

ADVANCED PRO RJ45 Control



INSTALLATION AND OPERATION MANUAL

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1. INTRODUCTION

1.1. Description

The **ADVANCED PRO RJ45** control is a versatile Plug&Play 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 adjusts the heating based on the desired set temperature, depending on the room temperature and the door status of the establishment.

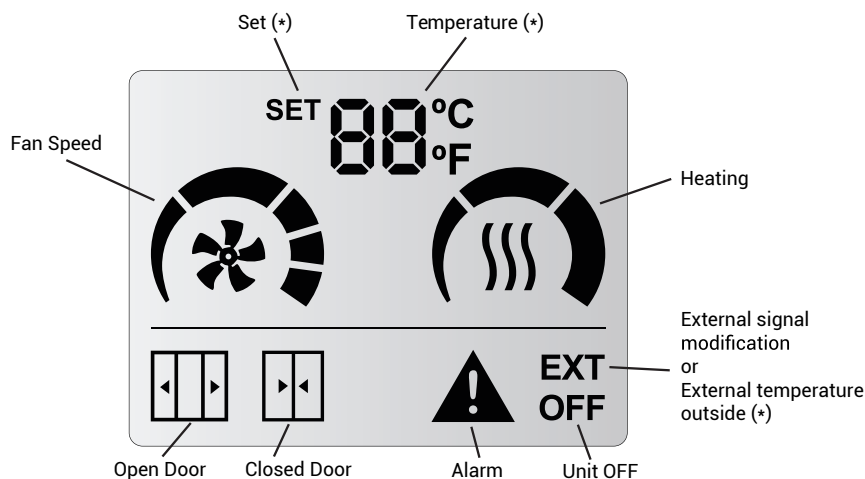
In addition, different heating speeds and stages can be selected depending on the door status. It has a "Boost" function when the door is open which increases the heating to ensure comfort.

1.2. Main Features

- Backlight LCD indicating fan speed, heating stage, room temperature, door state, external control, auto cooling, alarms and errors.
- Inbuild room thermostat to turn ON/OFF or modulate the heating according to SET temperature.
- Ready for door contact with door delay to allow 2 different ventilation speed and heating stages depending on door state (open/close).
- 6 digital IN configured according to the program (ON/OFF external, ON/OFF heating, fire alarm, etc).
- Allows configuration of maximum limit of fan speed and heating when door is open and closed, the boost mode, the memory, etc.
- Filter/maintenance alarm by time.

1.3. Screen and Buttons

Screen Layout:



SET	
External	
Room	

Button Layout:



- ON/OFF (circle with line)
- Use the arrows to set the temperature when electrical/water/DX heated air curtain (arrows)
- 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/DX heated air curtain

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 10°C and 35°C. Below 10°C and above 35°C, you can select “no” and the heating will not be limited by temperature (manual 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.

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

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

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

The 2-speed electrical heated air curtains manufactured **since 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. If it has a proportional valve it can be regulated on 3 stages.

Single Stage (ON/OFF):

- OFF = 0 segments painted
- ON = 3 segments painted

Proportional (only 5-speed with Airtècnics' 2024 PCB):

- 0% = 0 segments painted
- 33% = 1 segment painted
- 66% = 2 segments painted
- 100% = 3 segments painted

- *Heat Pump:*

DX CD: only one heating stage (ON/OFF).

Slave DX: the heating is not being regulated by the LCD control.

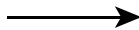
2.2. Device Initialization

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.

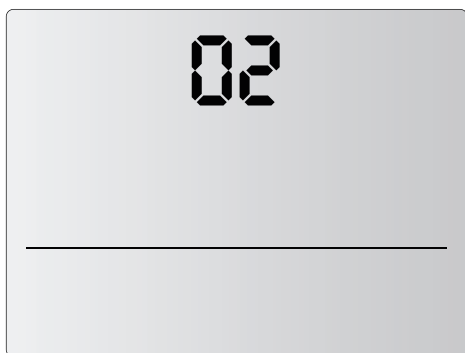
Example:



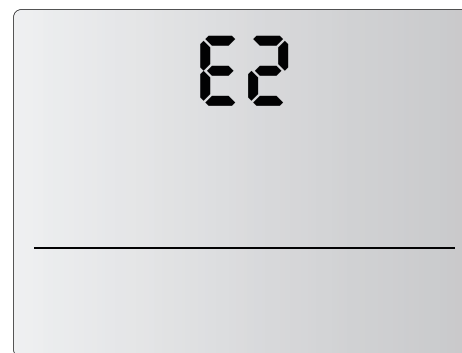
ADVANCED PRO RJ45 version: 01



Space between version and sub-version.



ADVANCED PRO RJ45 subversion: 02



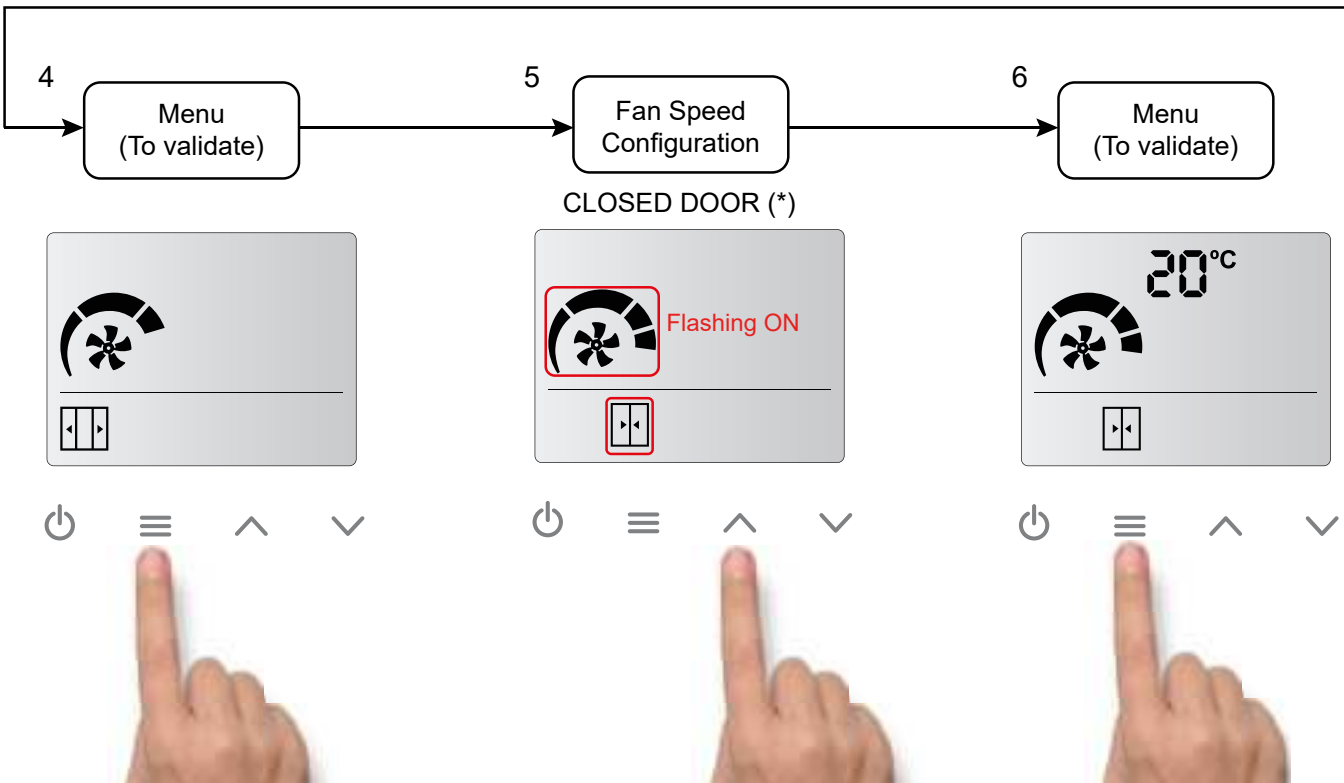
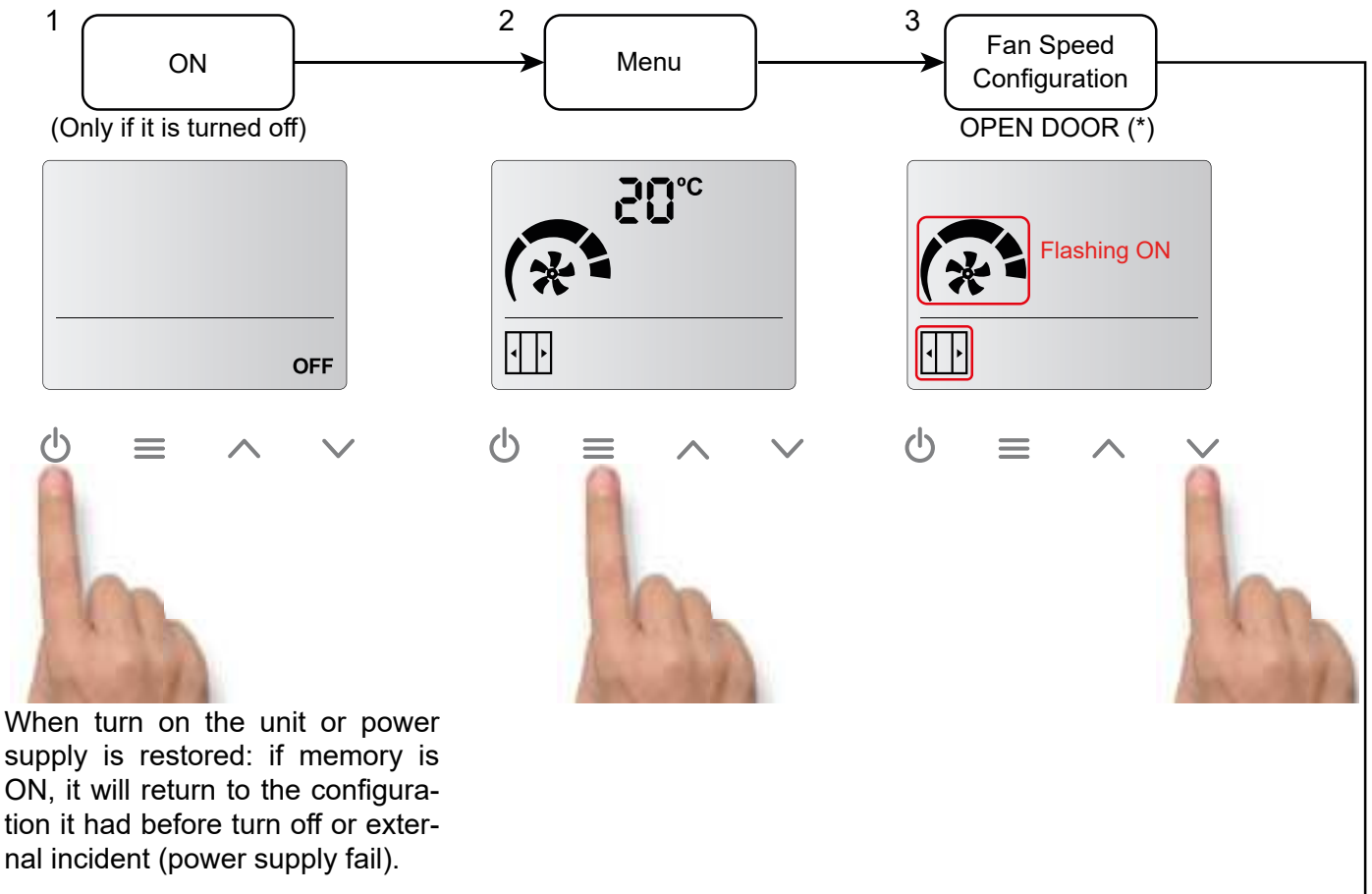
2-speed and 2 stages Electrical heating Model

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
in: Interface Slave

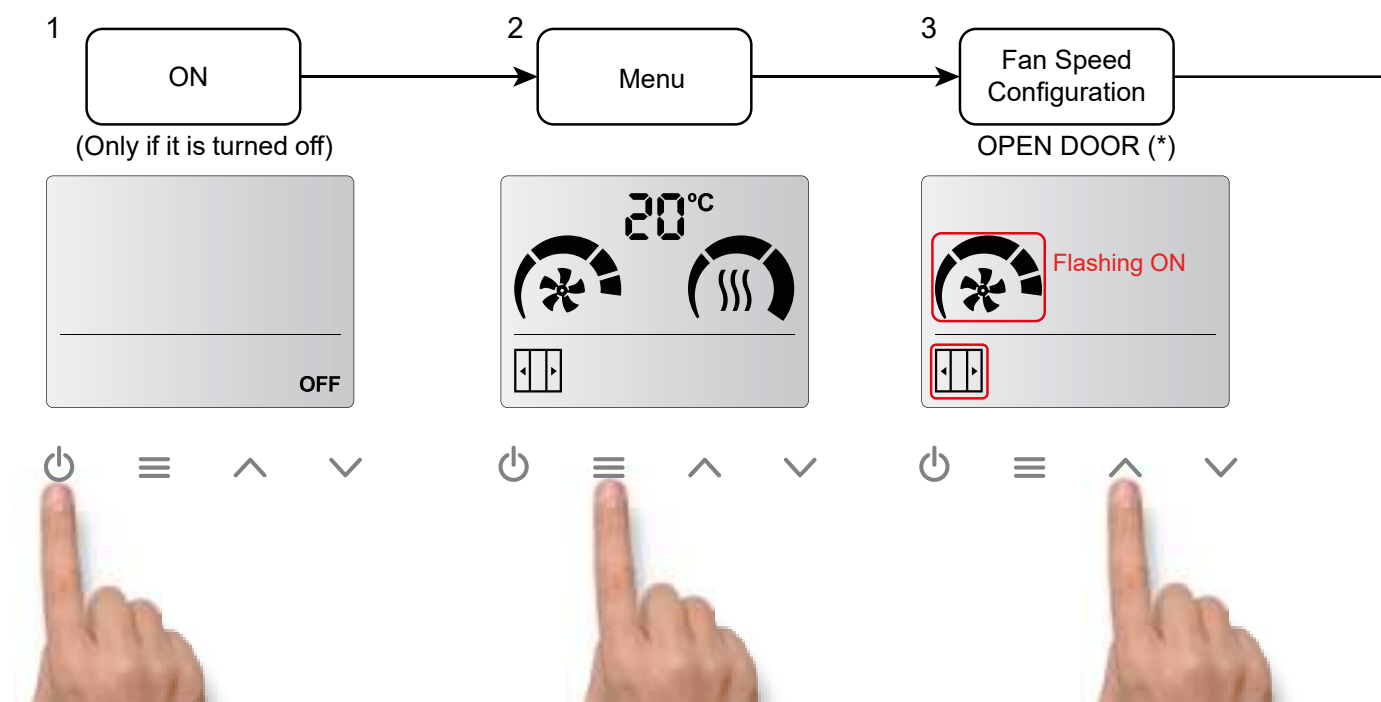
2.3. LCD User Menu Workflow

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

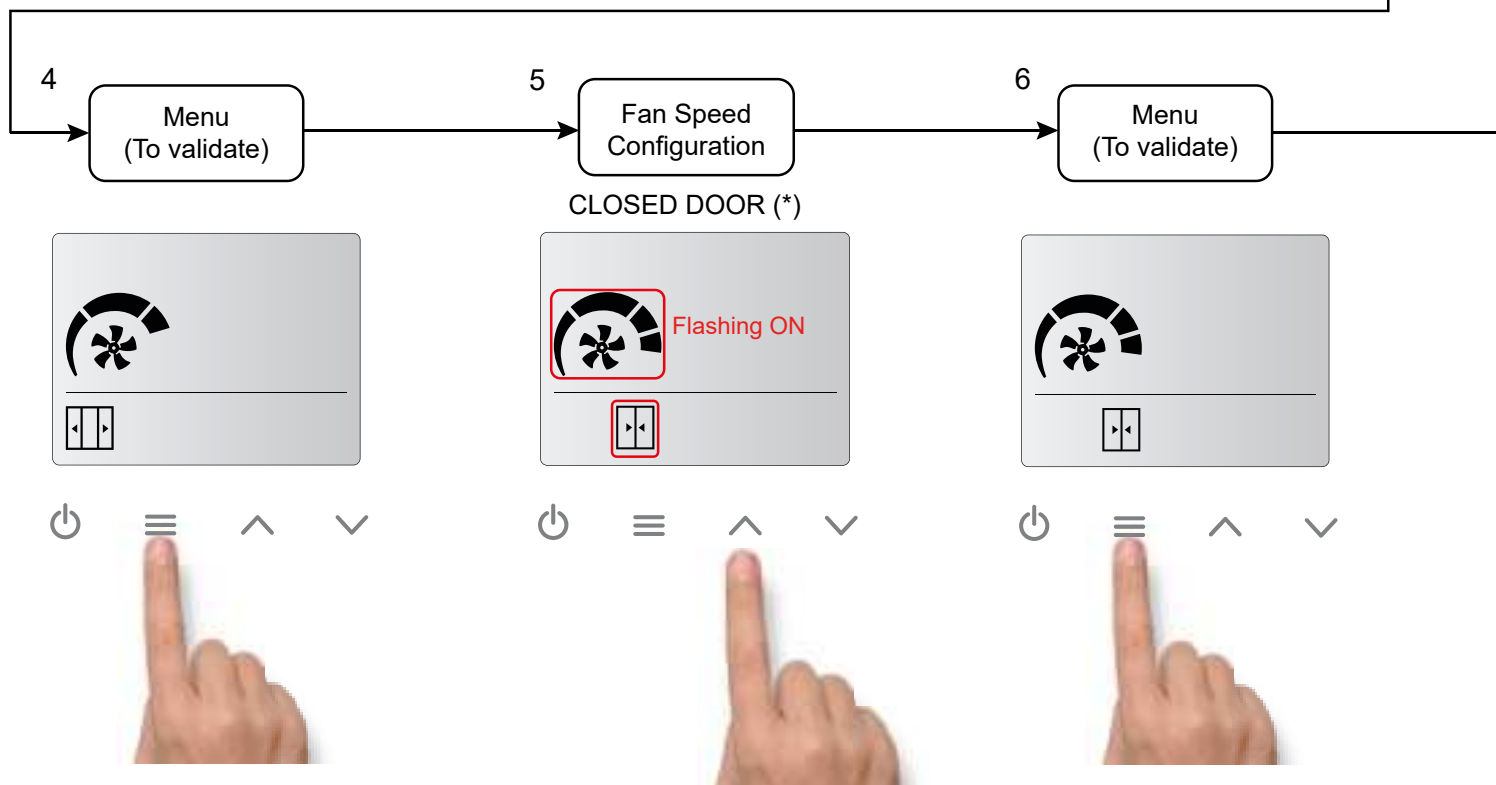


(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.

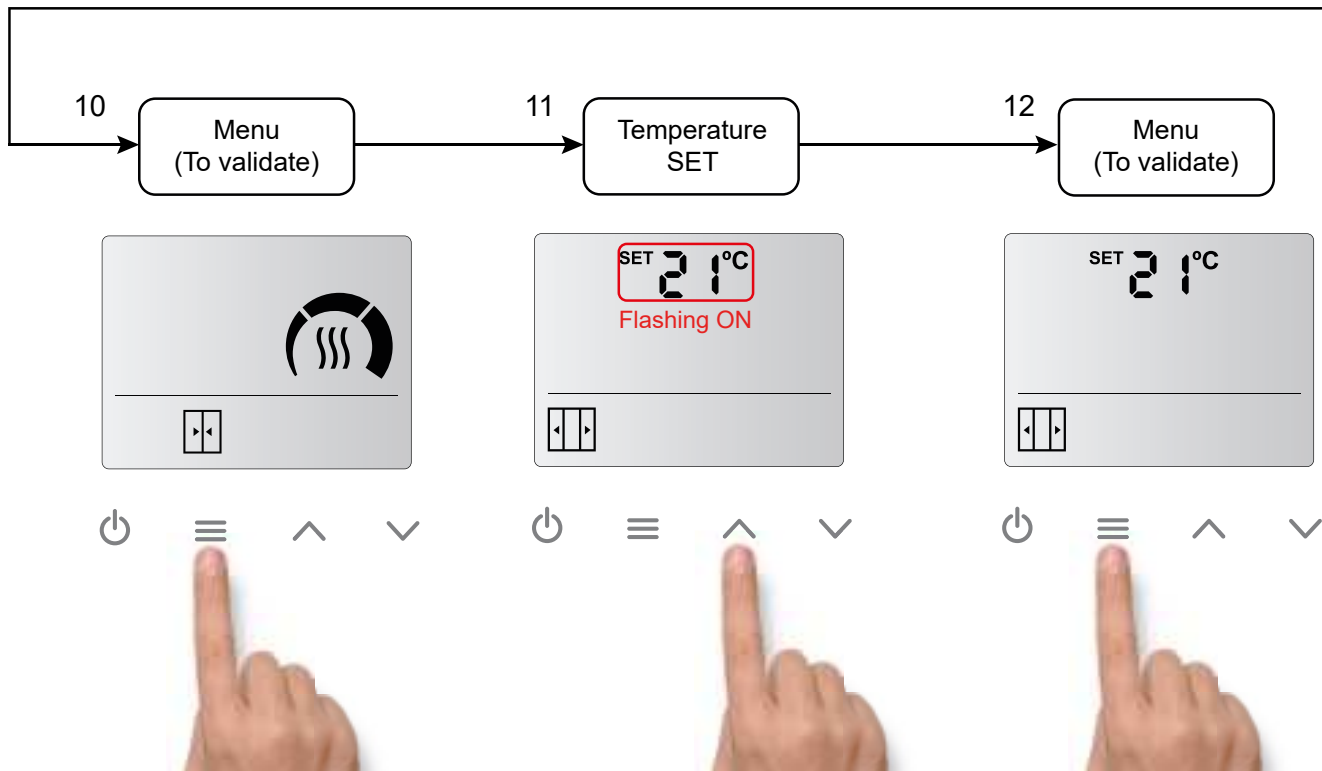
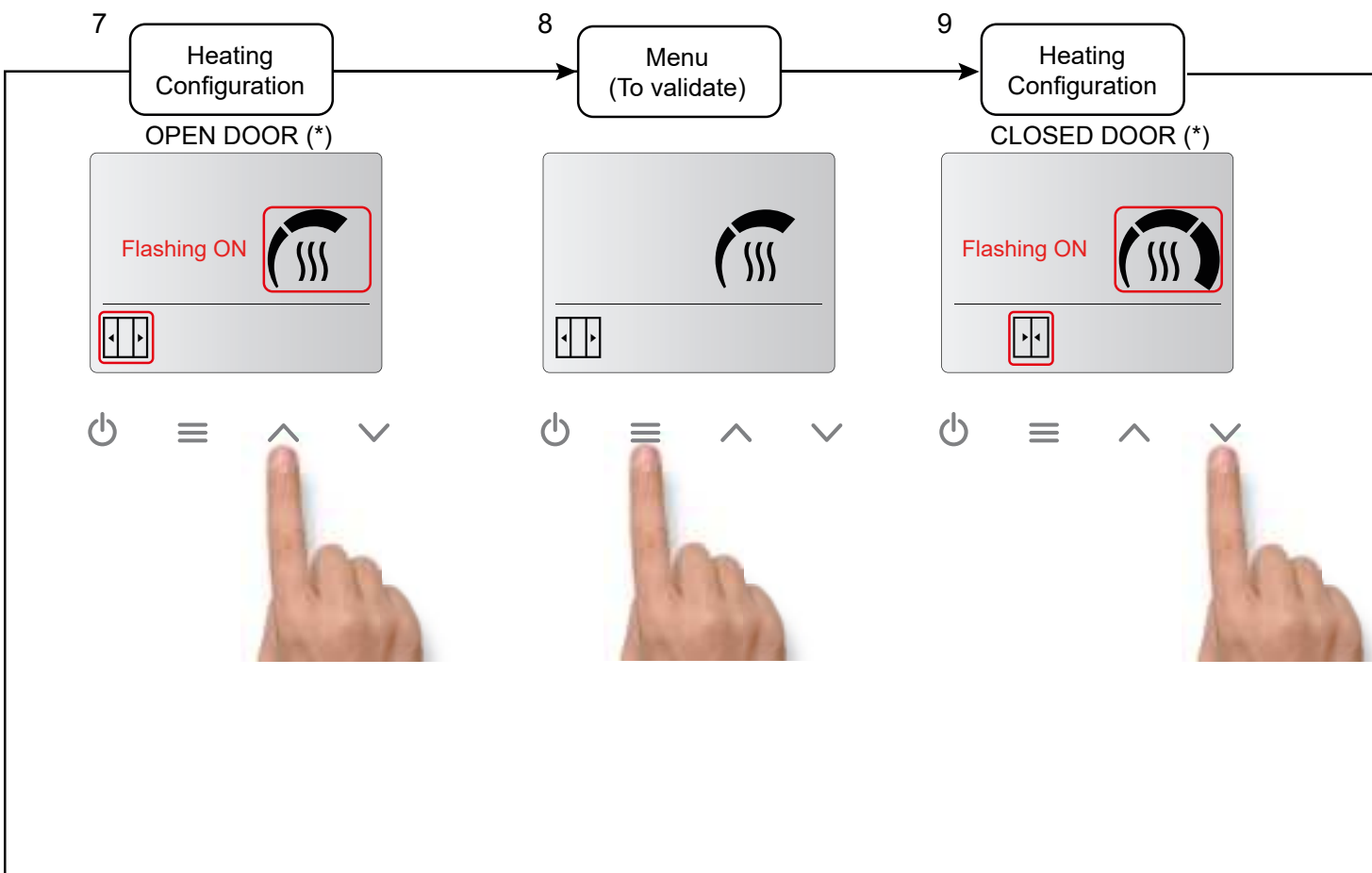
Menu Flow for heated air curtains models (it's the same process for electric heated, water heated or heat pump units):



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).

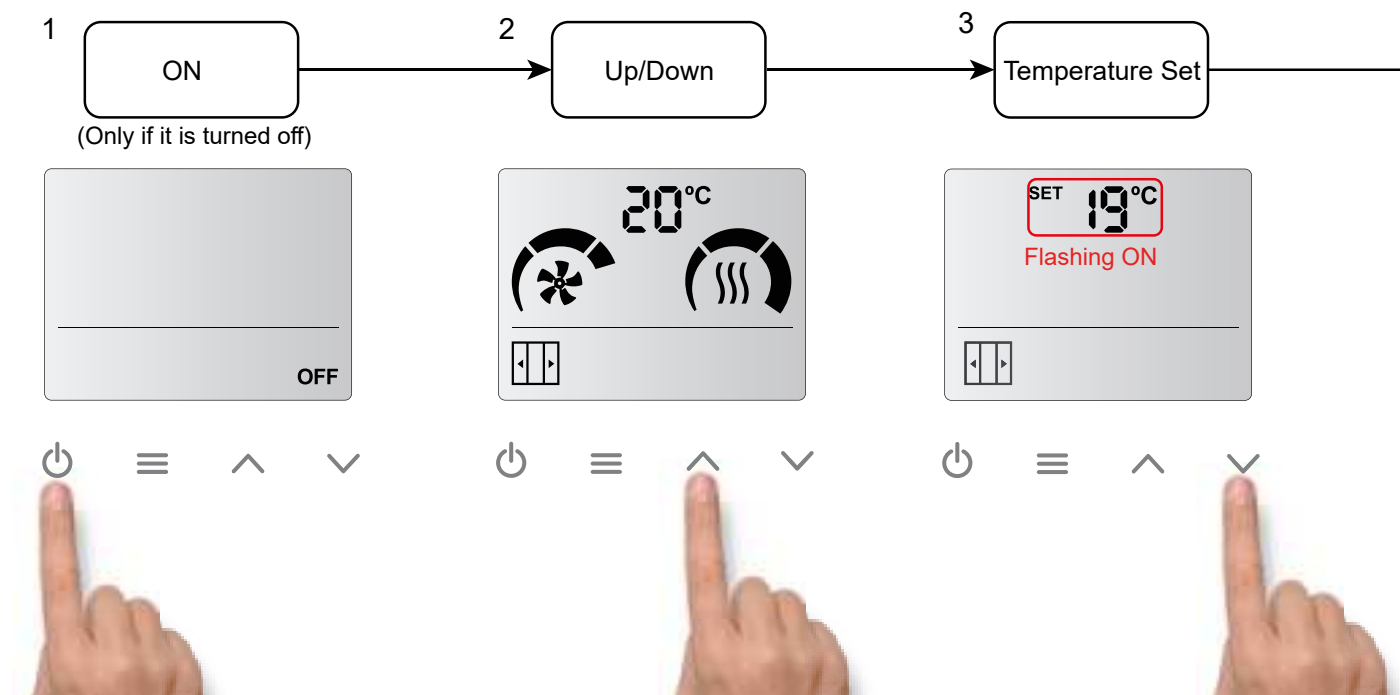


(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.

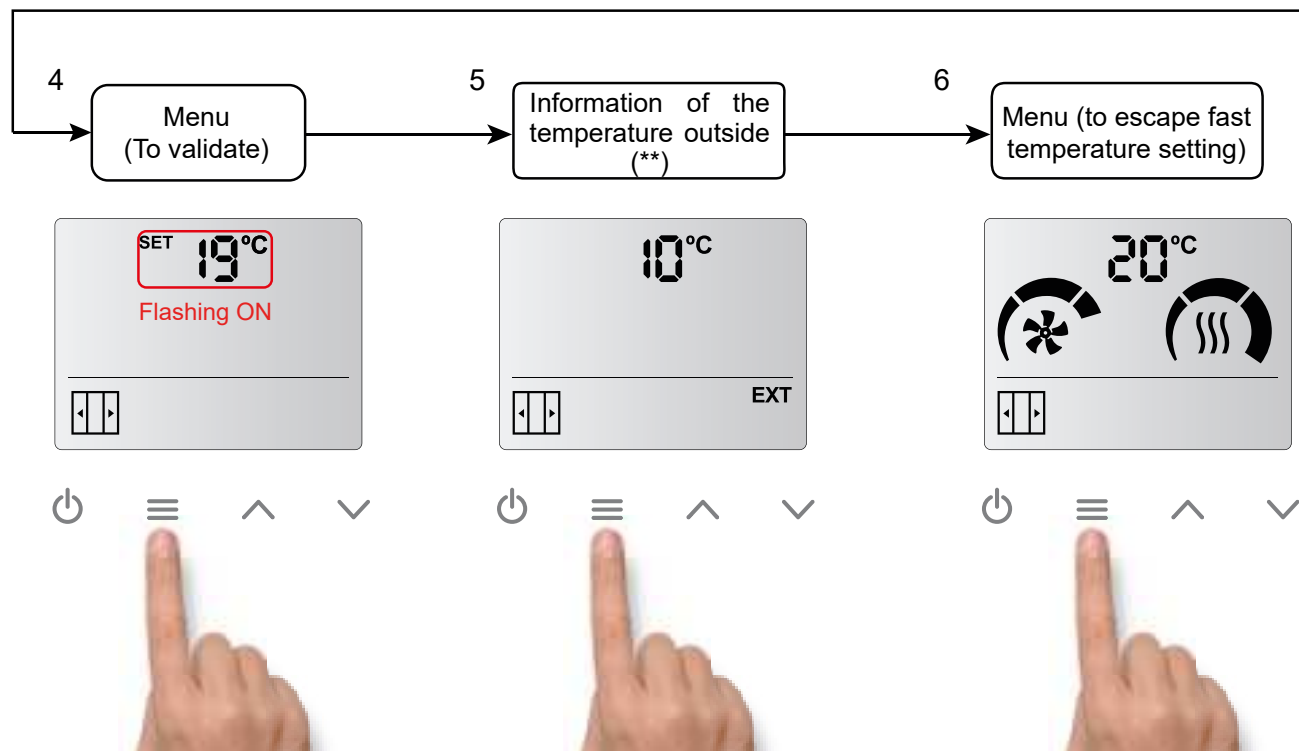


(*) If the door contact is not detected, the door open and door closed icons will not appear. Only one speed and one heating will be available.

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



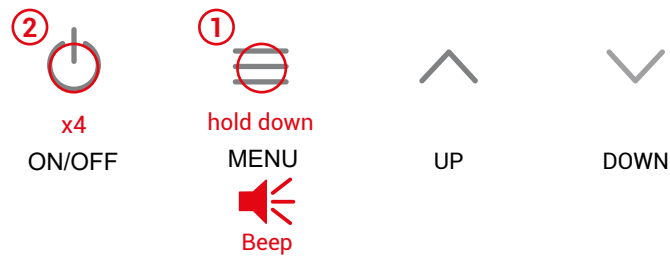
When turn on the unit or power supply is restored: if memory is ON, it will return to the configuration it had before turn off or external incident (power supply fail).



(**) 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:

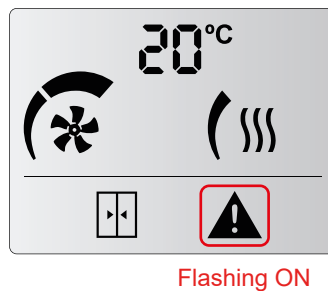


Hold down the menu button until the beep sounds and press the ON/OFF button 4 times and release the MENU button. Then it will be hear a higher-pitched beeping sound.

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, we will hear a lower-pitched beep indicating that the equipment is locked.

In addition, the alarm symbol shall appear on the display.



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

3. AUTOCOOLING AND EXTERNAL CONTROL

Autocooling:

Autocooling is only available for Electric heating only.

If the air curtain has been running with heating for more than 10 seconds 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 seconds depending on the heating working time. The fan and speed stages icons will flash intermittently.



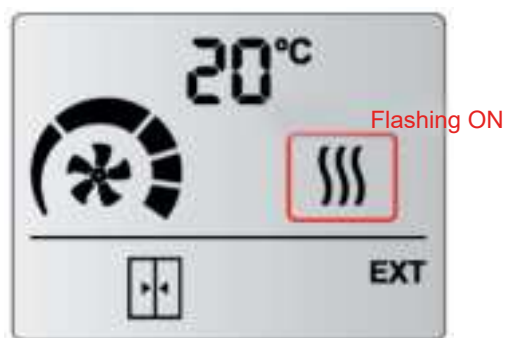
External control:

The "EXT" icon indicates that there is an external control to the unit and it is affecting the unit. There are two external signals available:

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



EXT CONTROL OFF



CALE OFF

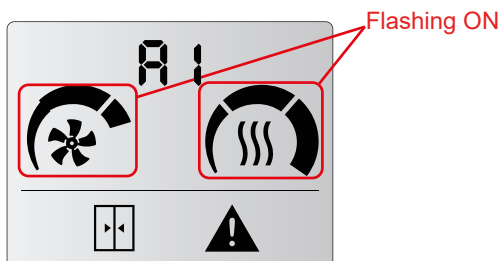
4. ALARMS AND ERRORS

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

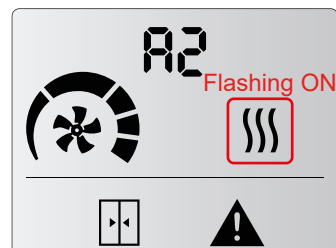
Alarms will remain fixed on the display because it affects to the device functioning.

A1 - Overheating (only electrical heated)



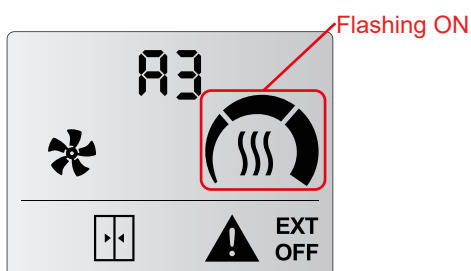
When the unit goes into overheating, it starts a process to cool it down. The ventilation starts to rise up to the maximum each 2 minutes. If overheating persists, the heating is turned down each 2 minutes until it is switched off. If it is still not solved, after 2 minutes heating is blocked and alarm 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 temperature is below anti-freezing temperature set (5°C), the valve opens to protect the water coil and the fan stops functioning. It can be also activated by external anti-freezing sensor connected to the PCB or a discharge temperature sensor installed on the air curtain PCB.

A6 - Fire Alarm

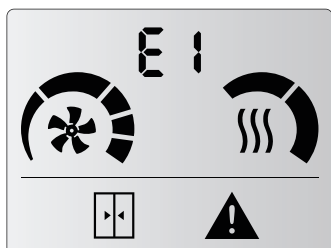


Stops and locks the unit. To unlock it, the power supply must be switched off. It is activated with DIN3 digital IN on the control unit.

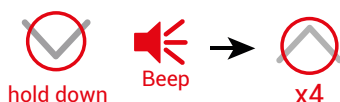
4.2. Errors

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

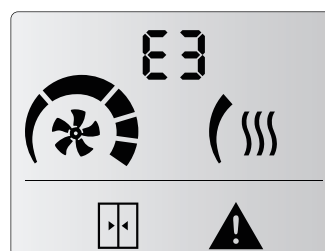
E1 - Filter/maintenance



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



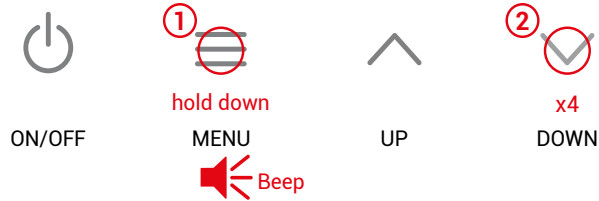
E3 - Missing temperature sensor



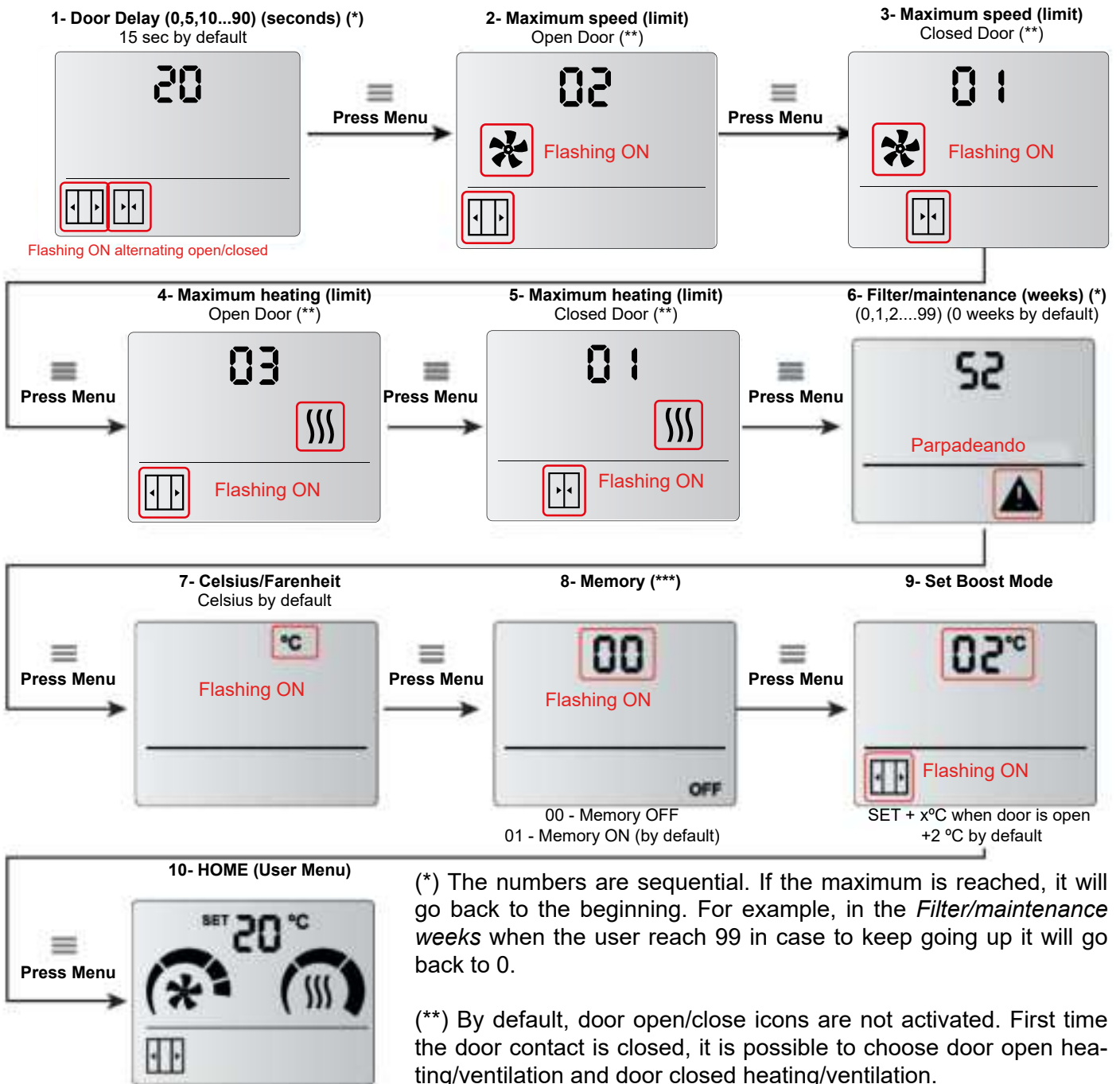
Missing temperature sensor or temperature out of range. Unit operation adapts and remains working according to inbuilt room temperature sensor.

5. 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.



In this menu is possible to modify operation parameters of the air curtain like the door delay, the max speed and max heating with open or closed door, the frequency of filter maintenance, temperature units system used, memory or setting the boost mode.



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

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

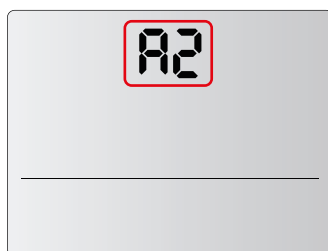
(***) In a power failure:

- 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.

6. INPUT/OUTPUT CONFIGURATION

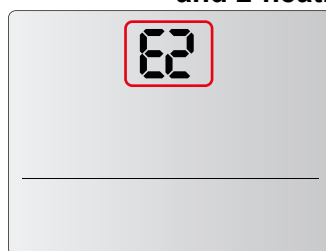
As shown in the initialization section, each air curtain model comes with a predefined program. The control configures the connected inputs and outputs differently depending on the selected model.

A2 - Only Air. 2-speed stages



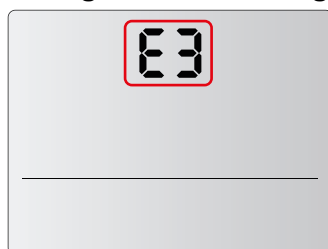
Digital Input:
 DIN1 - OFF
 DIN2 - n/a
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - n/a

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



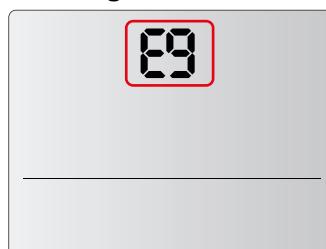
Digital Input:
 DIN1 - OFF
 DIN2 - Heating OFF
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - Overheating

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



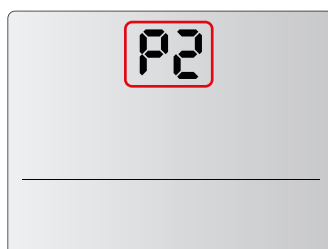
Digital Input:
 DIN1 - OFF
 DIN2 - Heating OFF
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - Overheating

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



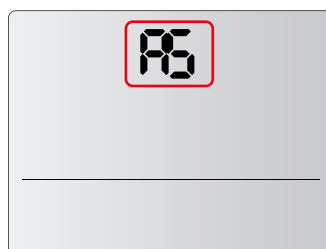
Digital Input:
 DIN1 - OFF
 DIN2 - Heating OFF
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - Overheating

P2 - Water Heating. 2-speed stages



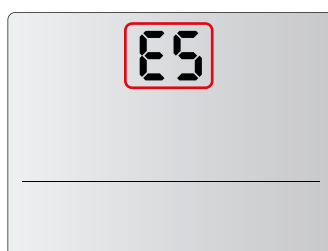
Digital Input:
 DIN1 - OFF
 DIN2 - Heating OFF
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - Cool
 DIN6 - Antifreeze
 DOUT - n/a

A5 - Only Air. 5-speed stages.



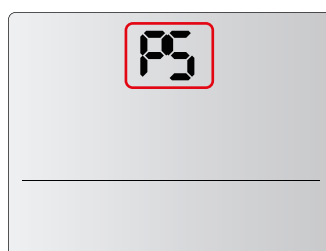
Digital Input:
 DIN1 - OFF
 DIN2 - n/a
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - n/a

E5 - Electrical Heating. 5-speed stages



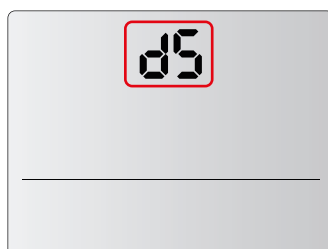
Digital Input:
 DIN1 - OFF
 DIN2 - Heating OFF
 DIN3 - Fire Alarm
 DIN4 - Door
 DIN5 - n/a
 DIN6 - n/a
 DOUT - Overheating

P5 - Water Heating. 5-speed stages



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

dS - Heat Pump DX Slave



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

in - Interface Slave



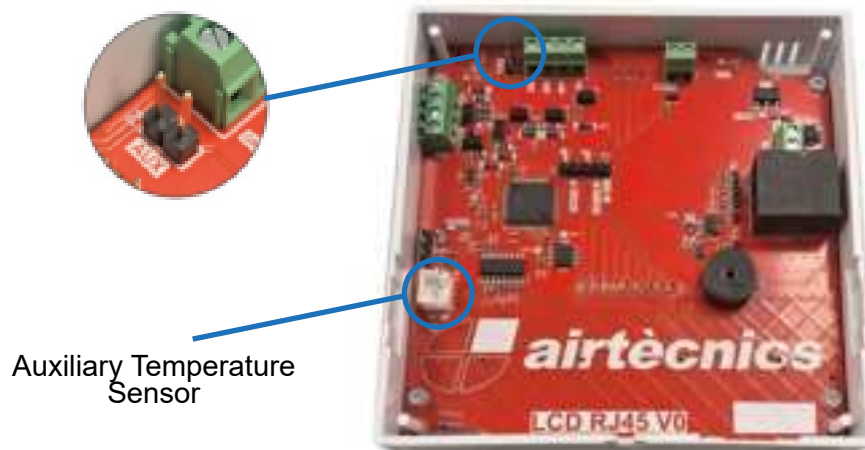
Digital Input:
 DIN1 - Speed Bit 1
 DIN2 - Speed Bit 2
 DIN3 - Speed Bit 3
 DIN4 - Heating Bit 1
 DIN5 - Heating Bit 2
 DIN6 - Bit BMS/Control
 DOUT - Overheating

7. TEMPERATURE SENSOR (AUX) ROOM/EXTERIOR

The functionality of this sensor depends on whether the AUX jumper is connected or not.

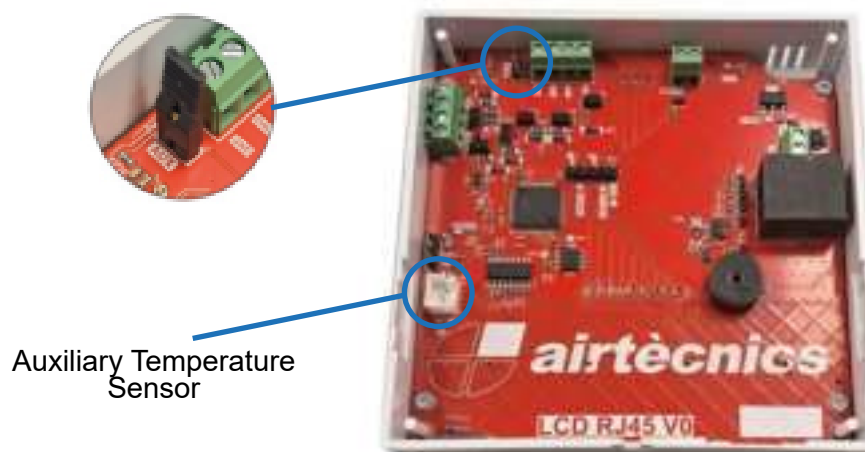
- No jumper connected:

The room temperature is read by the inbuilt temperature sensor included in the control. Optionally if the Auxiliary sensor is connected, the temperature outside the building can be read.



- Jumper is connected:

The ambient temperature is read by the Auxiliary temperature sensor instead of the one included on the board. The outdoor temperature will not be available to be read.



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