



PARTNER
IN VENTILATION
2VV.CZ

EN

ALFA 95 II ***vertical***



Installation and operation Manual



4-118-0229







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1. BEFORE YOU START

This manual includes the following symbols that will help you with orientation in the text.

Symbol		Meaning
	ATTENTION!	Warning or notification
	READ CAREFULLY!	Important instructions
	YOU WILL NEED	Advices and practical information
	TECHNICAL DATA	Detail technical information
		Link to another part of the user guide



Before connecting the unit, please read carefully the **Safe Operation of the Ventilation Unit** guide where you can find instructions for correct and safe operation of the product.

This manual includes important instructions for safe connection of the ventilation unit. Before connecting the unit, please read carefully and follow all the instructions below! The manufacturer reserves the right to make changes, including changes in the technical documentation, without prior notification. Please keep this manual for further references. Consider this manual a permanent part of the product.

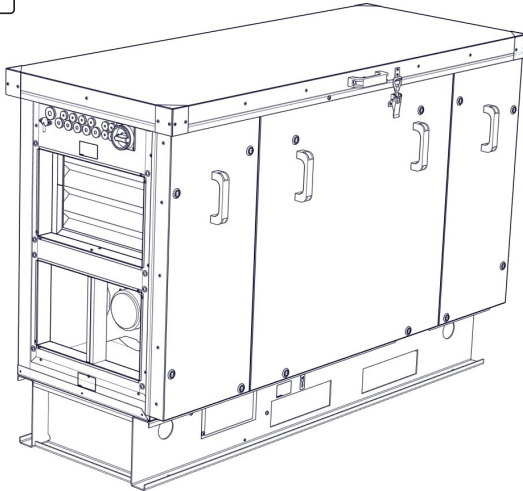
EC DECLARATION OF CONFORMITY

The product was designed, manufactured, and placed on the market, it complies with all relevant provisions and requirements of the European Parliament and the Council, including amendments, which it was classified under. The product is safe under normal conditions of installation and use. The conditions are defined in the Operating instructions. The product's safety evaluation was based on the harmonized European standards listed in the relevant EC declaration of conformity.

The current full version of the EC Declaration of conformity is available at www.2vv.cz

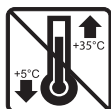
2. UNPACKING

2.1 CHECK THE SUPPLY

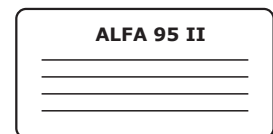
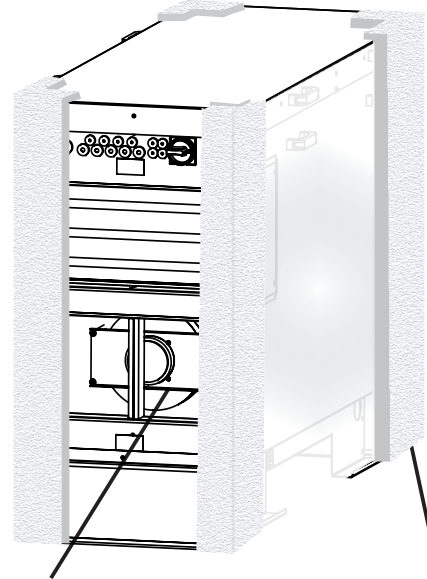


READ CAREFULLY!

- Upon delivery, check the product packaging for possible damage. If the packaging is damaged, notify the carrier. If the claim is not made in due time, any claims thereafter cannot be considered.
- Check whether the product type corresponds to your order. If the product type does not correspond, do not unpack it and contact the supplier immediately.
- After unpacking the unit, check its condition and condition of all its components. In case of doubt contact the supplier.
- Never use a damaged unit.
- If the unit is not unpacked immediately after its receipt, it must be stored in a dry place at temperatures from +5°C to +35°C.



2.2 UNPACK THE UNIT



READ CAREFULLY!

- If the ventilation unit was exposed to temperatures lower than 0 ° C during transport, keep it unpacked for at least 2 hours at room temperature before connecting it. This ensures that there is no difference between temperatures inside and outside the unit.



This product must be disposed of in accordance with local laws and regulations.

The product contains batteries and therefore it must be recycled or disposed of separately from the household waste. When the battery or the product reaches the end of its service life, contact your dealer or local authorities and ask about recycling options. The separate collection and recycling of your product and its battery will help to preserve natural resources and ensure that the product will be recycled in a manner that protects human health and the environment.

3. MAIN COMPONENTS

Size 800 / 1500 / 2500 / 3500 / 4500 / 5500



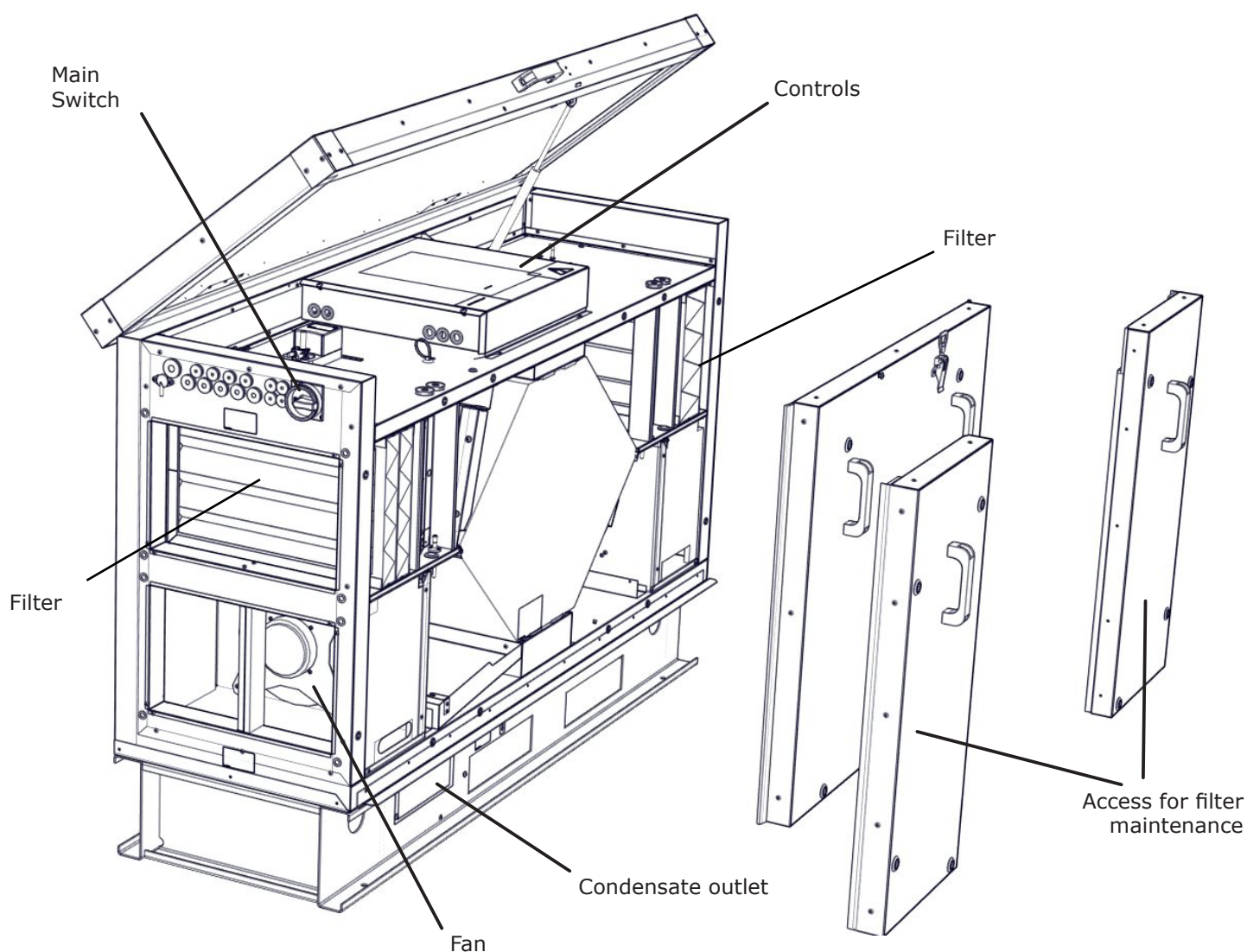
To connect use CAT5 UTP cable.
CABLE NOT INCLUDED



External temperature sensor
Shielded cable max. 50 m with a cross. 0.5 mm
CABLE NOT INCLUDED

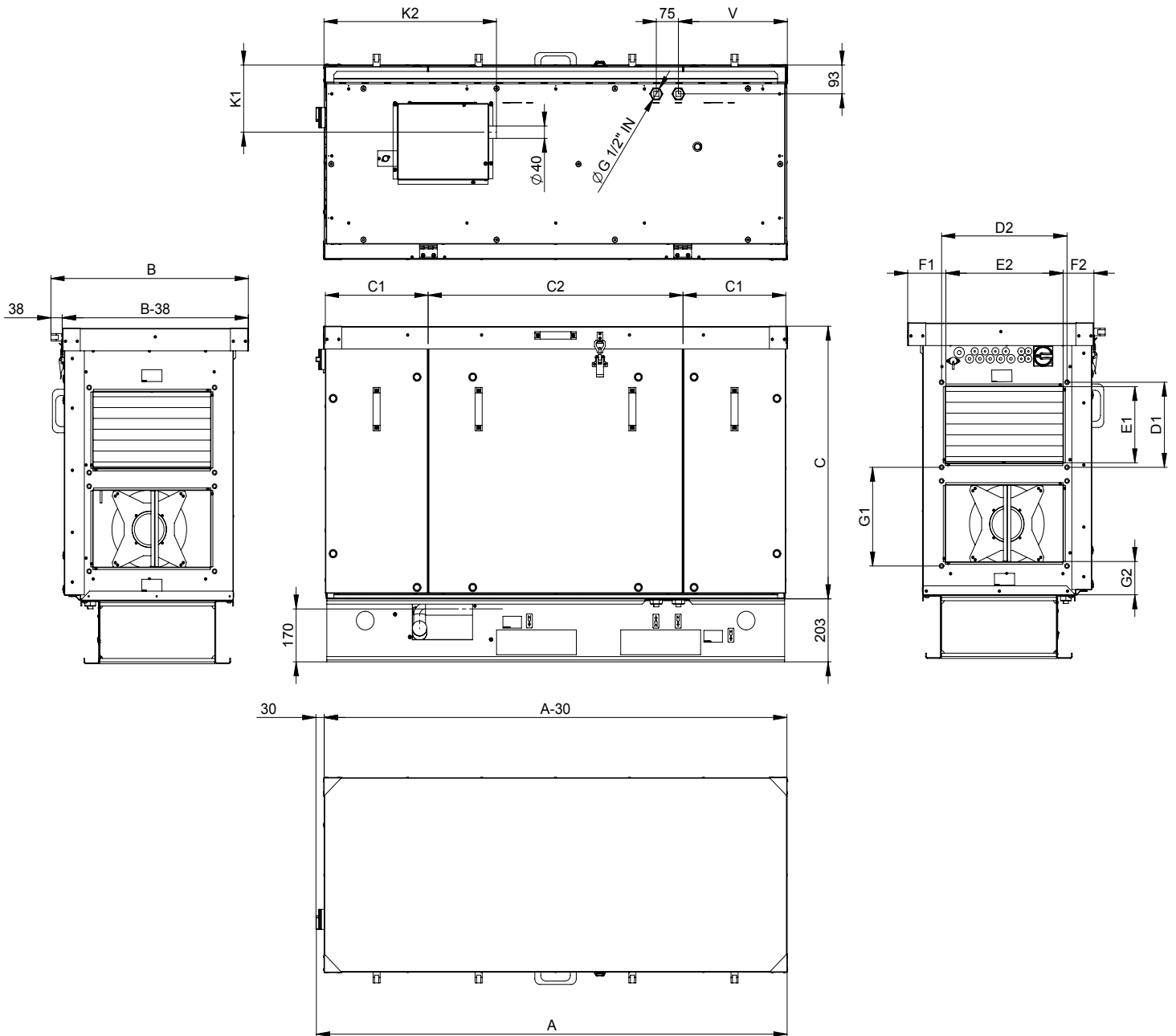


Water overflow sensor. Contact On/OFF.
Cable length 3 m



4. DIMENSIONS

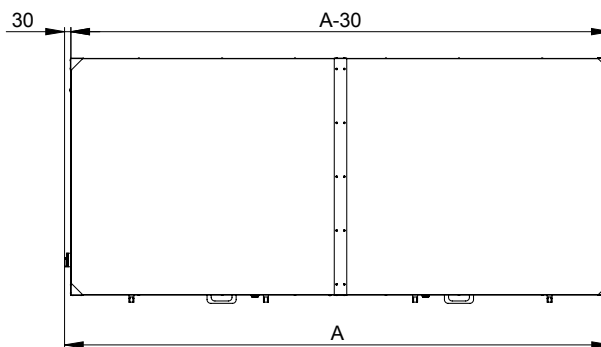
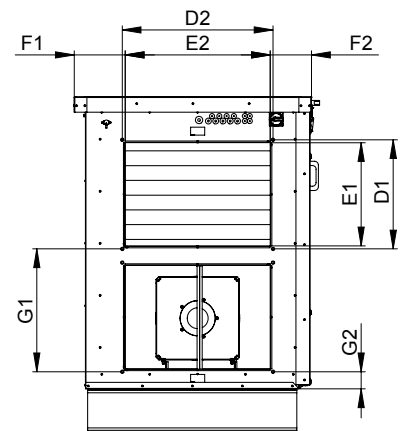
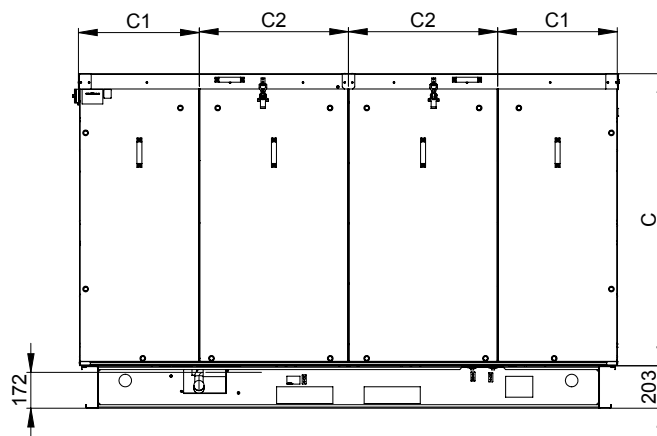
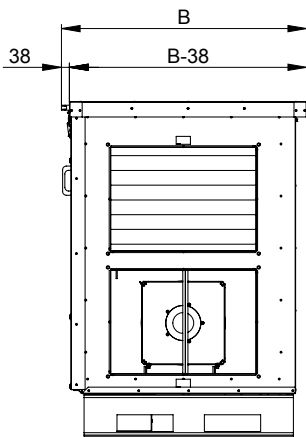
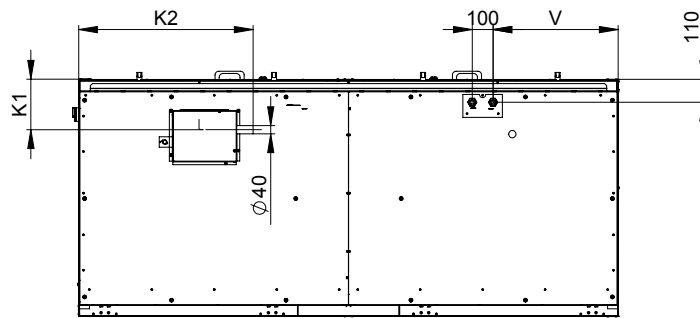
Size **800 a 1500**



Type	A	B	C	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	K1	K2	V
HR95-080	1594	668	878	862	348	274	424	246	397	129	104	318	108	217	584	369
HR95-150	1894	749	1128	1095	386	424	474	398	447	153	111	454	60	220	655	398

All dimensions are in mm

Size 2500 ~ 5500



Type	A	B	C	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	K1	K2	V
HR95-250	2164	789	1427	367	700	524	524	496	496	149	106	605	84	222	675	413
HR95-350	2622	1058	1402	580	716	524	724	496	697	186	137	590	82	242	839	602
HR95-450	2622	1178	1402	580	716	524	724	496	697	246	198	590	82	242	839	602
HR95-550	2622	1542	1402	580	716	524	1024	496	997	277	230	590	82	242	839	602

All dimensions are in mm

5. TECHNICAL PARAMETERS

Ventilator parameters (for 1 ventilator)

Type	Number of phases	Voltage [V]	Frequency [Hz]	Power consumption [W]	Current [A]	Speed [rpm]	Operating temperature min. [°C]	Operating temperature max. [°C]
HR95-080EC-...-...	1	230	50	175	1,3	2800	-25	60
HR95-150EC-...-...	1	230	50	455	3,1	2600	-25	40
HR95-250EC-...-...	1	230	50	500	3,15	1970	-25	60
HR95-350EC-...-...	3	400	50	1000	1,75	2140	-25	50
HR95-450EC-...-...	3	400	50	1000	1,75	2140	-25	50
HR95-550EC-...-...	3	400	50	1615	2,5	1750	-25	50

Electric preheater parameters

Type	Number of phases	Voltage [V]	Frequency [Hz]	Power consumption [W]	Current [A]
HR95-080...-...-E	1	230	50	2700	11,8
HR95-150...-...-E	3	400	50	5300	13,3
HR95-250...-...-E	3	400	50	8300	12,0
HR95-350...-...-E	3	400	50	11700	16,9
HR95-450...-...-E	3	400	50	15000	21,7
HR95-550...-...-E	3	400	50	18300	26,5

Electric reheater parameters

Type	Air flow [m³/h]	Air heating [°C]	Total power [kW]	Current [A]	Number of phases	Voltage [V]
HR95-080...-...-E	650	6,3	1,4	6,1	1	230
HR95-150...-...-E	1500	5,3	2,7	11,8	1	230
HR95-250...-...-E	2250	6,3	4,8	6,9	3	400
HR95-350...-...-E	3500	5,4	6,4	9,3	3	400
HR95-450...-...-E	4500	5	7,6	11	3	400
HR95-550...-...-E	5500	5,7	10,6	15,4	3	400

Hot-water reheater parameters

Type	Air flow [m³/h]	Power (kW)*	Temperature after exiting the heater [°C]	Pressure drop in the water flow [kPa]	Pressure drop in the air flow [Pa]	Connection cross-section ["]
HR95-080...-...-W	650	2,88	28,2	4	13	1/2"
HR95-150...-...-W	1500	5,44	25,8	3	25	1/2"
HR95-250...-...-W	2250	9,73	27,9	11	27	1/2"
HR95-350...-...-W	3500	14,1	27,9	10	18	1/2"
HR95-450...-...-W	4500	16	26,1	4	22	1/2"
HR95-550...-...-W	5500	22,7	27,3	7	22	3/4"

* for water 60/40 and the inlet temperature = +15 °C

CO exchanger parameters (Heating mode)

Type	Connection cross-section ["]	Pressure drop in the air flow [Pa]	Pressure drop in the water flow [kPa]	Power[kW]*	Air flow [m ³ /h]*	Media flow [m ³ /h]*	Temperature after exiting the heat exchanger [°C]*
HR95-080EC-...C	3/4	59	2,3	6,17	800	0,27	37,6
HR95-150EC-...C	3/4	73	1,6	10,74	1500	0,47	36
HR95-250EC-...C	1	91	2,2	17,56	2500	0,77	35,6
HR95-350EC-...C	1 1/2	62	2,3	27,02	3500	1,18	37,7
HR95-450EC-...C	1 1/2	75	1,4	31,98	4500	1,39	35,9
HR95-550EC-...C	1 1/2	57	2,6	43,78	5500	1,91	38,4

* For water 60/40 and the inlet temperature = +15 °C

CO exchanger parameters (Cooling mode)

Type	Connection cross-section ["]	Pressure drop in the air flow [Pa]	Pressure drop in the water flow [kPa]	Power [kW]*	Air flow [m ³ /h]*	Media flow [m ³ /h]*	Temperature after exiting the heat exchanger [°C]*
HR95-080EC-...C	3/4	66	21,1	4,92	800	0,84	15,6
HR95-150EC-...C	3/4	83	14,1	8,43	1500	1,45	16,3
HR95-250EC-...C	1	102	20,2	13,87	2500	2,38	16,4
HR95-350EC-...C	1 1/2	70	21,2	21,61	3500	3,71	15,6
HR95-450EC-...C	1 1/2	84	12,5	25,1	4500	4,3	16,3
HR95-550EC-...C	1 1/2	64	24,4	35,24	5500	6,04	15,3

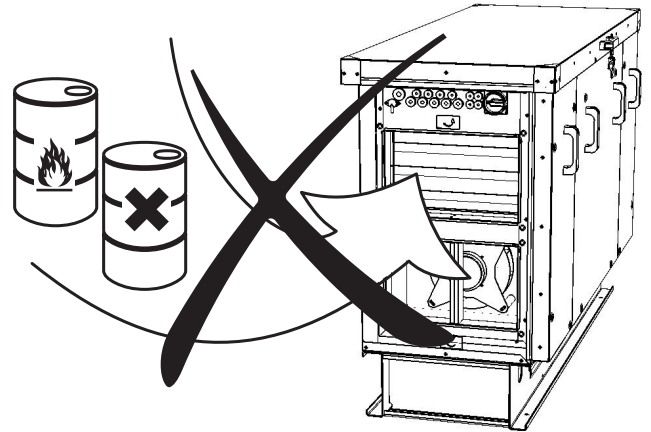
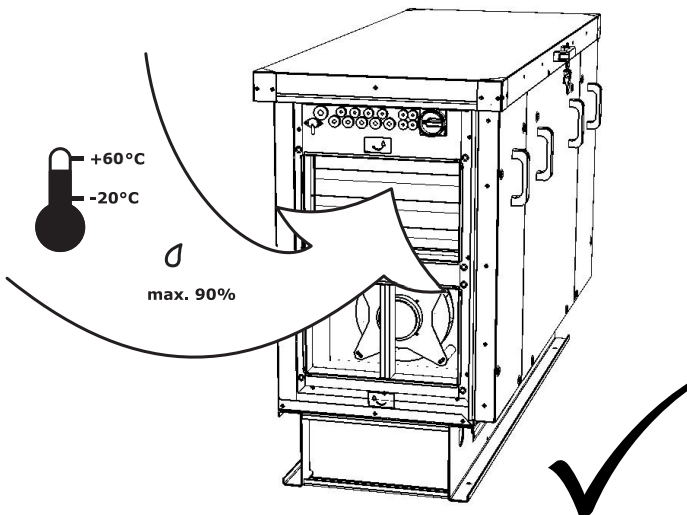
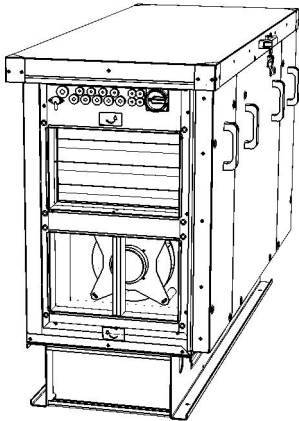
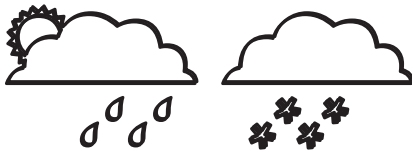
* For water 7/12 and the inlet temperature = +25 °C

Direct evaporator (Cooling mode)

Type	Air flow [m ³ /h]	Power [kW]	Temperature after exiting the heat exchanger [°C]	Humidity after exiting the heat exchanger [%]	Coolant pressure loss [kPa]	Pressure drop in the air flow [Pa]	Connection cross-section gas (liquid) ["]
HR95-080EC-...D	800	5,29	15,3	90,1	21,3	62	5/8 (5/8)
HR95-150EC-...D	1500	9,69	15,5	89,6	42,0	76	7/8 (1/2)
HR95-250EC-...D	2500	15,33	16	89,2	19,9	94	1 1/8 (7/8)
HR95-350EC-...D	3500	24,12	15	90	21,4	64	1 3/8 (1 1/8)
HR95-450EC-...D	4500	30,08	15,3	89,5	35,0	76	1 5/8 (1 1/8)
HR95-550EC-...D	5500	39,41	14,6	90,2	24,2	57	1 5/8 (1 1/8)

Data applies for the inlet temperature = +25°C, 70% RH and the evaporation temperature +5°C, coolant R410A

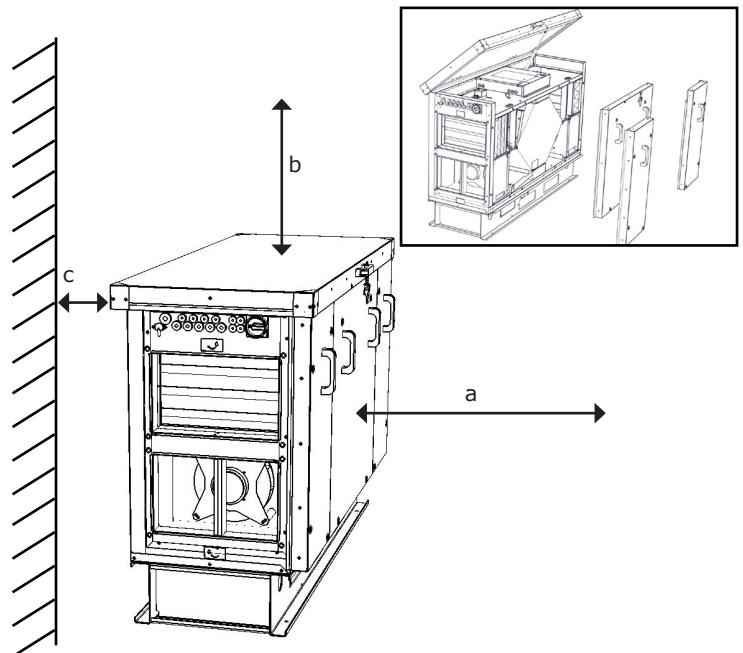
6. INSTALLATION



The unit is not designed for air containing flammable or explosive mixtures, chemical vapours, heavy dust, soot, grease, toxins, pathogenic organism, etc.

The electric protection index of units is IP 43 (designed for outdoor environments).

6.1-1 Access distances needed for servicing the unit



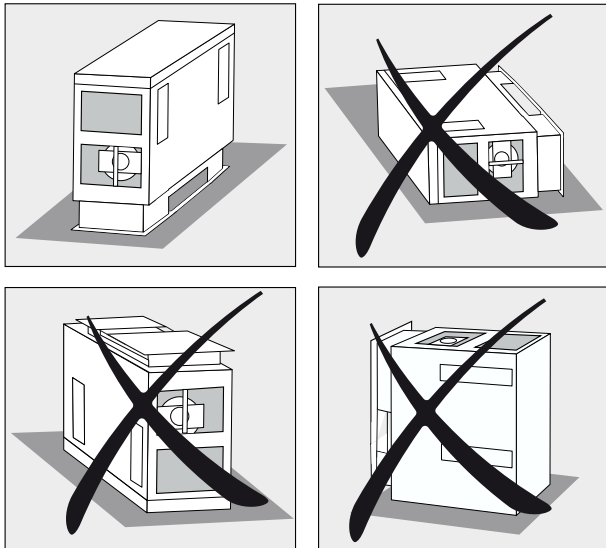
Type	a	b	c
HR95-080...-....	1000	800	100
HR95-150...-....	1000	800	100
HR95-250...-....	1000	800	100
HR95-350...-....	1100	1000	100
HR95-450...-....	1300	1200	100
HR95-550...-....	1600	1500	100

All dimensions in the table are in mm

6. INSTALLATION

⚙️ TECHNICAL DATA

- All types of ventilation units must be installed in a horizontal position. Other positions are not allowed.



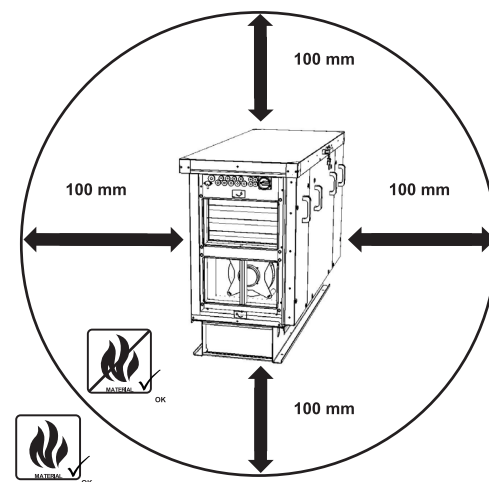
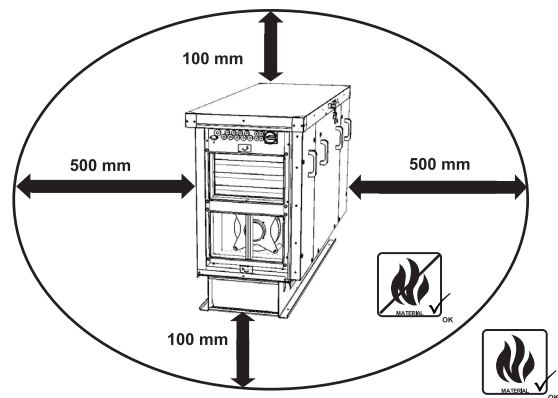
The unit must be installed so the air flow direction corresponds with the air flow direction in the distribution ducting.

The unit must be installed so it is possible to perform maintenance, repairs or disassembly. This means in particular access to inspect dampers and the possibility to open them, access to the control unit box cover, to connections on the sides of the unit, and to the air filter cover.

6.1-2 Safe installation distance

⚠️ ATTENTION!

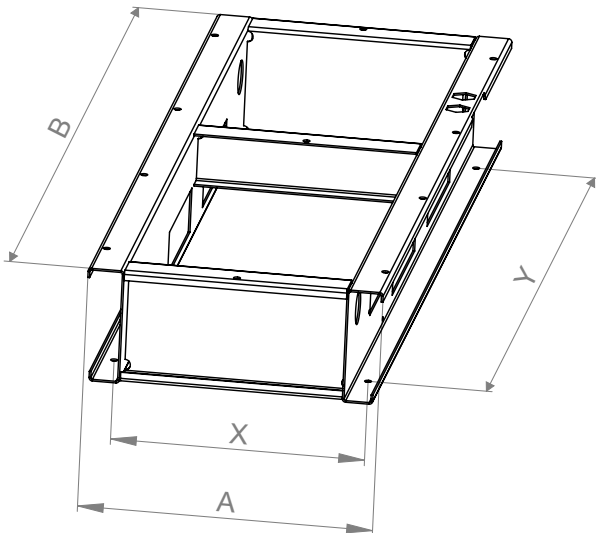
- All materials used in a distance shorter than 100 mm from the ventilation unit must be non-flammable (they do not burn, flame up, burn out) or little flammable (they do not burn, decompose – e.g. drywall). However, these materials must not cover the unit's inlets and outlets.
- The safe distance of flammable materials from the unit's outlets is 500 mm.
- The safe distance of flammable materials in other directions is 100 mm..



6. INSTALLATION

6.1-3 Unit anchoring

The anchoring points must be set out according to the following drilling template.



Fixing of the unit by 4 ~ 8 M10 bolts at the bottom of the bracket

Type	A	B	X	Y	Kg*
HR95-080...-...-...	516	1548	444	1300	257
HR95-150...-...-...	586	1850	514	1760	298
HR95-250...-...-...	624	2110	552	1300	399
HR95-350...-...-...	885	2565	793	2200	569
HR95-450...-...-...	1005	2565	913	2200	619
HR95-550...-...-...	1368	2565	1276	2200	715

all dimensions are in mm

* - the total weight of the heaviest unit in the category

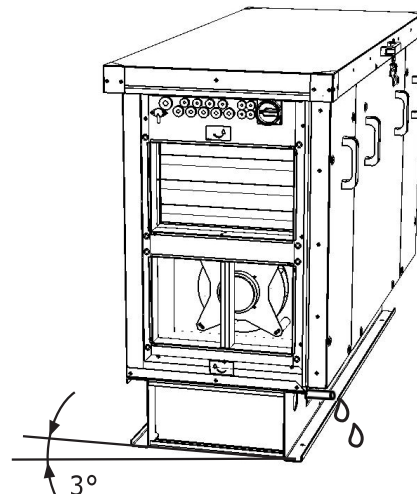
⚠ ATTENTION!

- The unit must be fixed to the base so it cannot move accidentally.
- With respect to the weight of the unit, it is necessary to use a corresponding handling device to lift it up (e.g. a forklift).

🔧 YOU WILL NEED

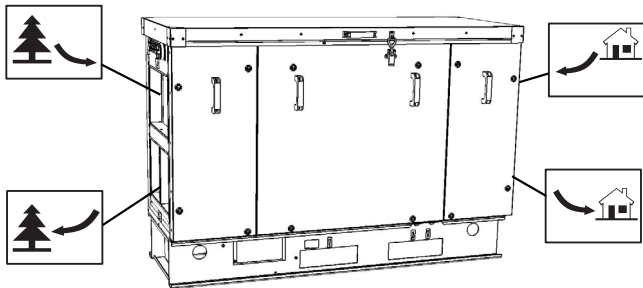
- 4 ~ 8 self-locking nuts, size M8 (depending on the unit's type)
- 4 ~ 8 threaded rods
- 4 ~ 8 dowels of a corresponding type and dimensions (depending on the material of the ceiling and the unit's weight).
- drill and drill bits of corresponding dimensions
- pliers and correct size spanner wrench

Place the unit in a horizontal position then tilt it about 3° so that the condensate can drain away. Fasten the unit with screws.

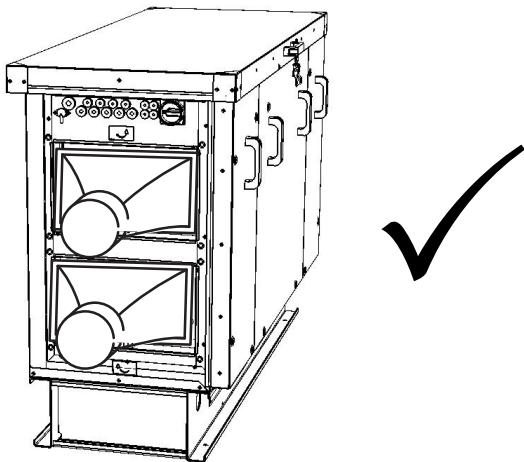


6. INSTALLATION

6.2 CONNECTING AIR INLETS

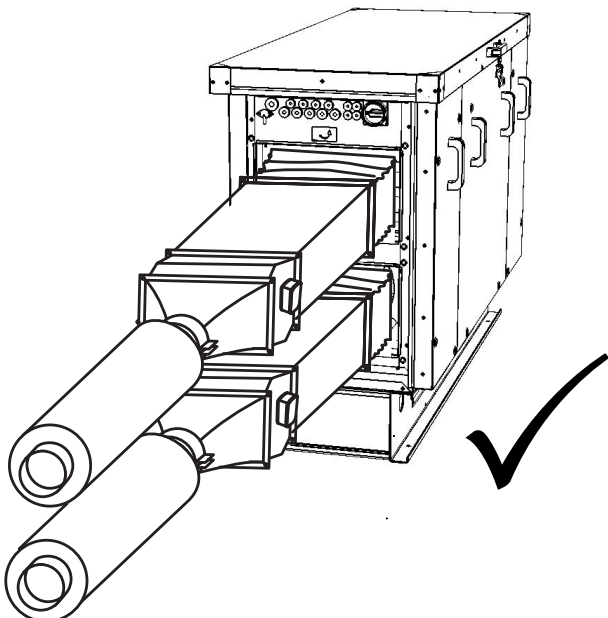


6.2-1 Duct connection Unit inlet/outlet - circular/re- ctangular



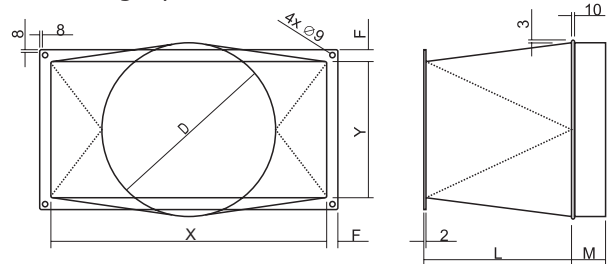
This is an accessory part which must be ordered separately

Example of possible connection with flexible connectors.
(This accessory is not supplied)



✂ YOU WILL NEED

- 16 M8 bolts (4 screws are supplied with each transition for rectangular/circular pipes)
- 4 sockets for connecting rectangular/circular pipes (accessories)
- corresponding spanner
- sealing tape / sealant

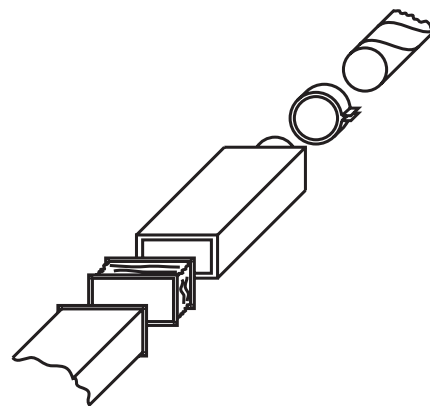


Type	X	Y	D	L	M
HR95-080...	400	250	250	100	50
HR95-150...	500	350	350	150	70
HR95-250...	500	500	400	200	70
HR95-350...	700	500	560	250	70
HR95-450...	700	500	560	250	70
HR95-550...	1000	500	630	600	70

All dimensions are in mm

🔍 READ CAREFULLY!

- The connected ducts must have the same dimensions as the unit's inlets and outlets. Smaller diameter ducts may cause a decrease in the unit's efficiency. In some cases, they may lead to shortening of the unit's lifetime.
- Connect the inlets and outlets (rectangular/circular hole). Use flexible joints to prevent vibrations.



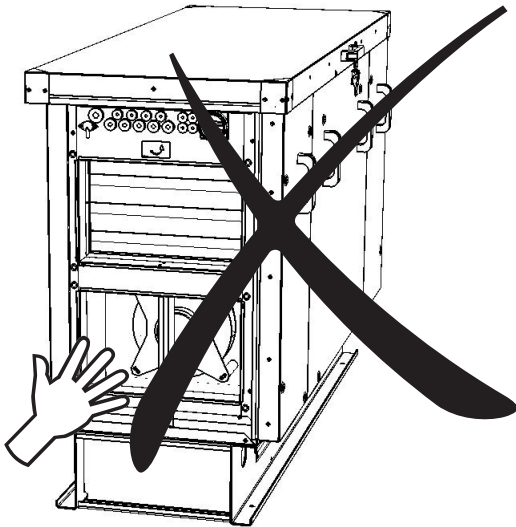
All connections of the distribution ducts to the ventilation unit must be sealed with a sealant or sealing tape.

The minimum distance between ducts or adapters and the unit's neck is 500 mm.

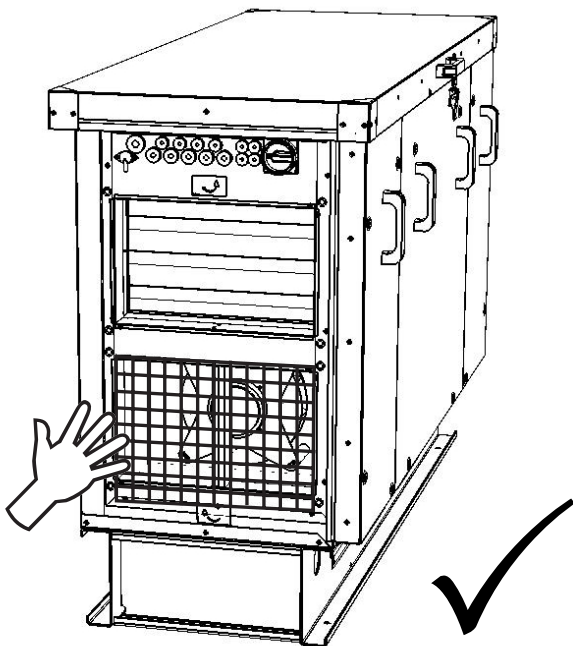
6. INSTALLATION

6.2-2 Protection of the unit's inlets and outlets (not included)

If an inlet or outlet is not connected to the ducts, a rain louvre must be used to prevent water and solid particles from coming into contact with the ventilator, heating elements, etc.



These accessories must be ordered separately

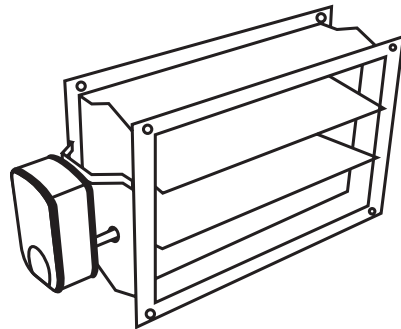


6.3 CONNECTING MECHANICAL ACCESSORIES

6.3-1 Air dampers

These rectangular dampers are used to close the air inlets connected to the ventilation unit.

These accessories must be ordered separately



YOU WILL NEED

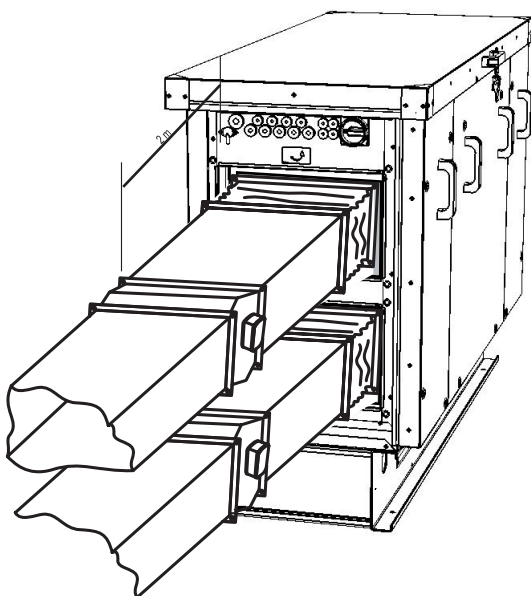
- 2 rectangular dampers (of corresponding dimensions)
- 2 actuators (with one or two wires, voltage 230 V)
- 8 M8 bolts and nuts
- 16 washers
- corresponding spanner
- flat tip screwdriver, Phillips screwdriver, sealing tape, and sealant

6. INSTALLATION

Types of rectangular dampers

Types of rectangular dampers	
HR95-080.....	MLKR/S-400250-04N1-0
HR95-150.....	MLKR/S-450400-04N1-0
HR95-250.....	MLKR/S-500500-04N1-0
HR95-350.....	MLKR/S-700500-04N1-0
HR95-450.....	MLKR/S-700500-04N1-0
HR95-550.....	MLKR/S-1000500-04N1-0

Install one dampers approx. 2 m the fresh air-suction neck of the duct, then install another damper on the exhaust duct, approx. 2 m from the neck. Connect servomotors to corresponding terminals in the casing of the control unit. See chapter Connecting wiring and electrical accessories

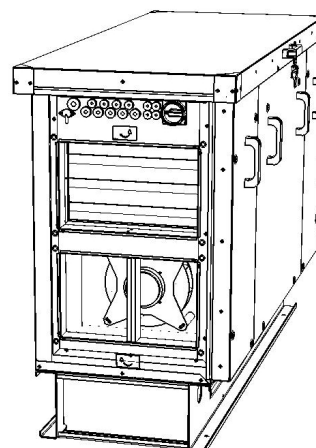


Set the damper to a completely closed position if the unit is off and to a completely opened position if the unit is running. Setting the damper to a different position may damage the unit.

6.4. CONNECTING ELECTRICAL ACCESSORIES

⚠ ATTENTION!

- **Before any intervention in the ventilation unit, the main power switch must be off!**
- *The ventilation unit's electrical wiring must correspond to a layout designed by a professional electrician. The electrical wiring must be done by a person authorized to perform electrical installations. It is necessary to follow all instructions in this manual and to comply with local laws and regulations.*
- *The wiring diagrams depicted on the product take precedence over diagrams in this manual! Before connecting the wiring, make sure that terminal indications match the diagram. If in doubt, contact the supplier and do not connect the unit!*
- *If the product is connected to other than original control system, contact the supplier of such system for the wiring diagram of individual controls.*
- *The unit must be connected to the mains using a heat-protected rigid insulated cable with the cross-section that corresponds to local regulations.*
- *To maintain the electrical protection, all cables must fit in the holes on the sides of the control unit casing.*
- *Any interventions or modifications of the internal wiring of the unit are prohibited and lead to loss of warranty!*
- *The unit's correct operation can only be guaranteed when original accessories are used.*
- *If it is necessary to install a sensor or a regulation component in the unit or on its casing, please consult its location with the unit manufacturer (or with its representative).*



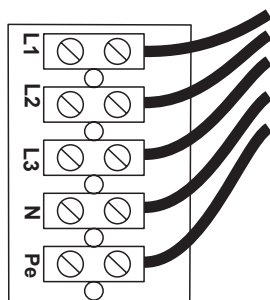
6. INSTALLATION

6.4-1 Supply cable

Wiring terminals for the power cord are located inside the casing of the control unit.

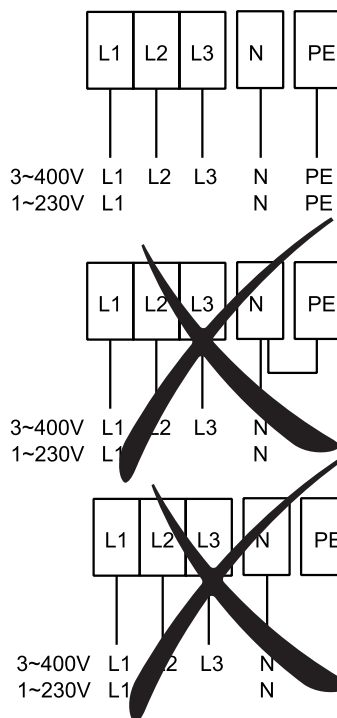
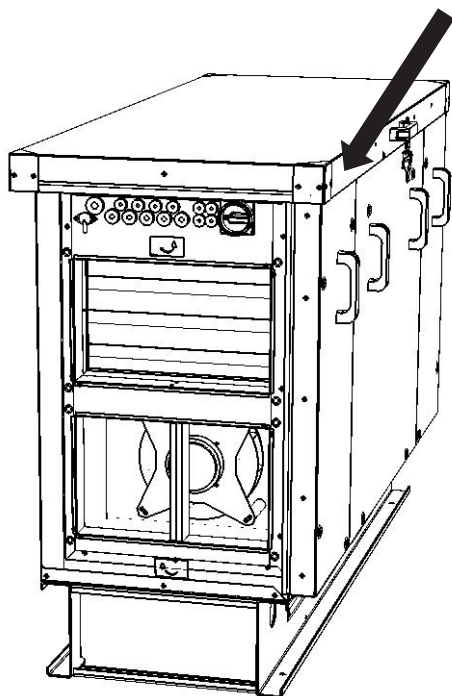
⚠ ATTENTION!

Minimum size of the protective grounding cable must be in compliance with local safety regulations regarding heavy current lead through a device's protective grounding cable.



⚙ TECHNICAL DATA

- Wiring parameters can be found on the label installed on the control device casing.



All phases of the electric power supply must be connected through the corresponding type of circuit breaker. The distance between disconnected contacts must be larger than 3 mm.

It must be possible to disconnect the unit from the electric power supply with a single power switch.

Information on product type

U = voltage	I = current
f = frequency	P = output/input
n = fan speed	m = weight
ph = number of phases	IP = electrical protection
av = airflow	ver = version

serial number

- The unit must be connected to TN-S network, this means that the neutral conductor must always be connected.

6. INSTALLATION

The recommended values for lead-in cables and circuit breakers

Units with integrated preheating

Type	Number of phases	Voltage (V)	Power (W)	Current (A)	Type of cable*	Type of circuit breaker (A)*
HR95-080...-...E.	1	230	2700	14,4	3Cx1,5	16
HR95-150...-...E.	3	400	5300	13,3	5Cx1,5	16
HR95-250...-...E.	3	400	8300	18,2	5Cx2,5	20
HR95-350...-...E.	3	400	11700	20,4	5Cx2,5	25
HR95-450...-...E.	3	400	15000	25,2	5Cx4	32
HR95-550...-...E.	3	400	18300	32	5Cx6	40

* - Recommended values. values must be specified by the person responsible for the wiring in the building (e.g. designer) with regard to parameters of the power line wiring and other parameters of the building

Units with integrated electric postheater

Type	Number of phases	Voltage (V)	Power (W)	Current (A)	Type of cable*	Type of circuit breaker (A)*
HR95-080...-...E	1	230	1400	8,7	3Cx1,5	16
HR95-150...-...E	1	230	2700	18	3Cx2,5	20
HR95-250...-...E	3	400	4800	13,1	5Cx1,5	16
HR95-350...-...E	3	400	6500	12,9	5Cx1,5	16
HR95-450...-...E	3	400	7700	14,6	5Cx1,5	16
HR95-550...-...E	3	400	10700	21	5Cx2,5	25

* - Recommended values. values must be specified by the person responsible for the wiring in the building (e.g. designer) with regard to parameters of the power line wiring and other parameters of the building

Units with integrated electric preheater and postheater

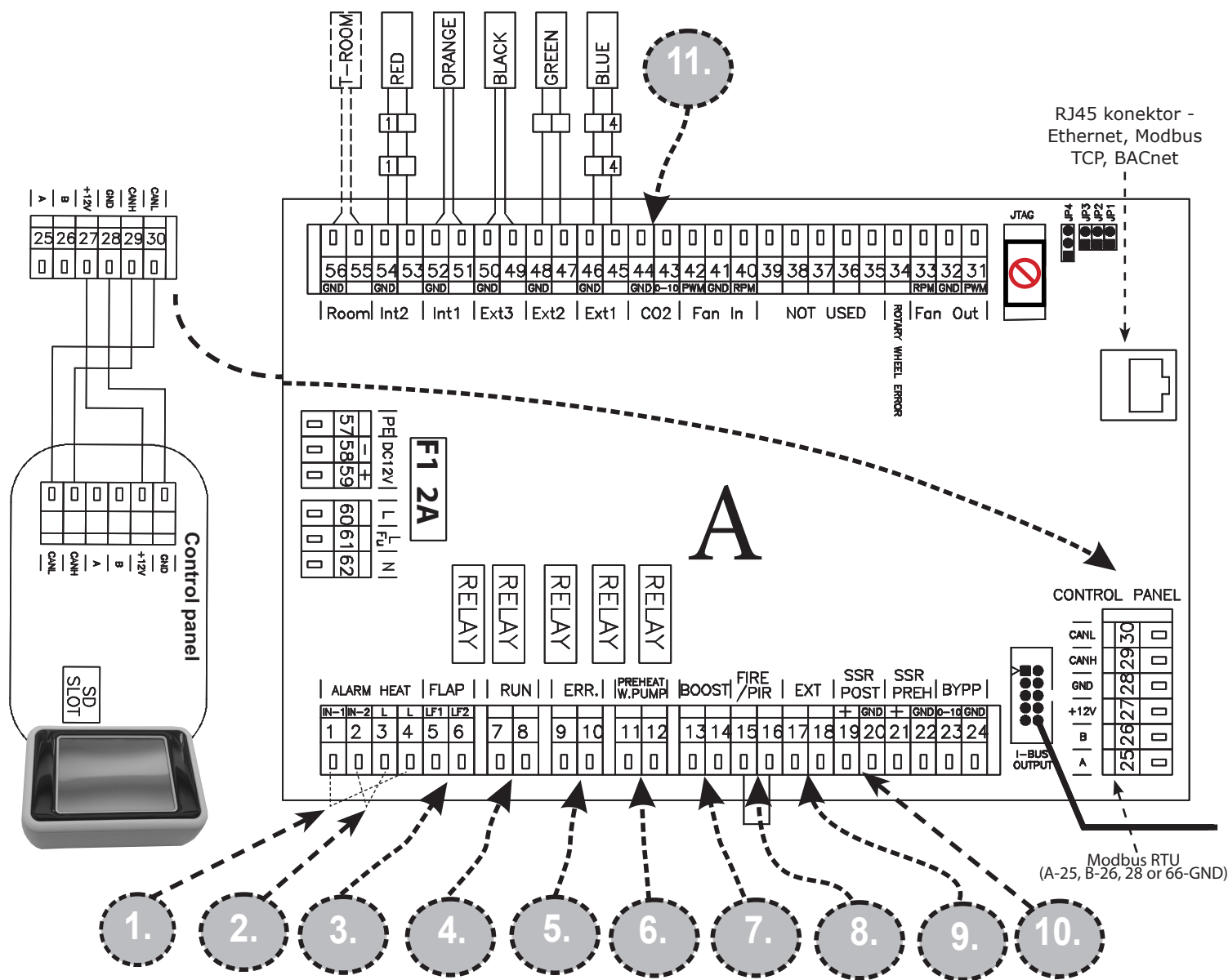
Type	Number of phases	Voltage (V)	Power (W)	Current (A)	Type of cable*	Type of circuit breaker (A)*
HR95-080...-...EE	3	400	4100	11,8	5Cx1,5	16
HR95-150...-...EE	3	400	8000	18	5Cx2,5	20
HR95-250...-...EE	3	400	13100	25	5Cx4	32
HR95-350...-...EE	3	400	18200	29,8	5Cx4	32
HR95-450...-...EE	3	400	22700	36,3	5Cx6	40
HR95-550...-...EE	3	400	29000	47,5	5Cx10	50

* - Recommended values. Values must be specified by the person responsible for the wiring in the building (e.g. designer) with regard to parameters of the power line wiring and other parameters of the building

6. INSTALLATION

6.4-2 Electrical accessories

Connect the unit's electrical accessories to the terminals located in the regulation box according to the scheme of wiring and terminal designations.

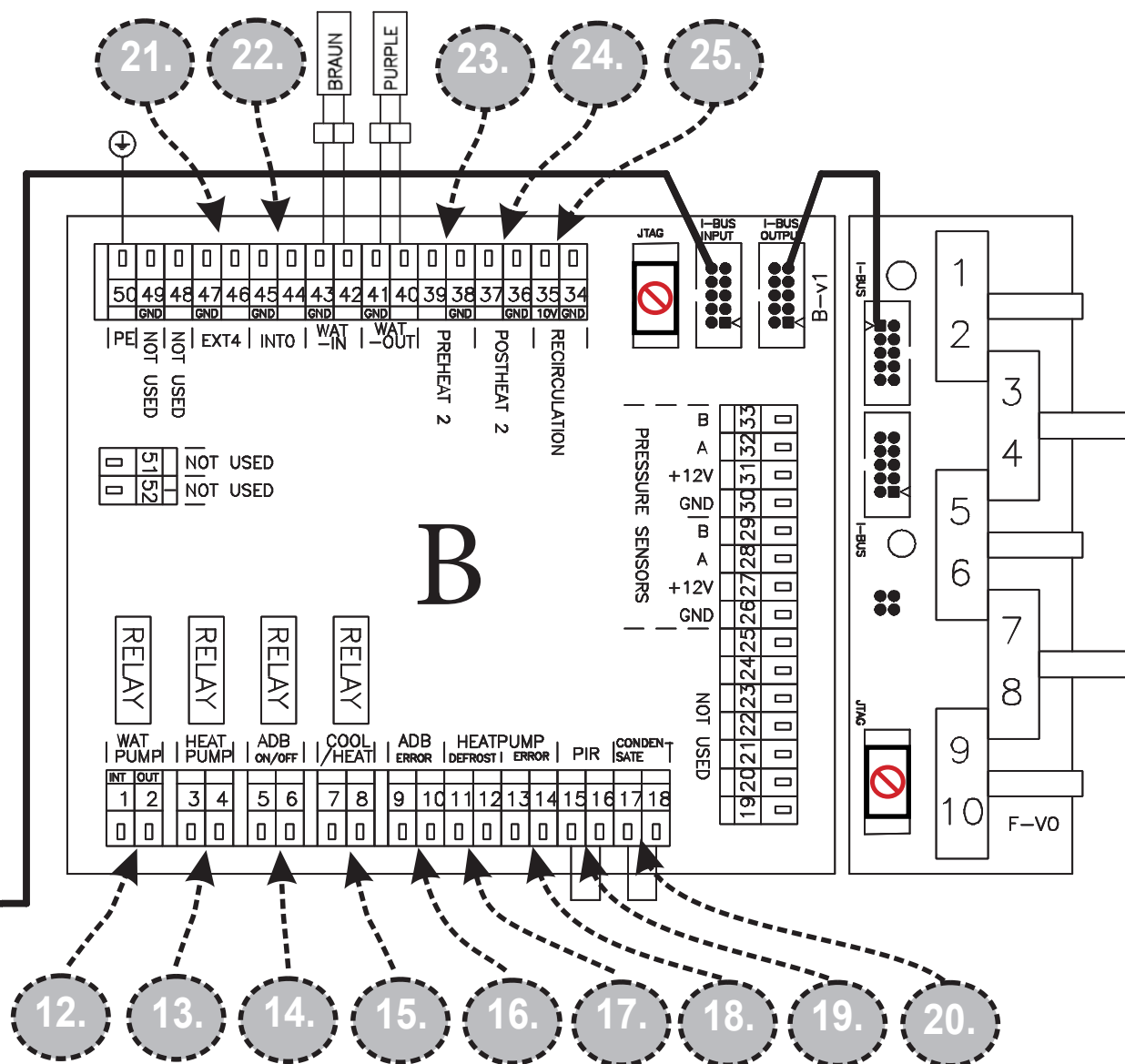


1.	A (1,4)	SAFETY THERMOSTAT POSTHEATING
2.	A (2,3)	SAFETY PREHEATING THERMOSTAT
3.	A (5-6)	LF1 - FLAP INLET (output L-open), LF2 - FLAP OUTLET (output L-open)
4.	A (7-8)	RUN CONTACT (output -NO/NC settable)
5.	A (9-10)	ERROR CONTACT (output NO)
6.	A (11-12)	PREHEATER WATER PUMP (11 - Lint, 12 - Lout)
7.	A (13-14)	BOOST (input NO)
8.	A (15-16)	FIRE (input NC)
9.	A (17-18)	EXTERNAL CONTROL ON/OFF (input NC)
10.	A (19,20)	OUTPUT PERFORMANCE OF POSTHEATING (0-10V OR PWM)
11.	A (43,44)	AQS SENSOR 0-10V (input)

6. INSTALLATION

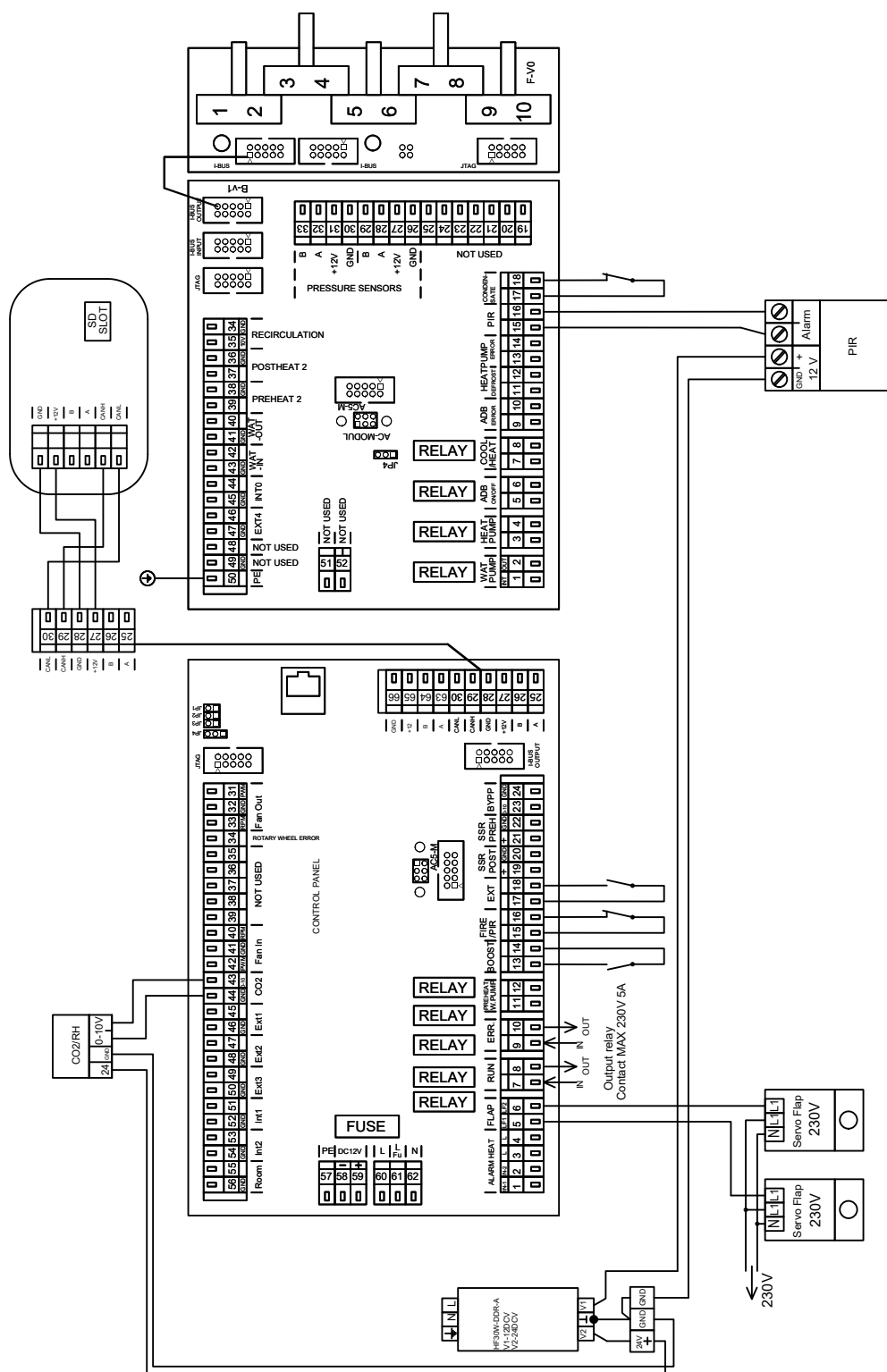
READ CAREFULLY!

- Wiring scheme is located on the inside of the regulation box's removable cover.
- Each accessory must be connected with a supplied cable, or with a cable that corresponds with the specifications of individual components.



12.	B (1-2)	WATER PUMP (1 - Lint, 2 - Lout)
13.	B (3-4)	HEAT PUMP CONTROL settable (output - ON/OFF)
14.	B (5-6)	ADIABATIC MODULE (output - ON/OFF)
15.	B (7-8)	COOL / HEAT settable (CO = NC/NO - DX = output settable)
16.	B (9-10)	ADIABATIC MODULE ERROR (input NO)
17.	B (11-12)	HEAT PUMP DEFROST settable (input NC/NO)
18.	B (13-14)	HEAT PUMP ERROR settable (input NC/NO)
19.	B (15-16)	PIR (input NC)
20.	B (17-18)	CONDENSATE OVERFLOW (input NC)
21.	B (46-47)	EXTERNAL TEMPERATURE SENSOR (external postheater - input)
22.	B (44-45)	EXTERNAL TEMPERATURE SENSOR (adiabatic module / recirc. chamber - input)
23.	B (38-39)	EXTERNAL PREHEATER (output - Water= 0-10V)
24.	B (36-37)	EXTERNAL POSTHEATER (output - Water= 0-10V)
25.	B (34-35)	RECIRCULATION CHAMBER (output 0-10V)

6. INSTALLATION

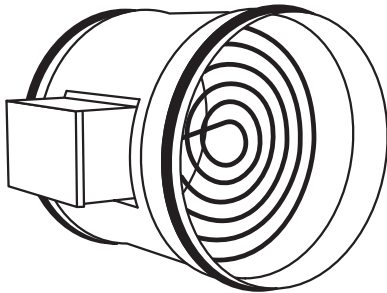


6. INSTALLATION

6.4 – 2.1 Non-integrated electric preheater (accessories)

TECHNICAL DATA

- Duct heater powered by 400 V AC and control voltage 0-10V DC
- CABLE: size of the power cord should be chosen according to the heater's output/input and according to conditions of the connection. The minimum sizes for the recommended outputs/inputs are listed in Chapter 6.4-1 Power Cable
- Control cable of the electric heater - cable with two conductors with the minimum cross-section of 0.5 mm² Maximum length of 50 m.



This accessory is sold separately

Recommended types of electrical preheating

Types of ventilation units	Type of preheating	Total power [kW]	Current [A]
HR95-080...-...	EOKO-250-3,0-3-D	3	4,3
HR95-150...-...	EOKO-355-7,5-3-D	7,5	10,8
HR95-250...-...	EOKO-400-7,5-3-D	7,5	10,8
HR95-350...-...	EOKO-560-12,0-3-D	12	17,3
HR95-450...-...	EOKO-560-12,0-3-D	12	17,3
HR95-550...-...	EOKO-630-24,0-3-D	24	34,7

6.4-2.2 External control

TECHNICAL DATA

- Low voltage switching contact - maximum possible contact load 12 V, 0.4 A.
- CABLE: cable with two conductors with a min. cross-section of 0.5 mm² Maximum length of 50 m.
- The contact is normally closed. When opening the contact, the unit turns off.

This accessory is sold separately

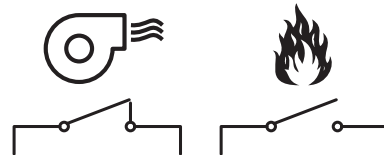
6.4-2.3 Fire contact

TECHNICAL DATA

- Low voltage switching contact - maximum possible contact load 12 V, 0.4 A.
- CABLE: cable with two conductors with a min. cross-section of 0.5 mm² Maximum length of 50 m.
- The contact is normally closed. When disconnected, the ventilation unit operates according to the pre-set output.



The required output can be set in the service menu - Chapter 7.6-12



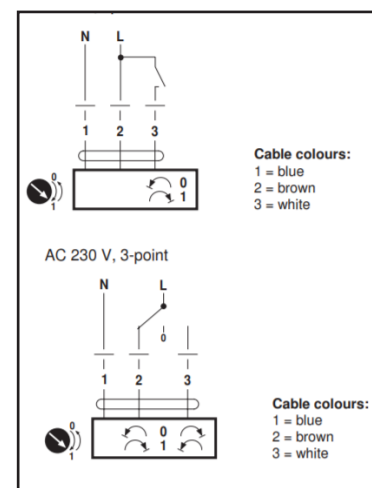
This accessory is sold separately

6.4-2.4 Servomotor for closing air inlet regulators with spring (Accessories)

TECHNICAL DATA

- Servomotor LM230 is supplied with 230 V AC – three-conductor control cable

This accessory is sold separately



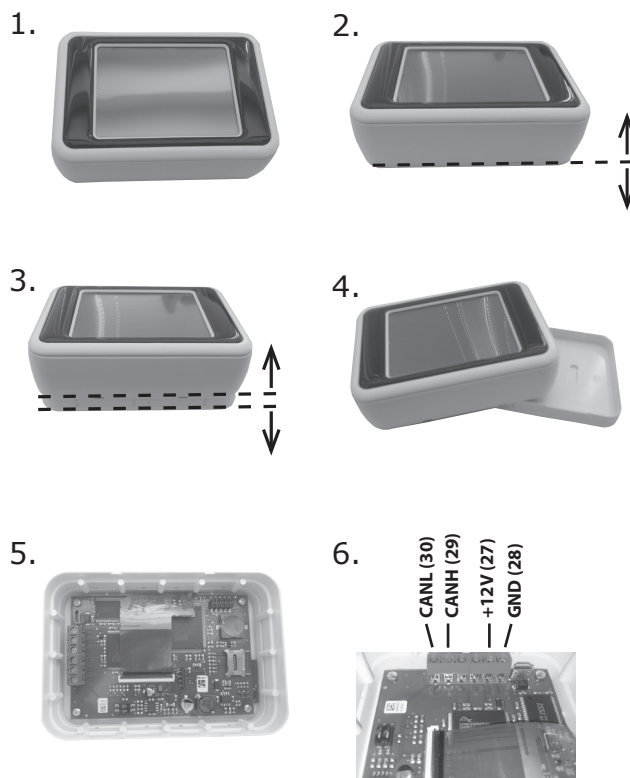
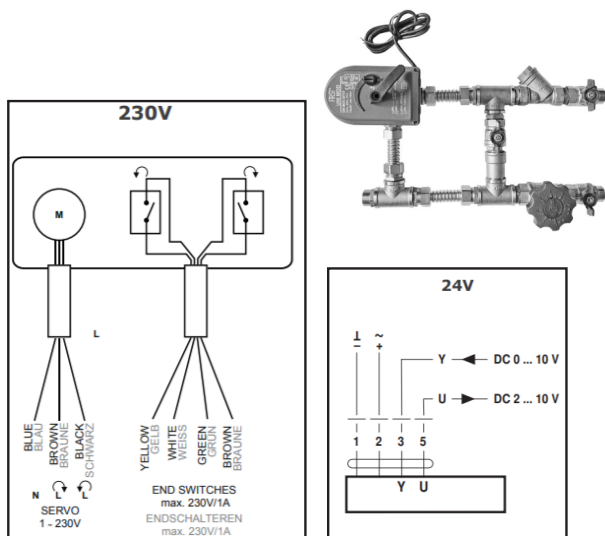
6. INSTALLATION

6.4-2.5 Servomotor for closing regulators

TECHNICAL DATA

- Servomotor is supplied with 230 V AC – three-conductor control cable

This accessory is sold separately



- insert the other end of the cable to one of the connectors on the electronic board.

6.4-2.6 Movement sensor

Low-voltage switching contact - maximum possible contact load 12 V, 0.4 A

CABLE: cable with two conductors with a min. cross-section of 0.5 mm² Maximum length of 50 m. Contact is normally open. When connected, the ventilation unit operates according to the pre-set ventilation output.

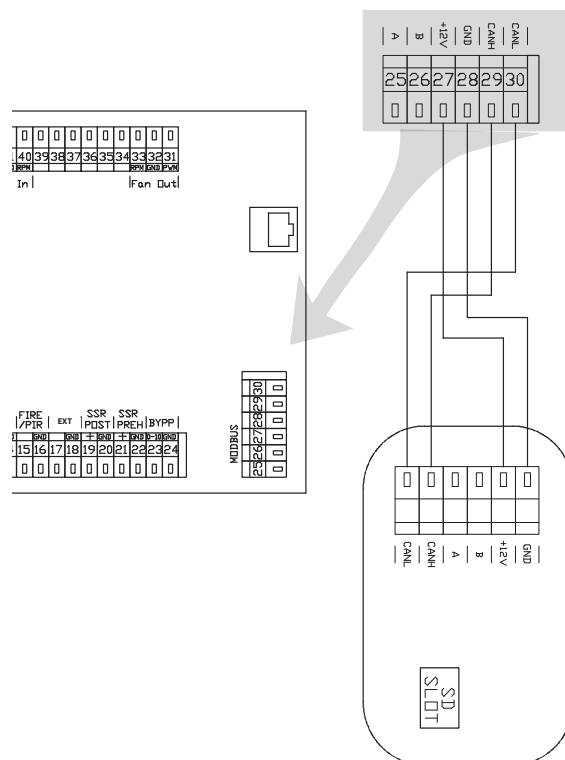


The required output can be set in the service menu - Chapter 7.6-2

6.4-3 Control unit

To activate the unit, it is necessary to connect the control display panel and the unit using a control cable (data cable)

- slacken the bolt on the bottom of the display panel
- open the case of the display panel.
- cut a hole for the cable
- insert the control cable to the connector of the display panel
- fix the display panel to the wall
- close and tighten the display panel case



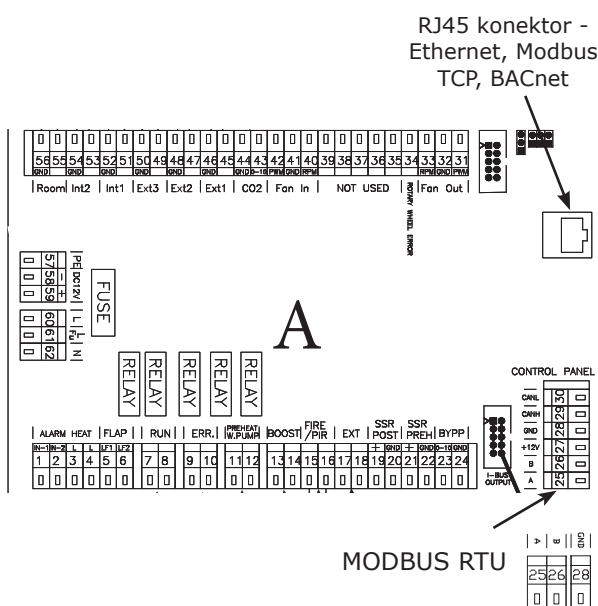
6. INSTALLATION

READ CAREFULLY!

- The supply and the control cable should be as far apart from each other as possible.
- Make sure that the cable has been properly inserted into the connector.
- Be careful not to damage cable insulation when fixing the control display panel to the wall or to other surface.
- If you do not connect connectors or cables directly during the unit's installation, protect them against mechanical damage or short circuit by an insulating tape.
- Cable connectors must not come into contact with water or other liquid.
- Parameter settings are maintained thanks to the battery with the service life of 3-5 years.

6.4-4 Connecting the unit to the BMS control system

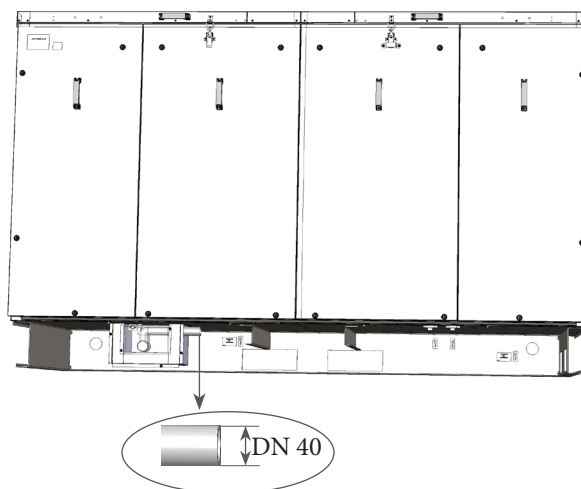
Connect the control unit with a standard communication cable. Insert the cable into one of the connectors on the ventilation unit's electronic board. Connect the other end to the main control unit. For details of the protocol (ModBUS) contact 2VV.



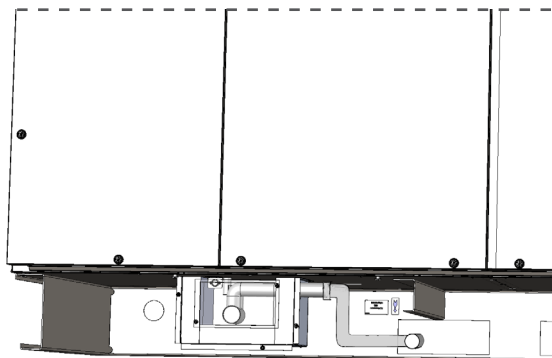
6.5 CONNECTING CONDENSATE OUTLET

The unit's condensate outlet (part of the heat exchanger) must be connected to a drain. This drain trap has an integrated freeze protection.

- Make sure that the unit is tilted by 3°, this enables a free drainage of condensate.



Connect the drain duct.

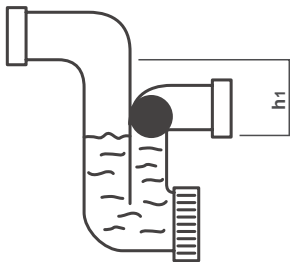


6. INSTALLATION

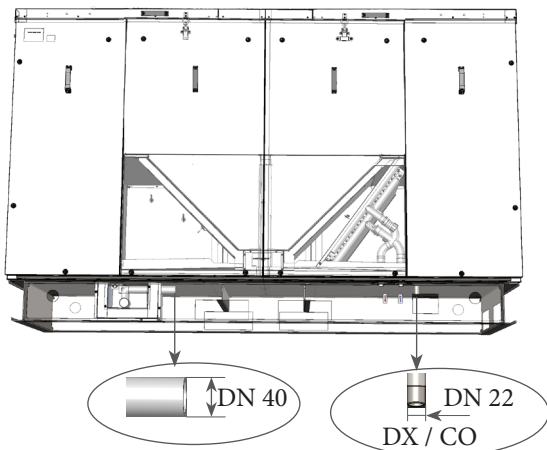
If the unit has a direct evaporator or C/O, it is necessary to connect a new trap (not included).

YOU WILL NEED

- 1 drain trap
- PVC discharge pipe
- discharge pipe sealing

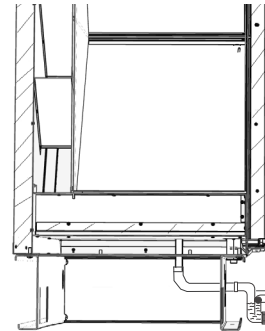


Unit type	h1 [mm]
HR95-080..-.-....	130
HR95-150..-.-....	130
HR95-250..-.-....	130
HR95-350..-.-....	130
HR95-450..-.-....	130
HR95-550..-.-....	130

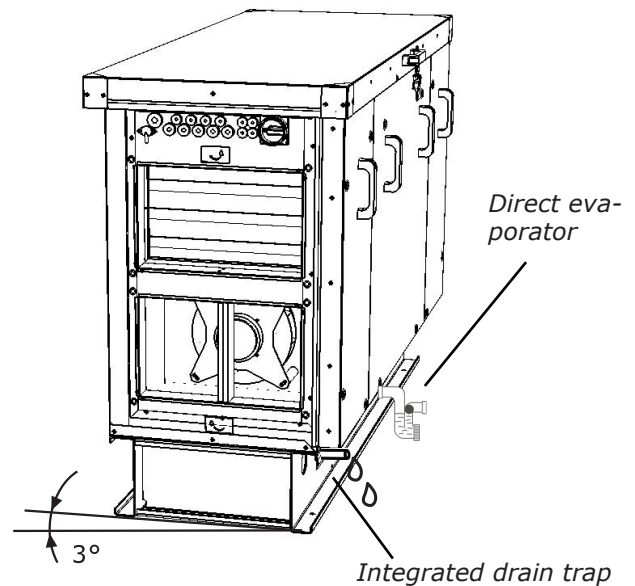


The connection to the condensate tray is located on the side/sides of the ventilation unit. Connect the drain pipe or hose to the condensate tray outlet .

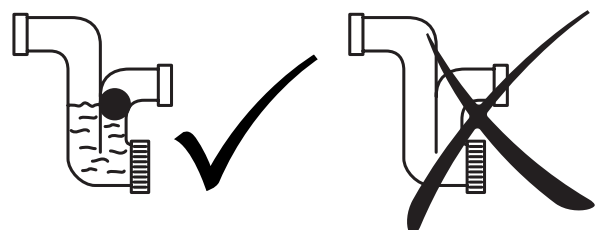
- Make sure that the unit is tilted by 3°, this enables a free drainage of condensate.



DX / CO



- Before putting the unit into operation, fill in the trap with water!!! Otherwise there is a risk of flooding and damage to the unit.



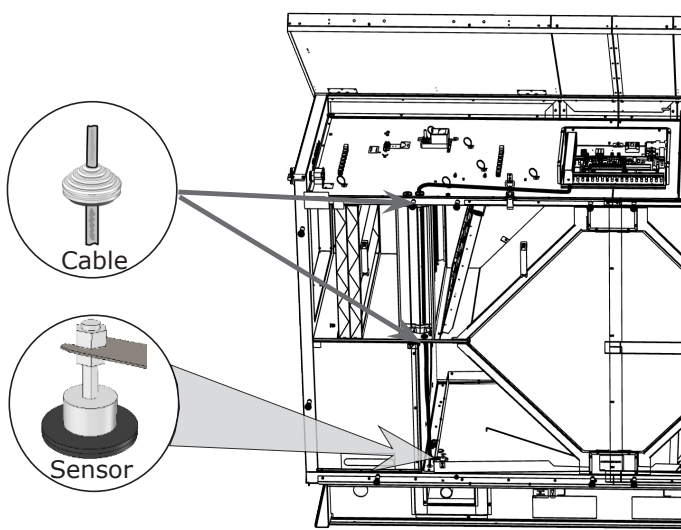
6. INSTALLATION

Optionally you can connect water overflow sensor (included in the package).

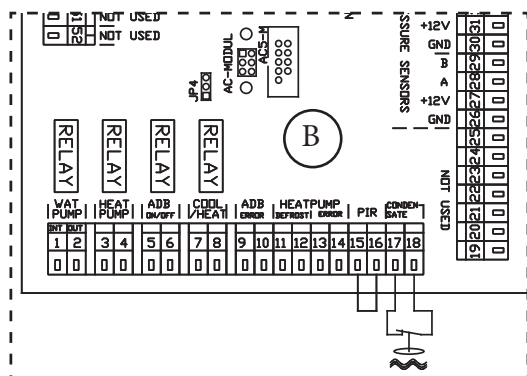


Attach the water overflow sensor to the holder, which is located in the condensate drain pan (see below).

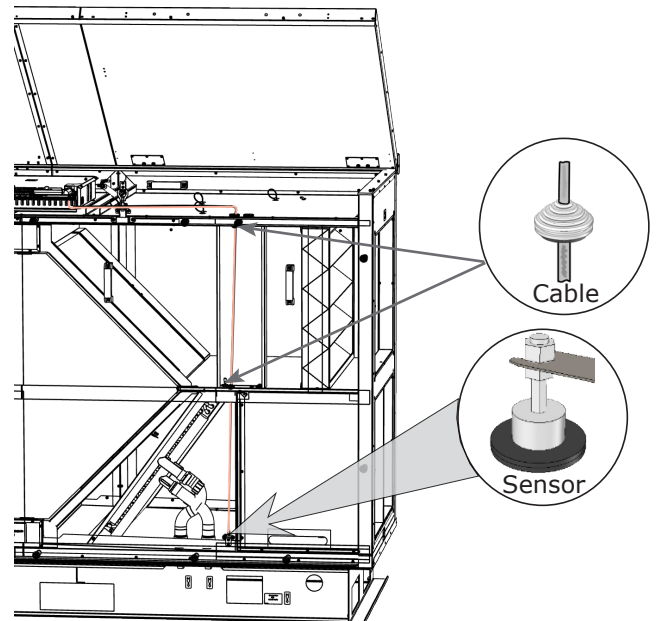
Pull the cable through the rubber grommets in the unit and connect it to the regulation.



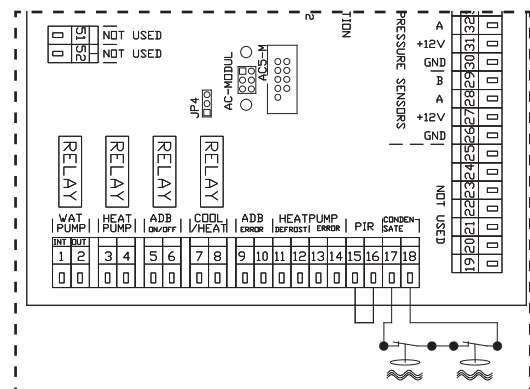
Water overflow sensor connect to terminals 17,18 on control board B



If the unit has a C-O exchanger or a DX exchanger, you can optionally connect another water overflow sensor to the condensing bath of the exchanger coil.



Water overflow sensor connect to terminals 17,18 on control board B



7. COMMISSIONING

READ CAREFULLY

Please check the following points before putting the unit into operation:

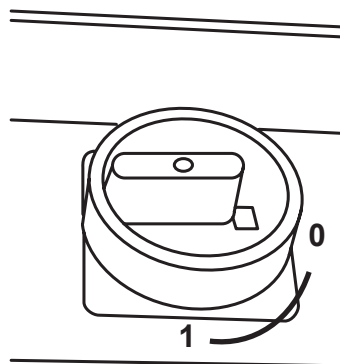
- That the unit is fixed well to the supporting structure.
- That the unit is closed correctly and that a pipe or a rain louvre is installed to each neck to avoid contact with any rotating or heating component.
- That the electrical wiring is connected correctly, including grounding and protection against external activation.
- That all accessories are connected correctly.
- That the condensate drain is connected correctly to the discharge piping (for units with cooling).
- That the connection is in compliance with instructions in this manual.
- That no tool or other subject has been left inside the unit – this could lead to damage to the unit

ATTENTION!

- Any interventions or modifications to unit wiring are prohibited and may lead to loss of warranty!
- We recommend to use accessories supplied by our company. If in doubt whether to use unoriginal accessories, please contact 2VV.

7.1 ACTIVATION

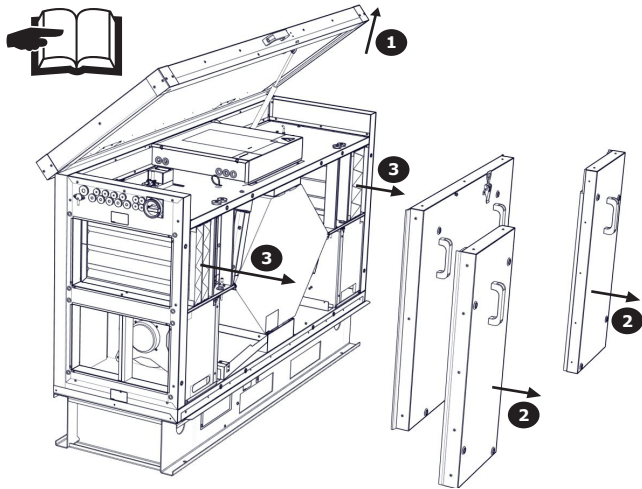
Put the unit into operation (Stand-by) by turning the main switch to position I (ON). When the main switch is turned on the control unit's display lights up and the service data load. Service data will start to load. The unit is ready to start after the service data are loaded.



8. MAINTENANCE

8.1 REPLACING A FILTER

It is recommended to perform a visual inspection of the filter at least once every 3 months



- 1) Open the top cover
- 2) Remove side panels
- 3) Pull out filters
- 4) Insert new filters, mount side panels, and close the top cover

Unit type	Filters	
	Pre-filter G4	filter G4
HR95-080...	FILTR-HR95-2-V0800-G4-PRE	FILTR-HR95-2-V0800-G4
HR95-150...	FILTR-HR95-2-V1500-G4-PRE	FILTR-HR95-2-V1500-G4
HR95-250...	FILTR-HR95-2-V2500-G4-PRE	FILTR-HR95-2-V2500-G4
HR95-350...	FILTR-HR95-2-V3500-G4-PRE	FILTR-HR95-2-V3500-G4
HR95-450...	FILTR-HR95-2-V4500-G4-PRE	FILTR-HR95-2-V4500-G4
HR95-550...	FILTR-HR95-2-V5500-G4-PRE	FILTR-HR95-2-V5500-G4

Unit type	filter F7
HR95-080...	FILTR-HR95-2-V0800-F7-MPP
HR95-150...	FILTR-HR95-2-V1500-F7-MPP
HR95-250...	FILTR-HR95-2-V2500-F7-MPP
HR95-350...	FILTR-HR95-2-V3500-F7-MPP
HR95-450...	FILTR-HR95-2-V4500-F7-MPP
HR95-550...	FILTR-HR95-2-V5500-F7-MPP

READ CAREFULLY!
 • Warning icon will automatically disappear

⚠ ATTENTION!

Unit's performance may be reduced and the fan can be damaged if the filter is not properly cleaned or replaced.

8.2 CLEANING INTERVALS

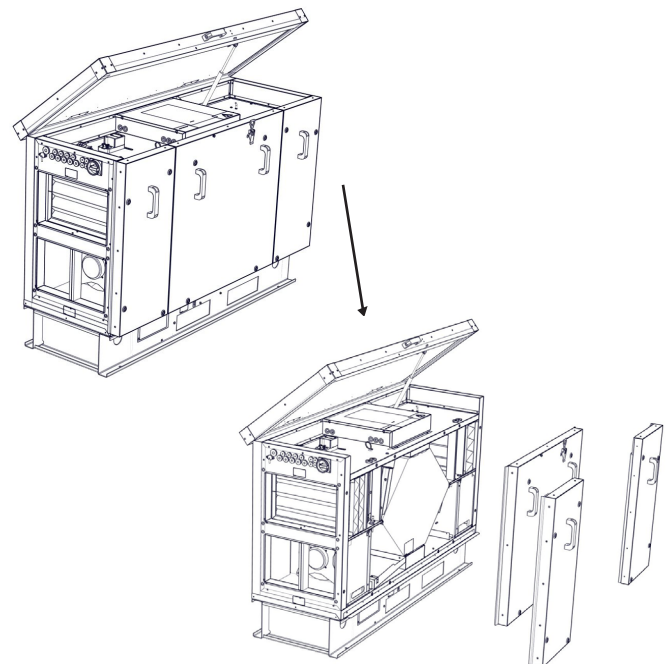
🔧 YOU WILL NEED

- 3mm Allen wrench
- vacuum cleaner
- brush
- cloth
- neutral cleaning agent (soap water)

It is recommended to check and clean the unit every six months; however, the intervals must be adapted to specific operating conditions. It is recommended to thoroughly clean the unit once a year.

If the unit is not in use for a long time, it is recommended to turn it on for about an hour every six months.

Follow the same procedure as when replacing the filter, see the previous chapter (8.1)

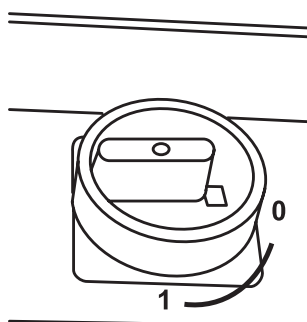


Clean the ventilation unit with a vacuum cleaner, brush, and cloth and soap water. Do not use sharp objects, aggressive chemicals, solvents, abrasive cleaners, high pressure washers, compressed air, steam.

9. REMOVING FAULTS

⚠ ATTENTION!

- Before starting maintenance and repair work, the unit must be disconnected from the power source and the supply voltage must be locked, service switch must be in the position 0 (off).
- Do not start repairs, if you are not sure or unfamiliar with the exact procedure. Contact an authorized service technician!!!



⚙ TECHNICAL DATA

- A fault is usually indicated by a message on the display, see the table below.

Description	Unit's behaviour	Likely problem	Solution
4 – Supply fan error	Unit is not working	Overheated fan or defect on thermal contact of inlet fan	Determine the cause of the overheating (defective bearing, short-circuit...) or replace the motor.
5 – Exhaust fan error	Unit is not working	Overheated fan or defect on thermal contact of inlet fan	Determine the cause of the overheating (defective bearing, short-circuit...) or replace the motor.
6 – Inlet filter clogged	Unit is ventilating	Clogged filter	Check the condition of the filter, or replace it. If the unit does not have a pressure sensor for the filter, RESET the clogged filter according to the manual.
7 – Exhaust filter clogged	Unit is ventilating	Clogged filter	Check the condition of the filter, or replace it. If the unit does not have a pressure sensor for the filter, RESET the clogged filter according to the manual.
8 - Failure in preheating 1	Unit is ventilating	Overheated electric exchanger or damaged sensor Open the exchanger thermostat.	Check that air can flow freely through the unit, electric heat exchanger is not cooling sufficiently. Check the safety thermostat on the electric preheating for damages.
9 - Failure in exchanger 1	Unit is ventilating	Overheated electric exchanger or damaged sensor Open the exchanger thermostat.	Check that air can flow freely through the unit, electric heat exchanger is not cooling sufficiently. Check the safety thermostat on the electric reheating for damages.
10 - Failure in exchanger 2	Unit is ventilating	Overheated electric exchanger or damaged sensor Open the exchanger thermostat.	Check that air can flow freely through the unit, electric heat exchanger is not cooling sufficiently. Check the safety thermostat on the electric reheating for damages.
11 - Failure in preheating 1	Unit is ventilating	Overheated electric exchanger or damaged sensor Open the exchanger thermostat.	Check that air can flow freely through the unit, electric heat exchanger is not cooling sufficiently. Check the safety thermostat on the electric preheating for damages.

9. REMOVING FAULTS

Description	Unit's behaviour	Likely problem	Solution
12 – CO2 sensor failure	Unit is ventilating	Defective air quality sensor	Check that the CO2 sensor is connected correctly or check that it is operating correctly (output signal value)
14 - ADB module error	Unit is ventilating	Failure of adiabatic module	Check that the input error is correctly connected to the electronics or, if necessary, that the adiabatic module is operating correctly
15 - Heat pump error	Unit is ventilating	Heat pump failure	Check that the input error is correctly connected to the electronics or, if necessary, that the heat pump is operating correctly (according to the instructions of its manufacturer)
16 – Inlet – External temperature sensor failure (T-EXT1)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
17 – Inlet – Failure of the temperature sensor behind the exchanger (T-EXT2)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
18 – Inlet – Temperature sensor failure in the supply canal (T-EXT3)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
19 - Inlet - Temperature sensor failure after the second exchanger (T-EXT4)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
20 - Exhaust – Temperature sensor failure in the exhaust canal (T-INT0)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
21 – Exhaust – Temperature sensor failure in the exhaust canal (T-INT1)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)
22 – Exhaust – Failure of the temperature sensor of the exchanger's anti-freeze protection (T-INT2)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kΩ)

9. REMOVING FAULTS

Description	Unit's behaviour	Likely problem	Solution
22 – Exhaust – Failure of the temperature sensor of the exchanger's anti-freeze protection (T-INT2)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kW)
23 - Temperature sensor failure of the exchanger's water supply (T_WATER_IN)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kW)
24 - Failure in the return water sensor of exchanger (T_WATER_OUT)	Unit is not working	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kW)
25 – Room temperature sensor failure (T_Room)	Unit is ventilating	Room temperature sensor failure	Check that the sensor is correctly connected to the electronics or test it measuring its resistance (the resistance value at +20°C is around 10kW)
26 - Failure in the pressure sensor of the exhaust filter.	Unit is ventilating	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced
27 - Failure in the pressure sensor of the inlet filter	Unit is ventilating	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced
28 - Failure in the pressure sensor of the inlet fan	Unit is not working correctly	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced
29 - Failure in the pressure sensor of the exhaust fan	Unit is not working correctly	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced
30 - Failure in the pressure sensor of the VAV supply channel	Unit is not working correctly	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced
31 - Failure in the pressure sensor of the VAV C4 exhaust channel	Unit is not working correctly	Pressure sensor failure	Check the supply point for mechanical damage or whether it is clogged by dirt, or whether the supply hoses are free. The pressure sensor will likely need to be replaced

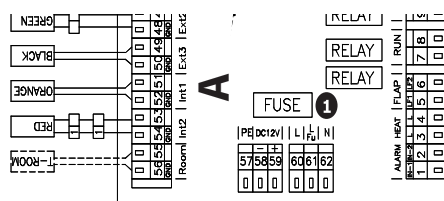
9. REMOVING FAULTS

Description	Unit's behaviour	Likely problem	Solution
32 - Air quality sensor failure	Unit is ventilating	Defective air quality sensor	Check that the quality sensor is connected correctly or check that it is operating correctly (output signal value)
33 - Failure in the recirculation relative humidity sensor	Unit is ventilating	Defective relative humidity sensor	Check that the humidity sensor is connected correctly or check that it is operating correctly (output signal value)
34 - Failure in the sensor of external temperature from BMS	Unit is ventilating	Defective sensor in BMS or incorrectly received data	Check that the address and values of the sensor in the BMS system are correct. Check that the sensor in the BMS system is working.
35 - Failure in the REK antifreeze protection relative humidity sensor	The unit is ventilating the permission to use preheating	Defective relative humidity sensor	The communication cable to the relative humidity sensor is damaged or disconnected. The humidity has exceeded the permitted limit and the sensor may temporarily measure incorrect values. Check the connection of the sensor. Set its address Check that it is not flooded. Replace if necessary.
36 - B moduli error	Unit is not working	The unit can not control the peripherals connected to Module B	Unable to communicate with module B. Check whether the communication cable between motherboards A and B is damaged If necessary, replace module B
37 - Condensate pan overflow	Unit is not working	The level sensor has detected an extremely high level of water in the condenser's pan	Check that the level sensor is connected correctly or check that it is operating correctly, or whether the condensate drain is not clogged, preventing the condensate from draining correctly.
50 - Inlet filter clogged > 80%	Unit is ventilating	Clogged filter	Filter change recommended
51 - Exhaust filter clogged > 80%	Unit is ventilating	Clogged filter	Filter change recommended
70 - Anti-freeze protection of the water heat exchanger	Unit is ventilating	The anti-freeze protection of the water heat exchanger is active	The automatic protection of the water exchanger has been activated in order to prevent damages due to low air temperature. This is an autonomous function and will be terminated once the risk of frost disappears. f
71 - Water heater - waiting for water temperature	Unit is ventilating	The unit controls the temperature of the liquid in the exchanger	The automatic process that assess the water temperature in the exchanger to activate the next steps is in progress
72 - Water heater - waiting for supply air temperature	Unit is ventilating	The unit controls the temperature of the air flowing through the exchanger	The automatic process that assess the temperature of the air flowing through the exchanger to activate the next steps is in progress

9. REMOVING FAULTS

Description	Unit's behaviour	Likely problem	Solution
73 - WCO detects temperature of the water supply (cold / hot)	Unit is ventilating	The unit controls the temperature of the liquid in the exchanger	The automatic process that assesses the water temperature in the exchanger to activate the next steps is in progress
73 - Pre-freecooling active	Unit is ventilating	Temperature evaluation for freecooling mode in progress	Preparation for freecooling mode in progress. It evaluates the temperature and the conditions necessary to activate this mode.
74 – Flow reduction, minimum temperature in the canal not reached	Unit operates in a restricted mode	The unit is trying to reach the set values of the channel's minimum	The temperature of the air flowing into the inlet branch of the building has not been reached. The performance of the unit is being automatically corrected to reach this minimum level. Automatic process
75 - Passive house protection	Unit is not working	The unit is operating in order to meet the Passive house specifications	The temperature of the air flowing into the inlet branch of the building is not within the Passive House specifications. The performance of the unit is being automatically corrected to reach this minimum level. Automatic process
76 - Heat pump defrost	Unit operates in a restricted mode	The unit is waiting until the heat pump defrosts.	The heat pump is reporting that it is defrosting. The unit is operating in defrost-waiting mode Automatic process

Fuse location



- ➊ Fuse location on the electronic board:
T2A 5x20 mm 250 V
- ➋ Motor fuses:
The information can be found on the label next to the fuse or directly on the fuse.



READ CAREFULLY!

- *When the power supply is resumed after an outage, the unit returns to the status it was before the outage. The unit always remembers its operational status and settings.*
If you aren't able to find or remove the cause of the malfunction, or if the repairs require an intervention on the device, contact an authorised service.

10. SERVICE

10.1 IF THE FAULT PERSISTS

If you cannot remove the fault, please contact the supplier.

READ CAREFULLY!

- *Provide the following information to facilitate the fault removal:*
 - *Product type*
 - *Serial number*
 - *Operating time*
 - *Used accessories*
 - *Unit location*
 - *Connection conditions (including electrical conditions)*
 - *Detailed description of the fault and steps taken to remove it*

10.2 PUTTING THE PRODUCT OUT OF OPERATION – DISPOSAL

Please make the product inoperative before disposal. Older units also include reusable materials. Take them to the waste separation site.

The product should be dismantled in a specialised centre so that the recyclable materials can be re-used. Parts that cannot be recycled in should be taken to a legal waste disposal site.

Materials must be disposed of in accordance with applicable national regulations and directives.

11. ACCESSORIES

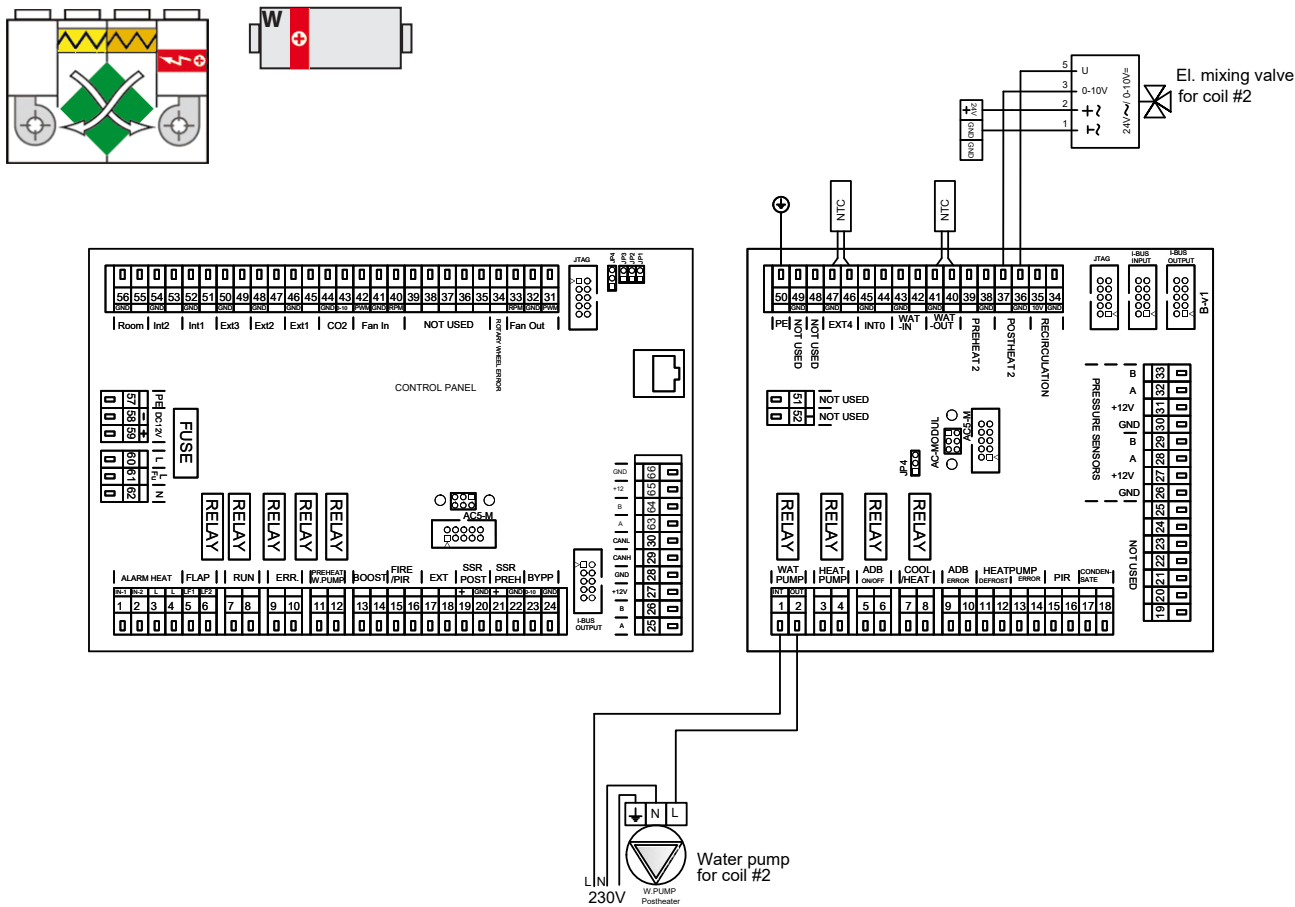
The original accessories to ALFA 95 unit:

Unit type	Type of preheating	Square / circle adapter
HR95-080...-.-.-.-.	EOKO-250-3,0-3D	PR-O-0400X250-D250-L100
HR95-150...-.-.-.-.	EOKO-355-7,5-3D	PR-O-0450X400-D350-L150
HR95-250...-.-.-.-.	EOKO-400-7,5-3D	PR-O-0500X500-D400-L400
HR95-350...-.-.-.-.	EOKO-560-12,0-3D	PR-O-0700X500-D560-L250
HR95-450...-.-.-.-.	EOKO-560-12,0-3D	PR-O-0700X500-D560-L250
HR95-550...-.-.-.-.	EOKO-630-24,0-3D	PR-O-1000X500-D630-L600

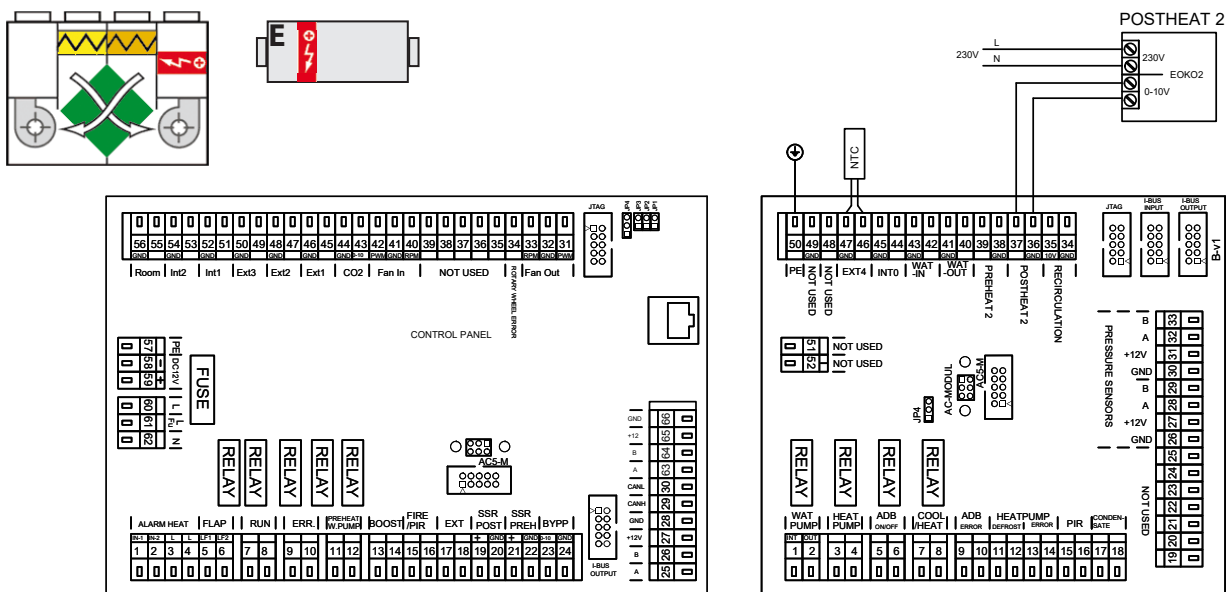
Unit type	Flap
HR95-080...-.-.-.-.	MLKR/S-400250-04N1-0
HR95-150...-.-.-.-.	MLKR/S-450400-04N1-0
HR95-250...-.-.-.-.	MLKR/S-500500-04N1-0
HR95-350...-.-.-.-.	MLKR/S-700500-04N1-0
HR95-450...-.-.-.-.	MLKR/S-700500-04N1-0
HR95-550...-.-.-.-.	MLKR/S-1000500-04N1-0

12. WIRING DIAGRAM

unit with electric heating coil / unit without electric heating coil with external water exchanger

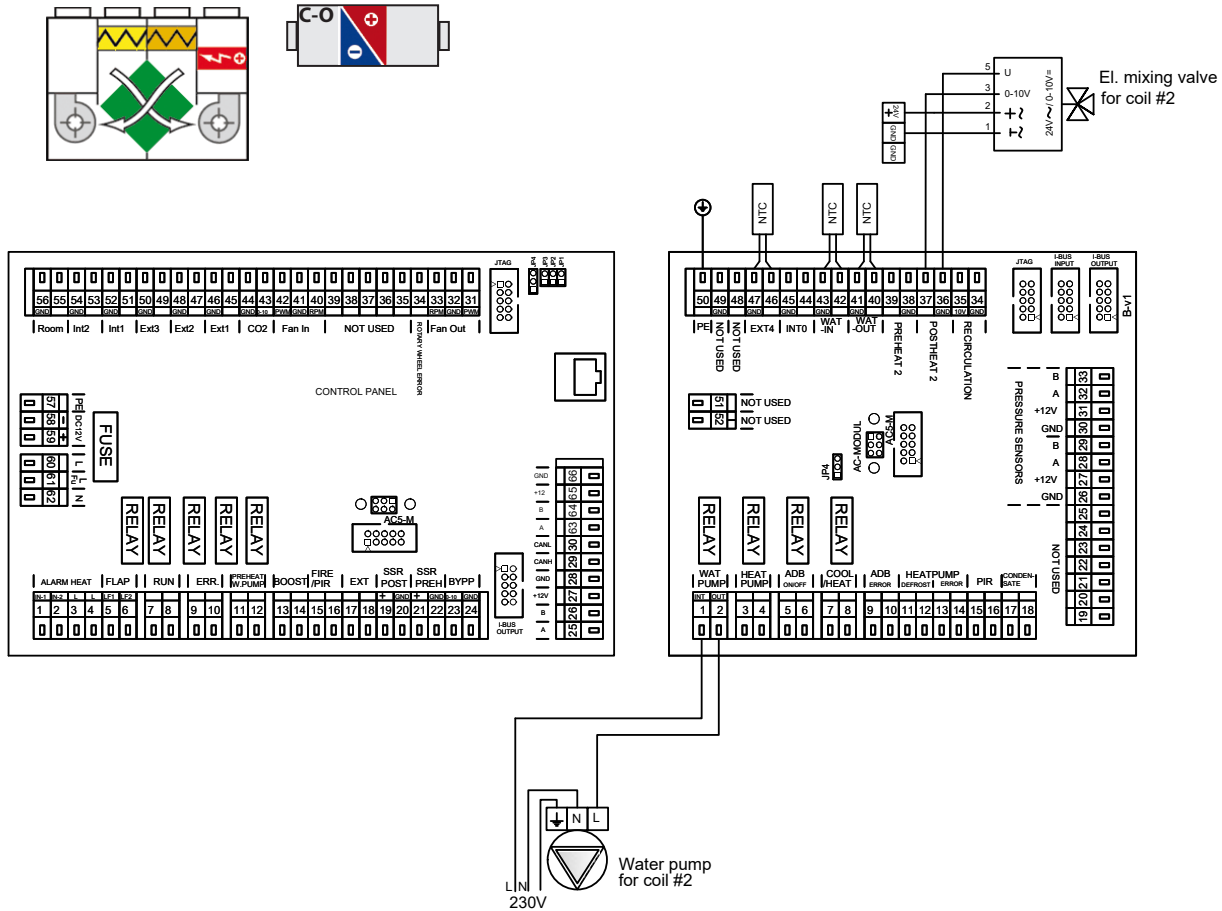


unit with electric heating coil / unit without electric heating coil with external electric exchanger

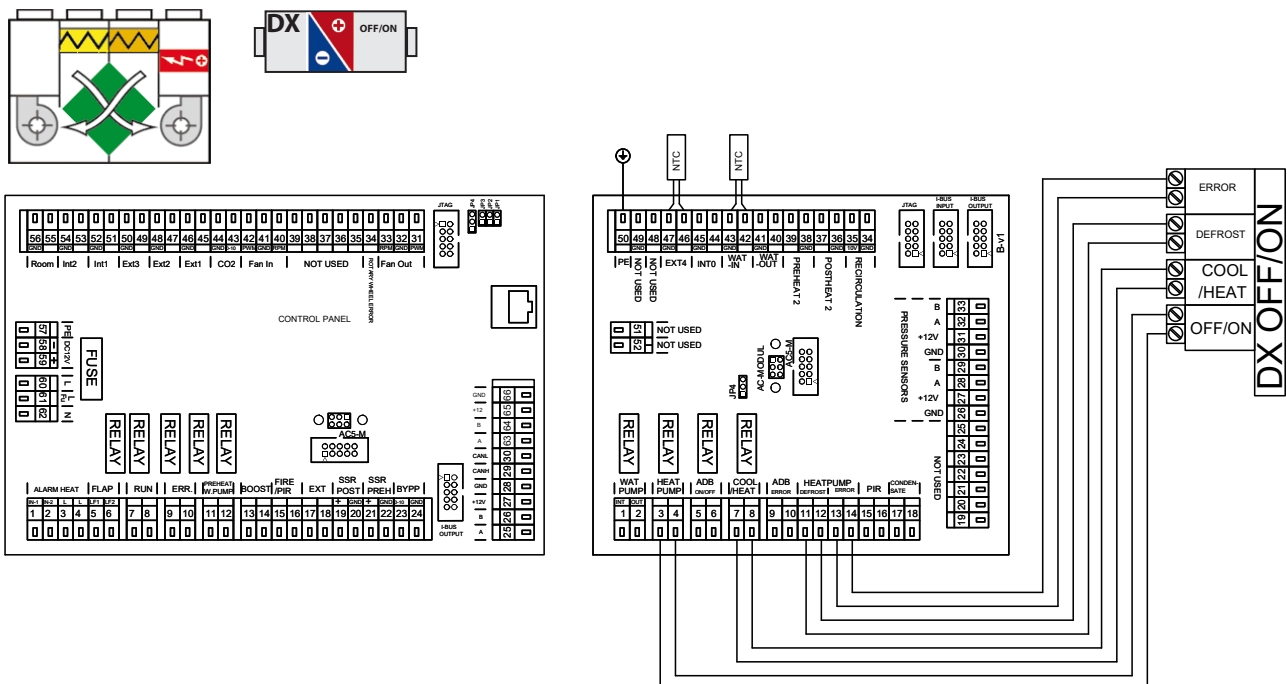


12. WIRING DIAGRAM

unit with electric heating coil / unit without electric exchanger with external C-O exchanger

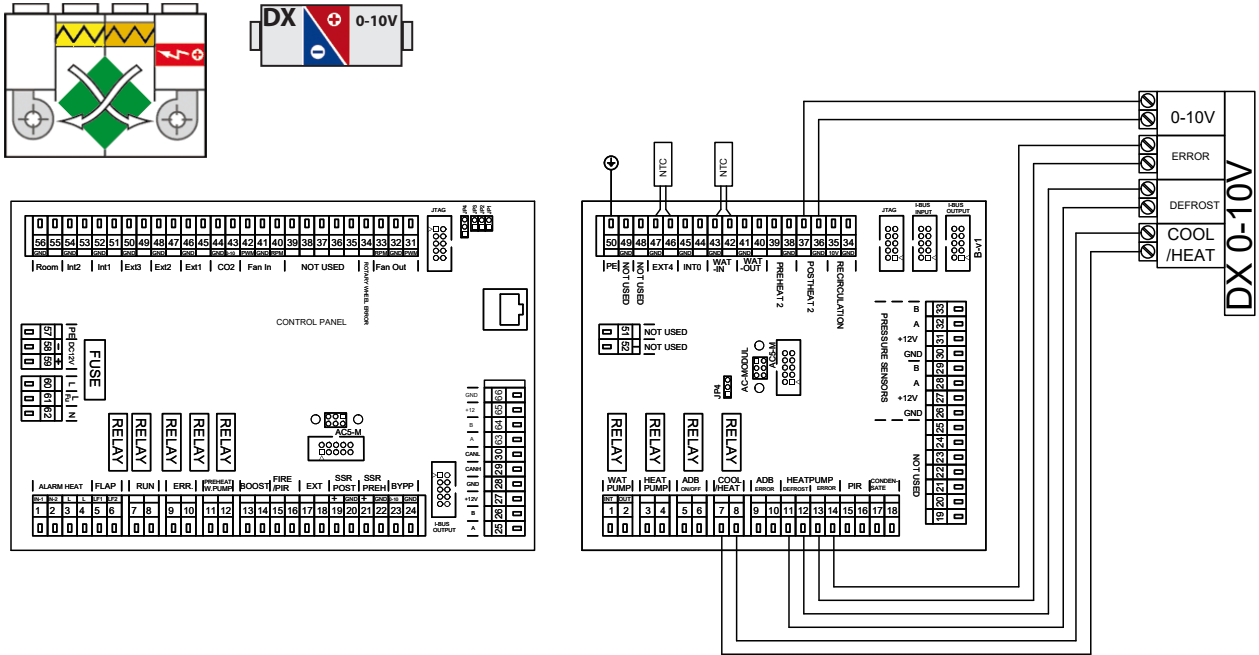


unit with electrical heating coil and second external DX exchanger with OFF / ON control

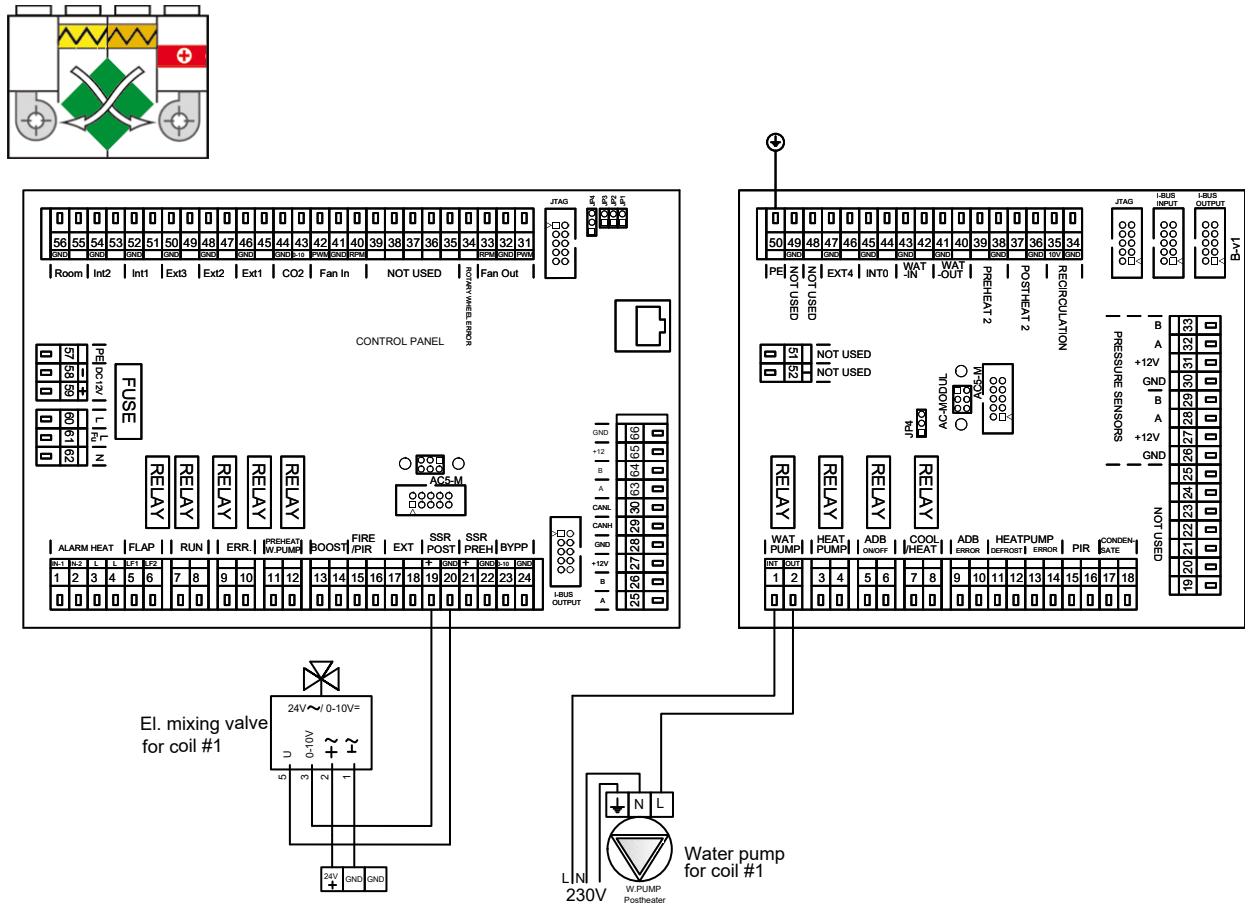


12. WIRING DIAGRAM

unit with electrical heating coil and second external DX exchanger with 0-10V control

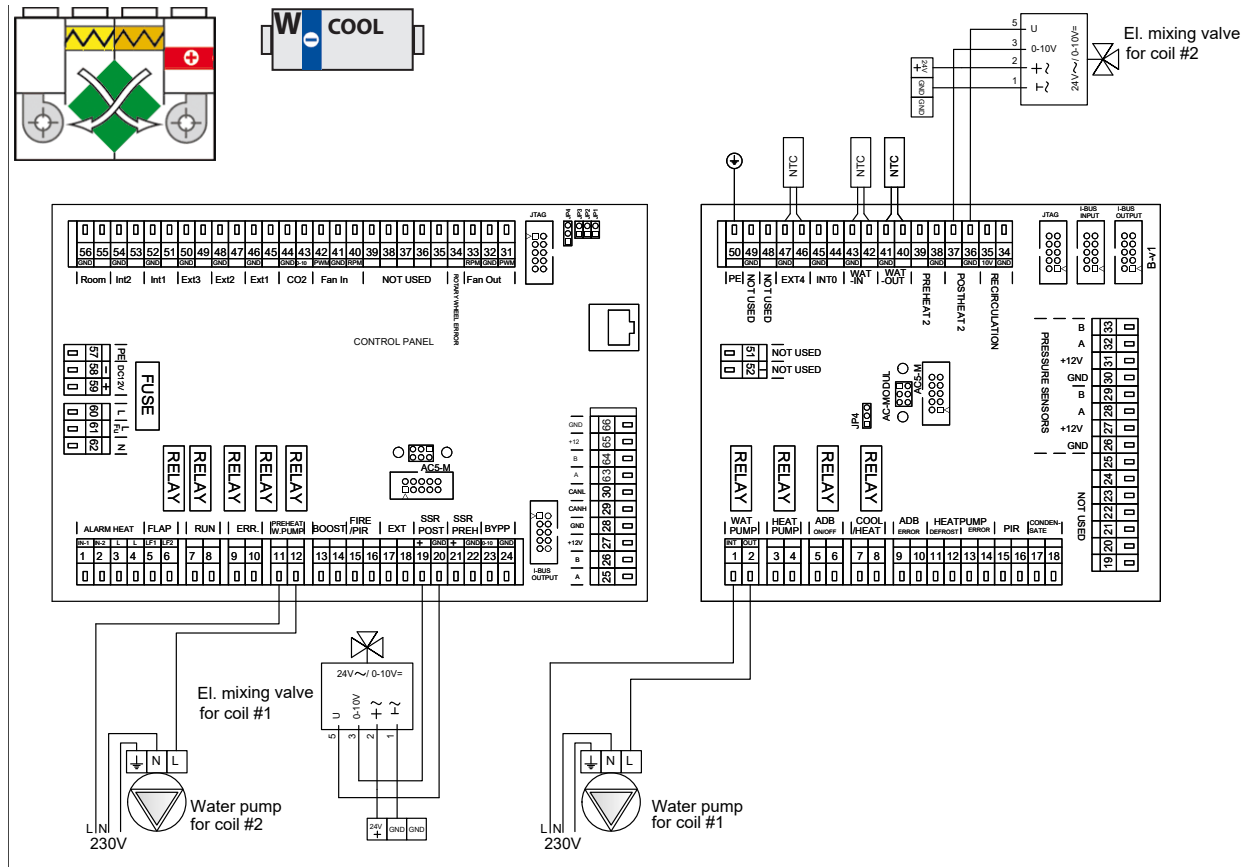


unit with water exchanger

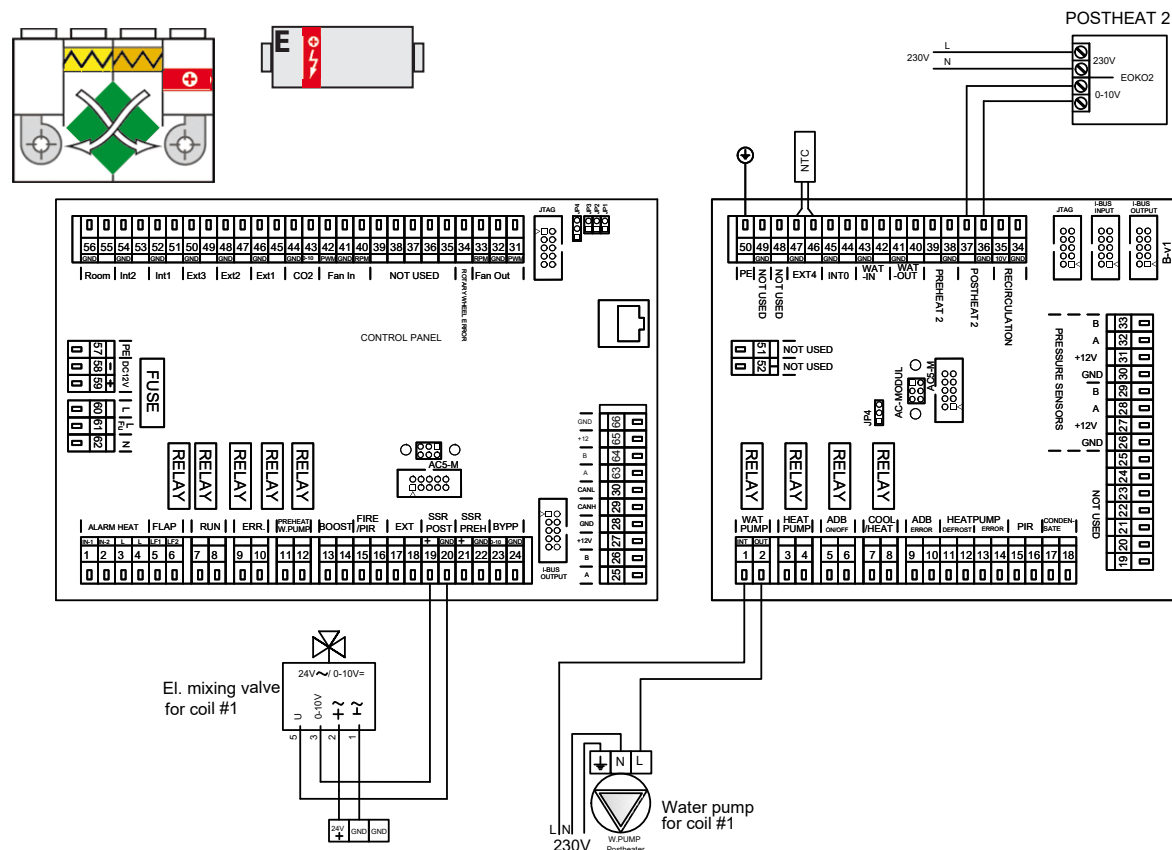


12. WIRING DIAGRAM

unit with water exchanger and second water external exchanger for water cooling

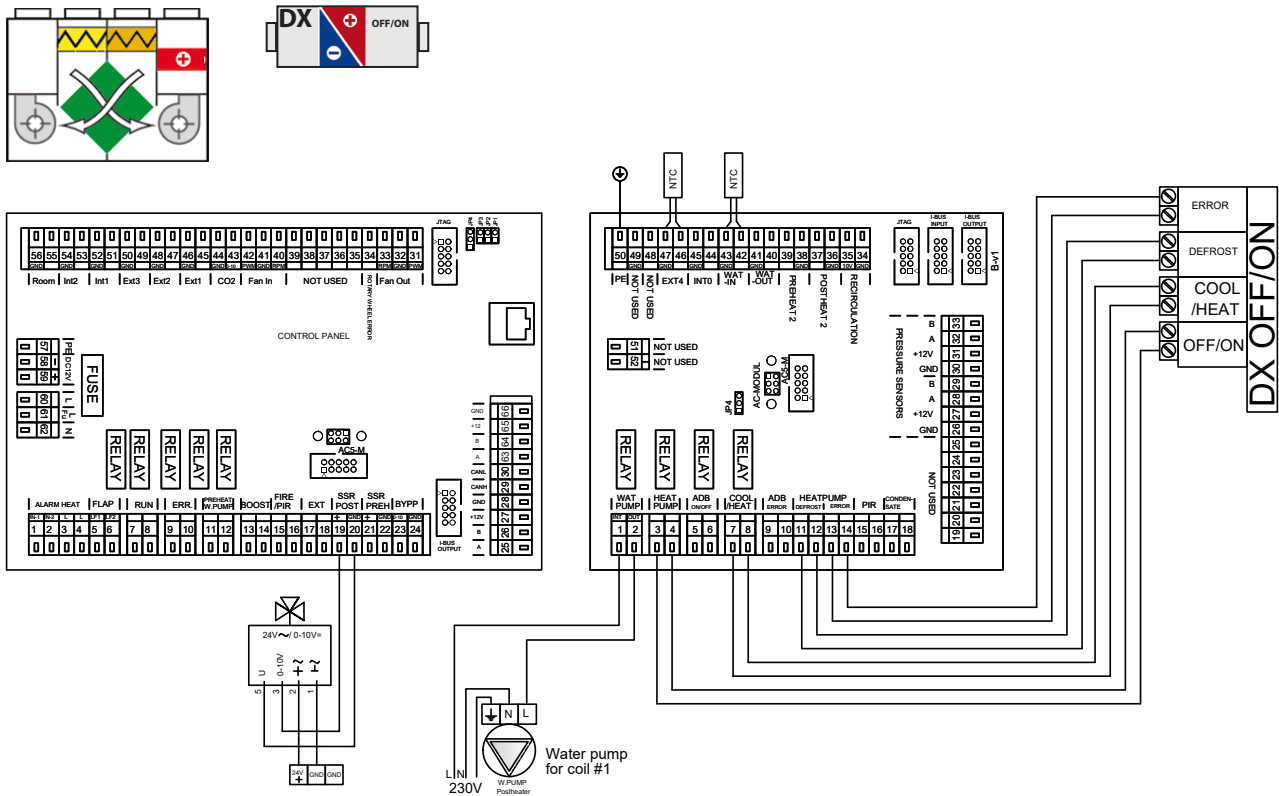


unit with water exchanger and second external electric heating coil

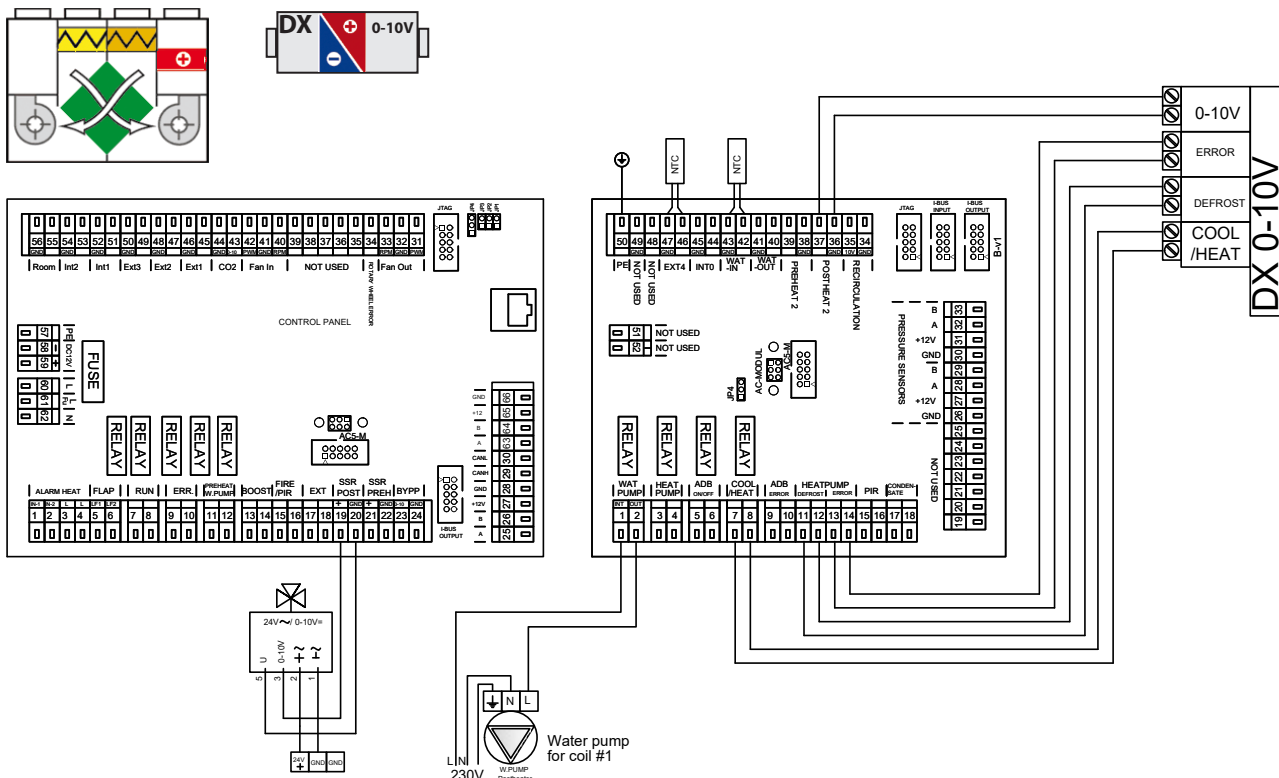


12. WIRING DIAGRAM

unit with water exchanger and second external DX exchanger with OFF / ON control

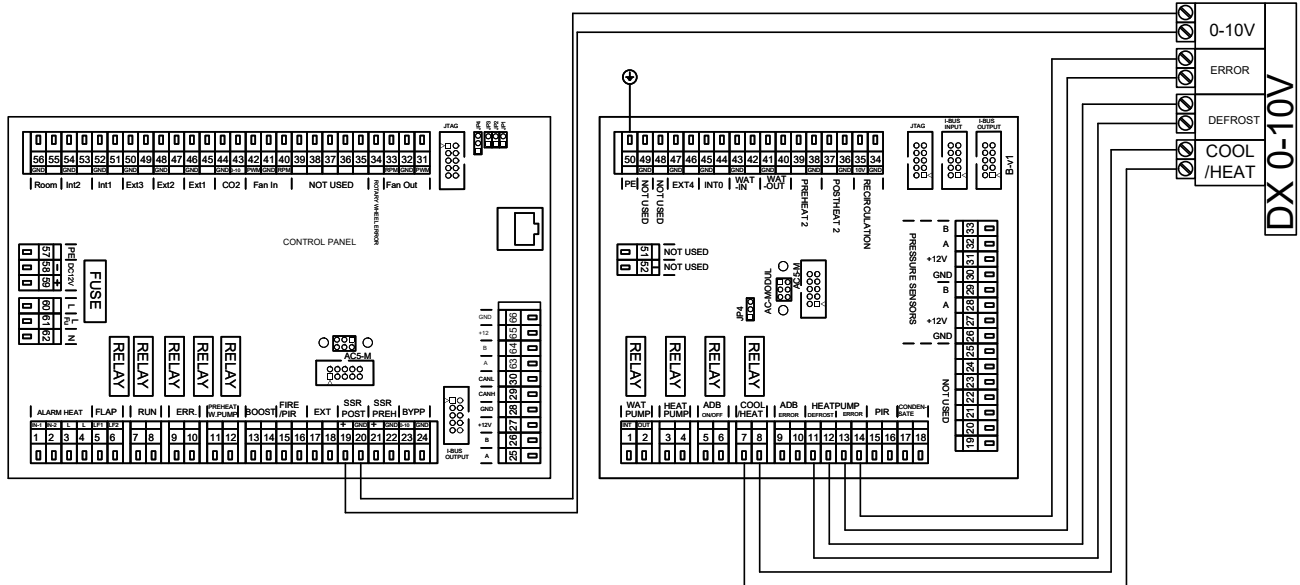
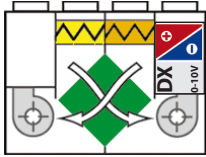


unit with water exchanger and second external DX exchanger with 0-10V control

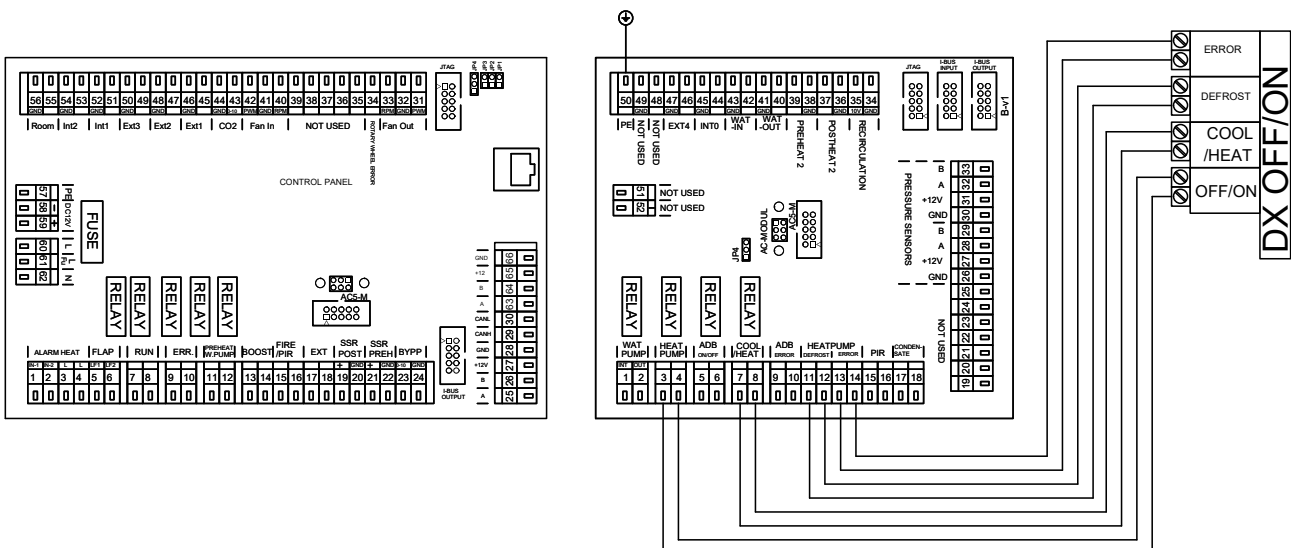
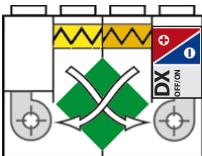


12. WIRING DIAGRAM

unit with DX 0-10V exchanger

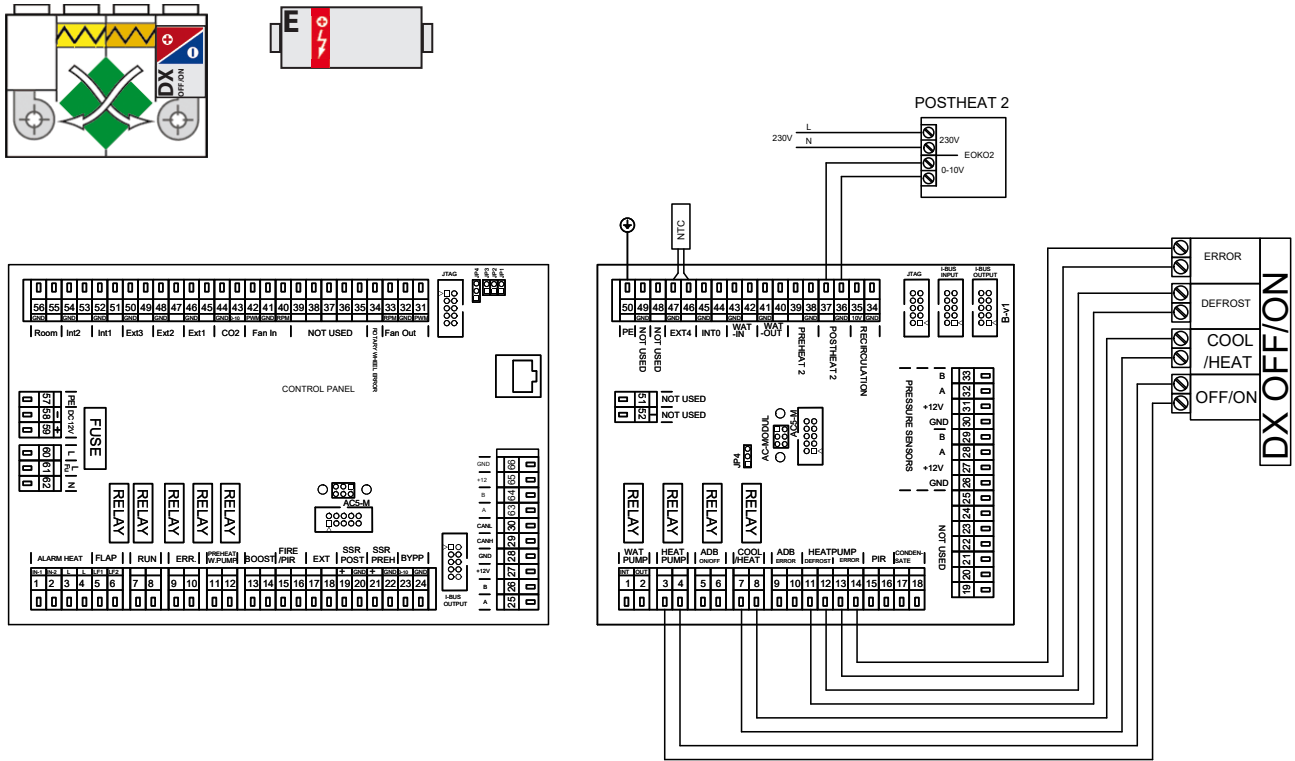


unit with DX exchanger control OFF/ON

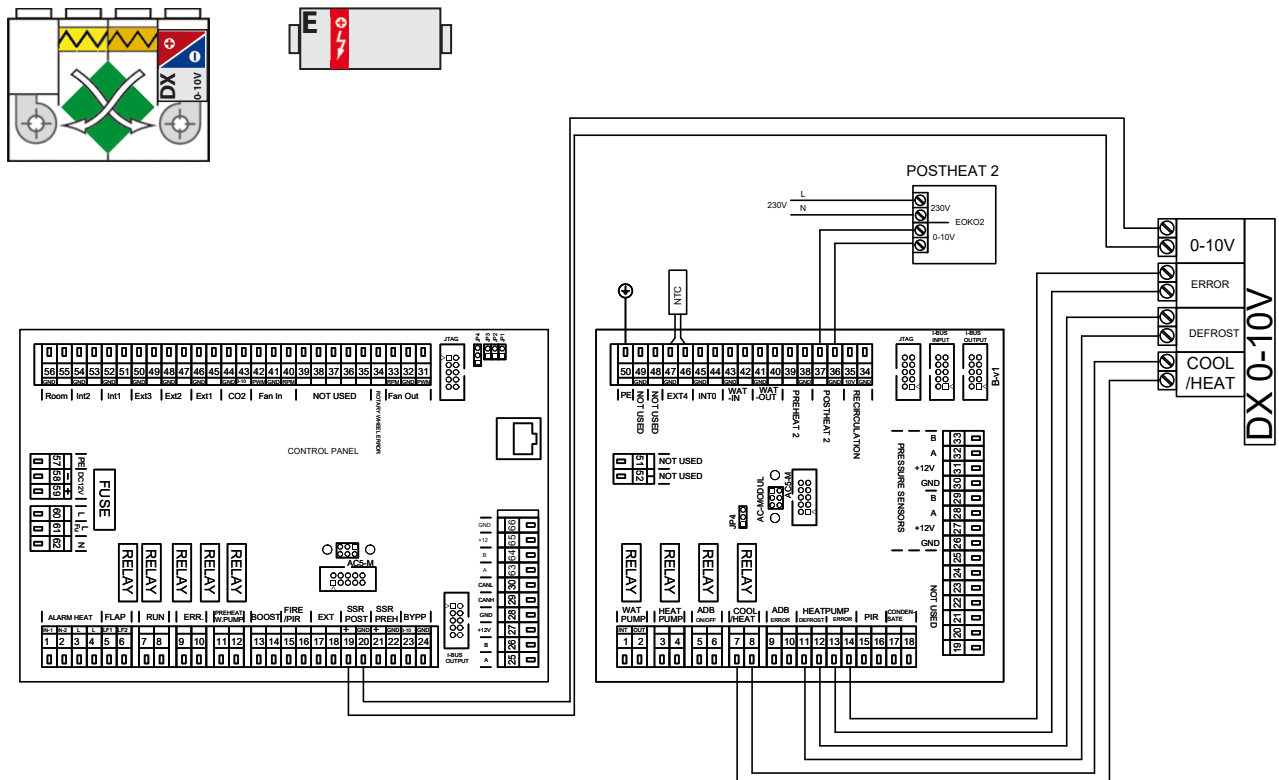


12. WIRING DIAGRAM

unit with DX exchanger, control OFF/ON and second external electric heating coil

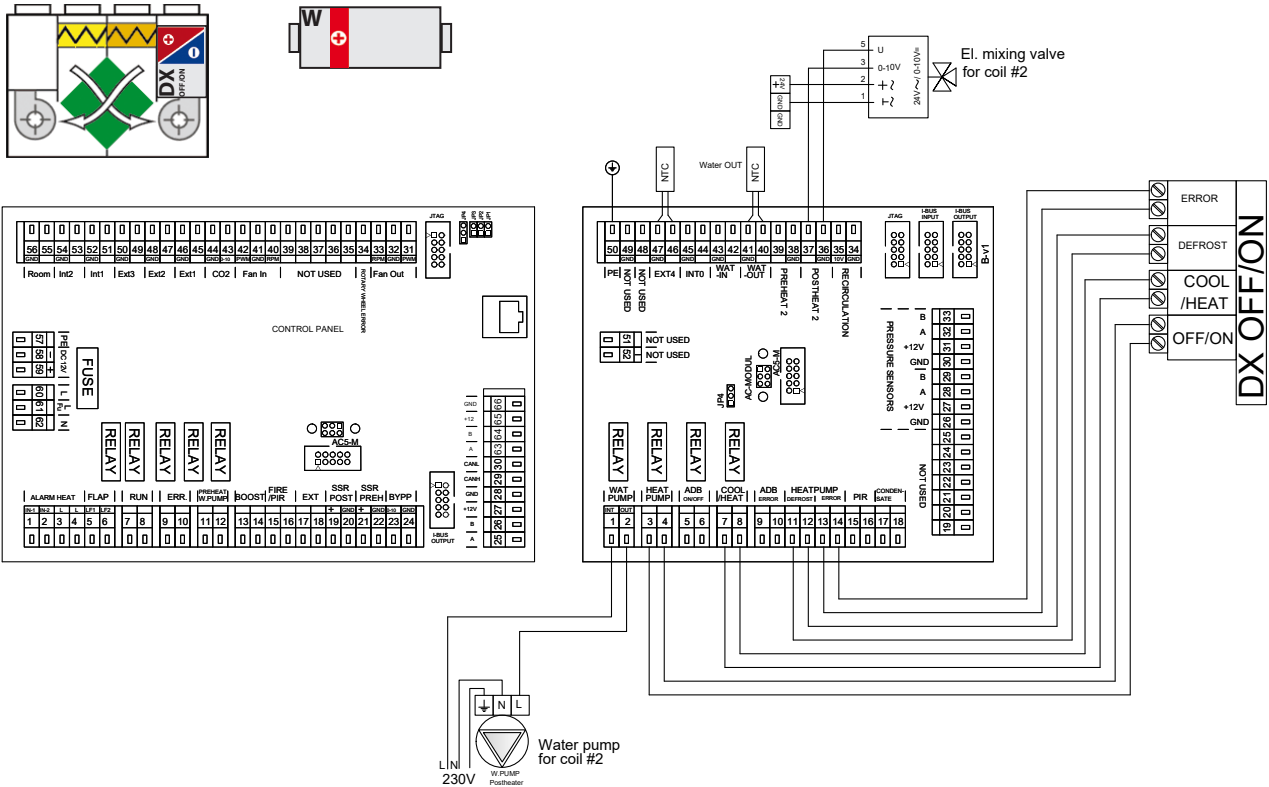


unit with DX exchanger control 0-10V and second external electric heating coil

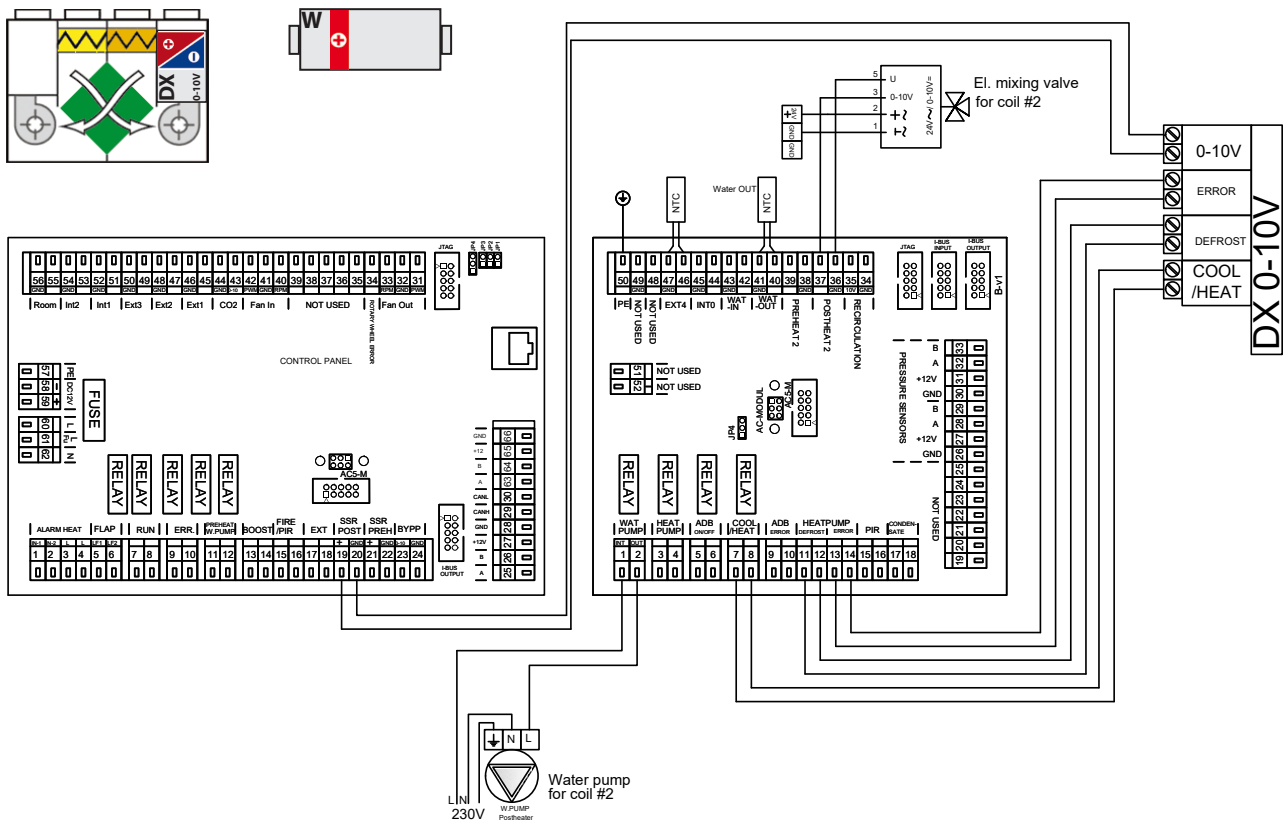


12. WIRING DIAGRAM

unit with DX exchanger control OFF/ON and second external water exchanger

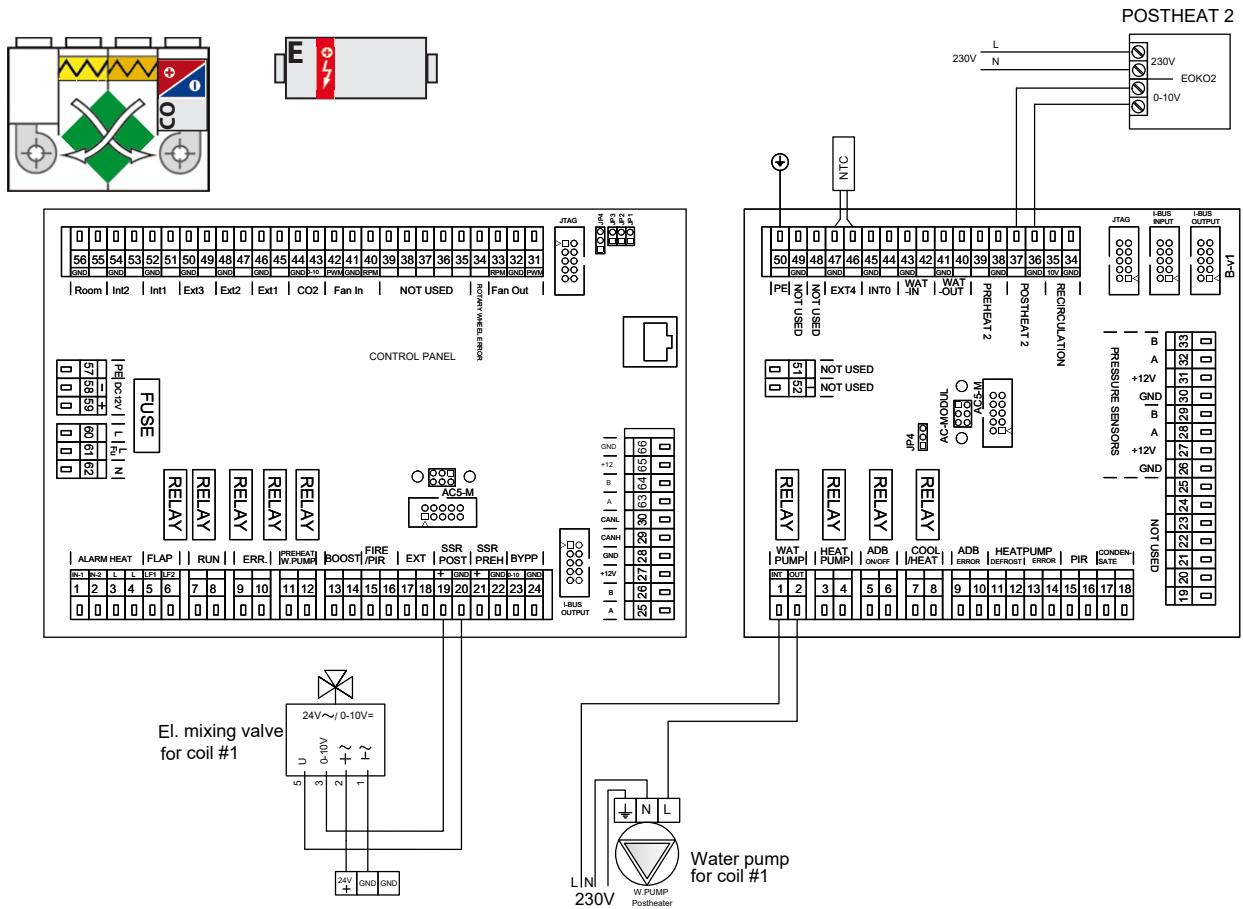


unit with DX exchanger control 0-10V and second external water exchanger

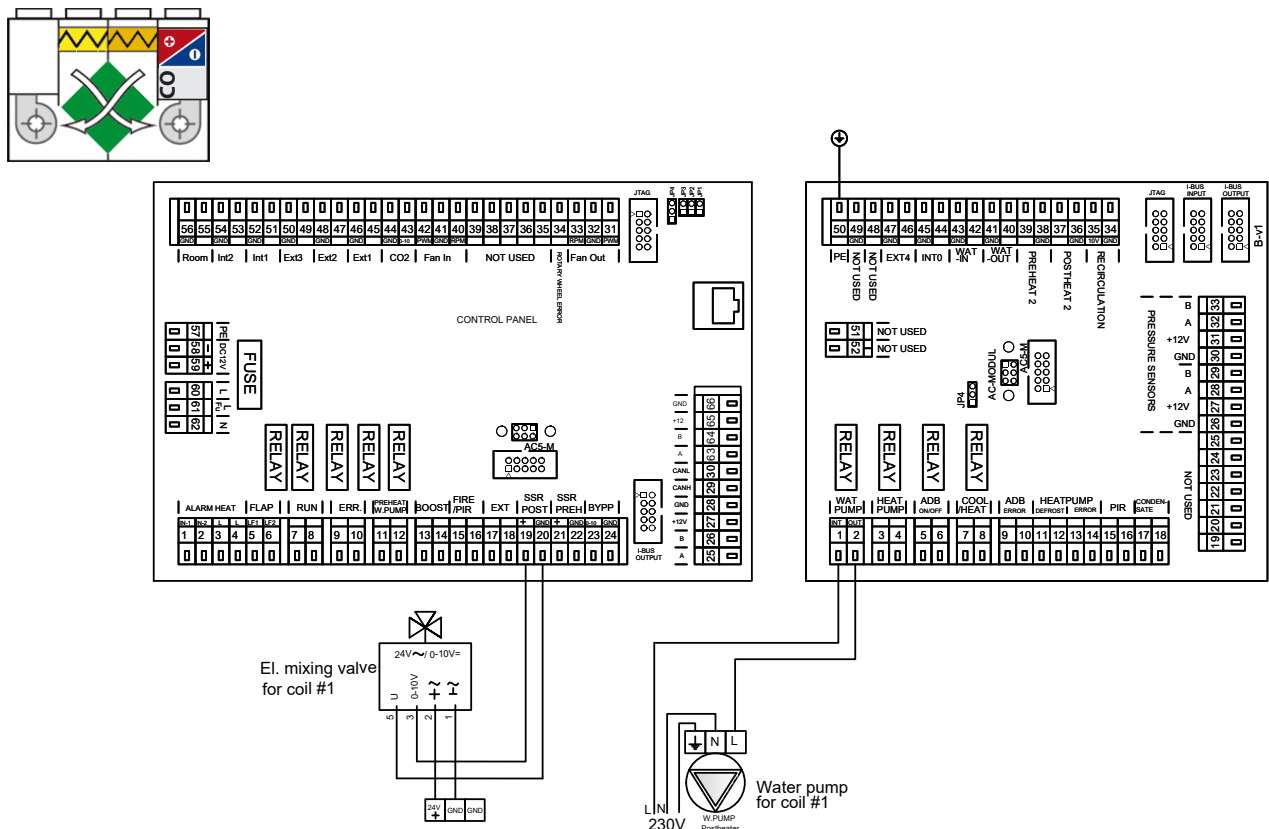


12. WIRING DIAGRAM

unit with exchanger for heating / cooling and second external electric heating coil



unit with exchanger for heating / cooling

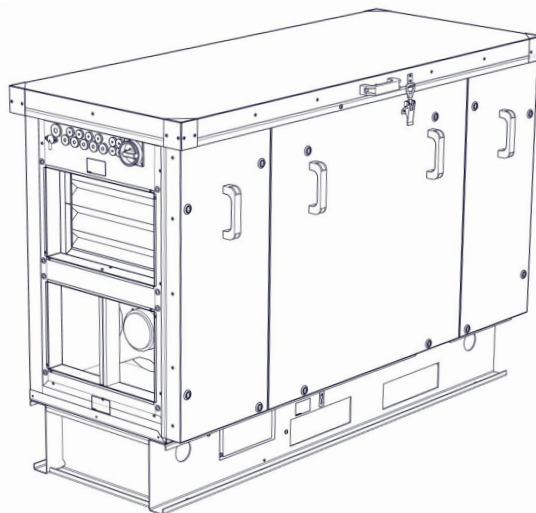


13. CONCLUSION



Please read this manual carefully and follow its instructions to ensure correct and safe operation of the heat recovery unit.

Should you have any questions or require some additional explanation, please do not hesitate to contact our sales department or technical support.



Contact information:

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Fáblovka 568
533 59 Pardubice
Czech Republic

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





The manufacturer is not liable for any damage to the product arising from unauthorised installation and operation inconsistent with regular conventions for installation and operation of air-conditioning units and regulation systems.