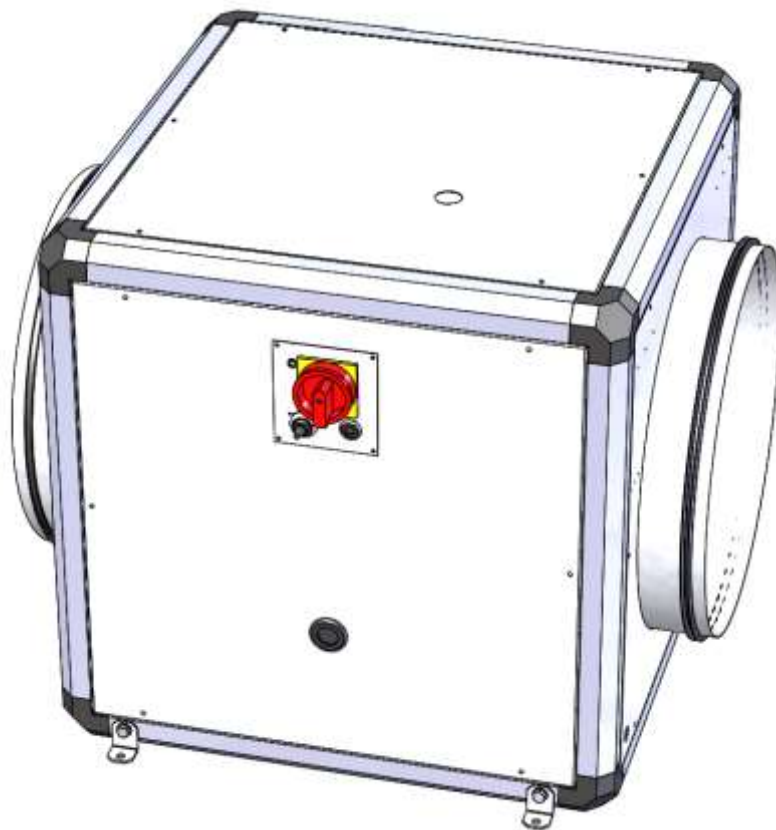


OPERATING AND COMMISSIONING INSTRUCTIONS



OPERATING AND COMMISSIONING INSTRUCTIONS

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OPERATING AND COMMISSIONING INSTRUCTIONS

SAFETY INSTRUCTIONS

In compliance with the current norms, the machine should be installed only by a technical person qualified for this type of work.

Use the required personal protection devices so as to avoid injuries caused by electrical and mechanical hazards (injuries by touching panels, sharp edges, etc.). Use EN170 protective eyewear and ear protection.

Do not use the unit for an other used which it designed. This unit can't be use for extract or supply dangerous air.

Move the machine as given in chapter *handling*.

Grounding is carried out in compliance with current standards. Never start the device without grounding

Before any intervention ensure that device is powered off and wait for complete stop of every rotative component such as damper, fan, rotative exchanger...

During device is running inspection doors must be mounted and closed.

Start is to be done only with padlockable swith.

Do not shut off or short circuit the safety and control equipment.

During interventions, be carefull with hot components such as hot water coil or electric resistances.

The machine should be installed in compliance with fire norms and regulation in each country.

The waste must be disposed of in compliance with the current standards. No packaging should be discarded into the environment.

We disclaim any responsibility for any damages resulting from wrong utilisation of the equipment, reparation, modification or non compliance of these instructions.

I. RECEIVING THE EQUIPMENT

The units are delivered fixed on longitudinal members or on blocks then wrapped in plastic film..

I.1. Checks on reception

When the equipment is received, the state of the packaging and the equipment must be checked. In the event of damage, make an accurate note of any problems on the carrier's delivery note

I.2. Unpacking

When the equipment is unpacked, check the following:

- The total number of packages is present.
- All accessories are present (dampers, roof, electric switchgear, etc.). After unpacking the equipment, the waste must be disposed of in compliance with the current standards. No packaging should be discarded into the environment

I.3. Storing

The equipment must be stored in shade, in a dry place, at a temperature between -20°C and 40°C. The packaging can't be considered sufficient for an external storage.

I.4. End of life

In accordance with the partnerships with the compagny ECOLOGIC. CALADAIR fulfills the obligations to finance the collection, removal and treatment of Waste Electrical and Electronic Equipment.

At the end of the life of this equipment, the user contacts the company ECOLOGIC who will propose a collection solution or a place of deposit for the product.

Contacts for pick-up requests:

E-mail: operations-pro@ecologic-france.com

Phone: 01 30 57 79 14

Internet: www.e-dechet.com

OPERATING AND COMMISSIONING INSTRUCTIONS

II. INSTALLATION

II.1. Handling

The units must only be moved in their installation position.

If the device is handled using a fork-lift truck, ensure this supports the load-bearing structure

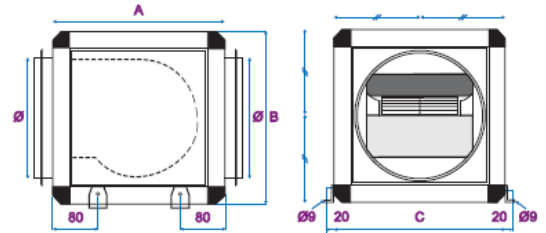
If the device is moved using a crane, use four cables of identical lengths. These must be at least as long as the greatest distance between two fastening points.

If $L + W + H > 5m$ then the case must be lifted using a lifting beam

II.2. Space required

Generally speaking, it is desirable to provide access space of at least the width of the unit on the each side for maintenance.

Modèle CBH	Taille module COMBIBOX®	A mm	B mm	C mm	Ø mm	Poids kg
CBZ 4	4A	445	445	445	315	29
	4C	445	445	445	315	29
CBZ 5	5	545	545	545	400	43
CBZ 6	6	645	645	645	450	64
CBZ 7	7A	745	745	745	500	86
	7B	745	745	745	500	90
CBZ 8	8	845	845	970	630	125



II.1. Installation

The unit must be laid on a sufficiently rigid and flat surface (use vibration mounts if necessary).

Install the unit such that bad weather or ambient temperature cannot damage the internal items of the unit during installation as well as when used later (possibly provide a protective cap).

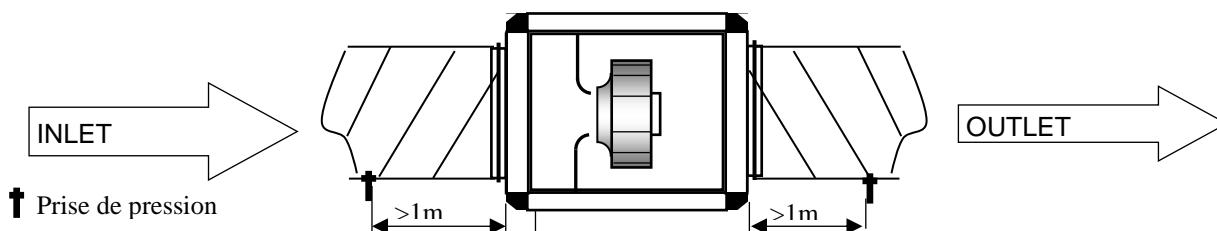
If inlet or outlet of the fan are not connected, you have to install a protection grid

Outdoor installation of the unit: For raising the unit above the ground (protection from water), a set of feet may optionally be supplied (PCB). A roof (TCB) as well as grated bevelled nozzles (BBG) or rain cowls (AGC) must also be provided if necessary (available as options).

Installation of the units in ceiling : units can be suspended with threaded rods. They can also be laid on a frame, suspended on the building structure, within the load capacity of the frame (frame in charge of the installer).

HVAC connections :

For the HVAC connection, select duct sections based on dimensions of the flexible bands that should be properly stretched. The ducts have to be insulated if necessary.



The box can be in HH configuration (see above) or VV (Bottom suction and top discharge)

For CBZ LOBBY® EC, connect the clear tube to the sheath

Supply: Connect the pressure tap (marked by a label + inside the electrical box) to the supply duct

Extract: connect the pressure tap (marked by a label - inside the electrical box) to the extract duct

OPERATING AND COMMISSIONING INSTRUCTIONS

III. GENERAL FONCTIONNING

Equipped in standard with control and proximity switch, this extract or supply box fan is composed by high efficiency EC motor with backward curve with included thermal protection

III.1. VERSION STANDARD

Fan is adjustable from integrated potentiometer. Add a pressure switch to know if the fan is running or not

III.1. VERSION LOBBY

The CBH LOBBY is equipped with a pressure transmitter for a suitable adjustment of the pressure set point for constant pressure operation. This box integrates a regulator, with LCD screen, communicating in MODBUS (RS485). The return of the fan state is automatically managed by the pressure transmitter.

- Equipped with a factory set clock in permanent operation HS (modifiable on site)
- Possibility to add a remote external stop by free voltage contact NO

III.1. VERSION DIVA

The CBH DIVA is equipped with an air quality transmitter for a suitable setting of the CO2 setpoint for operation between two flow rates (PV / GV) to maintain a CONSTANT CO2 level. This box integrates a regulator, with LCD screen, communicating in MODBUS (RS485). The return of the fan state is automatically managed by the pressure transmitter. To have the return of the state of the fan, it is necessary to add a pressure switch (DEP).

- Equipped with a factory set clock in permanent operation HS (modifiable on site)
- Possibility to add a remote external stop by free voltage contact NO

Nota : In order for CO2 regulation to work, the installation must imperatively follow the following constraints:



- GV clock at 0 (normal speed timer)
- PV clock in operation (reduced speed timer)
- External stop not engaged

III.1. VERSION MAC2

The CBH MAC2 is equipped with a pressure transmitter for a suitable adjustment of the flow setpoint (1 or 2 as desired) for constant flow operation. This box integrates a regulator, with LCD screen, communicating in MODBUS (RS485). The return of the fan state is automatically managed by the pressure transmitter

- Equipped with a factory set clock in permanent operation HS (modifiable on site)
- Possibility to add a remote external stop by free voltage contact NO

IV. ELECTRICAL WIRING

CBH EC	Size COMBIBOX®	Supply voltage (V / Ph / Hz)	Nominal power(W)	Amps (A)	Used temp (°C/°C)	Motor IP/Class	Thermal protection*
CBZ 4	4A	230 / 1 / 50	230	1.6	-25 / 60	IP44 / F	PTI
	4C	230 / 1 / 50	490	2.3	-25 / 60	IP54 / F	PTI
CBZ 5	5	230 / 1 / 50	700	3	-20 / 40	IP54 / F	PTI
CBZ 6	6	400 / 3 / 50	1000	1.6	-20 / 55	IP54 / F	PTI
CBZ 7	7A	400 / 3 / 50	1700	2.6	-20 / 40	IP54 / F	PTI
	7B	400 / 3 / 50	1950	3.15	20 / 40	IP54 / F	PTI
CBZ 8	8	400 / 3 / 50	2730	4.2	-20 / 40	IP54 / F	PTI

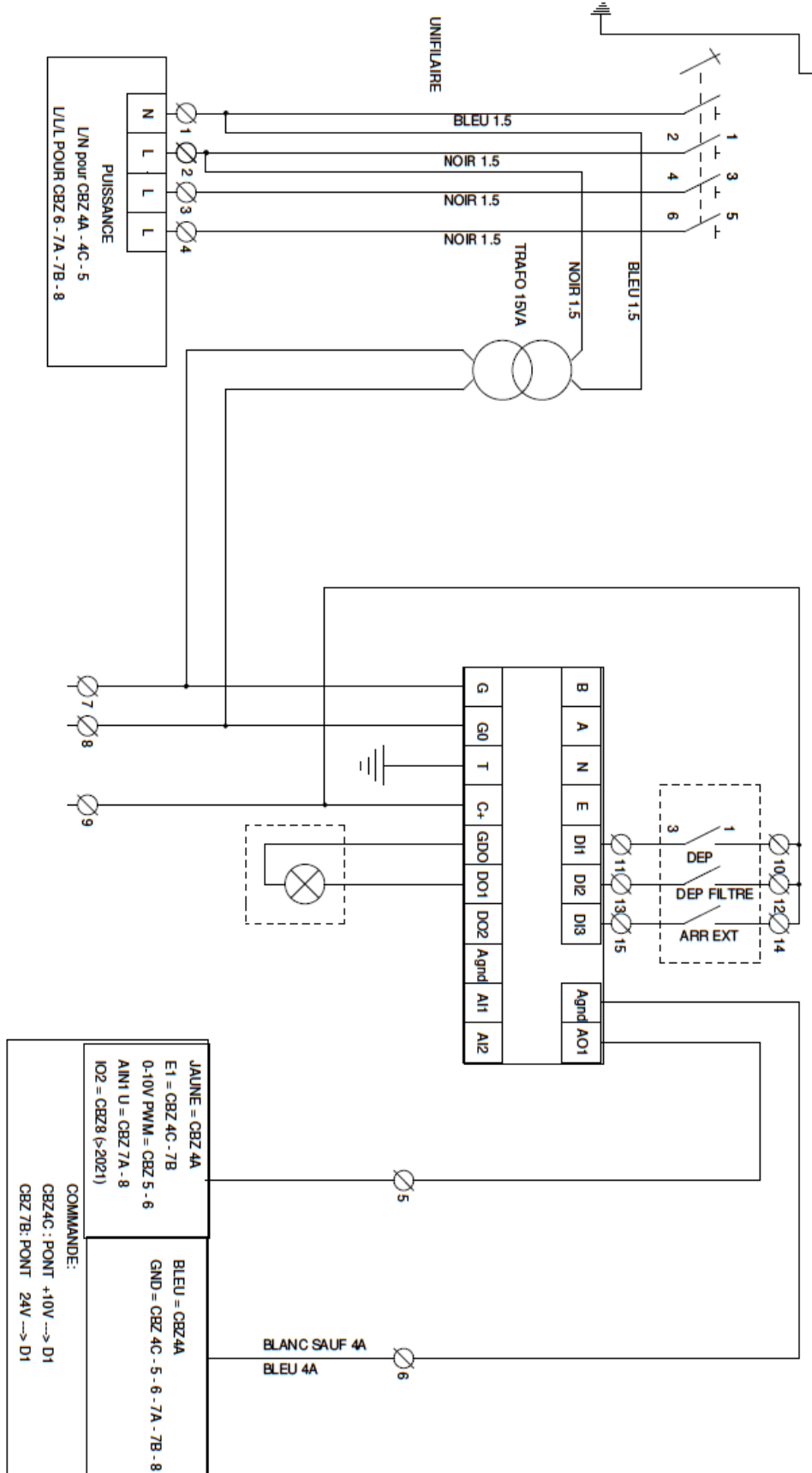
* PTI : Thermal protection integrated

OPERATING AND COMMISSIONING INSTRUCTIONS

IV.2. CBH LOBBY-DIVA-MAC2

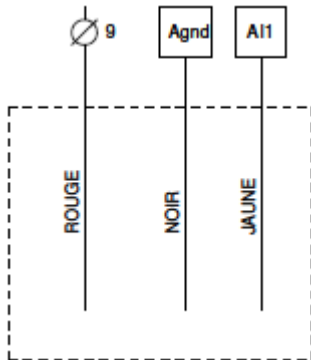
Pressure tube connection :

- Extract (mounted in standard) : The - is connected on the box fan and the + is not connected
- Supply : The + have to be connected on the supply duct and the - is not connected

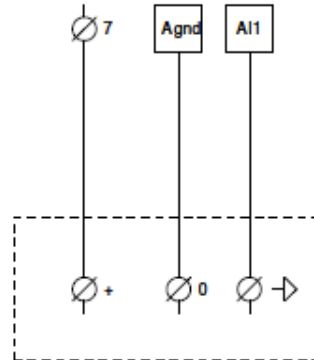


OPERATING AND COMMISSIONING INSTRUCTIONS

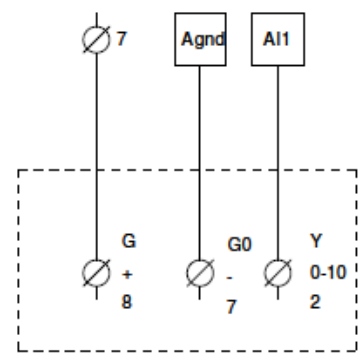
Transmitter connections



CBZ LOBBY EC



CBZ MAC2 EC



CBZ DIVA EC

V. PARAMETRAGES

V.1. Display control (on Corrigo or remote display)

There are four lines of twenty characters on the backlight display. The light only starts when a button is pushed. It stops after an inactivity period.

There are 2 LED on the front of the display:

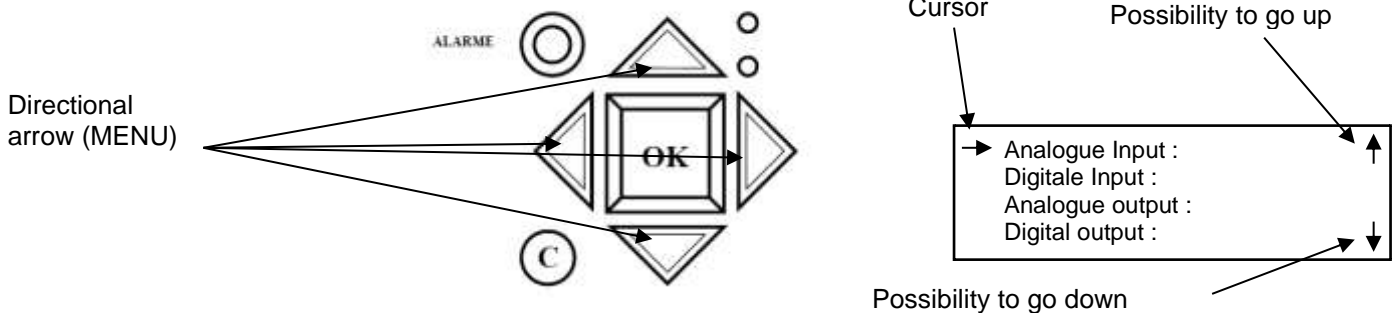
LED of the alarm is a bell symbol.

LED for the writing with a pen symbol.

- Quick blinking = you can modify the value

- Slow blinking = you must enter a password to modify the value

- Directional arrows up, down left and right help to navigate in the menus.
- Up and Down buttons help to increase or decrease the values of a parameter when you have access to. Right and left buttons help to navigate inside the parameter.
- OK button help to enter the value and to confirm a choice. C button helps to cancel it.
- Alarm button (red) allows the access of the defaults list.
- Left arrow also helps to go out of the alarm menu and go back to the main menu
- Cursors indicate the possible movements and which arrows to press.

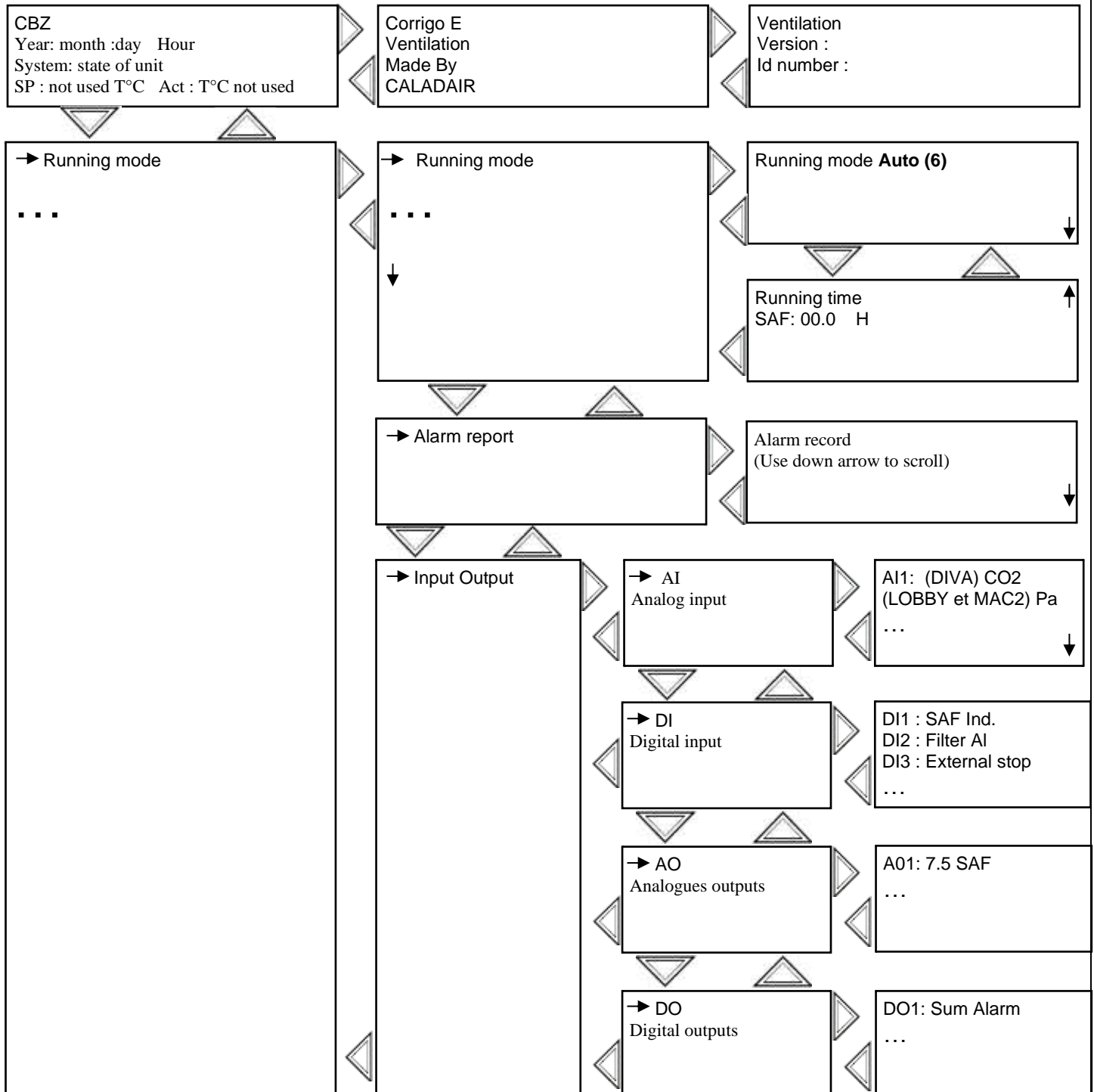


OPERATING AND COMMISSIONING INSTRUCTIONS

Words in normal writing = viewing only / **Words in bold** = Modification is possible / **Outlined words in bold** = Modification is possible with password 3333 ... = non accessible or not used



WARNING : Do not modify parameters which are not in bold characters, in this case no after sales will be admitted



- (1) **Hour date settings (see page 11)**
- (2) **Timer normal speed settings (see page 11)**
- (3) **Timer reduced speed settings (see page 11)**
- (4) **Holidays settings (see page 11)**
- (5) **Air flow settings (see page 11)**
- (6) **Manual / auto mode (see page 11)**

OPERATING AND COMMISSIONING INSTRUCTIONS

→ Régul ventilation

Frequency control SAF
(DIVA) %

Frequency control manuel vent.SAF
Output 1/1: **70% (5)**
Output 1/2: **50% (5)**

Pressure control SAF
(LOBBY) Pa

Pressure control SAF
Output 1/1: **not used**
Output 1/2: **150Pa (5)**

Air flow control SAF
(MAC2/QUATTRO) m3/h

Air flow control SAF
Output 1/1: **1500 m3/h (5)**
Output 1/2: **750 m3/h (5)**

→ Time settings

→ Hour/date

Hour : **15:54 (1)**
Date : **2018-03-29 (1)**
Day : **Mardi (1)**

→ Timer normal speed

Normal speed
Monday (2)
Per 1 : **06:00 - 22:00**
Per 2 : **00:00 - 00:00**

Normal speed
Monday - Friday (2)
Per 1 : **06:00 - 22:00**
Per 2 : **00:00 - 00:00**

Normal speed
Tuesday (2)
Per 1 : **06:00 - 22:00**
Per 2 : **00:00 - 00:00**

Etc...untill sunday + holidays

→ Timer reduced speed

Reduced speed
Monday (3)
Per 1 : **00:00 - 06:00**
Per 2 : **22:00 - 24:00**

Reduced speed
Monday - Friday (3)
Per 1 : **00:00 - 06:00**
Per 2 : **22:00 - 24:00**



Slow speed
Tuesday (3)
Per 1 : **00:00 - 06:00**
Per 2 : **22:00 - 24:00**

Etc...untill sunday + holidays

→ Holidays

Holidays (mm:jj) until 24 periods (4)
1: **01-01 - 01:01** (example 1st January)
2: **12-25 - 12:25** (example 25th december)

Acces rights

Enter

Enter password of the autorisation level
required : ****
Current level:

Exit
...

Exit this autorisation level ? **NO or YES**
Current level

OPERATING AND COMMISSIONING INSTRUCTIONS

V.2. Operator parameters modification (password 3333 required)

V.2.a. *Timer – Date and hour settings*

V.2.a.1. Hour and date of the controller CORRIGO (1) page 10

Access : Hour Date setting

Date and hour of the regulator are set by default in the CORRIGO controller. Summer/Winter time is automatically managed.

*V.2.a.1. **Timer normal and reduced speed (2) (3) page 10***

Operating exceptions:

DIVA® EC: For CO2 regulation to work, no high speed time range must be active.

LOBBY EC®: Only the High Speed Clock is active

Access :

- **Timer normal speed** : Time settings / normal speed programm
- **Timer reduced speed** : Time settings / slow speed programm

Nota : if slow speed (LS-1/2) and normal speed (HS-1/1) are activated in the same time window, unit works in high speed

Operation exceptions:

*V.2.a.2. **Période de vacances (4) page 10** Accès : Réglage Horaires / Vacances*

Le système est réglé sans période de vacances. Dans le cas où vous souhaiteriez diminuer le temps de fonctionnement pendant les périodes de vacances, régler les horaires de fonctionnement vacances comme indiqué dans le chapitre V.3.4), puis régler vos jours de vacances.

V.2.b. *Modification of speed – airflow – pressure (5) page 10*

Access: Regul ventilation / control flow rate VAS 1/1 and 1/2 or Control Pressure VAS 1/1 and 1/2

You can change the flow of your unit for each fan to adjust your flow or pressure.

V.2.c. *Forced stop of the unit or forced start LS or HS on the remote control*

Access : running Mode / running Mode

You can stop (7) (**stop**) unit with CORRIGO controller or do a forced start LS (7) (**manual speed 1/2**) or HS (7) (**manual speed 1/1**). In standard unit works automatically with clocks (7) (**Auto**)



If unit do not work in automatic mode an alarm will start. Manual speed 1/1 and manual speed 1/2 modes must be used only for the commissioning and repair. An other setting will lead to a failure of the unit.

OPERATING AND COMMISSIONING INSTRUCTIONS

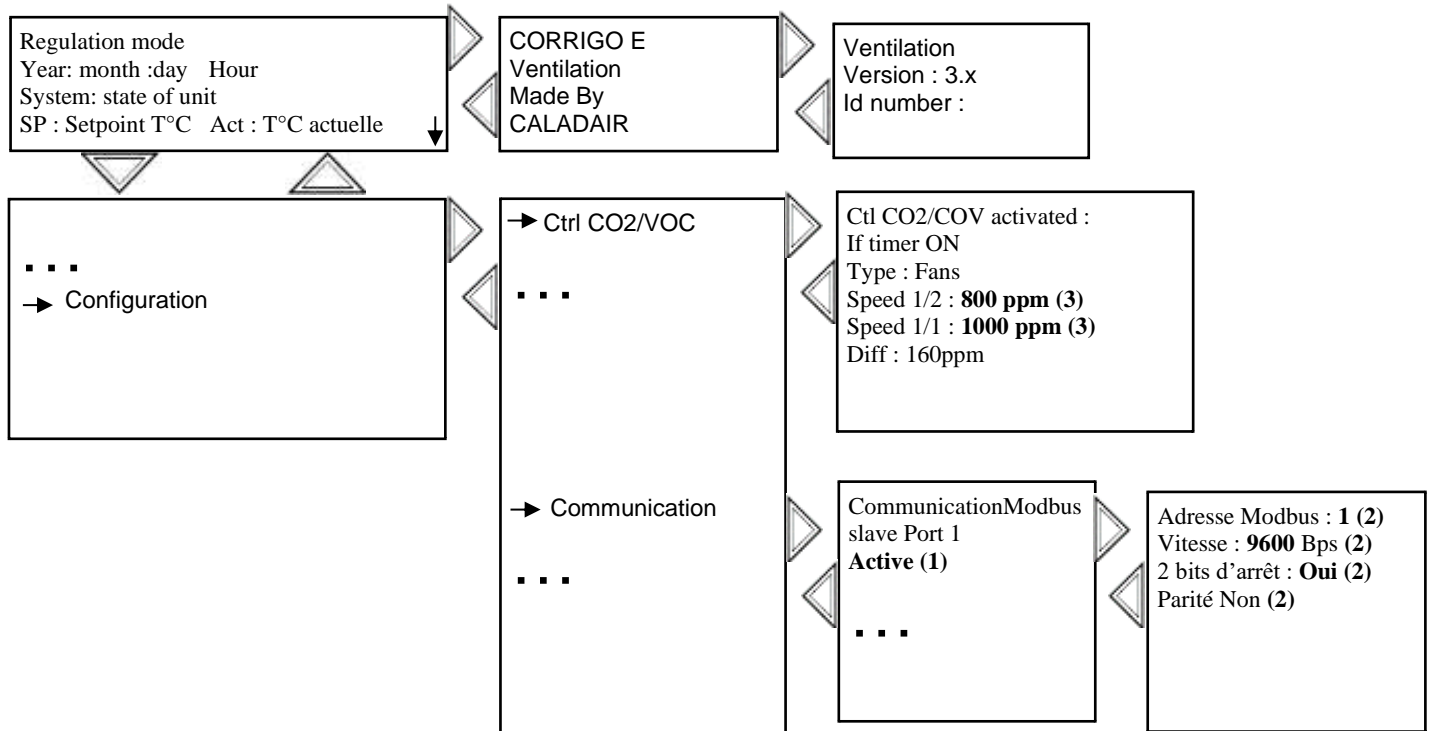
V.3. System parameters (communication + CO2)

V.3.a. Tree view of system menu

Mots en écriture normale = visualisation uniquement / **Mots en gras soulignés** = Modification possible avec mot de passe / ... = non utilisé ou non accessible.



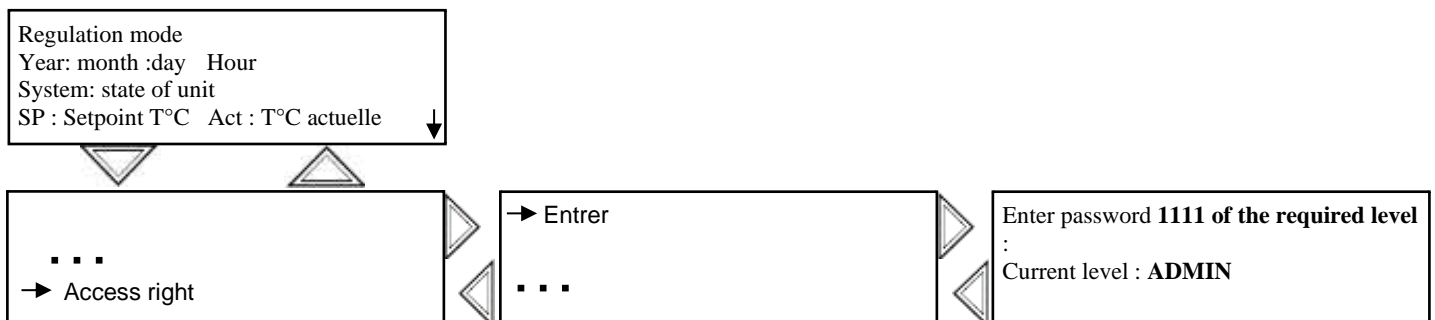
ATTENTION : Ne pas modifier d'autres paramètres que ceux indiqués en gras, dans le cas contraire aucun SAV ne pourrait être pris en compte



(1) et (2) Activation MODBUS RS485 and settings (page 13)
(3) Consigne CO2 (page 13)

V.3.b. Modification of system parameters

V.3.b.1. Access to System menu



OPERATING AND COMMISSIONING INSTRUCTIONS

V.3.b.2. Communication MODBUS via RS485 [(1) (2) page 12 (password 1111)]

You will find the simplified MODBUS at the end of the instructions and commissioning manual.

Access : Configuration / Communication

MODBUS TCP/IP is activate in standard in DHCP. Possibility to know DHCP adress or set IP fixe [(5)(6) chapter V.7], Modbus Port = 502 / Device ID = 255

Le **MODBUS RS 485** must be activate [(1) chapitre V.7]. Possibility to set speed, parity, stop bits... [(2) chapter V.7].

Modbus Type

1 = Coil status register (Modus fonction 1, 5 et 15)

2 = Input status register (Modus fonction 2)

3 = Holding register (Modus fonction 3, 6 et 16)

4 = Input resister (Modus fonction 4)

Supported Modbus functions

Read Coils (1)

Read discrete input (2)

Read Holding registers (3)

Read Input registers (4)

Write single Coils (5)

Write single register (6)

Write multiple Coils (15)

Write multiple register (16)

EXOL Type

R = Real (-3.3E38 – 3.3E38)

I = Integer (-32768 – 32767)

X = Index (0 – 255)

L = Logic (0/1)

Transmission mode

Controller is set in RTU mode

A maximum of 47 registers can be read in one message

V.3.b.3. CO2 setpoint for DIVA (3) page 12 (mot de passe 1111 nécessaire)

Access: Configuration / Ctrl CO2/COV

CO2 setpoint is set in standard: LS = 800ppm HS = 1000ppm. Unit will increase its speed proportionally to reach its maximum speed when CO2 will be at 1000ppm.

VI. MAINTENANCE

Outside the unit

Check the ducts, flexible sleeves, anti-vibrating plots; replace them if necessary. Check that all elements connected to the unit do not give any vibration to the unit.

Unit and Regulation

Check connection every year, clean fan if necessary

Fan

Dust the turbine and the volute if necessary.

Filtration

The filters are to be replaced every year or more if necessary

OPERATING AND COMMISSIONING INSTRUCTIONS

VI.1. Battery rempalcement

When low battery alarm starts and red LED is lighting, this indicates that the safety battery for the safeguard of the memory and clock is too low. Follow the instructions below to change them. A condenser keeps the safeguard and let the clock running for 10 minutes left after power cut. If the replacement of the battery takes less than 10 minutes, you will not have to reset the program and clock will work normally.

Replacement battety is a CR2032 type



Press the clips on each sides of the box with a little screwdriver to open the the top of the box.

Location of the battery



Take the battery and remove it softly .

Press firmly the new battery in the support. Note : Attention to the direction and polarity of the battery.

OPERATING AND COMMISSIONING INSTRUCTIONS

VII. REPAIR

For any other defect or anomaly found, and in case of inefficiency of troubleshooting, contact the After Sales Service. Defective parts must be replaced exclusively with original components (compliance with applicable product regulations)

VII.1. CBZ STANDARD

Description	Cause
Fan do not start	Unit is not powered correctly The motor is out of order Potentiometer or external 0-10V send 0V

VII.2. CBH LOBBY DIVA MAC2

No alarm

Description	Cause
CORRIGO screen do not light up	- Unit is not powered correctly (LED P/B of CORRIGO switched off) - To light up the screen, press a button (backlit).
Fans do not start	- Clocks are on 0 - Active alarm - Wait 1 min because there is a temporisation at the starting up - External remote stop is activated - Pressure tube disconnected - Wrong connection of pressure tube - No pressure in duct

Alarm

Affichage	Description	Type	Tempo	Cause
Malfunction supply air fan	Malfunction supply air fan	A	120s	- Pressure is under 5Pa. - Motor thermal protection activate.
Filter guard 1		C	0s	-Filters are dirty -Control the connection of the crystal tubes
Manual	Runs in manual mode	C	0s	See chapter V.1.c
Sensor error pressure VAS		A	5s	-0-10V signal is inverted -Pressure transmittor on fresh air is in short-circuit
Internal battery error	Error battery intern	A	5s	-Intern battery of the CORRIGO is disused -Change the battery quickly in order to not loose programm.

VIII. MODBUS

INPUT REGISTER

OPERATING AND COMMISSIONING INSTRUCTIONS

Fonction	Description	Exo type	Modbus Adresse	Défaut value
State of the unit	Modbus : 0= stop 1= starting up 2= Reduced speed starting up 4= Normal speed starting up 5= normal run 9= Night cooling 11= Stop sequence	X	3	
SAF running tim		R	4	
SAF pressure	LOBBY®	R	13	
SAF air flow	MAC2®	R	15	
CO2	DIVA®	R	17	
Analogue output	0-10V SAF	R	54	

HOLDING REGISTER

Fonction	Description	Exo type	Modbus Adresse	Défaut value
Normal speed setpoint	In % for DIVA®	R	424	xxx
Reduced speed setpoint	In % for DIVA®	R	425	xxx
Pressure setpoint	In Pa for LOBBY®	R	27	xxx
Normal airflow setpoint	In m3/h for MAC2®	R	28	xxx
Reduced airflow setpoint	In m3/h for MAC2®	R	29	xxx
Manual mode	MODBUS 0= manual stop 1= reduced air flow manual 2= normal air flow manual 3= Auto	X	368	xx:xx

INPUT STATUT REGISTER

Fonction	Description	Exo type	Modbus Adresse	Défaut value
General alarm return	If 1 = ALARM	L	30	
SAF default	If 1 = ALARM	L	33	
Filter guard	If 1 = ALARM	L	38	
Internal battery default	If 1 = ALARM	L	80	

IX. NOTES

