HUOLTO OHJE REVISIO: B
9.9.2024
Oscar Husman

Automation upgrade

Pingvin XL eco EDA -> eWind

NOTE!

Fan rotation guards must be disabled in the new eWind 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!

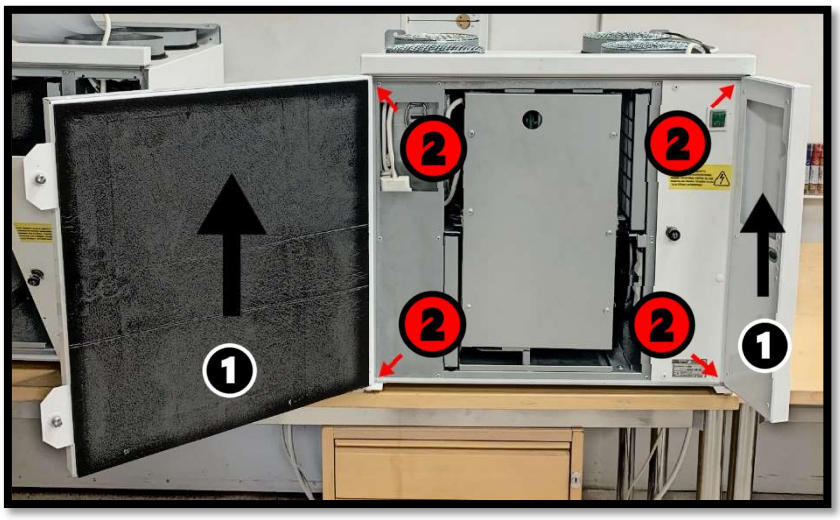
Table of contents

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

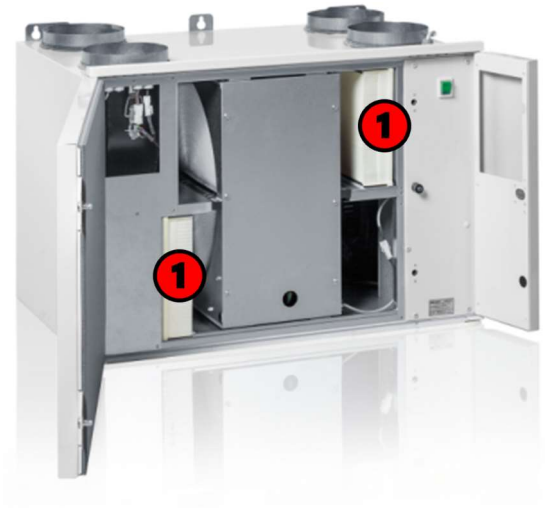
Disconnect ***the power cord (1)*** (and other power supplies if available).

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.



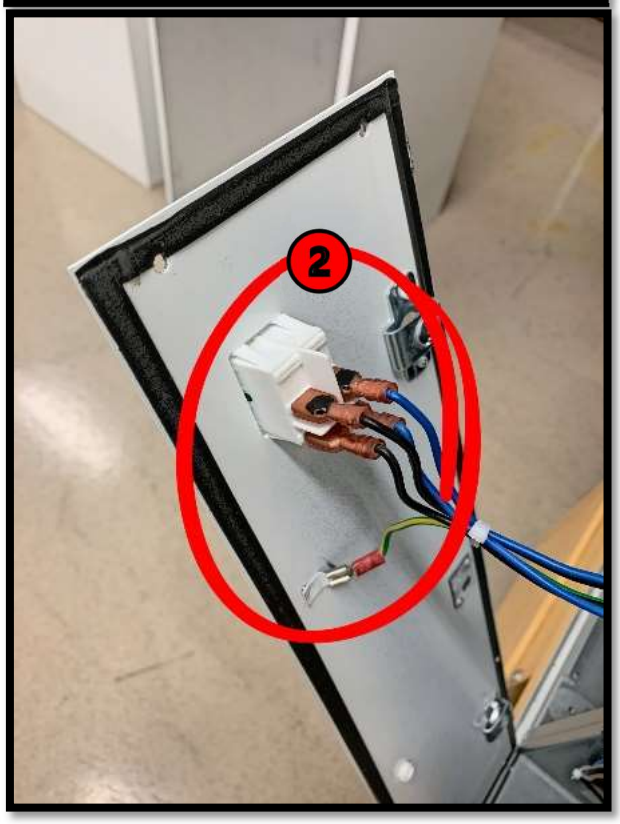
Disconnect ***the connector (2)*** from the heat exchanger.

Remove ***the heat exchanger (3)*** by pulling.

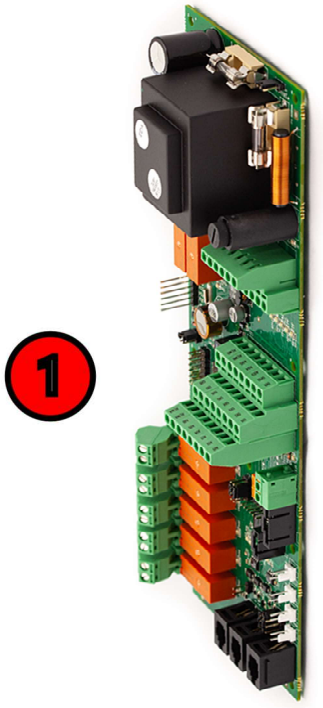
Open the electrical box by removing ***the screws (1)***.

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

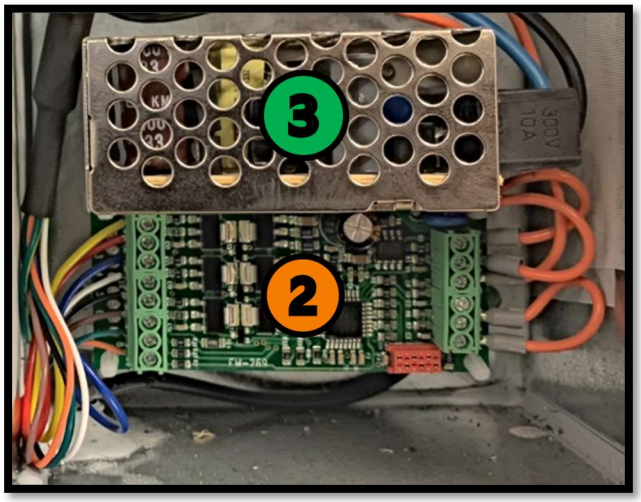
Disconnect ***all wires from the main switch and the ground wire (2)*** from the cover.



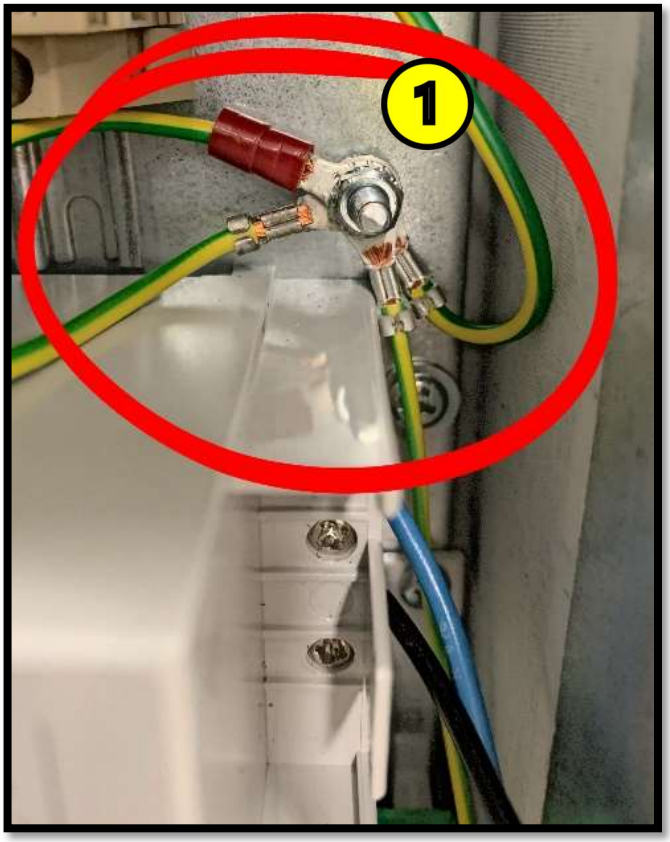
Mark all wires/sensors according to the marking on the main board and disconnect them from ***the EDA main board (1)***.



Disconnect the wires (that were connected to the EDA main board) from ***the HRW circuit board (2)*** and ***the transformer (3)***.

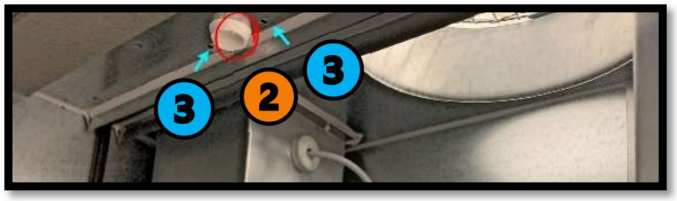


Disconnect ***all ground wires (1)*** from the automation base ground point.



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

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

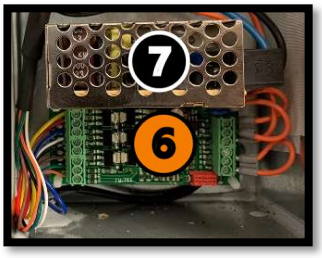


Disconnect ***the power supply wires (2)*** from the terminals.

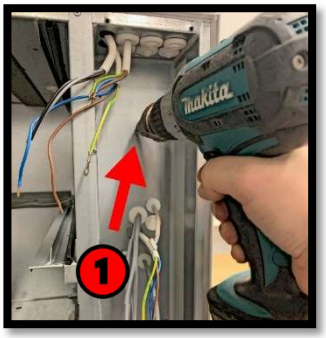
Remove ***the screws (3)***, and remove the automation base, incl. terminal blocks and ***EDA main board (5)***.

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

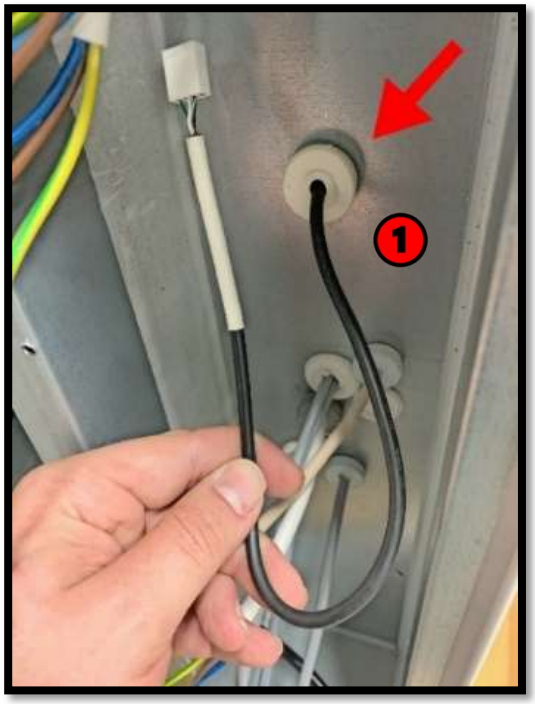
Remove ***the HRW circuit board (6)*** and ***transformer (7)***.
Save the PCB supports (4 pcs).



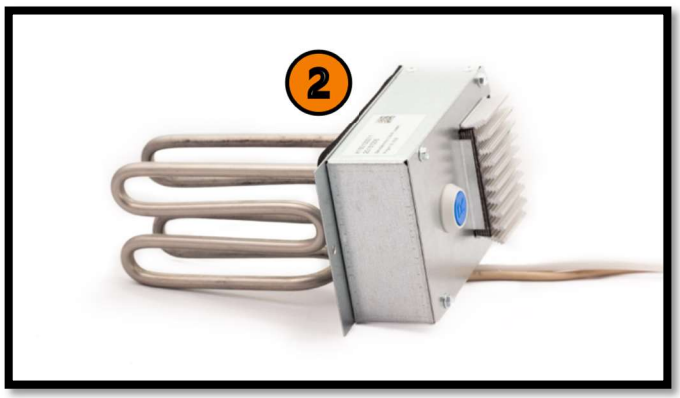
Drill ***a 18mm hole (1)*** as marked in the picture.



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

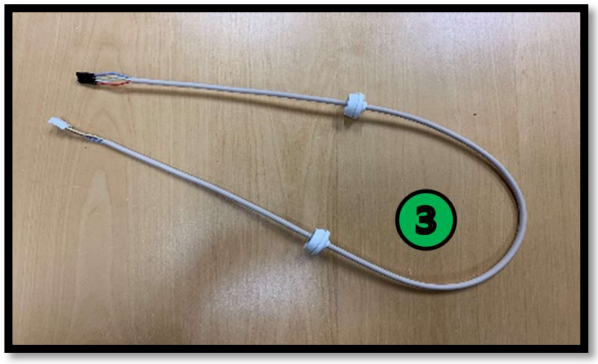


Release ***the after heater (2)***, by releasing the screw,
and remove the cover.
Ignore if the unit has a water coil after heater installed.



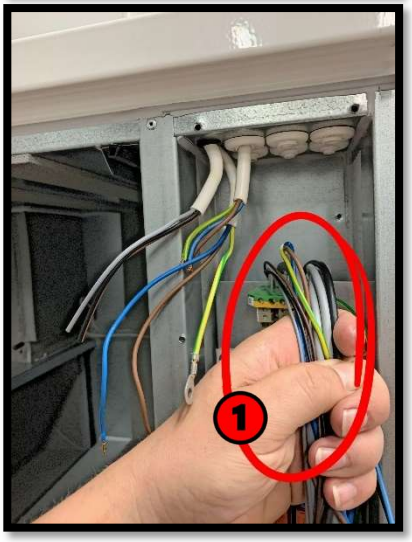
Remove the old triac control cable and install
the new triac control cable (3) *(40030313)*.
Ignore if the unit has a water coil after heater installed.

Re-install ***the after heater (2)***.
Ignore if the unit has a water coil after heater installed.

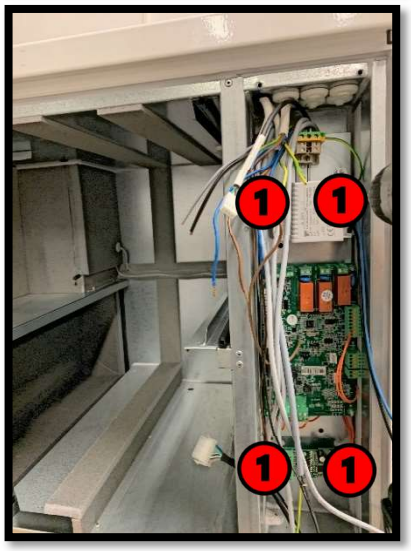


Install ***the new automation*** in the electrical box.

Make sure no installed ***cable / sensor (1)*** get stuck behind
the automation base and that they are available in front of the main board.

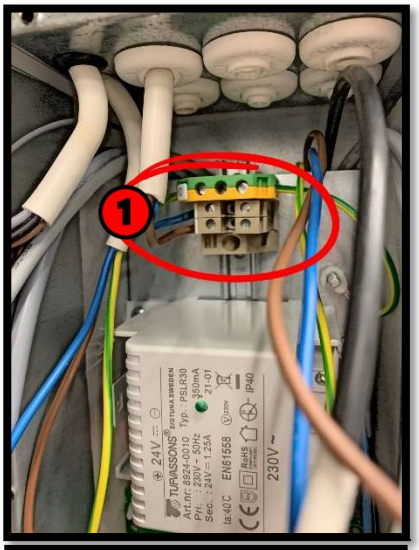


Attach ***the automation base***
(40029647) to the electrical box with
four self tapping screws (1) *(40031530)*.

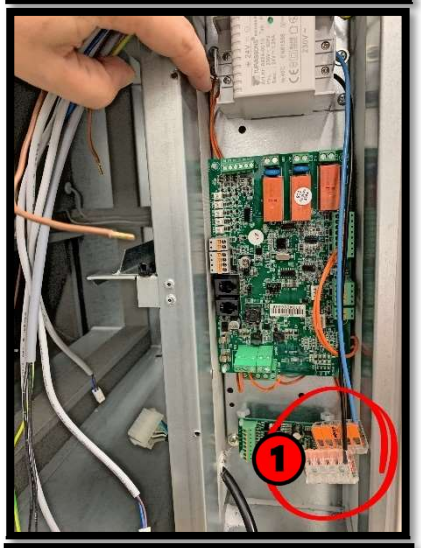


Connect ***the power cord to the terminals (1)***.

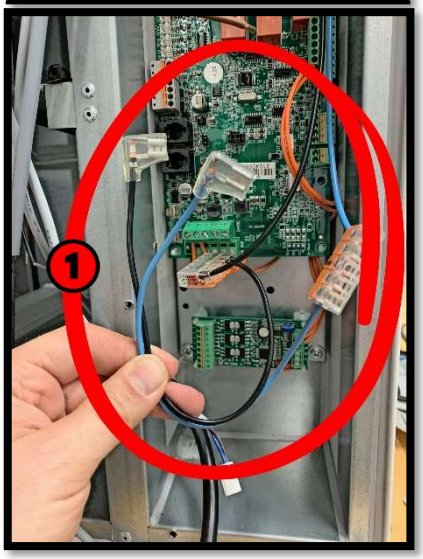
L: Brown
GND: Green/yellow
N: Blue



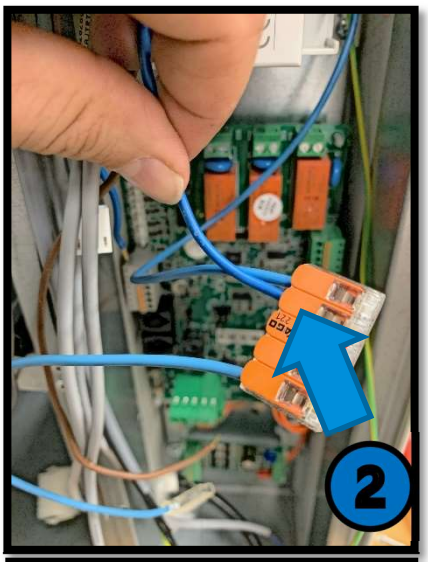
Install ***the connection terminals (1)*** *(40029982)*.
*One for "**L**" and one for "**N**".*



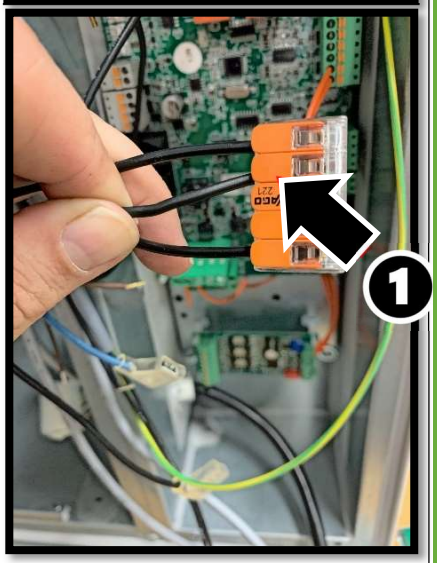
Connect one pair of ***the wires with flat connectors*** *(40028776, 40028777)* ***to the connection terminals (1)*** *(40029982)*.



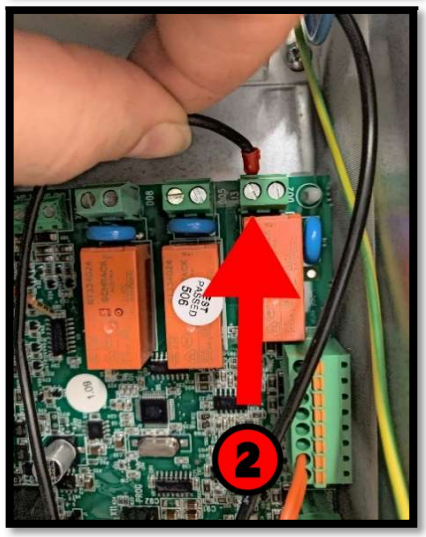
Connect ***the blue wire*** from the electrical after heater to ***the blue connection terminal (2)***.
Ignore if no electrical after heater installed.



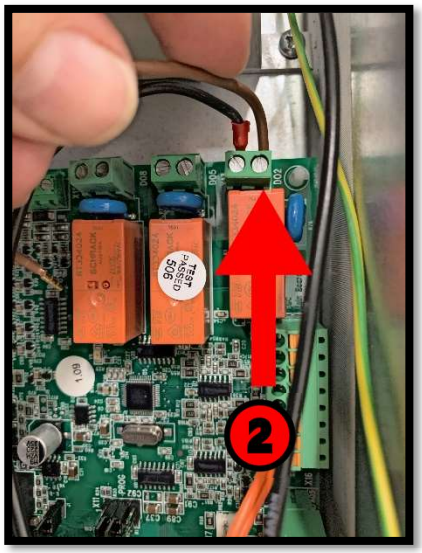
Connect ***the black wire*** (*40028774*) to ***the black connection terminal (1)***.



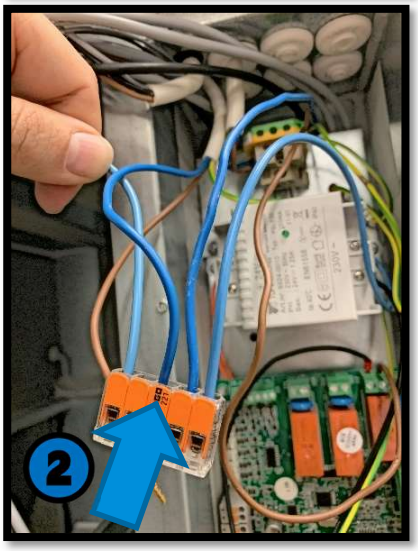
Connect ***the same black wire*** (*40028774*) to ***"DO2" (2)*** on the main board.



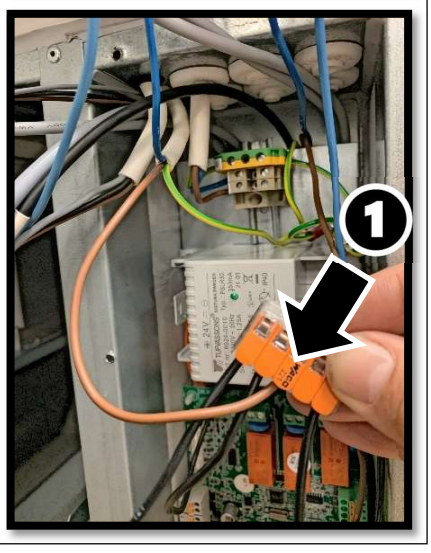
Connect ***the brown wire*** from the electrical after heater to ***"DO2" (2)***.
If there is a water coil after heater installed,
the circulation pump power wire (L) would be connected here.



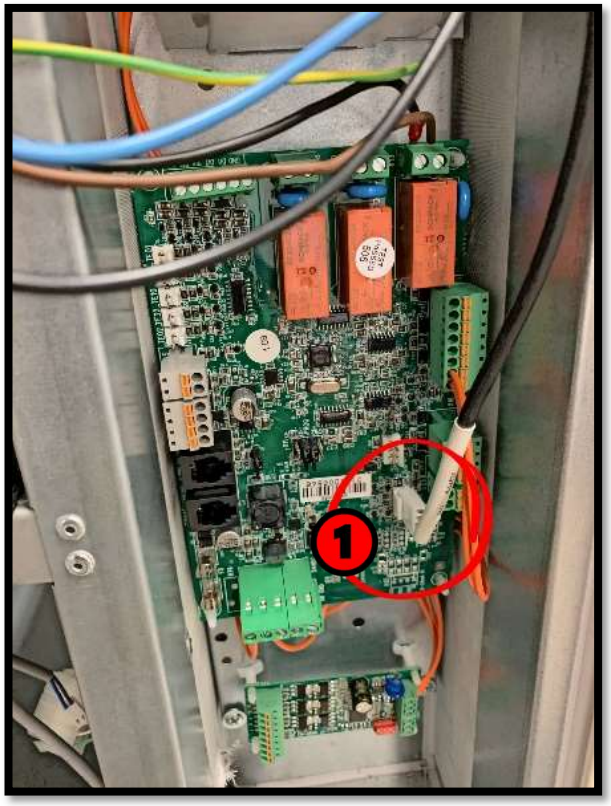
Connect ***the blue wires / or the wires marked "2"***
from the fan power cables
to ***the blue connection terminal (2)*** *(40029982)*.



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

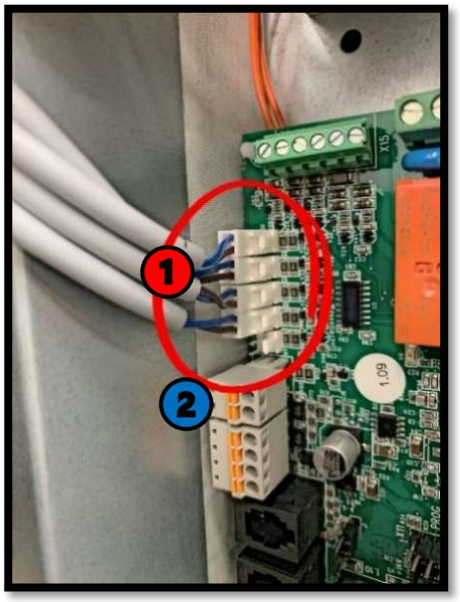


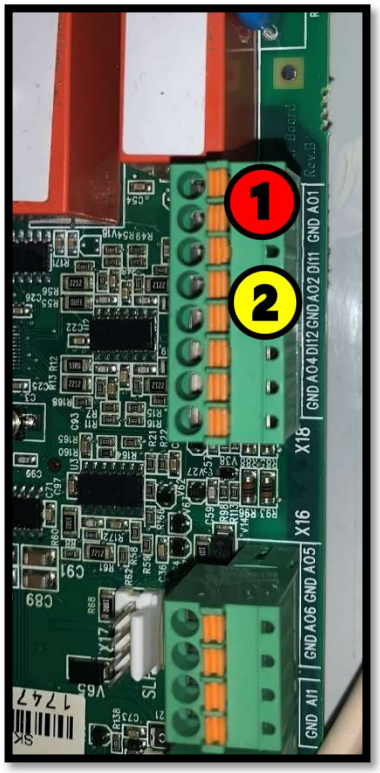
Connect ***the extract air sensor (1)*** *(40029224)* to the main board *(X29)*.



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

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





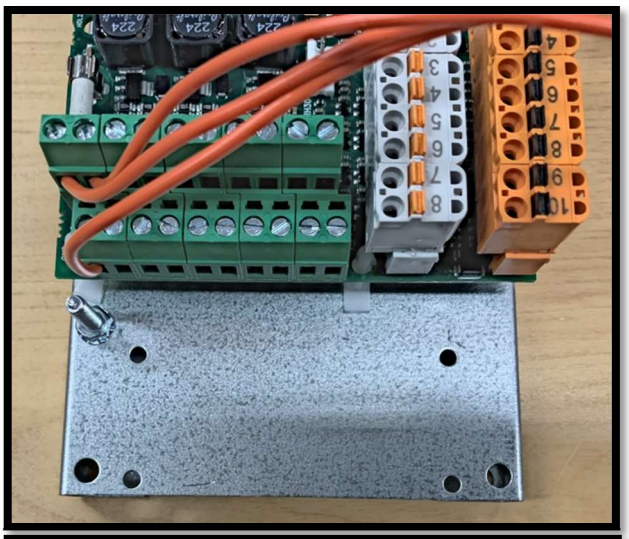
Connect ***the wires from the supply air fan control cable (1)*** to the main board.

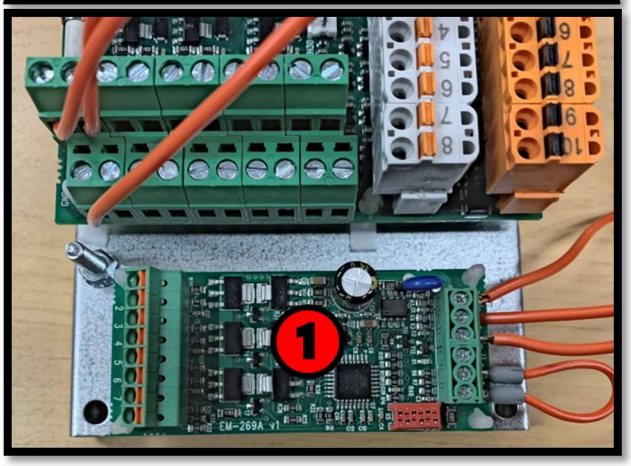
AO1: 1
GND: 2

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

AO2: 1
GND: 2

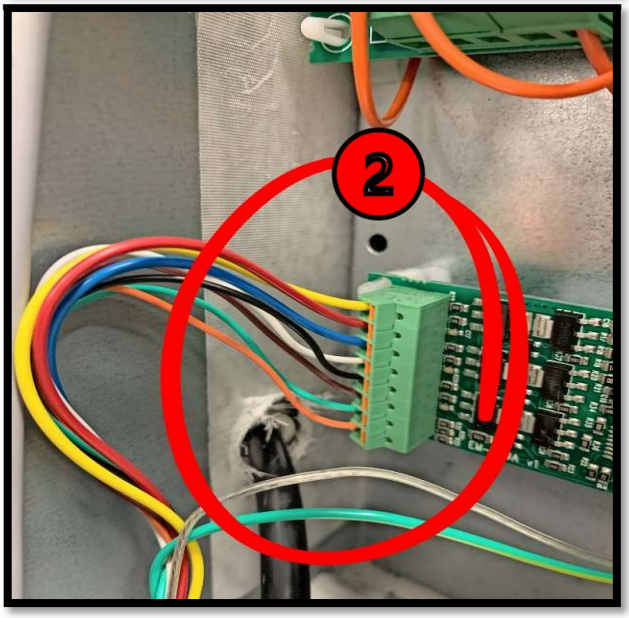
Install ***the old DC HRW circuit board (1)*** to the new automation base, and connect it to the main board according to the electrical diagram ***(page 25)***.

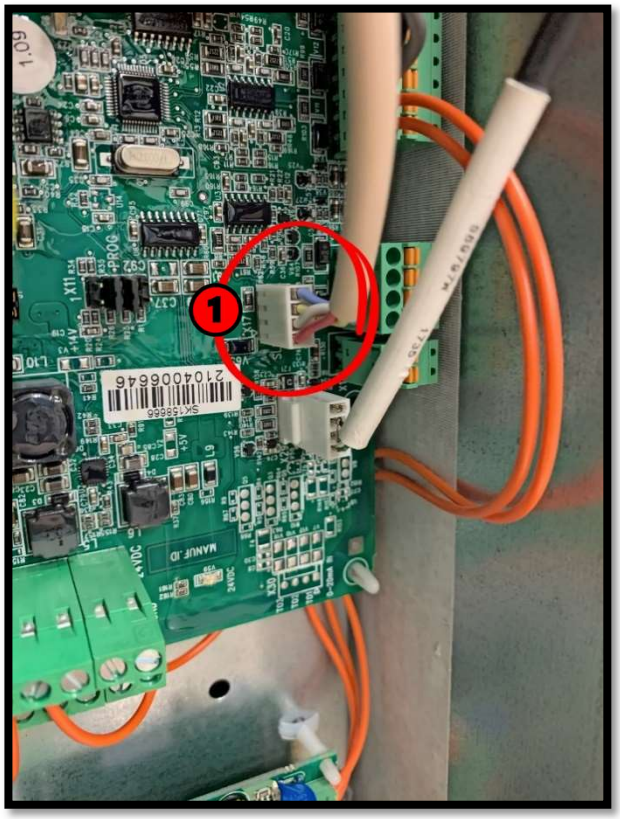




Connect ***the wires from the HRW cable to the HRW control board (2)***.

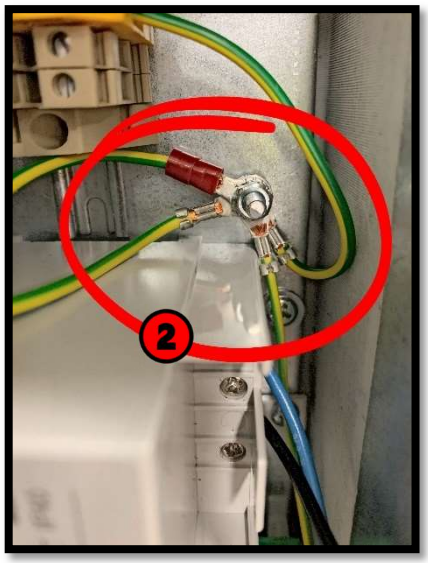
1: Yellow
2: Red
3: Blue
4: White
5: Black
6: Brown
7: Green
8: Orange



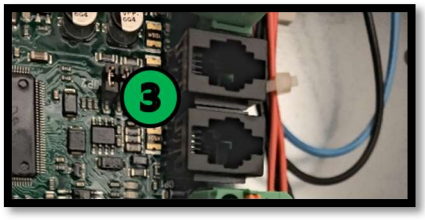


Connect ***the after heater control cable (1)***
to the main board *(X17).*
Ignore if no electrical after heater installed.

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

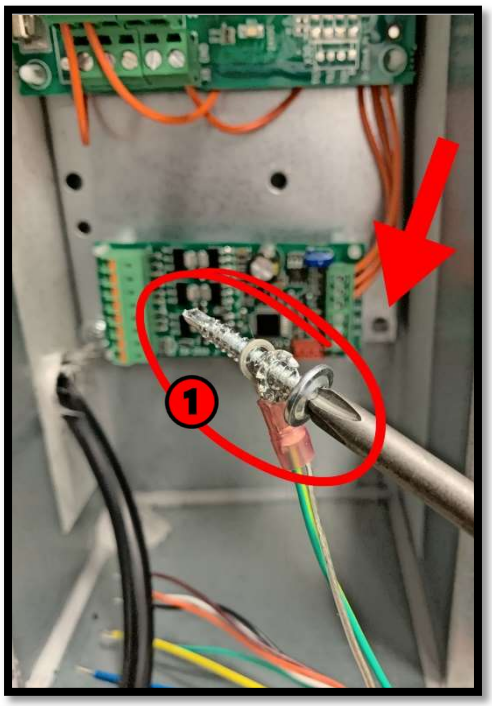


Connect ***all ground wires*** to ***the automation base ground point (2)***.
Ground terminal, HRW, supply air fan, extract air fan, after heater.
Totally five wires. *Four wires if no electrical after heater installed.*
Connect the cover ground wire to the ground terminal (PE).
Tighten with ***the nut*** *(40031489).*

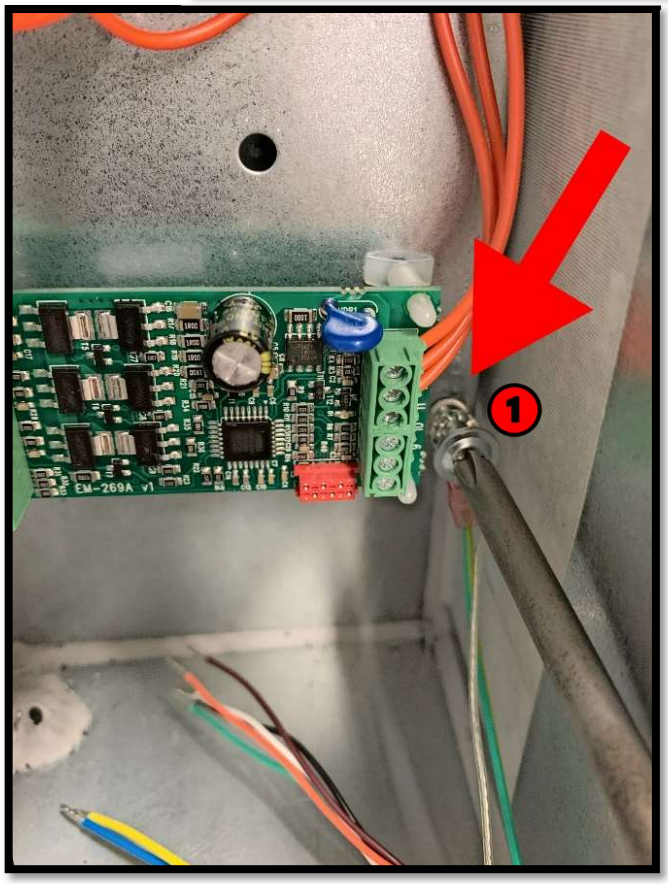


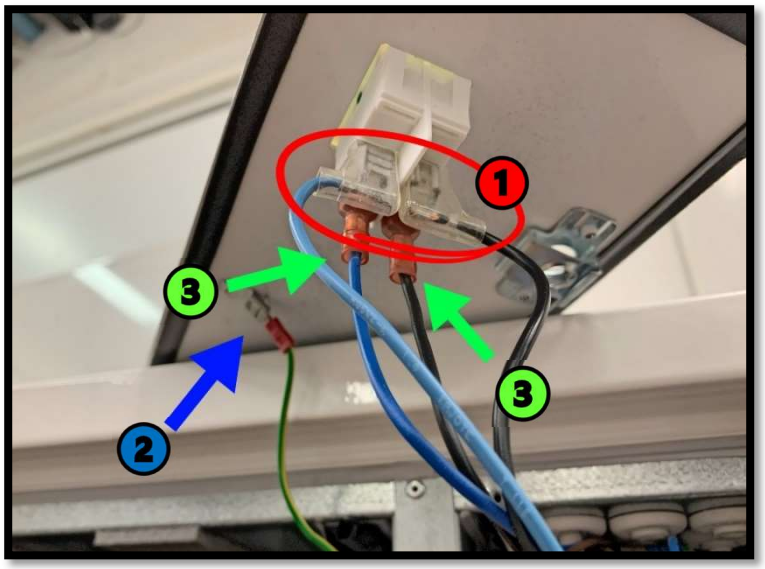
Connect ***the display cable to the main board (3)***.

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)*.

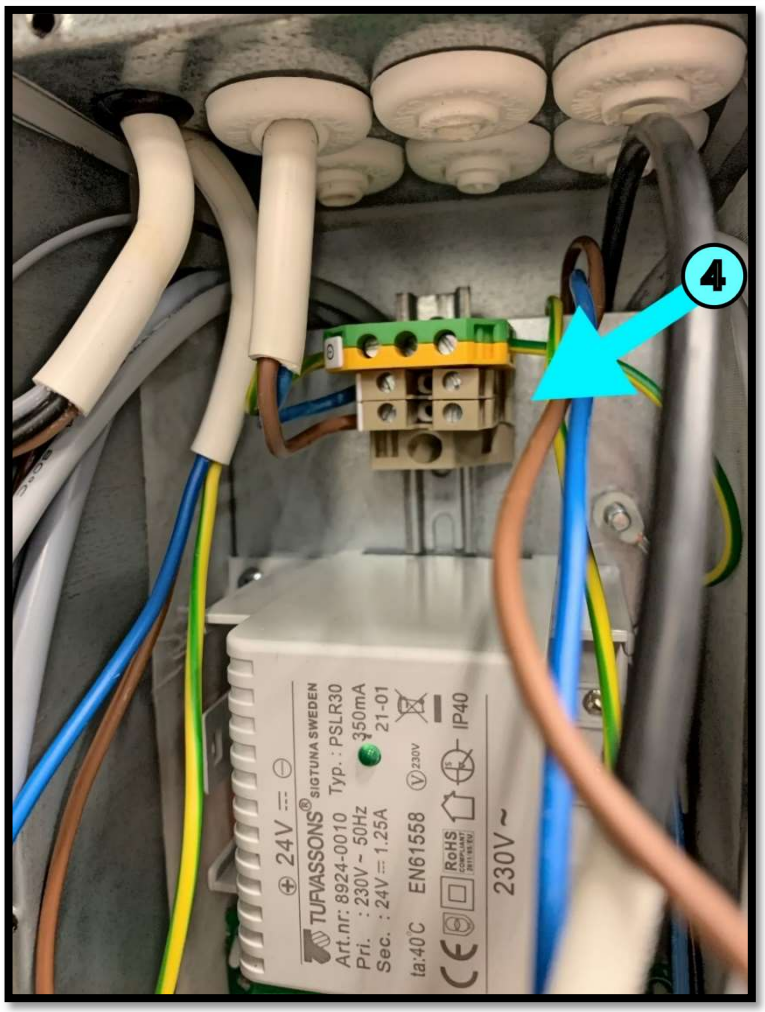


Reattach ***the screw (1)*** to the automation base.





Connect ***the pair of wires with flat connectors (1)***
(40028776, 40028777)
to the main switch and
the ground wire (2) to the cover.



Connect ***the other pair of wires with flat connectors (3)***
(40028776, 40028777)
to the main switch, and to ***the terminals (4)***.

L: Black
N: Blue

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

Disconnect and remove the old display.
Install ***the new display (3)*** *(40031115)* in a desired place.

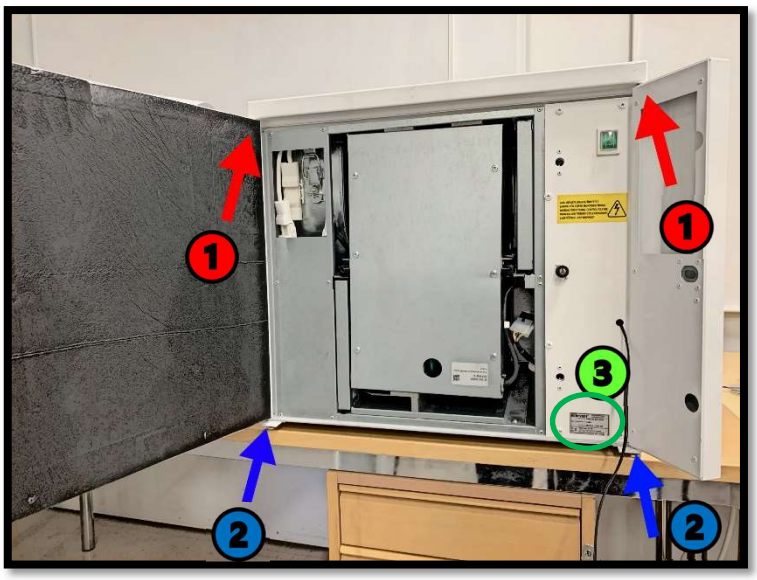
Install ***the WiFi module (4)*** *(40034288).*

4

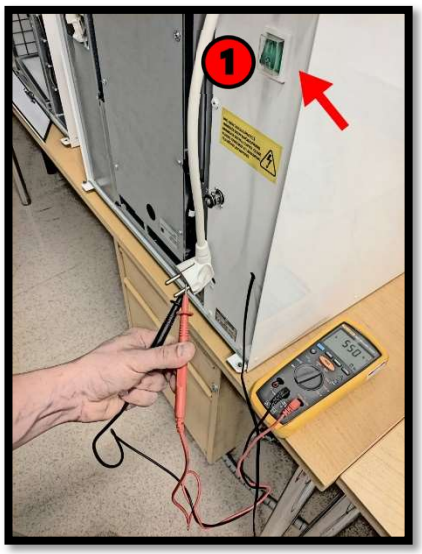
Install the doors by lifting ***(upper part first) (1)*** so that the lower edge rises above ***the pins (2)*** and gets into place.

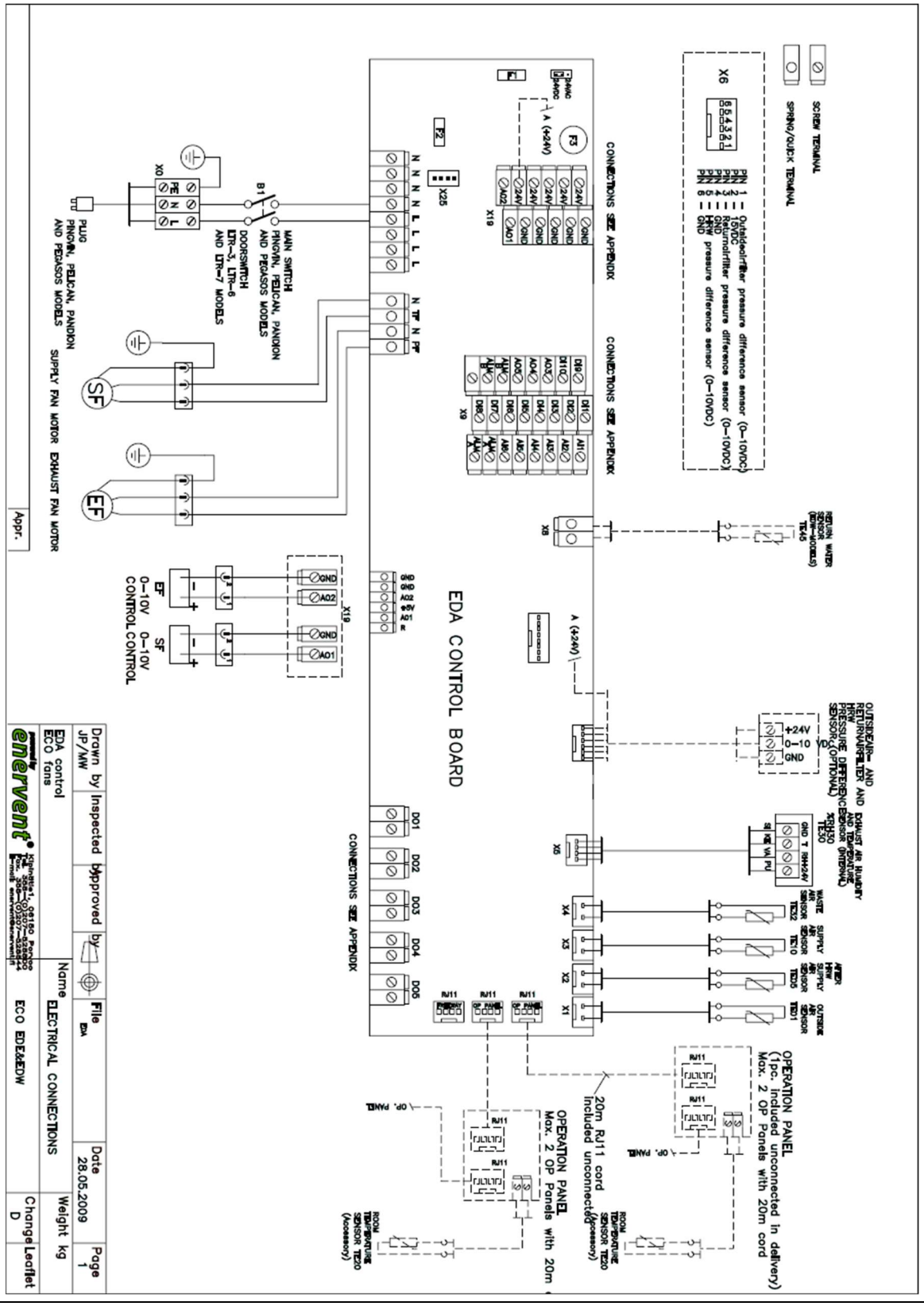
Install ***the new type plate sticker (3)***.

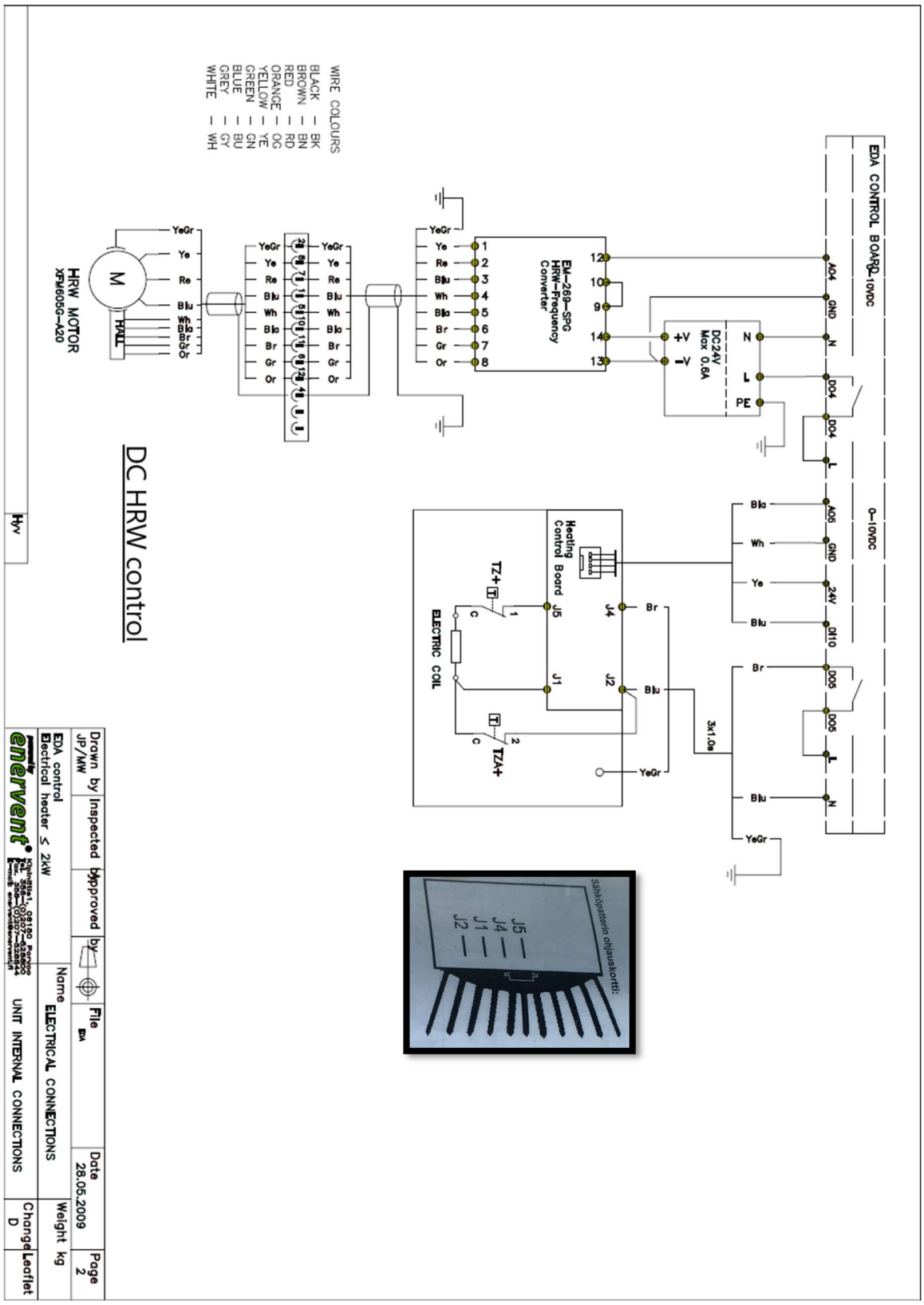
Close the doors.

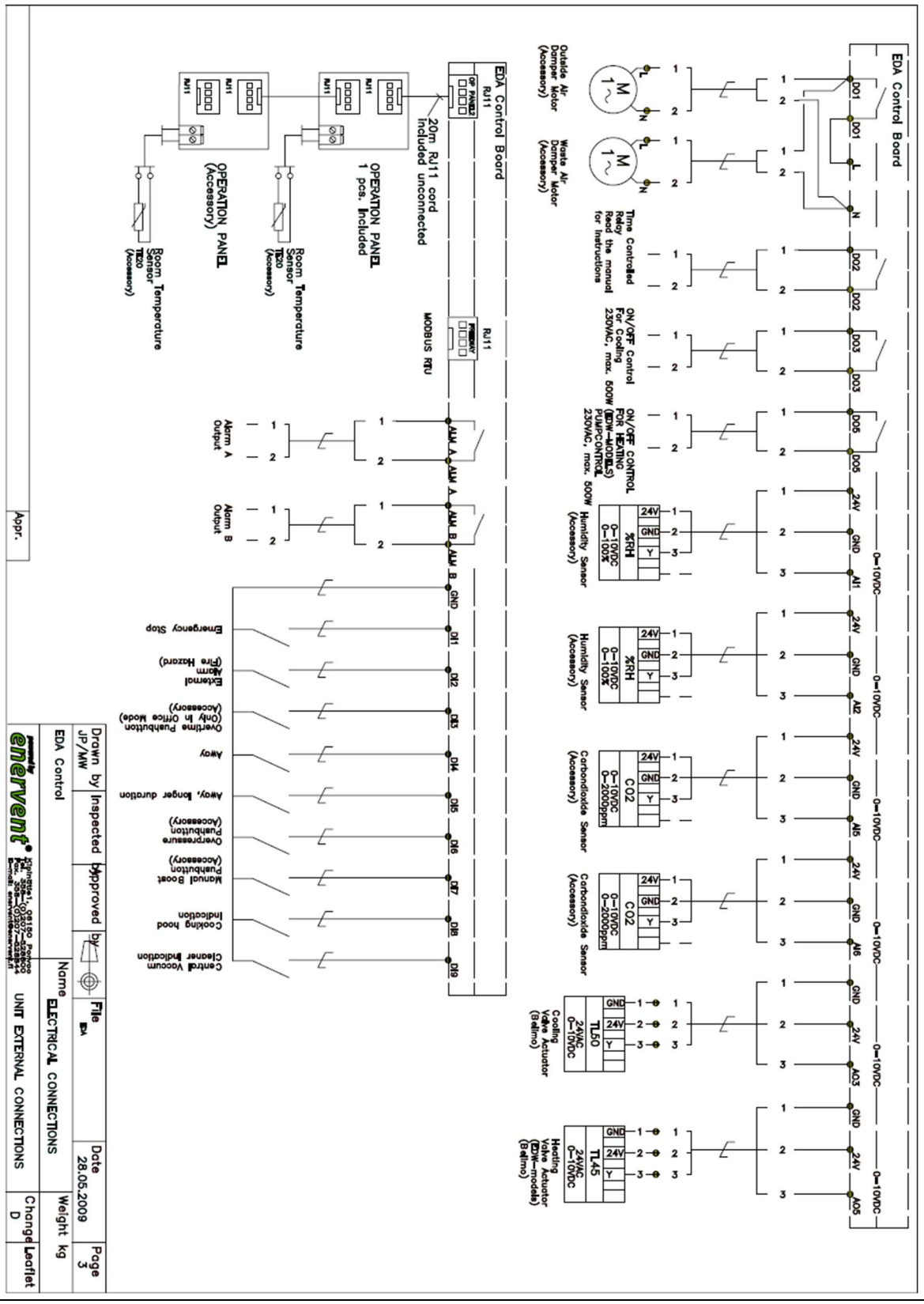


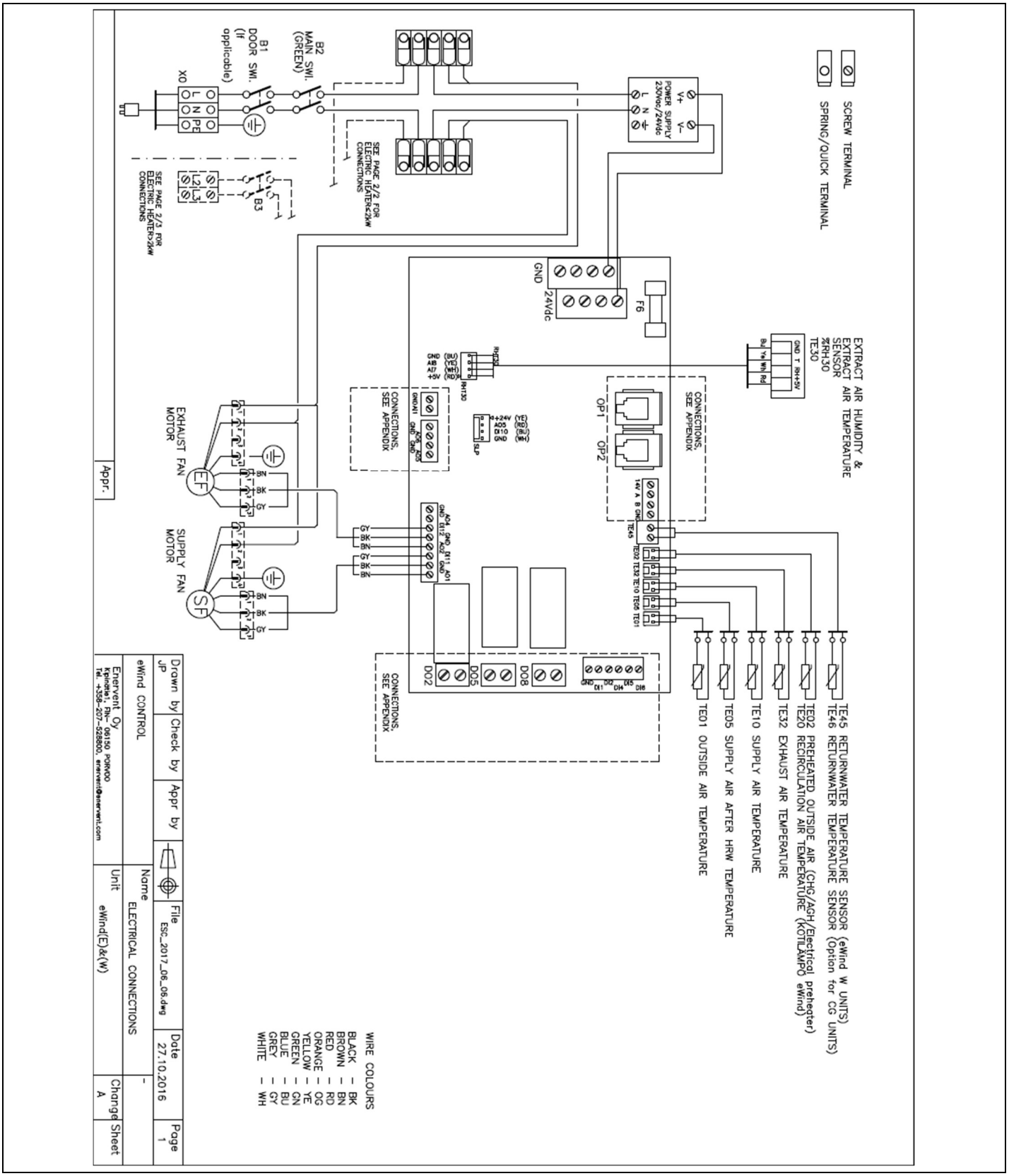
Turn on ***the main switch (1)*** and perform insulation and ground continuity test according to regulations.

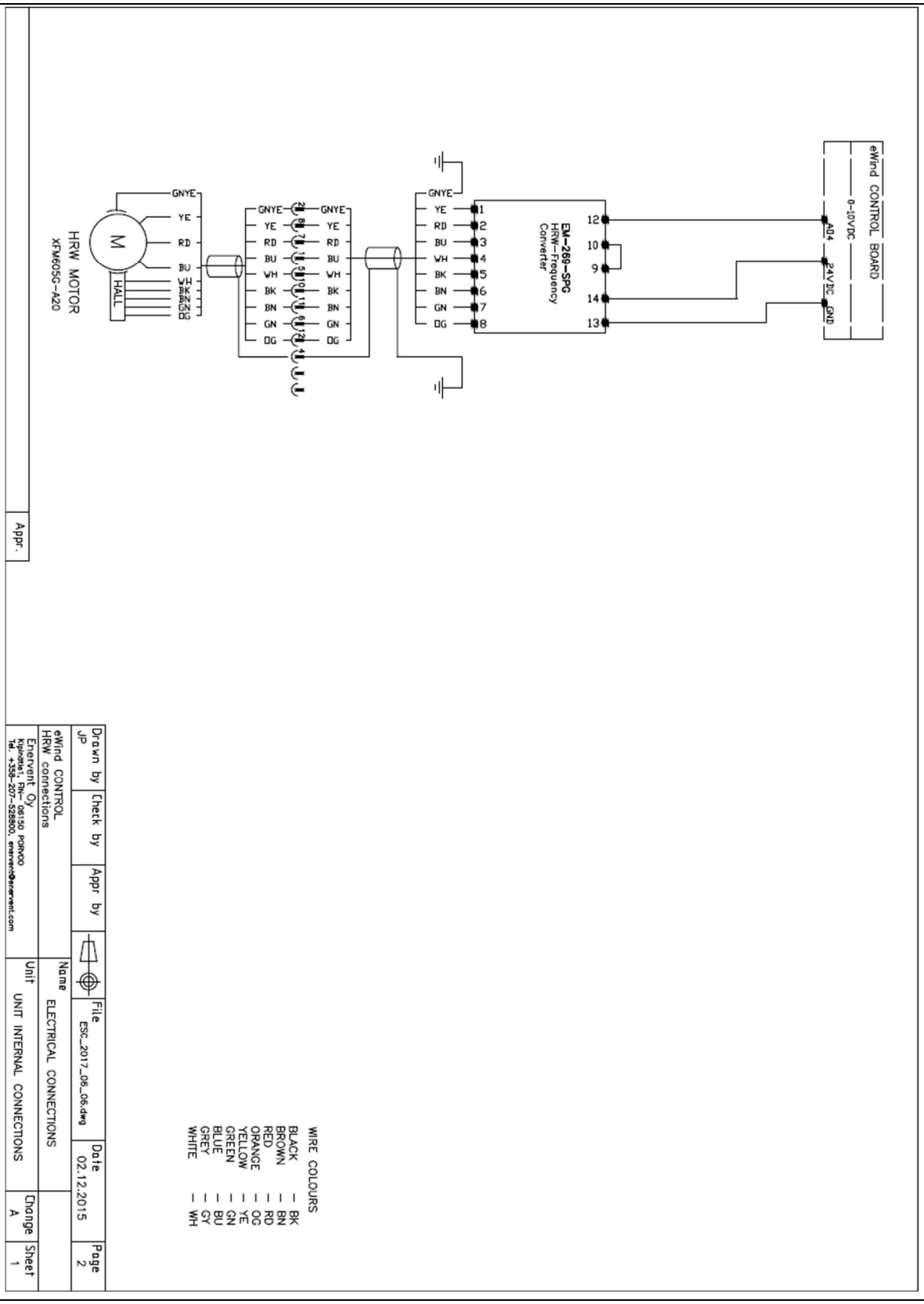


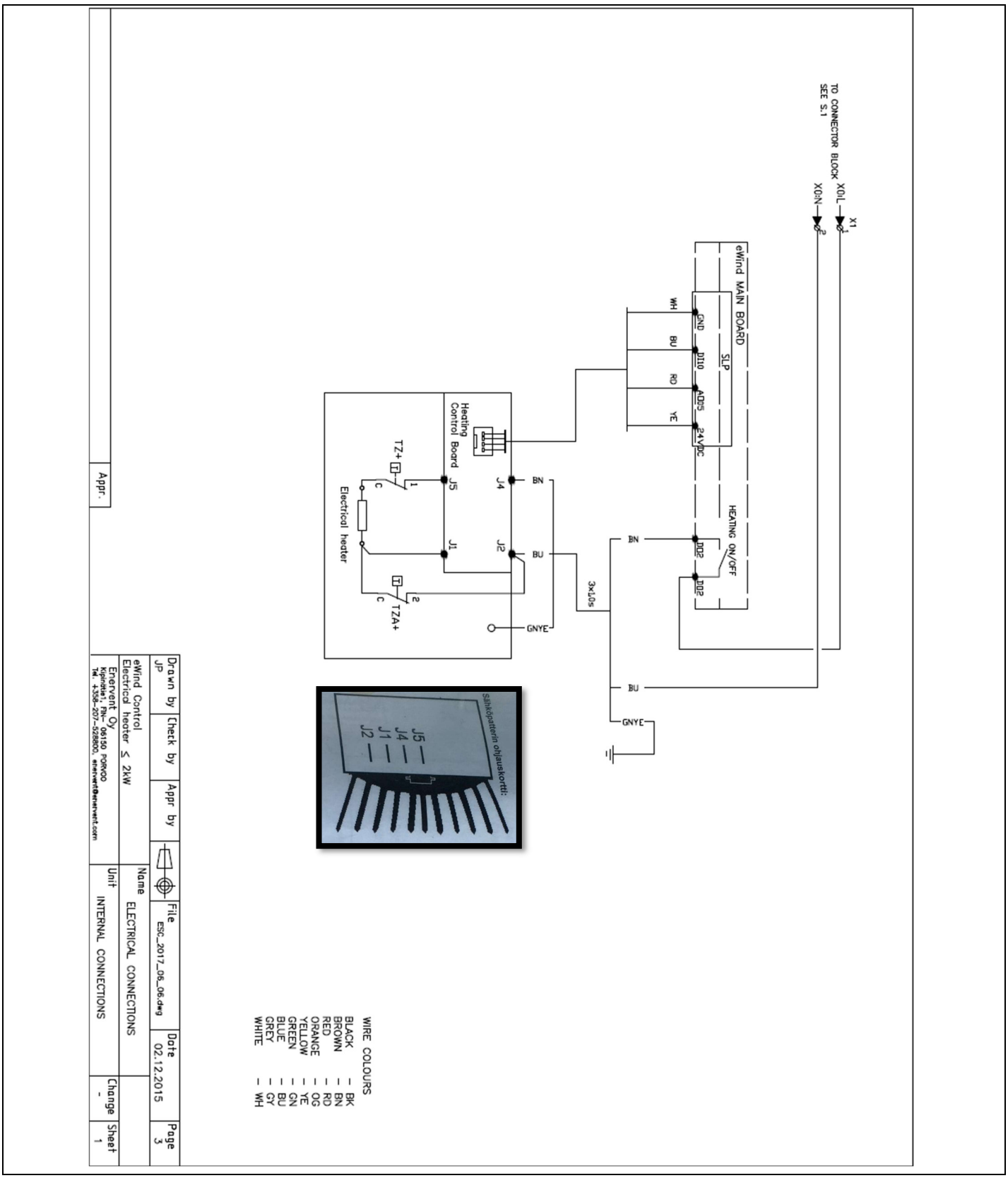

EDA CONTROL BOARD
CONNECTIONS SEE APPENDIX
SCREW TERMINAL
SPRING/QUICK TERMINAL
X6
Outdoor/filter pressure difference sensor (0–10VDC)
15VDC
Return/filter pressure difference sensor (0–10VDC)
GND
GND
pressure difference sensor (0–10VDC)
MAIN SWITCH-H PINGVIN, PELICAN, PANDION AND PEGASOS MODELS
DOORSWITCH-H LTR-3, LTR-6 AND LTR-7 MODELS
PLUG PINGVIN, PELICAN, PANDION AND PEGASOS MODELS
SUPPLY FAN MOTOR
EXHAUST FAN MOTOR
SF
EF
EF 0–10V CONTROL
SF 0–10V CONTROL
OUTSIDEAIR- AND RETURNAIRFILTER AND PRESSURE DIFFERENCESENSOR (OPTIONAL)
EXHAUST AIR HUMIDITY AND TEMPERATURE SENSOR (ANTIONAL)
+24V
0–10
GND
OPERATION PANEL (1pc. Included unconnected in delivery) Max. 2 OP Panels with 20m cord
20m RJ11 cord Included unconnected
OPERATION PANEL Max. 2 OP Panels with 20m
ROOM TEMPERATURE SENSOR TE20 (Accessory)
Drawn by JP/MW
Inspected by
Approved by
File
Date 28.05.2009
Page 1
Name ELECTRICAL CONNECTIONS
Weight kg
Change D
Leaflet
EDA control ECO fans
ECO EDE&EDW

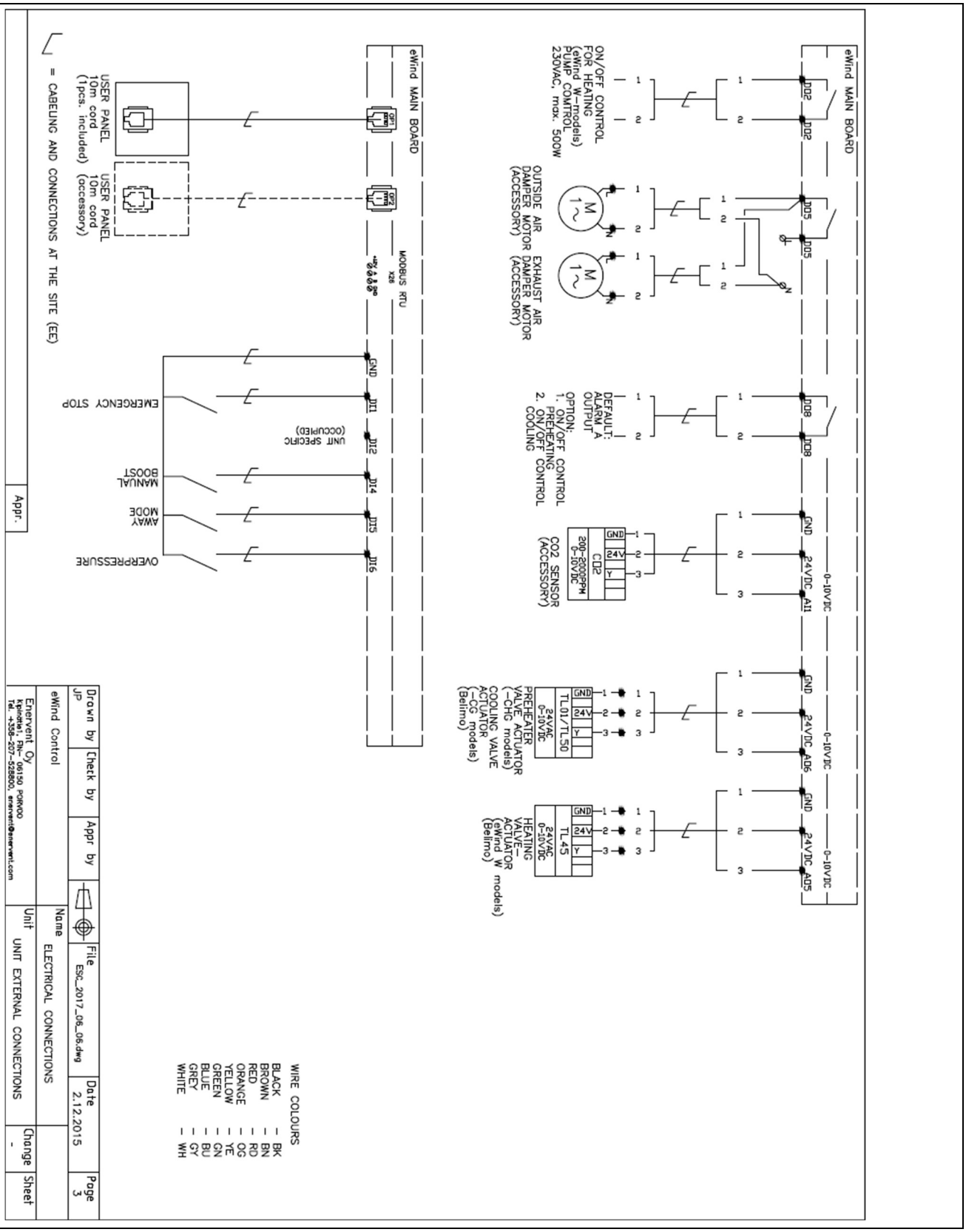

DC HRW control
EDA CONTROL BOARD
0-10VDC
HRW MOTOR
XFM605G-A20
HALL
EM-26P-SPG
HRW-Frequency
Converter
DC 24V
Max 0.6A
Heating
Control Board
ELECTRIC COIL
TZ+
TZ-
WIRE COLOURS
BLACK — BK
BROWN — BN
RED — RD
ORANGE — OG
YELLOW — YE
GREEN — GN
BLUE — BU
GREY — GY
WHITE — WH
3x1.0
Sähköpatterin ohjauskortti:
J5
J4
J1
J2
UNIT INTERNAL CONNECTIONS
ELECTRICAL CONNECTIONS
EDA control
Electrical heater ≤ 2kW
Drawn by JP/MW
Inspected by
Approved by
Date 28.05.2009
Page 2
Weight kg
Leaflet
Change D


EDA Control Board
DO1
DO2
DO3
DO5
Time Controlled Relay Read the manual for instructions
ON/OFF Control For cooling 230VAC, max. 500W
ON/OFF CONTROL FOR HEATING (EDW-MALLIT) PUMP CONTROL 230VAC, max. 500W
Outside Air Damper Motor (Accessory)
Waste Air Damper Motor (Accessory)
Humidity Sensor (Accessory)
Carbondioxide Sensor (Accessory)
Cooling Valve Actuator (Belimo)
Heating Valve Actuator (EDW-mallit) (Belimo)
0-10VDC
AI1
AI2
AI5
AI6
AO3
AO5
24V
GND
%RH
CO2
TL50
TL45
0-100%
0-2000ppm
24VAC
EDA Control Board
RJ11
20m RJ11 cord included unconnected
MODBUS RTU
OPERATION PANEL 1 pcs. included
OPERATION PANEL (Accessory)
Room Temperature Sensor TE20 (Accessory)
Alarm A Output
Alarm B Output
ALM A
ALM B
DI1
DI2
DI3
DI4
DI5
DI6
DI7
DI8
DI9
Emergency Stop
External Alarm (Fire Hazard)
Overtime Pushbutton (Only In Office Mode) (Accessory)
Alarm
Alarm, longer duration
Overpressure Pushbutton (Accessory)
Manual Boost Pushbutton (Accessory)
Cooling Hood Indication
Central Vacuum Cleaner Indication
Appr.
Drawn by JP/MW
Inspected
Approved by
File
Date 28.05.2009
Weight kg
Page 3
Change D
Leaflet
EDA Control
Name
ELECTRICAL CONNECTIONS
UNIT EXTERNAL CONNECTIONS


SCREW TERMINAL
SPRING/QUICK TERMINAL
B1 DOOR SWI. (If applicable)
B2 MAIN SWI. (GREEN)
B3
X0
POWER SUPPLY 230Vac/24Vdc
SEE PAGE 2/2 FOR ELECTRIC HEATER>2kW CONNECTIONS
SEE PAGE 2/3 FOR ELECTRIC HEATER>2kW CONNECTIONS
GND
24Vdc
F6
EXTRACT AIR HUMIDITY & EXTRACT AIR TEMPERATURE SENSOR %RH30 TE30
CONNECTIONS, SEE APPENDIX
OP1
OP2
EXHAUST FAN MOTOR
SUPPLY FAN MOTOR
EF
SF
TE45 RETURNWATER TEMPERATURE SENSOR (eWind W UNITS)
TE46 RETURNWATER TEMPERATURE SENSOR (Option for CG UNITS)
TE20 PREHEATED OUTSIDE AIR (CHG/ACH/Electrical preheater)
RECIRCULATION AIR TEMPERATURE (KOTILAMPÖ eWind)
TE32 EXHAUST AIR TEMPERATURE
TE10 SUPPLY AIR TEMPERATURE
TE05 SUPPLY AIR AFTER HRW TEMPERATURE
TE01 OUTSIDE AIR TEMPERATURE
DO2
DO5
DO8
WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
Appr.
Drawn by JP
Check by
Appr by
File ESC_2017_06_06.dwg
Date 27.10.2016
Page 1
eWind CONTROL
Name ELECTRICAL CONNECTIONS
Unit eWind(E)&(W)
Change A
Sheet -
Enervent Oy
Kipinätie 1, FIN- 06150 PORVOO
Tel. +358-207-528800, enervent@enervent.com


HRW MOTOR
XFM60SG-A20
HALL
GNYE
YE
RD
BU
WH
BK
BN
GN
OG
EM-26B-SPG
HRW-Frequency
Converter
eWind CONTROL BOARD
0-10VDC
AO4
24VDC
GND
WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
Appr.
Drawn by JP
Check by
Appr by
File ESC_2017_06_06.dwg
Date 02.12.2015
Page 2
Name ELECTRICAL CONNECTIONS
Unit UNIT INTERNAL CONNECTIONS
Change A
Sheet 1
eWind CONTROL HRW connections
Enervent Oy
Kipinätie 1, FIN- 06150 PORVOO
Tel. +358-207-528800, enervent@enervent.com


TO CONNECTOR BLOCK
SEE S.1
X0:L
X0:N
X1
eWind MAIN BOARD
SLP
GND
DI10
AD05
24VDC
WH
BU
RD
YE
HEATING ON/OFF
DO2
DO2
BN
BU
3x1,0s
GNYE
Heating Control Board
J5
J4
J1
J2
L
C
TZ+
TZA+
Electrical heater
Sähköpatterin ohjauskortti:
WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
Appr.
Drawn by JP
Check by
Appr by
File ESC_2017_05_06.dwg
Date 02.12.2015
Page 3
Name ELECTRICAL CONNECTIONS
Unit INTERNAL CONNECTIONS
Change -
Sheet 1
eWind Control
Electrical heater ≤ 2kW
Enervent Oy
Kipinätie 1, FIN- 06150 PORVOO
Tel. +358-207-528800, enervent@enervent.com


eWind MAIN BOARD
ON/OFF CONTROL FOR HEATING (eWind W-models) PUMP COMTROL 230VAC, max. 500W
OUTSIDE AIR DAMPER MOTOR (ACCESSORY)
EXHAUST AIR DAMPER MOTOR (ACCESSORY)
DEFAULT: ALARM A OUTPUT
OPTION: 1. ON/OFF CONTROL PREHEATING 2. ON/OFF CONTROL COOLING
CO2 SENSOR (ACCESSORY)
CO2
200-2000PPM 0-10VDC
PREHEATER VALVE ACTUATOR (-CHG models)
COOLING VALVE ACTUATOR (-CG models) (Belimo)
TL01/TL50
24VAC 0-10VDC
HEATING VALVE-ACTUATOR (eWind W models) (Belimo)
TL45
0-10VDC
24VDC
GND
eWind MAIN BOARD
MODBUS RTU
USER PANEL 10m cord (1pcs. included)
USER PANEL 10m cord (accessory)
EMERGENCY STOP
USER SPECIFIC (OCCUPIED)
MANUAL BOOST
AWAY MODE
OVERPRESSURE
= CABELING AND CONNECTIONS AT THE SITE (EE)
Appr.
WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
Drawn by JP
Check by
Appr by
File ESC_2017_06_06.dwg
Date 2.12.2015
Page 3
Enervent Oy
Kipinätie 1, FIN- 06150 PORVOO
Tel. +358-207-528800, enervent@enervent.com
eWind Control
Name ELECTRICAL CONNECTIONS
Unit UNIT EXTERNAL CONNECTIONS
Change -
Sheet

MANDATORY PARTS

10023856	**CONTROL UPDATE KIT PINGVIN ECO EDA → EWIND**	**1**

Code	Description	Pcs.
10023856	***CONTROL UPDATE KIT PINGVIN ECO EDA → EWIND***	
	Automation	
40030936	PCB support KGLS-6S	4
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	5
40028774	Wire 255mm 1mm2 black	1
40028779	Wire 255mm 1mm2 blue	1
40031094	eWind main board	1
40029195	Power supply Tufvassons PSLR24	1
40028788	Ground wire 100mm	1
40029341	Terminal SL 4/15	1
40029343	Terminal ES 15 PA	1
40029340	Terminal SRK 2,5/15 PA	2
40029330	PMC SB 5/50 So ERDE	1
40029329	PMC SB 5/50 So L	1
40029327	PMC SB 5/50 FW N	1
40029647	Automation base	1
	Components	
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	4
40031530	Screw ZN 4,2x25	5
40028774	Wire 255mm 1mm2 black	3
40028781	Wire 600mm 1mm2 blue	2
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
40031115	eWind panel package	1
40030313	Triac cable 1000mm 4-pole	1
40034288	WiFi module package	1
	Manuals etc. (depends on model)	
	eWind installation manual	1
	eWind user manual	1
	eWind electrical diagrams	1

Notes: