



PARTNER
IN VENTILATION
2VV.CZ

EN

ALFA 85

**Complete Instructions
INSTALLATION AND OPERATION**



4-118-0228

v7

EAC






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1. BEFORE YOU START

For better orientation you will find following symbols in the text hereof. Following table shows symbols and their meaning.

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 installation, please read carefully the guide **“Safety for Ventilation Units”** 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 follow all instructions! The manufacturer reserves the right to make changes including technical documentation without previous notification. Please keep this manual for further references. Consider this manual integral part of the product.

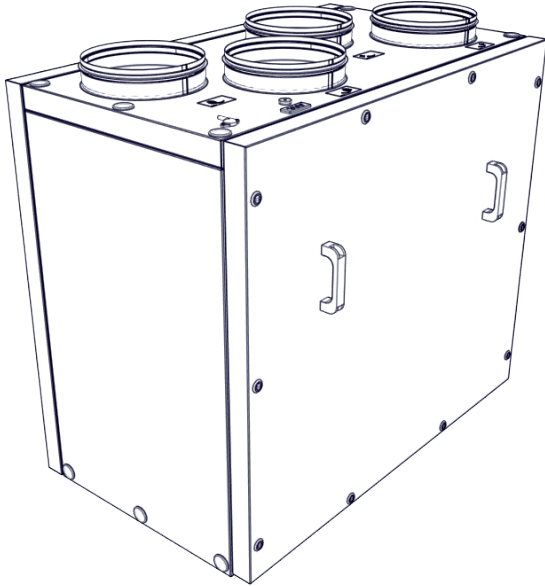
EC DECLARATION OF COMPLIANCE

The product was designed, and manufactured to comply with all relevant provisions and is in compliance with the requirements of the European Parliament and of the Council of the EU, including the amendment, which it was classified under. It is considered safe when installed in the specified conditions and operated according to the instructions of the operations manual. It was assessed according to harmonized European standards listed in the relevant EC declaration of conformity were applied.

For the current and full version of the EC declaration of conformity visit www.2vv.cz

2. UNPACKING

2.1 PRODUCT INSPECTION



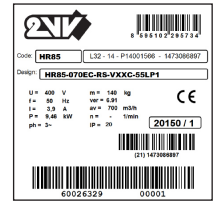
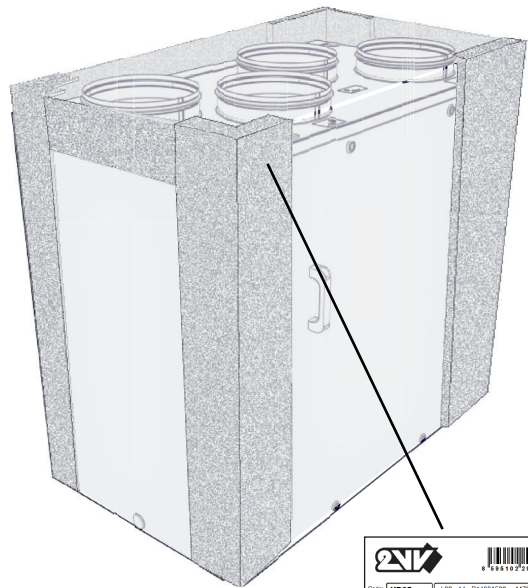
READ CAREFULLY!

- Upon delivery, check the product packaging for possible damage. In the event of damage to the packaging notify the carrier. If no complaint is filed in a timely manner, subsequent requests will not be considered.
- Check whether the product is appropriate for your order. If the product type does not match, do not unpack it and contact the supplier immediately.
- After unpacking, check the status of the unit and all of its components. If in doubt, contact the supplier.
- Never use a damaged unit.
- If you fail to unpack the unit immediately after its receipt, it must be stored in dry rooms at temperatures from +5 °C to +35 °C.

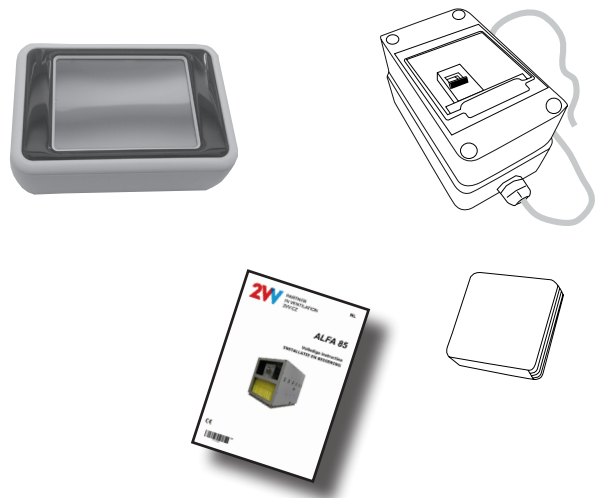


This product must be properly disposed of in accordance with local laws and regulations. The product contains batteries, so they must be recycled or disposed of separately from household waste.

When the battery or the product reach the end of their 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 is recycled in a manner that protects human health and the environment.



Components Included



Communication cable is not part of delivery and is required for proper operation of unit.
Recommended cable type: UTP CAT5 class



READ CAREFULLY!

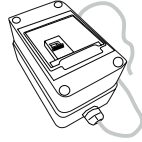
- If the ventilation unit was exposed to temperatures lower than 0 °C during transport, please unpack unit and let it sit at room temperature for at least 2 hours before connecting the unit in order to balance temperature inside unit.

3. MAIN COMPONENTS

Unit control



Main switch with cable of 1.5 m
(except for 700 series that has a supply cable of
CEE 7/16 "Europlug" type)



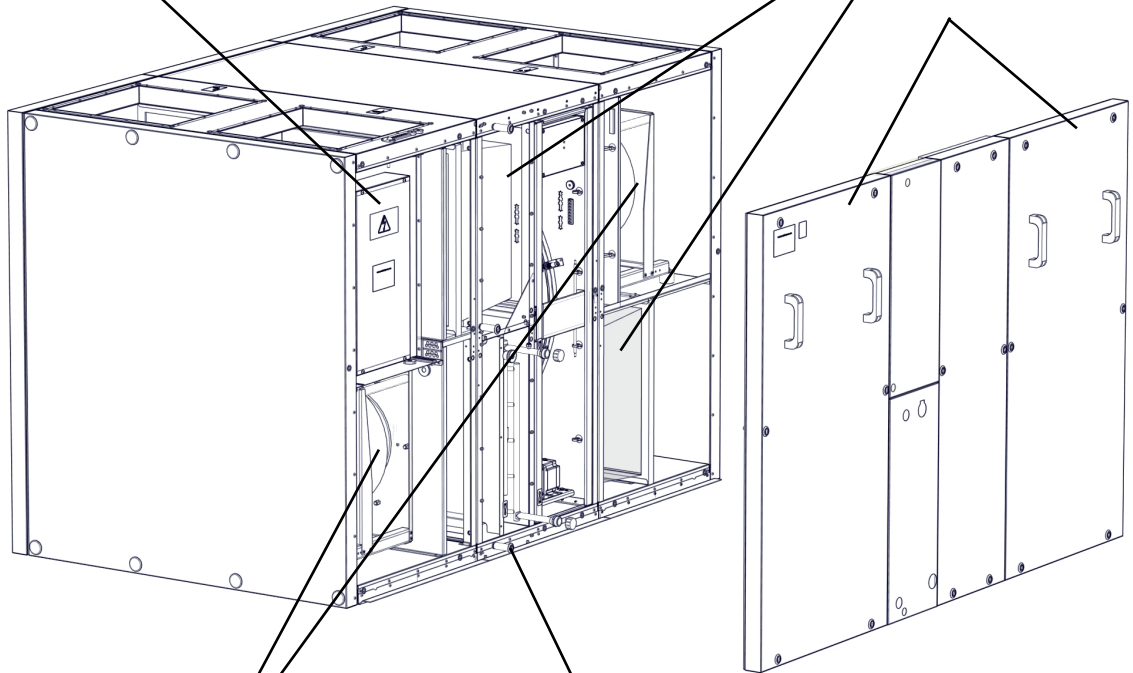
External temperature sensor (CT-ROM)
(shielded twin cable max. 50 m)



Unit controls box

Filters

Removable panels
access to the unit

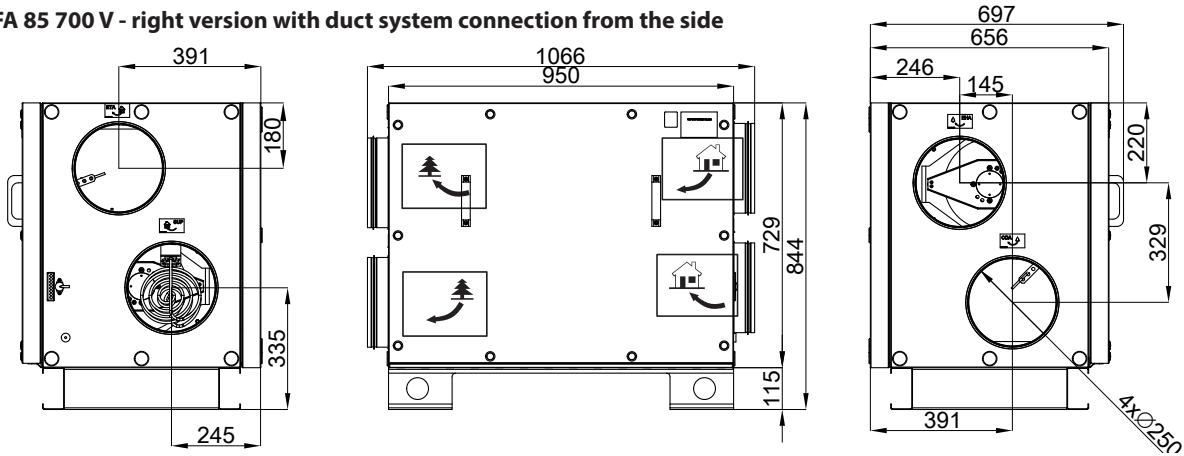


Fans

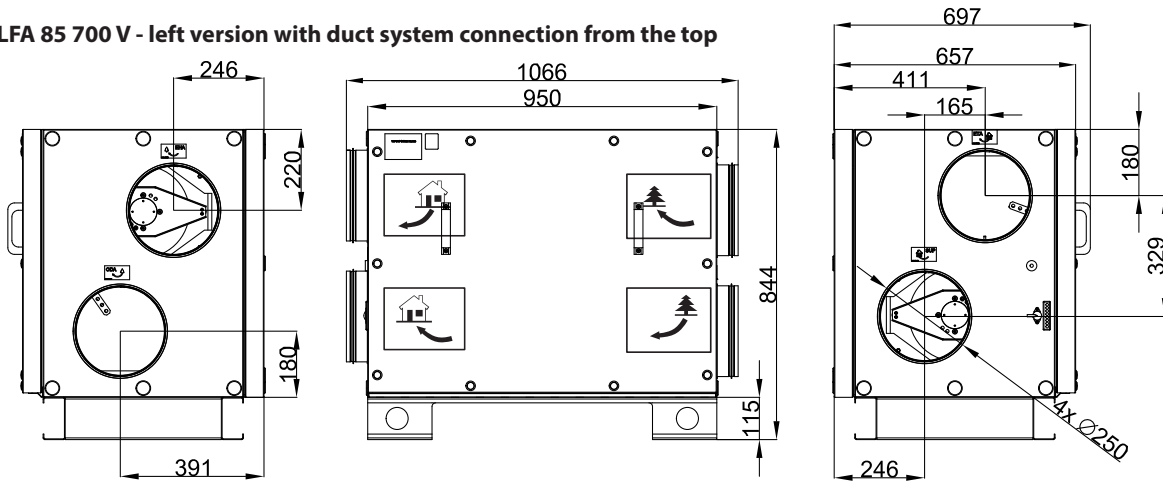
Condensate drain

4. DIMENSIONS

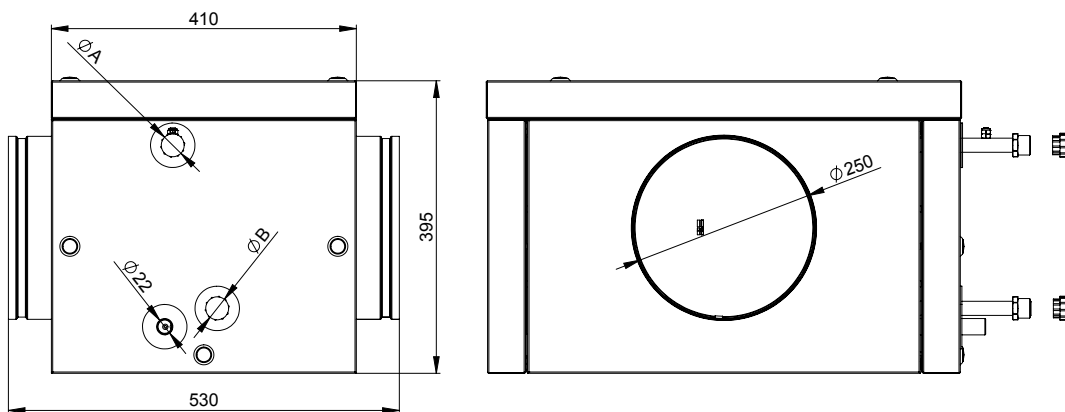
ALFA 85 700 V - right version with duct system connection from the side



ALFA 85 700 V - left version with duct system connection from the top



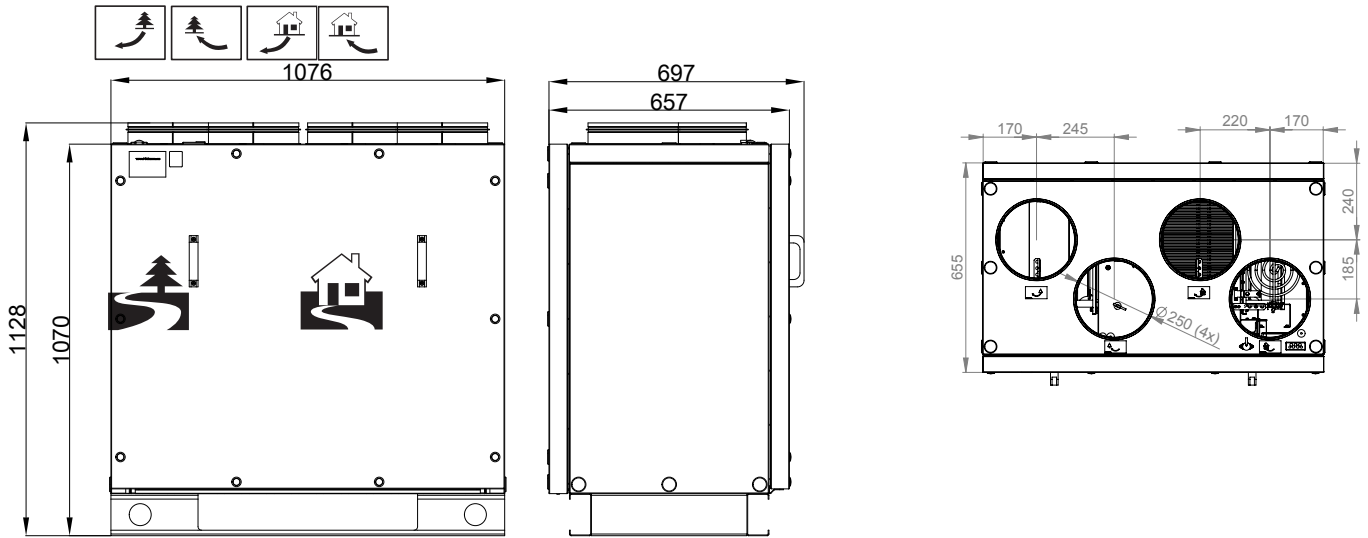
Water heater /C-O (change over) external module for units ALFA 85 700



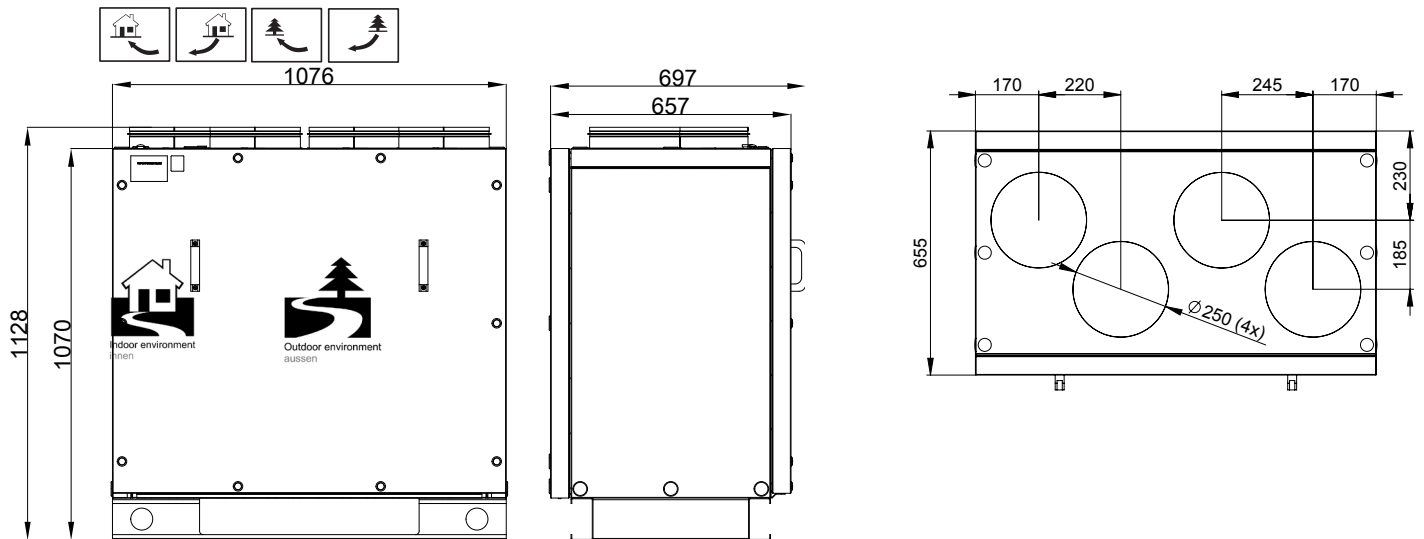
ALFA 85 700	A	B
700 water heater	G 1/2"	G 1/2"
700 heater/cooler	G 3/4"	G 3/4"
700 direct evaporator	5/8"	5/8"

4. DIMENSIONS

ALFA 85 700 U - right version with duct system connection from the top

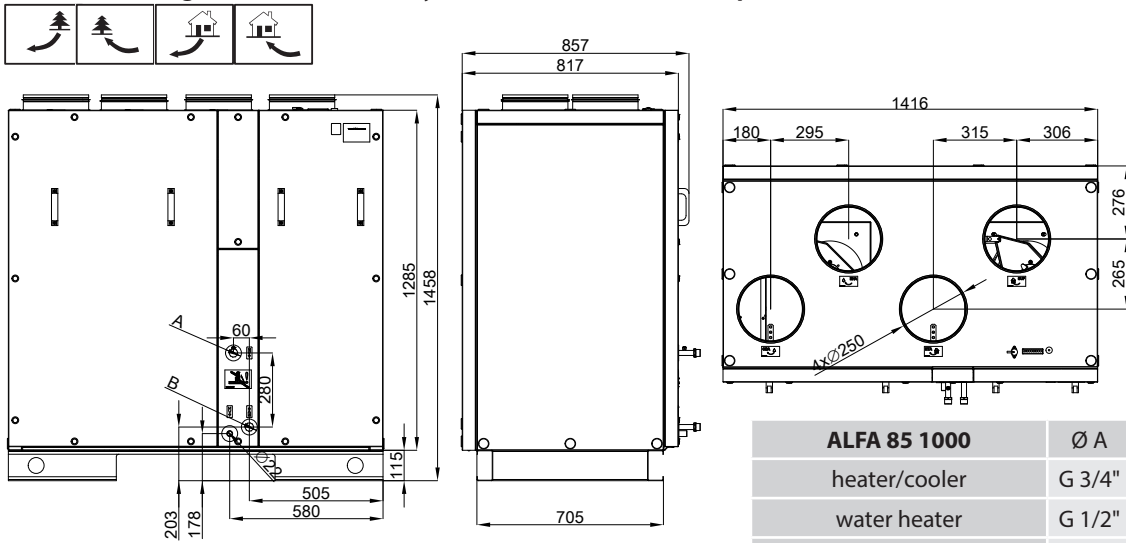


ALFA 85 700 U - left version with duct system connection from the top

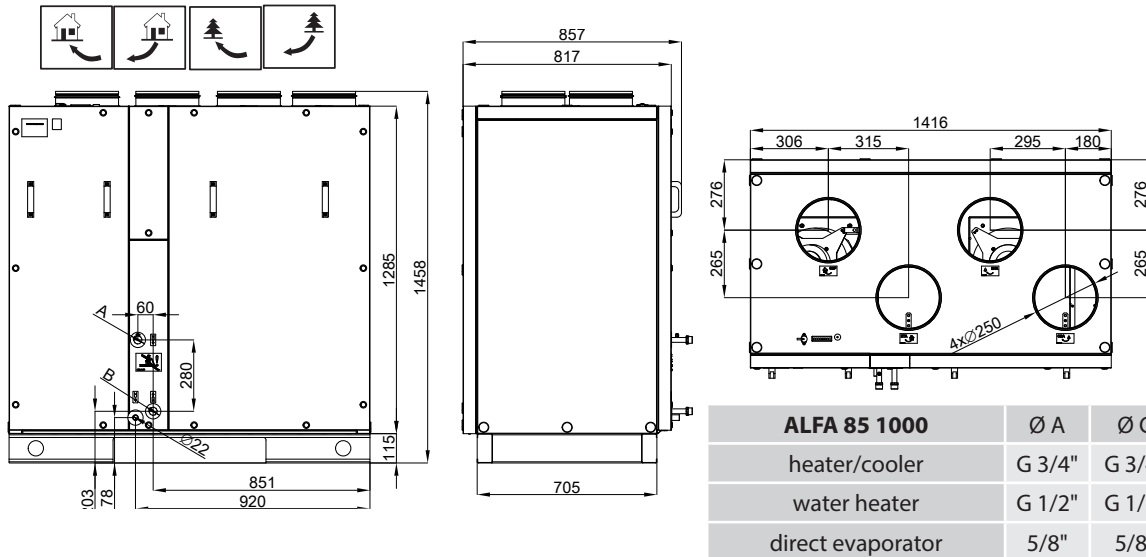


4. DIMENSIONS

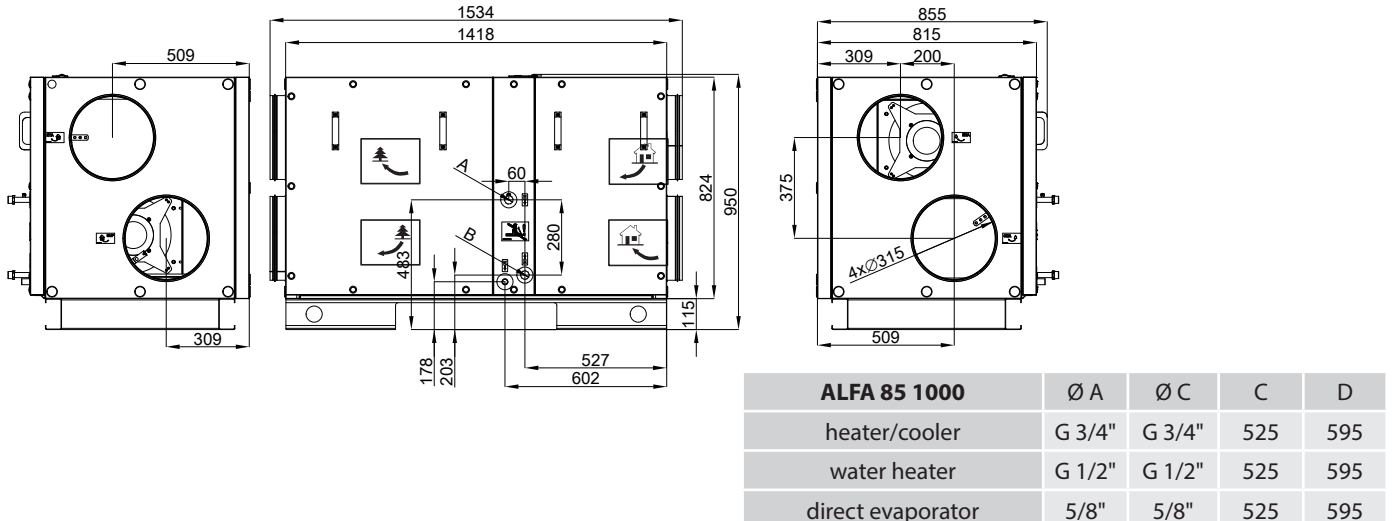
ALFA 85 1000 U - right version with duct system connection from the top



ALFA 85 1000 U – left version with duct system connection from the top

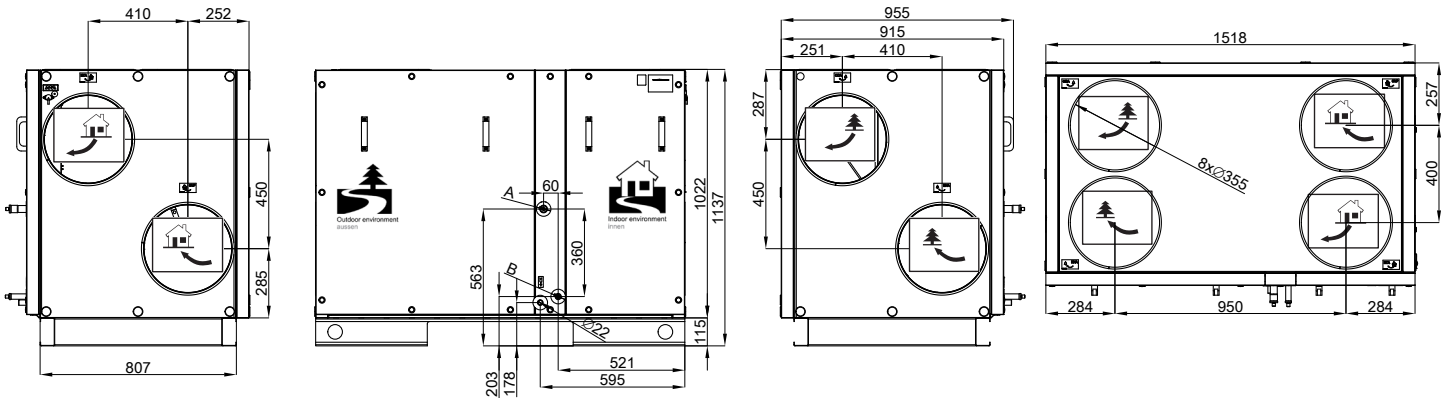


ALFA 85 1000 V - right version with duct system connection from the side



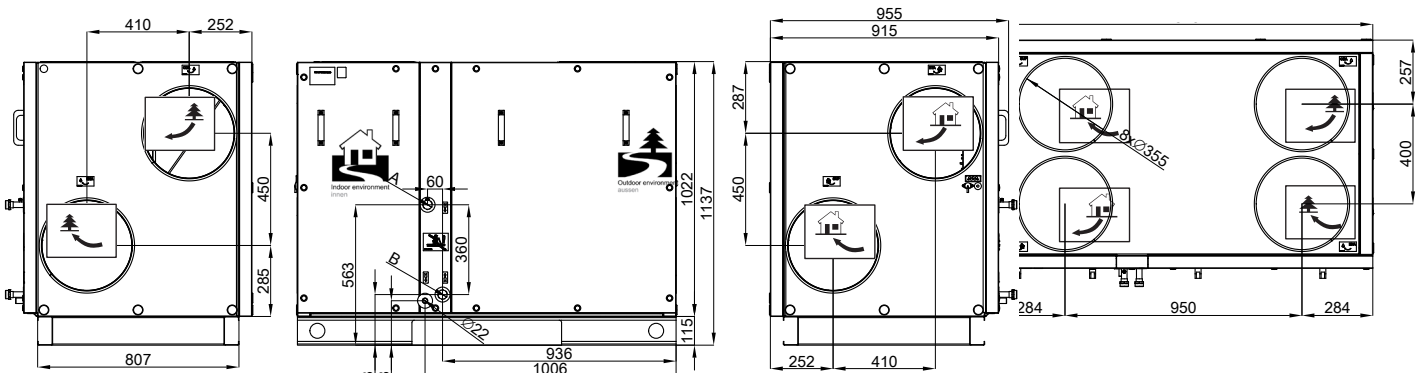
4. DIMENSIONS

ALFA 85 1500/2000 U/V - right version with duct system connection from the top



ALFA 85 1500/2000	Ø A	Ø C	C	D
heater/cooler	G 1"	G 1"	520	595
water heater	G 3/4"	G 3/4"	520	595
direct evaporator	1 1/8"	7/8"	520	595

ALFA 85 1500/2000 U/V - left version with duct system connection from the top

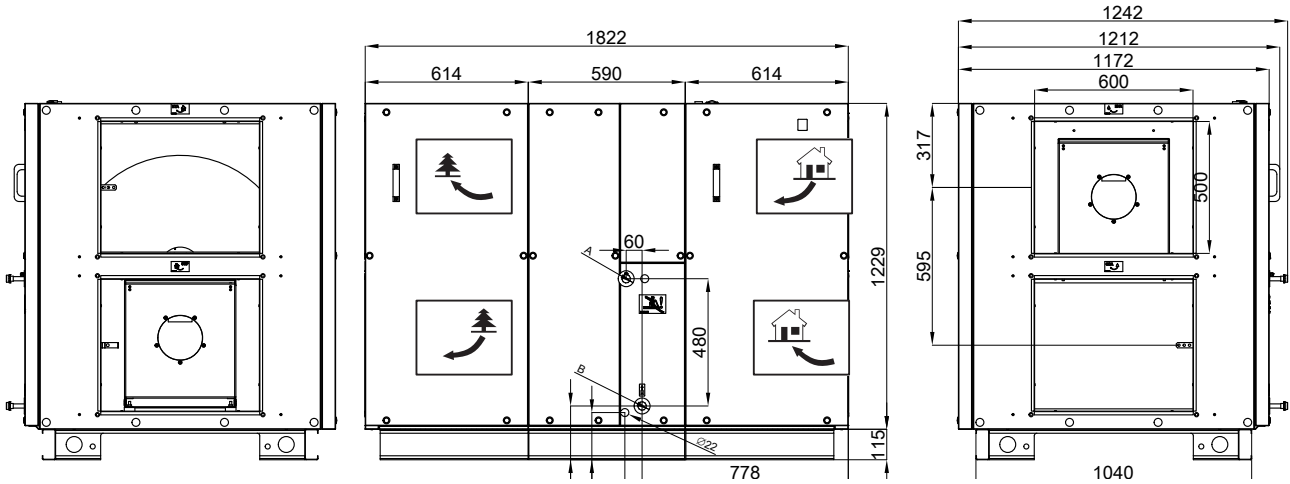


ALFA 85 1500/2000	Ø A	Ø C	C	D
heater/cooler	G 1"	G 1"	930	1005
water heater	G 3/4"	G 3/4"	930	1005
direct evaporator	1 1/8"	7/8"	930	1005

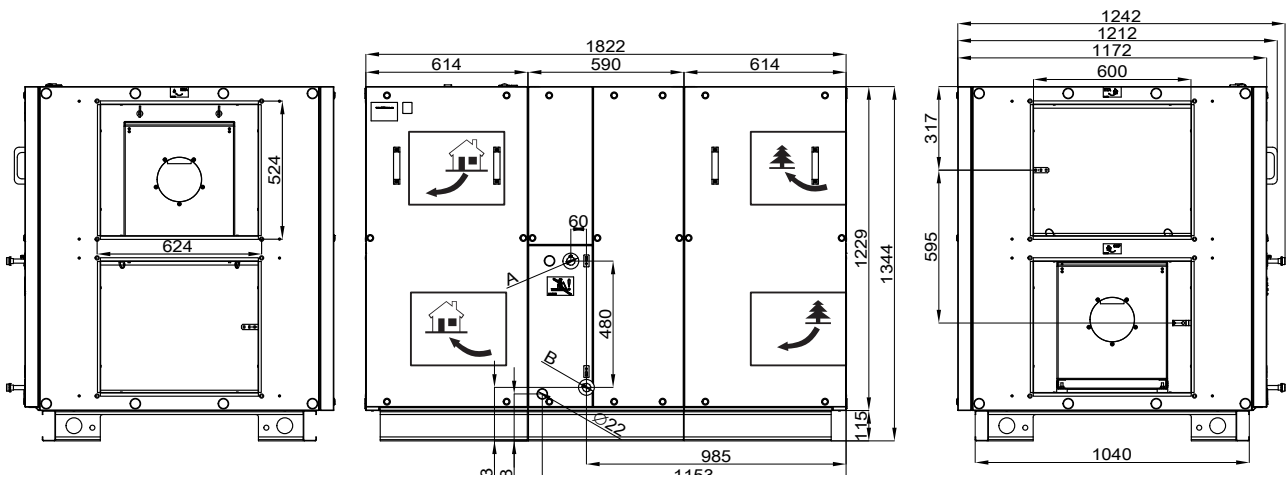
4. DIMENSIONS

ALFA 85 3000/4500 V - right version with duct system connection from the side

ALFA 85 3000/4500	Ø A	Ø C	C	D
heater/cooler	G 1"	G 1"	990	1060
water heater	G 3/4"	G 3/4"	990	1060
direct evaporator	1 3/8"	1 1/8"	990	1060

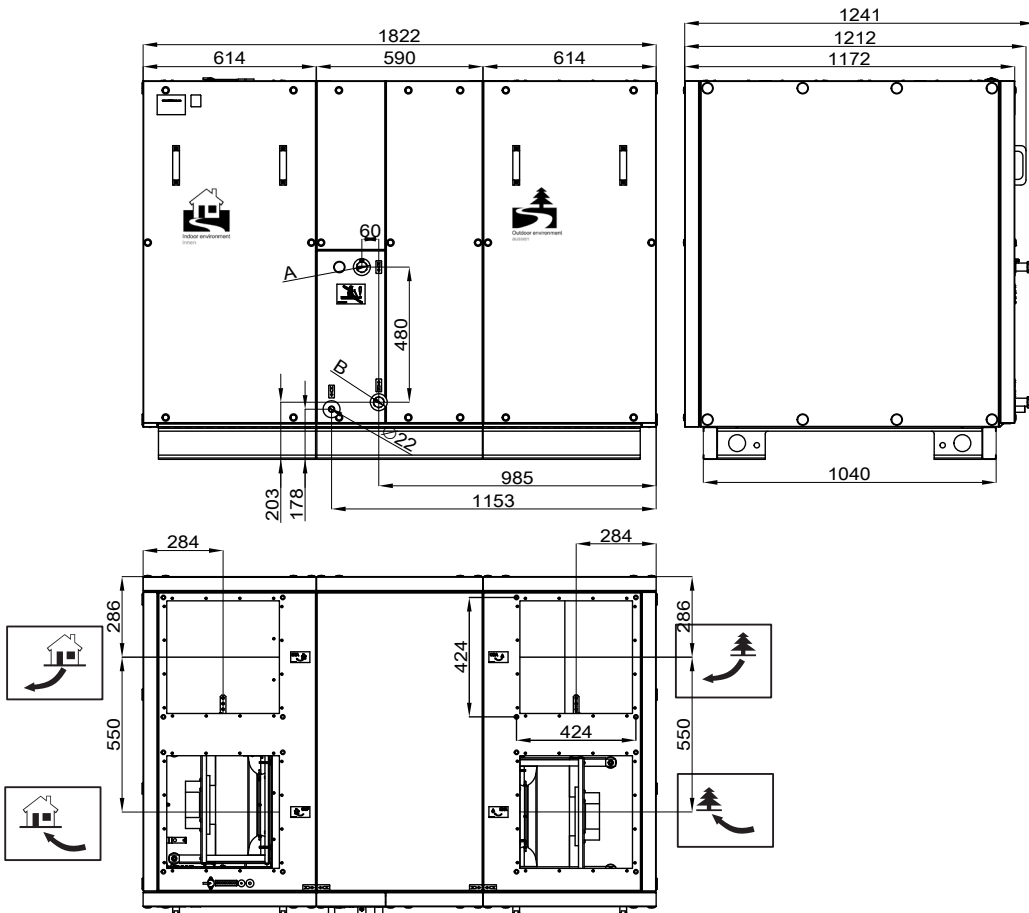


ALFA 85 3000/4500 V - left version with duct system connection from the side



4. DIMENSIONS

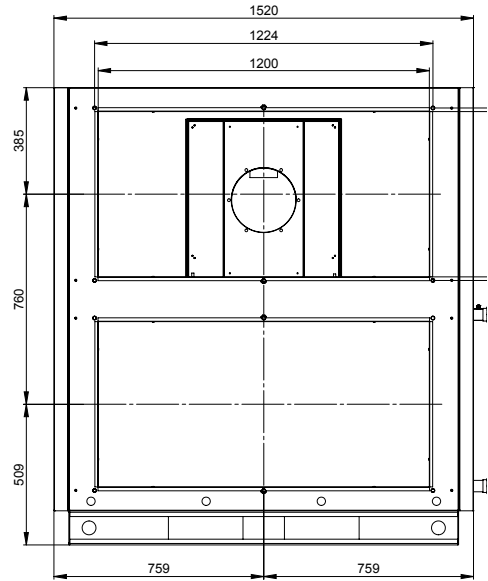
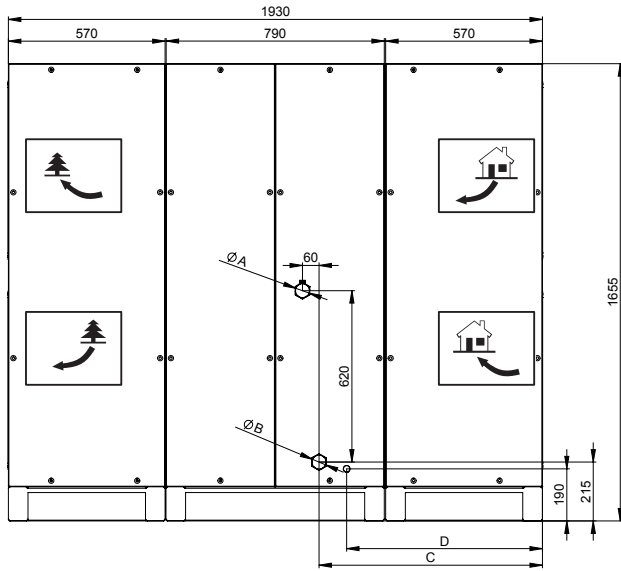
ALFA 85 3000/4500 U - left version with duct system connection from the top



ALFA 85 3000/4500	Ø A	Ø C	C	D
heater/cooler	G 1"	G 1"	990	1060
water heater	G 3/4"	G 3/4"	990	1060
direct evaporator	1 3/8"	1 1/8"	990	1060

4. DIMENSIONS

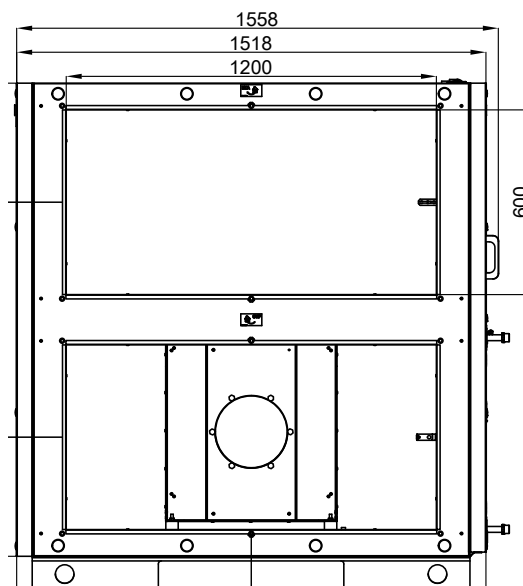
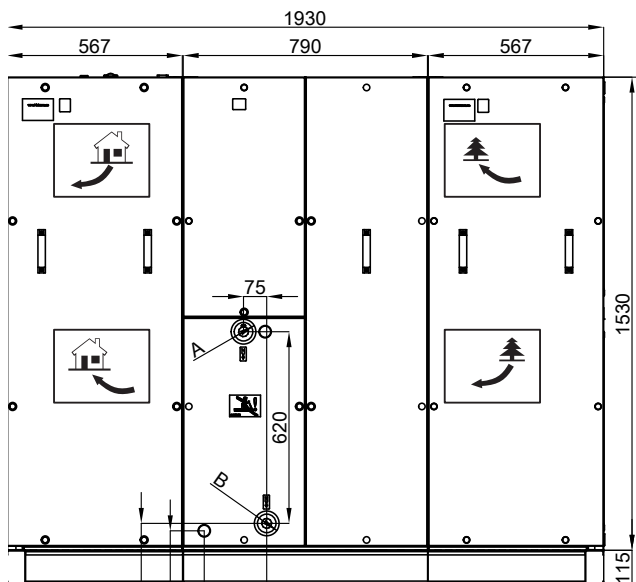
ALFA 85 5500/7500 V - right version with duct system connection from the side



ALFA 85 5500/7500	$\varnothing A$	$\varnothing C$	C	D
heater/cooler	1 1/2"	1 1/2"	810	710
water heater	3/4"	3/4"	810	710
direct evaporator	1 5/8"	1 1/8"	810	710

4. DIMENSIONS

ALFA 85 5500/7500 V - left version with duct system connection from the side

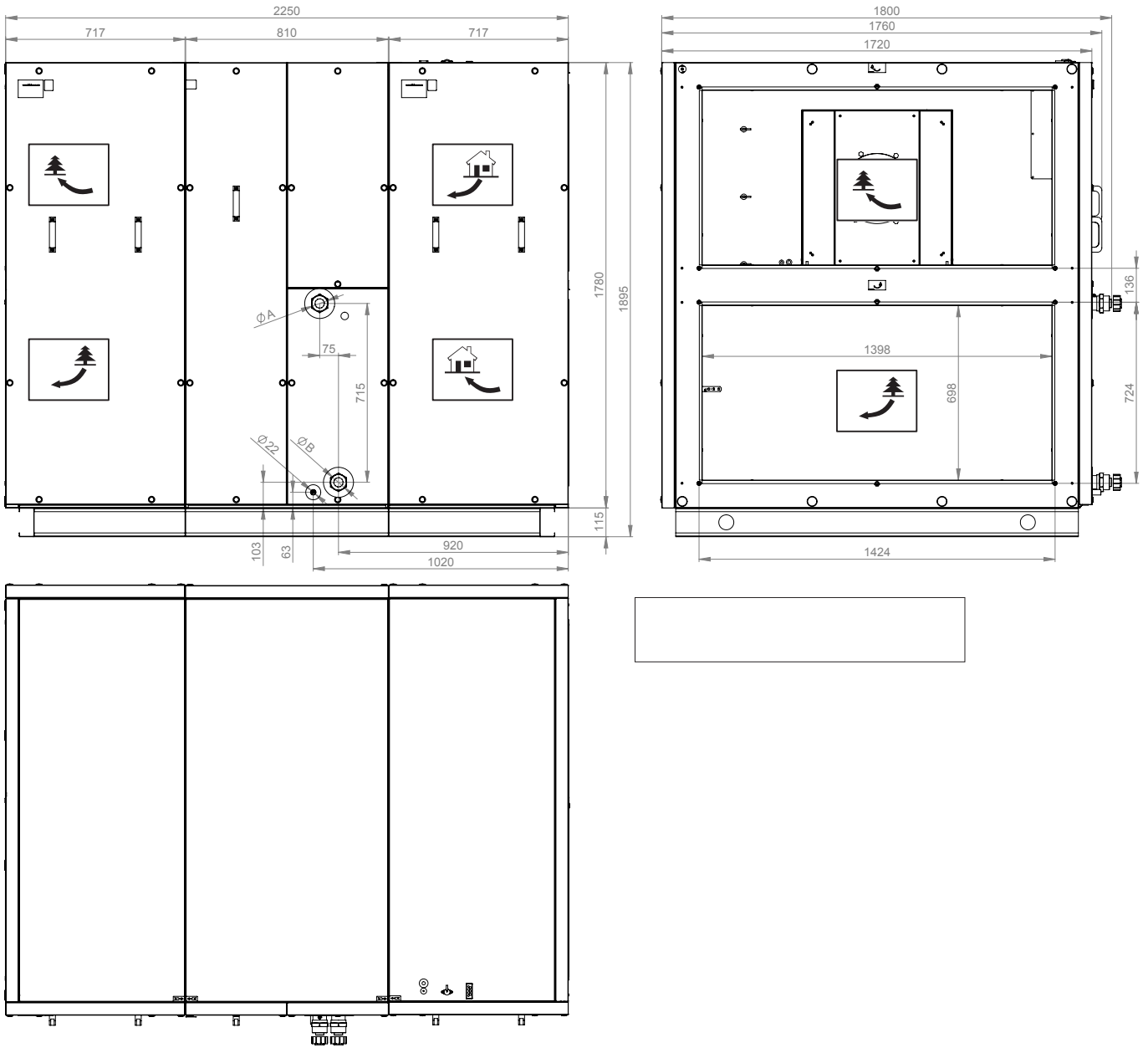


ALFA 85 5500/7500	Ø A	Ø C	C	D
heater/cooler	1 1/2"	1 1/2"	810	710
water heater	3/4"	3/4"	810	710
direct evaporator	1 5/8"	1 1/8"	810	710

4. DIMENSIONS



ALFA 85 9000/12000 V - right version with duct system connection from the side

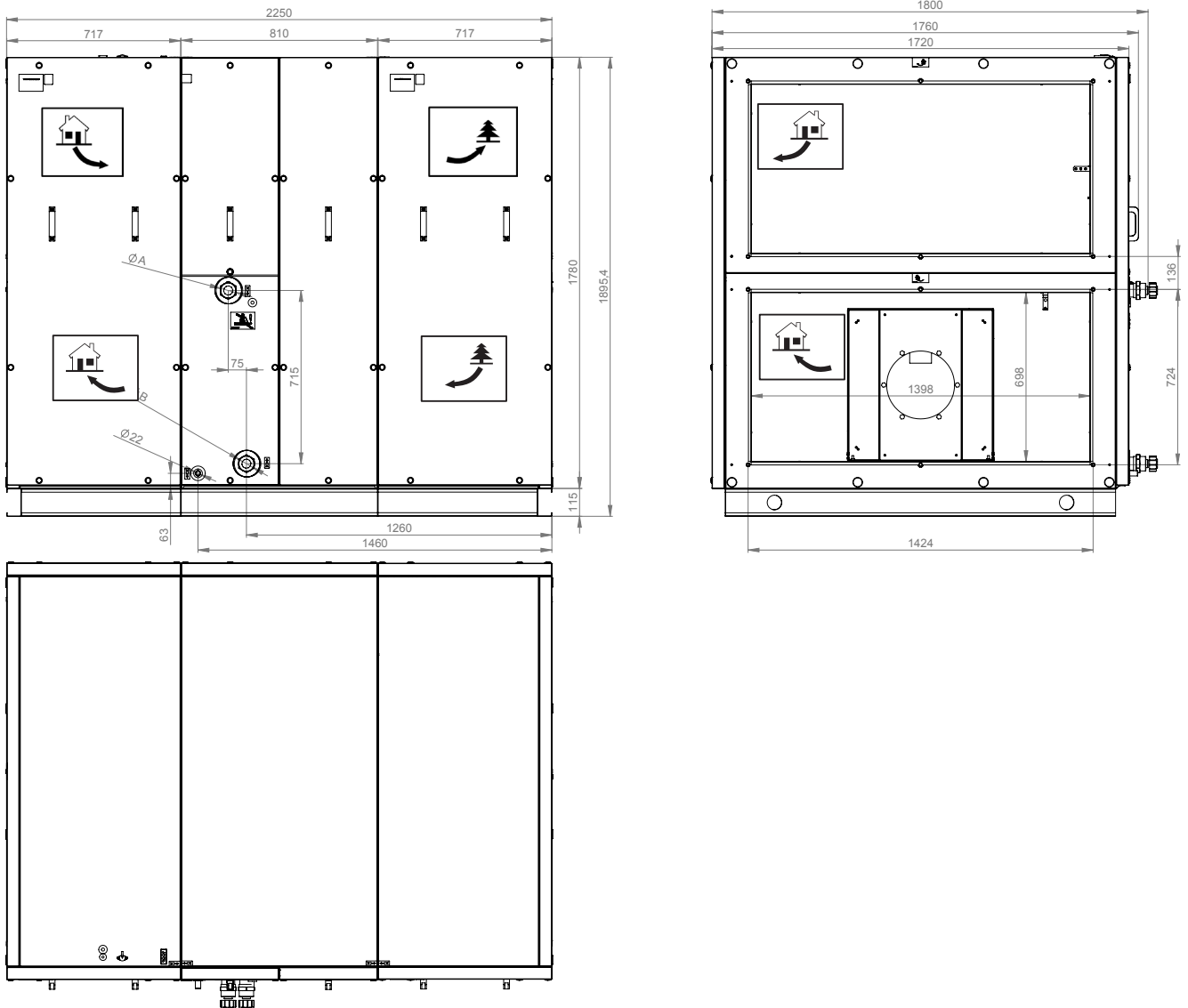


ALFA 85 9000/12000	Ø A	Ø B
heater/cooler	2"	2"
water heater	1"	1"
direct evaporator	1 1/8"	2 1/8"

4. DIMENSIONS



ALFA 85 9000/12000 V - left version with duct system connection from the side



ALFA 85 9000/12000	$\varnothing A$	$\varnothing B$
heater/cooler	2"	2"
water heater	1"	1"
direct evaporator	1 1/8"	2 1/8"

5. TECHNICAL PARAMETERS

Electrical characteristics of EC motors

Alfa 85 V/U	Voltage (V)	Frequency (Hz)	Number of fans in the unit	Fan input power (W)	Current (A)	Flowrate (m ³ /h)	IP
700	230	50	2	200	1,2	700	44
1000	230	50	2	455	2,8	900	54
1500	230	50	2	455	2,8	1600	54
2000	230	50	2	715	3,1	2500	54
3000	400	50	2	1000	1,63	3000	54
4500	400	50	2	1700	2,6	4500	54
5500 V	400	50	2	1850	2,9	5500	54
7500 V	400	50	2	2730	4,2	7000	54
9000 V	400	50	2	3450	5,3	8500	55
12000 V	400	50	2	5700	9	10000	55

5. TECHNICAL PARAMETERS

Model with electrical heater

Alfa 85 V/U	Voltage (V)	Frequency (Hz)	Input power (kW)	Current per phase (A)
700	230	50	2,4	11,7
1000	400	50	4	10,2
1500	400	50	5,5	12,3
2000	400	50	8,5	17
3000	400	50	11	16,5
4500	400	50	18,5	27,1
5500 V	400	50	27,6	40,7
7500 V	400	50	35,5	52
9000 V	400	50	40,8	60,6
12000 V	400	50	50,1	74,9

Model without electrical heater / model with water heater / model with C/O (change-over) / model with direct evaporator (DX).

Alfa 85 V/U	Voltage (V)	Frequency (Hz)	Input power (kW)	Current per phase (A)
700	230	50	0,4	3
1000	230	50	0,95	5,8
1500	230	50	1	6,2
2000	230	50	1,5	6,8
3000	400	50	2	3,5
4500	400	50	3,5	5,8
5500 V	400	50	3,5	5,8
7500 V	400	50	3,5	9
9000 V	400	50	7,2	12,1
12000 V	400	50	11,7	19,5

Model with water heater:

ALFA 85 V/M	Nominal flow rate (m ³ /h)	Nominal output (kW)	Exhaust temperature (°C)	Pressure loss - water (kPa)	Water flow rate (m ³ /h)	Pressure loss - air (Pa)	Connection
700	700	5,59	33	9,52	0,25	15,11	1/2
1000	900	7,92	35,4	6,47	0,35	9,42	1/2
1500	1600	13,71	34,7	18,74	0,6	12,16	3/4
2000	2500	17,77	30,5	30,02	0,78	26,39	3/4
3000	3000	24,17	33,2	12,16	1,07	14,13	3/4
4500	4500	30,51	29,6	18,74	1,34	28,55	3/4
5500 V	5500	42,16	32,1	10,1	1,86	14,91	3/4
7500 V	7000	48,39	29,9	13,05	2,13	22,66	3/4
9000 V	9000	63,19	31,4	9,03	3,22	28,65	1"
12000 V	12000	69,28	30	10,69	3,53	38,36	1"

*Data for the fall of water 90/70Tinlet = 10°C

5. TECHNICAL PARAMETERS

Model with C/O (change-over) cooling:

ALFA 85 V/M	Nominal flow rate (m ³ /h)	Nominal output (kW)	Exhaust temperature (°C)	Pressure loss - water (kPa)	Water flow rate (m ³ /h)	Pressure loss - air (Pa)	Connection
700	700	4,53	15,2	17,3	0,78	50	3/4
1000	900	6,05	14,8	8,5	1,04	31	3/4
1500	1600	9,57	15,7	6,3	1,64	40	1
2000	2500	12,91	16,8	11,1	2,21	88	1
3000	3000	19,17	15,3	12,9	3,29	47	1
4500	4500	25,28	16,3	21,4	4,34	96	1
5500 V	5500	37,35	14,8	26,3	6,41	50	1 1/2
7500 V	7000	44,29	15,5	35,8	7,6	76	1 1/2
9000 V	9000	51,85	15,7	15,6	8,89	61	2"
12000 V	12000	57,76	16,1	18,9	9,91	81	2"

*Data the fall of water 7/12Tinlet = 25°C, RH 70%

Model with C/O (change-over) heating:

ALFA 85 V/M	Nominal flow rate (m ³ /h)	Nominal output (kW)	Exhaust temperature (°C)	Pressure loss - water (kPa)	Water flow rate (m ³ /h)	Pressure loss - air (Pa)	Connection
700	700	6,68	37,5	2,5	0,29	46	3/4
1000	900	9,04	39	1,3	0,39	28	3/4
1500	1600	14,74	36,6	1,0	0,64	36	1
2000	2500	20,03	33,1	1,8	0,87	80	1
3000	3000	28,52	37,4	1,9	1,24	43	1
4500	4500	37,84	34,3	3,1	1,65	86	1
5500 V	5500	54,22	38,4	3,6	2,36	45	1 1/2
7500 V	7000	118,91	59	14,3	5,24	71	1 1/2
9000 V	9000	76,17	35,8	2,2	3,32	55	2"
12000 V	12000	84,89	34,5	2,65	3,7	73	2"

*Data the fall of water 60/40Tinlet = 10°C

Model with DX (Direct evaporator):

ALFA 85 V/M	Nominal flow rate (m ³ /h)	Nominal output (kW)	Exhaust temperature (°C)	RH (%)	Pressure loss - coolant (kPa)	Pressure loss - air (Pa)	Connection (gas)	Connection (liquid)
700	700	4,98	14,6	90,7	17,9	47	5/8	5/8
1000	900	7,17	13,5	91,8	22,8	29	5/8	5/8
1500	1600	12,12	14	91,2	12,5	37	INT 28,2	7/8
2000	2500	16,33	15,5	89,5	21,0	80	INT 28,2	7/8
3000	3000	22,68	14,1	90,9	31,9	42	1 3/8	1 1/8
4500	4500	29,28	15,5	89,3	50,0	87	1 3/8	1 1/8
5500 V	5500	41,38	14,1	90,7	26,0	45	1 5/8	1 1/8
7500 V	7000	48,47	15	89,8	34,3	68	1 5/8	1 1/8
9000 V	9000	49,57	14,5	81,7	28,1	56	2 1/8	1 1/8
12000 V	12000	54,65	15,1	80,5	33,4	75	2 1/8	1 1/8

Data: Tinlet = 25°C, 70% RH, evap. temperature 5°C, coolant R410A

6. INSTALLATION

6.1 SELECT UNIT LOCATION

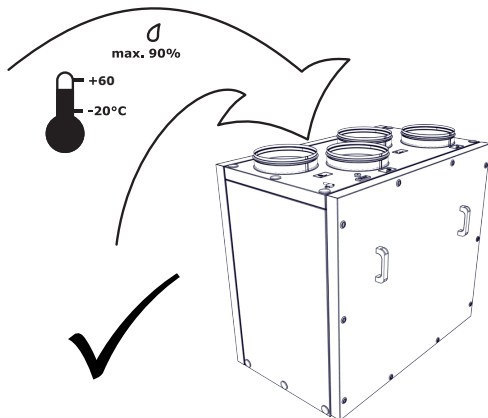
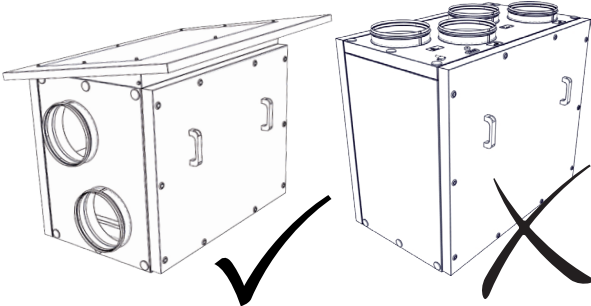
TECHNICAL DATA

Units intended for outdoor installation may only be installed in the an unprotected outdoor environment with with temperatures between -20°C to +60°C

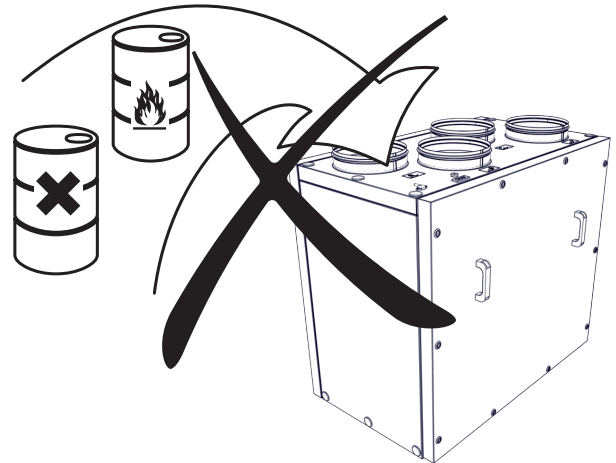
For outdoor installations it is necessary to use rain protected roofs. Outdoor installation is possible on side connection units only.

Rein-protected roofs

ALFA 85 V	code
700	ROOF-HR85-070
1000	ROOF-HR85-100
1500/2000	ROOF-HR85-150-200
3000/4500	ROOF-HR85-300-450
5500/7000	ROOF-HR85-550-750
9000/12000	ROOF-HR85-900-12K



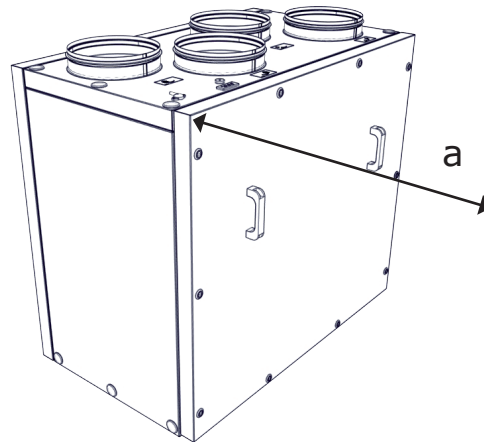
- The unit should use air flow with temperatures between -20°C to +60°C and relative humidity up to 90 %.



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 (intended for outdoor environments).

6.1-1 Access distances needed for servicing the units

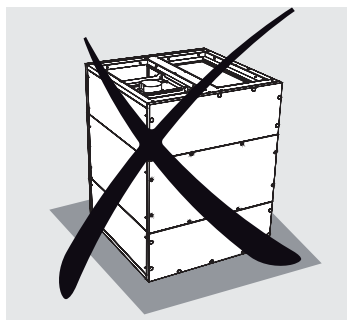
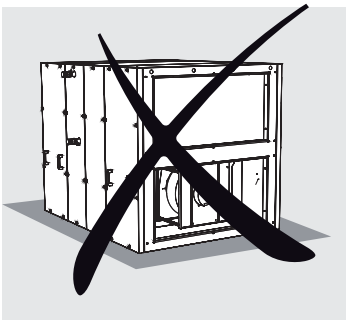
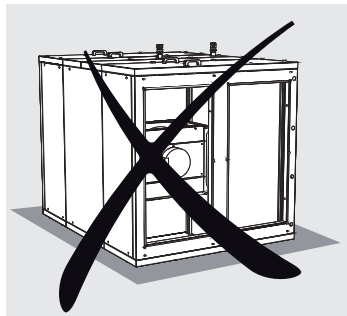
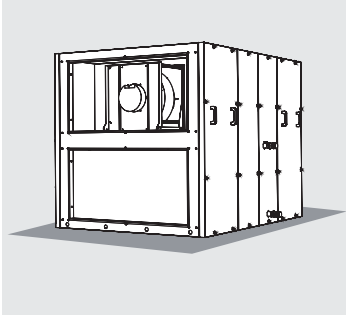


Models V/U	a
700	800
1000	800
1500	900
2000	900
3000	1200
4500	1200
5500	1500
7500	1500
9000	1500
12000	1500

6. INSTALLATION

TECHNICAL DATA

All unit models must be installed in an upright position according to the figure below. Any other position is strictly prohibited and will invalidate the warranty

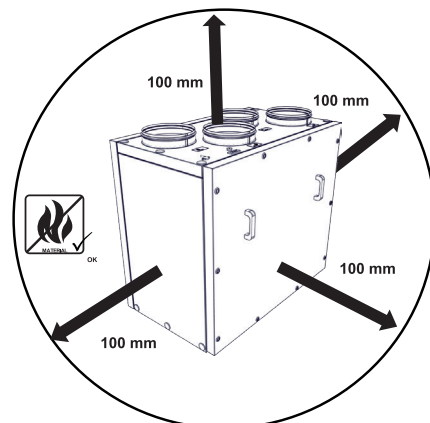
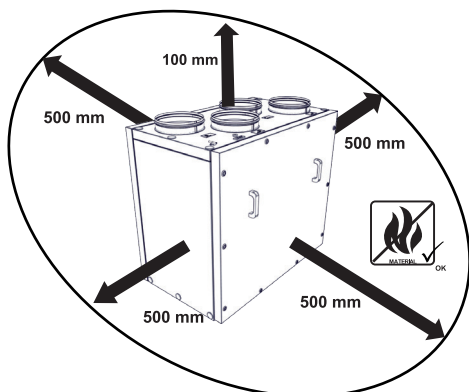


The unit must be installed so that the air inlets and outlets correspond with the direction of the air flows in the ventilation system. The unit must be installed to provide access for maintenance, repairs or disassembly. This includes access to dampers in order to inspect them, access to the controls box inside unit, and unit panels to access interior of the unit for filter changes and other components

6.1-2 Safe installation distance

ATTENTION!

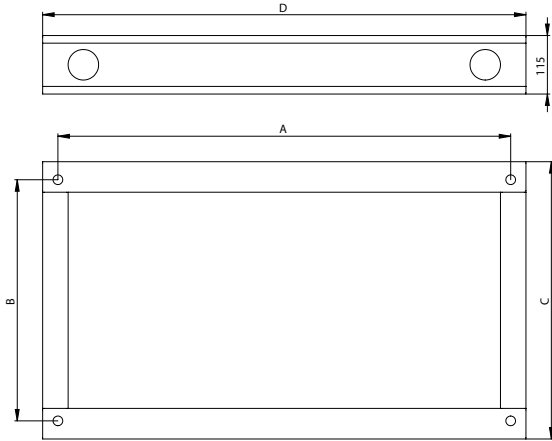
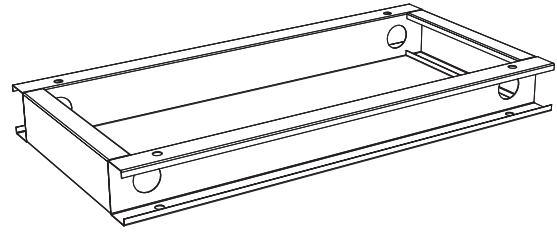
- All materials used within a distance of less than 100 mm from the ventilation unit must be non-flammable (do not burn, or flare up) or less flammable (do not burn, but decompose – e.g. drywall). These materials must not cover unit inlets and outlets.
- Safe distance of less flammable materials from unit exhalations is 500 mm.
- Safe distance of flammable materials in all directions from the unit is 100mm



6. INSTALLATION

6.1-3 Unit anchoring

Anchoring frames for units ALFA 85 – include delivery

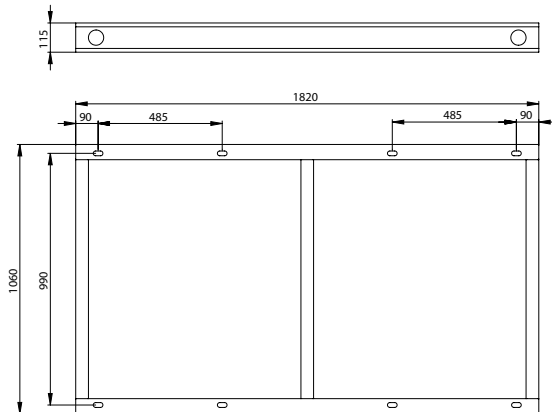


Type	A	B	C	D
700 V	890	475	545	950
700 U	890	475	545	1075
1000 V/U	1240	635	705	1415
1500,2000 V/U	1340	735	810	1520



YOU WILL NEED

4 bolts M8 to fix the unit are included with frame

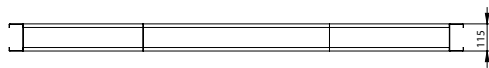


Type
3000,4500 V/U



YOU WILL NEED

4 bolts M8 to fix the unit are included with the frame



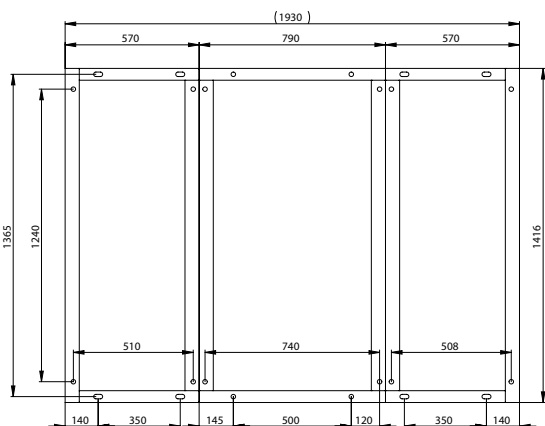
Type
5500,7500 V



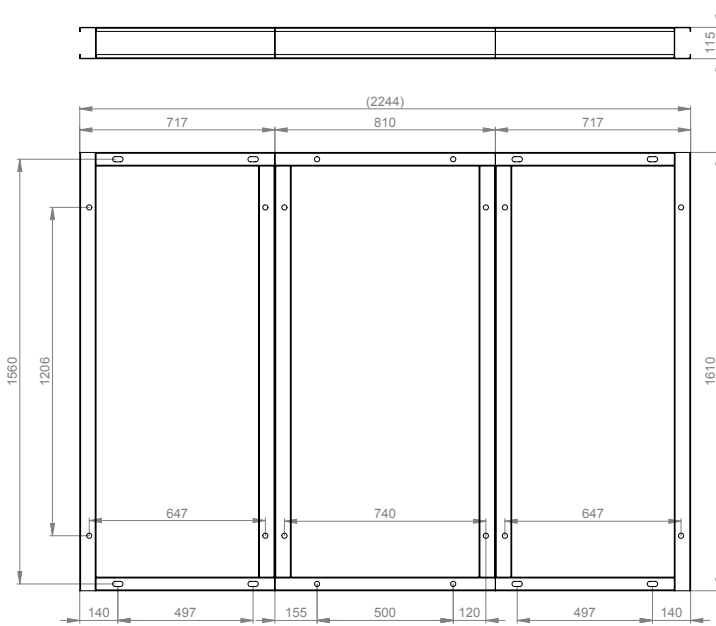
YOU WILL NEED

The unit must be mounted to the frame so it cannot move accidentally.

Please note when attempting to move the unit it is necessary to use a proper lifting device (e.g. forklift)



6. INSTALLATION



The base for HR85-900 / 12K is included



YOU WILL NEED

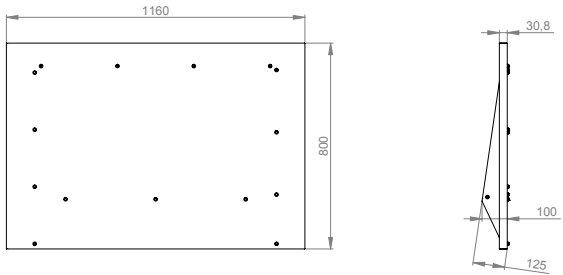
The unit must be mounted to the frame so it cannot move accidentally.

Please note when attempting to move the unit it is necessary to use a proper lifting device (e.g. forklift)

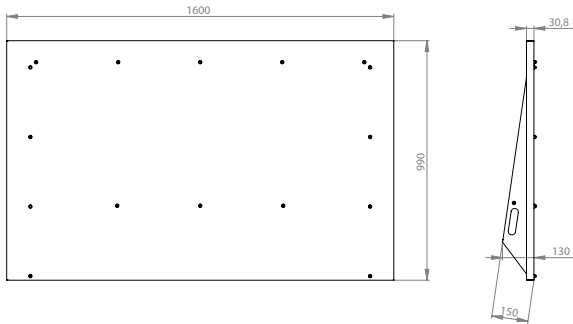
6. INSTALLATION

6.1-4 Dimensions of rain-protected roofs

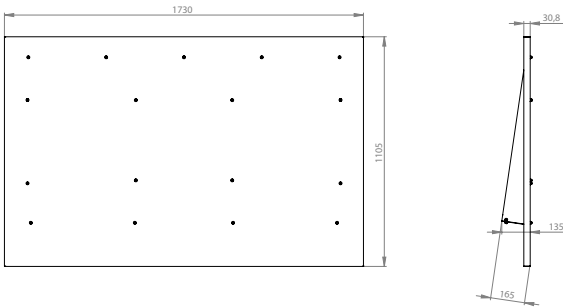
ALFA 85 700 V, ROOF-HR85-070



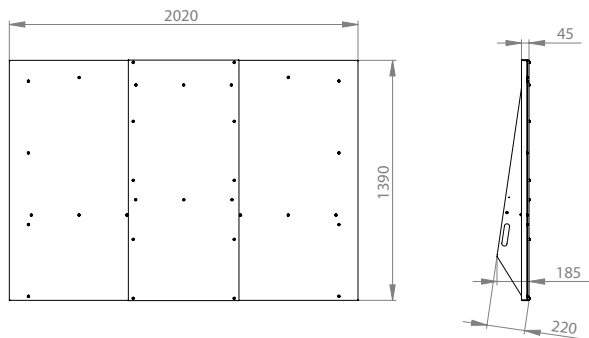
ALFA 85 1000 V, ROOF-HR85-100



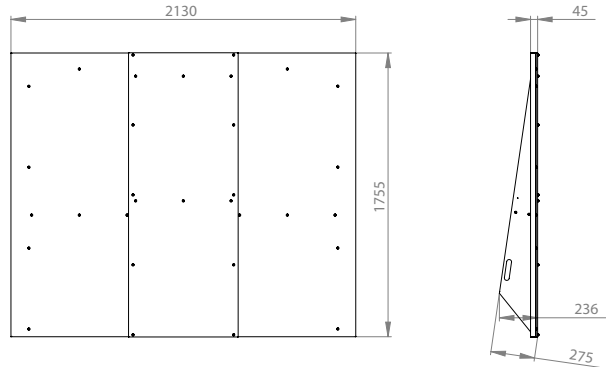
ALFA 85 1500-2000 V, ROOF-HR85-150-200



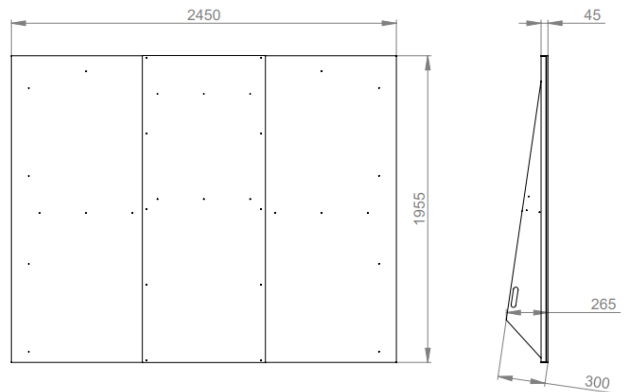
ALFA 85 3000-4500 V, ROOF-HR85-300-450



ALFA 85 5500-7500 V, ROOF-HR85-550-750



ALFA 85 9000-12000 V, ROOF-HR85-900-12K



6. INSTALLATION

ALFA 85 unit weights

ALFA 85 V

ALFA 85	w/o heating / w. el. heating (kg)	w. water /DX /C-O heating (kg)
700	115	120
1000	165	175
1500	205	215
2000	220	230
3000	335	350
4500	350	365
5500	550	580
7500	570	600
9000	820	850
12000	845	875

ALFA 85 U

ALFA 85	w/o heating / w. el. heating (kg)	w. water /DX /C-O heating (kg)
700	140	145
1000	190	200
1500	205	215
2000	220	230
3000	335	350
4500	350	365

6. INSTALLATION

ATTENTION!

- The unit must be fixed to the base to avoid accidental movement.
- Please note when attempting to move the unit it is necessary to use a proper lifting device (e.g. forklift)

6.1-5 Connecting sensors at external modules (units of 700 series)

External modules of 700 series are supplied with two sensors T-WATER-OUT and T-EXT-3 (for C/O coils, sensors: T-WATER-OUT, T-WATER-IN, T-EXT-3). Each sensor is 10 m long. These sensors must be connected to the controls system. Channel sensor T-EXT-3 must be located behind the external module and installed in the manner to ensure that the unit remains sealed from exterior

Note: Horizontal units of 700 series have the T-EXT-3 sensor installed by the manufacturer.

6.1-6 Unit installation of the three separate modules

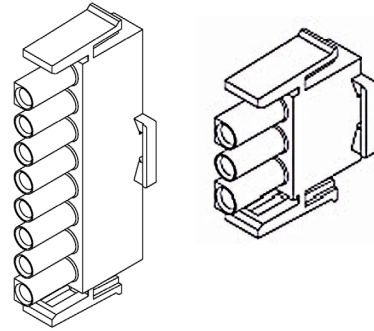
ALFA 5500 and 7500 units are supplied as separate modules, on three palettes to be mounted together during installation.

Individual modules must be attached together with bolts that are included with the unit delivery. Electrical connection of individual modules is made by universal terminals MATE-N-LOK (fig. 1.).

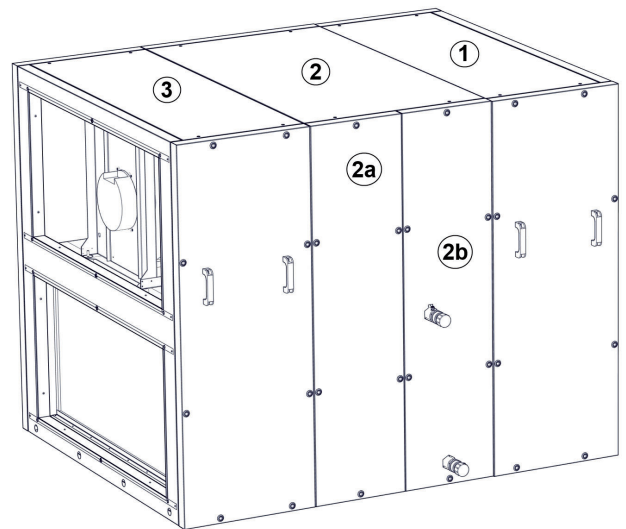
Electrical connection for rotary heat exchanger is located in the upper left section of the module no.2 (fig. 2. – 2a). Connection must be made according to the numerical indication of individual terminals and leads.

Connection of pressure sensors is made in the module no.2 (fig.2. -2b) using tube connectors. Individual hoses must run from modules no.1 and 3 to the module no.2, which they connect in according to the numerical indication.

1.



2.

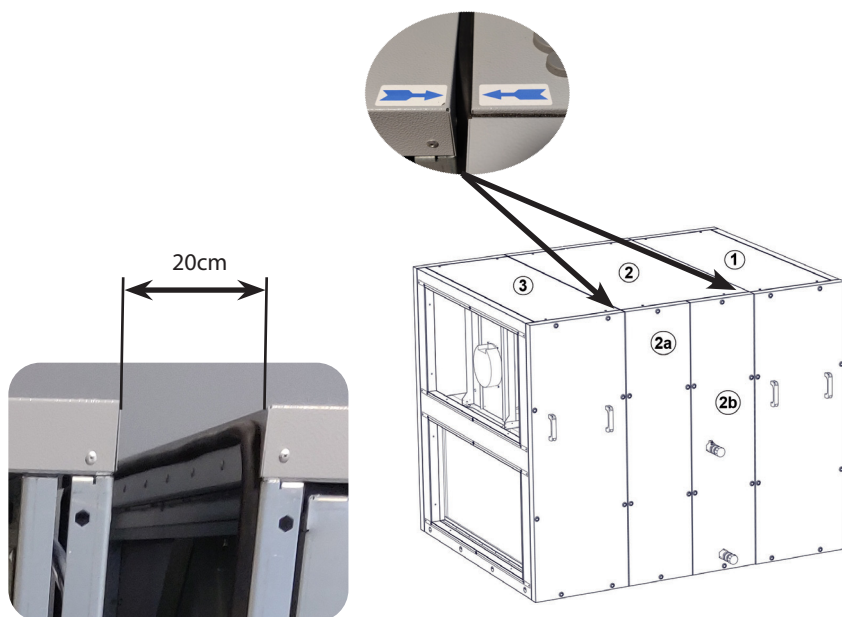


6. INSTALLATION

6.1-7 Installing the unit and connecting the wires to the module units.

To connect all conductors and tubing it is necessary to leave the limits of each module a gap of about 20cm between the modules.

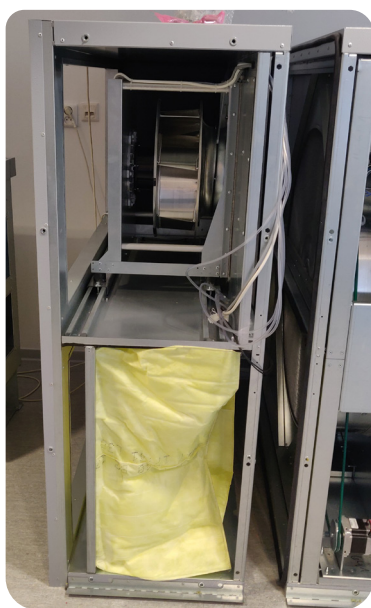
1. Installing the unit modules



3

2

1

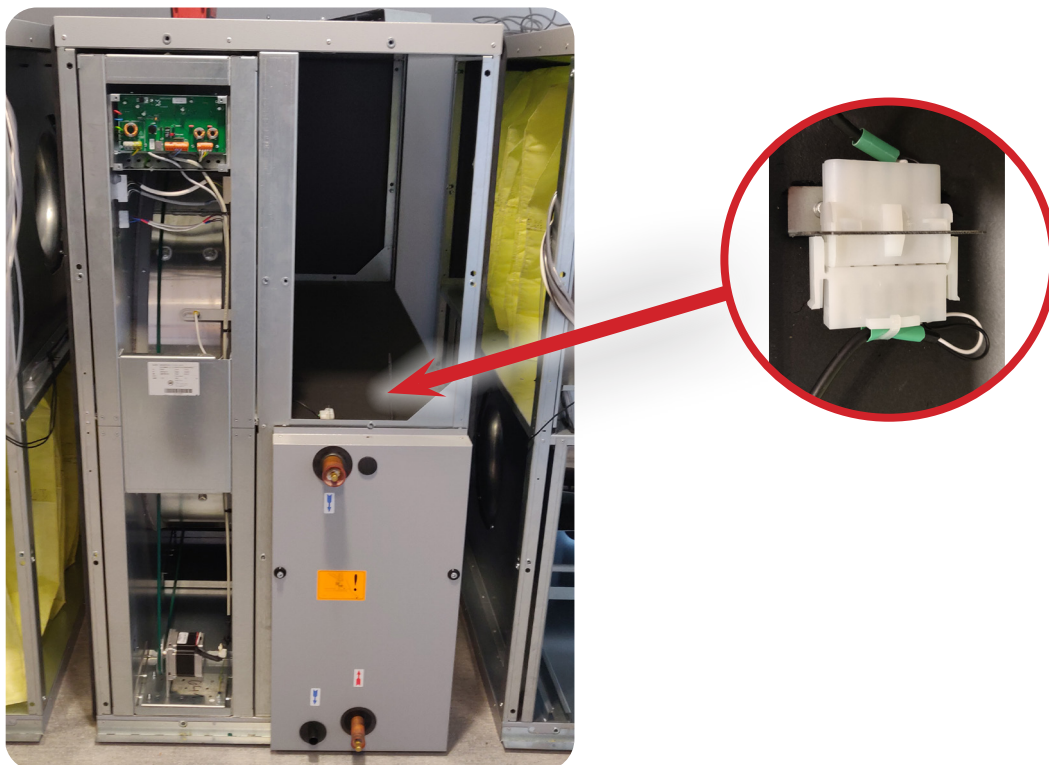


6. INSTALLATION

1. Water exchanger sensor connection

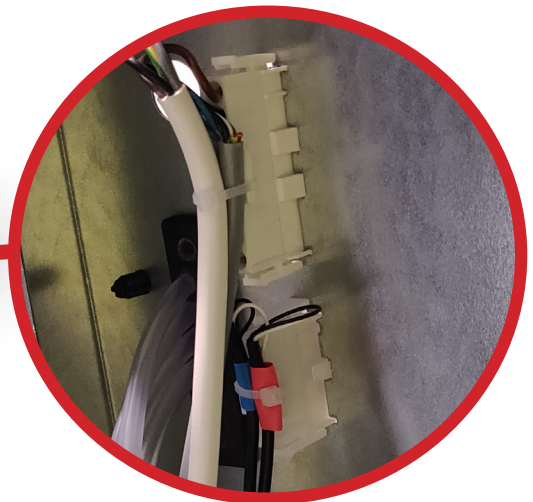
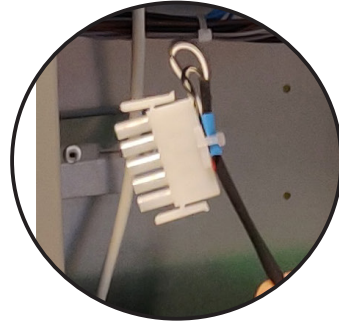
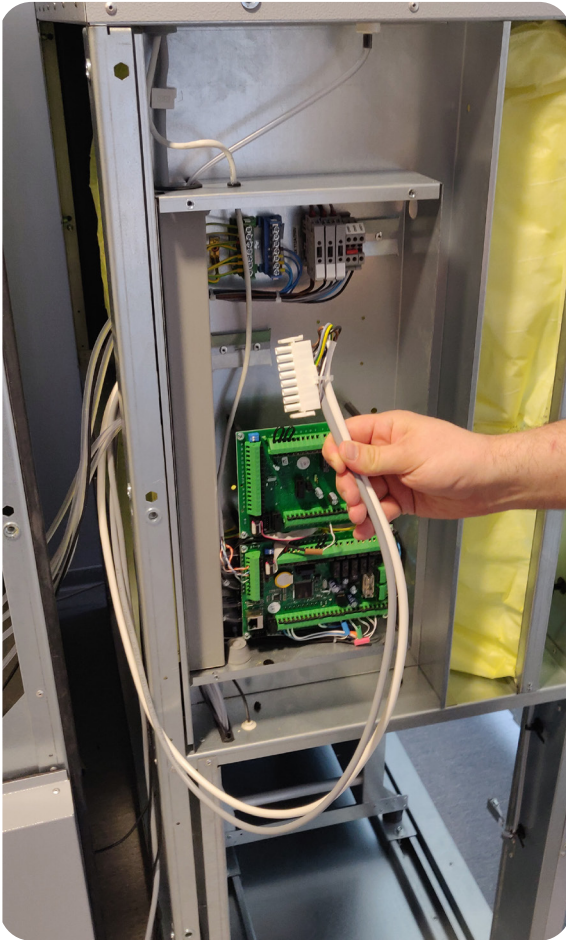


2. Air temperature sensor connection



6. INSTALLATION

3. Motor connections and temperature sensors



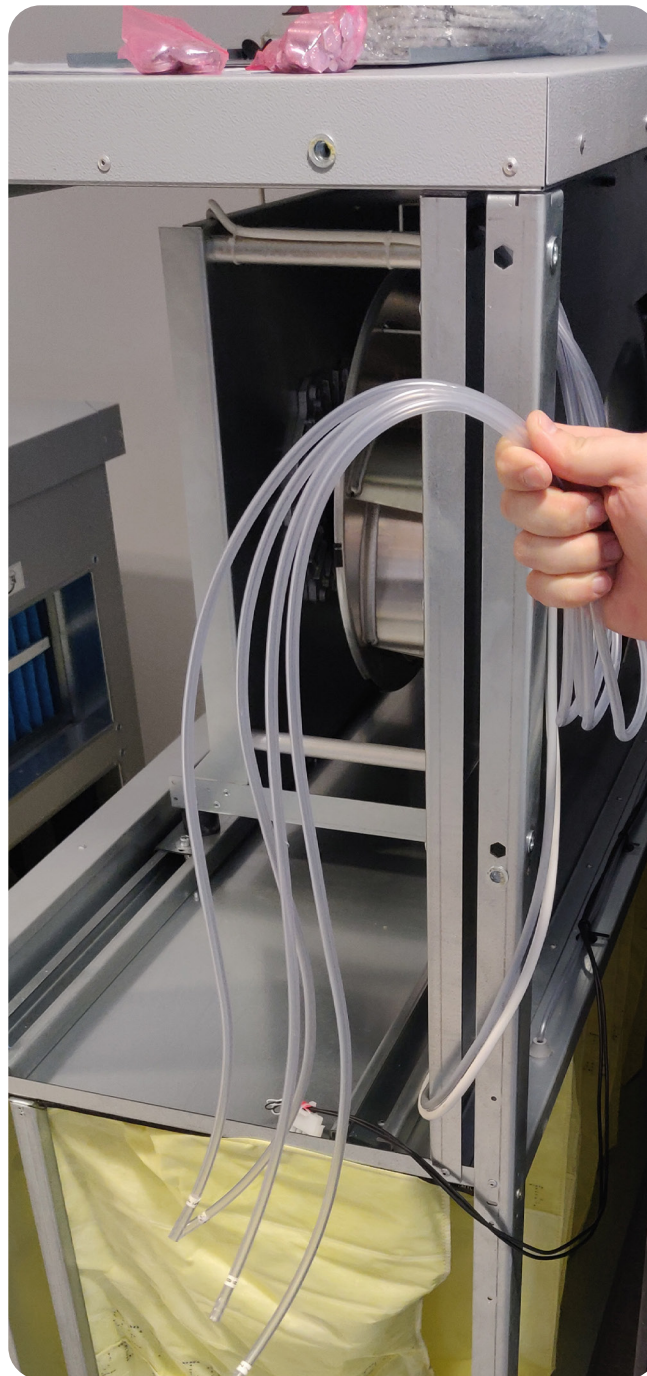
6. INSTALLATION

4. Connection of pressure measurement tubing

The pressure measurement tubing is connected by threading the tubes through the bushings in the middle module.

Connect the tubing in the outer module according to the numbers affixed to the tubing.

MODUL 3



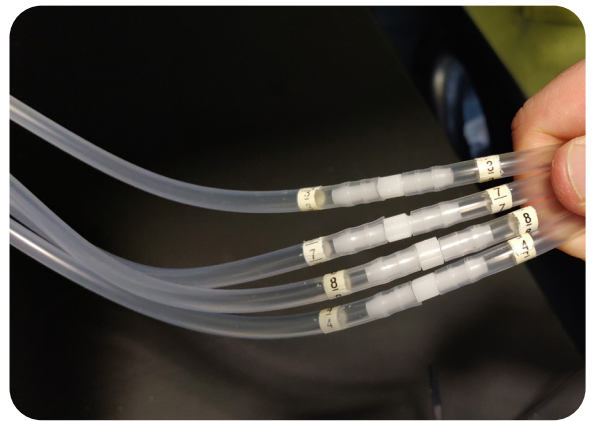
6. INSTALLATION

MODUL 2

Thread the tubing according to the figure below



Connect tubing to numbers.



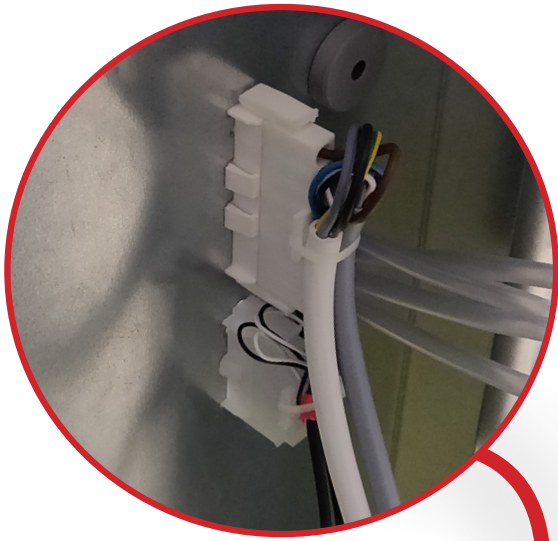
6. INSTALLATION

5. Motor and temperature sensor connection



6. INSTALLATION

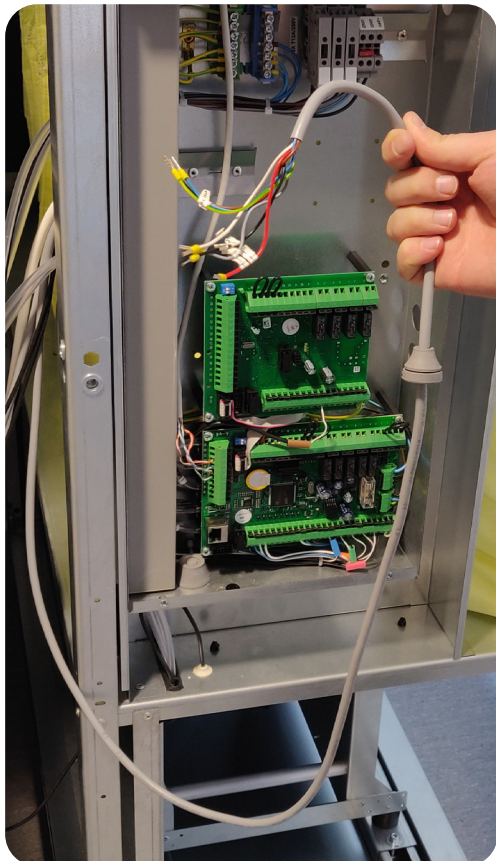
5. Motor and temperature sensor connection



6. INSTALLATION

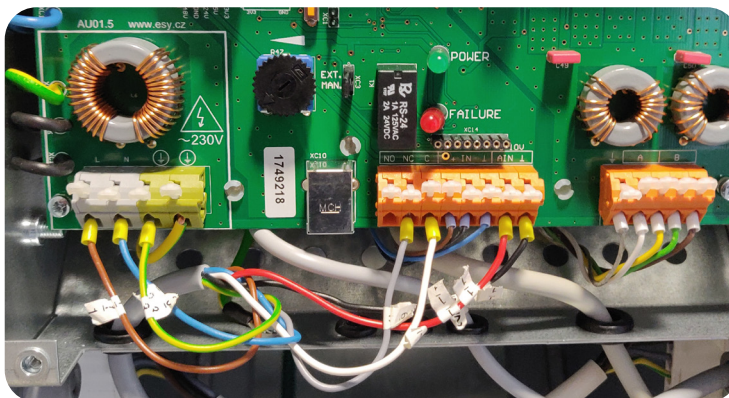
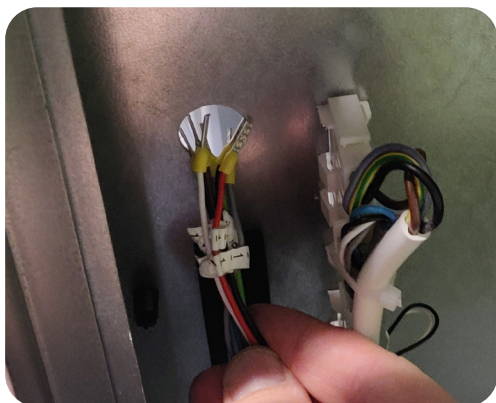
6. Connection of rotary wheel exchanger

Cable enters here. See arrow.



Push the power cable with bushing into the middle module where controls are located

Wires are marked with wiring number
The wiring diagram is on the controls cover.

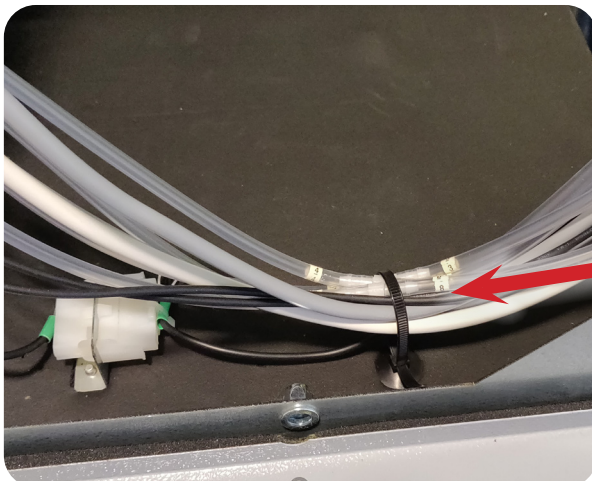
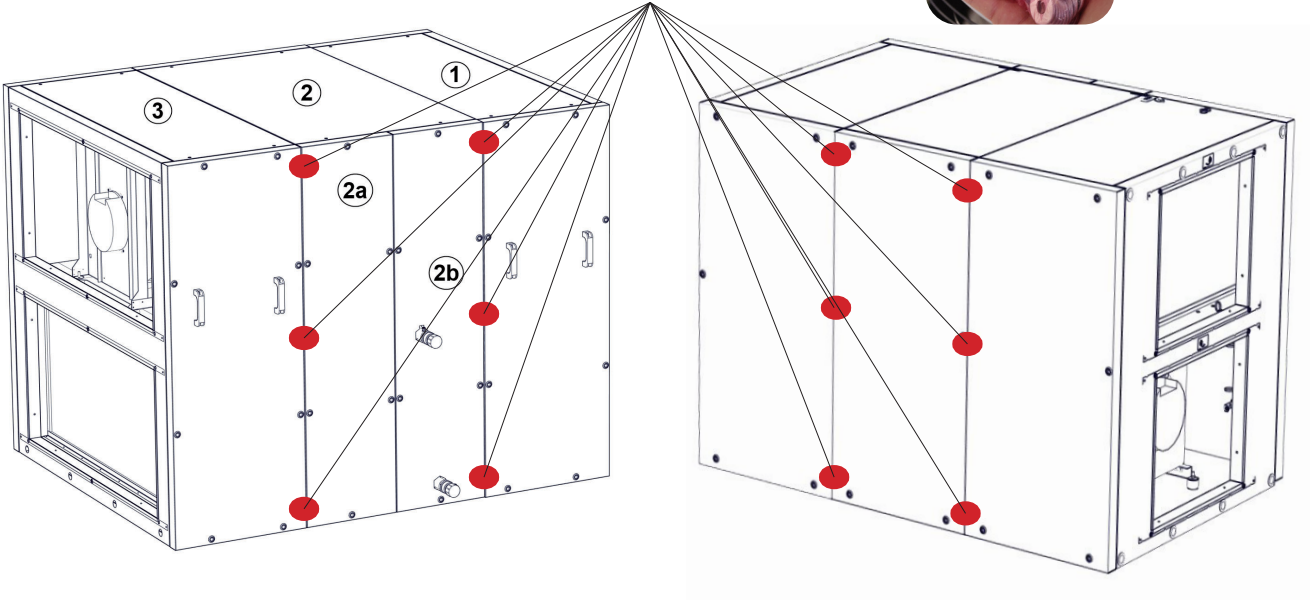


6. INSTALLATION

7. Module Connections



M8...12Pcs

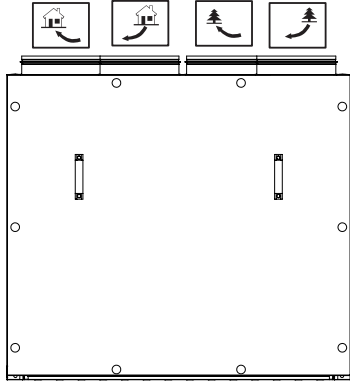


FIXING WIRES

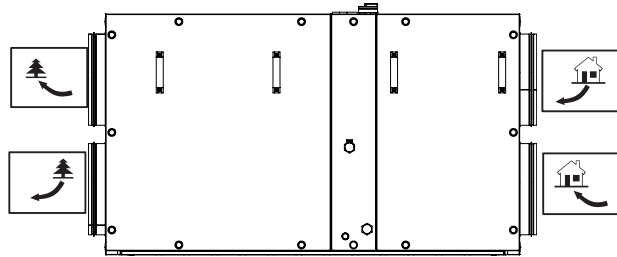
6. INSTALLATION

6.2 CONNECTING AIR INLETS

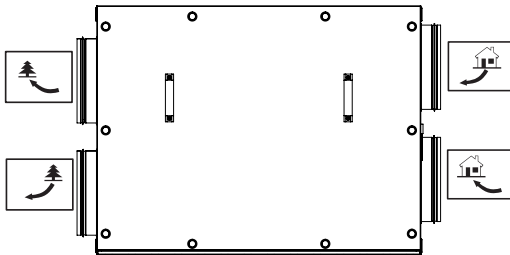
ALFA 85 700 U



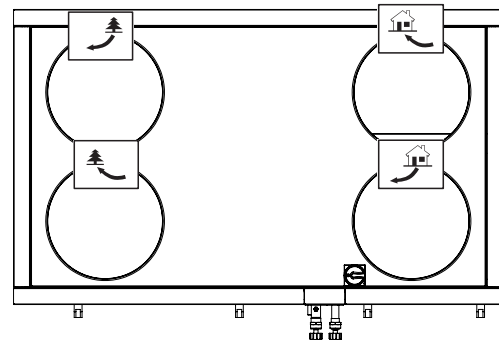
ALFA 85 1000 V



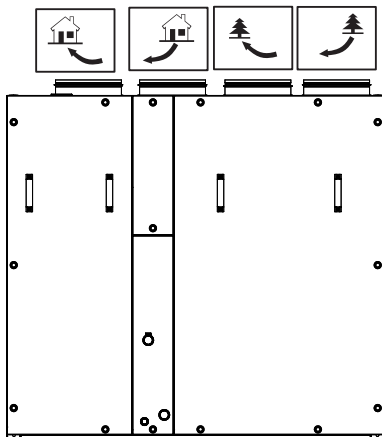
ALFA 85 700 V



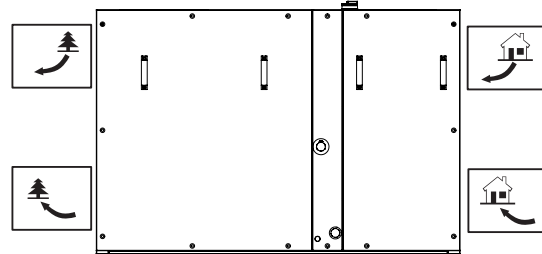
ALFA 85 1500/2000 U



ALFA 85 1000 U



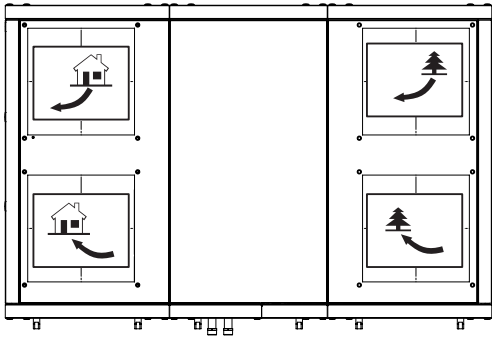
ALFA 85 1500/2000 V



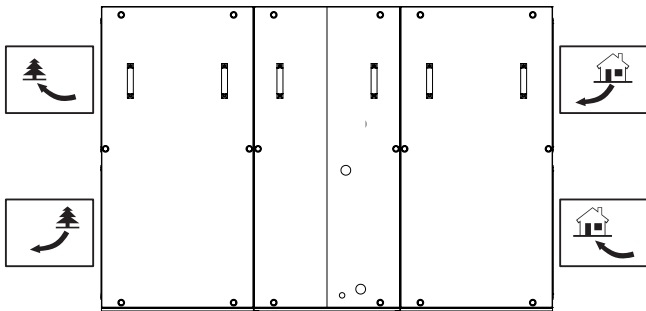
6. INSTALLATION

6.2 CONNECTING AIR INLETS

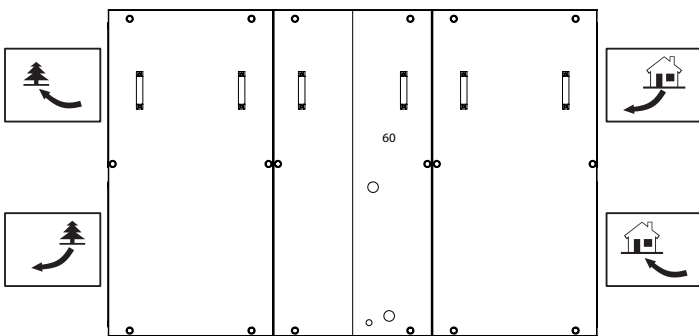
LFA 85 3000/4500 U



ALFA 85 3000/4500 V

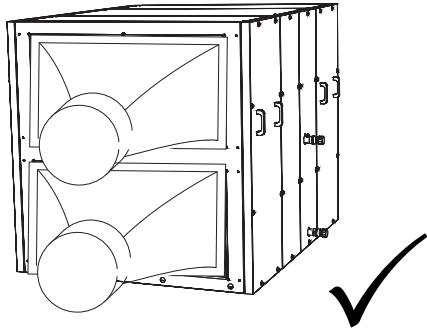


ALFA 85 5500/7500 V, 9000/12000 V

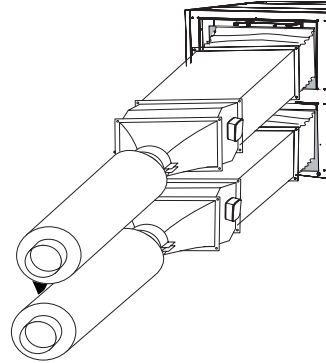


6. INSTALLATION

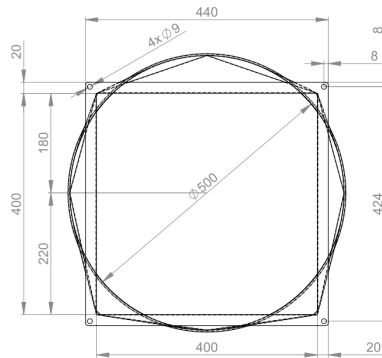
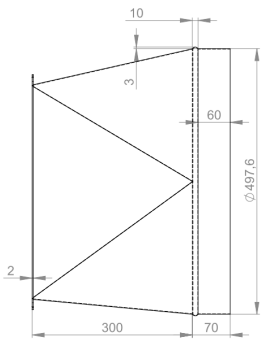
6.2-1 Duct Connections hole - circular/rectangular



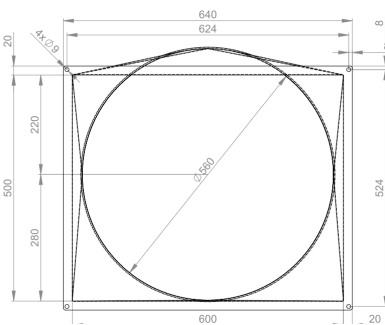
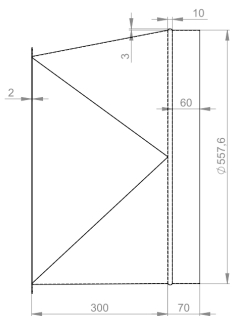
Accessories must be ordered separately.



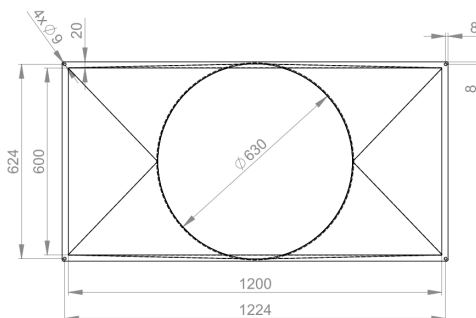
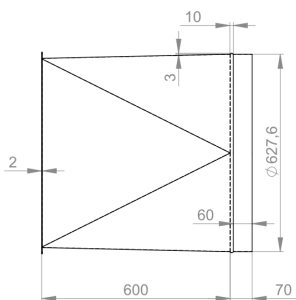
Example of possible connection with flexible connectors. Accessories must be order separately.



Rectangle/circle adapter	
Type	Code
3000, 4500 U	PR-VO-0400X400-D500-L300

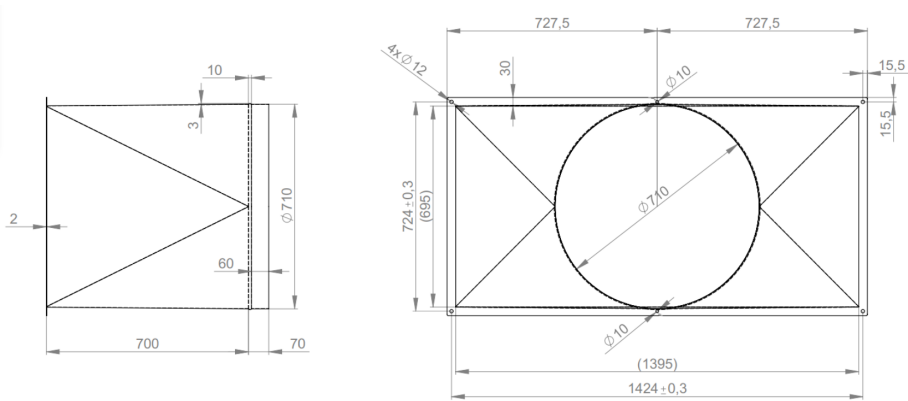


Rectangle/circle adapter	
Type	Code
3000, 4500 V	PR-VO-0600X500-D560-L300



Rectangle/circle adapter	
Type	Code
5500, 7500 V	PR-O-1200X600-D630-L600

6. INSTALLATION

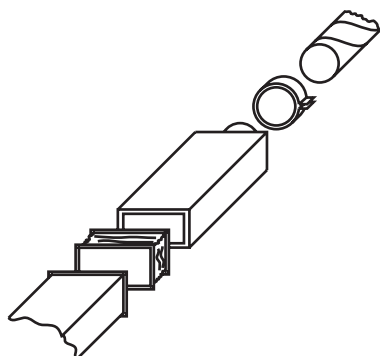


Rectangle/circle adapter	
Type	Code
9000, 12000	PR-O-1400X700-D710-L600

6. INSTALLATION

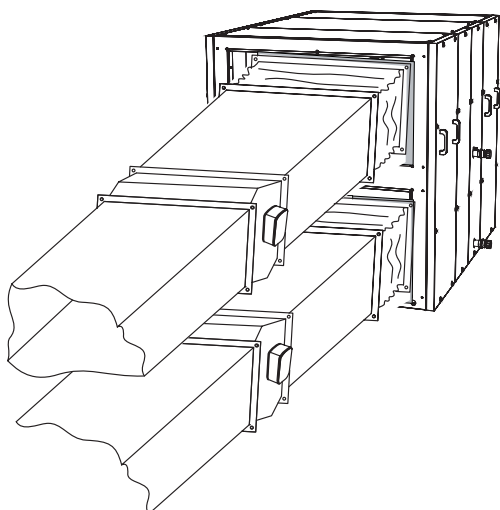
READ CAREFULLY!

- The connected ducts must have the same dimensions as the inlet and outlet openings of the ventilation unit. Smaller diameter pipes may cause a decrease in efficiency of the unit and in some cases may shorten its lifetime. Connect the inlet and outlet openings (rectangular / circular hole) using flexible joints to prevent vibration.



All connections of the distribution piping to the ventilation unit must be sealed with a binder or sealing tape. Minimum distance between pipe or adapter collar and the unit neck is 500 mm.

Install the damper in the outside air duct at a distance of 2m before the fresh air intake connection and on the exhaust duct at a distance of 2m from exhaust outlet. Connect servomotors to corresponding terminals in the casing of the control unit.

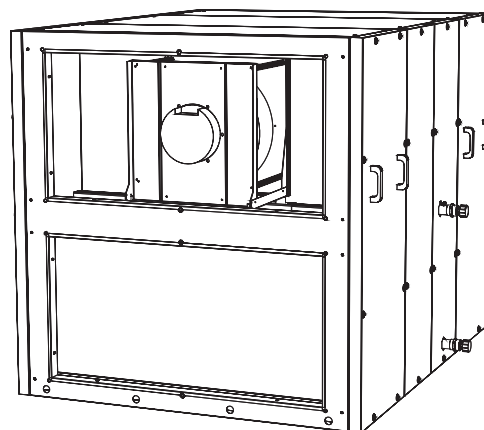


Set the dampers to be closed when the unit is off and open when the is in operation. Wrong damper postions could damage the unit.

6.3. CONNECTING ELECTRICAL ACCESSORIES

ATTENTION!

- Before accessing the interior of the unit unit, the main power switch must be off!
- Electrical wiring of the ventilation units must be installed according to the proposal of a professional electrician. Electrical wiring must be done by a person authorized to perform the electrical installations. It is necessary to follow all instructions of the manual and local laws and regulations.
- Wiring diagrams listed on the product take precedence over diagrams in this manual! Before connecting, make sure that terminal indications match the diagram. If in doubt, contact the supplier as well as do not connect the unit by any means.
- If the product is connected to other than original control system, contact the supplier of such system for the wiring diagram of their controls.
- The unit must be connected to the mains using a heat-protected rigid insulated cable with the diameter that corresponds with local regulations.
- To maintain the electrical protection, all cables must fit into the holes on the sides of the control unit casing.
- Any modifications of the internal electrical connection of the unit are prohibited and may lead to warranty loss!
- Correct operation of the unit can be guaranteed when original accessories are used only.
- If its necessary to install a sensor or regulation component in the unit or on its casing, please consult it with the unit manufacturer (or its representative).



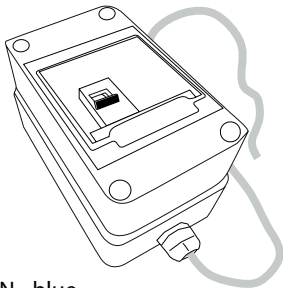
6. INSTALLATION

6.3-1 Connecting supply cable

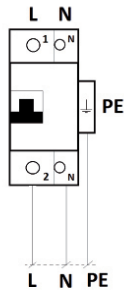
Connection of the power supply cable is located in the main power switch area. Units ALFA 85 of 700 series have no main power switch but a euro terminal to connect to the mains of CEE 7/16 type.

⚠ ATTENTION!

Minimum size of the protective grounding lead must be in compliance with local safety regulations for heavy current. For these reasons, units of 4500/5500/7500 series are provided with an additional grounding terminal located close to the electronics.

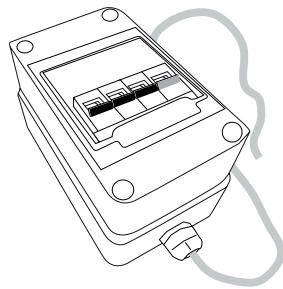


N - blue
PE - green and yellow

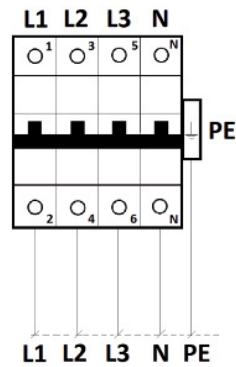


1~ 230V

MCB	Cable - type YSLY
1p+N C 10A	3x1,5



N - blue
PE - green and yellow

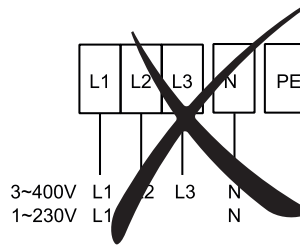
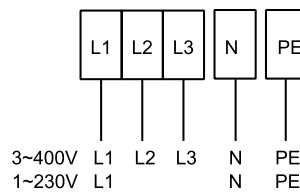
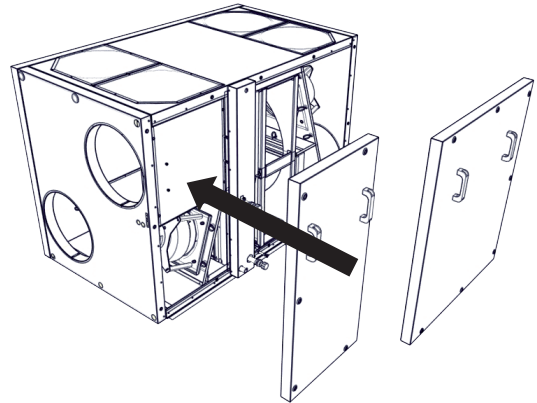


3~ 400V

MCB	Cable - type YSLY
3p+N C 10A	5x1,5
3p+N C 16A	5x2,5
3p+N C 20A	5x2,5
3p+N C 32A	5x4
3p+N C 63A	5x10
3p+N C 80A	5x16

TECHNICAL DATA

- Parameters of electrical devices are stated in the label installed on the control device casing.



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

The unit must be connected in the manner to be able to disconnect it from the electric power supply using a single power switch.

8 595 102 295734

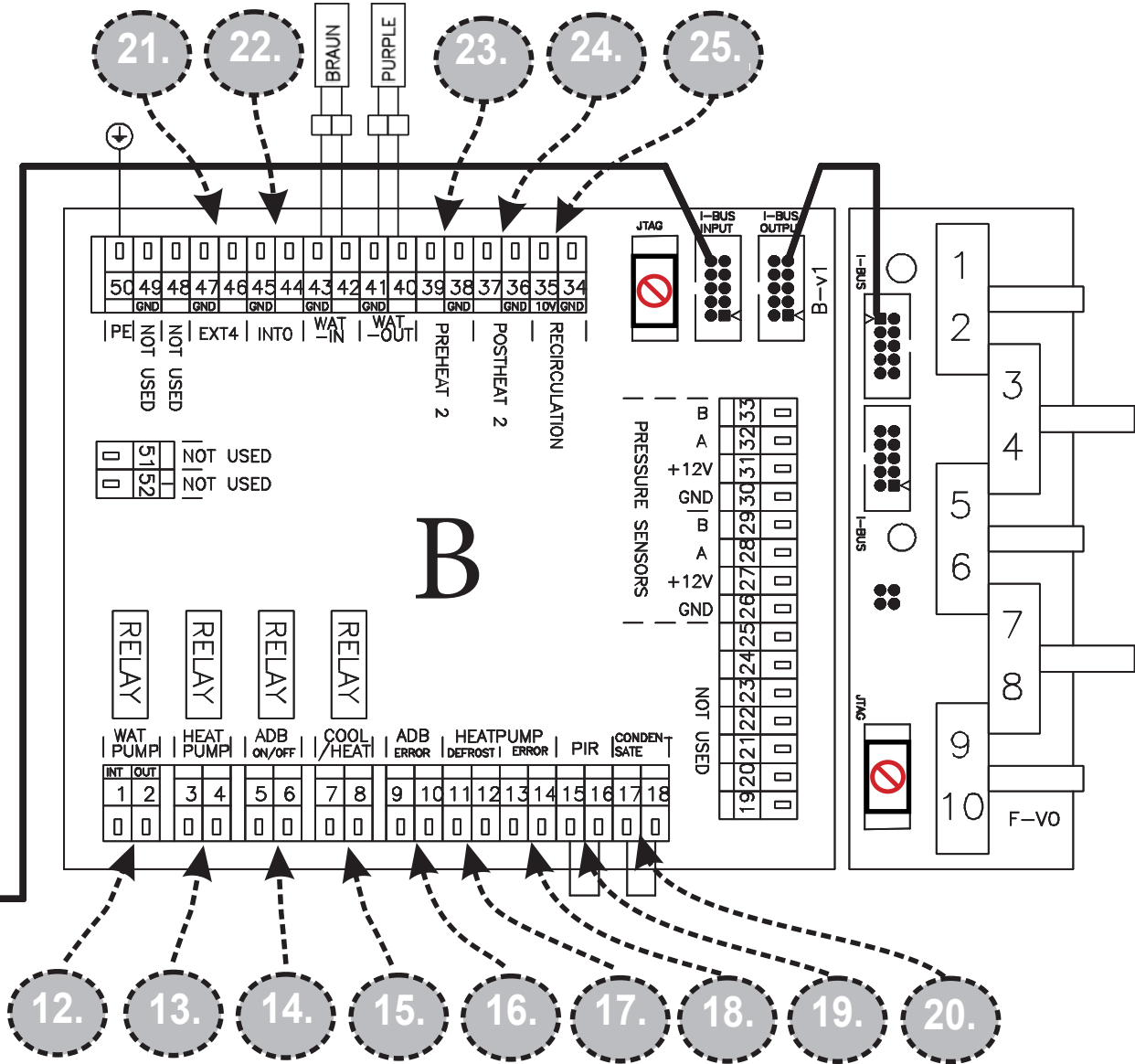
Code: **HR85** L32 - 14 - P14001566 - 1473086897

Design: **HR85-070EC-RS-VXXC-55LP1**

U = 400 V	m = 140 kg	
f = 50 Hz	ver = 6.91	
I = 3,9 A	av = 700 m3/h	
P = 9,46 kW	n = - 1/min	20150 / 1
ph = 3~	IP = 20	

(21) 1473086897

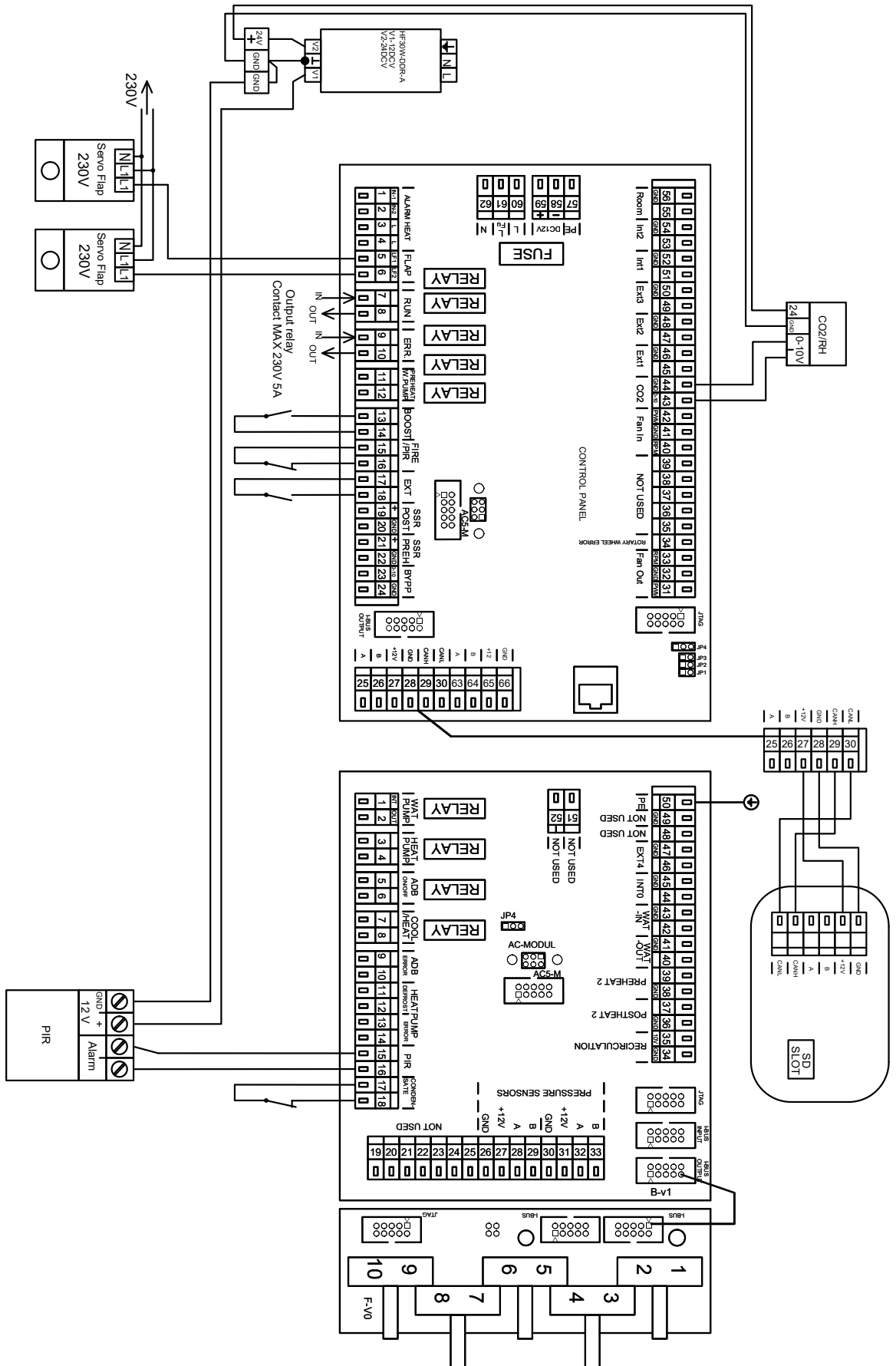
60026329
00001



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

Connecting ACCESSORIES



6. INSTALLATION

6.3-2.3 External control

- Low voltage switching contact - maximum possible contact load 12 V, 0.4 A.
- CABLE: cable with two leads with min. diameter 0.5 mm² Max. length 50 m.
- The contact is regularly on. When disconnected, the unit turns off.

 **ATTENTION!**

Not part of the supply

6.3-2.4 Fire contact

TECHNICAL DATA

- Low voltage switching contact - maximum possible contact load 12 V, 0.4 A.
- CABLE: cable with two leads with min. diameter 0.5 mm² Max. length 50 m.
- The contact is regularly connected. When disconnected, the ventilation unit operates according to the preset ventilation capacity.

6.3-2.7 Movement sensor

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

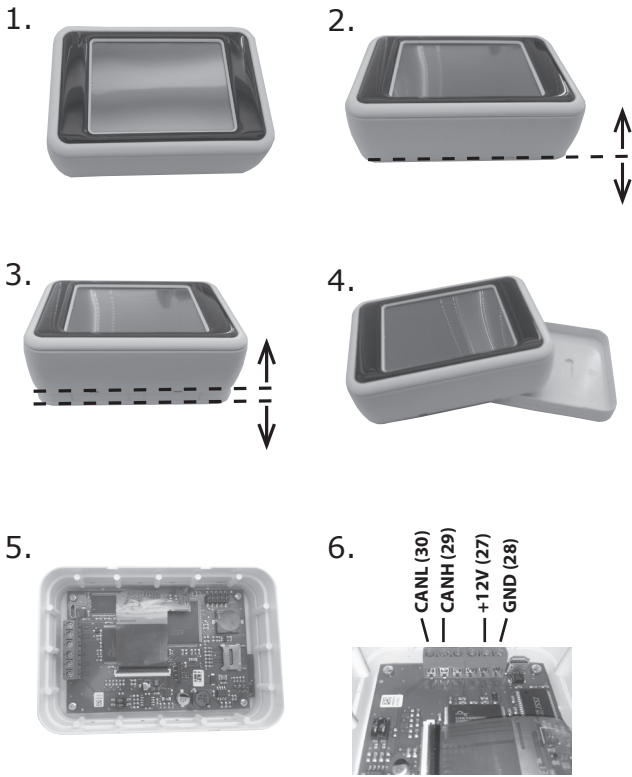
CABLE: cable with two leads with min. diameter 0.5 mm² . Max. length 50 m. The contact is regularly disconnected. When connected, the ventilation unit operates according to the preset ventilation capacity.

6.3-3 Control unit

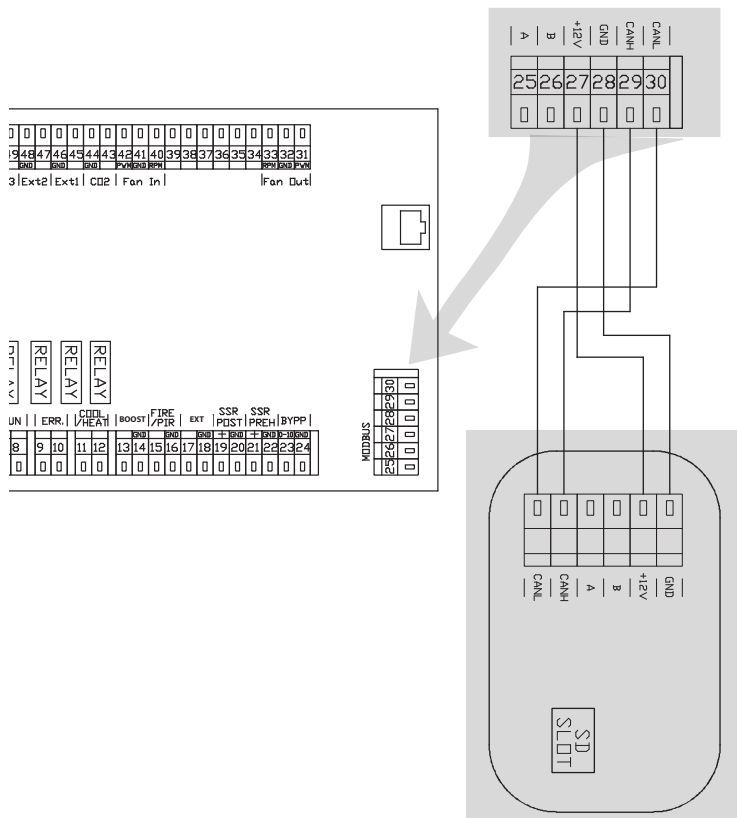
To activate the unit, it is necessary to connect the remote control with the unit using a control cable (data cable)

- Slacken the bolt on the bottom of the remote control
- Open the case of the remote control
- Cut a hole for the cable
- Insert the control cable to the connector of the remote control
- Fix the control panel to the wall
- Close and screw up the control panel case

6. INSTALLATION



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



READ CAREFULLY!

- Maximum distance possible should be maintained between the supply cable and control cable.
- Make sure that the cable engages firmly into the connector when inserted.
- Be careful not to damage cable insulation when fixing the remote control to the wall or other surface.
- If you do not connect connectors or cables directly during unit installation, protect them against damage or short circuit using an insulating tape.
- Cable connectors must not be in contact with water or other liquid.
- Parameter settings automatically saved by battery CR2032 located on the controls PCB. This battery has a service life of 3-5 years

6.3-4 Connecting unit to BMS control system

The control system of the ventilation unit is regularly provided with RS-485 interface. To connect the control unit, use the standard communication cable. Insert the cable to one of the connectors on the electronic board of the ventilation unit. Connect the other end to the main control unit. For details of the protocol (ModBUS) see 2VV

READ CAREFULLY!

A controller may also be connected to the unit connected to the a BMS control system

6.4 CONNECTING CONDENSATE DRAIN

Condensate discharge from the unit must be connected to the discharge piping by air trap.

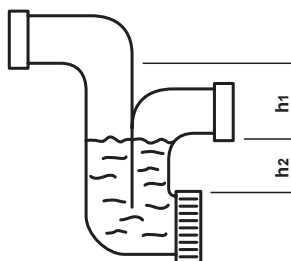
YOU WILL NEED

- 1 air trap
- PVC discharge pipe
- discharge pipe sealing

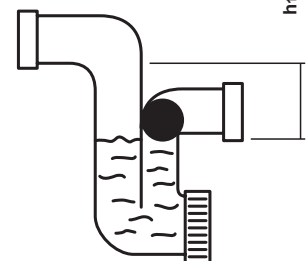
ATTENTION!

For units with change-over / direct evaporator DX, bal air trap must be used.

Regular air trap



Air trap with a ball

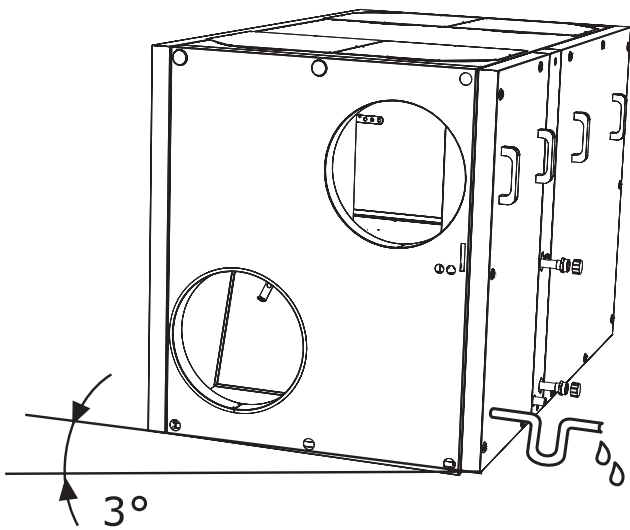


6. INSTALLATION

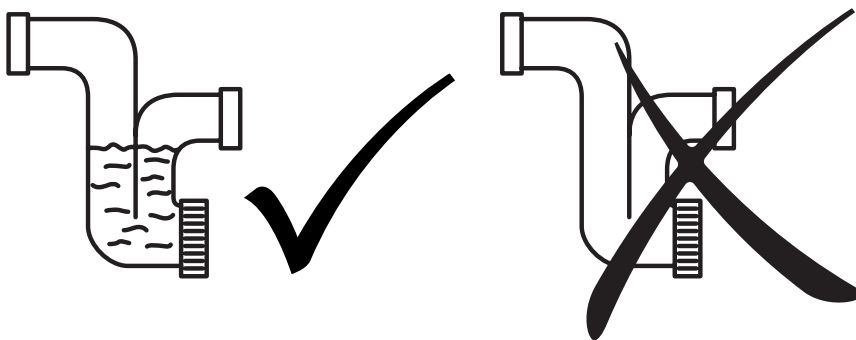
TYPE	h1 [mm]	h2 [mm]
Alfa 85	130	80

The bowl neck of the reservoir is located on the side/sides of the ventilation unit. Connect an air trap to this neck, leading to the pipe or hose that joins the drain.

- Make sure that the unit level is 3° to provide free flow of condensate discharge.



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



7. FIRST OPERATION

READ CAREFULLY

Please check the following before first operation:

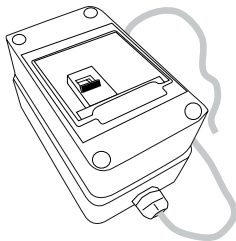
- That the unit is mounted well to the support structure.
- That the unit is closed correctly, and that ducts are properly connected, rain-protection roof installed, and that duct connections or other components are not in contact with any rotating or heating components
- That the electrical wiring is 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 object has been left inside the unit, which could result in damage to the unit.

ATTENTION!

- Any interventions or modifications to unit wiring are prohibited and may lead to warranty loss!
- We recommend using 2VV approved accessories only.

7.1 ACTIVATION

To activate the unit (Stand by mode), it is necessary to turn the main switch on (ON= red OFF= green). After activation, the display on the control panel lights up and data download will start. After complete download of these data, the unit is ready for operation.



8. MAINTENANCE

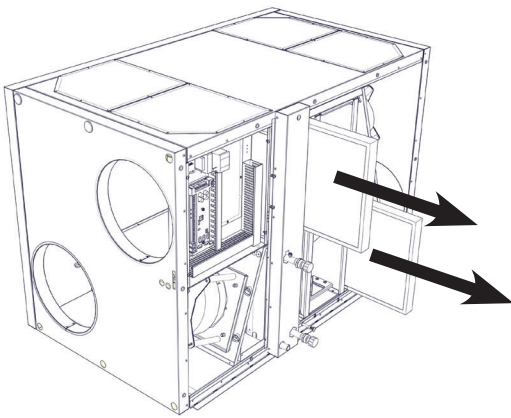
ATTENTION!

Units of series 3000/4500 and 5500/7500 are provided with safety contact, which disconnects el. heating from the power supply if the cover is removed. It is a safety component that should provide protection of persons against the threat of dangerous contact voltage of the el. heater, if the unit is not properly disconnected from the electric voltage.

8.1 REPLACING FILTERS

YOU WILL NEED

- 6mm Allen wrench



- 1) Unscrew the cover
- 2) Remove the air filter
- 3) Replace the air filter according to the unit type

Type M5	Code
700 V	FILTR-HR85-V070 M5
700 U	FILTR-HR85-U070 M5
1000 V	FILTR-HR85-V100 M5
1000 U	FILTR-HR85-U100 M5
1500,2000 V/U	FILTR-HR85-VU150-VU200 M5
3000, 4500 V/U	FILTR-HR85-VU300-VU450 M5
5500,7500 V	FILTR-HR85-V550-V750 M5
9000, 12000 V	FILTR-HR85-V900-V12K M5

Type F7	Code
700 V	FILTR-HR85-V070 F7
700 U	FILTR-HR85-U070 F7
1000 V	FILTR-HR85-V100 F7
1000 U	FILTR-HR85-U100 F7
1500,2000 V/U	FILTR-HR85-VU150-VU200 F7
3000, 4500 V/U	FILTR-HR85-VU300-VU450 F7
5500,7500 V	FILTR-HR85-V550-V750 F7
9000, 12000 V	FILTR-HR85-V900-V12K F7

READ CAREFULLY!

- Warning icon of filter replacement disappears automatically



ATTENTION!

Device functionality might be reduced or impaired, if the filter is not duly cleaned or replaced.

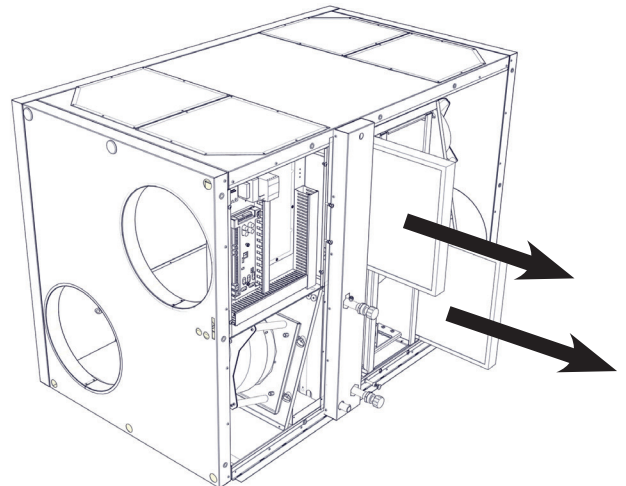
8.2 CLEANING INTERVALS OF THE VENTILATION UNIT

YOU WILL NEED

- 6mm Allen wrench
- vacuum cleaner
- brush
- rag
- neutral cleaning agent (soap water)

We suggest checking and cleaning the unit every six months; however these intervals must be accommodated to specific operating conditions. We suggest thorough cleaning of the unit once a year. If the unit is not in use for a long time, we suggest its activation every six months for about an hour.

Unscrew the the side panels, taking care that the panels will not fall and cause possible injury .



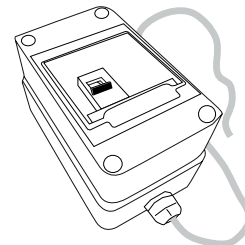
9ULTS REMOVAL

ATTENTION!

- Before you start a perform maintenance and repair works, the unit must be disconnected from the power source and the supply voltage locked, service switch in 0 position (off).
- Do not start repairs, if you are not sure of or do not know the exact procedure, and contact the specialized service!!!

TECHNICAL DATA

Defect is usually indicated by message on the display, see the table below.



Description	Unit's behaviour	Likely problem	Solution
1 - Request for filter calibration	Unit is working	after resetting the unit, or while recording the control	after inserting new filters enter menu 1616 on line 05 and calibrate the filters
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 engine.
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 engine.
6 – Inlet filter clogged	Unit is working	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 working	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 working	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 working	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 working	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 working	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.
12 – CO2 sensor failure	Unit is working	Defective air quality sensor	Check that the CO2 sensor is connected correctly or check that it is operating correctly (output signal value)
13 - Failure of rotary heat exchanger	Unit is not working	Failure of rotary heat exchanger	Check that the input error is correctly connected to the electronics or check what type of error the heat exchanger is indicating.

9. FAULTS REMOVAL

Description	Unit's behaviour	Likely problem	Solution
14 - ADB module error	Unit is working	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 working	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 10kW)
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 10kW)
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 10kW)
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 10kW)
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 10kW)
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 10kW)
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)

9. FAULTS REMOVAL

Description	Unit's behaviour	Likely problem	Solution
25 - Room temperature sensor failure (T_Room)	Unit is 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)
26 - Failure in the pressure sensor of the exhaust filter	Unit is working	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 working	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
32 - Air quality sensor failure	Unit is working	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 working	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 working	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.

9. FAULTS REMOVAL

Description	Unit's behaviour	Likely problem	Solution
50 - Inlet filter clogged > 80%	Unit is working	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
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 assess 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 duct 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
36 - B module 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
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
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.


9. FAULTS REMOVAL

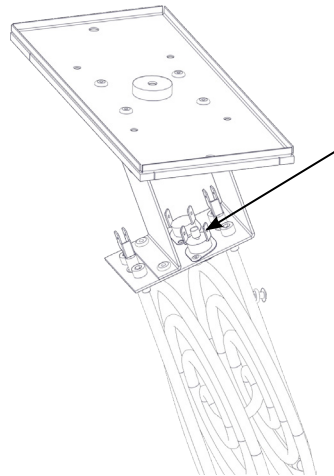
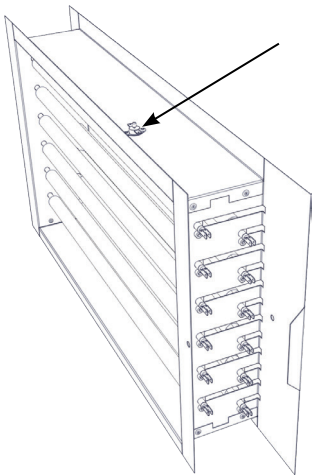
ATTENTION!

In case of power failure and subsequent recovery of the mains power supply, the unit returns to the state before such failure. The unit always remembers the operating status and all setups. If you fail to find or remove the cause of the fault, or if the repair requires intervention in the device, contact the authorised service

Electric heating overheat:

If the electric heating overheats, the safety thermostat is disconnected. Upon removing the cause of such overheat, it is necessary to reset manually the safety thermostat located directly on the electric heater.

Location of the safety thermostat is indicated with  RESET mark in each unit



Replacing damaged belt of the rotary heat recovery unit

In case of damage, breakage, or wear exceeding the acceptable limit (slipping) of the belt, it is possible to buy a spare belt that will be ready exactly for the wheel size. The belt connects using an aluminium clamp

Replacement procedure:

1. Pull out the „old“ damaged belt from the heat recovery unit
2. Insert the aluminium clamp to one end of the belt
3. One end of the new belt is glued to the outer shell of the heat recovery unit wheel using the tape
4. Turn it around until the end will show
5. The belt end is then detached from the wheel shell and both ends are connected using the clamp (already inserted in one end)
6. Tighten the belt using a driving pulley

10. SERVICE

IF THE FAULT PERSISTS

If you fail to remove the fault, please contact the supplier.



READ CAREFULLY!

For prompt fault removal, have the following information ready:

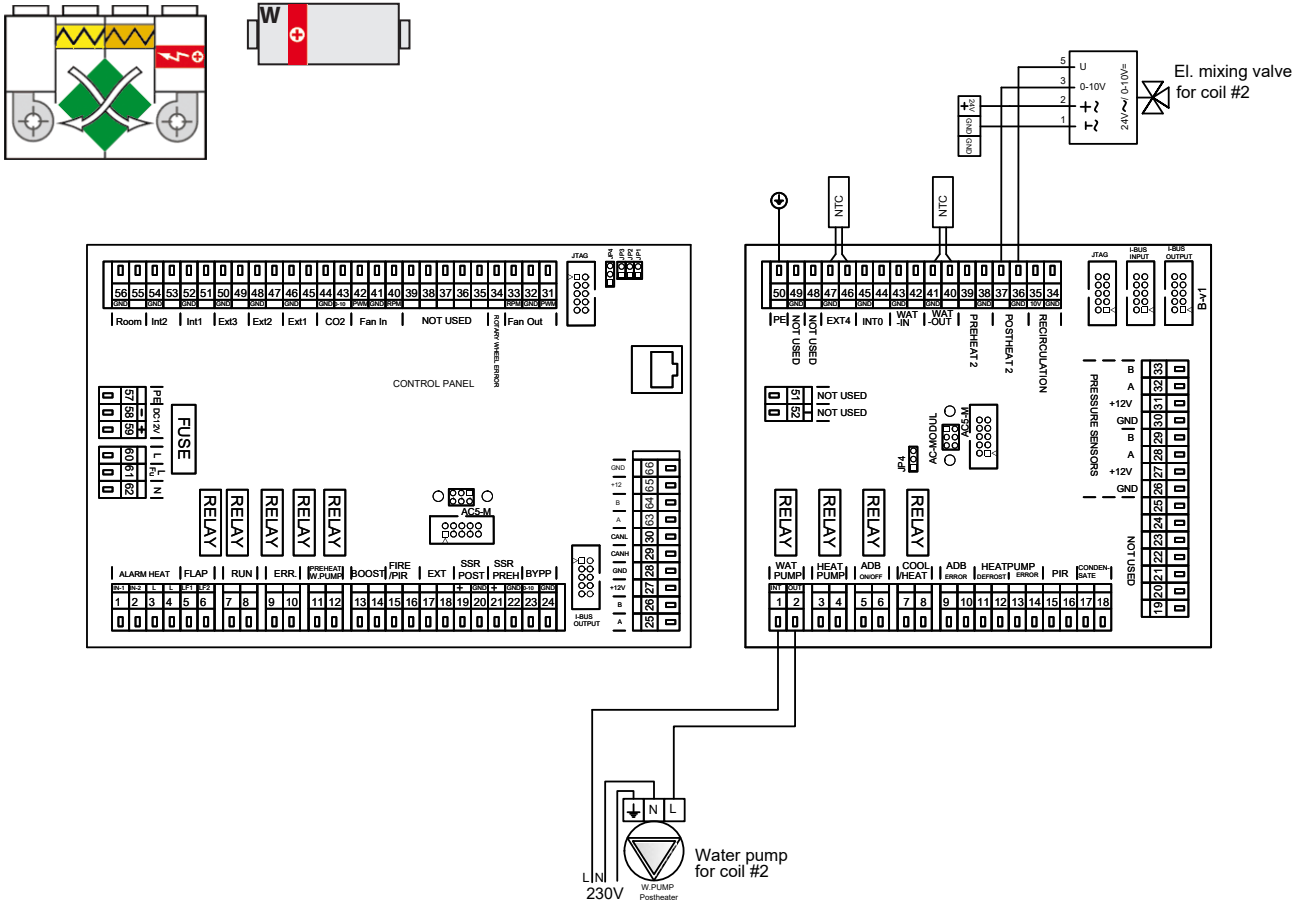
- Information on product type
- Serial number, service period
- Accessories used, unit location
- Connection conditions (also electrical connection)
- Detail fault description and steps take for its removal

PUTTING THE PRODUCT OUT OF OPERATION – DISPOSAL

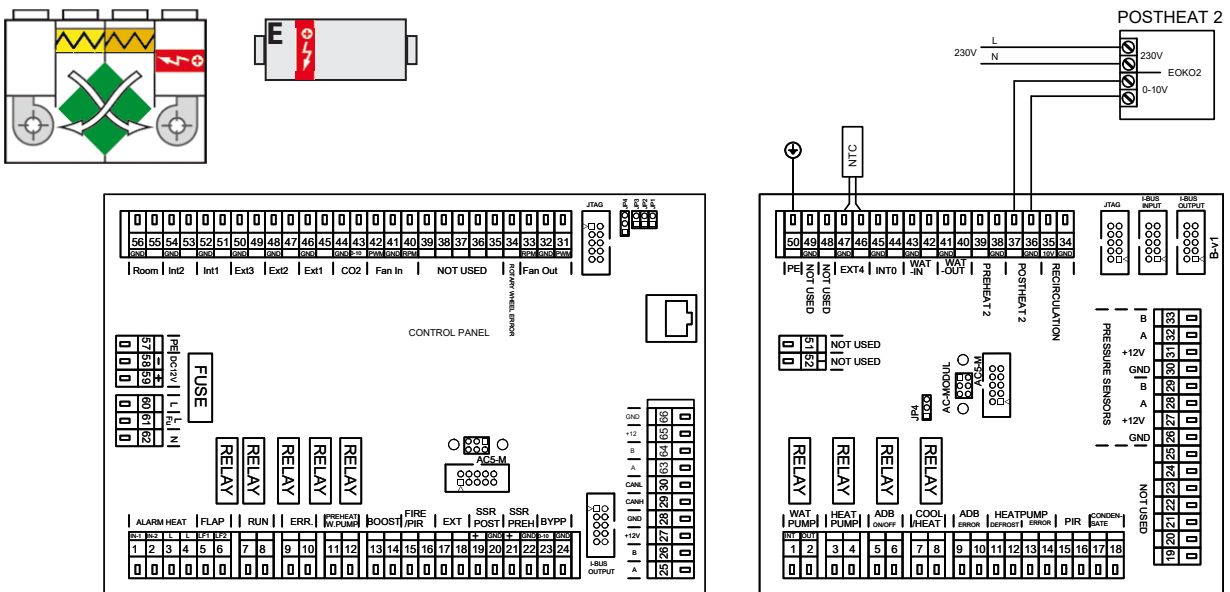
Please discard the product before disposal. Older units include also reusable materials. Take them to the waste separation site. It is better to let the product break down in a specialized center, allowing reuse of recyclable materials. Dispose parts that cannot be recycled in a regular waste disposal site. Materials must be disposed of in accordance with applicable national regulations and directives.

11. Wiring diagram

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

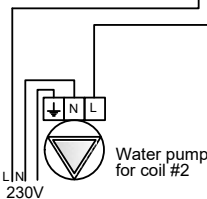
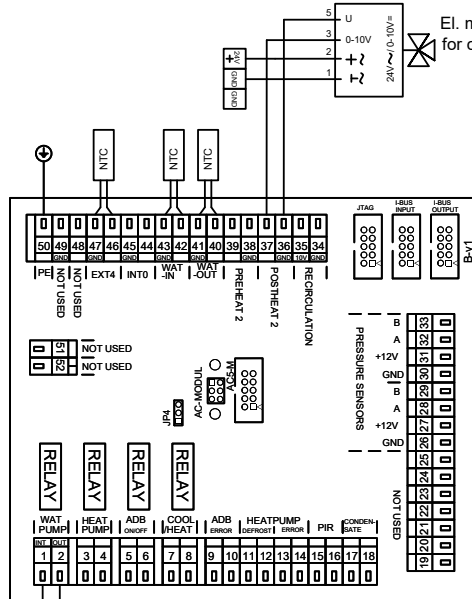
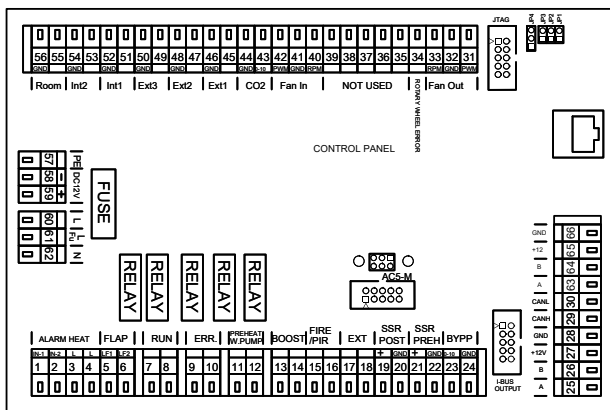
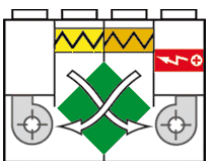


unit with electric exchanger / unit without electric exchanger with external electric exchanger

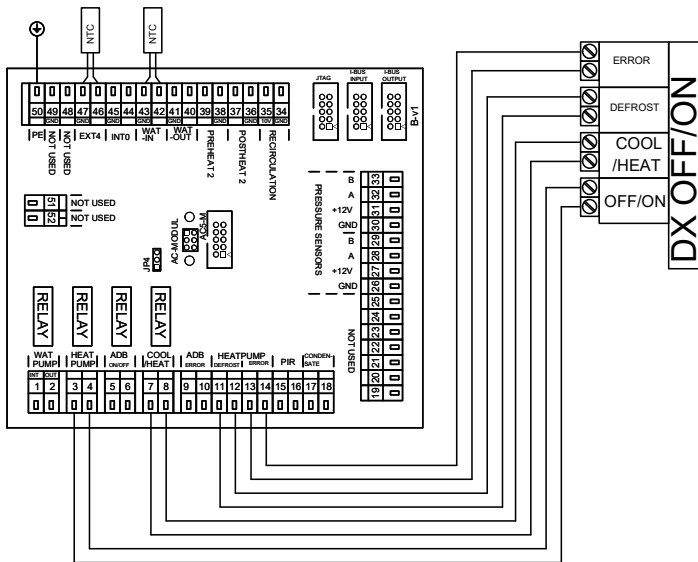
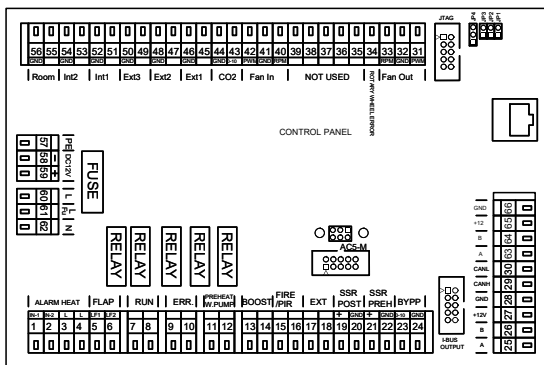
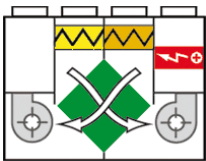


11. Wiring diagram

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

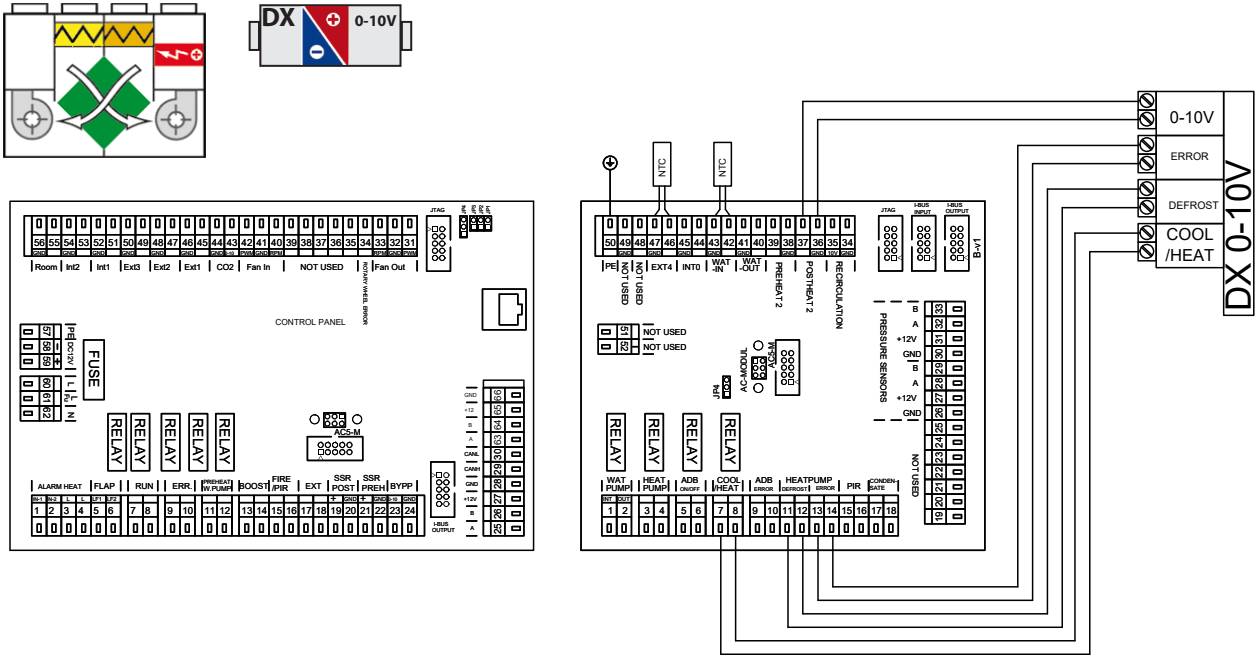


unit with electrical exchanger and second external DX exchanger with OFF / ON control

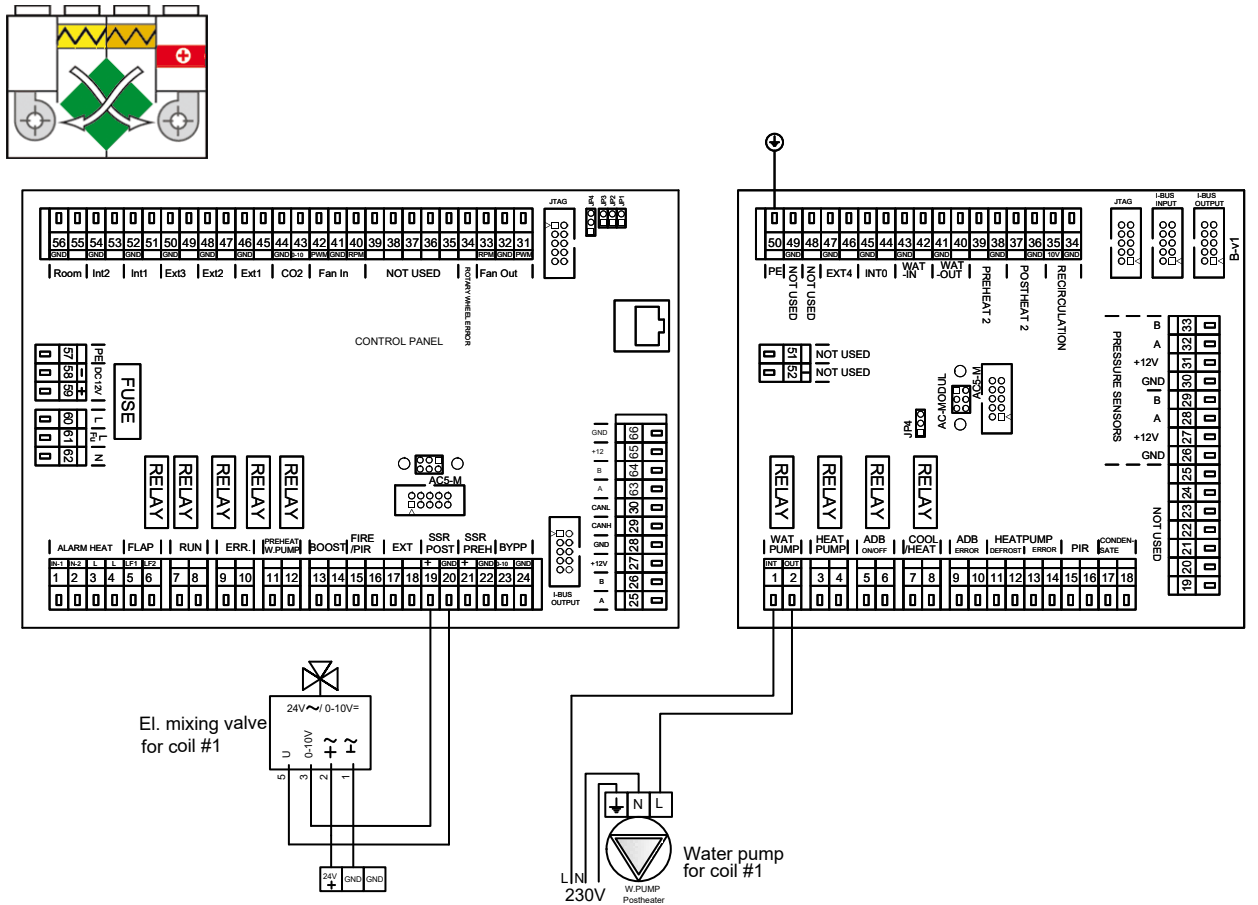


11. Wiring diagram

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

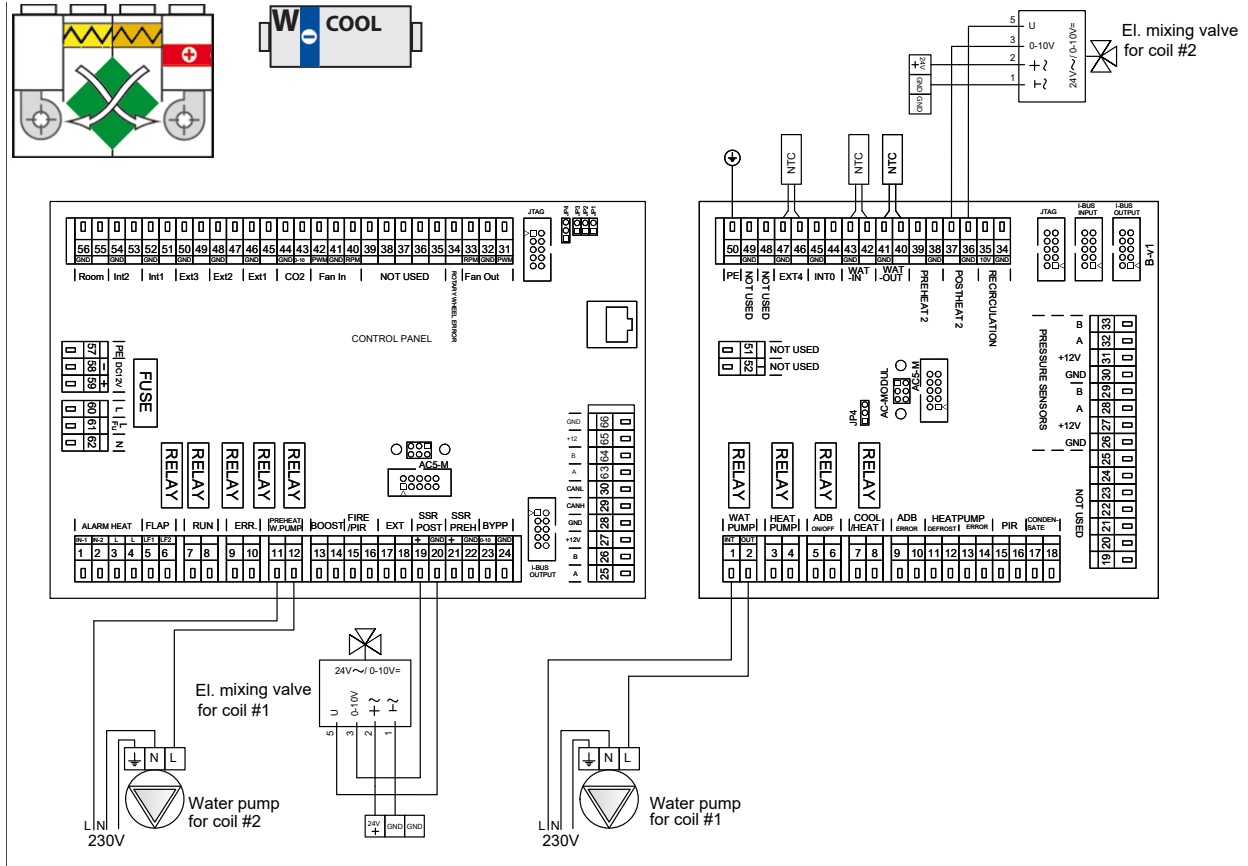


unit with water exchanger

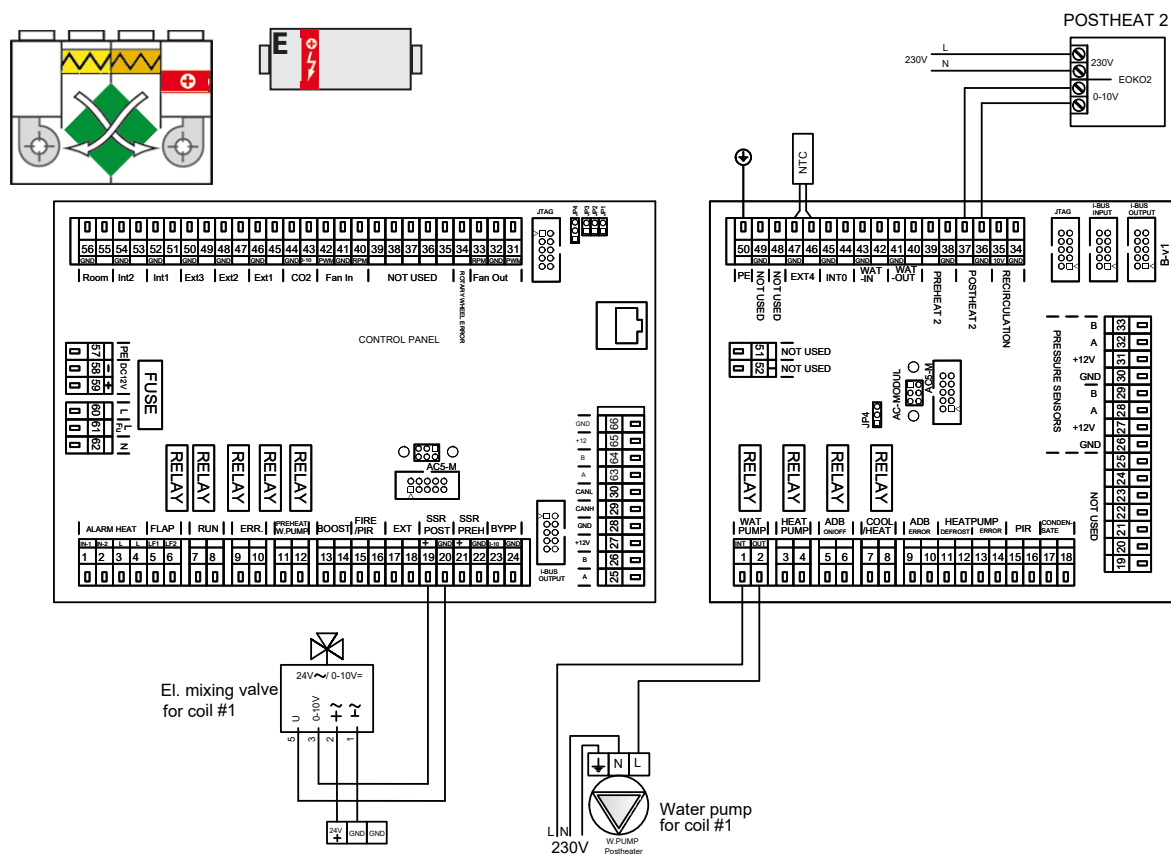


11. Wiring diagram

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

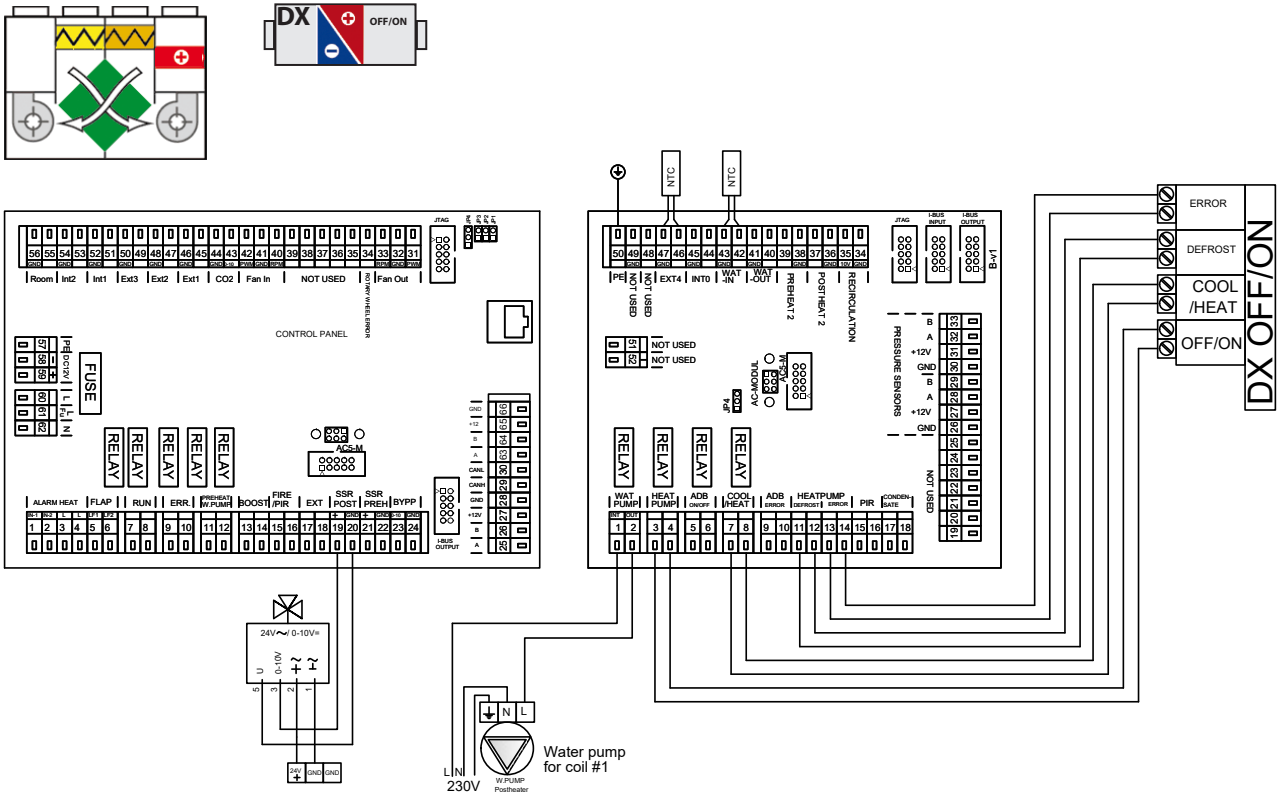


unit with water exchanger and second external electric exchanger

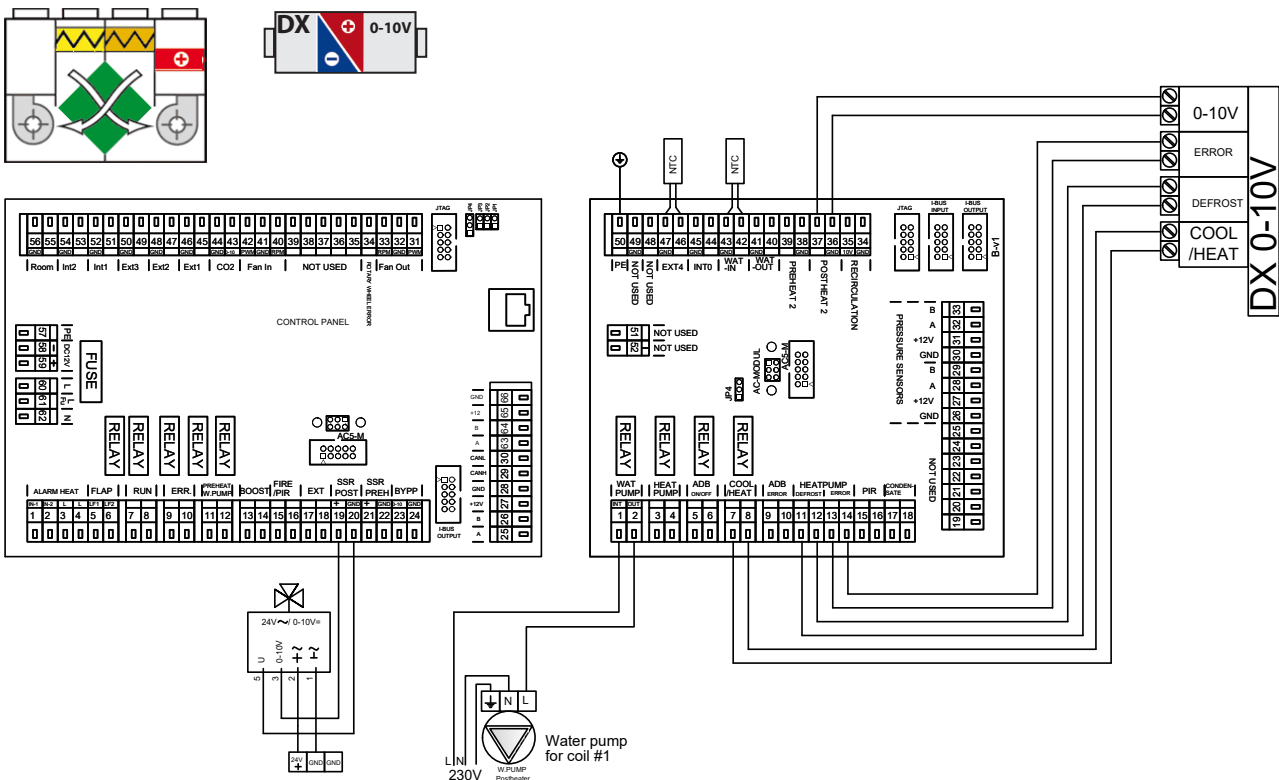


11. Wiring diagram

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

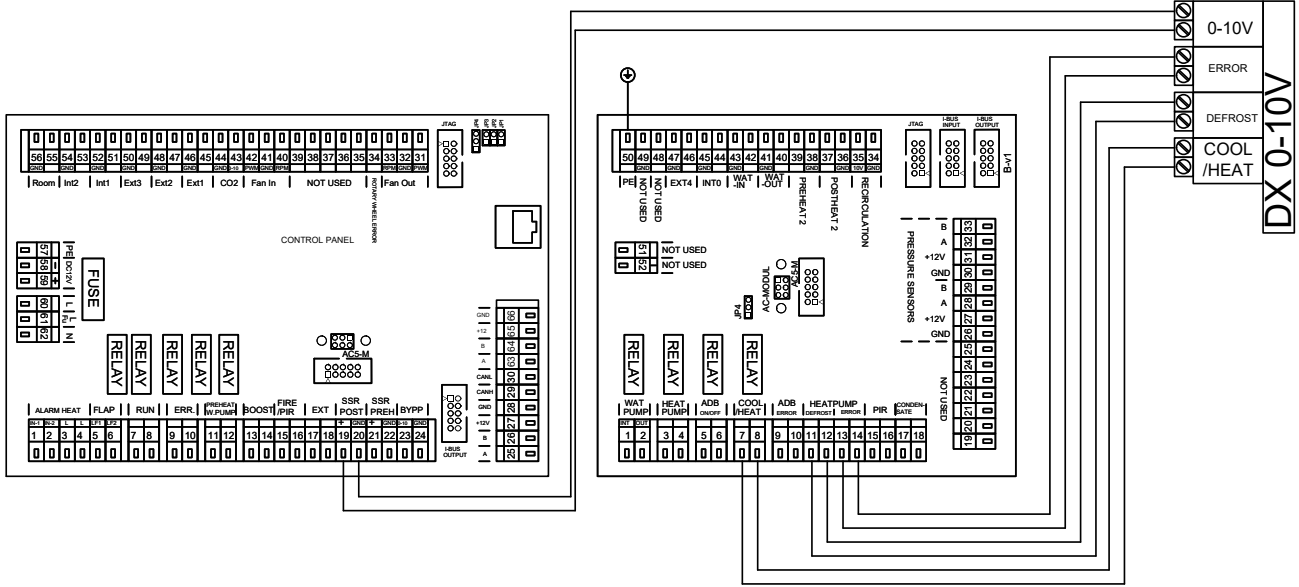
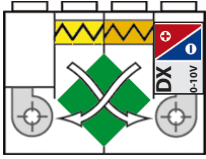


unit with water exchanger and second external DX exchanger with 0-10V control

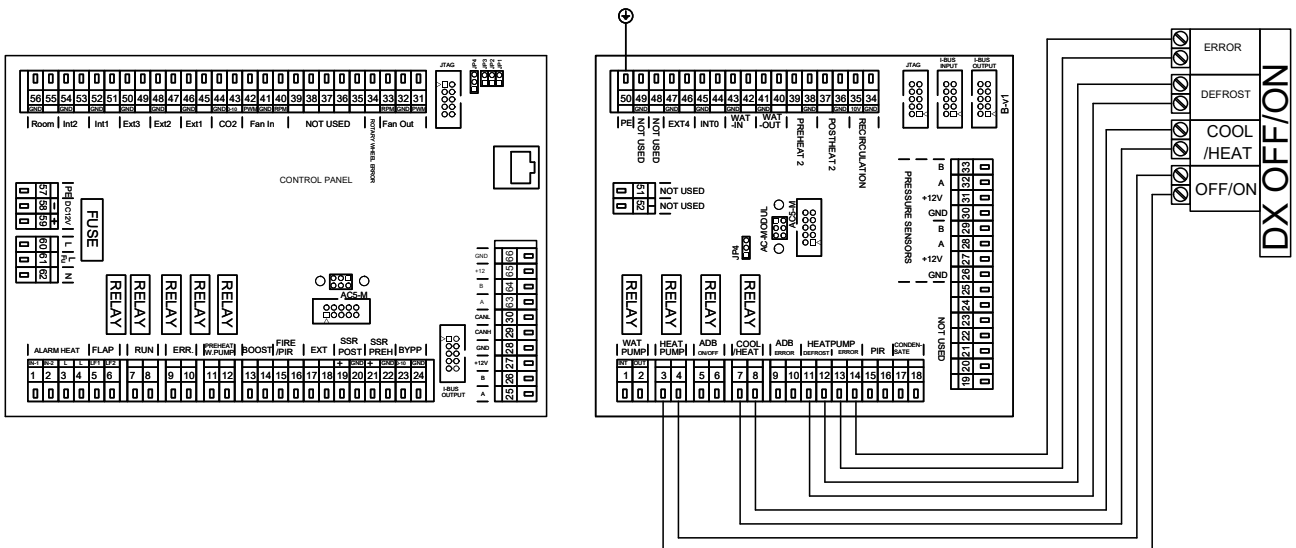
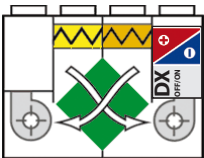


11. Wiring diagram

unit with DX 0-10V exchanger

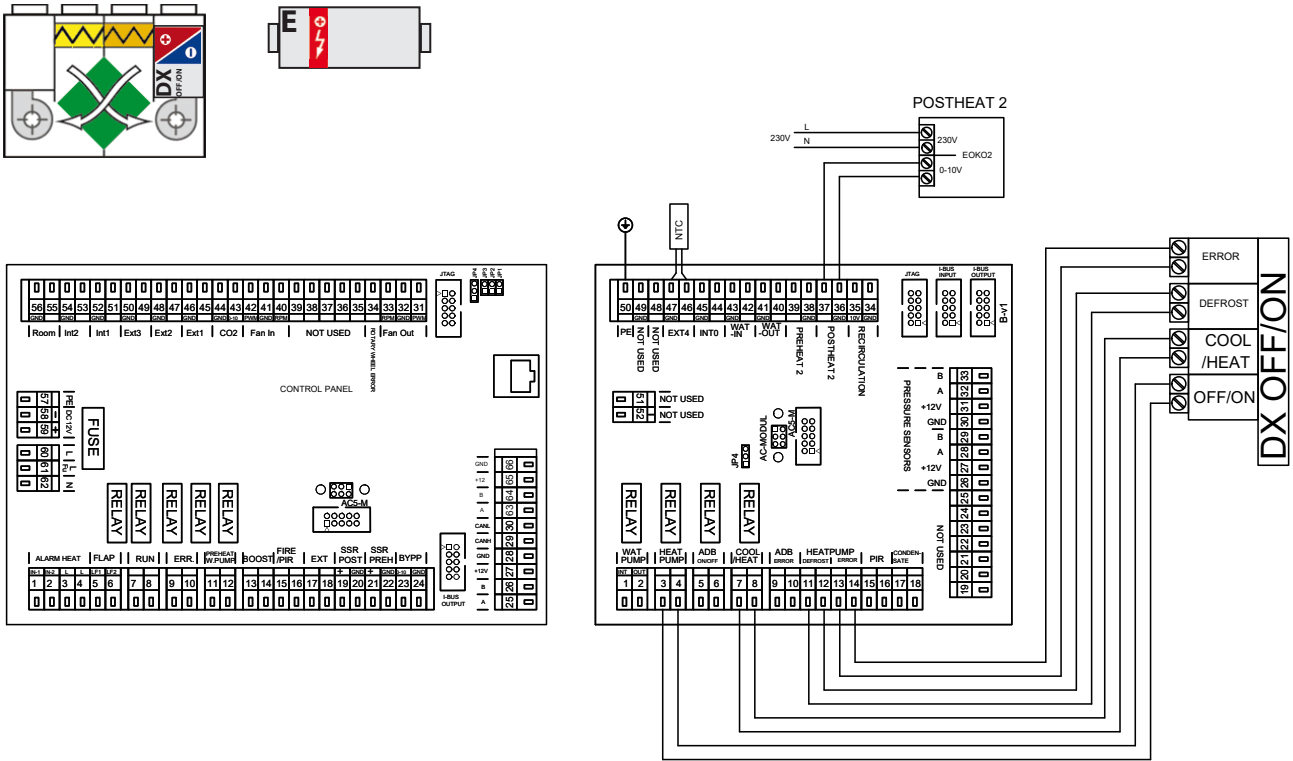


unit with DX exchanger control OFF/ON

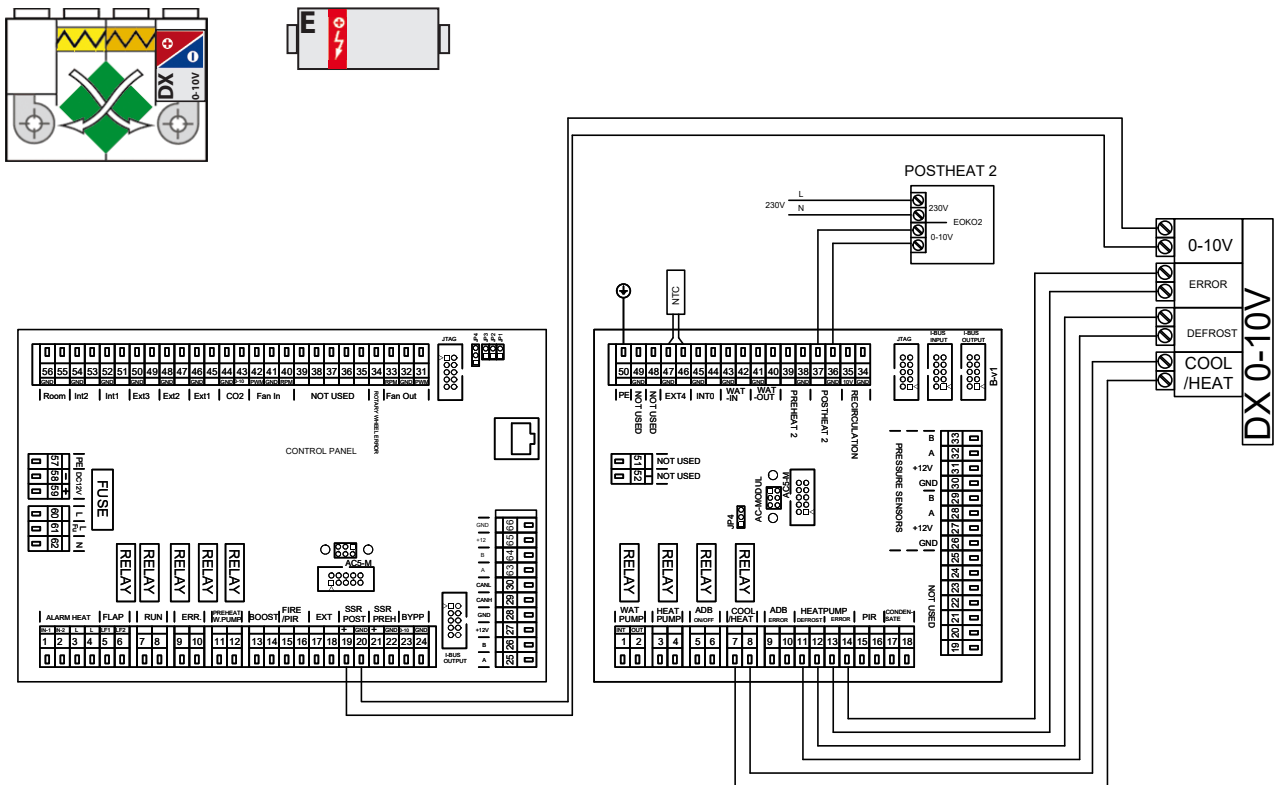


11. Wiring diagram

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

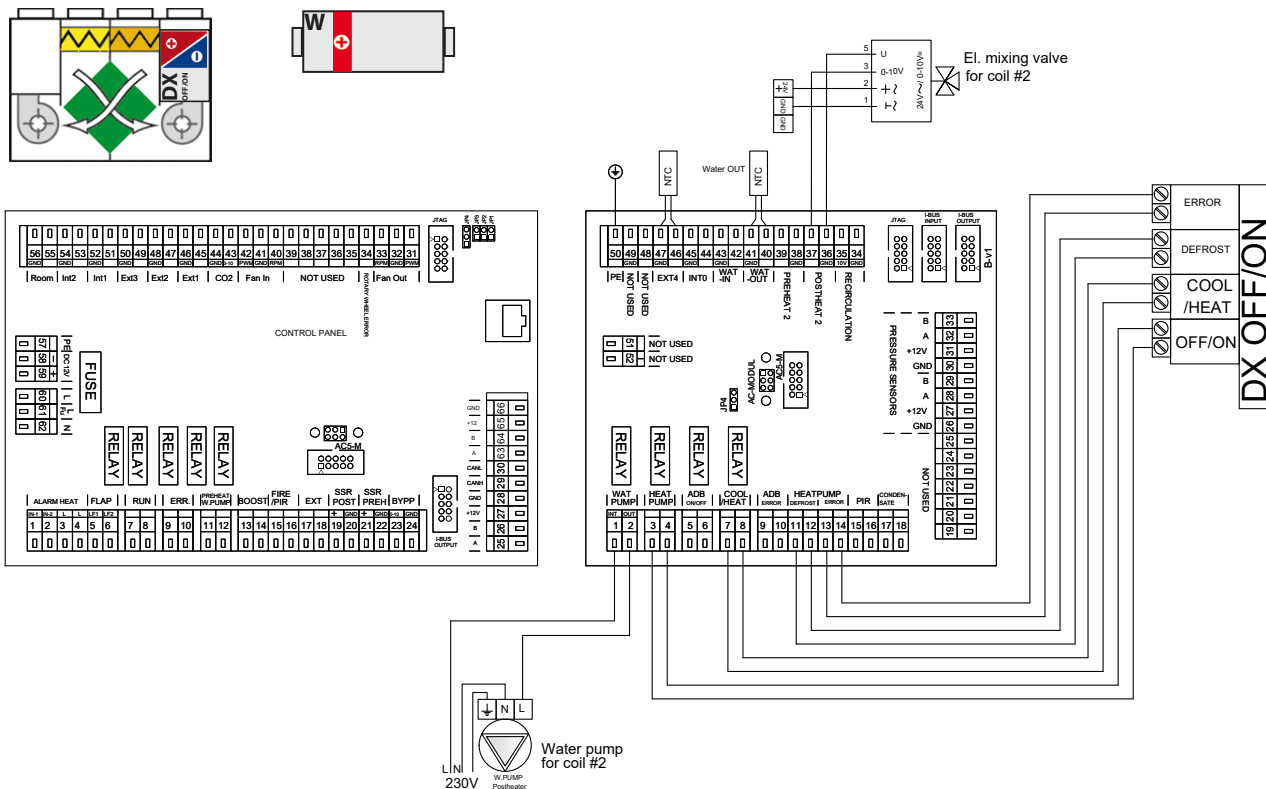


unit with DX exchanger control 0-10V and second external electric exchanger

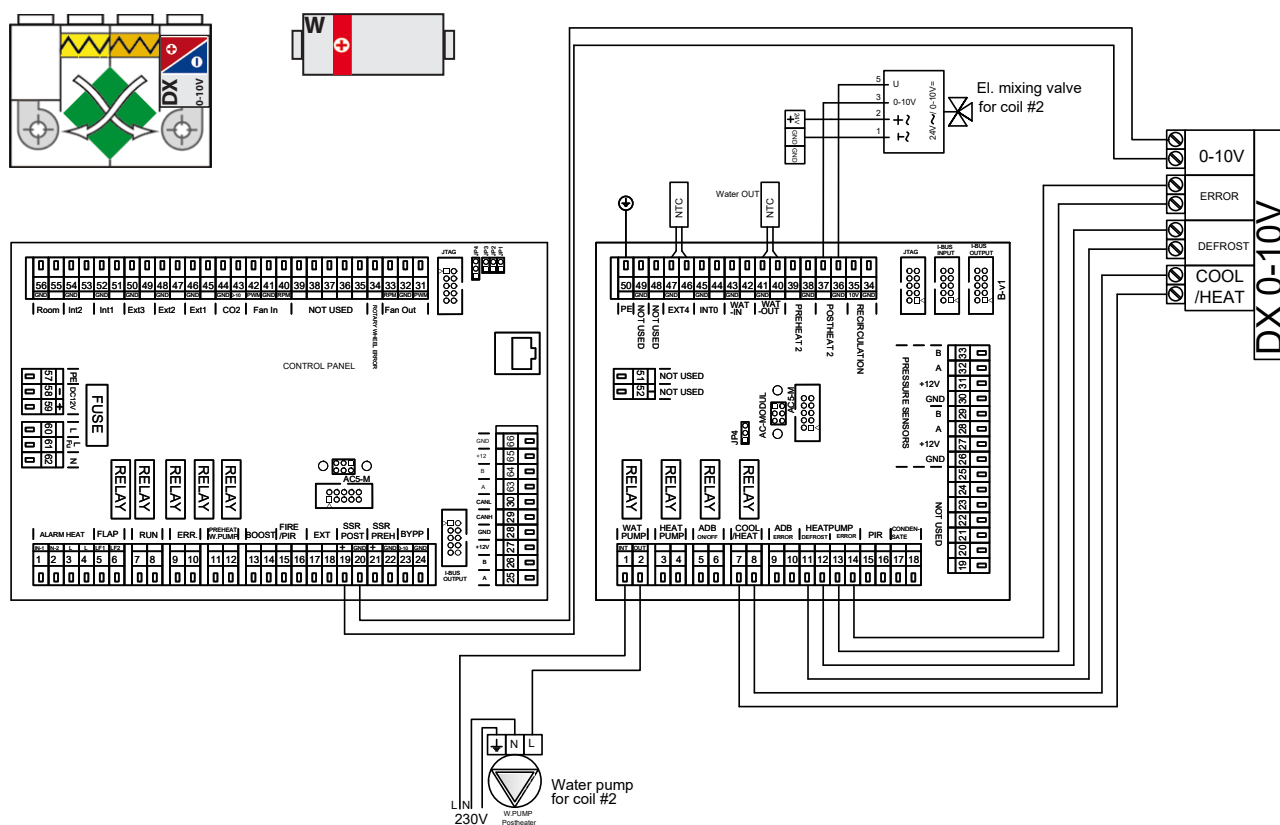


11. Wiring diagram

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

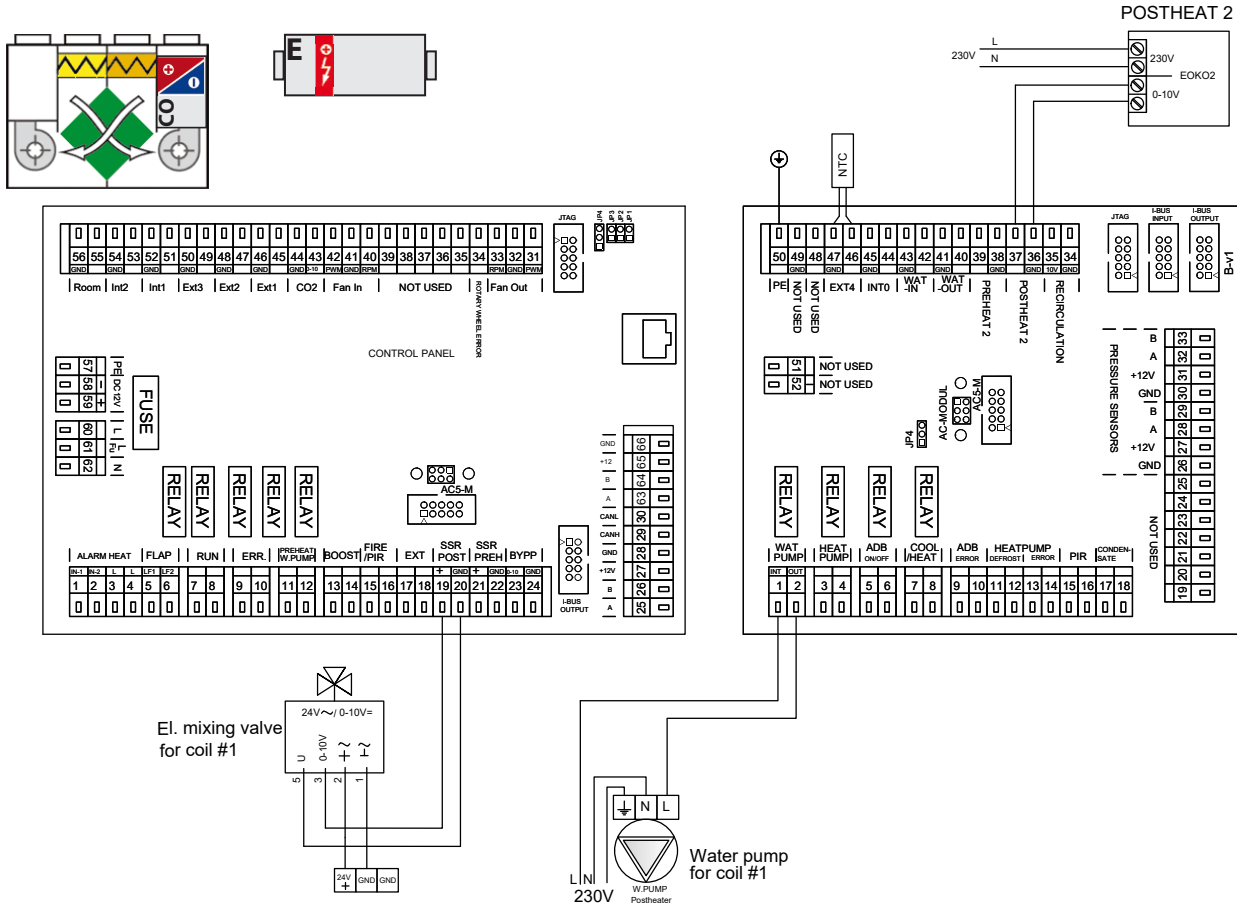


unit with DX exchanger control 0-10V and second external water exchanger

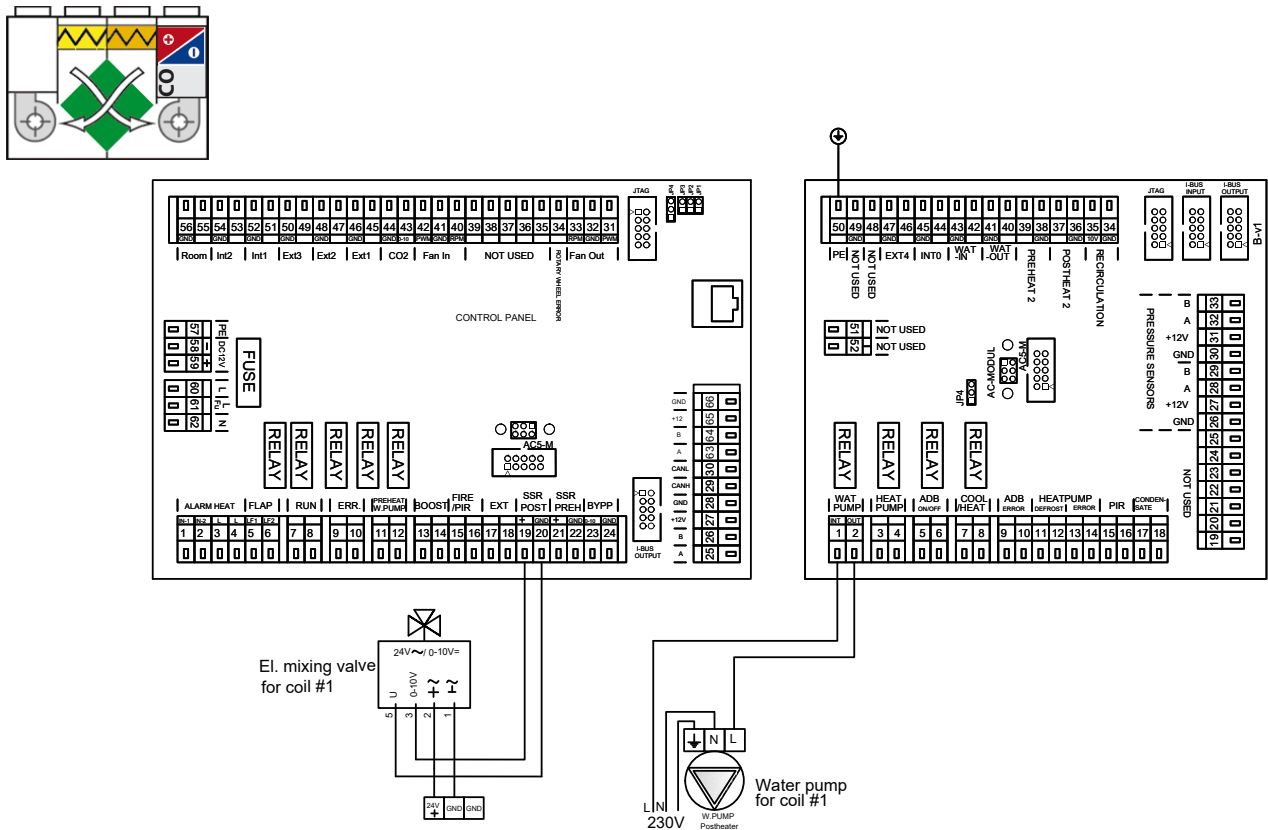


11. Wiring diagram

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



unit with exchanger for heating / cooling



12. CONCLUSION



For correct and safe use of the heat recovery unit, it is necessary to read this manual and follow the instructions. Please do not hesitate and contact our sales department or technical support if you have any questions or require additional explanation.

KONTAKT

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