

Automation upgrade

LTR-7 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).**

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 EDA27

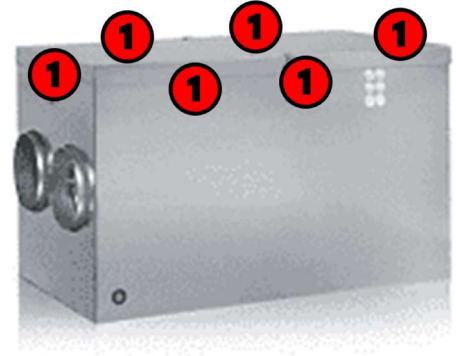
Electrical diagrams eAir31

Parts list eAir E.....35

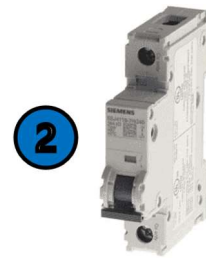
Parts list eAir W.....36

Notes37

Remove **the service door (1)** by releasing the locks.



Cut **the power to the unit (2)** (and other power supplies if available).



Remove **the cover to the electrical box (3)**.

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





Disconnect *the fan connectors (1)*.

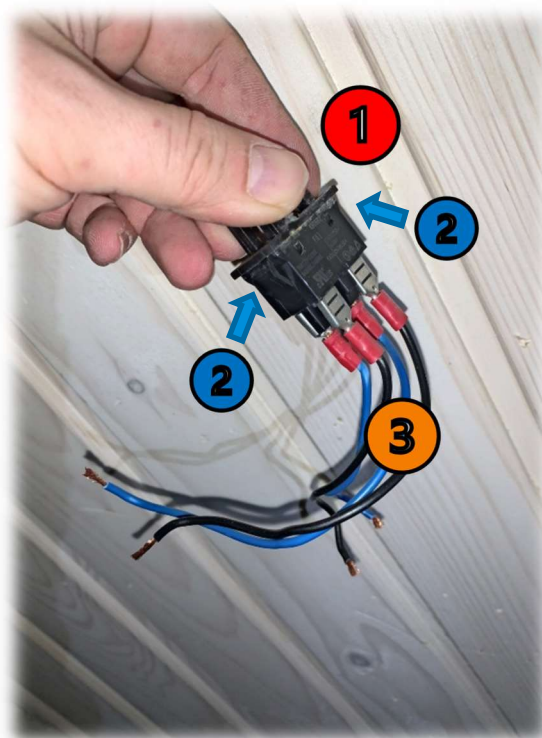
Disconnect *the HRW connector (2)*.

Remove *the HRW (3)* by pulling.

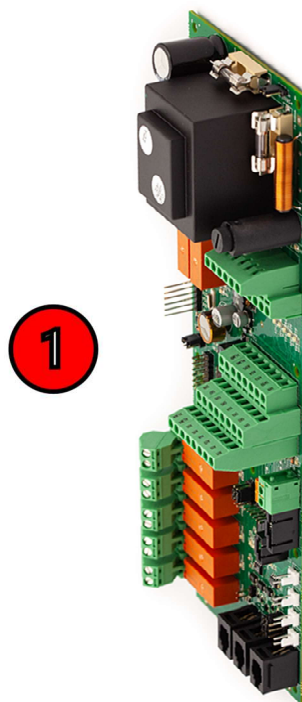
Remove **the fans (1)** by releasing **the fan rail locking parts (2)** and by pulling.



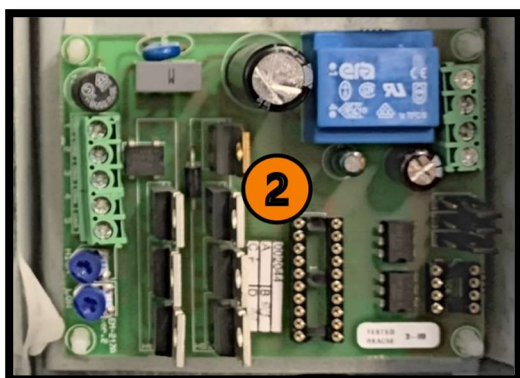
Remove **the main switches (1)** by pressing **the clips (2)**. Disconnect **the wires (3)** from the switches.



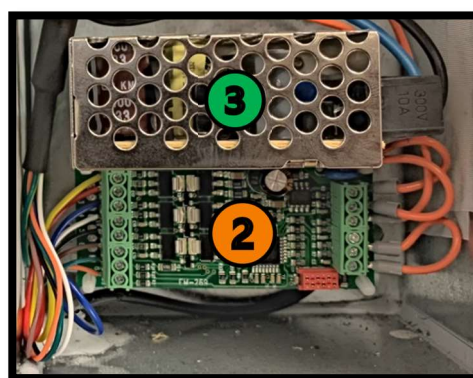
Mark all wires/sensors according to the marking on the main board and disconnect them from **the EDA main board (1)**.



Disconnect the wires and remove **the HRW circuit board (2)** and **the transformer (3)**.
Type of HRW depends on year of manufacture.



AC HRW circuit board.



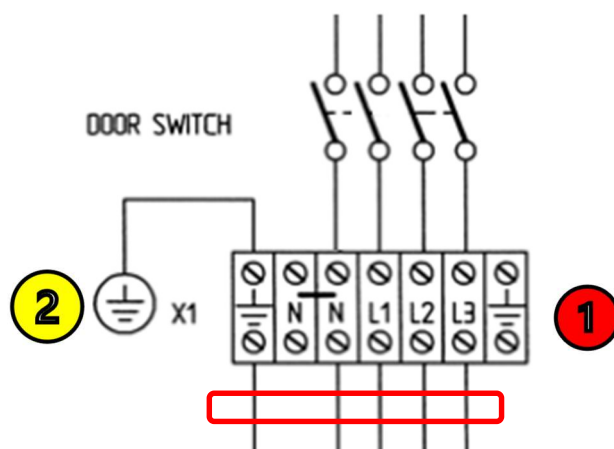
DC HRW circuit board.

Disconnect the main power supply wires from **the terminals (1)**.

Disconnect the ground wires from **the ground point (2)**.

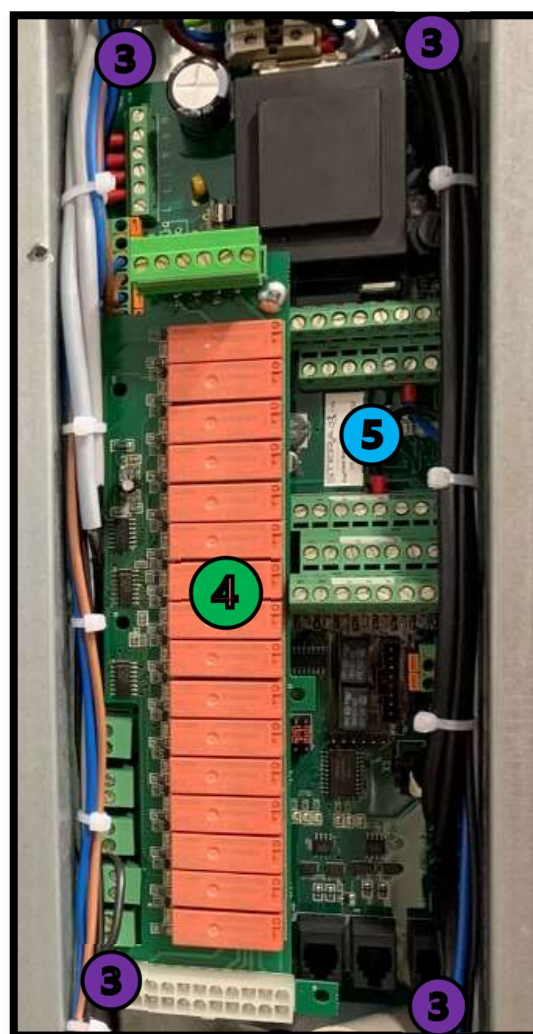
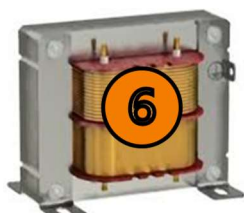
Don't uninstall **the pressure difference switch or the pressure hoses (7)**.

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



Remove **the screws (3)** and remove the automation base incl. **PCB supports (8)**, **terminals (1)**, **relay board (4)**, **EDA main board (5)** and **transformer (6)**.

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





Remove **the cable sealing (1)**.

Cut **the old extract air fan cable (3)**.

Install **a new cable sealing (40029244) to the new extract air fan cables (2) (40028803, 40028802)**.

Attach **the new extract air fan cables (2) (40028803, 40028802)**
to **the old extract air fan cable (3)** with strong tape.



Remove **the cable sealing (1)**.

Install **the new extract air fan cables (2)** (40028803, 40028802) **into the electrical box (2)**.

Install **a new cable sealing (1)** (40029244).

Install **the new supply air fan cables (1)** (40028803, 40028802).



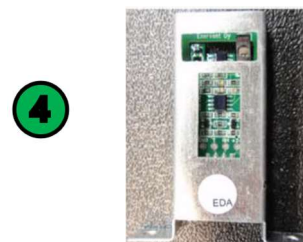
Install the new electrical after heater (10023273 / 10023272) if there was a blue relay installed in the electrical box. Otherwise:

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

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



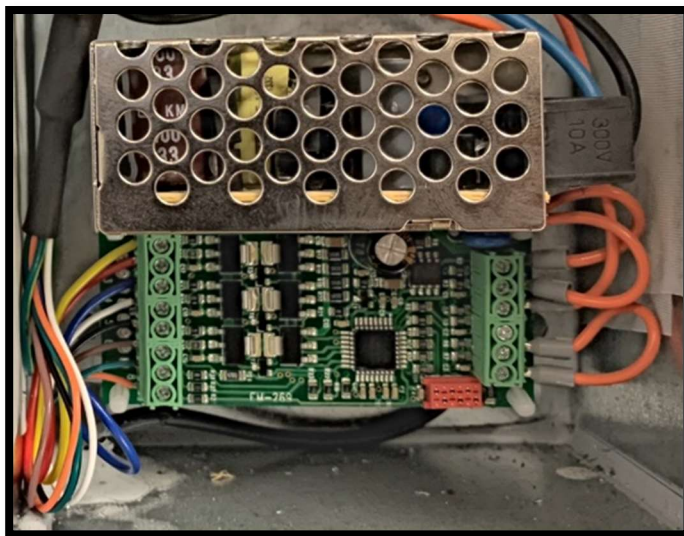
Remove **the old extract air sensor (4)** and the cable (two screws).



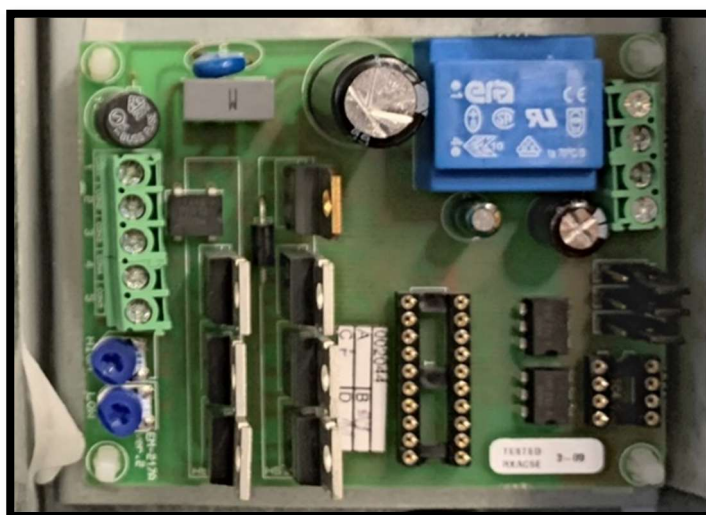
Install **the new extract air sensor (5)** (40029224).



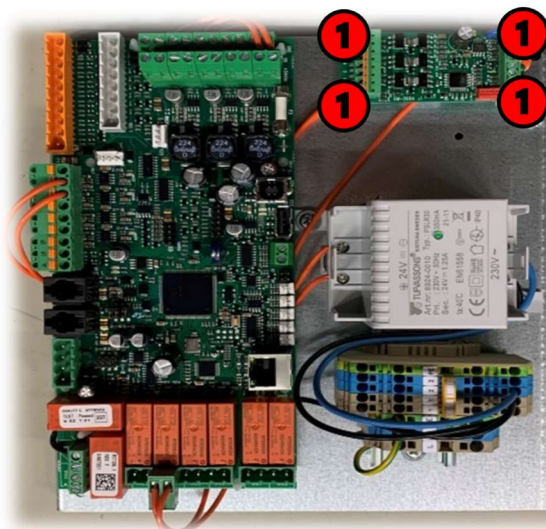
If the unit has a DC HRW installed, jump to *page 15*.



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

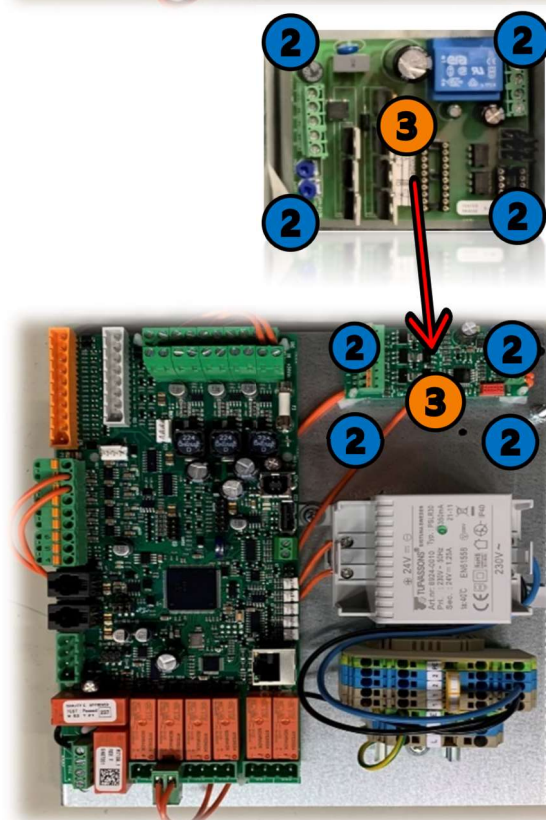


Remove **the PCB supports (1)** from the new automation base.



Mark **the holes (2)** for the **AC HRW circuit board (3)** to the automation base.

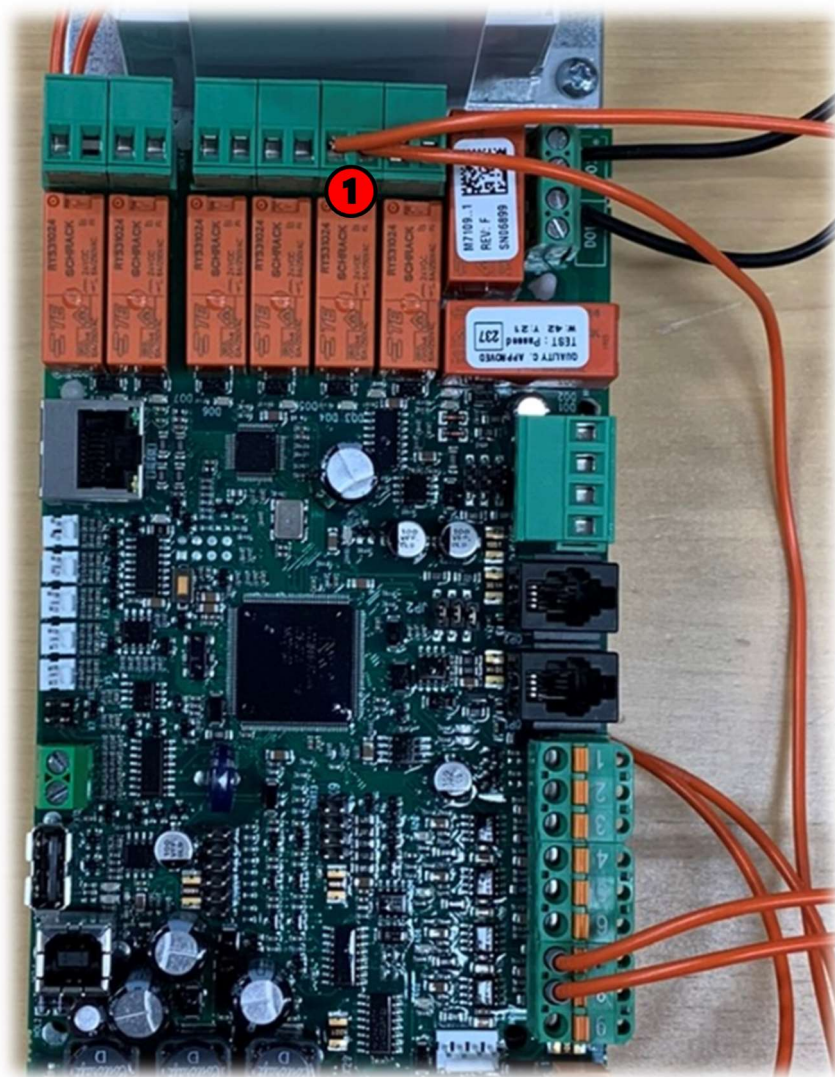
Drill **four 4,5mm holes (2)** according to **the previous markings (2)**.



Install **the old PCB supports (4)** into **the drilled holes (2)**.

Attach **the AC HRW circuit board (3)** to **the PCB supports (4)**.





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

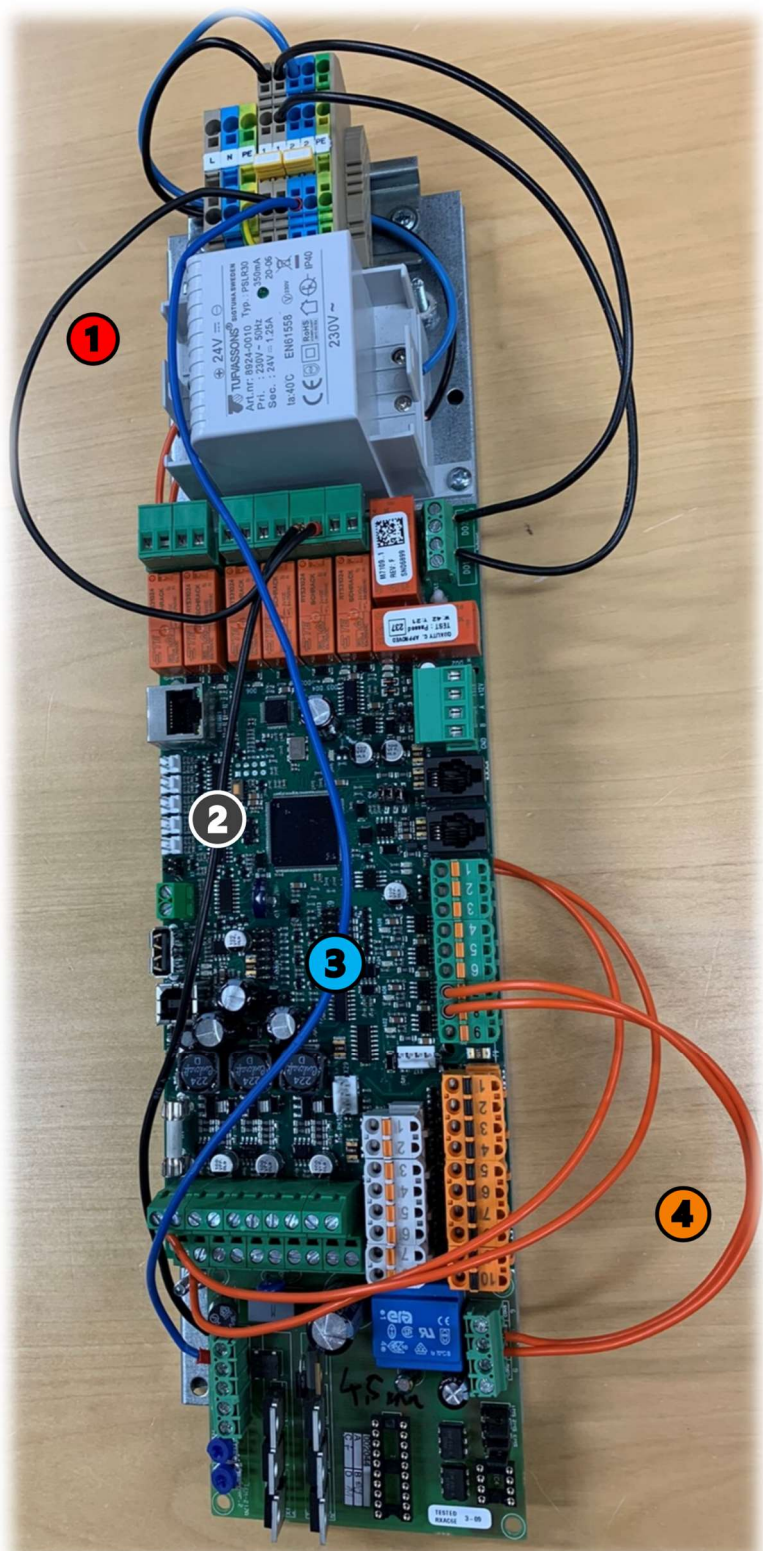
Connect **the black wire** (40028774)
to connection terminal "1" and to "DO4" (1).

Connect **the other black wire** (40028774)
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".**



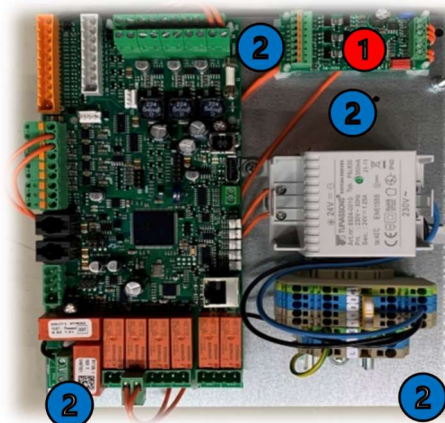


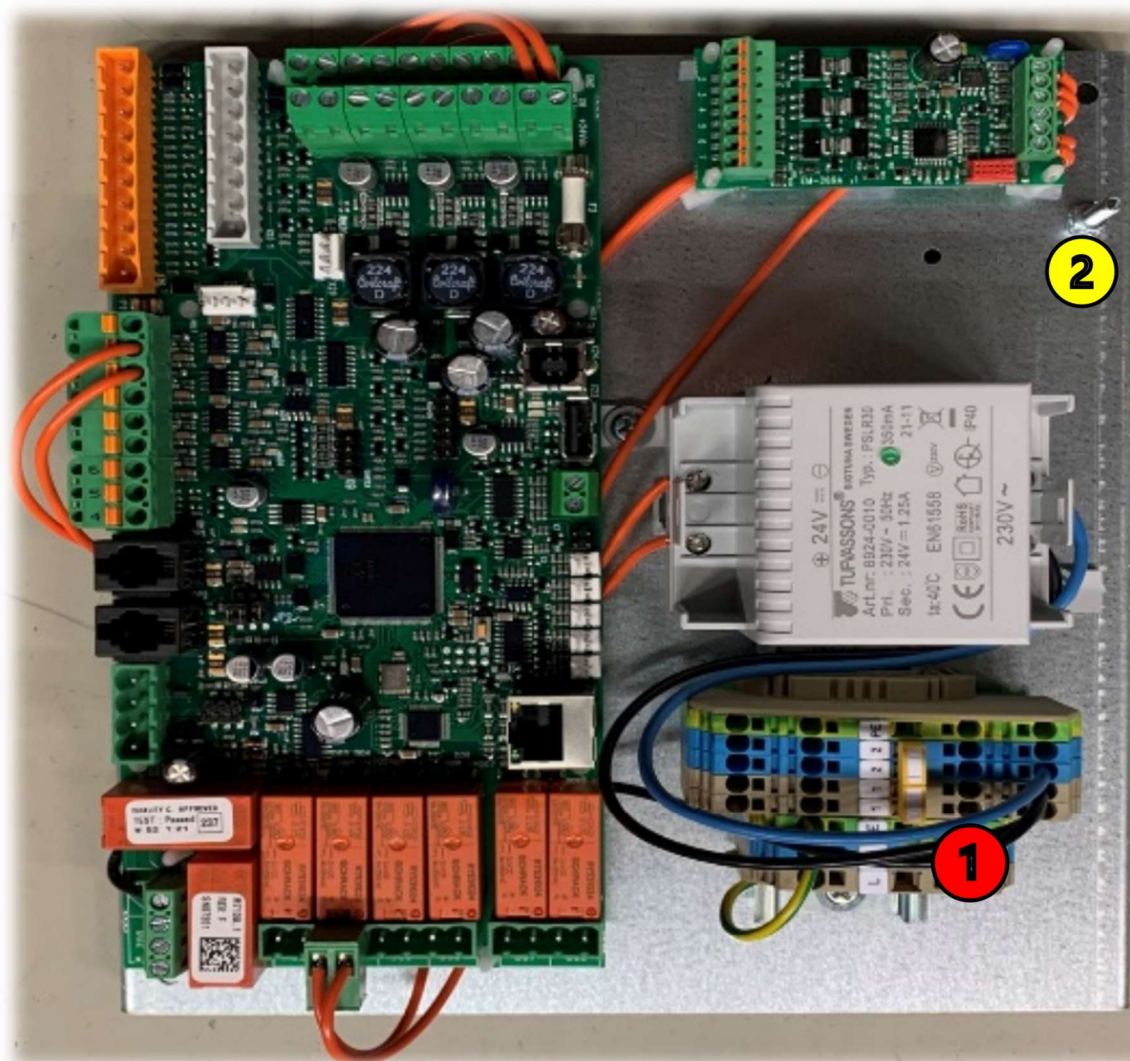
Move **the DC HRW control board (1)** to the new automation base.
Connect **the DC HRW control board (1)** according
to the electrical diagram (**pages 20 & 32**).

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** (40029740) to
the electrical box with **four self tapping screws (2)** (40031530).





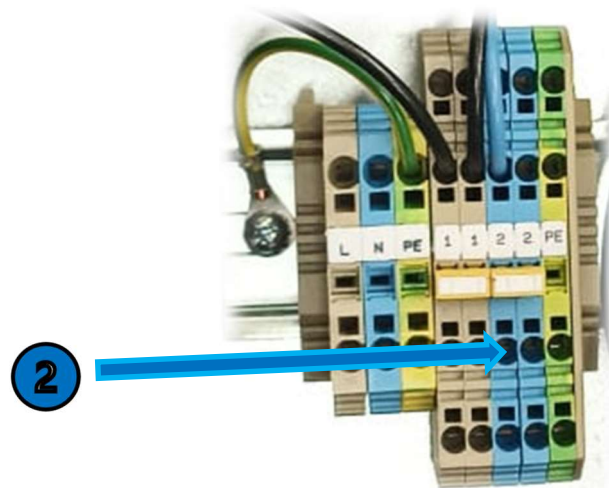
Connect **the main power cable to the terminals (1).**

Connect **all ground wires** to **the automation base ground point (2).**

Supply air fan, extract air fan, (after heater), HRW.

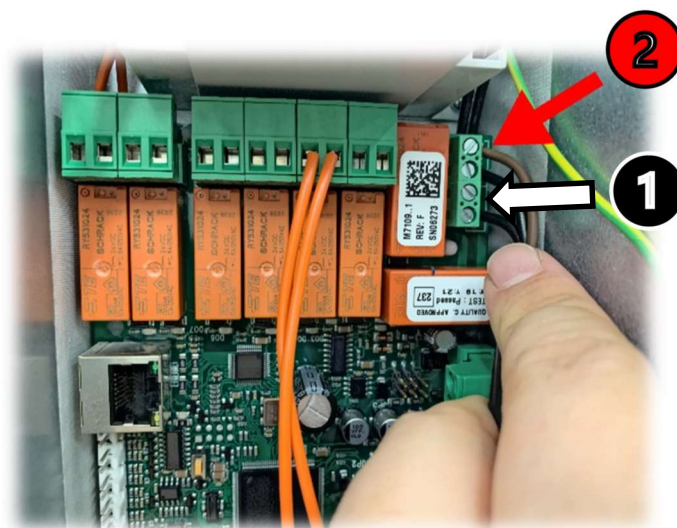
Tighten with **the nut** (40031489).

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.

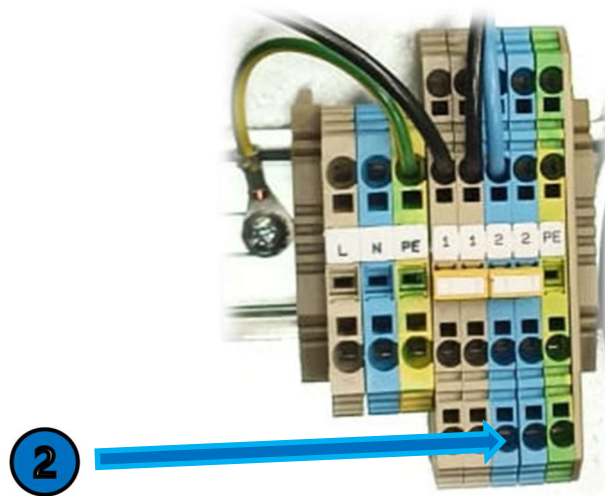


Connect **the brown wire** from the electrical after heater to **"DO2" (2)**.
If there is a water coil after heater installed, the circulation pump power wire (L) would be connected here.

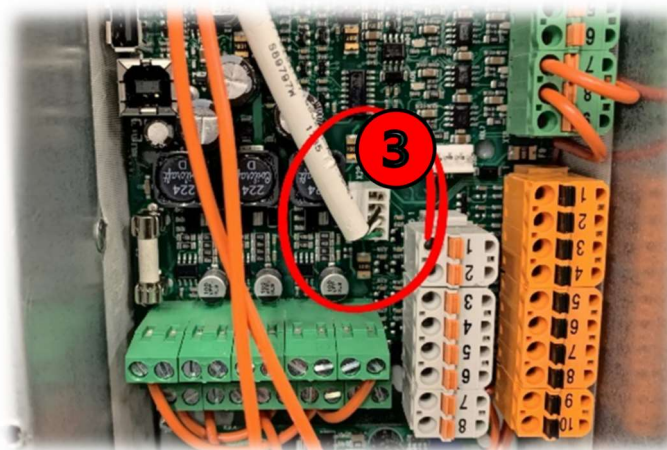
Connect **the brown wires / the wires marked "1"** in the fan power cables to **"DO1" (1)**.



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



Connect **the extract air sensor (3)** (40029224) to the main board (X29).



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

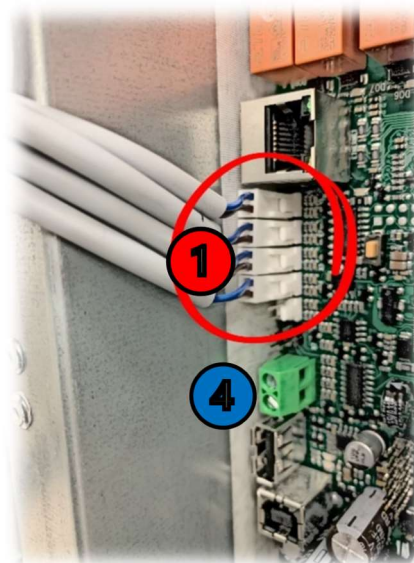
X1, TE01: Outside air

X2, TE05: HRW supply air

X3, TE10: Supply air

X4, TE32: Waste air

X12, TE45: Return water sensor (4),
if the unit has a water coil after heater installed.

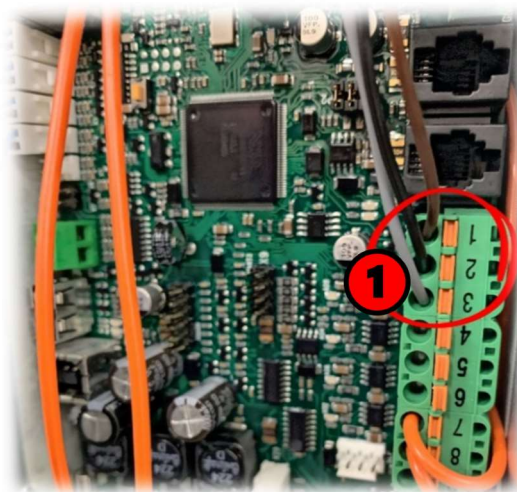


Connect **the wires from the supply air fan control cable (1)** (40028802) to the main board.

1: *Brown*

2: *Black*

3: *Gray*

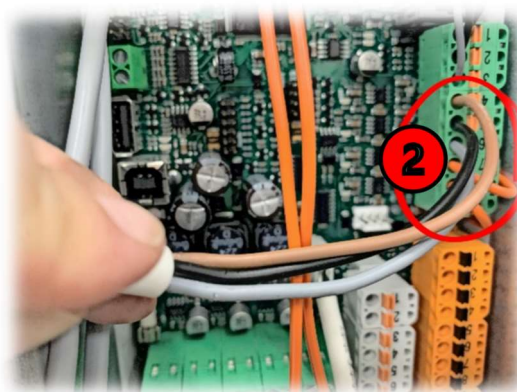


Connect **the wires from the extract air fan control cable (2)** (40028802) to the main board.

4: *Brown*

5: *Black*

6: *Gray*



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

1: Yellow

2: Red

3: Blue

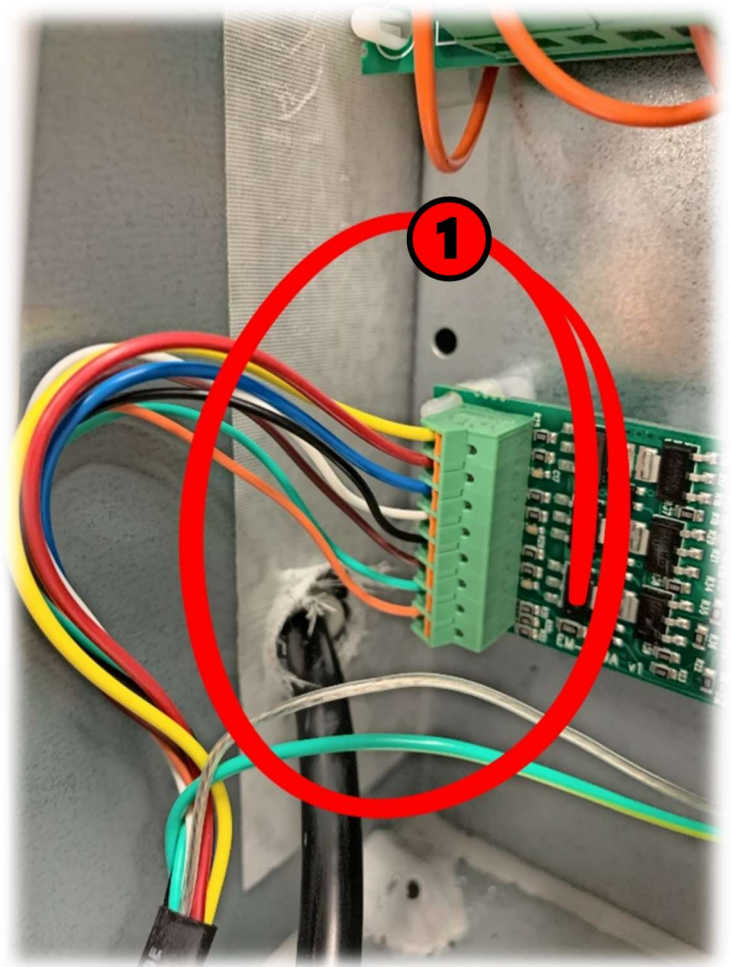
4: White

5: Black

6: Brown

7: Green

8: Orange



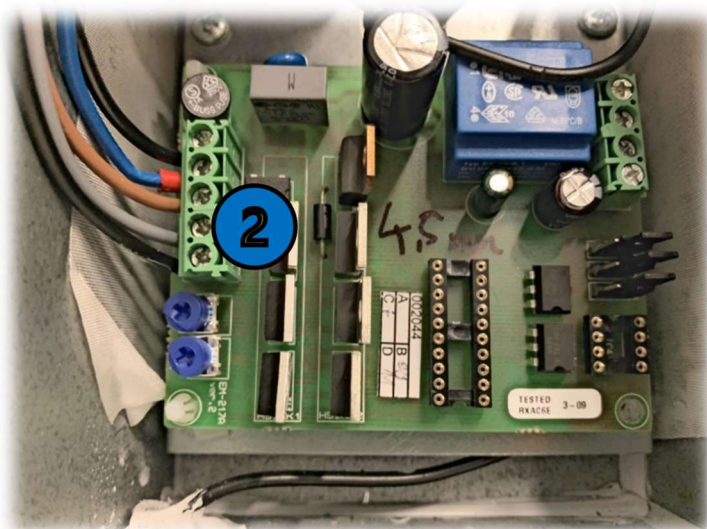
If AC HRW:

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

3: Brown

4: Gray

5: Black

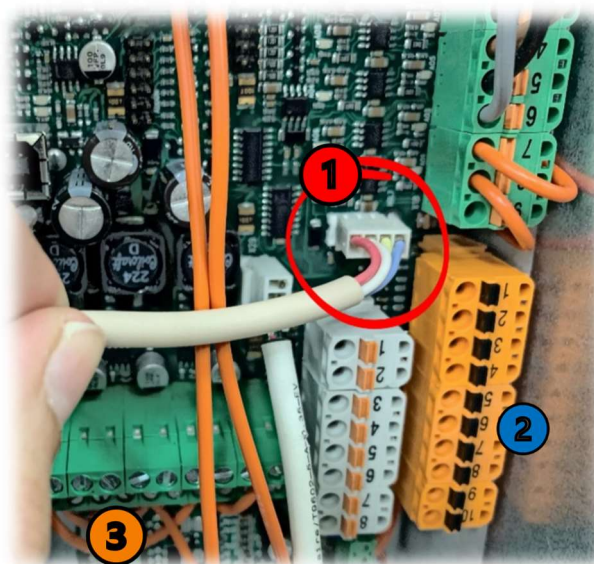


Connect **the after heater control cable (1)** to the main board (X17).

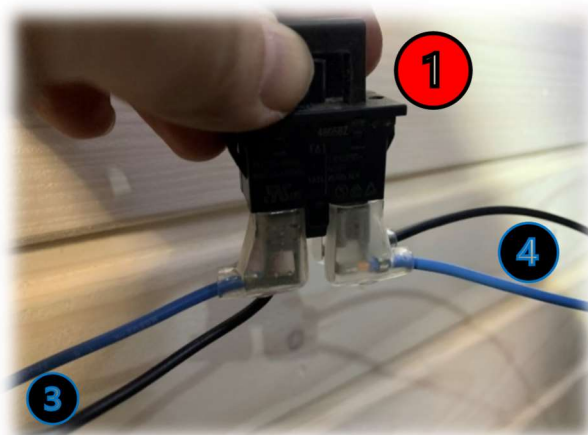
Ignore if no electrical after heater installed.

Connect **the pressure difference switch** to **DI2 (2) & GND (3)** on the main board.

Connect other components (for example actuator for water coil after heater or cooling coil) according to the electrical diagrams (pages 30-34).



Connect **the pairs of wires with flat connectors**, (40028820, 40028819) to **the main switch (1)**, install the main switch and connect the wires to **the connection terminals (2)**.

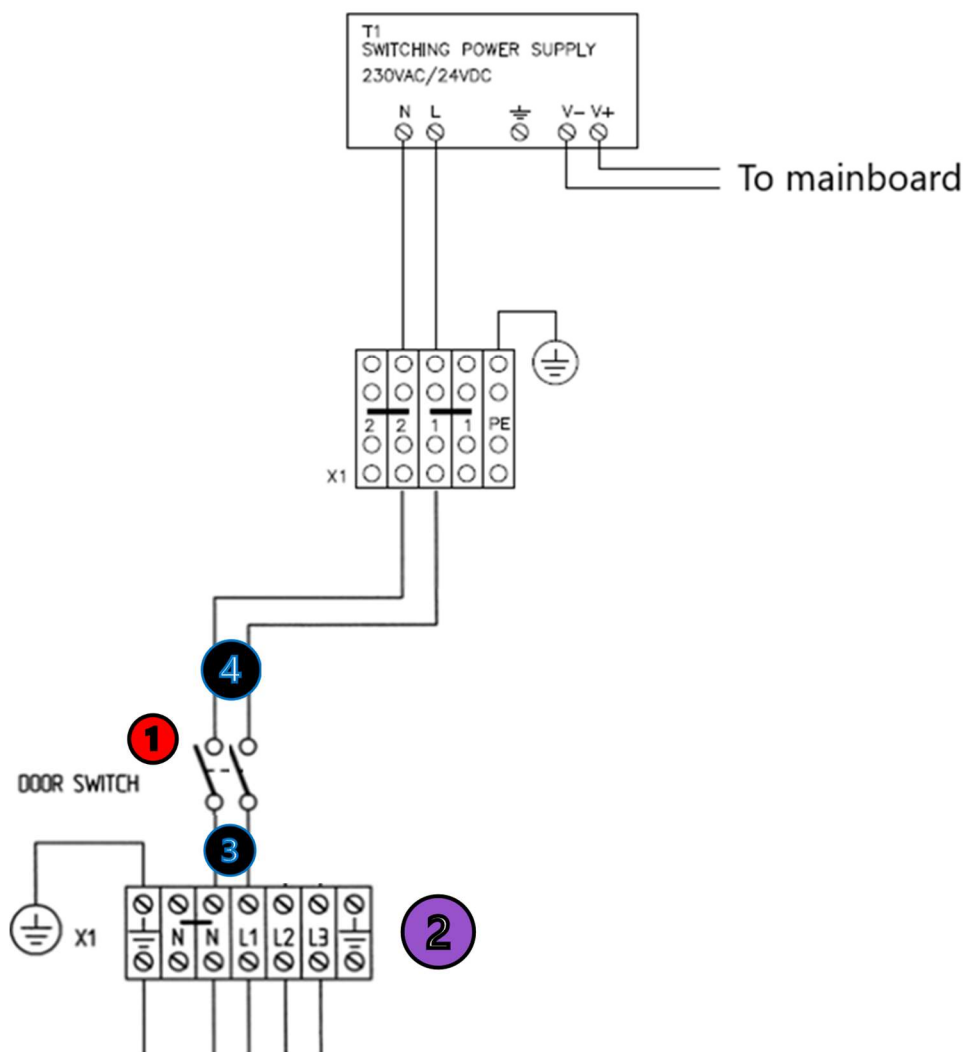


L1: Black (3)

N: Blue (3)

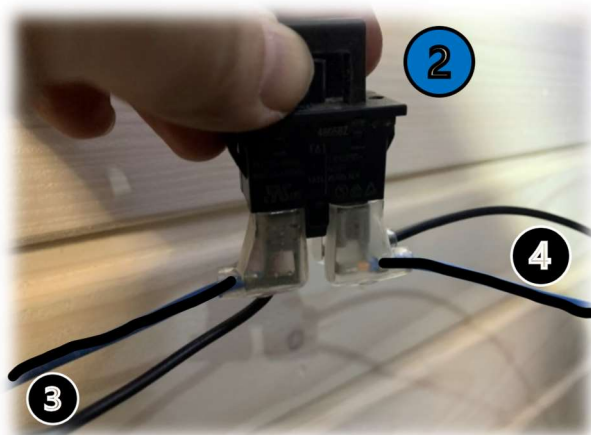
1: Black (4)

2: Blue (4)



If electrical after heater installed:

Connect **the other pairs of wires with flat connectors**, (40028820) to **the after heater switch (2)**, install the switch and connect the wires to **the connection terminals (5) & (6)**.

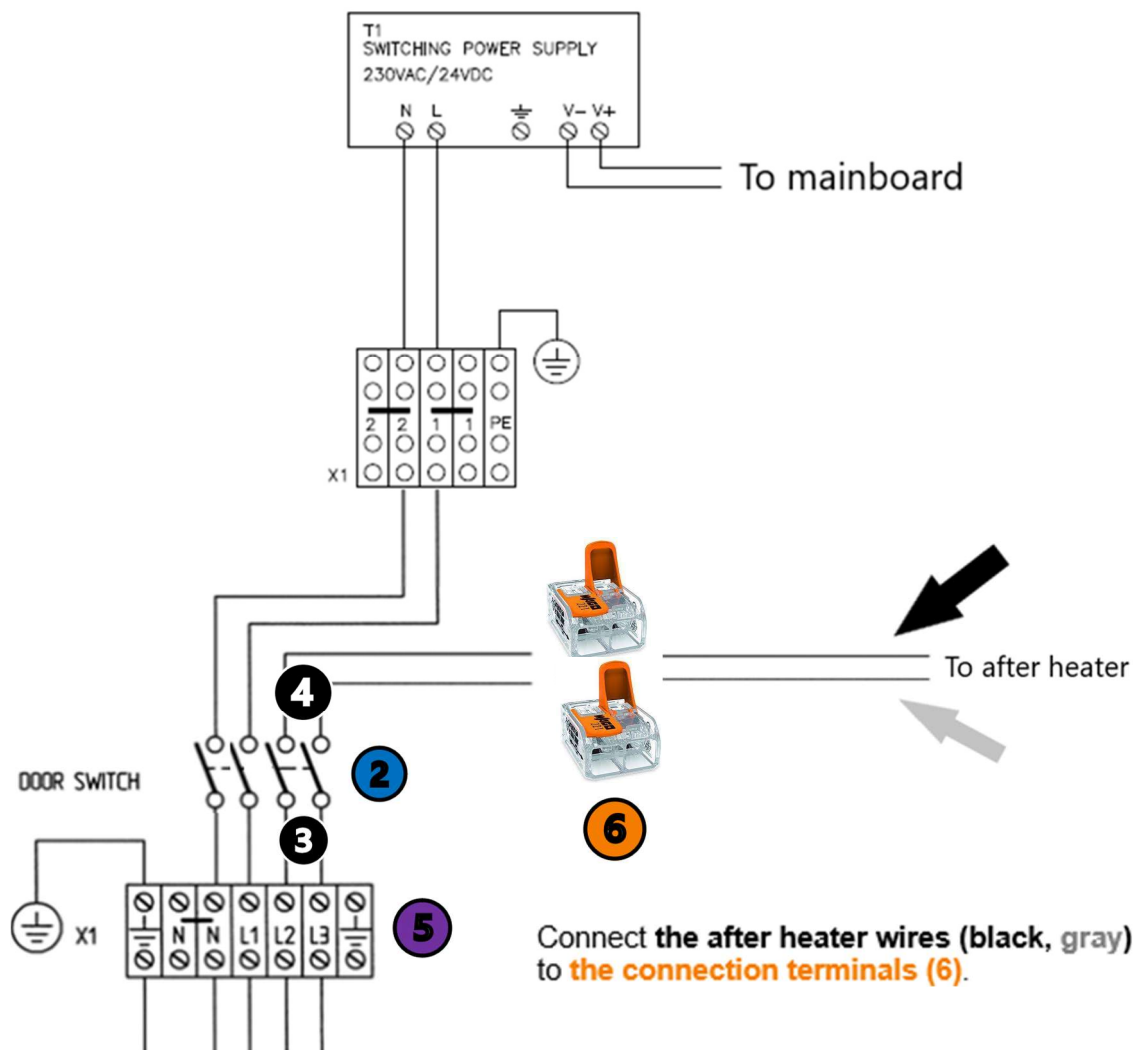


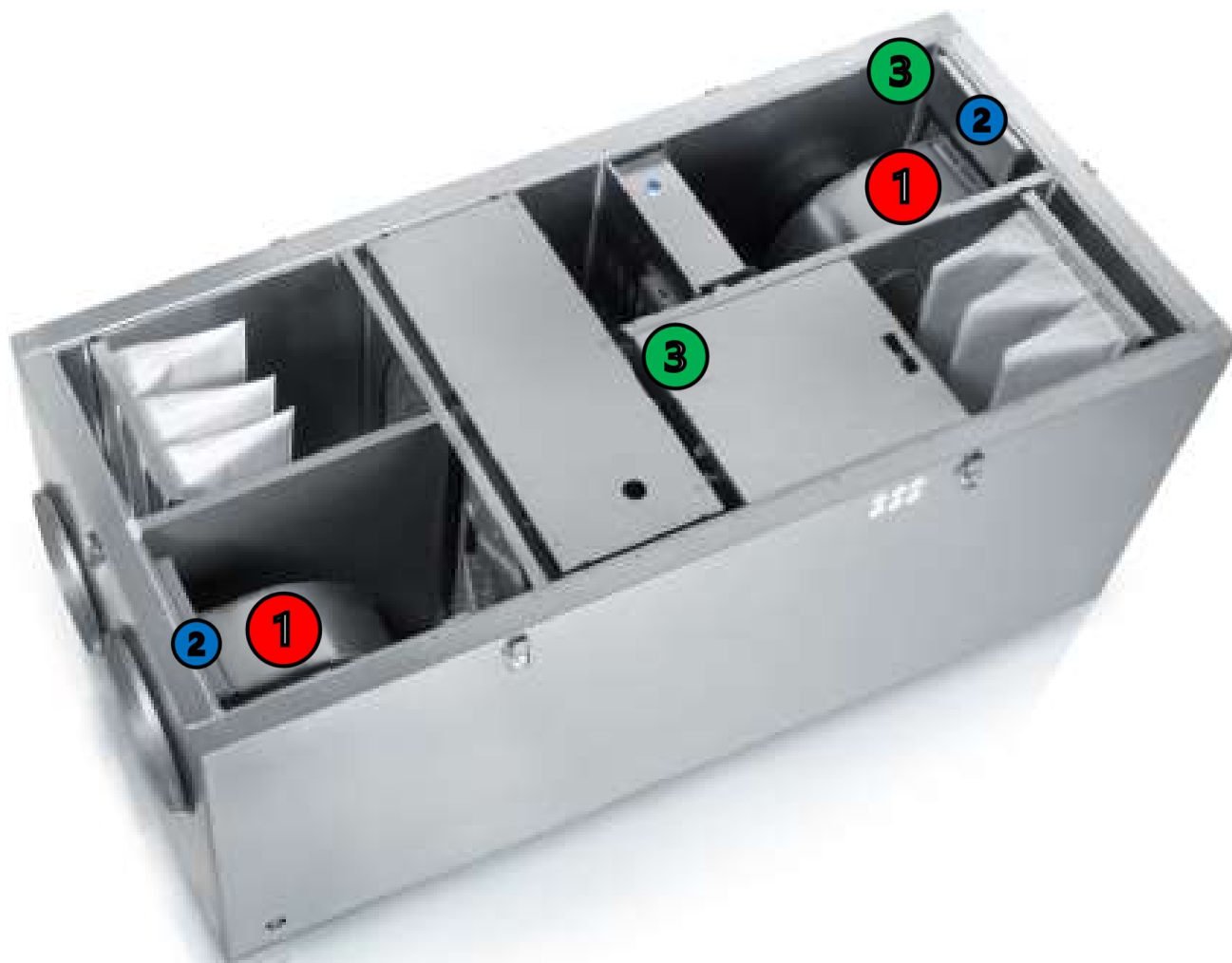
L2: Black (3)

L3: Black (3)

L2: Black (4)

L3: Black (4)

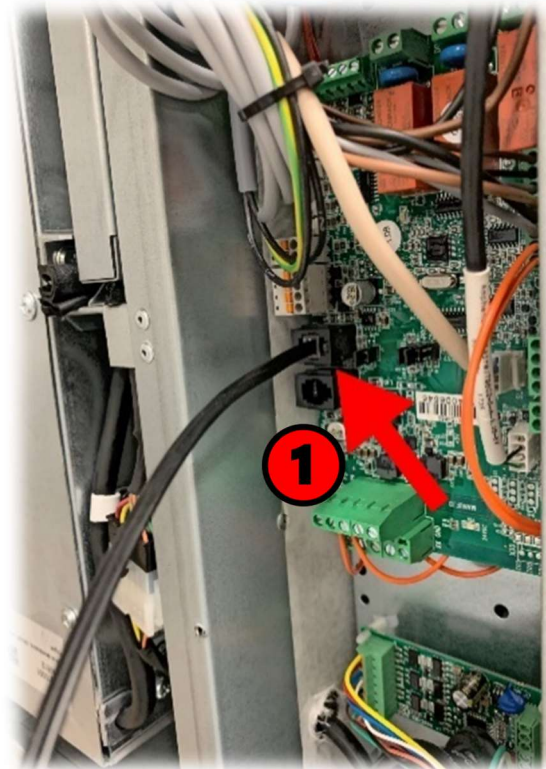




Install and connect **the new fans (1)** (10023152) / (10023151) / (10023144)
and **the fan rail locking parts (2)**.

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

Connect **the display cable (1)** to the main board.



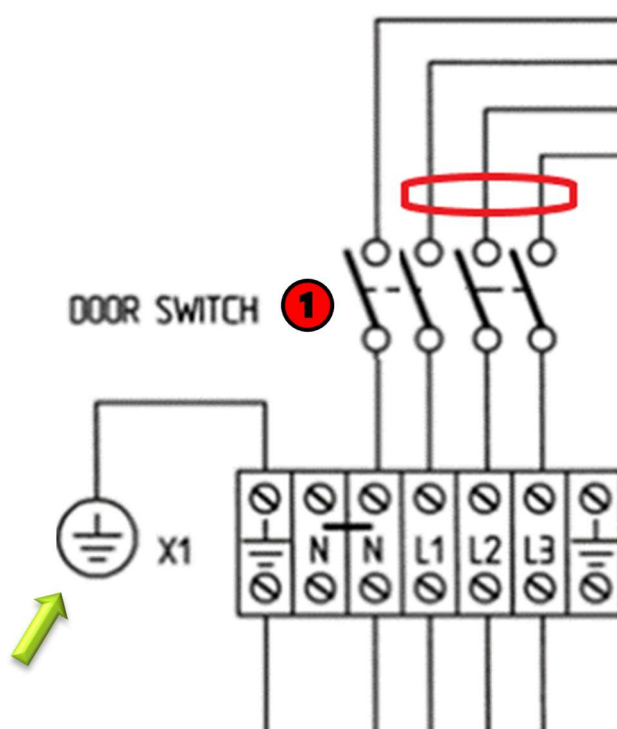
Install **the new display (2)** (40031114) in a desired place.

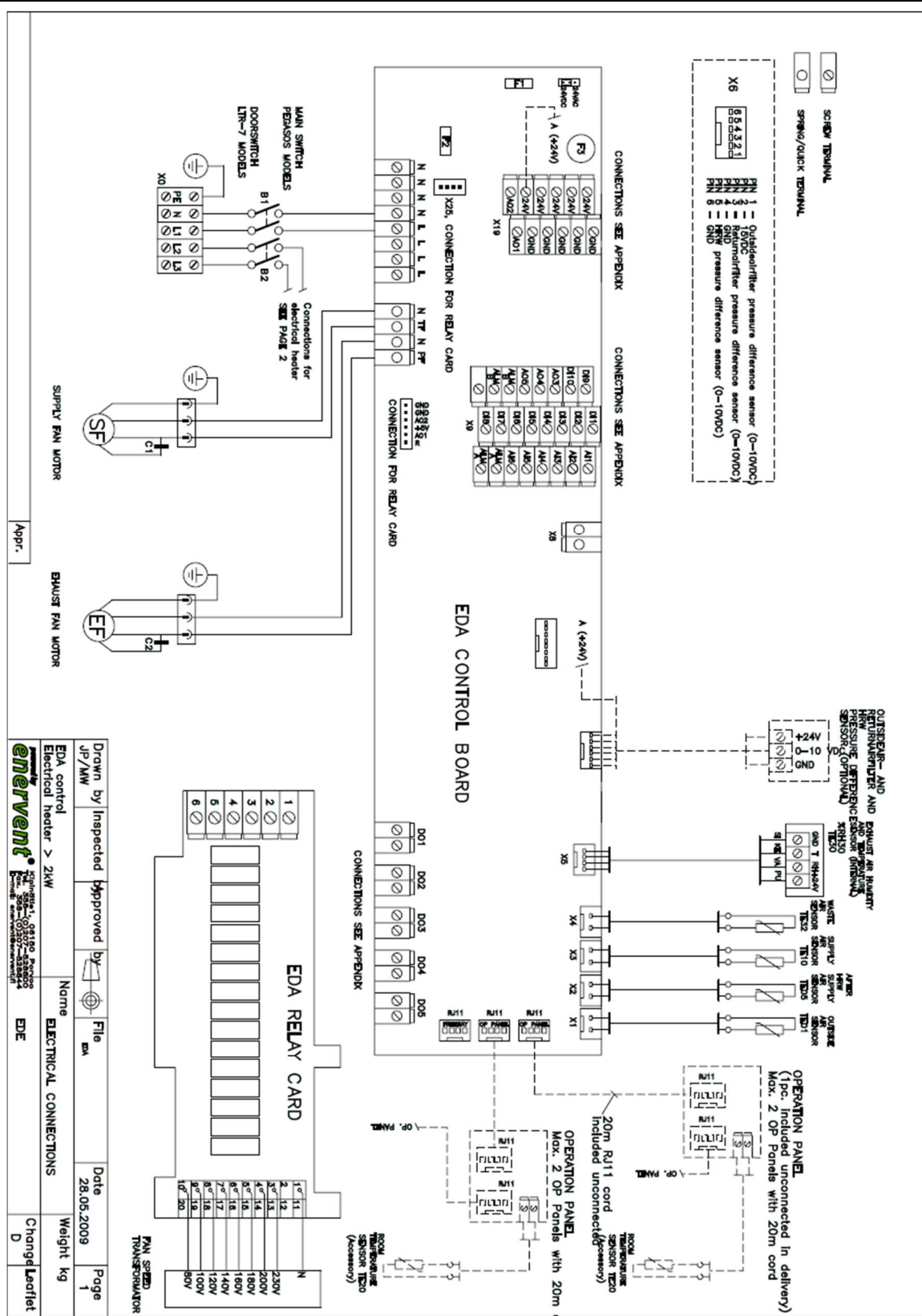


Install **the WiFi module (3)** (40034288).

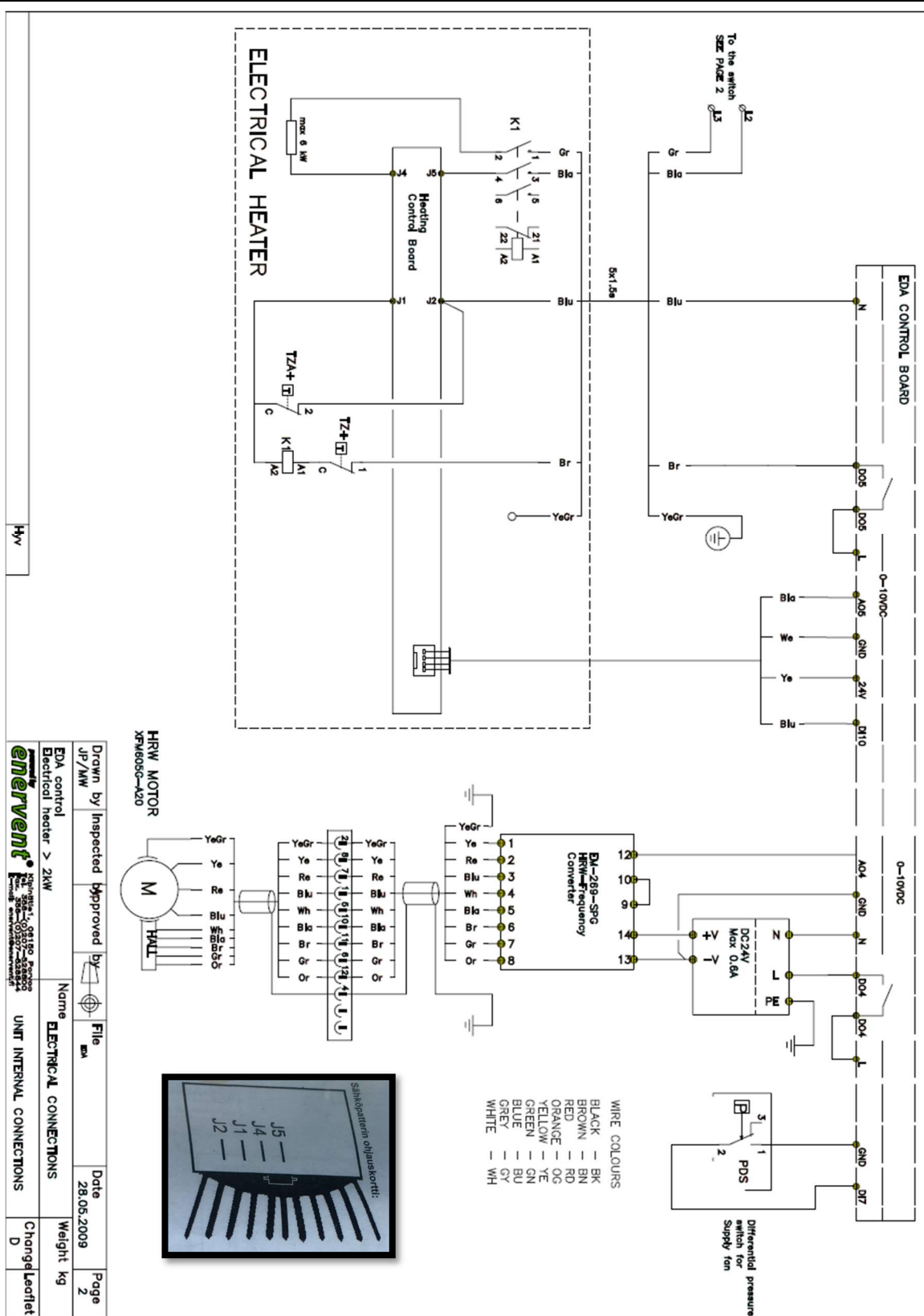


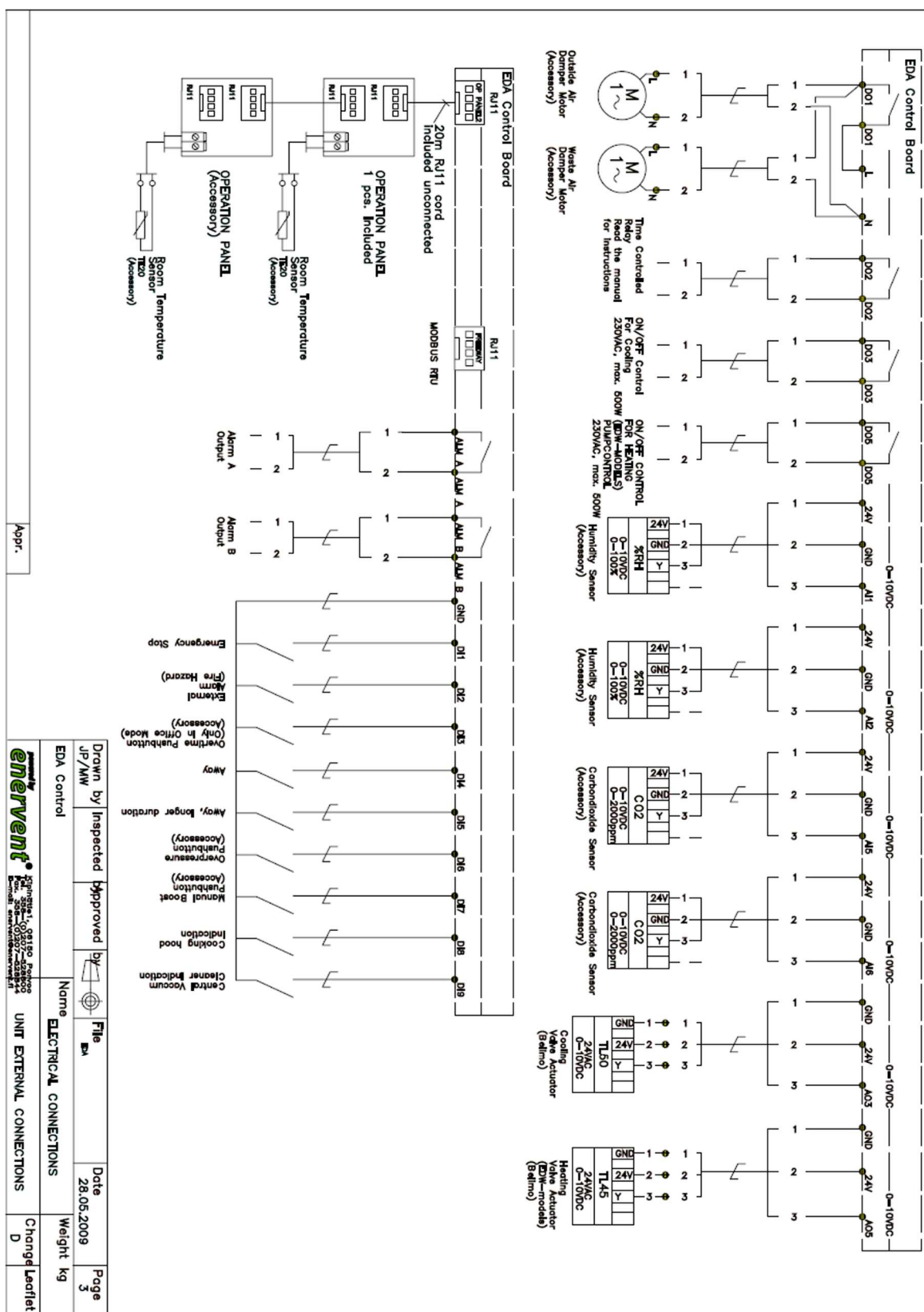
Press down **the door switch(s) (1)** and perform insulation and ground continuity test according to regulations.

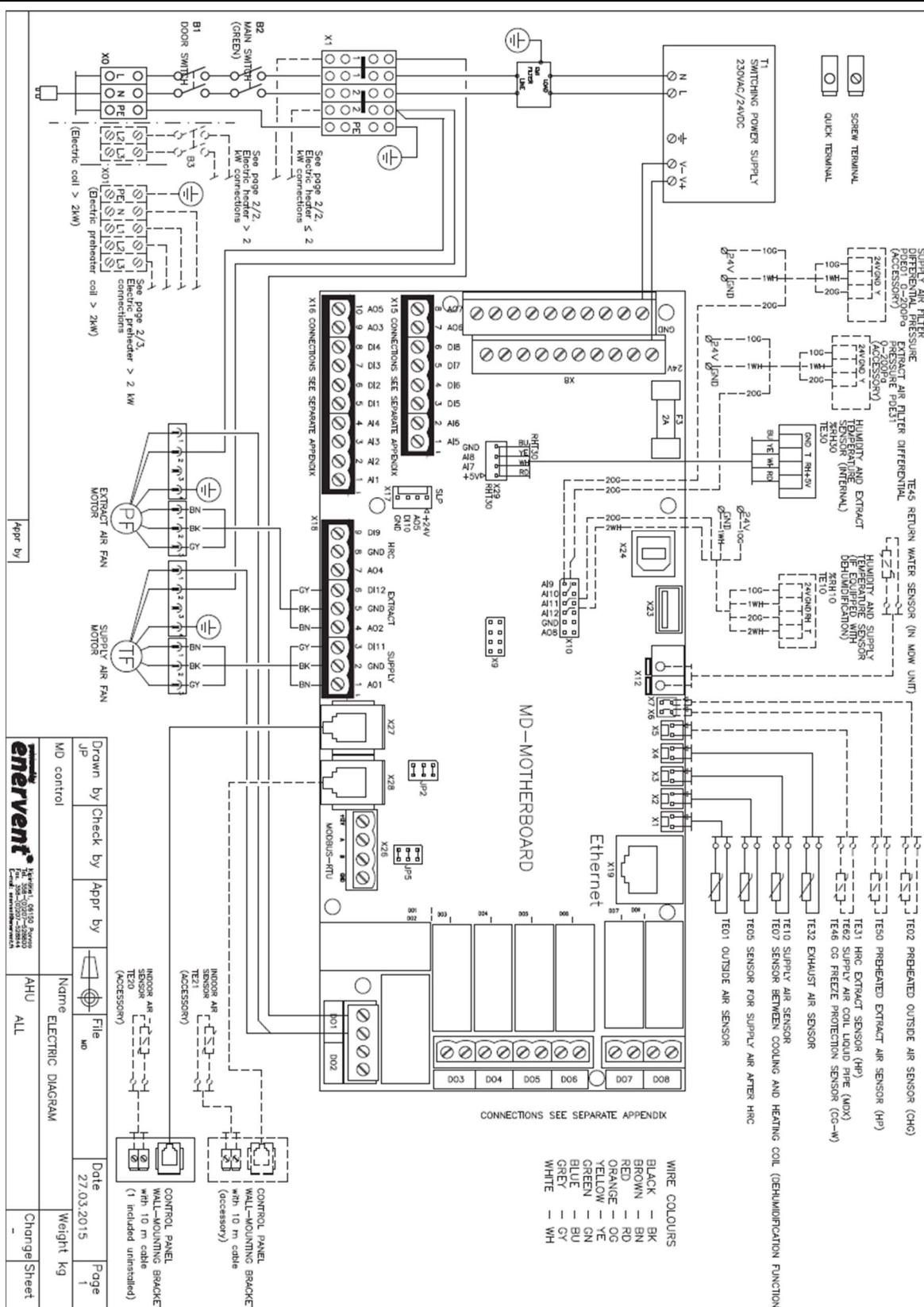


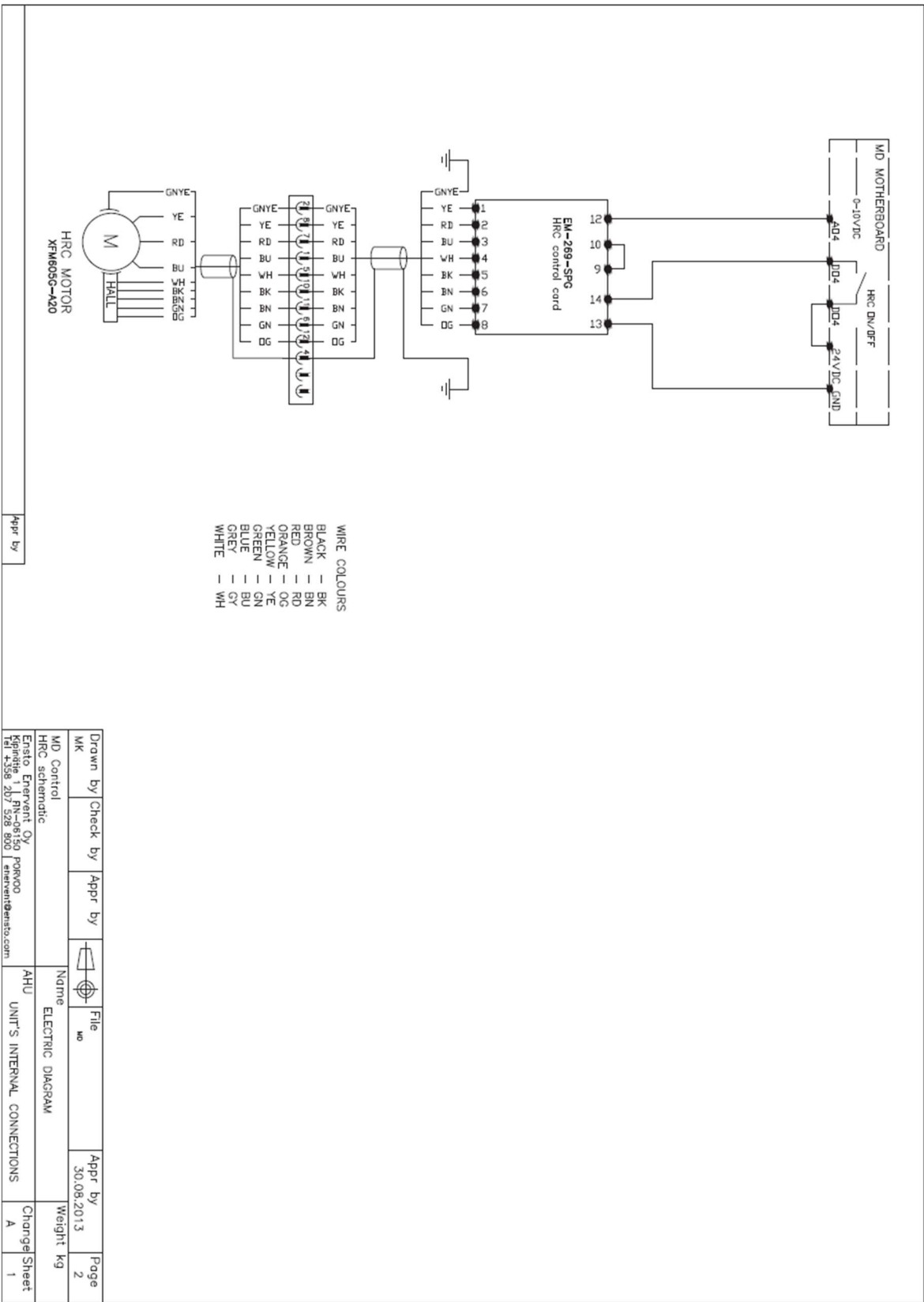


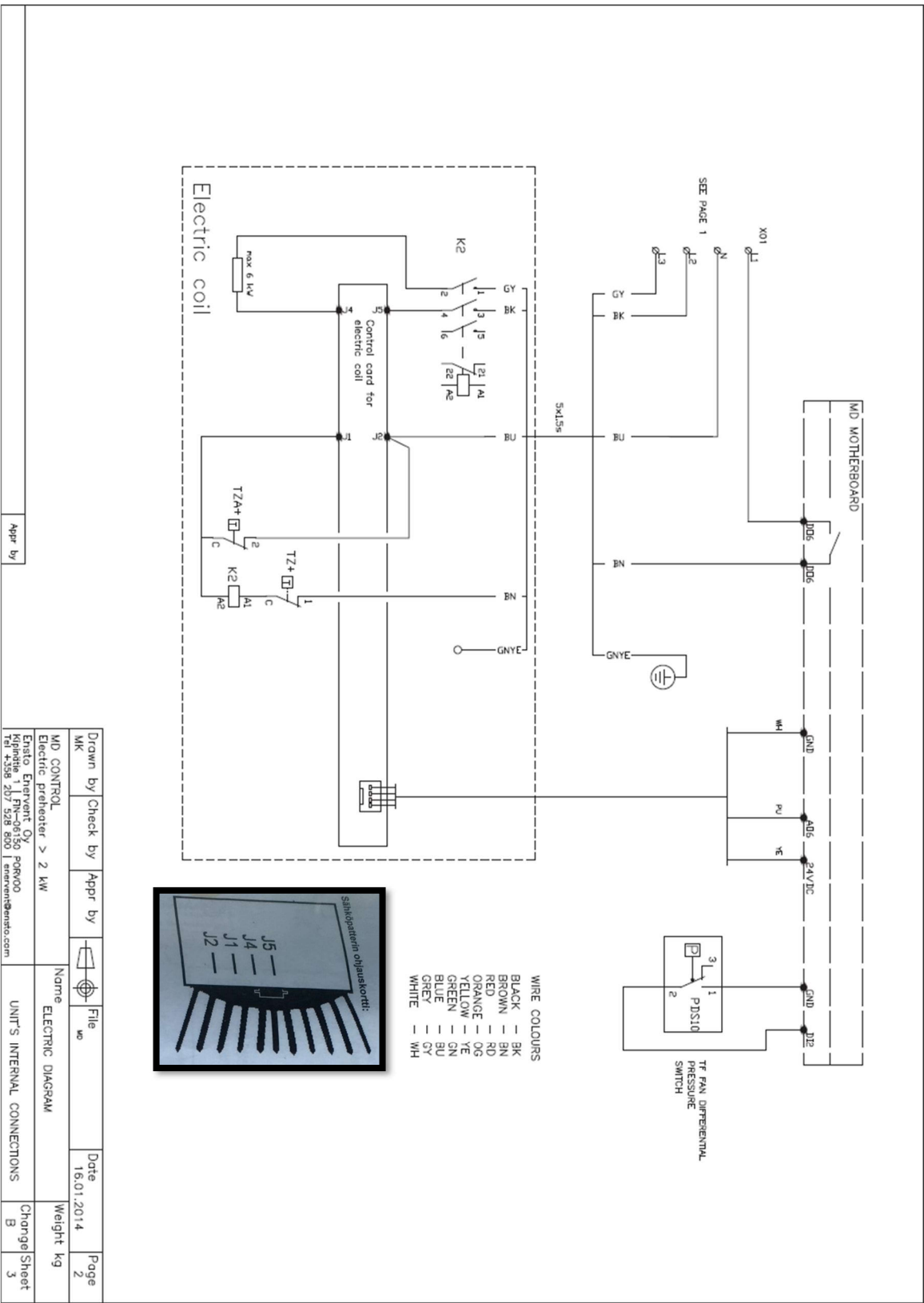


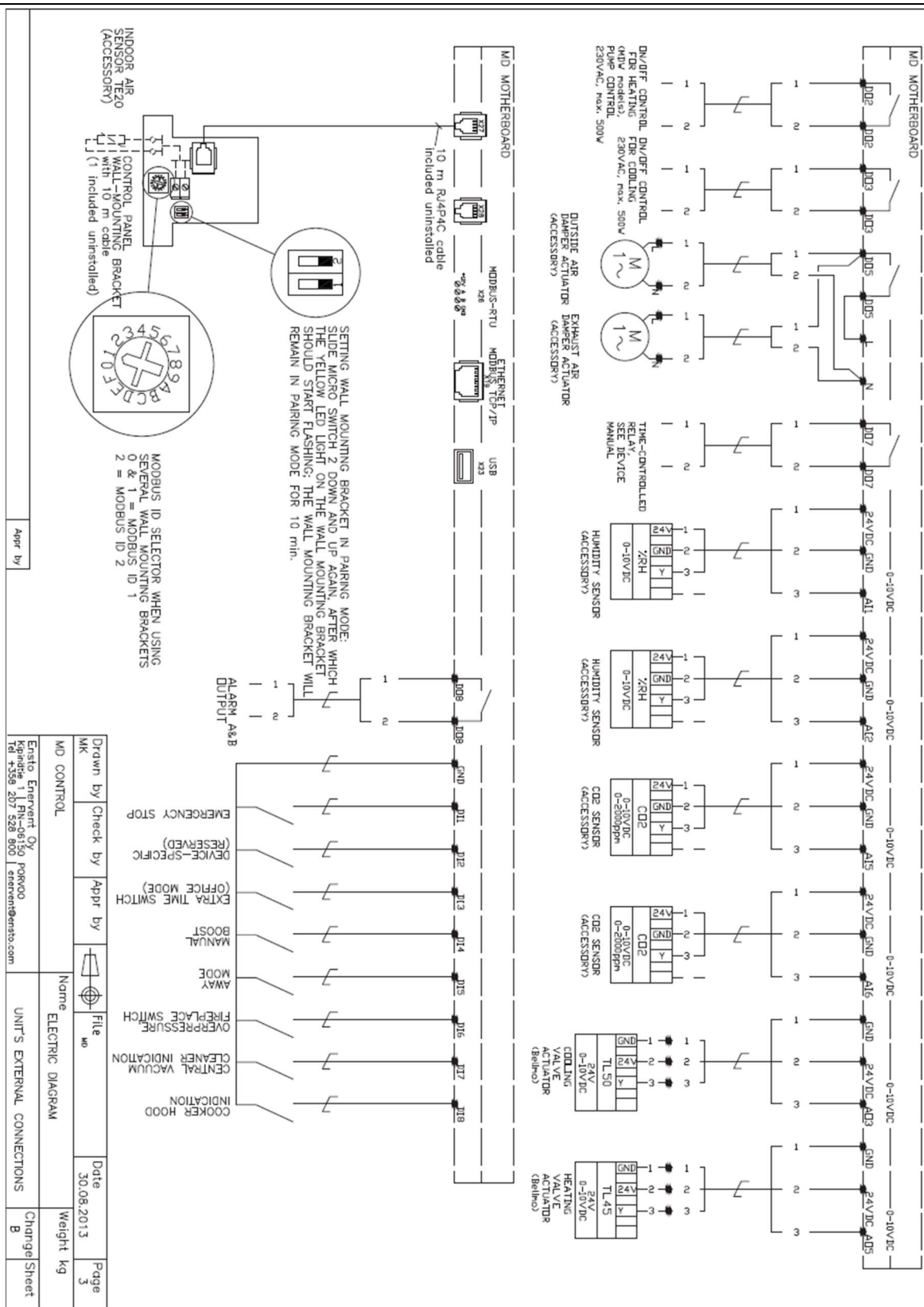












MANDATORY PARTS

10024010	CONTROL UPDATE KIT LTR7 (XL) EDE → EAIR E	1
10023152	FAN PACKAGE LTR-7 EBM 520W	2
	or	
10023151	FAN PACKAGE LTR-7 XL EBM 545W	2
	or	
10023144	FAN PACKAGE LTR-7 Z 500W	2

OPTIONAL PARTS

10023273	ELECTRICAL HEATER 4kW	1
	or	
10023272	ELECTRICAL HEATER 6kW	1

Code	Description	Pcs.
10024010	CONTROL UPDATE KIT LTR7 (XL) EDE → EAIR E	
	Automation	
40030936	PCB support KGL5-6S	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 0,75mm2	1
40028773	Wire 340mm orange 0,75mm2	6
40028774	Wire 255mm 1mm2 black	3
40028779	Wire 255mm 1mm2 blue	1
40031093	eAir main board	1
40029985	eAir main board connectors	1
40029195	Power supply Tufvassons PSLR24	1
40028788	Ground wire 100mm	1
40029740	Automation base	1
40029344	Terminal package modified	1
40029297	Terminal WT4, 58.504.0055.0	3
40029331	Terminal WT4, 8L, 50010106	1
40029332	Terminal WT4, PE, 50010186	1
40029339	Terminal 9708/2535,50013525	2
40029337	Terminal AP WT 2,5 - 10 GR	1
40028818	Ground wire 170mm	1
40031440	Terminal marking L1 (25ARK/LTK) 9705A / 6 / 10 B	1
40029325	Terminal marking L2 (25ARK/LTK) 9705A / 6 / 10 B	1
40029326	Terminal marking L3 (25ARK/LTK) 9705A / 6 / 10 B	1
40031441	Terminal marking N (25ARK/LTK) 9705A / 6 / 10 B	1
40031442	Terminal marking PE (25ARK/LTK) 9705A / 6 / 10 B	1
	Components	
40030100	Cable sealing VET 5-7	5
40029244	Cable sealing PMR 615 AVL140	4
40028803	Fan power cable	2
40028802	Fan control cable	2
40029224	Humidity/temperature sensor Amphenol 600mm	1
40031530	Screw ZN 4,2x25	4
40029982	WaGo 221-415	2
40028820	Wire 600mm black (main switch)	6
40028819	Wire 600mm blue (main switch)	2
40028774	Wire 255mm 1mm2 black	3
40028781	Wire 600mm 1mm2 blue	1
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
	Manuals etc. (depends on model)	
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1

MANDATORY PARTS

10024015	CONTROL UPDATE KIT LTR-6/7 EDA → EAIR	1
10023152	FAN PACKAGE LTR-7 EBM 520W	2
	or	
10023151	FAN PACKAGE LTR-7 XL EBM 545W	2
	or	
10023144	FAN PACKAGE LTR-7 Z 500W	2
Code	Description	Pcs.
10024015	CONTROL UPDATE KIT LTR-6/7 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 0,75mm2	1
40028773	Wire 340mm orange 0,75mm2	6
40028774	Wire 255mm 1mm2 black	3
40028779	Wire 255mm 1mm2 blue	1
40031093	eAir main board	1
40029985	eAir main board connectors	1
40029195	Power supply Tufvassons PSLR24	1
40028788	Ground wire 100mm	1
40029740	Automation base	1
40029344	Terminal package	1
	Components	
40030100	Cable sealing VET 5-7	5
40029244	Cable sealing PMR 615 AVL140	4
40028803	Fan power cable	2
40028802	Fan control cable	2
40029224	Humidity/temperature sensor Amphenol 600mm	1
40031530	Screw ZN 4,2x25	4
40028820	Wire 600mm black (main switch)	2
40028819	Wire 600mm blue (main switch)	2
40028774	Wire 255mm 1mm2 black	3
40028781	Wire 600mm 1mm2 blue	1
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
40034288	WiFi module package	1
	Manuals etc. (depends on model)	
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1

Notes: