Zehnder
Svea Cooler eAir

Installer manual

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1. Read first

This instruction manual is intended for all the persons involved in the installation of the Enervent ventilation units. Only qualified professionals may install the equipment described in this manual in accordance with the instructions in this manual and the local laws and regulations. If the instructions provided in this manual are not followed, the warranty for the equipment becomes void and damages may be caused to persons or property.

The equipment described in this manual may not be used by persons (including children) with reduced physical, sensory or mental capacity or without sufficient experience or knowledge, unless a person responsible for their safety is supervising and advising them in the use of the equipment.

The Svea Cooler is an innovative accessory module for the Svea ventilation unit, containing an integrated heat pump for cooling the ventilation supply air. The Cooler module mounts directly on top of the Svea ventilation unit and does not change the dimensions of the Svea ventilation unit, except for the height. The Svea Cooler can use the same wall mounting bracket or ceiling mount as the normal Svea ventilation unit. The Cooler module is controlled by the eAir automation in the Svea ventilation unit.

The Cooler module can be delivered separately and installed on an already commissioned Svea ventilation unit, provided there is sufficient room for the Cooler module and the mounting supports the weight. The Svea Cooler can be also purchased as one ready-to-install unit combination.

These installation instructions are to be used in conjunction with the Svea eAir Installation instructions.
If the Svea eAir installation instructions are in conflict with the Svea Cooler installation instructions, the Svea Cooler installation instructions should be followed.

The installer must follow the instructions in these Installation instructions. Failure to follow these instructions may invalidate the warranty and cause water damage, electrical shock, or fire.
The manufacturer is not responsible for any damage caused by not following these Installation instructions.

For your information
If the delivery does not contain all of the components listed in the section ‘Contents of the delivery’, please check the order and contact your distributor or Enervent before commencing installation.

2. Type plate

Enervent Zehnder Oy
Kipinätie 1
FI-06150 PORVOO
P022120002

10023631

Svea Cooler eAir

CE

230 V | 4.2 A | IP44 | 50 HZ | 750 W

Serial-No. **004154448901**

Prod **29.08.2025**

If you need technical support, please check the equipment type and serial number from the type plate.

3. Safety

3.1. General

The following pictograms are used:

Symbol	Meaning
	Important note
	Risk of damage to the system or impaired performance
	Risk of personal injury

The Svea Cooler module must be drained.

The Svea Cooler ventilation unit must be connected to a grounded power outlet.

The Svea Cooler weighs approximately 100 kg. Make sure the selected mounting is capable of supporting this weight.

There are no user serviceable parts inside the Svea Cooler module. Only a qualified electrician or refrigeration technician should open the service hatch of the Cooler module.

Only a certified electrician is allowed to make the connections between the Svea ventilation unit and the Cooler module.

Any modifications to the internal or external parts of the Cooler module are prohibited.

Only a qualified refrigeration technician is allowed to make any repair or service to the refrigeration circuit.

The Svea Cooler should be installed only by a qualified installer.

The Cooler module is not to be operated without the service hatch closed.

Danger of burns! The cooler module internal parts may be hot after use.

Danger of electric shock! There are high voltage parts inside the Cooler module capable of delivering a lethal electric shock.

Fluorinated refrigerant gas.
The Cooler module contains fluorinated refrigerant gas R32.

R32 is a flammable gas. Precautions must be taken to store the Cooler unit before installation in a well ventilated area without any ignition sources.

Make sure there are no ignition sources present when installing the Svea Cooler, no smoking, open flames, heat guns etc.

If the Cooler module is mechanically damaged, it must immediately be moved to a well-ventilated area without any ignition sources and checked for refrigerant leaks by a refrigerant technician with suitable equipment.

3.2. Recycling

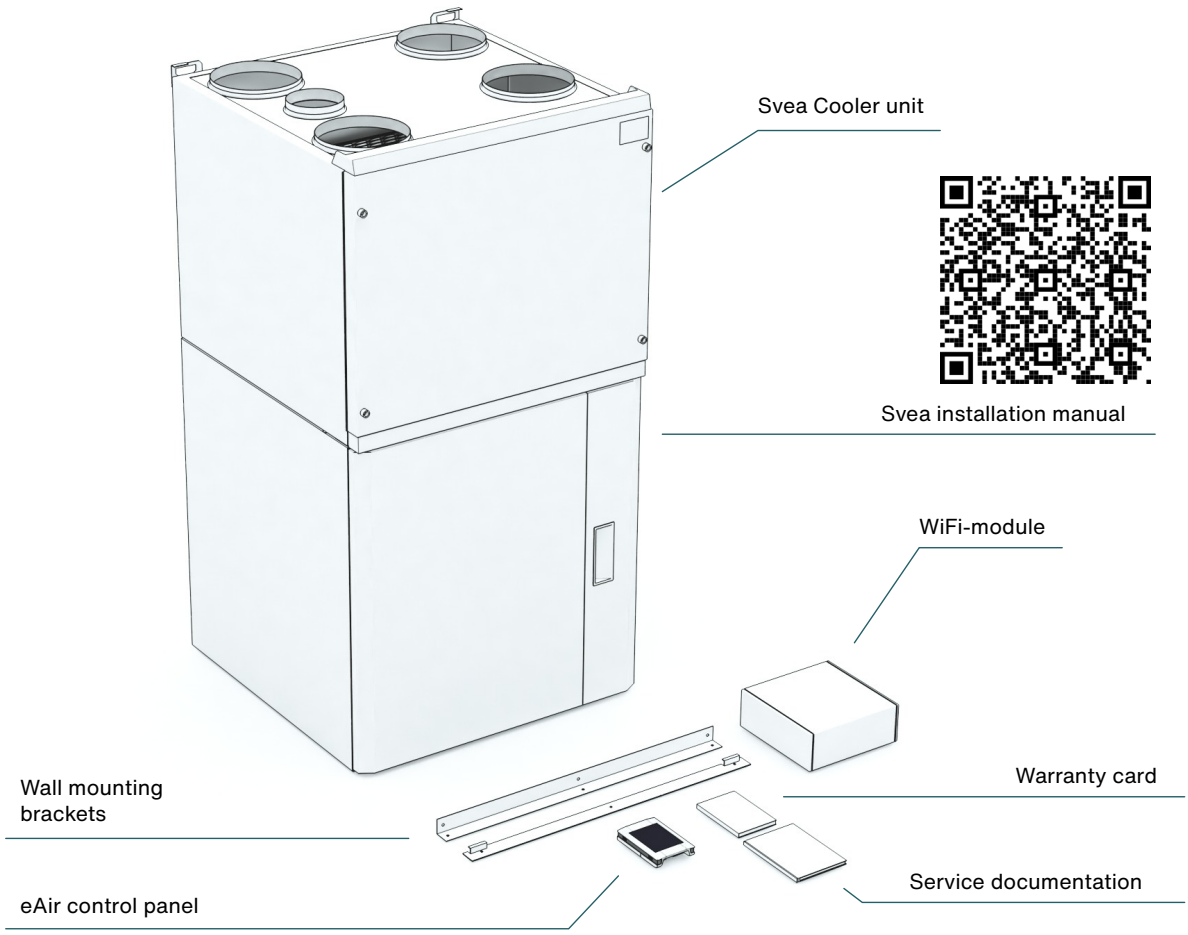
The Svea Cooler module must not be disposed of with household waste.

The Cooler module should be disposed of by a qualified refrigeration technician or delivered to a collecting point for hazardous waste.

Follow local regulations and laws regarding recycling of heat pumps and fluorinated refrigerant gases.

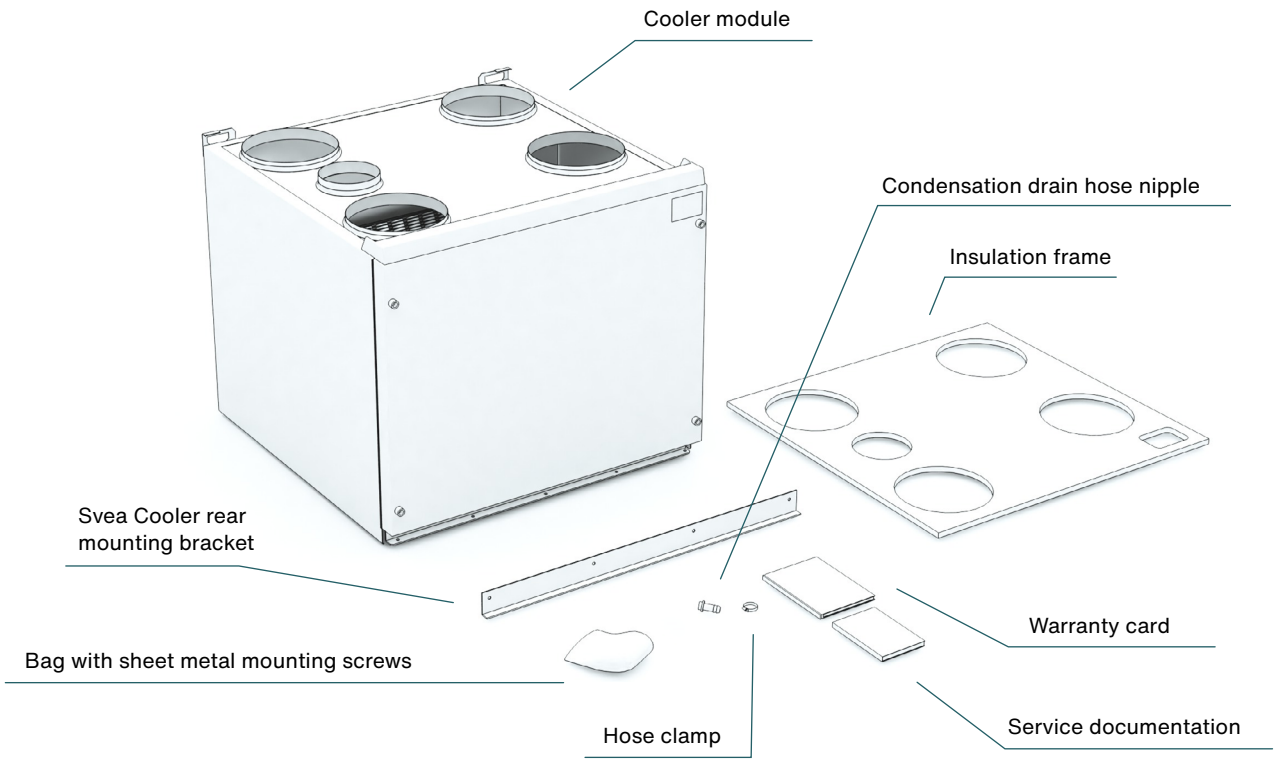
4. Contents of the delivery

Svea Cooler E 471012285

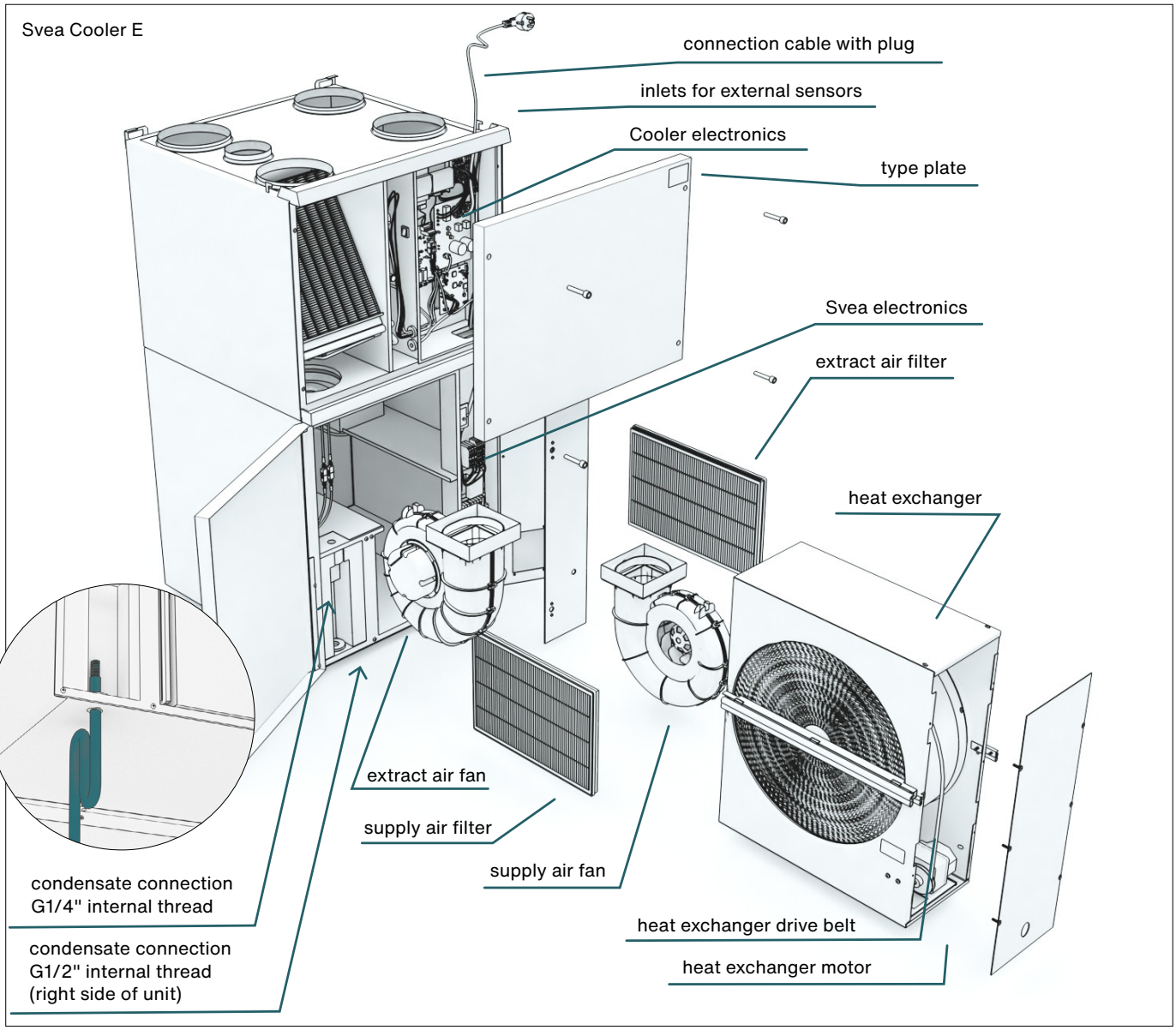


5. Cooler module delivered separately

Cooler Module 471010390

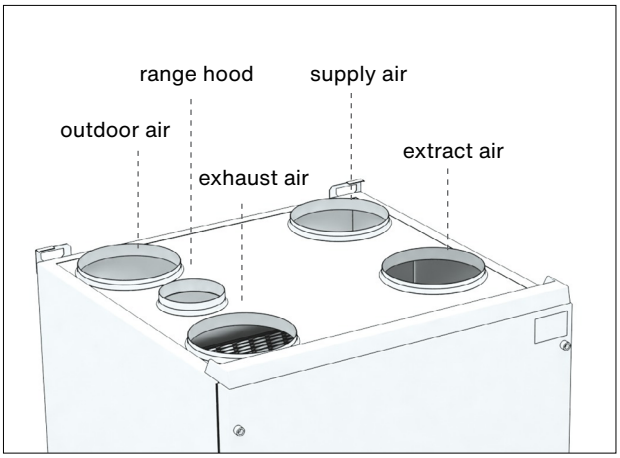


6. Technical specifications of the unit



	Cooler module (only)	Svea Cooler E (complete)
Width	600 mm	600 mm
Height	525 mm	1125 mm
Depth	600 mm	600 mm
Weight	50 kg	100 kg
Duct connection (duct size)	ø 160 mm	ø 160 mm
Range hood connection (duct size)	ø 100 mm	ø 100 mm
Input power	1203W/230V, 1~/50Hz/ 5,2A	2358W/230V, 1~/50Hz/ 10,3A
Circuit breaker	C16 A	C16 A
Airflow	150 l/s @ 100 Pa	150 l/s @ 100 Pa
Minimum airflow when cooling	60 l/s 216 m^3/h	60 l/s 216 m^3/h
Cooling Power (total)	3,3 kW @ 150 l/s	3,3 kW @ 150 l/s
Mains supply	230 V~, 50 Hz, 16 A	230 V~, 50 Hz, 16 A
Refrigerant	R32 / 0.7 kg	R32 / 0.7 kg

7. Duct connections



8. Before installation

The Cooler module must be drained.

Consider the noise level of the heat pump when choosing installation location. Prevent structural noise through the building structure as well as noise through the ducting.

Make sure the supply air duct is sufficiently insulated with vapor barrier insulation to prevent condensation on the supply air duct surface and prevent the cooled supply air from heating up in the duct reducing the cooling effect.

Make sure the mounting is sturdy and capable of supporting the Svea Cooler weight (approximately 100 kg).

The condensation drain should be regularly checked for functionality during use. At least before the cooling season it is mandatory to check that there is a small amount of airflow from the end of the drainpipe or hose when the Svea ventilation unit is operating. If there is no airflow, the drain should be checked for clogging.
A clogged drain can cause serious water damage to the Svea Cooler ventilation unit or its surroundings.

Would you like to know more?
If you would like to know more about the construction of ventilation systems and the insulation of ventilation ducts, you can read about them on our website at **www.enervent.com**.

9. Installation

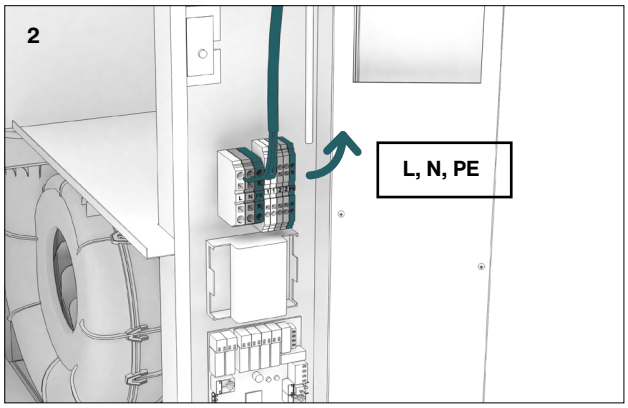
9.1. Cooler module installation, if delivered separately

1

Svea eAir

Before installing the ventilation unit, check that the unit and the ductwork do not have any foreign objects inside them.

2



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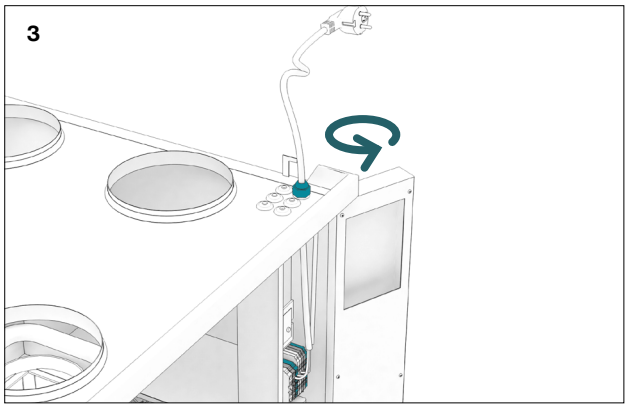

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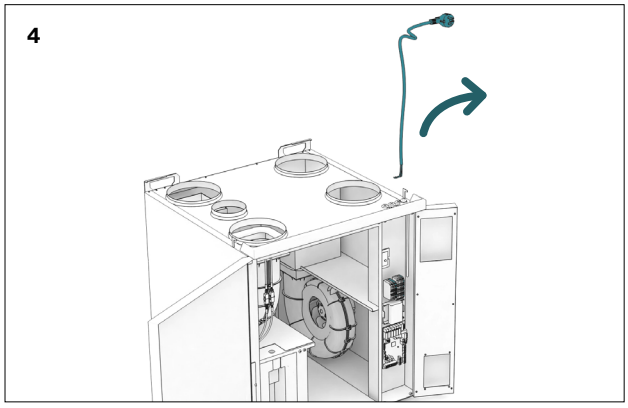

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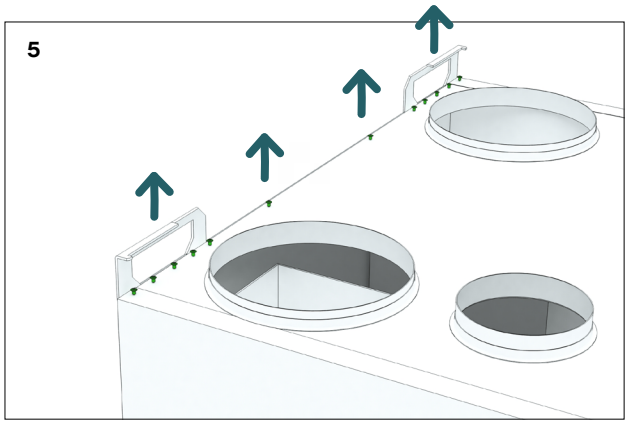

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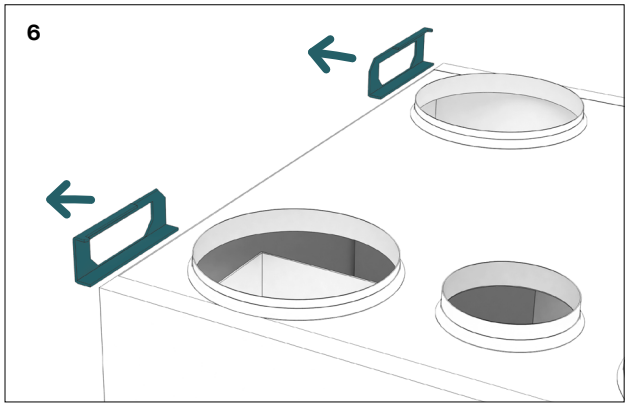

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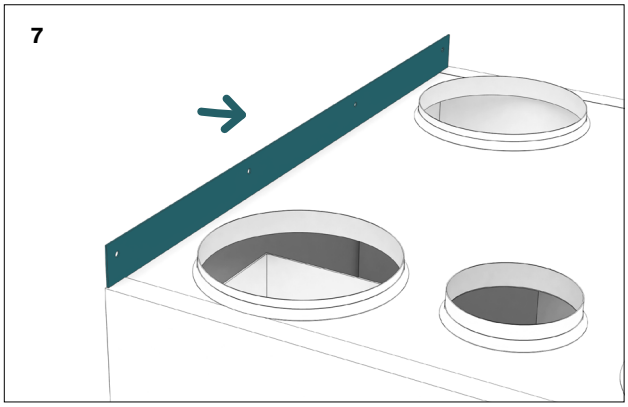

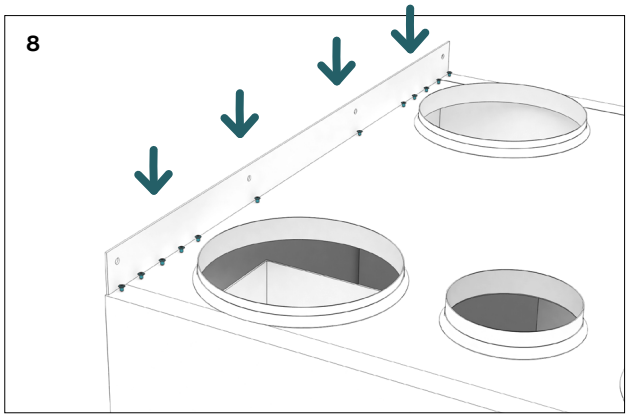
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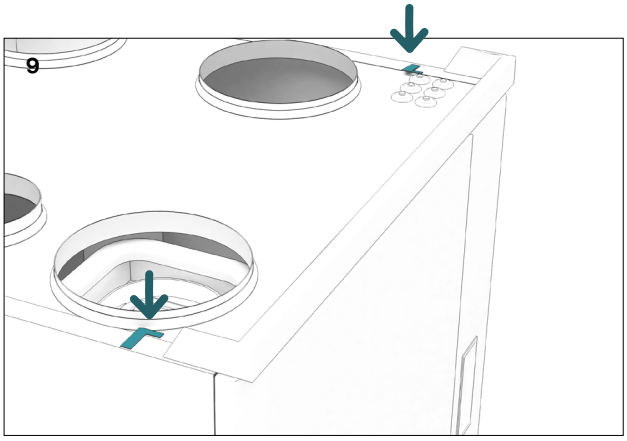
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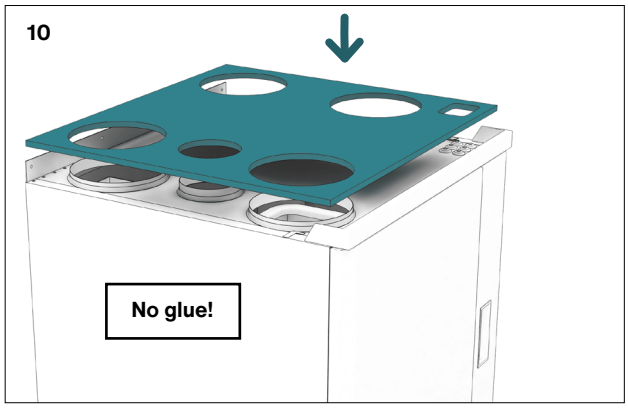
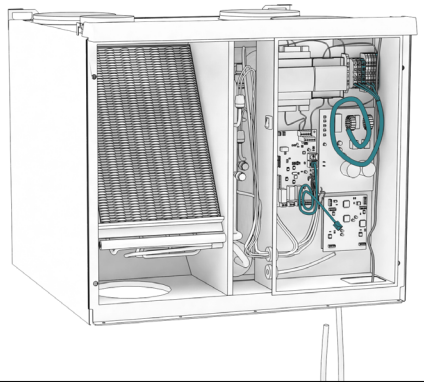

10
No glue!

11

Cooler module

12



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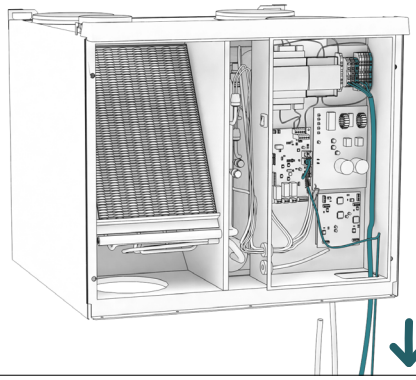

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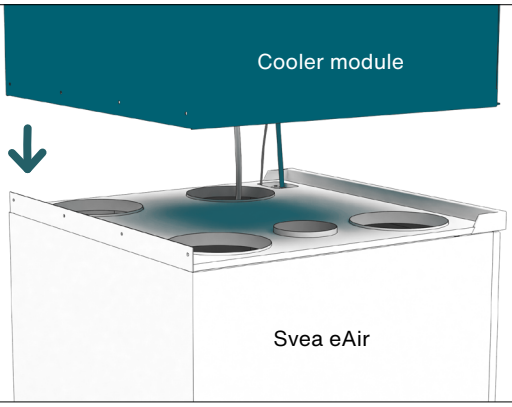

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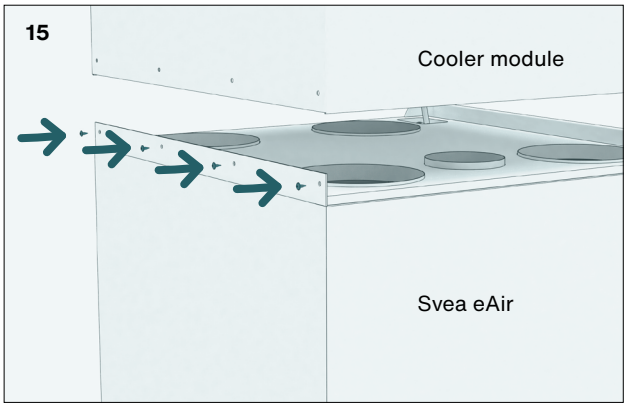

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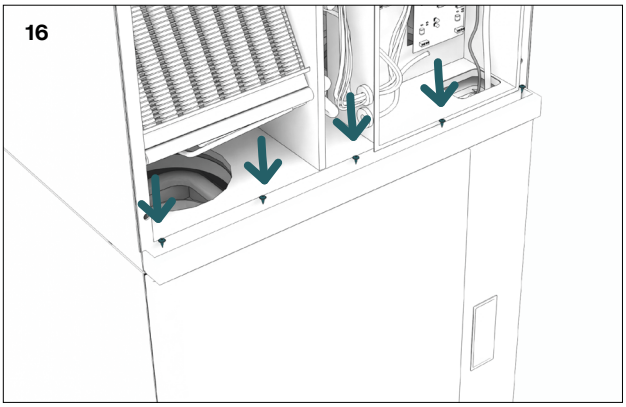

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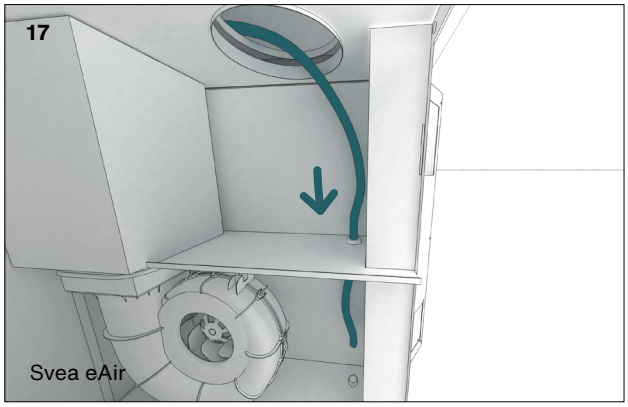

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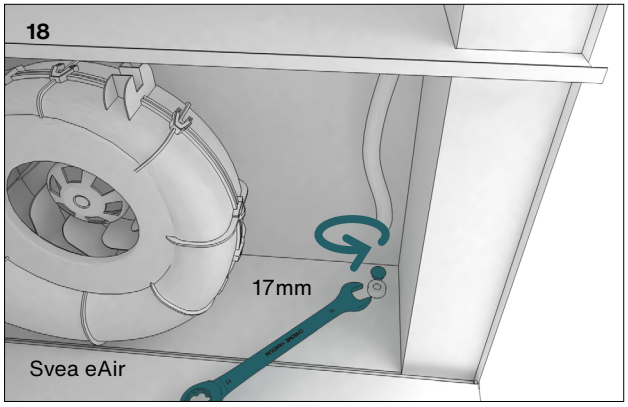
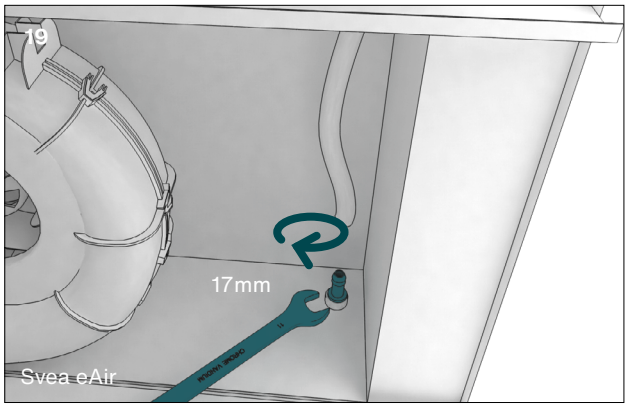
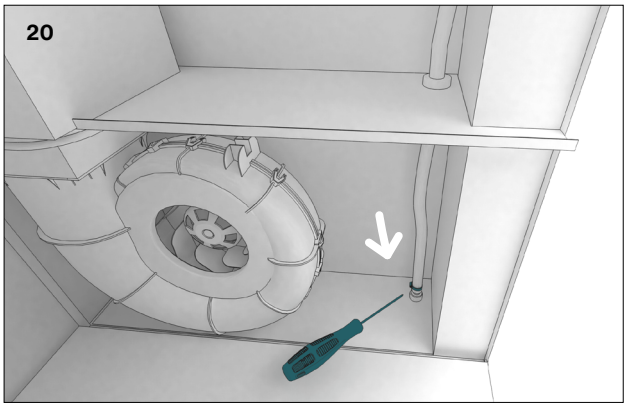



19
17mm
Svea eAir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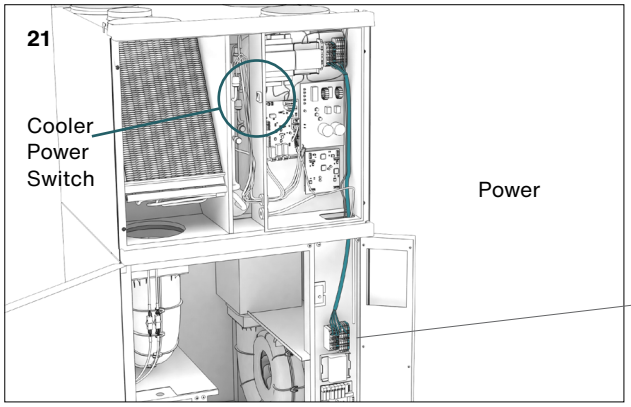
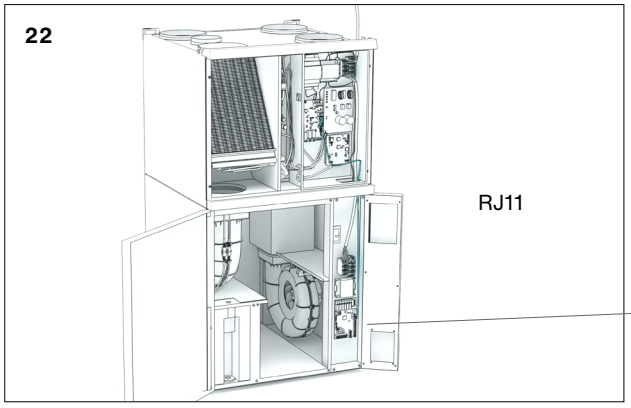
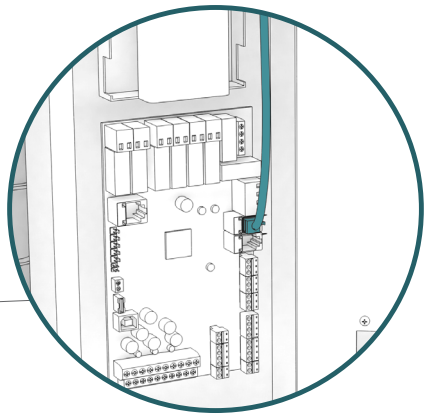
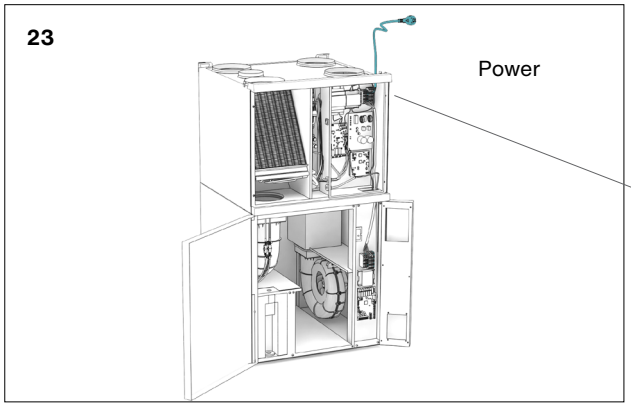

21
Cooler
Power
Switch
Power


22
RJ11

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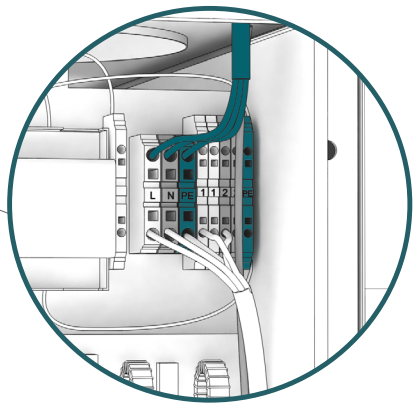
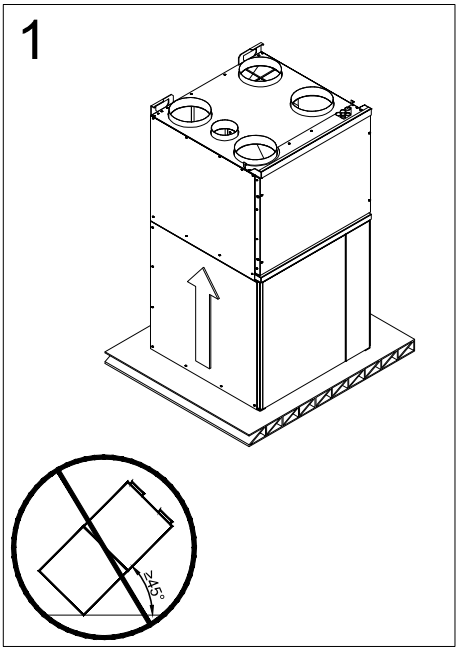
Power

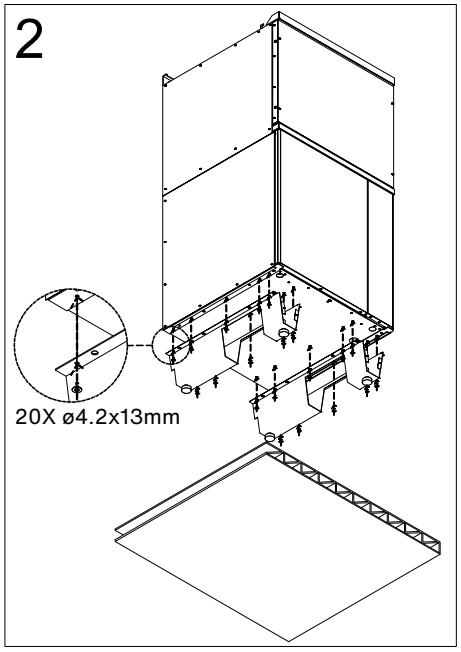


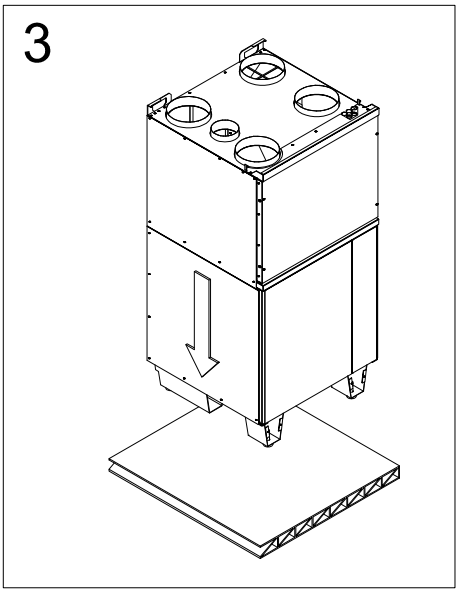
9.2. Software update when Cooler module delivered separately

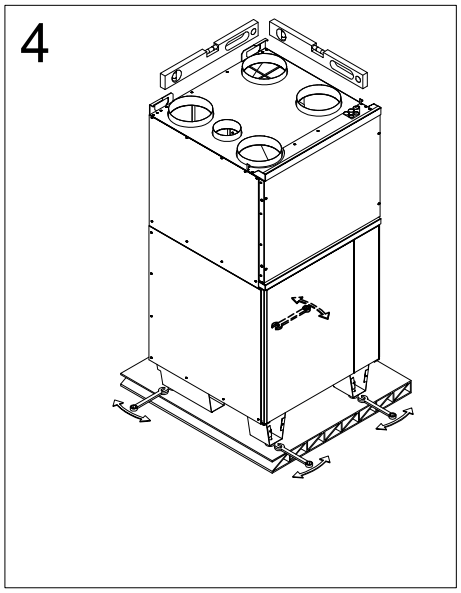
Please contact Enervent Zehnder technical support.

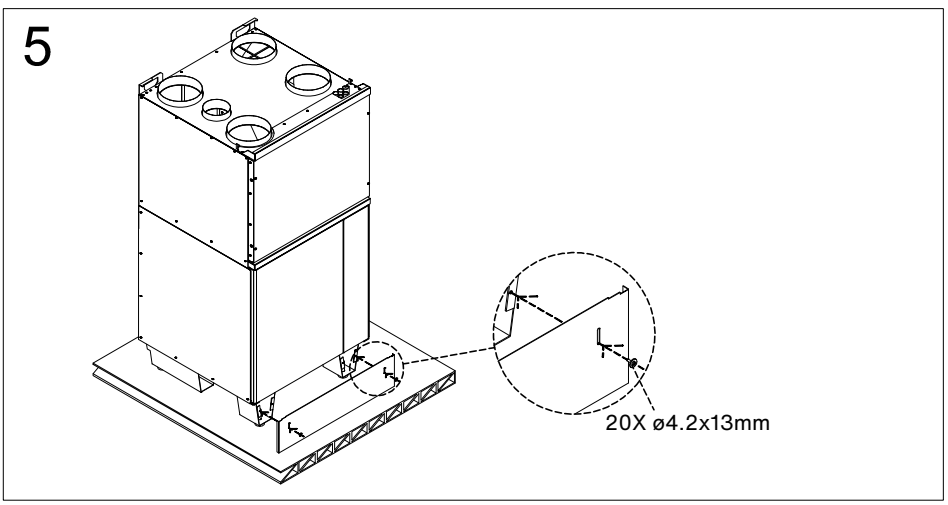
9.3. Floor mounting











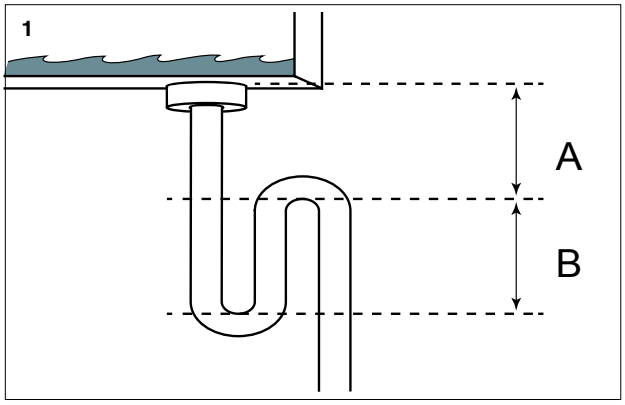
10. Draining condensate water

All Enervent ventilation units should be drained.
If the ventilation unit is equipped with active cooling, draining is mandatory.
When air cools down, condensate water can form on cold surfaces. For example in winter time when warm and humid inside air meets the cold heat recovery wheel, or when warm outside air meets the cooling coil in the ventilation unit (if applicable).

Be careful not to touch any parts of the Svea Cooler internals when pressing the door switch.

- The condensate water should be led in a falling, at least Ø15 mm pipe or hose, through a water trap to a floor drain or such.
- The pipe must at all times lie lower than the condensate water drip pan / condensate water connection of the ventilation unit.
- There must not be any longer horizontal sections on the pipe.
- The condensation drain pipe must be insulated if mounted in spaces where freezing can occur.
- Also duct coils used for cooling must be drained and use a water trap.
- Each drain connection must have a separate water trap.
- Two or more water traps can be connected to the same drain pipe, provided they are connected together downstream from the water traps.
- If using an S-type water trap, the height of the back-water in the water trap should be minimum 50 mm (pic. 1, dimension B). The height difference between the drain point and the water trap should be minimum 50 mm (pic. 1, dimension A).
- Make sure there is always water in the water trap.
- Enervent Zehnder recommends the usage of membrane type water traps that do not depend on water for sealing. Enervent product code 10023835 (small) (pic. 3). Installation of 10023835 water lock. The water trap should only be installed vertically. Remove the 1/4” plug covering the drain connection in the ventilation unit (pic. 2). Screw in the water trap firmly (pic. 3).
- Lock the water trap in place with the provided self tapping screw and sleeve (pic. 4). Install the screw right under the water trap. Install a suitable hose to the hose fitting (9mm) of the water trap.
- The functionality of the drain, including the duct coil drains, should be checked by pouring water into the drain at every filter change.

1



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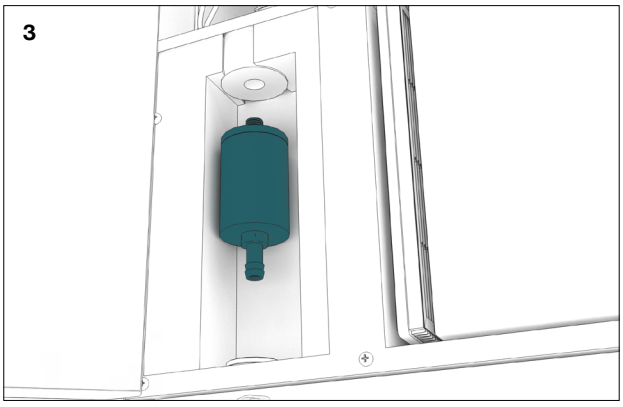

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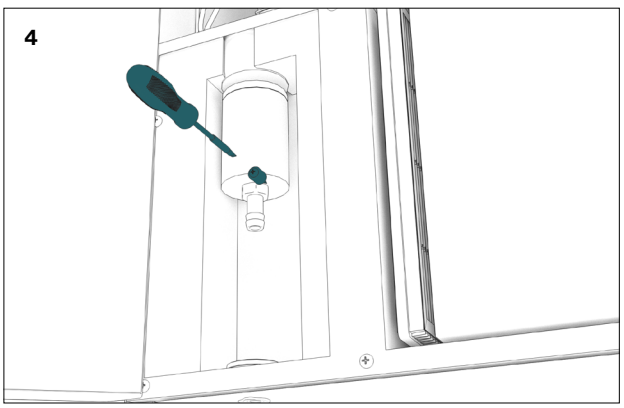
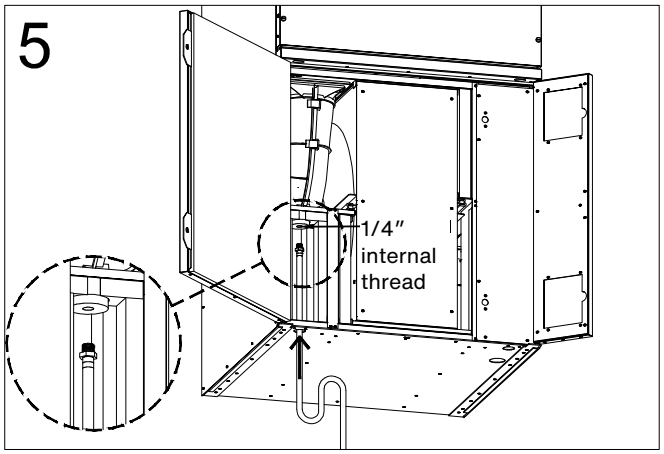
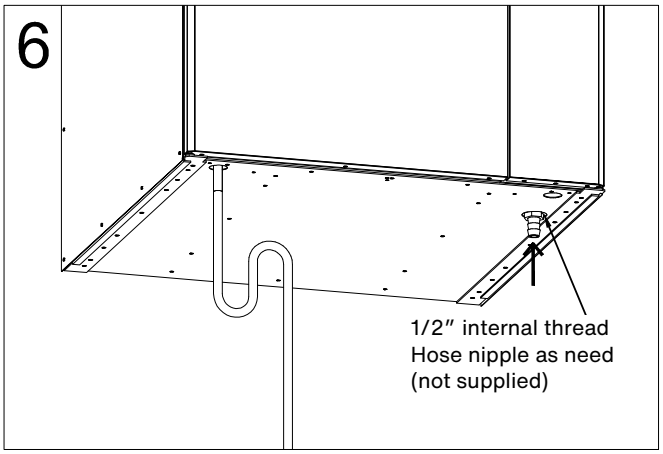
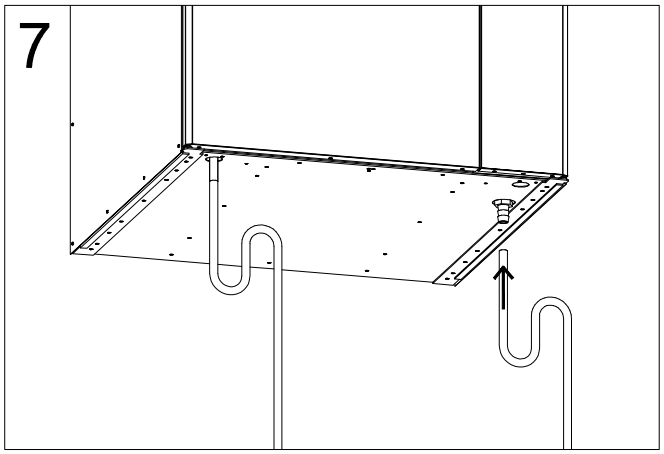



5
1/4″
internal
thread


6
1/2″ internal thread
Hose nipple as need
(not supplied)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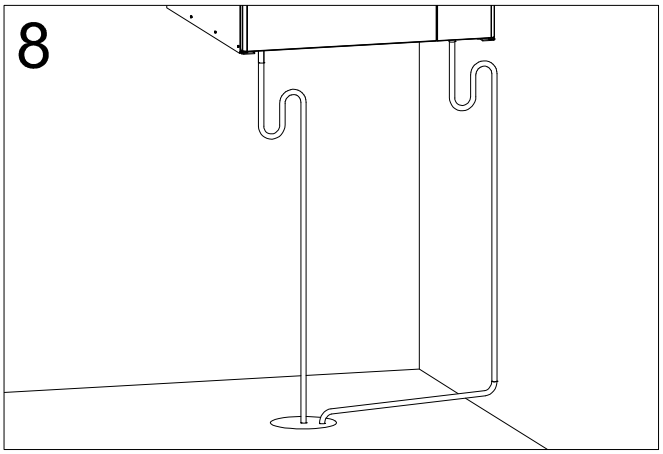
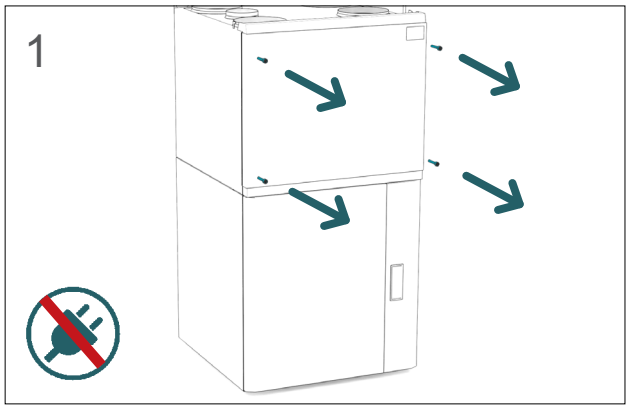
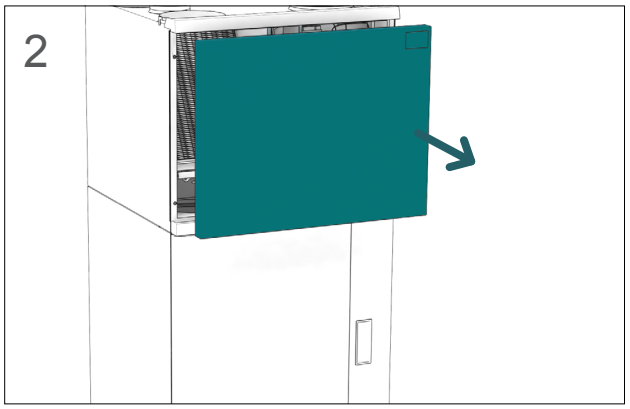
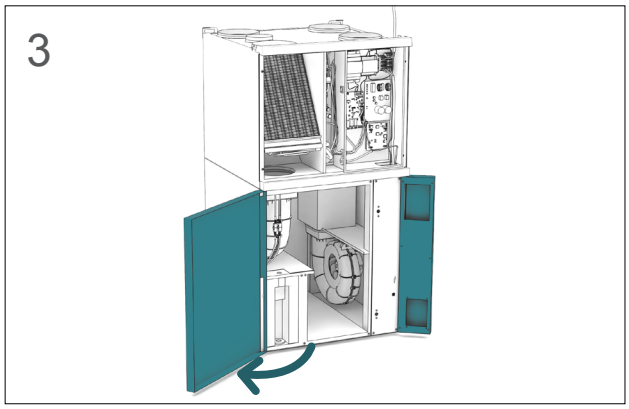

8

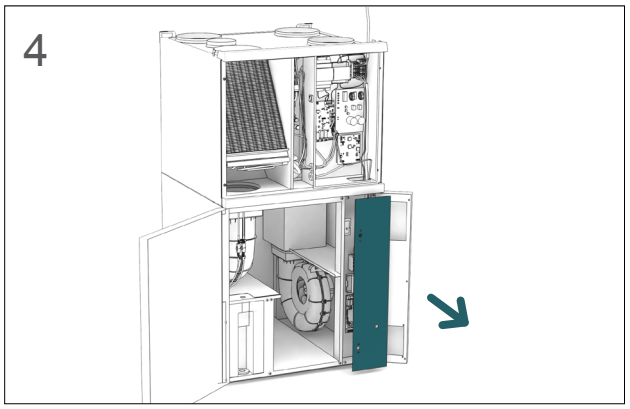
10.1. Installing the eAir control panel

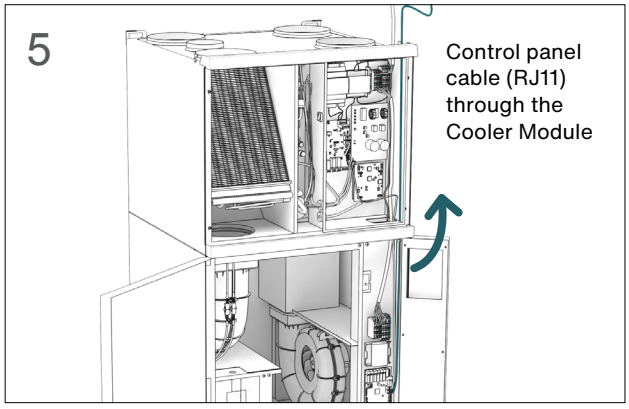
The eAir control panel (See section “Control system and eAir control panel” in the Svea eAir Installation instructions) is installed on a mounting box, or installed with a surface installation box (optional extra).

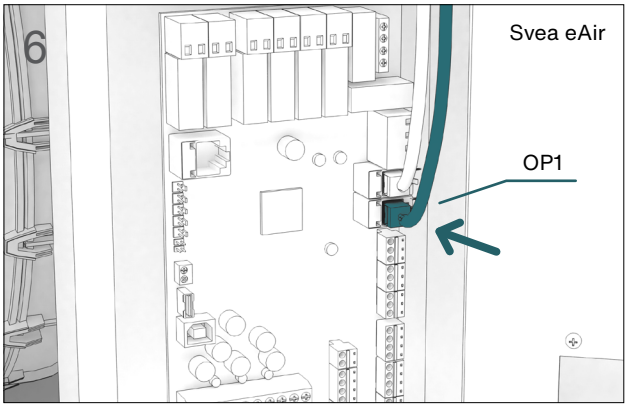


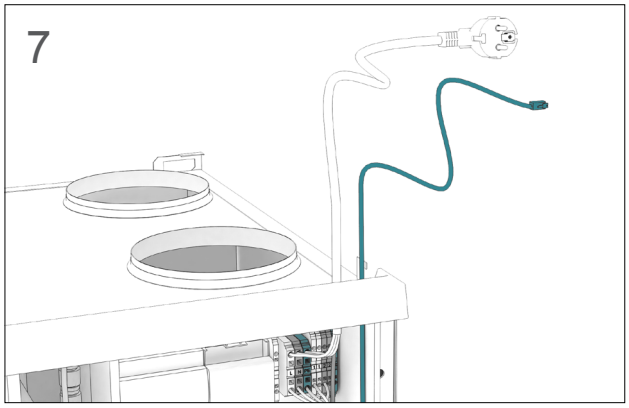


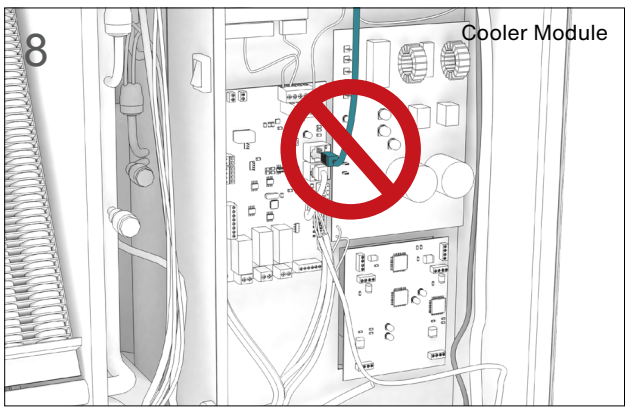


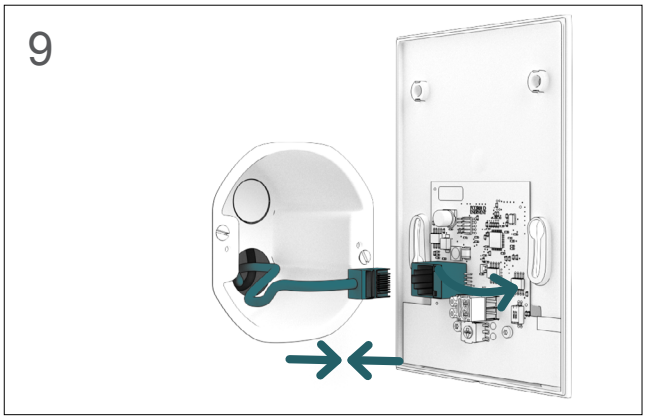


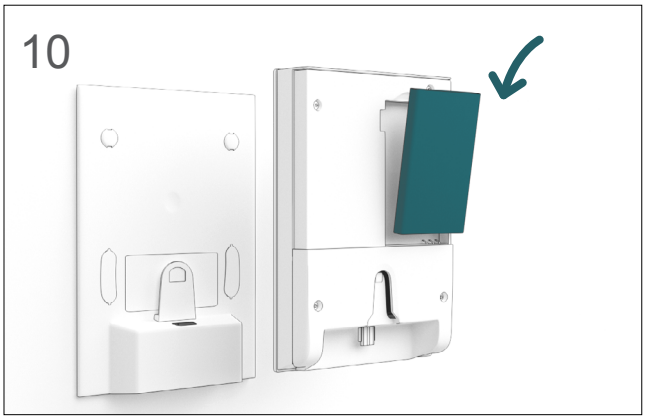


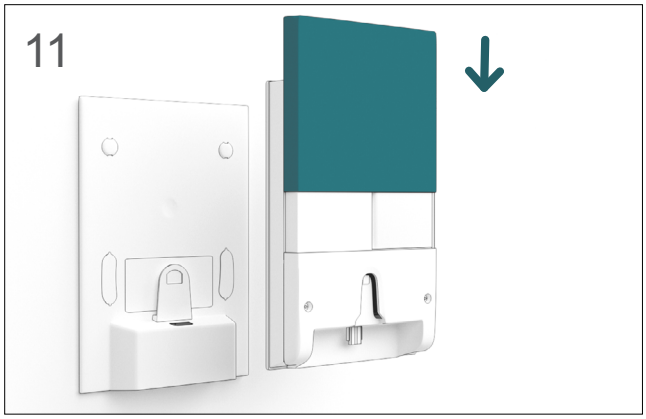


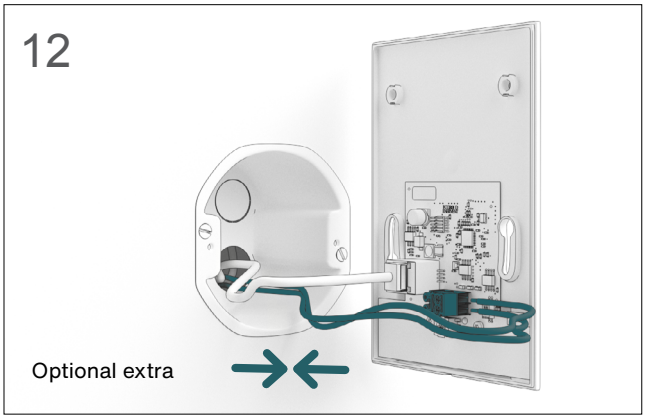


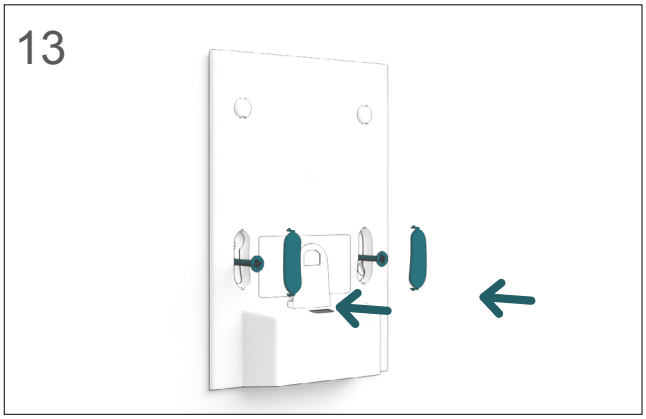












Only one eAir operating panel can be used with the Svea Cooler unit!

11. Commisioning

During commissioning the fan speed settings for the “minimum fan speed” setting when the compressor is operating, must be set to achieve at least minimum allowed airflow when the heat pump is cooling the supply air (see technical specifications).
If normal home mode airflow is greater than the specified minimum airflow during cooling,
the “minimum fan speed” setting is preferably set to the same values as in the “home mode setting”.

12. EU Declaration of conformity

EU DECLARATION OF CONFORMITY

We declare that our products follows the provisions of low voltage directive LVD 2014/35/EU, electromagnetic compatibility directive EMC 2014/30/EU, pressure equipment directive 2014/68/EU, machine directive MD 2006/42/EC, radio equipment directive RED 2014/53/EU, ROHS II directive 2011/65/EU, battery directive 2013/56/EU and waste electrical and electronic equipment directive WEEE 2012/19/EU.

Manufacturer:	Enervent Zehnder Oy
Manufacturer´s contact:	Kipinätie 1, 06150 Porvoo, FINLAND, tel. +358 207 528 800 enervent@zehndergroup.com, www.enervent.com
Description of the product:	Ventilation unit with heat recovery
Trade name of the product:	Svea Cooler eAir E right

The products are in conformity with the following standards:

LVD	EN 60335-1:2012/A15:2021 EN 60335-2-40 EN 62233:2008/AC:2008
EMC	EN 61000-3-2:2014, EN 61000-3-3:2013 EN 61000-6-1:2007, EN 61000-6-3:2007/A1:2011/AC:2012
PED	EN 378-2 :2016
RED	EN 300 328 v2.2.2
MD	EN ISO 12100:2010
ROHS	EN IEC 63000:2018

The conformity of each manufactured product is taken care according to our quality descriptions.

Product is CE-marked year 2026.

Porvoo 2nd of January 2026

Enervent Zehnder Oy

Tom Palmgren
Technology manager

EU DECLARATION OF CONFORMITY

We declare that our product follows the provisions of low voltage directive LVD 2014/35/EU, electromagnetic compatibility directive EMC 2014/30/EU, pressure equipment directive PED 2014/68/EU, machine directive MD 2006/42/EC, ROHS II directive 2011/65/EU and waste electrical and electronic equipment directive WEEE 2012/19/EU.

Manufacturer:	Enervent Zehnder Oy
Manufacturer´s contact:	Kipinätie 1, 06150 Porvoo, FINLAND, tel. +358 207 528 800, fax +358 207 528 844 enervent@enervent.com, www.enervent.com
Description of the product:	Cooling module for ventilation unit
Trade name of the product:	Svea Cooler

The products are in conformity with the following standards:

LVD EN 60335-1:2012/A15:2021
EN 60335-2-40
EN 62233:2008/AC:2008

EMC EN 61000-3-2:2014 and EN 61000-3-3:2013
EN 61000-6-1:2007 and EN 61000-6-3:2007/A1:2011/AC:2012

PED EN 378-2 :2016

MD EN ISO 12100:2010

ROHS EN IEC 63000:2018

The conformity of each manufactured product is taken care off according to our quality descriptions.

Svea Cooler is part of the system and is intended to be used only together with ventilation unit Svea eAir E. Responsible for the final CE marking is the one who brings the device into working order.

Product is CE-marked year 2026.

Porvoo 3rd of March 2026

Enervent Zehnder Oy

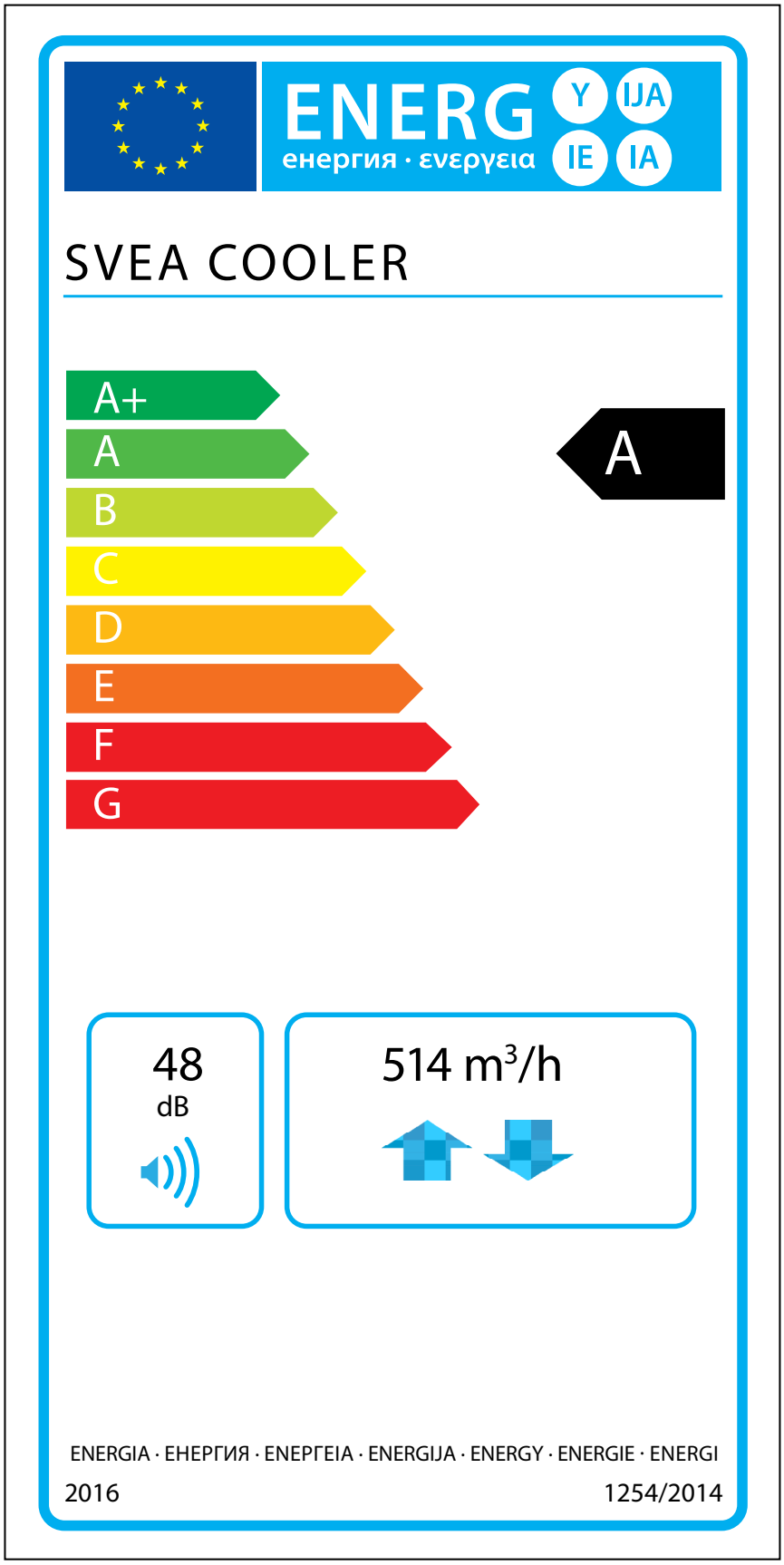
Tom Palmgren
Technology manager

13. Product information

Product information according to EU commision regulation no 1253/2014 and 1254/2014	
Supplier's name or trade mark	Enervent Zehnder
Supplier's model identifier	Svea Cooler
Specific energy consumption (sec) in kWh/(m2.A)	
▪ Cold climate	-84,6
▪ Average climate	-40,8
▪ Warm climate	-15,6
Declared typology in accordance with article 2 of this regulation	RVU
Type of drive installed or intended to be installed	Multi-speed drive
Type of heat recovery system	Regenerative
Thermal efficiency of heat recovery	84,8
Maximum flow rate in m^3/h	540
Electric power input of the fan drive, including any motor control equipment, at maximum flow rate (W)	146
Sound power level (L_{WA}), rounded to the nearest integer	48
Reference flow rate in m^3/s	0,105
Reference pressure difference in Pa	50
SPI in $W/(m^3/h)$	0,39
Control factor and control typology in accordance with the relevant definitions and classification in annex VIII, table 1	0,65
Declared maximum internal and external leakage rates (%) for bidirectional ventilation units	<4% / <0,8%
Position and description of visual filter warning for rvus intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	Filter warning on control panel. Instructions in user manual.
Internet address for disassembly instructions as referred to in point 3	https://doc.enervent.com/out/ out. ViewFolder.php?folderid=957
The annual electricity consumption (AEC) (in kWh electricity/a)	204
The annual heating saved (AHS) (in kWh primary energy/a) for each type of climate	
▪ Cold climate	8971
▪ Average climate	4586
▪ Warm climate	2074

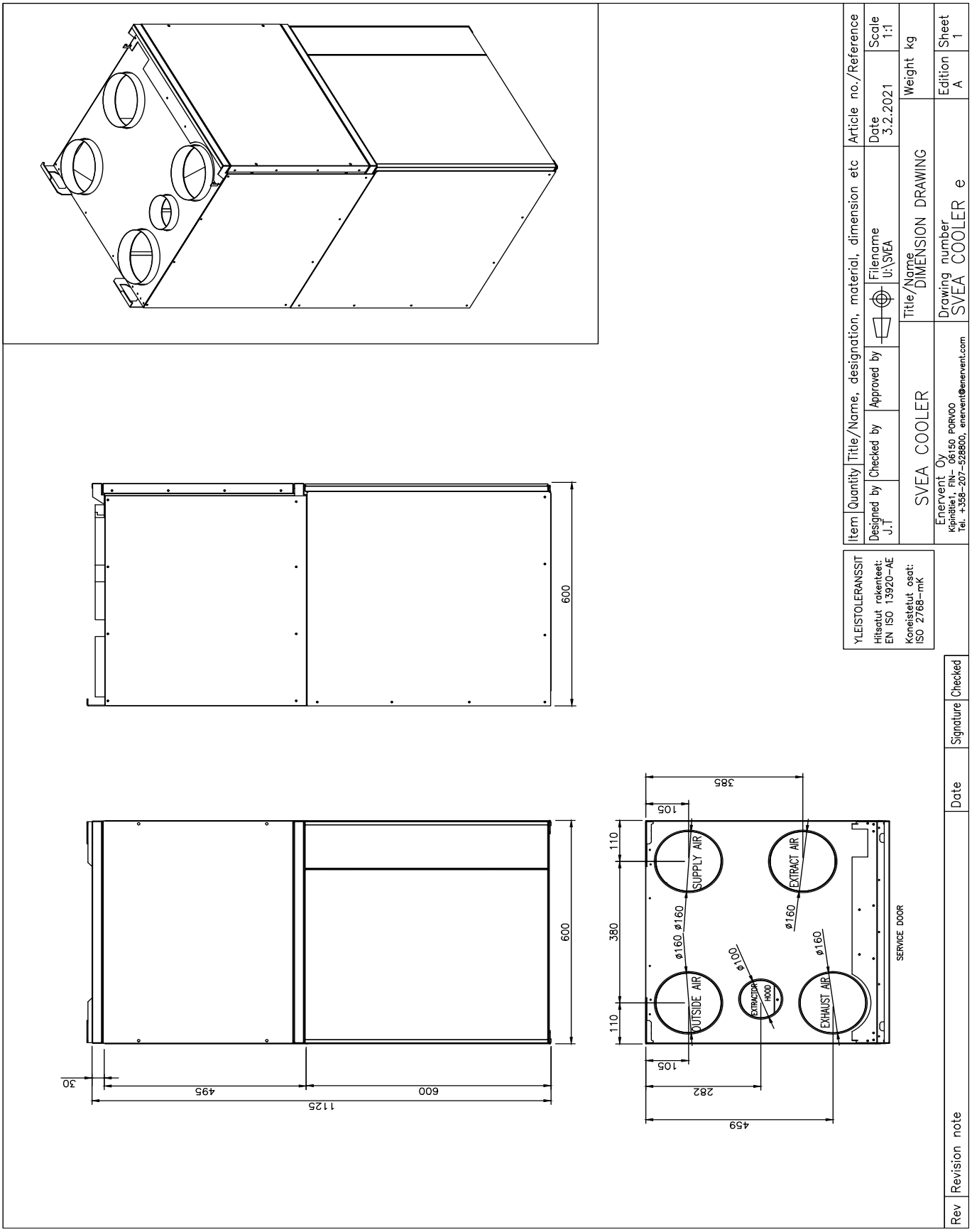
The information on the energy label for this product has been defined with local demand control. Local demand control means that the ventilation unit continuously regulates the fan speed(s) and flow rates based on more than one sensor. Please remember to connect all local sensors (some sold as extra equipment) in order to achieve the declared energy class.

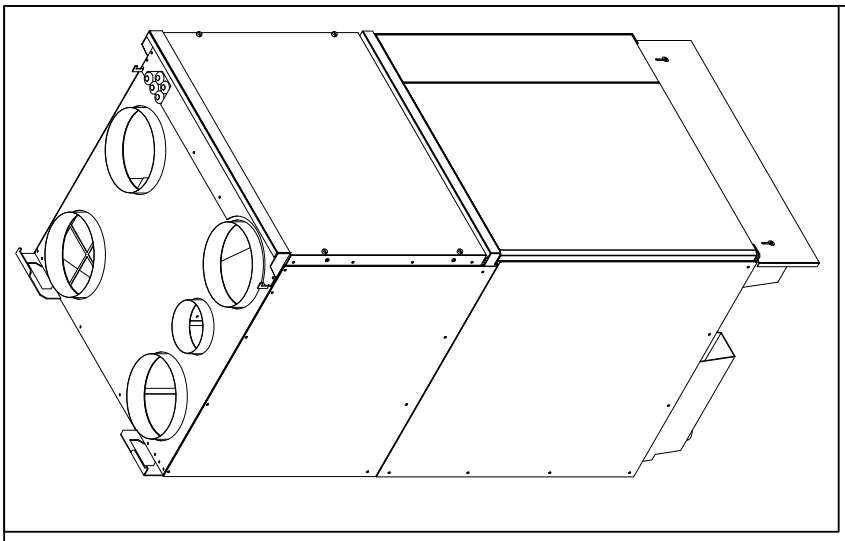
14. Energy class

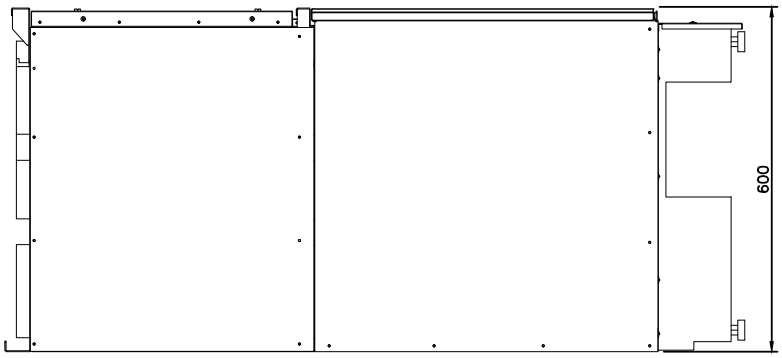


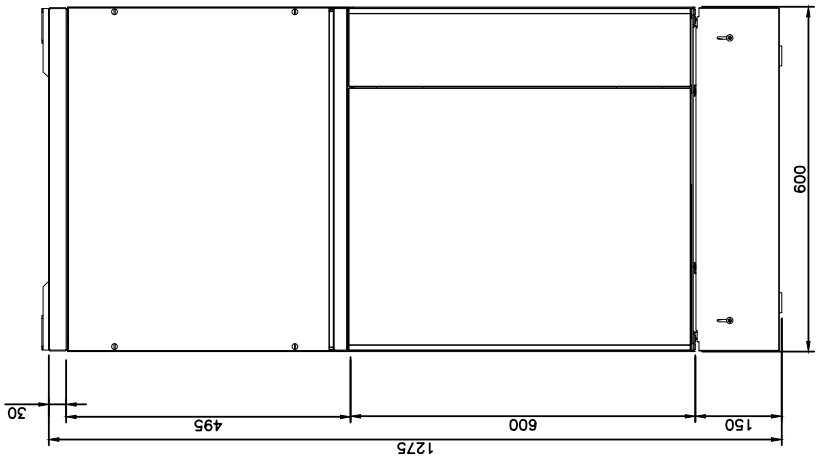
15. Appendices

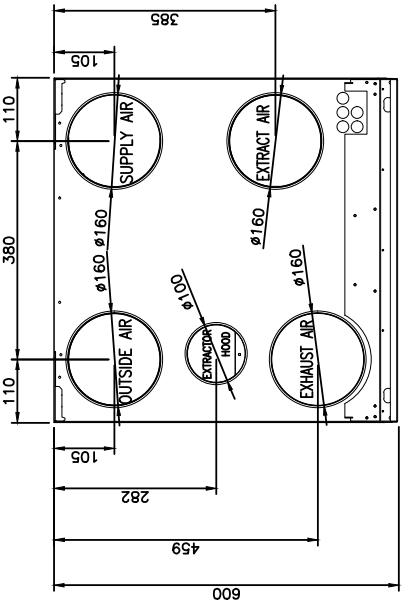
15.1. Dimensional drawings











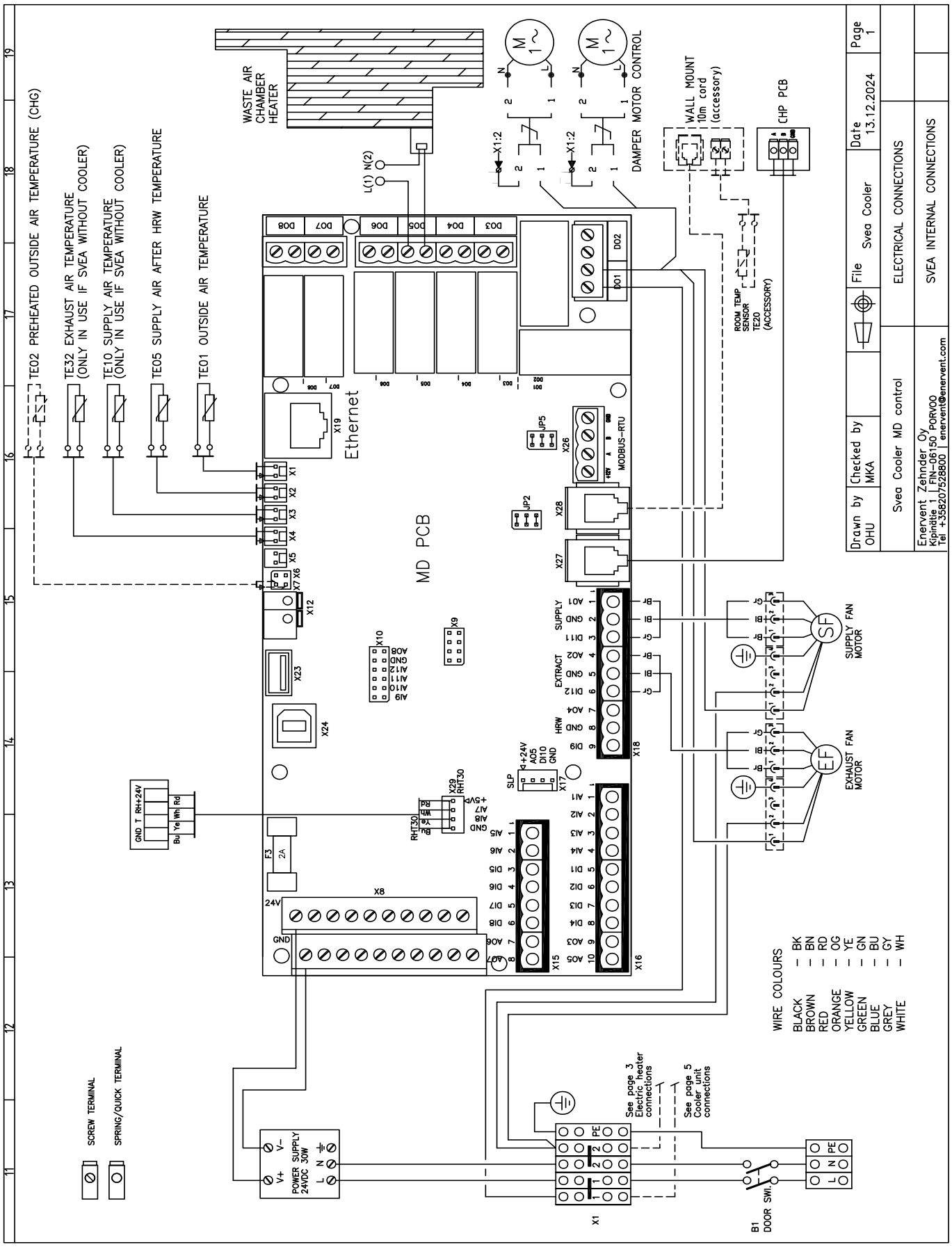
Item	Quantity	Title/Name, designation, material, dimension etc			Article no./Reference
Designed by J.T	Checked by	Approved by	Filename U:\SVEA	Date 13.5.2026	Scale 1:1
		SVEA COOLER	Title/Name DIMENSION DRAWING		Weight kg
		Enervent Zehnder Oy, enervent@zehndergroup.com Tel +358 207 528 800, www.enervent.com Kipinätie 1, FIN-06150, Porvoo	Drawing number SVEA COOLER		Edition B / Sheet 1

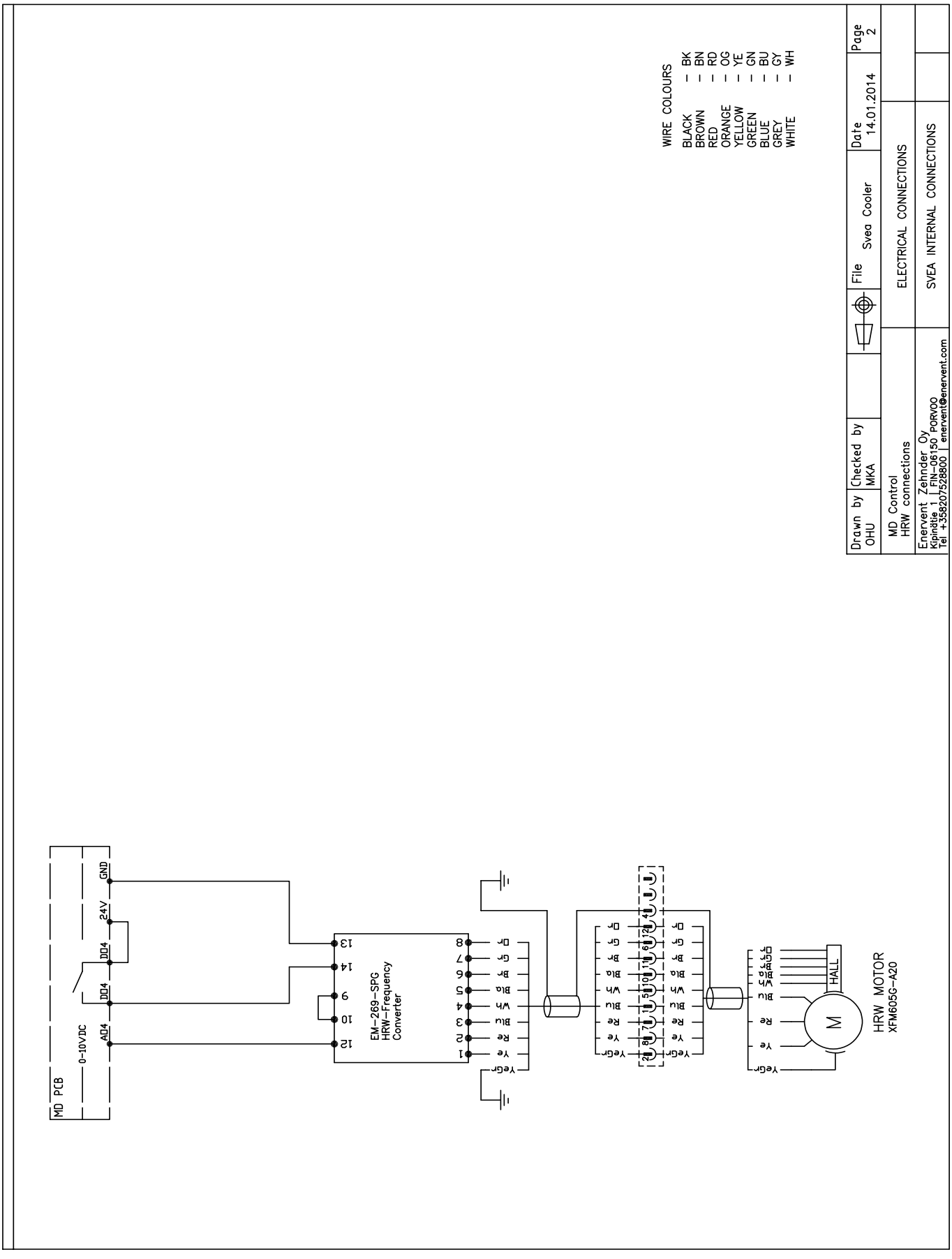
YLEISTOLERANSSIT
Hitsatut rakenteet: EN ISO 13920-AE
Koneistetut osat: ISO 2768-MK

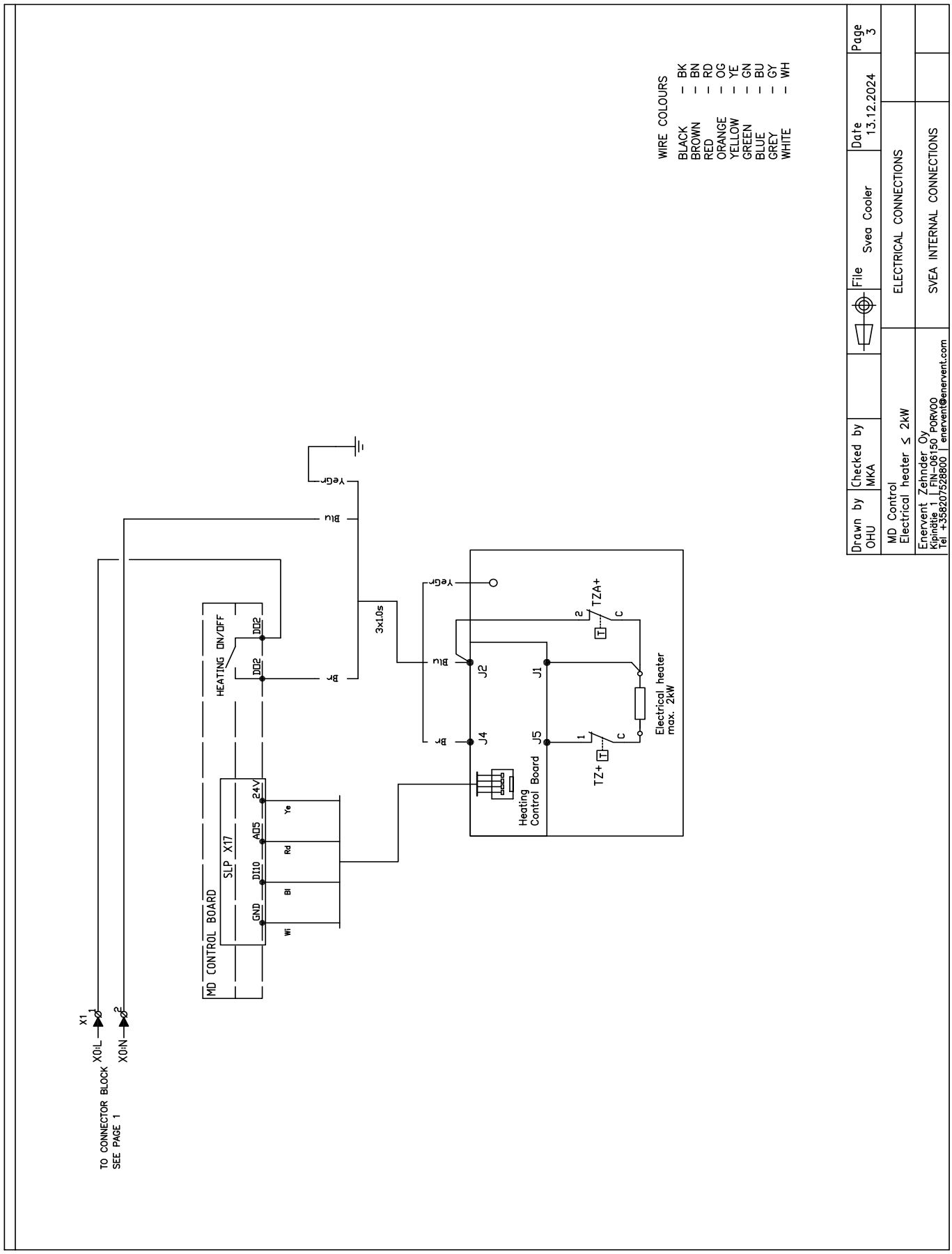
Rev	Revision note	Date	Signature	Checked

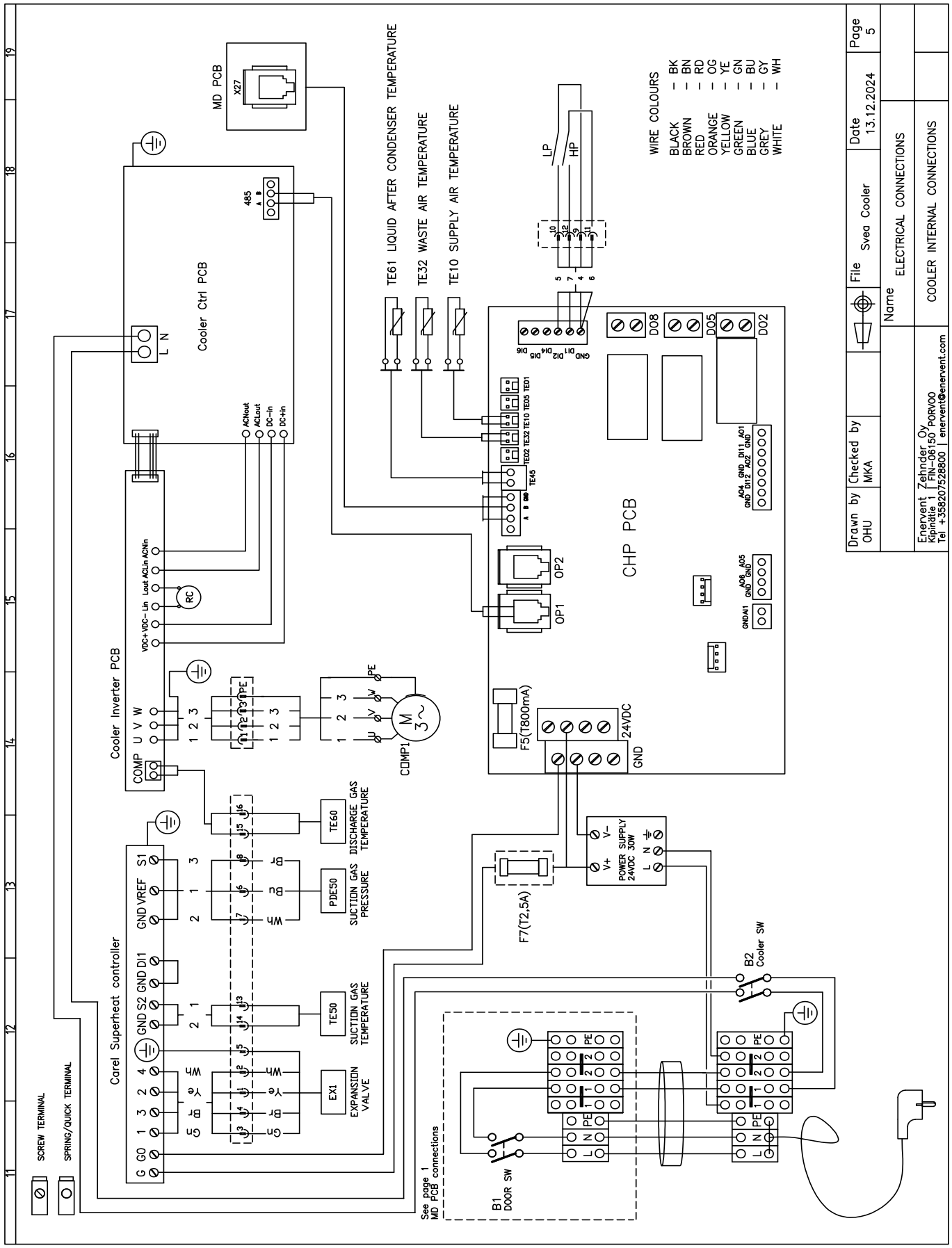
15.2. Electrical diagrams

15.2.1. Internal connections

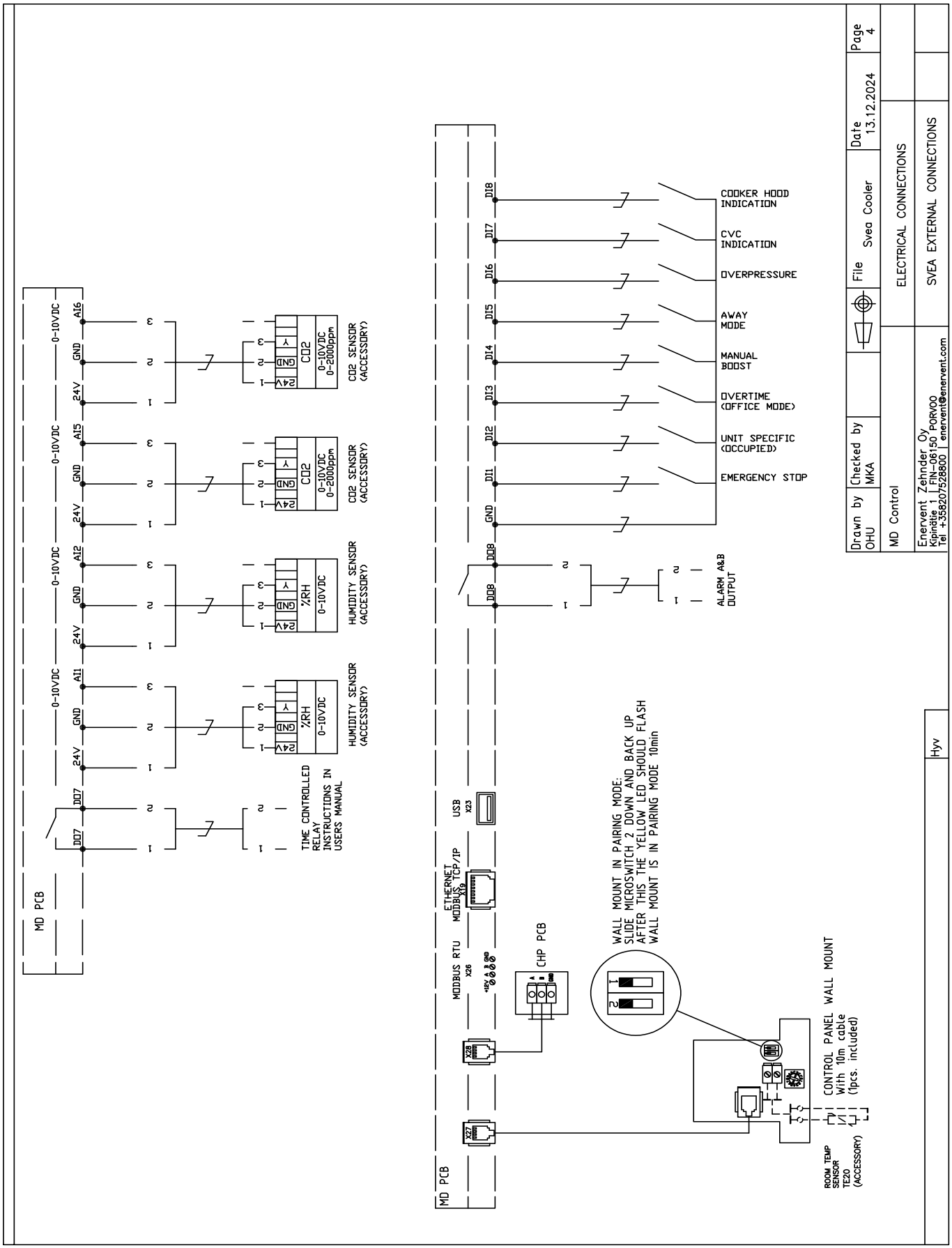



WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
MD PCB
0-10VDC
GND
24V
DO4
DO4
AO4
EM-269-SPG
HRW-Frequency
Converter
HALL
M
HRW MOTOR
XFM605G-A20
Drawn by OHU
Checked by MKA
File
Svea Cooler
Date 14.01.2014
Page 2
MD Control
HRW connections
ELECTRICAL CONNECTIONS
SVEA INTERNAL CONNECTIONS
Enervent Zehnder Oy
Kipinätie 1 | FIN-06150 PORVOO
Tel +358207528800 | enervent@enervent.com

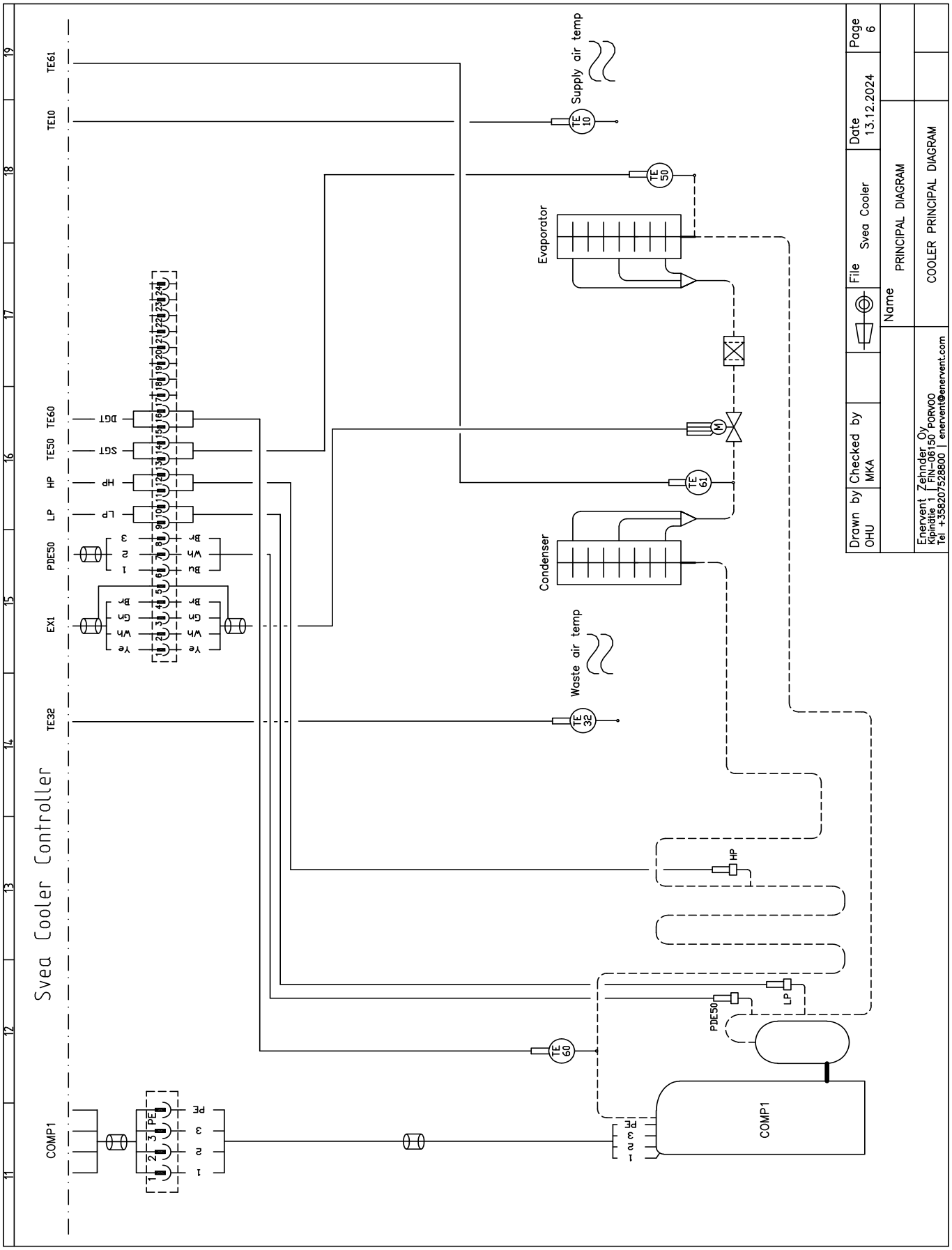

WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
Drawn by OHU
Checked by MKA
File
Svea Cooler
Date 13.12.2024
Page 3
MD Control
Electrical heater ≤ 2kW
ELECTRICAL CONNECTIONS
Enervent Zehnder Oy
Kipinätie 1 | FIN-06150 PORVOO
Tel +358207528800 | enervent@enervent.com
SVEA INTERNAL CONNECTIONS
TO CONNECTOR BLOCK
SEE PAGE 1
X0/L
X0/N
X1
MD CONTROL BOARD
SLP X17
24V
AO5
DI10
GND
HEATING ON/OFF
DO2
DO2
3x1.0s
Heating Control Board
J2
J1
J4
J5
TZA+
TZ+
Electrical heater max. 2kW


SCREW TERMINAL
SPRING/QUICK TERMINAL
MD PCB
X27
Cooler Ctrl PCB
485
L N
ACNout
ACLout
DC-in
DC+in
TE61 LIQUID AFTER CONDENSER TEMPERATURE
TE32 WASTE AIR TEMPERATURE
TE10 SUPPLY AIR TEMPERATURE
LP
HP
WIRE COLOURS
BLACK – BK
BROWN – BN
RED – RD
ORANGE – OG
YELLOW – YE
GREEN – GN
BLUE – BU
GREY – GY
WHITE – WH
CHP PCB
D08
D05
D02
OP1
OP2
F5(T800mA)
24VDC
GND
Cooler Inverter PCB
COMP U V W
VDC+ VDC- Lin Lout ACLin ACNin
RC
COMP1
Carel Superheat controller
G G0 1 2 3 4 S1 VREF GND S2 GND DI1
TE60 DISCHARGE GAS TEMPERATURE
PDE50 SUCTION GAS PRESSURE
TE50 SUCTION GAS TEMPERATURE
EX1 EXPANSION VALVE
F7(T2,5A)
POWER SUPPLY 24VDC 30W
V+ V- L N
B2 Cooler SW
B1 DOOR SW
See page 1 MD PCB connections
Drawn by OHU
Checked by MKA
File Svea Cooler
Date 13.12.2024
Page 5
Name ELECTRICAL CONNECTIONS
COOLER INTERNAL CONNECTIONS
Enervent Zehnder Oy
Kipinätie 1 | FIN-06150 PORVOO
Tel +358207528800 | enervent@enervent.com

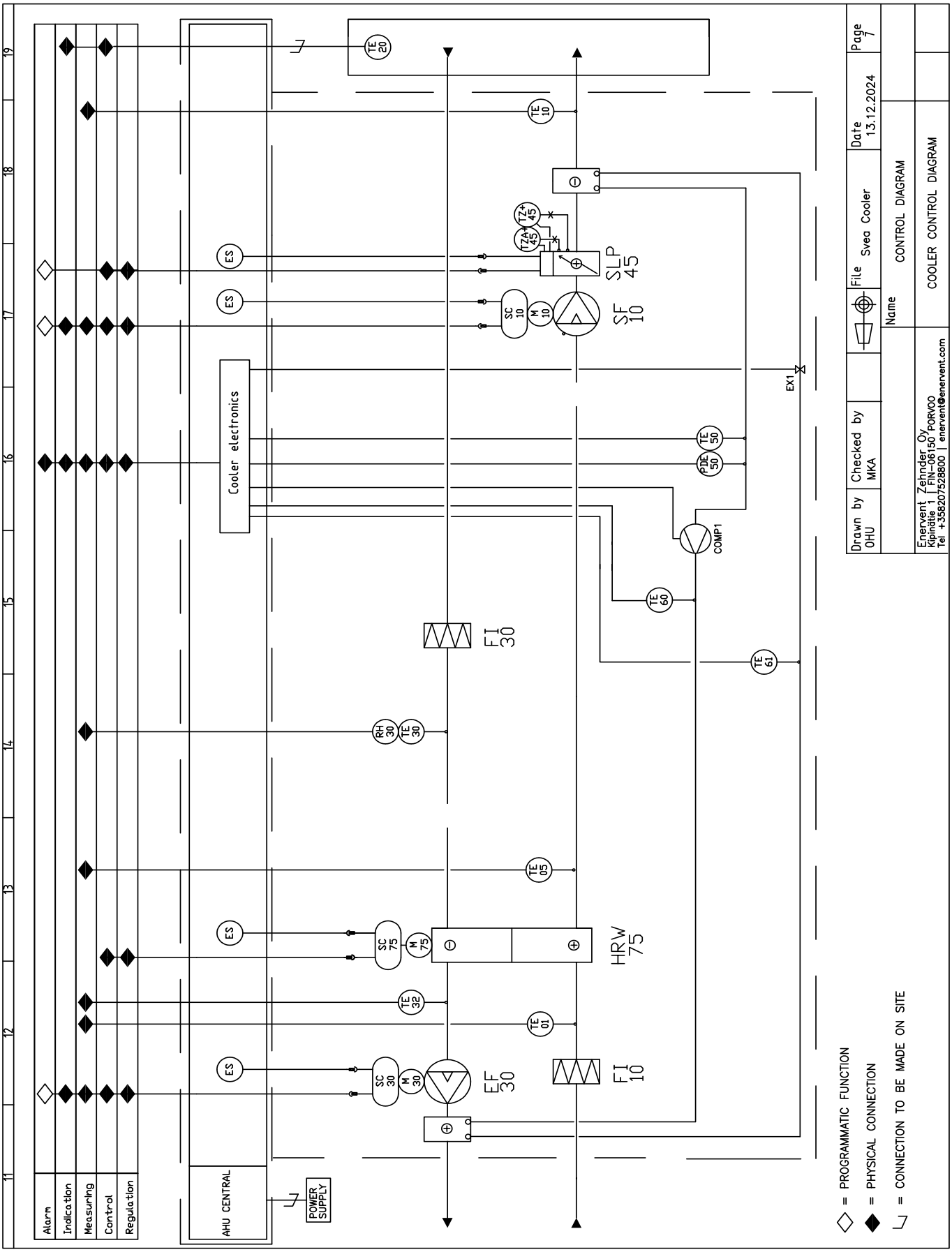
15.2.2. External connections



15.2.3. Principal diagram



15.2.4. Control diagram



15.3. Sensors

Name	Definition
TE01	Outside air temperature
TE02	Preheated outside air temperature
TE05	Supply air after HRW temperature
TE10	Supply air temperature
TE20	Room temperature
TE30	Extract air temperature
TE32	Exhaust air temperature
TE50	Suction gas temperature
TE60	Hot gas temperature
TE61	Liquid after condenser temperature
PDE50	Suction gas pressure
EX1	Expansion valve
LP	Low pressure switch
HP	High pressure switch
COMP1	Compressor
RC	Reactor
RH30	Extract air %RH
SF10	Supply air fan
EF30	Extract air fan
FI10	Outside air filter
FI30	Extract air filter
HRW75	Heat exchanger
SLP45	Electrical supply air heater

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enervent@zehndergroup.com ▪ www.enervent.com