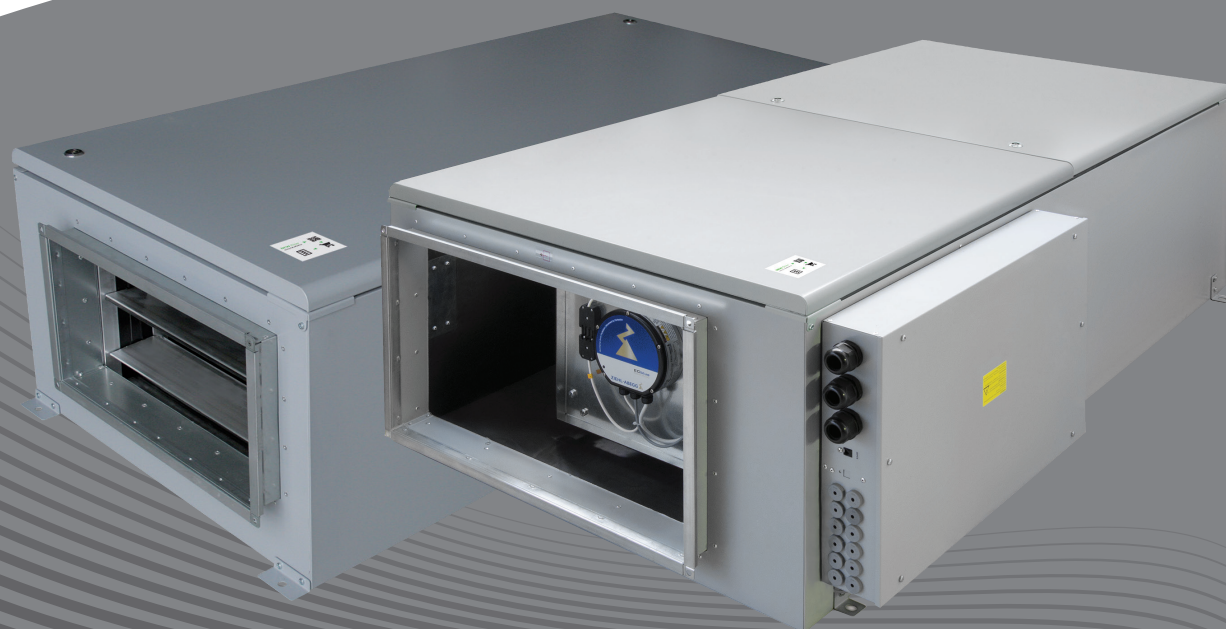


WALPOL

Installation and operating instructions

Air handling units
type WPZ



Version 6.0 E
B19

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2. SYMBOLS AND MARKING



Warning – pay attention



Additional information

Apply the auxiliary label on the unit (on an easily accessible location) or on the dashed location of the technical manual in order to keep the important information about the unit.

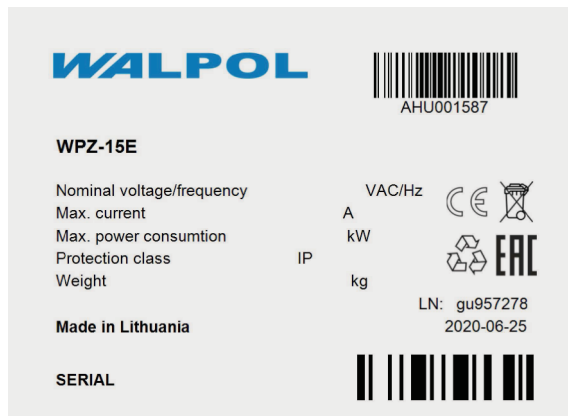


Figure 2.1. Technical label



Figure 2.2. Indication for duct connection (ODA - outdoor air; SUP - supply air).



Figure 2.3. Indication for water flow connection

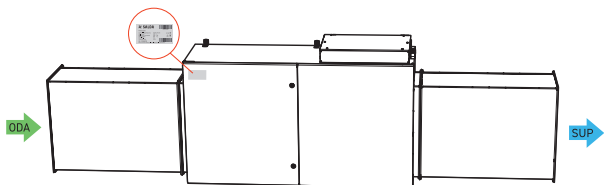


Figure 2.4. Technical label place and air duct indication WPZ - E

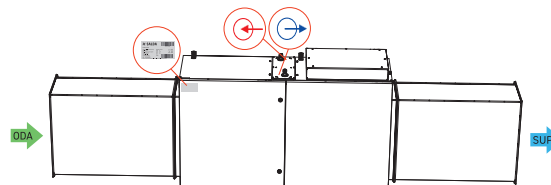


Figure 2.5. Technical label place and air duct indication WPZ - W



NOTE. Ducts are not the part of the unit.

3. SAFETY INSTRUCTIONS AND PRECAUTIONS

Read these instructions very carefully before installing and using this equipment. Installation, connection and maintenance should be carried out by a qualified technician and in accordance with the local regulations and legislation. The company shall take no responsibility for the injuries or damaged property if the safety requirements are not followed or the device is modified without the permission of the manufacturer.

Main safety rules

Danger



- Before carrying out any electrical or maintenance works, make sure that the device is disconnected from the mains and all moving parts of the device have stopped.
 - Make sure that the fans are not accessible through air ducts or branch openings.
 - If any liquids on electric parts or connections that bear voltage are noticed, stop the operation of the device.
 - Do not plug the device into the mains that differ from the one indicated on the label or on the housing.
 - Voltage of the mains should comply with the electro technical parameters indicated on the label.
 - The device should be earthed in accordance with the regulations on the installation of electric devices. Turning on and using unearthed device is not allowed. Follow the requirements specified on the device's labels that indicate danger.
-

Warnings



- Connection of electricity and maintenance of the device should be performed by the qualified personnel only and in accordance with the manufacturer's instructions and safety requirements.
 - In order to reduce the risk during installation and maintenance, suitable protective clothing must be worn.
 - Beware of sharp angles while carrying out installation and maintenance works.
 - Do not touch heating elements until they haven't cooled down.
 - Some devices are heavy, you should be very careful while transporting and installing them. Use suitable lifting equipment.
 - When connecting electricity to the mains, a circuit breaker of suitable size must be used.
-

Warning!



- If the device is installed in a cold environment, make sure that all connections and tubes are properly isolated. Intake and discharge air ducts should be isolated in all cases.
 - Openings of the ducts should be covered during transportation and installation.
 - Make sure not to damage the heater when connecting the piping of the water heater. For tightening up, use a wrench/spanner.
-

Before starting up the device



- make sure, that there are no strange objects inside;
 - manually check fans to make sure they are not stuck or blocked;
 - if rotary heat exchanger is installed in the device, make sure that it is not stuck or blocked;
 - check the earthing;
 - make sure that all components and accessories are connected in accordance with the wiring diagram or provided instructions.
-

Danger: Fumes



Antifrost system uses dis-balancing of the air flow and it may cause negative pressure in premises. Great care should be taken when using at the same time in premises as another heating appliance what depend on the air in premises. Such appliances include gas, oil, wood or coal-fired boilers and heaters, fireplaces, continuous flow or other water heaters, gas hobs, cookers or ovens which draw air in from the room and duct exhaust gases out through a chimney or extraction ducting. The heating appliance can be starved of oxygen, impairing combustion. In exceptional cases harmful gases could be drawn out of the chimney or extraction ducting back into the room. In this case we strictly recommend to turn off Antifrost and use an external preheater for heat exchanger anti-frost protection (see Antifrost function on the Remote controller manual).

4. INFORMATION ABOUT THE PRODUCT

4.1. DESCRIPTION

Air supply units WPZ designed for the air supply to commercial, warehousing, industrial kitchen, etc. premises where heat recovery is not required. The ventilation unit has a low height for the installation under the ceilings, alternatively, WPZ can be installed on the wall or under the roof. WPZ has EC-type motor, heater (depends on model), filter, motorized air damper and control board. WPZ can be controlled by external remote panel (accessory).



Not suitable for operation in pools, saunas and other similar premises.

4.2. DIMENSIONS AND WEIGHT

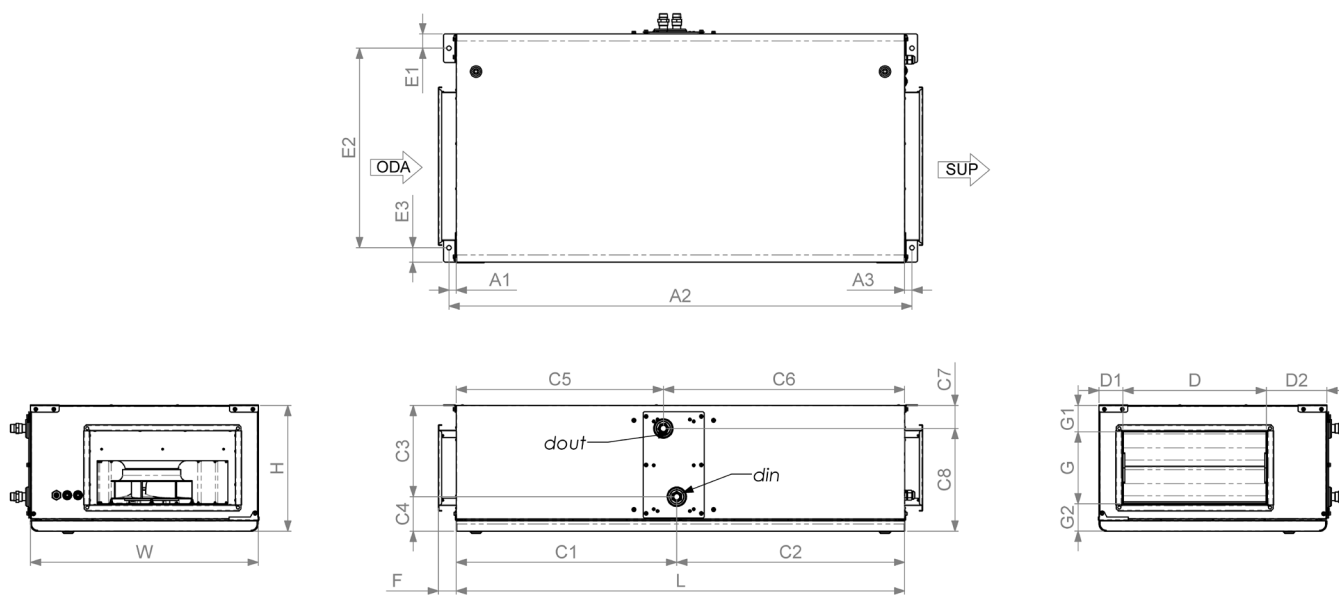


Figure 4.2.1. WPZ - 09 / 14 / 15 / 21 / 26 (1000-2000)

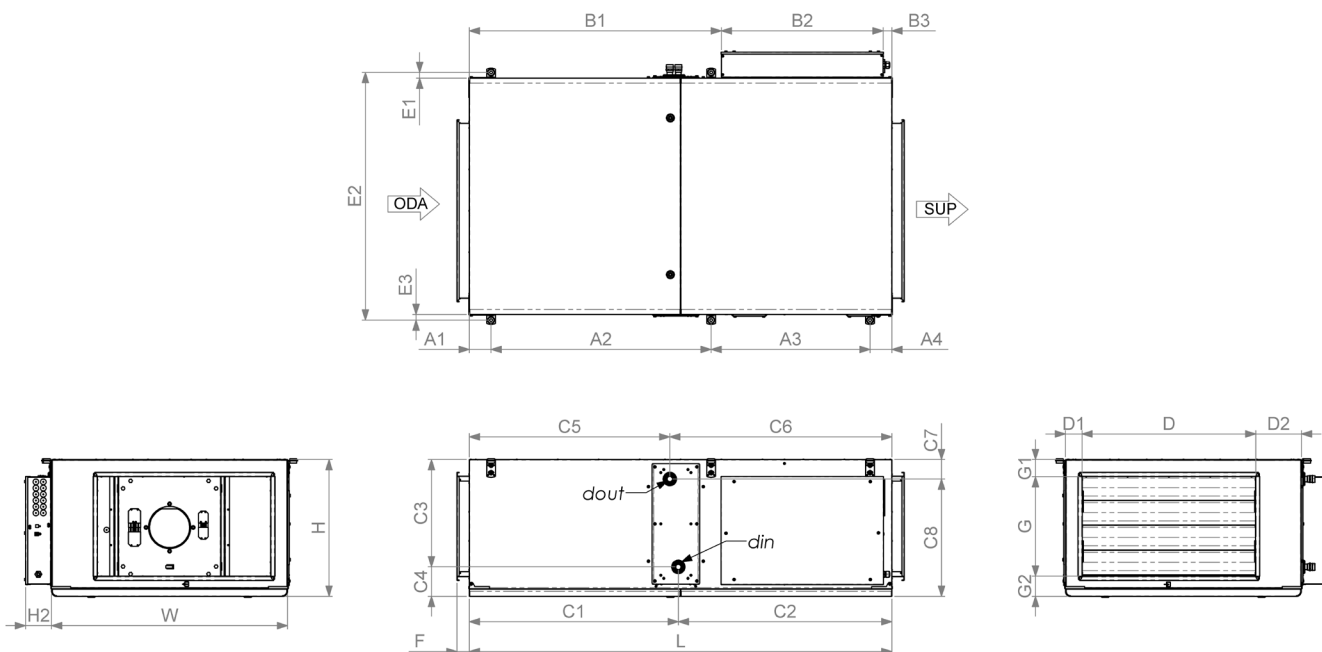


Figure 4.2.2. WPZ - 30 / 39 / 40 / 54 (3000-4000)

WPZ		9ED	14WD	WPZ-15ED / 21ED	26WD	30ED /39ED	40WD	54WD	
L	[mm]	1250		1550		1701			
W	[mm]	635		750		950			
H	[mm]	350		460		550			
ØD/D	[mm]	400		500		700			
G	[mm]	200		250		400			
F	[mm]	50							
H2	[mm]	-					105		
A1	[mm]	20					88		
A2	[mm]	1291		1591		886			
A3	[mm]	20					640		
A4	[mm]	-					88		
B1	[mm]	-					1015		
B2	[mm]	-					651		
B3	[mm]	-					35		
C1	[mm]	-	615	-	727	-	842	842	
C2	[mm]	-	635	-	823	-	859	859	
C3	[mm]	-	254	-	369	-	432	432	
C4	[mm]	-	96	-	91	-	118	118	
C5	[mm]	-	577	-	693	-	807	807	
C6	[mm]	-	673	-	857	-	894	894	
C7	[mm]	-	64	-	72	-	78	78	
C8	[mm]	-	286	-	388	-	472	472	
D1	[mm]	67							
D2	[mm]	168		182		183			
din		-	G1/2	-	G1/2	-	G3/4	G3/4	
dout		-	G1/2	-	G1/2	-	G3/4	G3/4	
E1	[mm]	40					23		
E2	[mm]	555		670		996			
E3	[mm]	40					23		
G1	[mm]	74		124		69			
G2	[mm]	76		86		81			

WPZ	9ED	14WD	15ED	21ED	26WD	30ED	39ED	40WD	54WD
WEIGHT [kg]	57	57	87	89	86	141	143	132	130

4.3. TECHNICAL DATA

WPZ	9ED	14WD	15ED	21ED	26WD
FAN					
phase/voltage	[50 Hz/VAC]	~1/230	~1/230	~1/230	~1/230
power/current	[kW/A]	0,17/1,4	0,17/1,4	0,37/1,65	0,37/1,65
speed	[min ⁻¹]	2860	2860	2010	2010
control input	[VDC]	0-10	0-10	0-10	0-10
protection class		IP54	IP54	IP54	IP54
Integrated electrical heater	[kW]	9,0	-	15,0	21,0
Total power/current consumption	[kW/A]	0,09/14,41	0,17/1,4	15,37/23,30	21,37/31,96
Automatic control integrated		✓	✓	✓	✓
Insulation of walls	[mm]	30	30	30	30
Air filter (class, dimensions LxWxH)	[mm]	FMK 566x283x270/7 ePM10 65%	FMK 566x283x270/7 ePM10 65%	FMK 682x394x307/7 ePM10 65%	FMK 682x394x307/7 ePM10 65%
Device protection class		IP34	IP34	IP34	IP34

WPZ		30ED	39ED	40WD	54WD
FAN					
phase/voltage	[50 Hz/VAC]	~1/230	~1/230	~1/230	~1/230
power/current	[kW/A]	0,87/4,5	0,87/4,5	0,87/4,5	1,3/6,4
speed	[min ⁻¹]	2200	2200	2200	2390
Streuungsspannung	[VDC]	0-10	0-10	0-10	0-10
protection class		IP54	IP54	IP54	IP54
Integrated electrical heater	[kW]	30,0	39,0	-	-
Total power/current consumption	[kW/A]	30,87/47,50	39,87/60,50	0,87/4,5	1,30/6,40
Automatic control integrated		✓	✓	✓	✓
Insulation of walls	[mm]	30	30	30	30
Air filter (class, dimensions LxWxH)	[mm]	FMK 822x485x340/8 ePM10 65%	FMK 822x485x340/8 ePM10 65%	FMK 822x485x340/8 ePM10 65%	FMK 822x485x340/8 ePM10 65%
Device protection class		IP34	IP34	IP34	IP34



Not suitable for installation in living rooms: additional noise insulation required.

4.4. OPERATING CONDITIONS

WPZ	all WPZ
Outdoor air temp. without frost protection	-
Ambient air temp.	-25 .. 40 °C
Max. ambient air humidity	-
Operation environment	Indoors

4.5. STANDARD PACKAGE OF COMPONENTS

WPZ	09 / 14 / 15 / 21 / 26	30 / 39 / 40 / 54
Washers 5 DIN 440R	-	12
ANTI VIBRATION PAD 313508000	-	6
KEY 291103	1	1
SUSPENSION BRACKET	-	6
BOLT M5X20	-	12

4.6. DESCRIPTION OF COMPONENTS

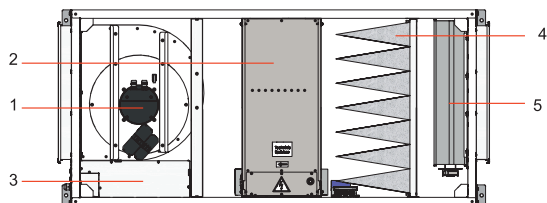


Figure 4.6.1. WPZ - 09 / 14 / 15 / 21 / 26 (1000/2000)

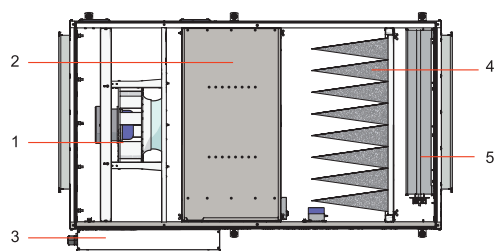


Figure 4.6.2. WPZ - 30 / 39 / 40 / 54 (3000/4000)

1 - Supply fan; 2 - Electrical/water heater/pre-heater; 3 - Control board; 4 - Supply air filter (pocket); 5 - Supply air damper.

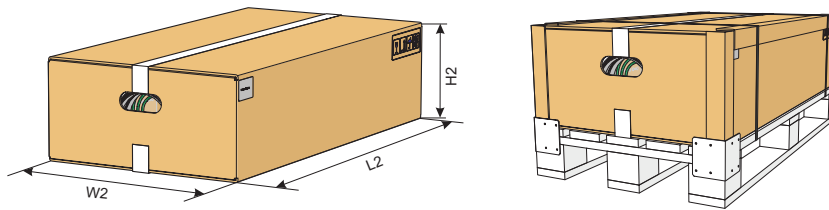
5. INSTALLATION

5.1. RECEPTION OF GOODS

Each device is carefully checked before transportation. When receiving the goods, checking the devices for any damage made during transportation is recommended. If any damage to the unit is observed, immediately contact the representatives of a transport company. Please inform the representative of the manufacturer, if any deviation of the device is noticed.

5.2. TRANSPORTATION AND STORAGE

- All units are factory-packaged to withstand normal conditions of transportation.
- When unpacking, check the unit for any damage made during transportation. Installing of damaged units is not allowed!
- The packaging is used for protection purpose only!
- When unloading and storing the units, use suitable lifting equipment to avoid damage and injuries. Do not lift units by holding on power supply cables, connection boxes, air extract or exhaust flanges. Avoid hits and shock overloads. Before installation, the units must be stored in a dry room with the relative air humidity not exceeding 70% (at +20°C) and with an average ambient temperature ranging between +5 °C and +30 °C. The storage place must be protected against dirt and water.
- The units must be transported to the storage place or installation site using forklifts.
- The recommended storage period should not be longer than one year. In case of storing the units for a period longer than one year, checking if the fan bearings and motor rotate without difficulty (turning the impeller by hand) and if the electric circuit insulation is not damaged or the moisture has not accumulated must be performed before the installation of the unit.



WPZ	H2	W2	L2	MAX. NUMBER OF TRANSPORTED PACKAGES
	[mm]	[mm]	[mm]	[pcs.]
9ED	630	705	1460	1
14WD	630	745	1460	1
15E / 21ED	740	815	1760	1
26WD	740	854	1760	1
30ED / 39ED / 40WD	830	1130	1870	1
54WD	830	1130	1870	1

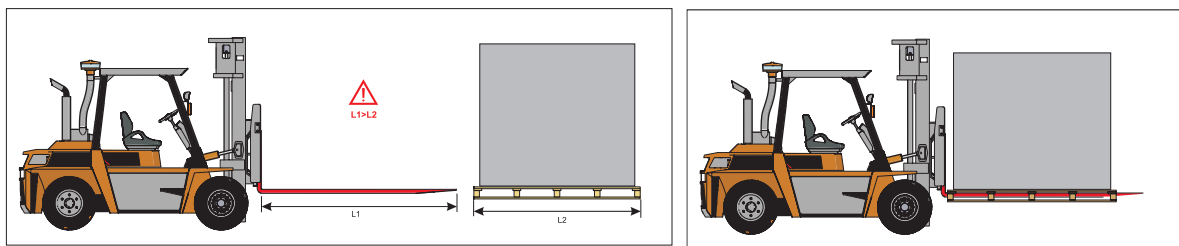


Figure 5.2.1. Lifting by forklift.



In order to prevent damage to the casing, only a product placed on a pallet should be lifted.

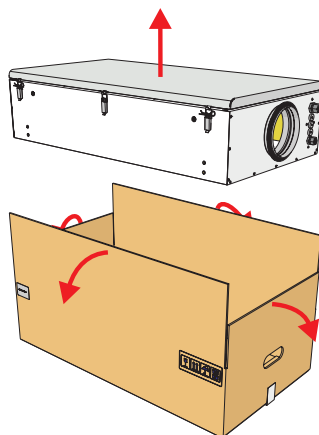
5.3. UNPACKING



Accessories may be packed together with the product. Prior to transporting the unit, the accessories should be unpacked first.

- Remove the film from the unit.
- Remove the bracing packaging tape that keeps the protective profiles in place.

- Remove the protective profiles.
- After unpacking the unit, examine it to make sure that no damage was made during transportation. Installing of damaged units is not allowed!
- Before commencing the installation of the unit, please check if all ordered equipment have been delivered. Any variation from the ordered equipment list must be reported to the product supplier.



5.4. PIPING AND INSTRUMENTATION DIAGRAM

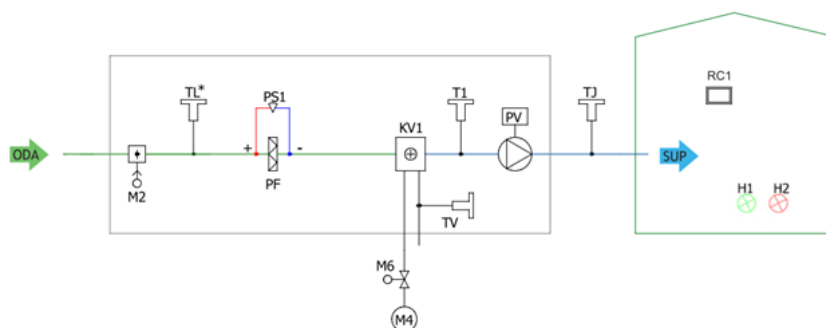



Figure 5.4.1. WPZ - 40WD / 54WD (* For WPZ - 14WD / 26WD (1000-2000) units TL is outside of the unit on the left side of M2)

LIST OF COMPONENTS

PV	Supply air fan	TL	Outdoor air temperature sensor
KE1	Electric heater	TJ	Supply air temperature sensor
PF	Supply air filter	PS1	Supply air filter differential pressure sensor
M2	Outdoor air damper actuator	M4/M	Water heater circular pump
KV1	Water heater	RC1	Stouch or Flex remote control panel
M6/SV1	Water heater valve actuator	TV	Water heater temperature sensor
	Ventilated premises	T1	Water heater thermostat
DX	DX cooler		

POSSIBLE PCB INPUTS/OUTPUTS

EAS	External alarm	H2	Alarm indication output
H1	Working indication output		
	Fans speed switch (BOOST)		System mode switch (START/STOP)

5.5. MOUNTING

- Installation should be carried out by qualified and trained staff only.
- When connecting air ducts, consider the labels on the casing of the unit.
- Before connecting to the air duct system, the connection openings of ventilation unit should be closed.
- When connecting the ducts, the air-flow direction indicated on the device housing should be observed.
- Do not connect the bends close to connection flanges of the unit. The minimum distance of the straight air duct between the unit and the first branch of the air duct in the supply air duct must be $1xD$, in air exhaust duct $3xD$, where D is the diameter of the air duct.
- It is recommended to use the brackets (accessories). This will reduce the vibration transmitted by the unit to the air duct system and environment.
- Sufficient space must be provided for opening of the manhole and filter covers.
- If the ventilation unit is wall-mounted wall, it may transmit noise vibrations to the premises. Though the level of noise generated by the fans is admissible, mounting the unit at the distance of 400 mm from the nearest wall is recommended. Where this is not possible, mounting of the unit on the wall of the room where the level of noise is not significant is recommended.
- Ducts are connected to the unit in such way that they could be easily disassembled and the heater could be removed from the unit when carrying out maintenance, servicing and/or repairs



The protective film is used to protect the unit during transportation. It is recommended to remove the film; otherwise, oxidation signs may occur.

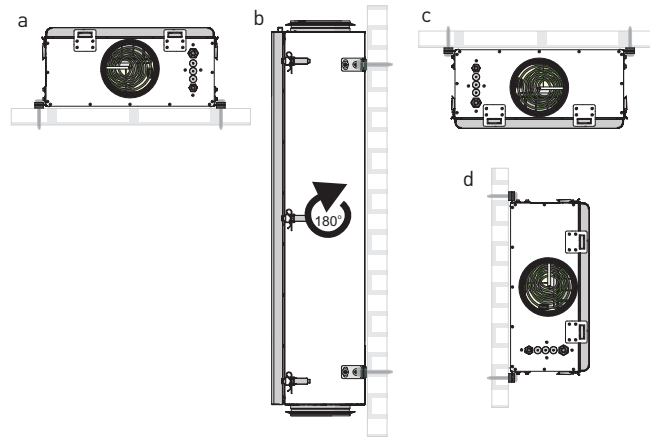


Figure 5.5.1. Mounting positions (d - mounting position not possible for units with pocket filters; b, d - mounting position not possible for water version)

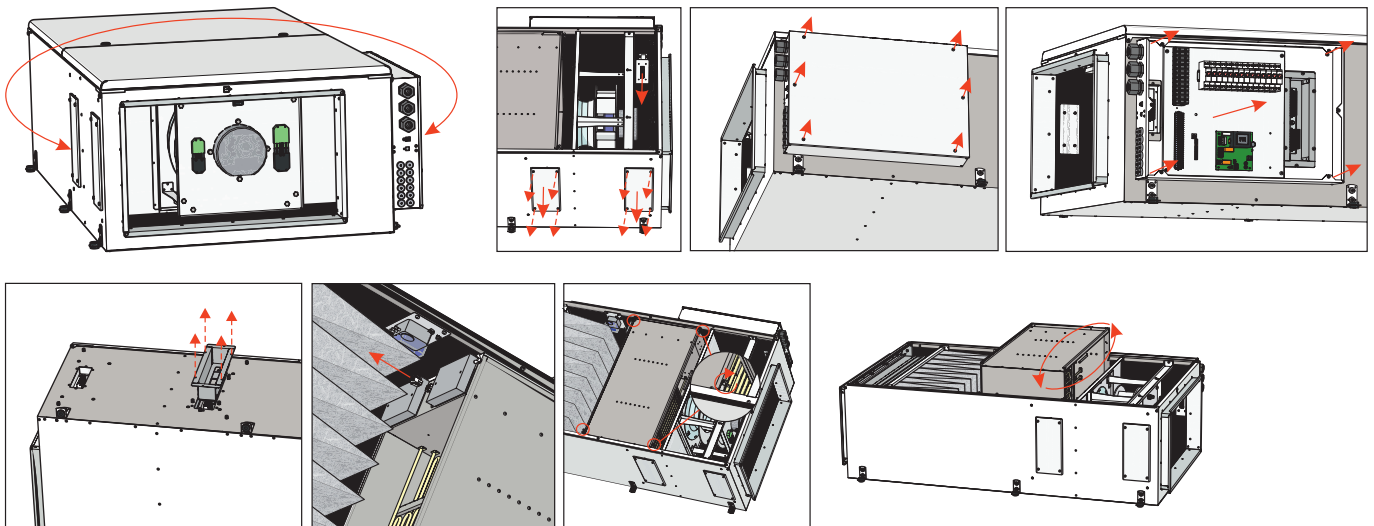


Figure 5.5.2. all WPZ (1000-4000) maintenance side change

5.5.1. UNIT PLACING AND MOUNTING POSITIONING REQUIREMENTS

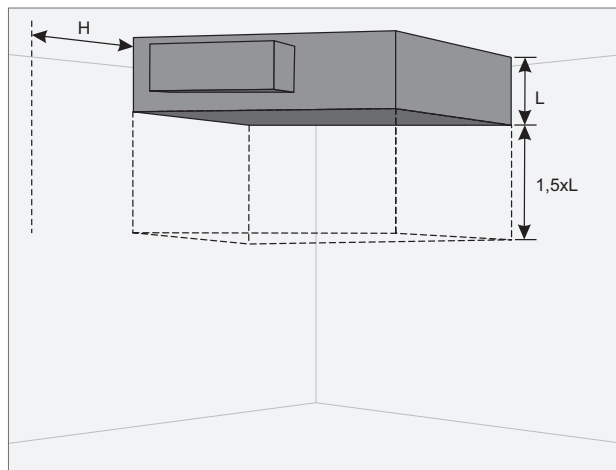


Figure 5.5.1.1. Min. distance to open the door - 1,5xL; Min. distance to open the control box door - H > 400 mm.

5.5.2. CEILING-MOUNTING OF THE UNIT

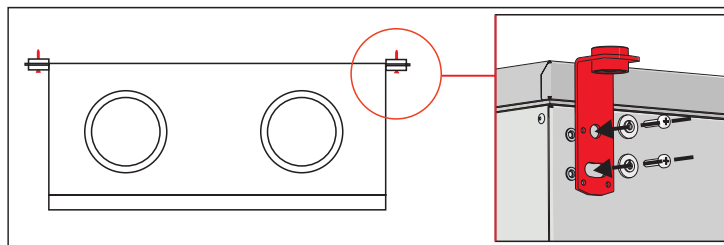


Figure 5.5.2.1. Ceiling mounting

5.5.3. ROOF MOUNTING (ACCESSORY)

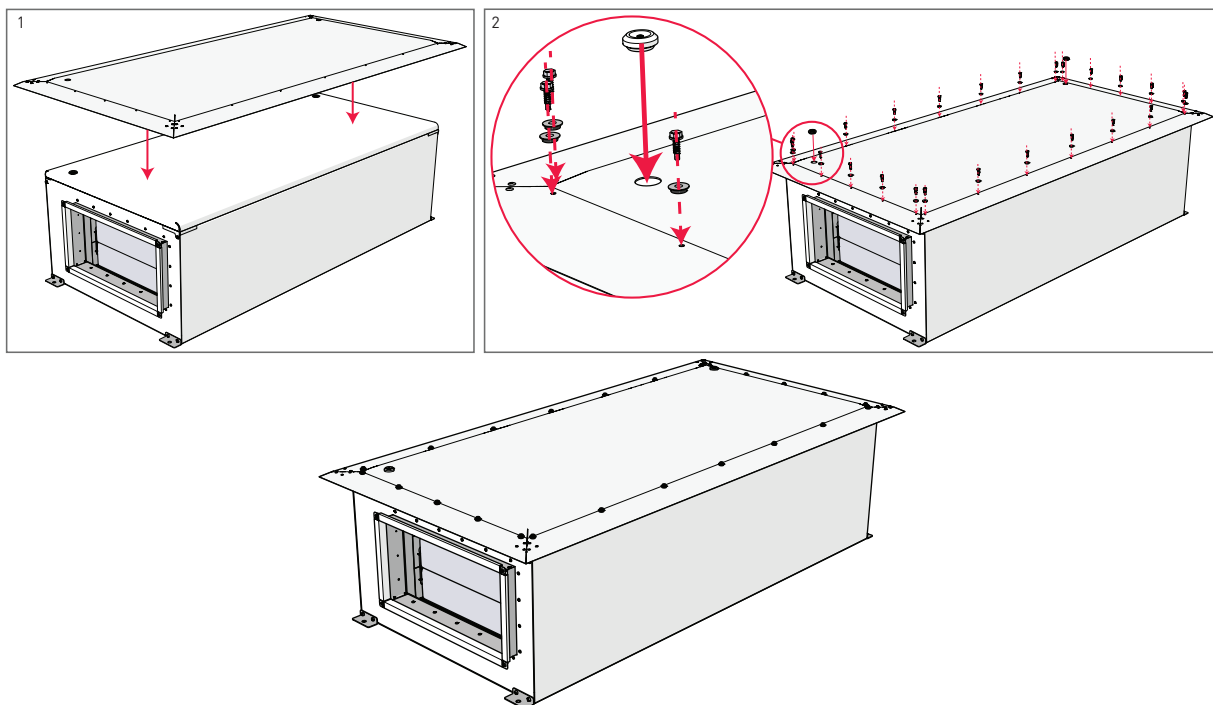


Figure 5.5.3.1. WPZ - 09 / 14 / 15 / 21 / 26 (1000-2000) Roof mounting

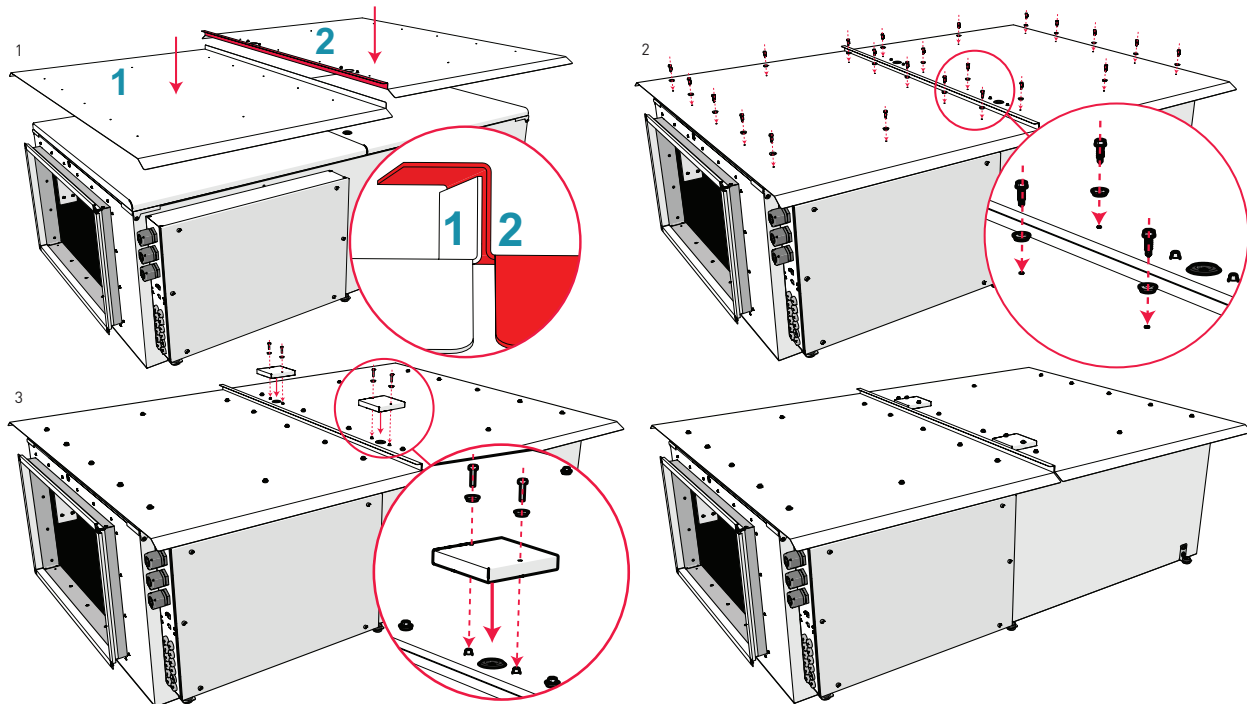


Figure 5.5.3.2. WPZ - 30 / 39 / 40 / 54 (3000-4000)

5.6. CONNECTION OF THE AIR DUCT

- The connected air ducts must not be bent and have separate fixing.
- Make sure that the fans can not be accessed through air duct heads. Otherwise, protective grid should be installed. You may choose the grid from the range of products provided in our website.
- Do not reduce the diameter of the piping near air inlet or exhaust ducts. If you want to reduce the airflow speed in the system, drop of pressure and noise level, you can increase the diameter.
- In order to reduce the level of the noise in the air supply system, install dampers (see the chapter on air supply system installation).
- In order to reduce air loss in the system, the air ducts and profile components should be of class C and higher. The catalogue on the above-mentioned items can be found in our website.
- External air and exhaust system piping should be isolated in order to prevent heat loss and condensation.
- Maintaining the distance of up to 8 meters between air intake and air exhaust ducts is recommended. Air supplying system should be installed away from potential air pollution sources.
- When installing air ducts next to the ventilation equipment, brackets must be used. They suppress vibration and assure secure installation of the various system parts. The necessary brackets can be found in our catalogue or website.
- Air ducts are often mistakenly connected in inappropriate location. The ventilation units bear the labels indicating the correct air duct connection layout. Before starting up the system, carefully check if all related works have been performed properly.



For flange diameters see chapter "DIMENSIONS AND WEIGHT".

5.7. CONNECTION OF THE UNIT TO ELECTRIC NETWORK

- Supply voltage to the unit must be connected by a qualified specialist following the manufacturer's instructions and applicable safety guidelines.
- The unit's power network voltage must correspond to electro technical specifications of the unit indicated in the technical decal.
- The unit's voltage, power and other technical specifications are provided in the unit's technical decal (on the unit casing). The unit must be connected to the voltage plug socket of the grounded power network in accordance with the applicable requirements.
- The unit must be earthed according to electrical equipment installation regulation.
- Using extension wires (cables) and power network plug socket distribution devices is not allowed.
- Prior to carrying out any ventilation unit installation and connection works (before the unit is commissioned), the unit must be disconnected from the power network.
- After installation of the ventilation unit, the power network plug socket must be accessible at any time. If the unit is equipped with circuit breaker, disconnection from the power network is performed through the two-pole or four-pole circuit breaker (by disconnecting phase poles and neutral).
- Before it is connected to the power network, the unit must be carefully checked for any damage (execution, control, and measurement nodes) made during transportation.
- The power cable can be replaced only by a qualified technician, having evaluated the rated power and current.



The manufacturer does not assume any liability for personal injuries and property damage due to non-conformance with the provided instructions.

5.8. START-UP RECOMMENDATIONS

5.8.1. SYSTEM PROTECTION

Units with integrated control board have integrated protection devices against short circuit. WPZ 400-2000 units have controller with F2 protection fuse of 250mA, 315mA or 350mA value. WPZ 3000-4000 units control board is equipped with additional protection devices:

WPZ	30ED / 39ED	40WD / 54WD
Q2 (F1)	B25	6,3A
Q3 (F2)	B16	1A
Q4 (F3)	B25	6,3A
Q5	B32	-
Q6	C10	-
Q7	C10	-

It is recommended to use protection device on units that are unequipped with internal power supply protection devices.

WPZ	9ED	14WD	15ED	21ED	26WD	30ED	39ED	40WD	54WD
Protection value	20 A	3 A	32 A	40 A	4 A	???	???	6 A	10 A

If additional accessories are used, external protection device value can be different.



To ensure safe maintenance of the unit, it is necessary to turn off main switch and/or external protection device.

5.8.2. PRE-STARTUP RECOMMENDATIONS OF THE UNIT (IN THE PRESENCE OF THE END-USER)

Prior to start-up, the system must be carefully cleaned. Check for the following:

- operation systems and unit elements as well as automation and automation devices were not damaged during installation,
- all electrical devices are connected to power supply and fit for service,
- all necessary automation elements are installed and connected to power supply and terminal blocks,
- cable connection to terminal blocks comply with the existing wiring diagrams,
- all electrical equipment protection components are properly connected (if they are additionally used),
- cables and wires correspond to all applicable safety and functional requirements, diameters, etc.,
- earthing and protection systems are properly installed,
- condition of all seals and sealing surfaces is proper.

6. MAINTENANCE

6.1. SAFETY INSTRUCTION



Unplug the unit from the mains before opening the door (disconnect the power plug from the outlet or in case an automatic circuit breaker installed, disconnect it as well. Make sure that it cannot be turned on by third parties) and wait until the fans completely stop (for about 2 min.).

6.2. GENERAL RECOMMENDATIONS FOR VENTILATION SYSTEM MAINTENANCE

In order to ensure proper functioning of the system, maintenance requirements and its periods should be observed. Otherwise, the warranty shall be void. Some recommendations are provided in the table below, but they are just advisory, as the need for system maintenance depends on the location of the unit installation, the pollution of atmosphere, population, working hours, etc.

COMPONENT	DURING START-UP	AT LEAST EVERY 6 MONTHS
Filters	Check the cleanliness of the filters	Replace filters every 3 to 4 months or according to the control device indications.
Fans	Check the connections and the direction of rotation	Check cleanliness. Clean, if necessary
		Make sure that the impellers are not unbalanced.
		Make sure that the impellers do not cause noise when rotated by hand.
		Make sure that the fastening screws are not loose and free of mechanical damage.
		Check electrical connections and make sure that these are secured properly and are free of signs of corrosion.
Control panel	Check the connections	Check the connections

Electric heater	Check the connections	Clean off dust, and check the electrical components and connections of the heater
Pressure sensor	Check electrical connections	Check the operation
Temperature sensor	Check electrical connections	Check the operation
Air supply and extract system	Check the connections	Clean
Air duct system	Check the tightness	Clean
Dampers, diffusers, grid	Check the tightness of connections	Clean
Switching unit (contactor)		Every 3 to 4 months, visually assess the functioning of the switching unit (contactor), i.e. make sure that its casing has no signs of melting or is not thermally damaged otherwise and does not produce any unusual sounds. All the contactors in the product or in its accessories must be checked.

6.3. COVER OPENING

Before opening the covers, first, unplug the unit from the mains, then wait for 2 minutes (until the fans completely stop).

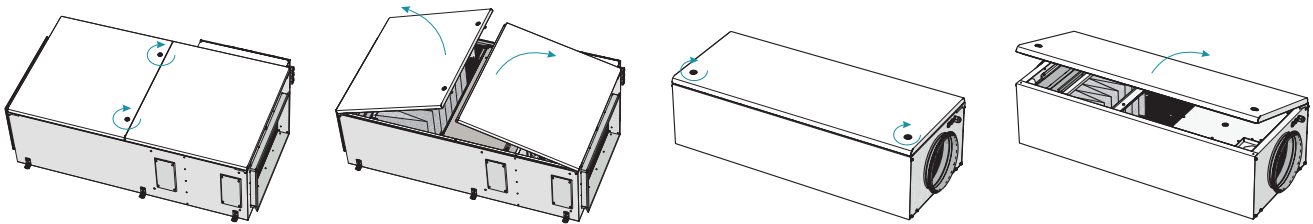


Figure 6.3.1. WPZ

6.4. FILTERS MAINTENANCE

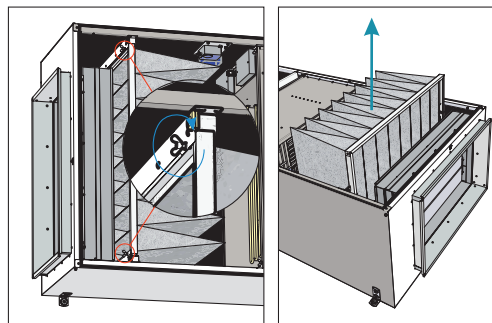


Figure 6.4.1. WPZ

In order to remove the filters, open unit door and take off the filters.

Dirt increases air resistance in the filter, therefore, lower amount of air is supplied into the premises. Arrows on the filters must comply with airflow direction.



After changing the filters, please reload the filter timer (if used). The instruction on reloading can be found in the control panel operation manual
Operation of the unit without filters is not allowed.



Change the filters every 3-4 months or according to the notification on the control device.

6.5. FANS MAINTENANCE

- Fan maintenance should be performed by experienced and trained staff only.
- The fan should be inspected and cleaned at least once per year.
- Prior to commencing any maintenance or repairs, make sure the fan is disconnected from the power source.
- Proceed to maintenance and repair after any fan rotation is stopped.
- Observe staff safety regulations during maintenance and repairs.
- The motor features a heavy-duty ball bearing design. The motor is completely sealed and grease-free.
- Detach the fan from the unit.
- The impeller should be particularly checked for built-up material or debris that may cause an imbalance. Excessive imbalance may lead to accelerated wear on motor bearings and vibration.
- Clean impeller and inside housing with mild detergent, water and damp, soft cloth.
- Do not use high-pressure cleaner, abrasives, sharp tools or caustic solvents that may scratch or damage the housing and impeller.

- Do not plunge the motor into any fluid while cleaning the impeller. Make sure the impeller's balance weights are not moved.
- Make sure the impeller is free of any obstacles.
- Install the fan back into the unit. Connect fan power and control signals.
- In case the fan after maintenance does not automatically start up or stop, contact the manufacturer. Malfunction of the fan can be identified by the pressure in the system (when pressure switches are connected). In case of any fault in the fan motor, a notice will appear on the control panel.



Prior to commencing any maintenance or repairs, make sure the unit is disconnected from the power source.

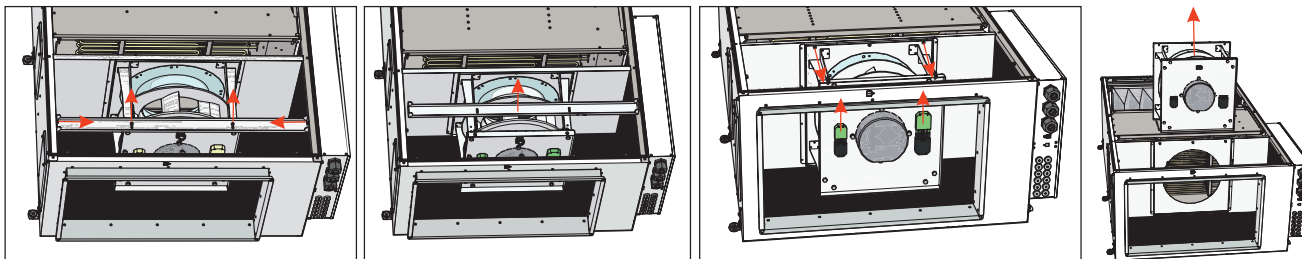


Figure 6.5.1. all WPZ (1000-4000)

6.6. HEATER MAINTENANCE

ELECTRICAL HEATER:

- In case manual protection is activated, check for a fault before pressing the RESET button. If the fault is identified after it has been rectified, press the RESET button using a screwdriver or a similar object.
- Electrical heater does not require additional servicing. The filters must be replaced as described above.
- Heaters are equipped with 2 thermal protection devices: an automatic self-resetting protection device that is activated at +50 °C, and a manually restored protection device that is activated at +100 °C.
- After an activation of the manually restored protection device, make sure the unit is disconnected from the power supply. Wait until all heating elements cool down and the fans completely stop. Having identified and rectified the failure, to start the unit, press the RESET button. The failure can be identified by a qualified technician only.
- For AmberAir Compact VEKA INT 400-700 EKO units remove control board cover, disconnect the electrical heater connector and remove the heater. For AmberAir Compact VEKA INT 1000-4000 EKO units disconnect the electrical heater connector and remove the heater.

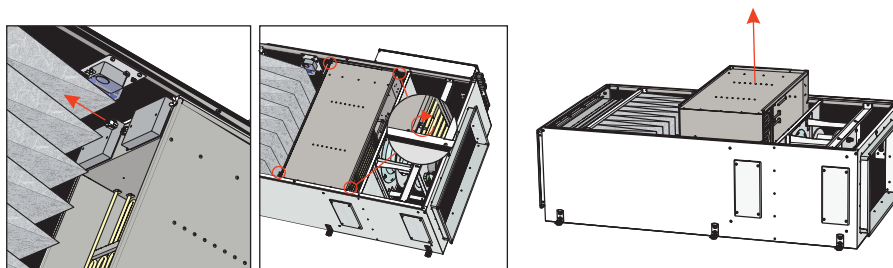


Figure 6.6.1. all WPZ (1000-4000)

WATER HEATER:

- Disconnect product unit from electric power source.
- Open the doors of the product.
- Drain the heating liquid from the system.
- Disconnect the heater from the system.
- Detach water thermostat sensor from the water heater.
- Unattach water heater temperature sensor from water heater.
- Remove 2 screws and remove the heater.

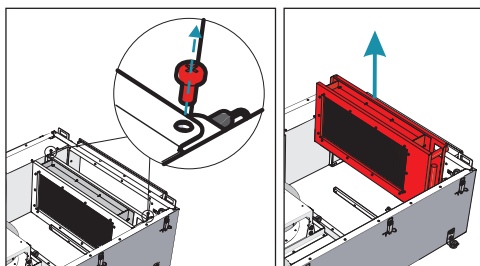


Figure 6.6.2. all WPZ (1000-4000)

6.7. CONTROL BOARD MAINTENANCE

- Disconnect product unit from electric power source.
- Open unit cover (except WPZ 3000-4000 units).
- Unscrew the bolts of the control box cover.
- Remove the control box cover.
- Disconnect all necessary cables, wires, and connectors from control board.
- Unscrew the control board mounting bolts and remove control board.
- To reassemble, follow all maintenance steps in reverse order. When re-connecting cables, wires, and connectors, make sure to match each wire and connector to corresponding connection terminal and connector.

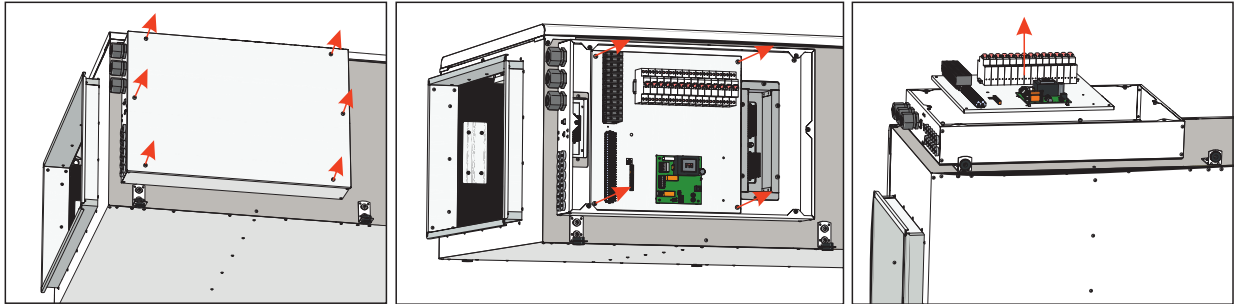


Figure 6.7.1. all WPZ (1000-4000)

6.8. AIR DAMPER MAINTENANCE

- Disconnect product unit from electric power source.
- Open the doors of the product.
- Detach air damper cable from the unit.
- Disconnect damper actuator.
- Remove the screws holding air damper.
- Remove air damper by sliding it upward.

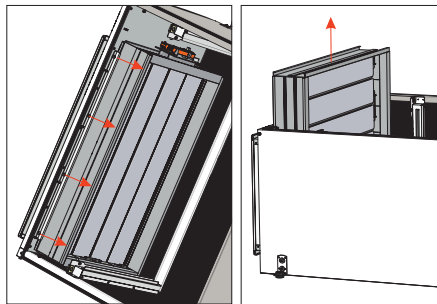


Figure 6.8.1. WPZ

7. CONTROL

7.1. DEVICE CONTROL

Ventilation unit equipped with EKO control board can be controlled with FLEX or Stouch remote controller.

7.2. DEVICE FUNCTIONS

EKO control board operation functions and control of the device depends on the following:

1. Selected control interface (remote control panel). The selected interface affects access to the information and settings, however, it does not affect the logic of control. Full access to the information and settings is available on FLEX.
2. Unit configuration (internal/external components, sensors and control board settings or controller type).



Refer to the instruction manual of the existing control device for unit control instructions.

8. CONNECTION OF ACCESSORIES

8.1. FIRE PROTECTION SIGNAL INPUT (FIRE PROTECTION INPUT (NC))

Fire protection signal input must be normally closed for WPZ, until the fire protection system is not connected a jumper is installed in the factory.

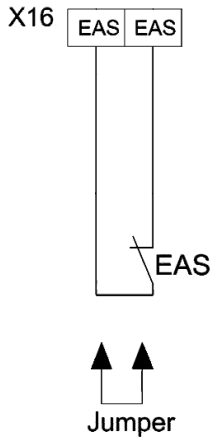


Figure 8.1.1. WPZ - 9ED / 14WD / 15ED / 21ED / 26WD

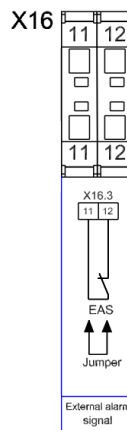


Figure 8.1.2. WPZ - 30ED / 39ED with electrical heater

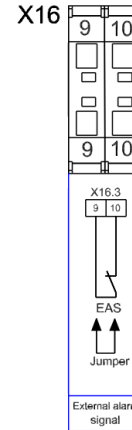


Figure 8.1.3. WPZ - 40WD / 54WD with water heater

8.2. CONNECTION OF AIR DAMPERS

WPZ products have integrated supply air dampers. WPZ - 15ED / 21ED / 26WD / 30ED / 39ED / 40WD / 54WD (2000-4000) units additionally can control external extract air damper by Open/Close actuators.

Wiring diagram for WPZ 15ED / 21ED / 26WD / 30ED / 39ED / 40WD / 54WD (2000-4000)

M3 - Open/Close damper actuator. Upon activation of control output, the damper opens, upon deactivation of control output, the damper closes.

Control output:

WPZ - 15ED / 21ED / 26W - X16:3;

WPZ - 30ED / 39ED - X16:26;

WPZ - 40WD / 54WD - X16:24

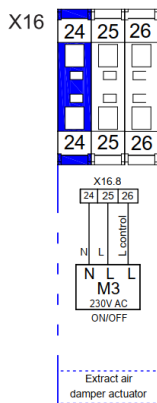


Figure 8.2.1. WPZ - 30ED / 39ED

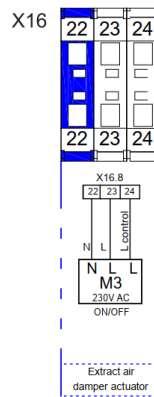
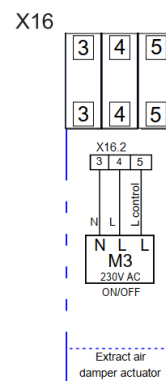
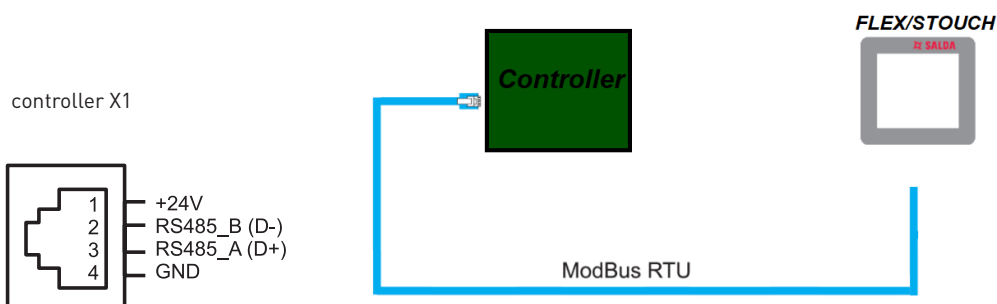


Figure 8.2.2. WPZ - 40WD / 54WD



WPZ - 15ED / 21ED / 26W

8.3. CONNECTION OF REMOTE CONTROL PANEL



8.4. WATER HEATER CIRCULATION PUMP AND VALVE ACTUATOR

Water heater circulation pump and valve actuator can only be connected to the units that are designed to operate with water heater.

Wiring diagram

Valve actuator is controlled by 0-10 VDC signal. Circulation pump is controlled by On/Off signal.

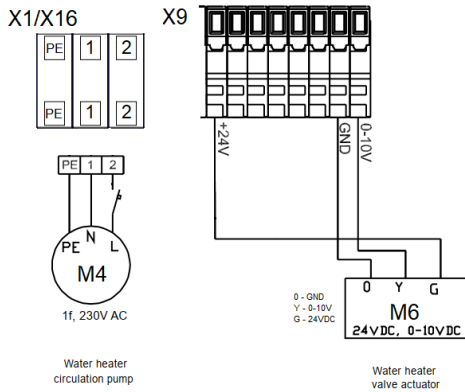


Figure 8.4.1. WPZ - 14WD / 26WD (1000-2000 W)

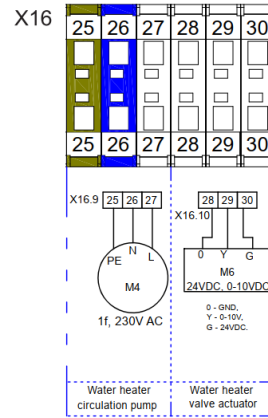
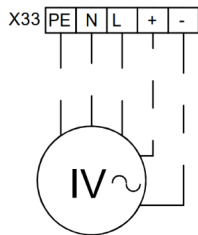


Figure 8.4.2. WPZ - 40WD / 54WD (3000-4000 W)

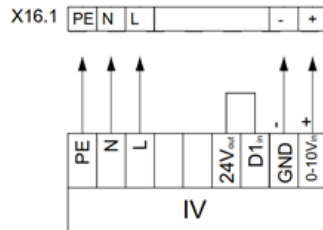
8.5. EXTRACT AIR FAN

WPZ units are able to control external extract air fan. Fan should be 230VAC, EC type with 0-10VDC control.



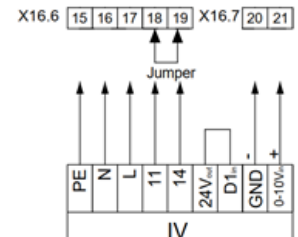
Extract air fan (max. 10A)

Figure 8.5.1. WPZ 9ED / 14WD (400-1000)



Extract air fan (max. 6A)

Figure 8.5.2. WPZ - 15ED / 21ED / 26WD (2000)



Extract air fan (max. 6A)

Figure 8.5.3. WPZ - 30ED / 39ED / 40WD / 54WD (3000-4000)

8.6. EXTRACT AIR FILTER PRESSURE SWITCH

WPZ WPZ - 30ED / 39ED / 40WD / 54WD (3000-4000) units have designated input for external extract air filter differential pressure switch – type NC.

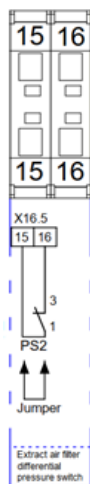


Figure 8.6.1. WPZ - 30ED / 39ED (3000-4000 E)

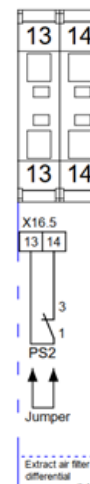


Figure 8.6.2. WPZ - 40WD / 54WD (3000-4000 W)

8.7. RECOMMENDED SCHEME FOR CONNECTION OF INTERNAL AND EXTERNAL COMPONENTS

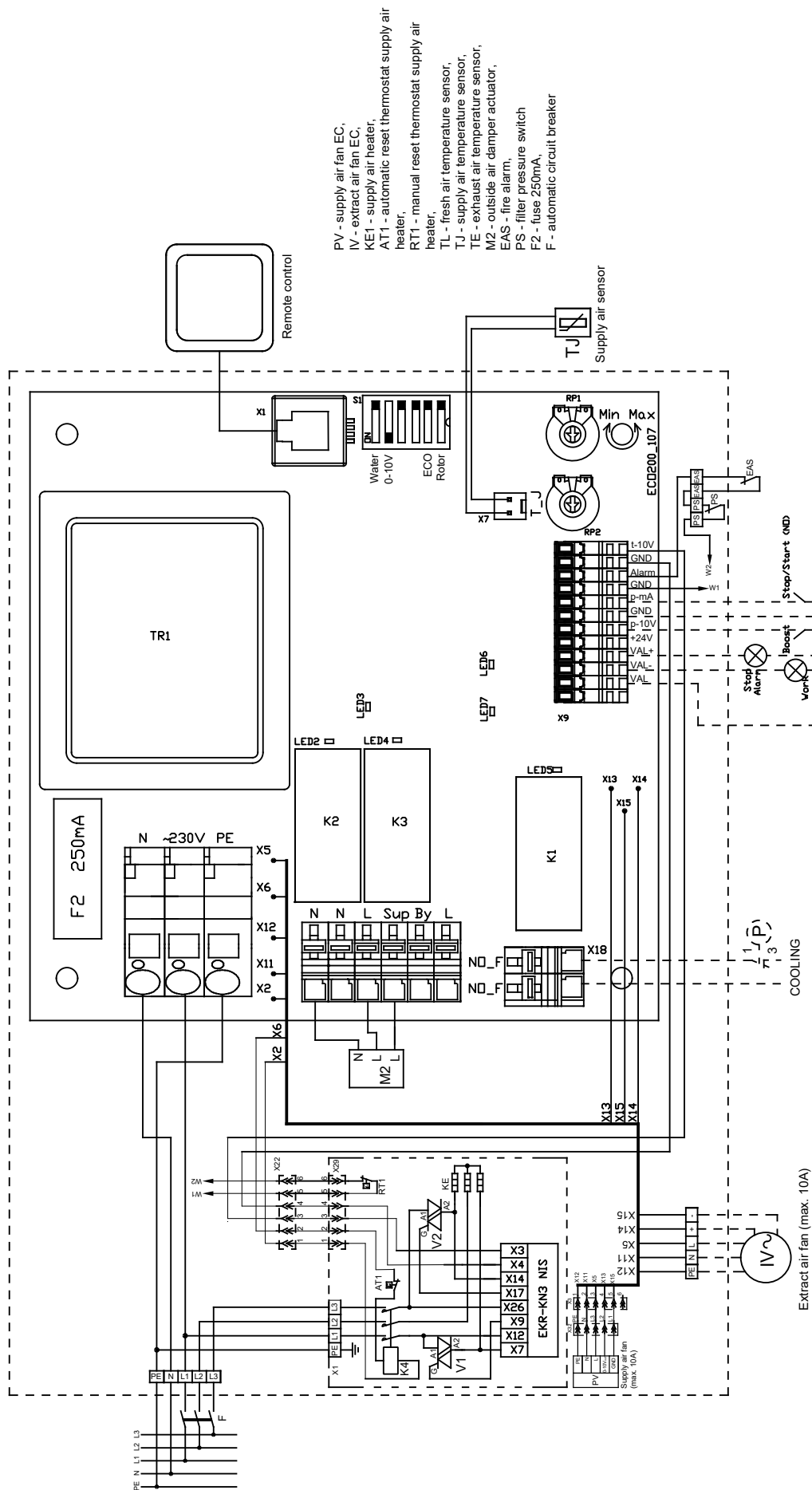
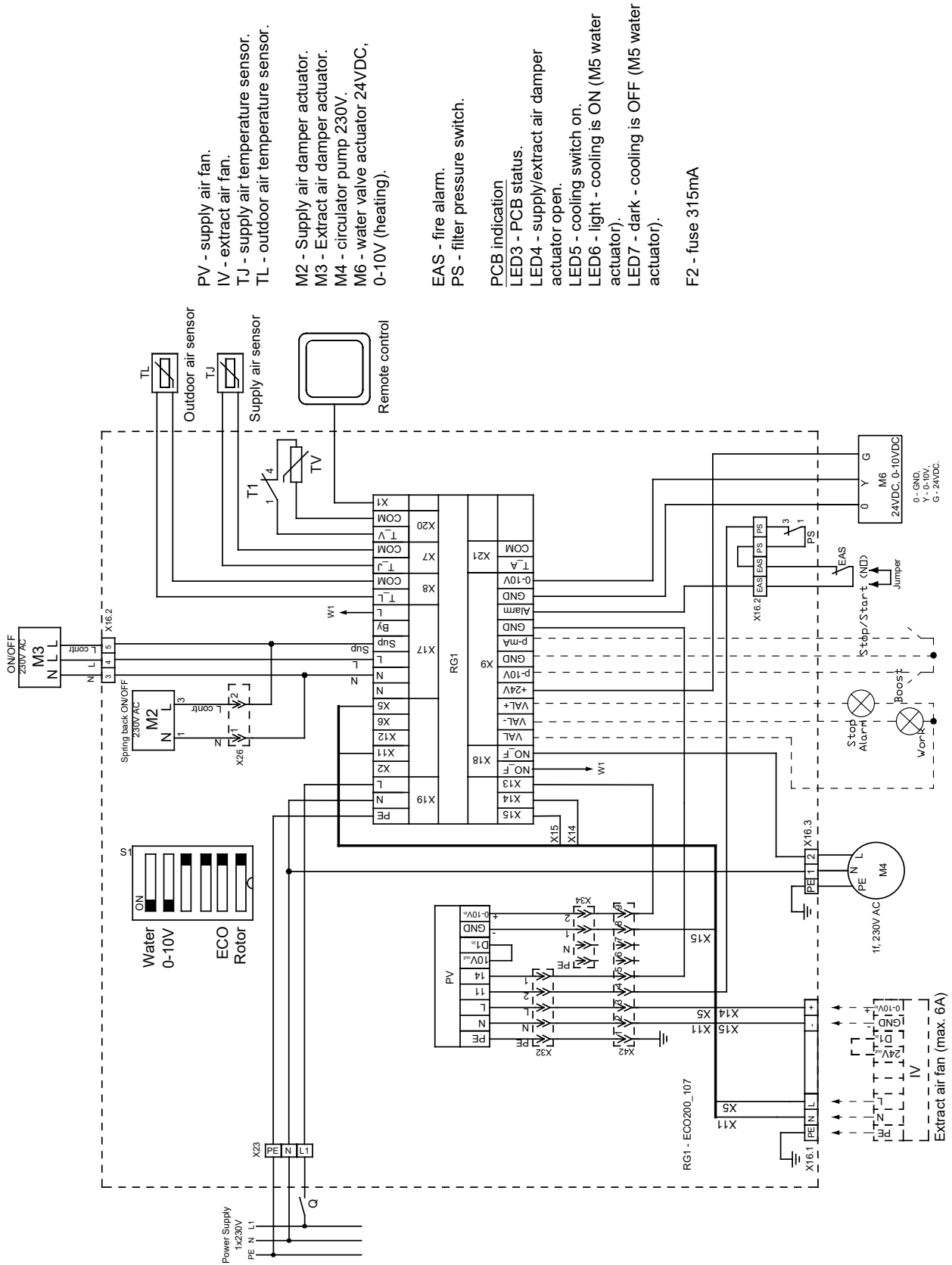


Figure 8.7.1. WPZ-9ED (1000-9.0; 12)



- PV - supply air fan.
- IV - extract air fan.
- TJ - supply air temperature sensor.
- TL - outdoor air temperature sensor.
- M2 - Supply air damper actuator.
- M3 - Extract air damper actuator.
- M4 - circulator pump 230V.
- M6 - water valve actuator 24VDC, 0-10V (heating).
- EAS - fire alarm.
- PS - filter pressure switch.
- PCB indication
- LED3 - PCB status.
- LED4 - supply/extract air damper actuator open.
- LED5 - cooling switch on.
- LED6 - light - cooling is ON (M5 water actuator).
- LED7 - dark - cooling is OFF (M5 water actuator).
- F2 - fuse 315mA

Figure 8.7.4. WPZ-26.9W [2000-26.9W]

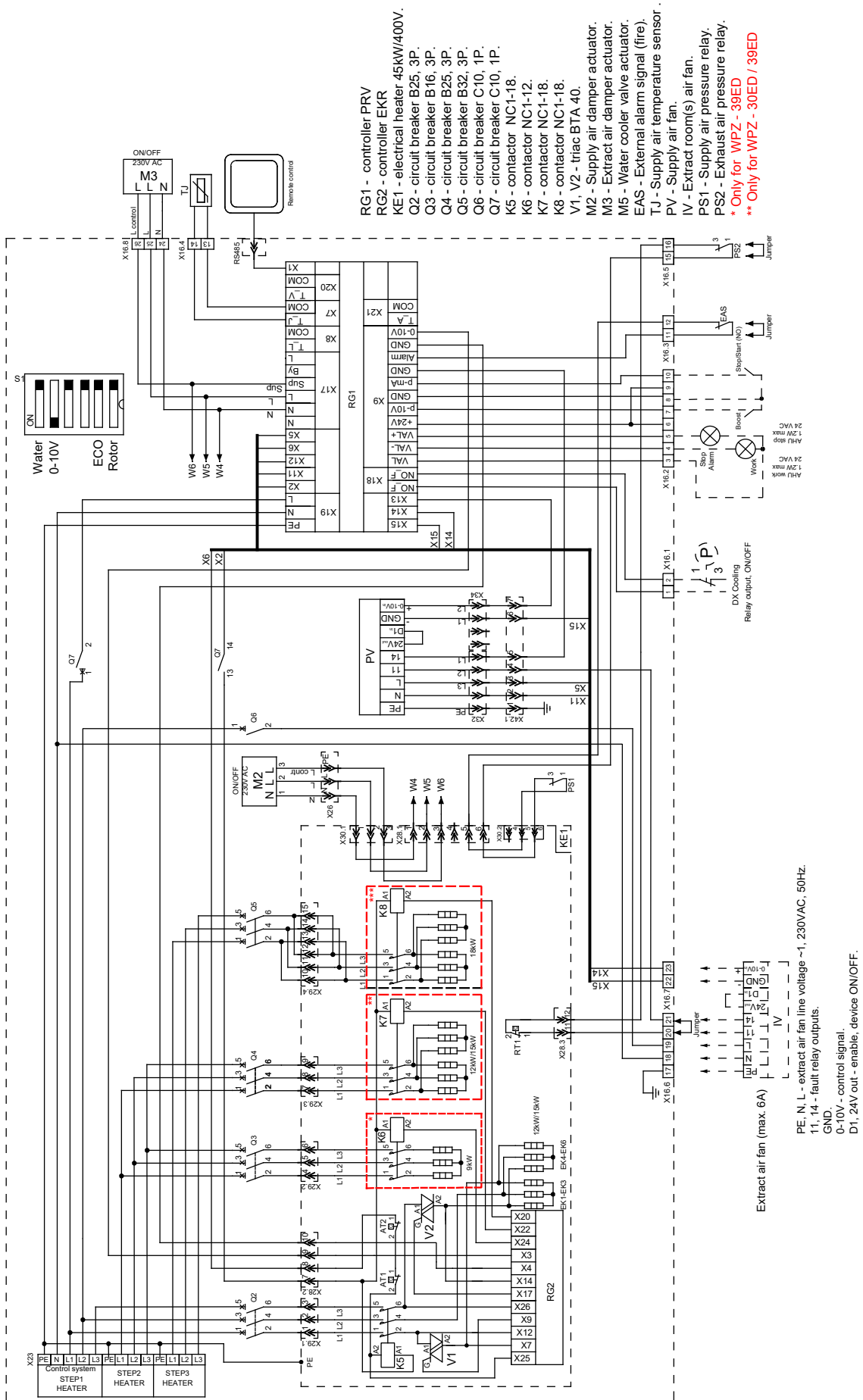
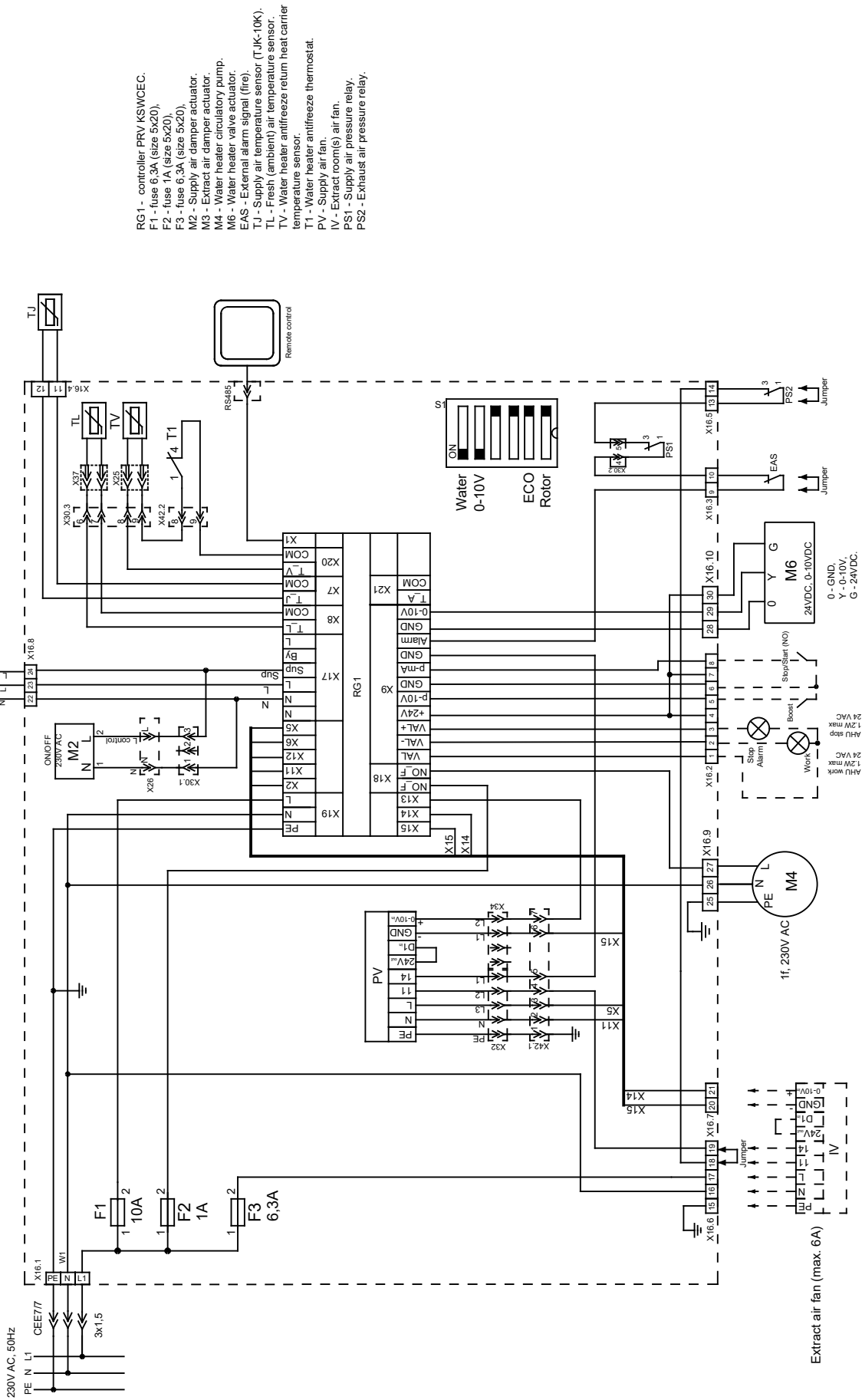


Figure 8.7.5. WPZ-30ED / 39ED (3000-4000 with electrical heater)



- RG1 - controller PRV KSWCEC.
- F1 - fuse 6.3A (size 5x20).
- F2 - fuse 1A (size 5x20).
- F3 - fuse 6.3A (size 5x20).
- M2 - Supply air damper actuator.
- M3 - Extract air damper actuator.
- M4 - Water heater circulatory pump.
- M6 - Water heater valve actuator.
- EAS - External alarm signal (fire).
- T1 - Supply air temperature sensor (TJK-10K).
- T2 - Fresh (ambient) air temperature sensor.
- T3 - Water heater antifreeze return heat carrier temperature sensor.
- T4 - Water heater antifreeze thermostat.
- PV - Supply air fan.
- IV - Extract room(s) air fan.
- PS1 - Supply air pressure relay.
- PS2 - Exhaust air pressure relay.

Figure 8.7.6. WPZ-40WD / 54WD (3000-4000 with water heater)

PE, N, L - extract air fan line voltage ~1, 230VAC, 50Hz
 11, 14 - fault relay outputs.
 GND.
 0-10V - control signal.
 D1, 24V out - enable, device ON/OFF.

9. POSSIBLE FAULTS AND TROUBLESHOOTING

FAILURE	CAUSE	EXPLANATION / CORRECTIVE ACTIONS
Unit is not operating	No supply voltage	Check whether the device is connected to the power network
	Protection device is off or a current leakage relay is active (if installed by the installer)	Switch on only if the unit condition has been evaluated by a qualified electrician. If the system failed, the failure MUST BE rectified prior to switching it on.
Air supply heater or pre-heater is not operating or malfunctioning (if installed)	Too low air flow in air ducts activates automatic protection	Check if air filters are not clogged Check if fans are rotating
	Manual protection is activated	Possible heater or unit failure. MUST contact the servicing staff for failure detection and its elimination.
Too low air flow at rated fan speed	Clogged supply and/or extract air filter(s)	Filter replacement needed
Filters are clogged and no message is shown on the remote control	Wrong time in filter timers or their switch is broken, or its pressure is set improperly.	Shorten filter timer time to the message of clogged filters or replace the pressure switch of the filters, or set their proper pressure.

10. ECODESIGN DATA TABLE

WPZ		WPZ-9ED	WPZ-14WD	WPZ-15ED	WPZ-26WD	WPZ-30ED	WPZ-40WD	WPZ-54W
				/ 21ED		/ 39ED		
Topology		Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional	
Type of drive (fan)		Variable	Variable	Variable	Variable	Variable	Variable	
Nominal NRVU flow rate	[m ³ /s]	0,21	0,21	0,37	0,37	0,68	0,68	0,89
Effective electric power input	[W]	96,1	110	242	281	495	509	651
SFPint	[W/(m ³ /s)]	158	230	75,3	51,7	139,2	135,5	181,9
Maximum internal SFP	[W/(m ³ /s)]	230	230	230	230	230	230	230
Face velocity	[m/s]	1,3	1,3	1,4	1,4	1,6	1,6	2,1
Nominal external pressure	[Pa]	150	150	250	250	250	250	250
Internal pressure drop of ventilation components	[Pa]	92,7	153	34,7	25,7	67,8	67,8	113
Static efficiency of fans used in accordance with Regulation No 327/2011	[%]	58,7	66,3	46	49,8	48,8	50	61,9
Declared maximum external leakage rates (CAL(R) @ +400 Pa)	[%]	4	4	4	4	4	4	4
Declared maximum external leakage rates (CAL(R) @ -400 Pa)	[%]	4	4	4	4	4	4	4
Filter class		C	C	C	C	C	C	C
Visual filter warning		Pressure device	Pressure device	Pressure device	Pressure device	Pressure device	Pressure device	Pressure device
Casing sound power level	dB(A)	54,3	54,8	67,8	58,2	61,8	62	62,2
ErP Compliance		2018	-	2018	2018	2018	2018	2018

11. COMMISSIONING PROTOCOL

Order data

Item no./serial no./fan designation:

Order no:

Plant designation:

Installation company

Company:

Contact person:

Company address:

Tel. no.:

Email:

Operator (installation site)

Company:

Contact person:

Company address:

Tel. no.:

Email:

Installation date:

Commissioning date:

Device type/designation:

Documentation

Yes

No

Installation, operating and maintenance instructions handed over

Air volume measurement protocol available

Visual inspection

Damage to the housing

Installation site according to device specification

Suitable weather protection for outdoor installation

Electrical installation completed

Condensate connection frost-free and correctly mounted

Assembly carried out according to assembly instructions

Pumped medium Conditions according to permissible device specification

Insulation work carried out on the device and air ducts

Filter state at commissioning

as good as new slightly soiled replacement required not present

Fire protection requirements met

Butterfly valves mounted in fresh air and exhaust air

Electrical connection	
Voltage [V]	Number of phases [pieces]:
Frequency [Hz]	Backup fuse [A]:

Function control	Yes	No
Fan impeller can be easily turned by hand	<input type="checkbox"/>	<input type="checkbox"/>
Vibration / grinding noise detected	<input type="checkbox"/>	<input type="checkbox"/>
Device tested at nominal volume flow	<input type="checkbox"/>	<input type="checkbox"/>
Control valves heater checked	<input type="checkbox"/>	<input type="checkbox"/>
Damper actuators outside and exhaust air tested	<input type="checkbox"/>	<input type="checkbox"/>
Functional check of the additional installation performed		
Preheating coil	<input type="checkbox"/>	<input type="checkbox"/>
Reheating coil	<input type="checkbox"/>	<input type="checkbox"/>
Fire dampers checked	<input type="checkbox"/>	<input type="checkbox"/>
Operation via:	no control panel available	<input type="checkbox"/>
	Control panel	<input type="checkbox"/>
	Control via external building control system	<input type="checkbox"/>

Briefing	Yes	No
Device / system function explained and instructed	<input type="checkbox"/>	<input type="checkbox"/>
Control unit explained and instructed	<input type="checkbox"/>	<input type="checkbox"/>
Filter change explained and instructed	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance activities explained and instructed	<input type="checkbox"/>	<input type="checkbox"/>

Defects / changes / special features / remarks:

Commissioning may only take place if all tests are positive!

Date, stamp, signature installer

Date, stamp, signature operator

12. MAINTENANCE BOOK

Plant designation:

⇒ Visual inspection for defects and contamination regularly

CONSTRUCTION PART	DURING COMMISSIONING	AT LEAST EVERY 6 MONTHS
Filter	Check filter cleanliness	Replace the filters every 3 to 4 months or as specified by the control panel.
Fans	Check connections and the direction of rotation	Check cleanliness and clean if necessary. Ensure that impellers are not out of balance. Ensure that impellers do not make noise when turned by hand. Ensure that mounting bolts are tight and undamaged. Check electrical connections. Ensure that they are properly secured and show no signs of corrosion
Plate heat exchanger	Check cleanliness	Check cleanliness and clean if necessary.
Control board	Check connections	Check connections
Electric heating coil	Check connections	Remove dust, check electrical components and connections of the heating coil
Pressure transducer	Check electrical connections	Check function
Temperature sensor	Check electrical connections	Check function
Supply and exhaust air system	Check connections	Clean
Air duct system	Check tightness	Clean
Dampers, air diffusers, air grilles	Check tightness of the connections	Clean
Condensate outlet unit	Check the installation of the condensate drain, make sure that water drains well from condensate pan.	Clean

Please note!

If cleaning/maintenance intervals are not observed, warranty and guarantee claims can be rejected by the manufacturer!

Bearing damage caused by imbalance of the impeller due to heavy soiling or improper cleaning is excluded from warranty/guarantee!

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