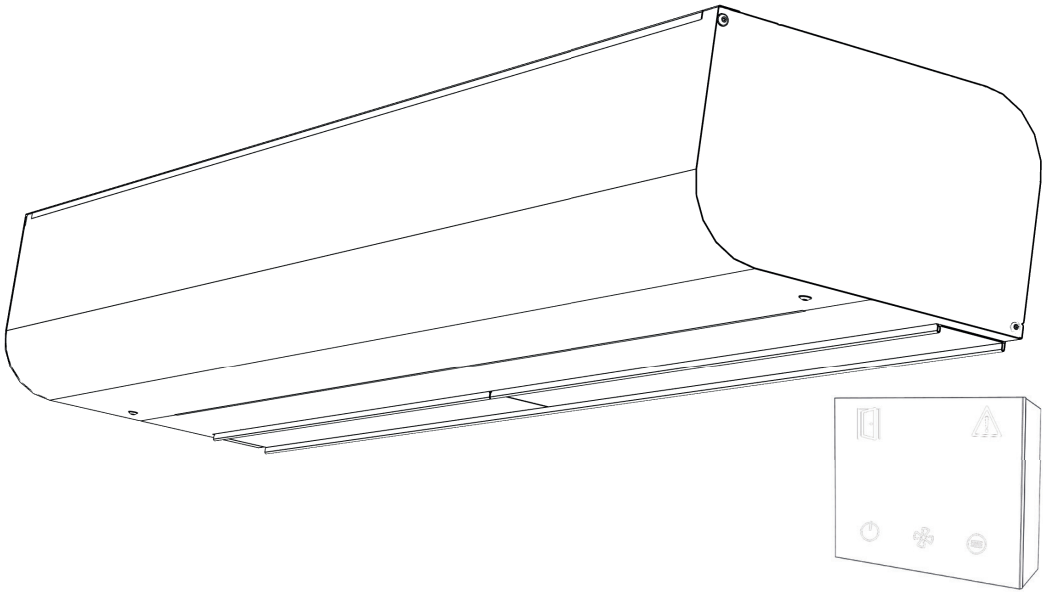
PARTNER
IN VENTILATION
2VV.CZ

EN

ESSENSSE NEO AC / EC

PRIME



INSTALLATION

VCES4 B-xxx-xx AC/EC

CE

06.12.2023 v-01

1. BEFORE YOU BEGIN

SYMBOL	MEANING
ATTENTION!	Warning or notice
READ CAREFULLY!	Important instructions
YOU WILL NEED	Practical tips and information
TECHNICAL INFORMATION	Detailed technical information
	Reference to another point/section of the manual

Before installing, read carefully the section **Safe use of the air curtains**, where you will find all the instructions for the safe and proper use of the product.

This manual includes important instructions for the appropriate installation of the air curtains. Before installing, read carefully all the following instructions and observe them. The manufacturer reserves the right to change, including the technical documentation, without prior notice. Keep the manual for future use. The instructions herein are part of the product

Declaration of conformity
Details can be found at www.2vv.cz/en/

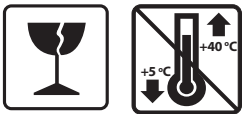
2. UNPACKING

2.1 CONTROL DE DELIVERY

PLEASE NOTE

Check the product for damages immediately after delivery. In case of damage to the packaging, contact the carrier. Claims not filed in due time will be disregarded.

- Check that it corresponds to the type of product ordered. In case of discrepancy, do not unpack the product and contact the vendor.
- After unpacking, check that the product and all the other components are in good order. In case of doubt, contact the vendor.
- Do not install a damaged unit!
- If you will not unpack the product immediately after delivery, store it indoors, in a dry place with ambient temperatures between **+5 °C and +40 °C.**



	All the packaging material is environmentally friendly and can be reused or recycled. Contribute actively to the protection of the environment and ensure the proper disposal or recycling of the packaging materials.	

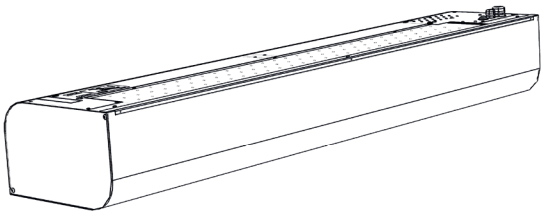
PLEASE NOTE

- If the unit was transported in temperatures lower than 0°C, after unpacking, leave it in operational conditions for at least two hours without activating in order to compensate the inner temperature.

2.2 CONTENTS

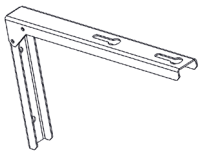
MASTER

1x



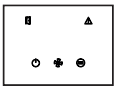
1x

2x



4x  M8

1x

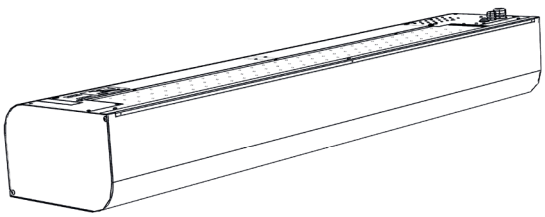


1x

 - UTP cable (20m)

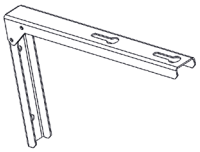
SLAVE

1x



1x

2x



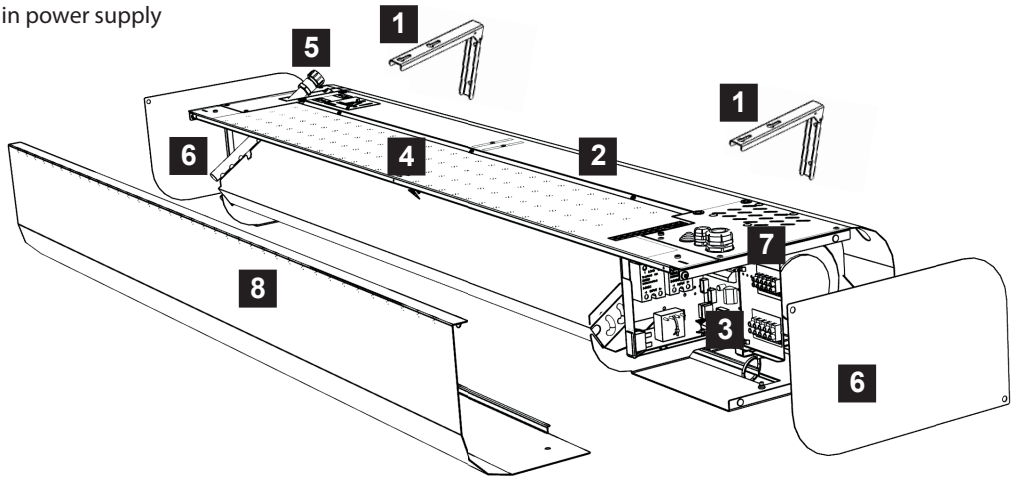
4x  M8

1x

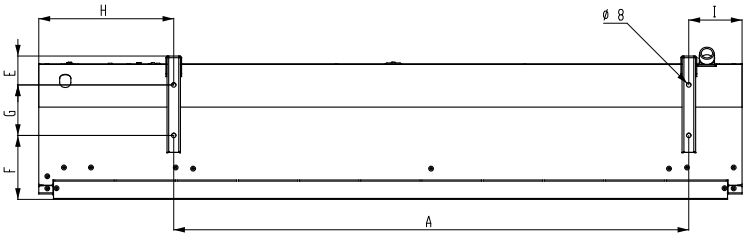
 - UTP cable (20m)

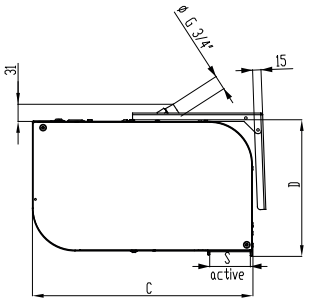
3. MAIN COMPONENTS

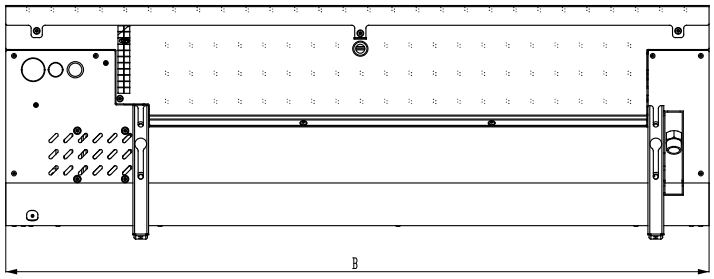
1. Mounting brackets (2pcs)
2. Curtain body
3. Area to connect the control panel
4. Suction cover
5. Connection of water exchanger (only water model)
6. Side cover
7. Grommets for connecting the main power supply
8. Front cover



4. DIMENSIONS







	A	B	C	D	E	F	G	H	I
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
VCES4 B 100	916	1252	392	244	51	111	90	240	95
VCES4 B 150	1325	1660	392	244	51	111	90	240	95
VCES4 B 200	1825	2160	392	244	51	111	90	240	95
VCES4 B 250	2235	2570	392	244	51	111	90	240	95

5. TECHNICAL PARAMETERS

AC MOTOR

Type	Heater power output [kW] (*LPHW 90/70°C)	Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]
VCES4 B 100-E0 AC	4.7	4.90	400 / 7.6	230 / 0.6	10.4	50	24.4
VCES4 B 150-E0 AC	7.5	7.70	400 / 11.4	230 / 0.9	10.2		30.4
VCES4 B 200-E0 AC	9.5	9.80	400 / 15.4	230 / 1.4	9.4		38.4
VCES4 B 250-E0 AC	12.0	12.40	400 / 19.0	230 / 1.4	10.2		45.4
VCES4 B 100-E1 AC	6.3	6.50	400 / 14.0	230 / 0.6	13.9		24.4
VCES4 B 150-E1 AC	10.0	10.20	400 / 20.5	230 / 0.9	13.6		30.4
VCES4 B 200-E1 AC	12.6	12.90	400 / 26.5	230 / 1.4	12.5		38.4
VCES4 B 250-E1 AC	16.0	16.40	400 / 24.0	230 / 1.4	13.6		45.4
VCES4 B 100-E2 AC	9.5	9.70	400 / 14.2	230 / 0.6	21.0		24.4
VCES4 B 150-E2 AC	15.0	15.20	400 / 21.6	230 / 0.9	20.3		30.4
VCES4 B 200-E2 AC	19.0	19.30	400 / 28.8	230 / 1.4	18.9		38.4
VCES4 B 250-E2 AC	24.5	24.90	400 / 36.8	230 / 1.4	20.9		45.4
VCES4 B 100-V2 AC	16.0	0.20	230 / 0.6	230 / 0.6	36.6		25.6
VCES4 B 150-V2 AC	23.6	0.20	230 / 0.9	230 / 0.9	35.2		32.1
VCES4 B 200-V2 AC	34.0	0.30	230 / 1.4	230 / 1.4	34.4		41.6
VCES4 B 250-V2 AC	42.9	0.40	230 / 1.4	230 / 1.4	34.5		48.6
VCES4 B 100-S0 AC	-	0.10	230 / 0.6	230 / 0.6	-		22.6
VCES4 B 150-S0 AC	-	0.20	230 / 0.9	230 / 0.9	-		28.6
VCES4 B 200-S0 AC	-	0.30	230 / 1.4	230 / 1.4	-		36.6
VCES4 B 250-S0 AC	-	0.40	230/ 1.4	230/ 1.4	-		42.6

*Intake air temperature +18 °C, at maximum heating level and highest fan speed.

EC MOTOR

Type	Heater power output [kW] (*LPHW 90/70°C)	Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]
VCES4 B 100-E0 EC	4.7	5.10	400 / 9.6	230 / 2.8	7.0	50/60	23.2
VCES4 B 150-E0 EC	7.5	7.90	400 / 13.5	230 / 3.0	8.3		29.6
VCES4 B 200-E0 EC	9.5	9.94	400 / 17.2	230 / 3.4	7.3		34.5
VCES4 B 250-E0 EC	12	12.44	400 / 19.0	230 / 3.5	7.5		41.5
VCES4 B 100-E1 EC	6.3	6.70	400 / 14.0	230 / 2.8	9.4		23.2
VCES4 B 150-E1 EC	10	10.40	400 / 20.5	230 / 3.0	11.0		29.6
VCES4 B 200-E1 EC	12.6	13.04	400 / 26.5	230 / 3.4	9.6		34.5
VCES4 B 250-E1 EC	16	16.44	400 / 24.0	230 / 3.5	9.9		41.5
VCES4 B 100-E2 EC	9.5	9.90	400 / 16.1	230 / 2.8	14.2		23.2
VCES4 B 150-E2 EC	15	15.40	400 / 23.7	230 / 3.0	16.6		29.6
VCES4 B 200-E2 EC	19	19.44	400 / 30.8	230 / 3.4	14.5		34.5
VCES4 B 250-E2 EC	24.5	24.94	400 / 38.5	230 / 3.5	15.2		41.5
VCES4 B 100-V2 EC	18.7	0.30	230 / 2.4	230 / 2.4	31.8		24.4
VCES4 B 150-V2 EC	26.3	0.40	230 / 3.0	230 / 3.0	32.0		31.3
VCES4 B 200-V2 EC	37.4	0.44	230 / 3.4	230 / 3.4	31.4		37.7
VCES4 B 250-V2 EC	45.8	0.44	230 / 3.4	230 / 3.4	32.5		44.7
VCES4 B 100-S0 EC	-	0.40	230 / 2.8	230 / 2.8	-		21.4
VCES4 B 150-S0 EC	-	0.40	230 / 3.0	230 / 3.0	-		27.8
VCES4 B 200-S0 EC	-	0.44	230 / 3.4	230 / 3.4	-		32.7
VCES4 B 250-S0 EC	-	0.44	230 / 3.5	230 / 3.5	-		38.7

*Intake air temperature +18 °C, at maximum heating level and highest fan speed.

The other technical parameters can be found in the corresponding technical sheet of the product

6. INSTALLATION

6.1 OPERATIONAL CONDITIONS:

The air curtain is designed to be used in an indoor, dry environment, with ambient temperatures between **5°C to +40°C**, a maximum relative humidity of 80%, and to transport air free of coarse dust, grease, chemical fumes and other contamination. The electrical protection is IP 20 (against particles larger than 12.5 mm, not protected against water).

Curtains with electric heater are fitted with an operational thermostat with automatic reset (located on each heater) and an emergency thermostat with manual reset.

The water exchangers are designed for a maximum water temperature of +100°C and maximum pressure of 1.6 MPa.

6.2 INSTALLATION CONDITIONS

The installation and assembly of the unit may be carried out only by a suitably qualified person who has the adequate tools!

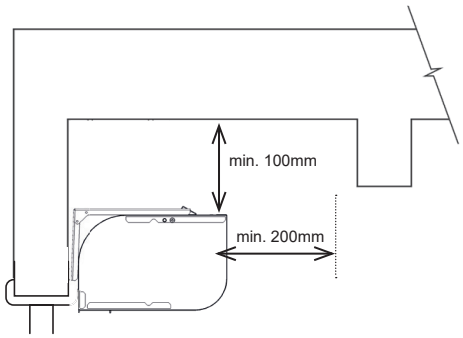
2 mounting brackets and 4 bolts are supplied with the product as standard.

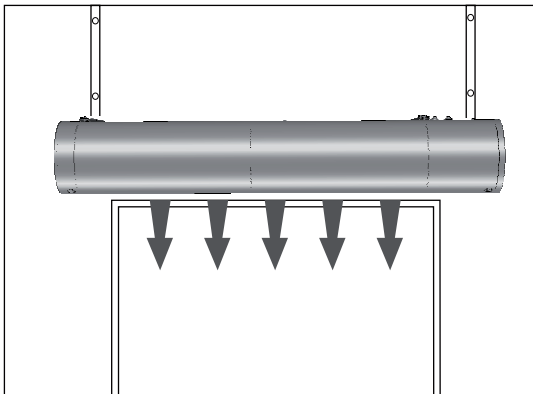
If the unit is to be mounted on threaded rods, they have to be ordered separately. The following rules should be observed for the proper function of the unit.

PLEASE NOTE

- minimum clearances must be observed (see fig. clearances) with respect to the flammability of materials.
- the clearances with respect to the flammability of materials are determined by the architect with regards to the regulations applicable at the place of installation
- the unit may be installed only in horizontal position
- there must be at least 200 mm of free space in front of the suction cover for the proper functioning of the unit
- the exhaust should be located as near as possible to the door or the curtain opening
- the curtain should extend beyond both sides of the opening by at least 100 mm
- if the curtain is to be installed above a door, place it as near as possible to the upper border of the door. See that the intake and exhaust are not blocked and that the air can flow freely, see fig.

6.3 NECESSARY SPACING





If there is a window above the door or another material preventing the installation on the brackets, the unit may be hanged from the ceiling with threaded rods, directly onto dowels (see below).

Installation with mounting brackets

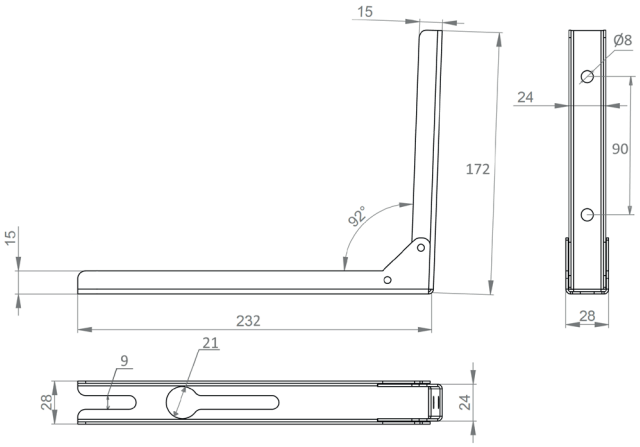
YOU WILL NEED

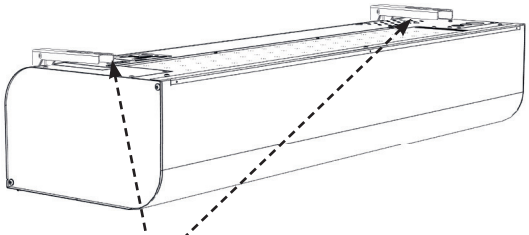
4x dowels (not included)
4x bolts (not included)

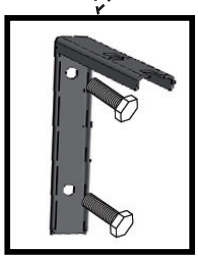
Measure the holes on the wall according to the dimension chart (see “Dimensions”) (observe the installation rules) Do not forget to choose whether the unit will be installed according to A or B and to set the height of the opening according to that! Insert back in the opening in the curtain (and only partially in the curtain) the screws that held the brackets and hang the curtain from them. **Check that the curtain is fastened properly to prevent it falling**

6. INSTALLATION

Dimensions of the bracket



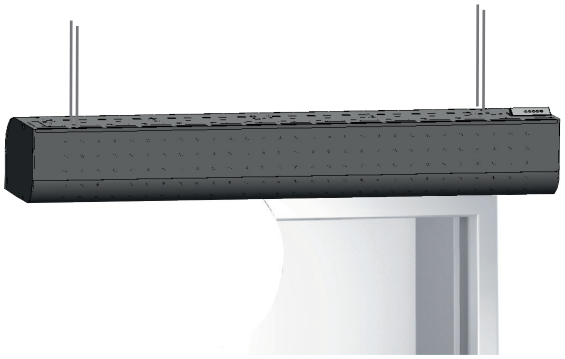




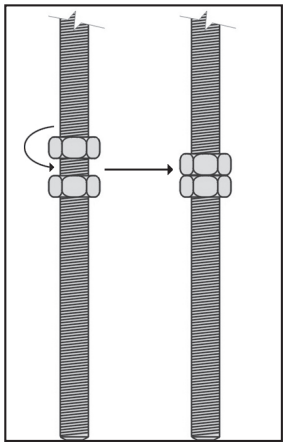
Installation with threaded rods

YOU WILL NEED

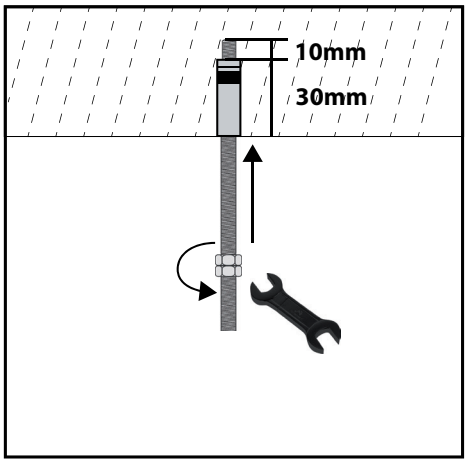
4 8mm anchors (not included)
4 M8 threaded rods (not included)
8 M8 nuts (not included)



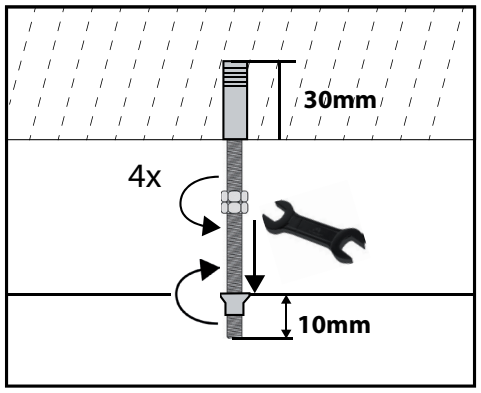
Before installing, check that the ceiling can bear the weight of the unit. Install according to the following figures.



1. Fastening to the ceiling



2. Fastening to the curtain

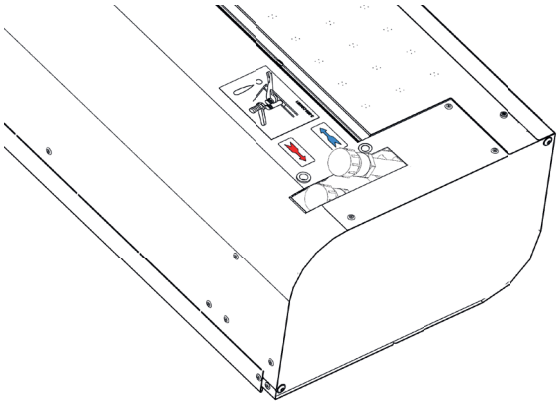


6. INSTALLATION

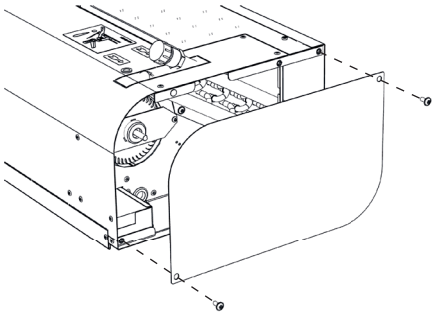
6.4 Connecting the water heater

(only for the curtain with LPHW)

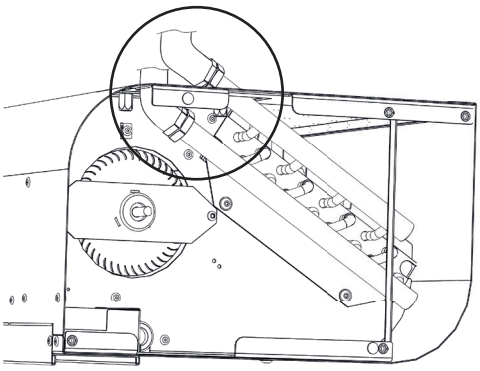
- flexible hoses are recommended to connect the water heater
- the connection and pressure tests of the heater must be carried out by a person with qualifications in plumbing and in compliance with the applicable regulations
- the diameters of the pipes to connect the water heater are listed in the section DIMENSIONS
- the heater is designed for water with a maximum pressure of 1.6 MPa and a maximum temperature of +100°C.



Open the side cover.



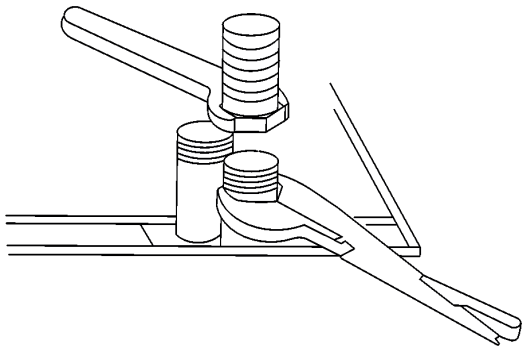
Connection of flexible hose.



PLEASE NOTE

- connect the pipes in the countercurrent connection, the hot water connection and the return heating water are shown in the figure above
- it is advisable to install a shut-off valve at the inlet and the outlet of the heater to interrupt the water supply

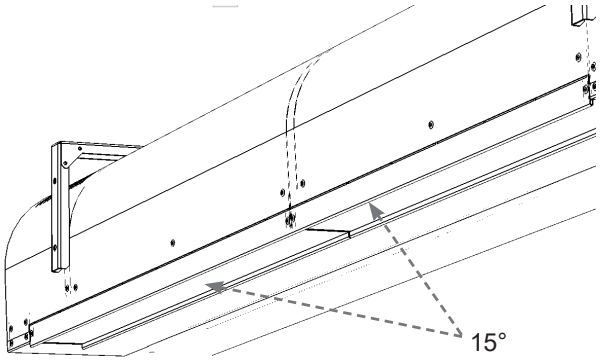
⚠ When connecting the heater, hold the outlet with pliers to prevent damages (see figure)



6.5 Setting the direction of the exhaust air

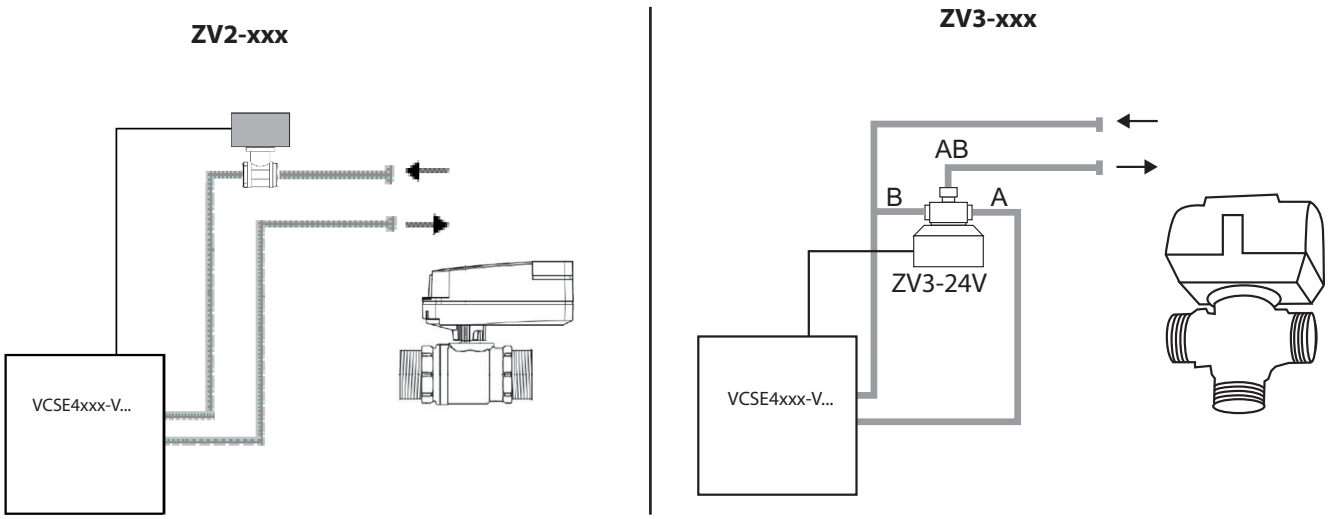
⚠ ***CAUTION!***

Deflect the exhaust in the desired direction during the installation of the unit The exhausts of the Essensse air curtain can blow air at a maximum angle of 15°

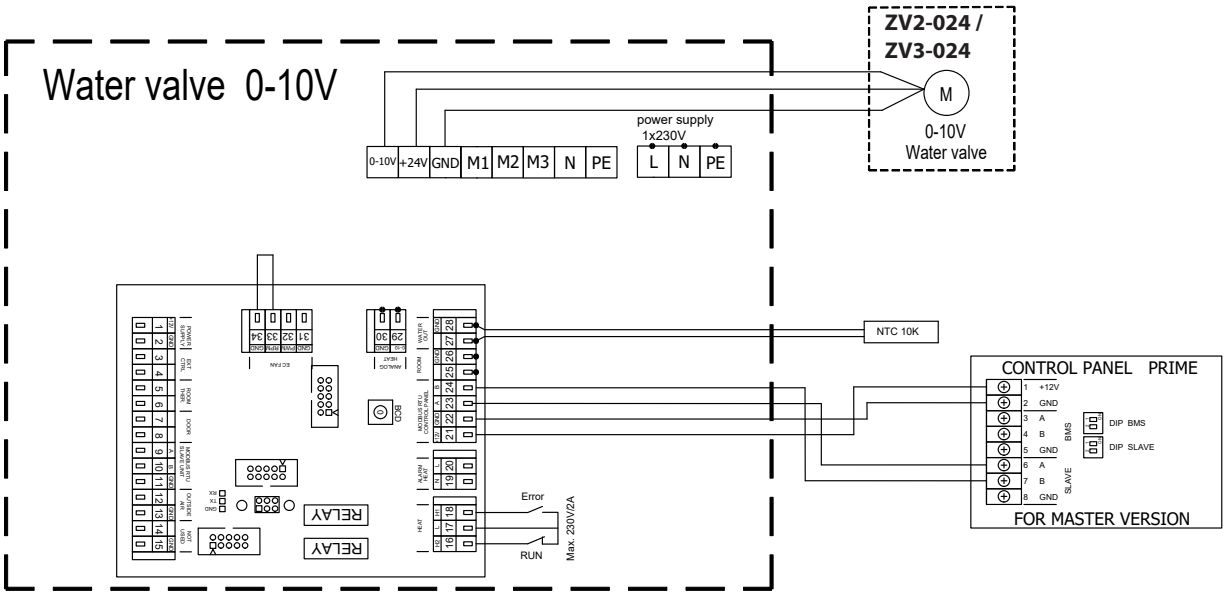


6. INSTALLATION

Regulation of the water exchanger using a valve ZV2-xxx or ZV3-xxx

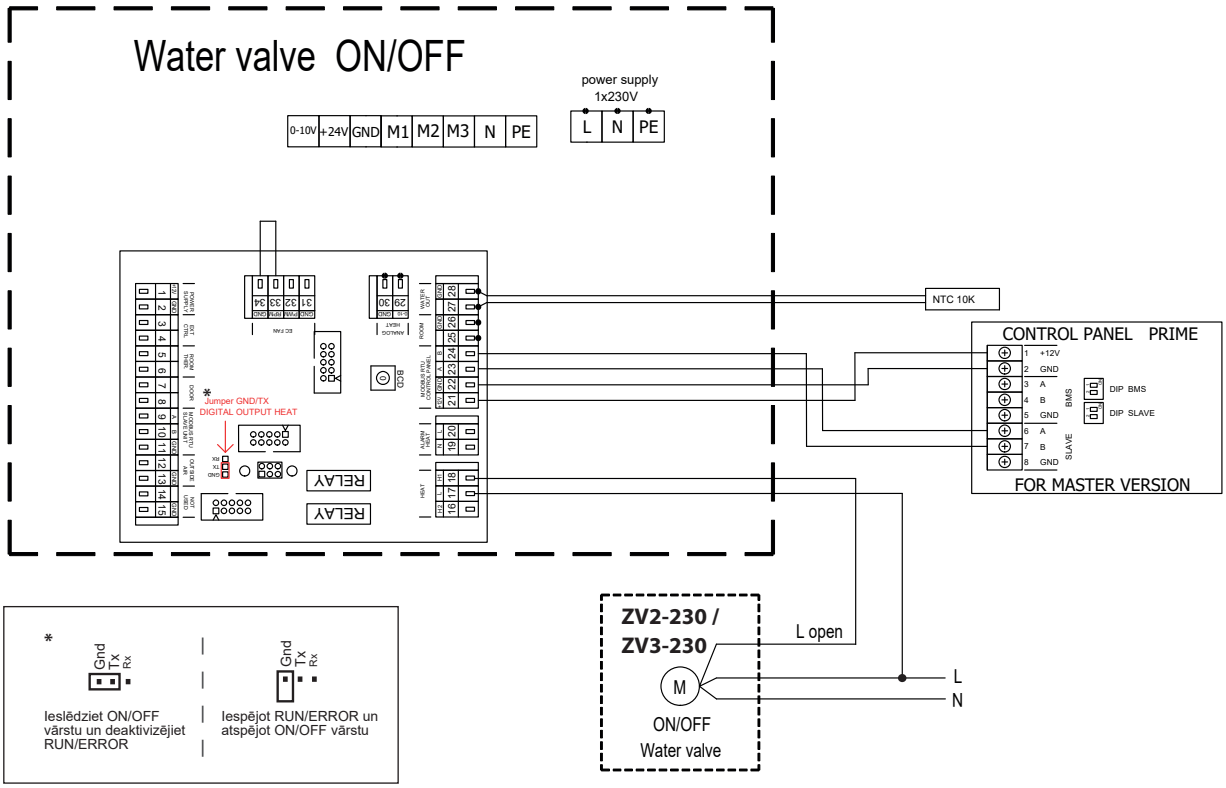


Wiring diagram for a two-way or three-way valve with **0-10 V** control signal.



6. INSTALLATION

Wiring diagram for a two-way or three-way valve with **ON/OFF** control.

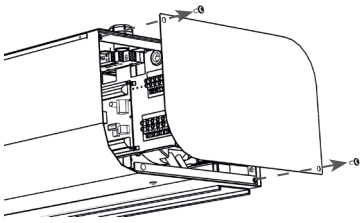


6. INSTALLATION

6.6 Connecting the supply cables

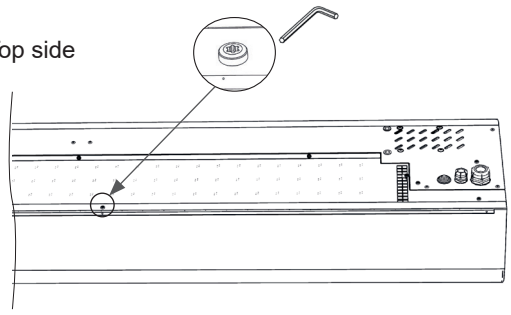
The following procedure requires the removal of the front cover and remove the side cove.

Side cover fastened with two M5 screws

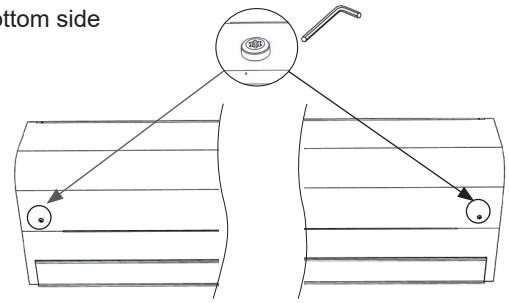


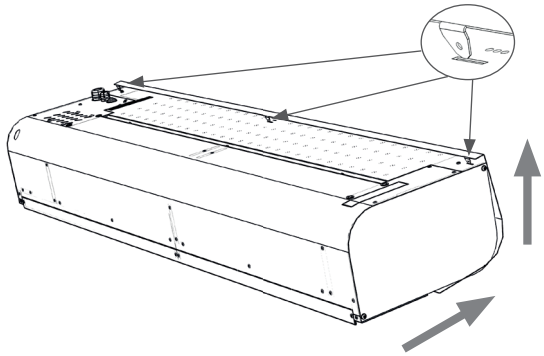
Opening the front cover
- unscrew one M5 screw on the top of the cover side
- unscrew two M5 screws on the bottom of the cover side

Top side



Bottom side



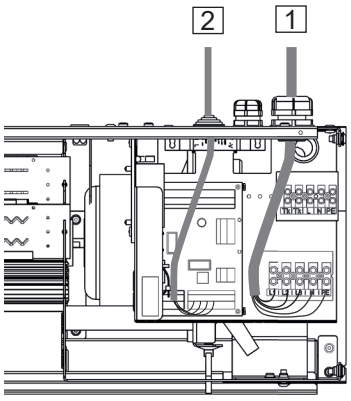


All phases of the electric power supply must be connected through the corresponding type of circuit breaker. It must be possible to disconnect the unit from the electric power supply with a single power switch.

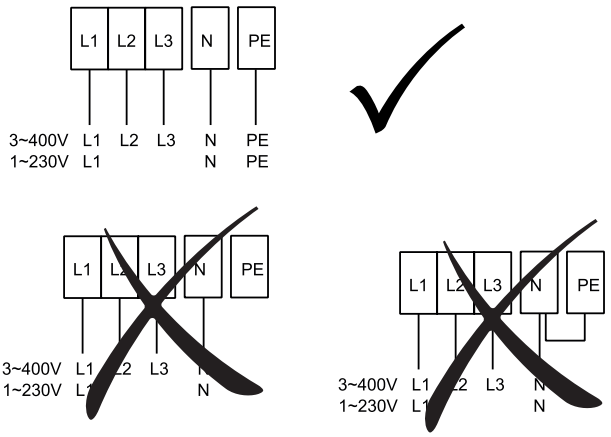
- The power cable is not included.
- Pull the regulator's communication cable.
- Pull the cables to the accessories, if applicable

CAUTION!

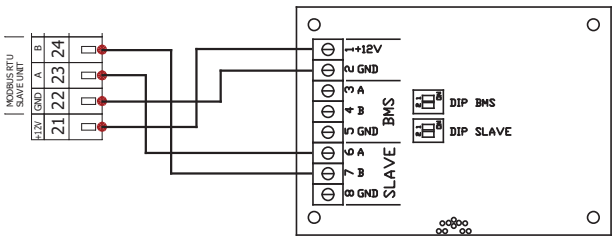
The supply must be determined by the relevant designer, it must comply with the applicable regulations and take into account the power an installation parameters of the air curtain



1 - Power supply connection



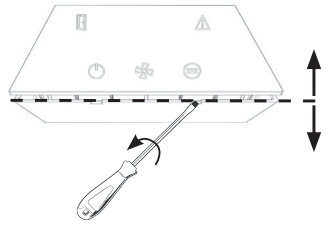
2 - Communication cable connection



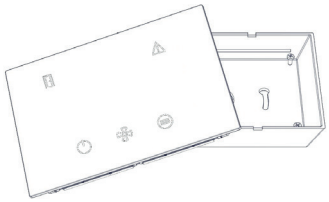
6. INSTALLATION

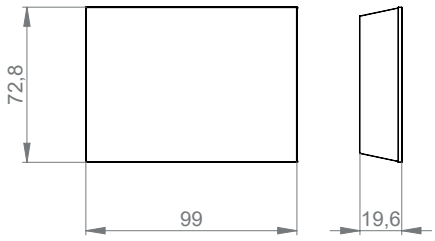
6.7 CONNECTING THE CONTROL PANEL

1.

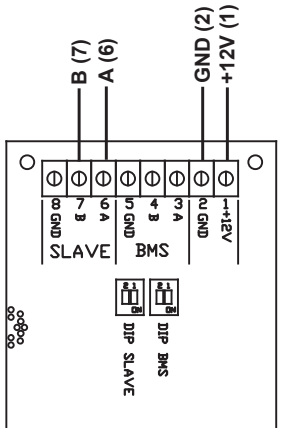


2.

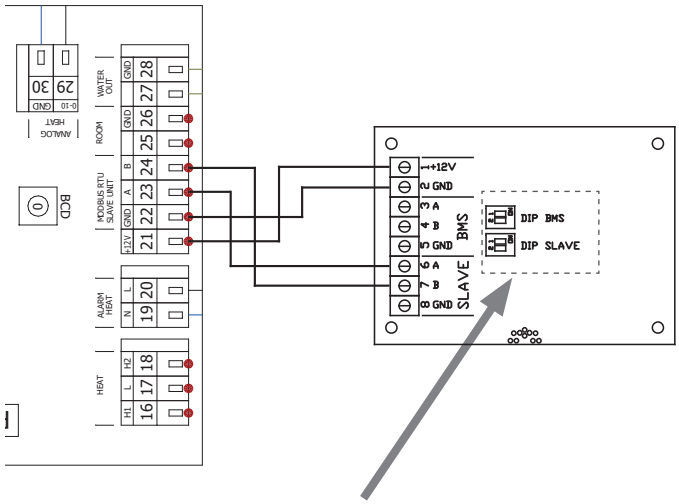




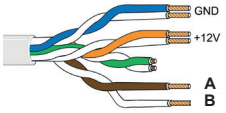
3.



4.



Important to use UTP CAT5 data cable (plugged crossed pair)!!!



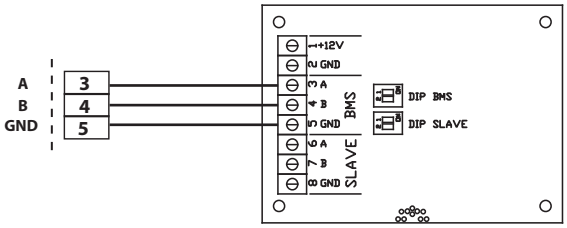
DIP BMS – termination possibilities:
DIP1 and DIP2 set to OFF – not terminated BUS
DIP1 and DIP2 set to ON – BUS termination 150Ω
DIP1 set to ON and DIP2 set to OFF – BUS termination 300Ω
DIP1 set to OFF and DIP2 set to ON – BUS termination 300Ω
Default: DIP1 – ON, DIP2-OFF - BUS termination 300Ω

DIP SLAVE - In case of set DIP to ON, termination
DIP1 and DIP2 set to OFF – not terminated BUS
DIP1 and DIP2 set to ON – BUS termination 150Ω
DIP1 set to ON and DIP2 set to OFF – BUS termination 300Ω
DIP1 set to OFF and DIP2 set to ON – BUS termination 300Ω
Default: DIP1 – ON, DIP2-OFF - BUS termination 300Ω

6.8 CONNECTION TO MODBUS RTU

Modbus RTU connection to the control panel

Range of settings:
Modbus address: 1-247, Default: 1
Baudrate: 4800/9600/19200/38400, Default:9600
Parity: NONE/ODD/EVEN, Default: ODD

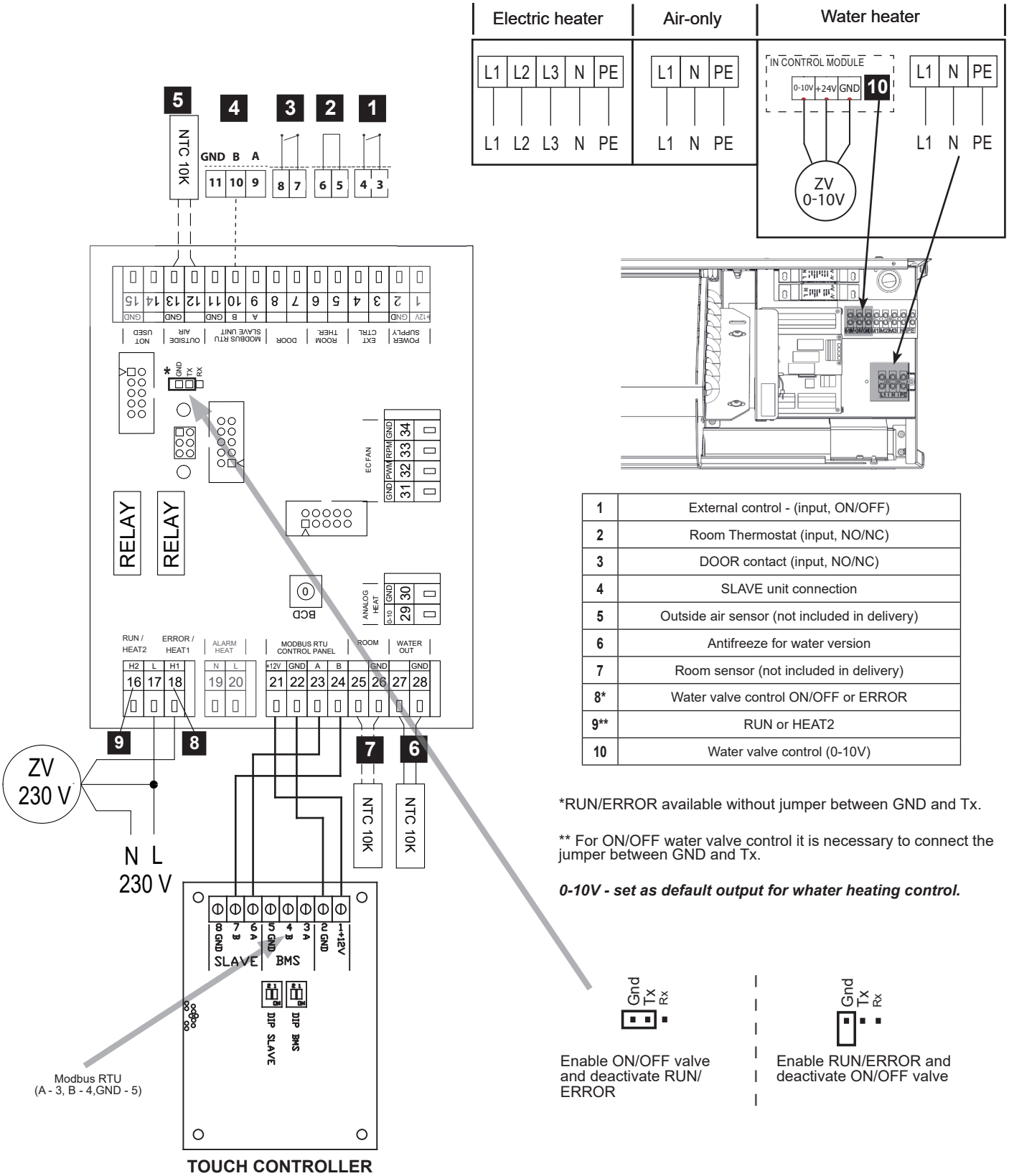


See the Modbus Connection Guide for more information.

6. INSTALLATION

6.9 ELECTRIC SCHEME FOR ACCESSORIES CONNECTION

MASTER CONNECTION



1	External control - (input, ON/OFF)
2	Room Thermostat (input, NO/NC)
3	DOOR contact (input, NO/NC)
4	SLAVE unit connection
5	Outside air sensor (not included in delivery)
6	Antifreeze for water version
7	Room sensor (not included in delivery)
8*	Water valve control ON/OFF or ERROR
9**	RUN or HEAT2
10	Water valve control (0-10V)

*RUN/ERROR available without jumper between GND and Tx.

** For ON/OFF water valve control it is necessary to connect the jumper between GND and Tx.

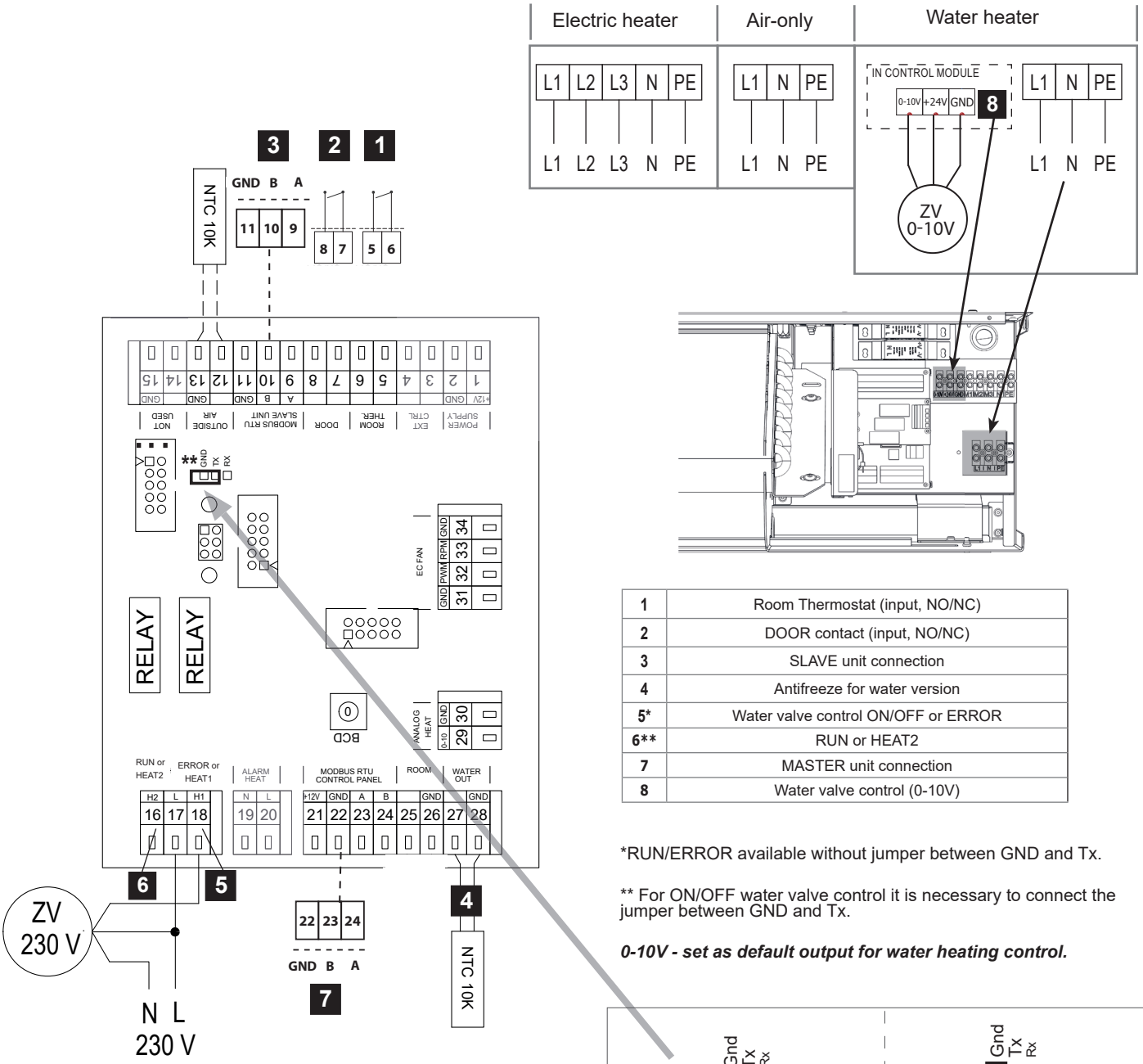
0-10V - set as default output for whater heating control.

TOUCH CONTROLLER

Use a shielded UTP CAT5 cable (included in the package) to connect the controller.
The maximum recommended cable length is 40m.
The data communication cable must be separated from the power line cables.

6. INSTALLATION

SLAVE CONNECTION



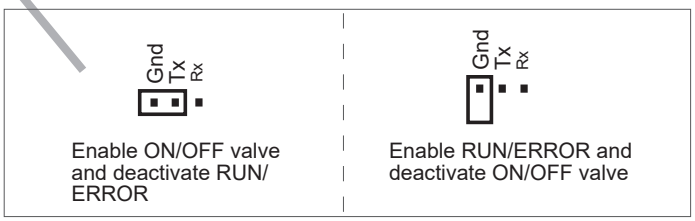
1	Room Thermostat (input, NO/NC)
2	DOOR contact (input, NO/NC)
3	SLAVE unit connection
4	Antifreeze for water version
5*	Water valve control ON/OFF or ERROR
6**	RUN or HEAT2
7	MASTER unit connection
8	Water valve control (0-10V)

*RUN/ERROR available without jumper between GND and Tx.

** For ON/OFF water valve control it is necessary to connect the jumper between GND and Tx.

0-10V - set as default output for water heating control.

Use a shielded UTP communication cable (included).

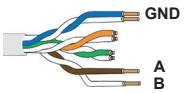


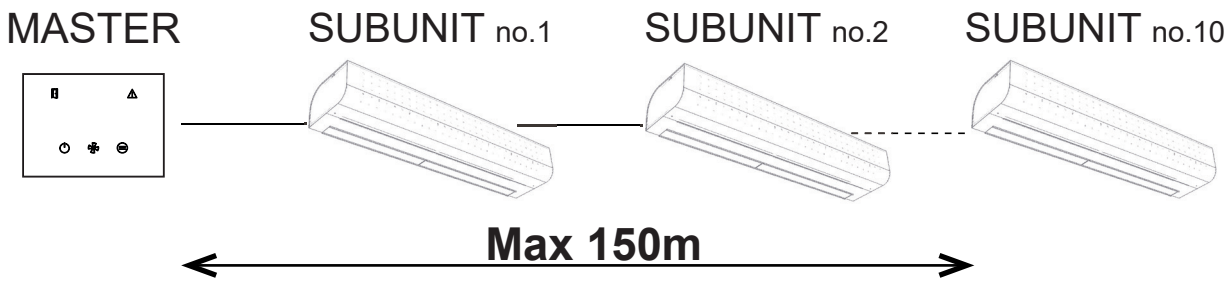
6. INSTALLATION

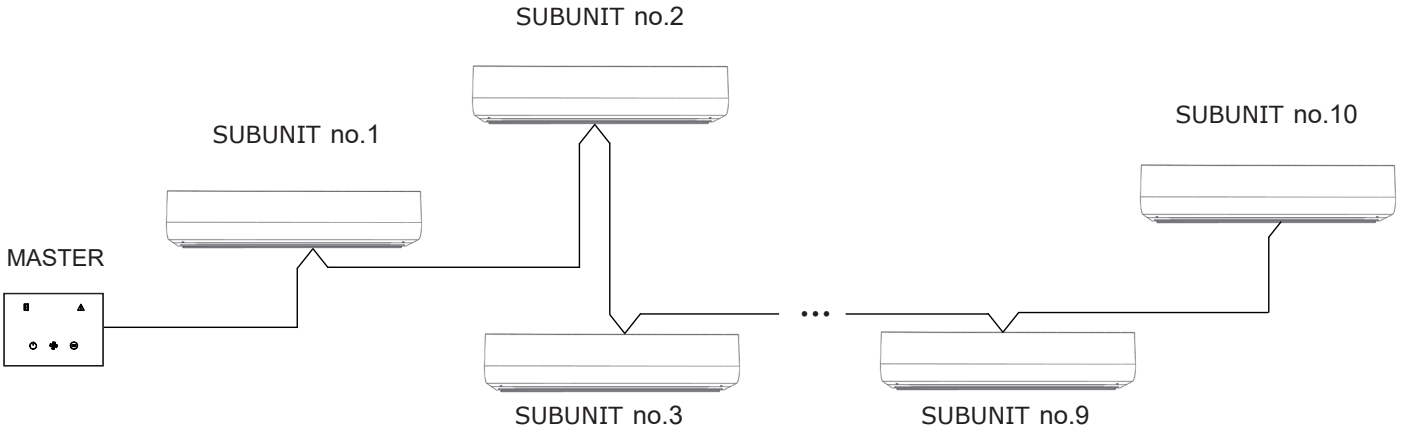
6.10 ELECTRICAL SCHEMES CHAINING

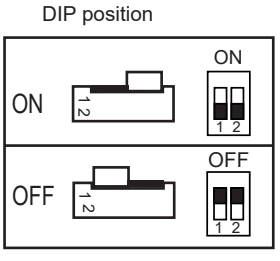
Use a shielded UTP communication cable (included in delivery) for chaining.
The data communication cable must be separated from the power line cables.

Connect communication terminals A , B and GND on both boards (SLAVE - SLAVE).

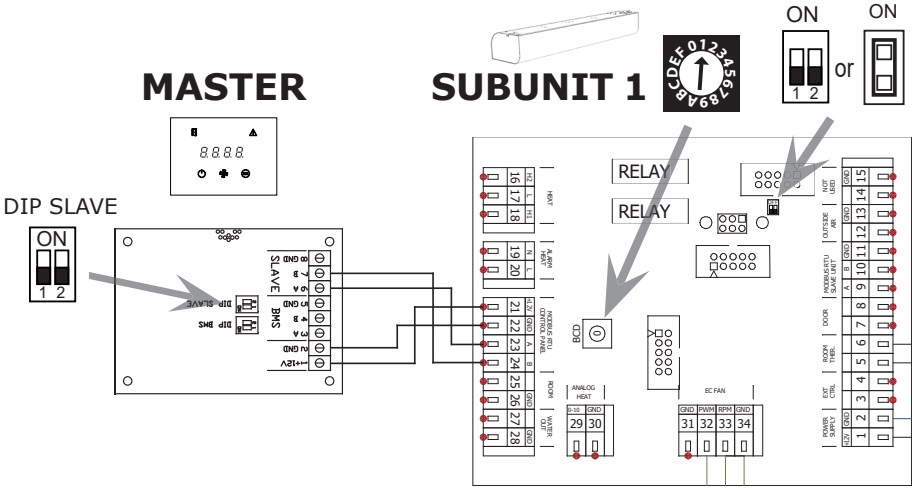




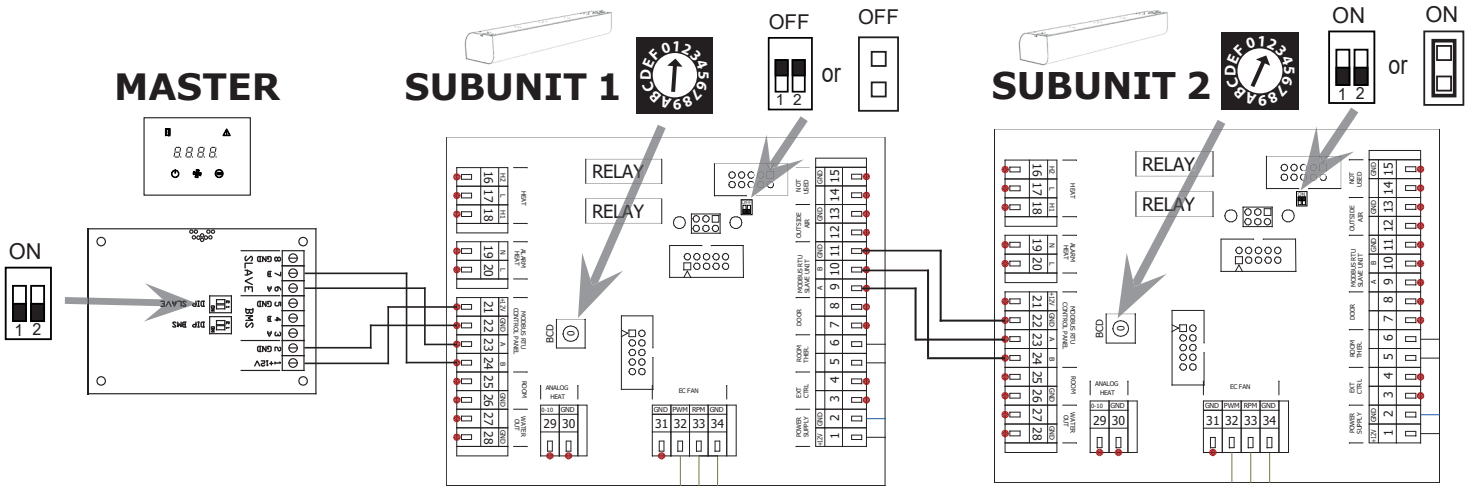


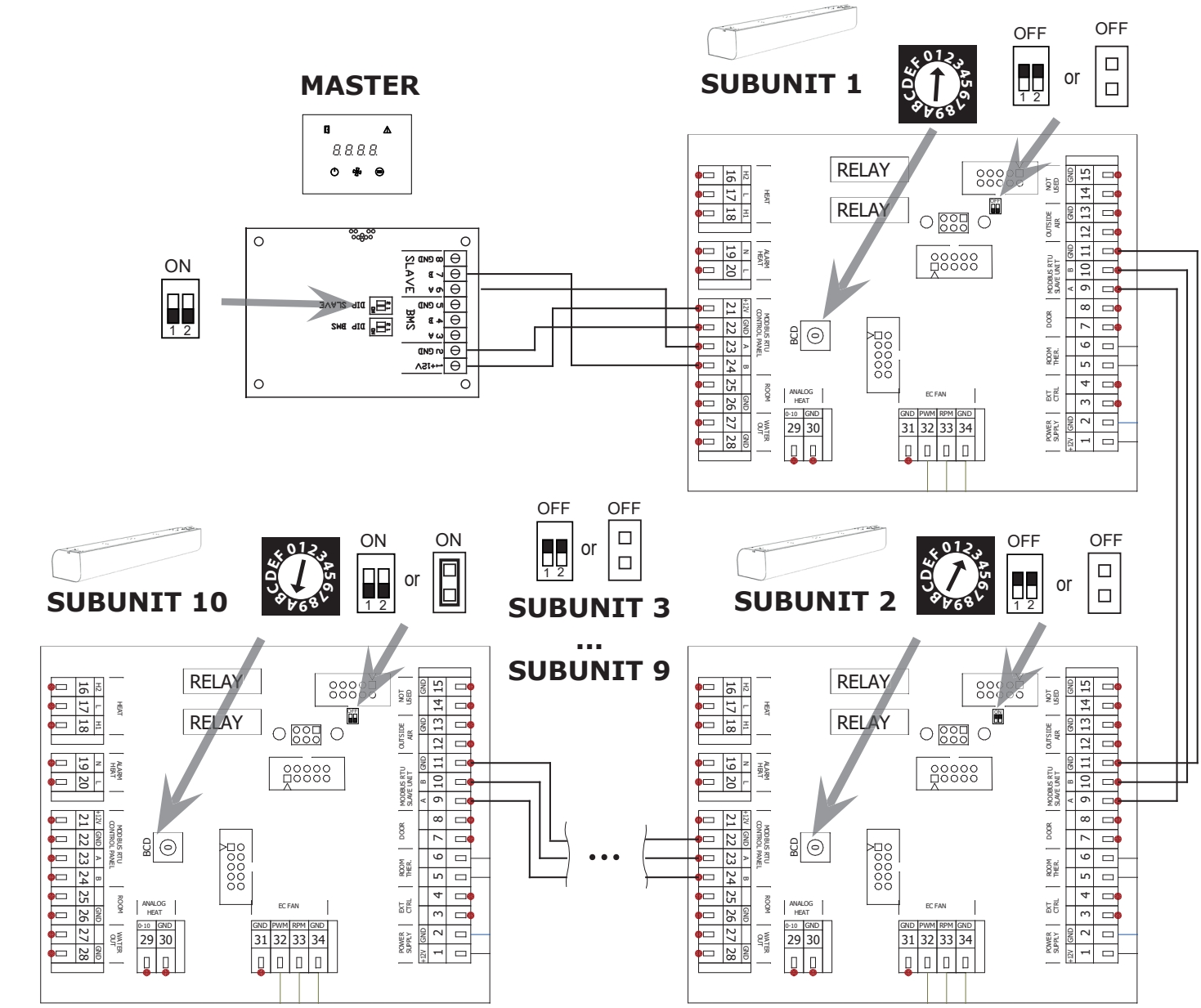


SU-BUNIT	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



6. INSTALLATION



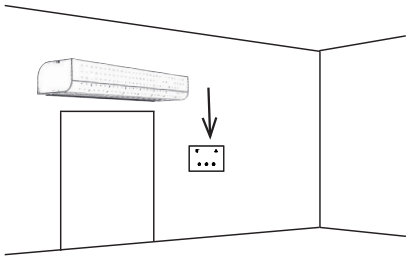


6. INSTALLATION

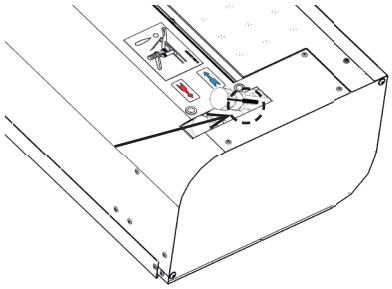
6.11 TEMPERATURE SENSORS

Included temperature sensors

Room temperature sensor - located in the control panel.

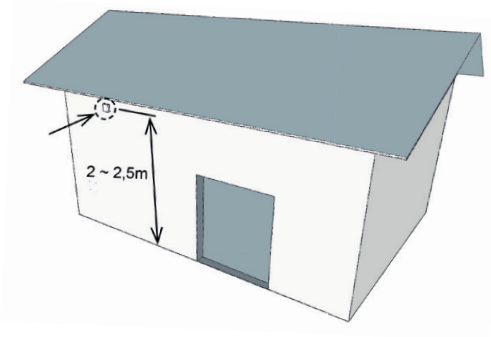


The return water temperature sensor.



Option temperature sensors (not included)

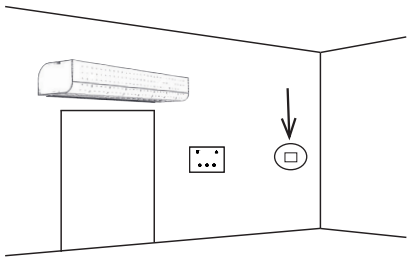
Outside temperature sensor.



⚠	Outside temperature sensor is recommended to be installed on North side of building, protected against direct sunlight or any other unwanted heat radiation. Temperature sensor is recommended to install to an cover box, which should contain small hole for better results.

Room temperature sensor

After installing a room temperature sensor on terminals 25-26, the temperature sensor in the control panel is automatically deactivated.



7. COMMISSIONING

READ CAREFULLY!

Before the initial commissioning, check:

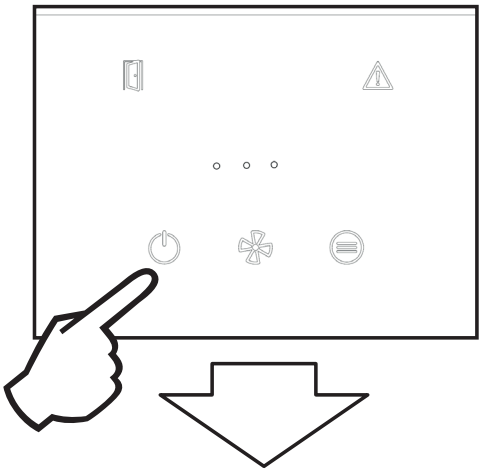
- that the device is well fastened to the support structure,
- that the device is properly closed
- that the power supply is properly connected, including the earthing and the external trigger protection,
- that all the electrical components are securely connected,
- that the installation complies with all the instructions herein,
- that no tool or any other object that may damage the unit remains within.
-

CAUTION!

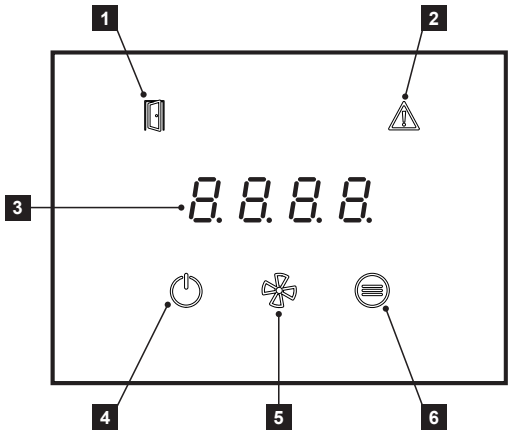
- Interventions or changes to the internal connections are forbidden and shall result in the loss of warranty.
- We recommend the use of accessories supplied by our company. Contact your supplier in case of doubts regarding the use of non-original accessories.

START-UP

After connecting power supply, the display lights up and the data is loaded.



The device is started and switched off by pressing the ON/OFF symbol for two seconds



1 - Open door status icon
2 - Error signalization
3 - Semi-segment display
4 - ON/OFF button (hold 2 secs.)
5 - Speed control button
6 - Temperature settings

Full description is available in the PRIME OPERATIONAL MANUAL

INDICATION ON THE PRIME CONTROL PANEL

- The LED above the button lights up - button press evaluated.
- ON/OFF LED flashes - time switch mode is active.
- FAN LED flashes - aftercooling is active.
- HEAT LED flashing - heating output limited due to insufficient airflow (electric version only), flashes only 20 seconds after HEAT button is pressed.
- Door LED lights - door is open
- LED Door flashes - Doo mode active
- ERROR LED lit - ERROR indication or freeze protection active. And at the same time the display shows an error code when the air curtain is in ON mode. In standby mode, only the ERROR LED remains lit.

LIST OF ERROR CODES:

E44 - FAN FAILURE
E45 - MAINTANANCE NEEDED/CLOGGED AIR FILTER
E46 - HEATER ERROR
E47 - OUTSIDE TEMPERATURE SENSOR FAILURE SLAVE1
E52 - MAINTANANCE SOON NEEDED/AIR FILTER CLOGGED > 80%
E60 - WATER OUTLET TEMPERATURE SENSOR FAILURE
E61 - ROOM TEMPERATURE SENSOR FAILURE
E62 - OUTSIDE BMS TEMPERATURE SENSOR FAILURE
E63 - ROOM BMS TEMPERATURE SENSOR FAILURE
E65 - COMMUNICATION FAILURE (BETWEEN CONTROL PANEL AND MAIN BOARDS)
E70 - WATER HEATER ANTIFREEZE PROTECTION
E80 - MODBUS GATEWAY COMMUNICATION FAILURE
E82 - TACHO STATE ERROR

AUTOMATIC FAN SPEED CONTROL INDICATION:

If the FAN button is pressed in the automatic fan speed control, the display shows the warning "Auto" for about 3 seconds, and in the next 3 seconds the current fan speed is displayed (e.g. "F 33" for 33% fan speed)

Interruption of time switch mode from control panel:
Press ON/OFF – display shows "t. oFF" - timer OFF)
(Reactivation of interrupted time switch mode, is available from APP AirGenio PRIME by disabling and again enabling time switch mode usage)

BUTTON FUNCTIONS:

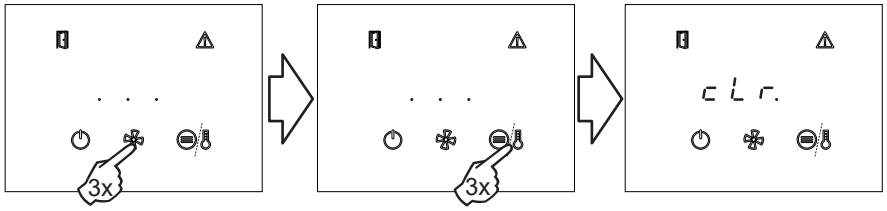
ON/OFF
Short press button ON/OFF – escape or enter (according to actual position in the menu)
Long press button ON/OFF – ON/OFF or time switch mode interruption
6 short presses in rapid succession (double-click on the button) - activate the remote-control lock if the lock code is set in APP AirGenio PRIME

FAN
fan speed selection / fan speed info or setting tens when entering the controller lock code.

HEAT/Function button
heating power or desired ROOM temperature selection/ info of the set heating power or current ROOM temperature or setting unit when entering controller lock code.

RESET maintenance/filter timer

To reset the maintenance/filter timer in the off state, press the fan button 3 times and then the HEAT/FUNCTION button 3 times. A successful reset is indicated by the clr message.



8. EXTERNAL ACCESSORIES

CONNECTING EXTERNAL ACCESSORIES

PLEASE NOTE

- The unit must be disconnected from the power supply to connect accessories.
- All external control components must be connected according to the wiring diagram.

ATTENTION!

The accessories not included with the product.

DK-B3 door contact

Isolated switching contact with maximum voltage 12V.
Cable - Two-core cable with a cross section of 0,5 mm^2. - Maximum length: 50 m

2-WAY OR 3-WAY VALVE WITH SERVO DRIVE (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx

2WAY OR 3-WAY VALVE WITH SERVO DRIVE (0-10V)
ZV2-024-xx,x-xx
ZV3-024-xx,x-xx

TEMPERATURE SENSOR CT-NTC-OUTDOOR

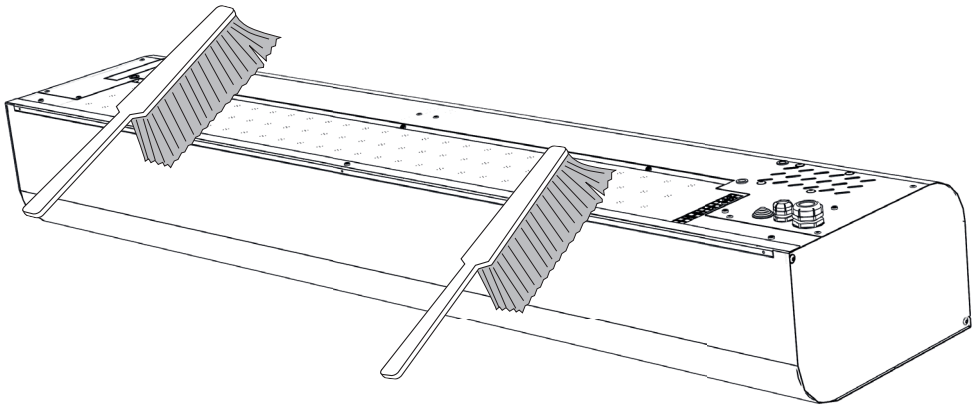
Temperature sensor 10m, IP68

9. CLEANING

ATTENTION!

Before carrying out any work inside the air curtain, the main power input must be disconnected. The air curtain must be allowed to cool down!

- It is forbidden to use compressed air, aggressive chemicals, solvents or water for cleaning.
- Clean using a damp cloth, fine brush or vacuum cleaner.
- Clean the surface of the air curtain including the suction inlet part.
- Clean as necessary, it is recommended that cleaning should be performed at least once every 3 months.
- Adhere to workplace safety and use protective aids.

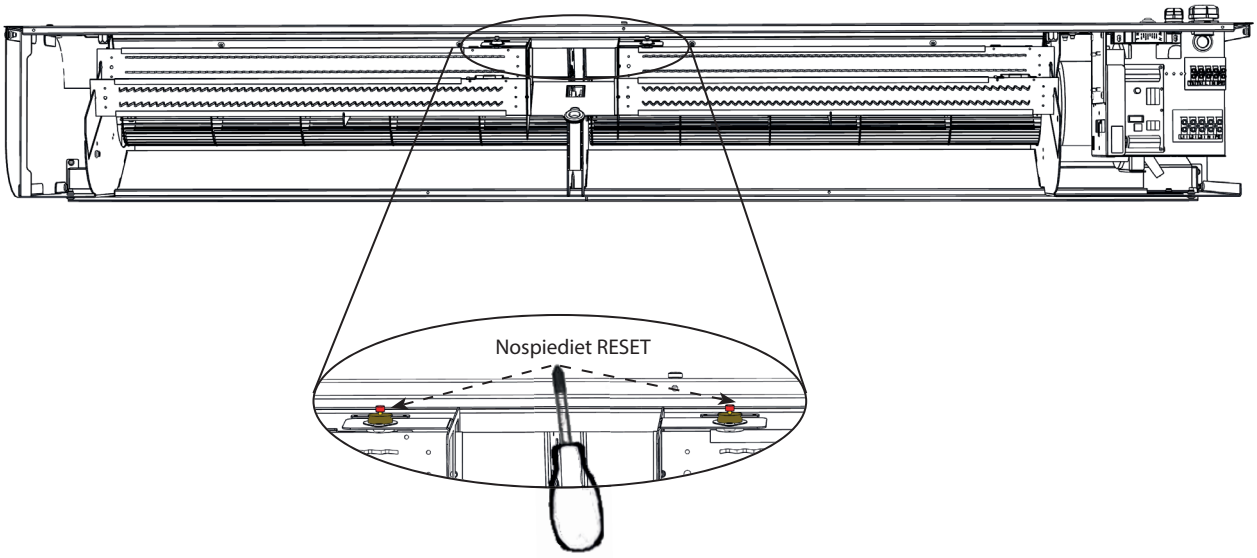


10. SERVICE

The main power supply must be switched off before any intervention inside the air curtain. The air curtain must be allowed to cool down!

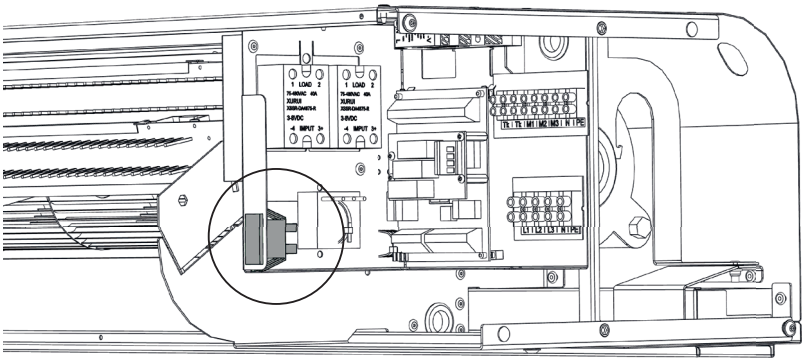
10.1 EMERGENCY THERMOSTAT RESET

- Check of emergency thermostats and subsequent reset.
- Visual inspection of curtain, heat exchanger and connection.
- Clean the surface and inside of the air curtain, including the suction part.



10. SERVICE

10.2 FUSE REPLACEMENT



- the information is located on the label next to the fuse or directly on the fuse

10.3 WHEN YOU AREN'T ABLE TO REMOVE DEFECT BY YOURSELF

If you are unable to resolve the problem, contact the supplier.
For the fast removal of defects please provide the following information:

- product reference number
- serial number
- running time
- used accessories
- installation location
- installation condition (including electrical)
- detailed description of the problem and the steps that you have taken for its removal

Warranty and post-warranty service is performed by the manufacturer, supplier or authorized service organization. When ordering service intervention it is necessary to describe the defect, product type designation indicated on its label, and the location of installation.

11. PUTTING THE PRODUCT OUT OF OPERATION - DISPOSAL

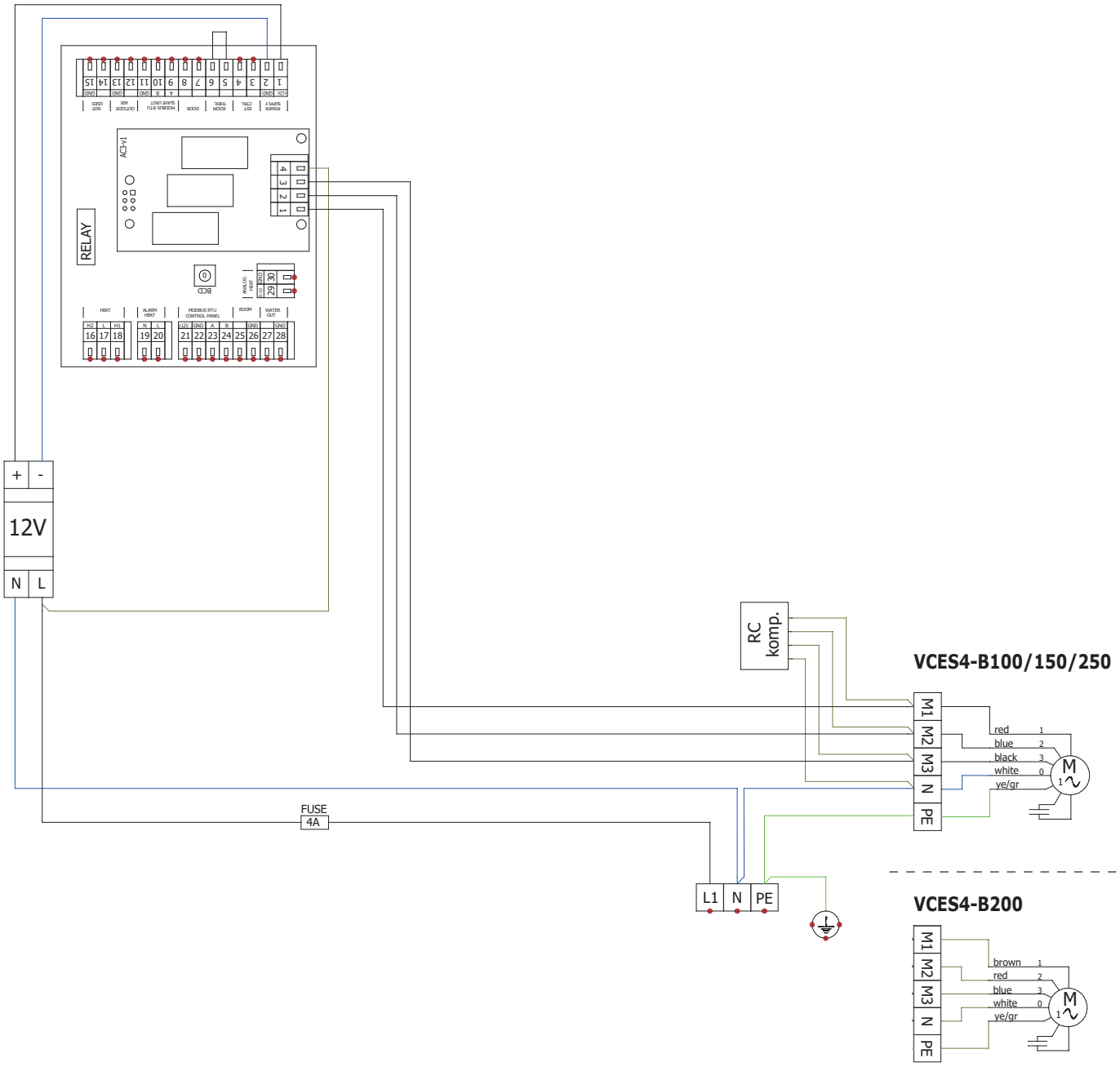
Before disposing of the product, make the product unusable. Even old products contain raw materials that can be reused. Take them to a collection point of secondary raw materials.
The product is good to dispose at the place, which is specialized for it, and thus it will be possible to recycle materials. Store unusable parts of the product at a controlled dump.

When disposing of materials, it is necessary to observe the relevant national regulations on waste disposal.

12. WIRING DIAGRAMS

AC FAN

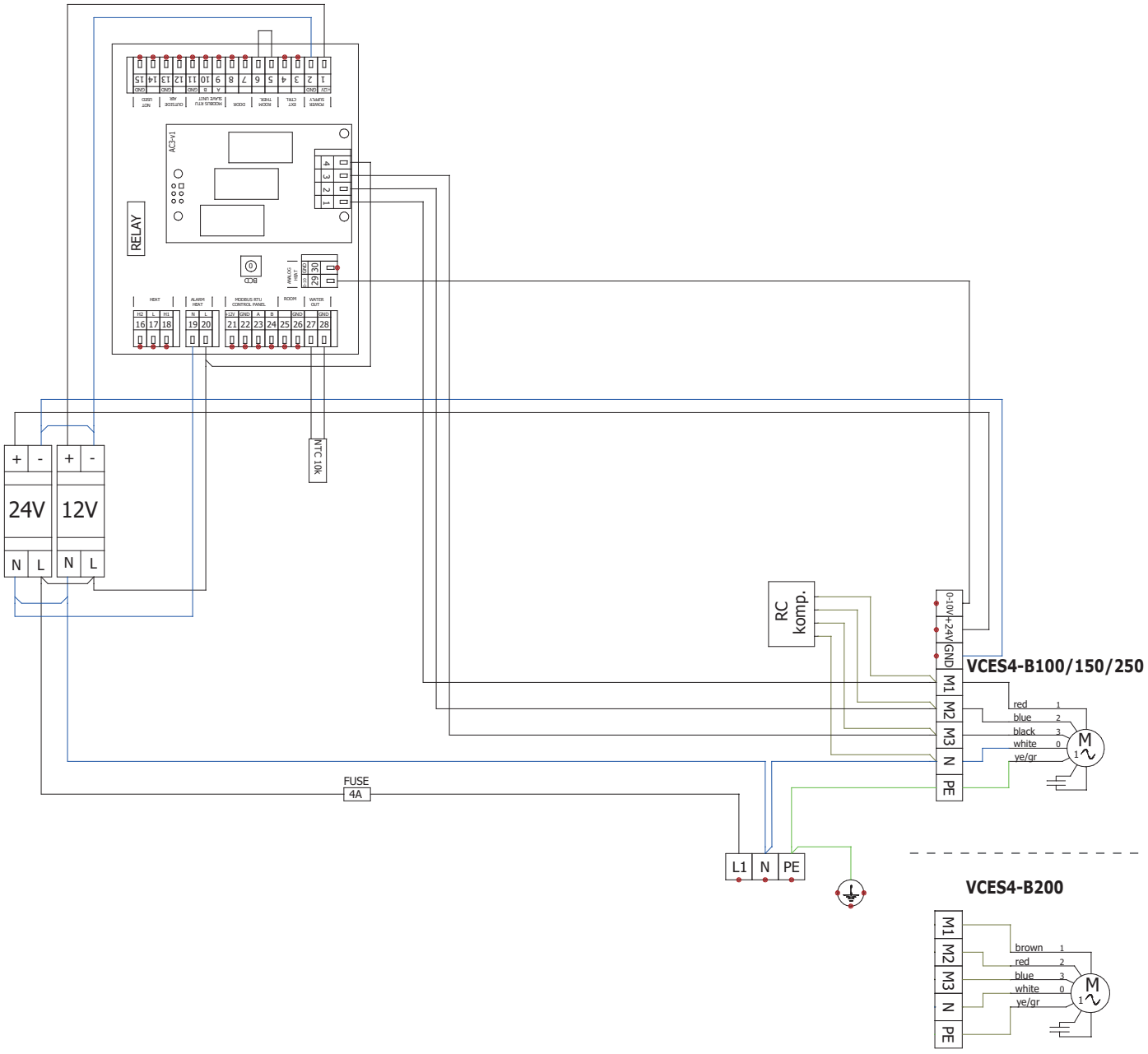
VCES4-Bxxx-AC-S0



12. WIRING DIAGRAMS

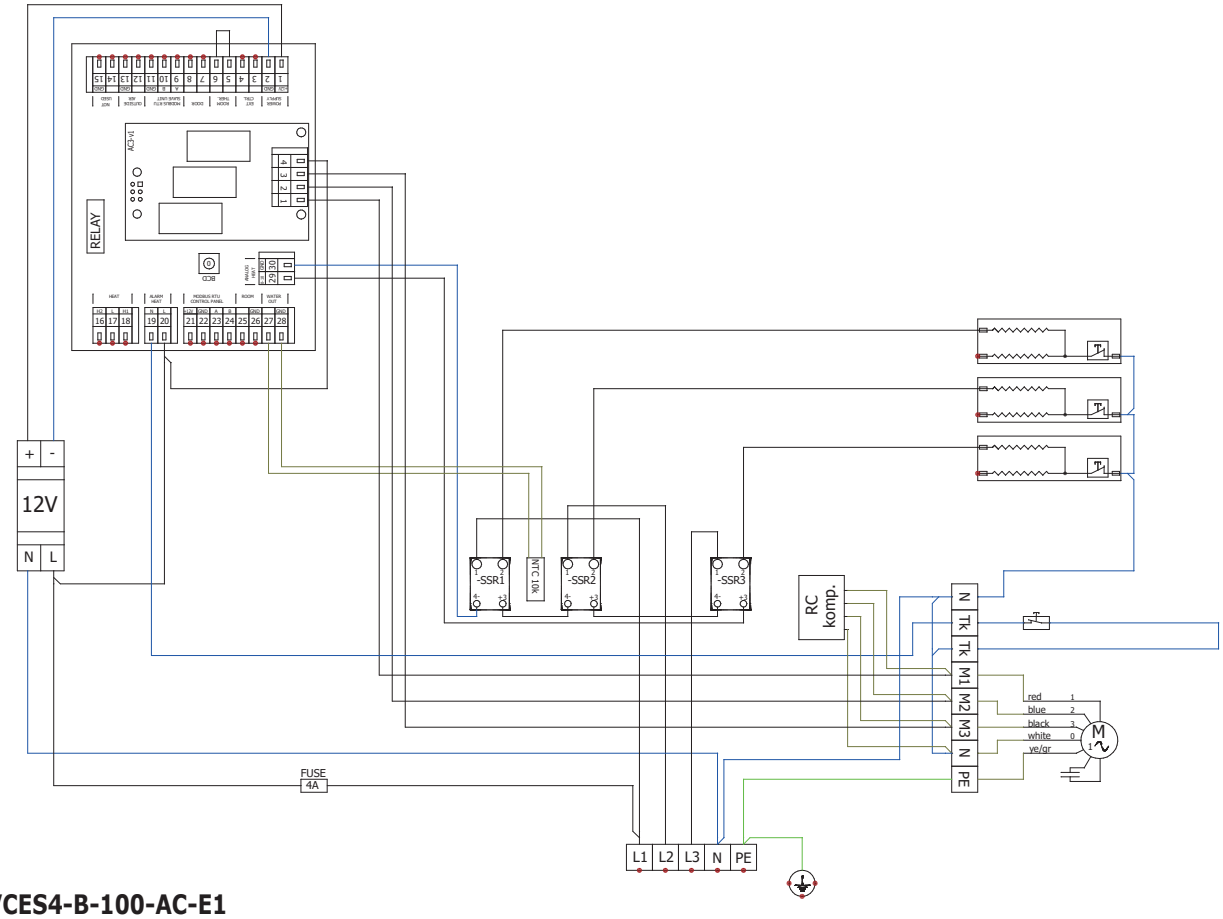
VCES4-Bxxx-AC-V2

AC FAN

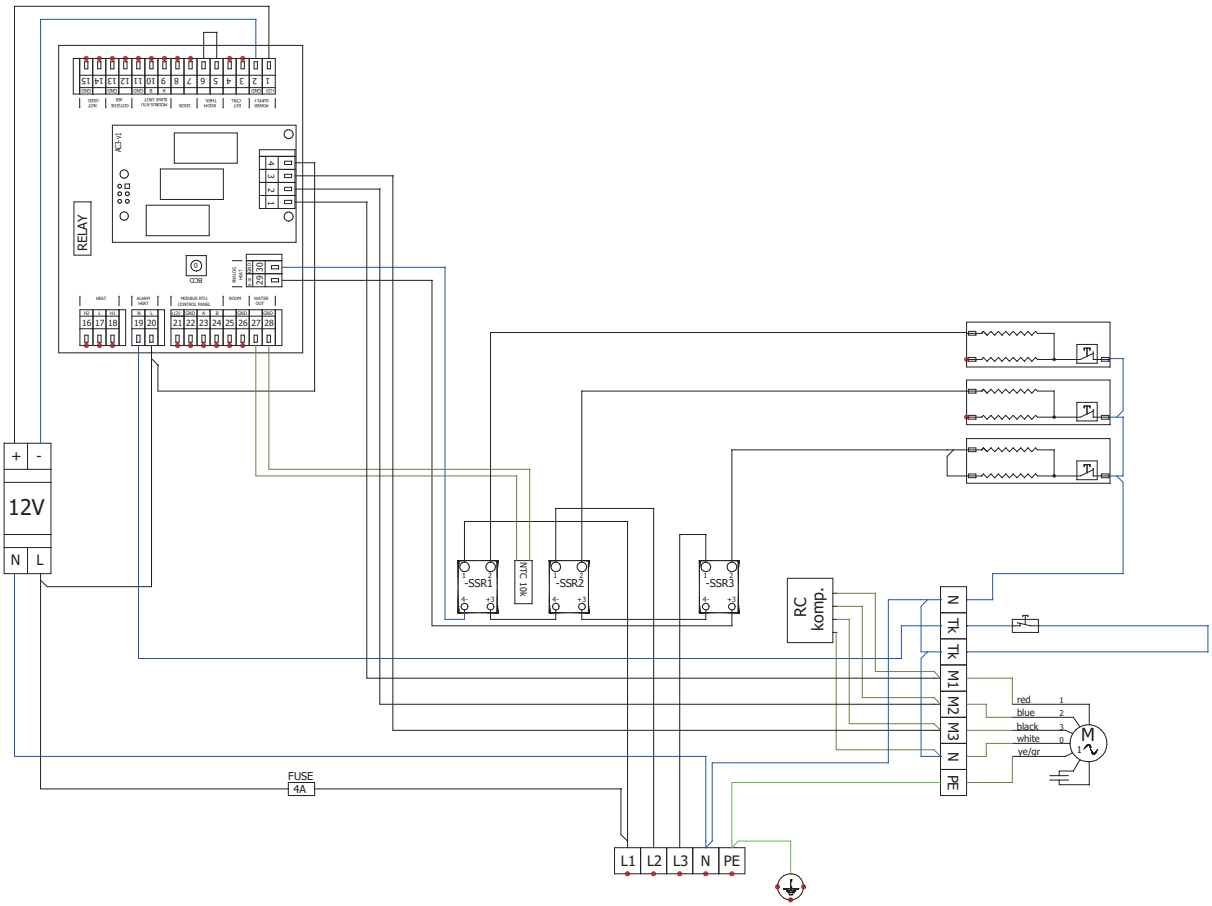


12. WIRING DIAGRAMS

VCES4-B-100-AC-E0

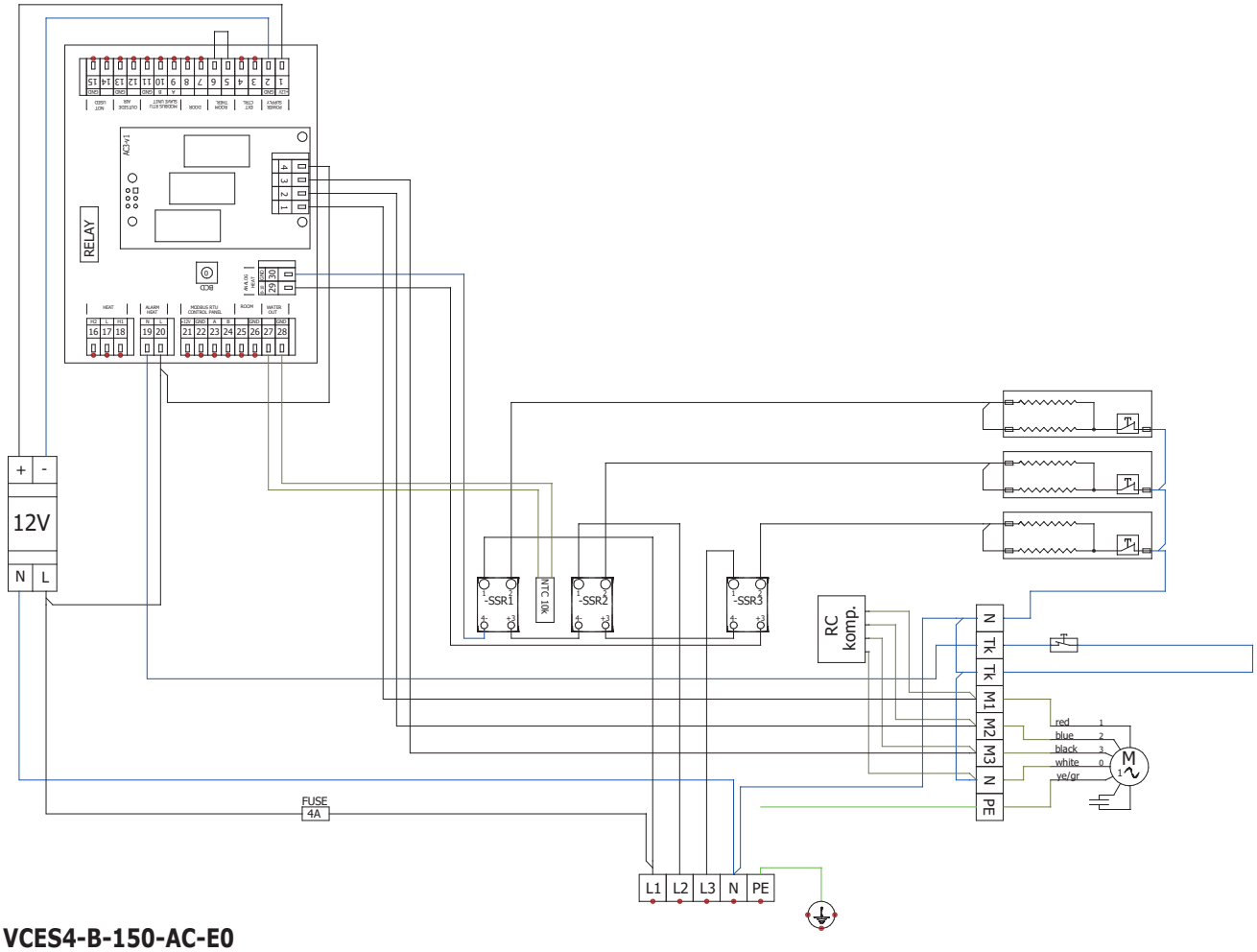


VCES4-B-100-AC-E1

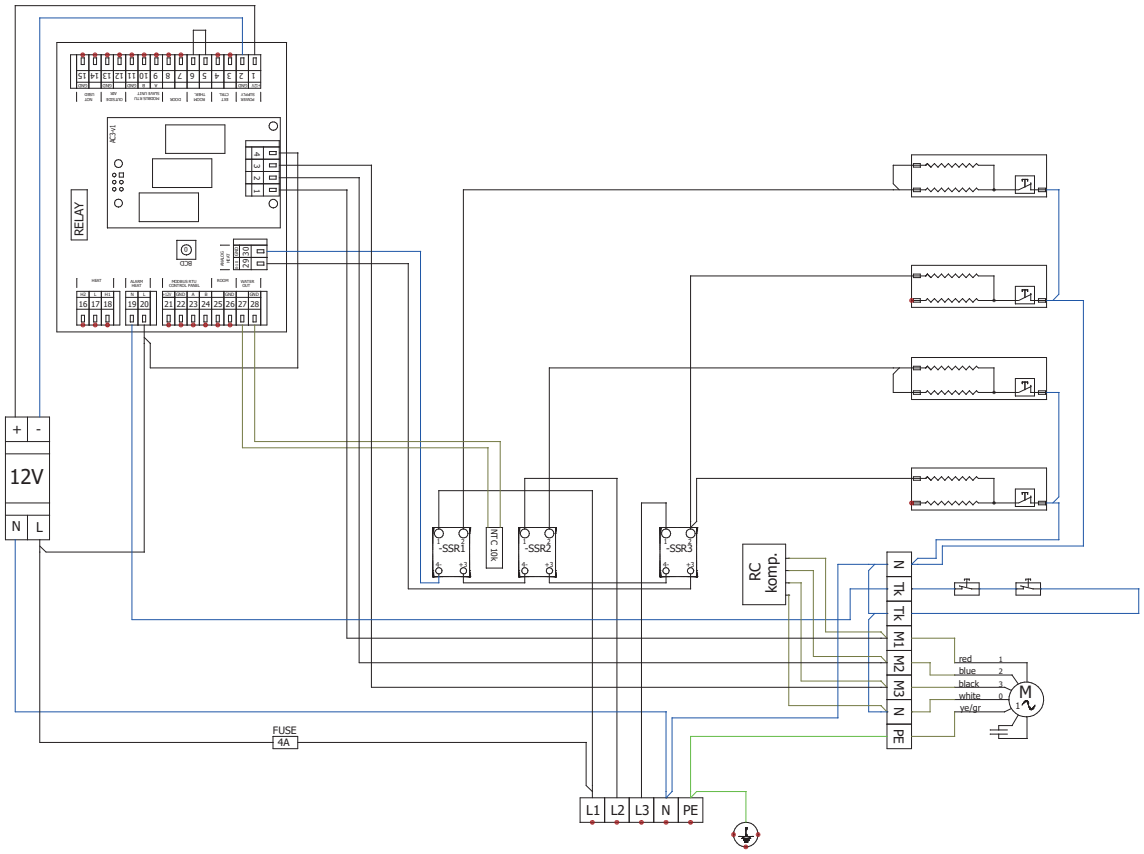


12. WIRING DIAGRAMS

VCES4-B-100-AC-E2

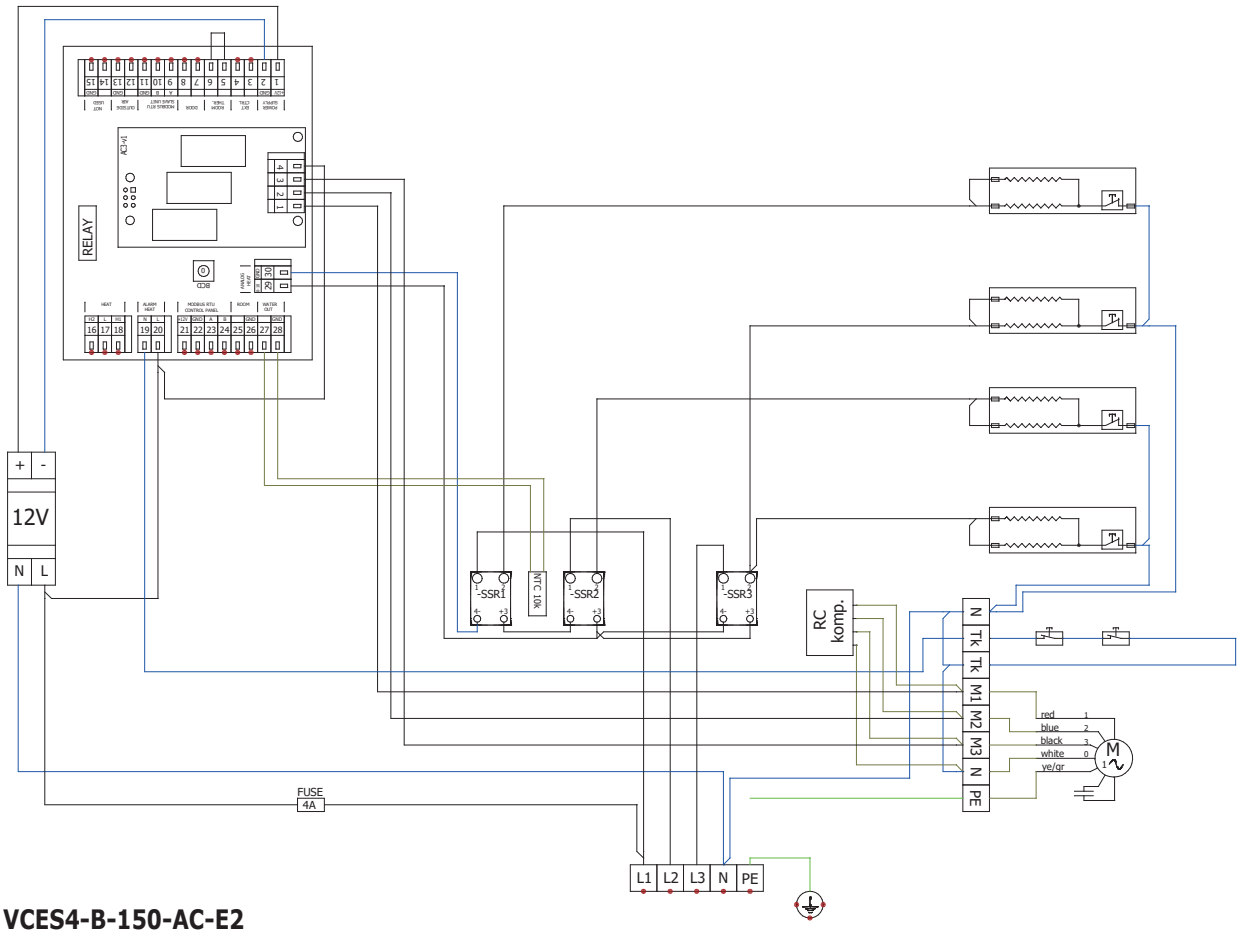


VCES4-B-150-AC-E0

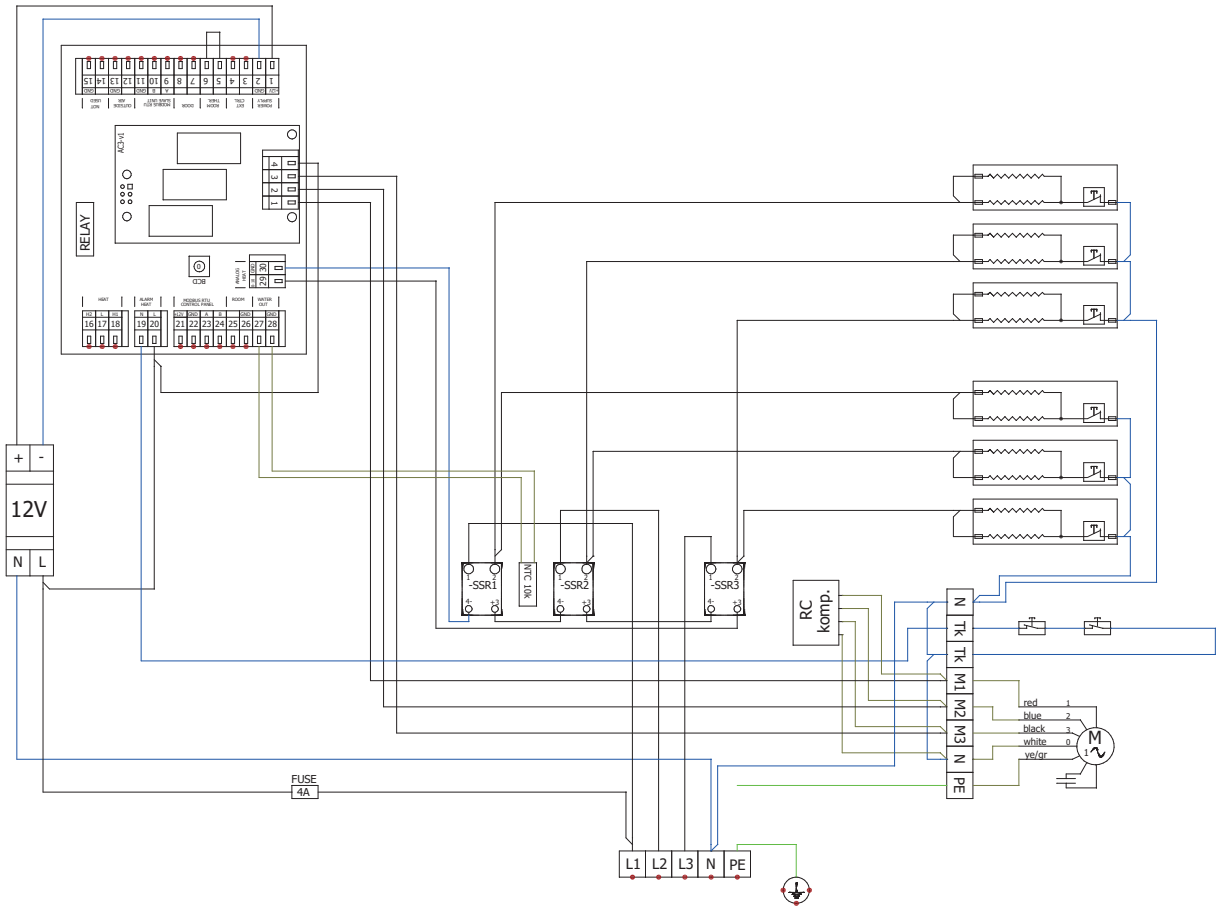


12. WIRING DIAGRAMS

VCES4-B-150-AC-E1

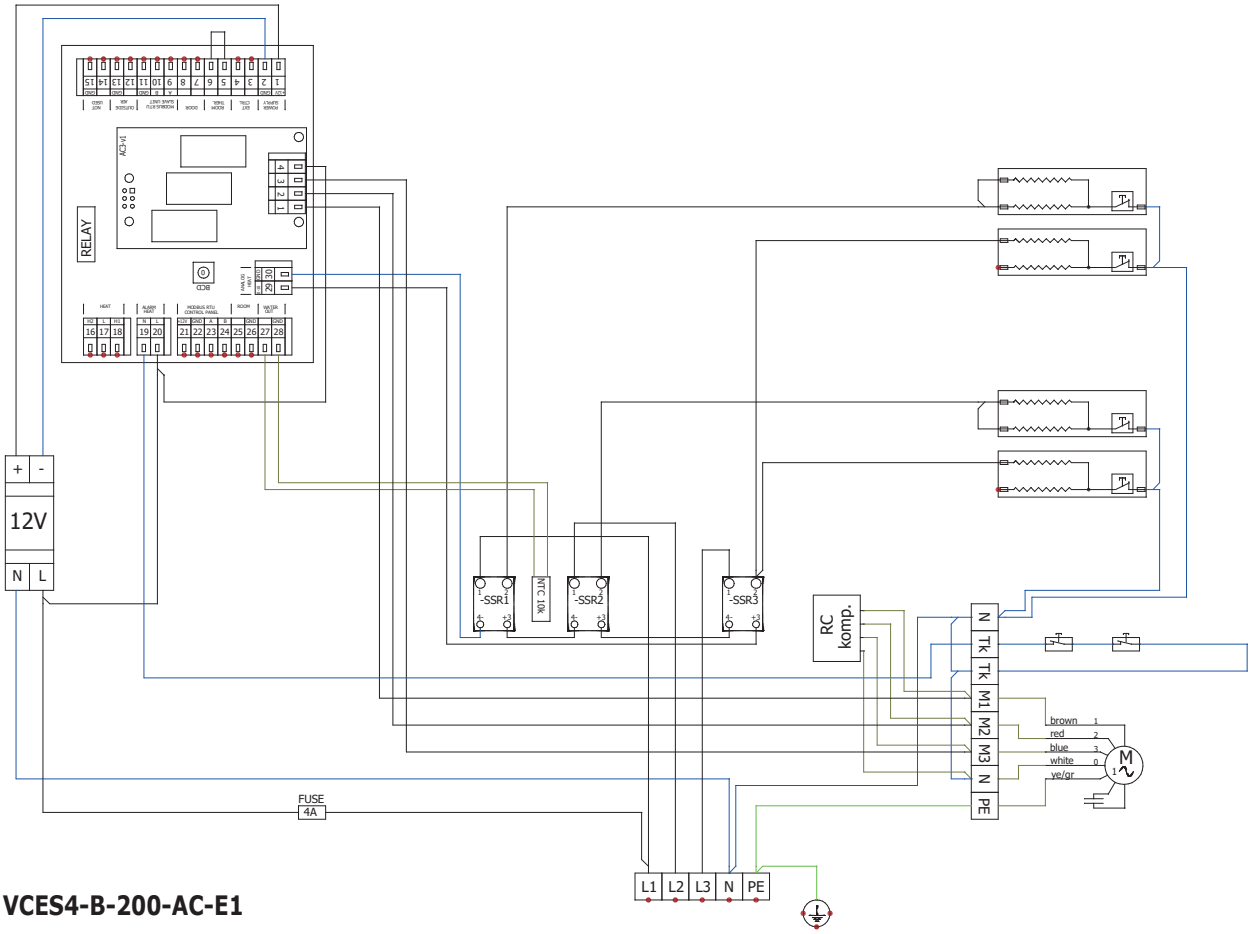


VCES4-B-150-AC-E2

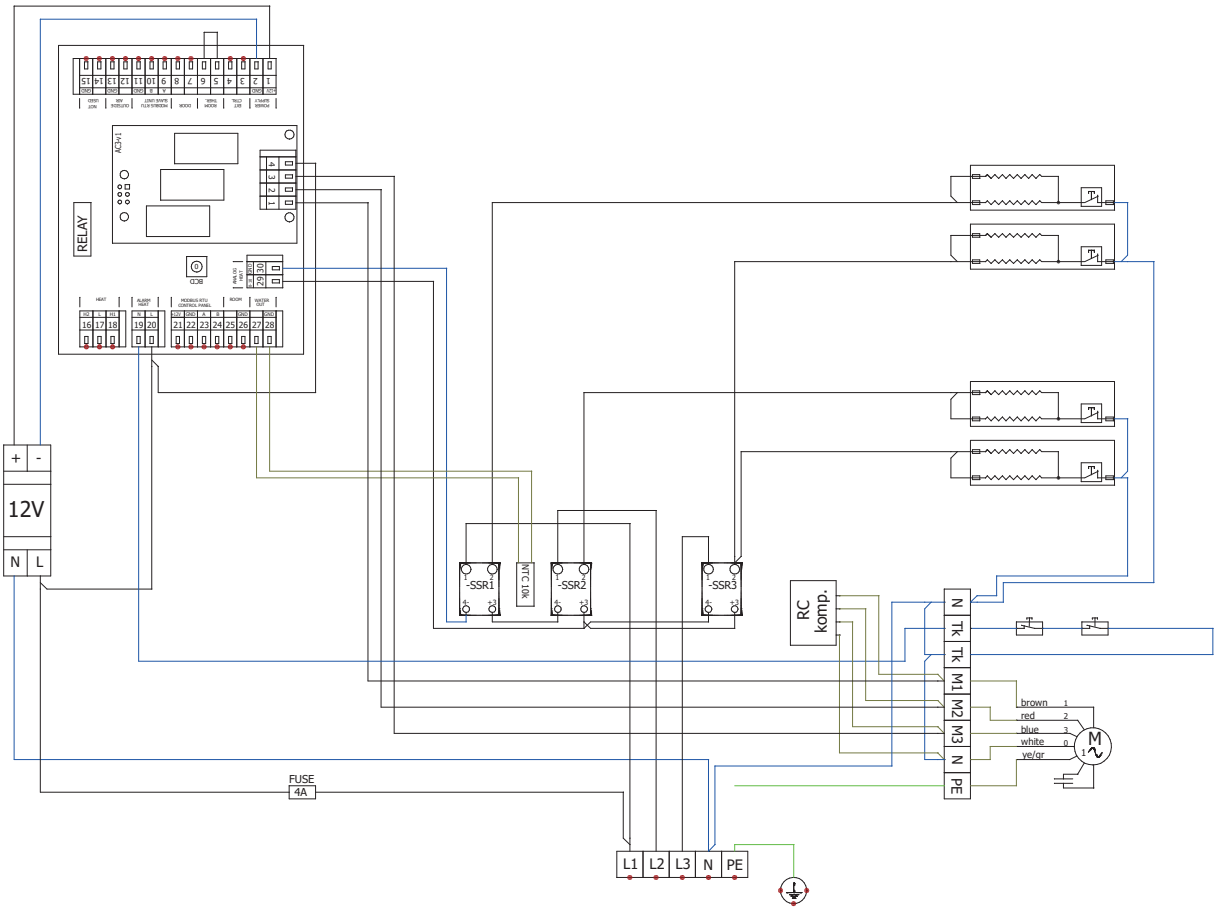


12. WIRING DIAGRAMS

VCES4-B-200-AC-E0

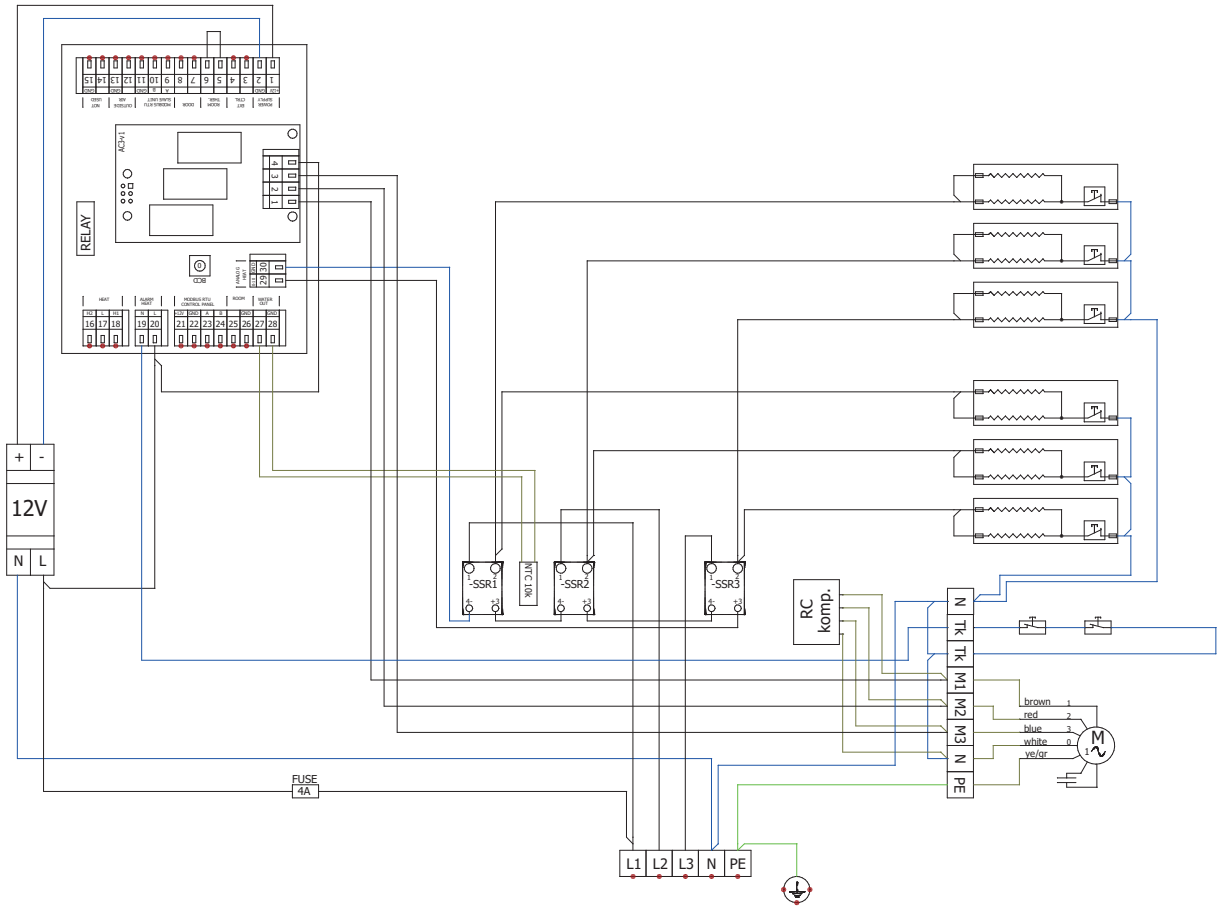


VCES4-B-200-AC-E1

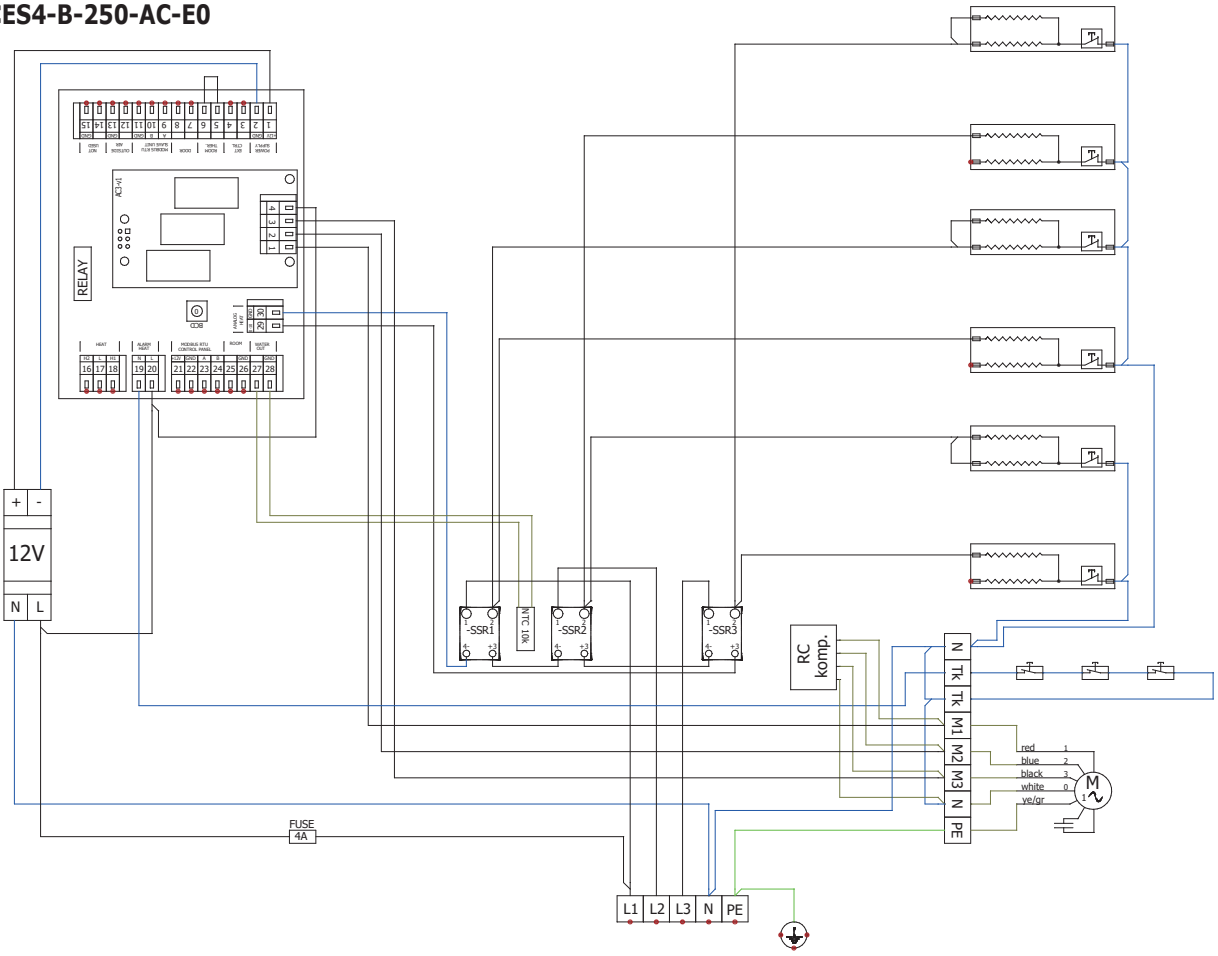


12. WIRING DIAGRAMS

VCES4-B-200-AC-E2



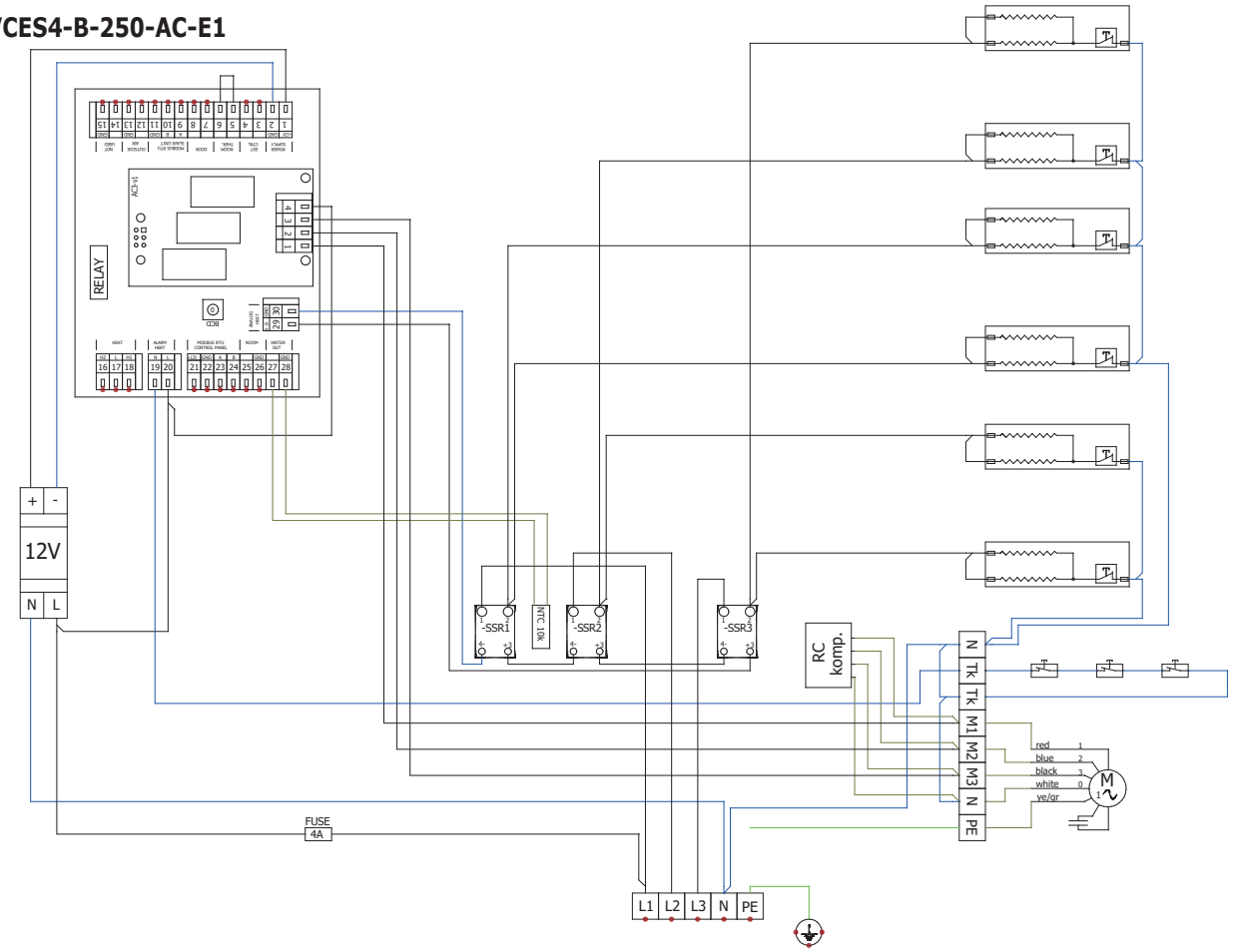
VCES4-B-250-AC-E0



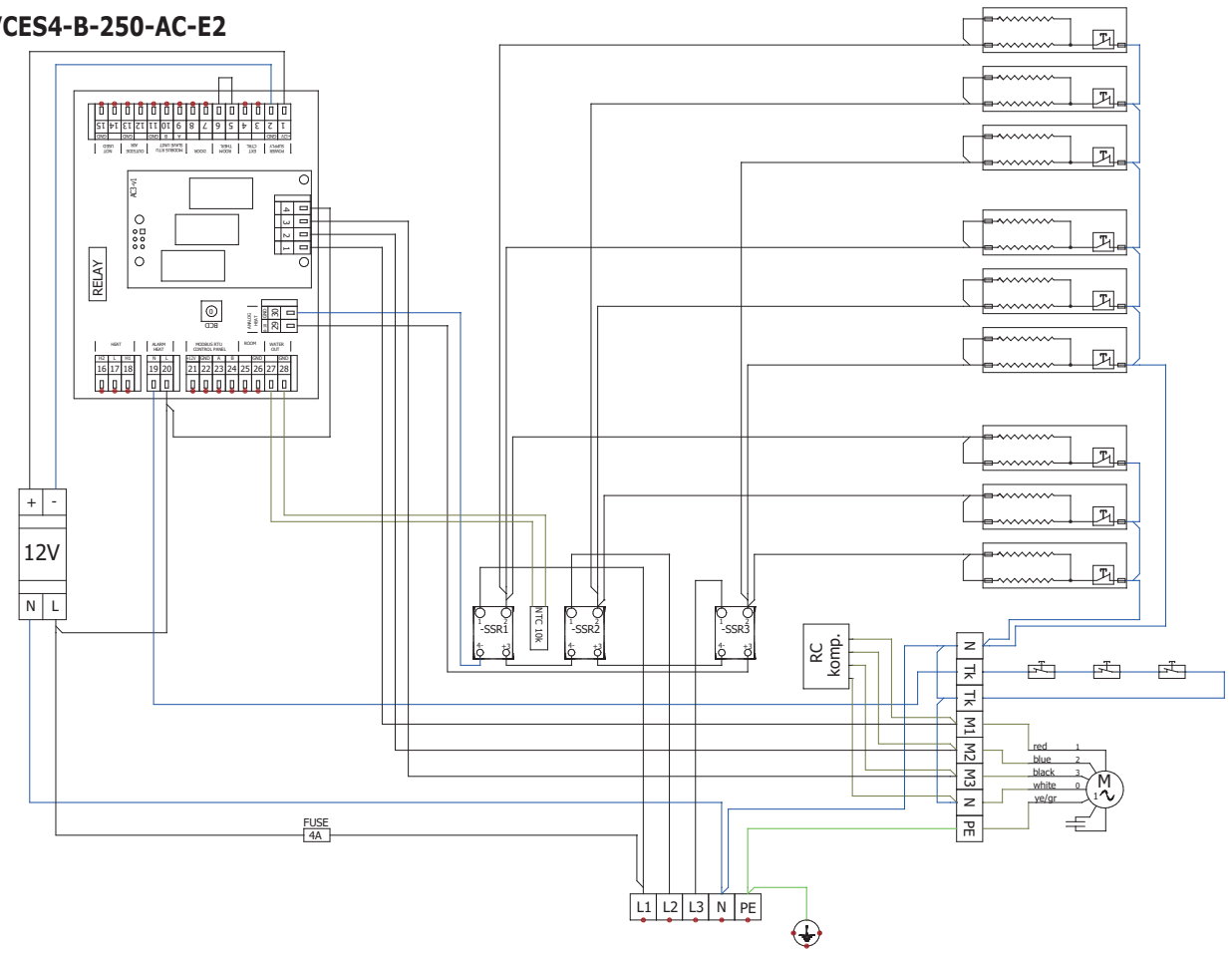
12. WIRING DIAGRAMS

AC FAN

VCES4-B-250-AC-E1

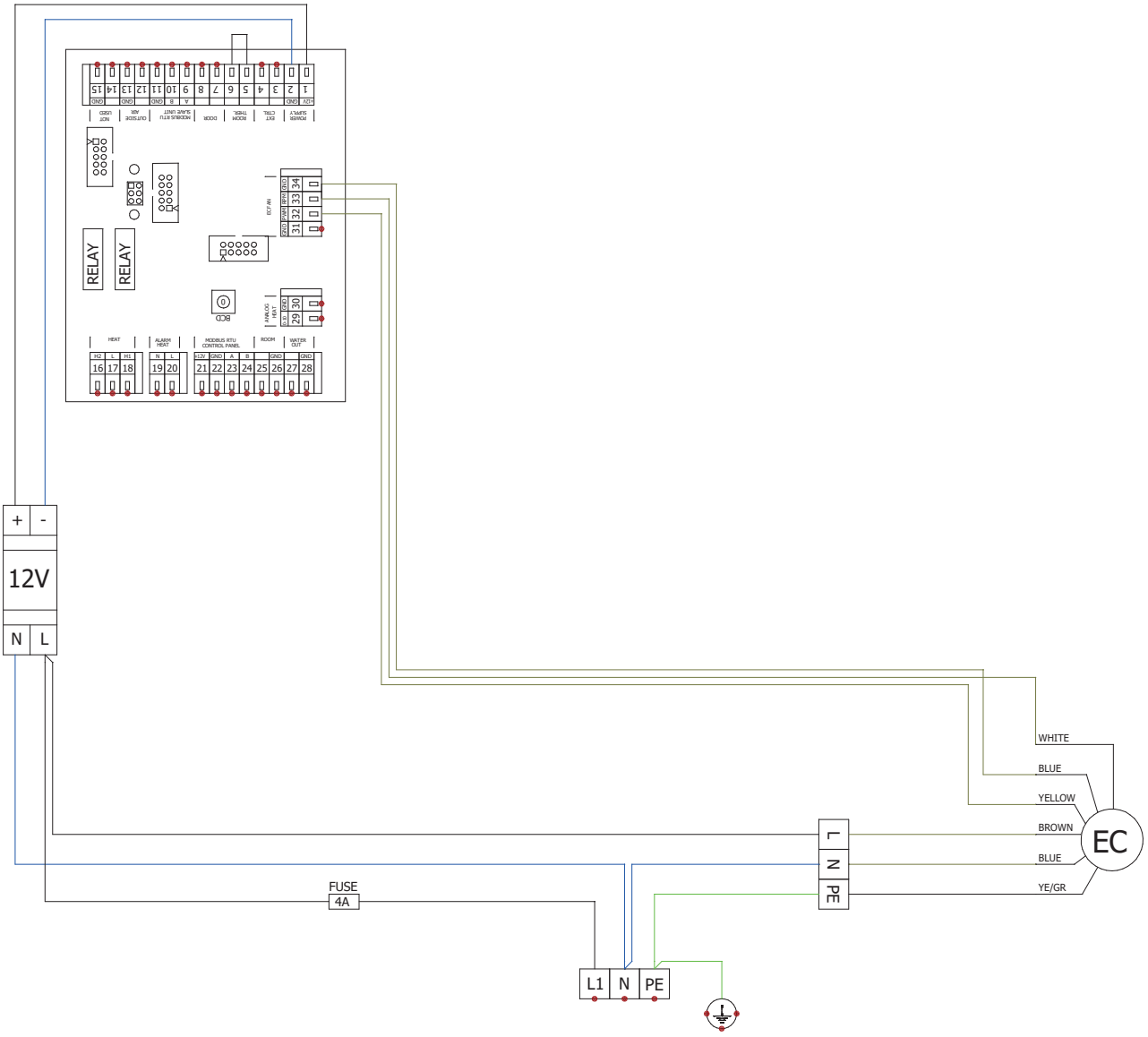


VCES4-B-250-AC-E2



12. WIRING DIAGRAMS

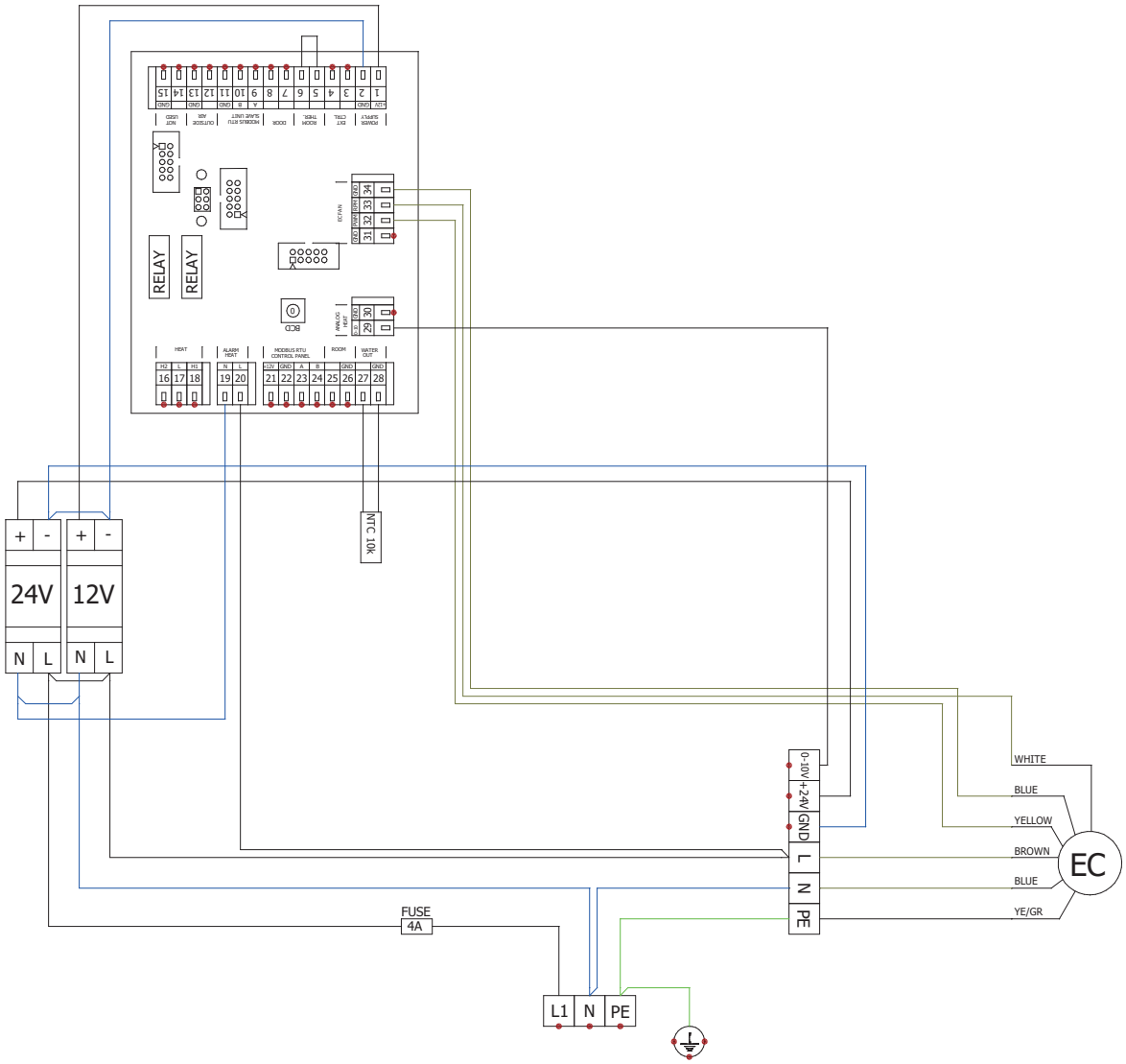
VCES4-Bxxx-EC-S0



12. WIRING DIAGRAMS

VCES4-Bxxx-EC-V2

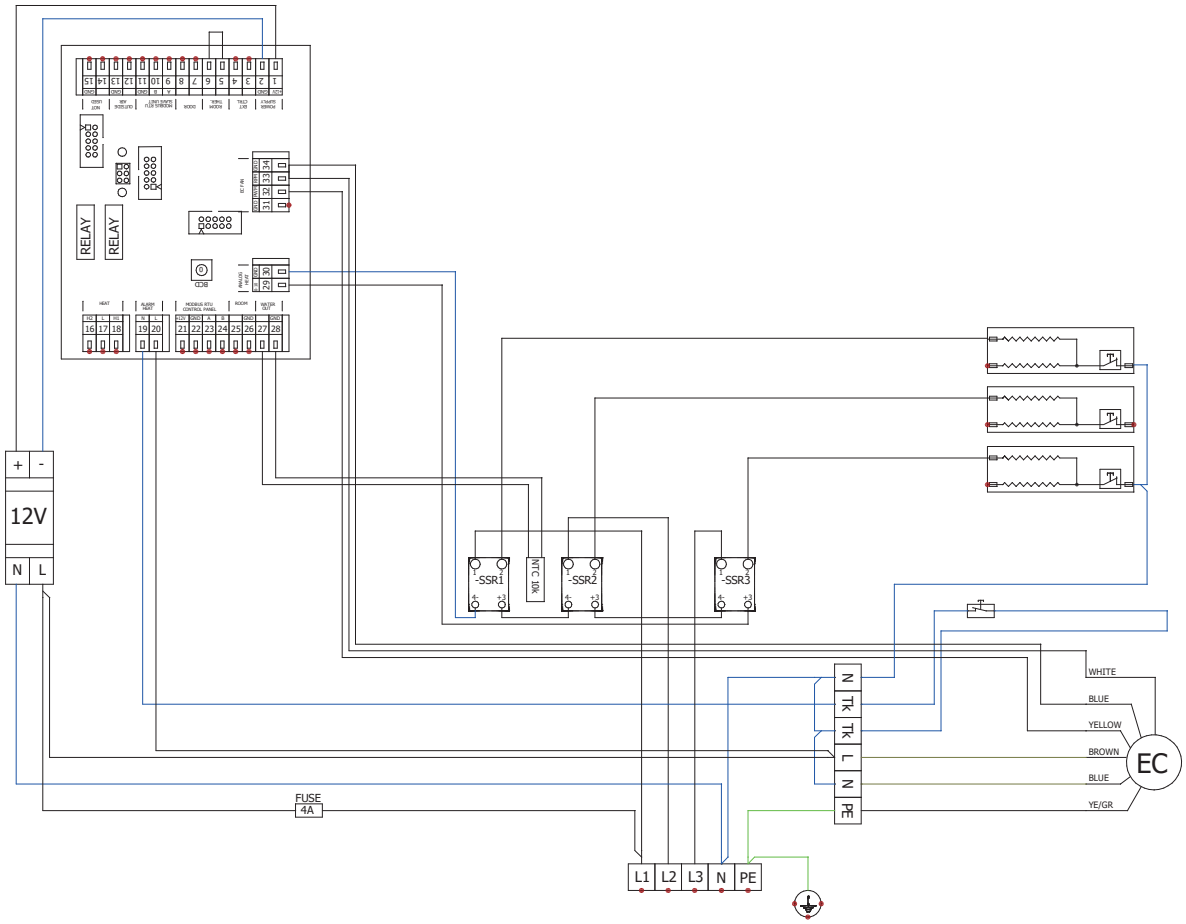
EC FAN



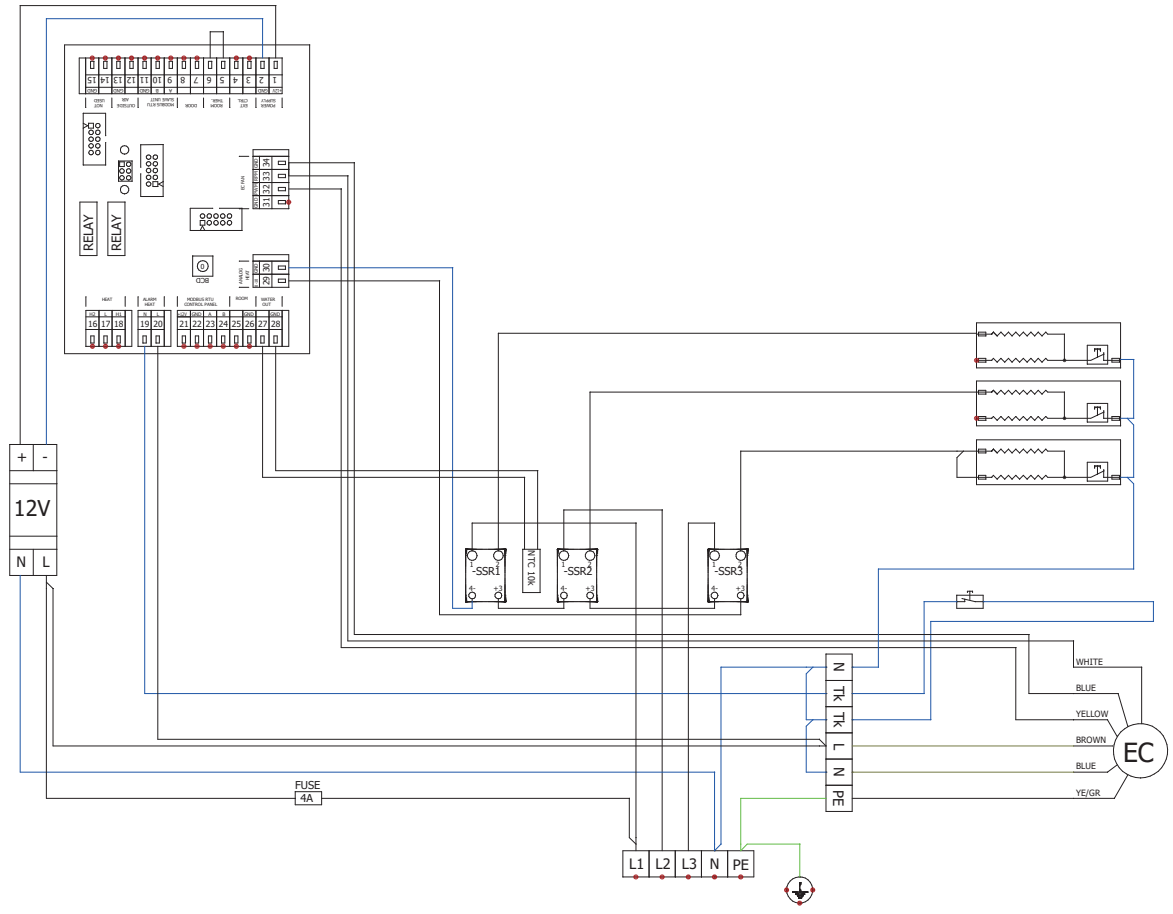
12. WIRING DIAGRAMS

EC FAN

VCES4-B-100-EC-E0



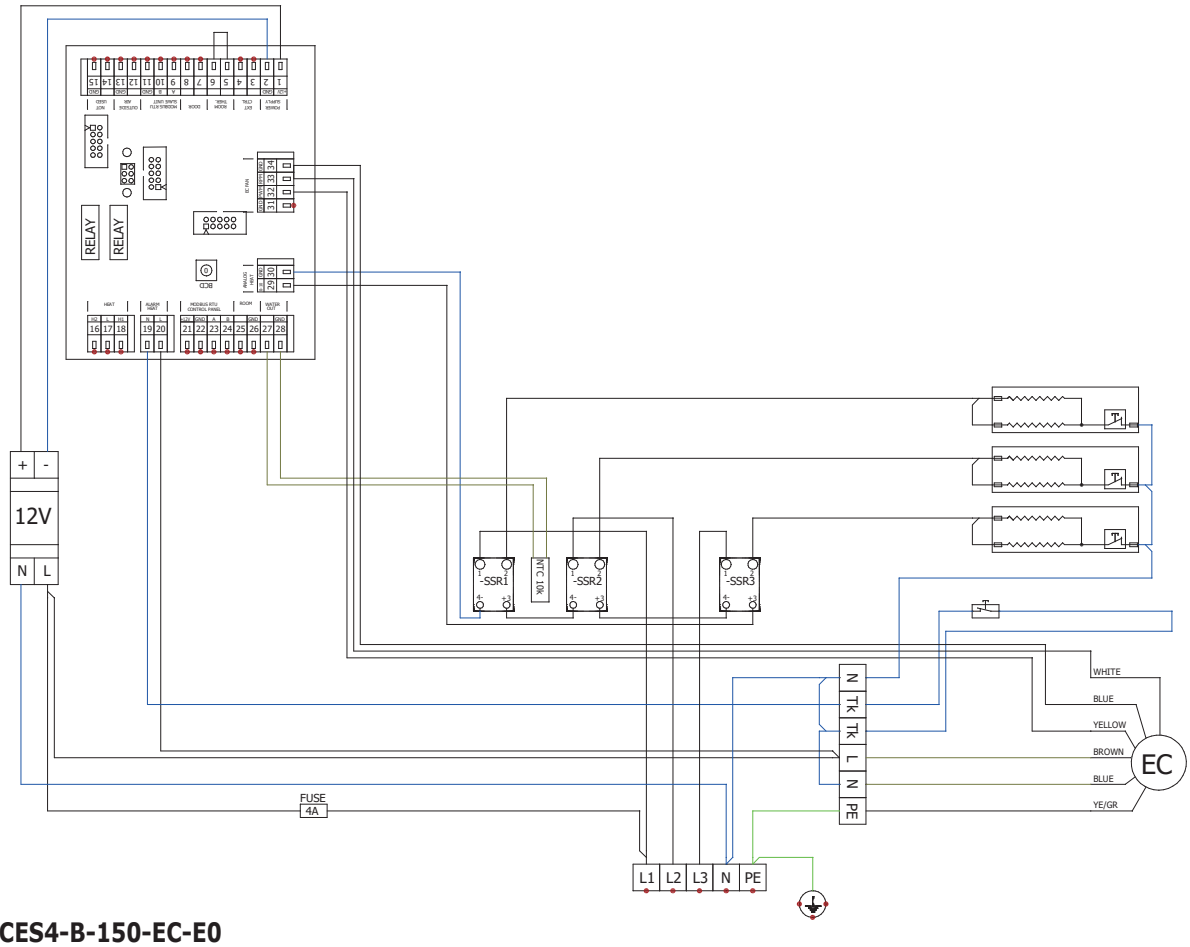
VCES4-B-100-EC-E1



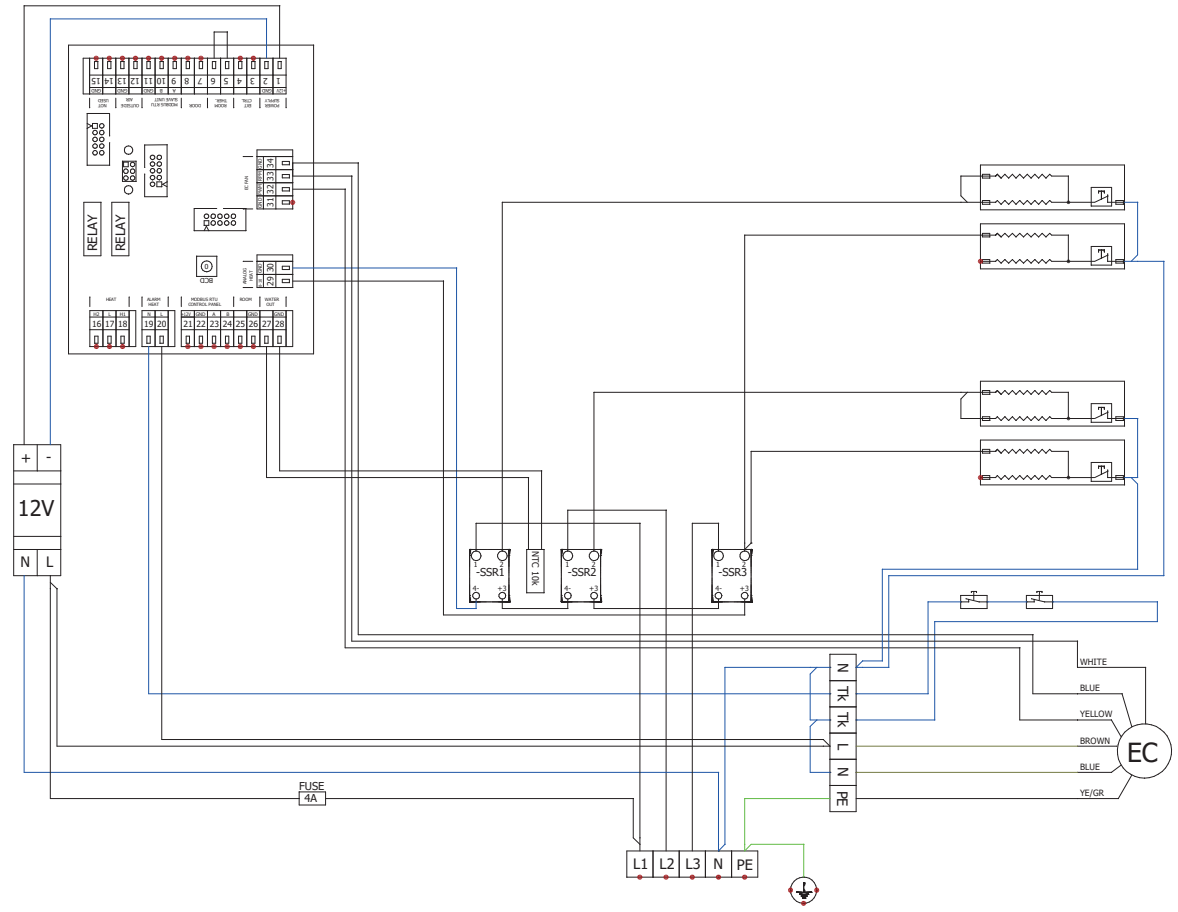
12. WIRING DIAGRAMS

EC FAN

VCES4-B-100-EC-E2



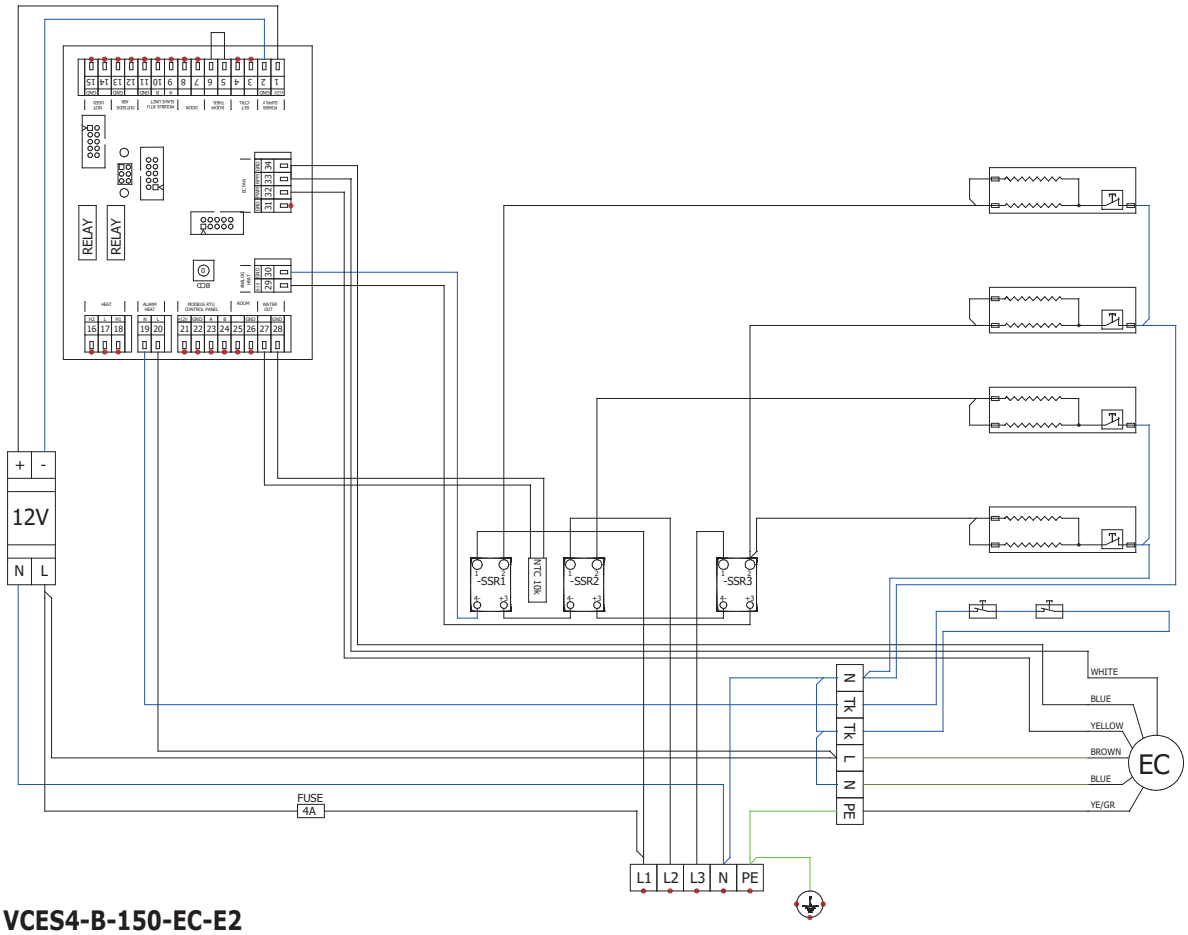
VCES4-B-150-EC-E0



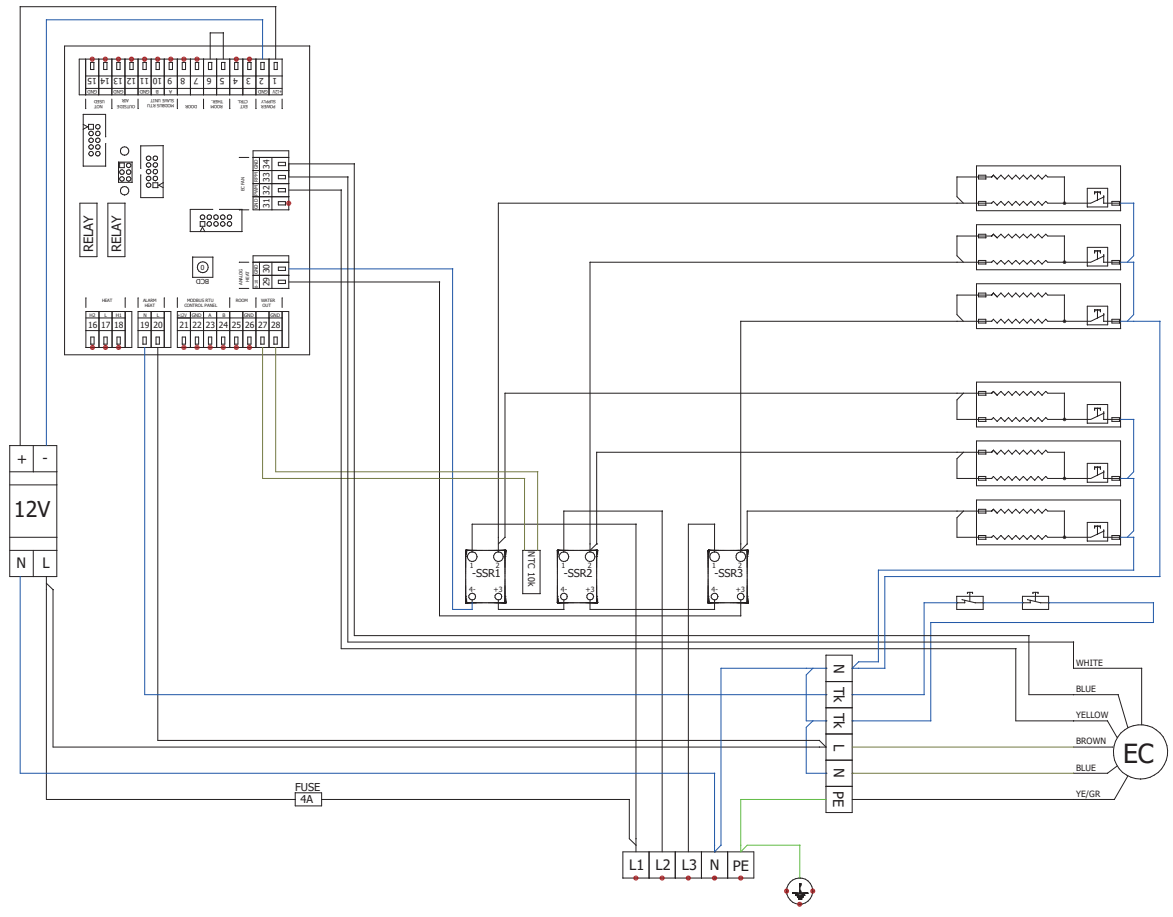
12. WIRING DIAGRAMS

EC FAN

VCES4-B-150-EC-E1



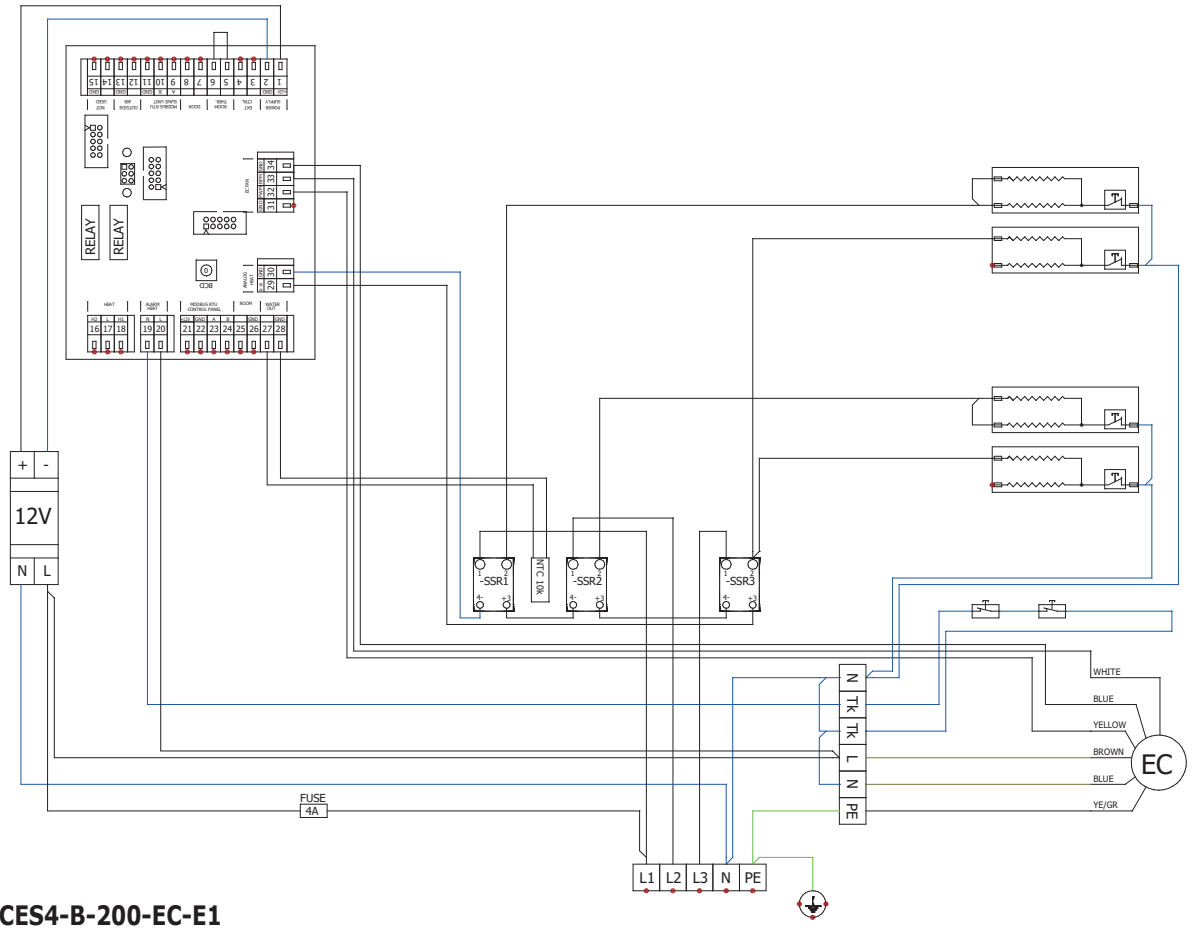
VCES4-B-150-EC-E2



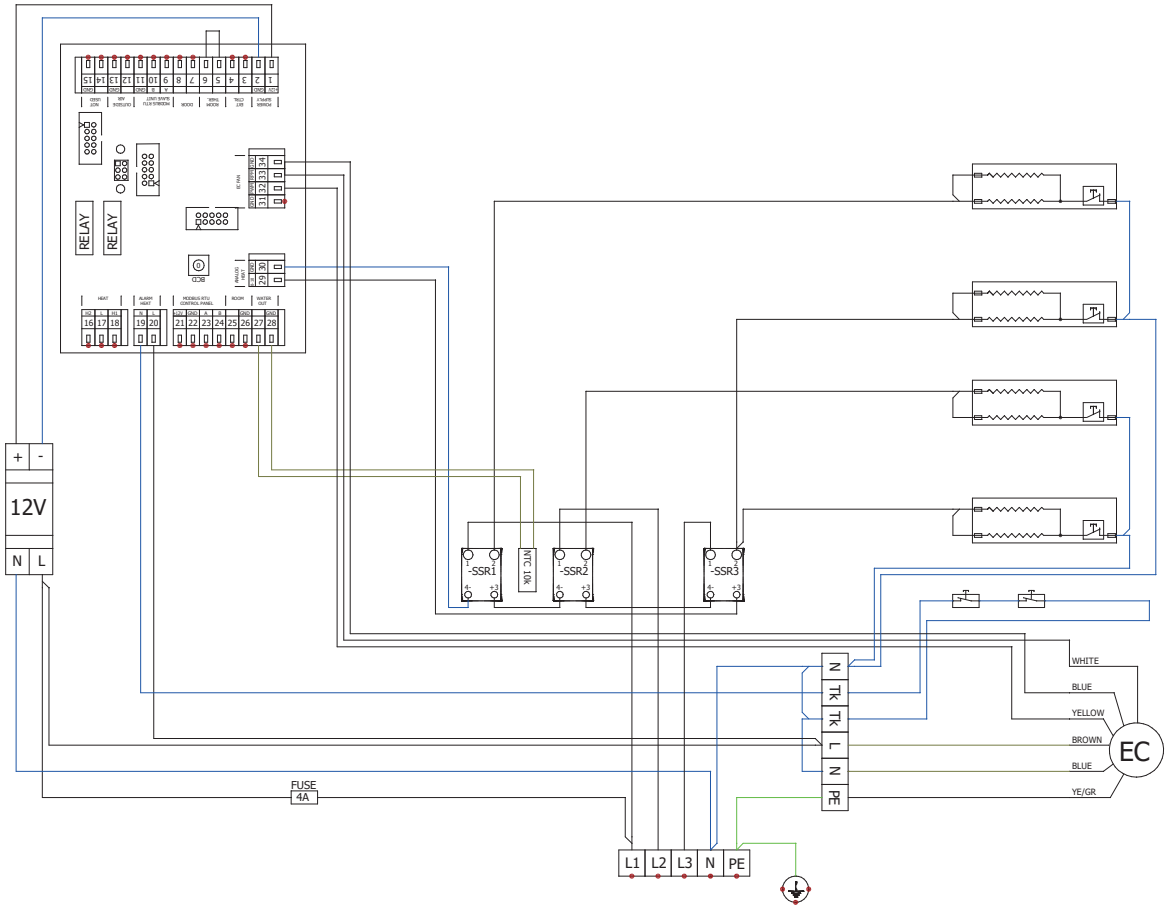
12. WIRING DIAGRAMS

EC FAN

VCES4-B-200-EC-E0



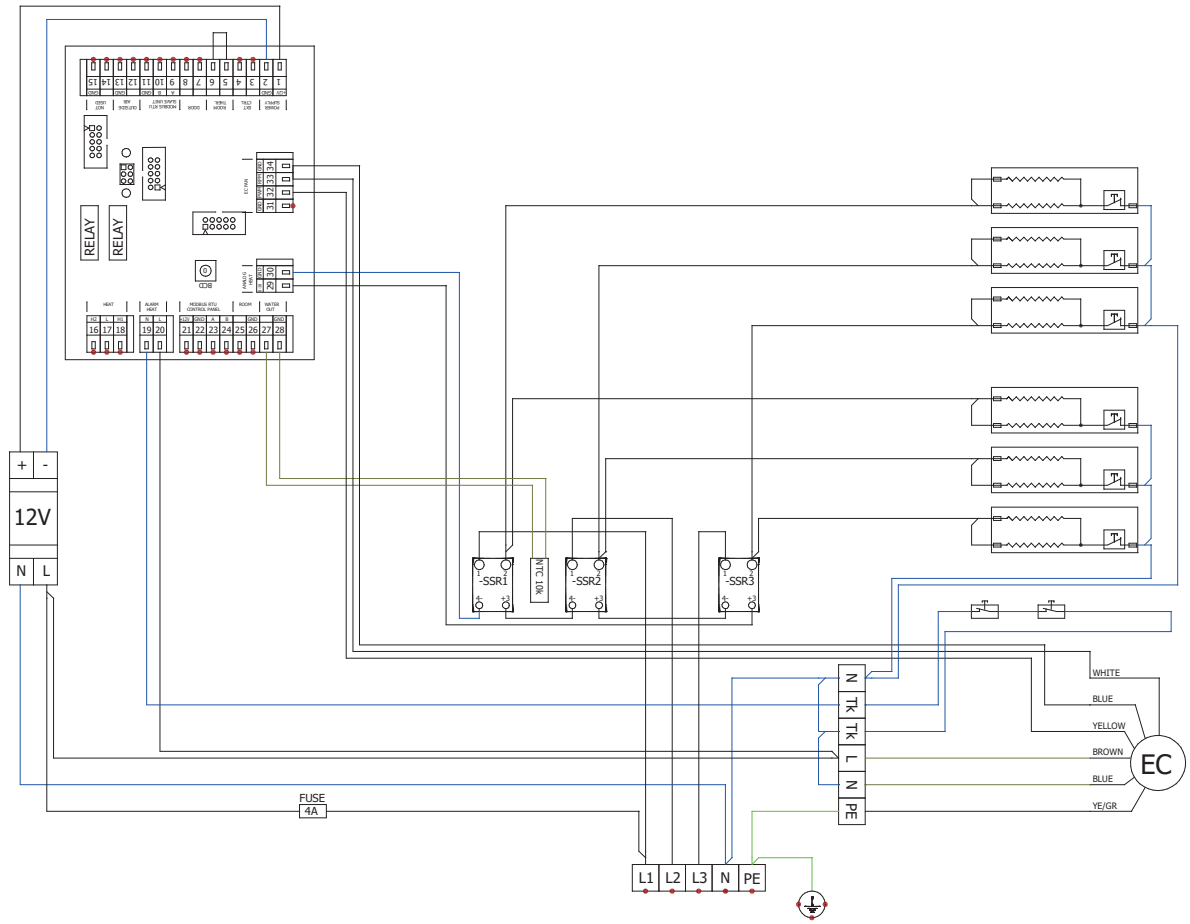
VCES4-B-200-EC-E1



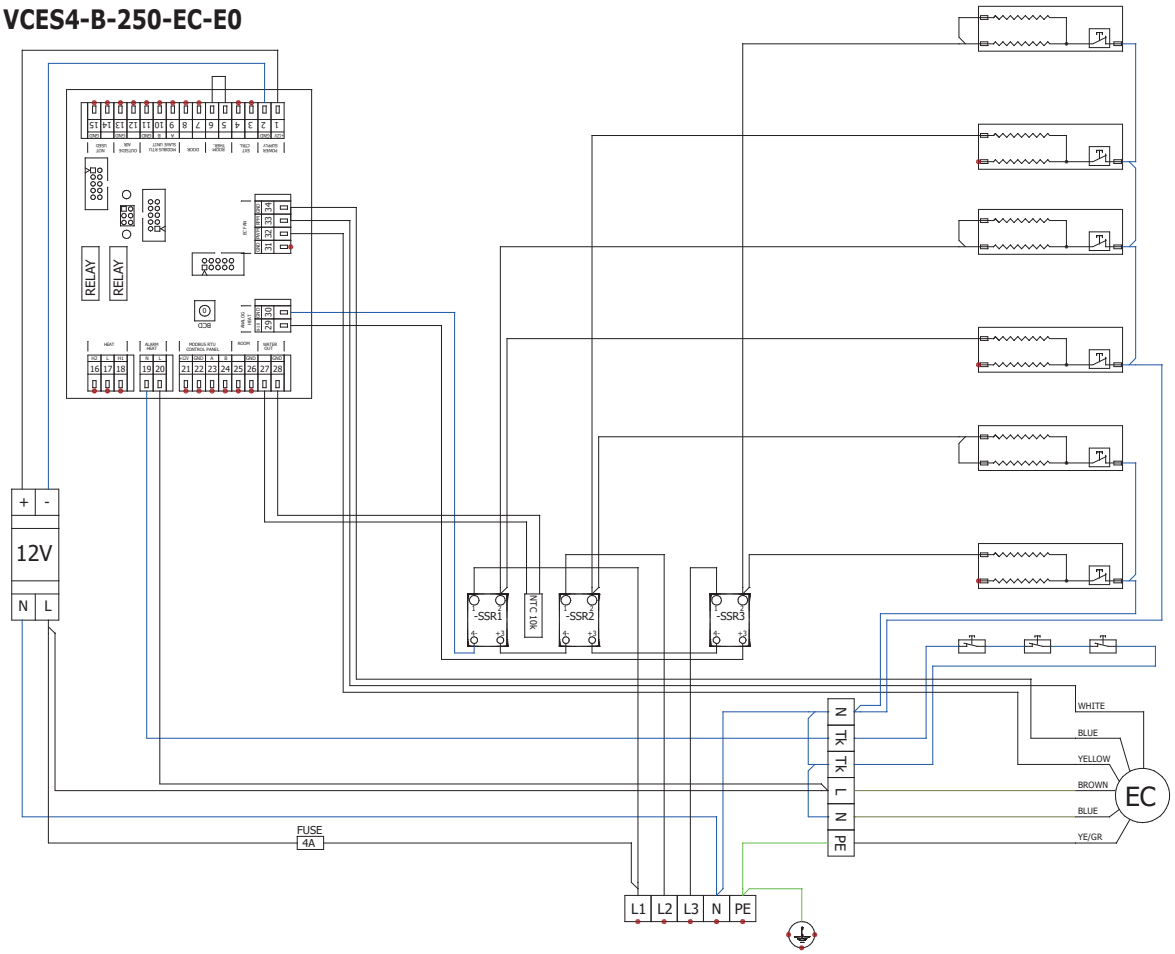
12. WIRING DIAGRAMS

EC FAN

VCES4-B-200-EC-E2

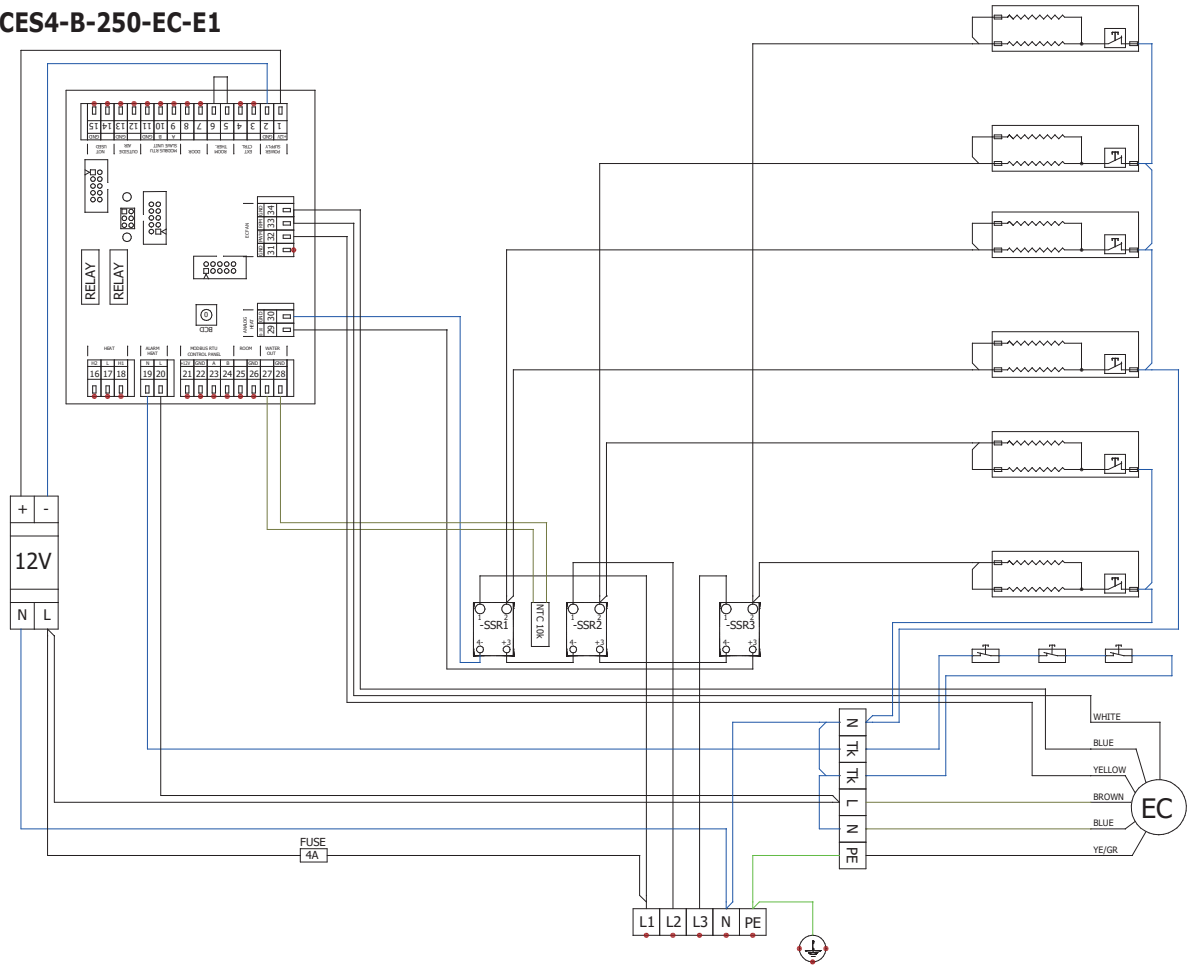


VCES4-B-250-EC-E0



12. WIRING DIAGRAMS

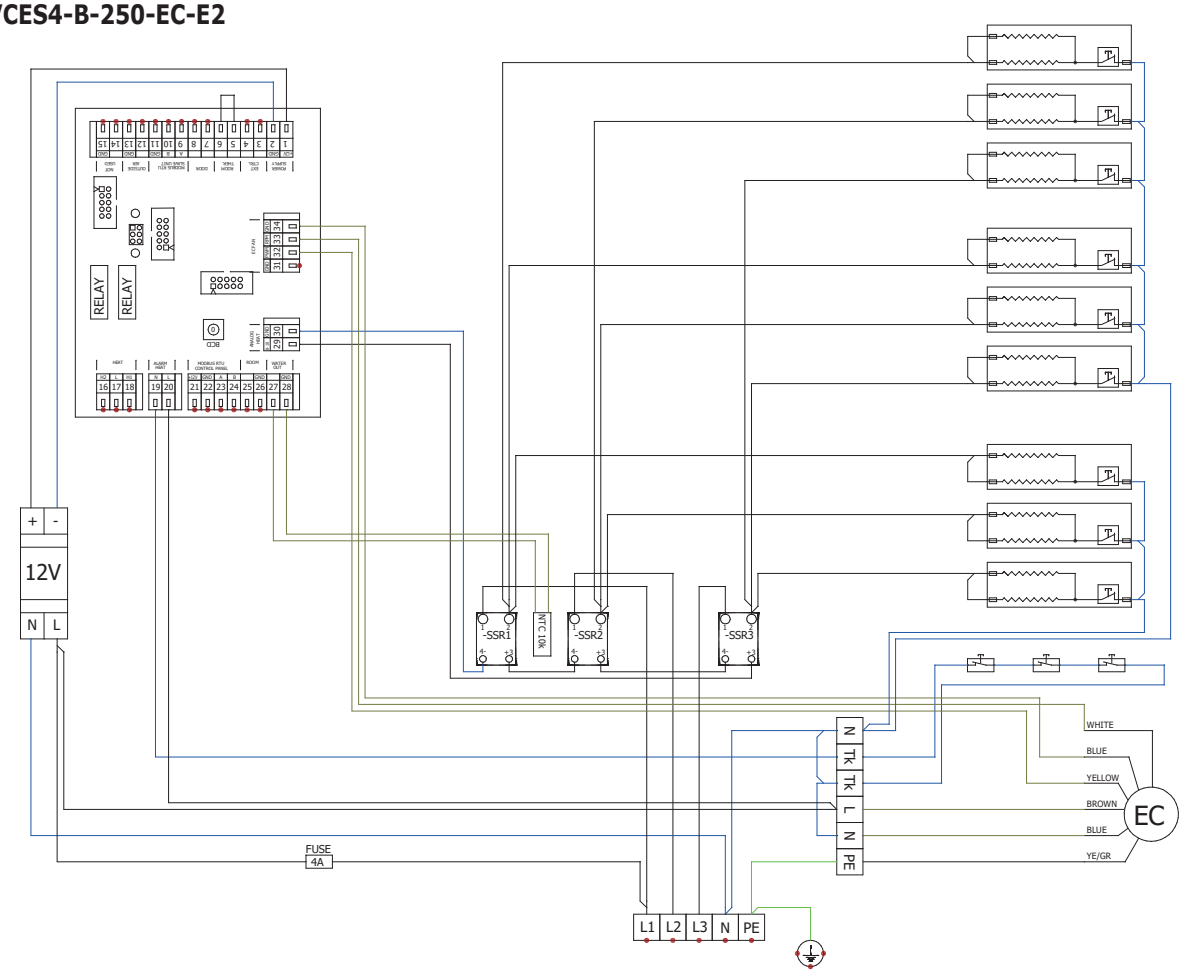
VCES4-B-250-EC-E1



EC FAN

12. WIRING DIAGRAMS

VCES4-B-250-EC-E2



EC FAN

13. CONCLUSION

After installing the air curtain, read carefully the **Manual for the appropriate regulator.** In case of any doubt or query, do not hesitate to contact our sales or technical support departments.

CONTACT

Adresse
2VV, s.r.o.,
Nádražní 794
Hala A
533 51 Pardubice – Rosice
Czech Republic

Internet :
http://www.2vv.cz/