airtècnics

ADVANCED PRO RJ45 Control

INSTALLATION AND OPERATION MANUAL

¡Attention, Do not switch on the device without the cover on!

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1. INTRODUCTION

1.1. Description

The **ADVANCED PRO RJ45** control is a versatile air curtain controller with an 8-way crossover RJ45 cable with digital communication. It is compatible with all air curtain models manufactured between 2004 and 2024.

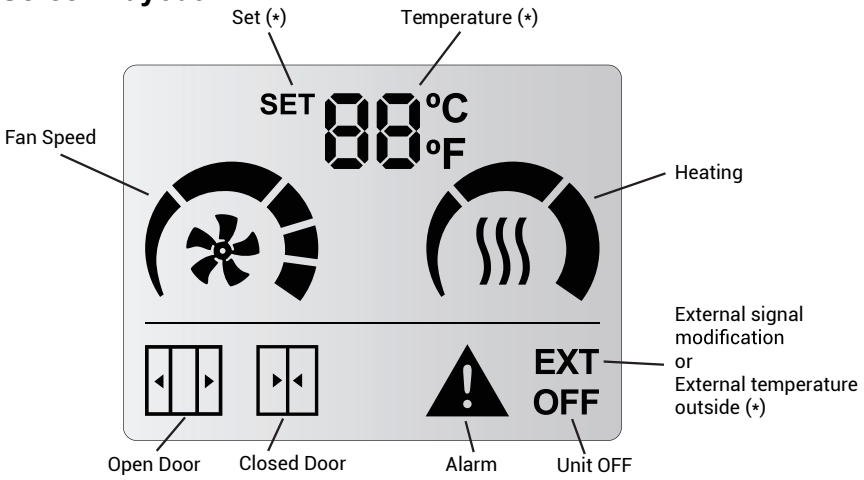
The **ADVANCED PRO RJ45** control allows the selection of different speeds and heating stages for door open and door closed.
In addition, it limits the heating based on the set temperature according to the room temperature (optionally also with the outside temperature) and the door status.
A 'Boost' function is available when the door is open, which increases the heating to ensure comfort (see explanation of Boost mode on page 11).

1.2. Main Features

- Backlight LCD indicating fan speed, heating stage, set, ambient and outdoor temperatures (if an additional sensor is installed outside the building), door status, alarms and errors, and external signals (EXT).
- Inbuild room thermostat to regulate the heating according to the desired temperature.
- Ready for the installation of a potential-free door contact. This can be used to set one speed and heating stage for an open door and another for a closed door.
- It has 6 digital inputs with different functions depending on the air curtain model configured: external OFF, OFF heat, fire alarm, door contact, anti-freeze, interface mode, among others.
- Maximum speed and heating settings for door open and door closed, boost mode, memory, etc.

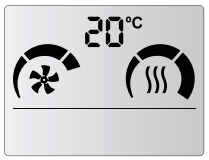
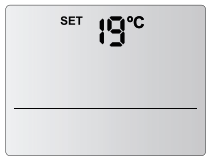
1.3. Screen and Buttons

Screen Layout:



Button Layout:

- ON/OFF (circle with line) allows to return to previous screen in Menus and starts/stops the air curtain.
- Use the arrows to set the temperature when electrical/water.
- User Menu to configure (3 lines):
  - Door open and door close ventilation speed.
  - Door open and door close heating stage.
  - Set temperature when electrical/water.

Room	
SET	
External (optional)	
Discharge	
Inlet (optional)	

2. USER FUNCTIONING

2.1. Parameter Variables

The display will know what functional limits exists and will only show the parameters that we can modify.

- **Temperature SET:** the desired temperature can be set between 10ºC and 35ºC. Below 10ºC and above 35ºC, you can select “no” and the heating will not be limited by temperature (thermostat mode).

- **Fan Speed**: user can select one fan speed for open and another for closed door. If the speed is set to 0 then the unit will be off.

- Slave DX: Only one speed can be selected when the heat pump is running.

- Interface Slave: The speeds are selected via the control of the heat pump brand.

Air Curtain Model	Open Door	Closed Door
2-speed	0-2	0-2
5-speed	0-5	0-5

- **Heating**: it depends on the air curtain model:

- Only Air: It has no heating.

- Electrical heated: The user can select between 0 and 3 heating stages depending on open and closed door and the fan speed selected.

	2-Speed		2 stages	3 stages
	STANDARD	0	0	0
		1	0,1,2	0,1,2,3
		2	0,1,2	0,1,2,3
Exception	1000-9kW (Limited)	0	0	-
		1	0,1	-
		2	0,1,2	-

5-Speed		
STANDARD	0	0
	1	0, 1
	2	0, 1, 2
	3	0, 1, 2
	4	0, 1, 2, 3
	5	0, 1, 2, 3

To be able to use the new ADVANCE PRO RJ45 control with old PCB, the control is configured beforehand according to the air curtain model (except replacement controls, check page 14).

The 2-speed electrical heated air curtains manufactured **since October 2024** with the new RJ45 control and the new RJ45 PCB have 3 stages of heating by default (without the “2 stages” jumper”).

- Water heated: A single stage (ON/OFF) can be selected depending on open and closed door.

Single Stage (ON/OFF):
· OFF = 0 segments painted
· ON = 3 segments painted

- Heat Pump:

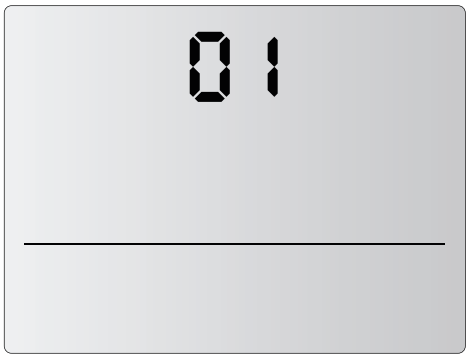
DX CD: Only one heating stage (ON/OFF) just as the temperature SET.

Slave DX and Interface Slave: The heating and the temperature SET are controlled by the brand control of the heat pump.

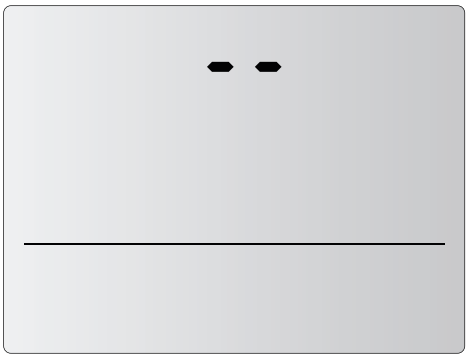
2.2. Device Initialization

When the control is plugged into the power supply, the screen will show the firmware version, the program the equipment is working on and will scan the number of air curtains connected.

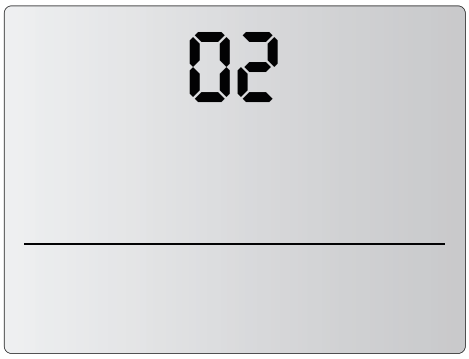
Example: The following screenshots appear with a V01.02 version and a configuration of 2 ventilation stages and 2 heating stages



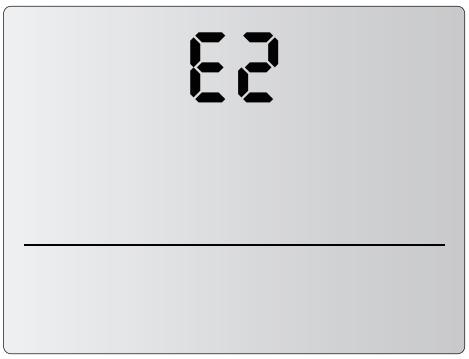
ADVANCED PRO RJ45 version: 01



Space between version and sub-version.



ADVANCED PRO RJ45 subversion: 02



2-speed and 2 stages Electrical heating Model

LEDS Control	LCD RJ45 Control
CA-2AO-IR CH-2HW-NE	A2
CE-2AO-IR	E2
CE-2AO-IR	E9
CW-2EV-IR CH-2HW-NE	P2
CA-5AW-IR CH-5HW-NE	A5
CE-5AW-IR	E5
CW-5AW-IR CH-5HW-NE CD-5AW-IR	P5
CS-5DX-NE (DX Slave)	dS
IN-NE-II (DX Interface Slave)	di

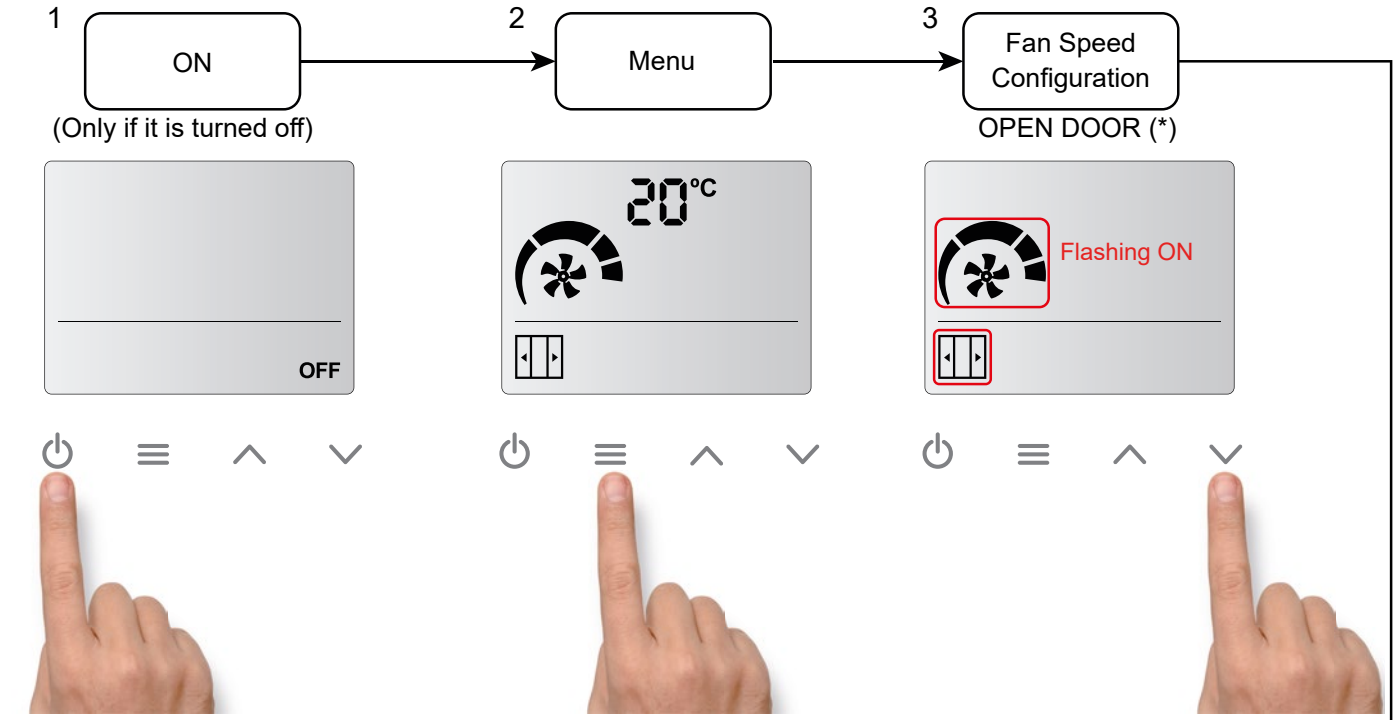
For inputs/outputs configuration, see section 7.

Options availables according to the model:
A2: Only Air. 2-speed stages.
E2: Electrical Heating. 2-speed stages and 2-heating stages.
E3: Electrical Heating. 2-speed stages and 3-heating stages.
E9: Electrical Heating. 2-speed stages. 1000-9kW.
P2: Water Heating. 2-speed stages.
A5: Only Air. 5-speed stages.
E5: Electrical Heating. 5-speed stages.
P5: Water Heating. 5-speed stages.
dS: Heat Pump DX Slave
di: Interface Slave

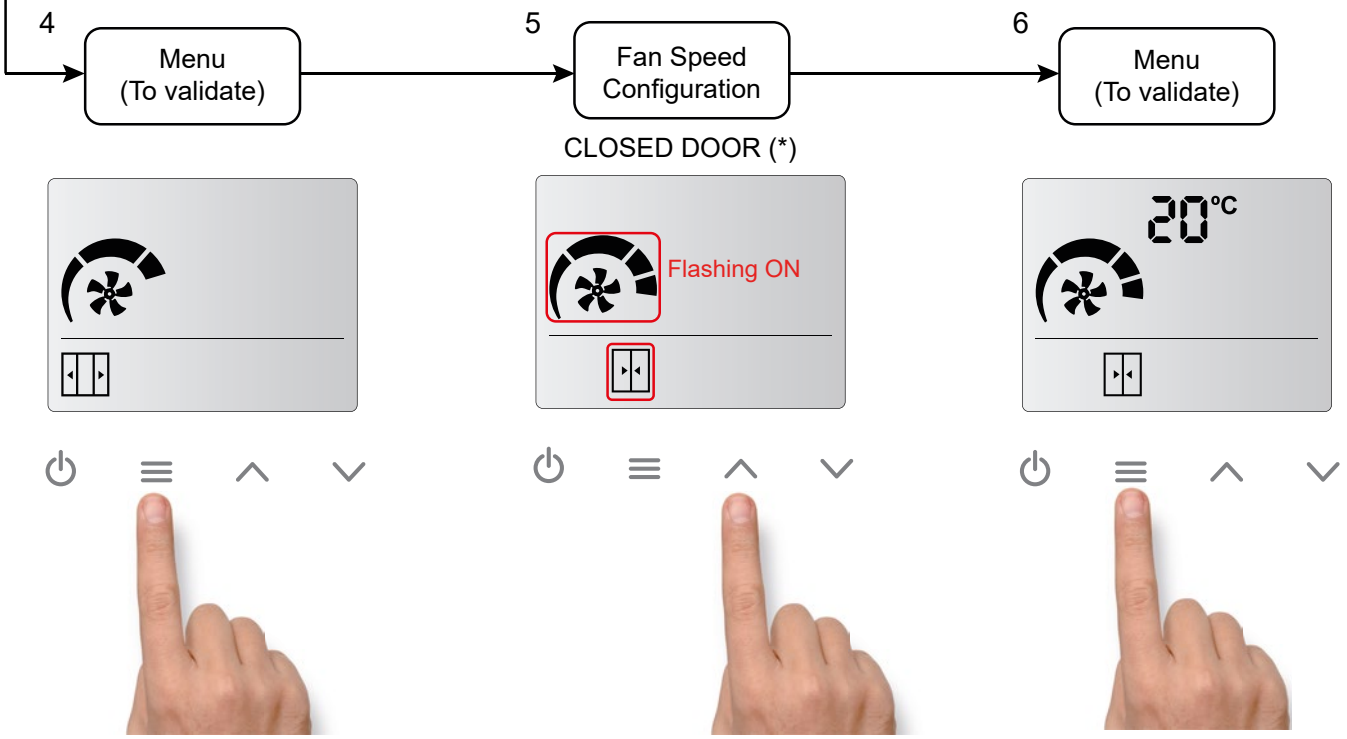
2.3. LCD User Menu Workflow

Once the control has been initialised, you can select the ventilation speeds and heating stages at which you want the curtain to operate. To do this, follow the diagram below:

Menu Flow for Only Air (Non-heated) models:

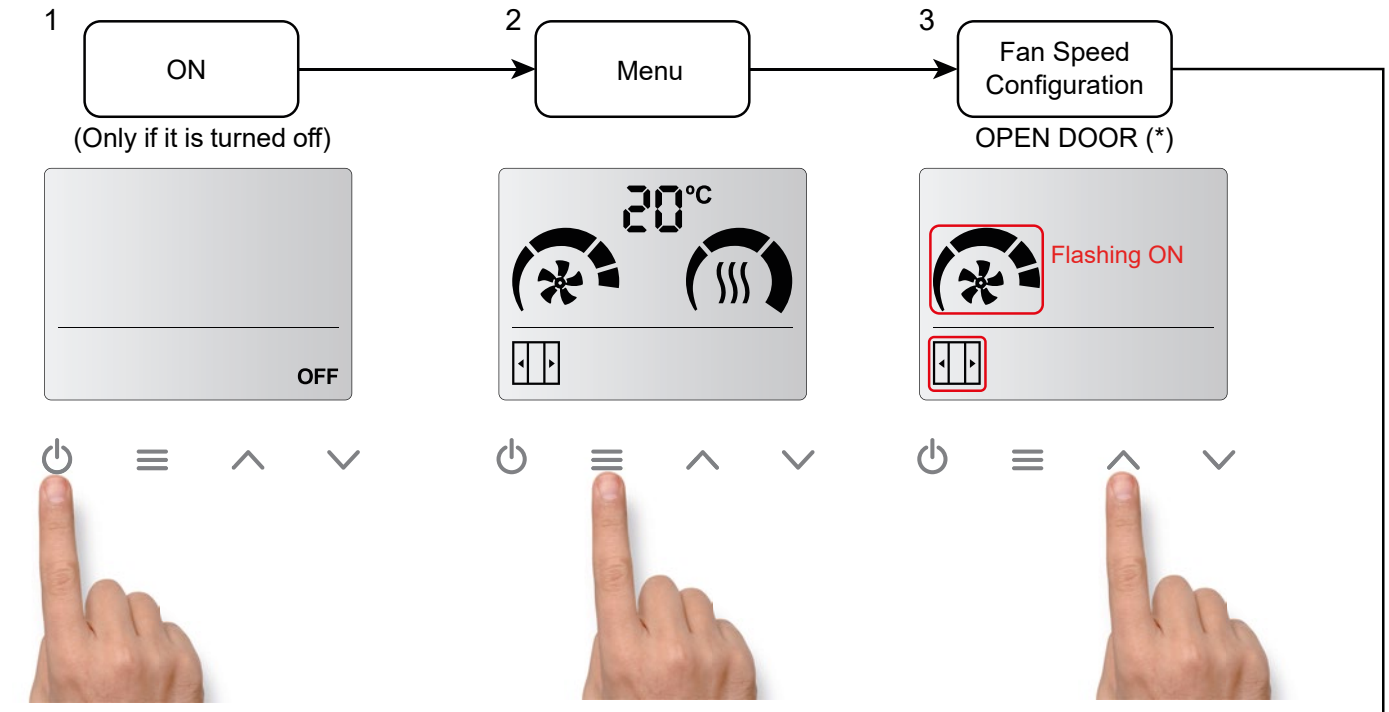


When turn on the unit or power supply is restored: if memory is ON, it will return to the configuration it had before turn off or external incident (power supply fail).

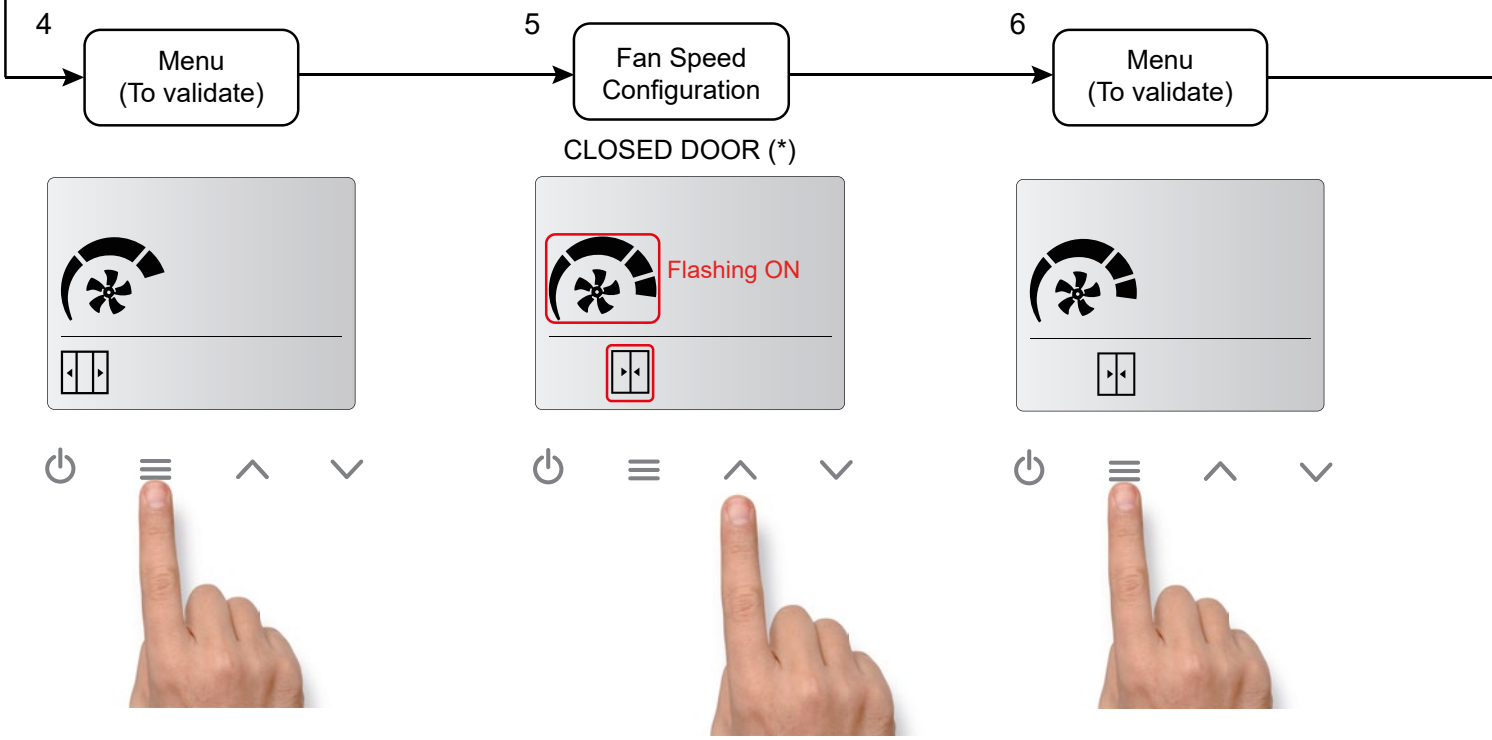


(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.
For the door icons to appear, a door contact must be connected to the 'DIN4' input and a door opening and closing cycle must be performed.

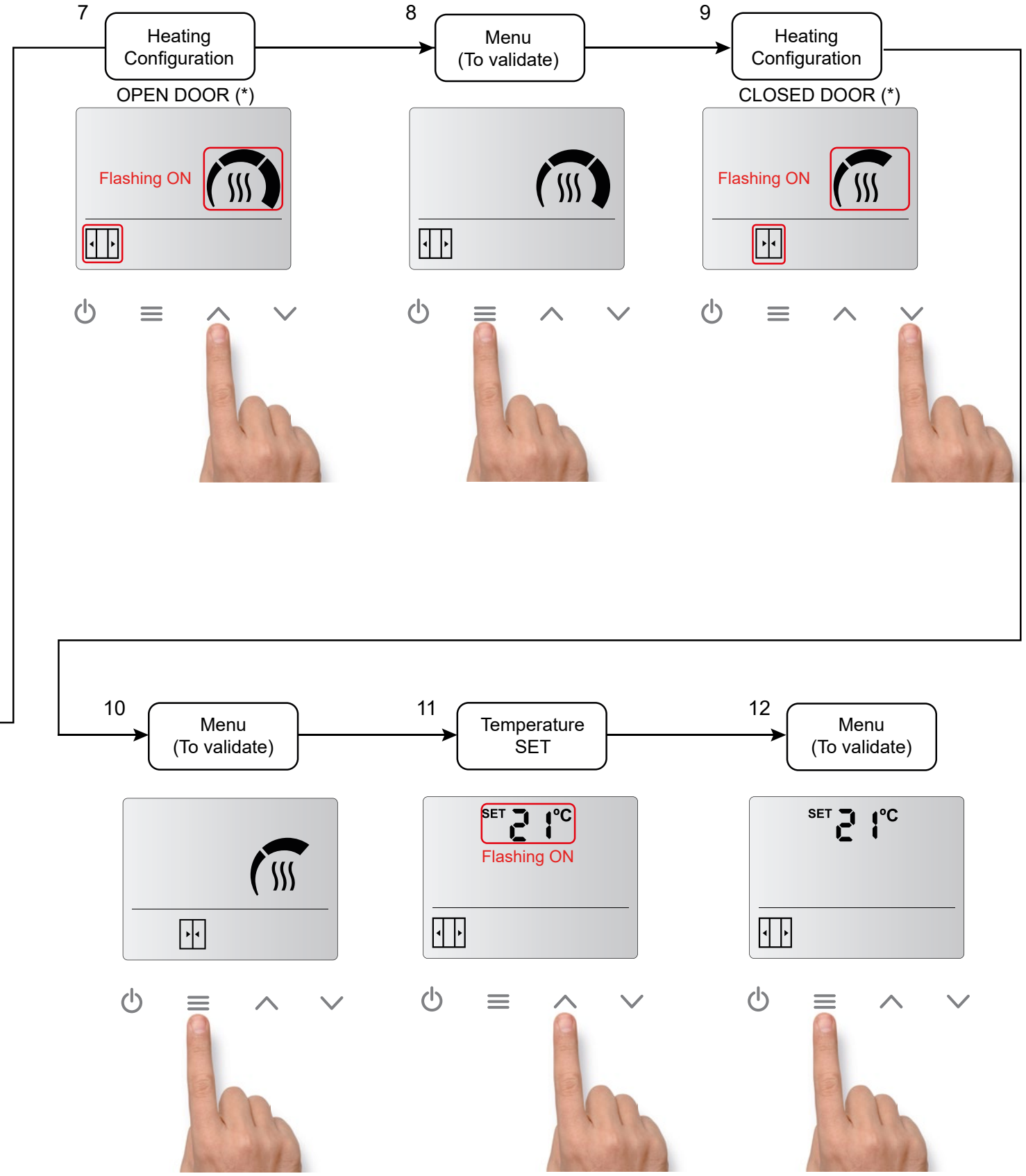
Menu Flow for heated air curtains models (it's the same process for electric heated, water heated or heat pump units with CD control):



When turn on the unit or power supply is restored: if memory is ON, it will return to the configuration it had before turn off or external incident (power supply fail).

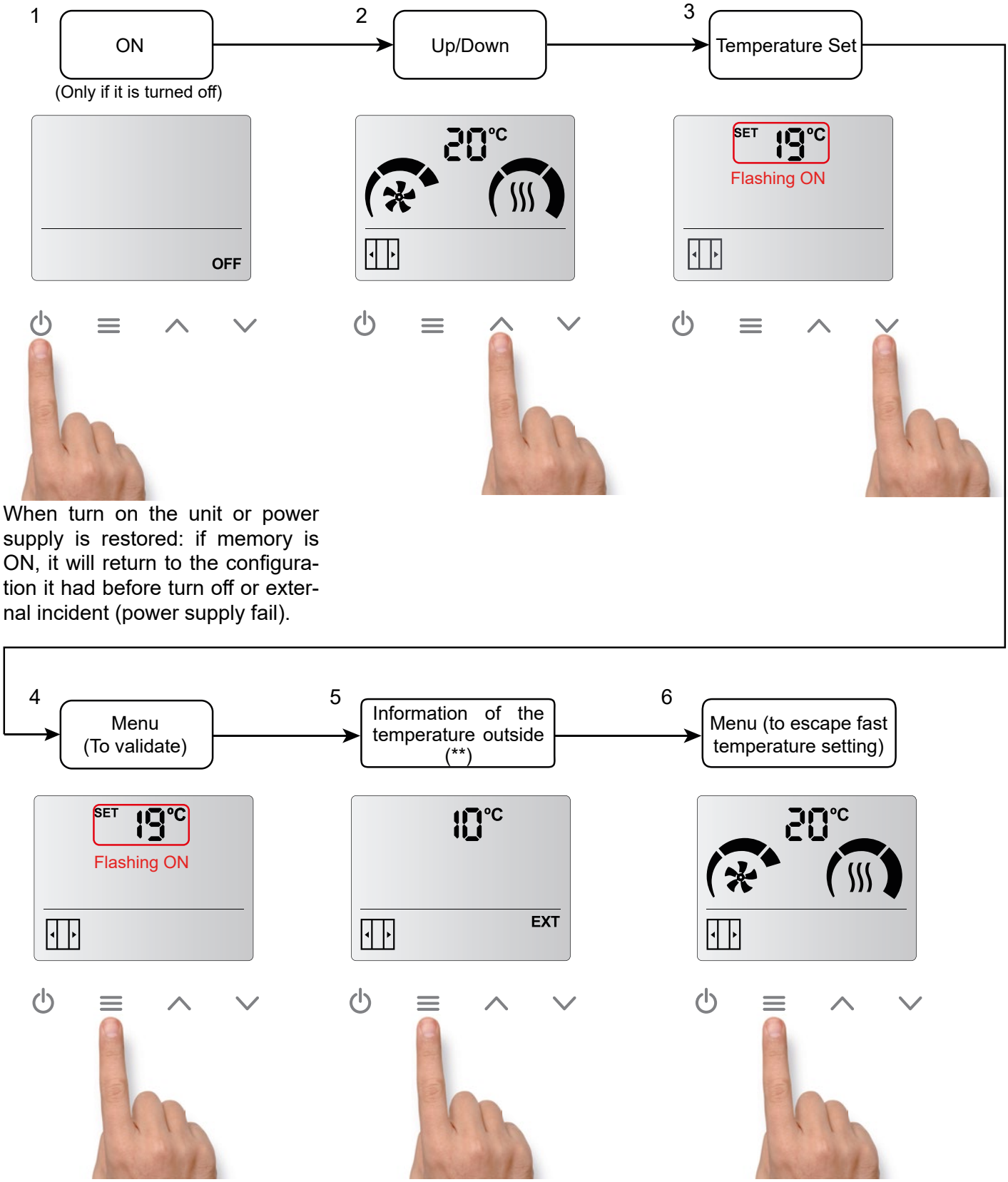


(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.
For the door icons to appear, a door contact must be connected to the 'DIN4' input and a door opening and closing cycle must be performed.



(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.
For the door icons to appear, a door contact must be connected to the ‘DIN4’ input and a door opening and closing cycle must be performed.

Fast access for temperature setting (only for heated models):

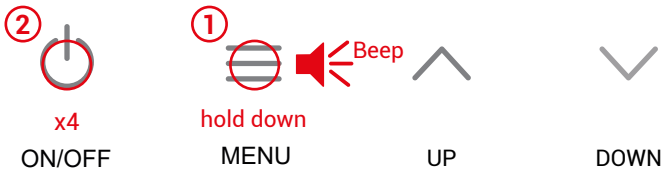


When turn on the unit or power supply is restored: if memory is ON, it will return to the configuration it had before turn off or external incident (power supply fail).

(**) Only if an outside temperature sensor is installed on the air curtain PCB.

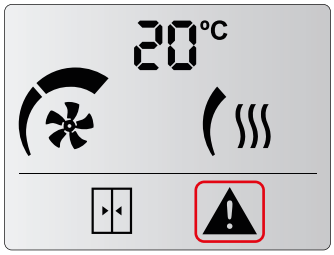
2.4. Control Locking

The control can be locked, but the air curtain will still operate normally.
To lock the device, the user needs to press the following key combination:



Hold down the menu button until the beep sounds and press the ON/OFF button 4 times and release the MENU button. Then a higher-pitched beeping sound will be played.

When the equipment is locked, we will not be able to carry out any action. This limitation also applies with the remote control.
For example, when pressing the menu, a lower-pitched beep will be played indicating that the equipment is locked.
In addition, the alarm symbol shall appear on the display.



Flashing ON

To **unlock the unit**, the user must repeat the same combination of buttons as for locking.
Then a higher-pitched beeping sound will be played, indicating that the control has been unlocked.

3. INTERFACE MODE

In models without heating and with water or electric heating, the Interface mode can be activated by closing the digital input DIN6.

This mode is specially designed for connecting the control to a BMS or PLC with potential-free signals.

With input DIN6 closed, the heating speeds and stages must be selected via the other potential-free, voltage-free digital inputs (DIN1, DIN2, DIN3, DIN4 and DIN5).

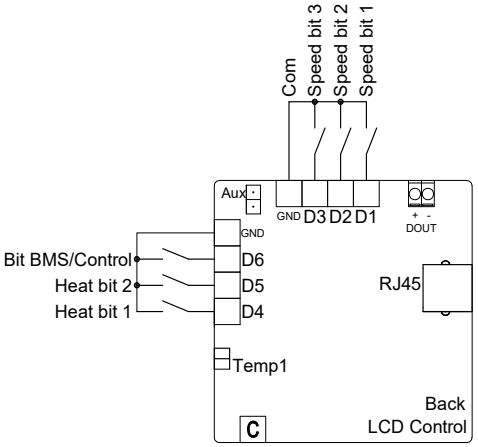
If the interface mode is to be used, the inputs must not be used to connect Heating OFF, Fire Alarm, door contact, etc.

Electrical heater	Din4	Din5
Heat 3 stages	Bit 1	Bit 2
Heat 0	Open	Open
Heat 1	Closed	Open
Heat 2	Open	Closed
Heat 3	Closed	Closed

Water heater	Din4	Din5
Heat On/Off	Bit 1	Bit 2
Heat Off	Open	Open
Heat ON	Closed	Open

Control for BMS or LCD

BMS	Din6
BMS Master	Closed
Control Master	Open



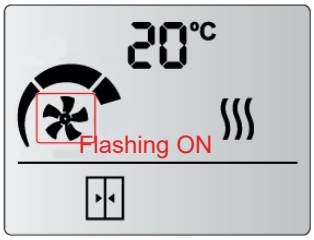
	Din3	Din2	Din1	
Speed	Bit 3	Bit 2	Bit 1	Bit 3 Bit 2 Bit 1
Speed 0	Open	Open	Open	111
Speed 1	Closed	Closed	Open	001
Speed 2	Closed	Open	Closed	010
Speed 3	Closed	Open	Open	011
Speed 4	Open	Closed	Closed	100
Speed 5	Open	Closed	Open	101
Blocked	Open	Open	Closed	110

Blocked off only available for 2025 generation PCBs

4. COOLING, AUTOCOOLING, EXTERNAL CONTROL AND BOOST FUNCTION

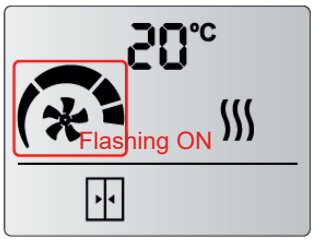
Cooling:

When the discharge (or internal sensor on 5-speed PCB) temperature is lower than the ambient temperature, Cooling mode starts working and limits to the third fan speed. The fan icon will flash intermittently.



Autocooling:

Autocooling is only available for Electric heating.
If the air curtain has been running with heating for more than 10 s at a time and the user switch it off, the ventilation continues ON (at the same speed before stop the control) up to a maximum of 90 s depending on the heating working time. The ventilation speeds icons will flash intermittently and the fan icon will remain static.



External control:

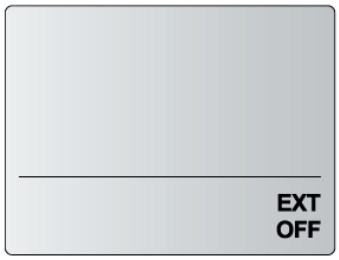
The “EXT” icon indicates that there is an external control to the unit and it is affecting the unit. There are four external signals available, depending on the program selected.

In the P1 program:

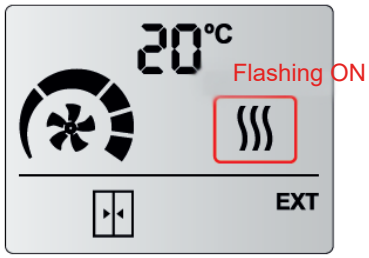
- **EXT OFF**: The unit has been stopped by External OFF contact. Not considered an alarm.
- **HEAT OFF**: Heating OFF, stopped externally. Not considered an alarm.

In the P2 program:

- **FAN EXT:** It is possible to select a fan speed when the DIN1 is closed.
- **Defrost:** The unit is set to configurated speed (V1 default) for the duration of the defrost. The fan and ventilation speeds icons will flash intermittentlly.



EXT CONTROL OFF



HEAT OFF

Boost Function:

The Boost function increases automatically the setpoint temperature (SET) when the door is open. For the function to be active, the door contact or the exterior sensor must be installed and, in addition, the Boost function varies according to the accessories installed:

Door contact	Exterior sensor	Boost
NO	NO	Not available
YES	NO	Open door → Always Boost *
NO	YES	Exterior temperature ≤ SET Temperature -7
YES	YES	Open door + Exterior temperature ≤ SET Temperature -7

*If you want to deactivate this function, set function 10 in the configuration menu to 0°.

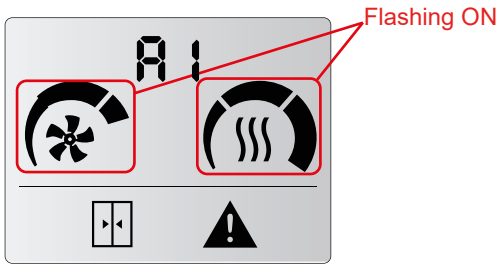
5. ALARMS AND ERRORS

To indicate an alarm (A) or an error (E), it will be displayed with a letter and a number in the same place as the temperature.

4.1. Alarms

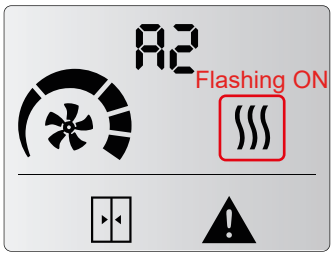
Alarms will remain fixed on the display because it affects to the device functioning.

A1 - Overheating (only electrical heated)



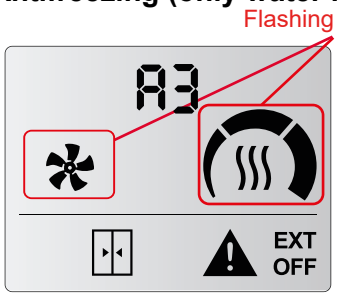
When the unit goes into overheating, it starts a process to cool it down. The ventilation starts to rise up to the maximum each 2 minutes. If overheating persists, the heating is turned down each 2 minutes until it is switched off. If it is still not solved, after 2 minutes heating is blocked and alarm A2 is activated (check A2).

A2 - Heating Blocked (only electrical heated)



The heating is blocked and switched off. It is the overheating safety program. Service must check the unit and fix the problem to avoid internal damages. Once solved, reset the unit.

A3 - Antifreezing (only water heated)



When ambient and discharge temperature is below antifreezing temperature set (5ºC), the valve opens to protect the water coil and the fan stops functioning.
It can be also activated by external antifreezing sensor connected to the PCB.

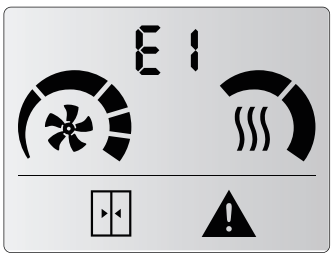
A6 - Fire Alarm

Stops and locks the unit. To unlock it, the power supply must be switched off. It is activated with DIN3 digital IN on the control unit.

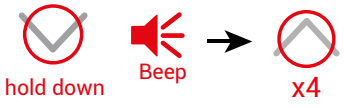
4.2. Errors

Errors will not remain on the display, they will alternate with the ambient temperature. Unit operation remains working normal or adapted.

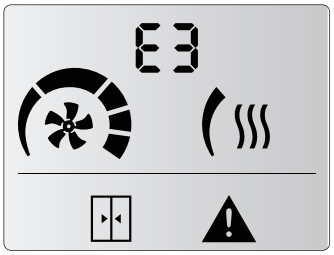
E1 - Filter/maintenance



Indicates filter change or cleaning / maintenance.
This alarm is activated by time counter. It does not affect operation. To reset the counter:



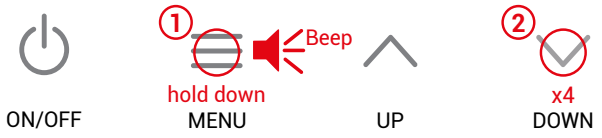
E3 - Missing temperature sensor

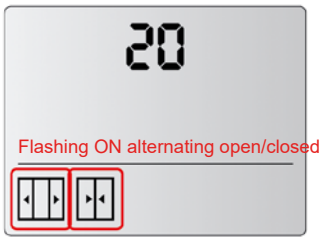
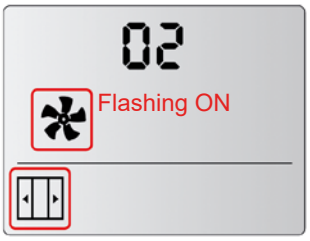
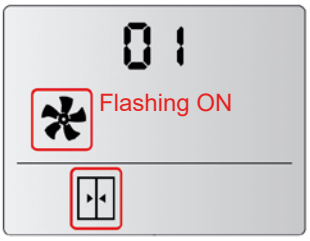
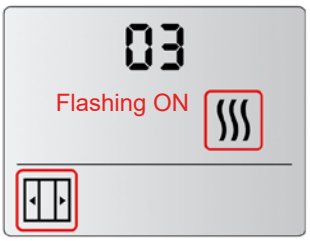
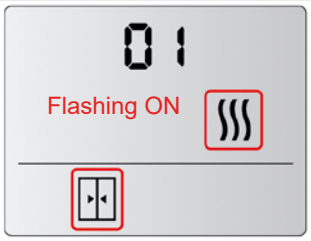
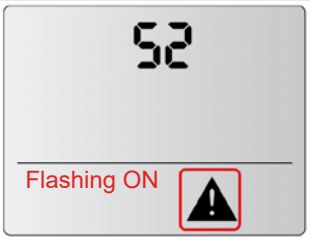
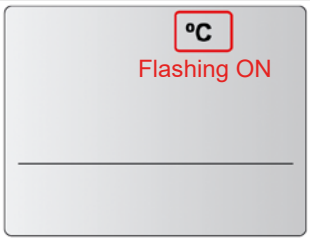
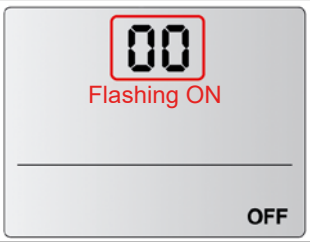
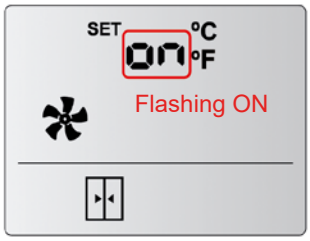
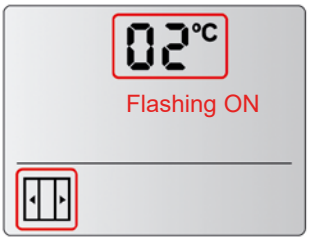
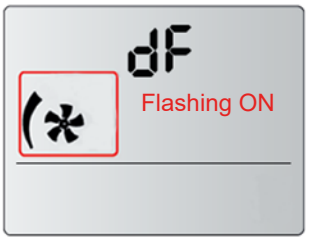
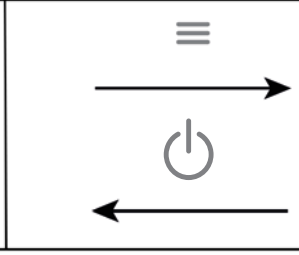


Missing temperature sensor or temperature out of range.
Unit operation adapts and remains working according to inbuilt room temperature sensor.

6. CONFIGURATION

To access the advanced menu, hold down the menu button (until a beep is heard) then press the DOWN button 4 times and release the MENU button.



1- Door Delay (0,5,10...90)(seconds) 15 sec by default	**2- Maximum speed (limit)** Open Door (*)	**3- Maximum speed (limit)** Closed Door (*)	**4- Maximum heating (limit)** Open Door (*)
			
5- Maximum heating (limit) Closed Door (*)	**6- Filter/maintenance (effective days) (*)** (0,1,2....99) (0 days by default)	**7- Celsius/Farenheit** Celsius by default	**8- Memory** 00 - Memory OFF 01 - Memory ON (by default)
			
9- Heater Function On by default	**10- Set Boost Mode** SET + x°C when door is open (+2 °C by default) (see page 11)	**11- Defrost Function** Only for Heat Pump air curtains	**Press Button** Between screens
			

1- Time that the speed and heating stages remain in open door mode from the time the door contact is closed until the air curtain operates at closed door speed and heating stages.

2,3,4 and 5- Limits the ventilation and heating stages that can be selected in the user menu.

6- The numbers are sequential. If the maximum is reached, it will go back to the beginning. For example, in the *Filter/maintenance* days when the user reach 99 in case to keep going up it will go back to 0.

8- In a power failiure:

- If Memory is set as ON. Once power supply is restored, the unit will go back to work with the same parameters than before the failure.
- If Memory is set as OFF. The unit will remain switched off.

9- Thermo ON - Ventilation ON when room temperature reaches SET temperature at closed door. Thermo OFF - Ventilation OFF when room temperature reaches SET temperature at close door.

(*) By default, door open/close icons are not activated. First time the door contact is closed, then it is possible to choose door open heating/ventilation and door closed heating/ventilation.

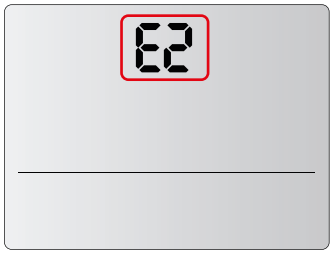
7. INPUT/OUTPUT CONFIGURATION

As shown in the initialization section, each air curtain model comes with a predefined program. The control configures the connected inputs and outputs differently depending on the selected model.

A2 - Only Air. 2-speed stages

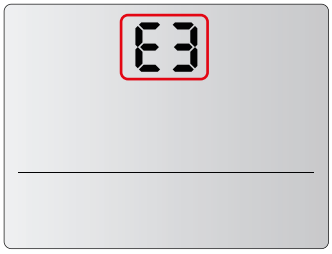
Digital Input:
DIN1 - OFF
DIN2 - n/a
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - n/a

E2 - Electrical Heating. 2-speed stages and 2-heating stages



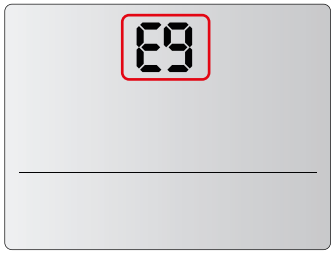
Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - Overheating

E3 - Electrical Heating. 2-speed stages and 3-heating stages



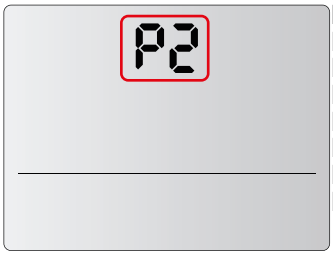
Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm (*)
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - Overheating

E9 - Electrical Heating. 2-speed stages. Limited 1000-9kW



Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm (*)
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - Overheating

P2 - Water Heating. 2-speed stages



Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - Antifreeze
DIN6 - Interface
DOUT - n/a

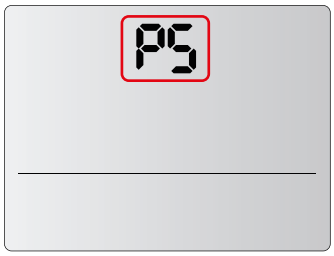
A5 - Only Air. 5-speed stages.

Digital Input:
DIN1 - OFF
DIN2 - n/a
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - n/a

E5 - Electrical Heating. 5-speed stages

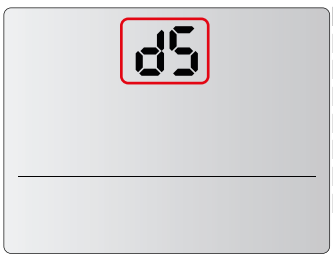
Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm (*)
DIN4 - Door
DIN5 - n/a
DIN6 - Interface
DOUT - Overheating

P5 - Water Heating. 5-speed stages



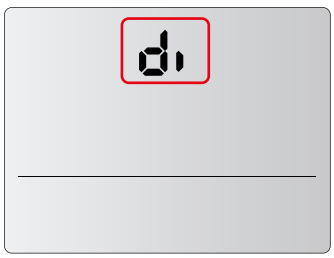
Digital Input:
DIN1 - OFF
DIN2 - Heating OFF
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - Antifreeze
DIN6 - Interface
DOUT - n/a

dS - Heat Pump DX Slave



Digital Input:
DIN1 - Fan
DIN2 - Defrost
DIN3 - Fire Alarm
DIN4 - Door
DIN5 - Cool
DIN6 - n/a
DOUT - n/a

in - Interface

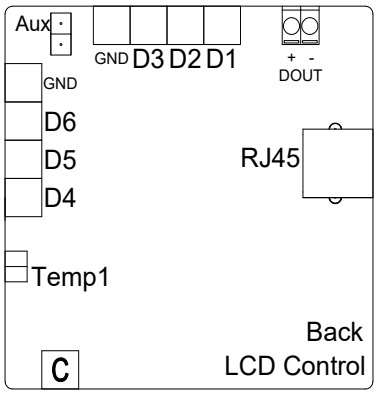


Digital Input:
DIN1 - Low speed
DIN2 - Medium speed
DIN3 - High speed
DIN4 - Door
DIN5 - Defrost
DIN6 - Fire Alarm
DOUT - Overheating

(*) FIRE function does not work with old versions of the PCB, PER-05V-W and PEC-02V-O.

8. DIGITAL INPUTS

Position of the digital inputs on the back of the LCD control:

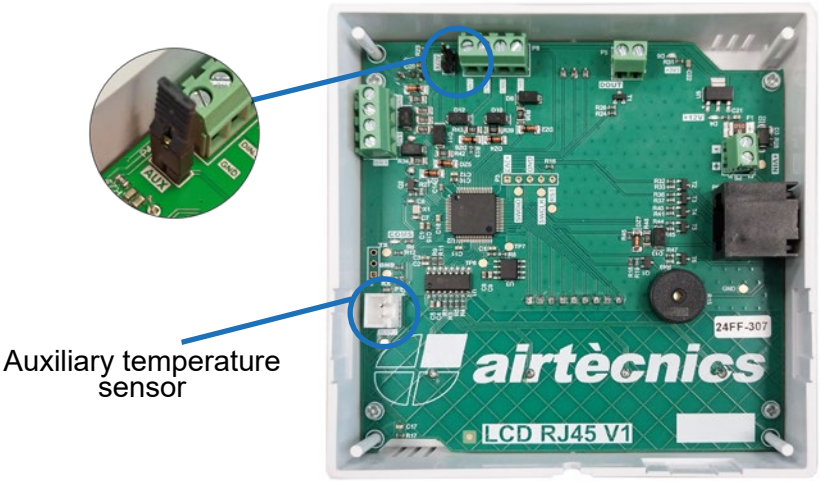


9. TEMPERATURE SENSOR (AUX) ROOM/EXTERIOR

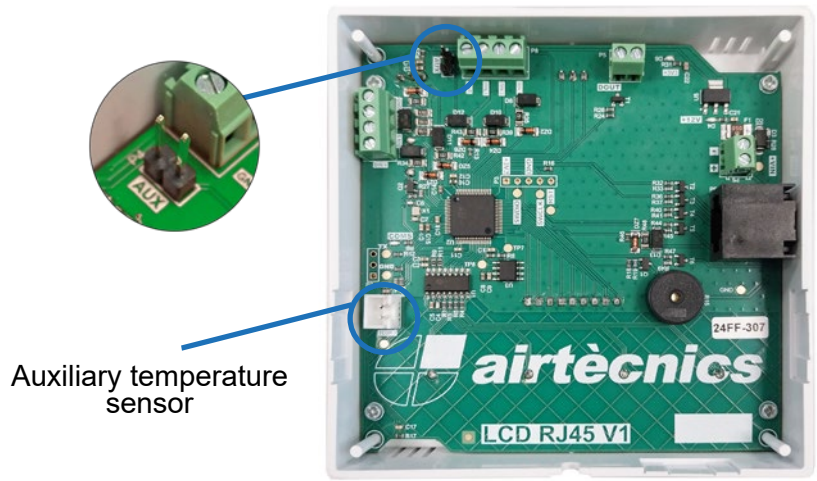
The LCD control has a room temperature sensor and, optionally, an additional temperature input.

If a sensor is connected to this input, the control will interpret the temperature as:

- Interior: With jumper



- Exterior: Without jumper



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AIRDOM05791-R6(04/25) ORIGINAL USER MANUAL
Airtècnics reserves the right to modify some of the specifications in this manual.