



TVEC Compact

Indoor installation only

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1. RECOMMENDATIONS AND SAFETY INSTRUCTIONS

Read the manual carefully before starting to install the equipment and keep it in good condition near the equipment throughout its lifetime. This manual, supplied with the TVEC Compact, is complemented by the Smart Evolution control manual and by individual technical data sheets for each TVEC Compact.

1.1. Precautions for installation and maintenance

- TVEC Compact can only be installed indoors. Not possible to install it outdoors.
- Installing a TVEC Compact can be risky due to live components or moving mechanical parts. This equipment must be installed, commissioned and repaired by qualified, trained personnel, in compliance with the standards in force and best practices
- Any servicing or maintenance operation that necessitates opening the panels or removing components from the TVEC Compact must be carried out by a qualified professional
- Electrical connections must be made by a qualified professional according to the rules of French standard NF C 15-100
- Avoid contact with energized electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product
- Make sure that the TVEC Compact cannot start running accidentally
- If one of the power supply cords is damaged, it must be replaced by the professional who installed the product or similarly qualified persons to avoid danger
- Panels should never be opened unless the fan is switched off and completely stopped
- During installation and maintenance of the TVEC Compact, do not to approach ignition sources close to the filtration sections as the material used in filters is flammable
- Should the motor fail (signal fault in the motor's built-in circuit, phase breakdown, motor blocked, short circuit at the earth or internal short circuit, intermediate and network under-voltage or over-voltage, peak current fault), an alarm triggers stopping the TVEC Compact. Switch off the power supply (circuit breaker on electrical switchboard), check if nothing is hindering the operation of the TVEC Compact (for example, blocking, rubbing, fouling of the wheel, abnormal noise, etc.)
- Only use genuine replacement parts supplied by the manufacturer
- For TVEC Compact fitted with an electrical heating coil: where there are multiple failures of the electrical coil control if the air supply compartment overheats a thermostat with manual reset will activate stopping the electrical coil
- The equipment must not be modified in any way to avoid invalidating the warranty
- Service the equipment regularly to ensure its smooth operation
- Before starting up the TVEC Compact, check if all the elements/equipment are correctly installed
- Conditions of storage and use:
 - Storage temperature/relative humidity: -25°C - +50°C/ 10 – 95 %RH (without condensation).
 - Operating temperature/relative humidity: -10°C - +40°C/ 10 – 95 %RH (without condensation).
 - HMI ambient temperature/relative humidity: 0°C - +50°C/ 10 – 95 %RH (without condensation).

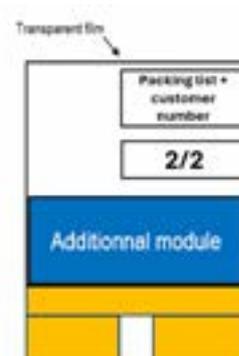
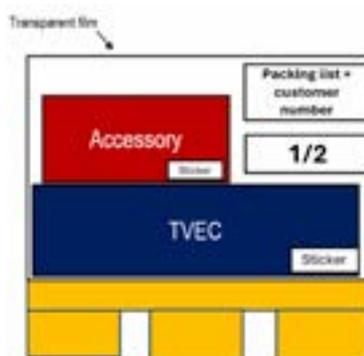
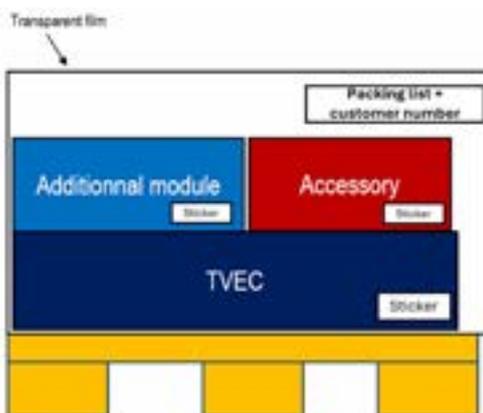
1.2. Delivery and handling precautions

The TVEC Compact are delivered properly packaged and labelled, usually on a pallet. Check if the TVEC Compact and its components have not been damaged during transport. If it is not possible to install the TVEC Compact at the time of delivery and the TVEC Compact has to be stored, take the following precautions to prevent parts from being damaged by water, dirt or foreign bodies.

- After receiving the goods, remove all plastic film and tape to prevent condensation from forming
- Ensure all accesses are properly closed
- Store the TVEC Compact and accessories in a dry area, preferably protected from the elements
- Place the TVEC Compact on a completely flat surface, free from humidity
- Cover the entire TVEC Compact and accessories with tarpaulins. Do not use plastic film
- Openings should be covered, preferably with cardboard
- If the TVEC Compact has been stored for longer than 12 months, make sure that the fan bearings are working properly by checking if there is free movement in the rotor

How the product is delivered if all the components FIT on one pallet:

How the product is delivered if all the components DO NOT FIT on one pallet:

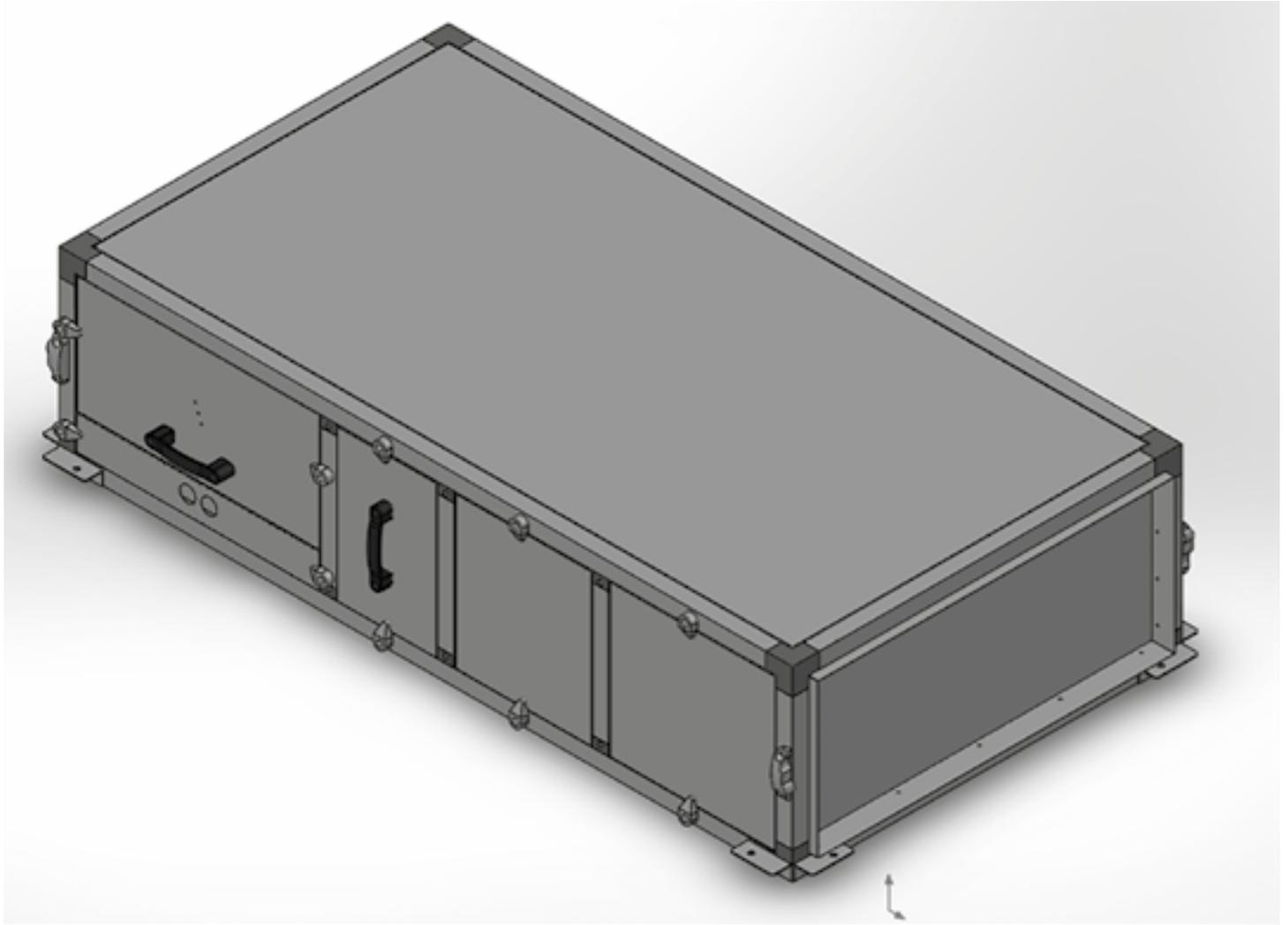


2. INSTALLATION

2.1. General information



CAUTION: the purpose of this document is to guide the installation of the TVEC Compact. For a fully compliant installation, refer to the legislation in force in the country of installation.



2.2. Transport on site

The TVEC Compact is packed in plastic film, protected with cardboard corners on the bottom and on top of the TVEC Compact. All accessories ordered with the TVEC Compact are supplied unfitted. The products are loaded onto pallets and secured to them using bolts and protective film.

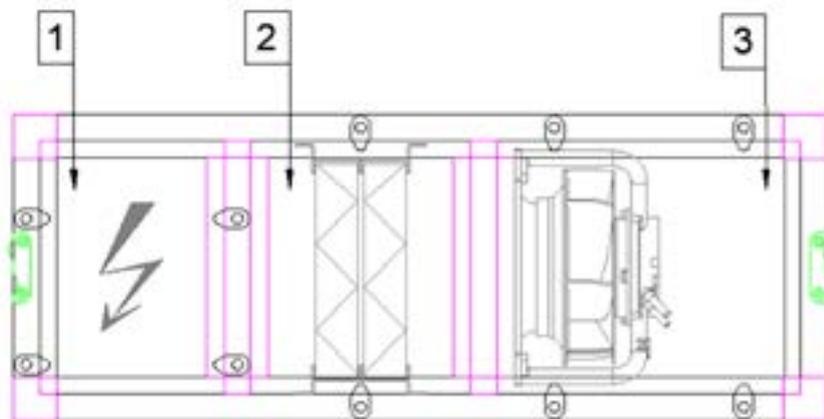
Before moving products, make sure that the means of transport used has an adequate load capacity. Handling should be done using a forklift or a pallet truck in the case of smaller TVEC Compact units.

2.3. Parts supplied with the TVEC Compact

The TVEC Compact has different possible configurations, all accessible on each size:

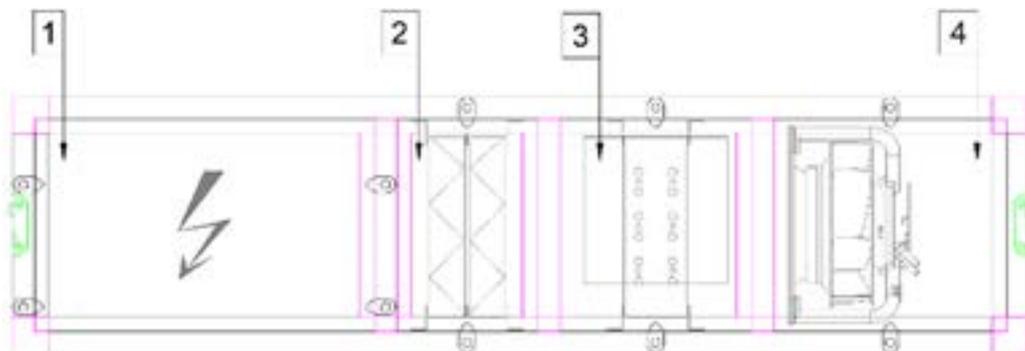
Unit with and without integrated coil

TVEC Compact without option (no coil, no heater)



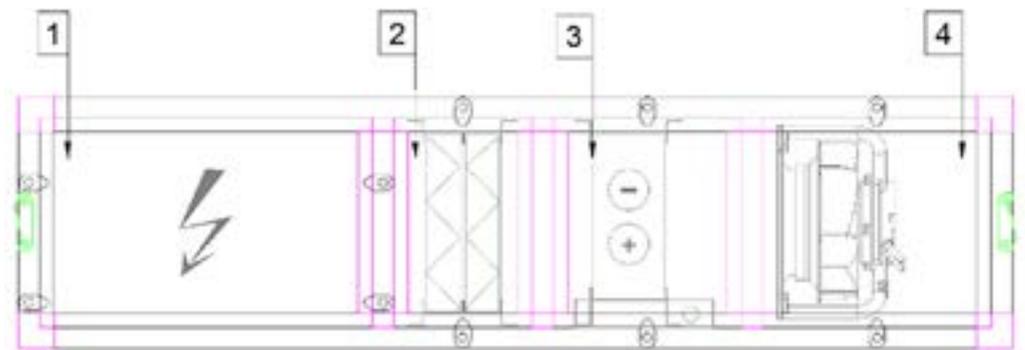
Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Fan

TVEC Compact with electrical post heater integrated



Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Electric heater
4	Fan

TVEC Compact with hydraulic coil integrated



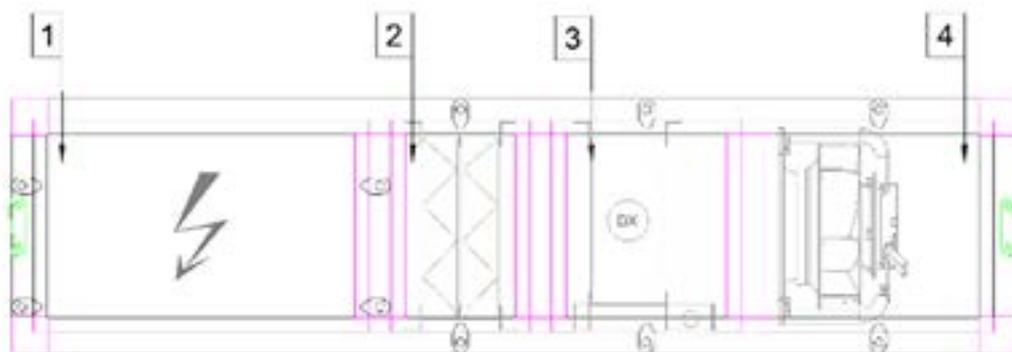
Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Hydraulic coil
4	Fan

If the TVEC Compact is ordered with an integrated change-over water coil, it must be equipped on site by the customer with a 3-ways water valve and an electrical actuator (0-10V command type, power supply 24V) sold as accessories separately (note that if you chose the article 3 ways valve in AlDes, it come with the associated actuator 0-10V that as to be installed and wired on site).

Modèle	Vanne 3 voies	Servomoteur	Code article
TVEC Compact 500	VFMD 315 2.5	SE4M24M30/VFMD	11060966
TVEC Compact 1000	VFMD 315 2.5	SE4M24M30/VFMD	11060967
TVEC Compact 2000	VFMD 332 16	SE4M24M30/VFMD	11060968
TVEC Compact 3000	VFMD 332 16	SE4M24M30/VFMD	11060969
TVEC Compact 5000	VFMD 340 25	SE4M24M30/VFMD	11060970
TVEC Compact 8000	VFMD 340 25	SE4M24M30/VFMD	11060971



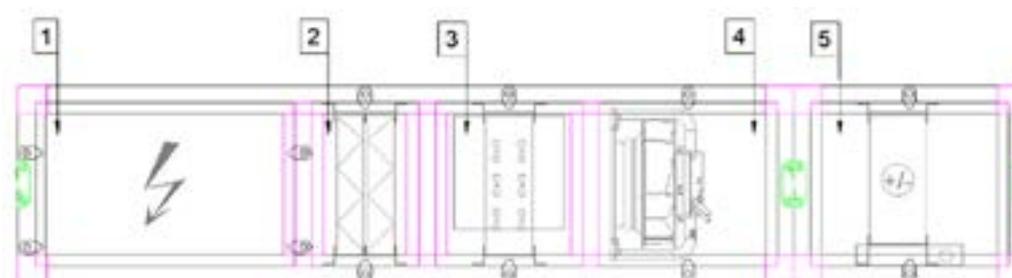
TVEC Compact with Direct expansion refrigerant (DX)



Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Direct expansion refrigerant (dx) coil
4	Fan

For this specific version, there is no additional accessory delivered with the unit. Unit in combination with external module.

TVEC Compact with additional external change-over coil (to be installed on site, delivered separately)

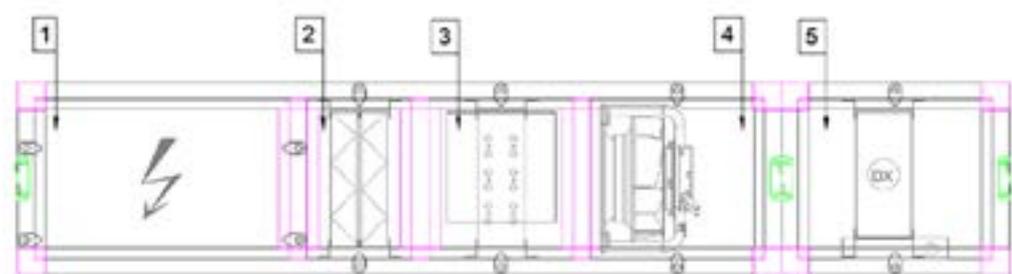


Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Electric heater
4	Fan
5	Change over coil



If the TVEC Compact is ordered with an additional change-over water coil, it must be equipped on site by the customer with a 3-ways water valve and an electrical actuator (0-10V command type, power supply 24V) sold as accessories separately.

TVEC Compact with additional external DX coil



Legend	
Reference	Description
1	Electrical cabinet
2	Filter (2 stages possibles)
3	Electric heater
4	Fan
5	Direct expansion refrigerant (dx) coil

For this specific version, there is no additional accessory delivered with the unit. Additional combinations are possible with recirculation session.

It is possible to take the unit work as the master (Extraction unit) slave (supplier unit).

Systematically, in every version of TVEC Compact with or without coil, the main prefilter is delivered with the unit.

All versions of TVEC compact are delivered with a control system which is already mounted, programmed in factory.

It's only necessary to care about the setting on site for the start up.

In every TVEC Compact, a plastic bag is placed on the supply air fan casing. It contains the HMI 10m cable to wire on site the remote HMI that is also delivered in standard with each TVEC unit.



Electrical HMI



Fixation brackets,
10 m cable

2.3.1. Remote Display (HMI) – Installation Information



Supplied with the unit:

- The remote HMI is supplied as standard with all versions of the TVEC Compact (delivered in cardbox put inside the unit casing).
- It is delivered in a card box inside the electrical cabinet. The cable will also be inside the electrical cabinet.

Connection terminals:

- The HMI is identified in the wiring diagram as «Remote Display».
- It must be connected to the CANBUS communication terminals on the c-pro 3 OEM controller.
 - C- and C+
 - APS terminals → 12V, GND

Cable type:

- Use:
 - A shielded twisted-pair cable for MODBUS signals (A/B)
 - LIYCY 4x1mm cable (with mesh/shield)

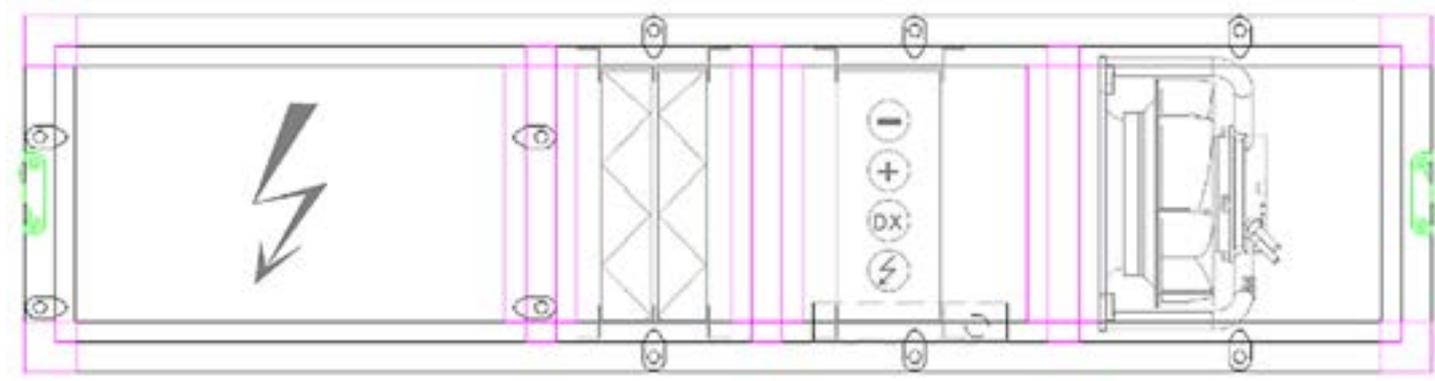
Additional wiring recommendations in case of BMS (building management system) control:

TVEC Compact can be monitored and controlled using a building supervisor or BMS. Communication protocol allowed is the Modbus RTU (RS485 type)

Use:

- Connect the MODBUS communication lines (A, B, and GND) to the matching controller terminals.
- Keep communication lines away from power cables to reduce electrical noise.
To get more information please refer to the control user guide
See Appendix: Electrical Wiring Diagram for terminal reference and physical layout
All these components must be mounted by the installer and installed on site. In addition, the wiring diagram is placed inside the electrical panel cover.

2.3.2. Global internal arrangement



2.4. Installation of the TVEC Compact

2.4.1. General information

The TVEC Compact can be installed under the ceiling, directly into the false ceiling using the fixations devices delivered on the TVEC Compact for all models or installed on the floor. Each model of TVEC comes with at least 4 squares devices already mounted in factory. It allows suspending mounting under ceiling.

After fixing the TVEC Compact in the correct position (take care of the sense of the air):

- carry out the connection to the ducting,
- connect it to the power supply network via the terminal boxes
- fix the condensate drain pipe to an appropriate pump or siphon (accessories that are not provided with the unit) when the unit is configured with a DX or hydraulic reversible coil.

When installing the TVEC Compact and connecting ducts and electric cables, make sure not to obstruct the access points so that the internal functional components can be extracted with ease.



CAUTION: Install the TVEC Compact through appropriate means (weight up to 220 kg) in order to avoid risks during the load handling procedures. Do not stand under the TVEC Compact until it is completely attached to the ceiling. During installation you may need to work at heights over 2m. Therefore, evaluate the risks of falling, inert suspension or generic injury and take the necessary precautions.

2.4.2. Installation conditions

Indoor installation only for any configuration of TVEC compact:

- Storage temperature/relative humidity: -25°C - +50°C/ 10 – 95 %RH (without condensation).
- Operating temperature/relative humidity: -10°C - +40°C/ 10 – 95 %RH (without condensation).
- HMI ambient temperature/relative humidity: 0°C - +50°C/ 10 – 95 %RH (without condensation).
- Electrical cabinet is IP54

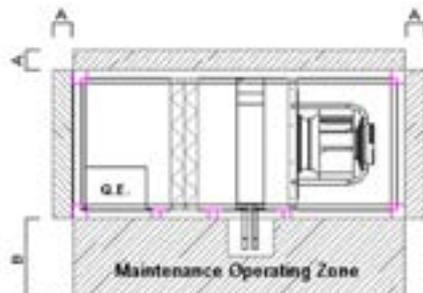
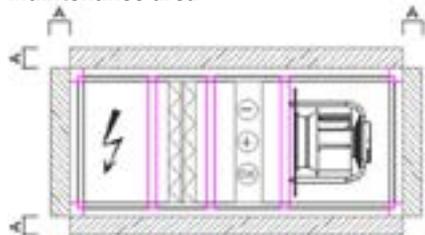
Outdoor installation is strictly prohibited for TVEC Compact

- Do not install near any of the following: sources of heat, steam, flammable or explosive liquids, etc
- Do not touch the device with wet or damp hands or feet

To consider:

- Use the device only for the use for which it was built. The manufacturer cannot be held responsible for any damage caused by improper or incorrect use
- Consider an area where the air flow and noise of the TVEC Compact don't disturb the neighbors
- Minimum space required for the maintenance (as defined below)
- A position that does not block passageways or entrances
- Check if the TVEC Compact is levelled
- There is a specific height to set in order to let the water drain evacuate correctly by the siphon
- Drain water can also be evacuated by a condensate pump (not provided)

Maintenance area



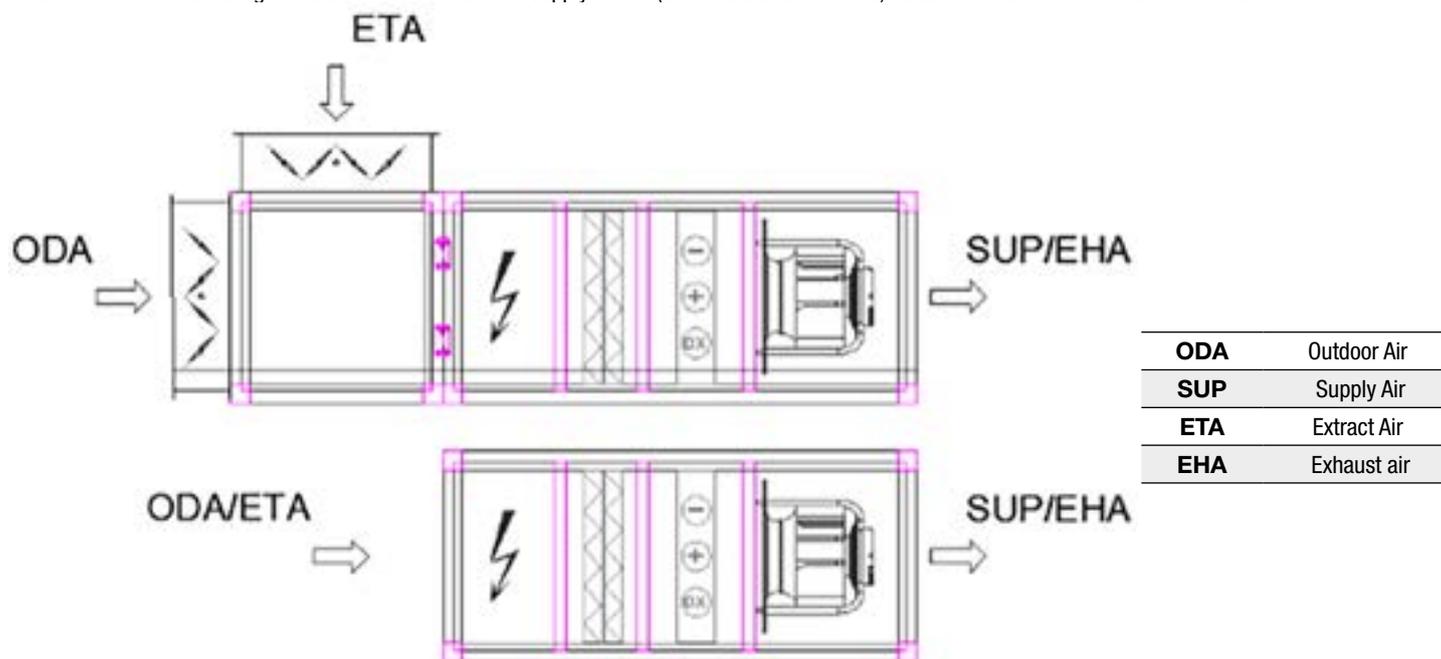
B' indicates the required distance for filter removal

Modèle	A	B	B'
TVEC Compact 500 Change hydraulic coil + CAV + F7	100	600	395
TVEC Compact 1000 Change hydraulic coil + CAV + F7	100	880	675
TVEC Compact 2000 Change hydraulic coil + CAV + F7	100	1435	615
TVEC Compact 3000 Change hydraulic coil + CAV + F7	100	1800	798
TVEC Compact 5000 Change hydraulic coil + CAV + F7	100	1905	850
TVEC Compact 8000 Change hydraulic coil + CAV+ F7	100	2050	923

Modèle	A	B	B'
TVEC Compact 500 Electric post heater integrated + CAV + F7	100	450	395
TVEC Compact 1000 Electric post heater integrated + CAV + F7	100	730	675
TVEC Compact 2000 Electric post heater integrated + CAV + F7	100	1285	615
TVEC Compact 3000 Electric post heater integrated + CAV + F7	100	1650	798
TVEC Compact 5000 Electric post heater integrated + CAV + F7	100	1755	850
TVEC Compact 8000 Electric post heater integrated + CAV + F7	100	1900	923
TVEC Compact 500 DX coil + CAV + F7	100	600	395
TVEC Compact 1000 DX coil + CAV + F7	100	880	675
TVEC Compact 2000 DX coil + CAV + F7	100	1435	615
TVEC Compact 3000 DX coil + CAV + F7	100	1800	798
TVEC Compact 5000 DX coil + CAV + F7	100	1905	850
TVEC Compact 8000 DX coil + CAV + F7	100	2050	923
TVEC Compact 500 Additionnal water change-over module	100	600	
TVEC Compact 1000 Additionnal water change-over module	100	880	
TVEC Compact 2000 Additionnal water change-over module	100	1435	
TVEC Compact 3000 Additionnal water change-over module	100	1800	
TVEC Compact 5000 Additionnal water change-over module	100	1905	
TVEC Compact 8000 Additionnal water change-over module	100	2050	
TVEC Compact 500 Additionnal DX coil module	100	600	
TVEC Compact 1000 Additionnal DX coil module	100	880	
TVEC Compact 2000 Additionnal DX coil module	100	1435	
TVEC Compact 3000 Additionnal DX coil module	100	1800	
TVEC Compact 5000 Additionnal DX coil module	100	1905	
TVEC Compact 8000 Additionnal DX coil module	100	2050	
TVEC Compact 500 Mixing box	100	195	
TVEC Compact 1000 Mixing box	100	195	
TVEC Compact 2000 Mixing box	100	195	
TVEC Compact 3000 Mixing box	100	195	
TVEC Compact 5000 Mixing box	100	195	
TVEC Compact 8000 Mixing box	100	195	
TVEC Compact 500 Ventilation + CAV + F7	100	495	
TVEC Compact 1000 Ventilation + CAV + F7	100	775	
TVEC Compact 2000 Ventilation + CAV + F7	100	1330	
TVEC Compact 3000 Ventilation + CAV + F7	100	1695	
TVEC Compact 5000 Ventilation + CAV + F7	100	1800	
TVEC Compact 8000 Ventilation + CAV + F7	100	1945	

2.5. Air connections

Fresh airflow towards the right and electrical box near the supply air fan (on all versions and sizes) as seen in the bottom view scheme below.



2.6. Servicing filters



CAUTION:

Filters must be exchanged by skilled technician, with the machine switched off.

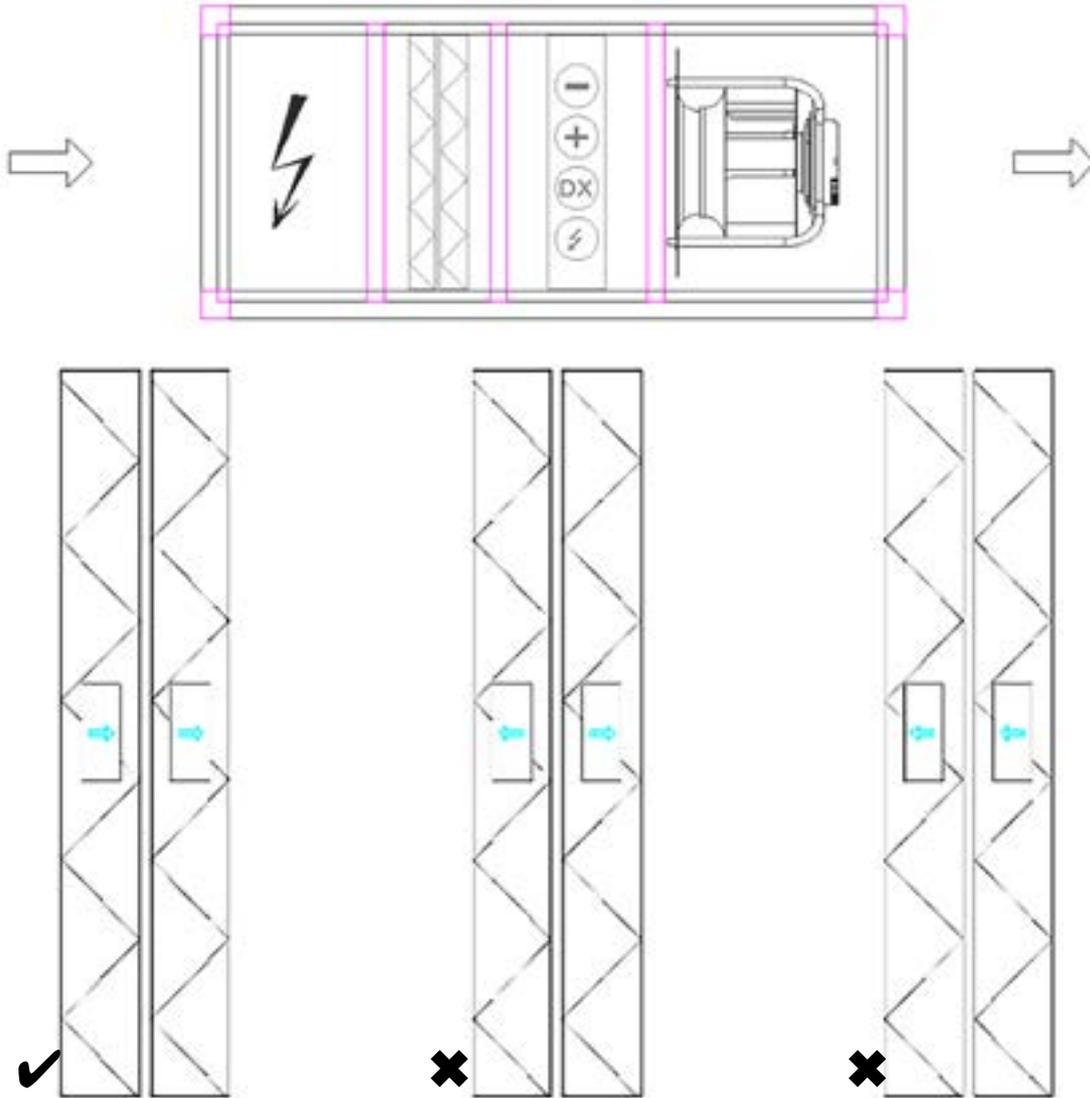
Filters can be replaced according to a clogging indicator (filter fouling). This indicator is produced by a pressure sensor which will trigger at the following recommended final head losses:

Model	F7 [Pa]	M5 [Pa]	M5 + F7 [Pa]
TVEC Compact 500 Change hydraulic coil + CAV + F7	250	250	350
TVEC Compact 1000 Change hydraulic coil + CAV + F7	250	250	350
TVEC Compact 2000 Change hydraulic coil + CAV + F7	250	250	350
TVEC Compact 3000 Change hydraulic coil + CAV + F7	250	250	350
TVEC Compact 5000 Change hydraulic coil + CAV + F7	250	250	350
TVEC Compact 8000 Change hydraulic coil + CAV+ F7	250	250	350
TVEC Compact 500 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 1000 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 2000 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 3000 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 5000 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 8000 Electric post heater integrated + CAV + F7	250	250	350
TVEC Compact 500 DX coil + CAV + F7	250	250	350
TVEC Compact 1000 DX coil + CAV + F7	250	250	350
TVEC Compact 2000 DX coil + CAV + F7	250	250	350
TVEC Compact 3000 DX coil + CAV + F7	250	250	350
TVEC Compact 5000 DX coil + CAV + F7	250	250	350
TVEC Compact 8000 DX coil + CAV + F7	250	250	350
TVEC Compact 500 Ventilation + CAV + F7	250	250	350
TVEC Compact 1000 Ventilation + CAV + F7	250	250	350
TVEC Compact 2000 Ventilation + CAV + F7	250	250	350
TVEC Compact 3000 Ventilation + CAV + F7	250	250	350
TVEC Compact 5000 Ventilation + CAV + F7	250	250	350
TVEC Compact 8000 Ventilation + CAV + F7	250	250	350

TVEC Compact	Number of filters	Number of rows	Number of columns
TVEC Compact 500	1	1	1
TVEC Compact 1000	1	1	1
TVEC Compact 2000	2	1	2
TVEC Compact 3000	2	1	2
TVEC Compact 5000	2	1	2
TVEC Compact 8000	2	1	2

2.6.1. Maintenance filters

Maintenance of Filters is recommended at least once a year depending on external and internal rate and type of pollutants.



Care about the filter position, look at sticker put on frame filter with arrow direction for airstream



2.7. Main control

The main control can be set to make the TVEC Compact work according to 3 different flow regulation type:

Fan control

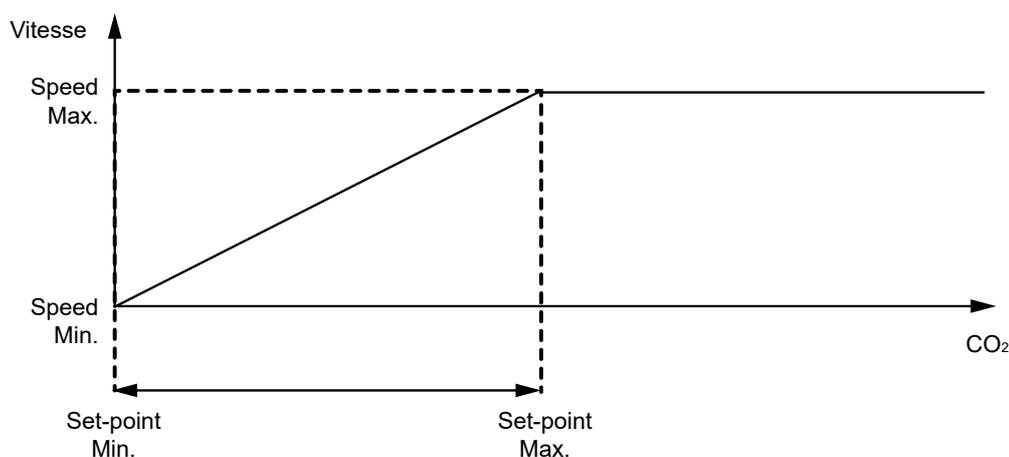
In units without the constant flow or CO₂ control accessory, fan speed variation is carried out via the controller (EC fans). In cases where the fans are regulated manually, they are adjusted in the main window by pressing the UP/DOWN buttons for a few seconds (until you hear a second confirmation beep) to increase or decrease the rotation speed of the fans. The variations are made in steps of 5%. The variation applies to both the supply and return fans.

Constant flow

The constant flow accessory makes it possible to keep the flow constant regardless of the variation in the system's pressure drop. This accessory cannot be added to the equipment at a later date; if necessary, it must be requested when ordering the equipment. The set-point can be defined in the user menu, corresponding to the differential pressure value. It is not possible to use constant flow control and CO₂ control at the same time.

CO₂ Control

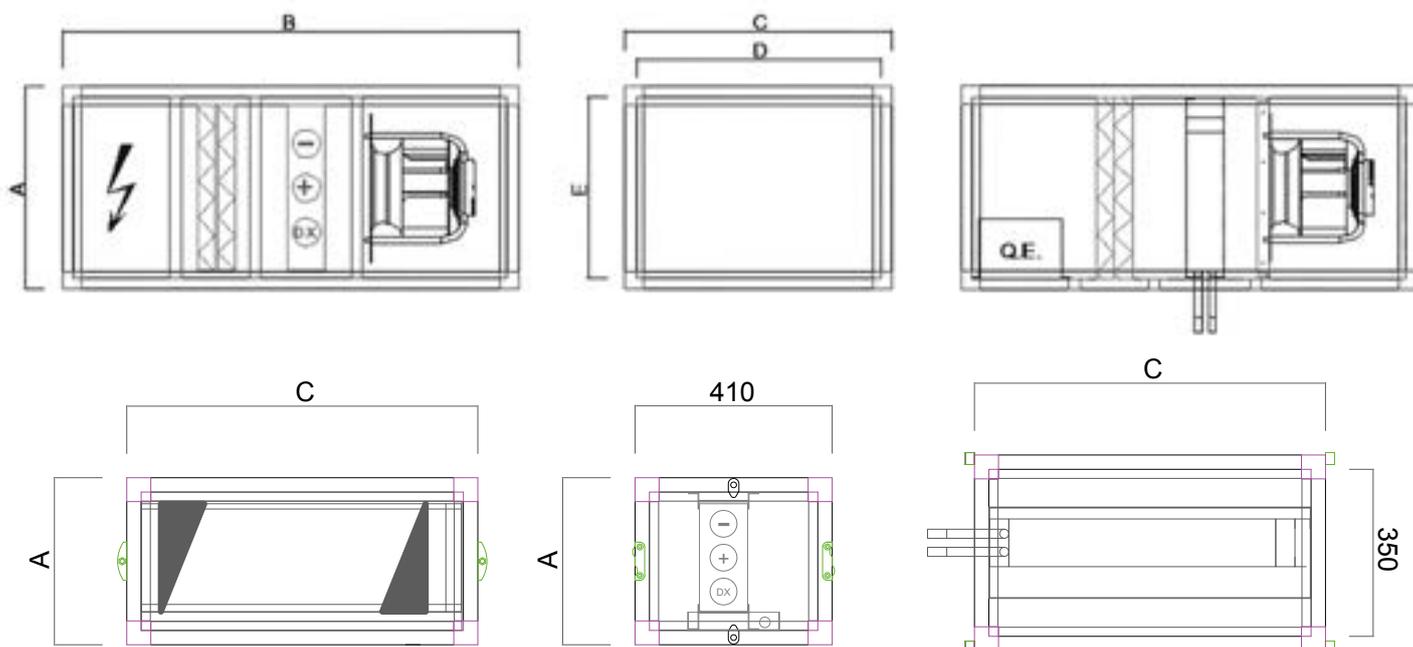
The purpose of the CO₂ control accessory is to monitor the concentration of carbon dioxide in the air in real time and adjust the fan according to the value of the measured and desired carbon dioxide concentration. If this accessory is purchased at a later date, the controller must be reprogrammed. CO₂ control is carried out as follows:



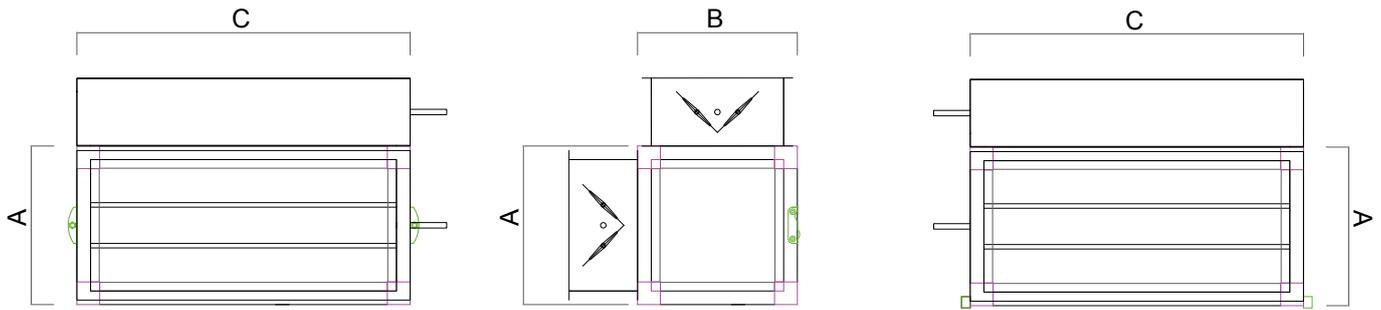
It is not possible to use constant flow control and CO₂ control at the same time.

3. DIMENSIONS

The rubber feet are 15 to 20 mm (depending on the tightening). The handles are 20 mm wide.



Mixing section



Additional external module

Modèle	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Spigot (mm)	Poids (kg)
TVEC Compact 500 Change hydraulic coil + CAV + F7	350	1375	450	390	290	-	80
TVEC Compact 1000 Change hydraulic coil + CAV + F7	350	1375	730	670	290	-	108
TVEC Compact 2000 Change hydraulic coil + CAV + F7	350	1450	1285	1225	290	-	184
TVEC Compact 3000 Change hydraulic coil + CAV + F7	375	1450	1650	1590	315	-	227
TVEC Compact 5000 Change hydraulic coil + CAV + F7	500	1450	1755	1695	440	-	272
TVEC Compact 8000 Change hydraulic coil + CAV+ F7	700	1530	1900	1840	640	-	326
TVEC Compact 500 Electric post heater integrated + CAV + F7	350	1375	450	390	290	-	74
TVEC Compact 1000 Electric post heater integrated + CAV + F7	350	1375	730	670	290	-	97
TVEC Compact 2000 Electric post heater integrated + CAV + F7	350	1450	1285	1225	290	-	169
TVEC Compact 3000 Electric post heater integrated + CAV + F7	375	1450	1650	1590	315	-	210
TVEC Compact 5000 Electric post heater integrated + CAV + F7	500	1450	1755	1695	440	-	248
TVEC Compact 8000 Electric post heater integrated + CAV + F7	700	1530	1900	1840	640	-	302
TVEC Compact 500 DX coil + CAV + F7	350	1375	450	390	290	-	79
TVEC Compact 1000 DX coil + CAV + F7	350	1375	730	670	290	-	107
TVEC Compact 2000 DX coil + CAV + F7	350	1450	1285	1225	290	-	182
TVEC Compact 3000 DX coil + CAV + F7	375	1450	1650	1590	315	-	224
TVEC Compact 5000 DX coil + CAV + F7	500	1450	1755	1695	440	-	268
TVEC Compact 8000 DX coil + CAV + F7	700	1530	1900	1840	640	-	321
TVEC Compact 500 Additional water change-over module	350	410	450	-	-	390x290	39
TVEC Compact 1000 Additional water change-over module	350	410	730	-	-	670x290	52
TVEC Compact 2000 Additional water change-over module	350	410	1285	-	-	1225x290	81
TVEC Compact 3000 Additional water change-over module	375	410	1650	-	-	1590x315	102
TVEC Compact 5000 Additional water change-over module	500	410	1755	-	-	1695x440	118
TVEC Compact 8000 Additional water change-over module	700	410	1900	-	-	1840x640	137
TVEC Compact 500 Additional DX coil module	350	410	450	-	-	390x290	38
TVEC Compact 1000 Additional DX coil module	350	410	730	-	-	670x290	51
TVEC Compact 2000 Additional DX coil module	350	410	1285	-	-	1225x290	79
TVEC Compact 3000 Additional DX coil module	375	410	1650	-	-	1590x315	99
TVEC Compact 5000 Additional DX coil module	500	410	1755	-	-	1695x440	114
TVEC Compact 8000 Additional DX coil module	700	410	1900	-	-	1840x640	132
TVEC Compact 500 Mixing box	350	350	450	290	390	390x290	23
TVEC Compact 1000 Mixing box	350	350	730	290	670	670x290	26
TVEC Compact 2000 Mixing box	350	350	1285	290	1225	1225x290	44
TVEC Compact 3000 Mixing box	375	375	1650	315	1590	1590x315	55
TVEC Compact 5000 Mixing box	500	500	1755	440	1695	1695x440	69
TVEC Compact 8000 Mixing box	700	700	1900	640	1840	1840x640	95
TVEC Compact 500 Ventilation + CAV + F7	350	925	450	390	290	290	51
TVEC Compact 1000 Ventilation + CAV + F7	350	925	730	670	290	290	70
TVEC Compact 2000 Ventilation + CAV + F7	350	975	1285	1225	290	290	120
TVEC Compact 3000 Ventilation + CAV + F7	375	1000	1650	1590	315	315	147
TVEC Compact 5000 Ventilation + CAV + F7	500	1100	1755	1695	440	440	187
TVEC Compact 8000 Ventilation + CAV + F7	700	1175	1900	1840	640	640	227

Piping diameter

Model with change-over coil	Inlet & outlet diam.	Model with DX coil	Inlet diam. (mm)	Outlet diam. (mm)
TVEC Compact 500 BAT CO	3/4"	TVEC Compact 500 BAT DX	22	12
TVEC Compact 1000 BAT CO	3/4"	TVEC Compact 1000 BAT DX	22	12
TVEC Compact 2000 BAT CO	1"	TVEC Compact 2000 BAT DX	28	12
TVEC Compact 3000 BAT CO	1 1/4"	TVEC Compact 3000 BAT DX	28	16
TVEC Compact 5000 BAT CO	1 1/2"	TVEC Compact 5000 BAT DX	35	22
TVEC Compact 8000 BAT CO	2"	TVEC Compact 8000 BAT DX	42	28

Note: The pipe diameters are valid for coils integrated into the TVEC units and coils integrated into the additional modules.

External module

Change over module	Article code	DX module	Article code	Mixing module	Article code
TVEC Compact 500 BAT CO	11060942	TVEC Compact 500 BAT DX	11060948	TVEC Compact 500 MOD Mixing	11060948
TVEC Compact 1000 BAT CO	11060943	TVEC Compact 1000 BAT DX	11060949	TVEC Compact 1000 MOD Mixing	11060949
TVEC Compact 2000 BAT CO	11060944	TVEC Compact 2000 BAT DX	11060950	TVEC Compact 2000 MOD Mixing	11060950
TVEC Compact 3000 BAT CO	11060945	TVEC Compact 3000 BAT DX	11060951	TVEC Compact 3000 MOD Mixing	11060951
TVEC Compact 5000 BAT CO	11060946	TVEC Compact 5000 BAT DX	11060952	TVEC Compact 5000 MOD Mixing	11060952
TVEC Compact 8000 BAT CO	11060947	TVEC Compact 8000 BAT DX	11060953	TVEC Compact 8000 MOD Mixing	11060953

4. ELECTRICAL DATA

4.1. TVEC compact with electrical post heater integrated

Detailed data

Model	Power supply	Model	Power supply
TVEC Compact 500	230V / ~1 / 50 + N + T	TVEC Compact 5000	400V / ~ 3 / 50 + N + T
TVEC Compact 1000			
TVEC Compact 2000			
TVEC Compact 3000		TVEC Compact 8000	

Model	Power supply fan only	Max absorbed current fan only	Max absorbed power fan only (kW)	Fuse calibrate fan only	Wire section [mm ²]
TVEC Compact 500	230V + N + T	1.10	0.16	2 A	3 G 4
TVEC Compact 1000		2.20	0.32	4 A	3 G 4
TVEC Compact 2000		3.10	0.66	4 A	3 G 4
TVEC Compact 3000		3.46	0.74	4 A	3 G 4
TVEC Compact 5000	400V + N + T	3.80	2.20	3x4 A	5 G 4
TVEC Compact 8000		4.80	2.80	3x6 A	5 G 4

4.2. TVEC unit with electrical post heater integrated

Detailed data

Model	Power supply	Model	Power supply
TVEC Compact 500	230V / ~1 / 50 + N + T	TVEC Compact 1000 - 8000	400V / ~ 3 / 50 + T

Model with post heater integrated	Power supply	Max absorbed current with post heater	Max absorbed power with post heater	Fuse calibrate with post heater	Wire section [mm ²]
TVEC Compact 500	230V + N + T	13.10	3	16 A	3 G 2.5
TVEC Compact 1000		8.70	6	10 A	4 G 1.5
TVEC Compact 2000	400V + T	19.50	13.5	20 A	4 G 4
TVEC Compact 3000		34.70	24	40 A	4 G 10
TVEC Compact 5000		52.00	36	63 A	4 G 25
TVEC Compact 8000		78.00	54	80 A	4 G 35

5. CONTROL OPTIONS



CAUTION: electrical connections must be made by a qualified electrician, wearing the appropriate Personal Protection Equipment. Never work on a live TVEC Compact. The electrical connection will be in compliance with NF-C 15-100. Keep the TVEC Compact watertight and prevent dust from accumulating.

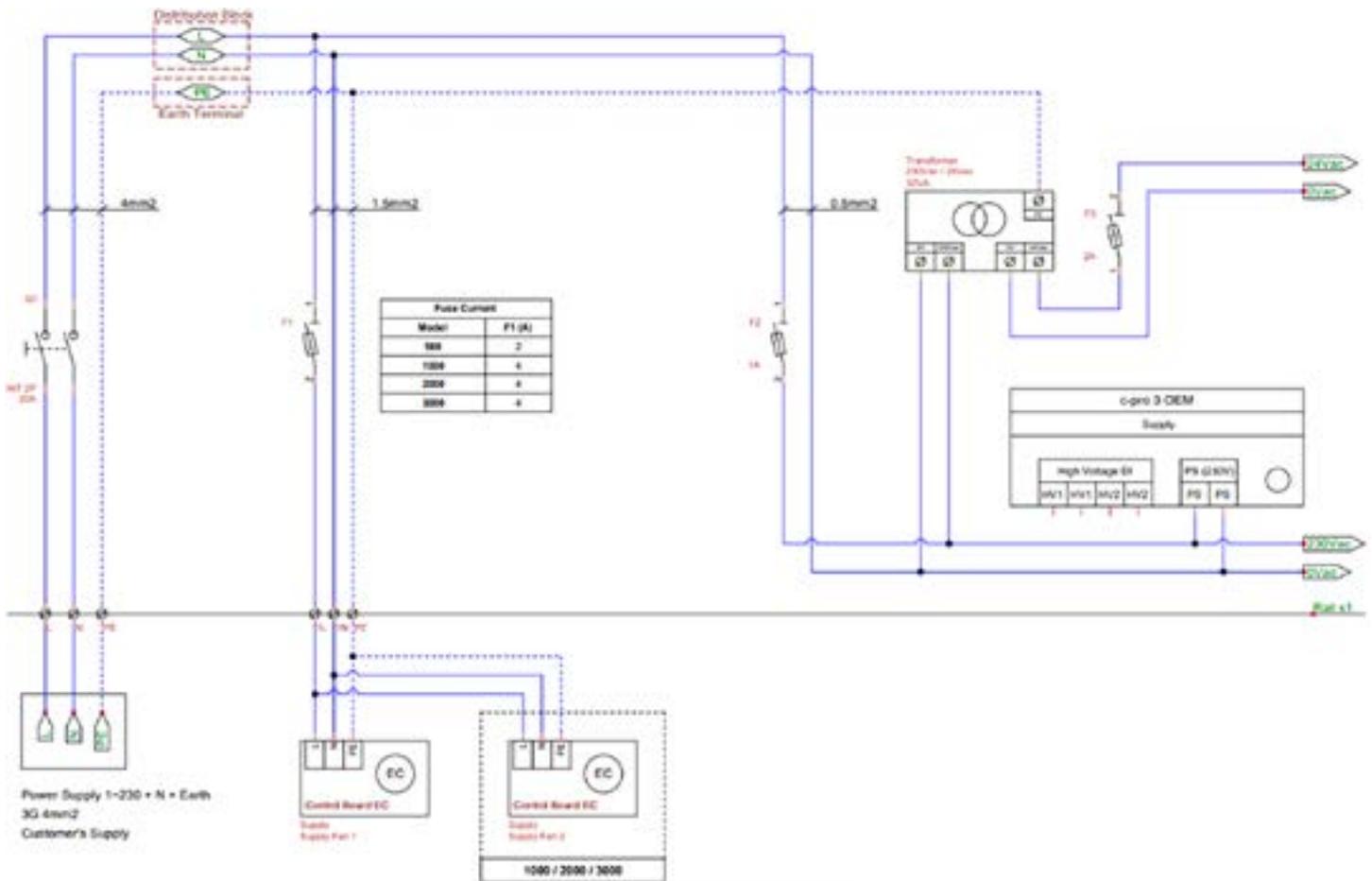
Every TVEC Compact has an electrical connection box on the side panel, near the supply air fan. This box gives access to the electrical power and control components (disconnect switches, cut-off supply, electronic control board, etc.). The TVEC Compact has a general supply electrical circuit and, depending on the options, an electrical coil circuit (heating).

Connection box:

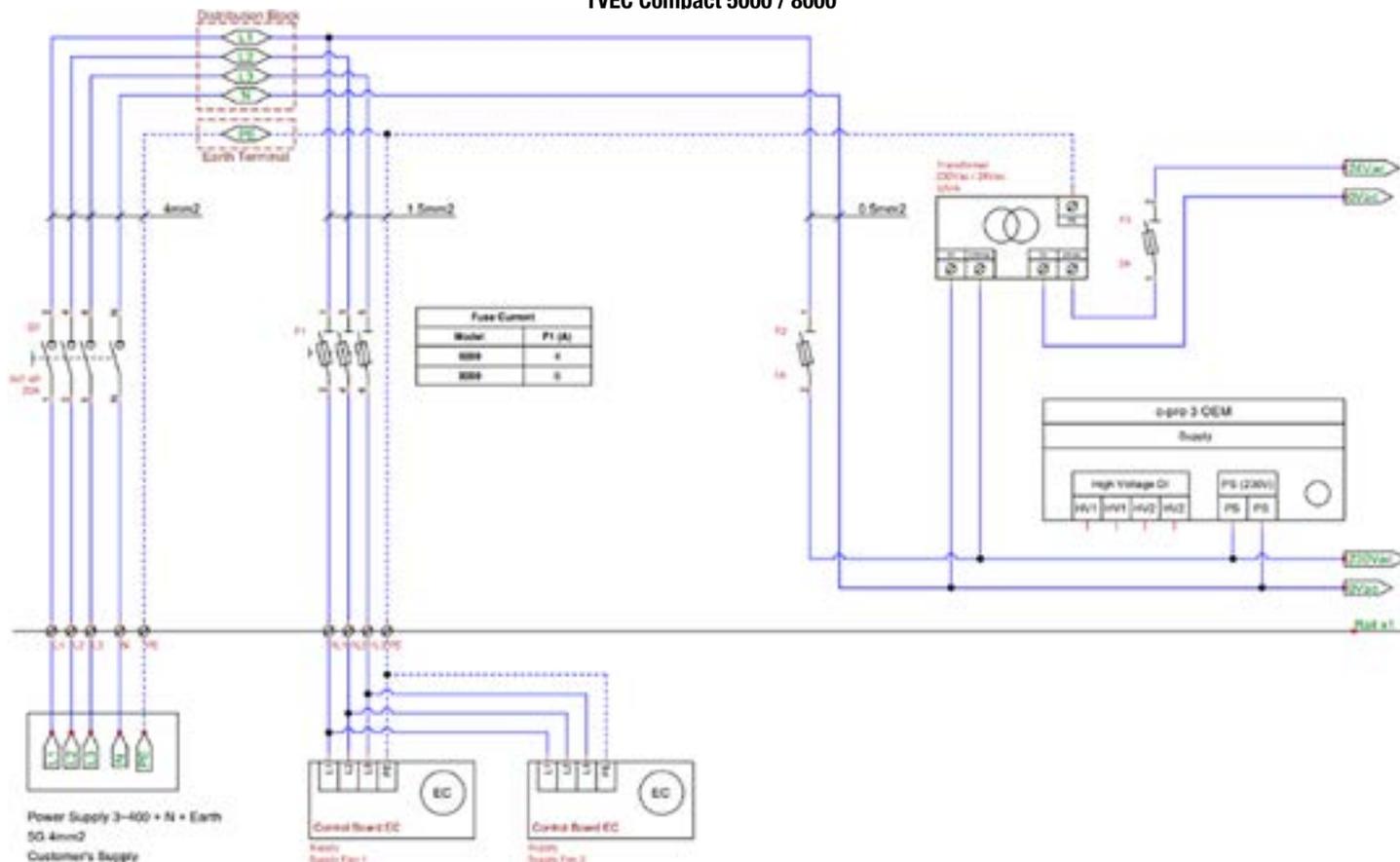
- Access electrical board with ¼ turn press-on screws
- TVEC Compact power supply
- Reheater power supply

Electrical power supply

TVEC Compact 500 / 1000 / 2000 / 3000



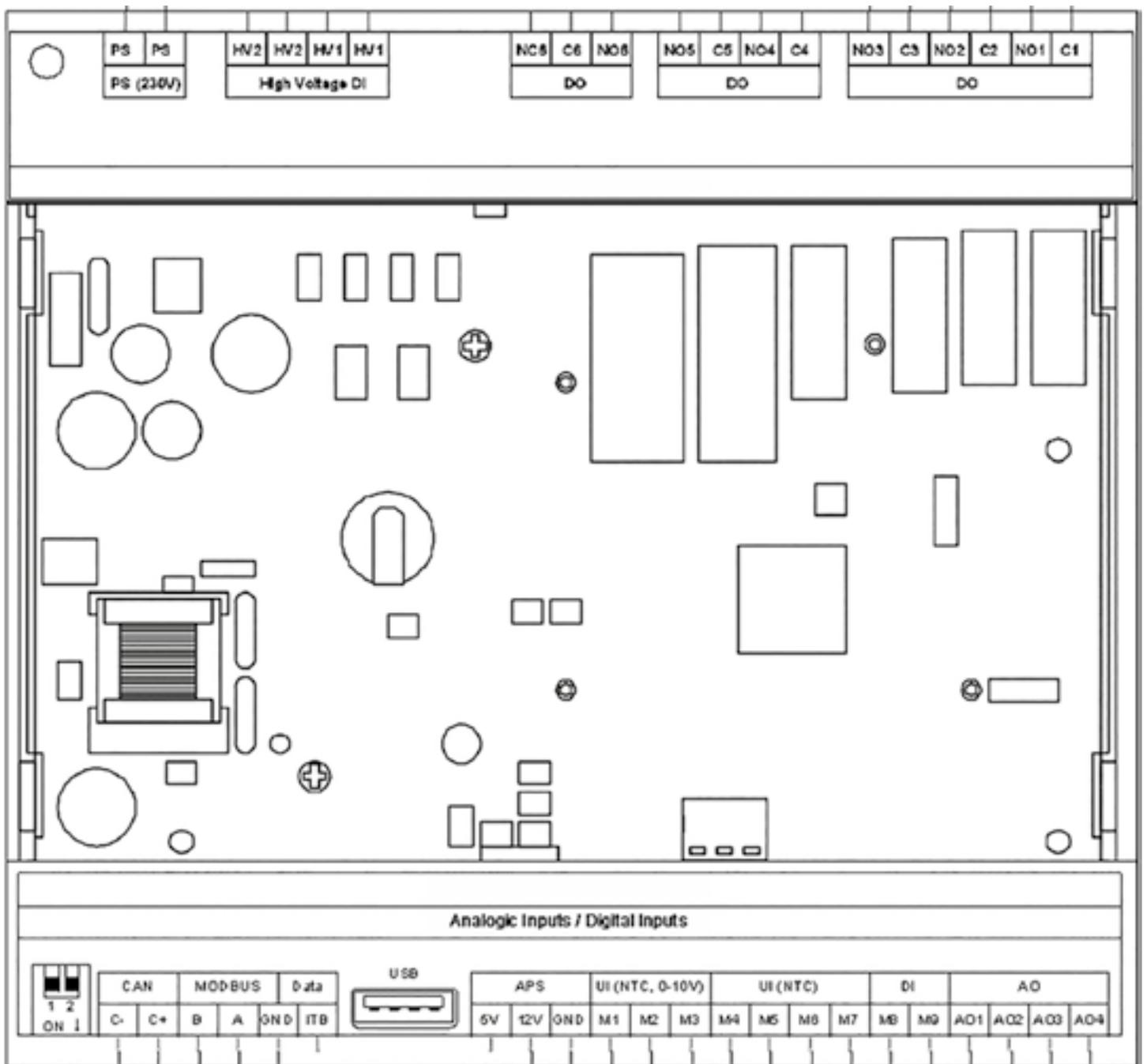
TVEC Compact 5000 / 8000



Reference	Description
Q1	Main switch
F1	Fuse Protection Fan Inflation
F2	Fuse Protection Control (230Vac)
F3	Fuse Protection Control (24Vac)
L	Power Supply Phase Terminal Block
N	Power Supply Neutral Terminal Block
PE	Earth Terminal Block
1L	Supply Fan Phase Terminal Block
1N	Supply Fan Neutral Terminal Block
M	Ground Terminal Block
VAC	24Vac Supply Terminal Block
PD1	Supply Pressure Transmitter Terminal Block (AI)
CO2	CO2 Sensor / External 0-10V Signal Terminal Block (AI)
T1	Outside Air Temperature Sensor Terminal Block (AI)
T2	Supply Air Temperature Sensor Terminal Block (AI)
T3	Return Air Temperature Sensor Terminal Block (AI)
AAG	Anti-freeze Alarm Terminal Block (DI)
AVI	Supply Fan Differential Press. Switch Terminal Block (DI)
P3	Exterior Air Clogged Filter Differential Press. Switch Terminal Block (DI)
DI1	Remote ON / OFF Terminal Block (DI)
VVI	Supply Fan Modulation Terminal Block (AO)
V1	Cooling / Heating Valve Modulation Terminal Block (AO)
V2	Heating Valve Modulation Terminal Block (AO)
VRE	Electric Coil Modulation Terminal Block (AO)

Reference	Description
R13	Outside / Return Air Damper Terminal Block (AO)
1DO1	Unit's Alarm Signal Terminal Block (DO)
1DO2	Unit's Alarm Signal Terminal Block (DO)
2DO1	Unit's State Signal Terminal Block (DO)
2DO2	Unit's State Signal Terminal Block (DO)
A	Signal + RS-485 MODBUS Master/Slave Port Terminal Block
B	Signal - RS-485 MODBUS Master/Slave Port Terminal Block
GND	Ground Terminal Block
C1	Signal + CAN Port Terminal Block
C2	Signal - CAN Port Terminal Block
VDC	12Vdc Supply Terminal Block

Control board wiring



Reference	Description	Cable Kit Colour	Terminal
C1	Digital output common contact for alarm signal	Pink	1D01
NO1	Digital output normally open contact for alarm signal (5A res. 250VAC)	Pink	1D02
C2	Digital output common contact for state signal	Pink	2D01
NO2	Digital output normally open contact for state signal (5A res. 250VAC)	Pink	2D02
C3	Digital output common contact for enabling electric heaters (EH)	Yellow	-
NO3	Digital output NO contact for enabling EH (5A res. 250VAC)	Pink	VRE
C4	Not used	-	-
NO4	Not used	-	-
C5	Not used	-	-
NO5	Not used	-	-
NO6	Not used	-	-
C6	Not used	-	-
NC6	Not used	-	-
HV1	Not used	-	-
HV1	Not used	-	-
HV2	Not used	-	-
HV2	Not used	-	-
PS	Device power supply (115... 230 VAC)	Brown	-
PS	Device power supply (115... 230 VAC)	Blue	-
AO1	0-10V for controlling fan	Yellow	VI
AO2	0-10V 3-way cooling valve	Yellow	V1
AO3	0-10V for control electric reheater or 0-10V 3-way heating valve	Yellow	V2
AO4	0-10V for outdoor and mix dampers	Yellow	R13
M1	Analogue input 0-10V for pressure sensor	Orange	PD1
M2	Analogue input 0-10V for CO2 sensor or fan external control signal	Orange	C02
M3	Analogue input NTC for outdoor temperature probe	Orange	T1
M4	Analogue input NTC for supply temperature probe	Orange	T2
M5	Analogue input NTC for return temperature probe	Orange	T3
M6	Digital input for antifreeze thermostat alarm	Purple	AAG
M7	Digital input for fan's malfunction alarm	Purple	AVI
M8	Digital input for clogged filter alarm	Purple	P3
M9	Digital input for remote ON/OFF control	Purple	DI1
5V	Not used	-	-
12V	Auxiliary power supply (12 VDC) for remote display	Red	VDC
GND	Reference (GND)	White	M
ITB	Not used	-	-
A	Signal + RS-485 MODBUS master/slave port	Green	A
B	Signal - RS-485 MODBUS master/slave port	Brown	B
C+	Signal + CAN port for remote display	Grey	C1
C-	Signal - CAN port for remote display	Grey	C2
USB port	USB port for communication and programming	-	-

Appendix – Electrical Wiring Diagram (TVEC Compact)

Refer to the following electrical diagram for terminal identification, controller connections, and power supply details.

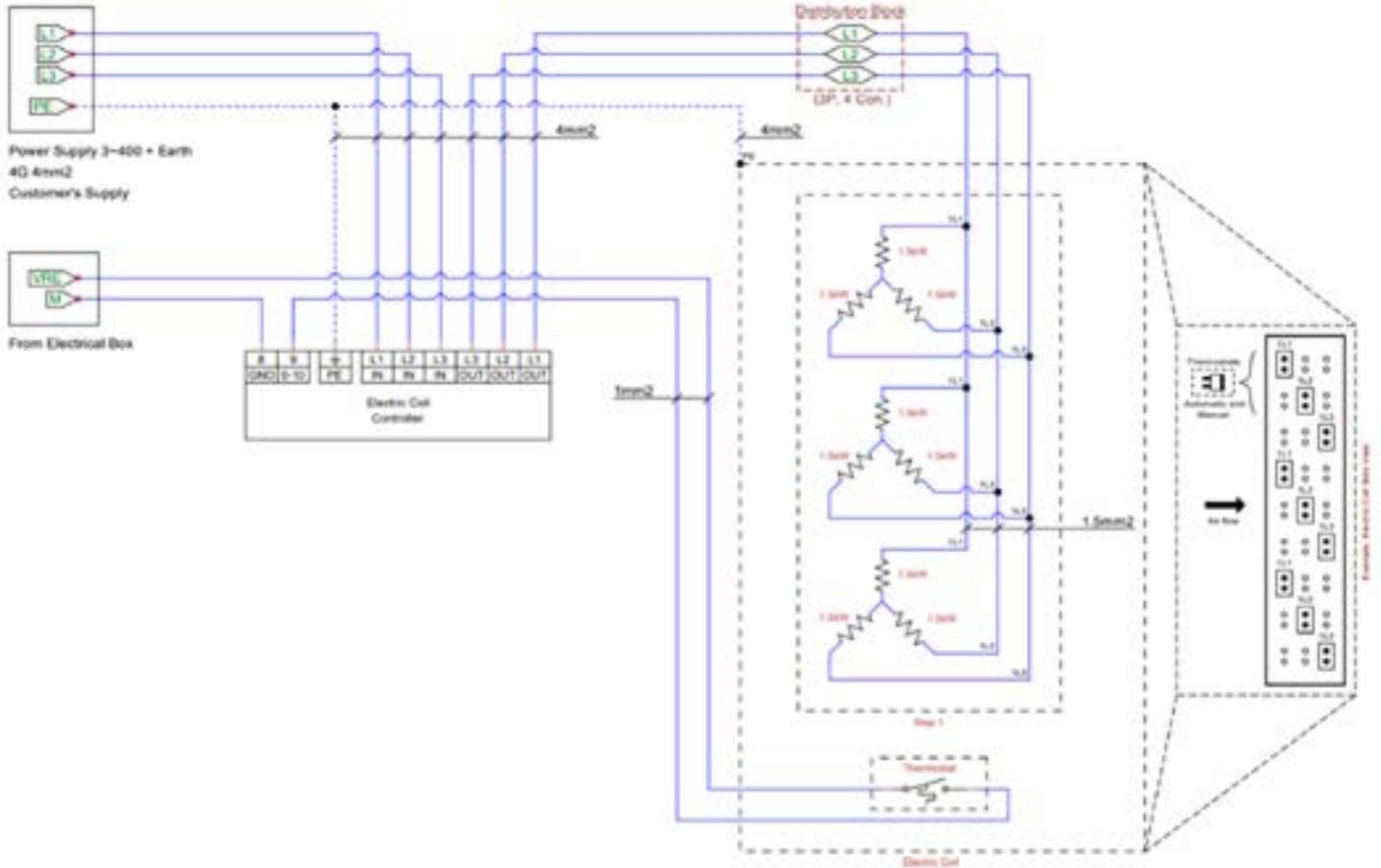
Model	Power (kW)	Maximum current (A)	Supply (V/F/Hz)
TVEC Compact 500	0.16	1.10	230/1/50
TVEC Compact 1000	2x 0.16	2x 1.10	230/1/50
TVEC Compact 2000	2x 0.33	2x 1.55	230/1/50
TVEC Compact 3000	2x 0.37	2x 1.73	230/1/50
TVEC Compact 5000	2x 1.10	2x 1.90	400/3/50
TVEC Compact 8000	2x 1.40	2x 2.40	400/3/50

Electrical Characteristics

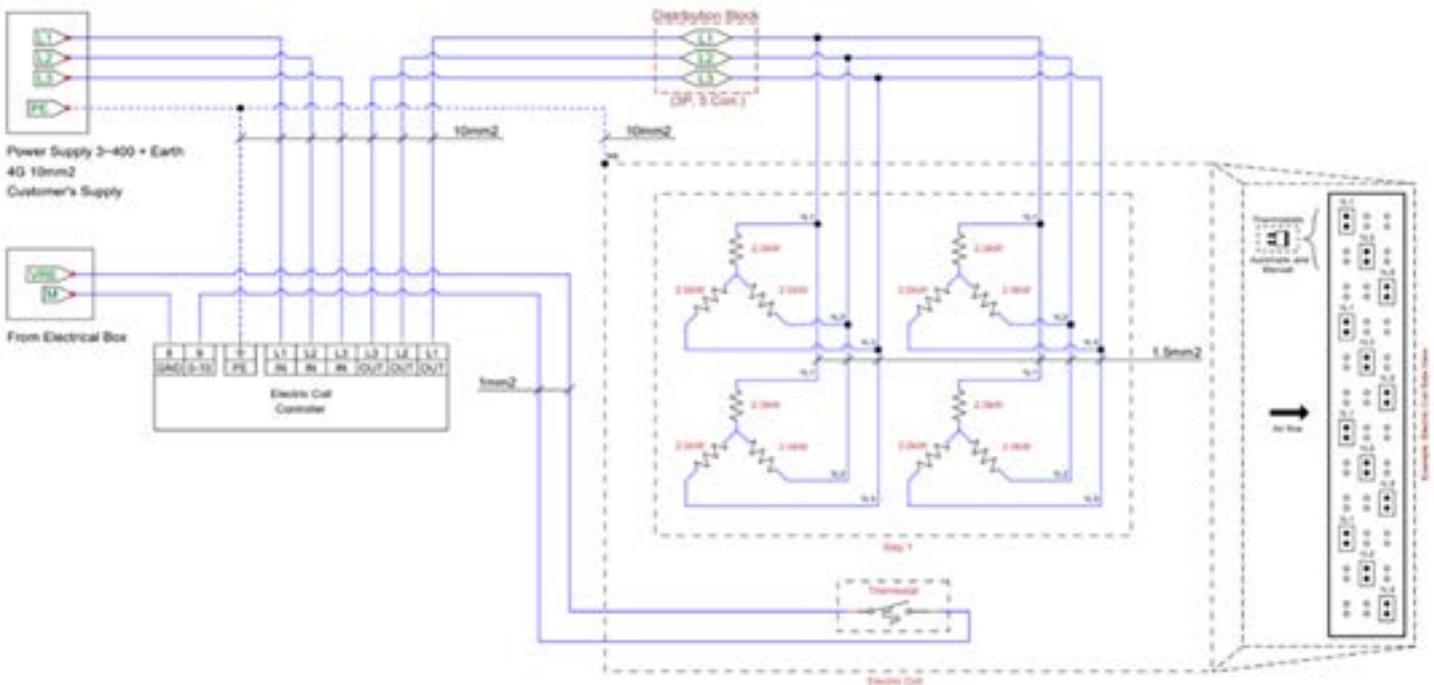
Supply

230 Vac 1N 50Hz or 400 Vac 3~ 50Hz

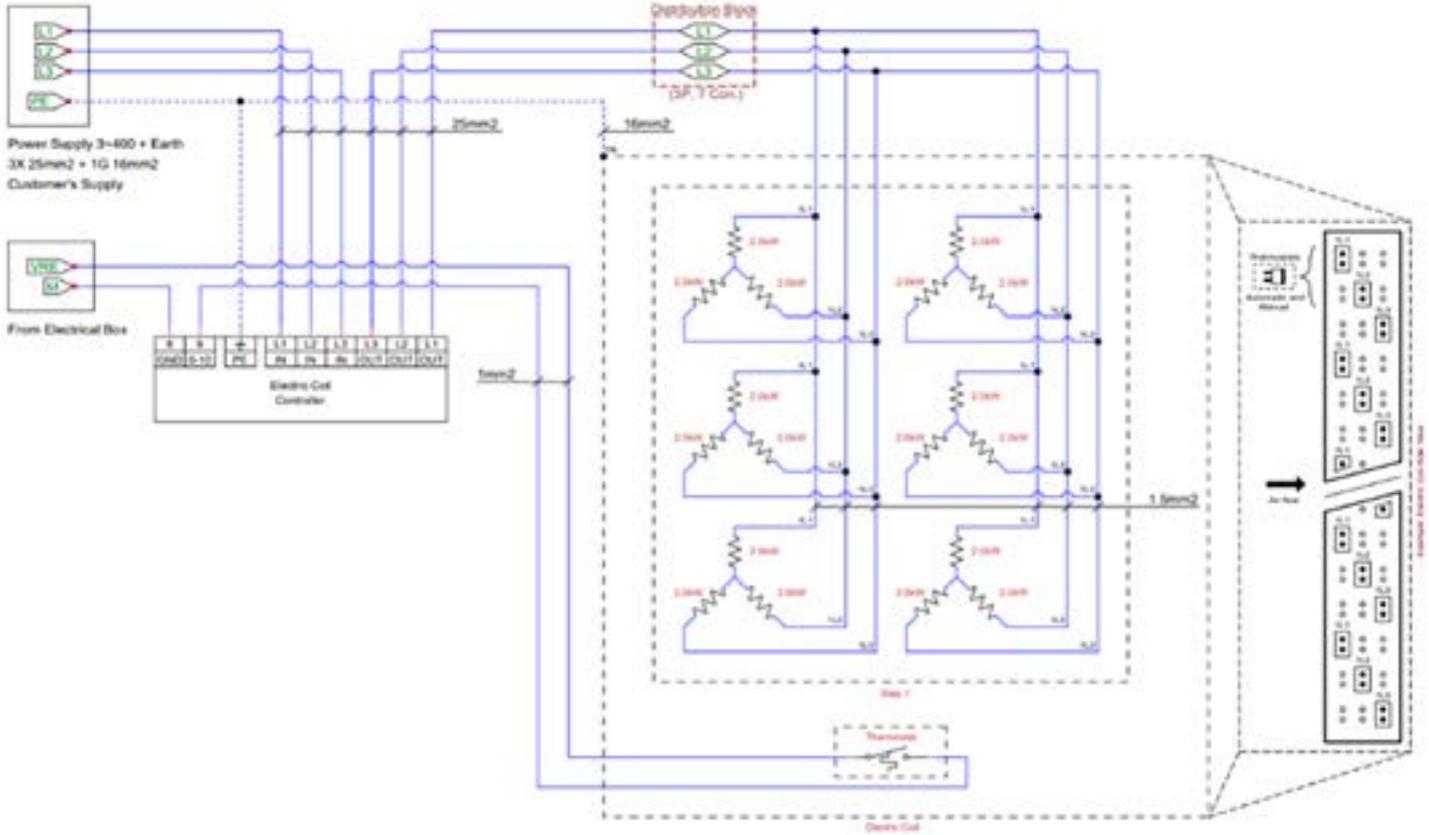
Electric coil diagram (TVEC Compact 2000)



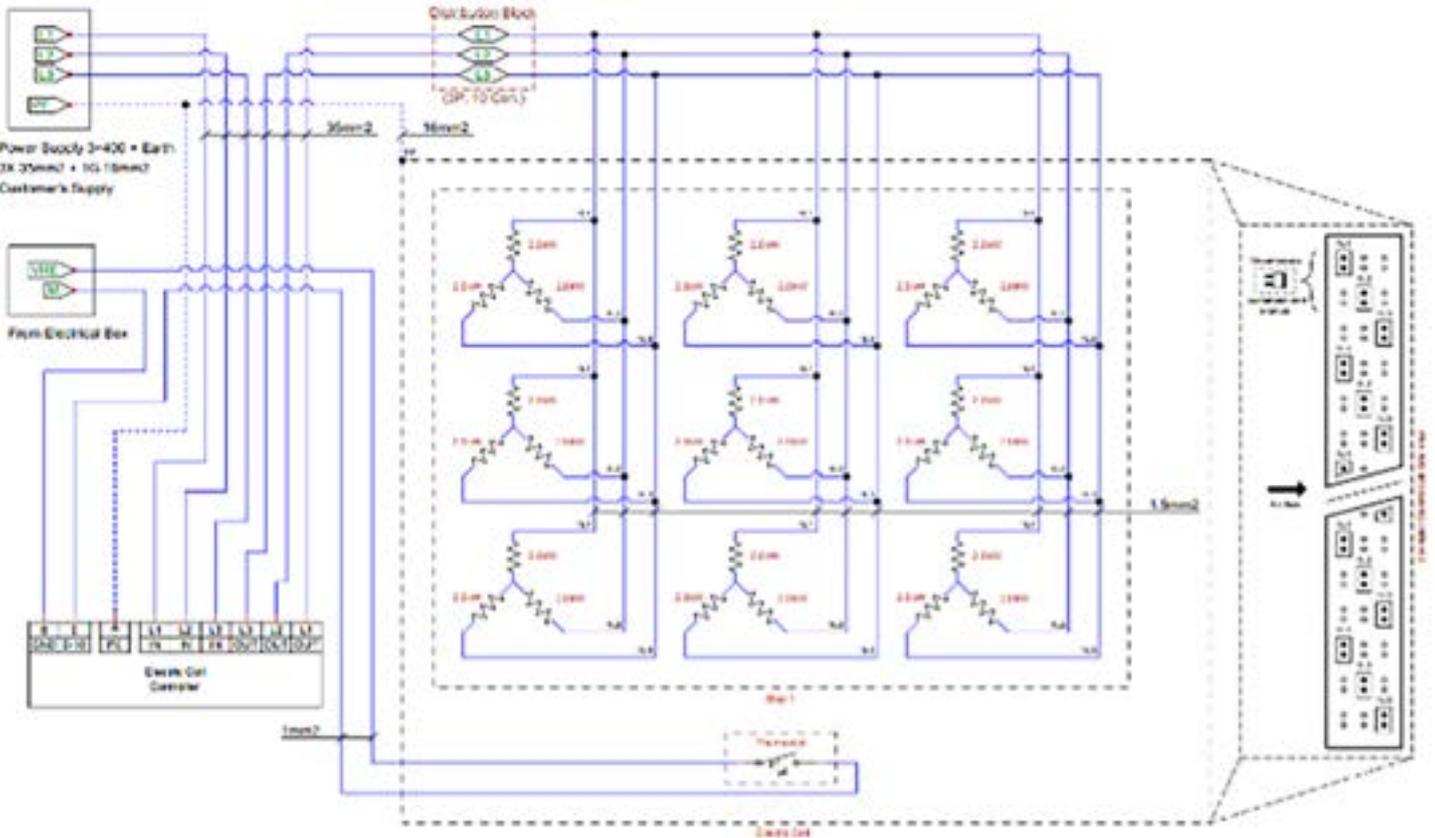
Electric coil diagram (TVEC Compact 3000)



Electric coil diagram (TVEC Compact 5000)



Electric coil diagram (TVEC Compact 8000)



6. PRE-START VERIFICATIONS

The TVEC Compact are factory tested; however, it's the installer's responsibility or designated organization to check and record the following points before starting up the equipment:

- Check if there are no foreign bodies or dirt on the rotating parts
- Check if the duct connections to the air handling TVEC Compact are correctly made
- Check if the discharges are not obstructed
- Ensure that no mounting accessories have been left inside the air handling TVEC Compact
- Check if the filters are perfectly clean
- Check if all electrical connections have been made in accordance with the standards and specifications
- Check if all the terminals of the electric motors are correctly tightened
- Check if all the holes in the cable routing are correctly sealed
- Check if all components are correctly secured
- Check if the hydraulic circuits are powered
- Check if the hydraulic connections to the batteries and condensate tray are correctly made
- Check the hydraulic connections and batteries for leaks
- Check if the siphon (not provided) is installed in the condensate tray outlet pipe
- Check if the fan can rotate freely and that there are no foreign objects inside
- Check the fixation of the TVEC Compact under ceiling
- Check the good connection to the duct net (no air leakage)

7. START

It is recommended that after 48 hours of operation you confirm that the TVEC Compact is working within the required parameters. Additionally:

1. Check globally all connections: electrical, hydraulic
2. Check the condensate drain trap good connection
3. Look for any air leaks near the removable panels joints. Readjust the tightness, if necessary
4. Check the well fan and motor mountings fixation (switch the TVEC Compact off beforehand at general cut-out)
5. Check the wiring of the small LCD HMI

8. CONTROL LOGIC

Please refer to the printed control manual included with this user guide for detailed information on the configuration and settings of each control function.

9. EXTENDED DOWNTIME

In case of extended downtime with the TVEC Compact connected to the ventilation system, close the suction/ injection and periodically check the absence of humidity inside the machine. In case of condensation, dry it immediately.

10. MAINTENANCE

Component	Operations	Annual frequency
TVEC Compact interior	Check the general state of contamination, deterioration and corrosion	1
	Check if there's any condensation	2
	Check if the control and regulation equipment are working correctly	1
Filters	Check for contamination, odours and deterioration (leaks)	4
	Check the pressostat	2
	Maximum filter replacement interval	1
Ventilator	Check if the fan is operating correctly	2
	Check the general state of contamination, deterioration and corrosion	2
Condensate drip tray	Check the condition of the condensate drip tray and clean it if necessary	2
	Check the condition and function of the siphon	4
	Check that the pipe is in good condition - water must be able to drain freely	2
External air inlet and outlet	Check if they are in good condition and allow air to circulate freely	1
	Check the general state of contamination, deterioration and corrosion	1
Electrical coil	Check if the coil is operating correctly (warms up)	1
	Check if the manual reset thermostat is working correctly	1
Water coil	Check if the actuator and the 3- way valve operate correctly.	1
Electrical enclosure	Check that there are no traces of moisture.	1

11. TROUBLESHOOTING

Fault	Causes	Remedies
Difficult start	a) Reduced supply voltage b) Insufficient motor static torque	a) Check motor plate data b) Close the air locks to reach full speed. If necessary, replace the motor
Insufficient airflow	a) Clogged ducts or suction points b) Clogged fan c) Clogged filter d) Insufficient rotation e) Clogged coil	a) Clean pipelines and suction point cleaning b) Clean the fan's impeller c) Filter cleaning or replacement d) Check supply voltage and if necessary, correct it e) Clean coil
Excess airflow	a) Filters not or wrongly placed b) Excessive available static pressure	a) Place or adjust the filters b) Adjust signal 0-10 V, 4-20 mA
Airflow performance drop after a period of acceptable operation	a) Air leak before and/or after the fan b) Damaged impeller	a) Circuit check and restore to original condition b) Check impeller, if necessary, replace with an original spare part
Low performance coil	a) Low internal coil flow b) Low airflow	a) Adjust internal coil flow b) Clean coil
Air pulsation	The fan performance set to near zero- flow causing instability, Clogged or wrong ductwork connection	Increase minimum speed on the electronic speed regulator (insufficient voltage) Modify the circuit and/or replace the fan. Clean and/or replace the suction duct
Filter alert	Clogged filters	Replace the filters
Condensates leakage	a) Excessive condensation b) Obstruction of the condensate tray outlet c) Lack of siphon / insufficient slope	a) Measure the water flow and adjust the installation to the recommended battery flow rate b) Clean the condensate tray c) Place/correct the slope

12. DISPOSAL

Directive 2024/884/EU of the European Parliament and of the Council of 13 March 2024 on waste electrical and electronic equipment (WEEE).



The WEEE symbol on the product or on its packaging indicates that the product must not be disposed of with normal household waste.

Instead, such marked waste equipment must be disposed of by arranging to return to a designated collection point for the recycling of waste electrical and electronic equipment. By separating and recycling this waste equipment at the time of disposal will help to conserve natural resources and ensure that the equipment is recycled in a manner that protects human health and the environment.

The final user will provide to deliver the product no longer in use in municipal electrical and electronic waste collection, or return it to the retailer as follows:

- distributors provide for the collection, at retail shops with sales areas relating to EEE of at least 400 m², or in their immediate proximity of very small WEEE (no external dimension more than 25 cm) free of charge to end-users and with no obligation to buy EEE of an equivalent type
- for products with external dimension more than 25 cm, distributors are responsible for ensuring that such waste can be returned to the distributor at least free of charge on a one-to-one basis as long as the equipment is of equivalent type and has fulfilled the same functions as the supplied equipment.

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive.



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