



CAIB-CAIT PRO REG 10-20-30-40-50

Compact controlled single flow air handling unit (AHU)

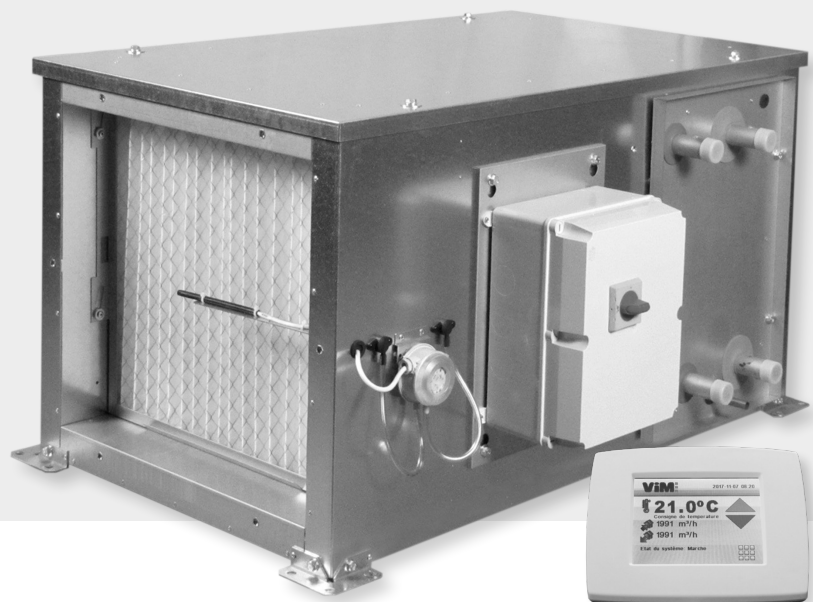


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1. GENERAL INFORMATION

1.1 Warnings

This product has been manufactured in accordance with rigorous technical rules of security in accordance with the standards of the EC. The EC declaration, as well as the instructions, can be downloaded from the Internet site.

Before installing and using this product, carefully read these instructions which contain important indications for your safety and that of users during the installation, commissioning, and maintenance of this product.

Once the installation is complete, leave this manual in the machine for any later consultation.

The installation of this product (installation, connections, commissioning, maintenance) and all other interventions must be carried out by a professional applying the rules of the art, safety standards, and regulations in force.

It must comply with the requirements relating to the Electromagnetic Compatibility (EMC) and the Low Voltage Directive.

The seller will not be responsible for any possible bodily injury and/or material damage caused when the safety instructions have not been followed or following a modification of the product.

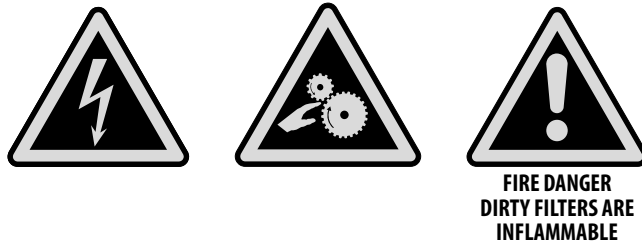
The CAIB CAIT single flow units are intended for single flow ventilation and air handling applications in kitchens or tertiary buildings.

Indoor installation (recommended) or outdoor:

- Max. permanent environment temperature : -20 °C / +40 °C.
- To avoid damage to electronic components (very low temperature, condensation) the safety switch located on the front panel must be maintained in the "ON" position except for maintenance periods.
- Relative humidity: 95% max. without condensation.
- Atmosphere not potentially explosive.
- Atmosphere of low salinity without any corrosive chemical agents.

1.2 Safety Guidelines

- Use the appropriate PPE (Personal Protective Equipment) for any handling operation.
- Before installing the air handling unit, make sure that the support and location are sufficiently resistant to bear the weight of the unit and accessories.
- Respect the danger labels present on the various access doors or panels:
- Live electrical equipment/Rotating machinery/Potentially flammable dust-laden filters:



- Do not open the access doors without having cut the electrical power from the lockable safety switch-disconnector located on the unit
- If there is work to be performed on the device, cut the electrical power at the main circuit breaker and make sure that nobody is able to reconnect it accidentally.
- Make sure that any mobile parts have stopped.
- Check that the fan motor is not accessible from the connection sheath.

Before start-up, check the following points:

- Ensure that the device does not contain any foreign body.
- Check that all the components are fastened in their original locations.
- Manually check that the fan is not rubbing and is not blocked.
- Check the connection of the earth electrode.
- Check that the access cover is securely closed.

1.3 Receipt - Storage

In the event of any lack, non-conformity, or total or partial damage of the delivered products, the Buyer must note its written reservations on the carrier's receipt in accordance with Article 133-3 of the Commercial Code and confirm them within 72 hours by registered letter with a copy sent to the seller.

The receipt of the material without reservation deprives the Buyer of any subsequent recourse against us. The product must be stored out of bad weather and protected from any impacts and stains caused by projections of any kind during its transport from the supplier to the end client, and on the work site prior to installation.

1.4 Warranty

The equipment is guaranteed for 24 months from the invoice date. The warranty is limited to the replacement of parts or equipment whose operation is recognized as defective by the maker, excluding any compensation or penalties. The costs of labor, removal and rest, travel related to the replacement are the responsibility of the Customer. Excluded from our warranty are defects linked to abnormal use or not in accordance with the recommendations in our instructions, defects observed as a result of normal wear and tear, incidents caused by negligence, lack of monitoring or maintenance, defects due to incorrect installation of devices or poor storage conditions prior to assembly.

In any case, maker is not responsible for transformed material, even partially repaired.

2. PRESENTATION OF RANGE - PRODUCT

2.1 Range

Use

Supply of fresh air into buildings with heating and/or cooling. Fixed installation on brackets, either indoors or outdoors.

5 Sizes: 10 (800 m³/h), 20 (1,800 m³/h), 30 (2,800 m³/h), 40 (3,800 m³/h) and 50 (5,500 m³/h).

- **Models with integrated coils:**

- **H3** : heating coil.
- **C4** : cooling coil.
- **R3** : reversible heating coil/cooling coil, 2, 3 or 4 rows.
- **H3 C4** : heating coil + cooling coil (except in size 10).
- **E** : electric heater.

- **Configurations:**

- **R**: Outdoor version, right-hand access in the direction of the air.
- **L**: Outdoor version, left-hand access in the direction of the air.

- **Monobloc constructions**

- **Dampers**

Motorised dampers are available as accessories (following table).

- Suction setting for antifreeze protection of water coils.
- Blowing setting to comply with CH 38 regulation of Public Access Buildings (ERP).

Use	Code	Designation	Description
CAIB CAIT 10	170296	CDR 50 F 468x345	Motorisable antifreeze or fire damper
CAIB CAIT 20 to 40	170297	CDR 100 F 614x563	Motorisable antifreeze or fire damper
CAIT 50	170298	CDR 100 F 950x510	Motorisable antifreeze or fire damper
CAIB CAIT 10 to 50	165385	LF 24 S	On-off motor with return spring 4Nm 24V 1 contact
Dampers to mount on a BCC flange:			
	683816	BCC 10	Circular connection flange
CAIB CAIT 10	165485	REEV 250	Motorisable antifreeze or fire damper with airproof shutter + exterior seals
	683817	BCC 20	Circular connection flange
CAIB CAIT 20	165487	REEV 355	Motorisable antifreeze or fire damper with airproof shutter + exterior seals
	683818	BCC 30-40	Circular connection flange
CAIB CAIT 30-40	165488	REEV 400	Motorisable antifreeze or fire damper with airproof shutter + exterior seals
	683857	BCC 50	Circular connection flange
CAIT 50	165491	REEV 560	Motorisable antifreeze or fire damper with airproof shutter + exterior seals
CAIB CAIT 10 to 50	165385	LF 24 S	On-off motor with return spring 4Nm 24V 1 contact

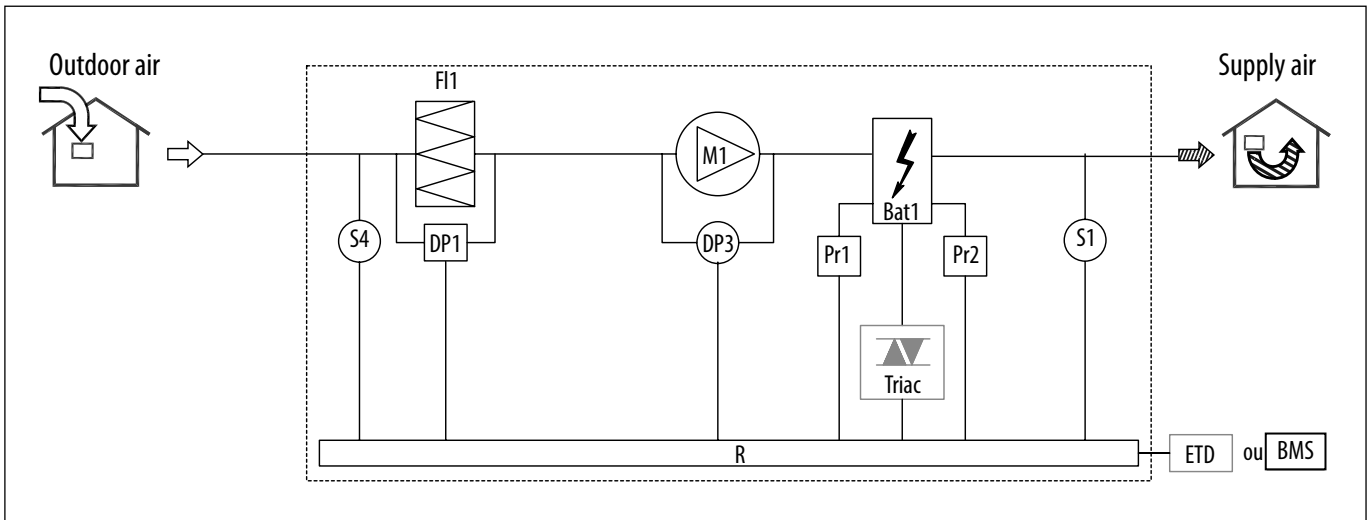
- **Communicating controller assembled/wired ready to be connected:**

- Variable flow (VAV), constant flow (CAV), constant pressure (COP).
- Temperature control by integrated CORRIGO specific controller.
- Modbus communicating on RS485 port and Bacnet IP on TCP/IP port.
- ETD remote touch control included (10m cable).

2.2 Functional diagrams

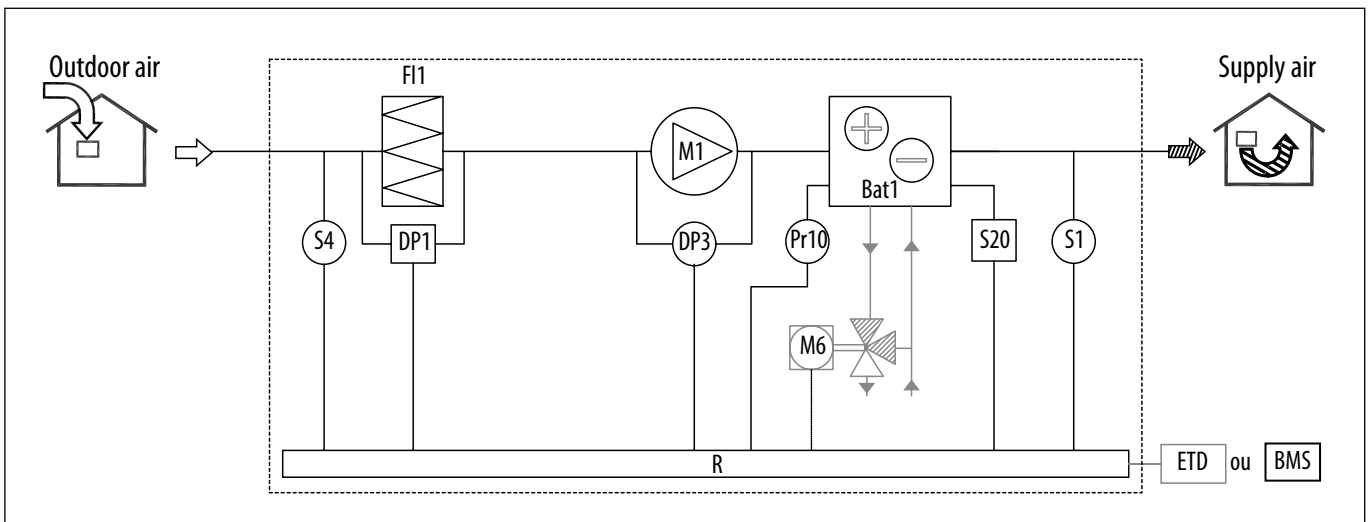
For any specific configuration contact the After sales service.

CAIB CAIT with electrical heater (E)



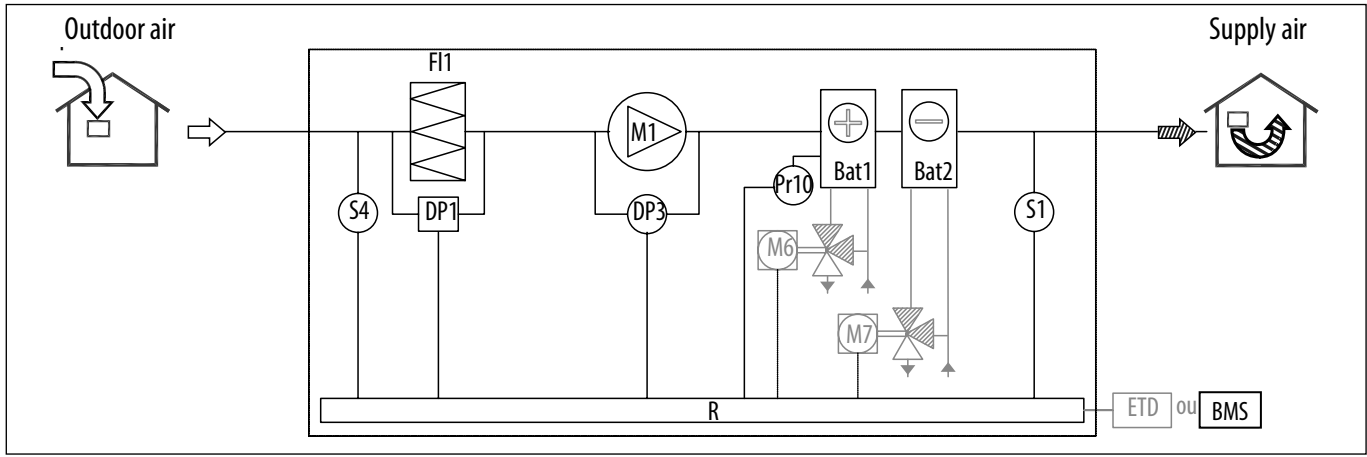
S1	T° supply sensor	M1	Motor-fan	DP1	Fresh air filter pressure switch
S4	T° fresh air sensor	M5	Fresh air damper (accessory)	DP3	Flow measurement
R	CORRIGO Controller	F11	Fresh air filter	Bat1	Electrical heater
PR1 PR2	Safety Thermostats	F12	Fresh air filter (option)	ETD	Touch display for control of the CAIB/T

CAIB CAIT with water coil (R3 / H3 / C4)



S1	T° extract sensor	M1	Motor-fan	DP3	Flow measurement
S4	T° fresh air sensor	M5	Fresh air damper (accessory)	Bat1	Reversible water coil / heating coil / cooling coil
R	CORRIGO Controller	M6	Motorised valve	ETD	Touch display for control of the CAIB/T
Pr10	Antifreeze sensor	F11	Fresh air filter		
S20	Change-over thermostat	DP1	Fresh air filter pressure switch		

CAIB CAIT with water coil (H3 C4)



S1	T° extract sensor	M5	Fresh air damper (accessory)	DP3	Flow measurement
S4	T° fresh air sensor	M6	Motorised valve	Bat1	Heating coil
R	CORRIGO Controller	M7	Motorised valve	Bat2	Cooling coil
Pr10	Antifreeze sensor	F11	Fresh air filter	ETD	Touch display for control of the CAIB/T
M1	Motor-fan	DP1	Fresh air filter pressure switch		

2.3 Products - Main Components



Version electrical heater (E), heating coil (H3), cooling coil (C4), heating + cooling (H3 C4), reversible (R3):

Model E	Designation
<p style="text-align: center;">Air direction →</p>	<ul style="list-style-type: none"> 1 Prefilter 2 Filter 3 Motor-fan 4 Bottom 5 Security cover legs 6 Cover 7 Supply face 8 Suction side 9 Safety Thermostats (2) 10 Electrical resistance
	<ul style="list-style-type: none"> 11 Droplet separator (C4 or R3) 12 Drain tray (C4 or R3) 13 Heating coil, cooling or reversible coil
	<ul style="list-style-type: none"> 14 Droplet separator 15 Drain tray 16 Heating coil 17 Reversible cooling coil

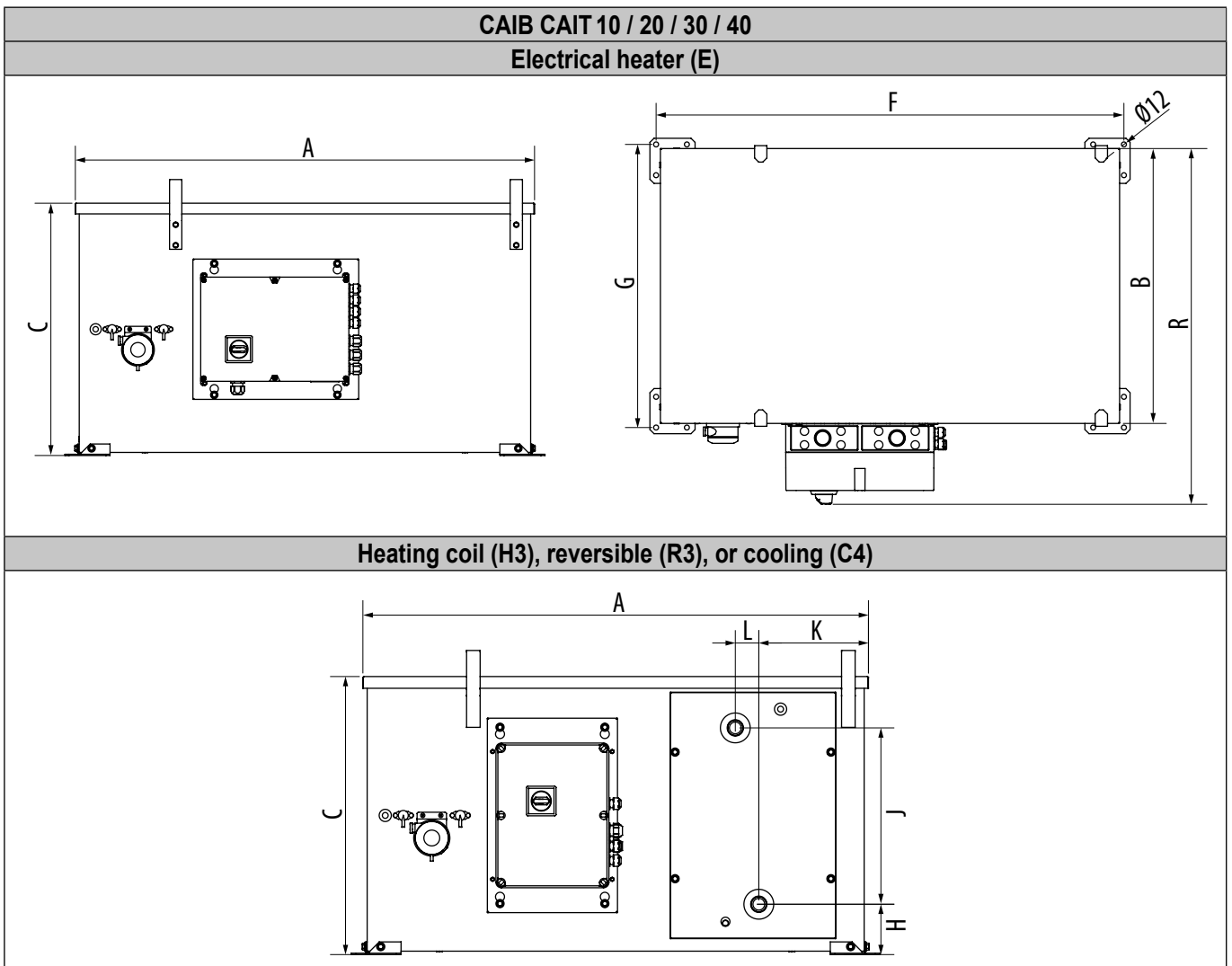
3. INSTALLATION

3.1 Unit identification / Symbols

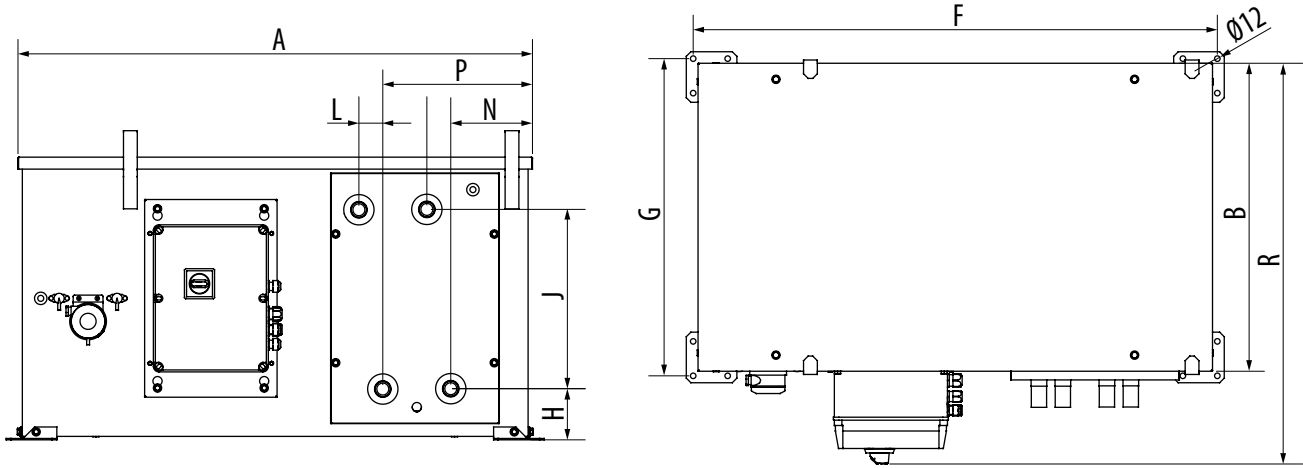
Identification label - stuck on the machine above the control cabinet

CAIB-30 M5 H3 PRO-REG R		CODE : 5209374500	115 kg	19262
Hot water coil				
GENERAL DATA	U = Mono 230V~ 50Hz P = 1 kW	I Nominale / RC = 3 A		
MOTOR DATA	U = 230 V - 50, Hz P = 0,715 kW	I Nominale / RC = 3,10 A		
ACCESSORIES	Hot water coil			
		 Made in France		

3.2 Dimensions and weights



Heating coil + cooling coil (H3 C4)

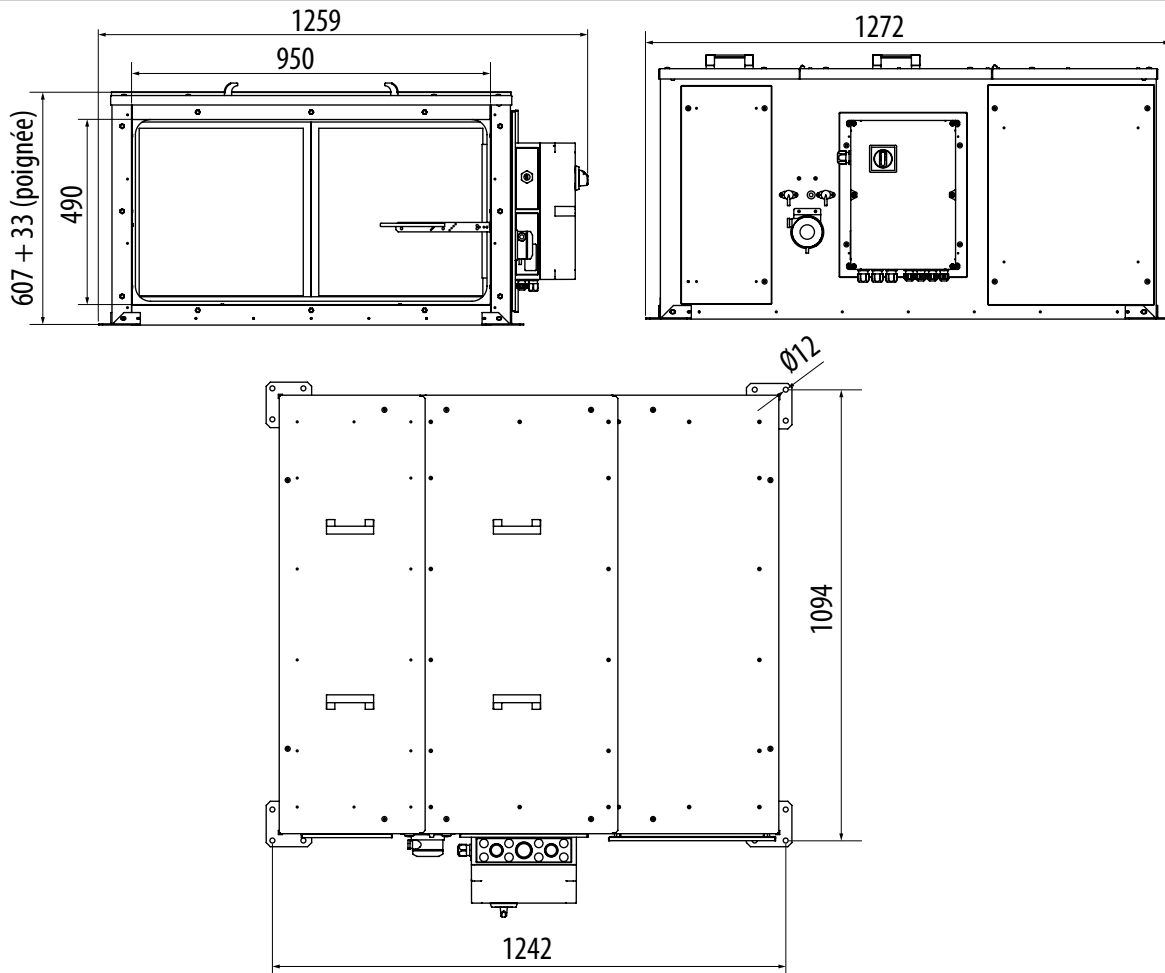


Size	Casing dimensions (mm)				Attachment (mm)	
	A	B	C	R	F	G
CAIB CAIT 10	819	520	385	720	840	540
CAIB CAIT 20	1119	670	615	870	1140	690
CAIB CAIT 30	1119	670	615	870	1140	690
CAIT 40	1119	670	615	870	1140	690

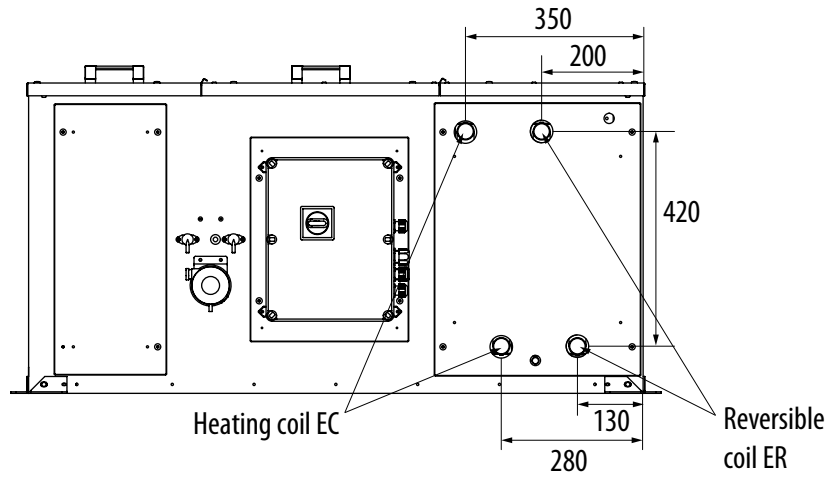
Size	Water coil (mm)						Weight (Kg)		
	H	J	K	L	N	P	E	H3 - C4 or R3	H3 C4
CAIB CAIT 10	89	210	150	52	N/A	N/A	55	58	-
CAIB CAIT 20	112	390	250	52	178	326	99	104	127
CAIB CAIT 30	112	390	250	52	178	326	103	115	131
CAIT 40	112	390	250	52	178	326	112	121	140

CAIT 50

Electrical heater (E)

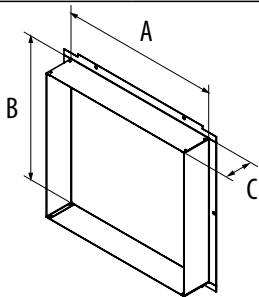


Heating coil (H3), reversible coil (R3) or heating and cooling coils (H3 C4)



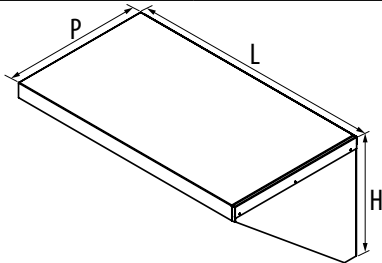
CAIT 50	E	H3	R3	H3 C4
Weight (kg)	174	160	169	185

BRC - Smooth flange for rectangular connection



Dimensions (mm)	A	B	C
CAIB/T 10	396	266	98
CAIB/T 20 30 40	546	495	98
CAIT 50	965	470	130

Rainproof hood

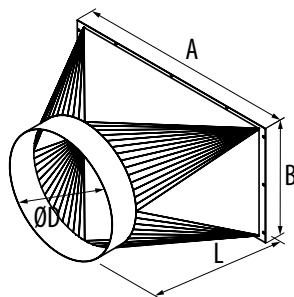
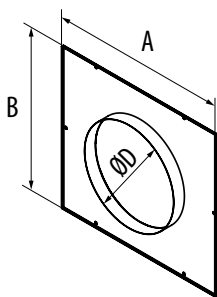


Dimensions (mm)	H	L	P
CAIB/T 10	336	438	231
CAIB/T 20 30 40	564	588	365
CAIT 50	514	1 067	609

BCC - Smooth flange for circular connection

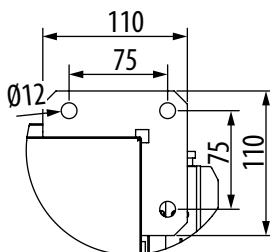
CAIB/T 10 à 40

CAIT 50



Tailles	A	B	Ø D	L
CAIB/T 10	458	328	250	-
CAIB/T 20	610	559	355	-
CAIB/T 30-40	610	559	400	-
CAIT 50	1 020	536	560	600

Fixing pad for CAIB/T 10 / 20 / 30 / 40 / 50



3.3 Handling

The units are delivered screwed to pallets made to fit the size of the casing.

CAIB CAIT air handling units can be handled by pallet truck, forklift truck, or crane. Handling machines will be adapted to the load and lifting conditions.

In all cases, the lift will be made at the base of the device mounted on a pallet. The centre of gravity is located at the centre of the unit.

The device must be handled with care and only in a horizontal position.

Pallet Dimensions		
Size	Width l (mm)	Length (mm)
CAIB/T 10	840	1130
CAIB/T 20-30-40	950	1380
CAIT 50	1145	1400

3.4 Location and attachment

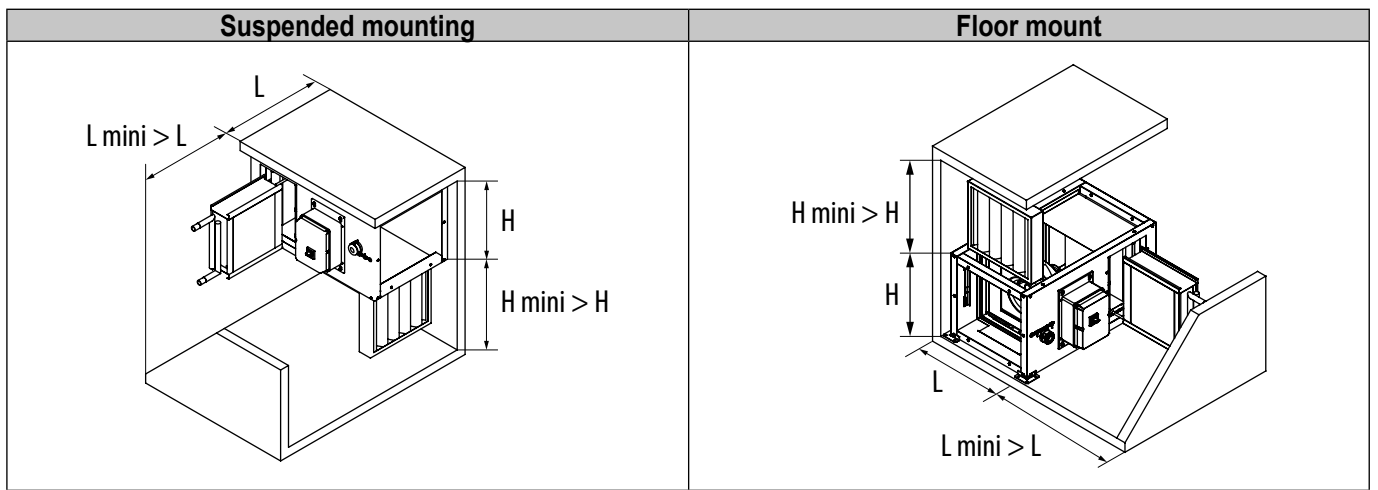
The CAIB CAIT must be placed on a horizontal and smooth surface that is able to support the load. The R and L models are intended for installation inside or outside of the buildings.

In all cases, provide any ducts, connection accessories, anti-vibration and anti-freezing protection equipment needed for the water coil. In areas with a high snowfall, additional protection should be considered. It is important to provide enough space so the panels can be opened, commissioned, and maintained (filter, fan, coils). Do not place the unit against a wall to avoid the transmission of solid-state noise.

The casing must be attached to a completely flat support by the side holes provided for this purpose. Mounting should be made on anti-vibration pads or plates and the connection with flexible sleeves is recommended.

Provide the following necessary clearances for maintenance operations:

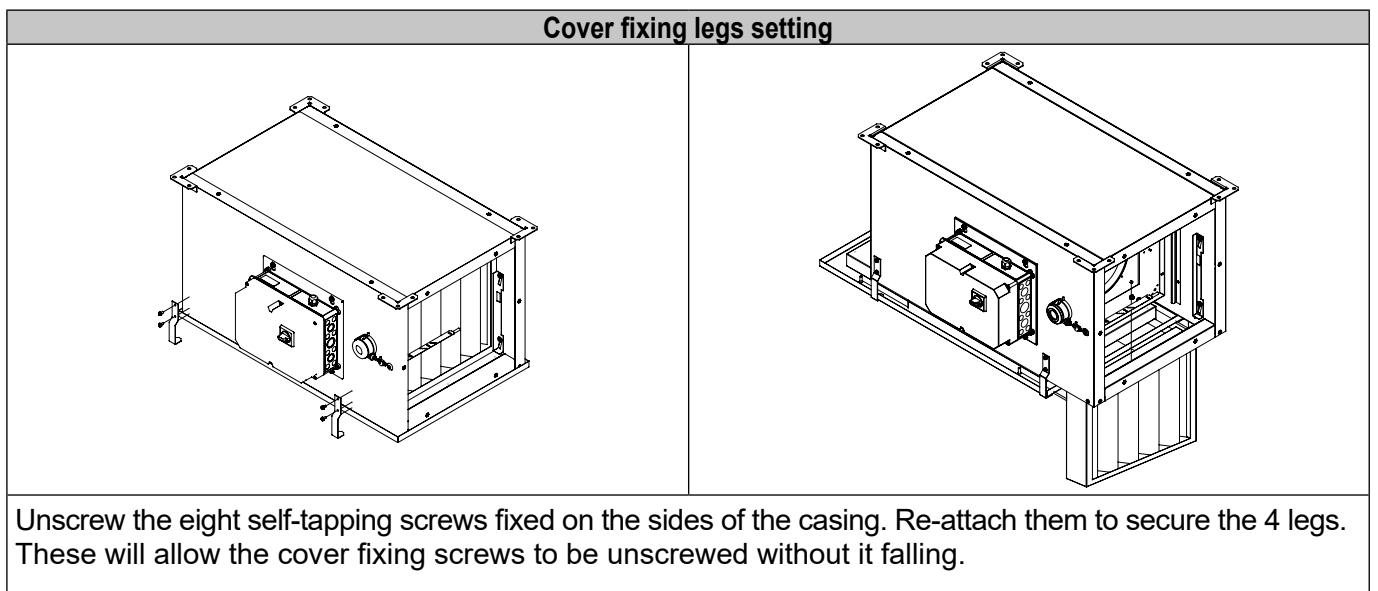
Different mountings	
	<p>Warning:</p> <ul style="list-style-type: none"> For electrical heater versions, only positions A, B and C are possible. With cooling and reversible coil versions, only positions A and C are possible. With the cooling and reversible coil versions in position A, reverse the drain tray (see below) Use anti-vibration compression mounts for position C. Use anti-vibration suspension mounts for position A.



3.4.1 Suspended ceiling installation CAIB/T 10-20-30-40

If CAIB CAIT 10, 20, 30 or 40 is attached to the ceiling, install beforehand the four delivered security legs of the cover. They allow it to be moved to the side to open the filter passage. It is sufficient then to extract it for replacement by a new filter.

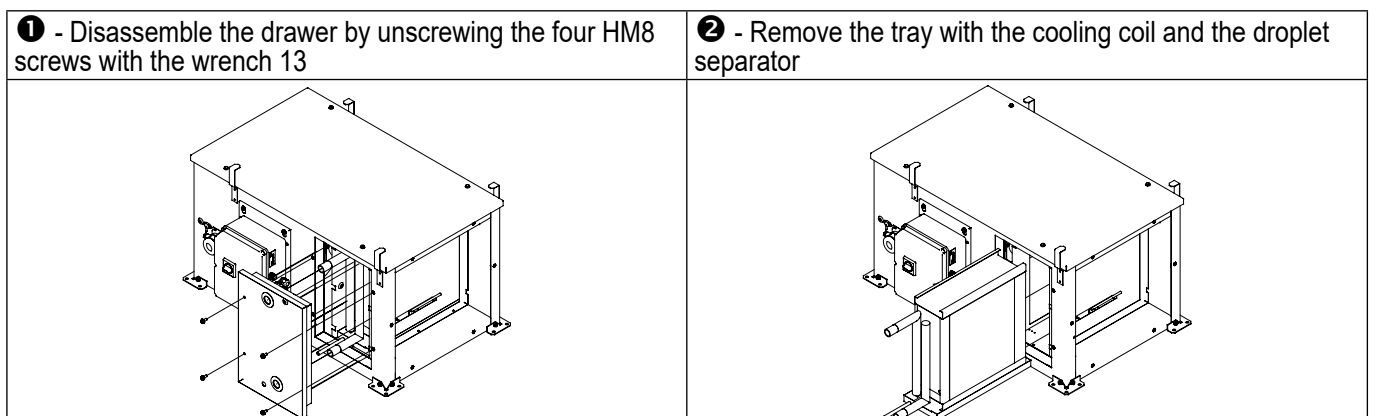
To completely remove the cover, slide it sideways.

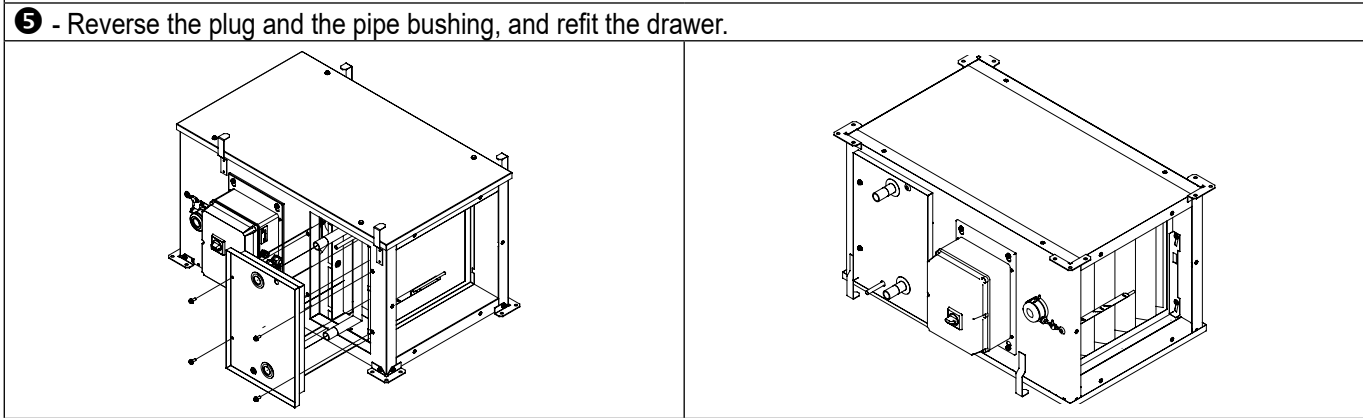
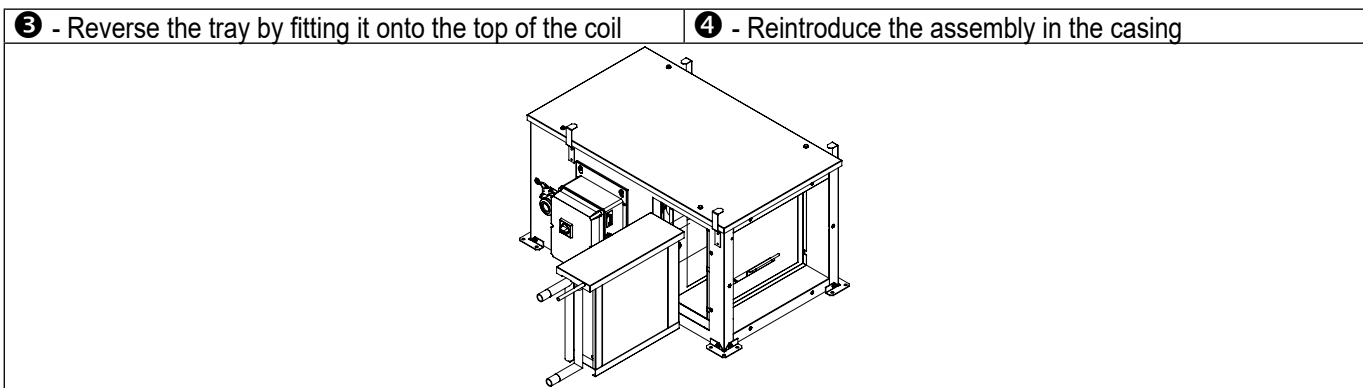


Inversion of the drain tray for collecting of condensates (CAIB CAIT C4, R3, and H3 C4)

The position of the drain tray for collecting of condensates from the CAIB CAIT with cooling or reversible coil is configured at the factory for attachment of the casing to the ground.

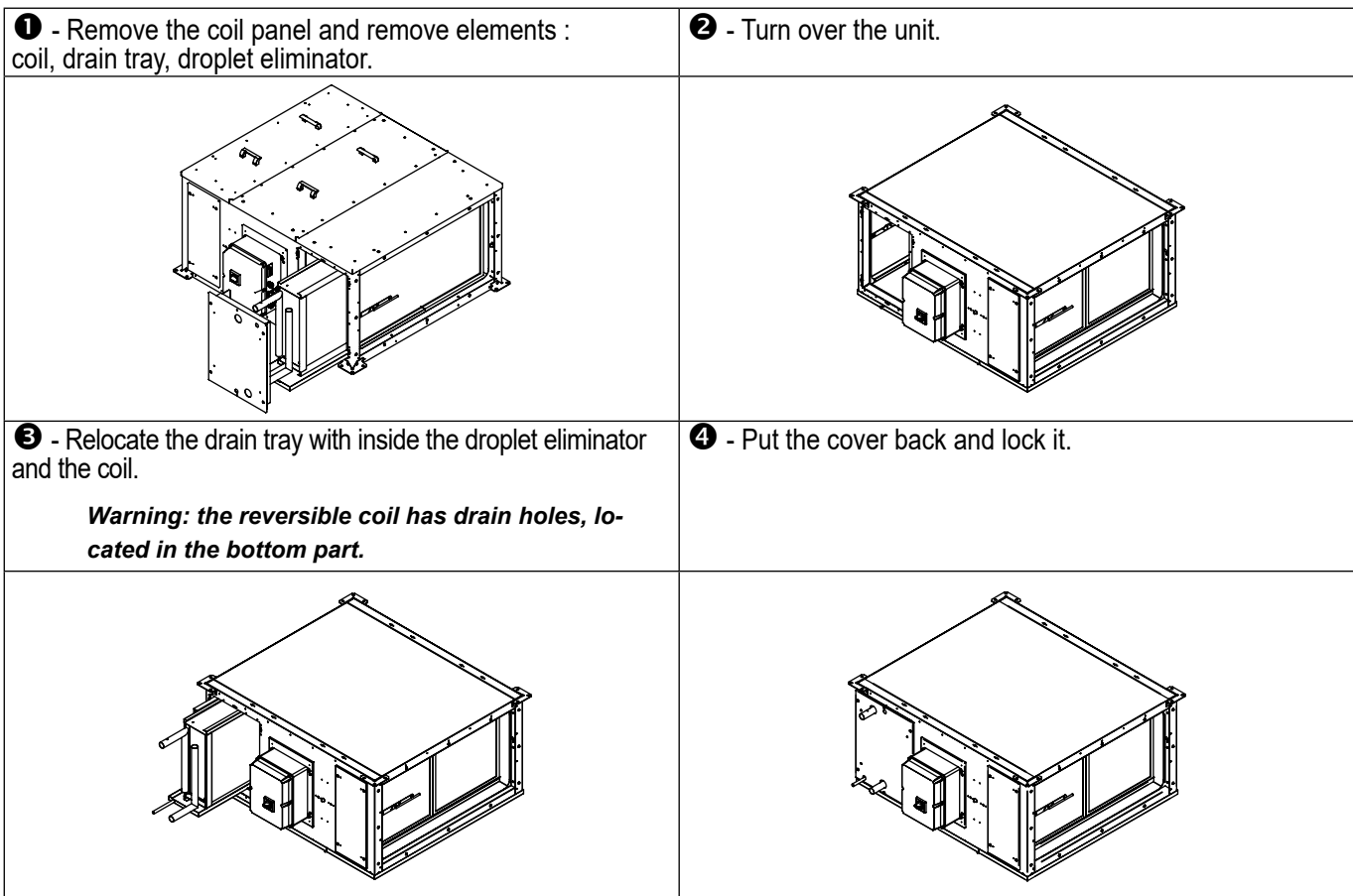
For a reverse mounting to the ceiling, it is essential to move the condensate drain tray.





3.4.2 CAIT 50 suspended ceiling installation

Inversion of the drain tray CAIT 50 R3 and H3 C4

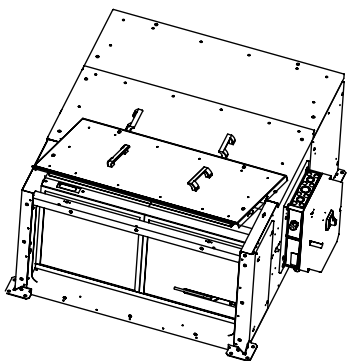
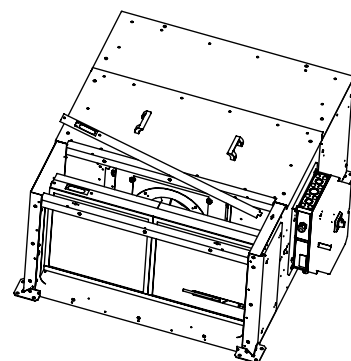
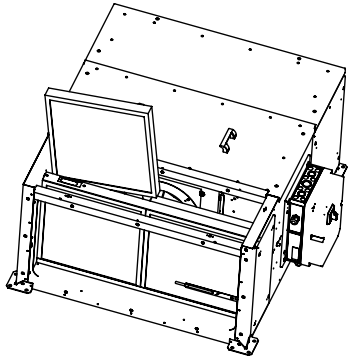


3.5 Filters and components access

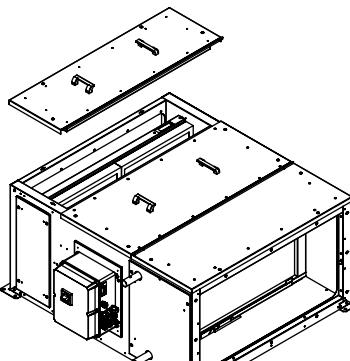
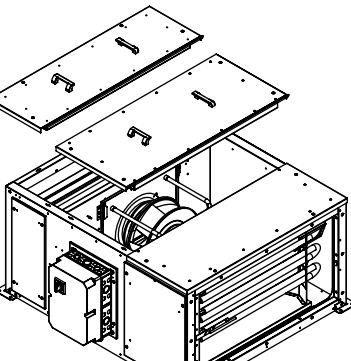
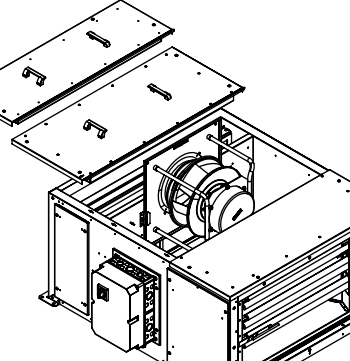
CAIB/T 10 to 40		
Filters and components access		
<p>1 - Upper panel dismantling : 4 screws M8x25</p>	<p>2 - Unlock filter(s) by pulling onto the sliding rail.</p>	<p>3 - Remove the filter(s)</p>

CAIT 50	
Panels and access hatches unlocking	
	<p>Black quarter-turn hexagonal head</p>
Filter(s) and coil(s) side dismantling	

Filter(s) replacing by the upper panel

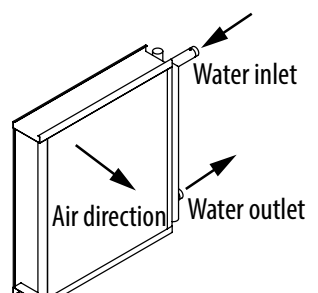
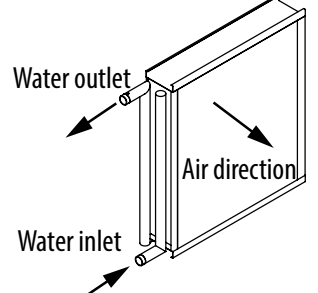
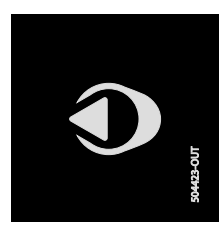
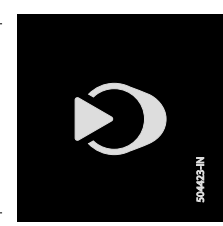
		
<p>❶ - Unscrew and remove the filter panel, with black quarter-turn hexagonal screw</p>	<p>❷ - Unlock the holding beam by sliding its lock.</p>	<p>❸ - Remove the filter(s) for replacement and repeat operations in reverse order for reassembly.</p>

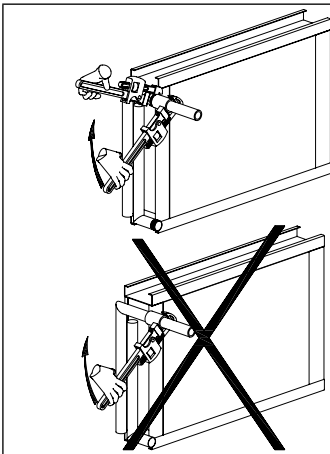
Démontage du ventilateur

		
<p>❶ - Unscrew and remove the filter panel, with black quarter-turn hexagonal head.</p>	<p>❷ - Unscrew and remove the fan panel, with black quarter-turn hexagonal head.</p>	<p>❸ - Unscrew fan holding flanges. Fan weight: 30Kg.</p>

4. HYDRAULIC AND FLUID CONNECTION

4.1 Connection of the water coils

Left hand water coil connections	Right hand water coil connections	Labels
		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Water outlet</p> </div> <div style="text-align: center;">  <p>Water inlet</p> </div> </div>



The hydraulic specifications of the unit are particular to your requirement and are determined by computer selection: Loss of pressure of the water/water flow. Refer to the selection for sizing the valve, accessories, and pump.

The connection of the piping to the coil must not impose any mechanical, vibration or thermal (dilation) constraints.

The coils are delivered already threaded at the ends.

During the tightening of the coil thread, hold the tubing with the aid of a wrench to prevent the tubes being damaged by twisting.

Respect the water entry and exit directions indicated on the labels glued to the coil panel(s). Water and air directions must be opposite to get maximum thermal performance.

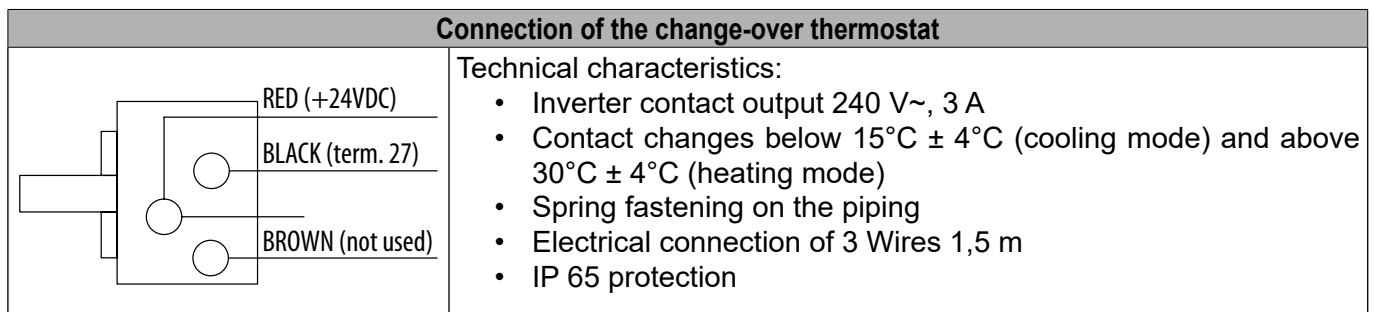
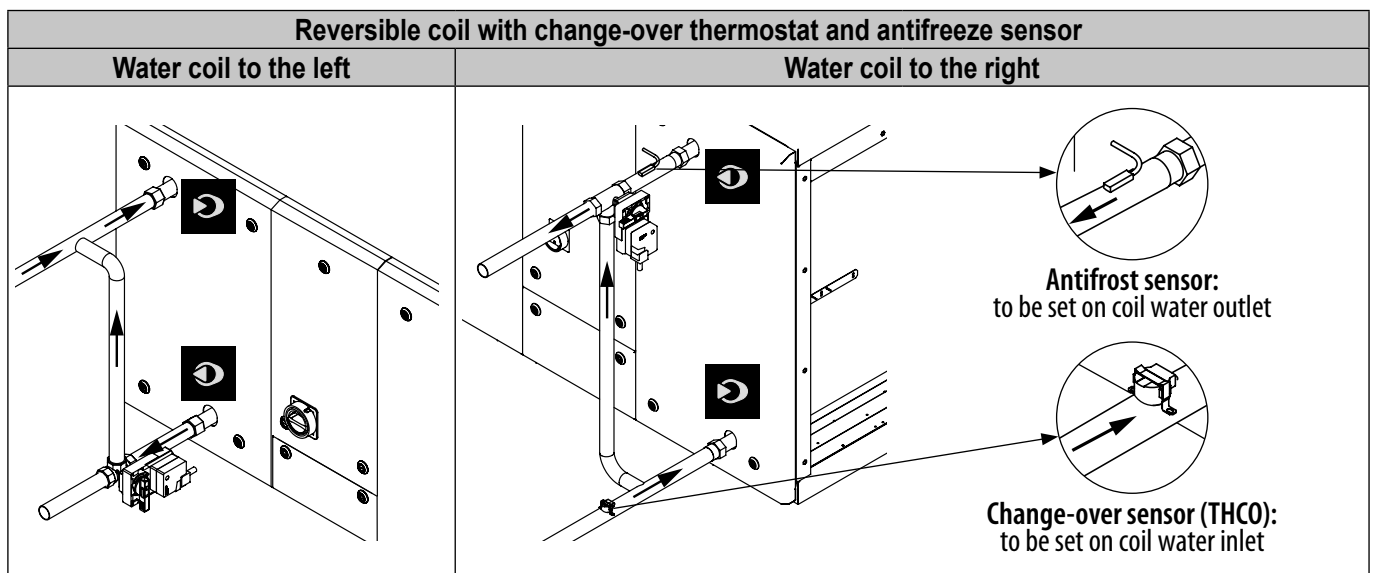
All the water coil headers are 1" diameter with a male pipe thread at the end. An adaptater is provided for the valves mounting :

- F26x34-M15x21 for CAIB/T 10,
- F26x34-M20x27 for CAIB/T 20, 30, 40 and 50.

Connection of hydraulic accessories:

Change-over thermostat (R3 versions only), valves, and antifreeze sensor

A change-over thermostat (THCO) is to be installed on the hydraulic network and connected to the electrical cabinet of the unit. It allows mixing valve control to be inverted in installations with only one coil, according to the fluid temperature detected at valve inlet.



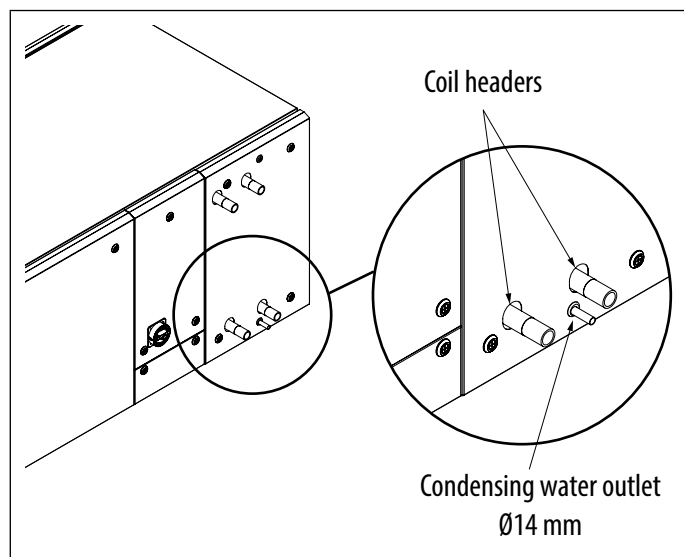
Ensure the good condition and the connection of the antifreeze sensor installed on the hot water return pipe of the unit (heating coil or reversible).

The coil headers have a male pipe thread at the end.

The motorised valves are not delivered already assembled.

Respect the positioning of the mixing valve on the network and the direction of the inlet and outlet of the water as indicated on the label stuck to the coil panel(s).

4.2 Condensing water outlet (versions R3, C4, and H3 C4 only)



- The unit is equipped with a droplet separator and a condensate drain tray of stainless steel welded at the corners.
- The condensate drain is 79 mm long and 14 mm diameter. The unit casings are all in over-pressure during the operation of the CAIB/T so that a water siphon is not required.
- Install a ball siphon to avoid the return of odours from the network when the machine is stopped.
- Insulate the condensate drain pipe to prevent the formation of condensation, and to prevent the risk of freezing of the drainage following the conditions of use.

5. AERAILIC CONNECTION

5.1 Connection of the ducts

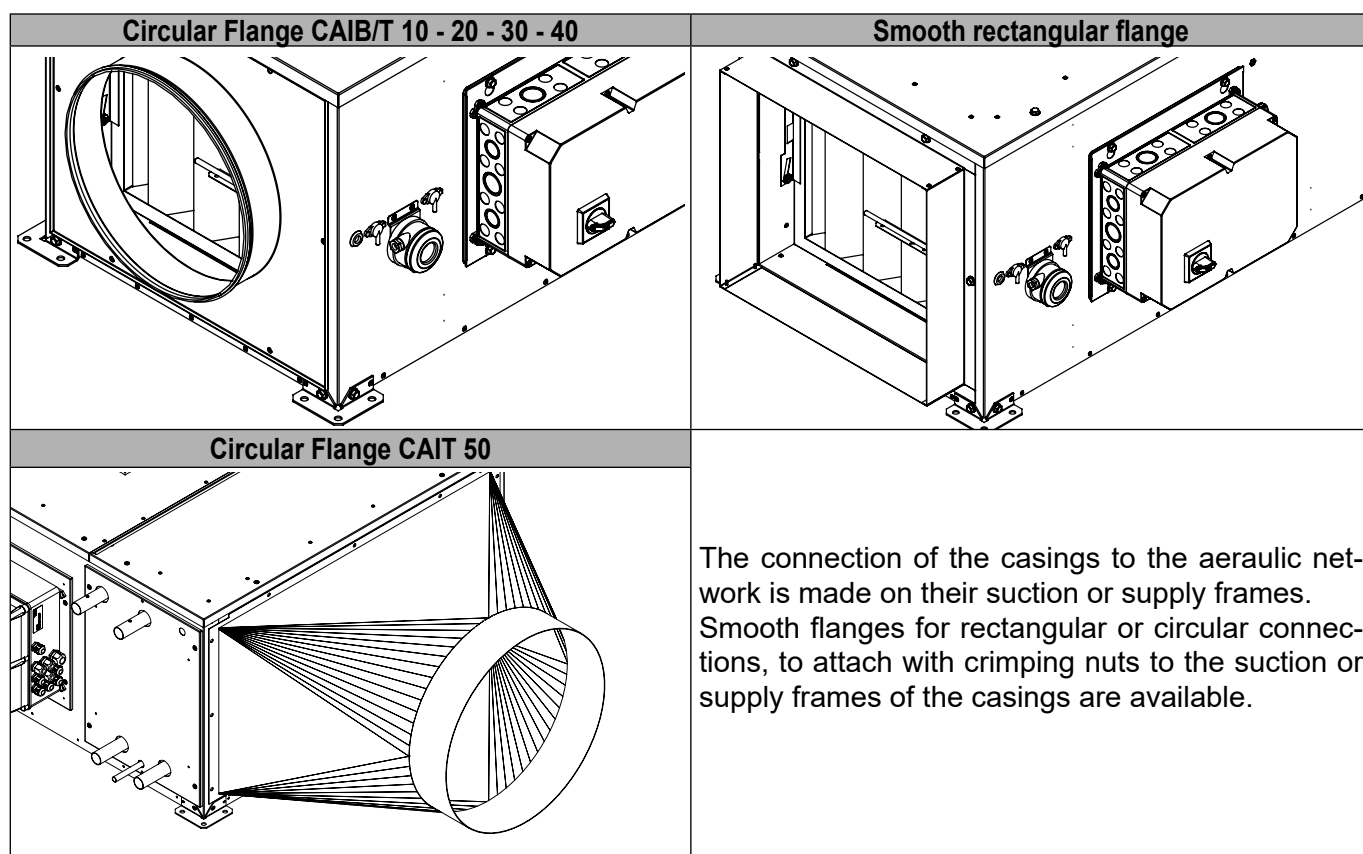
The ducts should not impose any mechanical constraints on the unit.

Check that the fan-motor is not accessible from the connection line (protection by the connection duct or a steel mesh air inlet).

Depending on the configuration of the installation and the sound level required, the addition of a silencer may be necessary at the air supply.

Take great care of the network airproof all along its length, from the entrances to the exits.

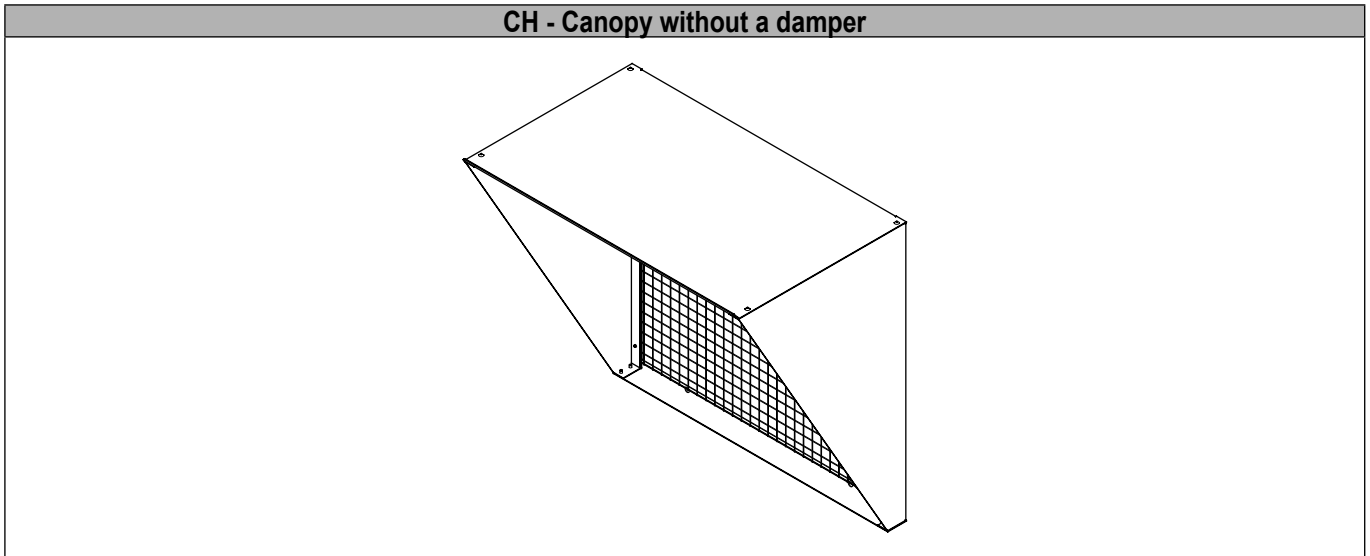
The fresh air duct must always be insulated, to avoid losses and the risk of condensation. The insulation level, particularly in the cold rooms and regions, must be reinforced.



5.2 Connection of the accessories

5.2.1 CH rain protection canopy

To prevent the entrance of water due to precipitation, a rain protection canopy is mounted at the suction and is fastened by crimping nuts on the suction framework of the CAIB/T.



When the unit is equipped with a water coil, it is advisable to provide a motorised damper with antifreeze protection located on the fresh air network. Whenever possible, use a motorised damper with reinforced sealing.

5.2.2 Differential pressure sensor - Operating in COP (Constant Pressure)

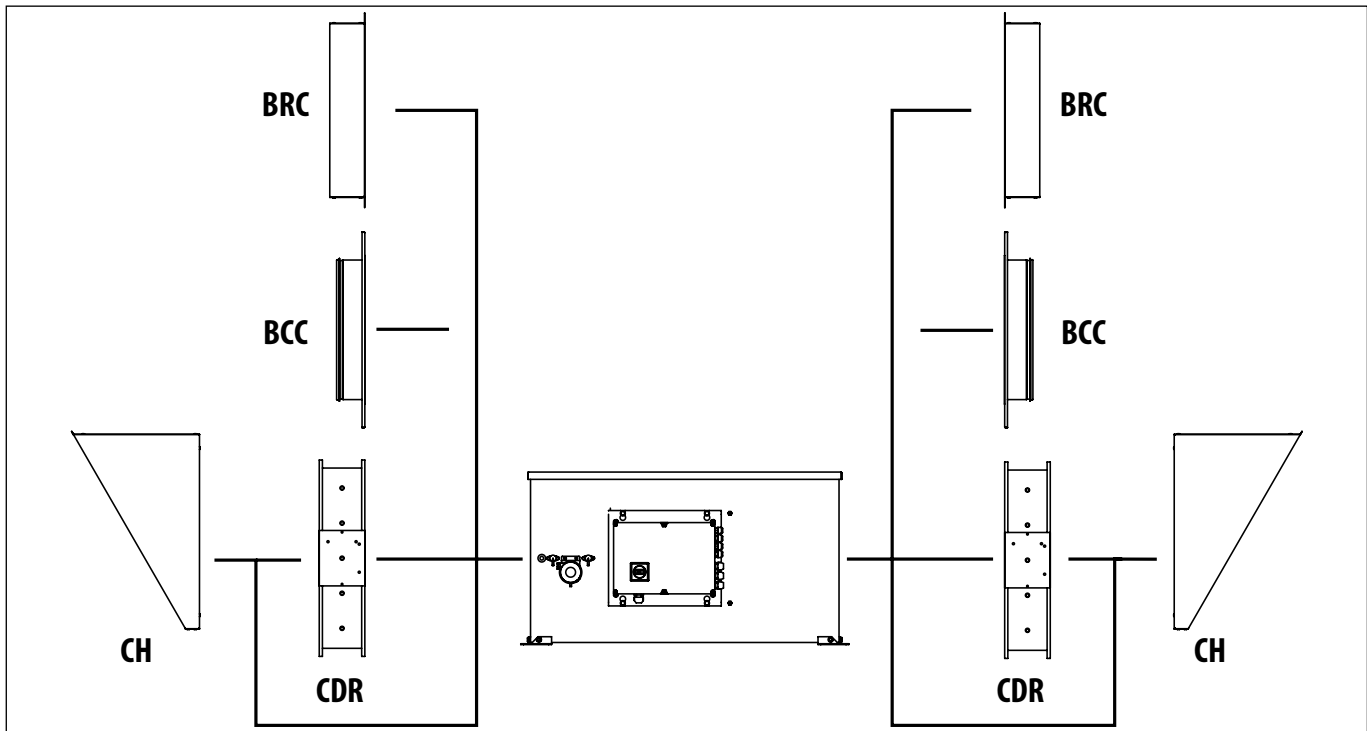
For constant pressure operation, it is necessary to install a pressure sensor in the supply duct at a minimum distance of twice the connection diameter.

Application	Code	Designation	Description
CAIB CAIT	132105	SPRD-B 800	Pressure sensor in housing, 0-800 Pa 0.5-4.5 V
SPRD Accessory	132143	KTPR	Kit of 2 pressure sensors + screw + 2 m of translucent tube

Pressure sensors registering in COP mode must be realised according to § "9.4 Measure air flow and pressure - Check the K coefficient", page 44 .

5.2.3 Accessories to mount on a circular BCC flange

Use	Code	Designation	Description
CAIB CAIT 10	874474	APC-250	APC - Output and circular air inlet
CAIB CAIT 20-30	875065	APC-355	APC - Output and circular air inlet
CAIT 40	874637	APC-400	APC -
CAIT 50	875068	APC-560	APC - Output and circular air inlet
CAIB CAIT 10	002411	MSDZ M0 250	M0 Supply flexible sleeve for electrical heater Lg.160 mm
CAIB CAIT 20-30	002405	MSDZ M0 355	M0 Supply flexible sleeve for electrical heater Lg.160 mm
CAIT 40	002413	MSDZ M0 400	M0 Supply flexible sleeve for electrical heater Lg.160 mm
CAIT 50	002429	MSDZ M0 560	M0 Supply flexible sleeve for electrical heater Lg.160 mm



La bride circulaire du CAIT 50 est conique, voir § "5.1 Connection of the ducts", page 17.

6. ELECTRICAL CONNECTION

6.1 Electrical characteristics

The power supply cables or connections to the accessories must pass through the grommets provided on the cabinet.

6.1.1 Overall unit

Power and current for the whole CAIB CAIT selected.

Capacity of the power supply terminal connection: 10 mm², tightening torque: 2.5 Nm.

Model	Fan					Electrical heater			
	Maxi. speed (RPM)	Freq. (Hz)	Voltage (V)	P. abs. max. (W)	I. (A)	Voltage (V)	P. abs. max. (W)	No. pins and power	I. (A)
CAIB/T 10 E Mono	2,649	50/60	1 Phase 230V	193	1.5	1 Phase 230V	6,000	2x3 kW	26.1
CAIB/T 10 E Tri	2,649	50/60	1 Phase 230V	193	1.5	3 Phases 400V	9,000	3x3 kW	13
CAIB/T 10 H3-C4-R3	2,649	50/60	1 Phase 230V	193	1.5	-	-	-	-
CAIB/T 20 E	2,850	50/60	1 Phase 230V	415	1.8	3 Phases 400V	15,000	3x5kW	21.7
CAIB/T 20 E	2,850	50/60	1 Phase 230V	415	1.8	3 Phases 400V	9,000	3x3 kW	13
CAIB/T 20 H3-C4-R3-H3 C4	2,850	50/60	1 Phase 230V	415	1.8	-	-	-	-
CAIB/T 30 E	2,800	50/60	1 Phase 230V	715	3.1	3 Phases 400V	24,000	3x3 kW+ 3x5 kW	34.6
CAIB/T 30 E	2,800	50/60	1 Phase 230V	715	3.1	3 Phases 400V	9,000	3x3 kW	13
CAIB/T 30 E	2,800	50/60	1 Phase 230V	715	3.1	3 Phases 400V	15,000	3x5 kW	21.7
CAIB/T 30 H3-C4-R3-H3 C4	2,800	50/60	1 Phase 230V	715	3.1	-	-	-	-
CAIT 40 E	2,580	50/60	3 Phases 400V + N	1,000	1.63	3 Phases 400V	30,000	6x5 kW	43.3
CAIT 40 E	2,580	50/60	3 Phases 400V + N	1,000	1.63	3 Phases 400V	15,000	3x5 kW	21.7
CAIT 40 H3-C4-R3-H3 C4	2,580	50/60	3 Phases 400V + N	1,000	1.63	-	-	-	-

Model	Fan					Electrical heater			
	Maxi. speed (RPM)	Freq. (Hz)	Voltage (V)	P. abs. max. (W)	I. (A)	Voltage (V)	P. abs. max. (W)	No. pins and power	I. (A)
CAIT 50 E	3 410	50/60	3 Phases 400V + N	1 800	2,8	3 Phases 400V + N	12 000	3x4kW	17,3
CAIT 50 E	3 410	50/60	3 Phases 400V + N	1 800	2,8	3 Phases 400V + N	24 000	6x4kW	34,6
CAIT 50 E	3 410	50/60	3 Phases 400V + N	1 800	2,8	3 Phases 400V + N	36 000	9x4kW	52,0
CAIT 50 E	3 410	50/60	3 Phases 400V + N	1 800	2,8	3 Phases 400V (*)	48 000	12x4kW	69,3
CAIT 50 H3-R3-H3 C4	3 410	50/60	3 Phases 400V	1 800	2,8	-	-	-	-

(*) The 48kW electric heater of the CAIT 50 has a separate 400V power supply with a safety switch.

Model	Complete unit		
	Voltage (V)	Total P (kW)	Current (A)
CAIB/T 10 E Mono	1 Phase 230 V	7	29
CAIB/T 10 E Tri	3 Phases 400 V + N	10	15
CAIB/T 10 H3-C4-R3	1 Phase 230 V	0.2	2
CAIB/T 20 E	3 Phases 400 V + N	16	25
CAIB/T 20 E	3 Phases 400 V + N	10	16
CAIB/T 20 H3-C4-R3-H3 C4	1 Phase 230 V	0.4	2
CAIB/T 30 E	3 Phases 400 V + N	26	40
CAIB/T 30 E	3 Phases 400 V + N	10	17
CAIB/T 30 E	3 Phases 400 V + N	17	26
CAIB/T 30 H3-C4-R3-H3 C4	1 Phase 230 V	1	3
CAIT 40 E	3 Phases 400 V + N	33	47
CAIT 40 E	3 Phases 400 V + N	17	24
CAIT 40 H3-C4-R3-H3 C4	3 Phases 400 V + N	1	2
CAIT 50 E	3 Phases 400 V + N	14	21
CAIT 50 E	3 Phases 400 V + N	26	38
CAIT 50 E	3 Phases 400 V + N	38	55
CAIT 50 E	3 Phases 400 V + N	50	73
CAIT 50 H3-C4-H3 C4	3 Phases 400 V + N	2	3

CAIB CAIT E 10, 6 kW single-phase: Power reducible to 3 kW by removing one 3 kW resistance.

6.1.2 CORRIGO Controller

- Supply voltage 24 V AC $\pm 15\%$, 50 to 60 Hz or 21 to 36 Vdc
- Power consumed models E.W-3: 12 VA, 6 W (DC)
- Ambient temperature 0...50°C
- Storage temperature -40...+50°C
- Max. ambient humidity 90% RH
- Protection index IP20
- Connecting plug-in terminals, 4 mm²
- Backup of the memory: an integrated long-life battery allows saving long-time settings, real time included.

Electromagnetic compatibility directive (EMC)

This product meets the requirements of the Directive 2004/108/CE of the European Parliament and Council (EMC) through compliance with standards EN 61000-6-1 and EN 61000-6-3.

RoHS

This product meets the requirements of the Directive 2011/65/UE of the European Parliament and Council.

Inputs

Analog inputs for PT1000 sensors (precision +I- 0.4°C) or 0...10 V DC (precision +I- 0.15% of the whole output signal). 12-bit resolution in the A/D signal conversion. Digital Inputs for potential-free contacts.

Outputs

Analog outputs 0...10 V DC, 1 mA, protection against short-circuits. Digital outputs, Mosfet outputs, 24 V AC/DC, 2 A continuous. Max. 8 A in total.

Communication ports

- 1 Web server TCP/IP port, TCP/IP communication,, BACnet/IP.
- 2 Modbus communication and EXoline RS485 Ports (language REGIN).

Indications

Operation: The green LED is lit when the CORRIGO is energised with voltage.

Alarm: The red LED flashes and the alarm text is displayed on the screen.

General alarm: This output can be configured.

E tool© configuration software

Equipment required: operating system MS Windows 2000, 8, 7, XP, Vista, Windows 7, Windows 8 or Windows 10.

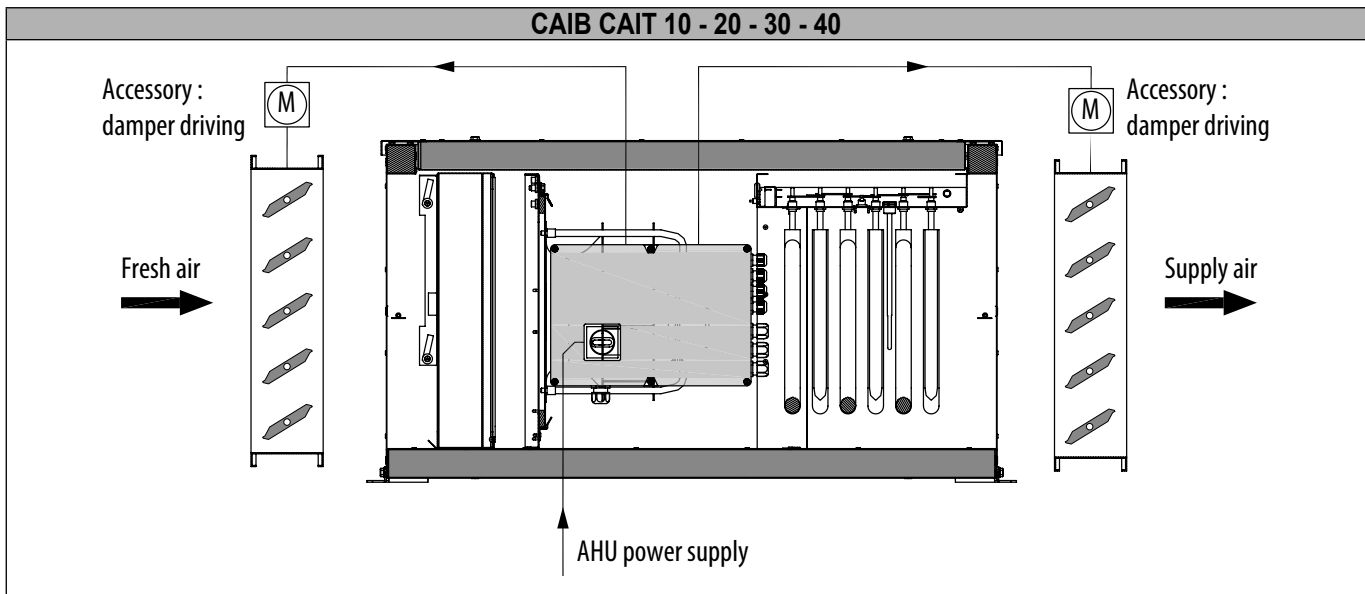
6.2 AHU power connection with electrical heater

A separate and protected power supply is to be provided for each unit.

The electrical cabinet is dedicated for command and power wirings.

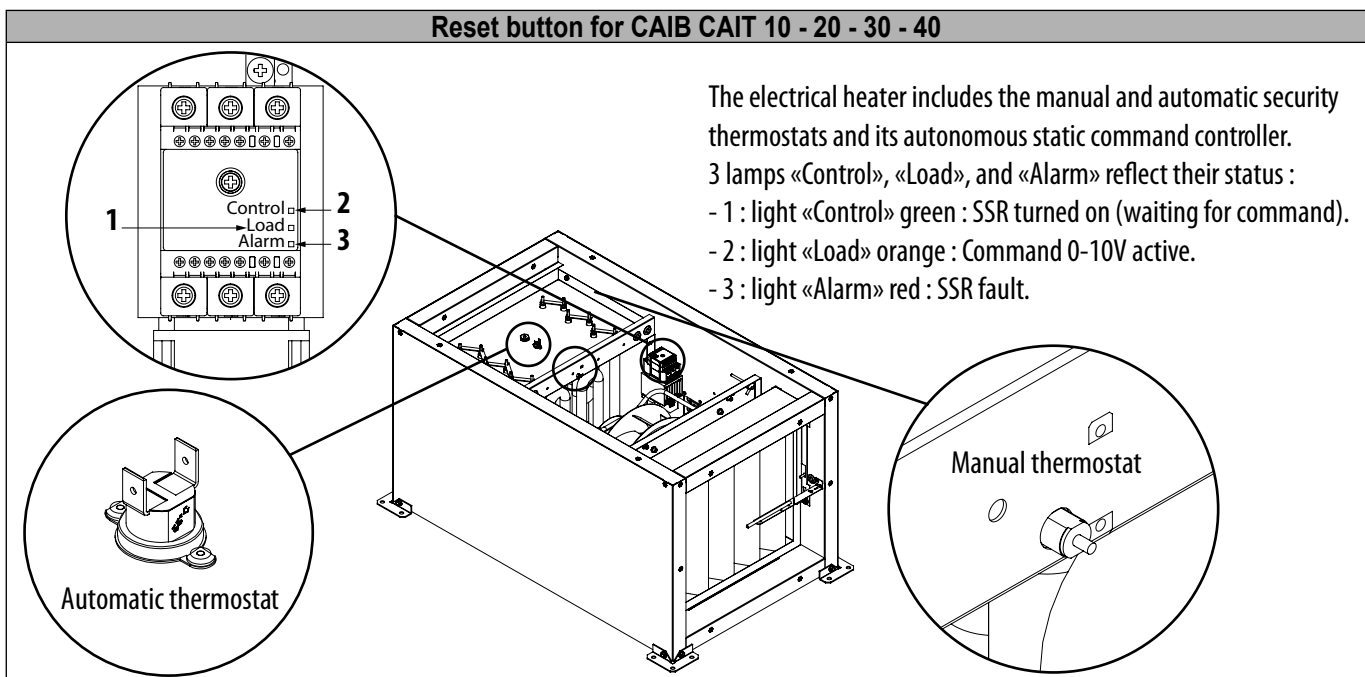
Dampers are to be provided as accessories. Damper actuators are connected to the CAIB/T control 24 V power supply.

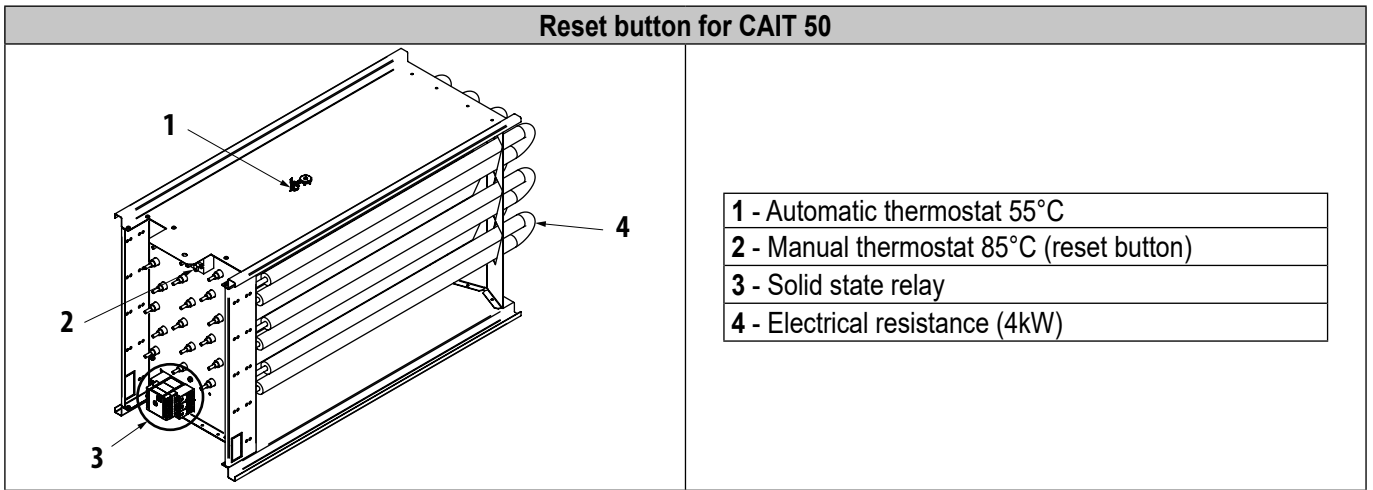
Dampers are to be provided for the accessories. The damper servomotors are powered by the power supply to the CAIB/T control at 24 V.



Model E

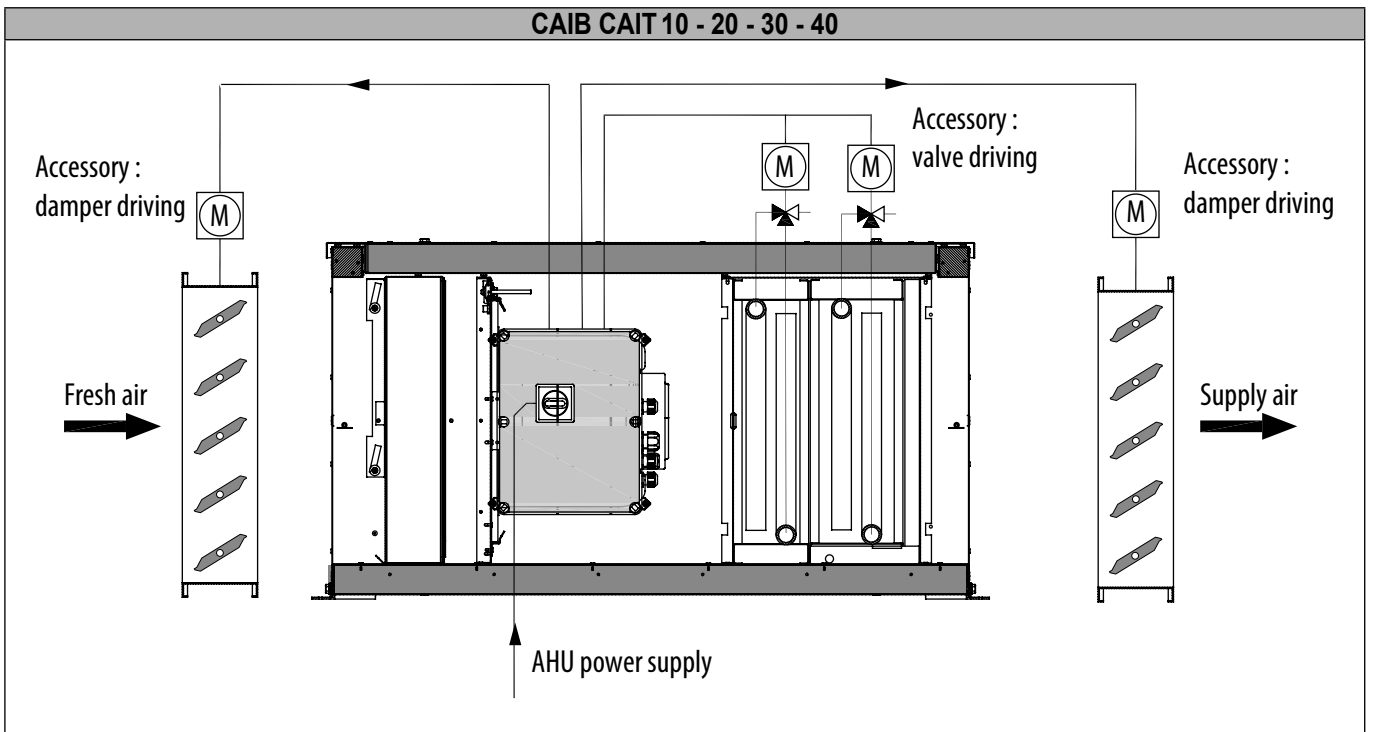
On the E models, an electrical heater is installed inside the unit. It is fully wired and connected to the control. There is only one power supply except for the CAIT 50 with 48kW electrical heater, which has a separate power supply for its electrical heater. Thermostat locations and manual thermostat resetting:





6.3 AHU power connection with water coil

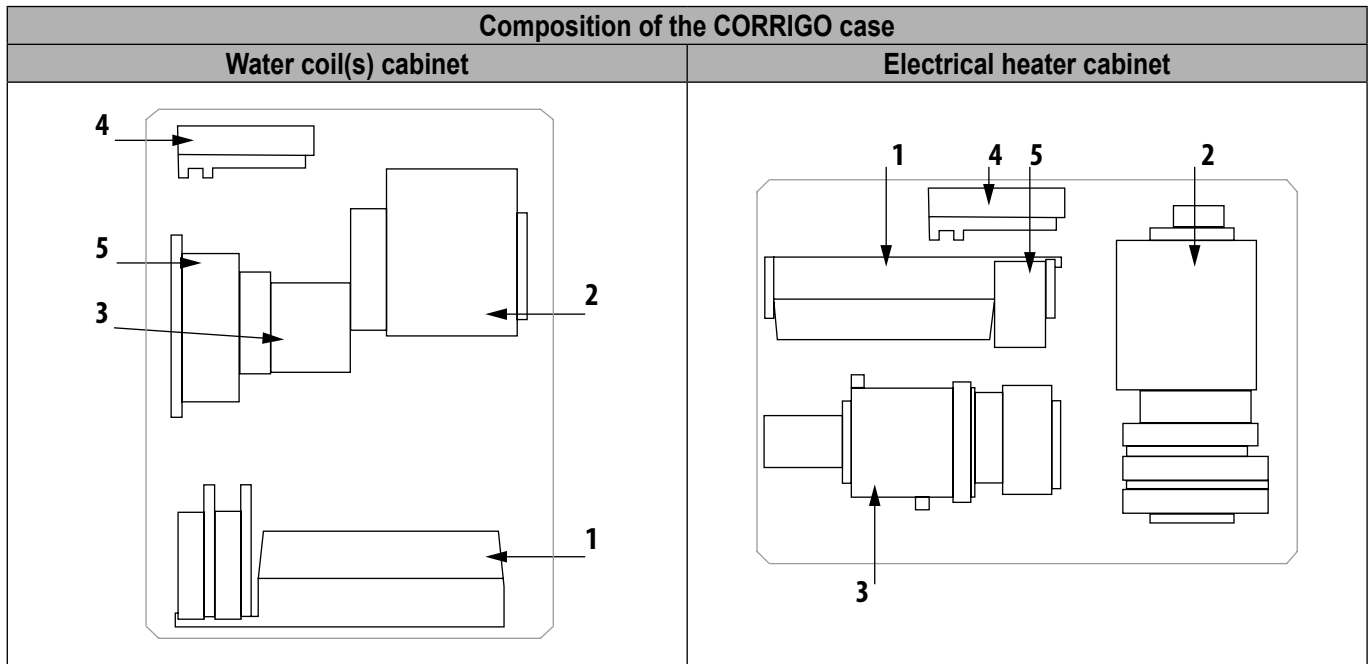
Dampers are to be provided as accessories. The damper servomotors are powered by the 24 V power supply of the CAIB/T control.



6.4 Connecting an external unit

CAIB/T version	Adding an external heating or reversible coil (0-10 V)	Adding an external cooling coil (0-10 V)
E	Control signal AO1 (heating/cooling following change-over). Direct connection.	Control signal AO3 (cooling). Direct connection.
H3	Control signal AO1 (heating/cooling following change-over). Connection in parallel.	Control signal AO3 (cooling). Direct connection.
C4	Control signal AO1 (heating/cooling following change-over). Direct connection.	Control signal AO3 (cooling). Connection in parallel.
H3 C4	Control signal AO1 (heating/cooling following change-over). Connection in parallel.	Control signal AO3 (cooling). Connection in parallel.
R3	Control signal AO1 (heating/cooling following change-over). Connection in parallel.	Control signal AO3 (cooling). Direct connection.

6.5 Control cabinet and connection



1 - CORRIGO

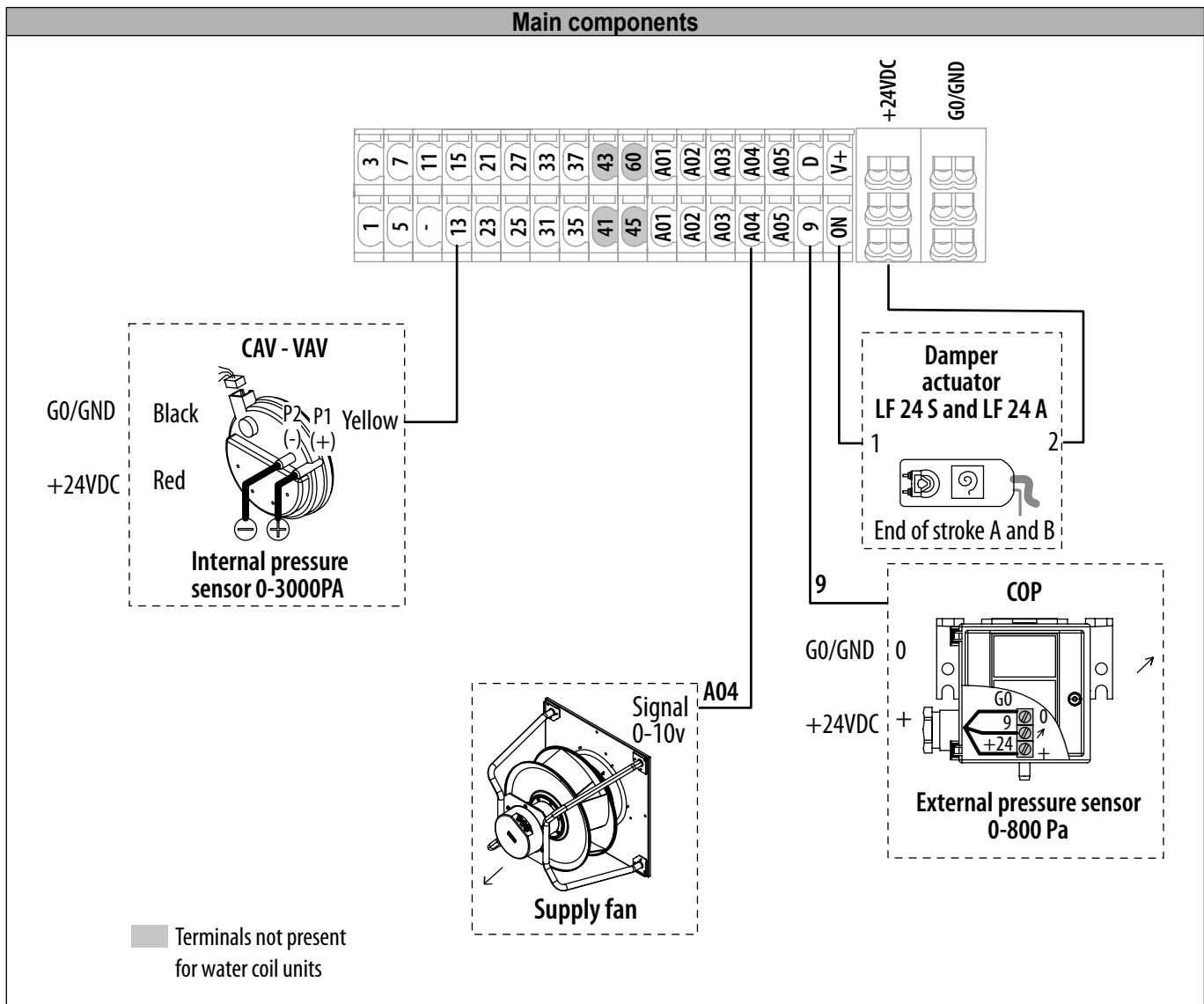
2 - Terminal

3 - Disconnecting switch

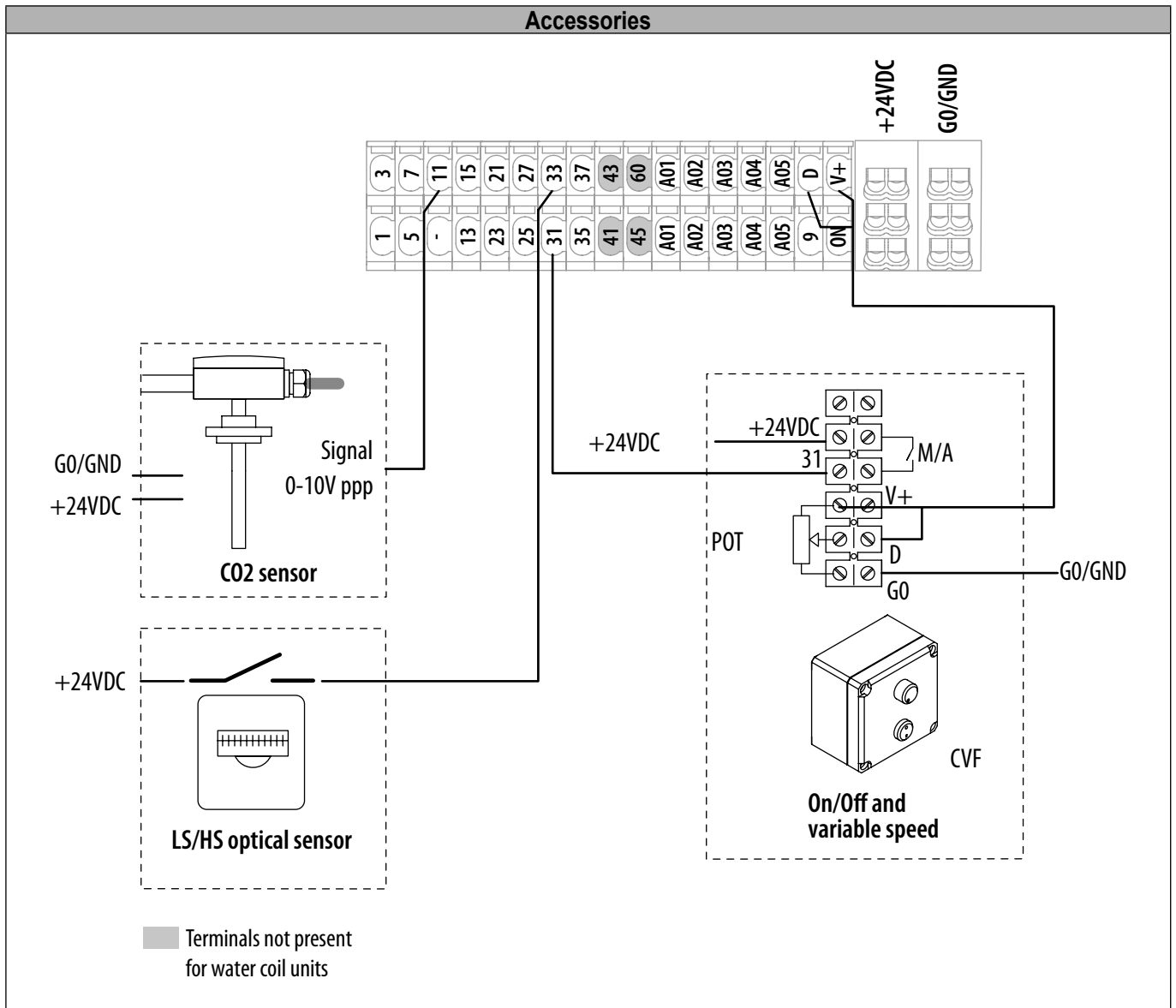
4 - Pressure sensor

5 - Power Supply

6.6 Connection of components to control the ventilation mode



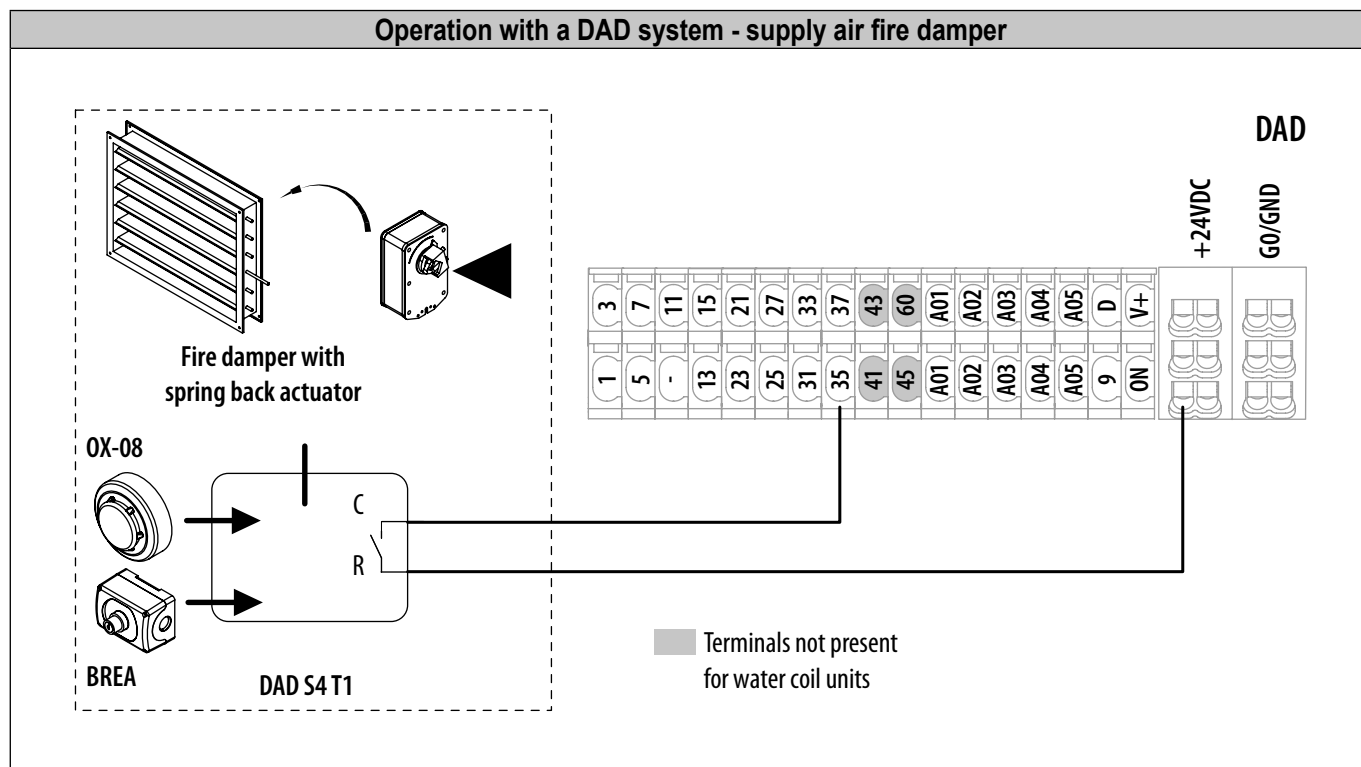
- AHU is delivered for operation in CAV mode, with a constant flow rate, as measured by its internal pressure sensor.
- For operation in VAV mode, variable flow, it is necessary to add a sensor (hygrometry, CO₂) which will allow the AHU to control on the basis of the received signal to reach the entered setpoint.
- For operation in COP mode, it is necessary to install an external pressure sensor 0-800 Pa of 0.5 - 4.5 Vdc.



The following accessories can be connected to the CORRIGO:

- CO₂ sensor, for control according to the CO₂ rate.
- Optical sensor, for operation with detection of presence (M/A or LS/HS).
- With the CVF (variable speed) accessory (potentiometer and switch):
 - The potentiometer allows control of the unit flow point.
 - The start/stop switch of the unit (terminals 31 and +24 Vdc) or the change-over to LS/HS (terminals 33 and +24 Vdc).

Input for an external signal of fire

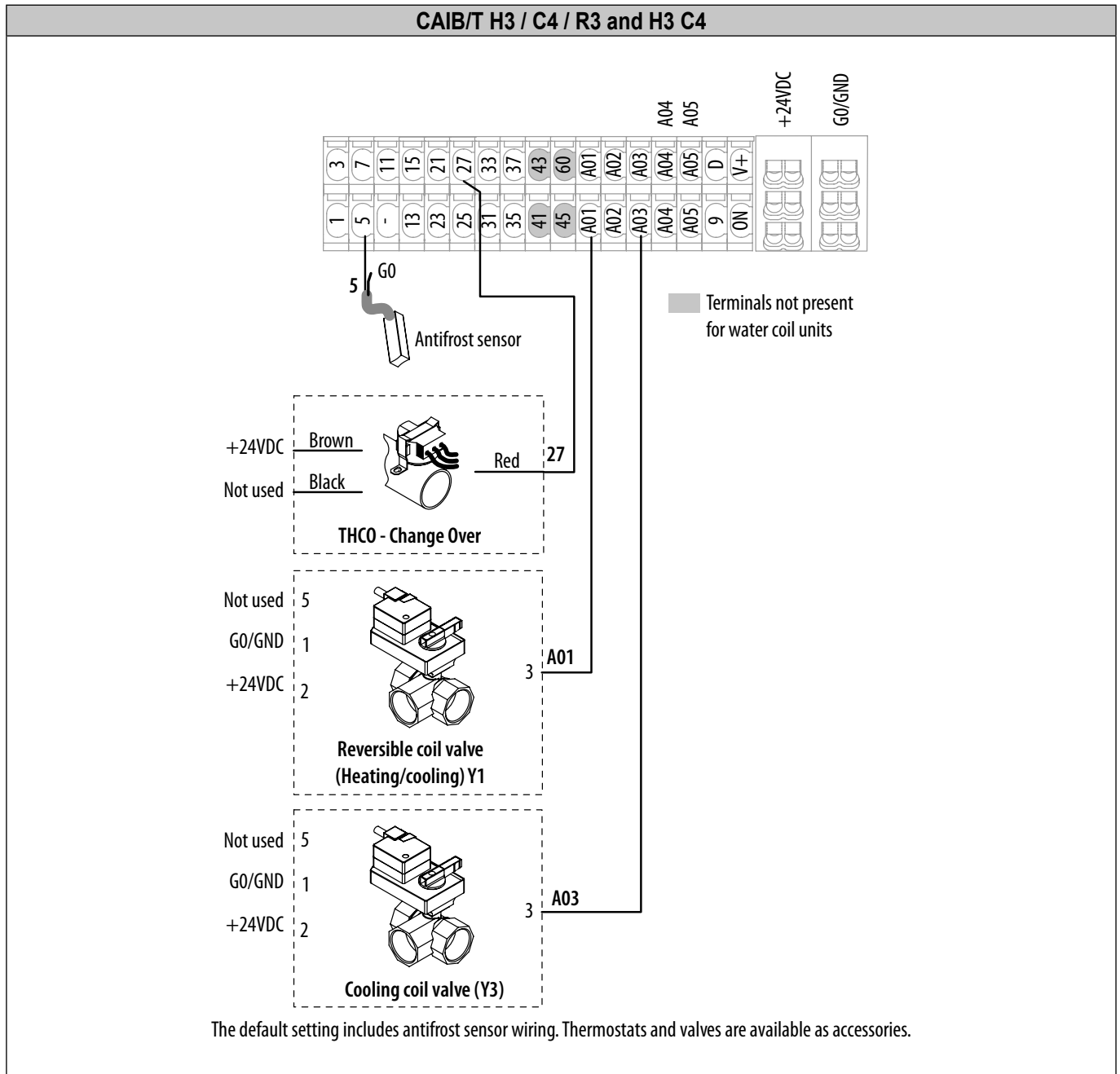


The DADs and sensors are accessories.

The control is configured to receive a fire contact. If the fire input is activated, the AHU is stopped. When the AHU has been stopped by the fire input, it can only be restarted after releasing the alarm.

6.7 Connecting accessories for temperature control

For control on the basis of ambient temperature, an ambient temperature sensor TG-R5/Pt1000 (accessory) must be added to 3 and G0 terminals. The supply air and fresh air sensors must remain connected in all cases.



Depending on the configuration, the elements must be connected as follows:

Model	Antifreeze sensor	Change-over	Battery valve controlled by
H3	factory connected	no	A01
C4	no	no	A03
R3			A01
H3 C4	factory connected	to connect by the installer	A01 for the heater coil A03 for the cooling coil

To add an external unit; "6.4 Connecting an external unit", page 22.

6.8 Connecting the remote control with ETD display

The ETD (remote touch screen) control is delivered with a 10m cable (possible extension up to 100m) equipped with an RJ10 4PC4 connector for connection to the CORRIGO.

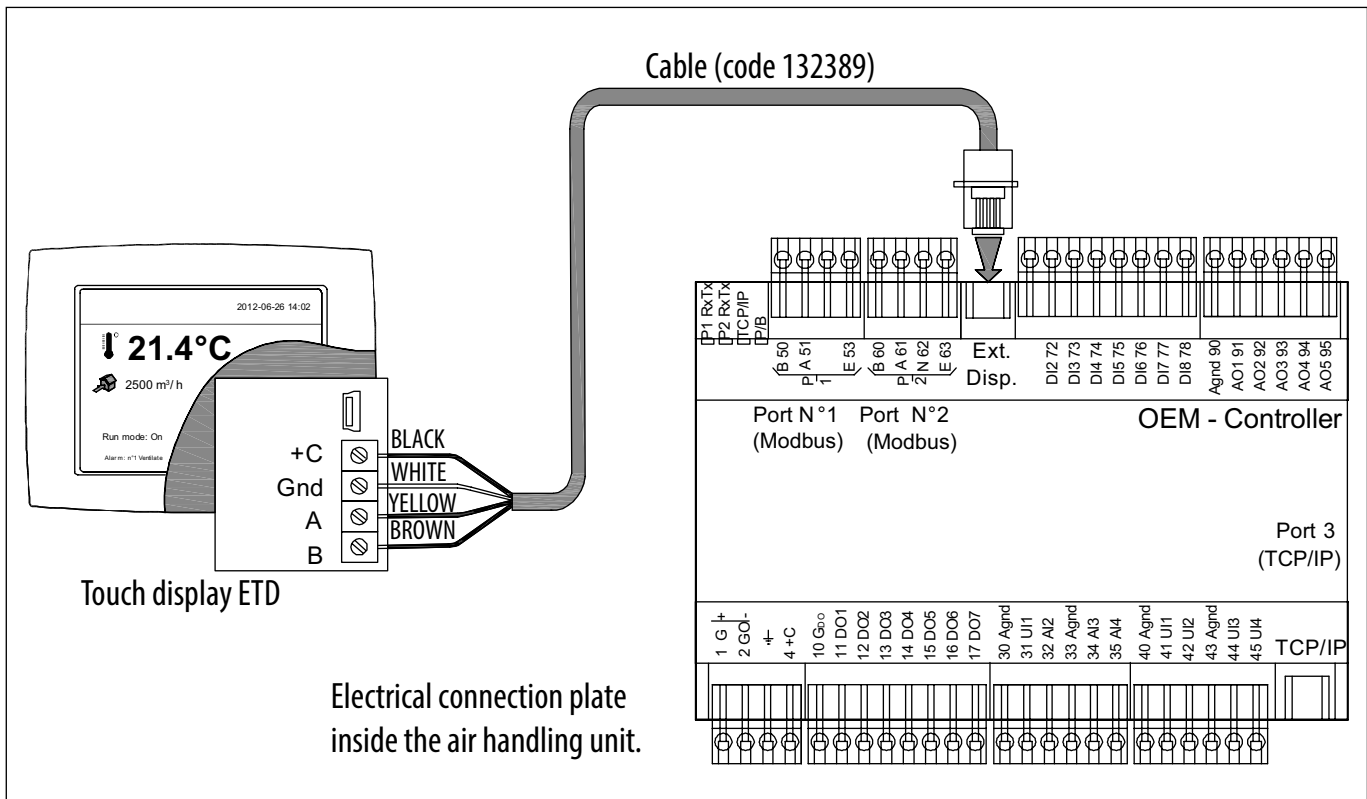
The RJ plug to connect the remote control is located on the terminals below the CORRIGO controller. To access there the controller must be unfixed from DIN rail as shown at § "9.5 Resetting the CORRIGO", page 46.

If an extension cable is available, it is located close from the CORRIGO and marked "ETD", plug the remote control with the extension cable in this case.

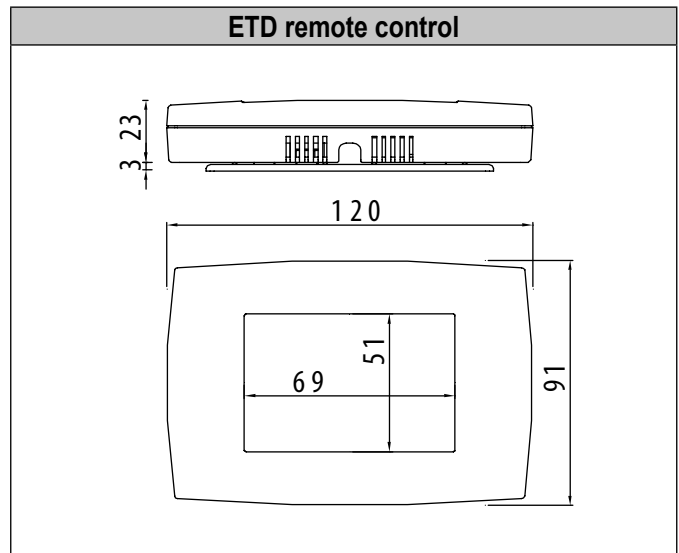
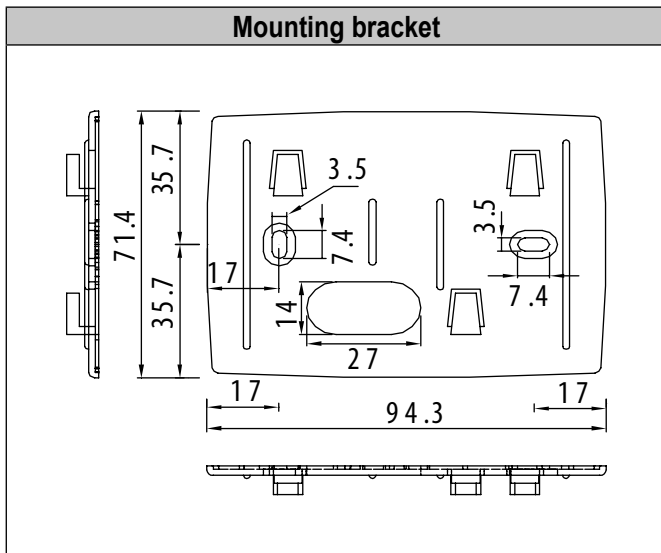
For use beyond 10m, use a shielded cable connected to the earth. If the cable is too long, do not wind it on itself. Leave the excess cable as it is or cut it to the length. Do not install the ETD cable near a power cable. Use one of the available grommets to connect inside of the unit.

The ETD control is IP30 and is exclusively reserved for use indoors, to be protected from any humidity. It is equipped with an internal temperature sensor that can not be used to control the ambient temperature. Once the configuration has been made, the remote control may be disconnected.

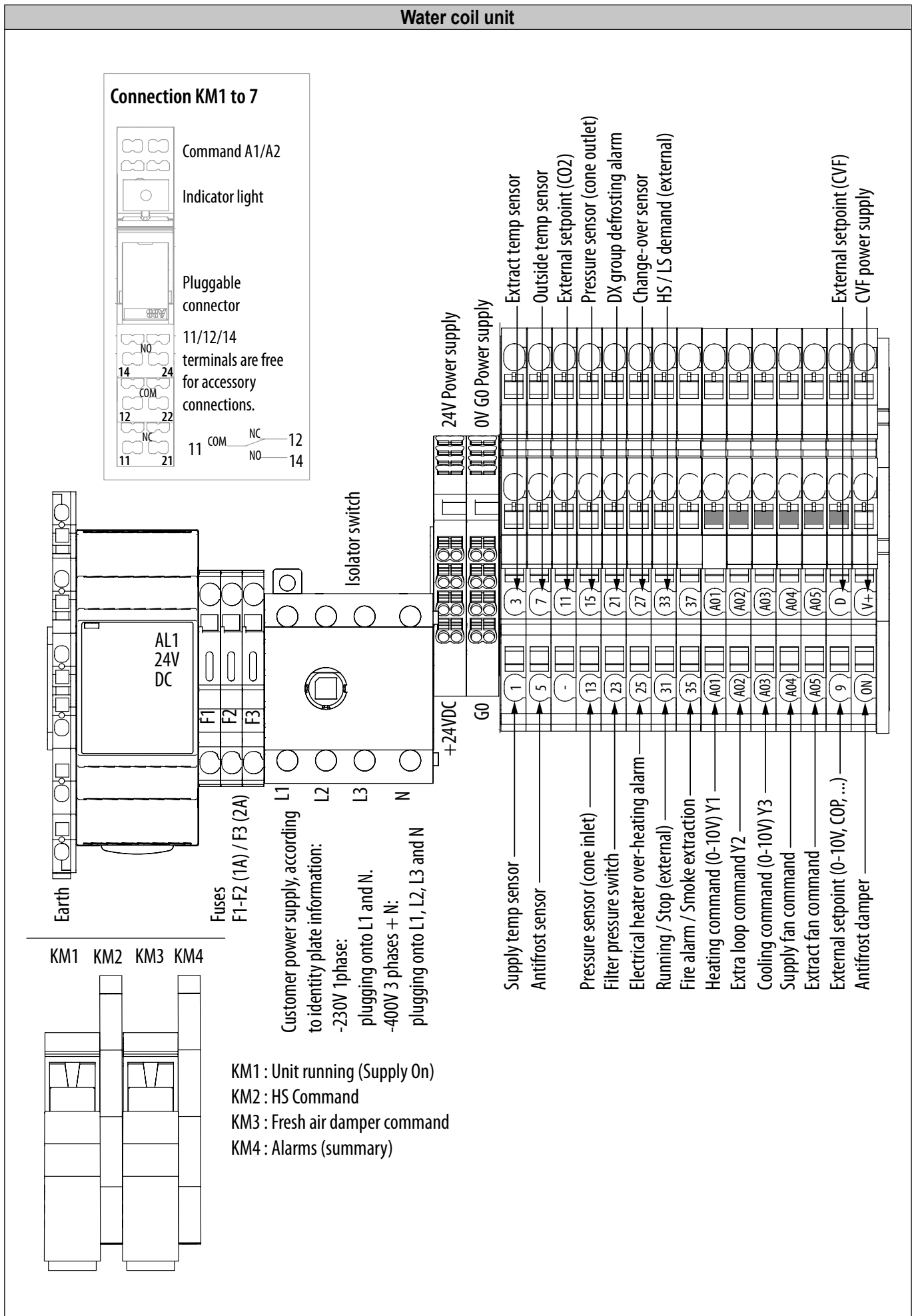
Wiring diagram



Implementation of the support and remote control



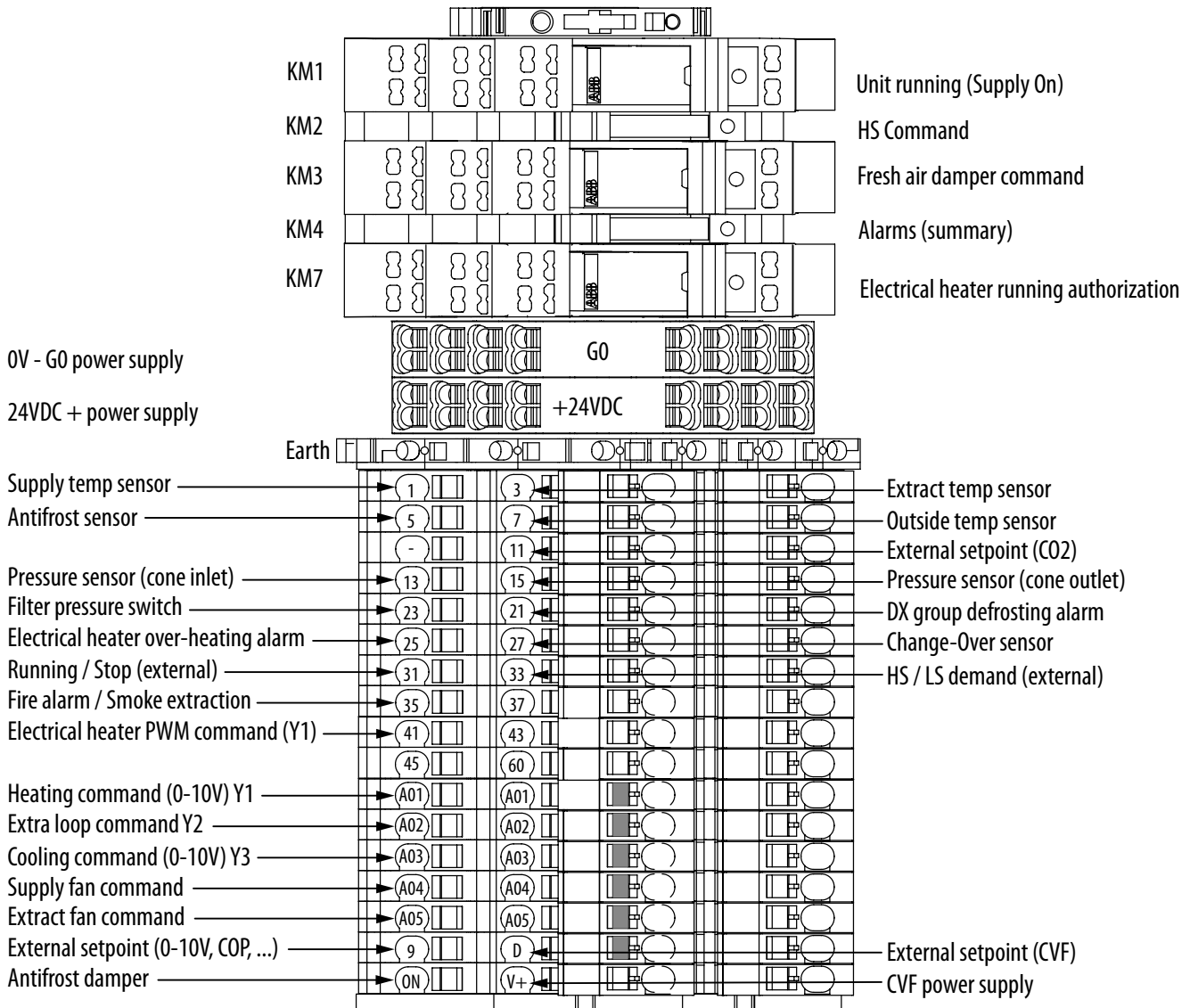
6.9 Terminal connections



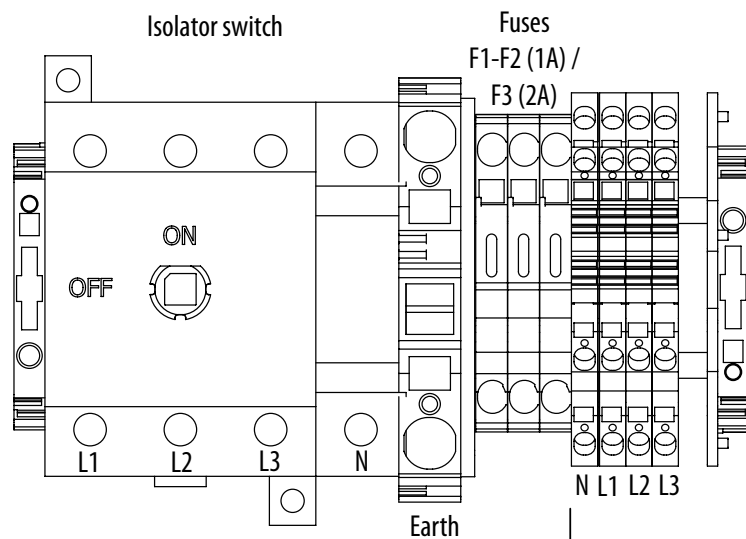
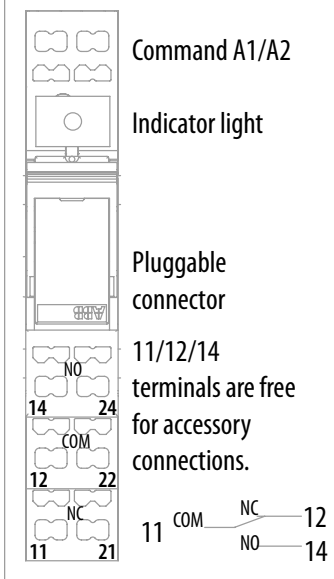
KM1 KM2 KM3 KM4

KM1 : Unit running (Supply On)
KM2 : HS Command
KM3 : Fresh air damper command
KM4 : Alarms (summary)

Electrical heater unit



Connection KM1 to 7



Customer power supply, according to identity plate information :

- 230V 1 phase: plugging onto L1 and N.
- 400V 3 phases + N: plugging onto L1, L2, L3 and N.

CORRIGO Input-output tables

E28	No. terminals	CAIB/T 10 - 20 - 30 - 40 - 50
Analog input		
AI1	(1-G0)	Supply T° sensor
AI2	(3-G0)	Free / extract sensor
AI3	(5-G0)	Free / water antifreeze protection T° sensor (Water coil)
AI4	(7-G0)	Fresh air T° sensor
Analog input (universal)		
UIA1	(G0-9-+24 V)	External fan setting (0-10 V...) / Extra external pressure sensor (operation for COP)
UIA2	(G0-11-+24 V)	Free / CO2 sensor (Mixture control damper)
UIA3	(G0-13-+24 V)	Pressure sensor (Supply fan cone)
UIA4	(G0-15-+24 V)	Free
Digital input (on-off)		
DI1	(21-24 Vdc)	Supplementary alarm 10
DI2	(23-24 Vdc)	Monitoring filter - low pressure switch
DI3	(25-24 Vdc)	Alarm for overheating of electrical heater
DI4	(27-24 Vdc)	Change-over sensor
DI5	(31-24 Vdc)	External request for Start/Stop
DI6	(33-24 Vdc)	External request for LS/HS
DI7	(35-24 Vdc)	Fire alarm / smoke extraction
DI8	(37-24 Vdc)	Antifreeze thermostats
Analog output		
AO1	(G0-24-A01)	Control of heating or reversible coils (0-10 V) (Y1)/(Y3)
AO2	(G0-24-A02)	Control (0-10 V) Y2 additional loop
AO3	(G0-24-A03)	Control of cooling (0-10 V) (Y3)
AO4	(G0-24-A04)	Control (0-10 V) blower fan
AO5	(G0-24-A05)	
Digital output (on-off)		
DO1	KM1 (11 -14)	Unit in operation (Fresh air blower active)
DO2	KM2 (11 -14)	GV control- Fresh Air - Slave
DO3	KM3 (11 -14)	DO3 (KM3) Fresh air damper (D01+ Damper Tempo) / Start BEG Pump
DO4	KM4 (11 -14)	Alarms summary
DO5	KM5 (11 -14)	Control 3 rd floor electrical heater
DO6	KM6 (11 -14)	Control 2 nd floor electrical heater
DO7	(41-G0)	PWM control of electrical heater.

7. COMMISSIONING

All units are subject to EC control and a functional test before being delivered.

Factory configuration of the units:

- Ventilation mode = CAV Mode (§"8.2 Constant flow operation (CAV)", page 36).
- High speed = maximum flow rate of the unit, Low speed = maximum flow rate / 2.
- Type fan = Coefficient k entered (§"9.4 Measure air flow and pressure - Check the K coefficient", page 44).
- Heating mode = T° constant supply (§ "8.6.1 Maintaining a constant supply temperature", page 39).
- Type of unit = according to the CAIB CAIT unit chosen (§ "8.1 Simplified Menus / Access", page 33).

Factory control of the units:

- Tests of electrical conformity: Continuity of the masses / Insulation of the energised parts.
- Control of the temperature sensor readings (T° of air supply, T° external, T° antifreeze depending on option).
- Control of supply fan alone (Control of corresponding flow sensor).

The commissioning and configuration of the control must be carried out by a qualified person regarding the described safety instructions § "1.2 Safety Guidelines", page 4. In metropolitan France this service can be provided by VIM and its qualified providers. **Contact us.** It can only occur once the installation, and the electrical, aeraulic and hydraulic connections have been carried out.

Before beginning the commissioning and configuration work, obtain all the necessary data on flows, pressures, temperatures, desired operating mode, and installation diagrams.

- Ensure that the device does not contain any foreign body.
- Check that all the components are fastened in their original locations.
- Manually check that the fan is not rubbing and is not blocked.
- Check that all the external electrical components are connected.
- Check the tightness of the electrical connections and the connection to earth.
- Check that the pressure switch is set for the number of filter stages used (§"11.4 Maintenance/replacement of the fresh air filter", page 72).
- Check the voltages, currents, thermal protection ratings.
- Check the direction of the fan rotation and the direction of air flow.
- Check the air flow.
- Check for any clogging of the filter - clean or replace if necessary.
- Enter the control parameters, simulate the operation of the coils / alarms / safety procedures.

Check that all accesses to the AHU are well closed and locked.

8. STANDARD CONFIGURATION

CAIB CAIT CORRIGO Control	E	H3	C4	R3	H3 C4
MAIN ELEMENTS					
- Main general safety switch mounted on the front panel of the control cabinet	●	●	●	●	●
- Control and terminal block built into the unit and accessible in the cabinet on the front panel	●	●	●	●	●
- Temperature sensor of fresh air suction TGK3 PT1000	●	●	●	●	●
- Temperature sensor of the extract TGK3PT1000	●	●	●	●	●
- Antifreeze temperature sensor TGA1 PT1000 (H3 - R3 - H3 C4)		●		●	●
- "Change-over" thermostat THCO to be installed at the entrance of the water coil (R3)				●	
- Temperature sensor of recirculation TGK3 PT1000 or of the ambient TGR5 PT1000	○	○	○	○	○
- 3 way valve(s), motorised - proportional 0-10 V supplied but not fitted		○	○	○	○
- Pressure switch to control filter clogging	●	●	●	●	●
FUNCTIONALITIES					
Control and display of flows					
- Constant or fixed flow (CAV mode), up to 2 different flow setpoints	●	●	●	●	●
- Variable flow according to an external 0-10 V signal, from the command control or a remote control (VAV mode)	●	●	●	●	●
- Constant pressure with an SPRD differential pressure sensor- COP Mode	●	●	●	●	●
- Management of flows according to time periods (clock)	●	●	●	●	●
- BOOST function by external contact	●	●	●	●	●
- STOP function by external contact	●	●	●	●	●
Control of the internal water coils					
- Adjusting the power by activating a 3-way valve		●	●	●	●
Control of the internal electrical heaters					
- Proportionally controlling the power of the electric heater	●				
Control of an external electrical heater (accessory)					
- Proportionally controlling the power of the electric heater by a 0-10 V signal	○	○	○	○	○
- Coordinating a damper servo-motor (accessory) on the fresh air	●	●	●	●	●
Controls and Security					
- Filter clogging signal	●	●	●	●	●
- Signal of fault of temperature sensors	●	●	●	●	●
- Signal of fan failure	●	●	●	●	●
- Signal of non-respect of a setpoint (Flow, Pressure, T°)	●	●	●	●	●
- Fire alarm from a contact linked to the external fire detection system	●	●	●	●	●
- Alarm of a communication fault between the controller and the remote control	●	●	●	●	●
- Control the freezing risk of the water coil (opening the valve, stop if the water temperature drops below 7 °C in heating mode)		●		●	●
- History of alarms	●	●	●	●	●
COMMUNICATION					
- Remote control with graphical touchscreen display (ETD)	●	●	●	●	●
- MODBUS RTU standard (RS485)	●	●	●	●	●
- BACNET IP on TCP/IP port	●	●	●	●	●
- Webserver application on TCP/IP port	●	●	●	●	●

● Included, ○ Option

8.1 Simplified Menus / Access

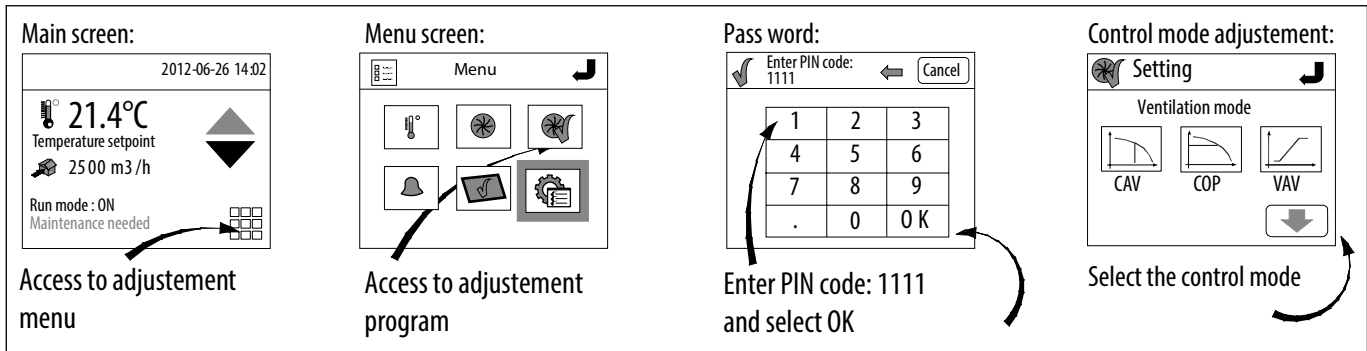
The CAIB CAIT AHU provides quick access to the main functions.

Access: There are 3 levels of access to the controller:

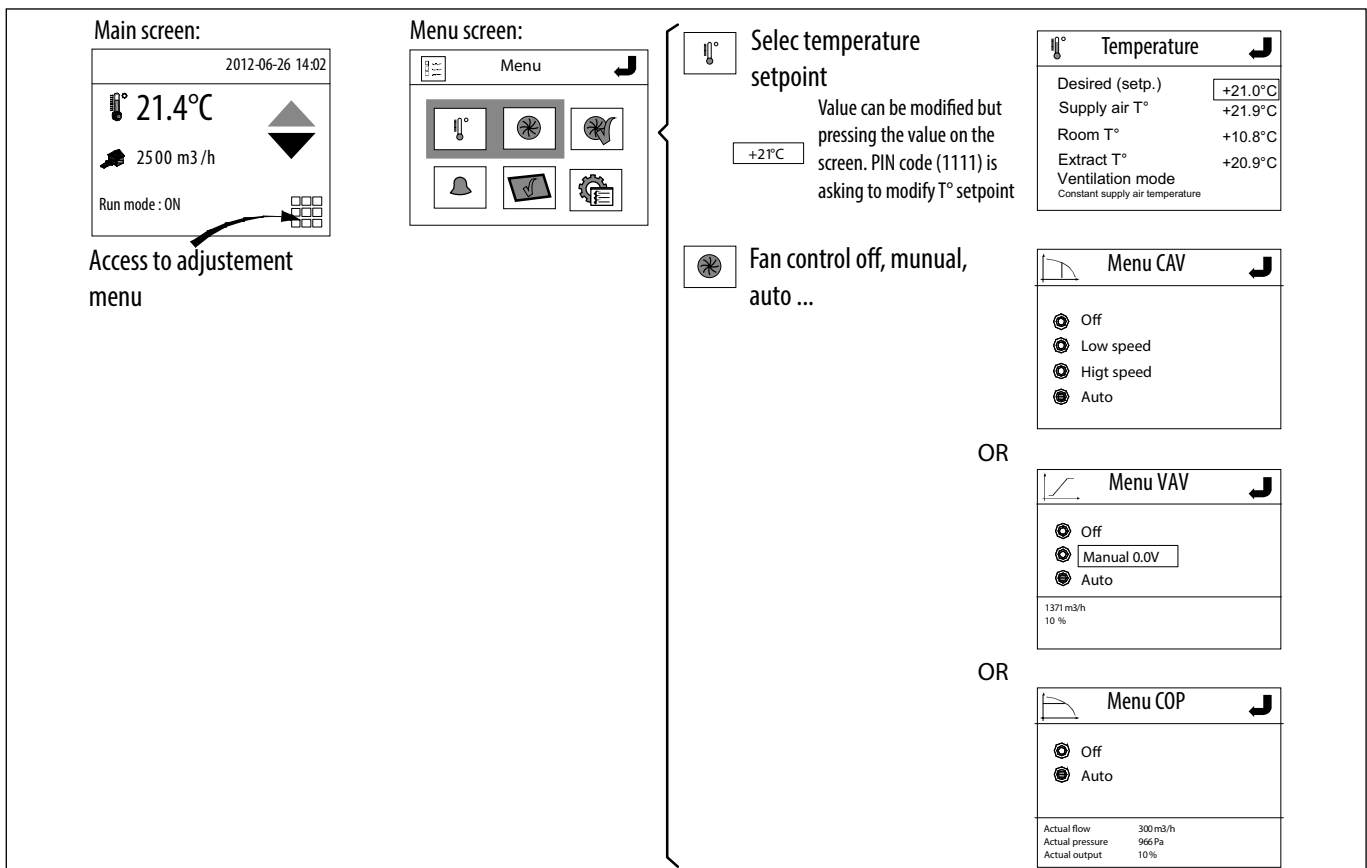
- **User level** (no password) - Access to the on/off functions - Auto or LS/HS and increase of the temperature setpoint ($\pm 3\text{ }^{\circ}\text{C}$)
- **Operator level** (password) - read and write access to the settings and parameters, but no access to the system configuration
- **Master level** (password) - read and write access to the settings and parameters, as well as access to the system configuration

The CAIB CAIT can operate according to 3 operating principles:

- **CAV**: Constant flow operation
- **VAV**: Variable speed operation
- **COP**: Constant pressure operation

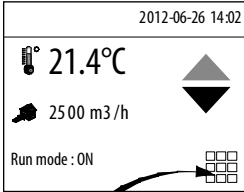


User level: adjustment of the temperature set point and selection of the unit operating mode (use of the time programme, stopping the unit, or possible overriding at a given speed). These two temperature and ventilation functions are accessible in two specific menus dedicated to this use.



Installer level: operating configuration of the unit, fan, coil, console, fault reading...

Main screen:



2012-06-26 14:02

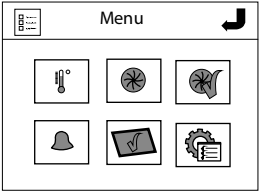
21.4°C

2500 m3/h

Run mode : ON

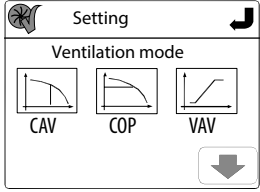
Access to ajustement menu

Menu screen:



Menu

**Working mode selection :
Installer parameter**

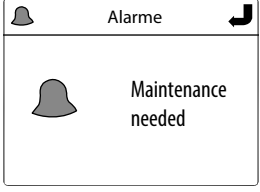


Setting

Ventilation mode

CAV COP VAV

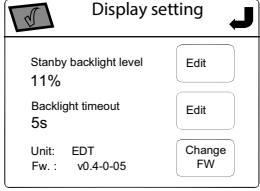
Read the alarm



Alarme

Maintenance needed

Display parameters



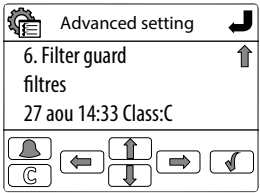
Display setting

Standby backlight level 11% Edit

Backlight timeout 5s Edit

Unit: EDT Change FW
Fw. : v0.4-0-05

**Advance parameter :
Expert mode
It's only possible to
read the alarm**

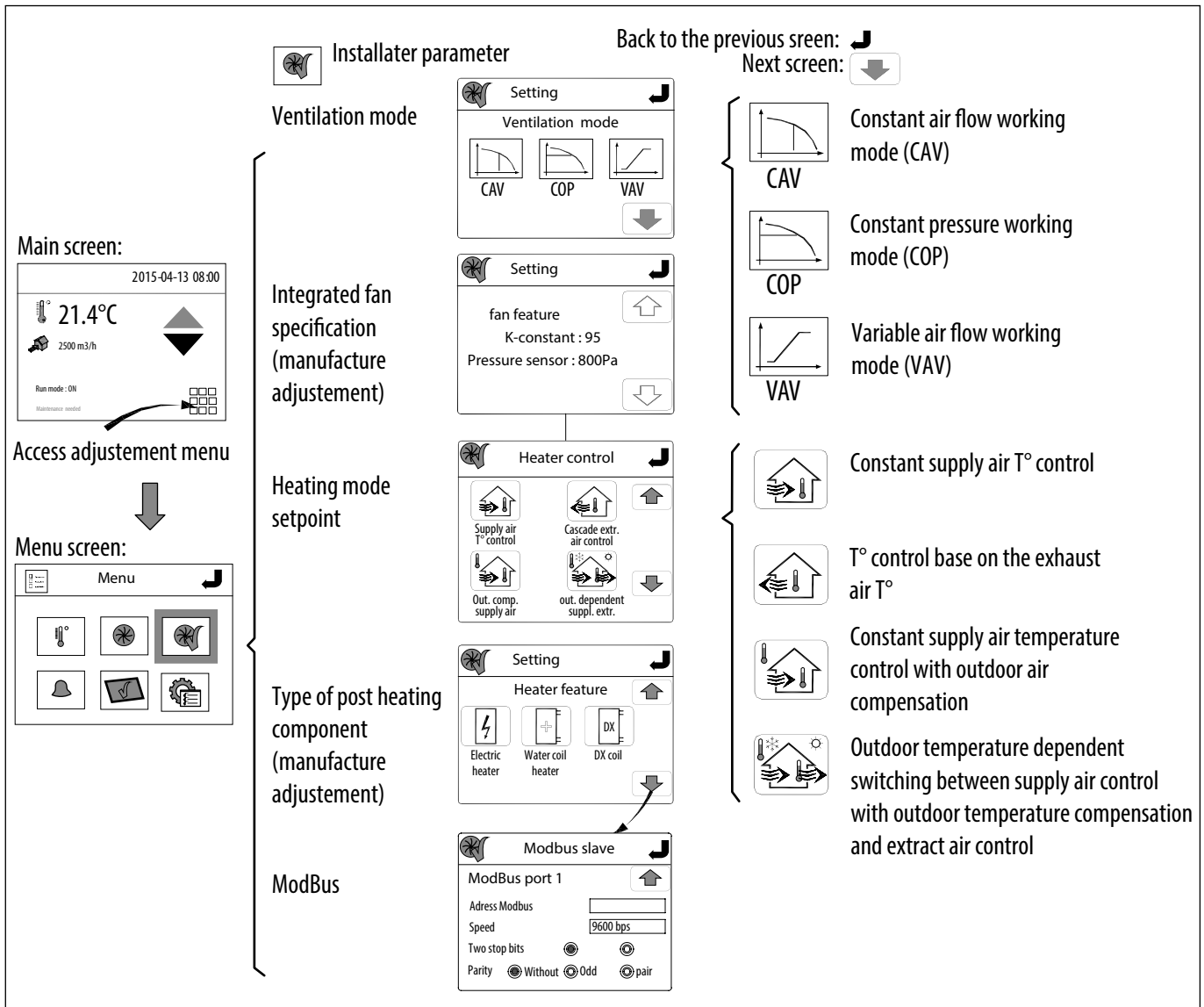


Advanced setting

6. Filter guard
filtres

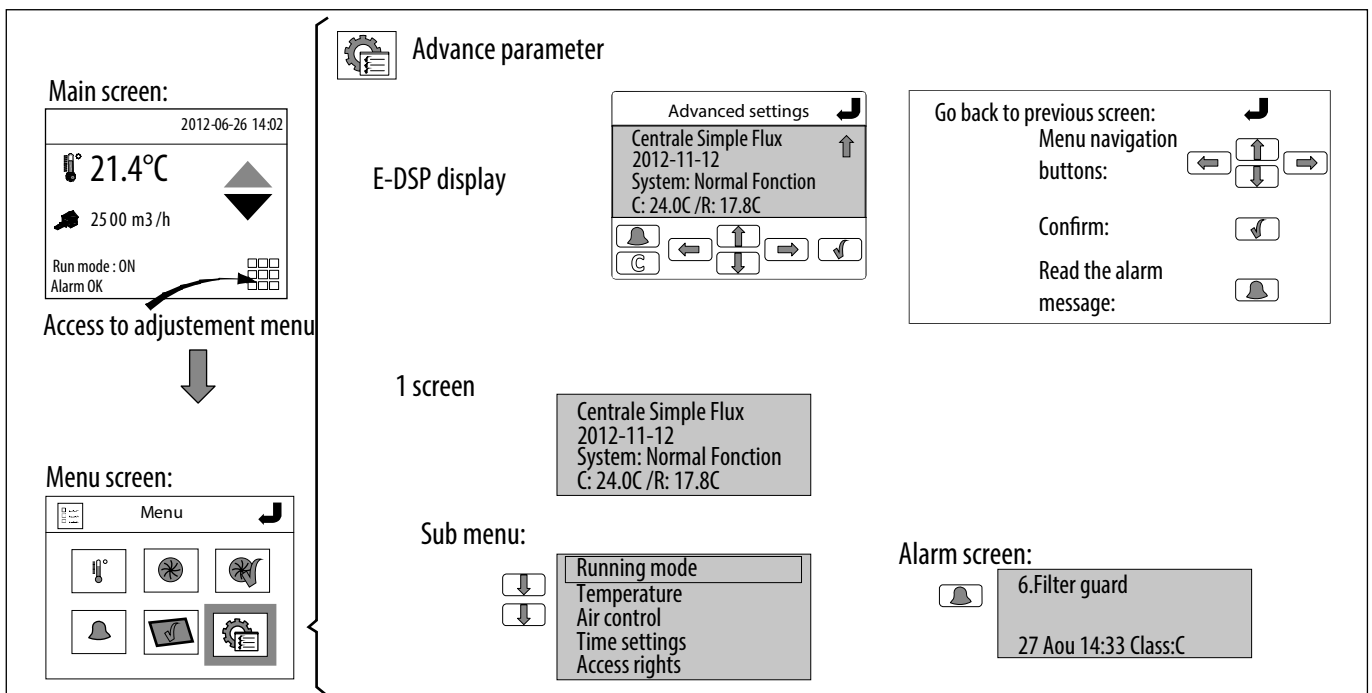
27 aou 14:33 Class:C

Choice of operation:

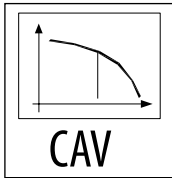


Advanced configuration in expert mode:

Used to read the message of the alarm reported on the main screen and to programme the clock



8.2 Constant flow operation (CAV)



Recommended mode to directly obtain the desired flow rate in an installation.

The fan speed is set to provide a precise flow and to keep it constant.

The supply air flow is controlled. The "Low Speed" and "High Speed" flow setpoints are set independently in m³/h with the ETD remote control.

The pressure transmitter measures the differential pressure on the fan suction chamber.

The flow resulting from the pressure measurement is calculated by the controller, in relation to a K coefficient specific to the fan.

The switching between the different setpoints will be carried out manually or automatically by a programming schedule.

The PI control loop of the fan maintains the setpoint by controlling the fan.

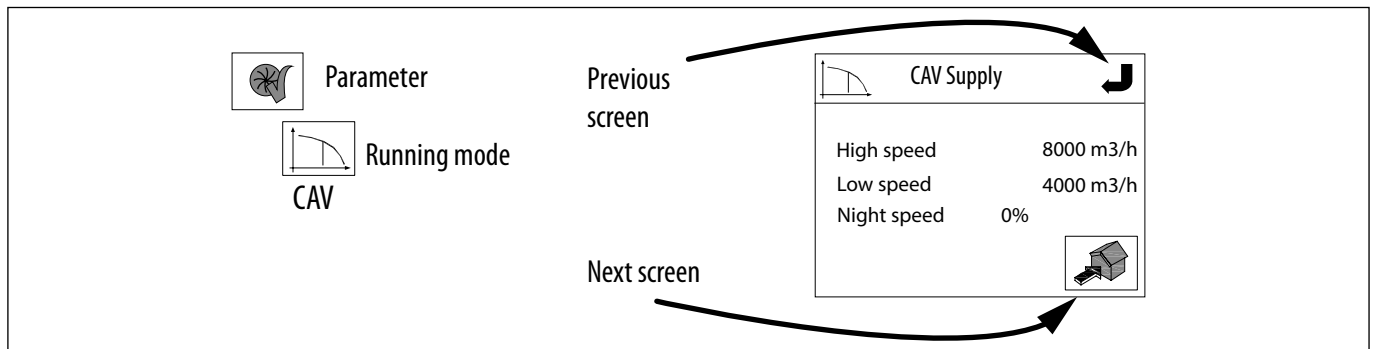
A third "night speed" setpoint may be entered from the control panel. The % value corresponds to the percentage of the maximum speed of the fan, and will be used during the night cooling (see corresponding function).

A delay of 60 seconds is integrated into the programme to ensure the protection of the heating elements in the event of a request to stop the unit.

Functional configuration of the ETD



Access to the simplified configuration menu (via password 1111) enables:

- The selection of the Low Speed and High Speed flow rates of the fan.
- The night-time setpoint value of the fan.



The selection of this mode in the installer menu automatically configures the user menu screen. The user can thus change the operation mode of the unit without touching the settings.

Setting for use on the ETD

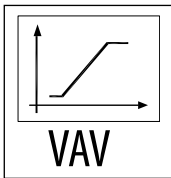
 CAV	 Menu CAV <input type="radio"/> Off <input type="radio"/> Low speed <input type="radio"/> High speed <input type="radio"/> Auto	Stop, Low Speed, High Speed Auto = according to clock or status of the control terminal (on/off + LS/HS) <i>Note: The control by the terminals 31-G0 / 33-G0 is a priority.</i>
---	--	---

8.3 Variable flow operation (VAV)

Air quality sensor measures CO₂ - Operation in VAV (Variable Flow)

For operation with variable flow, it is necessary to install an air quality sensor (CO₂ in general) either in the return air duct or in the atmosphere of the subject room.

Code	Designation	Description
132376	SCO2 AA-010-400-1100	Ambiant sensor with display 400-1000 ppm, output signal 0-10 V
132262	SHUR-010	SHUR 0-10 hygrometry sensor 0-100% HR wall mount
132375	SCO2 A-010-400-1100	Ambiant sensor with display 400-1000 ppm output, signal 0-10 V
132377	SCO23 G MIX 400-1100	Duct sensor of 400-1100 ppm, output signal 0-10 V or 4-20 mA



Recommended mode in a single zone configuration for variable flow applications according to a 0-10 V signal

The flow setpoint value is a function of a 0-10 V signal from an external sensor (CO₂, temperature, hygrometry...) or a manual percentage.

Functional configuration of the ETD

Access to the simplified configuration menu (via password 1111) enables.

- The selection of the operating range of the signal 0-10 V (see example below)
- The range of flow variation of the blower fan

Parameter Running mode VAV	VAV <table border="1"> <tr> <td>Vmin</td> <td>2.00 V</td> </tr> <tr> <td>Vmax</td> <td>7.00 V</td> </tr> <tr> <td>M³/h à Vmin</td> <td>1000 m³/h</td> </tr> <tr> <td>M³/h à Vmax</td> <td>2000 m³/h</td> </tr> </table>	Vmin	2.00 V	Vmax	7.00 V	M ³ /h à Vmin	1000 m ³ /h	M ³ /h à Vmax	2000 m ³ /h	Smin, Smax = using range from the connected sensor M ³ /h at Vmin, M ³ /h à Vmax = supply air flow range
Vmin	2.00 V									
Vmax	7.00 V									
M ³ /h à Vmin	1000 m ³ /h									
M ³ /h à Vmax	2000 m ³ /h									

<p>The graph shows a linear relationship between CO₂ concentration (ppm) and flow rate (m³/h). The x-axis ranges from 0 to 2000 ppm, and the y-axis ranges from 0 to 2000 m³/h. A line starts at (400, 1000) and ends at (1400, 2000), then remains constant at 2000 m³/h for higher CO₂ concentrations.</p>	<p>Example of use:</p> <p>Connection of a SCO₂ sensor with a measurement range of 0-2000 ppm (0-10 V)</p> <p>To use the range 400-1400 ppm, you must select Vmin=2 V and Vmax=7 V. If the example is used with flows that evolve from 1,000 to 2,000 m³/h, the facing curve is obtained.</p>
---	---

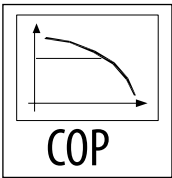
Note: The use of the HS Override entry allows the CO₂ sensor to be overridden at the m³/h setpoint value to Vmax (here 2,000 m³/h regardless of the value measured by the sensor).

The selection of this mode in the installer menu automatically configures the user menu screen. The user can thus change the operation mode of the unit without touching the settings.

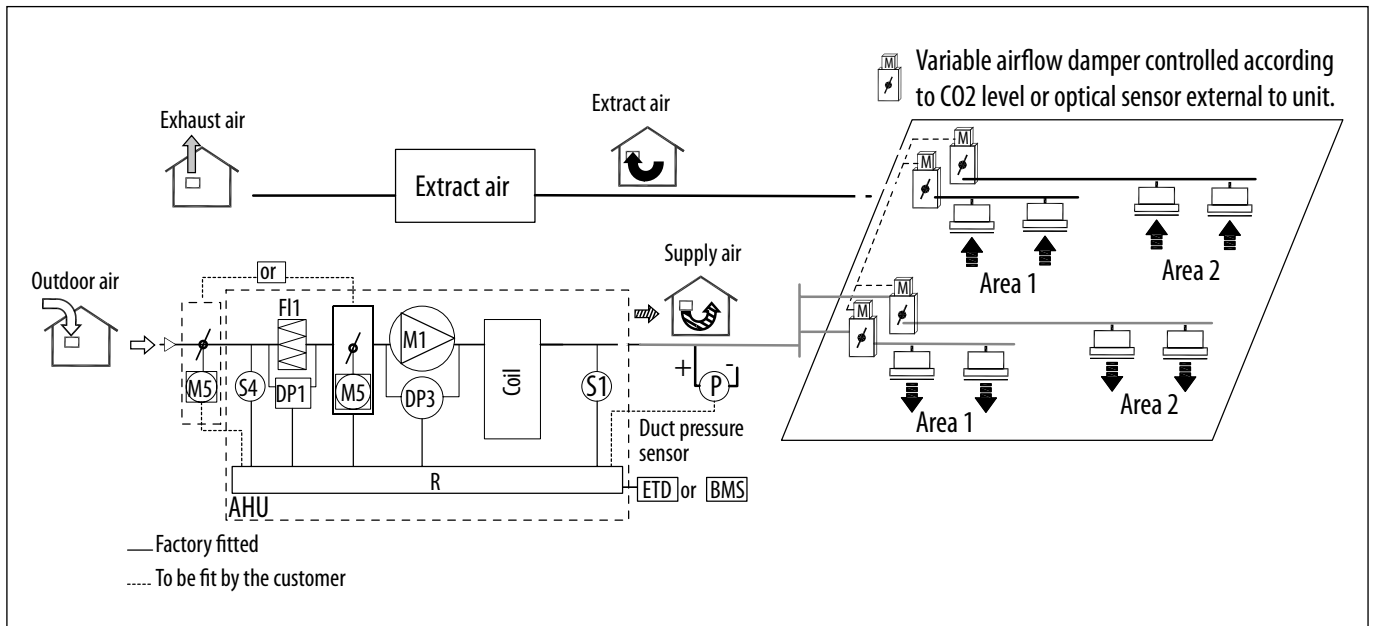
Setting for use on the ETD

Utilisation VAV 	Menu VAV <input type="radio"/> Off <input checked="" type="radio"/> Manual 10% <input type="radio"/> Auto 1371 m ³ /h 10%	Stop or Manual X % = Manual setting of a flow rate corresponding to: Min Flow + X% [Max Flow - Min Flow] Auto = use according to clock or status of the control terminal (on/off + sensor) Note: The control by the terminals 31-G0 / 33-G0 is a priority.
-------------------------------	---	---

8.4 Constant pressure operation (COP)



Recommended mode in multi zone configuration, for variable flow applications with flow modulation devices installed at the level of the network.



Flow is automatically modulated to maintain a constant pressure value measured by an external pressure sensor.

The ETD control screen will indicate on which network the pressure sensor is placed (see § "5.2.2 Differential pressure sensor - Operating in COP (Constant Pressure)", page 18).

The pressure setpoint is entered manually in Pa.

Ventilation mode	
Pressure setting point	300Pa
Real airflow	5000 m ³ /h
M3/h at Vmin	1000 m ³ /h
Real pressure	200Pa
Output signal	5V

The ETD remote control screen shows the flow in real time at the desired pressure.
 Pressure setpoint = Desired pressure value in the selected network. Selection of this mode in the installer menu automatically configures the user menu screen. The user can thus change the operation mode of the unit without touching the settings.

Setting for use on the ETD

<p>Utilisation COP</p>	<p>Menu COP</p> <p> <input type="radio"/> Off <input checked="" type="radio"/> Auto </p> <p> Actual flow 5000 m³/h Actual pressure 200Pa Actual output 5V </p>	<p>Stop</p> <p>Auto = operation according to time or the status of the control terminal (start/stop of unit).</p> <p>Note: a control by terminals 31-G0 / 33-G0 is priority.</p>
------------------------	--	---

8.5 Antifreeze protection of the heating coil (versions H3, H3 C4 and R3)

For the antifreeze protection of the heating coil, the temperature of return water is transmitted to the controller by a TGA1 PT1000 sensor installed by the factory on the outlet manifold of the unit. The controller will generate a permanent signal to the valve motor to maintain a sufficient flow of hot water to avoid frost in the unit.

In the case where the temperature of return water falls below the critical point (7°C), the fan is stopped and the damper (accessory) is closed, an alarm is activated with automatic resetting.



The antifreeze protection remains active when the fan is off.

8.6 Temperature control

The temperature control loop operates independently of the other control loops (fan or mixing chamber regulated according to a CO2 level...).



The temperature set point as well as the heating/cooling mode (temperature of constant flow - constant ambient temperature) are entered via the touch screen or the BMS (Building Management System). The extract or ambient temperature is maintained at the setpoint value by playing with the controller outputs "Y1 Heating", "Y2 Mixture damper", "Y3 Cooling". A single PI control loop is used. See § "5.2 Connection of the accessories", page 18.

8.6.1 Maintaining a constant supply temperature

 <p>Parameter</p>  <p>Heating mode</p> <p>Constant supply air T°C</p>	<p>The temperature is controlled by comparing the air supply temperature to the value of the setpoint configured with the touch display or the BMS.</p> <p>This is the default factory setting, the supply air temperature sensor is attached in the framework of the casing supply duct.</p>
--	---

The user can vary the temperature from the main screen by +/- 3°C compared to this initial setpoint.

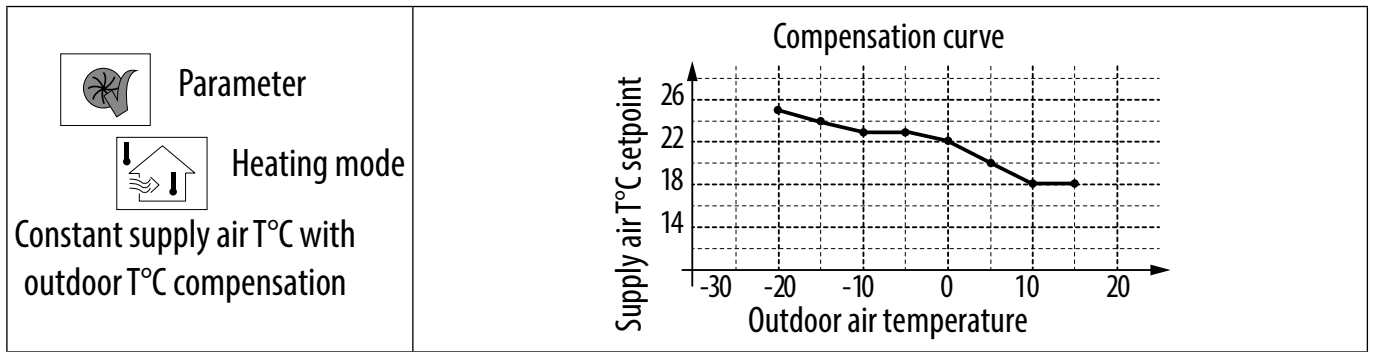
8.6.2 Maintaining a constant room or return temperature

 <p>Parameter</p>  <p>Cascade connected extract air T° control</p>	<p>The supply is controlled in cascade with the ambient or return temperature.</p> <p>The difference between the ambient or return temperature and the setpoint determines the supply temperature. An ambient or return sensor must be added.</p> <p>The control responds to a request to maintain temperature in an ambient or return, by limiting the duct temperature. This is included in a permissible range of 12 to 30 °C, controlled by a provided supply sensor, fixed to the duct.</p>
--	--

To control the ambient temperature, it is necessary to install an air temperature sensor in the room to control. To control the extract air temperature, a temperature sensor must be mounted to the extract air duct.

The user can vary the temperature from the main screen by +/- 3°C compared to this initial setpoint.

8.6.3 Adaptation of the temperature setpoint according to the external temperature



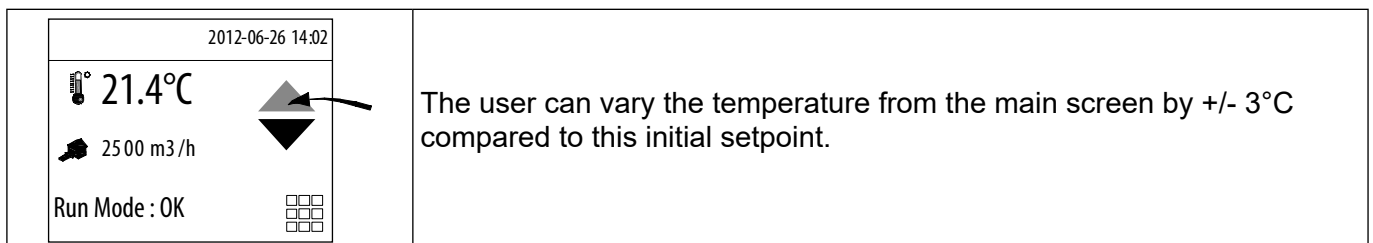
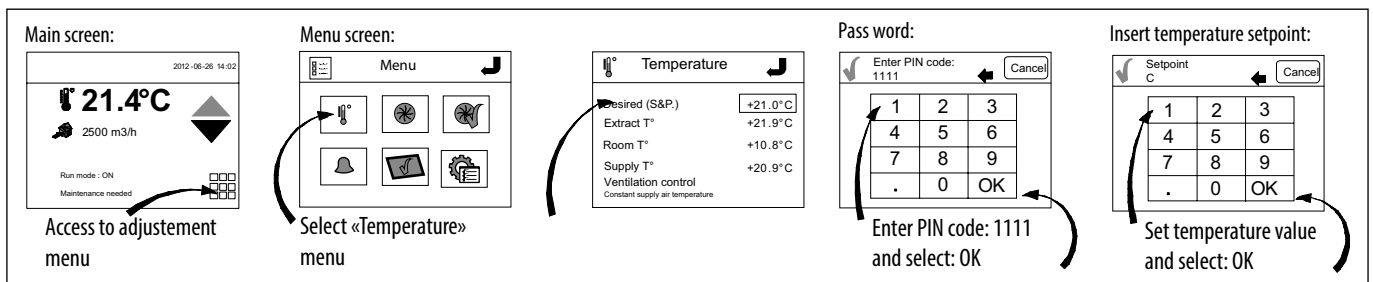
The control operation is similar to the 1st case.

Instead of a single temperature setpoint, a compensation curve is defined by the factory with eight set-points.

The supply setpoint is thus adapted in relation to this curve, and the variation of plus or minus 3 °C is still possible from the main screen. The required external temperature sensor is provided and mounted, and the supply air temperature sensor is provided for attachment to the supply duct.

8.6.4 Input of temperature setpoint

An initial setpoint value can be defined from the "Temperature" screen in the menus . The setpoint is set by default to 21°C and can be adjusted between 12 and 30°C.



9. ADVANCED CONFIGURATION

9.1 Hourly programming

The controller has several clocks for the individual programming of: Reduced flow, Normal flow, Stop. Holiday periods can be programmed and the change to summer time is automatic.

A night cooling function can be programmed to start the AHU outside the scheduled periods.

Configuring the clock:

Only the operating ranges are programmed (the fan is off outside these ranges).

The installer can thus define two operating ranges at normal speed (default speed or high speed) and at "reduced" speed (low speed when two speeds are possible). Normal speed is prioritised over reduced speed, and, in the case of overlapping programming times, the unit will operate at normal speed.

For each speed, two ranges can be entered per day.

For example:

High Speed can be defined from

08h00 to 12h00 in Period 1

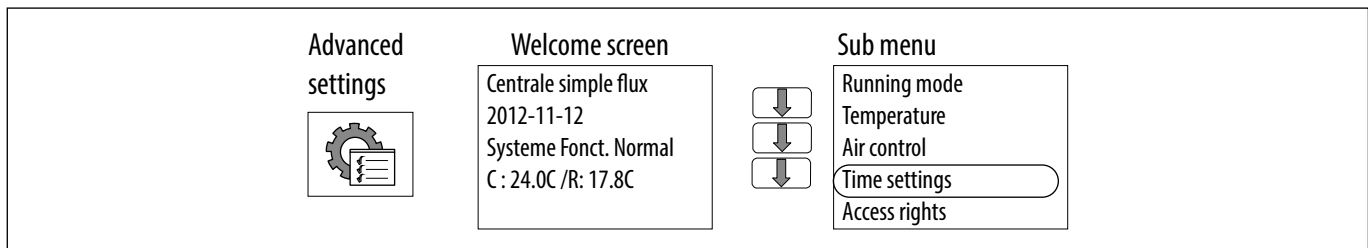
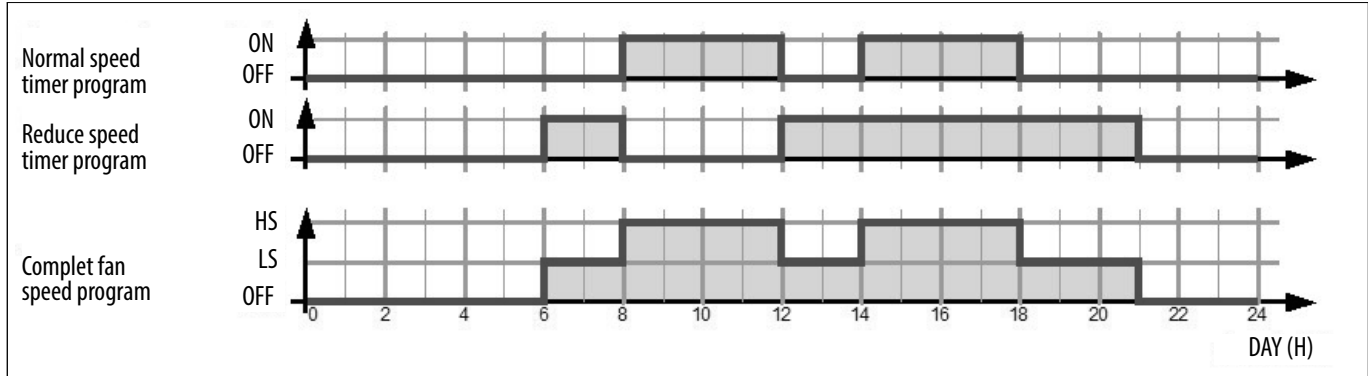
and from 14h00 to 18h00 in Period 2

and Low Speed from

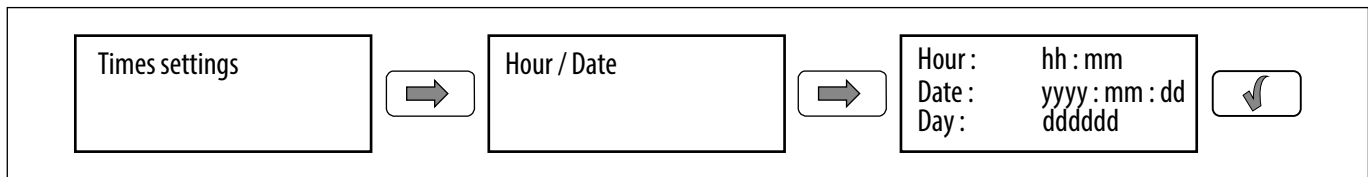
06h00 to 08h00 in Period 1

and from 12h00 to 21h00 in Period 2

The automaton will then control the fan in the following manner:



In the hourly menu, before programming the ranges, check that the date and current time are accurate. It is possible to adjust them as follows:



To access the fields, press the validation button (a cursor appears).

Then change the values with the arrows.

Once the value is obtained, press the validation button again.

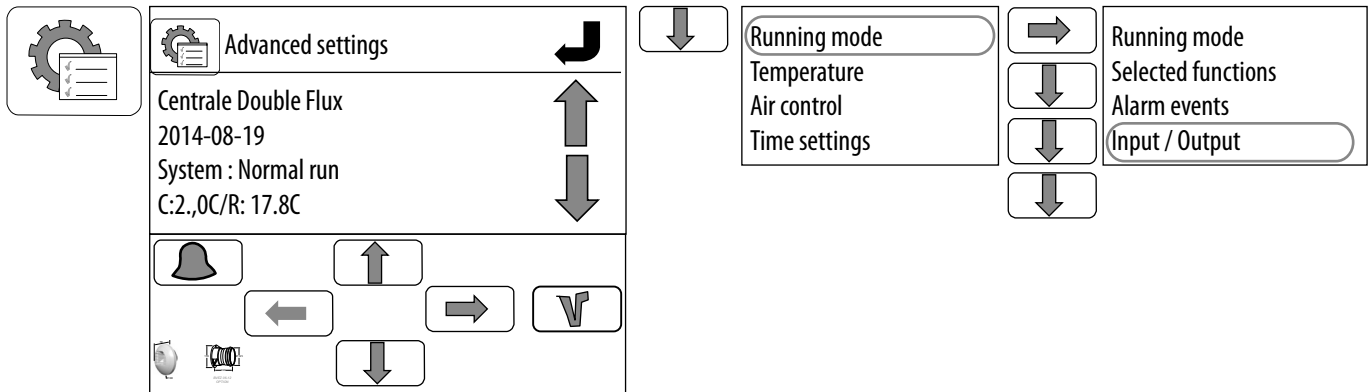
After validation of the last entry to all the fields, the cursor disappears.

<p>Menu settings of the hourly ranges A "reduced speed prg" table is also visible and is constituted in the same way as the "normal speed prg"</p>	Time settings	Time / Date	Time: hh:mm Date: yyyy:mm:jj Weekday: jjjjjjj		
	Timer Normal speed	Normal speed	Monday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	Normal speed Monday->Friday Per 1: 00:00- 00:00 Per 2: 00:00- 00:00
		Normal speed	Tuesday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	
		...			
		Normal speed	Thursday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	
		Normal speed	Friday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	
		Normal speed	Saturday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	Normal speed Saturday->Holiday Per 1: 00:00- 00:00 Per 2: 00:00- 00:00
		Normal speed	Sunday	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	
		Normal speed	Holidays	Normal speed Per 1: 00:00- 00:00 Per 2: 00:00- 00:00	
<p>The ranges are programmed either day by day, or by copying either the same programming from Monday to Friday and/or the same for Saturday, Sunday, and vacation days. The holiday periods are to be selected at the end of the table (24 possible periods).</p>	Time settings	Holidays	Holidays (mm : dd) 1: 01:01 - 01:01 2: 01:01 - 01:01 3: 01:01 - 01:01		
			Holidays (mm : dd) 4: 01:01 - 01:01 5: 01:01 - 01:01 6: 01:01 - 01:01		

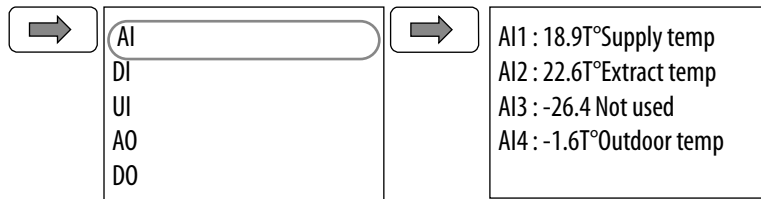
9.2 Override

<p>A digital input permits overriding the unit operation in normal contions. The override period is adjustable. The timer is set at the factory to 0s to be compatible with our presence detection systems and our control buttons. Terminal blocks are available in the terminal cabinet (use of a potential-free contact)</p>	Time settings	Extended running	Extended running 0 min Time in ext. Running Extended: 0 min
---	---------------	------------------	--

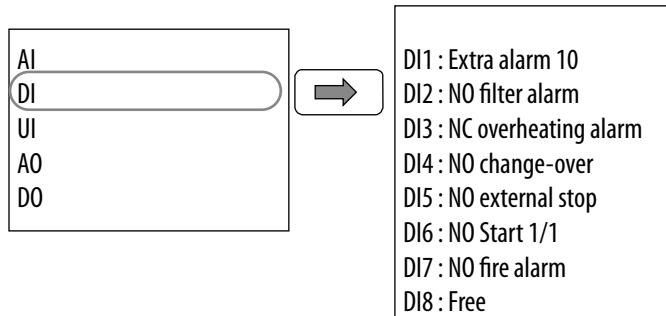
9.3 Control of the inputs/outputs



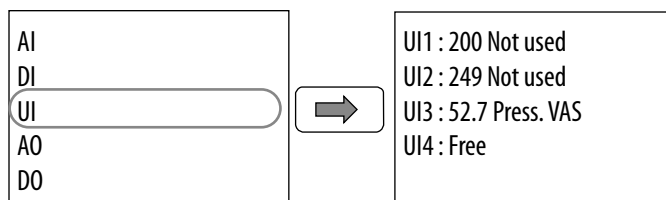
AI=Analogue Input



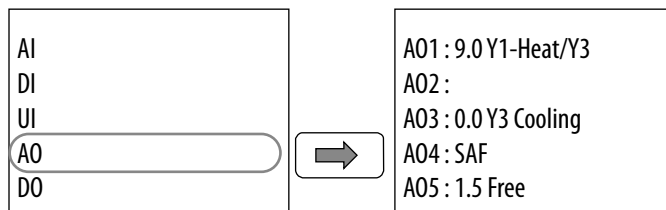
DI=Digital Input



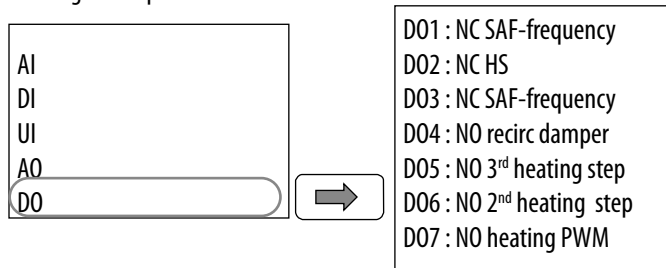
UI=Universal Input



AO=Analogue output



DO=Digital output



SIGNIFICATION INPUT / OUTPUT :

AI1 : Supply air temp sensor
 AI2 : Ambient or extract air temp sensor
 AI3 : Antifrost sensor in case of water coil (if used)
 AI4 : Outdoor temp sensor

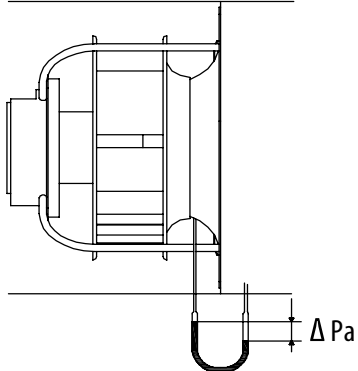
DI1: Extra alarm 10 - DX group defrosting
 DI2: Filter Pressure switch
 DI3: Overheating thermostat of electric heater/DX group defrosting alarm
 DI4: Change over thermostat
 DI5: External stop
 DI6: External high speed override
 DI7: Fire
 DI8:

UI1: External set point (0-10 V or COP signal) ...m³/h or Pa
 UI2:
 UI3: Pressure measurement (Pa)
 UI4:

AO1 : 0-10 V signal sent in heating mode
 AO2:
 AO3: 0-10 V signal sent in refreshing mode
 AO4: 0-10 V signal sent to supply fan
 AO5:

DO1: Contact to start up supply fan
 DO2: High speed contact
 DO3: Contact to start up supply fan
 DO4: Alarms summary
 DO5 : Free / 3rd step elect. heater
 DO6 : Free / 2nd step elect. heater
 DO7: PWM signal of the electric heater

9.4 Measure air flow and pressure - Check the K coefficient

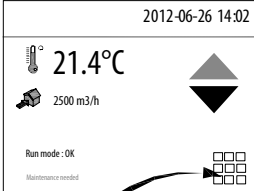


The fan of the CAIB CAIT is equipped with a differential pressure sensor, connected to the controller.

CAIB CAIT 10 to 40 = 0 - 800 Pa and a signal of 0.5 - 4.5 Vdc.
The pressure sensor measures the static pressure difference before the aspiration chamber and in the suction cone.

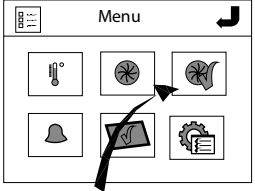
The air flow can be calculated from the following equation: $Q_v = K \times \sqrt{\Delta Pa}$
 Q_v = flow in m³/h; the K coefficient takes into account the specific characteristics of each fan.

Main screen



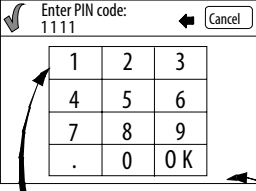
Access to adjustment menu

Menu screen:



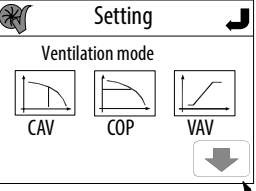
Access to adjustment program

Pass word:



Enter PIN code: 1111 and select: OK

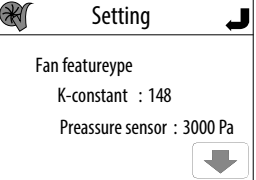
Control mode adjustment:



Select next screen

↓

Control mode adjustment:



To exit from a screen, press the icon in the upper righthand corner of the screen

CAIB/T ECOWATT FACTORY SETTINGS

Unit	Fan coefficient K	Pressure sensor		P Band (m ³ /h)	I Time (s)
		Signal (V)	Range (Pa)		
CAIB/T 10	41	0,5 - 4,5	0 - 800	8000	8
CAIB/T 20	55	0,5 - 4,5	0 - 800	8000	8
CAIB/T 30	90	0,5 - 4,5	0 - 800	8000	8
CAIT 40	102	0,5 - 4,5	0 - 800	8000	8
CAIT 50	116	0?5 - 4?5	0 - 800	8000	8

To change pressure sensor specifications:

With the arrow up and down enter password 1111 after each digit click on right arrow to go to the next one. at the end click on

- In CAV or VAV mode, the VAS pressure sensor allows air flow control and reading.
- In COP mode, the VAS pressure sensor allows pressure regulation.

In this mode, the VAS2 pressure sensor allows air flow reading.
Fill in the operating ranges in Volts and Pa as for the password above and confirm with the

P Band and I Time

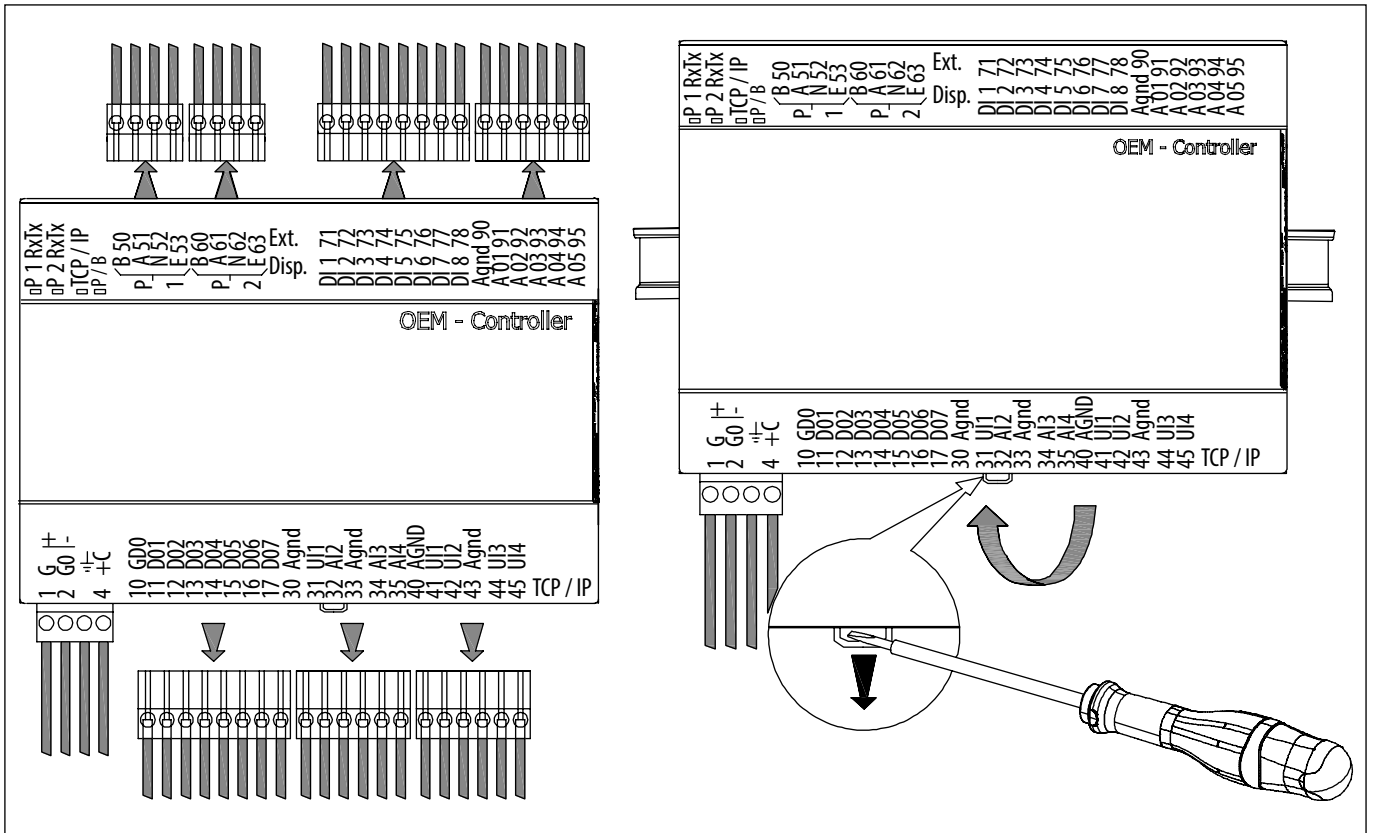
The proportional band and the integration time can be set for each unit.
This can improve reactivity and especially the phenomena of pumping and instability.
The values in the previous table are default values, they can be adjusted as needed for your installation.
Procedure to follow with the touch screen after confirming the password 1111 as here above:

Fill running ranges with Volts and Pa, confirm like for password here above and confirm with the

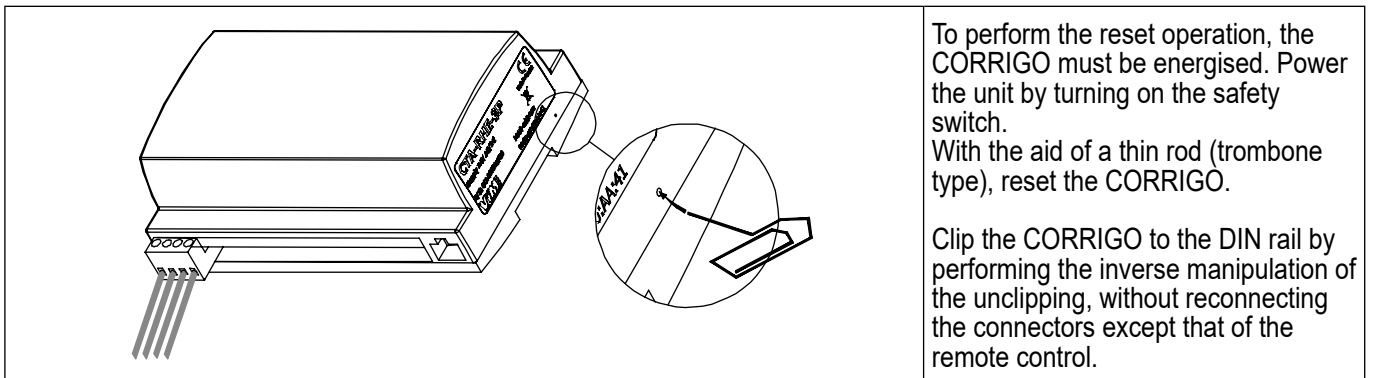
9.5 Resetting the CORRIGO

In some cases, after multiple settings or following a malfunction, it is sometimes necessary to reset the programme controller.

After having cut the electrical power supply to the unit at the safety switch, open the door giving access to the controller. Remove the connectors on the CORRIGO except the one for power.



Using a screwdriver, unclip the CORRIGO from the DIN rail.



Perform the following operations from the remote control:

The sequence of operations is as follows:

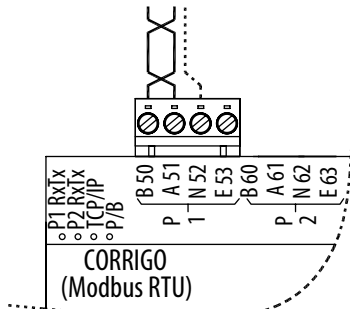
- Advance parameters** (Initial screen)
- CORRIGO Ventilation** (Selected)
- Expansion unit 1**
- Expansion unit 2**
- Preloaded Vtc-files** (Selected)
- Title: Preloaded Vtc-files** (Confirmation screen, Activate? No)
- Title: Preloaded Vtc-files** (Confirmation screen, Activate? Yes)
- Ventilation Vim Choose Configuration** (Confirmation screen, Standard, Accept change: No)
- Ventilation Vim Choose Configuration KSCR/DR 2019** (Confirmation screen, Accept change: No)
- Ventilation Vim Choose Configuration 28ES 3P** (Confirmation screen, Accept change: Yes)
- The CORRIGO program is being activated** (Status message)
- 2 min** (Timer)
- Advance parameters** (Final screen, showing Single air flow unit, 2014-06-26, System: Start, C:22.0C R: 19.0°C)
- Menu** (Final screen with icons for temperature, fan, ventilation, notification, tablet, and settings)

Switch off the electrical supply, reconnect the connectors on the CORRIGO, and close the unit.

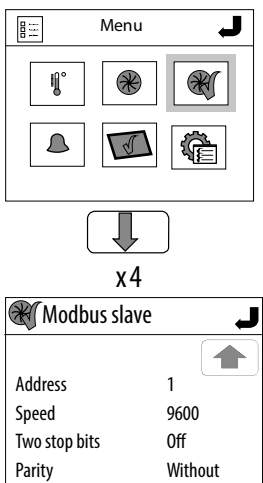
10. COMMUNICATION

10.1 Connection to BMS in modbus language

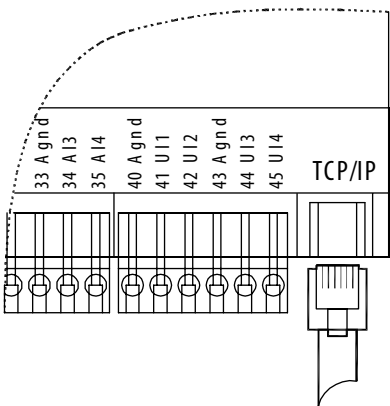
MODBUS RTU on port 1 - RS 485



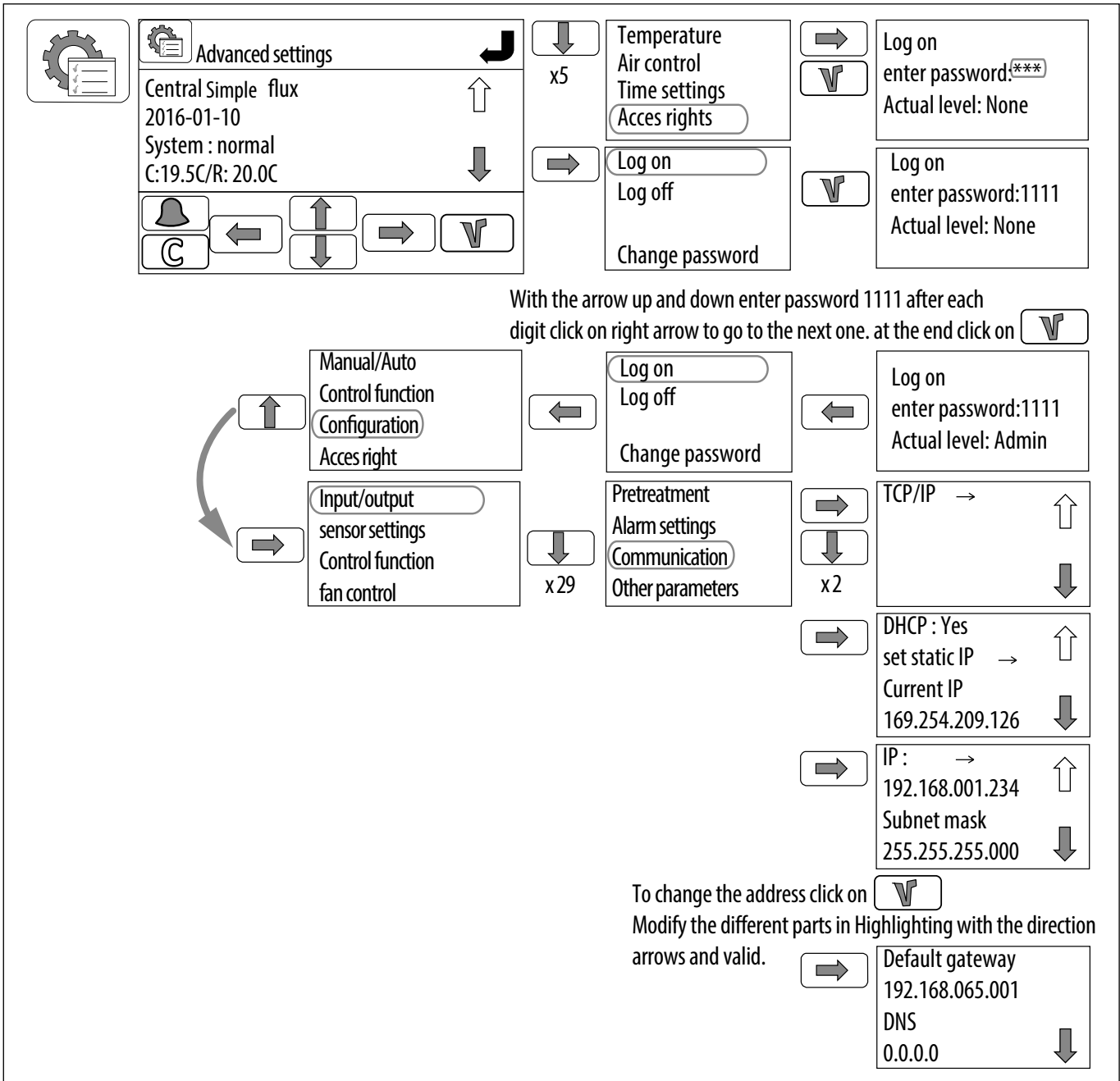
CORRIGO controller has 2 RS485 communication port, Port 1 is dedicated to modbus RTU communication as standard.



The Modbus address and communication configuration could be set directly on the last windows of the quick configuration menu. The address by default is 1, if few units are connected, the address of each one must be different from the others, possible address from 1 to 254. The communication parameters must be the same for all the units connected on the same network. Speed available: 9600 (default parameter), 19200, 38400 or 76800 baud Modbus communication takes place using 1 stop bit. It's possible to activate 2 bits stop. Parity : none (could be modify)



CORRIGO controller is equipped with one TCP/IP communication port (RJ45 Connector). By default, this port is dedicated to Modbus IP communication.



With the arrow up and down enter password 1111 after each digit click on right arrow to go to the next one. at the end click on

To change the address click on
Modify the different parts in Highlighting with the direction
arrows and valid.

Reduce list of Modbus network variable

The simplified list Modbus below includes the most usually data used in supervision communication in Modbus. All these points can be obtained for all the units equipped with Corrigo controller. Available information will dependent on the configuration of the construction site(work) (ways of working, or options chosen, assembly/ cabling etc.).

Function	Address	Read/Write	Description	Accepted value
FANS CONTROL				
Set point supply air flow	40428	R/W	Setpoint supply air flow ,Normal Speed ,CAV (Constant Air Volume) running mode	0..max air flow of the unit
	40429	R/W	Setpoint supply air flow ,Reduce Speed ,(Constant Air Volume) running mode	0..max air flow of the unit
Pressure set point on supply air	40024	R/W	Pressure set point in COP (Constant Pressure) running mode, when pressure transmitter is installed on the supply air duct. Value: 0 .. 9999 means 0 .. 999.9Pa	0..max available pressure
Set point exhaust air flow	40030	R/W	Setpoint exhaust air flow ,Normal Speed ,CAV (Constant Air Volume) running mode	0..max air flow of the unit
	40031		Setpoint exhaust air flow ,Reduce Speed ,(Constant Air Volume) running mode	0..max air flow of the unit
Speed selector	40368	R/W	Manual speed selection 0=stop, 1=Reduce speed , 2=Normal speed, 3=Automatic (according to timer program)	0, 1, 2 ou 3
READING AIR FLOW /PRESSURE				
Supply air flow	30032	R	In COP mode with pressure transmitter on supply air duct = Value of Δ Pa mesurement on supply air fan nozzle Air flow is obtain by calculation: Air flow= $K*\sqrt{\Delta P}$ Coef.K value corresponding to the unit; $\sqrt{\Delta P} = \sqrt{\text{read value}/10}$ Value: 0 .. 9999 signifiant 0 .. 999.9Pa	0..max flow
	30015	R	Supply air flow (M3/h), in CAV, VAV ou COP on exhaust air running mode	0..max flow
Supply air pressure	30013	R	Pressure on supply air fan (Pa), in COP on supply air duct Value: 0 .. 9999 means 0 .. 999.9Pa	0..max value of the unit
Exhaust air flow	30033	R	In COP mode with pressure transmitter on exhaust air duct = Value of Δ Pa mesurement on supply air fan nozzle Air flow is obtain by calculation: Air flow= $K*\sqrt{\Delta P}$ Coef.K value corresponding to the unit; $\sqrt{\Delta P} = \sqrt{\text{read value}/10}$ Value: 0 .. 9999 signifiant 0 .. 999.9Pa	0..max value of the unit
	30016	R	Exhaust air flow (M3/h), in CAV, VAV ou COP on exhaust air running mode	0..max value of the unit
Boost	10008	R	Status of boost function 0=boost off; 1=boost on	0 or 1
TEMPERATURE STATUS				
Supply air temperature	30007	R	Read the supply air temperature Value: -990 .. +990 means -99.0 .. +99.0 °C.	-999..999
Exhaust air temperature	30009	R	read the exhaust air temperature Value: -990 .. +990 means -99.0 .. +99.0 °C.	-999..999
Outdoor air temperature	30001	R	Read the outdoor air temperature Valeurs: -990 .. +990 signifiant -99.0 .. +99.0 °C.	-999..999
Water coil temperature	30019	R	Read the water coil temperature (anti frost probe value) Valeurs: -990 .. +990 signifiant -99.0 .. +99.0 °C.	-999..999
ALARMS				
Total alarms	10184	R	A or B Alarm status 0=Normal, 1=Alarm	0 or 1
filters alarm	10038	R	Alarme pression filtres 0=Normal, 1=Alarm	0 or 1
	10033	R	Pressure fault on supply air fan	0 or 1
Fans alarms	10034	R	Pressure fault on exhaust air fan 0=Normal, 1=Alarm	0 or 1

Function	Address	Read/Write	Description	Accepted value
Fire Alarm	10042	R	Fire alarm 0=Normal, 1=Alarm	0 or 1
Antifrost on water coil	10057	R	Low water temperature (<7°C) 0=Normal, 1= alarm	0 or 1
COIL STATUS				
Signal 0-10V of the valve actuator	30119	R	Hot water signal (0-10V) Y1 Value: 0..100 means 0,0V .. 10.0V.	0..100
	30121	R	Cold water signal (0-10V) Y3 Value: 0..100 means 0,0V .. 10.0V.	0..100
Saison/change over	10017	R	read position status (input DI4) 0= hot control position ; 1= cold control position	0 or 1
TEMPERATURE SETPOINT				
Supply air position set point	40001	R/W	Set point température in 'constant supply air Temperature' value: 0..+999 means 0 .. +99,9°C; 0 =off	0...999
Saison/change over	40230	R/W	Change over control mode 0=heating mode, 1=cooling mode, 2=auto	0, 1 or 2
WORKING TIME				
Fans working time hours	30 004	R	Running time of supply air fans	0...999999
	30005	R	Running time of exhaust air fans Value: 0 .. 999999	0...999999

The complet list could be load on our web site or on Etool / help/corrigo variable list.

10.2 Bacnet communication protocole for BMS communication

BACnet MS/TP ON port 2 – RS485

CORRIGO
(BACnet MS/TP)

The regulator CORRIGO has 2 communication ports RS485 (to use with a cable STP), the port2 is dedicated by default to the communication in BACnet MS / TP, but the function must be activated to be able to work.

BACnet activation

Advanced settings
Central Simple flux
2016-01-10
System : normal
C:19.5C/R: 20.0C

Temperature
Air control
Time settings
Acces rights

Log on
enter password:***
Actual level: None

Log on
enter password:1111
Actual level: None

Manual/Auto
Control function
Configuration
Acces right

Input/output
sensor settings
Control function
fan control

Log on
Log off
Change password

Pretreatment
Alarm settings
Communication
Other parameters

Log on
enter password:1111
Actual level: Admin

Function port2 : →

BACnet MS/TP
communication
Port2
Not active

Activate the BACnet MS/TP

Device name :
Corrigo Ventilation
MAC
0

Device ID low
2640
Device ID high
0 (10000)

Speed
9600bps
Max master address
127

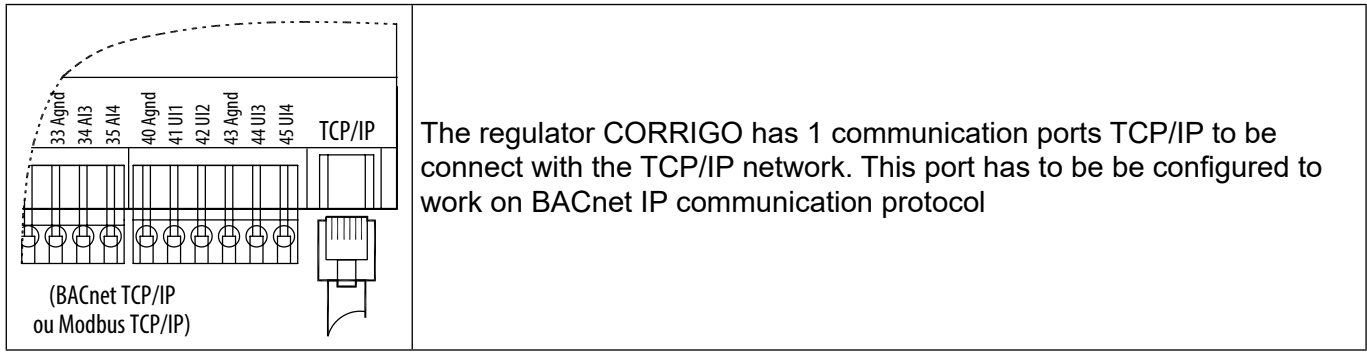
With the arrow up and down enter password 1111 after each digit click on right arrow to go to the next one. at the end click on

To change the name or MAC click on Modify the value in Highlighting

To change ID low or high click on Modify the value in Highlighting

To change speed click on Modify the value in Highlighting with arrow and valid

BACnet IP on port TCP/IP



Activation du BACnet IP

With the arrow up and down enter password 1111 after each digit click on right arrow to go to the next one. at the end click on

To activate the BACnet click on Change from NOT active to active with the arrow and valid

To change the name click on Modify the value in Highlighting

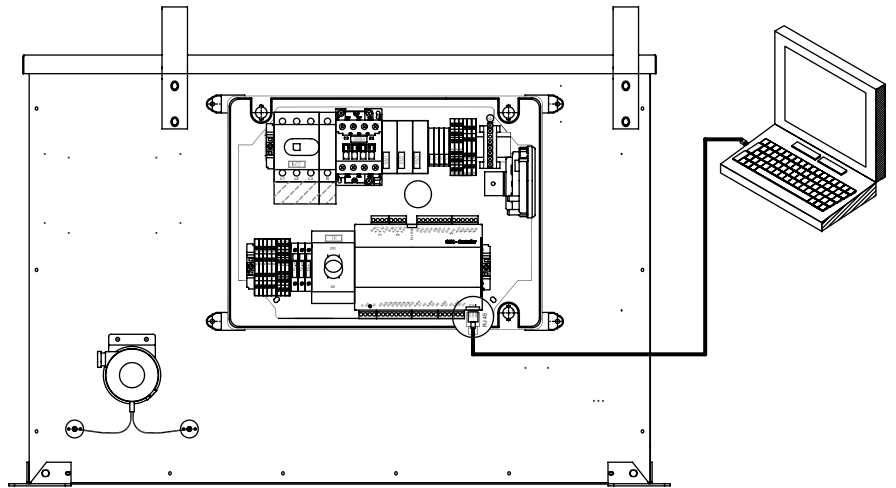
To change the ID low and high value click on Modify the value in Highlighting

To change the UDP port click on Modify the value in Highlighting

It is possible to give a static ip address to the CORRIGO (similar procedure as with Modbus IP).

For example :
 Name : AHU_1_OFFICE
 Static IP address : 192.168.10.100
 Net Mask : 255.255.255.0
 Default Gateway : 192.168.10.1

After the installation of ETOOL on your PC connect it to the CORRIGO with a standard net cable with RJ45 connector. The CORRIGO must be powered ; main switch has to be switch on.

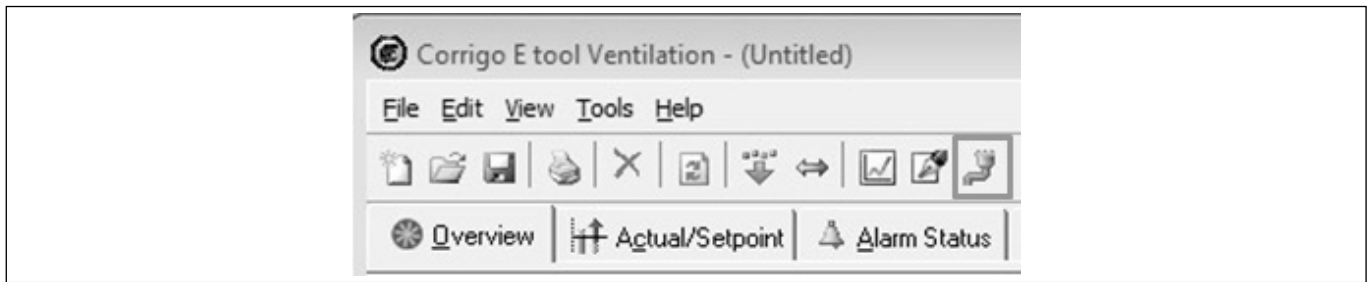


Click on the following icon:

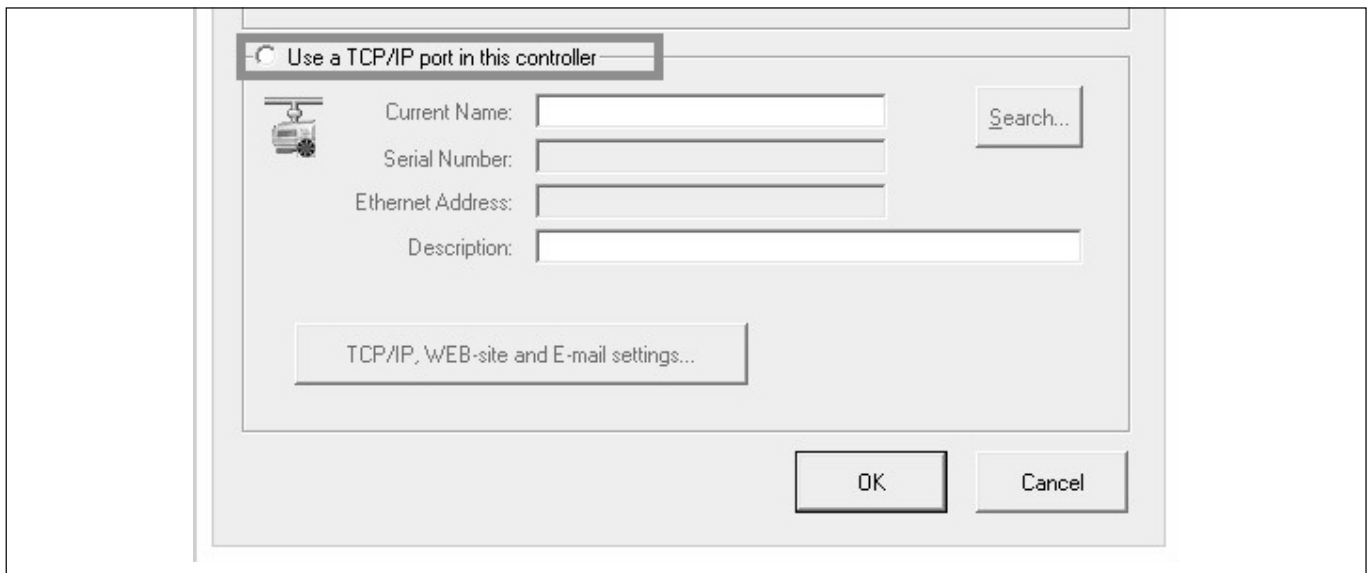


The screen below appears. On the first screen "Select Model", choose the type of CORRIGO that is connected, and select from the list E283W-3, corresponding to the CORRIGO V3, 3 ports used.

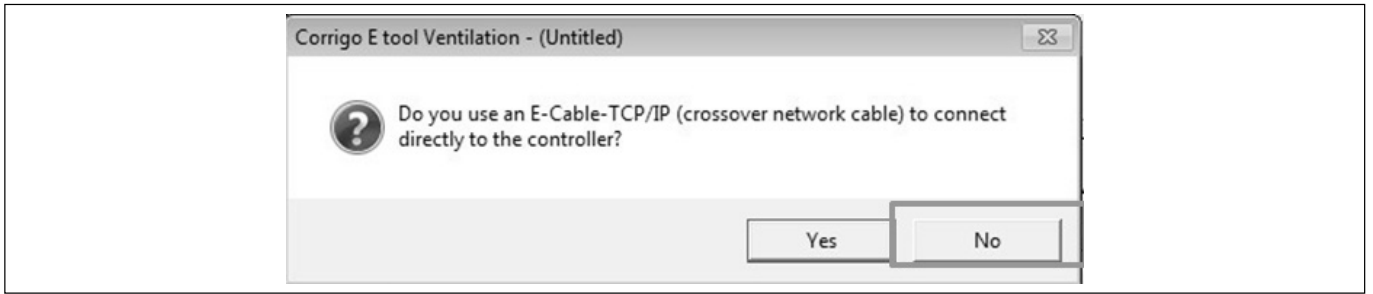
Click on the icon to select the type of connection.



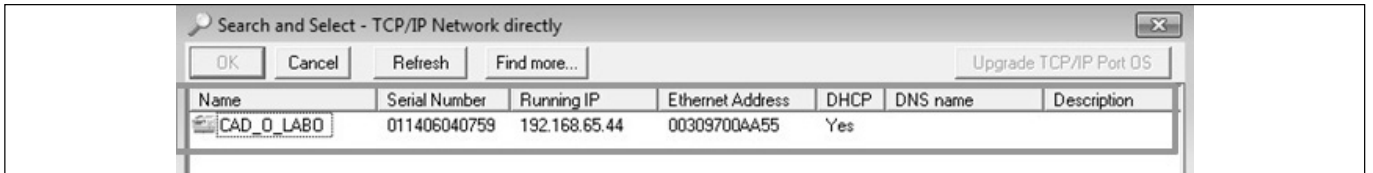
Select TCP/IP



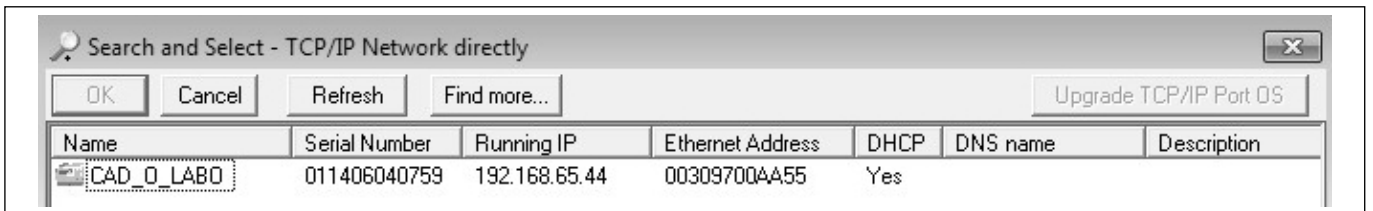
Select "NO"



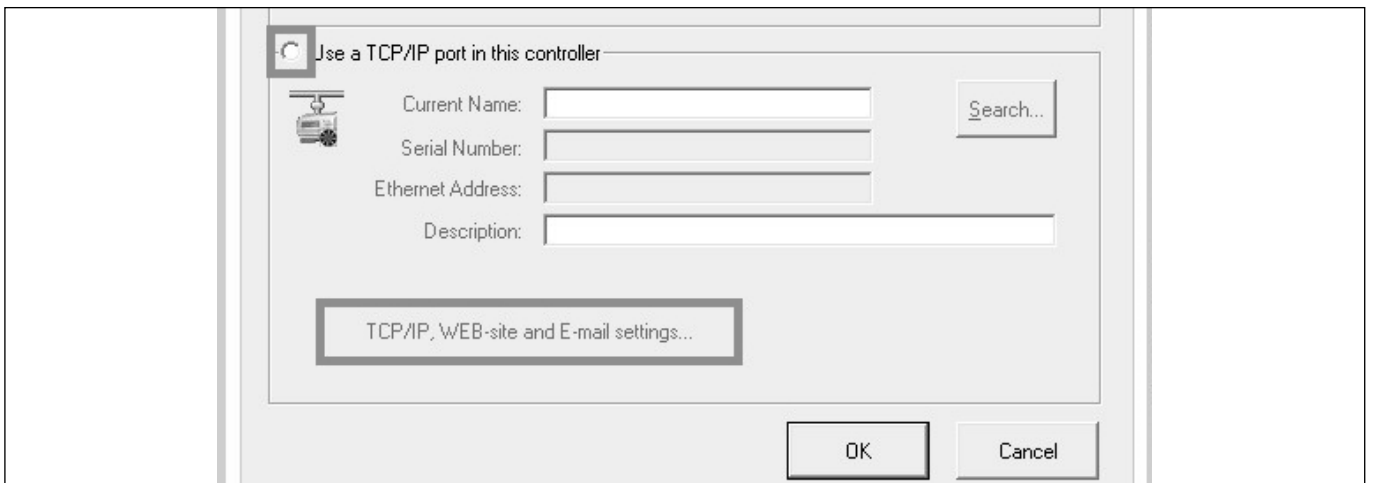
An investigation is then conducted to locate the relevant CORRIGO.



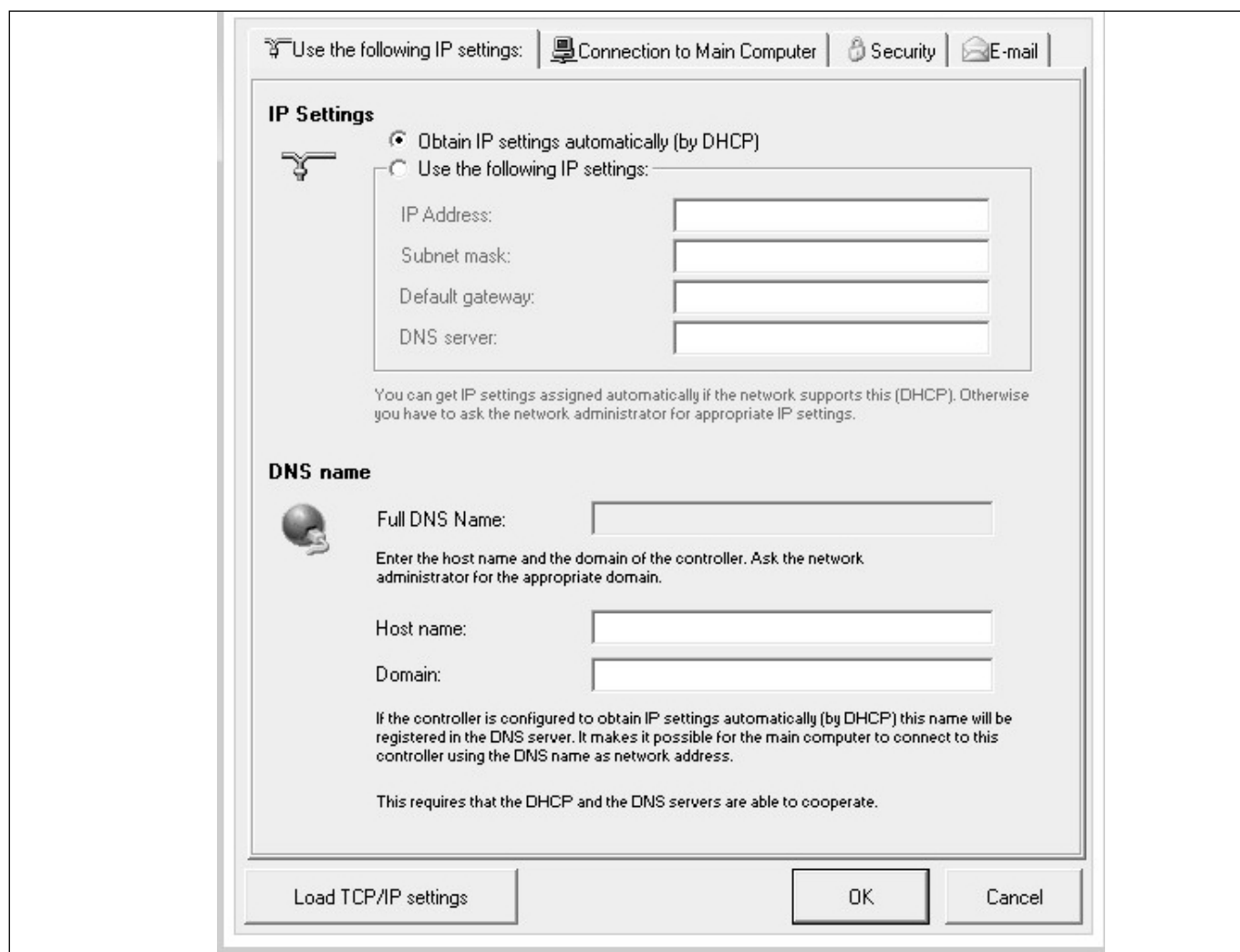
The name and the serial number of the CORRIGO appear - Select the auomaton to connect if there are several on the network and press OK.



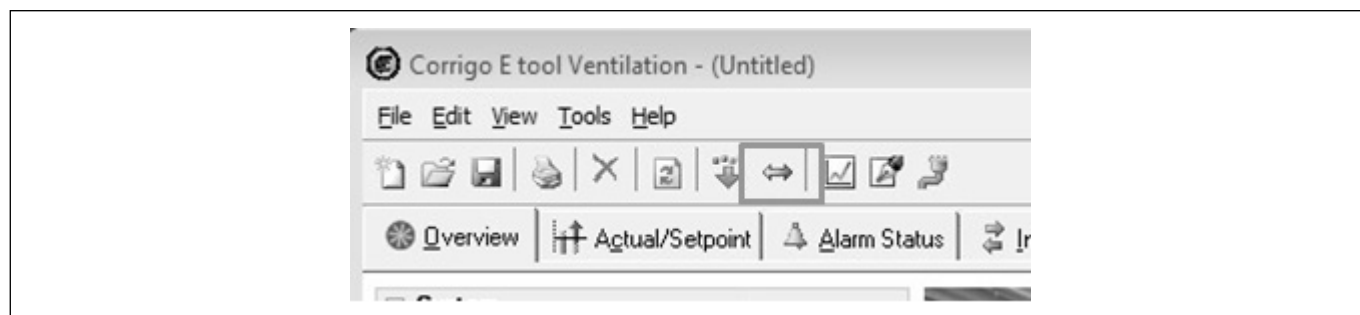
Go back to the previous screen, the selected unit appear, you can modify the name to easily recognized it: "Current name" and press "TCP/IPSettings, Web site and e-mail":



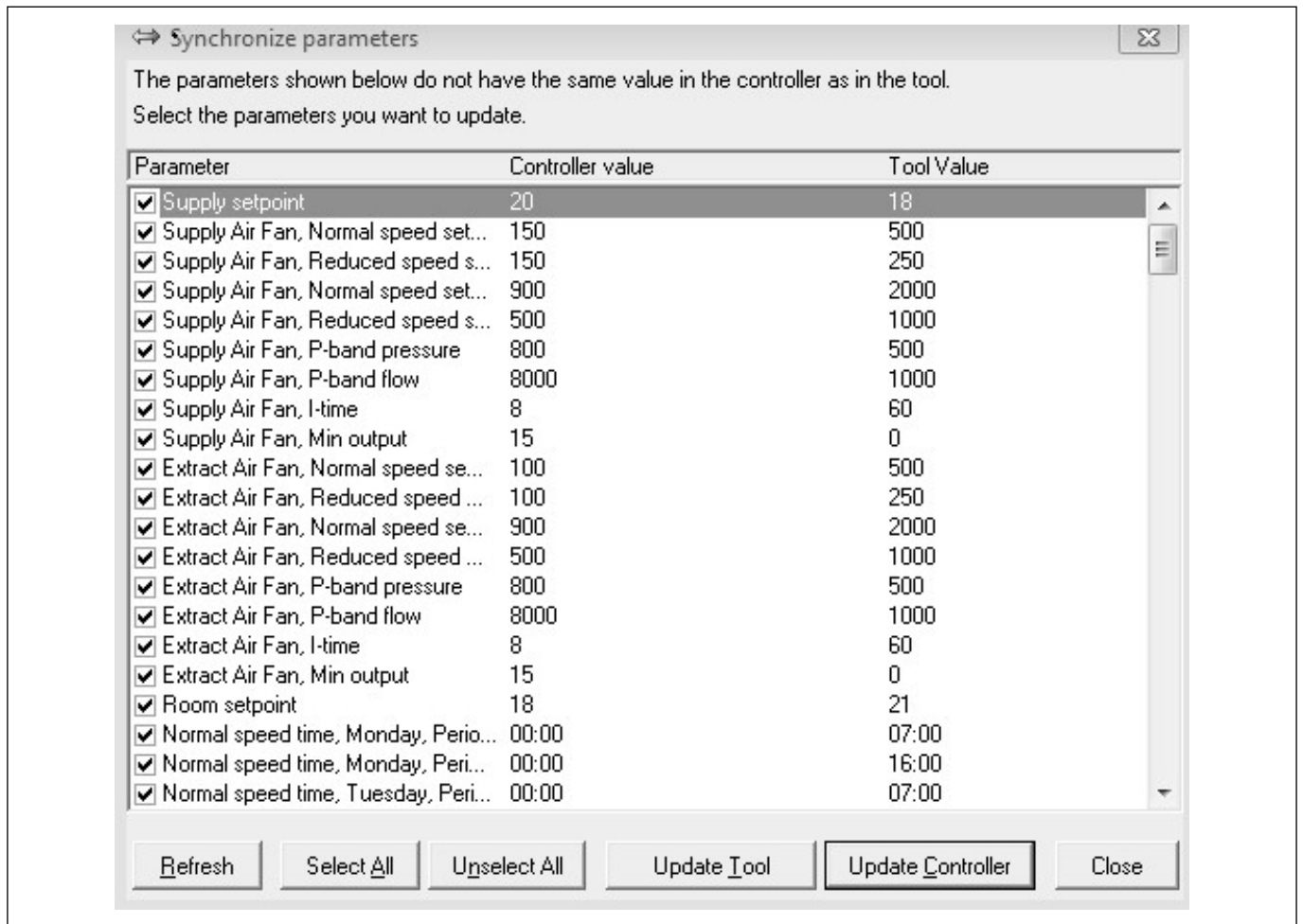
Check "Obtain an IP address automatically (by DHCP)" and click on "Load the TCP/IP settings" to load the information on the CORRIGO.



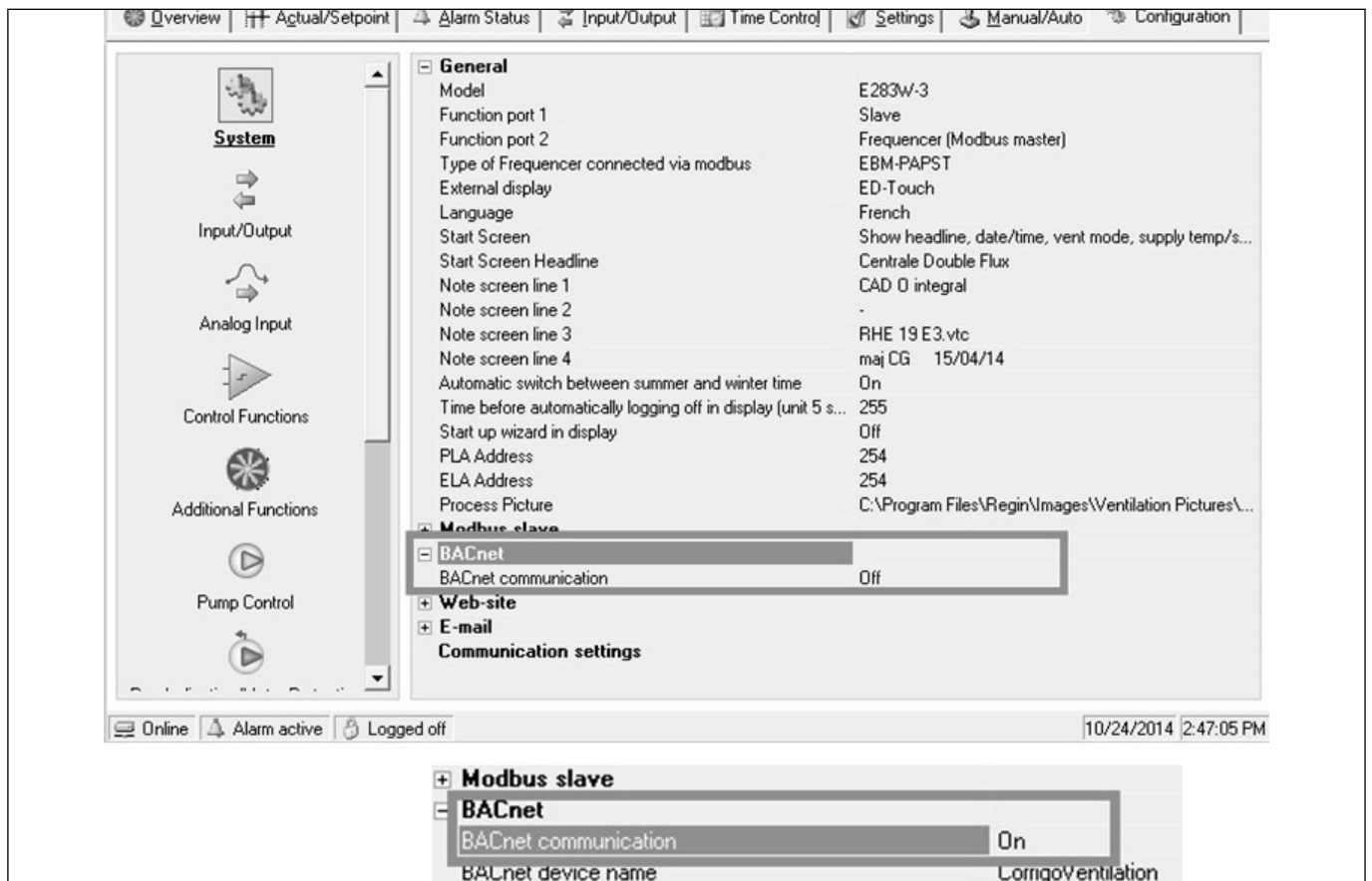
Synchronising the CORRIGO with the PC allows recovery of the configuration (VTC) of the CORRIGO.



Update the E tool. Import the parameters from the CORRIGO. **ATTENTION: DO NOT CLICK ON UPDATE THE CONTROLLER.**



Activation of the BACnet, then select "ON":



BACnet	
BACnet communication	On
BACnet device name	CorrigoVentilation
BACnet device ID Low	2640
BACnet device ID High (x10000)	0
BACnet/IP UDP port number Low	7808
BACnet/IP UDP port number High (x10000)	4
BBMD address	

It is possible to rename the BACnet ID of the CORRIGO, such as 'CorrigoVentilation' for 'AHU...' for example.

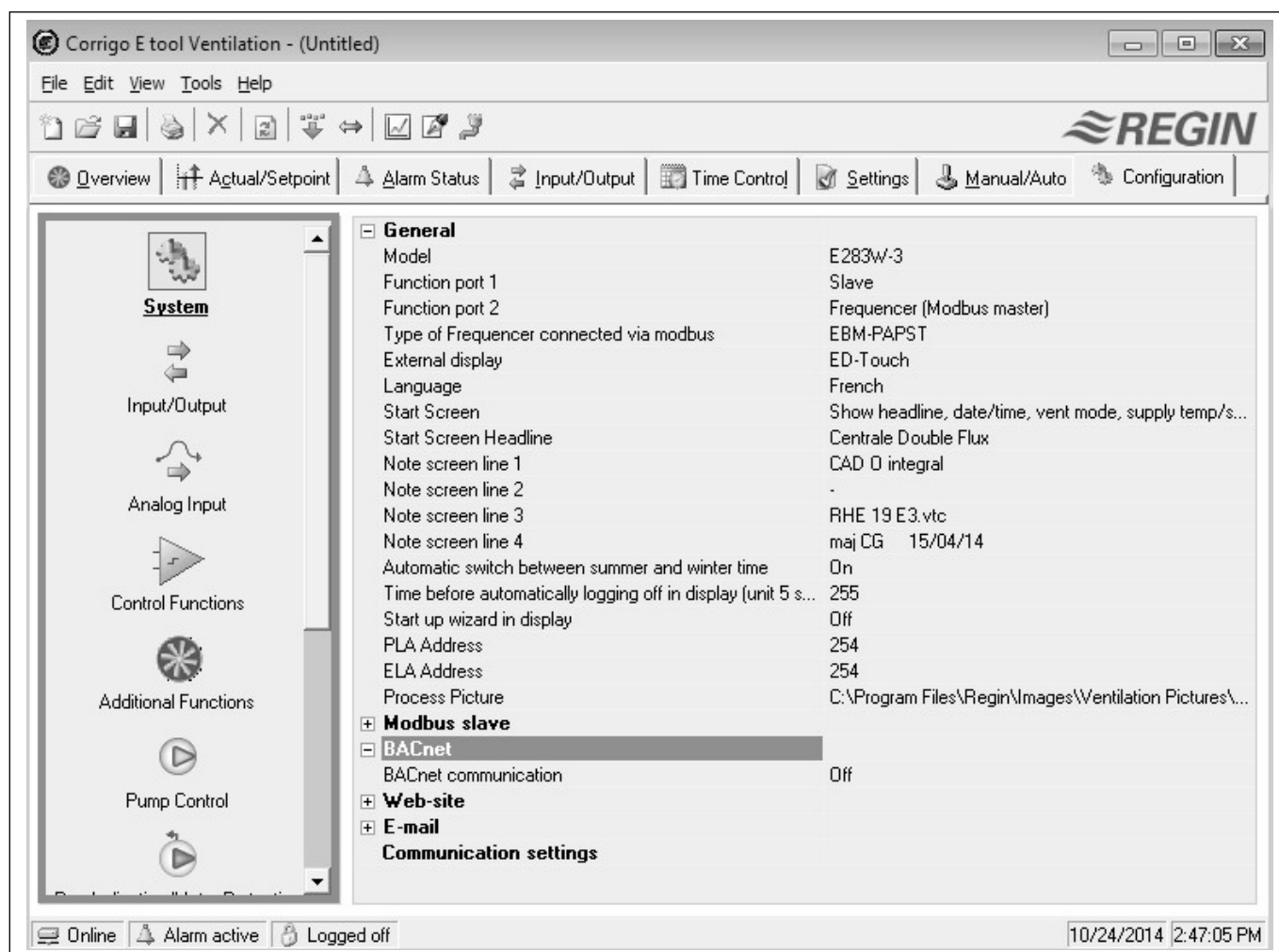
All CORRIGOs have the same controller BACnet ID by default, lower figures = 2640.


It is essential to provide different codes when several units are installed on the same network.

By default, the last 4 digits of the CORRIGO serial number can be assigned.

Once this operation is completed, the changes made on E tool with the CORRIGO must be synchronized.

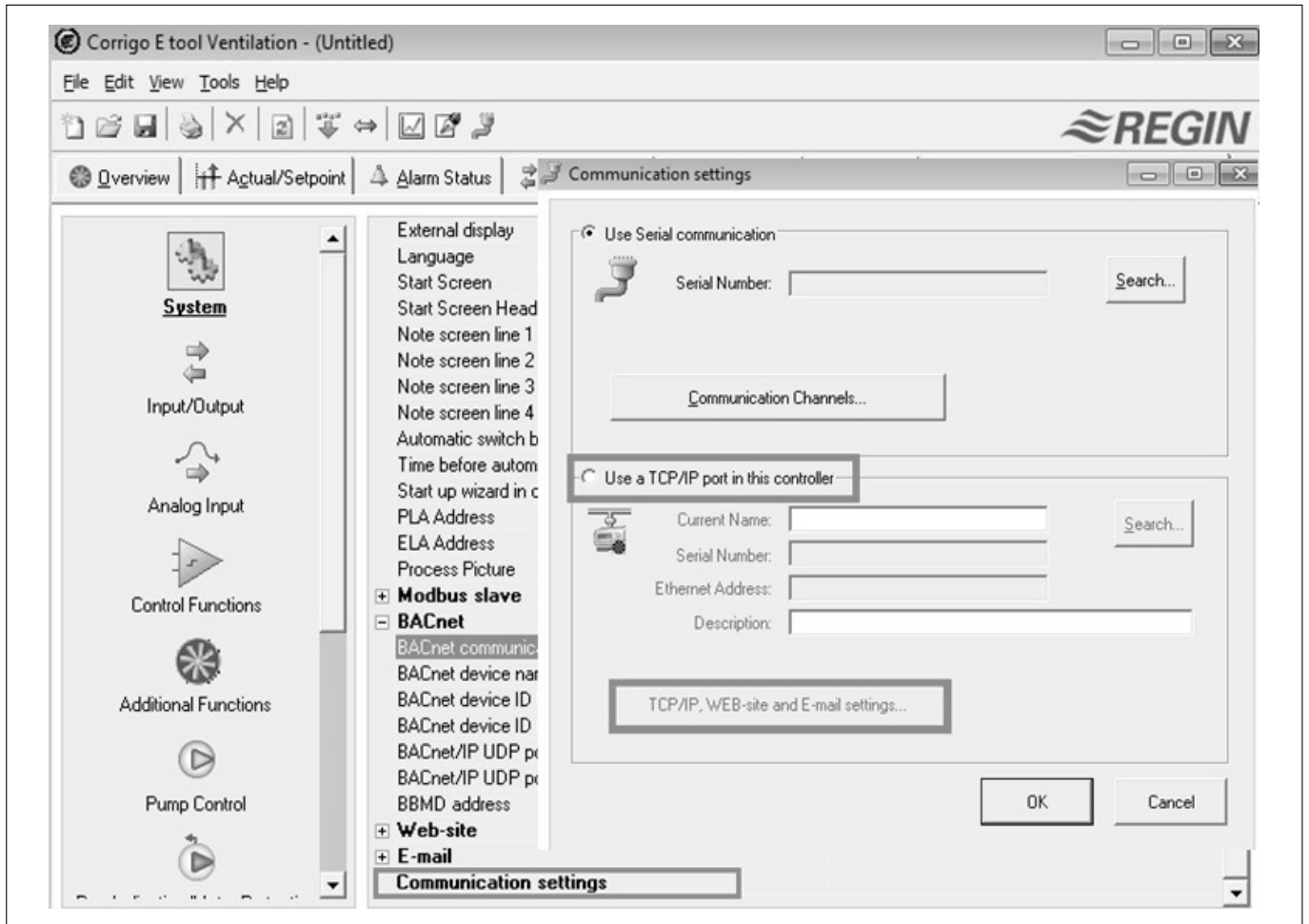
Place the mouse cursor on the left side of the screen and right-click the mouse:



Click on Synchronize Parameters ; any changes made will appear; then click on Modify the CORRIGO, the Admin code: 1111 will be requested to validate the entry.

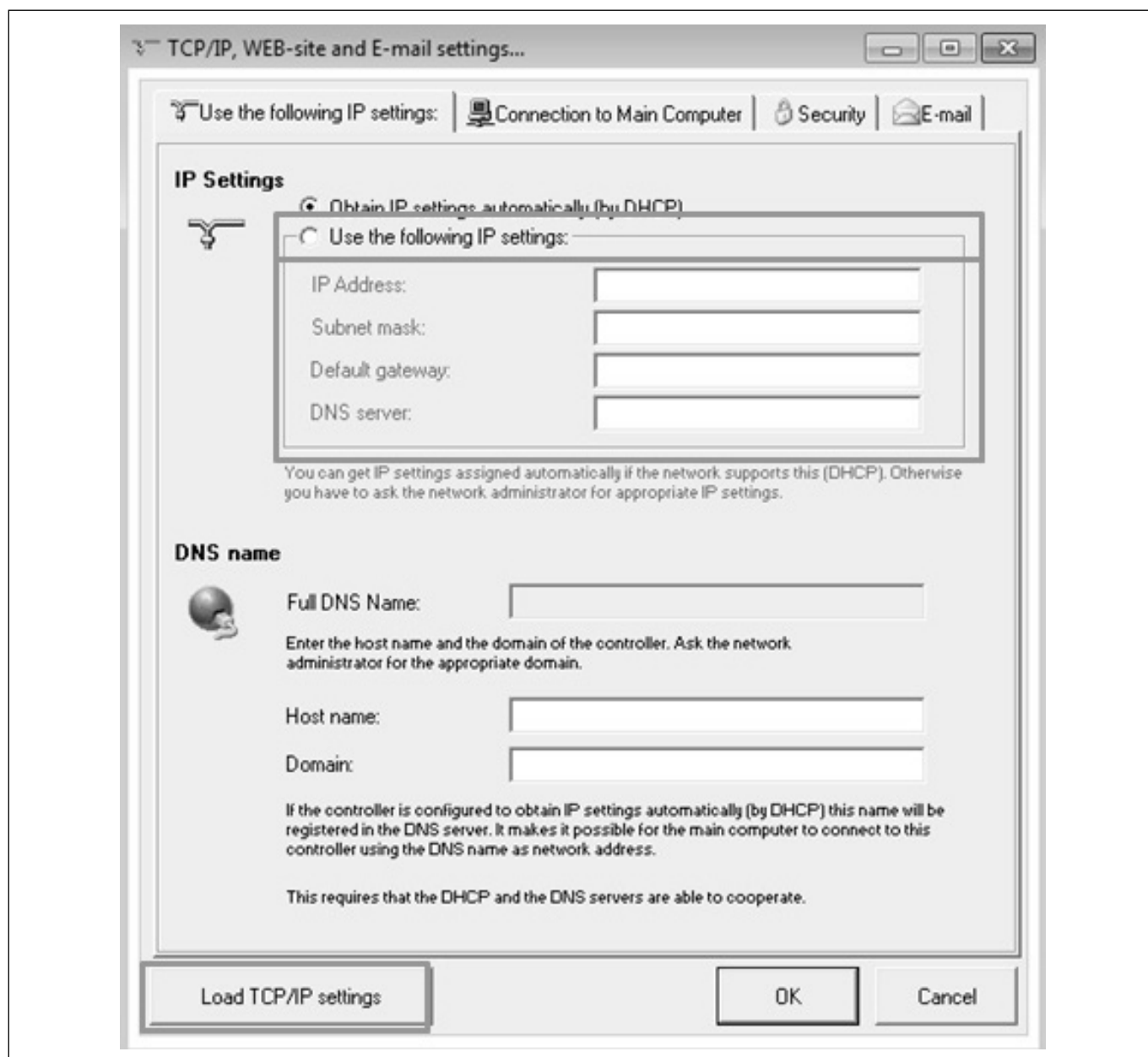
After having activated the BACnet, a fixed IP address must be assigned to the unit so that it can integrate into the network.

Go to "Communication port settings", and a window appears on the screen:



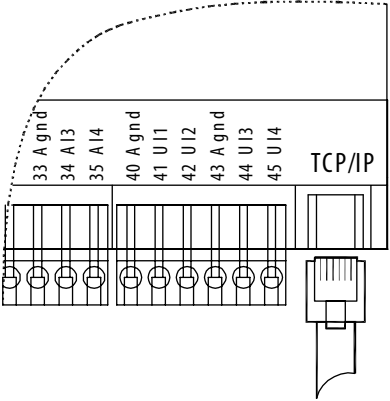
Click on "Use the following IP Settings", and enter the information provided by the customer in the corresponding boxes, for example: IP Address: 192.168.010.100- Sub-net mask: 255.255.255.000.

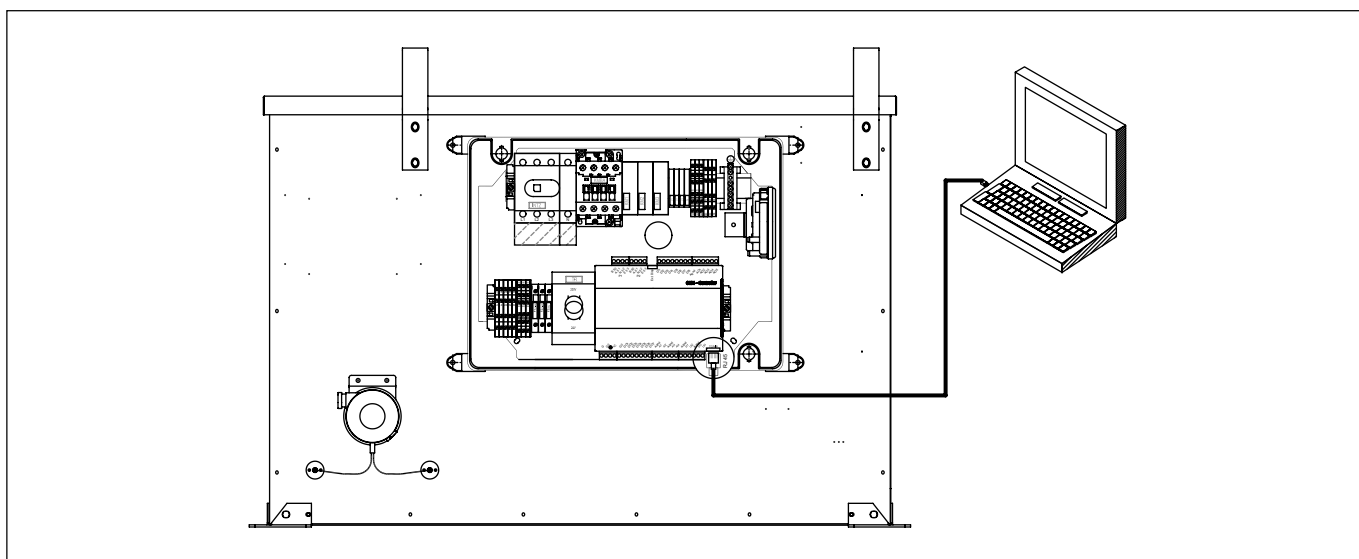
Default Gateway (the first 9 digits identical to those of the IP address, and the last 3 are specific). To validate, click on “Load the TCP/IP settings”.



The CORRIGO is ready to be installed on the desired TCP/IP network and to communicate in BACnet. The file for the implementation of the BICS BACNET Protocol (BACnet protocol Implementation Conformance Statement).

10.3 Integrated web server application

	<p>The CORRIGO controller of CAIB CAIT is equipped with an integrated web server, which allows, by a simplified access, to consult and act on this server as on any element of an intranet network.</p> <p>It is also possible to control the CORRIGO via the Internet; however, the settings must be made by the network administrator concerned (contact us for the procedure to follow).</p> <p>The connection of the CORRIGO regulator to the TCP/IP network is carried out with a network cable to the RJ45 connection.</p>
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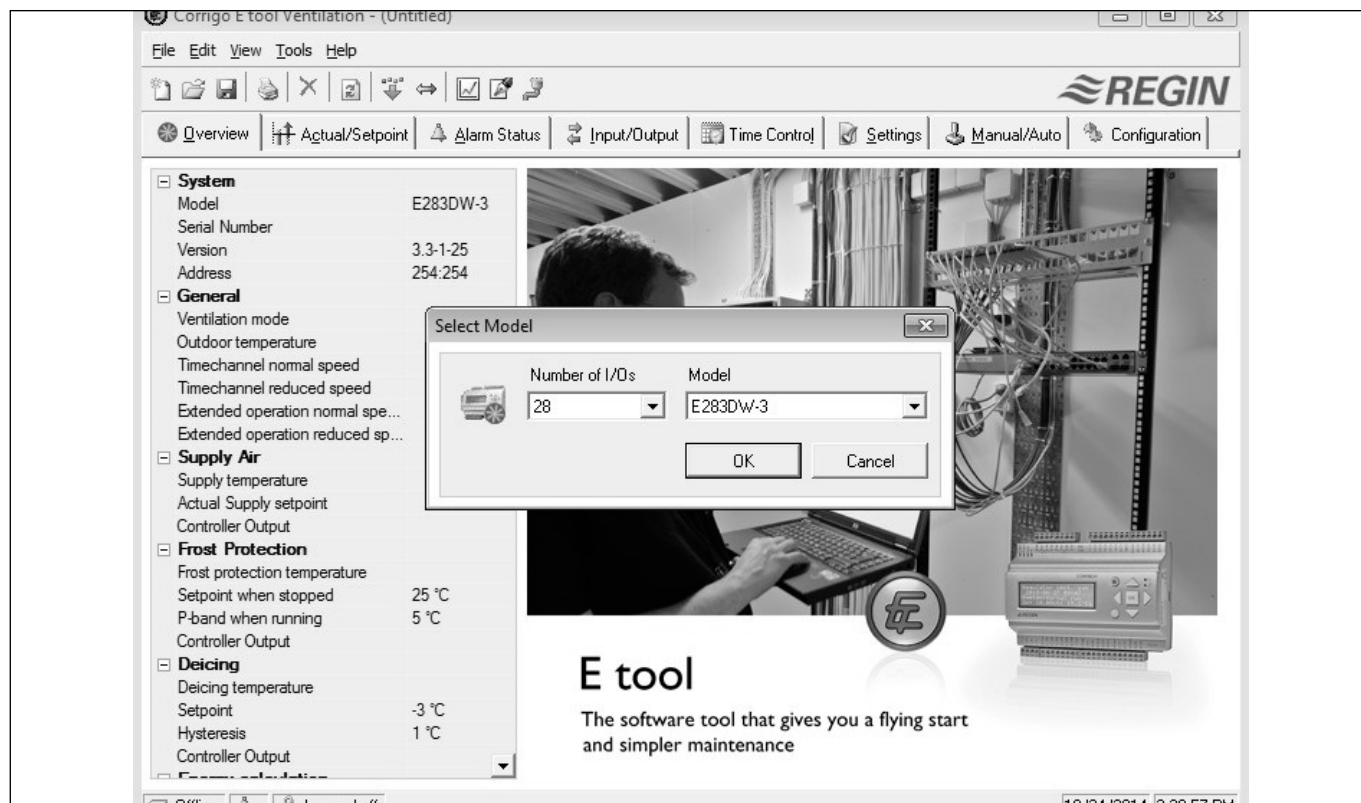


Download and install the E Tool programme on your PC.
Connect the CORRIGO with a network cable to your PC ; the unit must be electrically energised and the safety switch must be ON for the controller to be powered.

Click on the following icon in the office:

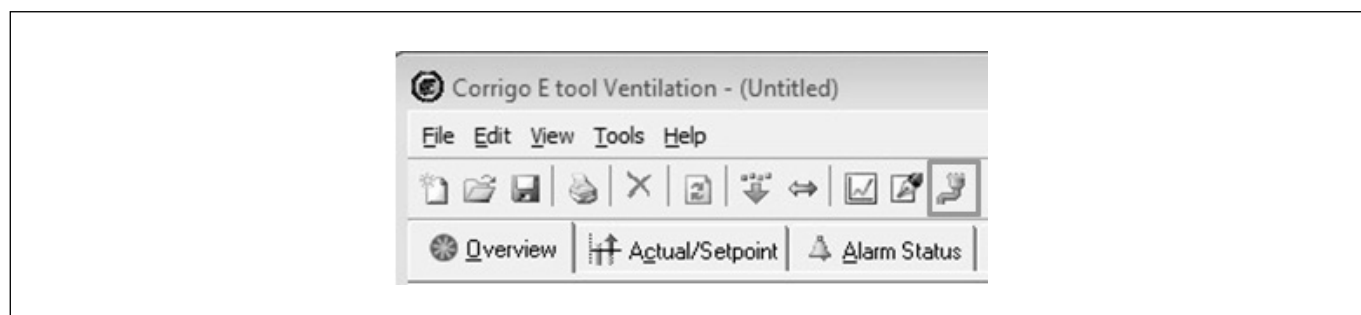


The following screen appears:

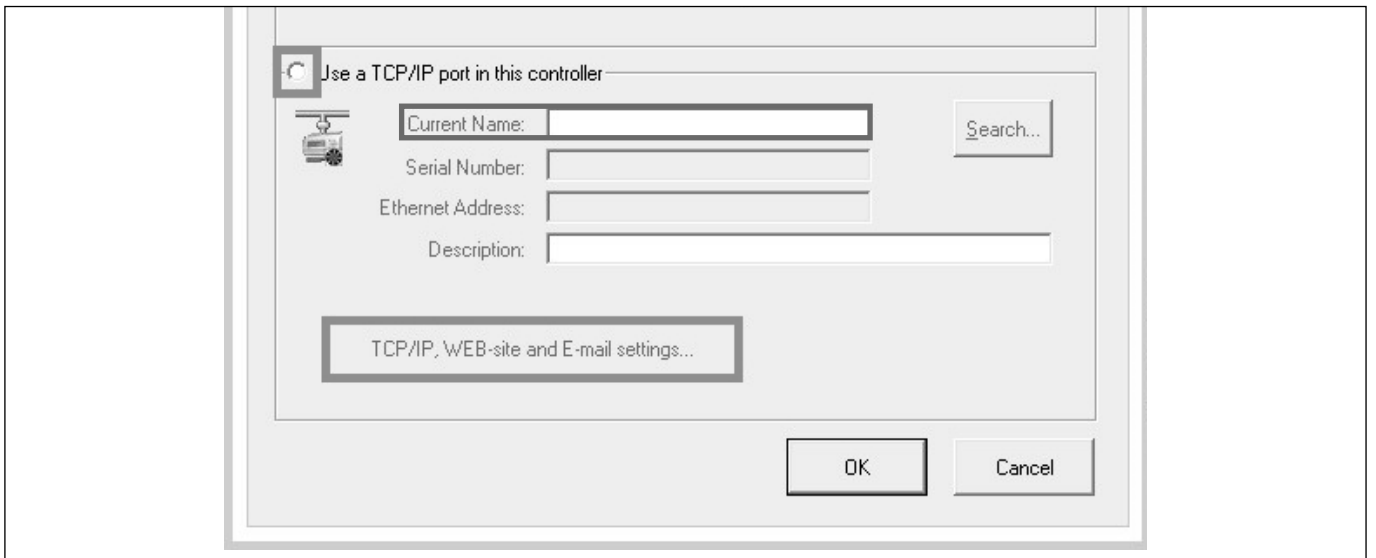


On the first screen, choose the type of CORRIGO that is connected, and select from the list: Corresponding to the CORRIGO V3, the 3 ports used (E283W-3).

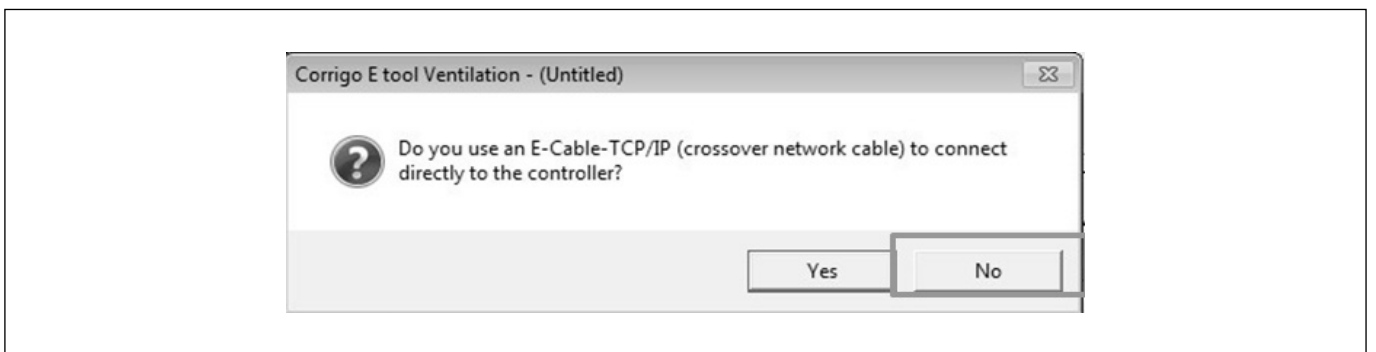
Click on the icon below to declare the type of connection.



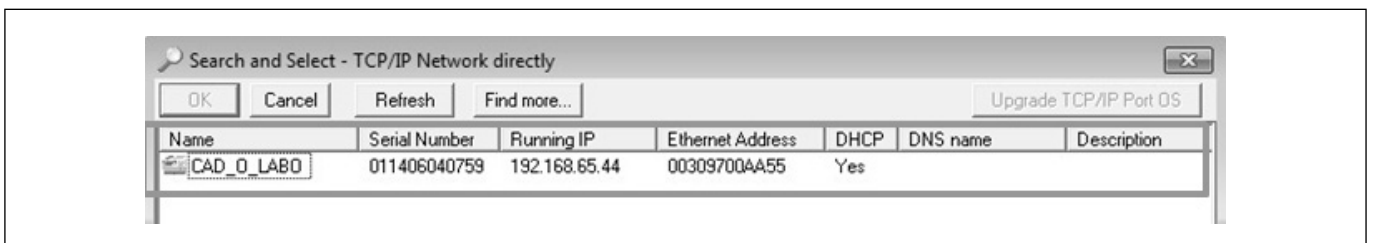
Check "Use TCP/IP port".



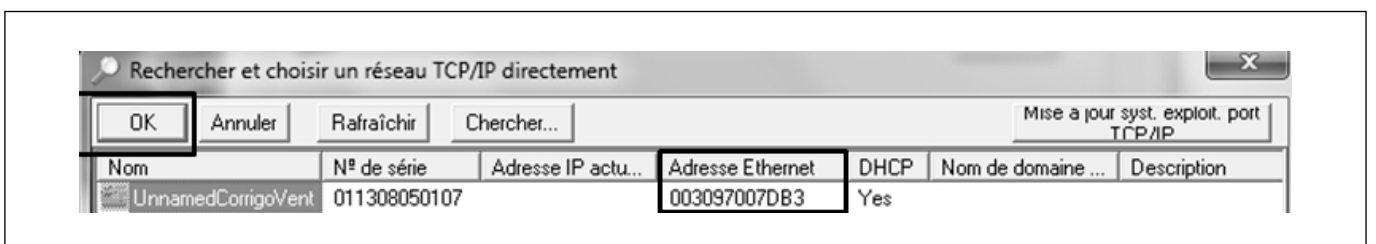
Answer "NO" to the question concerning the use of a crossover cable.



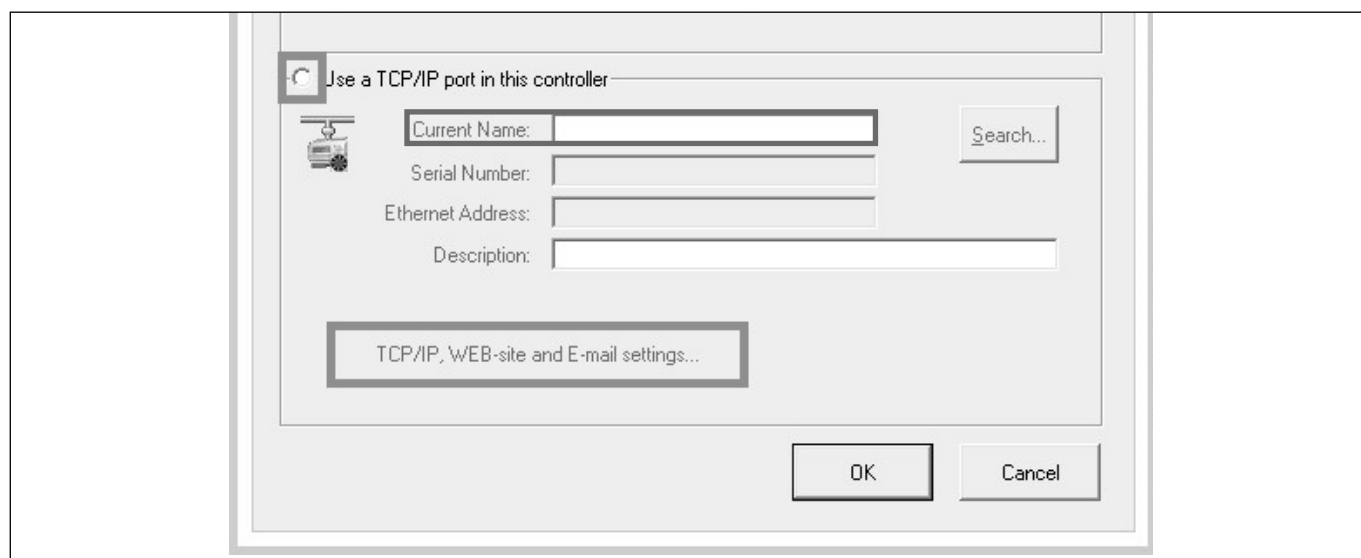
An investigation is then conducted of any connected CORRIGO



The names and the numbers of the CORRIGOs appear - select the auomaton to connect if there are several on the network and press OK. [Note the Ethernet address of the controller (the physical address of the controller, often called MAC) which you may be requested to provide by the network administrator.]



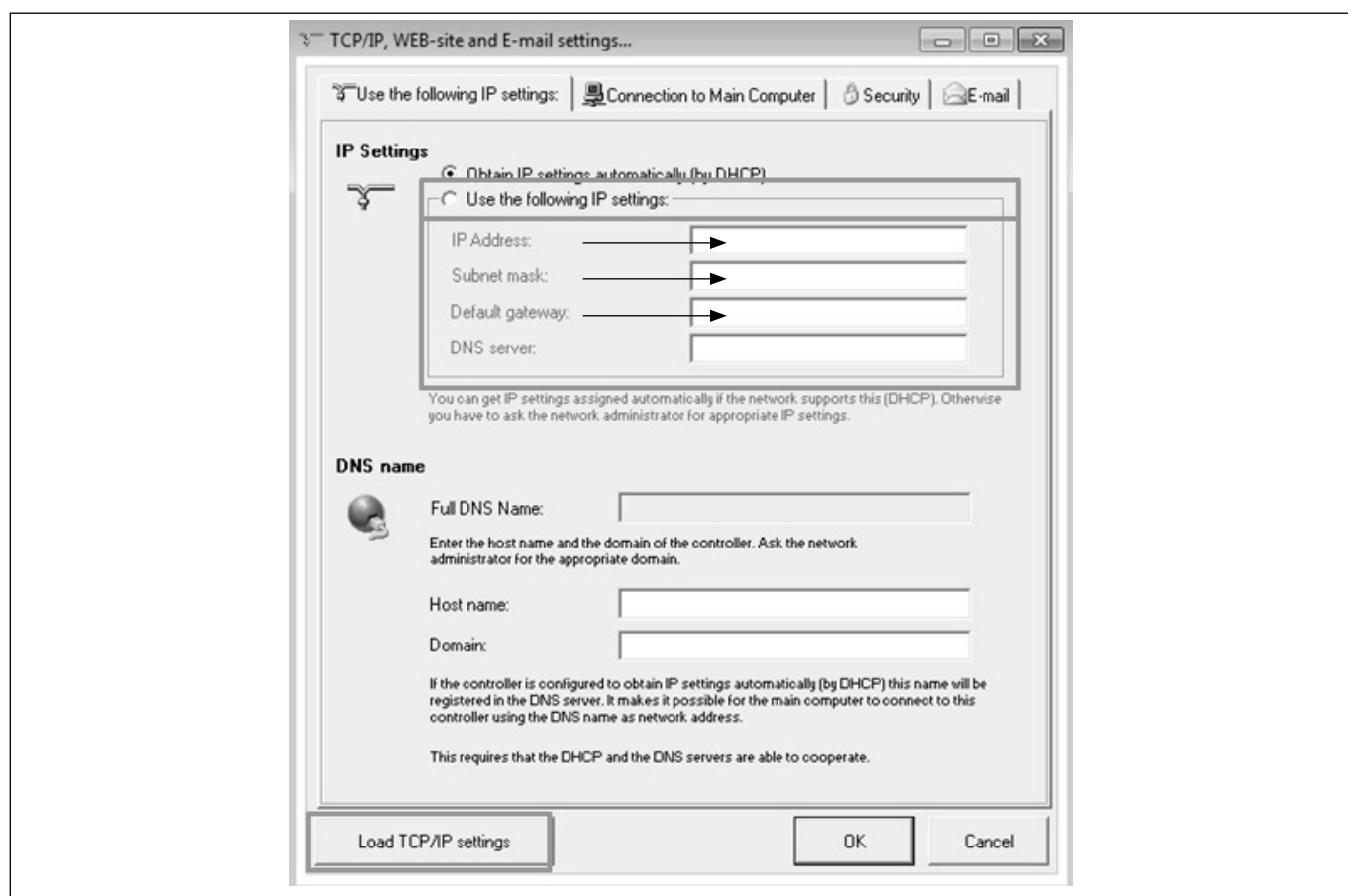
Return to the previous screen, where the selected unit appears; you can assign a name to the CORRIGO by modifying the text in the box: "Current name" and press "TCP/IPSettings, Web site and e-mail":



Click on "Use the following IP Settings", and enter the information provided by the network administrator in the corresponding boxes, for example:

IP Address: 192.168.010.100 Sub-net mask: 255.255.255.000

Default Gateway (the first 9 digits identical to those of the IP address, and the last 3 are specific).

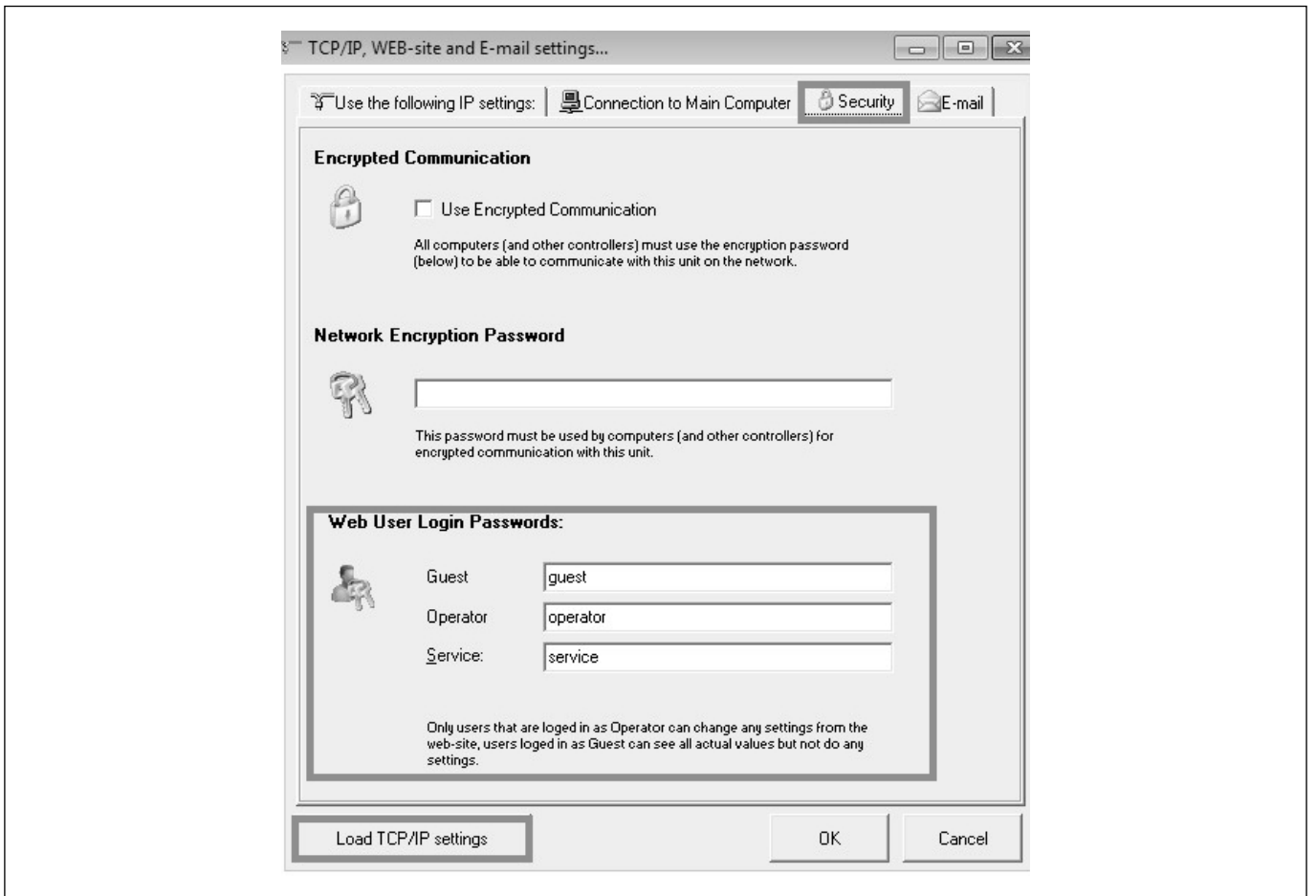


Click on the "Security" tab

You can change the default passwords that will be requested at the time of connecting to the web page. The various passwords allow you either to only view the parameters (Guest), or to view and modify the settings (operator or service).

To validate, click on "Load the TCP/IP settings".

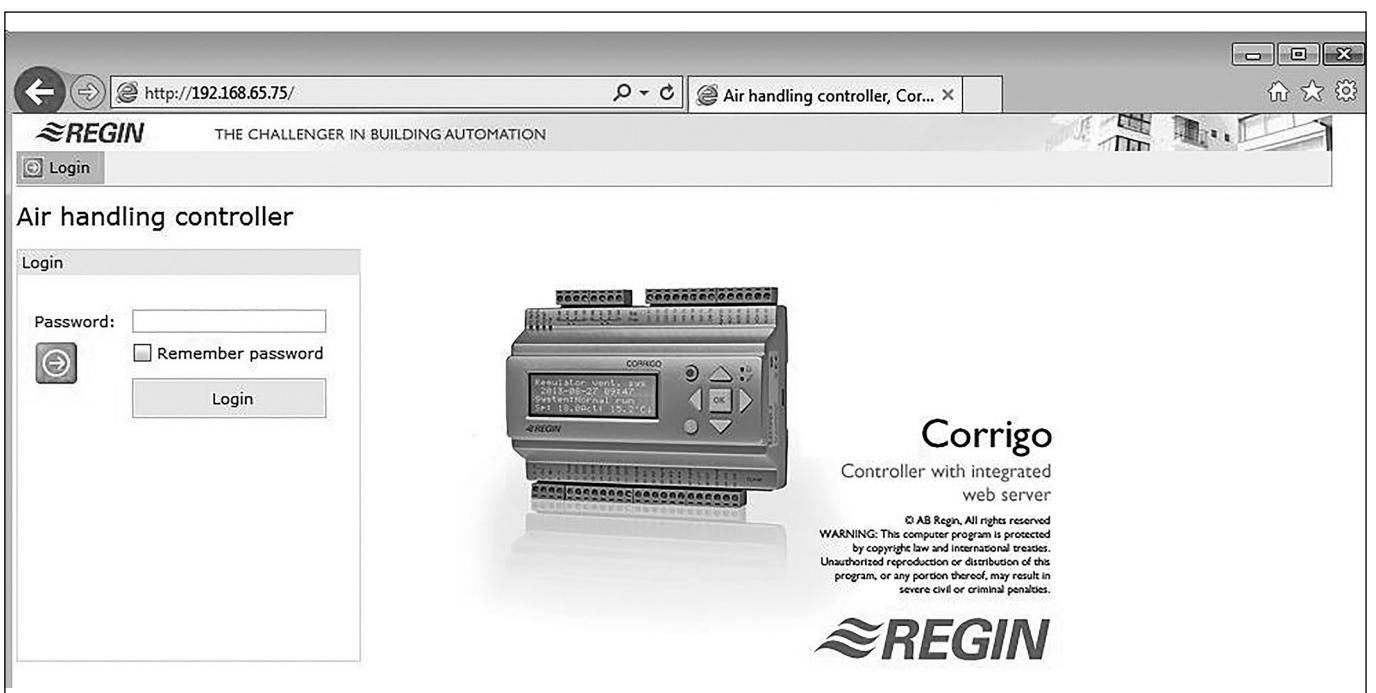
The CORRIGO is now configured for your network.



From your browser, you can now type the controller IP address to be connected to the controller web page. For the example above, type: 192.168.010.100



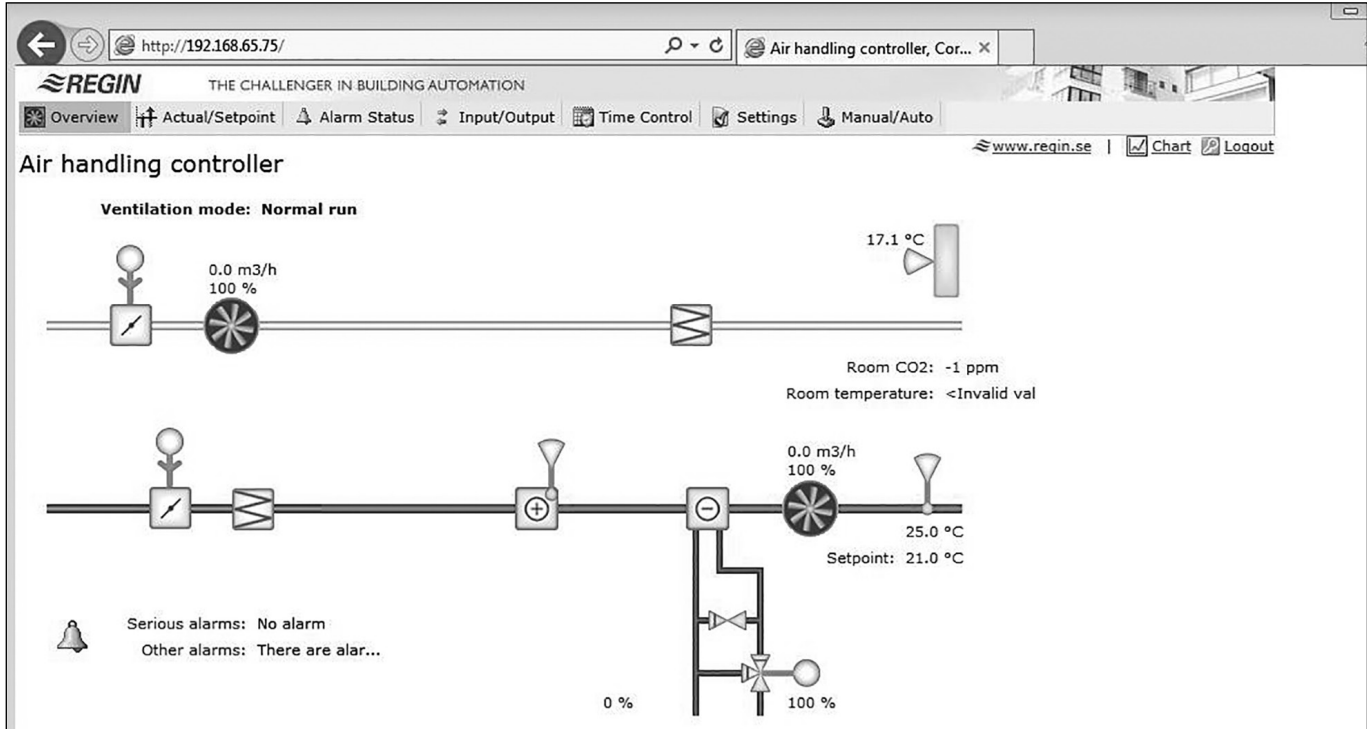
The following page opens on the screen:



Enter the password that corresponds to your level of authorisation, by default:

- **Guest:** consultation of values only
- **Operator or Service:** consultation and modifications to the values.

Click on “Run the application” to display the following window, which represents the current status of the unit in real time.



The 2nd tab includes the current values and instructions. We strongly recommend to modify only the normal instructions; such as the temperature setpoint and flows at normal and low speed, and not to change the other values.

Air handling controller

General	
Ventilation mode	Normal run
Outdoor temperature	17.1 °C
Time channel normal speed	Off
Time channel reduced speed	On
Extended operation normal speed	Off
Extended operation reduced speed	Off
Room temperature 1	<Invalid value>
Supply air fan run time	4 h
Extract air fan run time	1 h
Supply air	
Supply temperature	25.0 °C
Supply setpoint	21.0 °C
Neutral zone	0.0 °C
Controller output	0 %

The 3rd tab allows consultation of the alarms:

Air handling controller

Alarm object	Alarm class	Status
Malfunction supply air fan	Alarm class C	Alarmed
Malfunction P1 heater	Alarm class C	Normal
Malfunction P1 cooler	Alarm class C	Normal
Filter guard 1	Alarm class C	Normal
Flow guard	Alarm class C	Normal
External frost guard	Alarm class C	Normal
Deicing pressure guard	Alarm class C	Normal
Fire alarm	Alarm class C	Normal
External alarm	Alarm class C	Normal
Supply air control error	Alarm class C	Normal
High supply air temp	Alarm class C	Normal
Low supply air temp	Alarm class C	Normal
Supply air temp max limit	Alarm class C	Normal
Supply air temp min limit	Alarm class C	Normal
High room temp	Alarm class C	Normal
Low room temp	Alarm class C	Normal
Electric heating is overheated	Alarm class C	Normal
Sensor error outdoor temp	Alarm class C	Normal
Supply air fan control error	Alarm class C	Alarmed
Manual supply air control	Alarm class C	Normal
Manual supply air fan mode	Alarm class C	Normal
Manual heater control	Alarm class C	Normal
Manual cooler control	Alarm class C	Normal
Manual P1 heater	Alarm class C	Normal
Manual P1 cooler	Alarm class C	Normal
Internal battery error	Alarm class C	Normal
Sensor error supply air temp	Alarm class C	Normal
Sensor error SAF pressure	Alarm class C	Normal
Sensor error CO2	Alarm class C	Normal
Alarm frequency converter SAF	Alarm class C	Normal

The 4th tab allows viewing the status of the inputs / outputs of the controller:

Air handling controller

Analogue inputs	Value
AI1	Supply air temp (°C) 24.9
AI2	Not used 0.0
AI3	Not used 0.0
AI4	Outdoor temp (°C) 17.0
UAI1	Not used 184.7
UAI2	CO2 sensor (ppm) -1.0
UAI3	SAF pressure (Pa) -100.0
UAI4	Not used -100.2

Analogue outputs	Value
AO1	Heating Y1 0.0
AO2	Y4 extra sequence 0.0
AO3	Cooling Y3 10.0
AO4	SAF 10.0
AO5	Not used 0.0

Digital inputs	Status
DI1	Filter guard 1 Off
DI2	Filter guard 2 Off
DI3	Overheated electric heater Off
DI4	Not used Off
DI5	External switch On
DI6	Extended operation normal Off
DI7	Fire alarm Off
DI8	Not used On
UDI1	Not used Off
UDI2	Not used Off
UDI3	Not used Off
UDI4	Not used Off

Digital outputs	Status
DO1	SAF freq start On
DO2	SAF start 1/1 normal speed Off
DO3	Fresh air damper On
DO4	Sum alarm On
DO5	Heat step 3 Off
DO6	Heat step 2 Off
DO7	Heating PWM Off

For more details, please see "9.3 Control of the inputs/outputs", page 43.

The 5th tab allows programming a schedule of hours of automatic operation:

Air handling controller

Normal speed	Start	Stop	Start	Stop	Holiday schedule	Start date	End date
Monday	00:00	00:00	00:00	00:00	Holiday period 1	1 Jan	1 Jan
Tuesday	00:00	00:00	00:00	00:00	Holiday period 2	1 Jan	1 Jan
Wednesday	00:00	00:00	00:00	00:00	Holiday period 3	1 Jan	1 Jan
Thursday	00:00	00:00	00:00	00:00	Holiday period 4	1 Jan	1 Jan
Friday	00:00	00:00	00:00	00:00	Holiday period 5	1 Jan	1 Jan
Saturday	00:00	00:00	00:00	00:00	Holiday period 6	1 Jan	1 Jan
Sunday	00:00	00:00	00:00	00:00	Holiday period 7	1 Jan	1 Jan
Holiday	00:00	00:00	00:00	00:00	Holiday period 8	1 Jan	1 Jan
Reduced speed	Start	Stop	Start	Stop	Holiday period 9	1 Jan	1 Jan
Monday	00:00	24:00	00:00	00:00	Holiday period 10	1 Jan	1 Jan
Tuesday	00:00	24:00	00:00	00:00	Holiday period 11	1 Jan	1 Jan
Wednesday	00:00	24:00	00:00	00:00	Holiday period 12	1 Jan	1 Jan
Thursday	00:00	24:00	00:00	00:00	Holiday period 13	1 Jan	1 Jan
Friday	00:00	24:00	00:00	00:00	Holiday period 14	1 Jan	1 Jan
Saturday	00:00	24:00	00:00	00:00	Holiday period 15	1 Jan	1 Jan
Sunday	00:00	24:00	00:00	00:00	Holiday period 16	1 Jan	1 Jan
Holiday	00:00	00:00	00:00	00:00	Holiday period 17	1 Jan	1 Jan
					Holiday period 18	1 Jan	1 Jan
					Holiday period 19	1 Jan	1 Jan
					Holiday period 20	1 Jan	1 Jan
					Holiday period 21	1 Jan	1 Jan
					Holiday period 22	1 Jan	1 Jan
					Holiday period 23	1 Jan	1 Jan
					Holiday period 24	1 Jan	1 Jan

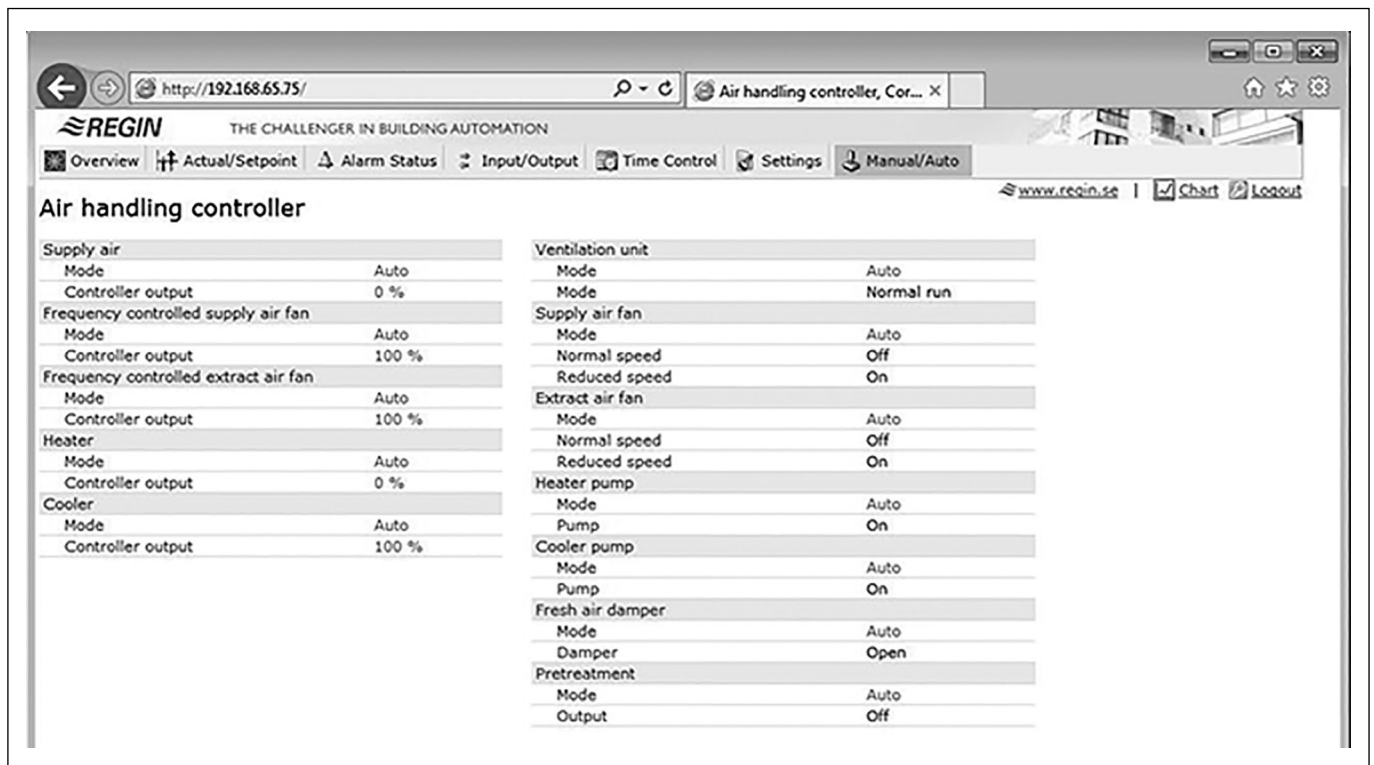
The 6th tab includes the proportional and integral values as well as the trigger settings for some alarms. **DO NOT CHANGE THE VALUES.**

Air handling controller

Controller settings	
Supply air	
P-band	33 °C
I-time	100 s
Frequency controlled supply air fan	
P-band flow	800 m3/h
I-time	8 s
Min output signal	15 %
Frequency controlled extract air fan	
P-band flow	800 m3/h
I-time	8 s
Min output signal	15 %
CO2	
P-band	400 ppm
I-time	10 s

Alarm settings	
General	
Alarm hysteresis	0.2
Malfunction supply air fan	
Class	C
Delay	30 s
Stop ventilation unit if alarm active	No
Alarm text	Malfunction supply air fan
Malfunction extract air fan	
Class	Disabled
Delay	72 s
Stop ventilation unit if alarm active	No
Alarm text	Malfunction extract air fan
Malfunction P1 heater	
Class	C
Delay	5 s
Stop ventilation unit if alarm active	No
Alarm text	Malfunction P1 heater
Malfunction P1 cooler	
Class	C
Delay	5 s
Stop ventilation unit if alarm active	No
Alarm text	Malfunction P1 cooler
Filter guard 1	
Class	C
Delay	1 s
Stop ventilation unit if alarm active	No
Alarm text	Filter guard 1
Flow guard	
Class	C
Delay	5 s

The 7th tab allows manual or automatic control of the different elements:

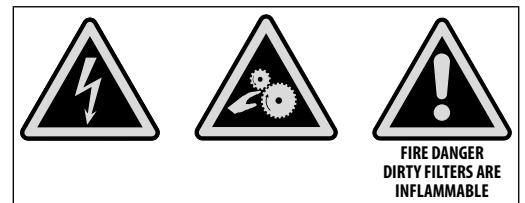


Except for carrying out certain tests, it is recommended to leave the system on AUTO.

11. MAINTENANCE

11.1 Prior precautions

- Use the appropriate PPE (Personal Protective Equipment) for any operation:
- Respect the danger signs present on the various access doors: **Live electrical equipment/Rotating machinery/ Potentially flammable dust-laden filters:**



Do not open the access doors without having cut the electrical power from the lockable safety switch-disconnector located on the unit

If there is work to be performed on the device, cut the electrical power at the main circuit breaker and make sure that nobody is able to reconnect it accidentally.

Make sure that any mobile parts have stopped.

11.2 Frequency of maintenance

Comply at a minimum with the legal obligations.

The following table gives an indication of the average maintenance frequencies.

It does not take into account specific factors such as inside or outside installation, the intensity of the atmospheric pollution, the number of occupants, or the number of hours of operation.

Body	At commissioning	Minimum of every 6 months
Filter	Check for clogging - Clean	Remove dust or replace
Fan	Check the connections - the direction of rotation	Check the clogging - cleaning if needed
Electrical cabinet	Check the connections	Check the connections
Electrical heater	Check the connections	Check the connections
Water coil	Inspect the sealing	Check the clogging - clean if necessary. Inspect the sealing / tighten connections
Droplet separator		Clean
Condensate drain tray	Inspect the sealing/flow	Clean
Pressure switches	Check the electrical/aeraulic connections Check setting for 1 or 2 filters	Check the operation
Sensors	Check the operation/settings	Check the operation/settings
Flexible sleeves	Check they are correctly mounted and sealed.	Replace if necessary
Fresh air intake/extract grill	Check their existence and their attachments.	Clean
Duct networks	Check they are correctly connected and sealed.	Clean
Nozzles/diffusers/plenums	Check the sealing of connections	Clean

11.3 List of faults

In the event of the appearance of a fault or alarm, a message "Maintenance required" appears in red on the main screen. The type of alarm can then be consulted in the advanced menu, the fault is then clearly identified on the screen. The list of fault messages is given below.

Note: The alarms are reported with a type C alarm class, and the reset is automatic as soon as the problem is resolved (no manual acknowledgment is required).

The diagram shows a sequence of four screenshots from a control interface:

- Settings menu access:** A main screen showing a temperature of 21.4°C, a setpoint of 2500 m3/h, and 'Run mode: ON'. A grid icon in the bottom right corner is highlighted with an arrow.
- Screen menu:** A 'Menu' screen with several icons. The icon representing a gear or settings is highlighted with an arrow.
- Advanced parameters:** A screen titled 'Advanced parameters' showing details for a 'Single air flow unit' (2012-11-12) with system status 'Normal Fonct.' and temperatures 'C:24.0C/R: 17.8C'. A bell icon (alarm symbol) is highlighted with an arrow.
- Alarm list:** A screen titled 'Advanced parameters' showing a specific alarm: '6. Pressostat filter' with the date '27 August 14:33 Class:C'. A box at the bottom right contains the text: 'Alarm list can be checked using up and down arrows. To exit screen, press top right icon.'

Reference	Alarm text	Description
1	Fan fault AN	Fan pressure switch fault (Fresh Air)
2	Fan fault AE	Not used here
6	Casing filter	Filter pressure switch(s) indicates a fault
10	Fire alarm/defrost DX group	Fire alarm activated (external request activated) or DX group defrosting in progress.
13	Supply control error	Setpoint not reached
23	Overheating Bat. Electrical	Safety thermostat of the electrical heater triggered
24	Risk of freezing	Low temperature of the cooling coil (<12 °C fixed value)
25	Low antifreeze T° (frost protection)	Temperature of the water coil too low (<7°C)
27	Sensor error (external)	Malfunction of a connected sensor
29	Rotary heat exchange protection	Not used here
31	Control error AN	Fan fault (Fresh Air)
32	Control error AE	Not used here
41	Manual heating control	Heating output in manual control
42	Manual control exchange	Not used here
43	Manual cooling control	Cooling valve output in manual control
48	Internal battery low	Change the internal battery
49	Temp sensor error AN	Malfunction of the supply sensor
50	Temp sensor error AE	Malfunction of the extract air sensor
51	Ambient 1 sensor error	Malfunction of the ambient 1 sensor
53	Temp sensor error AE	Not used here
55	Pressure sensor error AN	Malfunction of the pressure sensor
56	Pressure sensor error AE	Not used here
58	Temp antifreeze sensor error	Malfunction of the antifreeze sensor

11.4 Maintenance/replacement of the fresh air filter

As a standard feature, the CAIB CAIT includes a M5 prefilter on the fresh air. A second F7 filter can be added (option). The clogging of each filter is controlled by a differential pressure switch with forwarding of the information to the controller.

Replacing the filter: (See § "11.10 Replacement parts", page 74)

- Switch off the electrical supply at the safety switch.
- Open the hatch or door
- Remove the prefilter from the slot and then unlock the second filter stage if present.
- Remove any dust from the compartment close to the filter.
- Place the new filter(s) in their location(s), and re-lock.
- Close the door or the door.
- Restart the unit, the alarm filter is on automatic acknowledgment and should disappear from the alarm board.

N.B. : At the first start-up, once the installation is completed, it is advised to clean the filter or to replace it.

The pressure switch is attached to the side of the control cabinet.

The settings to check at commissioning are the following:

Filters	DP1
M5 or F7	200 Pa
M5 + F7	400 Pa


11.5 Casing maintenance

To facilitate the maintenance, the moto-fan can be extracted from the unit:

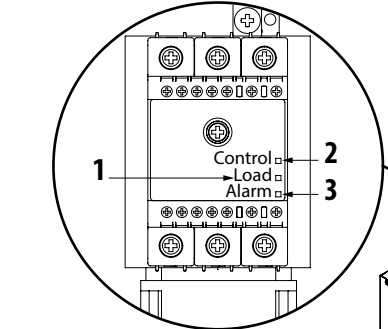
- Switch off the electrical supply at the safety switch.
- Open the hatch or door
- Clean with compressed air or soapy water.
- Do not use ammoniacal detergents.
- Clean the air filters (flat or folded filters) and replace if necessary
- Check the general condition of the unit (corrosion) as well as the external and interior accessories, which may need cleaning.
- Check the correct operation of the damper links, the blocking of the blades and their orientation.
- If there are cooling coils, ensure that the condensate drain tray under the cooling coil does not contain any foreign body that could obstruct the drain pipes. Check the siphon for the free flow of the condensate drainage.
- Clean the turbine and the fan shaft.
- Check the good condition of the antivibration pads, if present.

11.6 Maintenance/replacement of the fan

After a long period of use, dust can be deposited on the fan so that dust removal is necessary.

	<p>To remove the fan:</p> <ul style="list-style-type: none">• Switch off the electrical supply at the primary circuit-breaker.• Remove the cover.• Disconnect the power and control connection plugs at the side.• Disconnect the pressure sensor.• Unscrew the two screws from the engine support using a wrench.• Remove the fan.• Clean the fan with a damp cloth - do not spray the fan.• Reinstall the unit by following the disassembly procedure in reverse.
---	--

11.7 Maintenance/replacing the electrical heater

	<p>The electrical heater includes the manual and automatic security thermostats and its autonomous static command controller.</p> <p>3 lamps «Control», «Load», and «Alarm» reflect their status :</p> <ul style="list-style-type: none">- 1 : light «Control» green : SSR turned on (waiting for command).- 2 : light «Load» orange : Command 0-10V active.- 3 : light «Alarm» red : SSR fault.
--	--

Before the heating season, remove the dust from the resistances with compressed air or using a vacuum cleaner and a soft brush. Visually check the condition of the components and tighten the connections if necessary.

- Switch off the electrical supply at the main circuit breaker.
- Open the access doors.
- Visually check the condition of the components and tighten the connections.
- Disconnect the cables before removing the unit.

Be careful not to tear or damage the cables by pulling on the unit.

11.8 Maintenance/replacing the water coil.

To maintain the characteristics of the unit, drain the water circuit once a year.
As a result of the ambient pollution, and despite the filtration, dust can be deposited on the unit.

After disassembly, the unit can be cleaned with a jet of water, steam or compressed air, but proceed with care not to damage the unit fins.

For units equipped with reversible cooling units (R3), clean the condensate drain tray with water and a non-abrasive detergent. Ensure the proper drainage and inspect the siphon.

11.9 Replacement of the CORRIGO controller battery

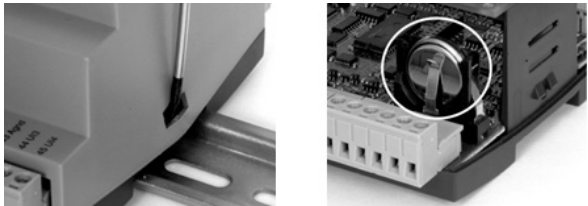
When the low battery alarm appears and the red indicator light illuminates, this means that the backup battery to save the memory of the real time clock is too low.

The procedure for changing the battery is described below.

A capacitor allows you to save the memory and to operate the clock during approximately 10 minutes after the power has been switched off.

If the battery change takes less than 10 minutes, there is no need to reload the programme, and the clock continues to operate normally.

The replacement battery is type CR2032.

	<ul style="list-style-type: none"> • Press the clips on each side of the enclosure with a small screwdriver to separate the cover from the base. • Hold the base and remove the cover. • Grip the battery and gently pull it upward until it leaves its housing. • Take a new battery and slide it in the support. Pay attention to the direction of installing the battery to observe the polarity.
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11.10 Replacement parts

Code	Type	Name
R153531050	ETD touch screen control	ETD Corrigo 28 I/O remote touch control
R209239241	Corrigo E28 E/S	Corrigo E28-3 Ports
R209181243	Remote control connection cable	10m connection cable for E3-DSP screen
R190300142	CO2 sensor	SCO2 A 010 400-1100ppm 0-10V Sonde CO2 room sensor
R190300241	CO2 sensor	SCO2 AA 010 400-1100ppm 0-10V Sonde CO2 room display sensor
R190300242	CO2 sensor	SCO2 G MIX 400-1100ppm 0-10V 4-20mA Sonde CO2 duct sensor
5416753000	Ambient sensor	TG-R5/PT1000 wall mount ambient sensor 0 to 30 °C
5416787100	Hygrometry sensor	SHUR 010 Hygrometry sensor 0-10 V 0-100% RH wall mount
5407038900	M5 Filter	AFR CAIT-10 M5-PRE 390 x 265 x 98
5407039000	M5 Filter	AFR CAIT-20-30-40 M5-PRE 541 x 495 x 98
5407093300	M5 Filter	AFR CAIT-50 M5 473x494x96 (needed quantity: 2)
5407039100	F7 Filter HPE	AFR CAIT-10 F7-POST 390 x 265 x 98
5407039200	F7 Filter HPE	AFR CAIT-20-30-40 F7-POST 541 x 495 x 98
5407093400	F7 Filter HPE	AFR CAIT-50 F7 473x494x96 (needed quantity: 2)
5407072700	M5 Filter	AFR CAIT-10 M5-PRE 390 x 265 x 48
5407072800	M5 Filter	AFR CAIT-20-30-40 M5-PRE 541 x 495 x 48
5407093500	M5 Filter	AFR CAIT-50 M5-PRE 473x494x48 (needed quantity: 2)
5407072900	F7 Filter HPE	AFR CAIT-10 F7-POST 390 x 265 x 48
5407073000	F7 Filter HPE	AFR CAIT-20-30-40 F7-POST 541 x 495 x 48

Code	Type	Name
5407093600	F7 Filter HPE	AFR CAIT-50 F7-POST 473x494x48 (needed quantity: 2)
5407093900	F9 Filter HPE	AFR CAIT-10 F9-POST 390 x 265 x 48
5407094000	F9 Filter HPE	AFR CAIT-20-30-40 F9-POST 541 x 495 x 48
5407093700	F9 Filter HPE	AFR CAIT-50 F9-POST 473x494x48 (needed quantity: 2)
R190300247	Plug fan	PFOI 08 Plugfan ECM D250 193W Mono 230 V CAIB/T-10
R190300248	Plug fan	PFOI 18 Plugfan ECM D250 415W Mono 230 V CAIB/T-20
R190300108	Plug fan	PFOI 19 Plugfan ECM D280 715W Mono CAIB/T-30
R190300243	Plug fan	PFOI 25 Plugfan ECM D310 1000W Tri CAIT-40
018244	Plug fan	PFOI 52 Plugfan ECM D310 1800W Tri CAIT-50
R190300244	Cooling coil	BAT EG 4R CAIB-10/250 Cooling coil
R209183241	Heating and reversible coil	BAT EC/EG 3R CAIB-10/250 Heating/reversible coil
R190300246	Cooling coil	BAT EG 4R CAIB-20/30 CAIT-40 Cooling coil
R190300245	Heating and reversible coil	BAT EC/ER 3R CAIB-20/30 CAIT-40 Heating/reversible coil
068361	Reversible cooling coil	BAT ER 4R CAIT-50 Cooling coil
068360	Heating coil	BAT EC 2R CAIT-50 Heating coil

12. WASTE MANAGEMENT

12.1 Treatment of packaging and non-hazardous waste

The packaging (non-returnable pallets, cardboard, films, wooden packaging) and other non-hazardous waste must be recycled by an approved service provider.

It is strictly prohibited to burn or bury them, or deposit them in any uncontrolled dump.

12.2 Treatment of professional EEEW

This product must not be disposed or treated with the domestic waste but must be deposited at a suitable collection point for electrical and electronic equipment waste (EEEW).



S&P SISTEMAS DE VENTILACIÓN, S.L.U.

**C. Llevant, 4
Polígono Industrial Llevant
08150 Pareds del Vallès
Barcelona - España**

**Tel. +34 93 571 93 00
Fax +34 93 571 93 01
www.solerpalau.com**



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