

Automation upgrade

Pandion AC -> eAir

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 (2)**
(+ other power supplies if available).



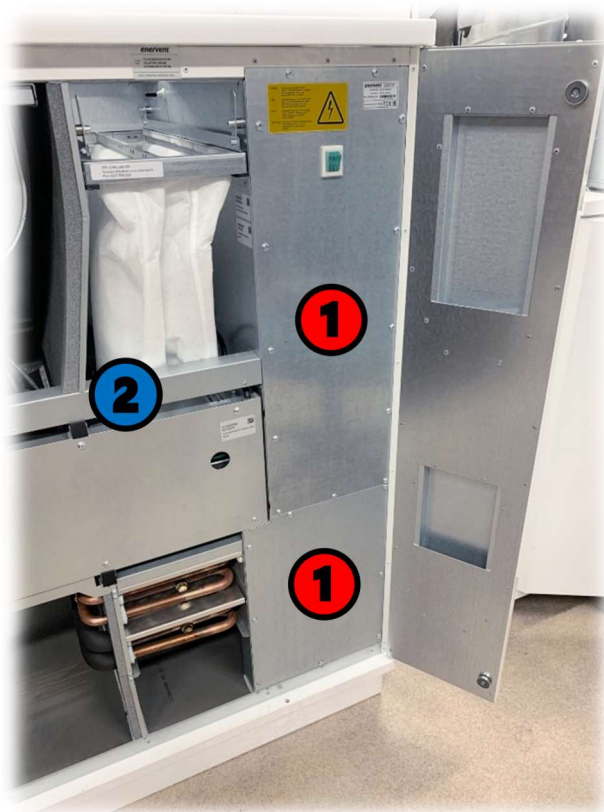
Open the service door by turning **the three locks (3)**.



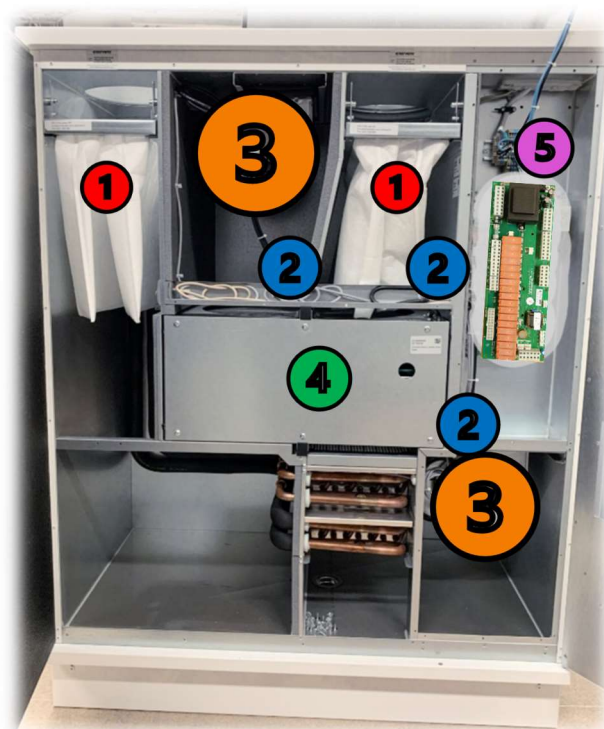
Remove **the cover to the electrical box (1)** and **the supply air fan chamber (1)** by removing the screws.

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

Remove **the POP rivets** from **the cable rail (2)** by drilling, and remove the cover.

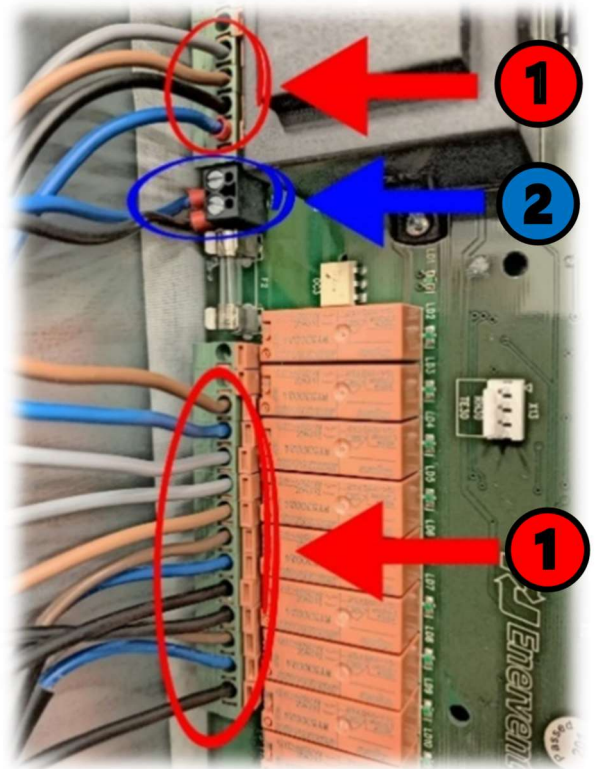


Remove **the filters (1)** by pulling.
Disconnect **the connectors (2)**.
Remove **the fans (3)**.
Remove **the HRW (4)** by pulling.
Disconnect and remove the main switch wires from **the terminals (5)**.

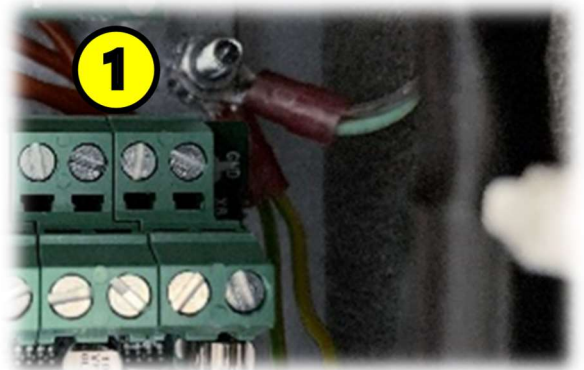


Disconnect **the wires (1)** by pressing the orange button next to the wire.

Disconnect **the wires (1)** from the main board marked **red (1)** and **blue (2)**.



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



Disconnect **the ground wire (1)** from the main board and remove it.

If there is a water coil installed (ACW), the actuator is connected **here (2)**. Disconnect and remove the wires. The actuator can't be used anymore. Install the new actuator afterwards according to the electrical diagram (**page 29**).

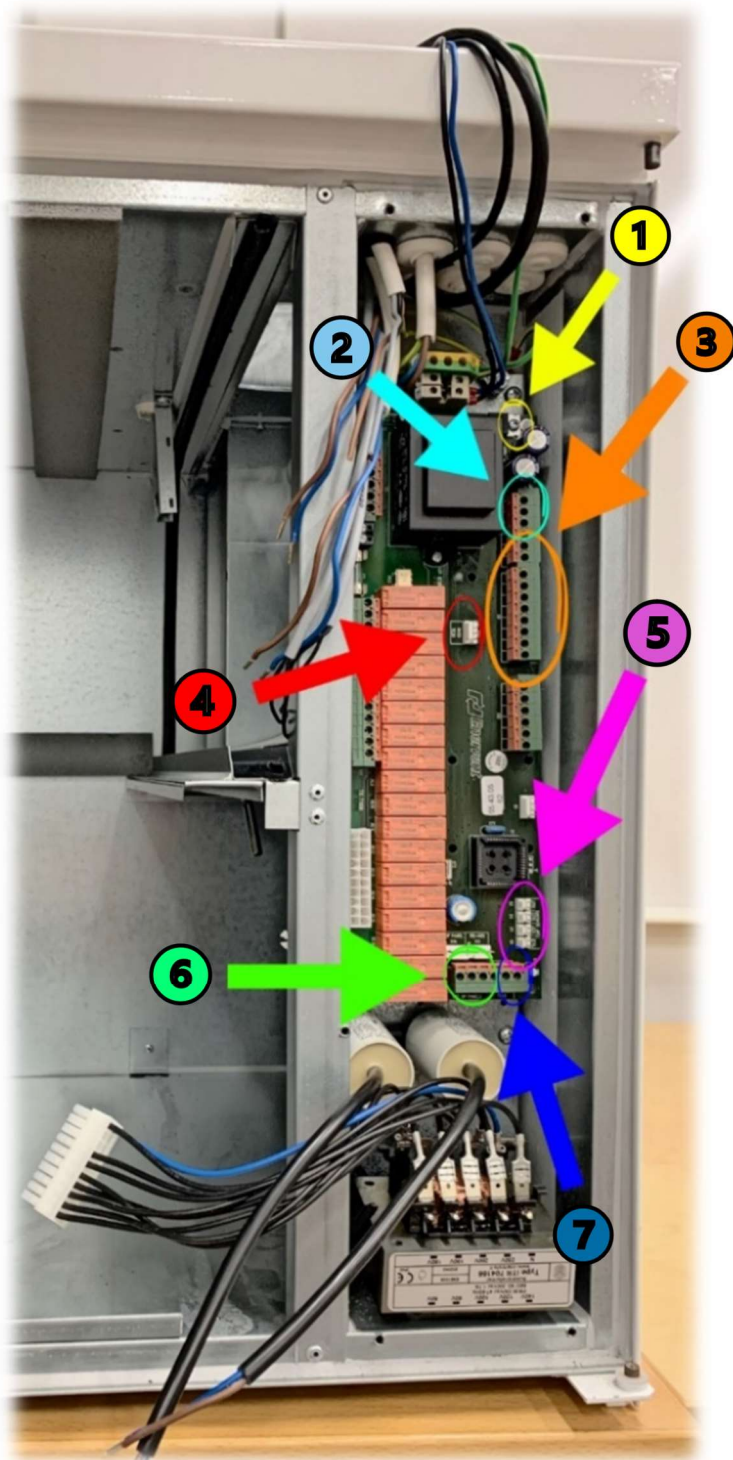
If there are wires connected **here (3)**, mark them according to the reading on the mainboard and disconnect.

Disconnect **the cable (4)**.

Disconnect **the sensors (5)**.

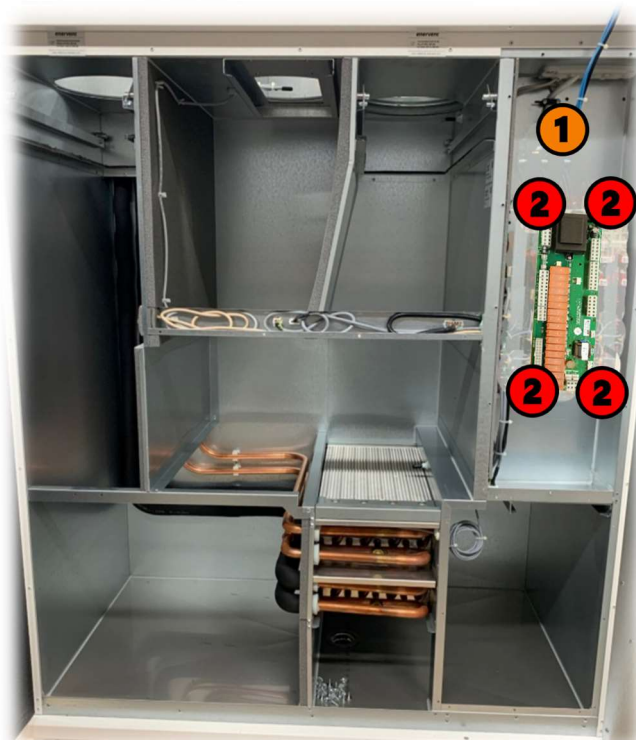
Disconnect **the wires (6)**. Don't remove this cable (might be needed later).

If the unit has a water coil after heater installed (ACW), the return water sensor is connected **here (7)**. Disconnect and remove the wires. The sensor can't be used anymore.



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

Remove **the possible screws / PCB supports (2)** and remove the automation base incl. terminal blocks, main board, capacitors, transformer and possible other components.



Cut and remove **the outside air sensor (1)**.
 Cut and remove **the HRW supply air sensor (2)**.
 Cut and remove **the waste air sensor (3)**.
 Cut and remove **the supply air sensor (4)**.

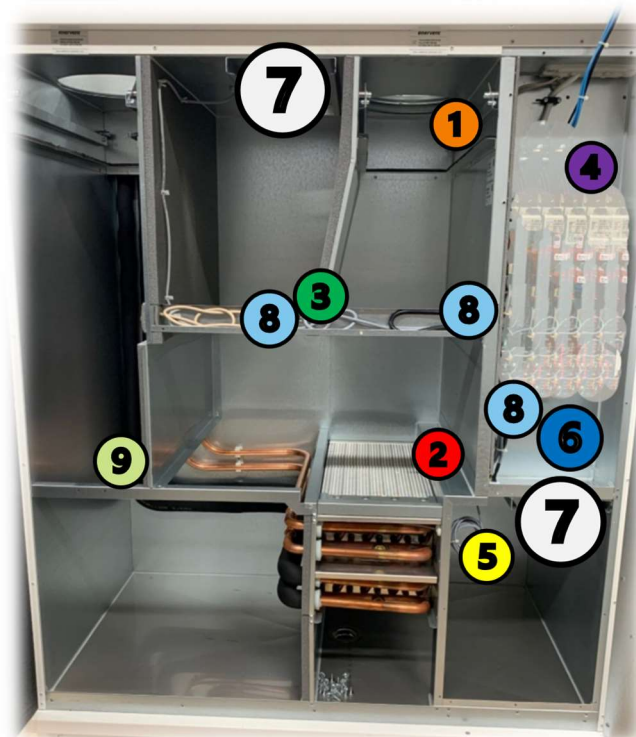
If the unit has a water coil after heater installed; cut and remove **the sensor cable (5)**.

If the unit has an electrical after heater installed; remove the after heater by removing four screws and by pulling, along with the cables connected to **the after heater (6)**.

Remove the POP rivets from **the fan rails (7)** by drilling, and remove the rails (they are also glued to the frame).

Remove **the HRW- and the fan cables (8)**.

Remove **the extract air sensor cable (9)**.



Install **the new extract air sensor (1)** (40029225) and attach it with **cable ties** (40030997) on top of the old sensor. The old sensor won't be used anymore.



Cut a gap in the insulation and install the extract air sensor cable into **the gap (2)** and through the cable rail into the electrical box.



Install **the new fan rails (1)** (10026631).

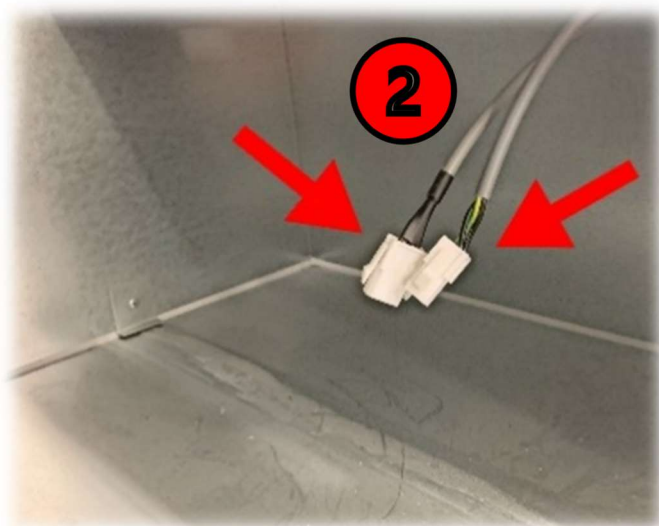
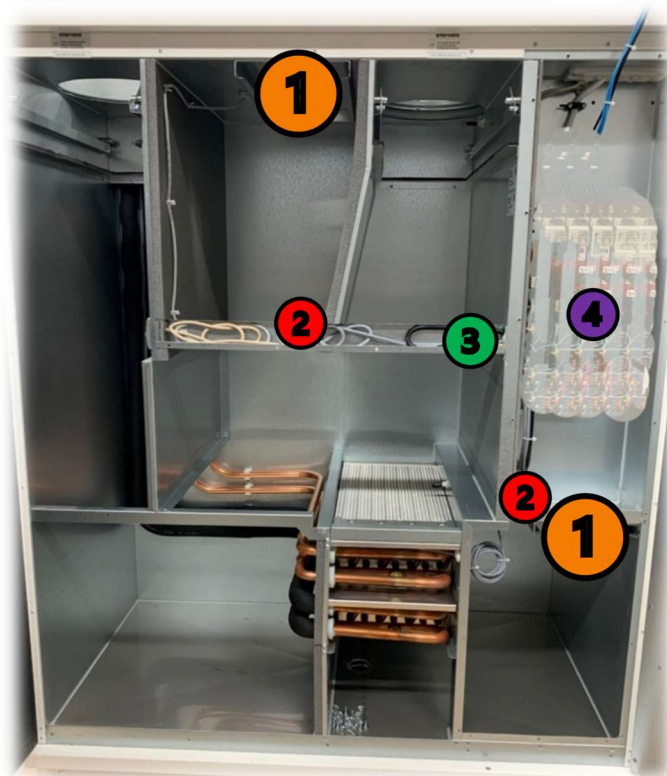
by:

- drilling new 3,2mm holes for **the new POP-rivets** (40031559).
- placing sealant between the frame and the fan rails.
ex. Würth silicone sealant.
- attaching the new fan rails to the frame with **the new POP-rivets** (40031559).

Drill two 18mm holes in the frame (where the old fan cables were attached (if needed), install **new cable sealings** (40030101) and install **the new fan cables (2)** (40028782, 40028783, 40028784, 40028785).

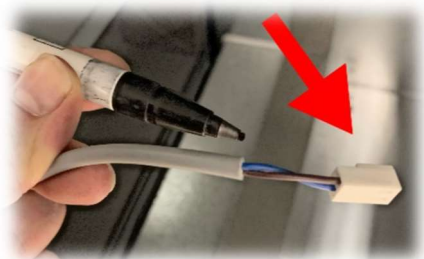
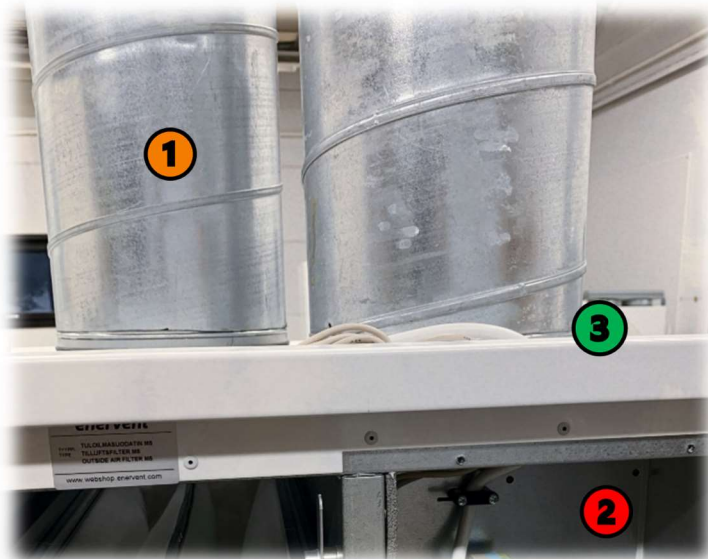
Drill a 18mm hole (where the old HRW cable were attached), install a new cable sealing (40030101) and install **the new HRW cable (3)** (40028725).

Install the cables in **the electrical box (4)**.





Drill a 16mm hole in **the outside air duct (1)**, install a new cable sealing (40030100) and install **the new outside air sensor (1) (1700mm)** (40029167) into the duct. Mark the sensor **"TE01"** on the connector in the other end and install it in **the electrical box (2)** through **the cable sealing in the frame (3)**.



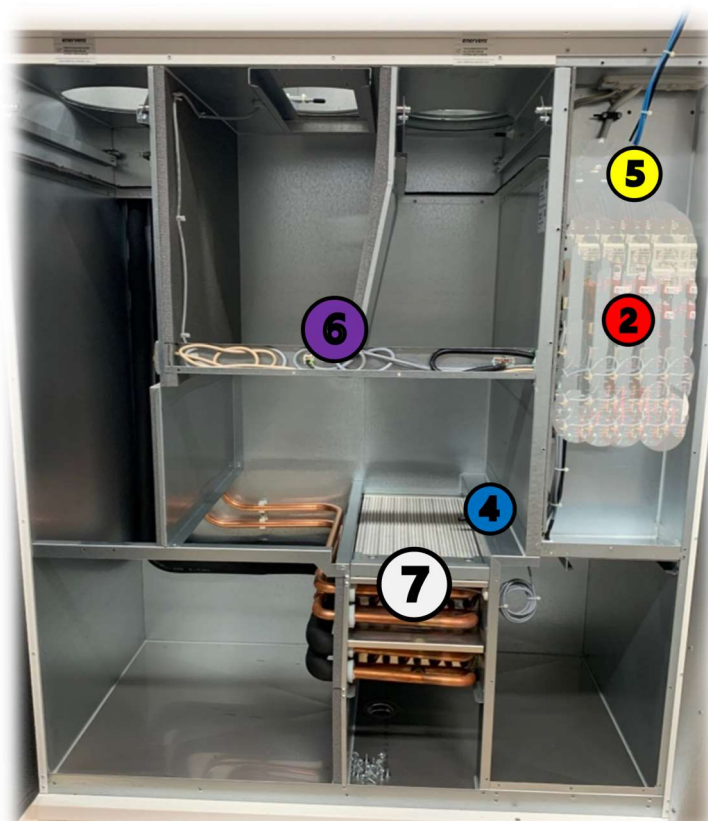
Install **the new HRW-supply air sensor (4) (850mm)** (40029165) and mark it **"TE05"** on the connector in the other end.

Install **the new supply air sensor (5) (500mm)** (40029230) and mark it **"TE10"** on the connector in the other end.

Install **the new waste air sensor (6) (1700mm)** (40029167) and mark it **"TE32"** on the connector in the other end.

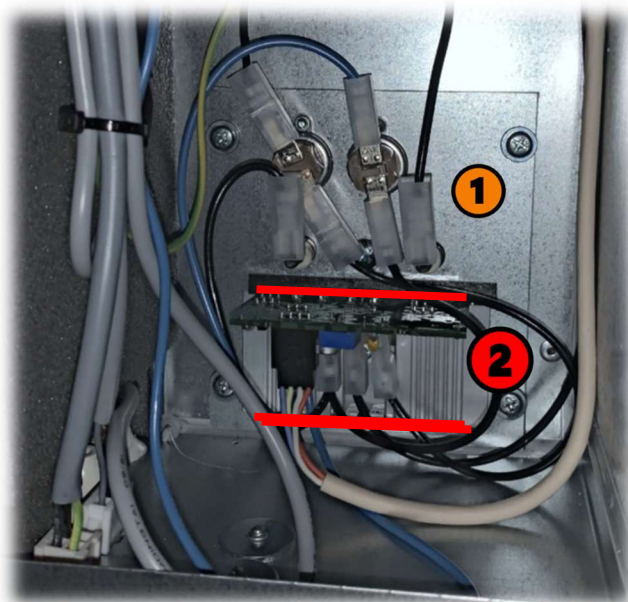
If the unit has a water coil after heater installed; install **the new return water sensor (7) (40029228)** on the upper pipe of the water coil and isolate it from surrounding air.

Install the sensor cables in **the electrical box (2)**.



If the unit had an electrical after heater installed; install **the new electrical after heater (1)** (10023887).

NOTE! The gap in the frame needs to be checked and enlarged with metal scissors to prevent the new circuit board from touching the frame. If the 230VAC circuit is too close touching the frame, a short circuit may occur (2).



Install **the new automation (3)** 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 (4)** (40031530).

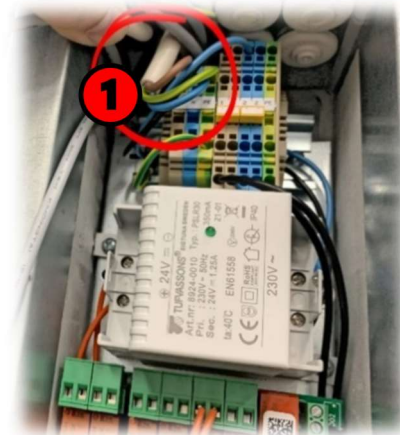


Connect **the main power cable to the terminals (1).**

L: Brown

PE: Green/yellow

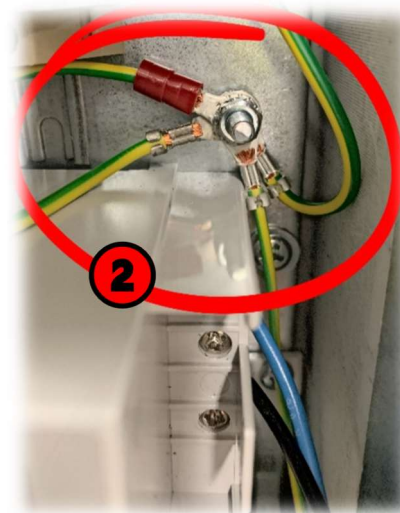
N: Blue



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

Supply air fan, extract air fan, ground terminal. Totally three wires.

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



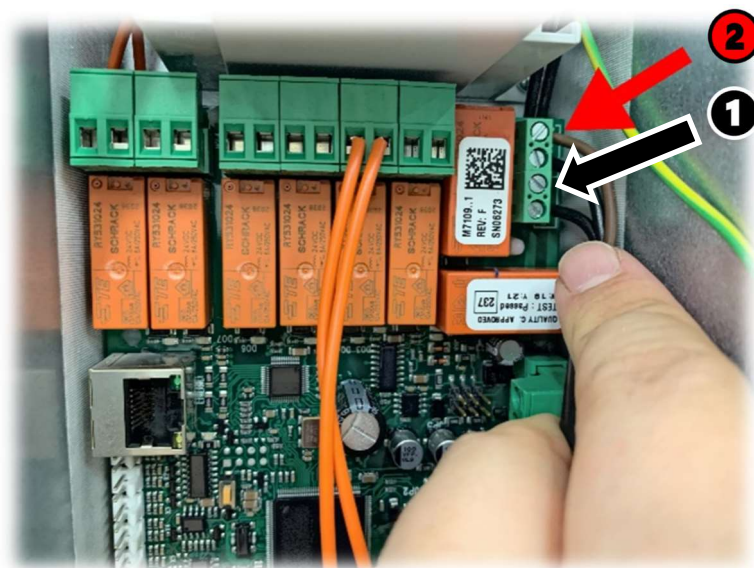
Connect **the blue wire** from the electrical after heater to **the blue "2" connection terminal (2).**

Ignore if no electrical after heater installed.

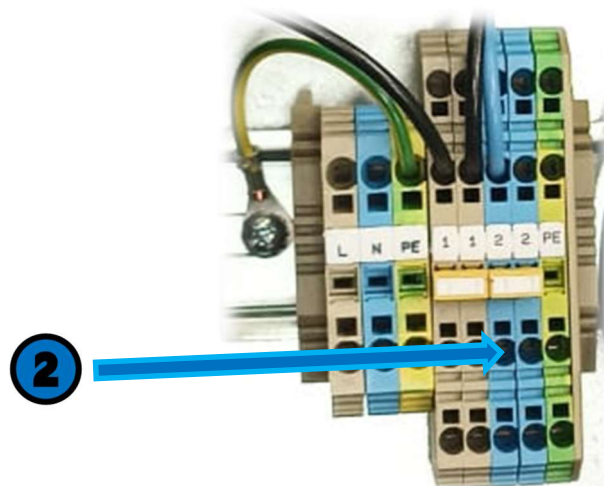


Connect **the brown wire** from the after heater to **"DO2" (2)**.
If there is a water coil after heater installed, the circulation pump power wire (L) would be connected here.

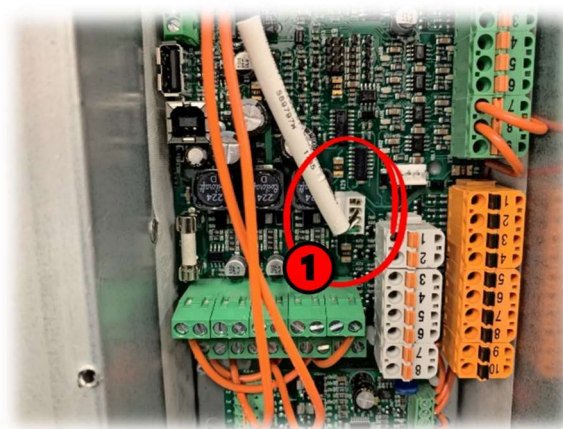
Connect **the wires marked "1"** in the fan power cables (40028782, 40028783) to **"DO1" (1)**.



Connect **the wires marked "2"** in the fan power cables (40028782, 40028783) to **the blue "2" connection terminal (2)**.



Connect **the extract air sensor (1)** (40029225) to the main board (X29).



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

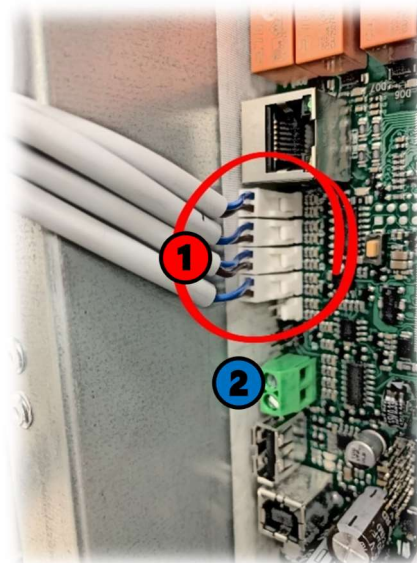
X1, TE01: Outside air (40029167)

X2, TE05: HRW supply air (40029165)

X3, TE10: Supply air (40029230)

X4, TE32: Waste air (40029167)

X12, TE45: Return water sensor (2) (40029228)
if the unit has a water coil after heater installed.

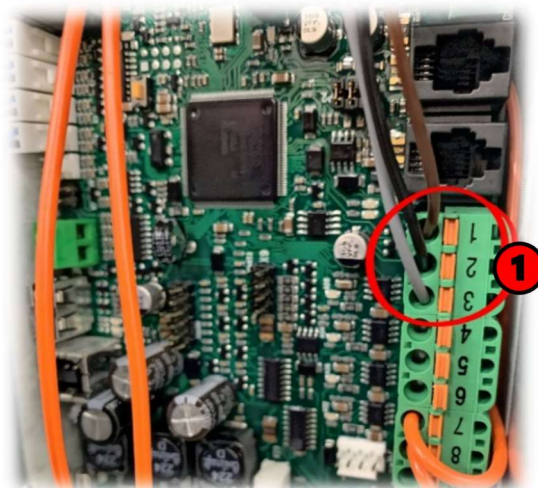


Connect **the wires from the supply air fan control cable (1)** (40028784) to the main board.

1: Brown

2: Black

3: Gray

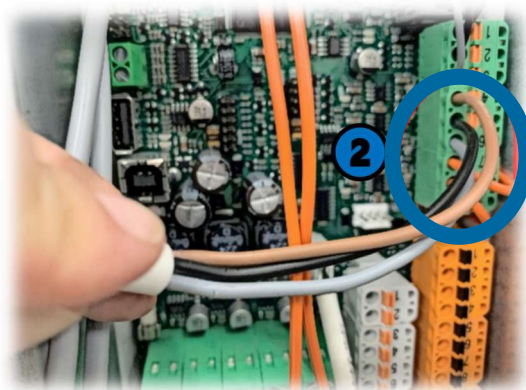


Connect **the wires from the extract air fan control cable (2)** (40028785) to the main board.

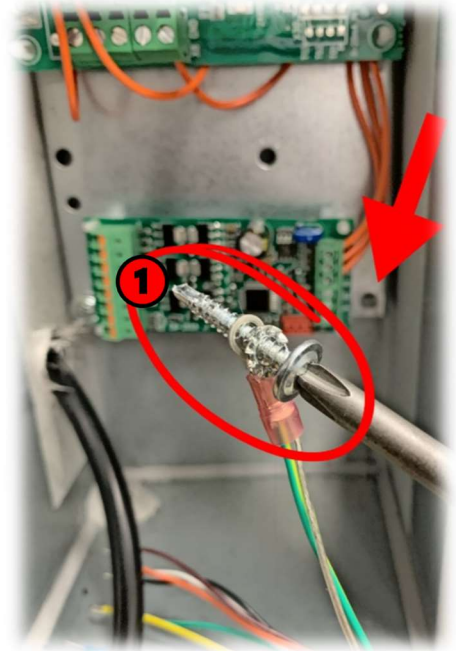
4: Brown

5: Black

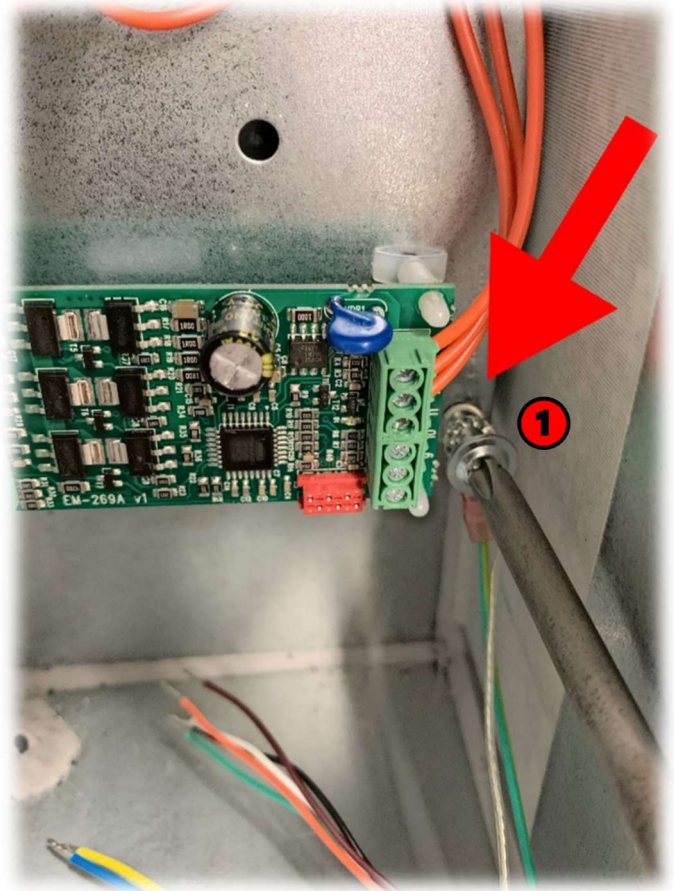
6: Gray



Release **the screw (1)** from the automation base and attach **the ground wire** 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 (40028725) to the HRW control board (1).**

1: Yellow

2: Red

3: Blue

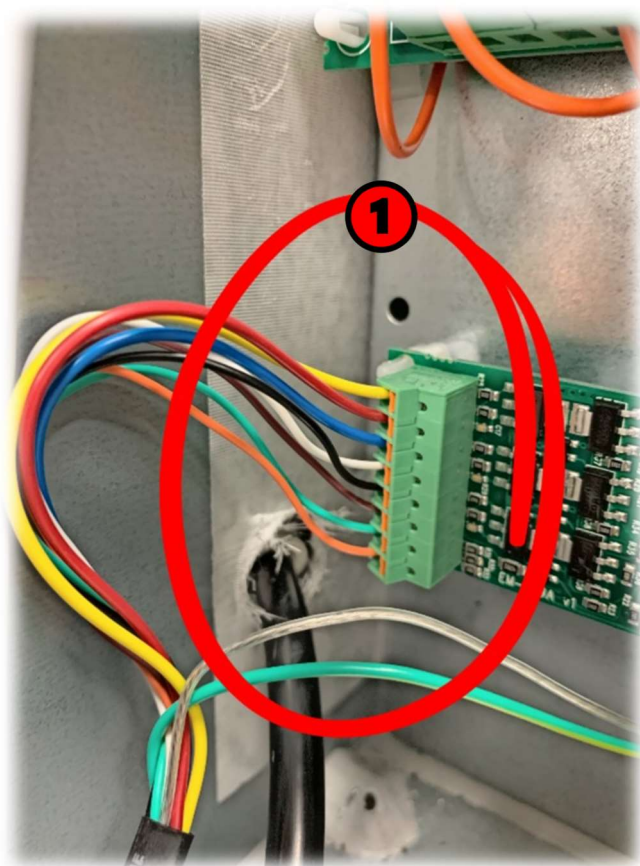
4: White

5: Black

6: Brown

7: Green

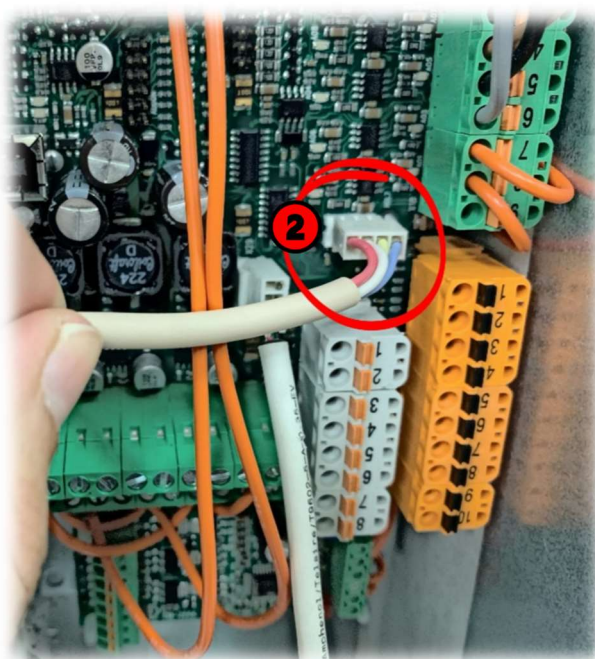
8: Orange

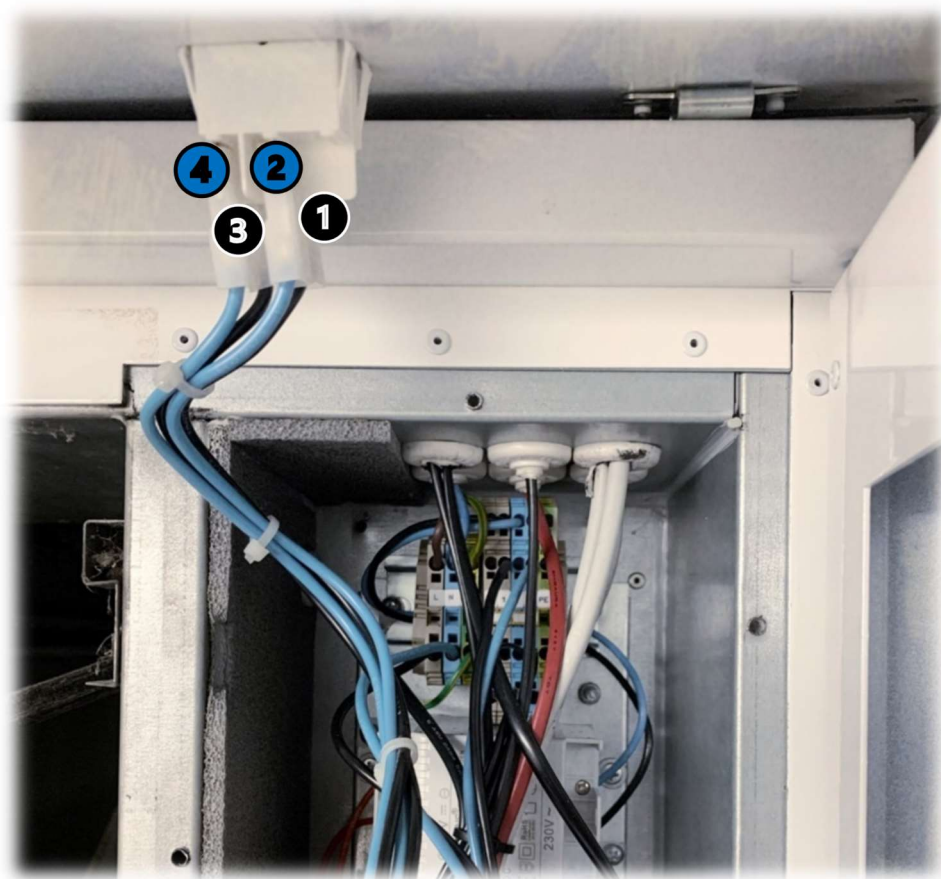


Connect **the after heater control cable (2)** to the main board (X17).

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

Connect other components (for example actuator for cooling coil or water coil after heater) according to the electrical diagrams (pages 26-29).





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

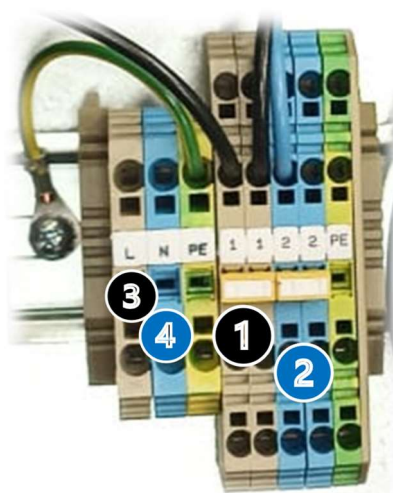
L: Black (3)

N: Blue (4)

1: Black (1)

2: Blue (2)

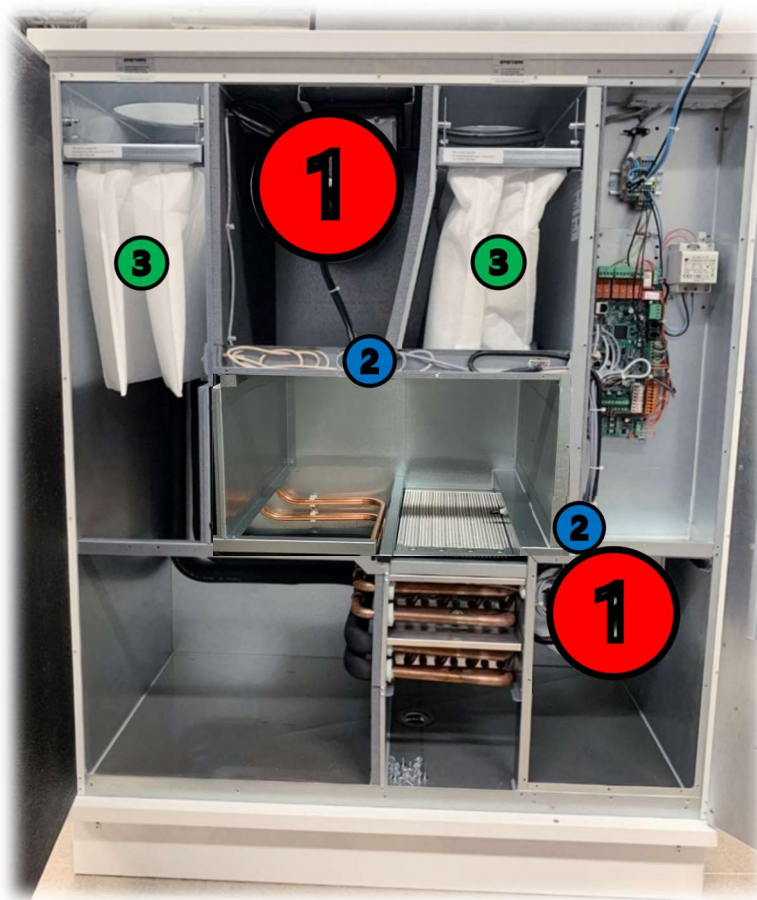
Attach all cables and wires together with **cabl e ties** (40030997).



Install **the new fans (1)**
(10023316, 10023315)

Connect **the fan cables (2)** and attach
them together with cable ties (40030997).

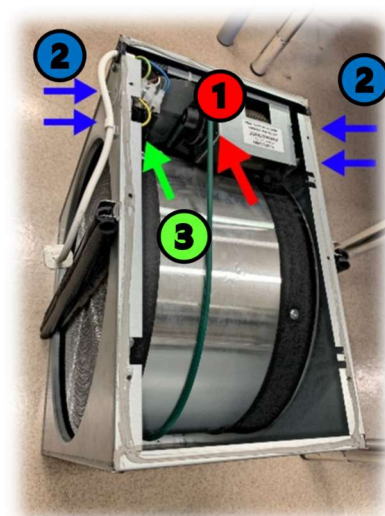
Install **the filters (3)**.



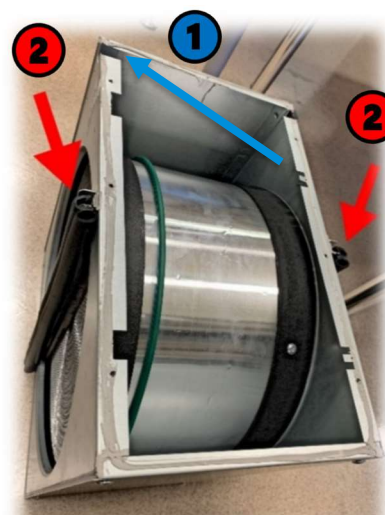
Remove **the screws (4)** from the HRW cover.



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 (1) for the new motor cable.
Check that **the brush clips and the rubber sealings (2)** are unbroken and in place.



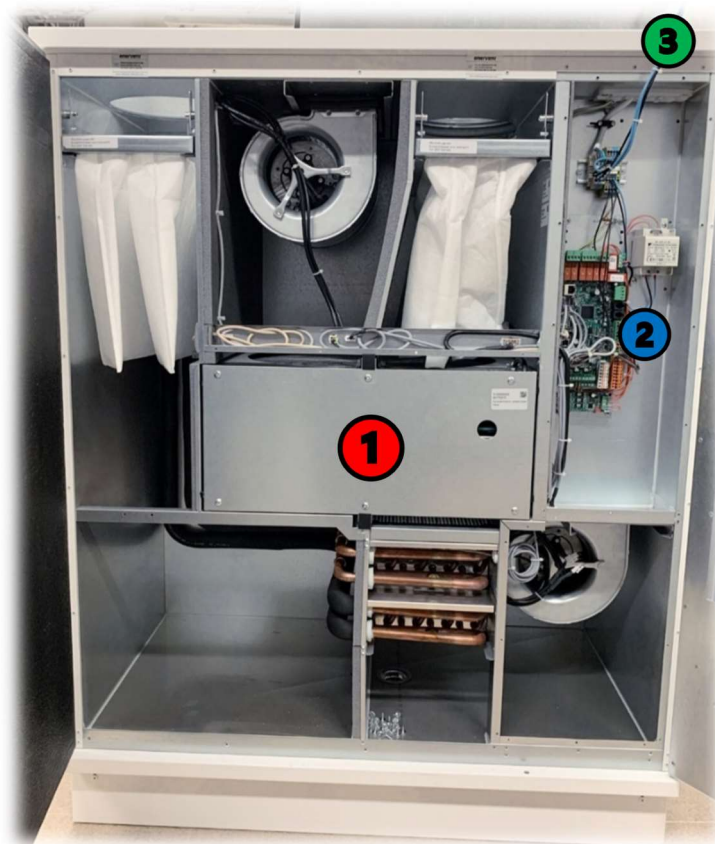
Install **the new motor package (1)** (40028738).
Attach the cover with the screws.



Install **the HRW (1)** and connect it.

Connect **the new display cable (2)** to the main board through **the cable sealing in the frame (3)**.

The old display cable may also be used, but the joints has to be done carefully and in a proper way.



Disconnect and remove the old display.
Install **the new display (4)** (40031114) in a desired place.

4



Install **the WiFi module (5)** (40034288).

5

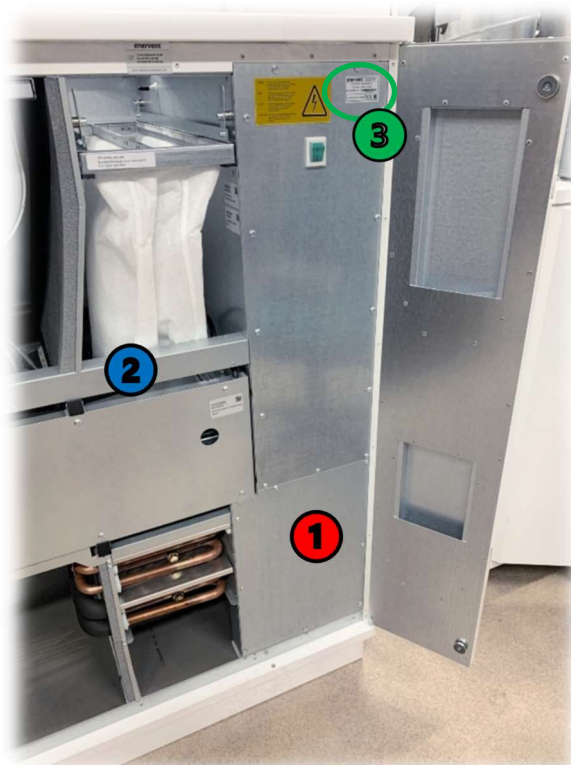


Attach the cover to **the electrical box (1)**
and the supply air fan chamber (1).

Attach **the cover to the cable rail (2)**
with the new POP rivets (40031559).

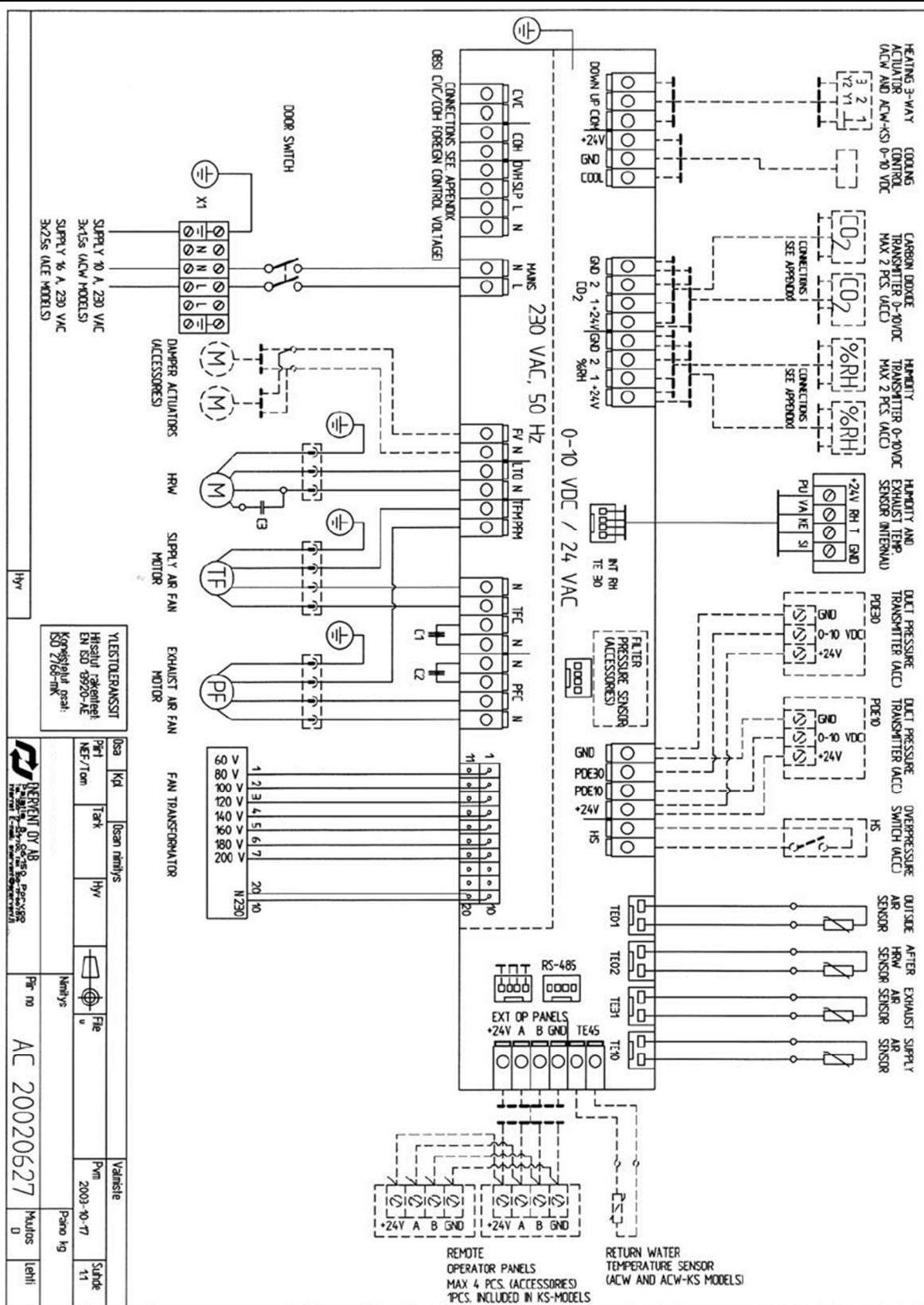
Install **the new type plate sticker (3).**

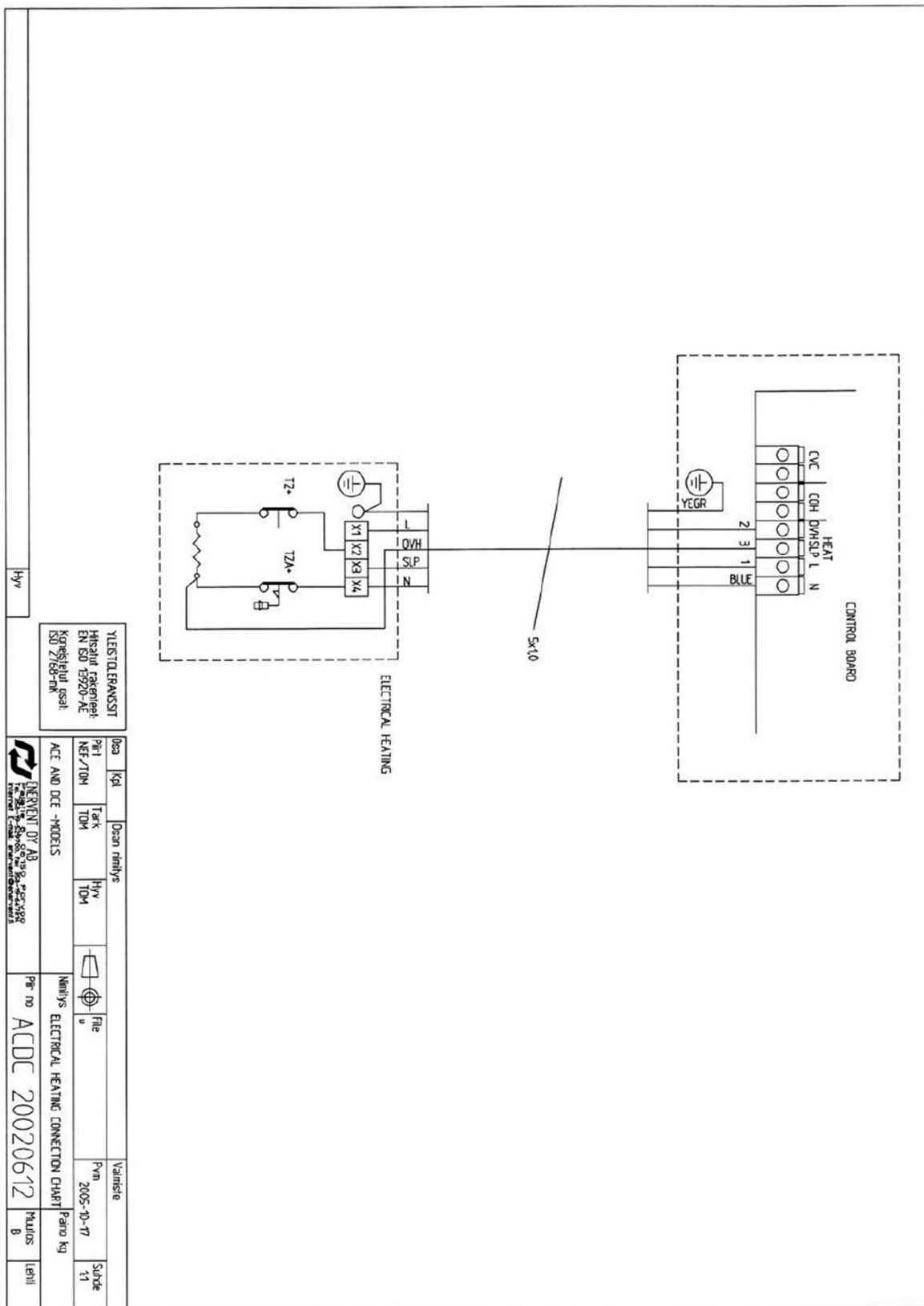
Close the service door.



Turn on **the main switch (4)** and perform
insulation and ground continuity test
according to regulations.

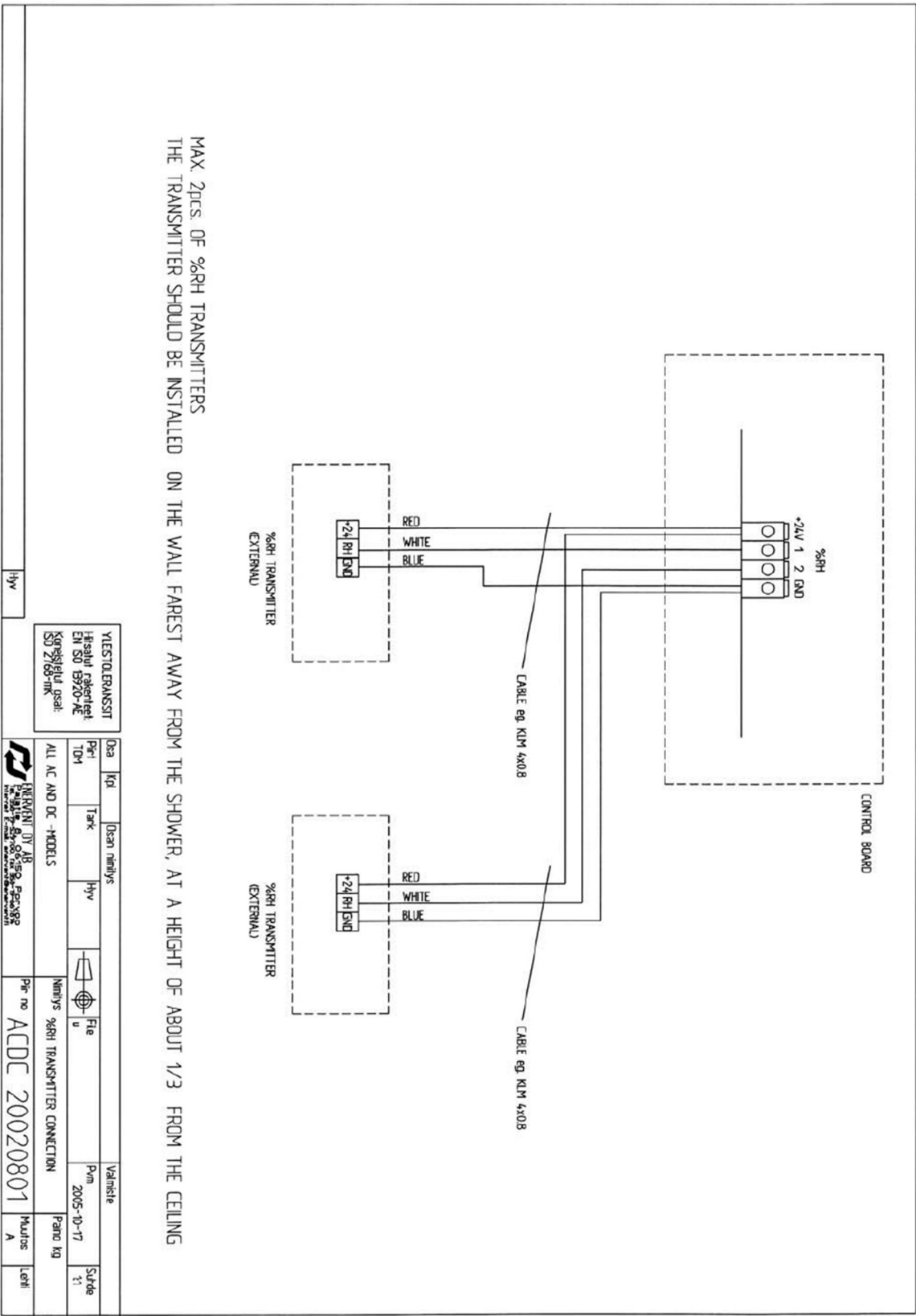


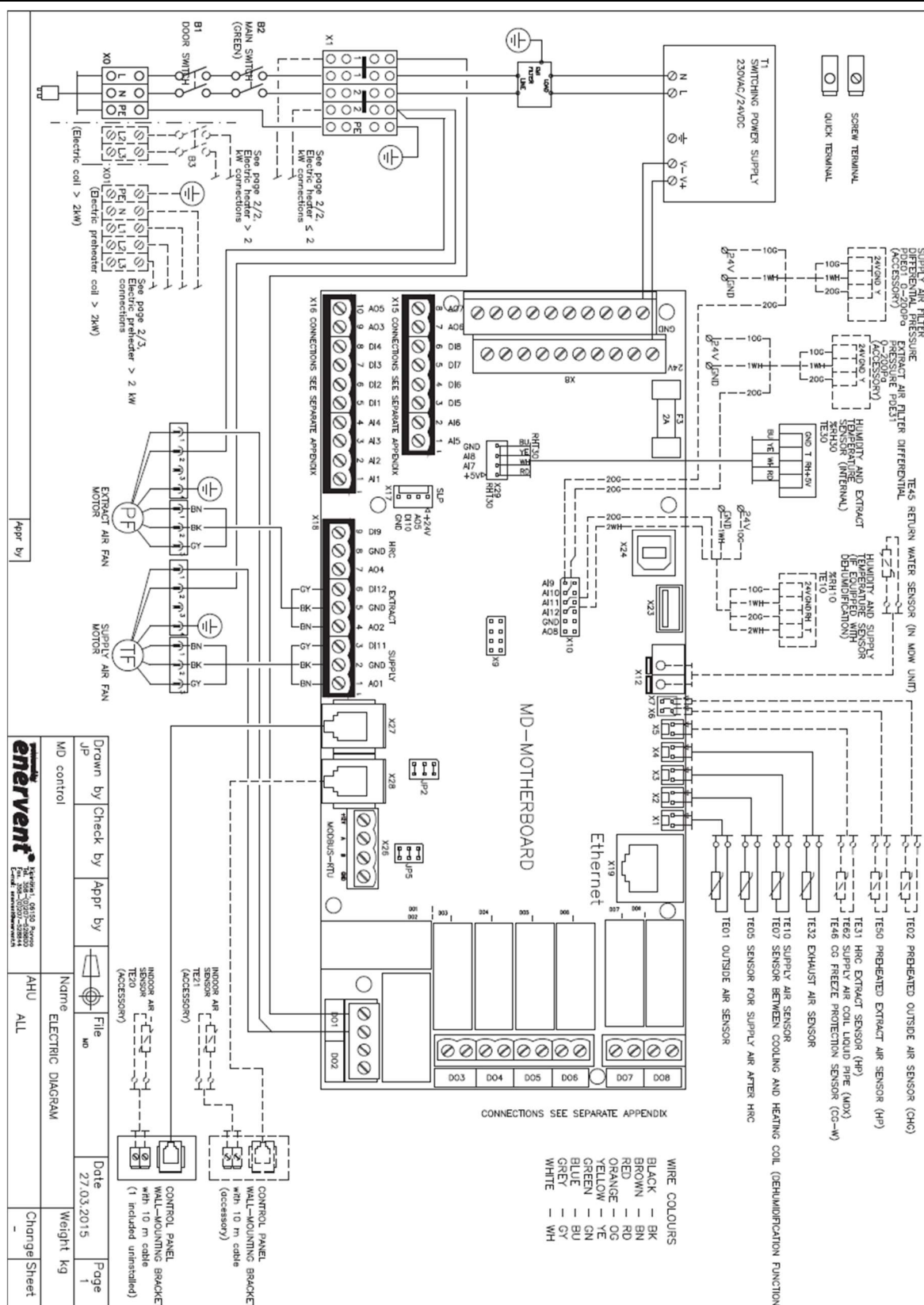


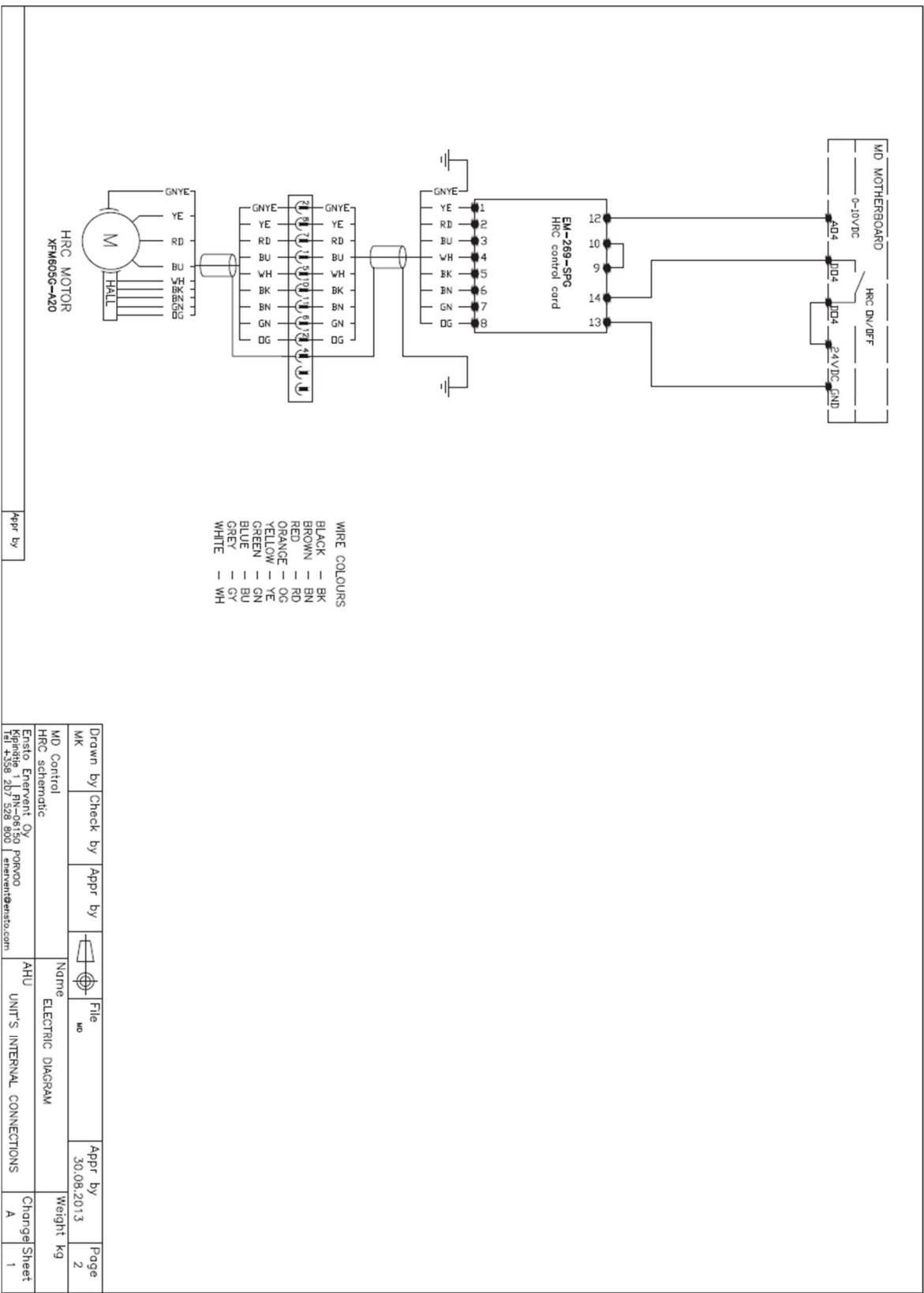


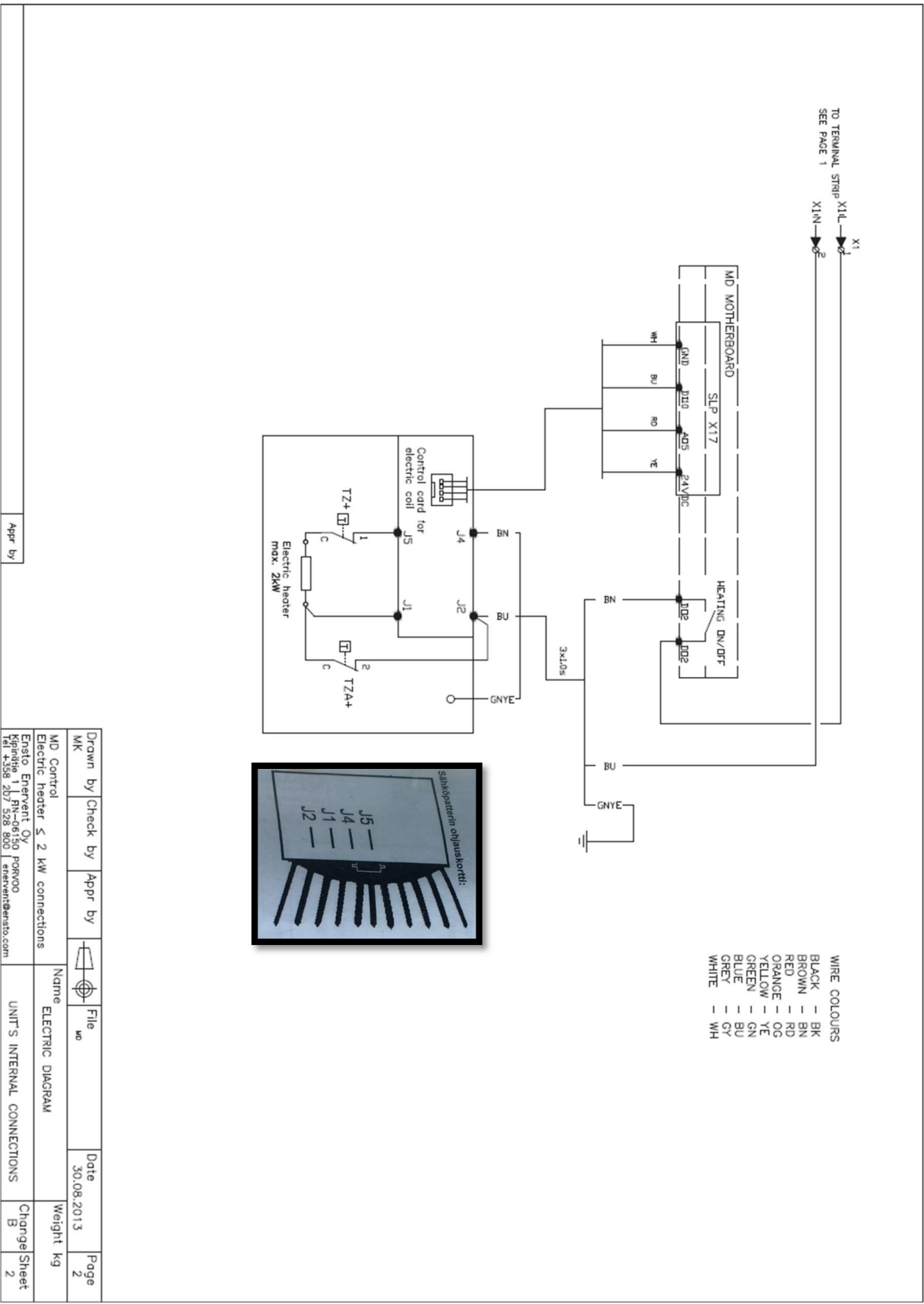


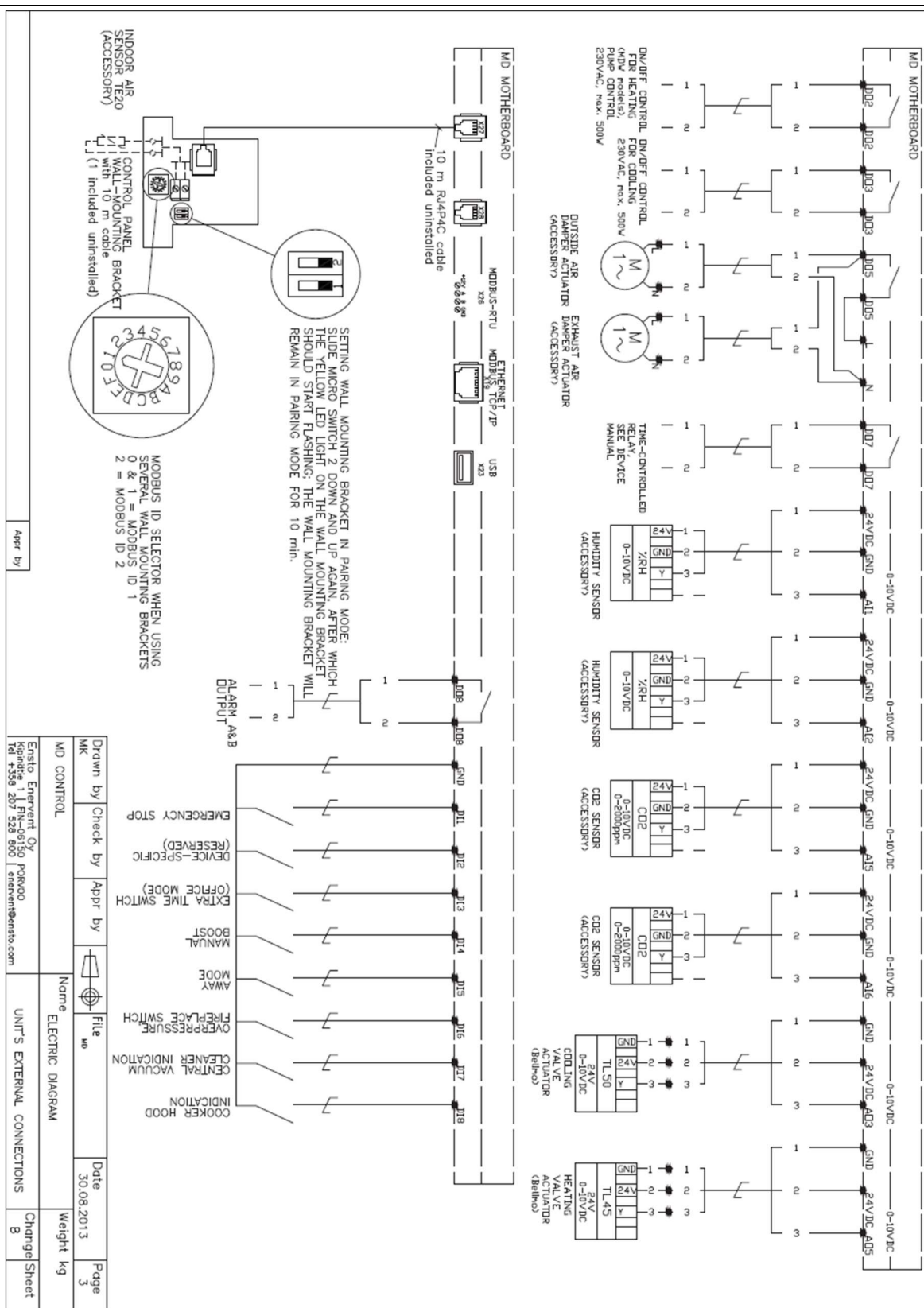
PRATT & KENT
P.O. Box 106450
Dallas, TX 75210-6450
Tel. 214-766-7700, Fax 214-766-7831
E-Mail: pratt@prattkent.com











MANDATORY PARTS

10024007	CONTROL UPDATE KIT PELICAN ACE → EAIR E	1
10023316	FAN PACKAGE 170W SUPPLY AIR	1
10023315	FAN PACKAGE 170W EXTRACT AIR	1
10026631	FAN RAIL PACKAGE PANDION	1
10023887	ELECTRICAL HEATER 0,8kW	1

<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
10024007	CONTROL UPDATE KIT PELICAN ACE → EAIR E	

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 0,75mm2	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
40029647	Automation base	1
40029344	Terminal package	1

Components

40030100	Cable sealing VET 5-7	2
40030101	Cable sealing VET 7-10	3
40028782	Fan power cable supply air	1
40028783	Fan power cable extract air	1
40028784	Fan control cable supply air	1
40028785	Fan control cable extract air	1
40029167	EDA temperature sensor 1700mm	2
40029230	EDA temperature sensor 500mm	1
40029165	EDA temperature sensor 850mm	1
40029225	Humidity/temperature sensor Amphenol 1800mm	1
40031530	Screw ZN 4,2x25	4
40028820	Wire 600mm black (main switch)	2
40028819	Wire 600mm 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
40031559	POP-rivet Multigrip 3,2x9	20
40028738	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

MANDATORY PARTS

10024006	CONTROL UPDATE KIT PELICAN ACW → EAIR W	1
10023316	FAN PACKAGE 170W SUPPLY AIR	1
10023315	FAN PACKAGE 170W EXTRACT AIR	1
10026631	FAN RAIL PACKAGE PANDION	1
10025837	FAN RAIL PACKAGE	1

<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
10024006	CONTROL UPDATE KIT PELICAN ACW → EAIR W	

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

40030100	Cable sealing VET 5-7	1
40030101	Cable sealing VET 7-10	3
40028782	Fan power cable supply air	1
40028783	Fan power cable extract air	1
40028784	Fan control cable supply air	1
40028785	Fan control cable extract air	1
40029167	EDA temperature sensor 1700mm	2
40029230	EDA temperature sensor 500mm	1
40029165	EDA temperature sensor 850mm	1
40029225	Humidity/temperature sensor Amphenol 1800mm	1
40029228	Return water sensor, surface	1
40031530	Screw ZN 4,2x25	5
40028820	Wire 600mm black (main switch)	2
40028819	Wire 600mm 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
40031559	POP-rivet Multigrip 3,2x9	20
40028738	HRW motor package stepless DC	1
40028725	Rotor cable DC 60cm	1
40031114	eAir panel package	1
40034288	WiFi module package	1
40034505	Valve actuator TR24-SR	1

Manuals etc. (depends on model)

eAir installation manual	1
eAir user manual	1
eAir electrical diagrams	1

Notes: