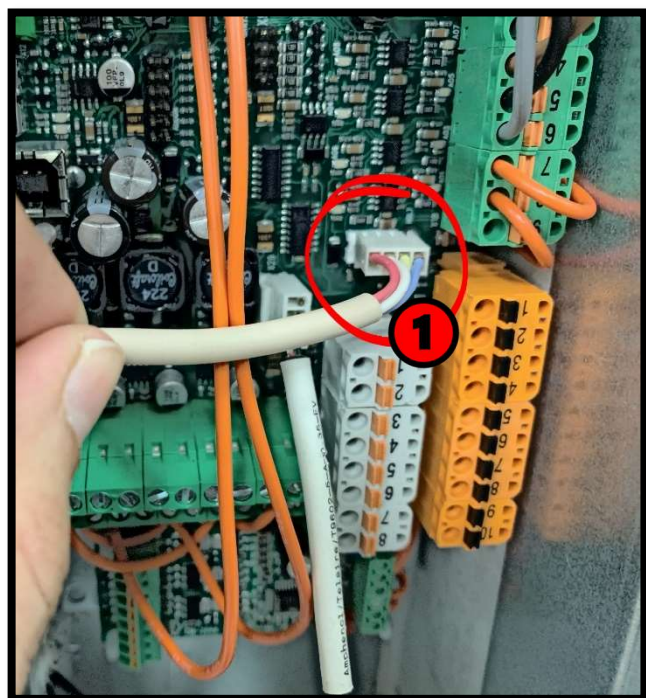
8: Orange



Connect **the after heater control cable (1)** to the main board (X17).

Ignore if no electrical after heater installed.

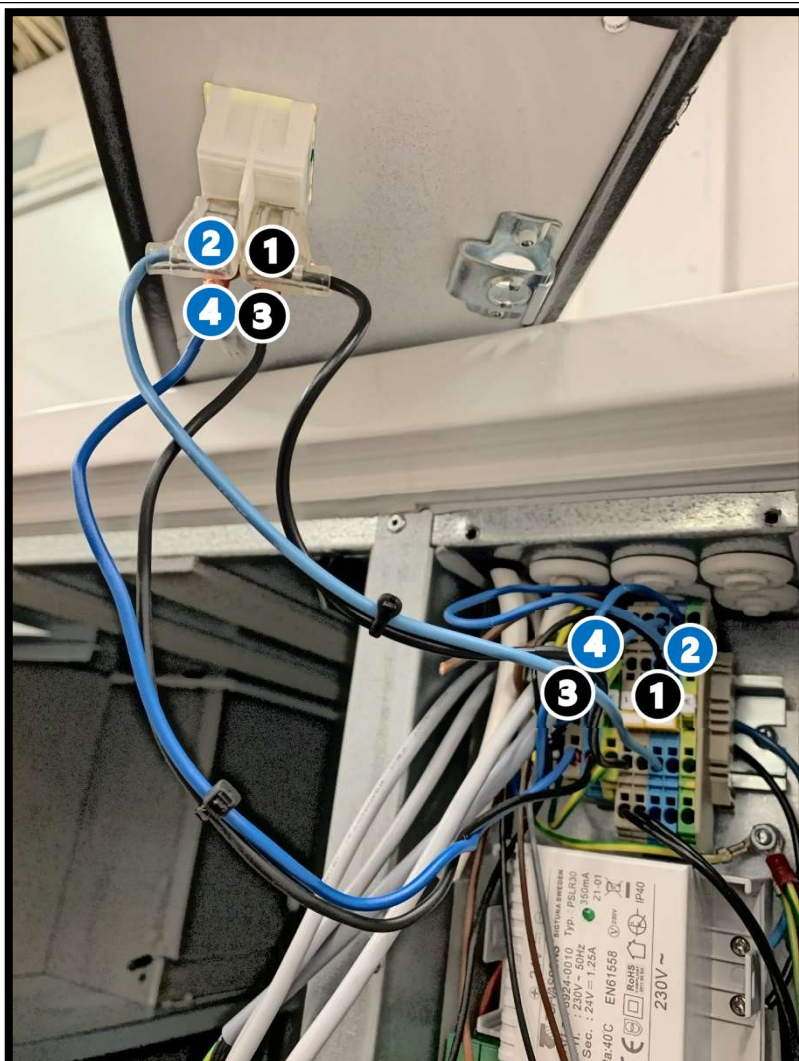
Connect other components (for example actuator for cooling coil) according to the electrical diagrams (pages 31-34).



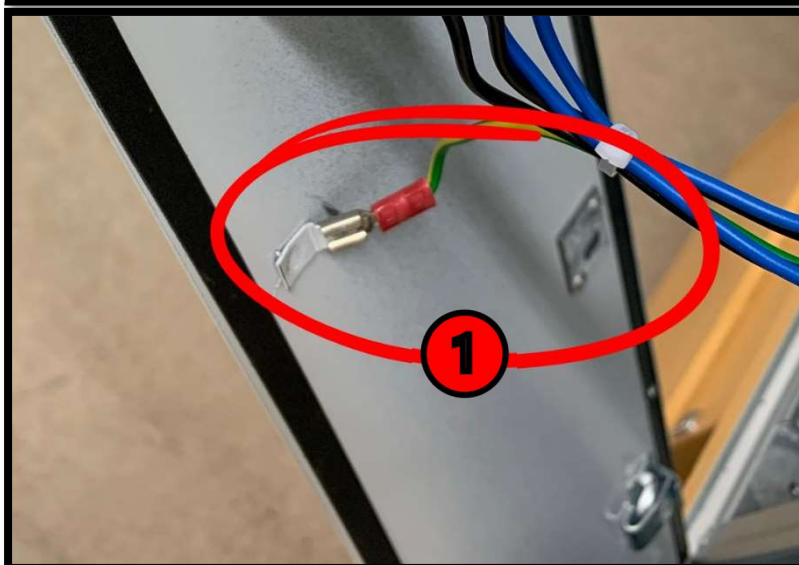
Connect **the pairs of wires with flat connectors** (40028776, 40028777) to the main switch and to the connection terminals.

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

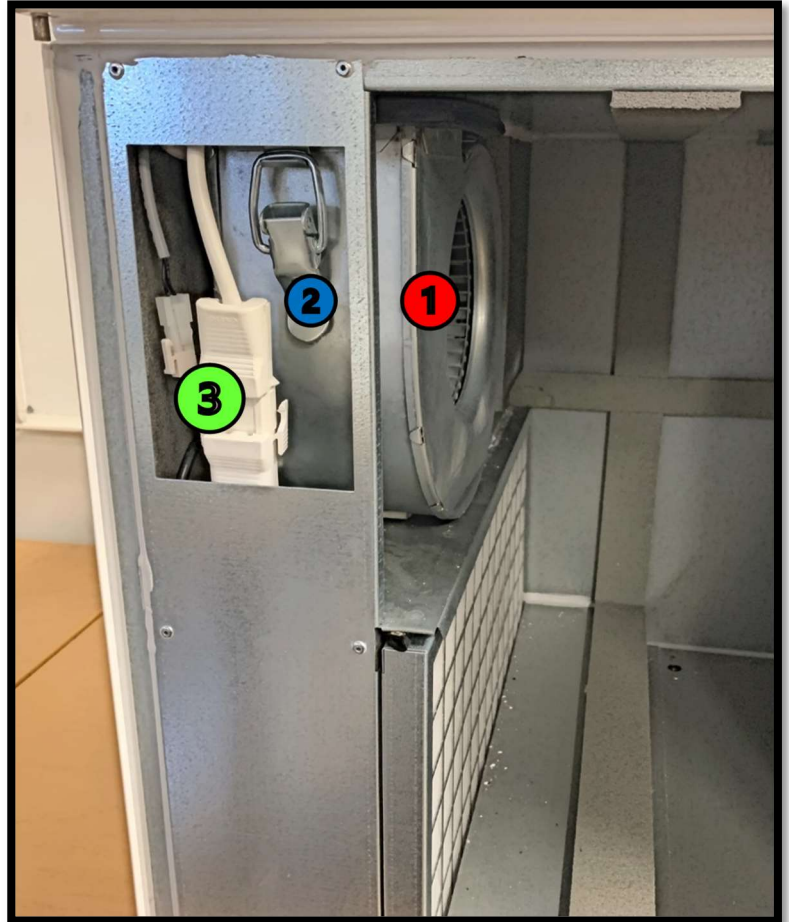
1: Black (1)
2: Blue (2)



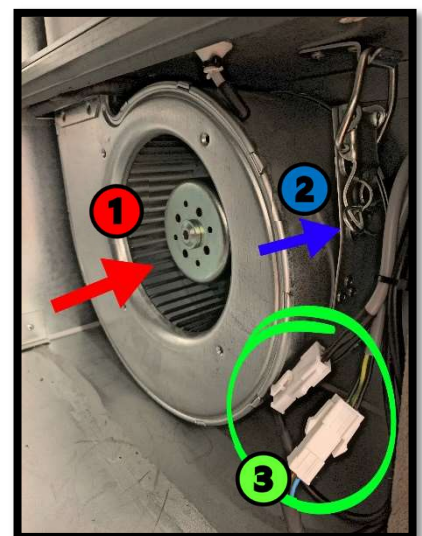
Connect **the ground wire (1)** to the cover.



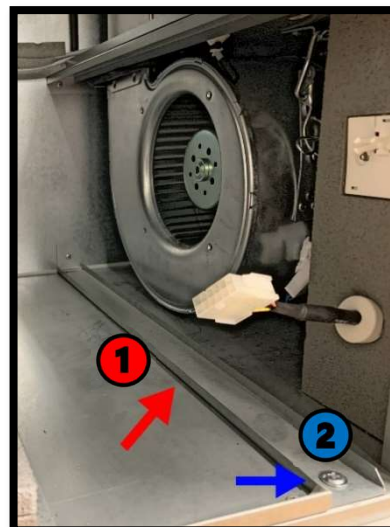
Install **the new extract air fan (1)**
(10023126 / 10023170).
Attach **the pin (2)**.
Connect the cables to the adapters (3).



Install **the new supply air fan (1)** (10023125 / 10023171).
Attach **the pin (2)**.
Connect the cables to the connectors (3).
Attach the cables together with a cable tie.



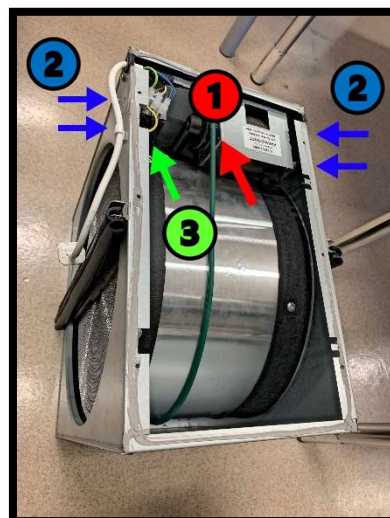
Install **the filter rail (1)** and attach **the screw (2)**.
A filter can't be used here anymore because of the HRW cable.



Remove **the screws (1)** from the HRW cover.



Remove **the belt (1)** from the wheel.
Remove **the screws (2)** from the motor package.
Remove **the ground wire (3)**.



Remove **the motor package**.

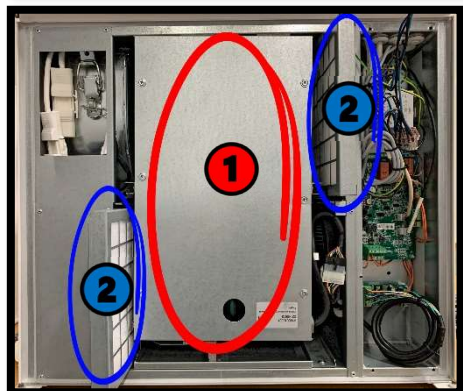
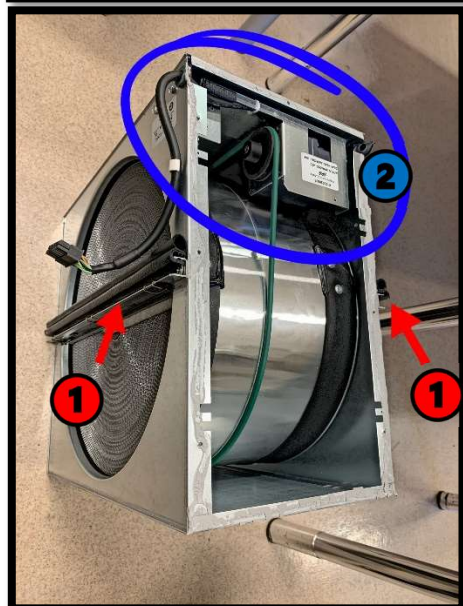
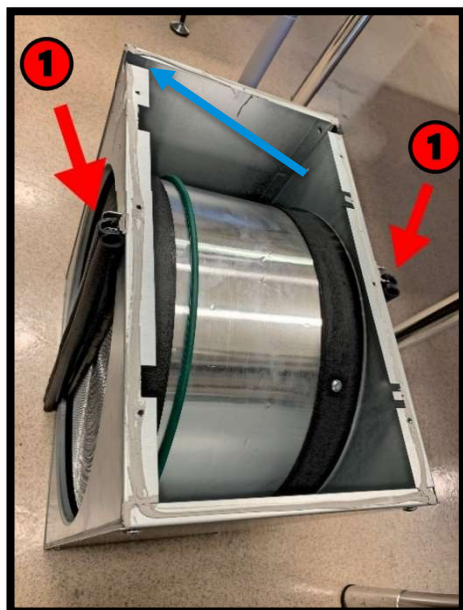
Cut a gap for the new motor cable.

Remove **the rubber sealings (1)**, carefully so the brush clips underneath won't come off.

Install **the new motor package (2)** (40028737).

Install **the rubber sealings (1)** on the opposite side of the brush rail. Attach the cover with the screws.

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



Install **the new display (2)** (40031115) in a desired place.

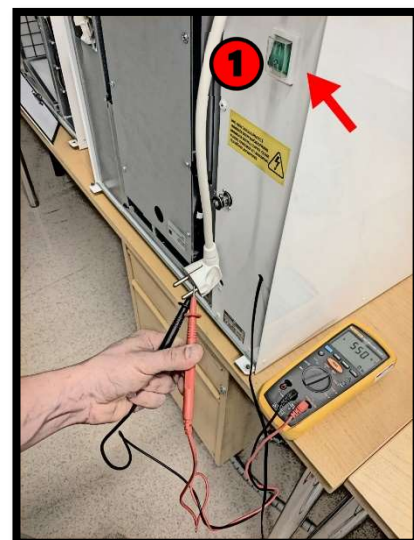


Install **the WiFi module (3)** (40034288).

3



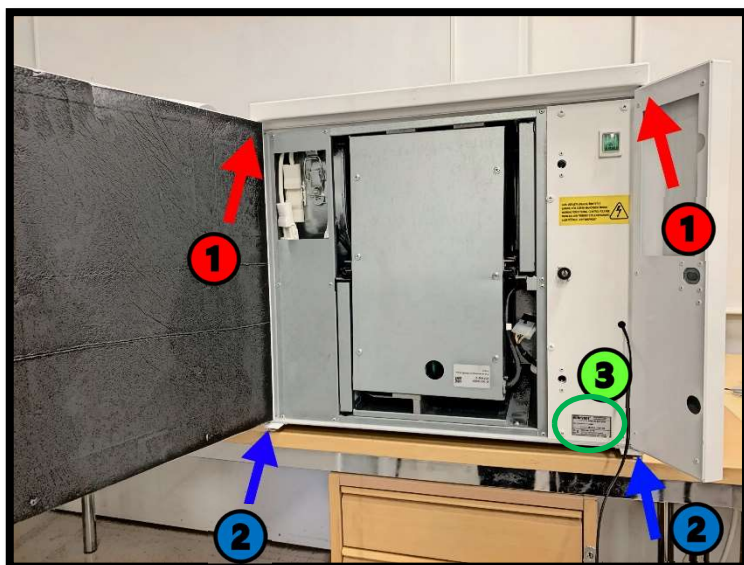
Turn on **the main switch (1)** and perform insulation and ground continuity test according to regulations.

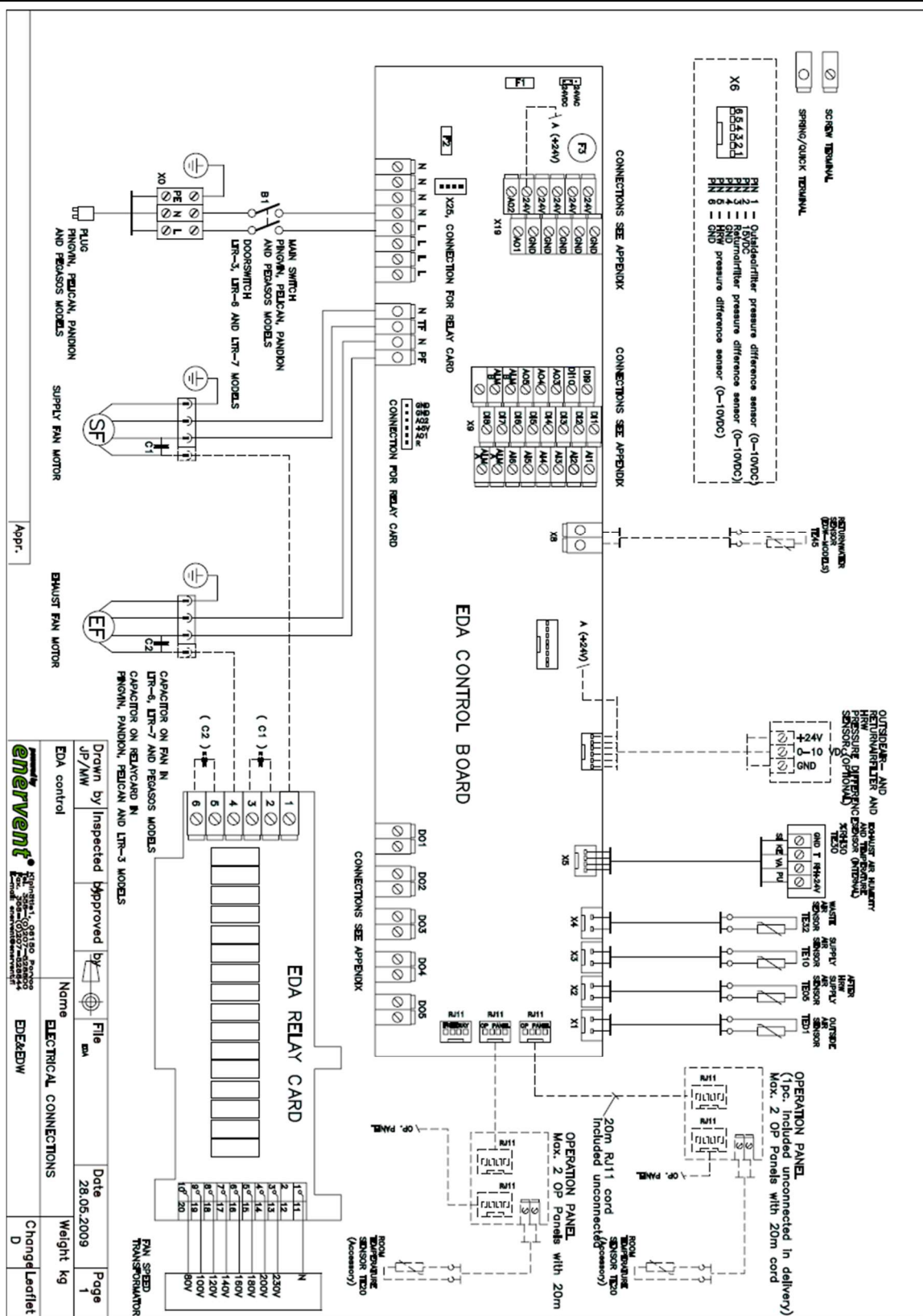


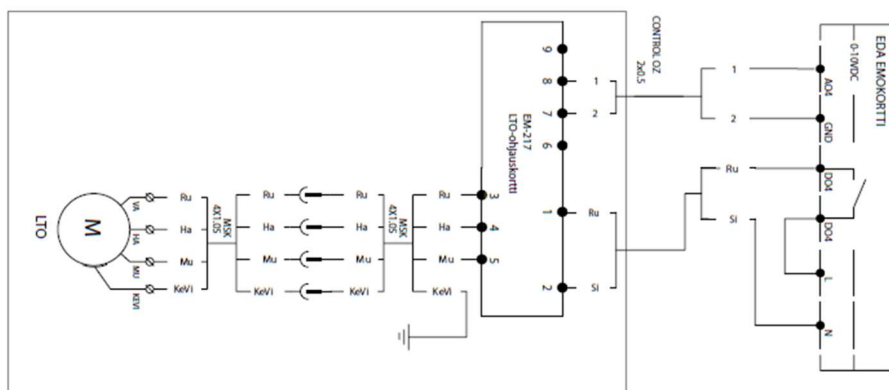
Install the doors by lifting **upper part first (1)** so that the lower edge rises above **the pins (2)** and gets into place.

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

Close the doors.

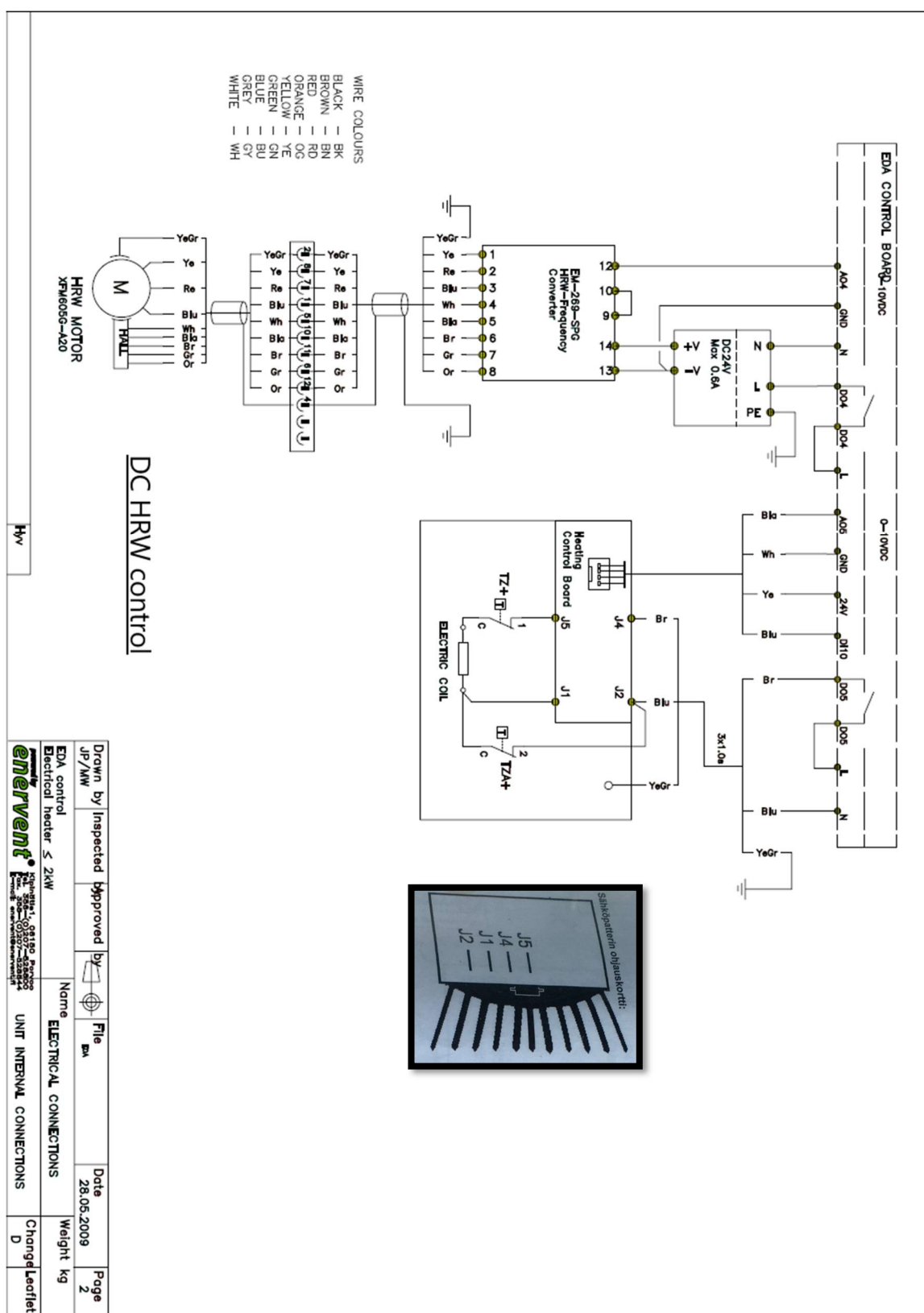


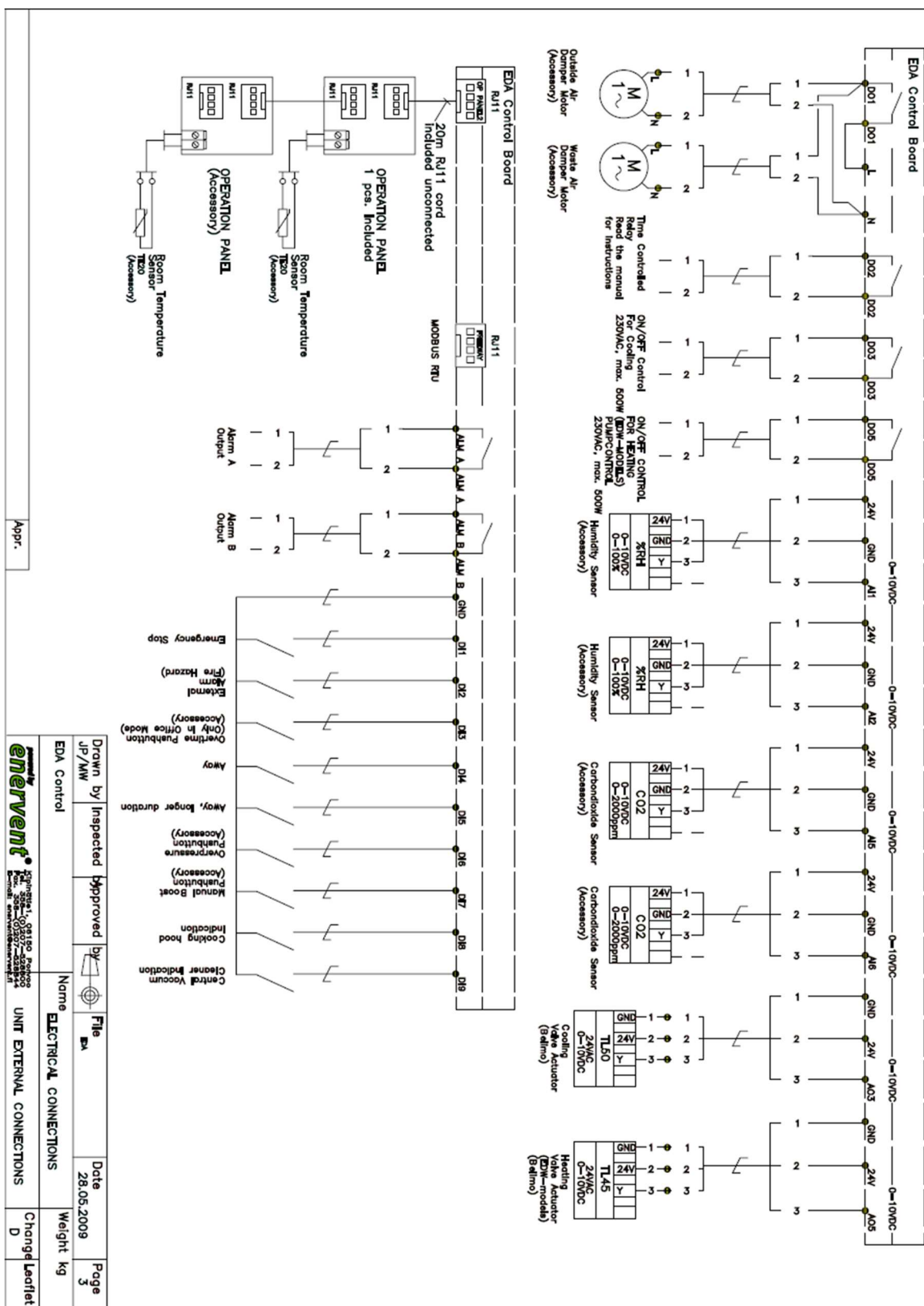


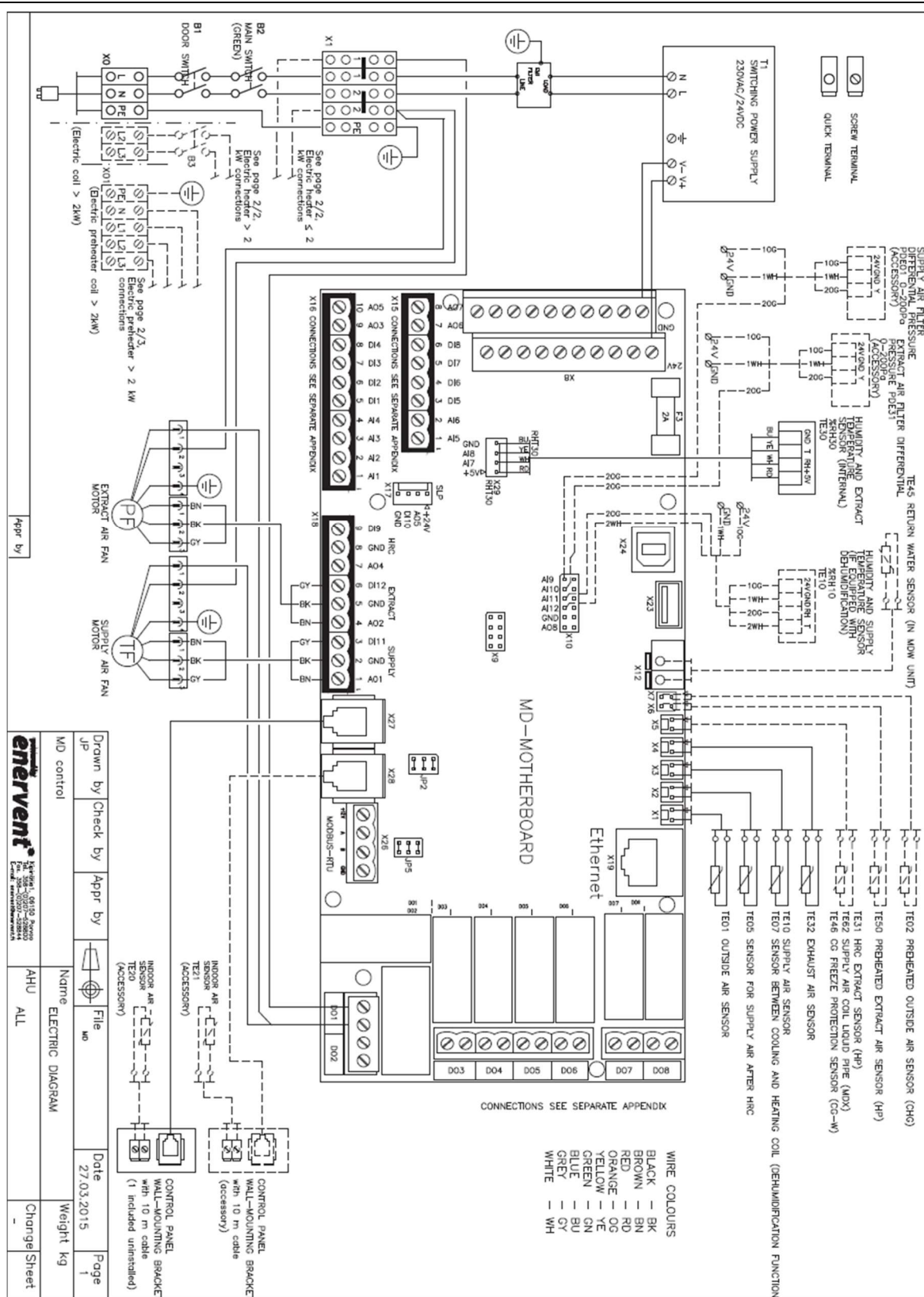


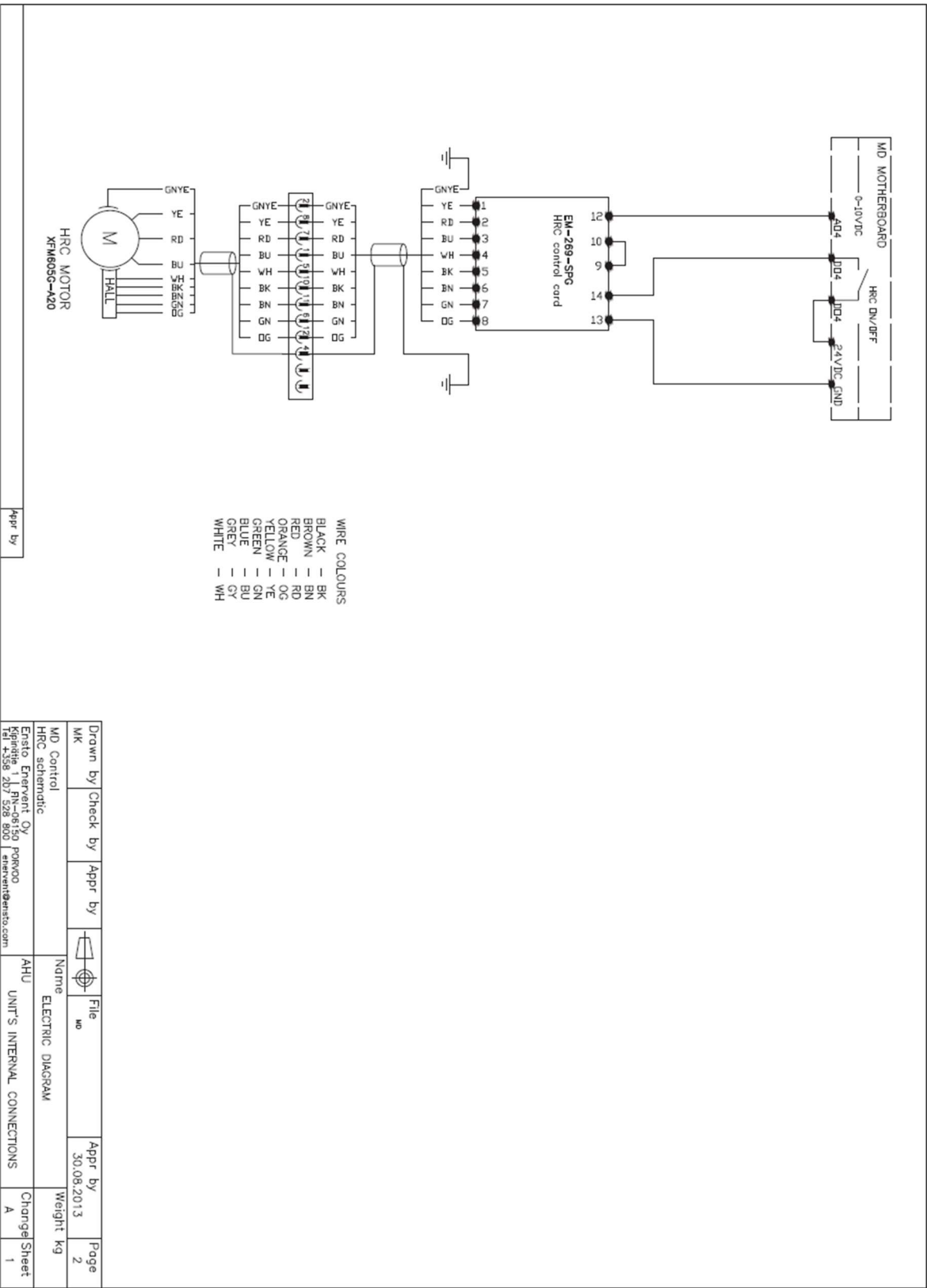
Inside rotor

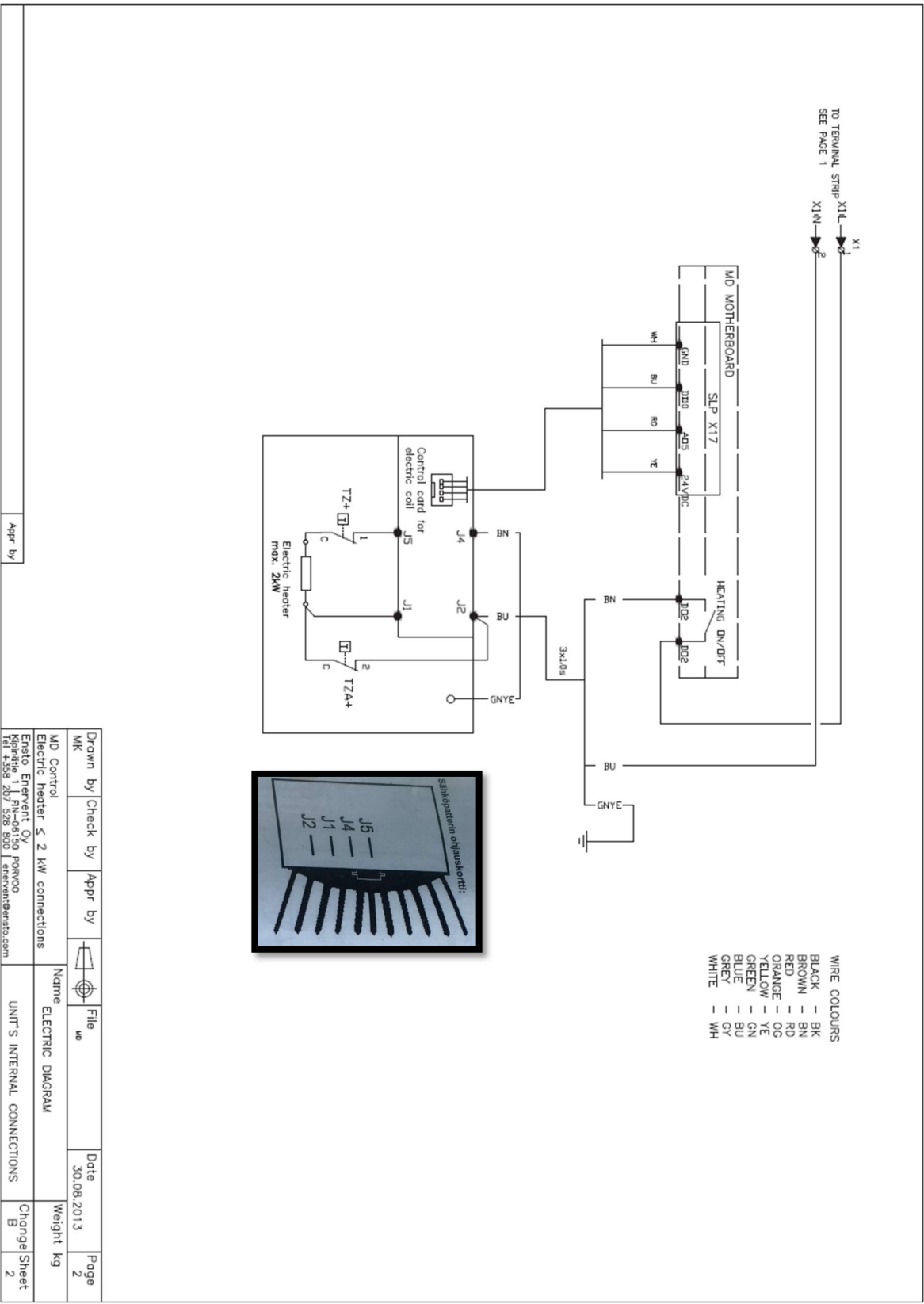
Pitk MW	Tark	Hv		File test	Pvm 18.09.2007	Stu 2
EDA Ohjauk			Nimitys SAHKOKALANO		Paino kg	
approved by enervent* Tekijä: Jouni A. Lohi Puh. 010 500 077 / 2280040 E-mail: jouni.lohi@enervent.fi			KOJEN SÄISEN KYTKENNÄN		Mittaus A	
					Lehti	

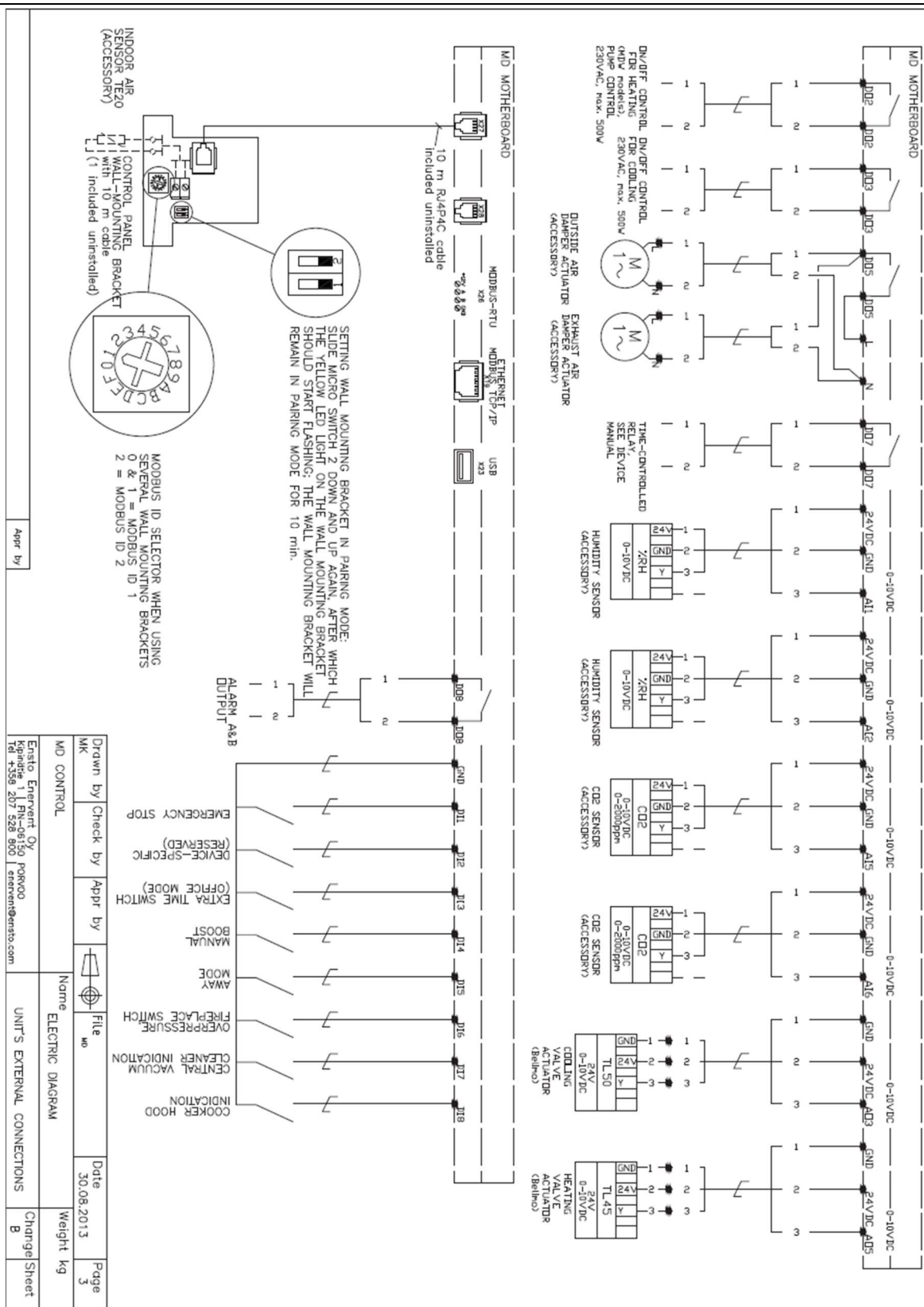












MANDATORY PARTS

10023859	CONTROL UPDATE KIT PINGVIN EDE → EAIR E	1
10023125	FAN PACKAGE 118WPINGVIN SUPPLY AIR RIGHT	1
10023126	FAN PACKAGE 118WPINGVIN EXTRACT AIR RIGHT	1
	or	
10023171	FAN PACKAGE 118WPINGVIN SUPPLY AIR LEFT	1
10023170	FAN PACKAGE 118WPINGVIN EXTRACT AIR LEFT	1
10023244	ELECTRICAL HEATER 0,4kW RIGHT	1
	or	
10023243	ELECTRICAL HEATER 0,4kW LEFT	1
<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
10023859	CONTROL UPDATE KIT PINGVIN EDE → EAIRE	
	Automation	
40029189	Control board EM-240-M	1
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 ²	1
40028773	Wire 340mm orange 0,75mm ²	6
40028774	Wire 255mm 1mm ² black	3
40028779	Wire 255mm 1mm ² 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	
40029346	Connector NAC 31S.W	1
40028768	Adapter	1
40029530	Adapter	1
40030100	Cable sealing VET 5-7	5
40030101	Cable sealing VET 7-10	6
40028783	Fan power cable	1
40028785	Fan signal cable	1
40029224	Humidity/temperature sensor Amphenol 600mm	1
40029982	WaGo 221-415	1
40031530	Screw ZN 4,2x25	5
40028776	Wire 250mm black (main switch)	2
40028777	Wire 250mm blue (main switch)	2
40028774	Wire 255mm 1mm ² black	1
40031537	Washer 6798-A ZN M4x8	1
40031489	Nut DIN 934/8 ZN M4	1
40030997	Cable tie 2,5x200mm	10
40028737	HRW motor package stepless DC	1
40028725	Rotor cable DC 60cm	1
40031114	eAir panel package	1
40030313	Triac cable 1000mm 4-pole	1
40034288	WiFi module package	1
	Manuals etc. (depends on model)	
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1

MANDATORY PARTS

10023857	CONTROL UPDATE KIT PINGVIN ACW → EAIR W	1
10023125	FAN PACKAGE 118W PINGVIN SUPPLY AIR RIGHT	1
10023126	FAN PACKAGE 118W PINGVIN EXTRACT AIR RIGHT	1
	or	
10023171	FAN PACKAGE 118W PINGVIN SUPPLY AIR LEFT	1
10023170	FAN PACKAGE 118W PINGVIN EXTRACT AIR LEFT	1

<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
Automation		
40029189	Control board EM-240-M	1
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 ²	1
40028773	Wire 340mm orange 0,75mm ²	6
40028774	Wire 255mm 1mm ² black	3
40028779	Wire 255mm 1mm ² 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		
40029346	Connector NAC 31S.W	1
40028768	Adapter	1
40029530	Adapter	1
40030100	Cable sealing VET 5-7	5
40030101	Cable sealing VET 7-10	6
40028783	Fan power cable	1
40028785	Fan signal cable	1
40029224	Humidity/temperature sensor Amphenol 600mm	1
40029982	WaGo 221-415	1
40031530	Screw ZN 4,2x25	5
40028776	Wire 250mm black (main switch)	2
40028777	Wire 250mm blue (main switch)	2
40028774	Wire 255mm 1mm ² black	1
40031537	Washer 6798-A ZN M4x8	1
40031489	Nut DIN 934/8 ZN M4	1
40030997	Cable tie 2,5x200mm	10
40028737	HRW motor package stepless DC	1
40028725	Rotor cable DC 60cm	1
40031114	eAir panel package	1
40034288	WiFi module package	1
Manuals etc. (depends on model)		
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1

Notes: