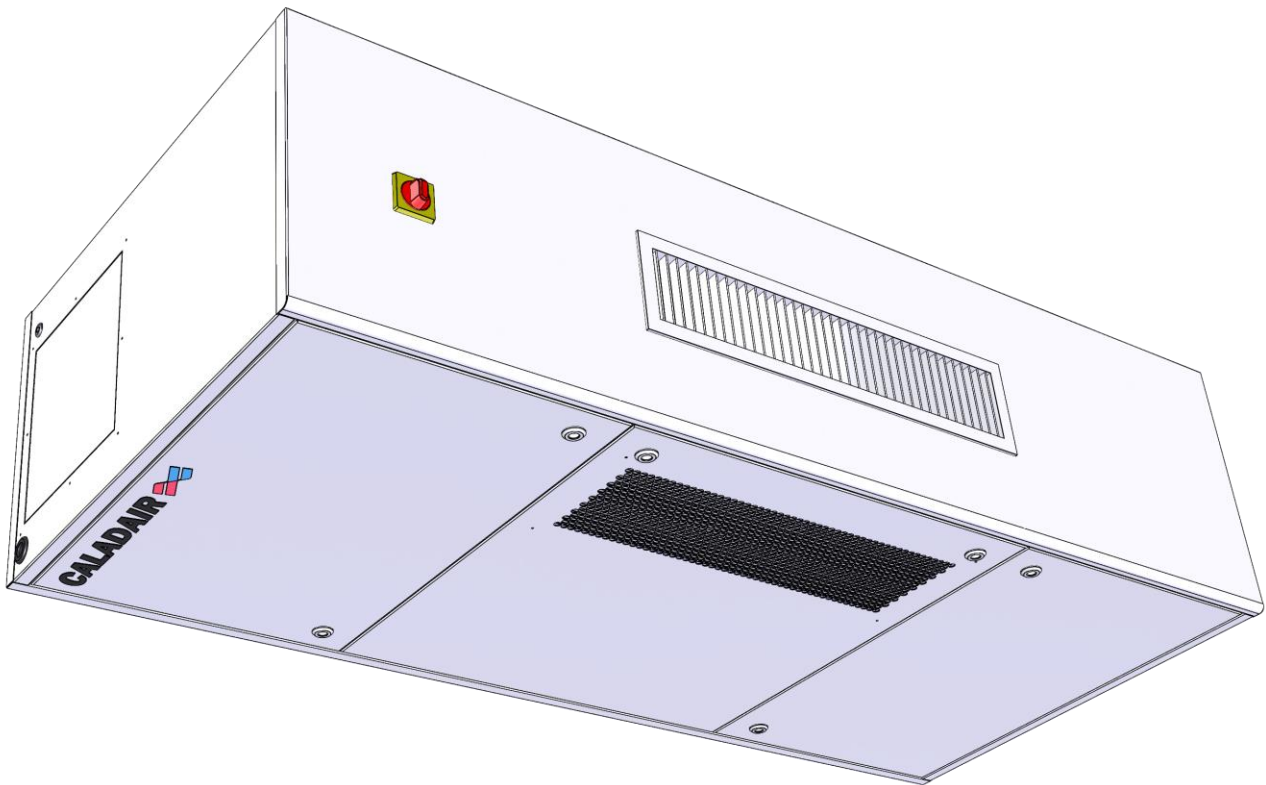


Installation and commissioning manual



Applicable to Manufacturing Nr 231610 →

I TECHNICAL SPECIFICATIONS page 5

VIII INSTALLATION page 13

XII START-UP page 29

XIV GENERAL WIRING DIAGRAM page 38



I.	TECHNICAL SPECIFICATIONS	5
I.1.	General dimensional characteristics.....	5
I.2.	Dimensional characteristics specific to the hot water coil	5
I.3.	Electrical characteristics	6
I.4.	External connections	7
I.5.	Airflow connections	7
II.	GENERAL INFORMATION	8
III.	ON RECEIPT OF THE EQUIPMENT.....	8
III.1.	Checks	8
III.2.	Unpacking	8
III.3.	Storage.....	8
IV.	END OF LIFE.....	8
V.	PACKAGING AND PACKING	9
VI.	IDENTIFICATION AND LABELLING.....	9
VII.	COMPOSITION	10
VII.1.	General composition.....	10
VII.2.	Electrical board	11
VII.3.	Control terminal blocks and user connections	12
VIII.	INSTALLATION.....	13
VIII.1.	Handling in an upright position	13
VIII.2.	Lifting in horizontal position	13
VIII.3.	Installation precautions	13
VIII.4.	Coring of the wall or the ceiling.....	14
VIII.5.	Installation et fixation to the ceiling	14
VIII.5.a.	Attachment of the support to the ceiling	15
VIII.5.b.	Installation of the unit on its support.....	16
VIII.5.c.	Installation of the unit in a false ceiling.....	17
VIII.6.	Access inside the unit	17
VIII.7.	Aeraulic connection	18
VIII.8.	Connecting the power supply	18
IX.	ELECTRICAL CONNECTION OF EXTERNAL DEVICES	19
IX.1.	Alarm report output (DO5) - 24Vac to be relayed.....	19
IX.2.	Heating output (DO3) - 24Vac to be relayed	20
IX.3.	3-way valve control output (AO1 – 0-10V).....	20
IX.4.	Forced reduced speed digital input (RS=Reduced Speed) (DI3)	21
IX.5.	Forced normal speed digital input (NS=Normal Speed) (DI4)	22
IX.6.	External stop digital input (DI5).....	22
IX.7.	Fire protection digital input (DI8)	22
IX.8.	Firefighter remote stop control (ADP).....	22
X.	DRAINAGE OF CONDENSATE.....	23
X.1.	Gravity evacuation.....	23
X.2.	Evacuation by condensate lift pump (optional).....	23
X.2.a.	General information	23
X.2.b.	Composition of the condensate lifting pump kit.....	23
X.2.c.	Operating principle	24
X.2.d.	Maintenance	24
X.2.e.	Performances and operating limits	24
X.2.f.	Installation of condensate lift pump.....	24
X.2.g.	Installation of the anti-siphoning device	26
X.2.h.	Running test.....	26
X.2.i.	Diagnosis.....	26
XI.	GENERAL OPERATION	27
XI.1.	Start-up sequence of the unit.....	28



EVERSKY™

Decentralised Energy Recovery Unit

XI.2.	Stop sequence.....	28
XII.	START-UP	29
XII.1.	Setting up the time schedules	30
XII.2.	Adjustment of ventilation setpoints and CO2 management.....	31
XIII.	TROUBLESHOOTING – MAINTENANCE	31
XIII.1.	Fresh air filter pressure switch DEP FS	31
XIII.1.a.	Setting the tare	31
XIII.1.b.	Electrical connection.....	32
XIII.1.c.	Pneumatic connection	32
XIII.2.	Fans pressure switches DEPS and DEPR	32
XIII.2.a.	Setting the tare	33
XIII.2.b.	Electrical connection.....	33
XIII.2.c.	Pneumatic connection	33
XIII.3.	PT1000 temperature sensor	35
XIII.4.	CO2 sensor.....	35
XIII.5.	Electrical heating coil (BE).....	36
XIII.6.	Electrical frost protection coil (DBE).....	36
XIII.7.	THS and THSD Safety thermal switches.....	36
XIII.7.a.	Location	37
XIII.7.b.	Electrical connection.....	37
XIII.7.c.	Manual reset.....	37
XIII.8.	THA frost protection thermostat (hot water coil)	37
XIII.8.a.	Location	37
XIII.8.b.	Nominal trigger threshold setting	37
XIII.8.c.	Electrical connexion	37
XIV.	GENERAL WIRING DIAGRAM	38
XV.	WIRING DIAGRAM OF CUSTOMER CONNECTIONS.....	40
XVI.	PERIODIC MAINTENANCE	41
XVI.1.	Generalities.....	41
XVI.2.	Annual general inspection	41
XVI.3.	Checking the filters	41
XVII.	TROUBLESHOOTING.....	42
XVIII.	REPLACING THE INTERNAL MEMORY BATTERY	42
XIX.	EASY 5.0 CONTROL.....	42
XX.	AEREAULIC PERFORMANCES	43
XX.1.	EVERSKY 500	43
XX.2.	EVERSKY 750	43
XX.3.	EVERSKY 900	44
XX.4.	EVERSKY 1100	44
XXI.	COMMISSIONING REPORT	45

Safety and environment instructions

- Installation and maintenance of the unit must be performed by qualified staff according to local and current standards and regulations.
- Use Personal Protective Equipment to avoid damages related to electrical, mechanical (injuries from contact with metal sheets, sharp edges) and acoustics risks.
- Do not use the unit for any purpose other than that for which it is designed. This appliance may only be used for conveying air free of hazardous or construction dust.
- Move the equipment as indicated in the handling chapter.
- Carry out grounding in accordance with current standards. Never start-up a device that is not grounded (protective earth).
- Before any intervention, ensure that the device is turned off and wait for the complete shutdown of the moving components of the ventilation unit before opening the doors.
- During operation, inspection panels, doors and hatches must always be mounted and closed.
- The device is started or stopped only via the proximity switch.
- Safety and control equipment must not be removed, short-circuited or deactivated.
- During interventions, be vigilant to the temperature that certain components can reach (water battery or electrical resistance ...).
- The installation must comply with fire safety regulations.
- Any waste generation must be treated in accordance with the regulations in force.
- It is the responsibility of the installer of the equipment to ensure compliance with the regulations concerning noise emissions inside the building and to adapt if necessary, the conditions of installation.
- We accept no liability for damages resulting from misuse of the equipment, unauthorized repair or modification or non-compliance with this notice.

REMINDER AND DEFINITION OF PICTOGRAMS USED



Danger and warning:

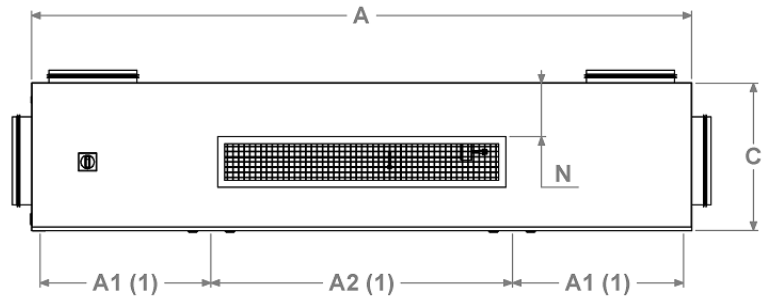
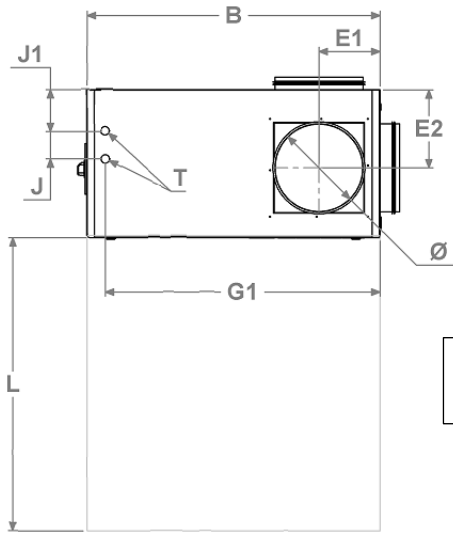
- o Operation or situation that may present a danger
- o Warning about instructions to follow



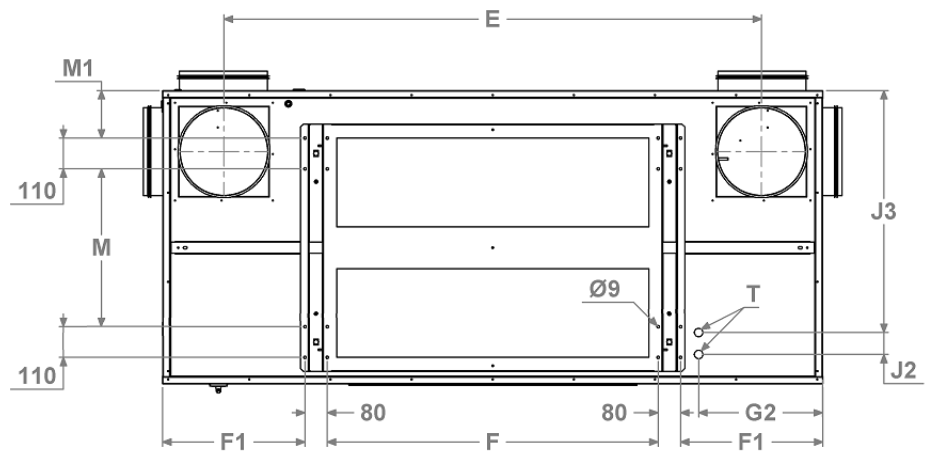
Reading the documentation that accompanies the product is mandatory.

I. TECHNICAL SPECIFICATIONS

I.1. General dimensional characteristics



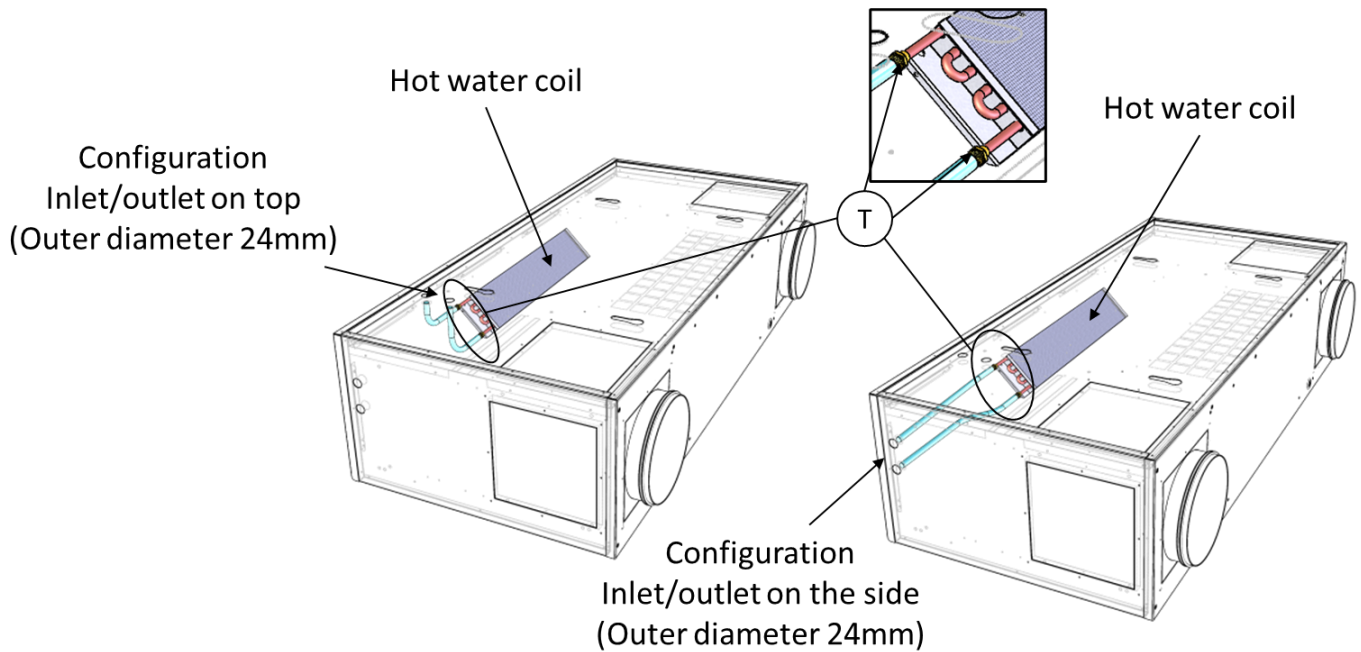
(1) Dimension of the opening panels
Location of suction and discharge outlets according to the chosen configuration



EVERSKY Models	Ø	A	A1	A2	B	C	E	E1
	mm	mm	mm	mm	mm	mm	mm	mm
500	250	1670	490	645	815	445	1297	185
750	315	1985	555	830	900	510	1547	220
900	315	1985	555	830	900	510	1547	220
1100	315	2365	615	1085	1050	530	1924	220
EVERSKY Models	E1	E2	F	F1	M	M1	N	Weight
	mm	mm	mm	mm	mm	mm	mm	kg
500	185	230	742	384	332	170	130	132
750	220	260	927	449	415	170	170	170
900	220	260	927	449	415	170	170	180
1100	220	280	1185	510	565	170	190	220

I.2. Dimensional characteristics specific to the hot water coil

EVERSKY Models	Hot water coil connections						
	Ø	Side			Top		
	T	J	J1	G1	J2	J3	G2
	" Male	mm	mm	mm	mm	mm	mm
500	3/8	55	135	725	55	675	320
750	3/8	90	140	835	90	750	385
900	3/8	90	140	835	90	750	385
1100	3/8	90	160	985	80	865	445



T Hydraulic connections G $\frac{3}{8}$ " Male with flat gasket seat.
 Internal piping and seals not supplied.
 Provide sufficient clearance for the 3-way valve.
 Hot water inlet is from the bottom, outlet in the top position.

1.3. Electrical characteristics

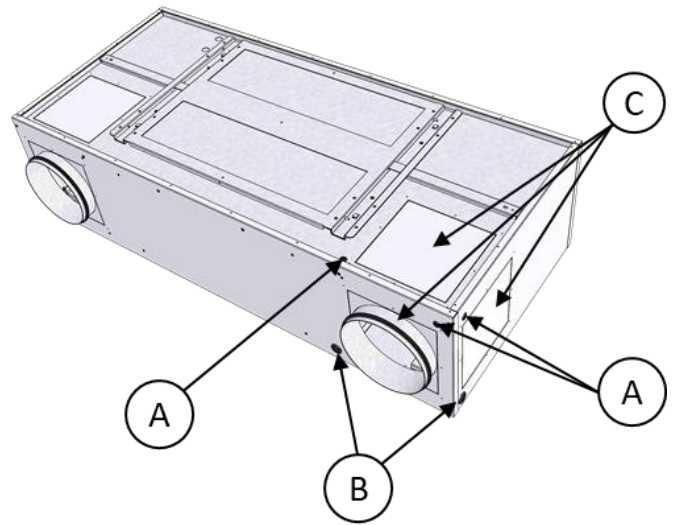
Model EVERSKY	Electrical motor power (W)	Temp. Use (°C / °C)	Electrical safety rating	Thermic protection*	PREMIUM BE SMART - INFINITE BC		FIRST PREMIUM BC		INFINITE BE	
					Electrical supply voltage (V / Ph / Hz)	Electric charge protection (A)	Electrical supply voltage (V / Ph / Hz)	Electric charge protection (A)	Electrical supply voltage (V / Ph / Hz)	Electric charge protection (A)
500	2x169	-25/60	IP54/B	PTI	230 / 1 / 50	7,0	230 / 1 / 50	2,7	230 / 1 / 50	11,4
750	2x170	-25/60	IP54/B	PTI	230 / 1 / 50	8,2	230 / 1 / 50	2,8	230 / 1 / 50	13,7
900	4x169	-25/60	IP54/B	PTI	230 / 1 / 50	10,8	230 / 1 / 50	5,3	230 / 1 / 50	16,3
1100	4x170	-25/60	IP54/B	PTI	230 / 1 / 50	11	230 / 1 / 50	5,5	230 / 1 / 50	16,5

*PTI : Integrated Thermal Protection

EVERSKY Model	SMART - INFINITE BE - INFINITE BC		PREMIUM BE - INFINITE BE	
	Electrical frost protection coil (DBE)		Electrical heating coil (BE)	
	Input (W)	supply voltage (V / Ph / Hz)	Input (W)	supply voltage (V / Ph / Hz)
500	1000	230 / 1 / 50	1000	230 / 1 / 50
750	1250	230 / 1 / 50	1250	230 / 1 / 50
900	1250	230 / 1 / 50	1250	230 / 1 / 50
1100	1250	230 / 1 / 50	1250	230 / 1 / 50

1.4. External connections

- (A) or (B) :
 - Power supply
 - Condensate drainage with condensate lift pump (hose $\varnothing 6 \times 9$)
- (B) Gravity evacuation of condensate (hose $\varnothing 10 \times 16$)
- (C) Removable outlets/blind panels

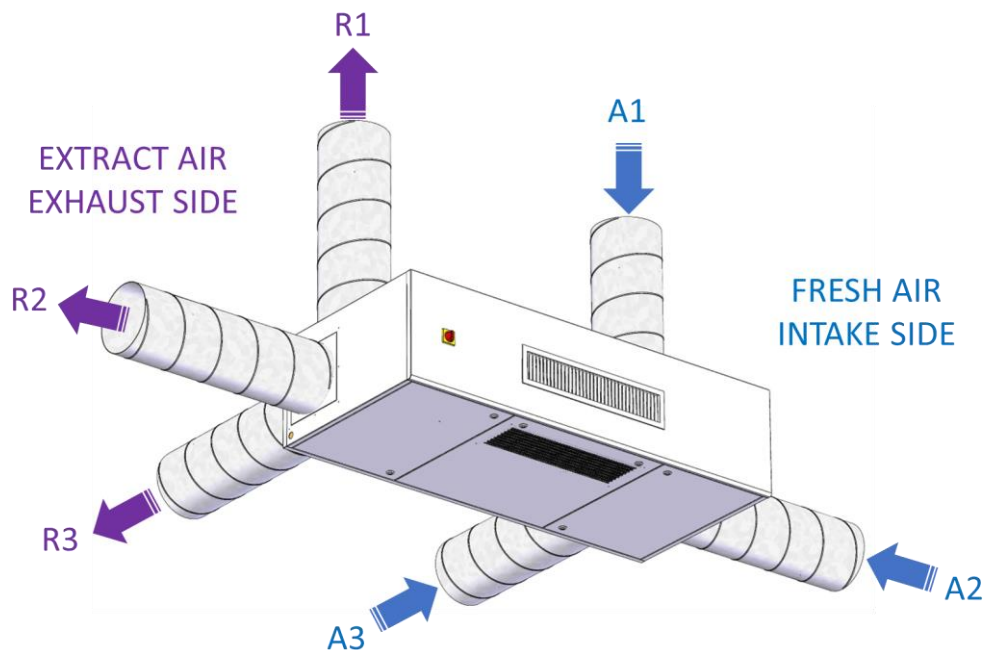


1.5. Airflow connections

The EVERSKY unit has modular connection ports on the fresh air intake and the exhaust extracted air allowing 9 configurations of aeraulic connection to adapt to each installation specificity.

This removable port panels feature is patented and is fitted with circular lip seal in order to ensure the sealing to the air networks (ATEC CSTB n° 13-224-12).

The modification of the location of the port panels may be performed from inside the unit at the end of the installation.



Possible combinations of the position of fresh air intake and exhaust extracted air

II. GENERAL INFORMATION

EVERSKY is a range of high efficiency and low noise emissions decentralised ERU (Energy Recovery Unit). It features as standard an air CO2 control (DCV).

Installed directly into the room or space to be treated, it avoids the need for a complex and expensive air distribution network.

Featuring a high efficiency static heat exchanger, hot water or electrical coil, fresh air F7 filtration range and reinforced sound insulation, **EVERSKY** guarantees expected hygiene and comfort in the case of demanding rooms while limiting energy consumption.

EVERSKY unit features as standard the **EASY 5.0 (from Manuf. Nr 231610)** control system with **MODBUS RTU/TCP** and **BACNET MSTP/IP** communication protocols (protocol choice enable on field) and a **HTML5** compliant **WEBSERVER**. It features a mobile **touch screen** for easy commissioning and maintenance. The EASY 5.0 control system is described in a separate manual.

EVERSKY is delivered as **PLUG&PLAY - SET&FORGET**: the controller is pre-set and set up with options ordered as standard to facilitate and minimise commissioning time.

III. ON RECEIPT OF THE EQUIPMENT

III.1. Checks

On receipt of the equipment, check the condition of the packaging and the equipment itself, as well as the number of packages. In case of damages, make precise reservations on the carrier's delivery note and notify your distributor immediately.

III.2. Unpacking

When unpacking the equipment, check the following points:

- o Total number of packages
- o Presence of ordered accessories (electrical equipments, sleeves, studs...).

Remove the protective film from the outer shell.

After unpacking the equipment, the waste must be disposed of in accordance with the standards and laws in force and the sorting rules must be respected.

No packaging should be dispersed in the environment.

III.3. Storage

As long as the appliance is not installed, it must be stored in a dry place. The packaging cannot be considered sufficient for storage in the weather.

IV. END OF LIFE

Through its membership of the ECO-organization ECOLOGIC, CALADAIR meets the obligations of financing the collection, removal and treatment of Waste Electrical and Electronic Equipment.

During the installation or uninstallation of this equipment, the user or installer can contact the company **Ecologic** who will offer him a collection solution to evacuate the obsolete product in a suitable sector.

Phone: +33 130 577 909

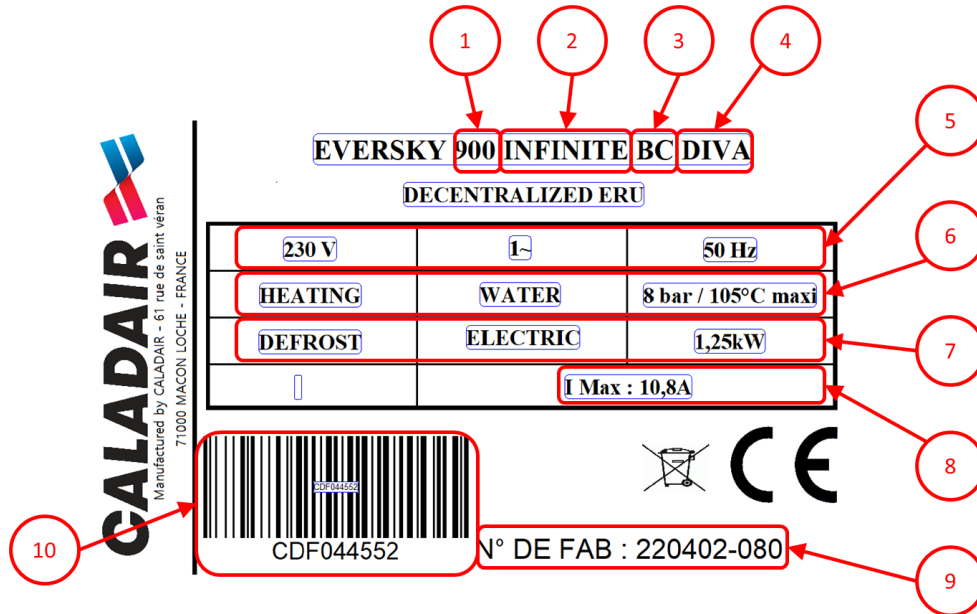
Web : www.e-dechet.com

V. PACKAGING AND PACKING

The **EVERSKY** units are delivered fixed on transport supports and wrapped in a protective film. Sensitive parts are protected by cardboard or bubble film.

VI. IDENTIFICATION AND LABELLING

The **EVERSKY** units are identified by the signage label affixed directly to a side wall.

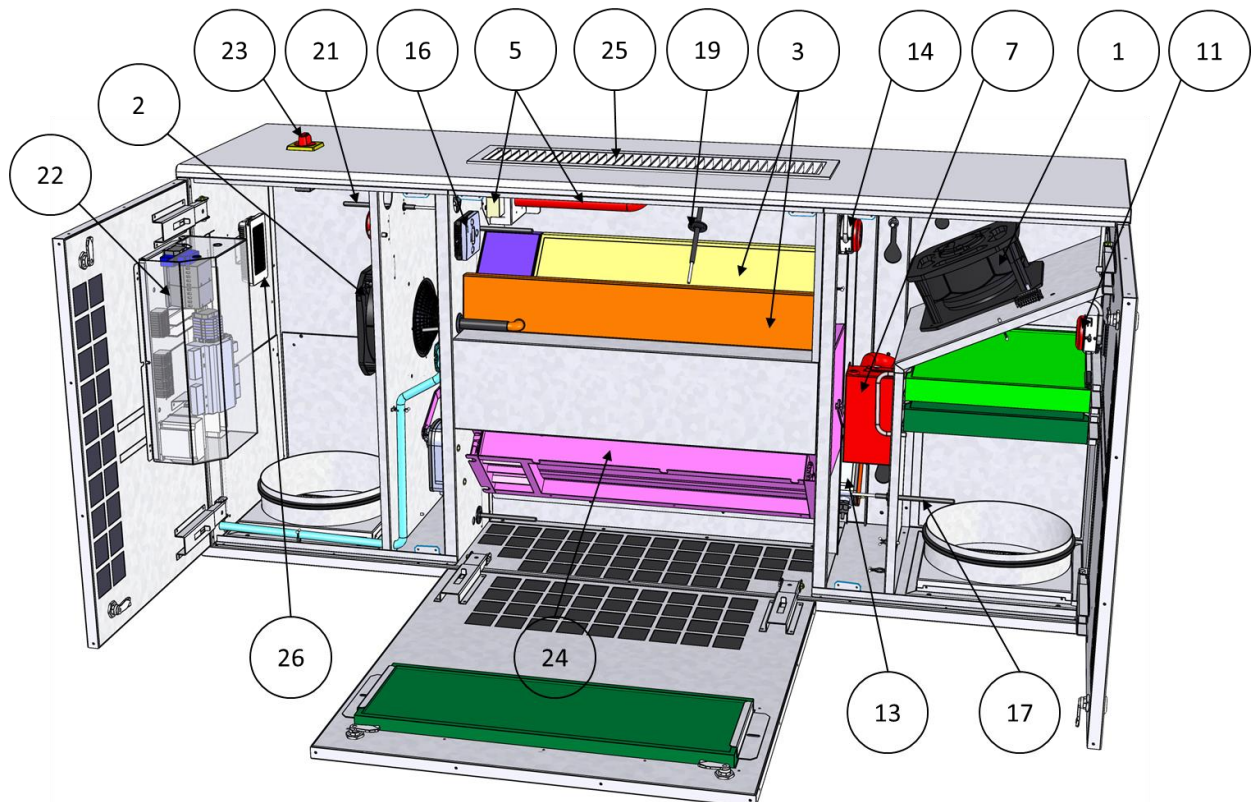
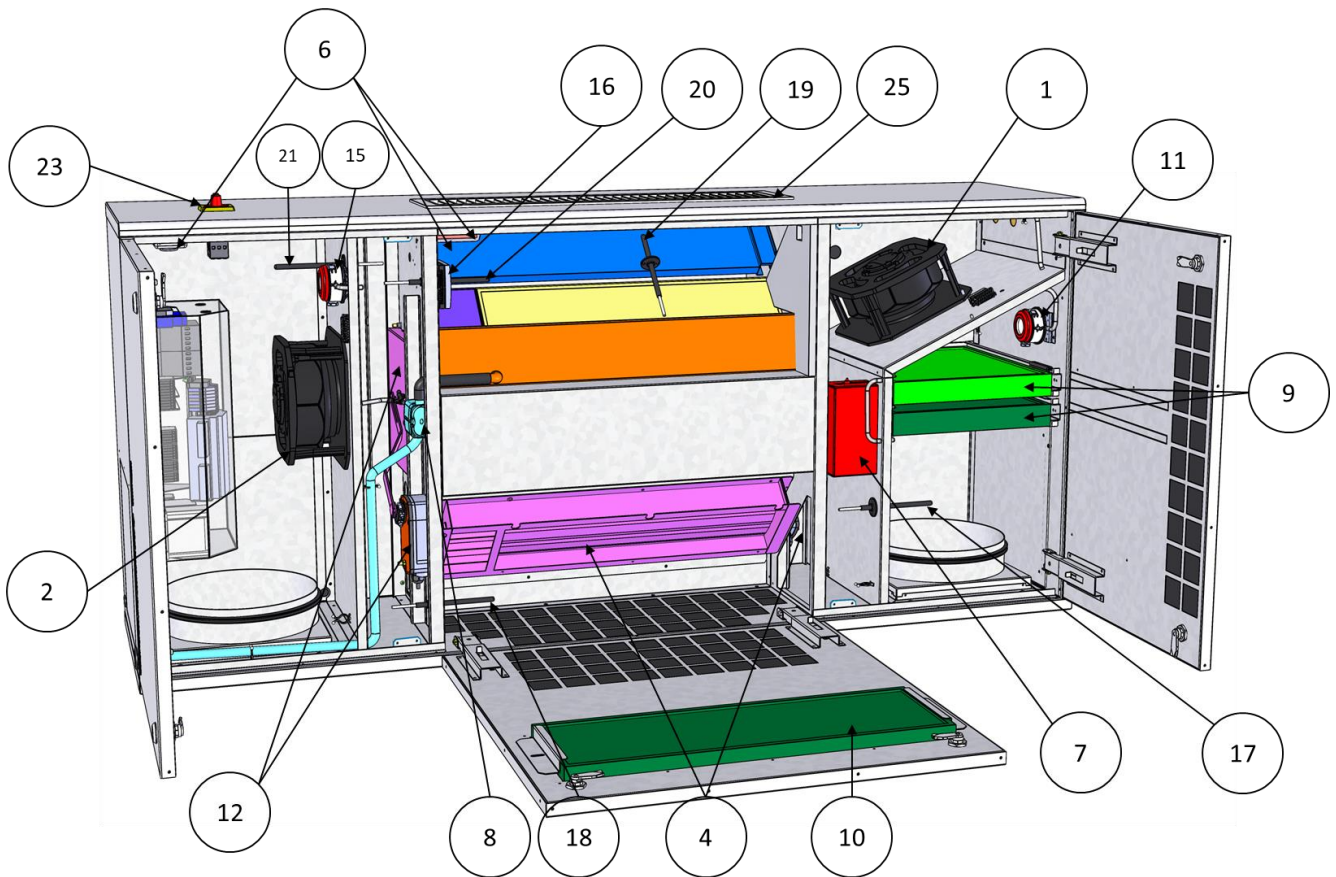


Signage label

1	Unit size
500/700/900/1100	
2	Thermal equipment
FIRST	Unit without coil
SMART	Unit equipped with electrical pre-heating coil (frost protection)
PREMIUM	Unit equipped with a heating coil
INFINITE	Unit equipped with electrical pre-heating coil (frost protection) and a heating coil
3	Type of heating coil
BE	Electrical heating coil
BC	Hot water heating coil
4	Type of fan control
DIVA	CO2 dependent variable speed fans (DCV)
5	Power supply
6	Characteristics of the heating coil
7	Characteristics of the pre-heating coil (frost protection)
8	Maximal current input
9	Reference code of the unit
10	Manufacturing number (to be mentioned during any contact with the supplier)

VII. COMPOSITION

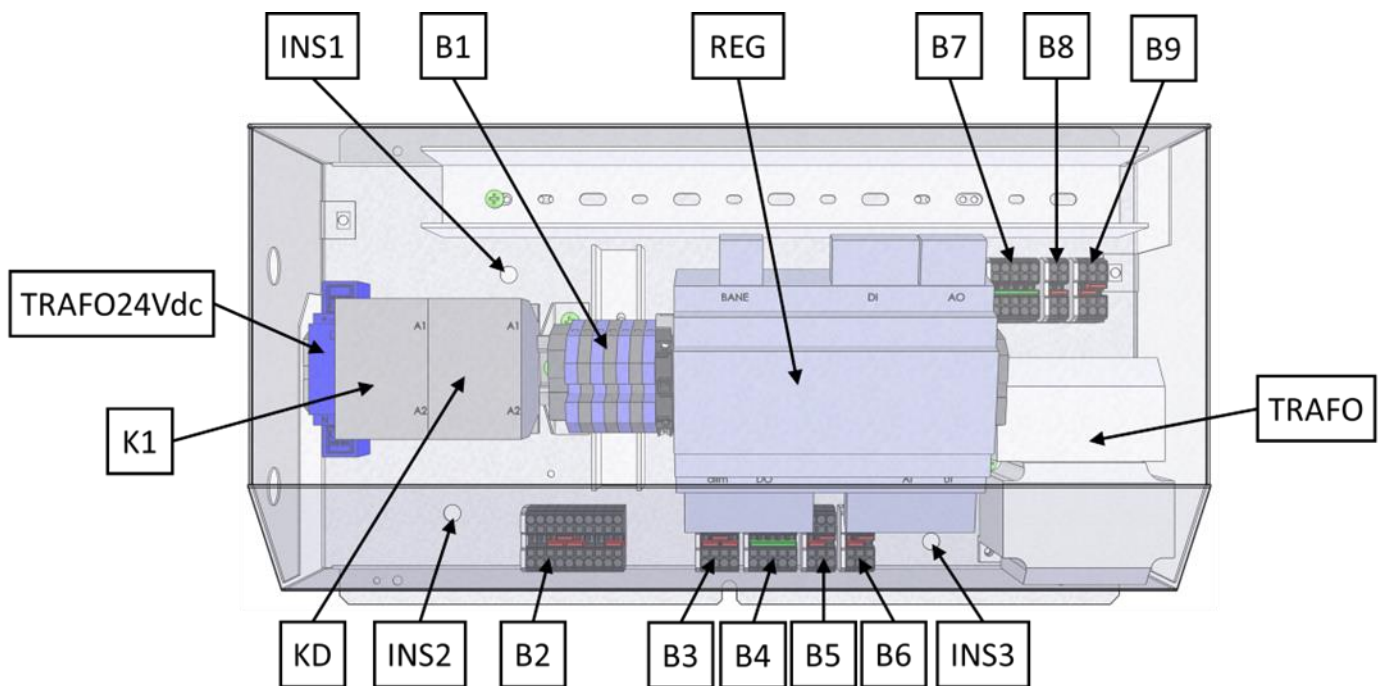
VII.1. General composition



Details of the composition of the unit seen from below

Mark	Designation	Components
1	SAF	Variable speed supply air fan (EC motor)
2	EAF	Variable speed extract air fan (EC motor)
3	REC	Plate type recuperator with removable condensate pan
4	BIM	Bypass with modulating motorized damper
5	BE+THS	Supply air electrical heating coil + thermal safety switch (PREMIUM BE – INFINITE BE)
6	BC + THA	Supply air hot water heating coil + frost protection switch (PREMIUM BC – INFINITE BC)
7	DBE + THSD	Supply air pre-heating coil + thermal safety switch (INFINITE - SMART)
8	PRC	Condensate lift pump with draining hose (option)
9	FS	Double supply air filter (F7) (F9 additional filter in option)
10	FR	Extract air filter (F7)
11	DEPFS	Supply air filter guard (pressure switch)
12	RMR	Extract air damper
13	RMS	Supply air damper
14	DEPS	Supply air fan guard (pressure switch)
15	DEPR	Extract air fan guard (pressure switch)
16	CO2	CO2 sensor
17	SEG	Outdoor air temperature sensor
18	SBD	Pre-heated air temperature sensor (control of the pre-heating coil)
19	SSG	Supply air temperature sensor
20	SRG	Extract air temperature sensor
21	SDG	Exhaust extract air temperature sensor (control of the bypass)
22		Control board
23	IG	Main switch
24		Extraction grid
25		Supply grid
26	PG 5.0	Mobile wired remote touch screen

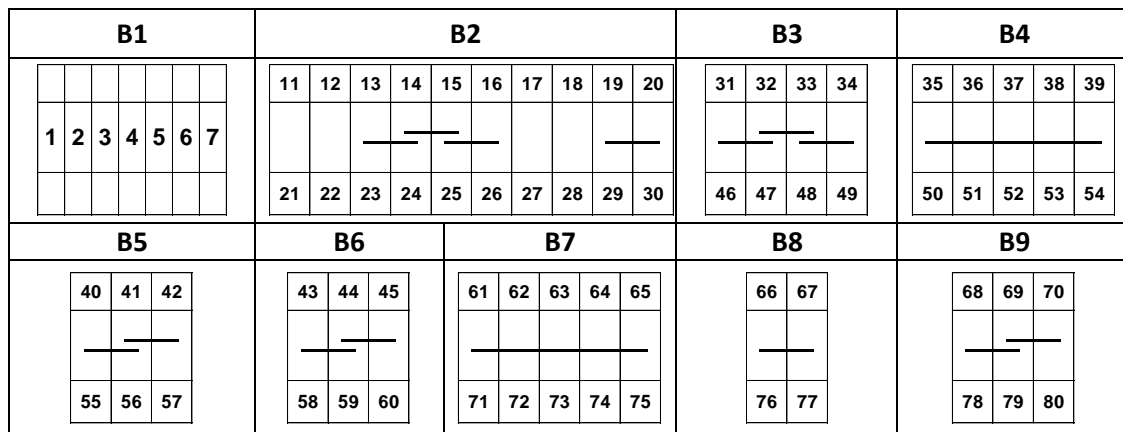
VII.2. Electrical board



Face view of the electrical board with controller

Mark	Components
B1	Terminal block for fans supply + condensate lift pump
B2	Terminal block for safeties
B3	Terminal block for commons GDO
B4	Terminal block for commons AGND (30)
B5	Terminal block for commons G (1) → +24V
B6	Terminal block for commons +C (4)
B7	Terminal block for commons +C (4)
B8	Terminal block for commons G (1) → +24V
B9	Terminal block for commons AGND (90)
INS1...3	Crimped nuts for protective earth (PE) connection
K1	Electrical heating coil power switch
KD	Electrical pre-heating coil power switch
REG	Controller
TRAFO	Control transformer
TRAFO24Vdc	24Vdc supply transformer of PG 5.0

VII.3. Control terminal blocks and user connections



Terminal blocks of electrical board

Designation	Definition	Terminals	Connection
ADP	Firefighter remote stop	21-22	To be connected to the terminals of a NC dry contact of the firefighter remote stop. (Shunt between terminals 21-22 at the factory)
THA	Frost protection thermal switch	23-27	To be connected to the NC dry contact of the THA frost protection thermal switch (PREMIUM BC and INFINITE BC)
THS	Thermal safety switch	23-27	To be connected to the NC dry contact of the THS thermal safety switch (PREMIUM BE and INFINITE BE)
THSD	Preheating coil thermal safety switch	24-28	To be connected to the NC dry contact of the THSD thermal safety switch (SMART - INFINITE BE and INFINITE BC)
MF PV	Reduced speed external running	DI3 Controller + 73	To be connected to a NO external dry contact.
MF GV	Normal speed external running	DI4 Controller + 74	To be connected to a NO external dry contact.
ARR EXT	External stop	DI5 Controller + 75	To be connected to a NO external dry contact.
V3V BC	3-way valve for hot water heating coil	AO1 Controller + 76 + 78	To be connected to the 3WV of the hot water heating coil (see XV WIRING DIAGRAM OF CUSTOMER CONNECTIONS)
AL	Alarm report	DO5 Controller + 47	24Vac output available when operating fault (Caution 24Vac output to be relayed)

VIII. INSTALLATION

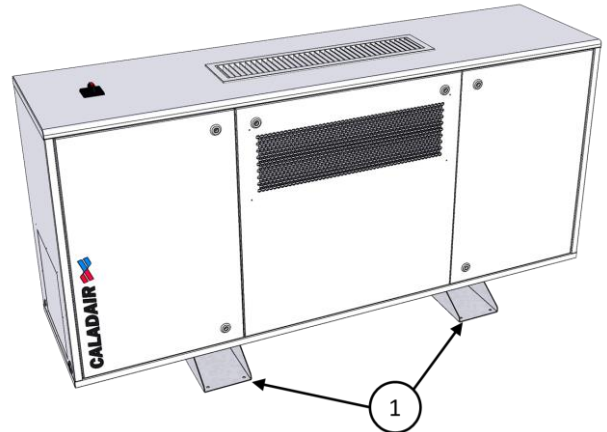
VIII.1. Handling in an upright position

It is recommended to handle the unit on its transport medias (1) and to remove them at the last moment as close as possible de the place of location.

If the equipment is handled using a forklift, take care that it supports the load-bearing structure.

Adapt the choice of handling means to the weight of the equipment received (refer to the weight given at the beginning of the document).

During transport, the ports are fixed on the inside the unit to facilitate the handling and avoid possible damage.



Transport medias to be removed during installation

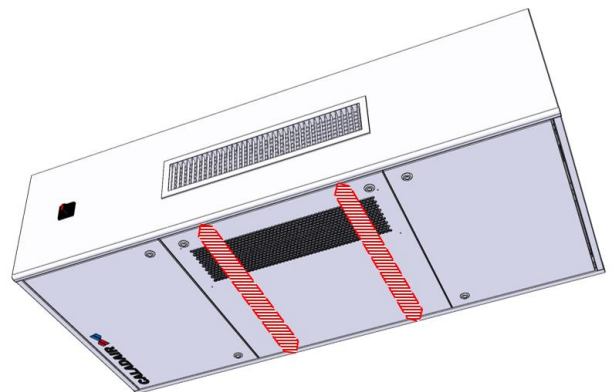
VIII.2. Lifting in horizontal position

	<p>The unit must not be lifted by the fixing bracket fitted from the factory.</p>
	<p>Avoid any shocks during lifting or ground removal that could damage the structure and the integrity of the unit.</p>
	<p>If the unit is lifted using a crane, use a rudder and belt it to keep in a horizontal position.</p>

Do not obstruct the opening of the side doors during the ceiling mounting of the unit.

Support areas under the central part:

- Recessed from doors seals and latches
- From the lower edge of the front panel to the lower edge of the rear panel.



VIII.3. Installation precautions

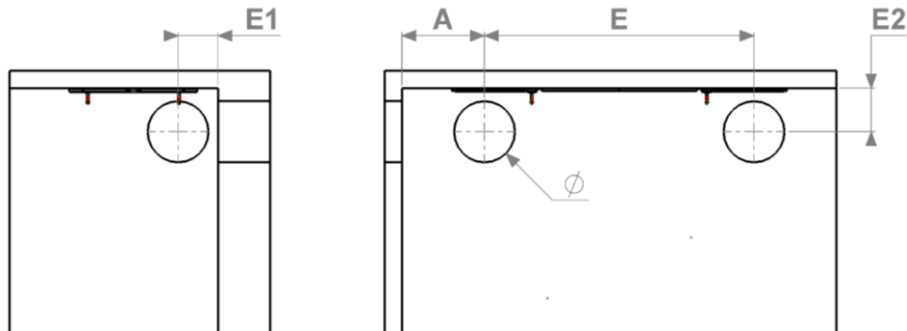
Make sure that there is no obstacle in front of the blow jet:

- If the ceiling is sloping, it is recommended to install the unit on the upper part of the slope
- There should be no beams perpendicular to the blow jet
- If there are light fitting protruding from the ceiling, the air stream must be able to pass over the light fittings so that it is not blocked.

VIII.4. Coring of the wall or the ceiling

If the fresh air inlet or/and the exhaust air outlet must pass through a wall, a sufficiently large opening must be provided according to the recommendations in the following table:

EVERSKY	A mini (mm)	E (mm)	E1 mini (mm)	E2 mini (mm)	Ø mini (mm)
500	190	1300	190	230	300
750	225	1550	225	260	350
900	225	1550	225	260	350
1100	225	1927	225	280	350



Positions of inlet port and exhaust port in frontal or lateral configurations

VIII.5. Installation et fixation to the ceiling

EVERSKY unit must be installed exclusively indoor, on the ceiling (with or without false ceiling).

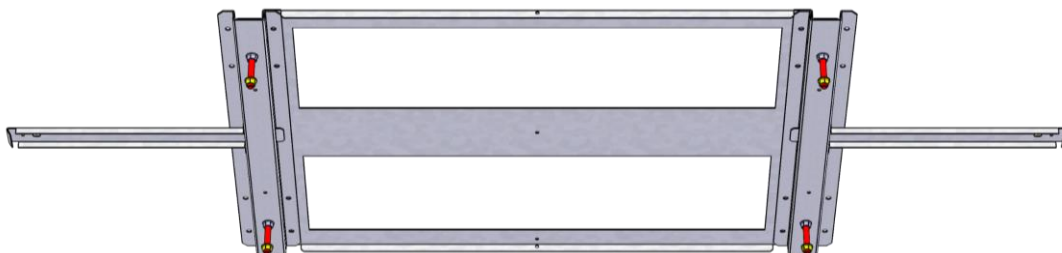
Install the unit in such a way that bad weather or ambient temperature cannot damage the internal elements. No water inlet from outside must be made possible: make sure to install awnings or rain grilles at the fresh air inlet or at the extract air exhaust and to leave a slight slope from the inside to the outside on the ducts of fresh air supply and extract air discharge.

Make sure to keep the airtight of the building at the core holes between the wall and ducts:

- On the outside: fill the gap between the duct and the core
- On the inside: fill the gap between the duct and the core or place a seal between the wall and the face concerned of the unit.

Before any operation, check that the installation supports are suitable to support the weight of the unit with all accessories and option.

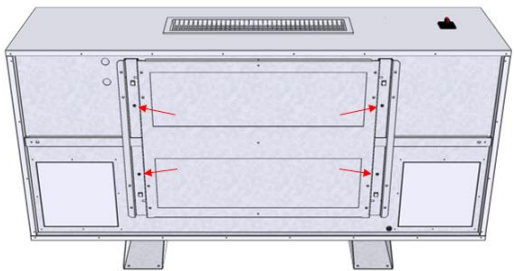
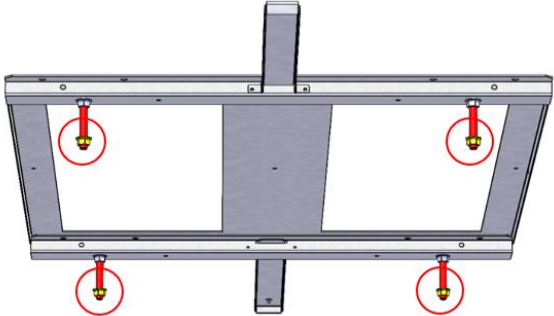
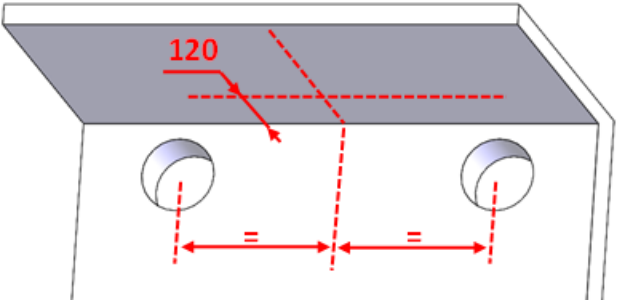
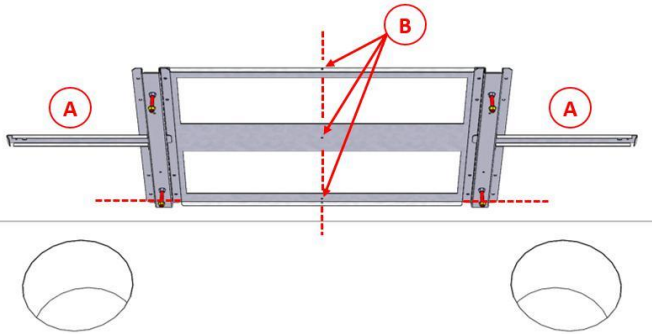
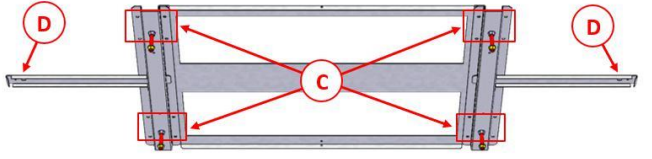

The mounting bracket must always be attached to the top panel in order to ensure the tightness of the unit.



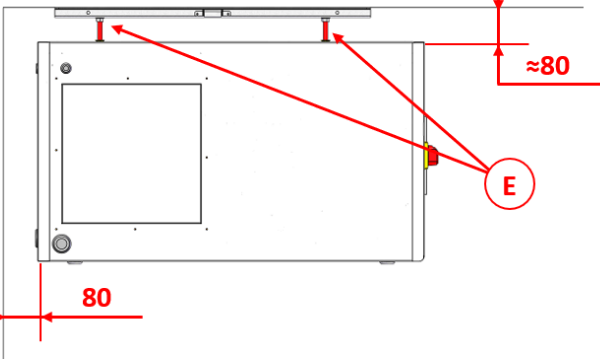
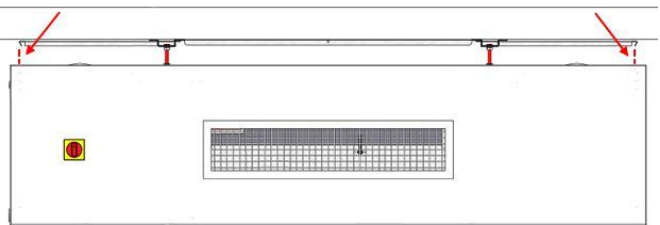
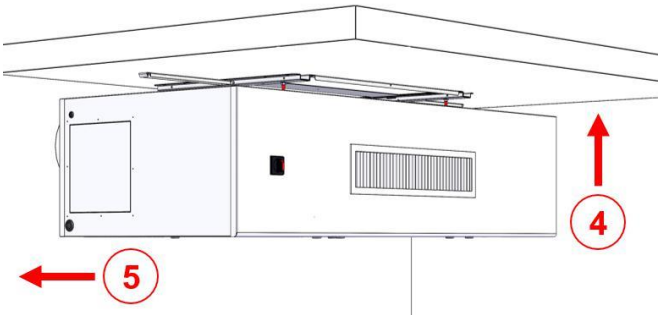
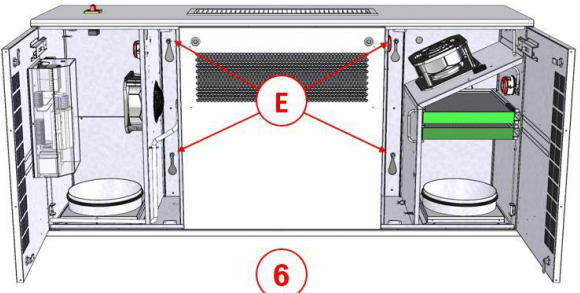
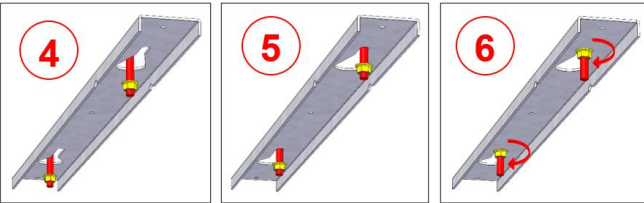
Support de fixation servant également de gabarit de montage

VIII.5.a. Attachment of the support to the ceiling

Example of unit fastening with duct connection on the back side and leaning against the wall.

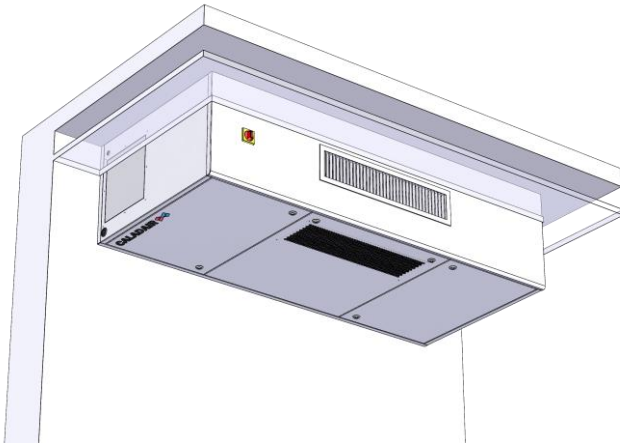
Step	Description	Description
1	<p>Remove the bracket from the top panel of the unit by unscrewing the 4 fixing screws.</p> <p>Note: the position of the bracket thus fitted at the factory corresponds to the clamping position once the unit is leaning against the wall.</p> <p>This position may refer to the prior dimensions taking depending on the installation configuration chosen.</p>	
2	<p>Check the presence of clamping nuts on the threaded rods of the fixing support (nuts to be engaged approximately 10mm after the end of the threaded rods).</p>	
3	<p>Draw 2 markers on the ceiling:</p> <ul style="list-style-type: none"> • 1 line 120mm from the wall to which the unit is leaning • 1 line perpendicular to the first above and centered in relation to the 2 cores made in the wall. 	
4	<p>Align the edge of the support on the first line and centered the frame on the second line by means of the holes (B) acting as markers (templates plates (A) can optionally be removed beforehand to facilitate the installation of the frame and rework afterwards).</p>	
5	<p>Attach the frame by means of 4 x 4 fixing holes (C).</p>	
6	<p>Attach the 2 template plates on their ends by means of fixing holes (D).</p>	

VIII.5.b. Installation of the unit on its support

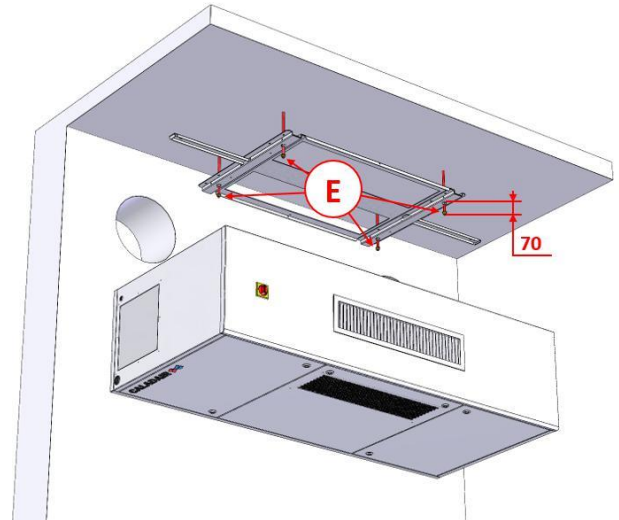
Step	Description
1	Place the unit in horizontal position (doors below and blowing grid at the front) and remove the transport supports.
2	<p>Lift the unit and bring it close to its final position about 80mm from the wall and 80mm from the ceiling. (In this step, the screws (E) are still set back from above the unit)</p> 
3	<p>Adjust the position of the unit laterally using the 2 template plates acting as visual guide/marker.</p> 
4	<p>Raise the unit until it is flush with the ceiling.</p> 
5	<p>Move the unit backwards until it is leaning against the wall.</p> 
6	<p>Open the side doors to tighten the nuts inside the unit so that the unit can be placed correctly against the ceiling and its trim adjusted.</p>  <p style="text-align: center;">Engagement of threaded rods inside the unit</p>
7	<p>Arrange the removable port / blind panels from inside according to the configuration of the installation (see 1.5 Airflow connections).</p>

VIII.5.c. Installation of the unit in a false ceiling

The unit can be semi-recessed in a false ceiling (mounting (A)) up to 10mm above the blowing grid frame.



(A) Mounting in contact with the ceiling



(B) Offset ceiling mounting

The unit can also be offset from the ceiling (B).

In this case, remove the 4 screws (E) M10x70 et replace them with a M10 threaded rod. Allow the threaded rod to protrude 70mm below the support.

Ensure that the attachment of the threaded rod in the ceiling is strong enough to support:

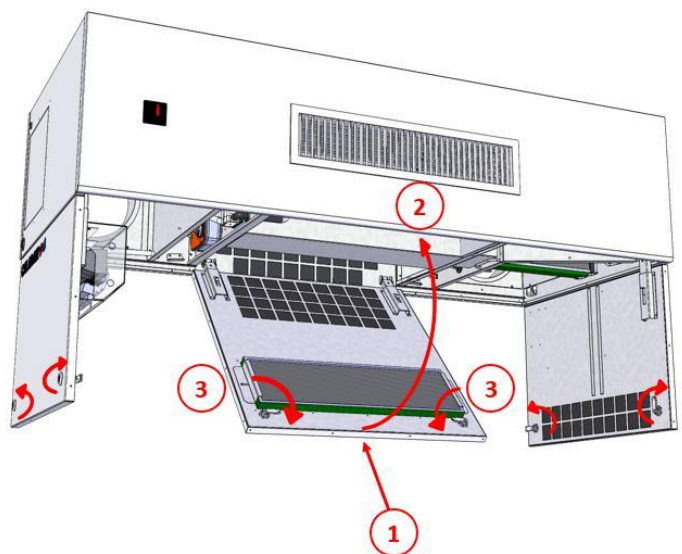
- Weight of the unit itself and any options mounted on it
- Installation loads
- Operation/maintenance loads

VIII.6. Access inside the unit

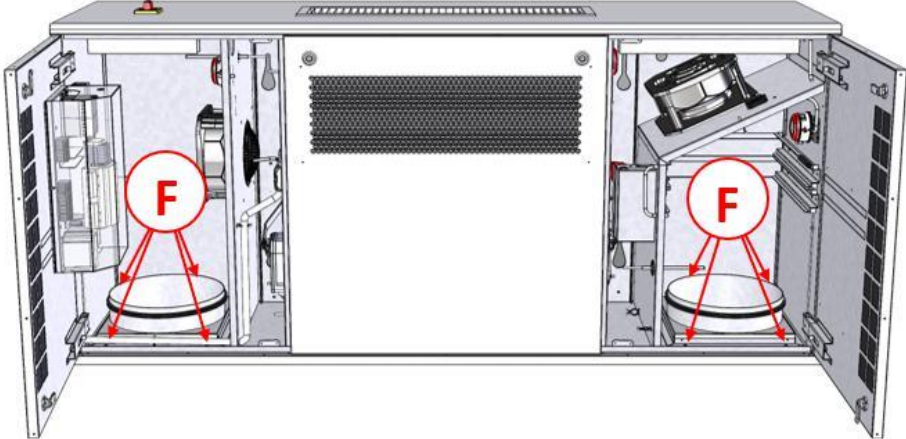
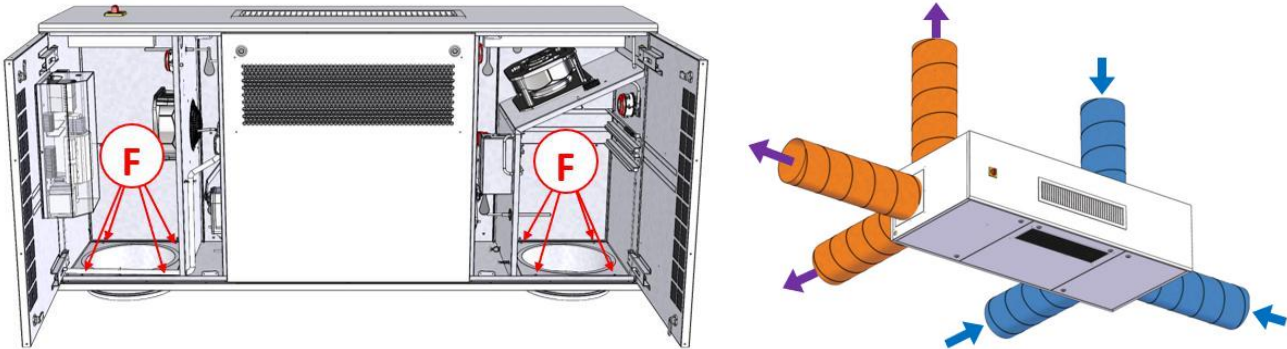
The EVERSKY unit has 3 independent, recessed and hinged doors for access to the interior.

For closing the doors:

- 1- Push the door until it is pressed against the seal located toward the hinges
- 2- Raise the door upwards
- 3- Turn the locks in the direction of the arrows.



VIII.7. Aeraulic connection

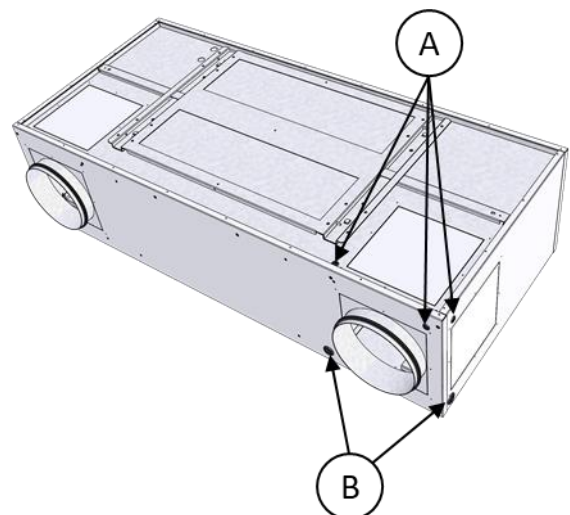
Step	Description
1	<p>Loosen the screws (F) and remove the port panels.</p> 
2	<p>Flip the port panels and connect them to the ducts. Tighten the screws (F). The modularity of the port panels makes it possible to position them on any side according to the diagram below:</p> 

VIII.8. Connecting the power supply

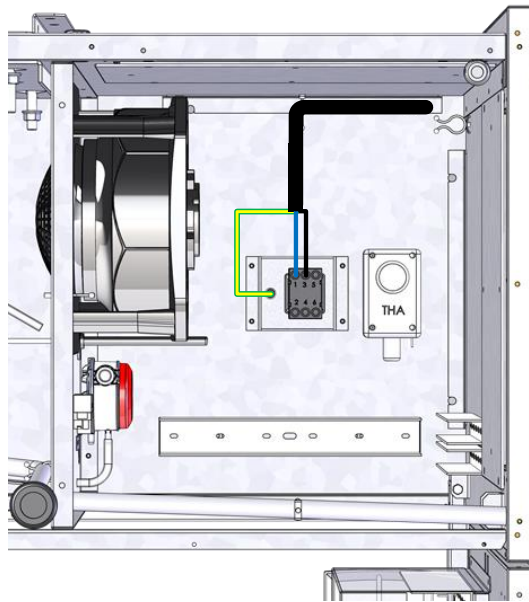
Provide electrical protection devices (circuit breaker, differential) upstream the of the power supply cable of the unit. Electrical characteristics needed for the selection and the sizing of power supply (cable section, guards...) are available in chapter I.3 Electrical characteristics).

Drill the rubber wire pass (A) or (B) positioned on one of the faces and run the power cable through it.

One of the wire passes (B) is reserved for the draining of condensate by gravity.



Connect power supply wires directly on the main switch terminal (marker 1 and 3).
 Connect the protective earth (PE) wire on the crimped nut near the main switch (provide a eyelet lug for M6 screw).
 The protective earth wire must be slightly longer than the line and neutral wires.



Power supply connection to the main switch

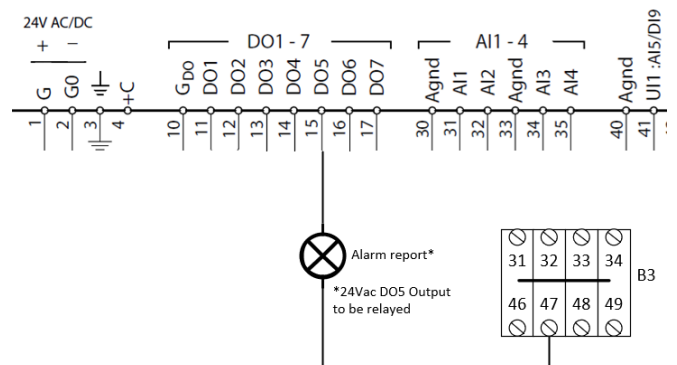
Attach and clamp strongly the power supply cable to a fixed part (frame, cable tray...).

IX. ELECTRICAL CONNECTION OF EXTERNAL DEVICES

The EASY control embedded in the EVERSKY unit provides the user with specific inputs and outputs to know or force the operation, or to possibly control remoted devices.

IX.1. Alarm report output (DO5) - 24Vac to be relayed

Factory setting = NO (Normally Open) output
 Output in idle state (open) = no active alarm or presence of Class C alarm (warning).
 Active output (closed) = Class A or B alarm is active.
 24Vac output to be relayed.



IX.2. Heating output (DO3) - 24Vac to be relayed

Only for Premium BC and Infinite BC unit versions.

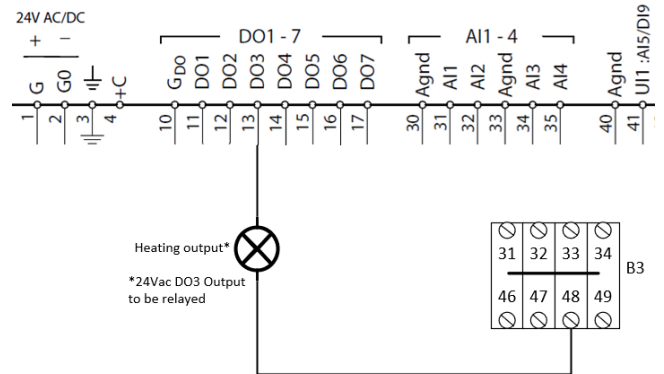
Factory settings = NO (Normally Open) output.

24Vac output to be relayed.

The DO3 digital output is activated when the control identifies a need for heat to comply with the temperature setpoint. This all-or-nothing signal can be used to control, for example, the operation of a circulator/pump, or a heating generator.

The DO3 Output gives 0Vac when it is inactive, 24Vac when it is active.

The maximum current is limited to 100mA. The output must be relayed to power a component whose consumption exceeds the maximum current.



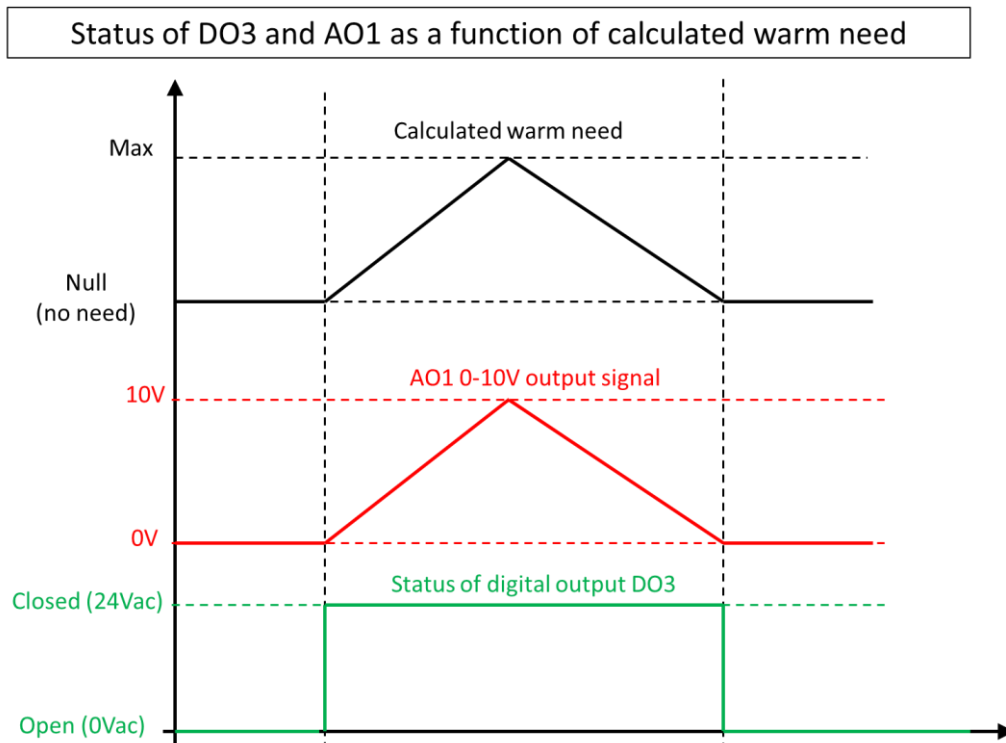
The status of the DO3 digital output is associated with the state of the analog output AO1 used for controlling the 3 ways valve of the hot water heating coil.

IX.3. 3-way valve control output (AO1 – 0-10V)

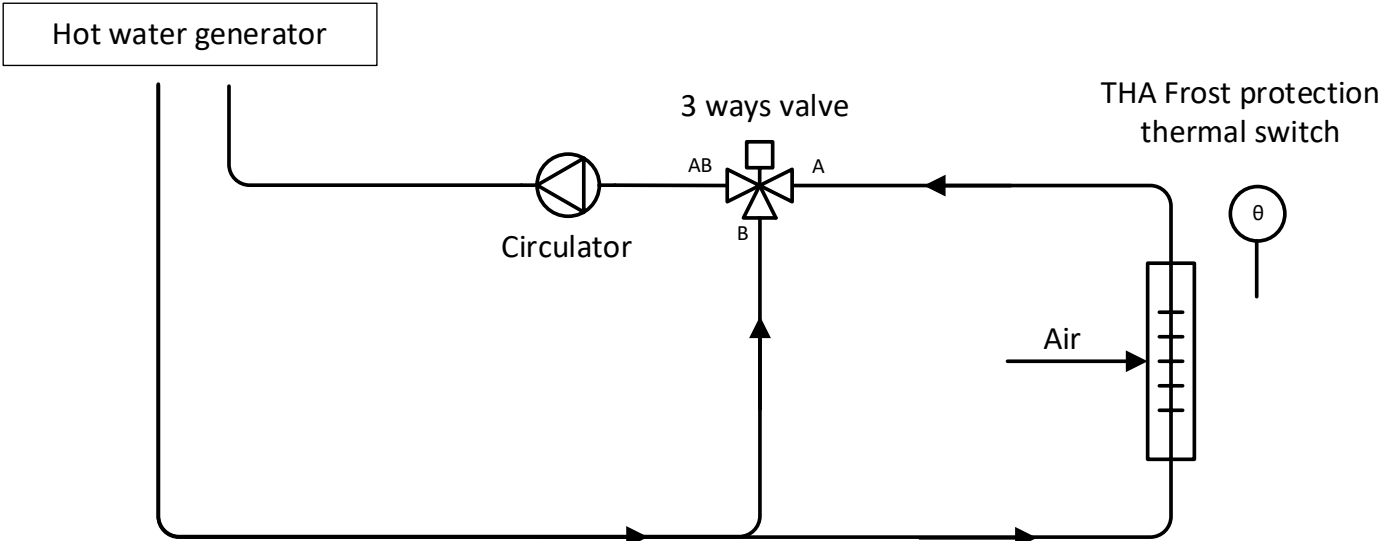
Only for Premium BC or Infinite BC unit versions.

The operation of AO1 analog output is associated to the operation of the DO3 digital output.

The signal of the AO1 analog output is 0-10V type. It reflects the heating requirement calculated by the unit's controller according to the programmed temperature setpoint and the actual measured temperature via a PI (proportional/integral) control loop:



This signal can be used, for example, to control external devices (3-way modulating valve, heating modulating generator...) that provides heating for the room. The unit is acting as a room thermostat.



Hydraulic principle diagram

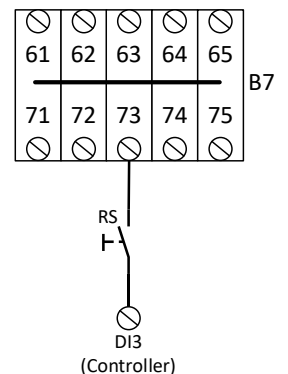
	Hydraulic connection	Electrical connection
Respect the direction of orientation of the valve axis		
Respect the direction of flow of fluid		

IX.4. Forced reduced speed digital input (RS=Reduced Speed) (DI3)

The forced reduced speed external control is used to force the unit to operate in reduced speed.

This function is active when the contact is closed.

It has priority on timer settings. It does not have priority if the operation of the unit is already in normal speed by timer.



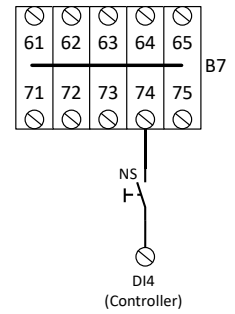
IX.5. Forced normal speed digital input (NS=Normal Speed) (DI4)

The forced normal speed external control is used to force the unit to operate in normal speed.

It is active when the contact is closed.

The function has priority if the unit is:

- In reduced speed by the timer
- In reduced speed by the forced reduced speed external control
- Stopped by the timer.



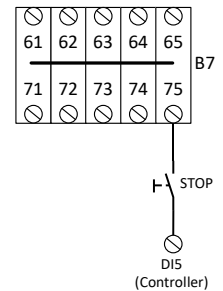
IX.6. External stop digital input (DI5)

The external stop control is used to force the unit to shut down.

It is active when the contact is closed.

The function has priority if the unit is:

- o In reduced or normal speed operation by the timer
- o In forced reduced speed or forced normal speed by external control (digital input)

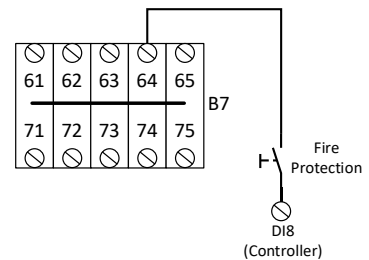


IX.7. Fire protection digital input (DI8)

Fire protection digital input makes it possible to force the operation of the unit regardless the actual setpoint required by the control in a flexible way according to several options available in the controller.

This function is not activated as standard, it must be configured.

This function needs to use an external NO (normally open) dry contact. The input can be configured as NC instead of NO if needed.



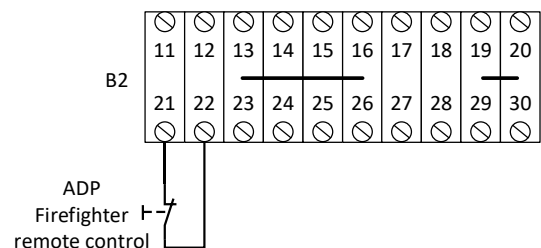
IX.8. Firefighter remote stop control (ADP)

Replace the factory shunt between terminals (21) and (22) by a NC (Normally Closed) dry contact acting as firefighter remote control.

At the opening of the contact, the 24Vac supply is cut off depriving the control of the unit of any function (no more display available).

The isolation motorized dampers on the fresh air side and the on the exhaust air side close by means of their automatic return spring.

All the actuators return to their resting position.



X. DRAINAGE OF CONDENSATE

X.1. Gravity evacuation

As standard, the unit is designed for a drainage of condensate by gravity (without high point). The installation of a siphon is to be expected at the time of installation of the unit.



Non-compliance with the installation rules of the condensate siphon can lead to an overflow of the condensate pan and an internal flooding of the unit that can cause damages to the equipment, damages, malfunctions, and endanger the occupants and staff.

The position of the condensate evacuation and the kind of connection interface are presented in chapter I.4 External connections.

Provide a slope of 2 to 3 % in direction of condensate evacuation and ensure that the collector is neither under nor overpressured.

X.2. Evacuation by condensate lift pump (optional)

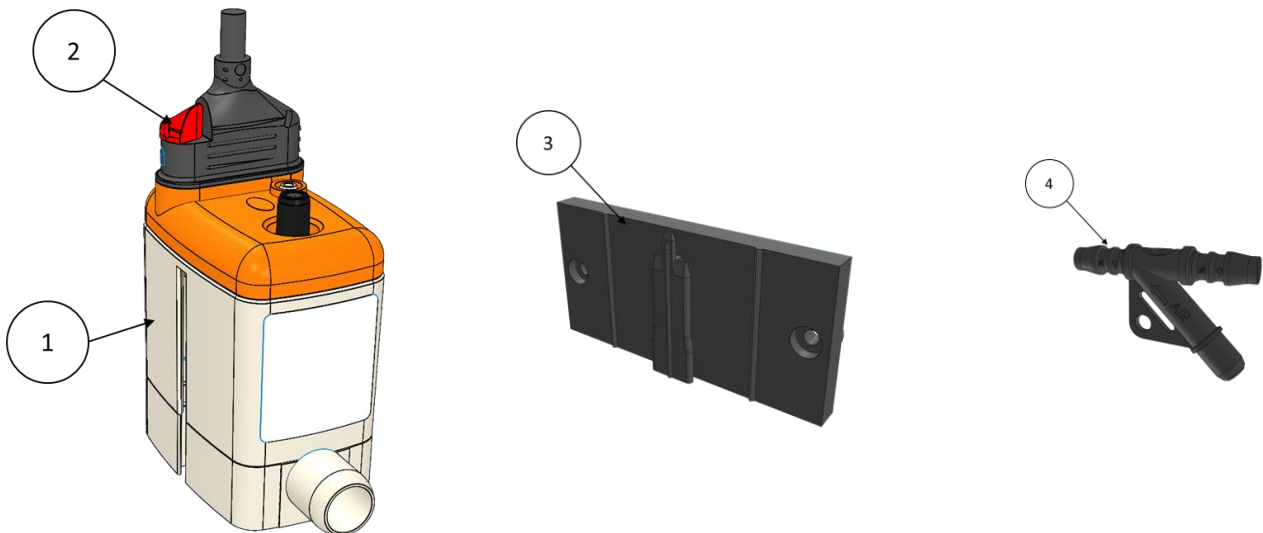
X.2.a. General information

If condensate drainage by gravity is not possible, a condensate lift pump with mounting accessories is available as an optional kit. The condensate lift pump makes it possible to evacuate the condensate at a higher level from the unit (for example on the roof, in another room...) or in case of high point on the evacuation line. The operation of the pump does not affect acoustic qualities of the unit.



Non-compliance with the installation rules of the condensate siphon can lead to an overflow of the condensate pan and an internal flooding of the unit that can cause damages to the equipment, damages, malfunctions, and endanger the occupants and staff.

X.2.b. Composition of the condensate lifting pump kit



Repère	Description
1	Pump
2	Electrical cable with lockable connector
3	Mounting bracket
4	Anti-siphoning device
–	Fixing screws (x2)
–	Transparent PVC tube (length 5m to cut)
–	Clamp

X.2.c. Operating principle

The pump operates autonomously as soon as the unit is switched on. It is equipped with a level controller that automatically switches the pump on and off depending on the level of condensate in the condensate pan.

As standard, the pump incorporates a NC (Normally Closed) dry contact that opens when the condensate level contained in the condensate pan reaches a critical level, see XIV GENERAL WIRING DIAGRAM. This contact is used in order to control the operation of the unit in the event of abnormally high condensate level and thus protects the equipment, as well as the occupants and the staff.

X.2.d. Maintenance

The condensate lift pump requires regular cleaning with bleach in order to maintain the correct operation of the internal valves and the level detection device. The frequency of cleaning should be adapted regarding the environment in which the unit operates.

Check the operation of the pump every maintenance operation. Check absence of suspicious noise on the pump by forcing its operation in filling condensate pan with clean water. Check the condition of the suction and discharge tubes and their connections.

X.2.e. Performances and operating limits

Maximum length	10m
Maximum elevation	5m
Condensate maximum temperature	+35°C
Overheating thermal protection (automatic reset)	+115°C
Anti-overflow dry contact	NC (Normally Closed) 8A resistive – 250Vac
Power consumption	14W

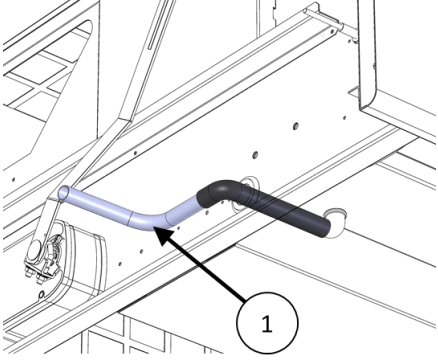
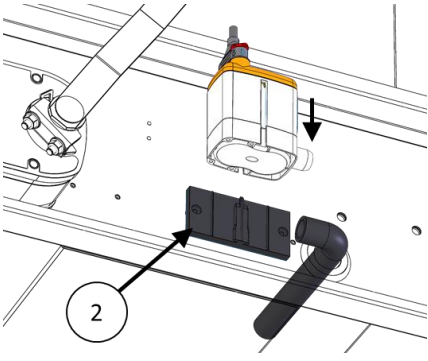
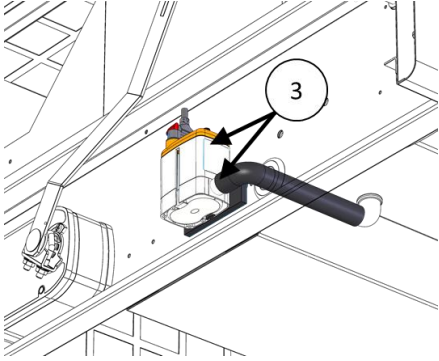
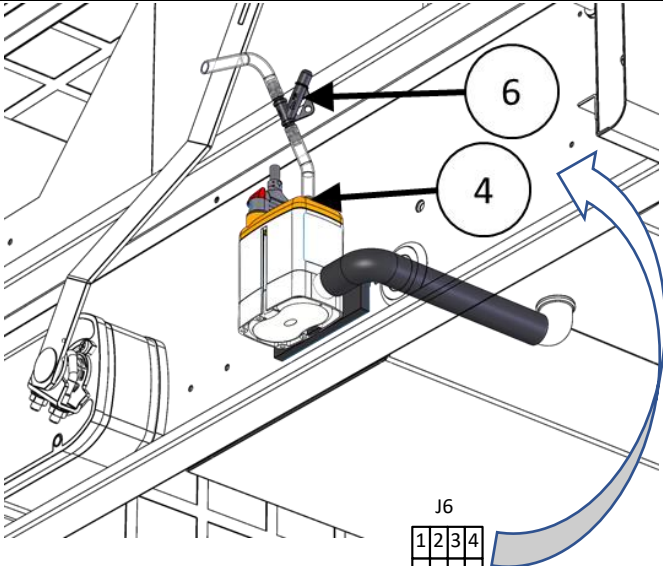
X.2.f. Installation of condensate lift pump

X.2.f.1. Preliminary checks

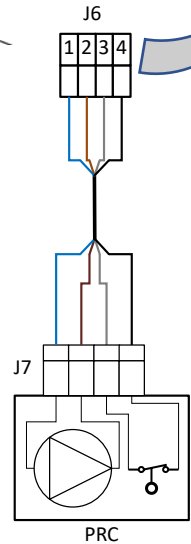
Beforehand, check the condensate pan and pipes for particles (metal chips, plaster/concrete debris...) that may have resulted from the installation and transport operation and remove them to avoid pump failure.

X.2.f.2. Installation

! The transparent PVC tube must not pass through any area that may cause condensate to freeze. The condensate exhaust pipe must never pass through a section that could cause the discharged condensate to freeze.

Step	Description	
		
1	Remove the part of the tube that equips in standard the unit and acting for drainage by gravity.	
2	Fix the pump mounting bracket to the pre-drilled wall by means of the 2 metal sheet screws.	
3	Install the pump on the mounting bracket and insert the elbow sleeve into the suction connection.	
4	Install the transparent PVC hose to the pump discharge connection.	
5	Pull the the transparent PVC tube to the desired discharge place taking care not to bend or pinch it. Secure it with Rilsan clamps to prevent the weight of water from distorting it.	
6	Install the anti-siphoning device to the rising part of the discharge tube after cutting it and respecting the mounting rules (see X.2.g Installation of the anti-siphoning device here after).	
7	Connect the electrical cable to the terminals of the J6 connector (available near the pump) in accordance with the wiring diagram (see XIV GENERAL WIRING DIAGRAM) and by removing the shunt connected between terminals (3) and (4) beforehand.	
8	Plug the connector to the pump and lock it.	

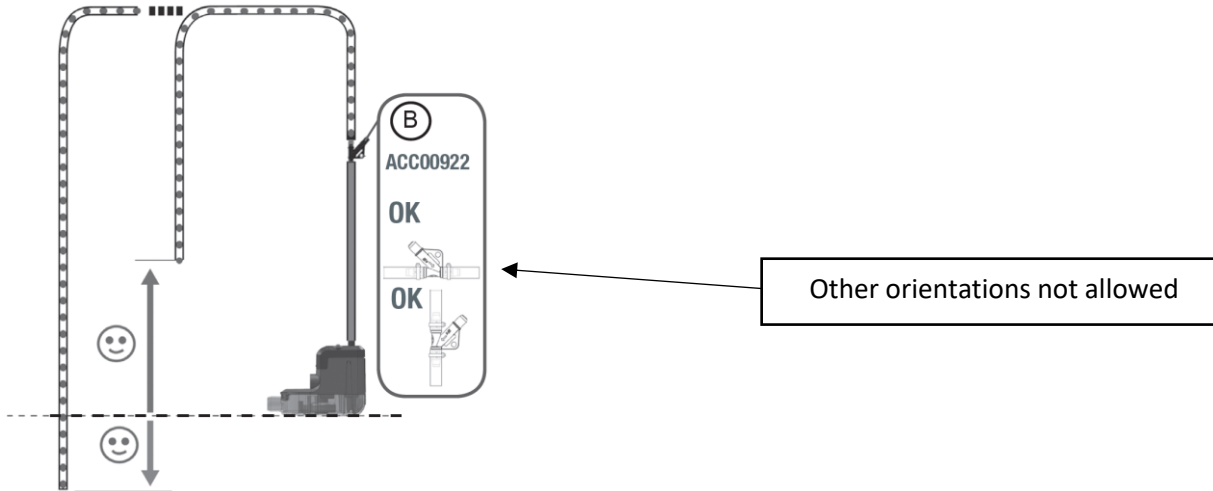
Terminal	Wire color
1	Blue
2	Brown
3	Grey
4	Black



X.2.g. Installation of the anti-siphoning device

If the end of the discharge tube is below the condensate lift pump level, there is a risk of siphoning the pump which can lead to its failure by repeated dry running. To avoid this, it is therefore necessary to install the anti-siphoning device supplied in the condensate lift pump kit.

The anti-siphoning device keeps a sufficient column of water in the pump discharge tube when it stops. It must be installed at a higher level than the pump, vertically or horizontally, taking care to be oriented to the following recommendations:



Mounting recommendations of the anti-siphoning device.

X.2.h. Running test

Following the installation of the pump and its accessories, a test procedure is mandatory to verify the proper operation of the pump and avoid any inconvenience that could result.

Step	Explanations
1	Clean the condensate pan of any debris (assembly residues, manufacturing residues, packaging residues...) to avoid premature wear of the pumping system, clogging of the level detection chamber, and a clogging of the pump.
2	Gently pour water into the condensate pan using a bottle.
3	Check that the pump starts and stops properly to evacuate the spilled water. In the event of too large spill, the overflow safety can be triggered and cut off the electrical supply of the controller. Wait for the level to drop before allowing the controller to be power again.

X.2.i. Diagnosis

For any problem, check beforehand:

- Suction and discharge tubes are not pinched or obstructed
- The float inside the pump is not blocked
- The suction and discharge ports of the pump are not obstructed.

Symptoms	Causes and remedies
The pump does not work regardless of the water level in the tank.	Check the power supply of the pump and wiring.
The pump operates continuously without shutdown phase and sucks in no/little condensate level.	Check that the height of discharge does not exceed the maximum allowed height. Check the tightness of the suction tube and absence of air intakes. Replace the pump if necessary.
The pump continuously chains the on/off cycles.	Stop the pump and check the water column in the discharge tube does not go down. If so, replace the pump.

XI. GENERAL OPERATION

The EVERSKY unit features the following functions as standard:

- o Ambient air CO₂ management:
The regulation continuously acts on the speed of the supply and extract air fans in order to maintain the CO₂ level of the room at a level compatible with the requirements of comfort and hygiene. The measured CO₂ rate being the image of the occupancy rate of the room, when the CO₂ rate increases, the speed of the fans increases to increase the air renewal, and vice versa. The energy consumed by the fans and the noise level of the unit are thus continuously optimized.
- o Thermal energy recovery management:
Depending on the (adjustable) temperature setpoint, the control continuously adapts the thermal energy recovery rate of the recuperator in order to maintain the heat in the room in cold periods, or the coolness in hot periods. When the conditions are right, the plant can deactivate the heat recovery and switch to free cooling or free heating mode. The fully configurable night cooling function makes it possible to force the air flow at night to lower the temperature of the room at the beginning of the day, thus improving thermal comfort and limiting energy consumption related to the use of any auxiliary devices (air conditioning, reversible heat pump, etc.).
- o Management of supply air heating (if equipped with an electric or hot water battery - PREMIUM or INFINITE versions):
As an option, EVERSKY can be equipped with a heating coil in order to maintain the thermal comfort of the room in which it is installed.
- o Protection against icing of the recuperator by modulating bypass:
At low outside air temperature, the fresh air flow through the recuperator is continuously optimized to prevent icing of the recuperator and maximize energy performance.
- o Management of fresh air preheating (if equipped with a new air preheating battery) SMART or INFINITE versions:
In order to maximize the operating range in energy recovery, especially in the cold season, EVERSKY manages the preheating of fresh air to avoid icing of the recuperator.
- o Isolation:
The EVERSKY unit is equipped as standard with motorized isolation dampers that close when the unit is stopped or in the event of a power cut in order to avoid any parasitic air circulation between the room and the outside.

XI.1. Start-up sequence of the unit

The boot sequence is enabled when the following conditions are met:

- The unit is ON,
- - And there is no active Class A alarm (alarms that stop the plant), or the external shutdown control is not active,
- - And at least one hourly program (reduced speed or normal speed) is active, or a forced run (normal or reduced speed) is active, or the fire function set to start the unit is active, or there is a request for running from BMS.

The boot sequence spans a total time of 120s. Throughout this time, the alarms are inhibited (except for alarm (63) Overheating THS electric coil which is monitored during this period) and the unit starts on the operating point defined at the initialization of the thermal sequences at startup. The minimum fan control signal does not apply.

The openings of the fresh air and exhaust air dampers open as soon as the start sequence is activated. The extract fan control signal is released 15s after the boot sequence is activated. 15s later, the supply fan control signal is in turn released and the supply fan starts. The outputs relating to the control of 3-way valve and heating or cooling pumps are activated.

Once the 120s have elapsed, the ventilation unit switches to normal mode at the end of the start-up sequence. The minimum and maximum control signal of the fans is then taken into account, and alarm monitoring is activated. In the event of a power failure, the unit automatically restarts as soon as the power supply reappears.

XI.2. Stop sequence

The shutdown sequence occurs when at least one of the following conditions is present:

- Appearance of an alarm whose action requires the normal shutdown of the unit (be careful, some alarms are programmed to fast shutdown, in this case the normal shutdown sequence is ignored and the unit stops immediately),
- Switching to OFF the unit,
- No active time slot,
- The fire function is set to stop the unit,
- Stop request coming from BMS.

The shutdown sequence extends over a time related to the setting of fan shutdown times (post-ventilation) and closing times of fresh air and exhaust air dampers. When the shutdown sequence is activated, the alarm management function and the electric coil output are immediately deactivated (the hot/cold water coil and recuperator outputs remain active). The blowing fan is stopped after 180s. The return fan shuts down 30s later. The fresh air and return air dampers are closed 5s after the return fan is stopped and all actuator control signals are disabled.

XII. START-UP

The clamp that holds the PG 5.0 mobile wired remote touch screen during the transport phase can be removed permanently.

The EVERSKY ventilation unit is delivered preset and ready for operation.

The commissioning procedure can follow the following sequence of steps:

Step	Icon PG 5.0	Description	Additional Information
1		Installation and wiring of options (if present)	See IX ELECTRICAL CONNECTION OF EXTERNAL DEVICES
1.1		Heating 3-way valve	
1.2		Heating circulator	
1.3		Remote orders (smoke detection devices, fire detection devices, remote reduced run order, remote normal run order, remote stop order, fire protection)	
1.4		Output signal (alarm)	
1.5		Remote touch control EDT2	See Installation and using manual of EDT2 See manual MS-CDF-020 - EASY 5-0 CONTROL
2		Date and time settings	See manual MS-CDF-020 - EASY 5-0 CONTROL
3		Automatic daylight saving setting	
4		Time schedule settings	See XII.1 Setting up the time schedules See manual MS-CDF-020 - EASY 5-0 CONTROL
5		Fans setpoints setting	See XII.2 Adjustment of ventilation setpoints and CO2 management See manual MS-CDF-020 - EASY 5-0 CONTROL
6		Temperature setpoints setting	See manual MS-CDF-020 - EASY 5-0 CONTROL
7		Communication ports wiring and setting	
8		Specific functions setting	
8.1		Night overventilation function	
8.2		Fire protection function	
8.3		Frost prevention function by reducing supply airflow rate	
9		Checking the correct operation and PIDs adjustment	See manual MS-CDF-020 - EASY 5-0 CONTROL
10		Backup of users settings*	

*Using the backup function at the end of the commissioning will save all the adjusted parameters and will allow to restore a useful setup in any time.

XII.1. Setting up the time schedules

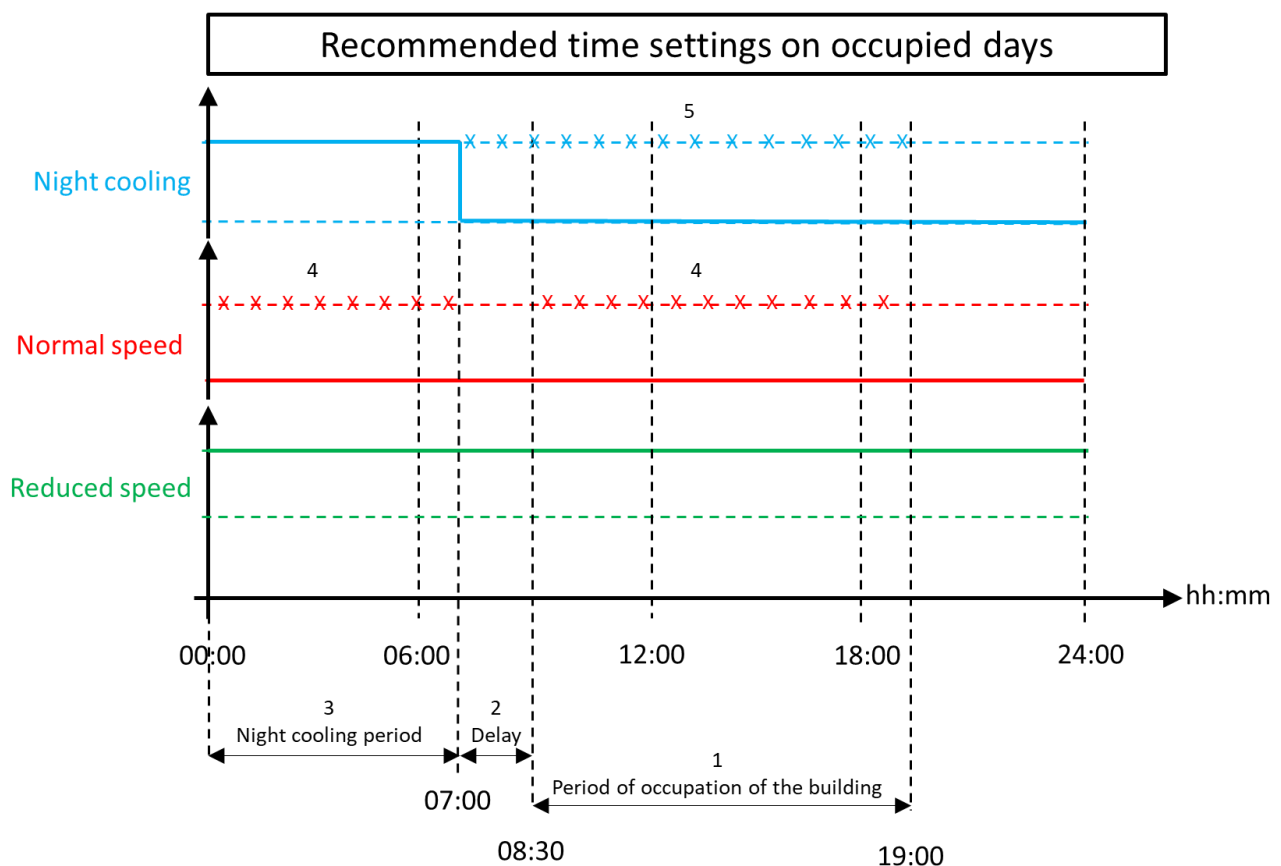
The operating principle of the EVERSKY unit is to continuously adjust the air flow according to the CO2 level measured in the room by acting on the fan speed in order to always optimize comfort and energy consumption.

The time schedule is to be adapted according to the type of room occupancy, and according to whether or not the EVERSKY unit must maintain thermal comfort in this room.

If thermal comfort must be maintained because there is no heating device in the room and the EVERSKY unit is equipped with a heating coil, permanent ventilation without a time slot for shutdown will be preferred.

On the contrary, if thermal comfort is provided by an already existing heating/cooling device and there is no night occupation, the shutdown of the machine can be considered on this time slot if there is no minimum ventilation requirement (evacuation of residual moisture, VOC...). It goes without saying that the absence of ventilation does not allow to heat or cool the room.

Recommended settings for the occupation day of the room ventilated by EVERSKY:



In the diagram above, the crosses (x) indicate the time slot during which the function should not be active. The night cooling time slot must start after 00:00 and end before 12:00.

Week (Monday...Friday) (days of occupancy):

- (1) Identify the occupancy slot of the room (for example 8:30 ... 19:00).
- (2) Respect a delay of at least 1h00-1h30 between the end of the night cooling and the beginning of the period of occupation of the room (end of night cooling = 7h00).
- (3) Start the beginning of night cooling around midnight. Too early = risk of getting a building too cool in the morning (with a start of the function while the outside temperature is still too hot = poor performance of night cooling), too late = risk of limited effectiveness of night cooling.
- (4) The normal speed must not be programmed during periods of night cooling or occupancy of the building so that the night cooling function can be activated, and the CO2 control remains functional. It can possibly be the rest of the time.
- (5) The night cooling period should not be activated during the day or during the occupancy period.

XII.2. Adjustment of ventilation setpoints and CO2 management

The principle of CO2 control is to manage the speed of the fans (and therefore the airflow rate) according to the level of CO2 in the air in the room. The higher the CO2 level, and therefore the higher the occupancy rate, the faster the fans turn, and therefore the higher the airflow (air renewal). Comfort and air quality are maintained at all times.

Recommendation to adjust the low CO2 threshold:

Ambient air contains a variable share of CO2 depending on where you are located. This concentration is usually always above 300ppm for an extra-urban location and can exceed 700ppm for a very dense urban location. An increase in the speed of the fans and therefore in the air flow will in no way lower the concentration of CO2 in the room below this "base" value.

It is therefore advisable not to set the CO2 threshold for the reduced speed too far below the basic CO2 concentration of the outside air, in order not to generate unnecessary air exchange, which leads to energy consumption and noise pollution.

Recommendation to adjust the high CO2 threshold:

The level of CO2 in the supply air has a direct impact on the comfort and well-being of the occupants. Repeated and prolonged exposure to CO2 concentration values above 1000ppm can have adverse effects on the human body. This value of 1000ppm will therefore be kept as a reference for the CO2 threshold setting for normal speed.

If the unit is equipped with a heating coil to provide all the heating requirements, it may be advisable to increase the ventilation setpoints of reduced speed (in particular) and normal speed to maintain the room temperature if the heat losses of the room require it.

When the high threshold of CO2 (1000ppm) cannot be maintained, especially in case of high occupancy of the room, it may be necessary to increase the normal speed setpoint.

In the event that the unit is not equipped with a heating coil, the reduced speed setpoint may be reduced without being less than 30% in order to ensure:

- Evacuation of residual moisture from the room
- Proper operation of the supply and extract air fans as well as their operating control device (DEP S and DEP R).

XIII. TROUBLESHOOTING – MAINTENANCE

XIII.1. Fresh air filter pressure switch DEP FS

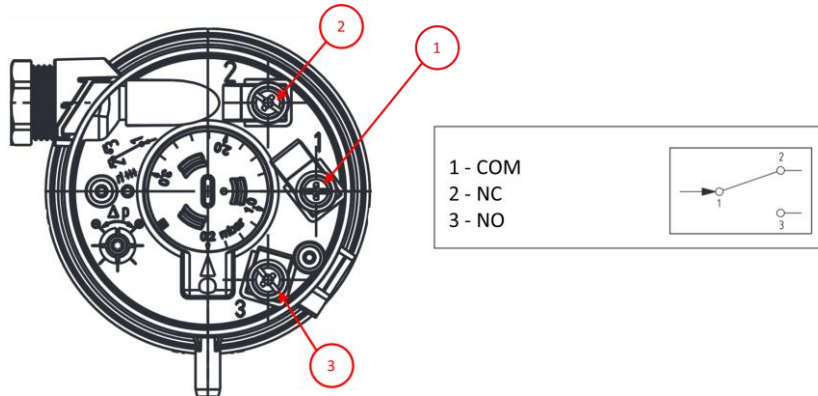
XIII.1.a. Setting the tare

The condition of the supply air filters (fresh air) is continuously monitored by an air pressure switch which informs the controller of the pressure drop. If the pressure drop of the filters exceeds the pressure switch setting, the controller informs the user by means of a warning.



XIII.1.b. Electrical connection

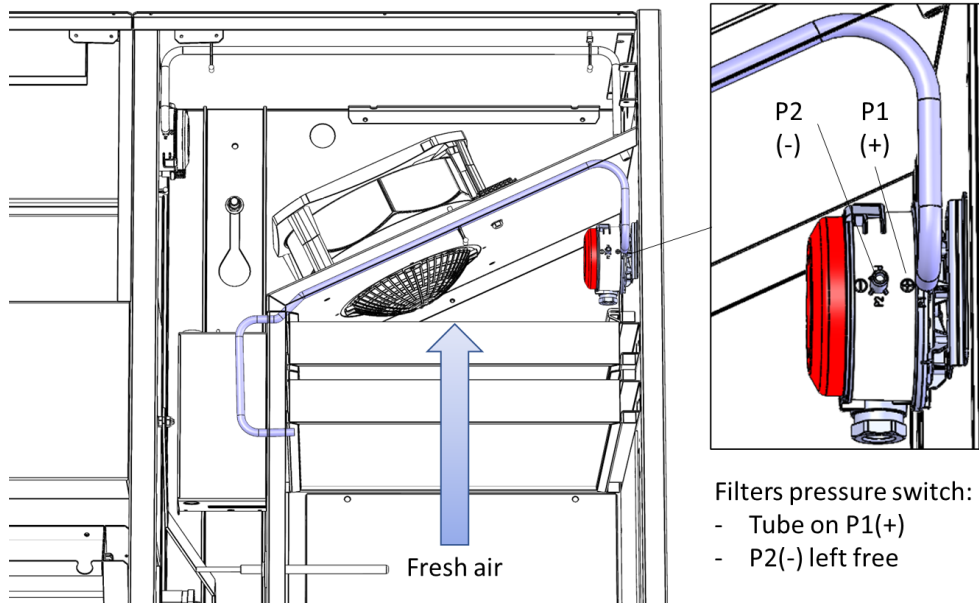
The filter pressure switch is of the NO type (normally open). The contact is open at rest and closes when the filter pressure drop (differential pressure) is higher than the setting (200 Pa at the factory).



The pressure switch must be connected between terminals (1) and (3) according to the electrical wiring diagram.

XIII.1.c. Pneumatic connection

In case of replacement or removal of the component, the pneumatic connection must be respected during re-installation as described in the table below:



XIII.2. Fans pressure switches DEPS and DEPR

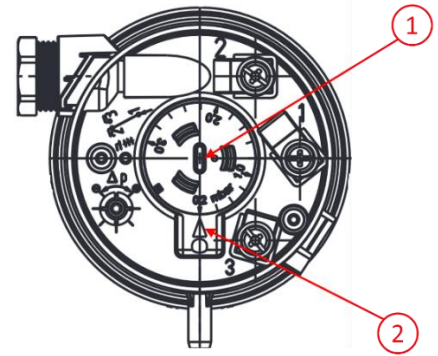
The operation of the supply and exhaust fans is continuously monitored by two air pressure switches which inform the controller whether or not there is sufficient air pressure.



XIII.2.a. Setting the tare

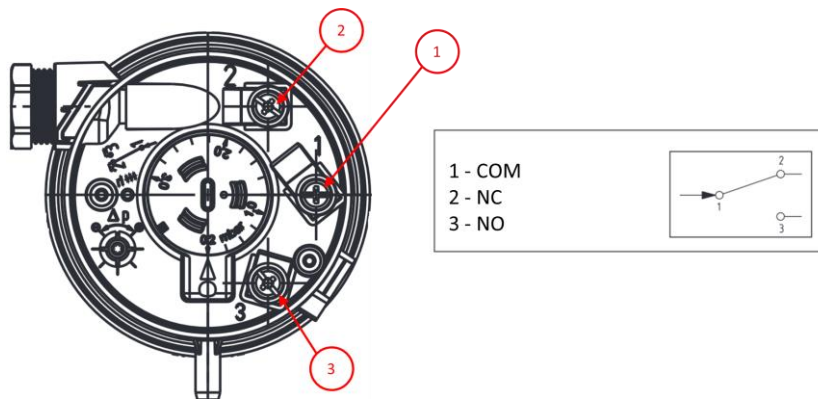
The nominal setting of fan pressure switches is 25Pa. There is no need to change the factory setting. This setting must be respected when the component can be replaced if necessary, which can be delivered on another setting value.

The adjustment is simply done using a flat footprint screwdriver by turning the central element (1) so that the arrow (2) coincides with the set value.



XIII.2.b. Electrical connection

Pressure switches are of type NO (Normally Open). The contact closes when the differential pressure generated by the air flow exceeds the adjustment value of the pressure switch (25 Pa at the factory outlet).



Pressure switches shall be connected between terminals (1) and (3) in accordance with the electrical wiring diagram.

XIII.2.c. Pneumatic connection

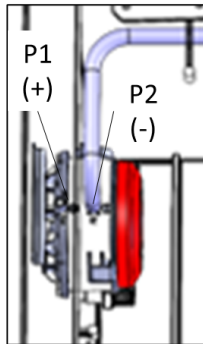
If the component is replaced or removed, the pneumatic connection must be respected during re-installation as described in the table below.

The operation of the supply air and extract air fans are controlled by air pressure switches that inform the controller of the unit of the proper functioning of the fans.

These pressure switches are of type NO (normally open). At rest, contact is open. It closes when the differential pressure exceeds the setting value (25 Pa out of the factory).

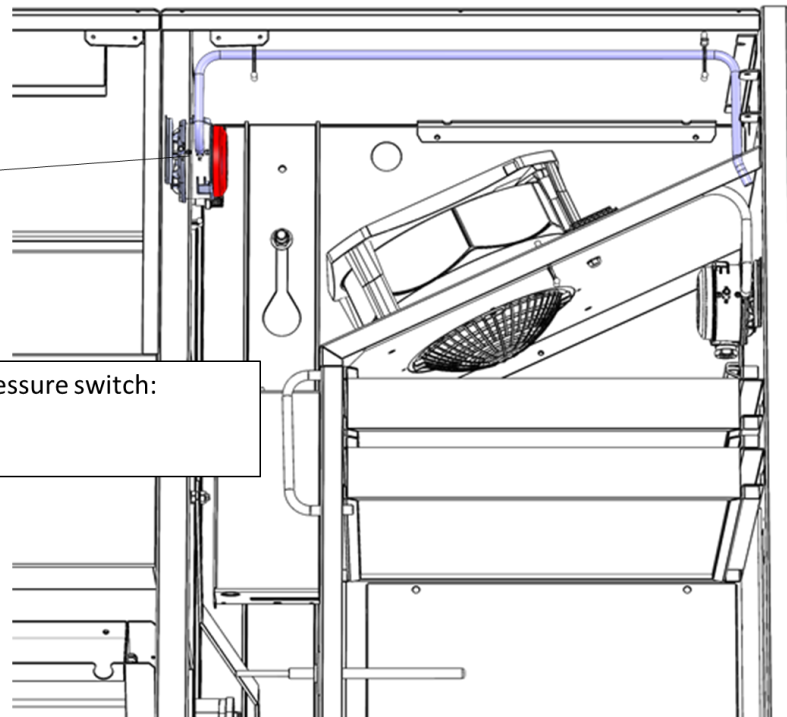
In case of replacement, respect the setting, the position of the electrical connections and the transparent pressure taking tubes.

Supply fan



Supply fan control pressure switch:

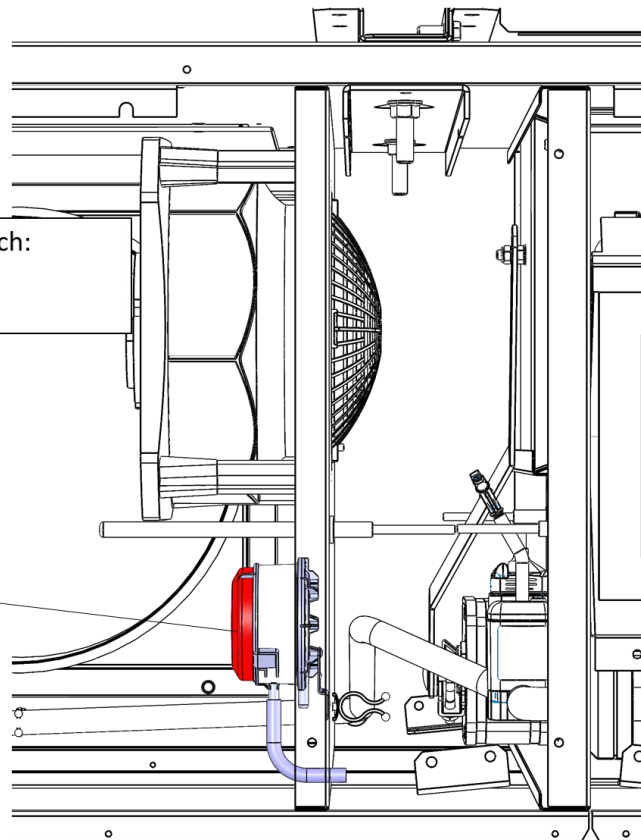
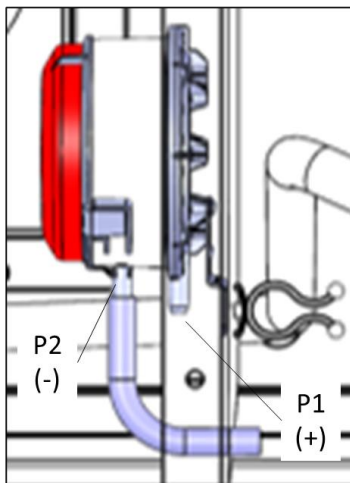
- P1(+) left free
- Tube on P2(-)



Extract fan

Extract fan control pressure switch:

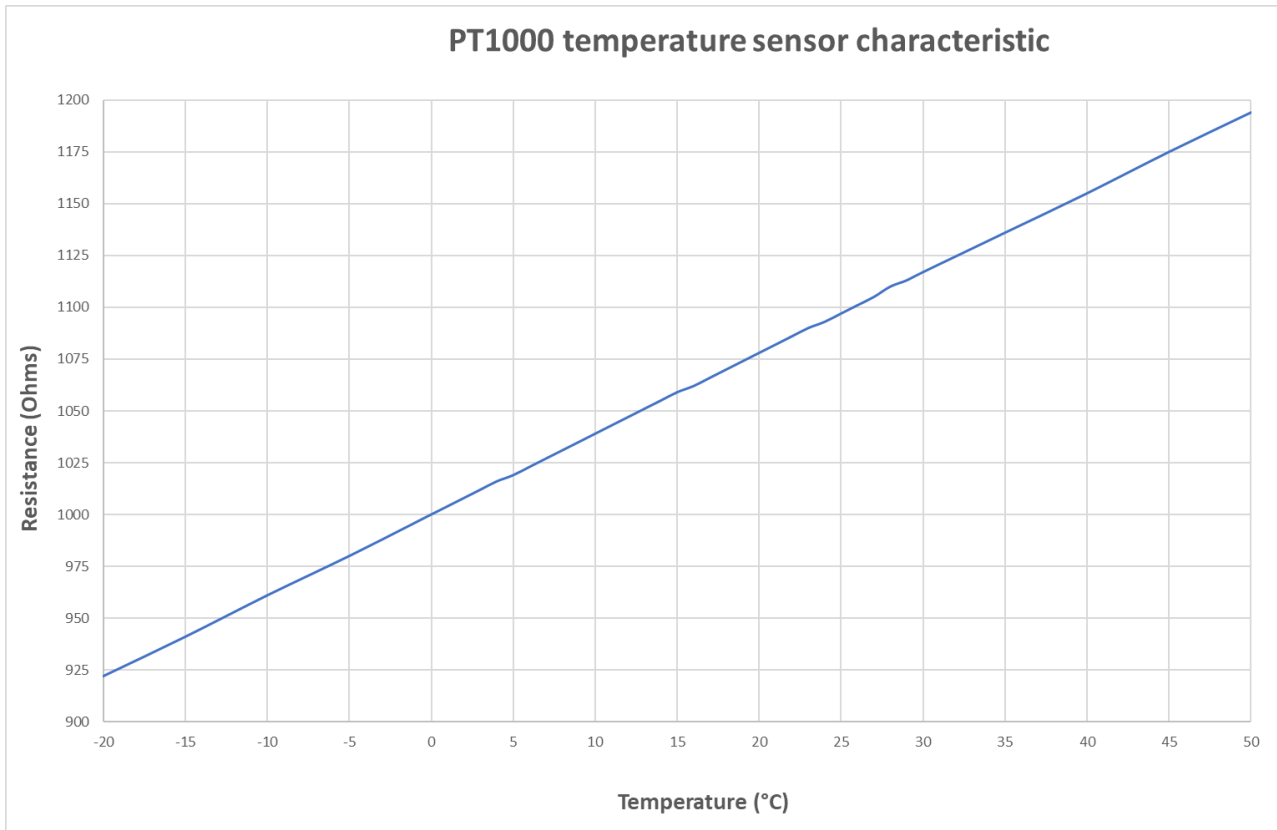
- P1(+) left free
- Tube on P2(-)



XIII.3. PT1000 temperature sensor

The temperature sensors are PT1000 type. The location of each temperature sensor is shown in chapter VII.1 General composition.

The curve below shows the resistance characteristic of the sensitive element as a function of its temperature.

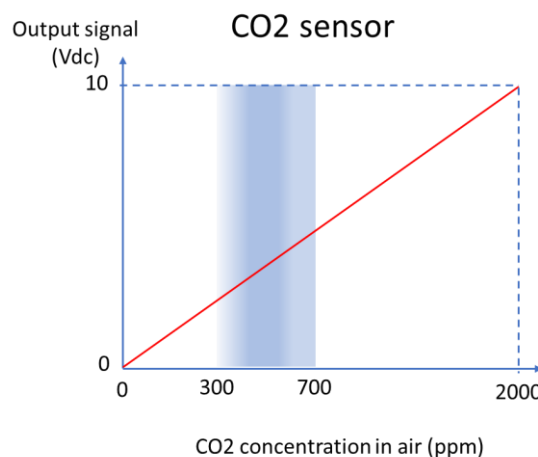


The sensor is simply checked using an ohmmeter and a reference thermometer. The resistance measured at the terminals of the (disconnected) sensor wire must correspond to within +/- 3% of the resistance value tabulated above for the equivalent temperature measured by the reference sensor. If necessary, the sensor must be replaced. If the sensor check is good, but the control displays an incorrect value, the problem may be due to faulty connectors/wires or an incorrect offset that has been set.

XIII.4. CO2 sensor

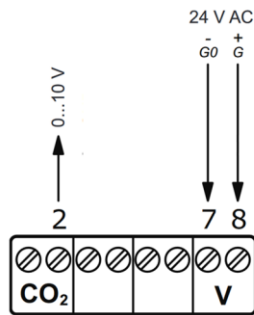
The CO2 sensor is placed in the extract air circuit (see chapter VII.1 General composition) and must not be moved.

The CO2 sensor transmits the image of the CO2 concentration (ppm) in the extracted air as a 0-10V analogue signal that can be interpreted by the controller:



Ambient air naturally contains a variable share of CO2 depending on where you are located. This concentration is usually always above 300ppm for an extra-urban location and can exceed 700ppm for a very dense urban location.

The output signal of the CO₂ sensor is therefore never zero and should normally always be greater than 3V. In the case, conversely, it is possible that the probe or connectors have a problem.

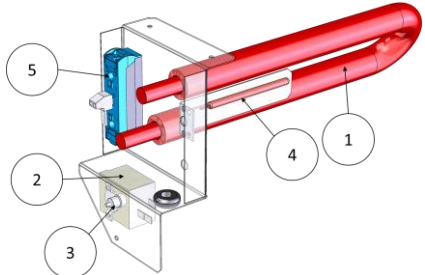


Visual representation of the CO₂ probe and electrical connection terminals

The 24Vac power supply is between terminals (7) and (8) and the analog signal 0-10V output is located on the terminal (2).

XIII.5. Electrical heating coil (BE)

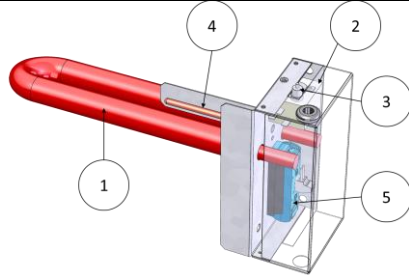
	EVERSKY PREMIUM BE / INFINITE BE			
	500	750	900	1100
Nominal voltage	~1 - 230Vac – 50Hz			
Nominal current	4,3 A	5,4 A		
Nominal power input	1000 W	1250 W		



(1) Heating element
 (2) Safety thermal switch THS
 (3) Reset button
 (4) Bulb
 (5) SSR Static relay

XIII.6. Electrical frost protection coil (DBE)

	EVERSKY SMART / INFINITE BE / INFINITE BC			
	500	750	900	1100
Nominal voltage	~1 - 230Vac – 50Hz			
Nominal current	4,3 A	5,4 A		
Nominal power input	1000 W	1250 W		



(1) Heating element
 (2) Safety thermal switch THSD
 (3) Reset button
 (4) Bulb
 (5) SSR Static relay

XIII.7. THS and THSD Safety thermal switches

The THS and THSD safety thermostats protect respectively the electrical heating coil and the electrical pre-heating coil (frost protection) (if equipped) as well as their environment close to any excessive overheating in the event of, for example, a failure of a control device (contactor, static relay, controller...) or the supply fan.

XIII.7.a. Location

The THS safety thermostat is located on the support plate of the heating element see XIII.5 Electrical heating coil (BE).
The THSD safety thermostat is located on the support plate of the heating element see XIII.6 Electrical frost protection coil (DBE).

XIII.7.b. Electrical connection

The THS and THSD safety thermostats are of the NC (Normally Closed) type. The contact opens when the bulb temperature exceeds 90°C (not adjustable). The electrical connection is made between the terminals (C) and (2) according to the electrical diagram (see XIV GENERAL WIRING DIAGRAM).

XIII.7.c. Manual reset

When the thermostat has triggered due to an overheating detection, it is necessary to manually reset it by pressing the white button after removing the protective cap. As long as the reset has not been carried out, the fan unit will not be able to restart and the alarm (23) "electric heating coil is overheated" will always be present.

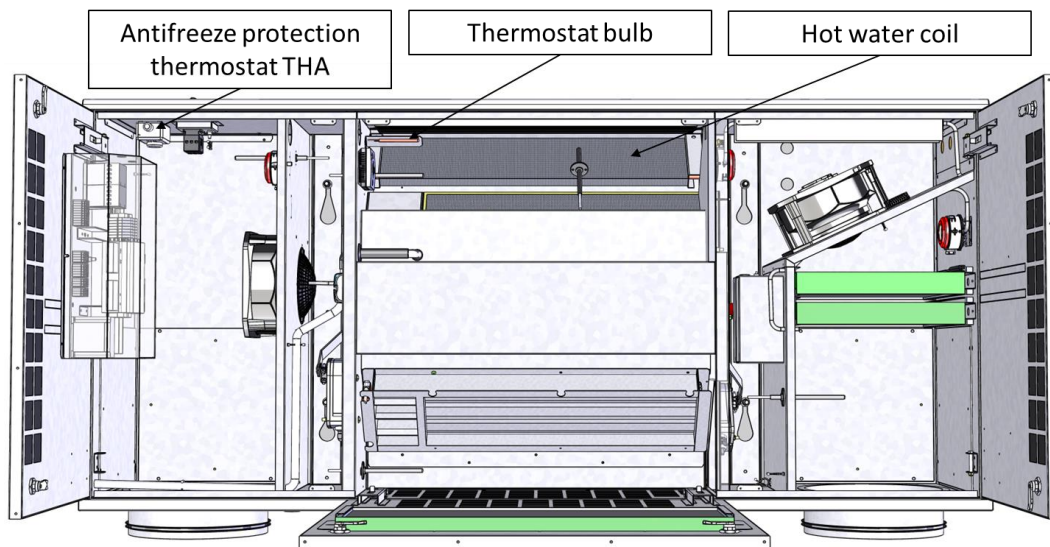
Before manually resetting the THS thermostat or the THSD thermostat, it is necessary to understand and correct the cause of the malfunction.

XIII.8. THA frost protection thermostat (hot water coil)

The THA frost protection thermostat protects the hot water coil from freezing in case the hot water production system (device external to the ventilation unit) is not functional and the ventilation unit is operating in full fresh air mode during periods of low outside temperature (below +5°C).

When the THA thermostat triggers (the contact opens), the fan unit stops and the hot water pump output DO3 is activated to force the heating of the coil. When the temperature of the bulb rises above +5°C, the contact closes and the unit restarts normally.

XIII.8.a. Location



Location of the THA frost protection thermostat and its bulb (central view from below)

The THA frost protection thermostat is located in the control compartment near the main switch. Its bulb is positioned on the hot water coil.

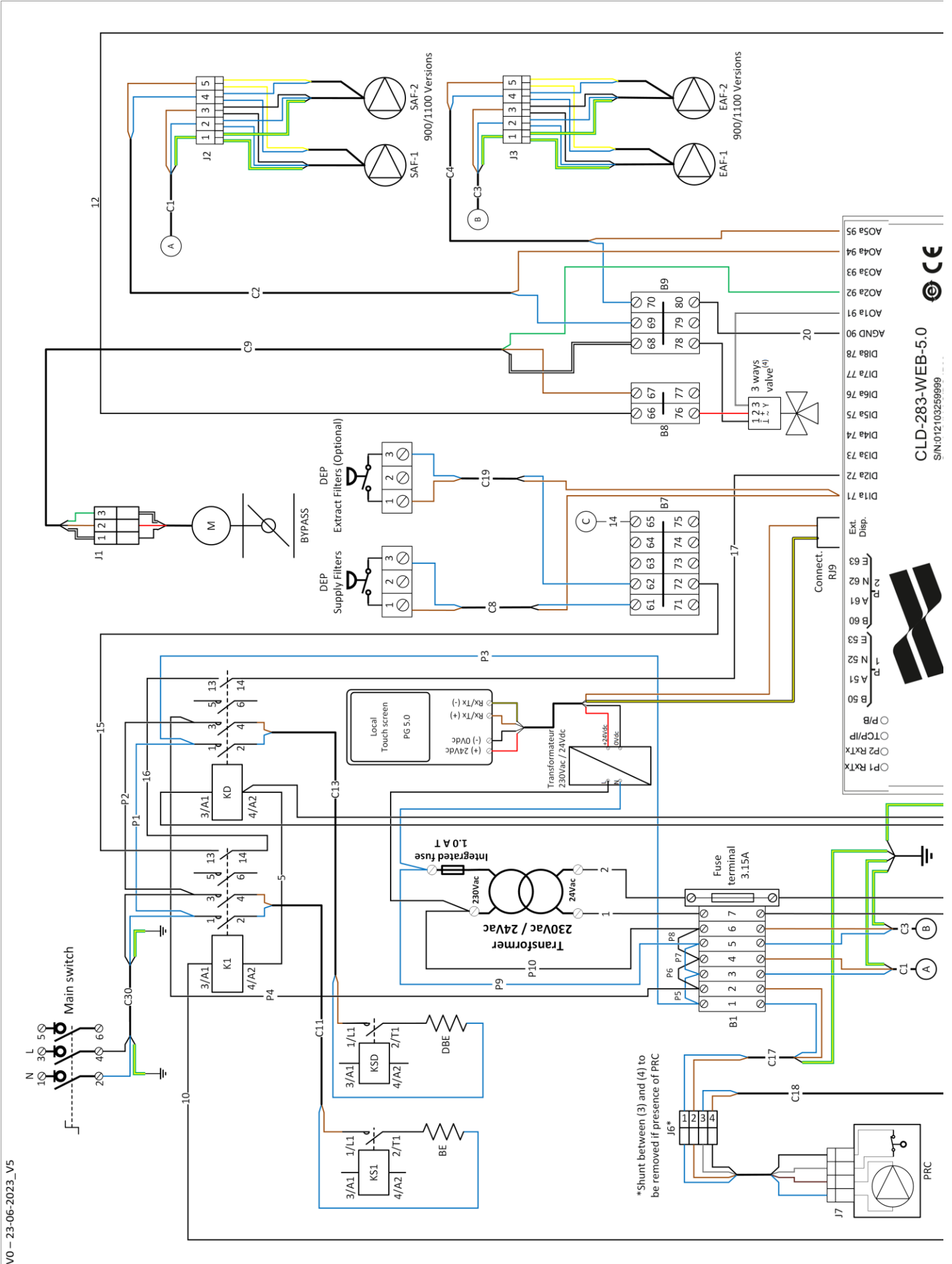
XIII.8.b. Nominal trigger threshold setting

The THA thermostat is set to +5°C out of the factory.

XIII.8.c. Electrical connexion

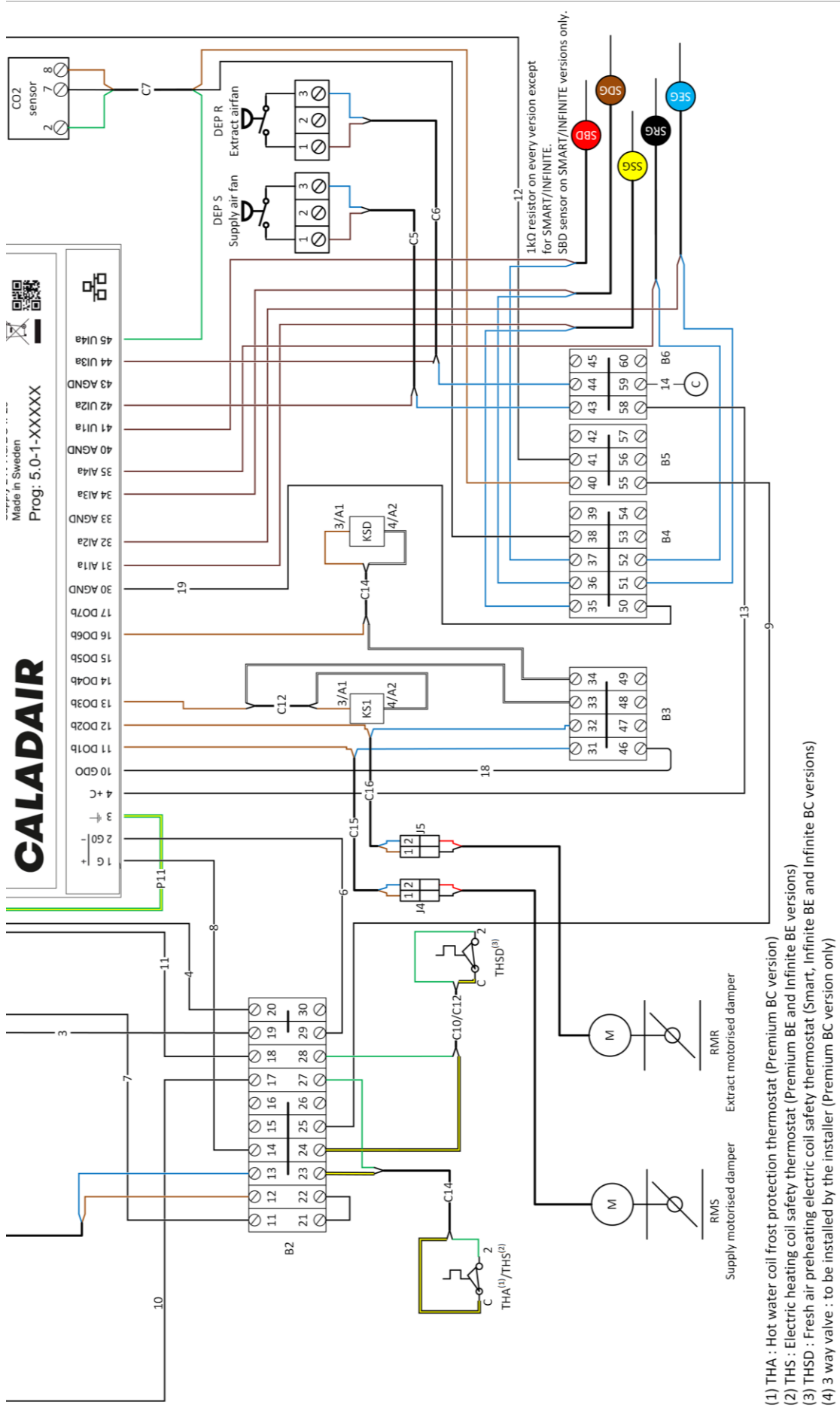
The THA antifreeze thermostat is of type NC (Normally Closed). The contact opens when the temperature of the bulb drops below +5°C. The electrical connection is made between the terminals (C) and (2) according to the electrical diagram (see XIV GENERAL WIRING DIAGRAM).

XIV. GENERAL WIRING DIAGRAM



CE
 CLD-283-WEB-5.0
 SIN:012103259999

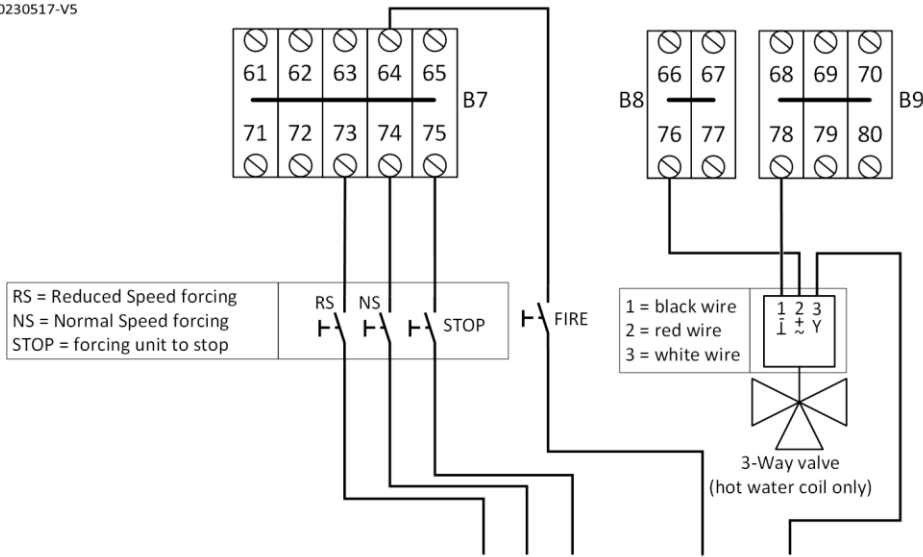




- (1) THA : Hot water coil frost protection thermostat (Premium BC version)
- (2) THS : Electric heating coil safety thermostat (Premium BE and Infinite BE versions)
- (3) THSD : Fresh air preheating electric coil safety thermostat (Smart, Infinite BE and Infinite BC versions)
- (4) 3 way valve : to be installed by the installer (Premium BC version only)

XV. WIRING DIAGRAM OF CUSTOMER CONNECTIONS

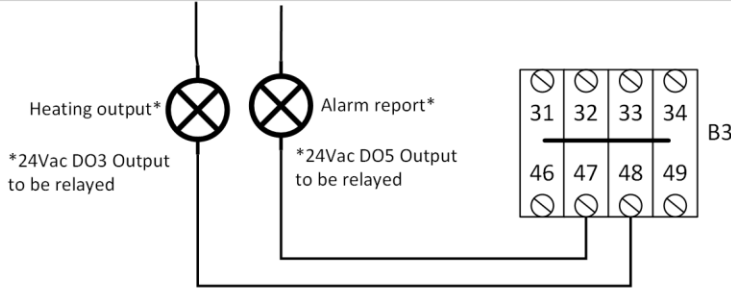
External customer connections – V0 20230517-V5



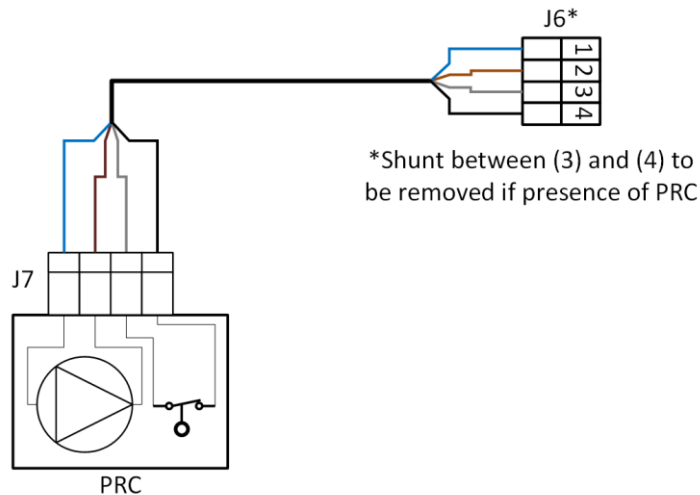
OP1 RxTx	OP2 RxTx	OTCP/IP	OP/B	B 50	A 51	N 52	E 53	B 60	A 61	N 62	E 63	Ext. Disp.	DI1a 71	DI2a 72	DI3a 73	DI4a 74	DI5a 75	DI6a 76	DI7a 77	DI8a 78	AGND 90	AO1a 91	AO2a 92	AO3a 93	AO4a 94	AO5a 95
----------	----------	---------	------	------	------	------	------	------	------	------	------	------------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------

CLD-283-WEB-5.0
 S/N:012103259999
 Supply 24V AC/DC IP20
 Made in Sweden
 Prog: 5.0-1-XXXXX

1 G	2 G0	3	4 +C	10 GDO	11 DO1b	12 DO2b	13 DO3b	14 DO4b	15 DO5b	16 DO6b	17 DO7b	30 AGND	31 AI1a	32 AI2a	33 AGND	34 AI3a	35 AI4a	40 AGND	41 UI1a	42 UI2a	43 AGND	44 UI3a	45 UI4a
-----	------	---	------	--------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------



Condensate lift pump:



XVI. PERIODIC MAINTENANCE

XVI.1. Generalities

Maintenance and decommissioning of the installations must be carried out under conditions that ensure compliance with the applicable environmental regulatory requirements. Maintenance must be carried out at least once a year or as required by applicable regulations (fire safety, etc.). Depending on the installation and operating conditions, the inspection interval may be reduced.

The warranty will be void if the maintenance instructions are not followed.

Before starting any maintenance or repair work, it is imperative to switch off the power supply and ensure that it cannot be switched on again inadvertently (lock the proximity switch in the off position for this purpose).

Service and maintenance work must be carried out by qualified personnel equipped with the appropriate tools and equipment (Personal Protective Equipment, multimeter, etc.).

Component	Interval	Action

XVI.2. Annual general inspection

Check the sheaths, flexible sleeves and replace them if necessary.

Check that all the elements connected to the unit are in place so that no vibrations can be transmitted to the external elements.

Check the electrical connexions and the tightness of the terminals.

XVI.3. Checking the filters

Classification		Washing (Water + light detergent)	Suction Blowing
Filter Efficiency ISO 16890	Reference		
ePM1 - 55%	F7	Not allowed	

Frequency (operating months)	
Every 3 months (to be adapted according to local conditions)	Every 12 months
Checking	Replacement

XVII. TROUBLESHOOTING

First of all, check that the electrical connectors and terminal blocks are correctly connected and tightened, and that this operation has not been omitted during the start-up phase of the equipment. Also check that the screw connectors are tight.

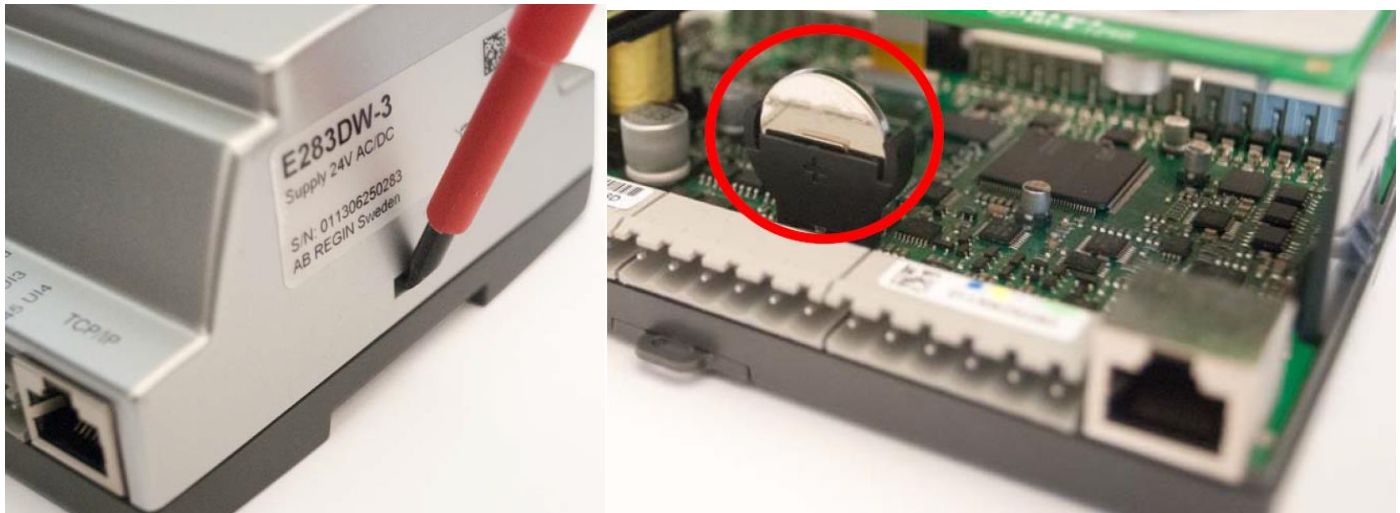
Defective parts must be replaced only with original components in order to comply with the regulations applicable to the product. Replacing defective parts with non-original parts will result in the loss of the manufacturer's warranty for the entire equipment.

XVIII. REPLACING THE INTERNAL MEMORY BATTERY

This procedure requires knowledge of proper ESD protection, i.e. an earthed wristband must be used!

When the alarm (48) "Internal Battery Error" is activated and the battery LED lights up red, the battery for backup of program memory and real-time clock has become too weak. The battery is replaced as described below. A backup capacitor saves the memory and keeps the clock running for at least 10 minutes after the power supply is removed. Therefore, if the battery replacement takes less than 10 minutes, there will be no need to reload the program, and the clock will continue to run normally.

The replacement battery must be of the type CR2032.



Remove the cover by pressing down the locking torques at the edge of the cover using a small screwdriver, and at the same time pulling the edges outwards.

Grip the battery firmly with your fingers and lift it upwards until it rises from its holder. Press the new battery firmly down into place.

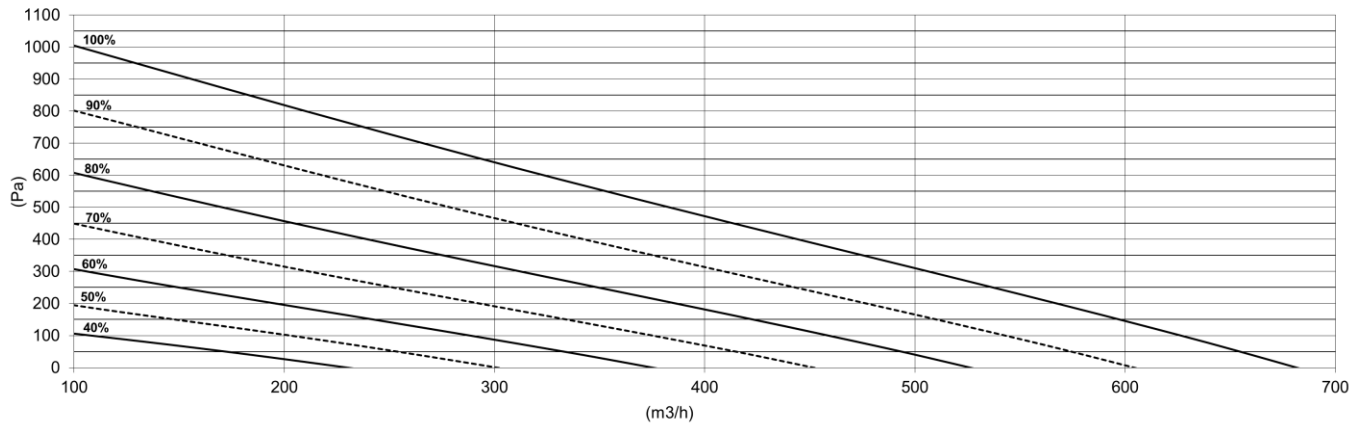
Note: To preserve correct polarity, the battery can only be inserted the "right way round"!

XIX. EASY 5.0 CONTROL

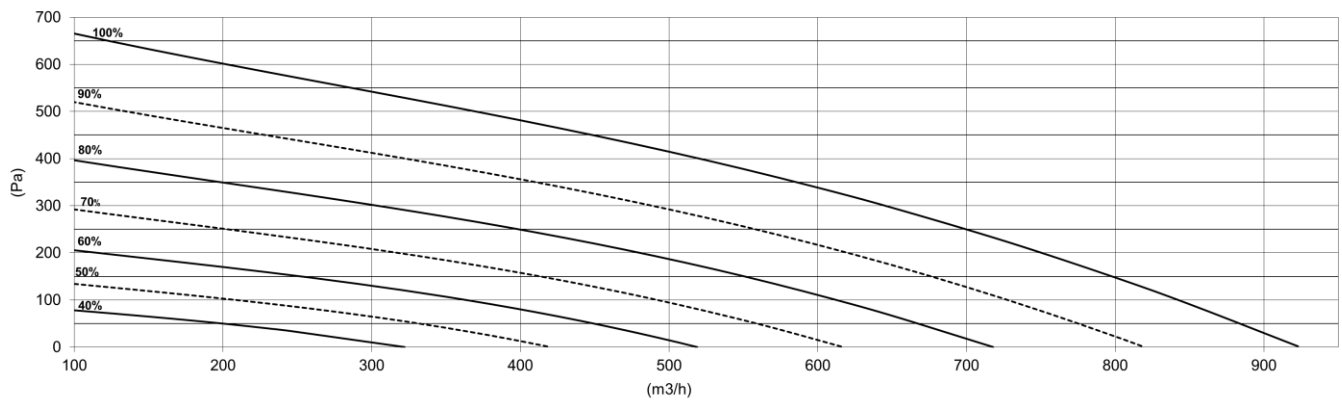
See dedicated manual MS-CDF-020 – EASY 5-0 CONTROL.

XX. AERAILIC PERFORMANCES

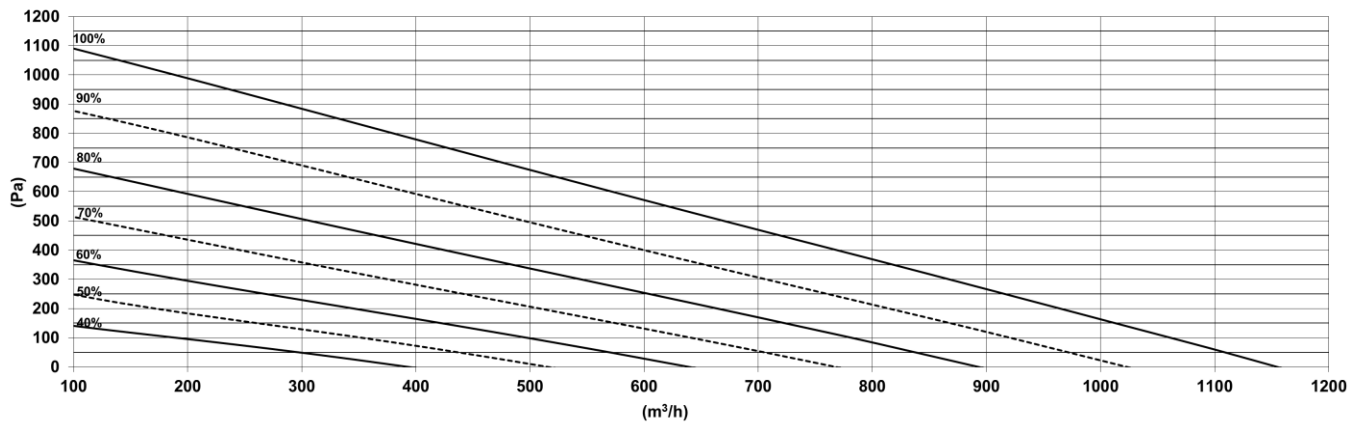
XX.1. EVERSKY 500



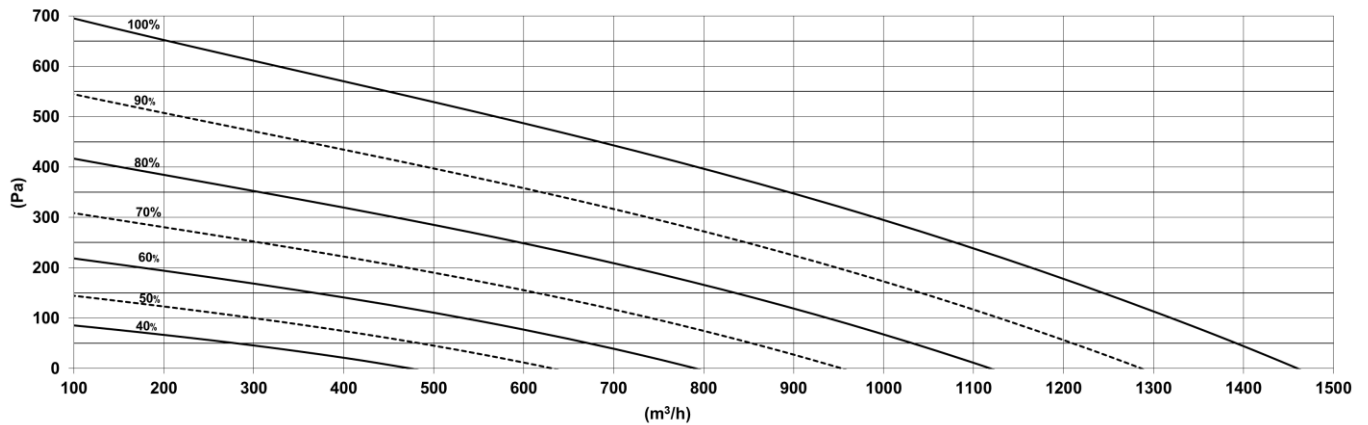
XX.2. EVERSKY 750



XX.3. EVERSKY 900



XX.4. EVERSKY 1100





XXI. COMMISSIONING REPORT

Site			
Address			
Date/...../.....	Technician / company	
Unit			
Manufacturing number			

Ventilation setting	Normal speed setp.	Reduced speed setp.t	High CO2 setpoint	Low CO2 setpoint
%%ppmppm

Temperature setting	Constant supply air temperature	Supply air temperature law	Constant extract air temperature	Extract air temperature law
Setpoints°C	<u>Outdoor Temp.:</u> -20.0°C -15.0°C -10.0°C -5.0°C 0.0°C 5.0°C 10.0°C 15.0°C	<u>Setpoint</u> °C	<u>T. ext.</u> -20.0°C -15.0°C -10.0°C -5.0°C 0.0°C 5.0°C 10.0°C 15.0°C <u>Setpoint</u>

Time schedule	Red. speed	Mo	Tu	We	Th	Fr	Sat	Sun	Holidays
	Period 1	:	:	:	:	:	:	:	:
	Period 2	:	:	:	:	:	:	:	:
	Norm. speed	Mo	Tu	We	Th	Fr	Sat	Sun	Holidays
	Period 1	:	:	:	:	:	:	:	:
	Period 2	:	:	:	:	:	:	:	:

Presence of BMS	YES	NO	Backup of user settings				YES	NO
-----------------	-----	----	-------------------------	--	--	--	-----	----



NOTES

Date	Stakeholder	Comments



EVERSKY™

Date	Stakeholder	Comments