

Automation upgrade

Pegasos MCC -> 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.

A list of the allowed tasks can be found at the Tukes home page (Finland) (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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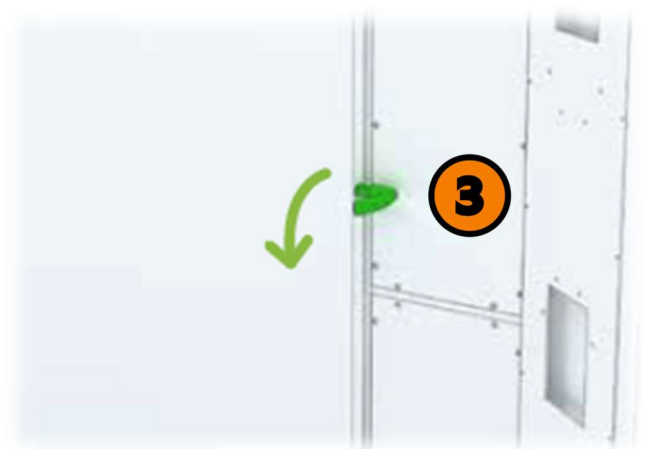
Open **the small door (1)** by pressing on it.



Disconnect **all power supplies to the unit (2)**.



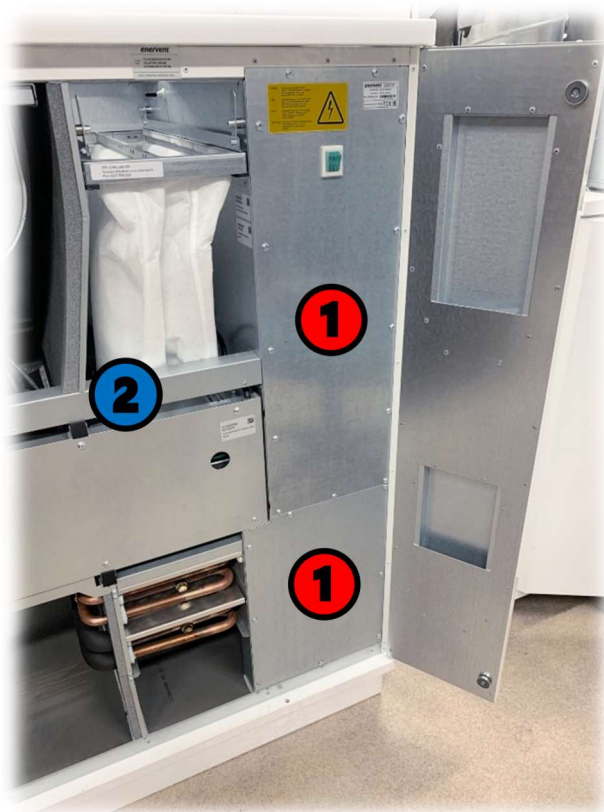
Open the service door by turning **the handle (3)**.



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.



Release **the filter locks (1)** and remove the filters by pulling.

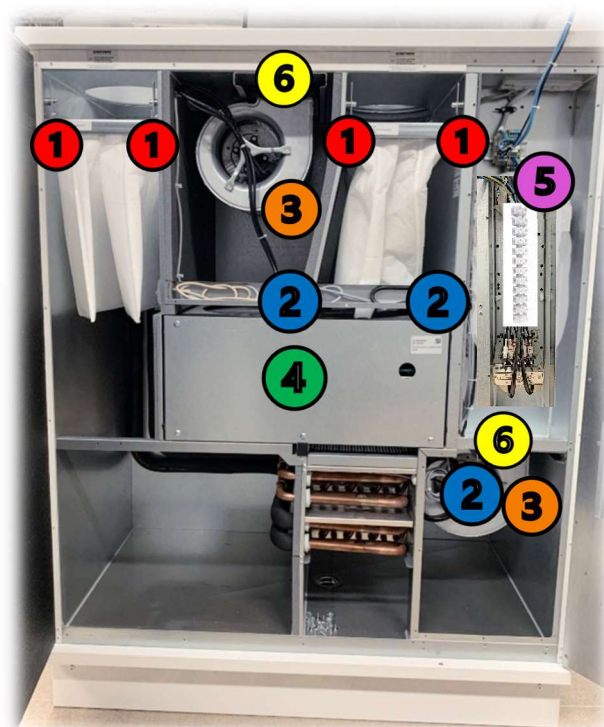
Disconnect **the connectors (2)**.

Remove **the fans (3)** by pulling.

Remove **the HRW (4)** by pulling.

Disconnect and remove the main switch wires from **the terminals (5)**.

Remove **the fan rails (6)** by drilling the pop-rivets (they are also glued to the frame).



Don't uninstall the main power supply terminals, the main switch (7), or the wires connected to them.



7



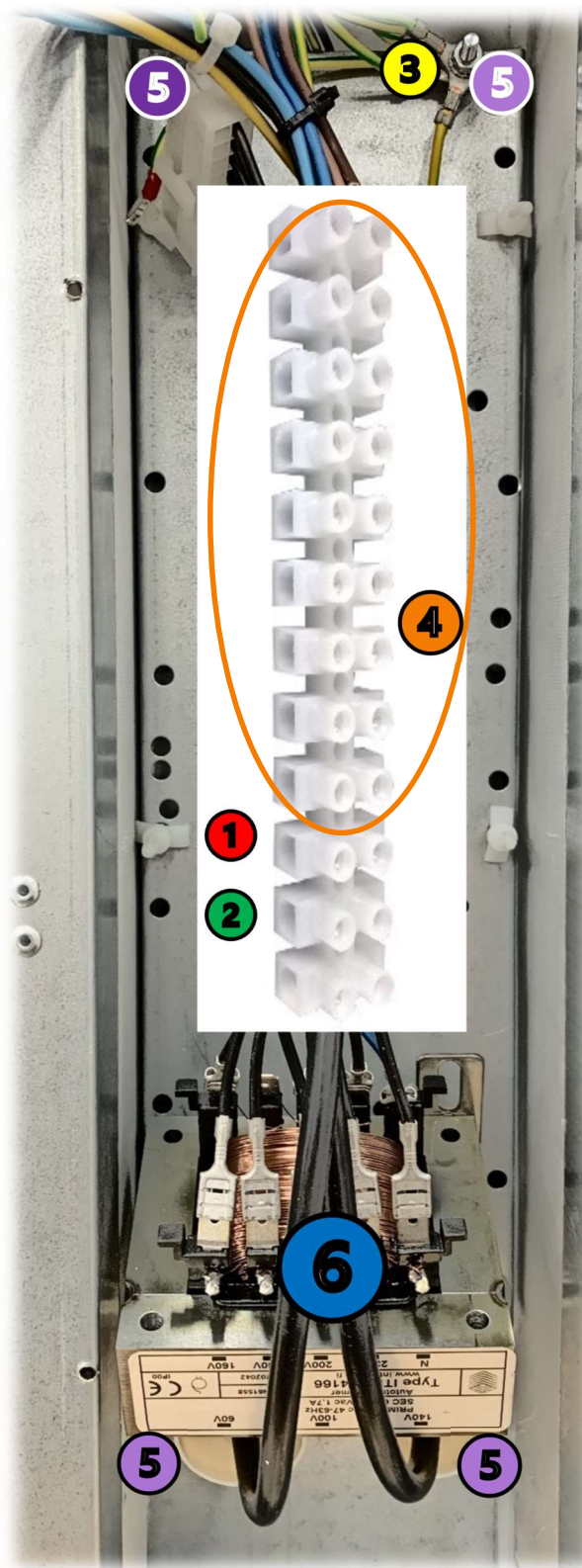
Disconnect **the power cord wires (1)**.

Disconnect and remove **the main switch wires (2)**.

Disconnect **all ground wires (3)** from the automation base ground point.

Disconnect **the rest of the wires (4)**.

Remove **the screws (5)**, and remove the automation base, **transformer (6)** and possible other components.

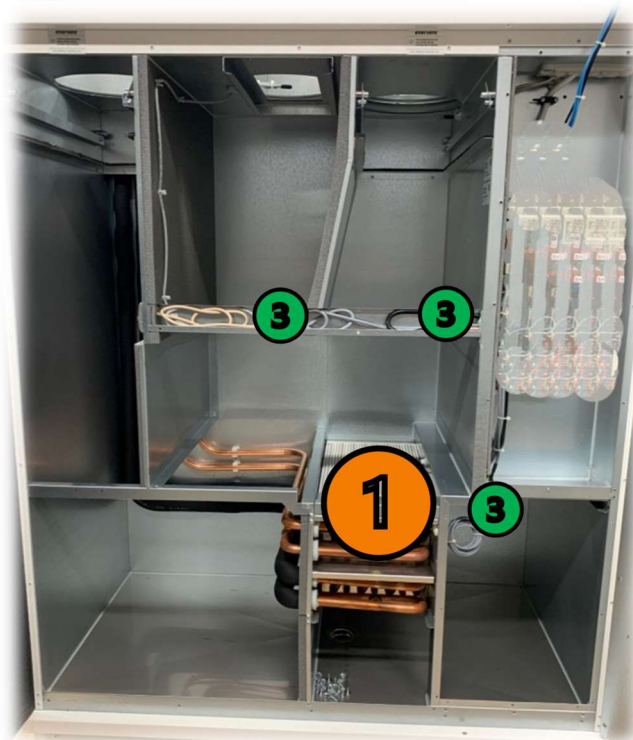


Remove the electrical after heater by pulling, along with the cables and the Pulser controller incl. sensors, connected to **the electrical after heater (1)**
Ignore if no after heater installed.

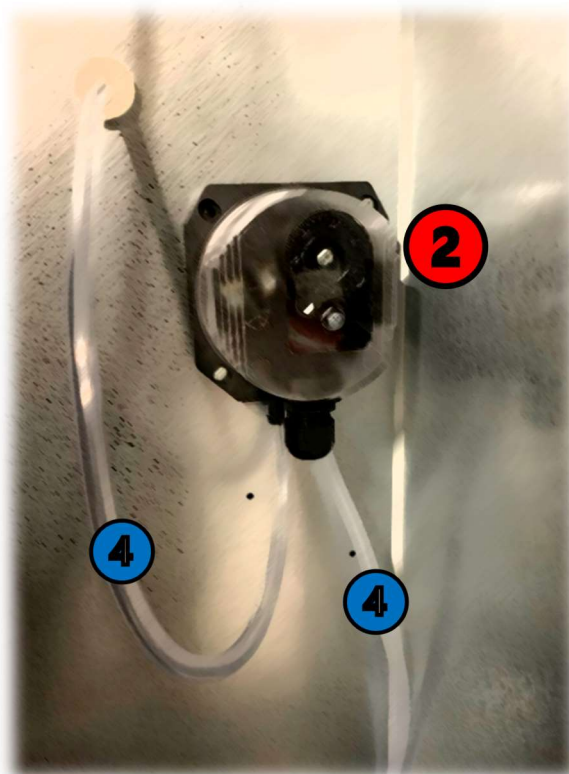
or

Leave the **water coil after heater (1)** installed, but disconnect and remove any possible automation.
Ignore if no after heater installed.

Remove **the HRW- and the fan cables (3)**.



If the unit has an **electrical after heater (1)** installed;
Disconnect and remove **the pressure difference switch (2)**.
Disconnect but don't uninstall **the pressure hoses (4)**.



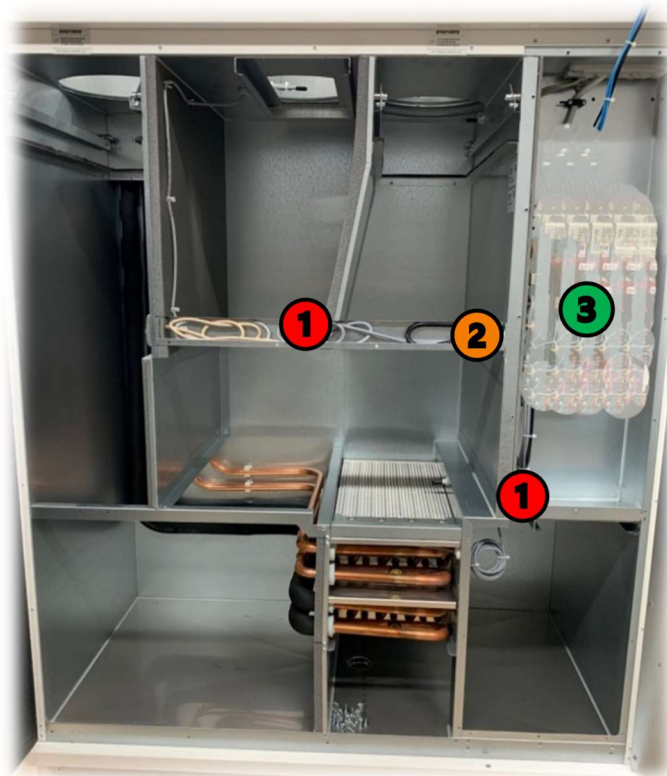
Install **the new extract air sensor (1)** (40029225) and attach it with cable ties (40030997) to the cross support.



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.

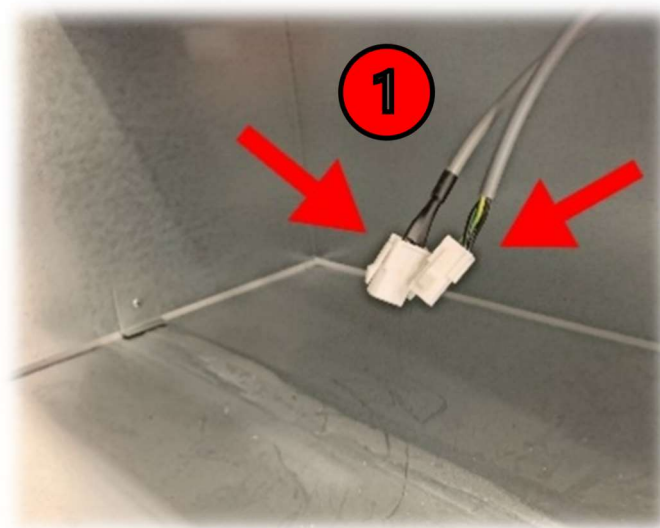


Drill two 18mm holes in the frame (where the old fan cables were attached), install **new cable sealings** (40030101) and install **the new fan cables (1)** (40028782, 40028783, 40028784, 40028785).

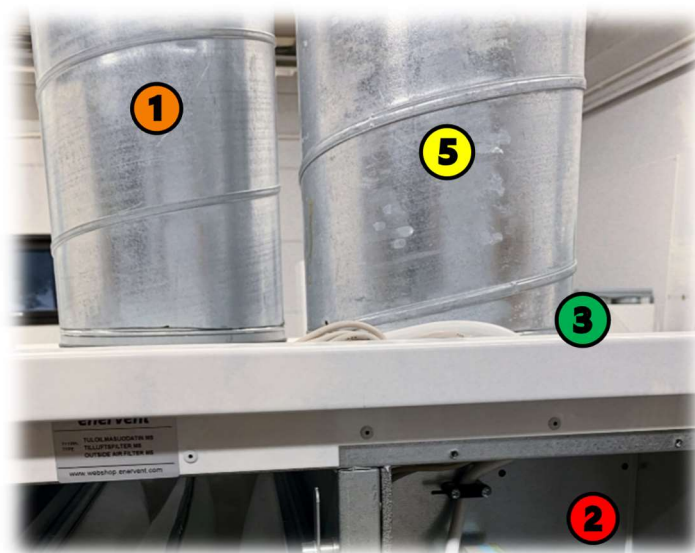
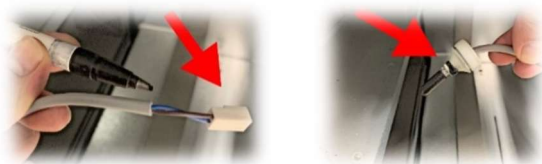


Drill a 18mm hole (where the old HRW cable were attached), install a new cable sealing (40030101) and install **the new HRW cable (2)** (40028725).

Install the cables in **the electrical box (3)**.



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)**.

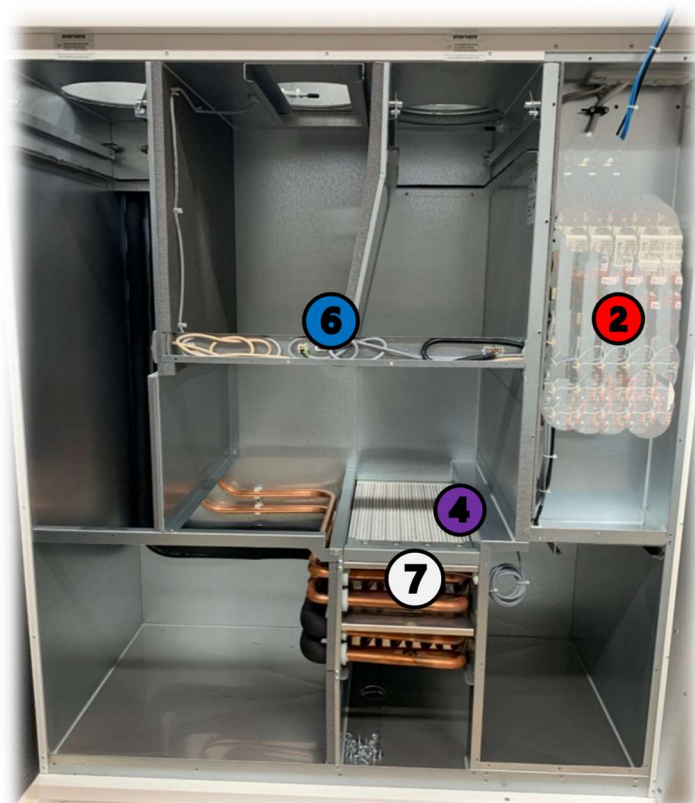


Install **the new HRW-supply air sensor (4) (850mm)** (40029165) and mark it **"TE05"** on the connector in the other end.

Drill a 16mm hole in **the supply air duct (5)**, install a **new cable sealing (40030100)** and install **the new supply air sensor (5) (1700mm)** (40029167) into the duct. Mark it **"TE10"** 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 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.



If the unit had an electrical after heater installed; install **the new electrical after heater (1)** (10023897) or (10023896) in its place and install the cables in **the electrical box (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).

If electrical after heater installed:

Install **the new pressure difference switch (5)** (4034055) in the electrical box and connect it with **the wires (40028773)** to the mainboard according to the electrical diagram (**page 25**). Connect the pressure hoses to the switch:
(-) in airflow before supply air fan
(+) in airflow after supply air fan



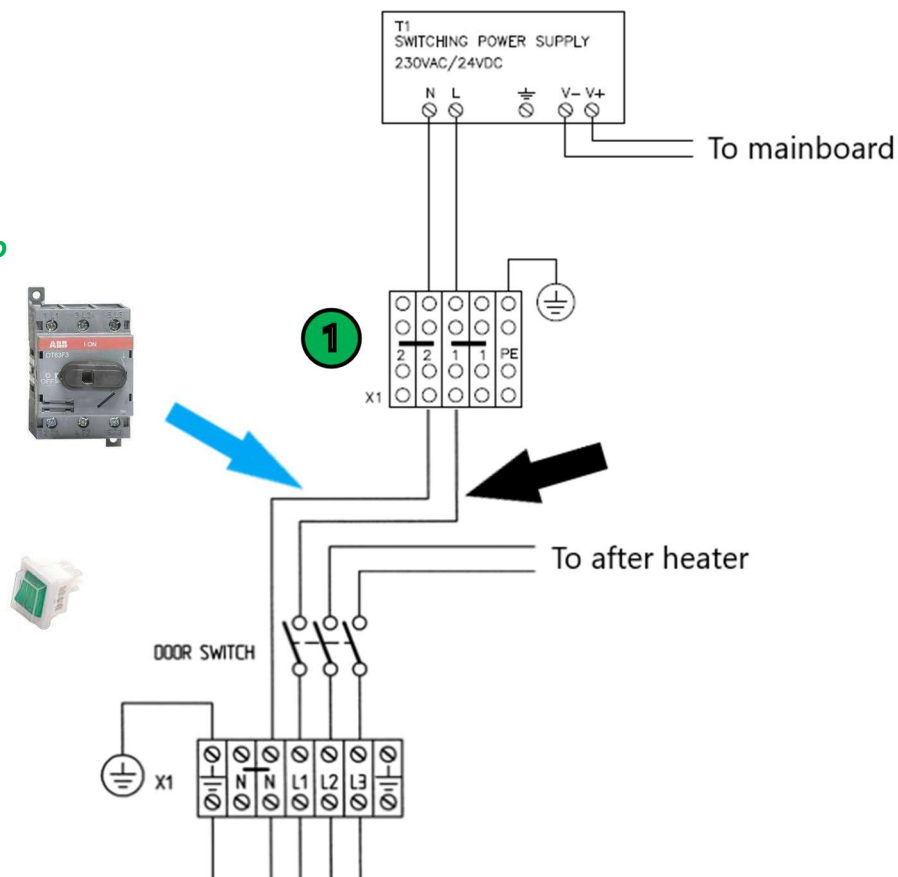
Connect **the power supply wires to the new terminals (1)**.

If electrical after heater installed:

- 1: Black connection terminal (1)
(from main switch L1)
- 2: Blue connection terminal (2)
(N-terminal)

If water after heater installed:

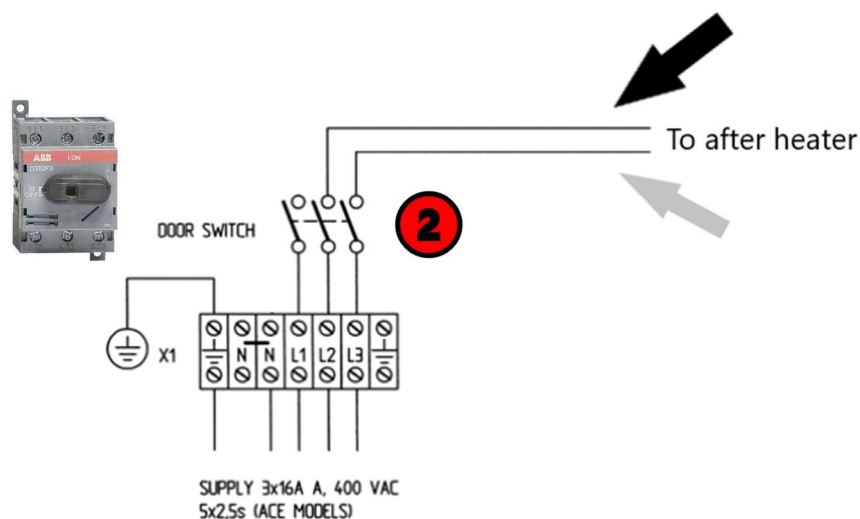
- 1: Black connection terminal (1)
(from main switch L)
- 2: Blue connection terminal (2)
(from main switch N)



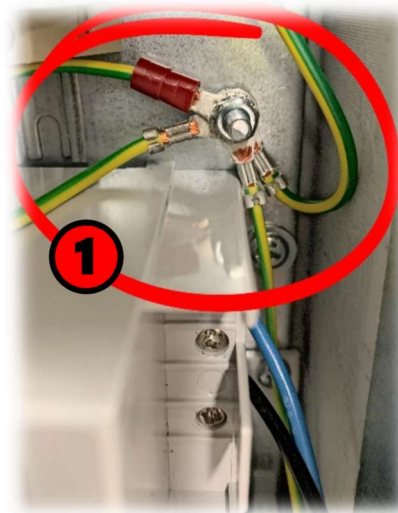
If electrical after heater installed:

Connect **the power supply to the electrical after heater (2)**

- After heater black wire L2
(to main switch L2)
- After heater gray wire L3
(to main switch L3)



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

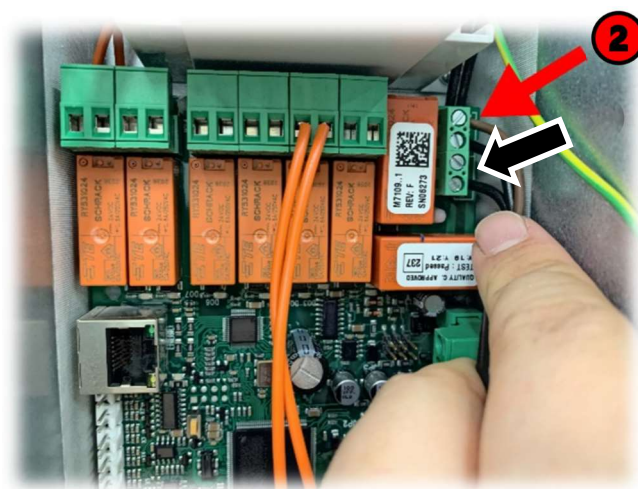


Connect **the blue wire** from the electrical after heater to **the blue "2" connection terminal (2)**.
Ignore if no electrical after heater installed.

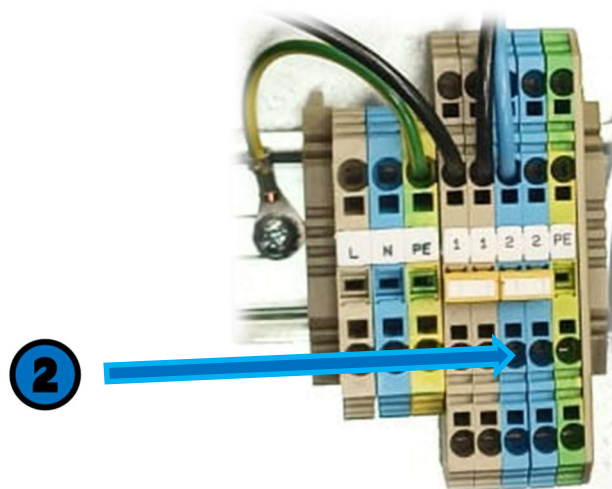


Connect **the brown wire** from the after heater to **"DO2" (2)**.
If there is a water coil after heater installed, the circulation pump power wire (L) would be connected here.

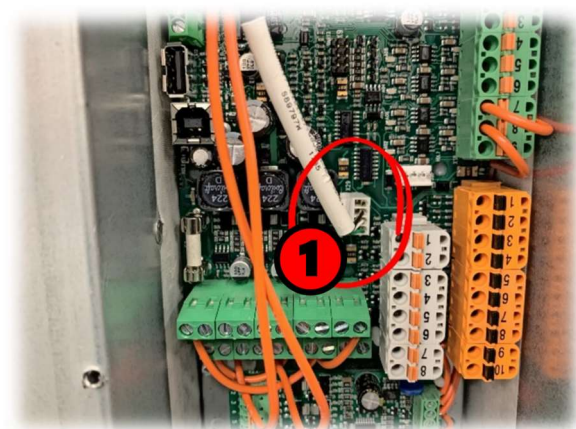
Connect **the wires marked "1"** in the fan power cables (40028782, 40028783) to **"DO1"**.



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



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



Connect **the sensors (3)** to the main board according to the markings.

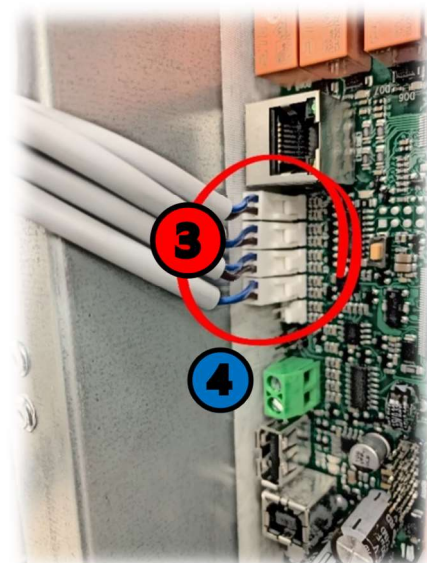
X1, TE01: Outside air (40029167)

X2, TE05: HRW supply air (40029165)

X3, TE10: Supply air (40029167)

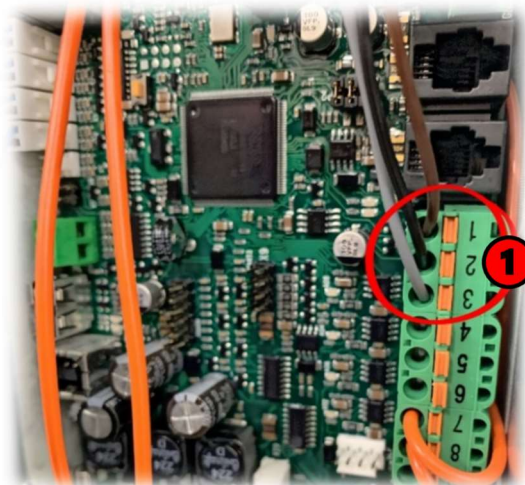
X4, TE32: Waste air (40029167)

X12, TE45: Return water sensor (4) (40029228)
if the unit has a watercoil 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

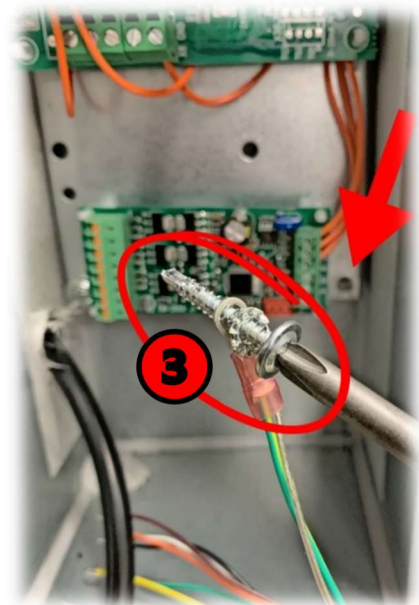


Connect **the wires from the extract air fan control cable (2)** (40028785) to the main board.

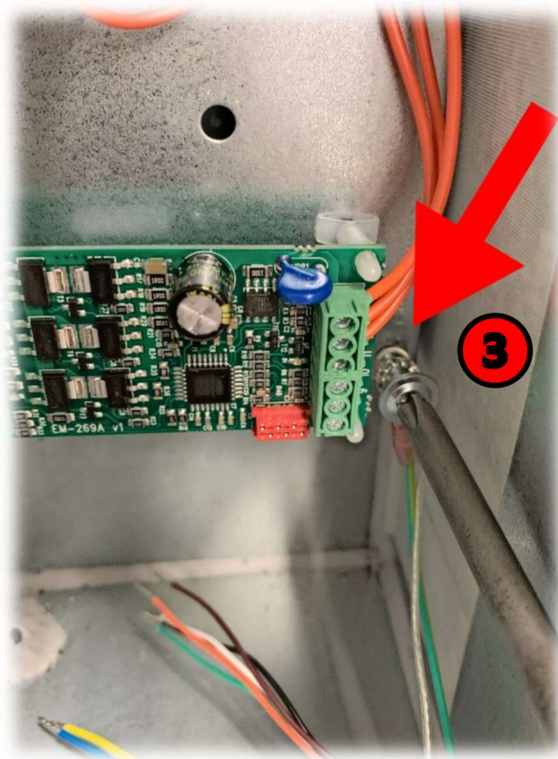
- 4: Brown
- 5: Black
- 6: Gray



Release **the screw (3)** from the automation base and attach **the ground wire** from the HRW cable to the screw, along with **a washer** (40031537).



Reattach **the screw (3)** to the automation base.



Connect **the wires from the HRW cable (40028725) to the HRW control board (1).**

1: Yellow

2: Red

3: Blue

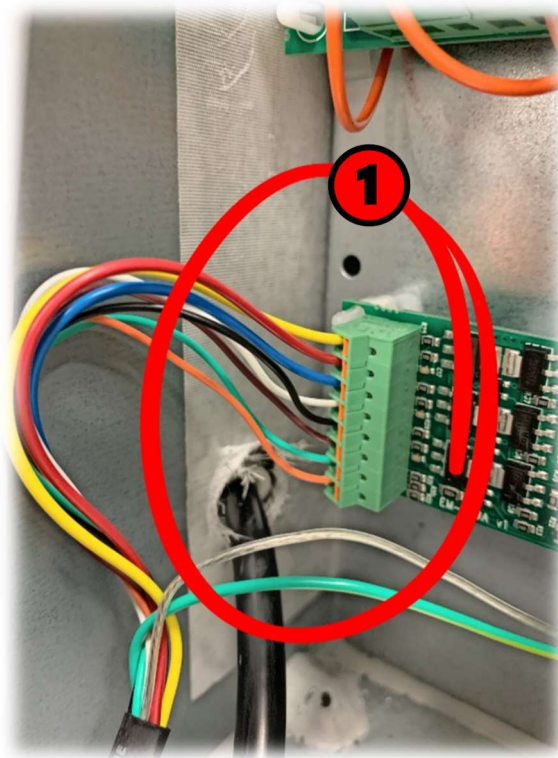
4: White

5: Black

6: Brown

7: Green

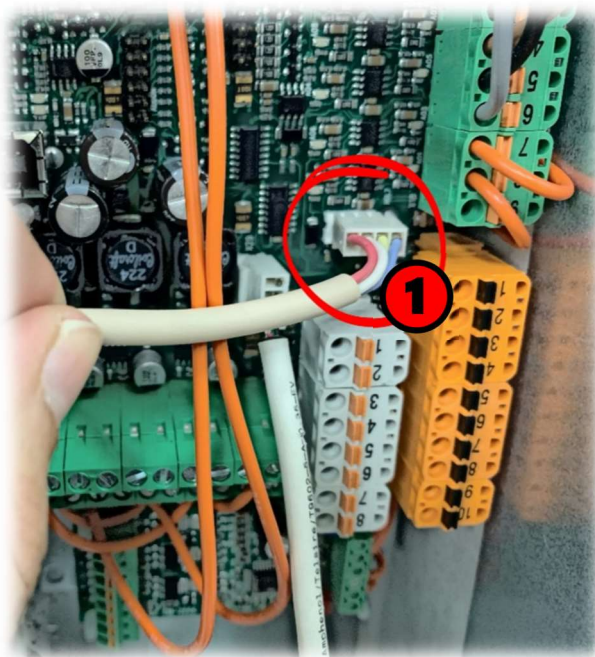
8: Orange



Connect **the after heater control cable (1)** 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 23-26).

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

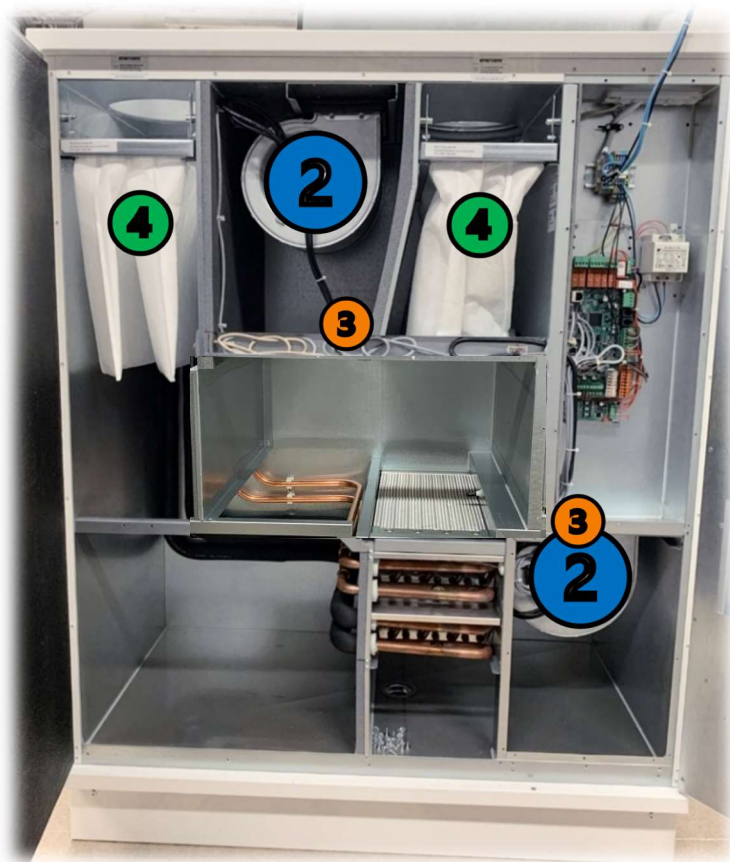


Install **the new fan rails and the fans (2)**
 (10023145 (EBM 520W))
 (10025051 (EBM 545W))
 (10023144 (Z 500W))

NOTE! The new supply air fan rail must be installed 15mm more to the left compared to the old supply air fan rail.
New holes for the pop-rivets must be drilled.
(Otherwise the new supply air fan won't fit!)

Connect **the fan cables (3)** and attach them together with **cable ties (40030997).**

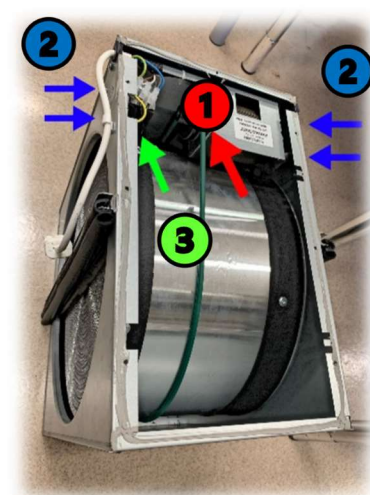
Install **the filters (4).**



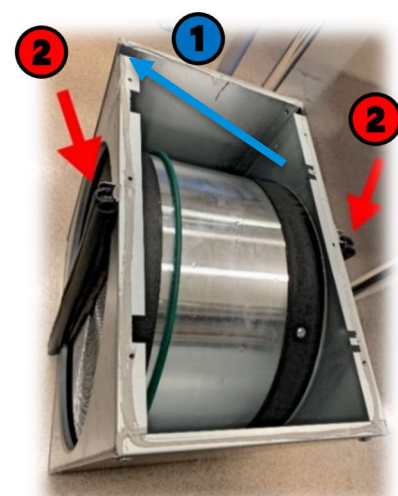
Remove **the screws (1)** from the HRW cover.



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



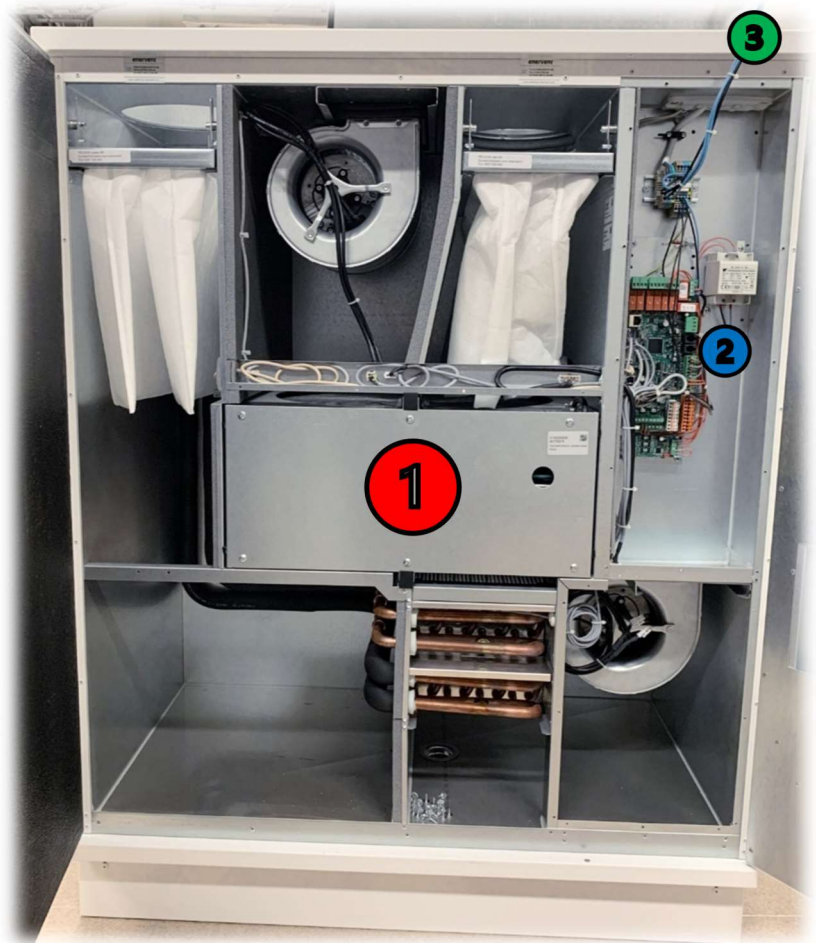
Install **the new motor package (1)** (40028738).
Attach the cover with the screws.



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 (1)** (40031114) in a desired place.

1



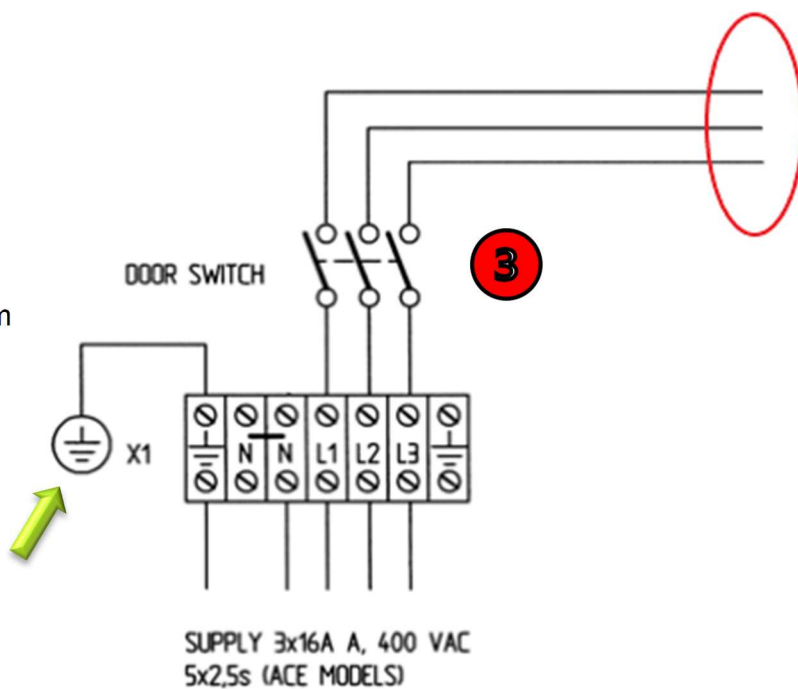
Install **the WiFi module (2)** (40034288).

2



If electrical after heater installed:

Turn on **the main switch (3)** and perform insulation and ground continuity test according to regulations.

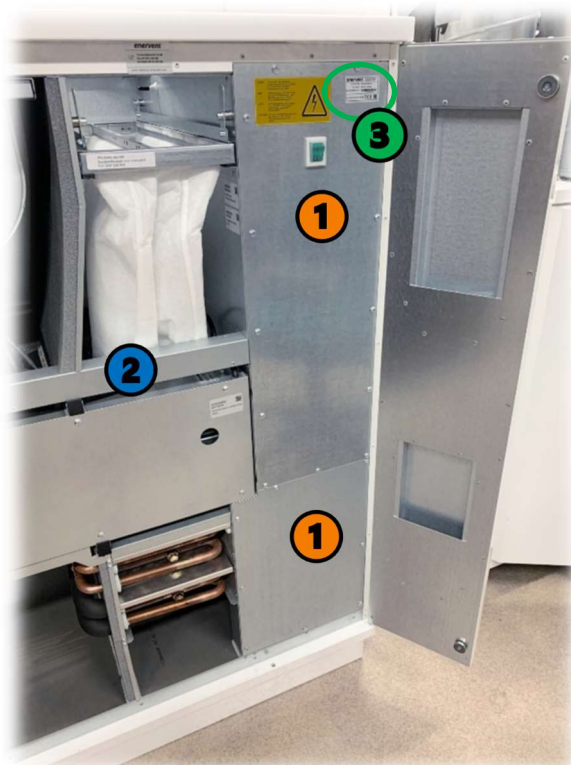


Attach the cover to **the electrical box (1)**
and **the supply air fan chamber (1)**.

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

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

Close the doors.

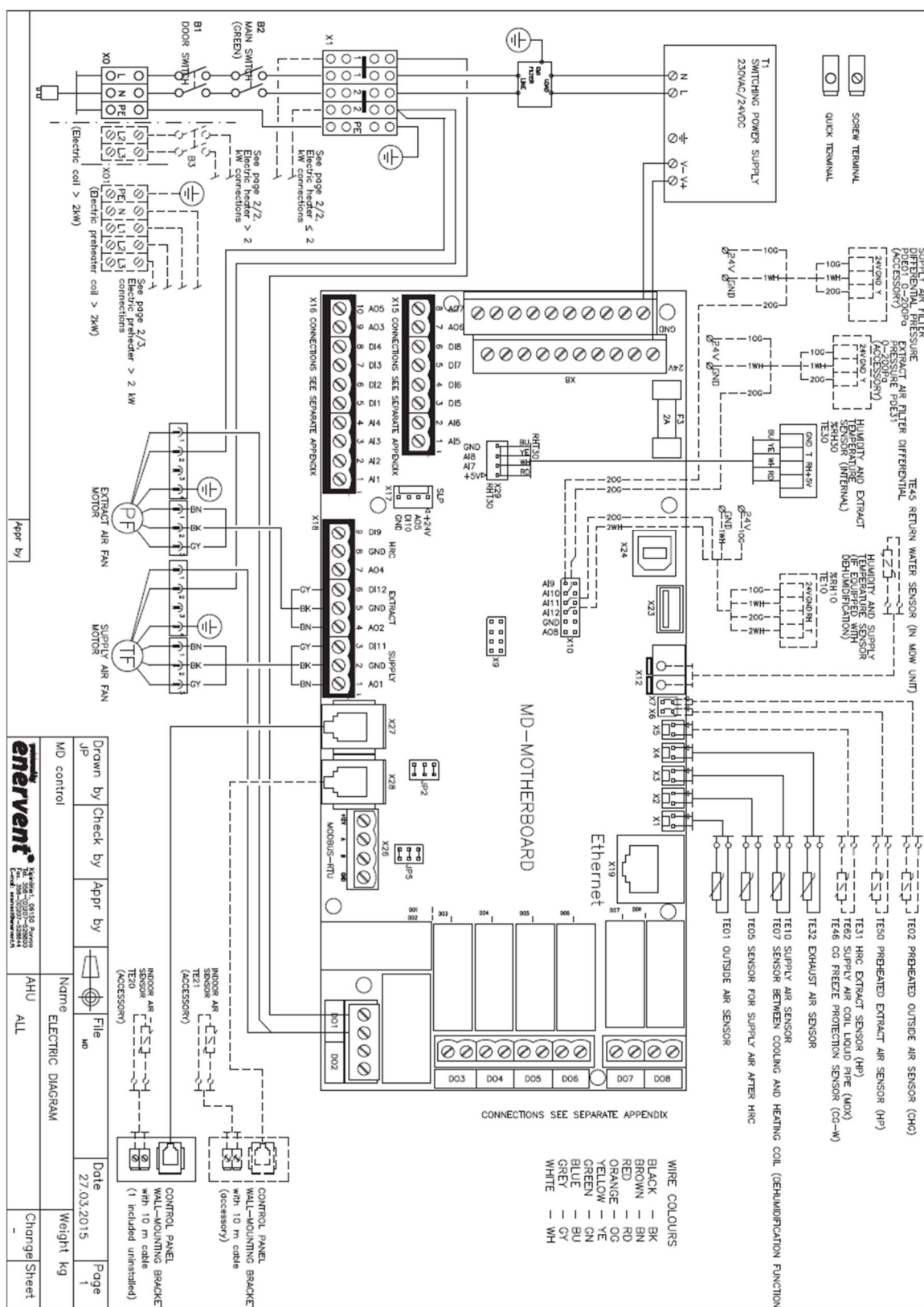


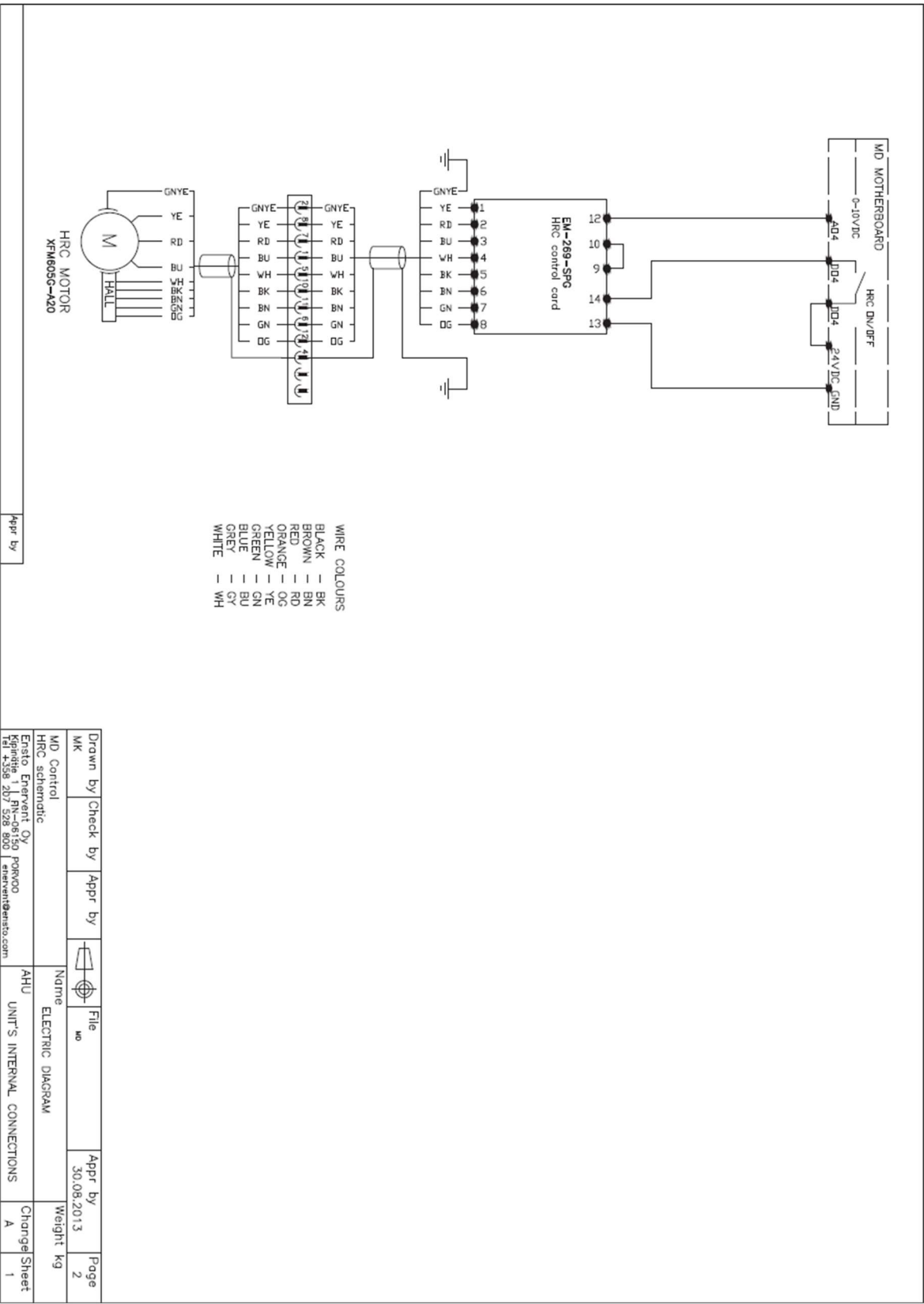
If water coil after heater installed:

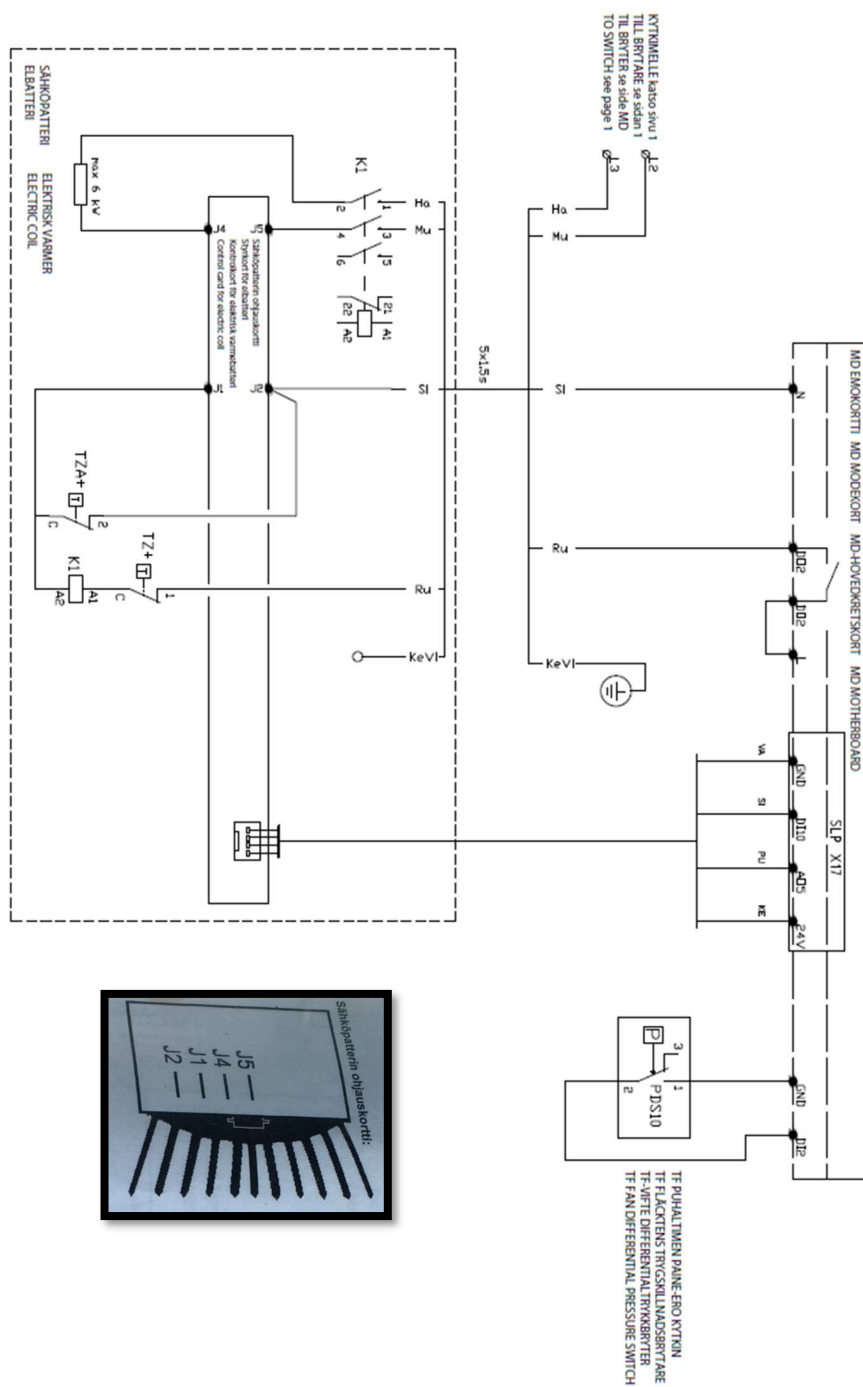
Turn on **the main switch (1)** and perform
insulation and ground continuity test
according to regulations.

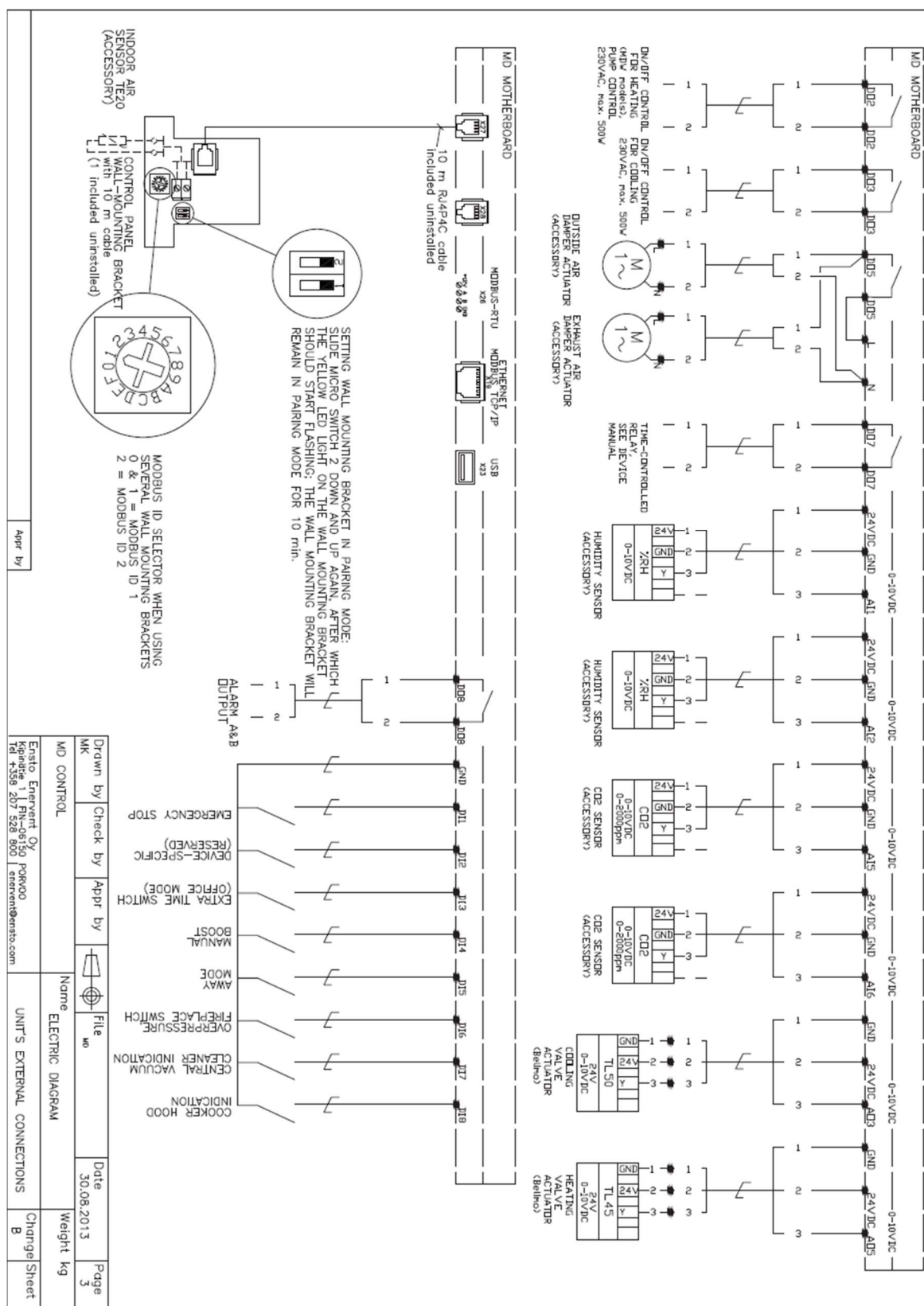








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MANDATORY PARTS

10024003	CONTROL UPDATE KIT PEGASOS ACE → EAIR E	1
10025828	FAN RAIL PACKAGE PEGASOS	1
10023145	FAN PACKAGE PEGASOS EBM 520W	2
	or	
10025051	FAN PACKAGE PEGASOS XL EBM 545W	2
	or	
10023144	FAN PACKAGE PEGASOS Z 500W	2
10023897	ELECTRICAL HEATER 4kW	1
	or	
10023896	ELECTRICAL HEATER 6kW	1

<u>Code</u>	<u>Description</u>	<u>Pcs.</u>
10024003	CONTROL UPDATE KIT PEGASOS ACE → EAIR E	
	Automation	
40029189	Control board EM-240-M	1
40030936	PCB support KGLS-6S	5
40030937	PCB support LCB5M-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	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	3
40029165	EDA temperature sensor 850mm	1
40029225	Humidity/temperature sensor Amphenol 1800mm	1
40028773	Wire 340mm orange 0,75mm ²	2
40028780	Wire 600mm 1mm ² black	2
40031530	Screw ZN 4,2x25	6
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	12
40028738	HRW motor package stepless DC	1
40028725	Rotor cable DC 60cm	1
40031114	eAir panel package	1
40034288	WiFi module package	1
40034055	Pressure difference switch	1
	Manuals etc. (depends on model)	
	eAir installation manual	1
	eAir user manual	1
	eAir electrical diagrams	1

MANDATORY PARTS

10024002	CONTROL UPDATE KIT PEGASOS ACW → EAIR W	1
10025828	FAN RAIL PACKAGE PEGASOS	1
10023145	FAN PACKAGE PEGASOS EBM 520W	2
	or	
10025051	FAN PACKAGE PEGASOS XL EBM 545W	2
	or	
10023144	FAN PACKAGE PEGASOS Z 500W	2

Code	Description	Pcs.
10024002	CONTROL UPDATE KIT PEGASOS 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	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	3
40029165	EDA temperature sensor 850mm	1
40029225	Humidity/temperature sensor Amphenol 1800mm	1
40029228	Return water sensor, surface	1
40031530	Screw ZN 4,2x25	6
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	12
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: