

EVEREST XV

Installation instructions **EN**



Download the settings guide from our website or directly from the SD card provided.



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1. RECOMMENDATIONS AND SAFETY INSTRUCTIONS

Please read this notice carefully before installing the equipment and keep it in good condition near to the device throughout its life time.

1.1 Personal protection

- This device may be used by children over the age of 8 and by persons with impaired physical, sensory or mental capacities or without experience or knowledge, if they are suitably supervised or if they are provided with instructions concerning the safe use of the device and they have understood the risks involved.
- Children should not be allowed to play with the device. User cleaning and servicing should not be done by children without suitable supervision.

1.2 Precautions for installation and maintenance

- Installing an EVEREST unit may present risks due to live electrical elements or moving mechanical parts. The equipment must be installed, activated and repaired by trained and qualified technicians, in full respect of applicable standards and best practices.
- Any servicing or maintenance operation requiring the access doors to be opened or any component of the unit to be removed must only be carried out by qualified technicians.
- Electrical connections for the equipment shall be made by a professional in accordance with standard NF C 15-100.
- In particular, a cut-off switch with an opening distance of at least 3 mm on each pole and a circuit breaker with a suitable trip rating shall be installed in the fixed wiring installation. The copper conductor cross-sections are defined in sections 1.9.3, 1.9.4 and 1.9.5 of this installation notice.
- The electrical power supply to the device must be disconnected prior to any maintenance or cleaning operation.
- Ensure that the unit may not be turned on accidentally.
- If a power cable is damaged, it must be replaced by the professional fitter who installed the product or by a similarly-qualified person, to prevent any danger.
- If the motor overheats, it will reduce its modulation on a linear basis. If the motor exceeds its maximum admissible internal temperature, the controller will stop the motor and automatically restart it after it has cooled down. In the event of a motor fault (signal fault in the motor's integrated circuit, phase failure, motor blockage, short circuit to Earth or internal short circuit, intermediate or network undervoltage or overvoltage, peak current fault), an alarm will cause the unit to shutdown. Cut off the power supply (circuit breaker on switchboard), check that nothing is preventing the unit from operating correctly (e.g. blockage, rubbing, clogged wheel, abnormal noise, etc.) and wait one hour before re-energizing the unit.
- If the problem persists, contact your fitter or vendor.
- Use only official spare parts provided by the manufacturer.
- For units equipped with an electrical heating coil: in the event of multiple failure of the electrical coil control (failure of at least two sensors) and in the event of overheating in the air supply compartment (ambient temperature > 85 °C), an auto-reset thermostat will cause the electrical coil to shut down. The electrical coil is equipped with a manual-reset thermostat triggered at 120 °C.
- To ensure the guarantee is effective, the unit must not be modified in any way.
- Ensure the unit is serviced regularly to ensure it operates correctly.

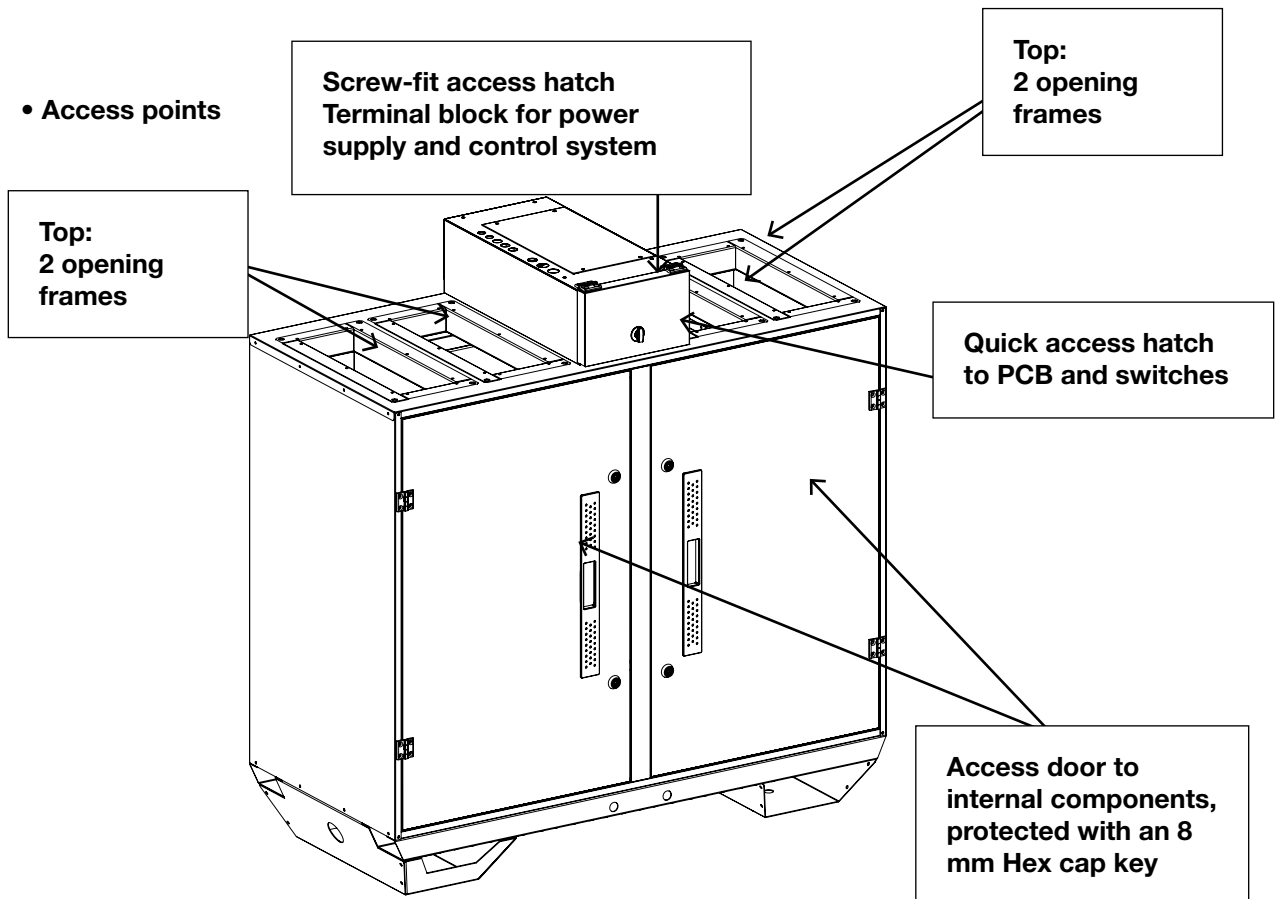


2. INSTALLATION

2.1 General

Attention: the purpose of this document is to provide instructions on the installation of the unit. To ensure the installation is fully compliant, refer to applicable legislation in effect in the country of installation (e.g. NF DTU 68-3 part 1.1.4).

Caution: the unit is designed for indoor use.

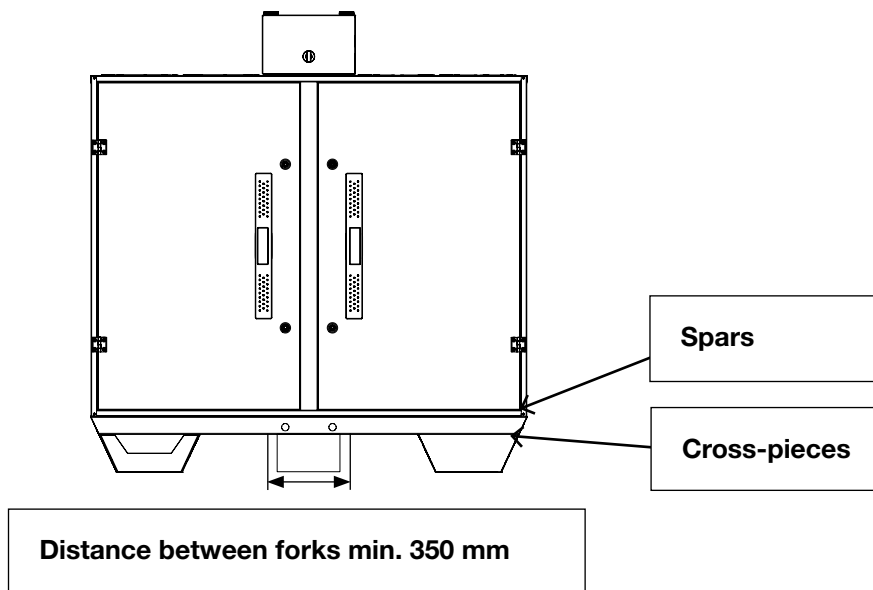


The unit identification plate is provided in duplicate. One plate is located on the back of the quick access hatch and another is on the side panel. The unit is packaged in plastic film, protected with cardboard corner pieces. All accessories ordered with the unit are delivered unassembled. Refer to section 2.6 for fitting accessories.

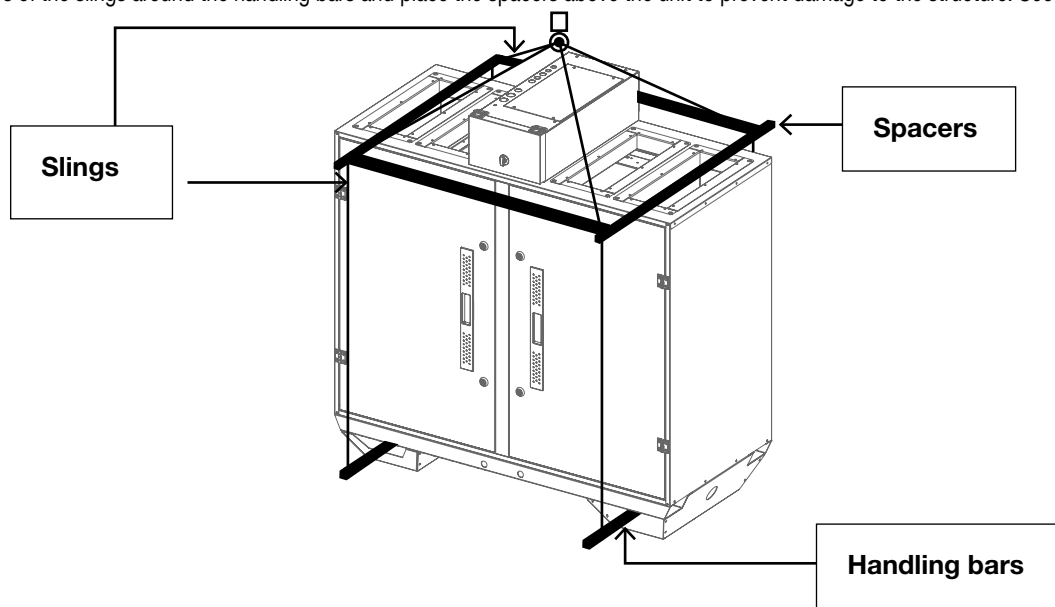
Attention: do not drill the panel between the two access doors, nor the base plates as they support the cable bundles!

2.2 Transport on site

The unit is mounted on cross-pieces. When transporting using a forklift, ensure that the forks are long enough for all the spars to rest on them. Ensure that the cross-pieces are not damaged when the forks are passed under the unit (ensure minimum clearance of 350 mm for the XV1600 and the XV2300).



Handling with slings: use the handling bars placed in the cross-pieces. The flexural rigidity of the bars should be suitable for the weight of the unit. Place the loops of the slings around the handling bars and place the spacers above the unit to prevent damage to the structure. See diagram below.



2.3 Parts supplied in packaging

2.3.1 Document pouch

All instructions concerning usage of the unit are stored in the air supply compartment.

An SD card with a USB adapter containing the control instructions and the software configuration is provided in the pouch.

2.4 Installing the Unit

2.4.1 General

Position the cross-pieces on a flat, stable surface (flat floor for condensate).

We recommend that you install an anti-vibration device between the feet of the Unit and the floor (e.g. anti-vibration mountings or mat) and between the branch connections and the air ducts (e.g. flexible sleeve) to attenuate any vibrations generated by the fans.

When installing the Unit and connecting ducts and electric cables, ensure that you do not block access points, so that internal functional elements can be easily removed and that the unit can be correctly cabled.

Space required for servicing: the two side doors must be able to open to a minimum of 90° to enable replacement of the filters. The central black door must open to an angle of 180° to enable access to switches and the control system.

NB: The electrical box has an IPX2 protection rating subject to the cable glands being securely closed, the electrical connection panel being screwed shut and the quick access hatch to the switches being closed with a quarter-turn. To avoid any risk of condensation of ambient air on the fresh air ducts, and to improve unit performance, we strongly recommend that all ducts are insulated.

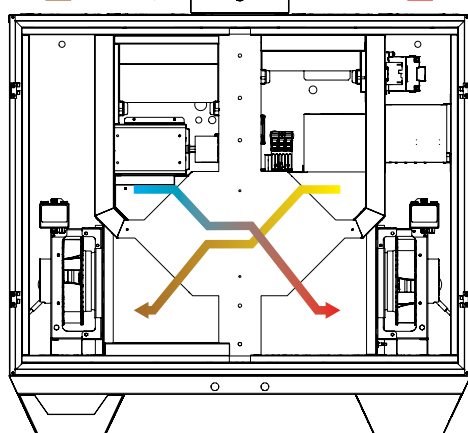
2.5 Airflow direction

A right side and a left side version exist.

2.5.1 Right side version

Discharge Fresh air Air exhaust Air supply

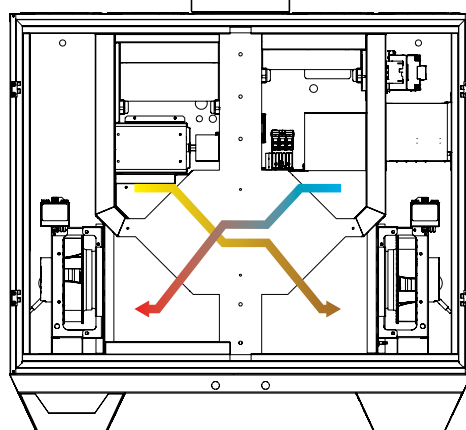
Internal airflow direction to the right



2.5.2 Left side version

Air exhaust Discharge Air supply Fresh air

Internal airflow direction to the left



2.6 Assembling options / accessories

The ceiling is fitted with M8 inserts on each corner of the opening frame to accommodate external accessories: adapter pieces - insulated flexible sleeves - rigid flexible sleeves - dampers. Each accessory is delivery with screws.

Protective foam should be installed between the accessories and opening frames to ensure an airtight junction between the elements.



2.6.1 Connecting adapter pieces

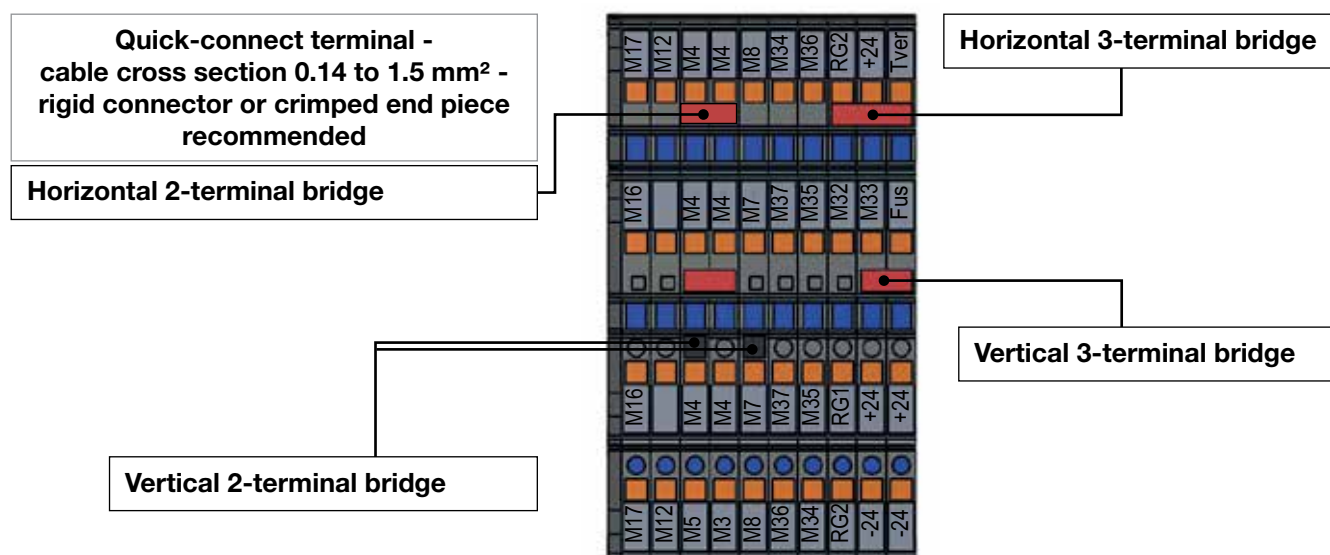
Adapter pieces are supplied with 4 screws, washers and M8 nuts. As necessary, screw each adapter piece into the inserts on the opening frames or on the insulation dampers, by assembling washer, screw and nut in each assembly corner. To connect circular ducts, they must be fitted with a rubber O-ring seal. Refer to the diameters for each machine in section 3.3. Insulate the ducts and adapter pieces in accordance with applicable standards and regulations.

2.6.2. Fitting an insulation damper on fresh air / discharged air duct

Dampers are supplied with pre-wired servo-motors, an RG link cable (whether one or two dampers are present), a junction box and M8 screws. Fit an airtight seal on each opening frame. Screw each damper into the inserts on the opening frame.

Connect the RG cable to the RG1 - RG2 terminals on the terminal block (see diagram below), ensuring beforehand that the cable is passed through the cable gland on the electrical box, to ensure the IPX2 rating. For technical data concerning the terminals, refer to section 2.8.2.

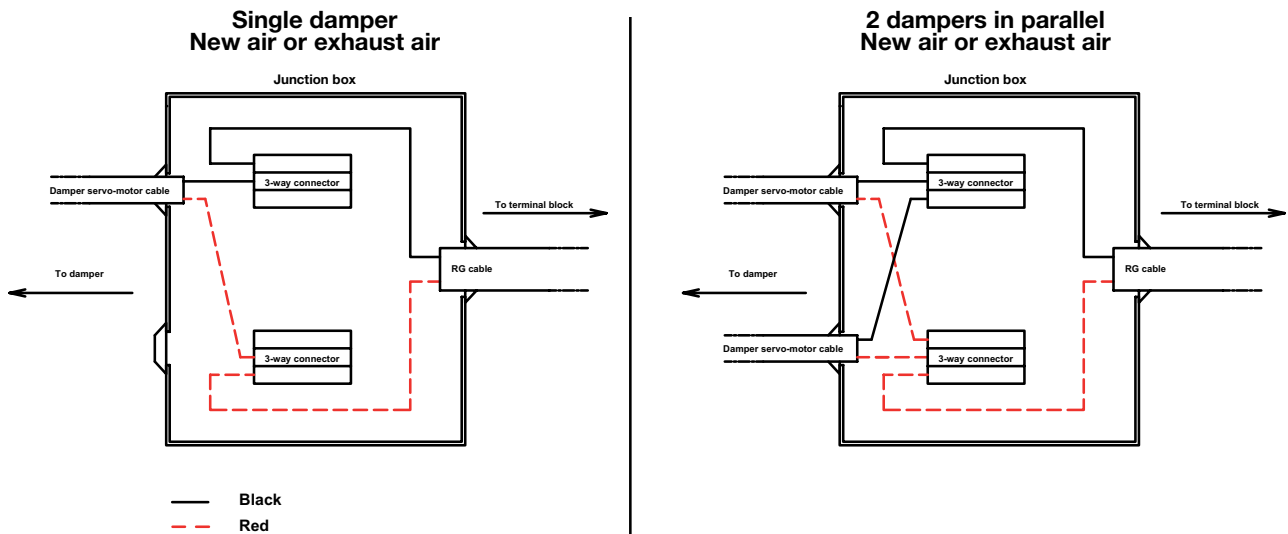
Wiring diagram for RG cable to terminal block:



Control terminal connection

Labels	Definition	Comments
M17	Air supply temperature sensor	Sensor connected in factory
M16		
M12	CO2 sensor – 010 V	Active if option selected
M4	GND	Bridged by default on terminal block
M5	CTA external shutdown	
M4	GND	NO
M3	High speed	
M8	Fire Alarm contact	Bridged by default on terminal block
M7	GND	
M34	CTA Alarms (A) return relay	NO
M35		
M36	CTA Alarms (B) return relay	NO
M37		
RG1	Fresh air damper relay - ON/OFF	NO (Active if option selected)
RG2		
+24	24V AC	Damper servo-motors
-24		
+24	24V AC	CO2 probe
-24		

Wiring diagram - junction box:



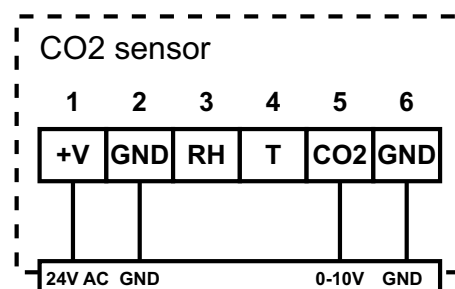
2.6.3 Connecting standard or insulated flexible sleeves

Flexible sleeves are available in the standard version (one layer of glass fibre, fire resistance rating M0) or insulated version (two layers of glass fibre, insulated with a 5 mm glass wool felt), supplied with 4 M8 screws, 8 washers and 4 nuts. The sleeve may be fixed to a damper or directly to the opening frames. For sleeve dimensions, refer to section 3.2.1.

Screw each flexible sleeve into the inserts of the opening frame or on to the insulation dampers, by fitting the washer, screw and nut in each assembly corner. Insulate the ducts in accordance with applicable standards and regulations.

2.6.4 Connecting the CO₂ sensor

The CO₂ sensor is supplied as an accessory. It must be connected to the terminal block according to the diagram below (24 V AC / GND and 1-10V input).

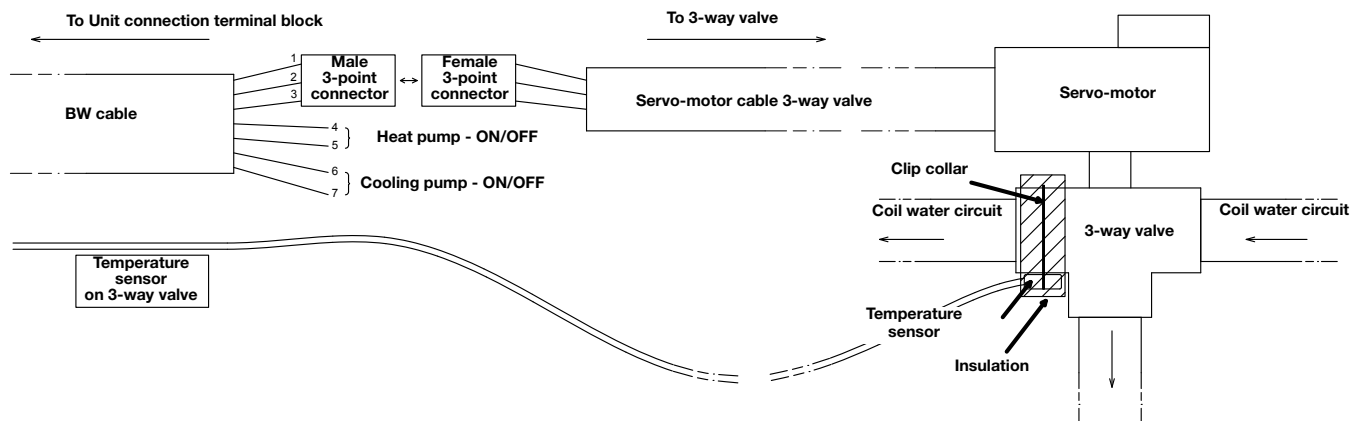


2.6.5 Optional internal water coil

The internal water coils are supplied with two flat seals, a motor-driven and pre-wired 3-way valve, a BW control wire and a frost-protection temperature sensor (to measure the temperature of the fluid circulating in the coil). The flat seals and the 3-way valve are for the time being left in the optional accessories box. The BW wire and the frost-protection sensor are connected at one end to the control terminal block. They are left unattached at the other end, ready to be installed.

Make the hydraulic connection for the water coil, where the inlet and outlet are on the side wall. Connect the 3-way valve to the coil water circuit. Once the hydraulic connections are made, connect the wires for the internal water coil (refer to wiring diagram below).

Servo-motor and 3-way valve assembly diagram:



Attach the BW male connector to the female connector on the servo-motor (strands 1, 2, and 3 of the BW cable).

If so desired, attach the 4 free strands of the BW cable used to control the stop or start functions of the hot or cold water coil circuit pump.

Caution: the electrical connections of external devices or which are located in a humid environment must be watertight. We recommend that you protect the connections between the servo-motor cable and the BW cable, using at least an IPX5 protection.

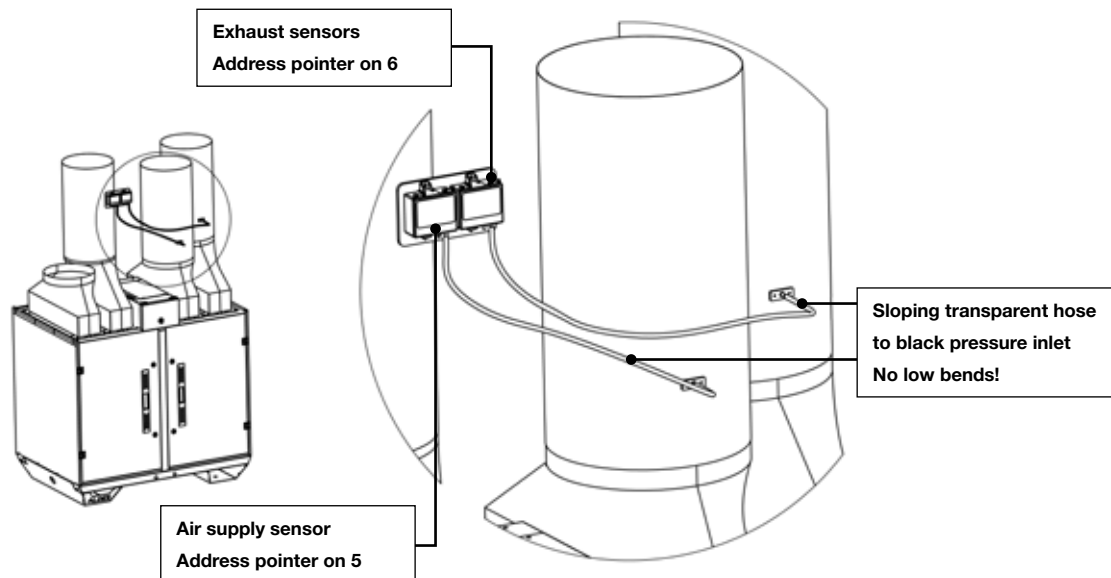
Attach the temperature sensor to the 3-way valve of the internal coil using a plastic collar. To increase the precision of fluid temperature measurement, insulate the sensor and the 3-way valve.

2.6.6 Constant pressure option

The kit contains 3 x RJ12 cables (labelled R8, R9, R10) connected to the 2 PTH pressure sensors. Each sensor is connected to 2 metres of transparent flexible tube, itself connected to a black pressure inlet. 4 self-tapping screws are supplied in a plastic bag. The whole assembly is factory pre-wired and supplied in the box of optional accessories.

The exhaust PTH sensor is intended to measure the difference in pressure between the exhaust duct and the ambient air. Its address pointer is positioned on 6. The transparent tube is connected to the negative terminal (-) of the sensor (duct under negative pressure). Leave the positive terminal (+) free. Drill a Ø10 mm hole in the exhaust duct to insert the pressure inlet. Fix the pressure inlet in place using the two self-tapping screws. Ensure there is an airtight seal around each pressure inlet.

The air supply PTH sensor is intended to measure the difference in pressure between the air supply duct and the ambient air, outside the unit. Its address pointer is positioned on 5. The transparent tube is connected to the negative terminal (-) of the sensor (duct under negative pressure). Leave the negative terminal (-) free. Drill a Ø10 mm hole in the exhaust duct to insert the pressure inlet. Fix the pressure inlet in place using the two self-tapping screws. Ensure there is an airtight seal around each pressure inlet.



Caution: the transparent tubes must descend from the pressure inlet of the PTH sensor to the black pressure inlet on the duct without a low bend that may cause a water trap. Under certain conditions, the air in the tube may condensate. Water stagnating in the tube would cause incorrect measurements and therefore incorrect control of the unit!

Caution: to obtain the best possible results, the pressure must be measured where there is least risk of turbulence, i.e. on a straight section of duct. The minimum distance to respect from any source of perturbation is at least twice the diagonal of a rectangular cross-section and at least twice the diameter of a circular cross-section.

2.6.7 LON option

The kit contains 2 x RJ12 cables, a RJ12 split (2 female inputs → 1 female output) and an OJ Air2 LON module. The whole kit is factory pre-wired and connected to the connection terminal block.

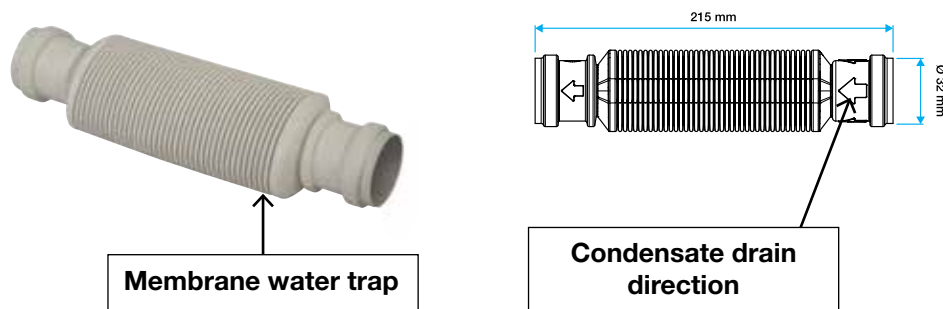
Connect the RJ12 cable labelled R11 waiting on the spar to one of the two female RJ12 connectors on the LON module.

The LonWorks networks cable is connected to the OJ Air2 LON module via the PTR 2-point connector on the module.

2.7 Hydraulic connection

2.7.1 Connecting condensate drains - general

All condensate drains must be connected to a water trap (plate heat exchanger and cooling coil optional). The water traps are delivered with each unit, in a box placed inside the unit. The membrane water traps are used to eliminate the negative pressure in the device, so as to enable the drainage of condensate or to prevent an air leak from the unit.

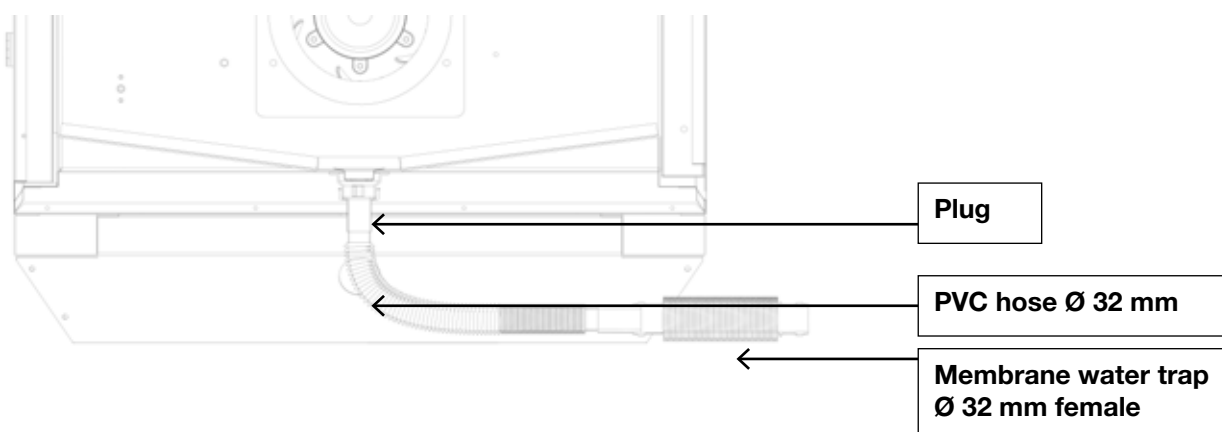


NB: to prevent the risk of freezing in winter, insulate the water trap and the drain accessories if they are located in a non-heated area!

2.7.2 Connecting the heat exchanger condensate drain

Our condensate collection trays are fitted with a drain that passes through the floor, comprising a plug and a PVC pipe Ø32. The membrane water trap is delivered in the box of separate parts. Connect the membrane water trap to the evacuation pipe.

Attention: Respect the condensate drainage direction indicated by an arrow on the connector.



2.7.3 Connecting the cooling coil condensate drain

Our cooling coil condensate collection trays are fitted with a plug attached to an extendible hose discharging at the access panel spar under the cooling coil. The end of the PVC hose has a male Ø32 end piece. Connect the discharge hose to a water trap (refer to section 2.8.1) by attaching a female PVC Ø32 end piece.

2.7.4 Connecting the internal water coil collectors

Refer to section 3.4 for collector diameters and their positions.

Collectors have a standard thread. Attach the water inlets and outlets on the coil collectors.

The collector water inlets and outlets are identified on the side panels of the Unit (the water circuit always runs counter to the air circuit on a coil containing at least two rows). We recommend that you hold the collector with a clamp while connecting it, to prevent damage to the collector that could cause leaks.

Ensure the joints on the collectors are sealed and use an expansion seal or flexible connection to absorb any expansion or contraction.

Refer to section 3.4 for nominal diameters of the 3-way valves.

NB: Coils admit a maximum pressure of 8 bar.

2.8 Connecting to mains power

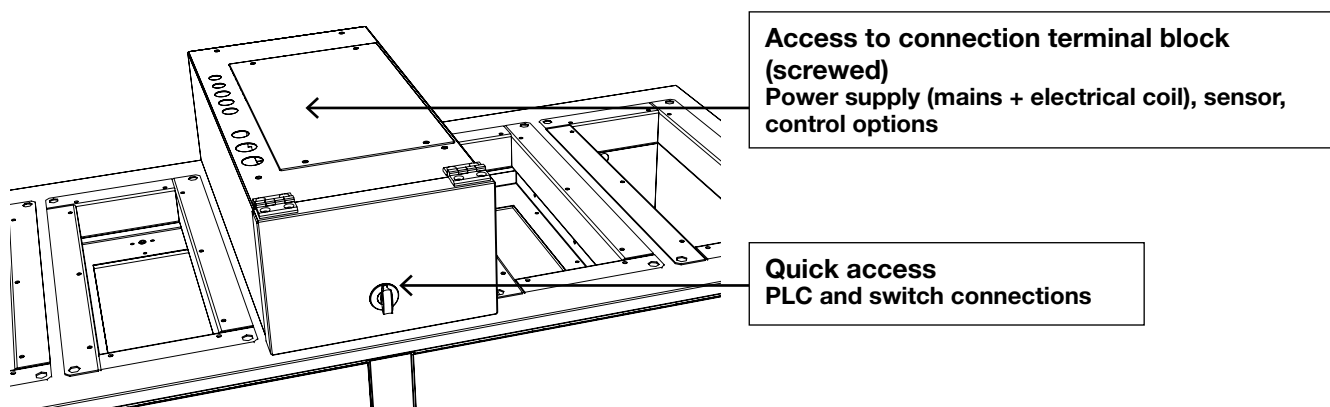
Caution: electrical connections should be made by a qualified electrician equipped with suitable Personal Protective Equipment. Never perform work on the Unit while it is energized. The electrical connection shall respect NF-C 15-100. Each power supply network must be protected with an omni-pole circuit breaker with an opening distance of 3 mm on each contact. For a single-phase power supply, use a type A differential leak current circuit breaker. For a 3-phase supply, use a type B circuit breaker. We recommend a differential of 300 mA for these two types of power supply. The amperage rating required for each circuit breaker according to the size of the Unit is defined in sections 2.8.3 and 2.8.4. Maximum recommended ambient temperature < 45 °C. **Remember to connect to the Earth circuit.**

2.8.1 Control principle - Power

Each unit has an electrical control box on its roof. This box contains the power and control components, and features two access hatches:

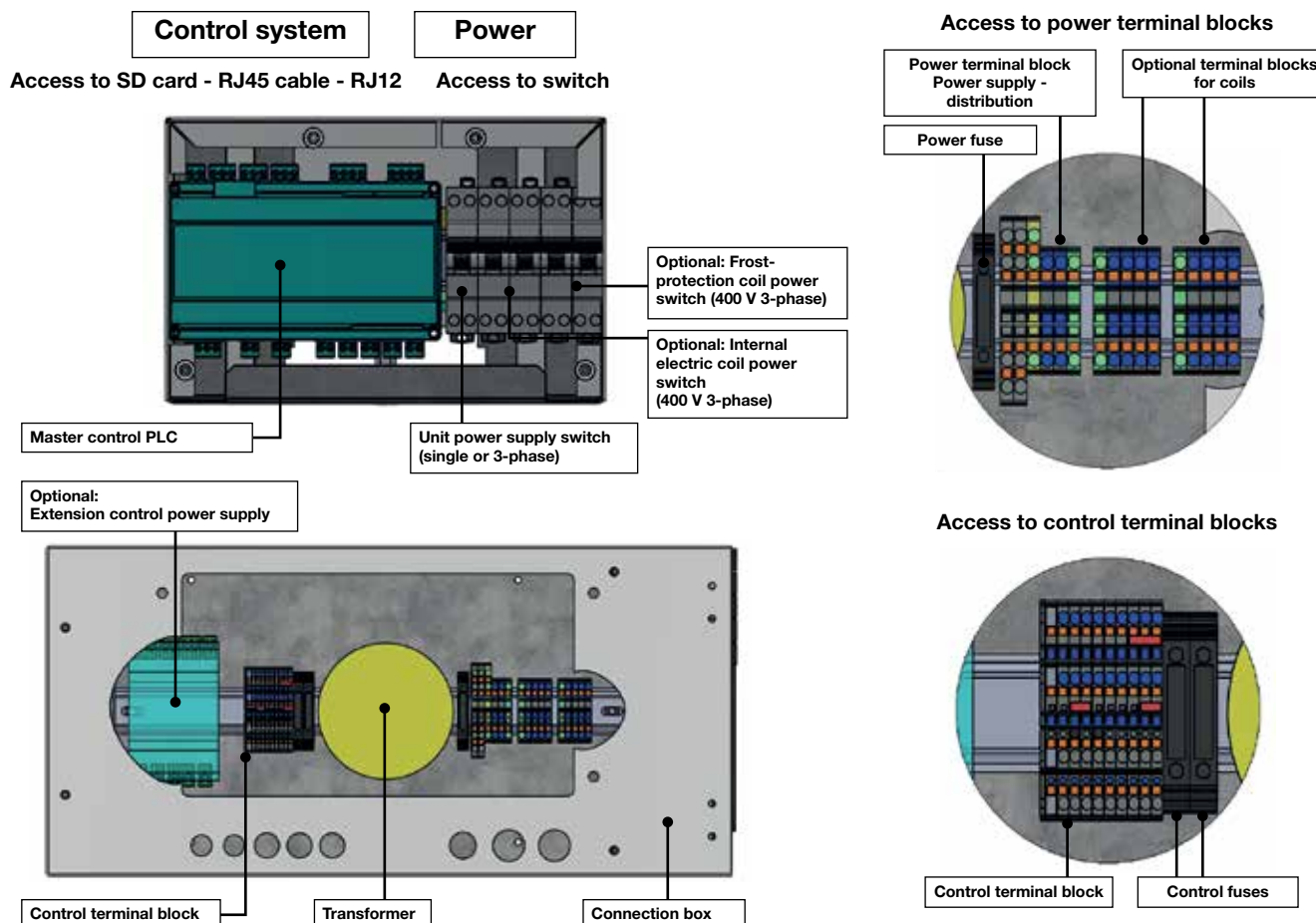
- One screwed hatch for the electrical connections (power and control)
- One quarter-turn locking hatch for access to the PLC and switch connections

Refer to the diagram below.



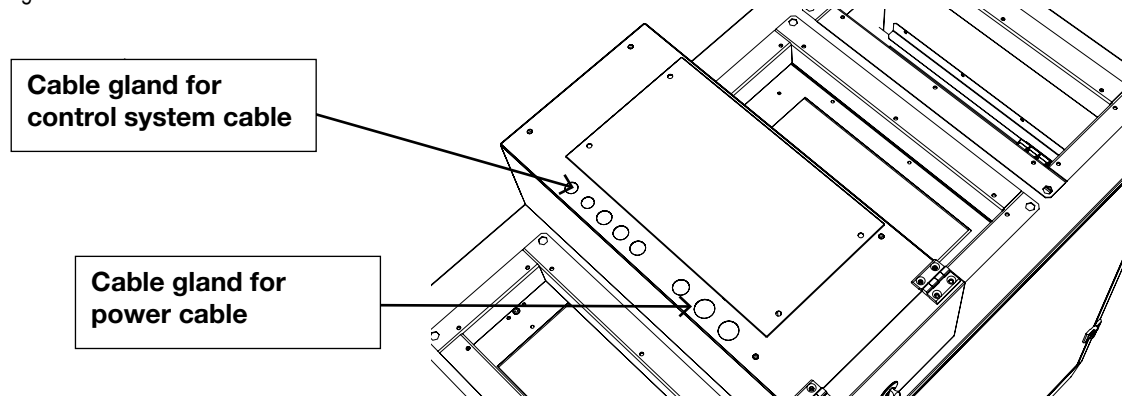
The Unit has a general power supply circuit and one circuit for each electrical coil. Each circuit has its own switch located behind the quick access hatch.

The terminal blocks for the power and control components are separated by the transformer. The transformer is protected by fuses upstream (1 A) and downstream (2.5 A).



2.8.2 Connecting electrical cables - power or control

Unscrew the cross-head screws on the access hatch to the terminal block. Pass the power supply cables through the cable glands to ensure air tightness.



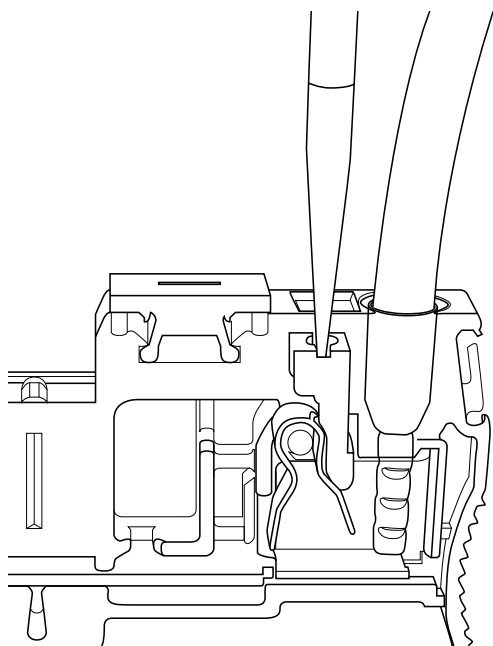
The power supply cable rigid conductors or with end pieces are directly connected to the spring terminals (no tools required). It is possible to release the conductors using a screwdriver to actuate the orange latch in front of the conductor insertion hole.

The flexible conductors without end pieces must be inserted by actuating the latch to release the spring (see photo below).

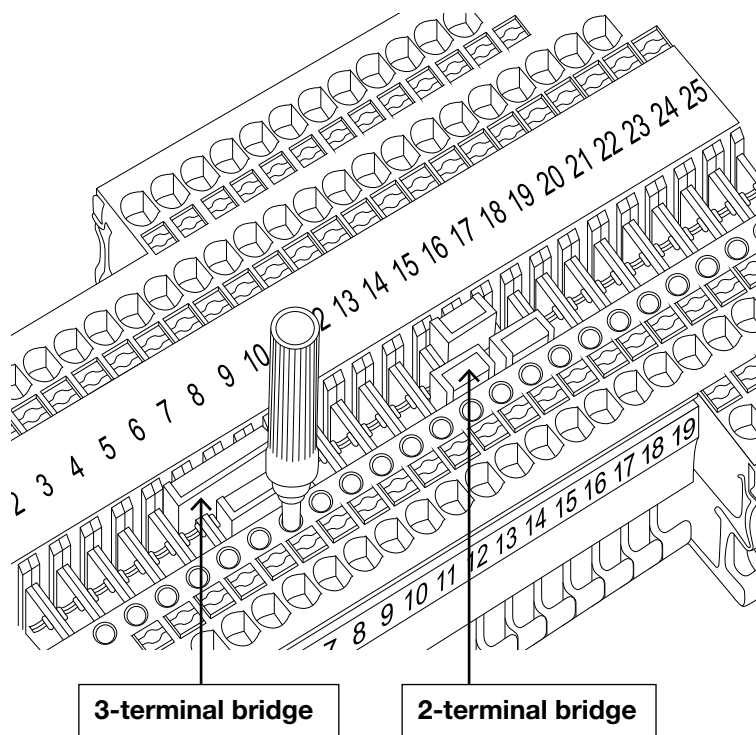
By applying a light effort on the latch, you can verify that the conductor is correctly inserted if the latch recedes 1 mm without resistance.

The bridges slot into the purpose-built holes in the terminal (see photo below).

Connecting a conductor to a terminal



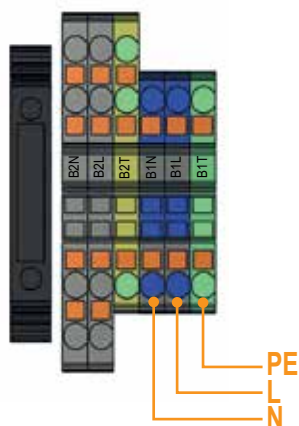
Connecting a bridge to a terminal (for inlet/outlet dampers)



2.8.3 Unit mains power supply (single-phase)

We recommend a circuit breaker with a 20 A rating and a 300 mA differential sensitivity and a minimum cable cross-section of 1.5 mm² for the mains power supply. See wiring diagram below:

Power terminal connection

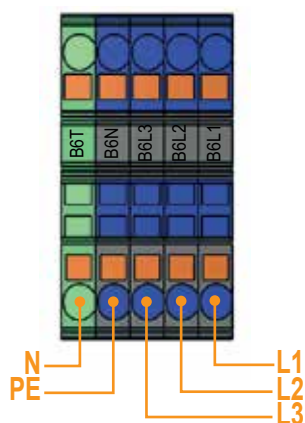


Single-phase unit power supply 230 V + E:
 - 2 fans
 air exhaust / air supply
 - PLC

Unit power supply				
Models	Power supply	Frequency	Max. power consumption (W)	Terminal type
XV 600	1~ 230 V AC + E	50/60 Hz	1100	Quick-connect terminal - cable cross section 0.14 to 4 mm ² - rigid connector or crimped end piece recommended
XV 1200	1~ 230 V AC + E	50/60 Hz	1200	
XV 1600	1~ 230 V AC + E	50/60 Hz	1300	
XV 2300	1~ 230 V AC + E	50/60 Hz	1420	

2.8.4 Connecting the power supply to the frost-protection coil or heating coil (optional)

Connection to frost-protection coil power terminal block



Alimentation triphasée
 batterie Dégivrage
 3 x 400V +N +T

We recommend a circuit breaker with a 20 A rating and a 300 mA differential sensitivity, along with a cable cross-section of 2.5 mm².

Electric coil power supply				
Models	Power supply	Frequency	Max. power consumption (W)	Terminal type
XV 600	3~ 400 V AC +N +E	50 Hz	1700	Quick-connect terminal - cable cross section 0.5 to 10 mm ² - rigid connector or crimped end piece recommended
XV 1200	3~ 400 V AC +N +E	50 Hz	3400	
XV 1600	3~ 400 V AC +N +E	50 Hz	5650	
XV 2300	3~ 400 V AC +N +E	50 Hz	7500	

Attention: Each coil is controlled by a static relay. The static relay is likely to generate interference. The use of mains filters may be necessary in the event that the user needs to satisfy EMC requirements (EN/IEC standard).

- Unit XH1000 to XH3500: filter 220nF / 760V /X1

2.9 Servicing filters

Caution: filters must only be serviced with the unit de-energized, by a technician with suitable qualifications (live LV conductor).

To check how clogged the filters are, we recommend that you use a pressure sensor (optional extra).

We recommend that the filters be changed when the final pressure losses reach the following levels:

G4 filters: max. 250 Pa

F7 flat filters: 250 Pa ECO - max. 450 Pa

F7 HE filters: 250 Pa ECO - max. 450 Pa

Consult the configuration notice to reset the pressure loss when changing the filters under a dynamic alarm.

2.10 Configuring the TCP/IP protocol

Connect the RJ45 cable to the TCP/IP socket on the Master PCB:



1) Using the remote control, obtain the IP address of the control system, the subnetwork mask, the gateway and the DNS server as follows:

- User / Internet

- (To change windows use the control wheel. To alter a value, press the central button and turn the control wheel to the required value).

- Static/Dynamic IP:

- Use Static if there is a direct connection between the PC and the Unit
- Use Dynamic if a router is used for the connection

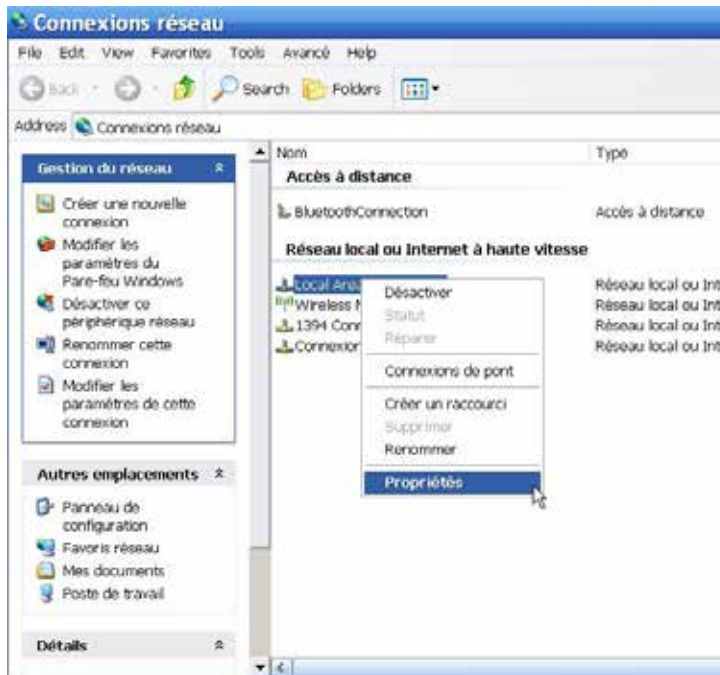
- Examples:

- Default IP address, e.g.: 172.20.20.3
- Default subnetwork mask, e.g.: 255.255.255.0
- Default gateway, e.g.: 172.20.20.1
- DNS server required e.g.: 172.20.20.3 (identical to IP address)
- Auxiliary DNS server 0.0.0.0

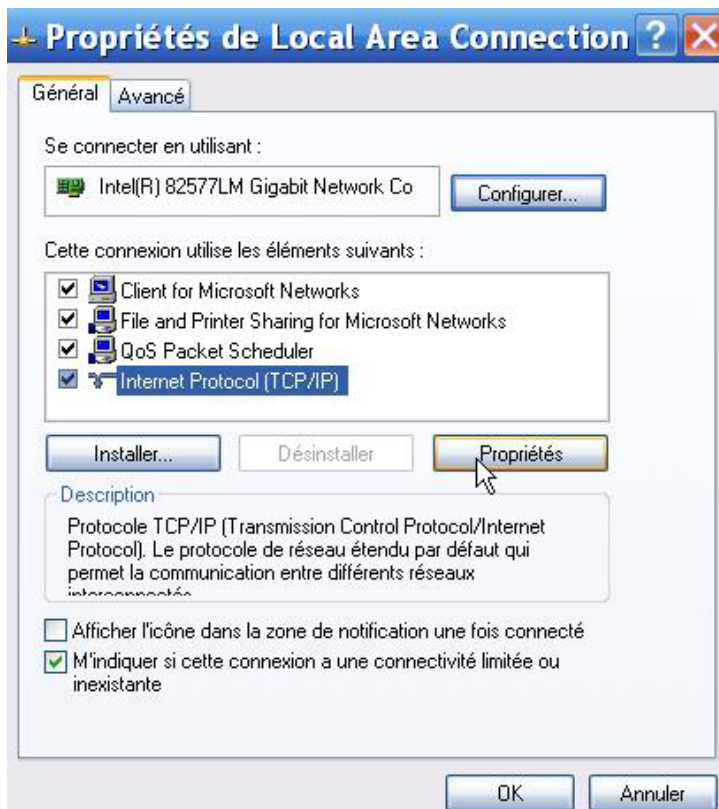
2) On the PC, configure the IP address and DNS server address. Two paths are possible depending on the version of Windows:

a. with Windows XP

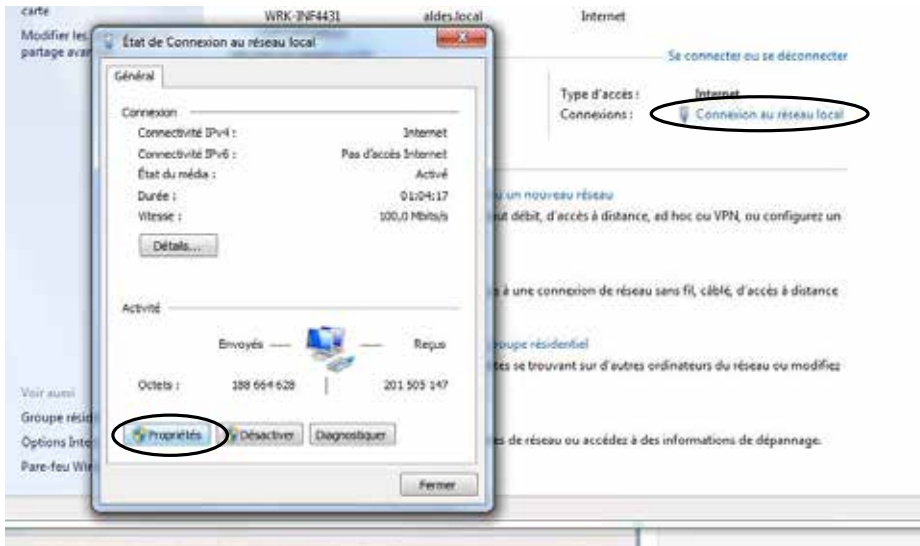
- Start/Connections / Display all connections / right-click "local area connection" / Properties:



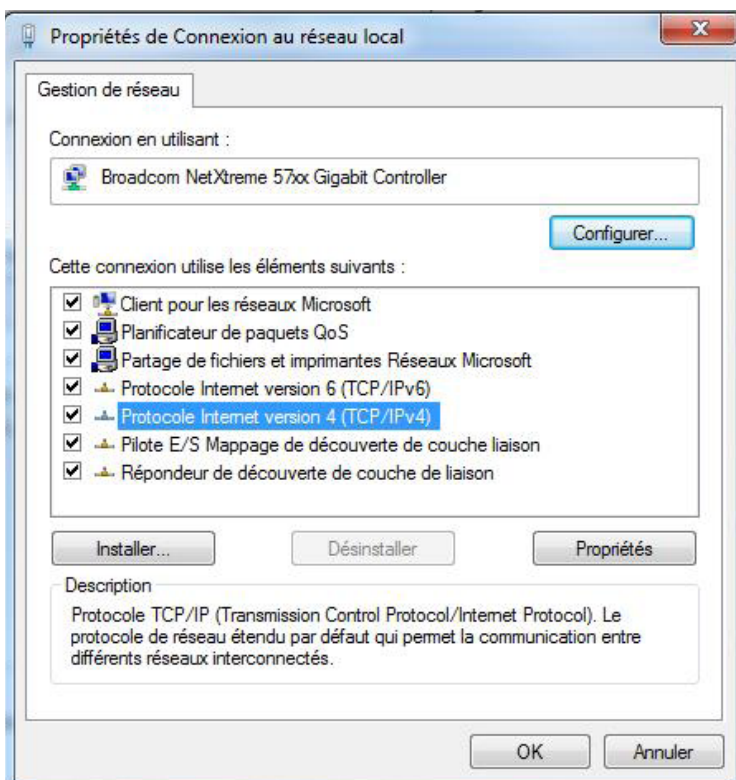
- Internet Protocol / Properties:



b. with Windows 7



- Configuration panel / Network and Internet / Network and Sharing Centre
- Local network connection / Properties



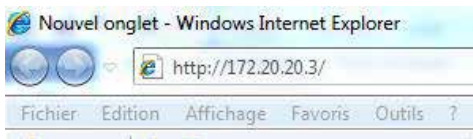
- Click IP v.4 / Properties

c. Configure the IP address (Windows XP and 7)



- IP address: Create an IP address for the PC other than that of the PCB. Caution, this PC IP address must use the same first three sections of the PCB IP address, e.g.:
PCB IP address = 172.20.20.3;
PC IP address = 172.20.20.4.
- Subnetwork mask: Identical to that of the PCB: 255.255.255.0 (identical to PCB)

3) Open a web page using Internet Explorer and enter the IP address of the PCB:



- The next page is displayed:

Username:
Password:
Language: Française ▾



 **Aldes Smart Control®**

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- Enter the user name and password depending on your profile:

User:

- Name: USER
- Password: 111

Installer:

- Name: INSTALLE
- Password: 222

Service:

- Name: SERVICE
- Password: 333

- For more information on configuring the control system, refer to the configuration instructions.

- Once the PCB IP address is entered, if the webserver page is not displayed, this may be due to the proxy.

2.11 Remote control communication

2.11.1 Using the remote control



Rotate the wheel to browse a menu. Press the wheel to select a menu. Press ESC to quit a menu.

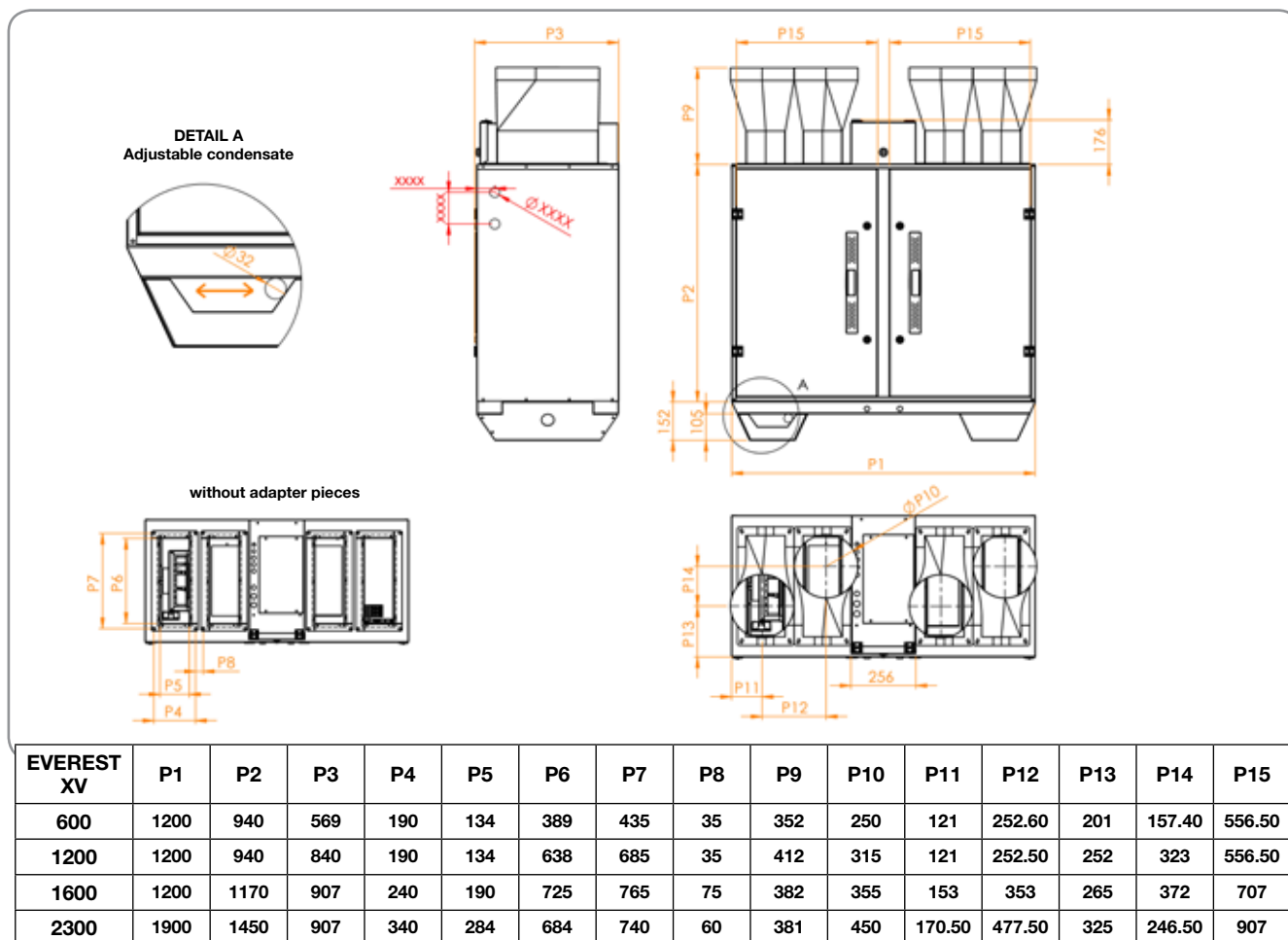
2.11.2 Menu access

- To access the User level no password is required.
- To access the Installer level, enter the password: 1 1 1 1.
- To access the Service level, enter the password: 1 1 1 2.



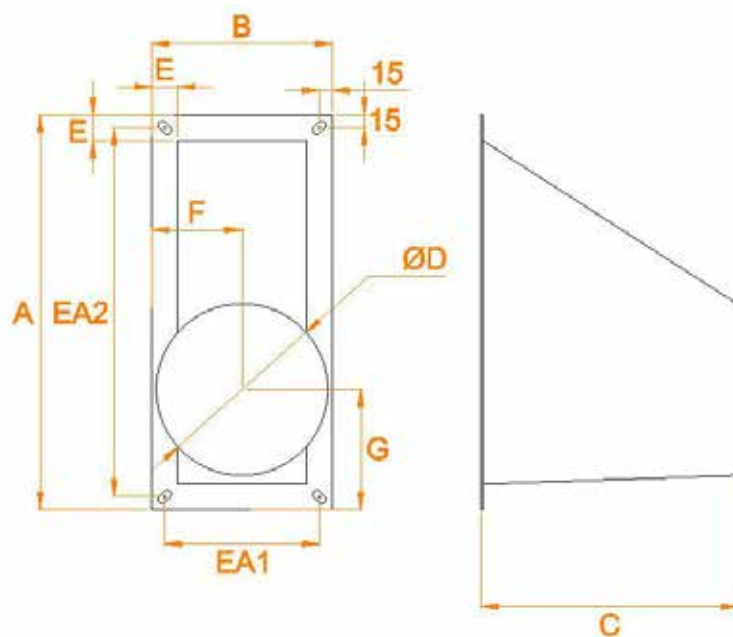
3. DIMENSIONS

3.1 Unit dimensions



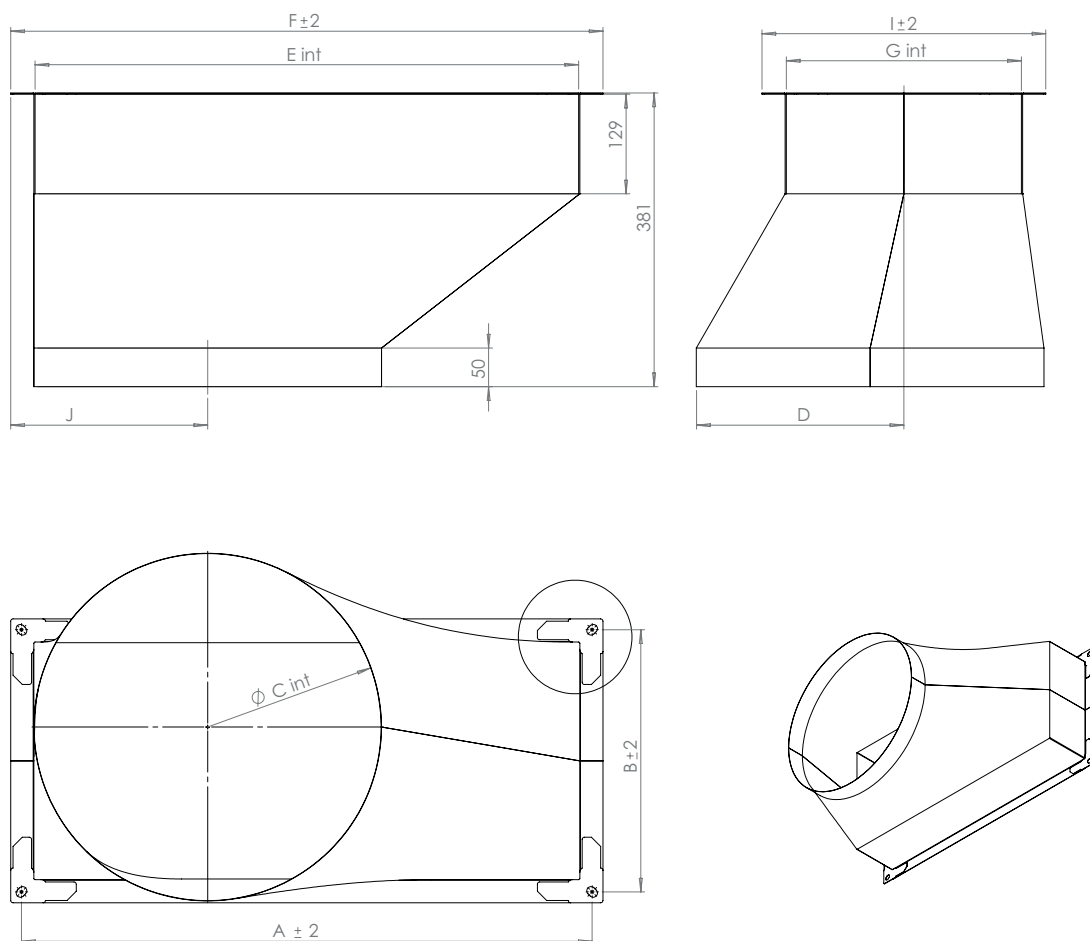
3.2 Dimensions of external accessories

3.2.1 Flexible sleeves



Size	Q (m ³ /h)	EA1 (mm)	EA2 (mm)	A (mm)	B (mm)	C (mm)	Ø D - (Ø std duct) (mm)	Ø D1 int. - (mm)	E (mm)	F (mm)	G (mm)
T1	600	190	435	465	220	300	250	251	30	110	117.50
1-bed	1200	190	685	715	220	300	315	316	30	140	180
2-bed	1600	240	765	785	260	300	350	351	30	155	225
3-bed	2300	340	740	760	360	300	450	451	30	200	210
Tolerances		+3/-3	+3/-3	+5/-5	+5/-5	-	0/-1.50	+2/0	+1/-1	-	-

3.3 Adapter piece drawings



TOP	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Dimension G	Dimension H	Dimension I	Dimension J
Size 1	435	190	Ø 250	139	399	469	153		224	156
Size 2	685	190	Ø 315	207	649	719	153		224	192
Size 3	765	240	Ø 355	202	729	799	203		274	212
Size 4	740	340	Ø 450	269	703	774	303		374	260

3.4 Diameters of internal water coil collectors

Caution: the coils admit a maximum pressure of 8 bar.

Models	Water coils		3-way valve female connection	
	Coil type	Copper collector Ø Ext. (Gas inches)	Valve flow factor (Kvs)	DN (mm)
XV 600	1 row	1/2 "	1.6	15
XV 1200	1 row	1/2 "	1.6	15
XV 1600	1 row	1/2 "	2.5	15
XV 2300	1 row	1/2 "	2.5	15



4. CONTROL OPTIONS

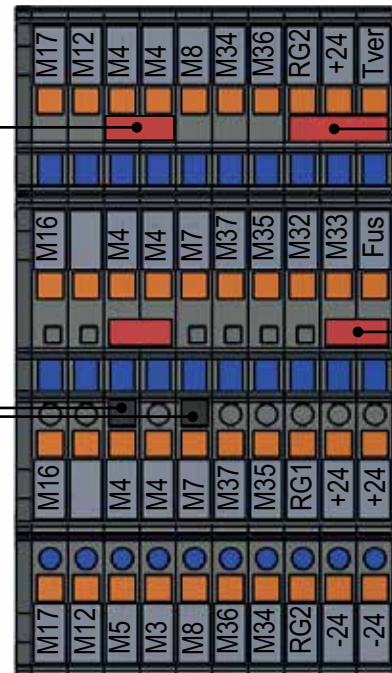
4.1 Hard-wired control options

Control terminal connection

Labels	Definition	Comments
M17	Air supply temperature sensor	Sensor connected in factory
M16		
M12	CO2 sensor – 010 V	Active if option selected
M4	GND	Bridged by default on terminal block
M5	CTA external shutdown	
M4	GND	NO
M3	High speed	
M8	Fire Alarm contact	Bridged by default on terminal block
M7	GND	
M34	CTA Alarms (A) return relay	NO
M35		
M36	CTA Alarms (B) return relay	NO
M37		
RG1	Fresh air damper relay - ON/OFF	NO (Active if option selected)
RG2		
+24	24V AC	Damper servo-motors
-24		
+24	24V AC	CO2 probe
-24		

Horizontal 2-terminal bridge

Horizontal 3-terminal bridge



Vertical 2-terminal bridge

Vertical 3-terminal bridge

Quick-connect terminal - cable cross section 0.14 to 1.5 mm² - rigid connector or crimped end piece recommended

CO2 sensor: control according to CO2 content in room.

- Connect M12-M4 for 0-10 V signal return.
- Connect +24 / GND for sensor power supply.

Unit external shutdown: ON/OFF instruction to Unit.

- Connect M5-M4 for Unit ON/OFF instruction.

High speed: forced operation at full speed for a given time (to be configured in software).

- Connect M4-M3 for the High Speed instruction.

Fire Alarm contact: triggers forced ventilation at a given speed (to be configured in software).

- Connect M8-M7 for the fire alarm.

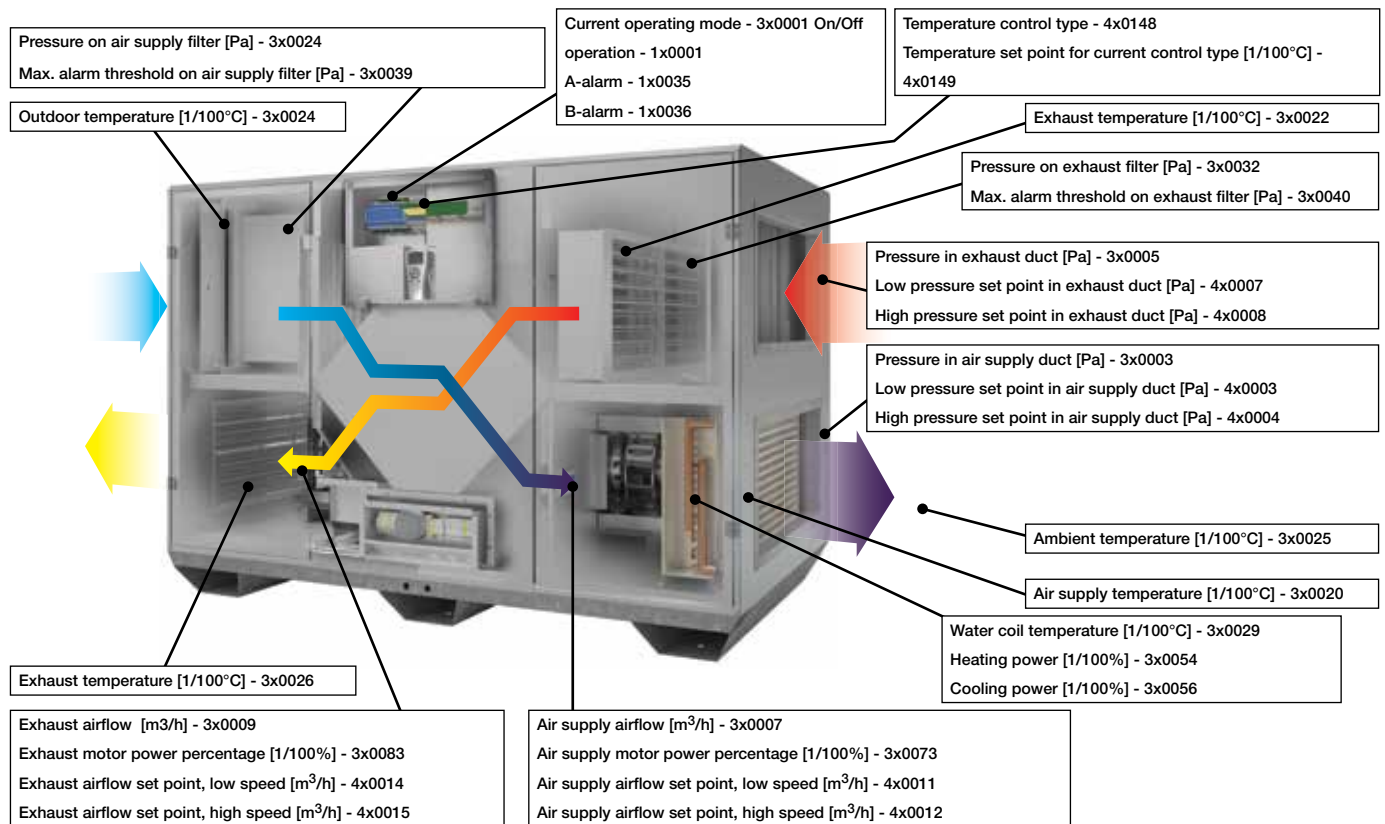
- **Caution:** according to article CH38 (ErP) for public buildings and containing several units that handle over 10,000 m³/h for the same area; or which supply sleeping areas: a standalone external sensor + trigger must automatically control the shutdown of the fan unit in the event of fire. To do this, set the airflow to 0%. Refer to the configuration instructions.

Inlet/outlet damper: refer to section 2.6.2.

Alarm return to Unit: alarm return relay (potentially free).

- Connect M36-M37 (max. voltage 24 V AC).
- Normally open.
- Contact closes in the following cases: fire alarm / fault on water coil pump / fault on motor.

4.2 Modbus addresses



NOTES



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