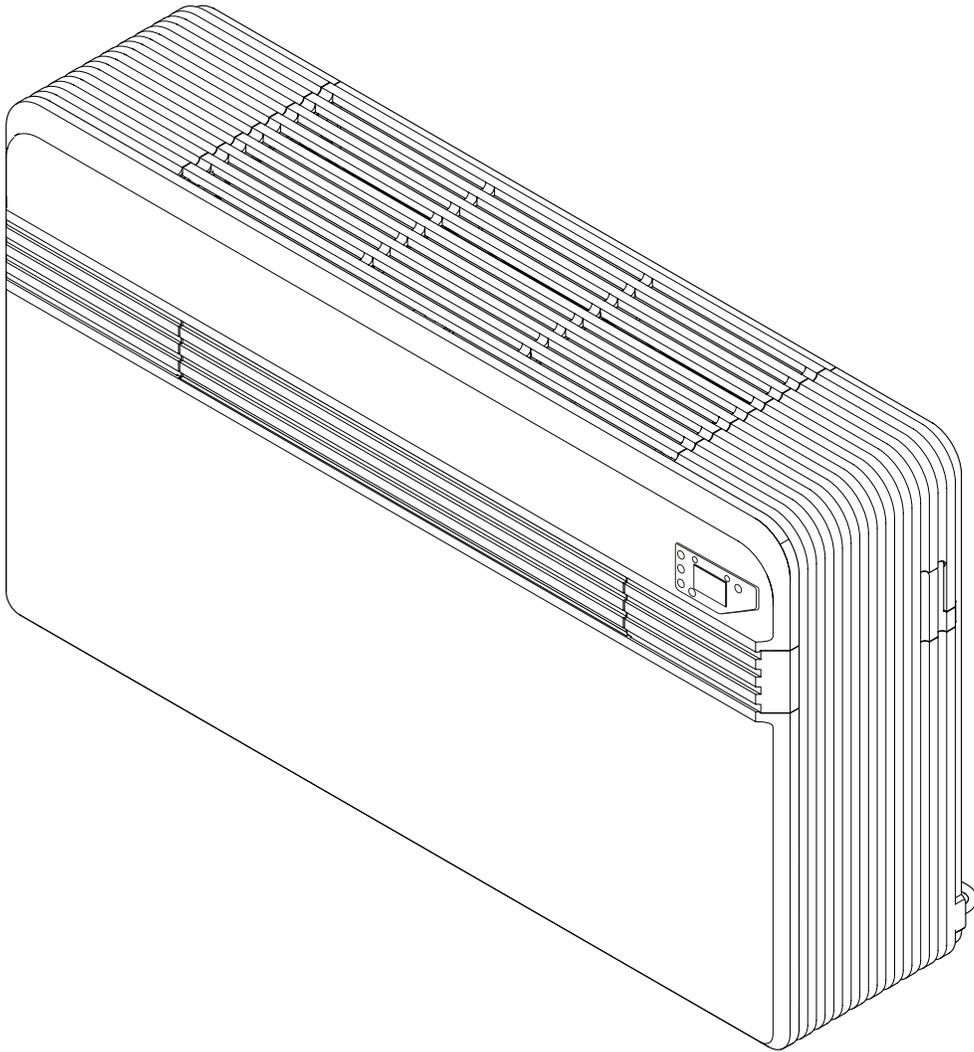


MAESTRO

INVERTER 12 HP Model# 01925



SERVICE MANUAL 

 **OLIMPIA
SPLENDID**
HOME OF COMFORT

SYMBOLS USED IN THE MANUAL AND THEIR MEANING



WARNING

To indicate actions that if not carried out correctly may result in injuries of general origin, personal injury or death.



ATTENTION

To indicate actions that if not carried out correctly can cause accidents of general origin or can generate malfunctions.

NOTICE

To indicate important information and particularly delicate operations.

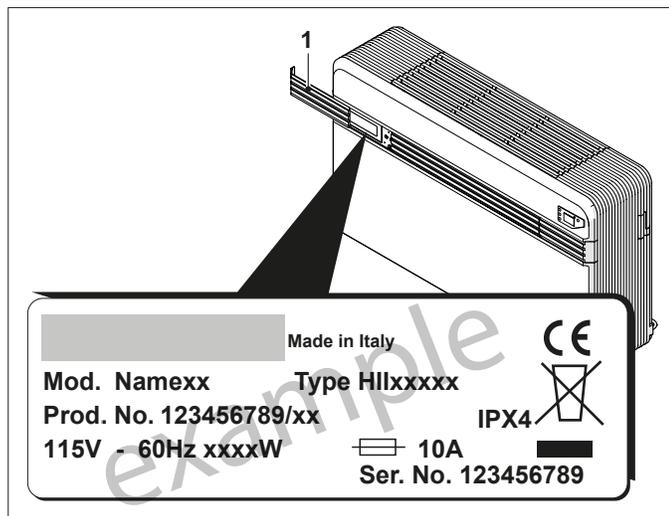
RANGE

PRODUCT FAMILY	Model #
Maestro Pro Inverter 12 HP	01925

DATA PLATE

here is a data plate that shows the information of the unit.

Open the left mask (1) to access the data plate.



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1 WARNINGS AND SAFETY RULES

 WARNING	
	<p>READ THE INSTRUCTIONS Read this manual carefully before carrying out any operation on the appliance.</p> <p>Failure to follow these instructions can result in property damage, personal injury or death.</p>

 WARNING	
	<p>During maintenance of the appliance, make sure that it is installed in a professional manner, in accordance with current legislation. Failure to do so can result in substantial damage to property, severe personal injury or death.</p> <ul style="list-style-type: none"> - The owner and manager is responsible for the operational safety and regulatory compliance of the heating system. - Improper installation, adjustment or maintenance can cause damage to material assets, personal injury or death.

 WARNING	
	<p>HIGH PRESSURE DANGER The refrigeration circuit contains high pressure coolant and oil. Proper safety procedures must be followed and appropriate protective equipment worn when working with refrigerants. Failure to follow these instructions can result in serious injury or death.</p>

NOTICE	
<p>FIRE DANGER The use of a torch requires extreme caution. Follow all recommended safety precautions and protect surrounding areas with fireproof materials. Keep a fire extinguisher handy. Failure to follow these instructions can cause moderate to severe damage.</p>	

NOTICE	
<p>This appliance must be installed and connected to the electrical network only by qualified personnel according to the installation instructions and in compliance with local regulations in force. The manufacturer assumes no responsibility for the incorrect installation of the appliances.</p>	

 WARNING	
	<p>DANGER OF ELECTROCUTION Check that the electrical outlet has the same configuration as the plug of the appliance. If different, consult a licensed electrician.</p> <ul style="list-style-type: none"> - Do not use plug adapters. - Do not use an extension cable. - Do not remove the earth ground. <p>Always connect to a grounded 3-pole socket.</p> <p>Failure to follow these instructions can result in death, fire, or electric shock.</p>

NOTICE	
	<p>The appliance must be subjected to maintenance by qualified personnel at least once a year, in accordance with current legislation.</p>

NOTICE	
	<p>Incorrect maintenance or adjustment can damage the appliance and cause harm to people or create a potential danger.</p>

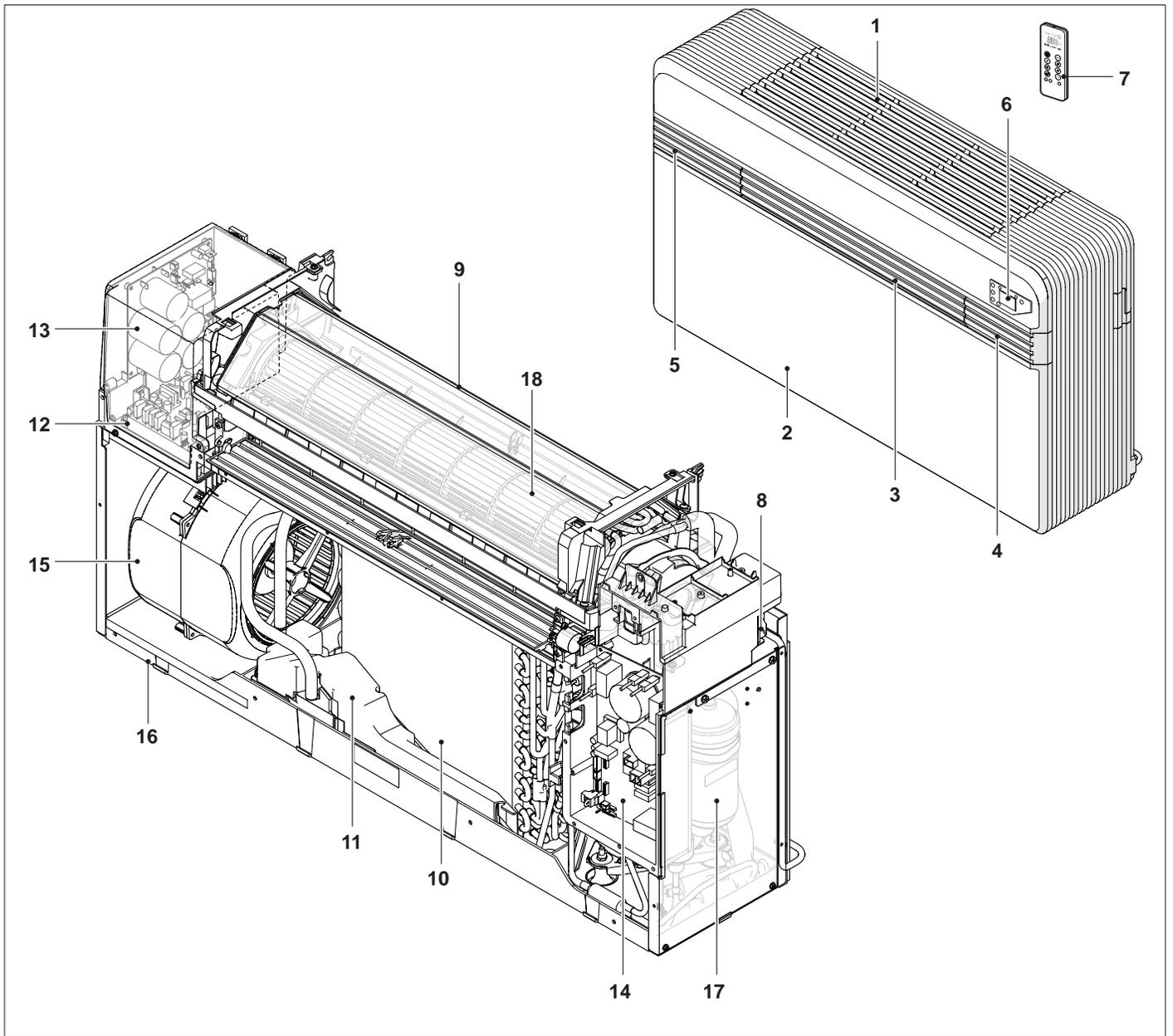
 WARNING	
	<p>Do not remove, disable or bypass the safety devices of this unit. This could cause fire, injury or death.</p>

 WARNING	
	<p>RISK OF ELECTROCUTION Before carrying out any maintenance or cleaning, disconnect the appliance from the power supply. Failure to follow these instructions can result in electric shock, serious injury or death.</p>

 WARNING	
	<p>DANGERS FROM MOVING PARTS</p> <ul style="list-style-type: none"> - It is forbidden to operate the unit if it is out of order or with the front grille removed. - It is forbidden to put your hands within the radius of action of the fan. <p>Failure to follow these instructions can result in serious injury.</p>

2 DESCRIPTION OF THE UNIT

2.1 Structure



Ref.	Description
1	Upper grill
2	Body
3	Flap
4	Right Mask
5	Left Mask
6	Display
7	Remote control
8	ON/OFF key
9	Indoor Coil

Ref.	Description
10	Outdoor Coil
11	Pump unit
12	IPM card
13	Power board (POWER)
14	Control board
15	Outdoor fan
16	Base
17	Compressor
18	Indoor fan

2.2 Technical features

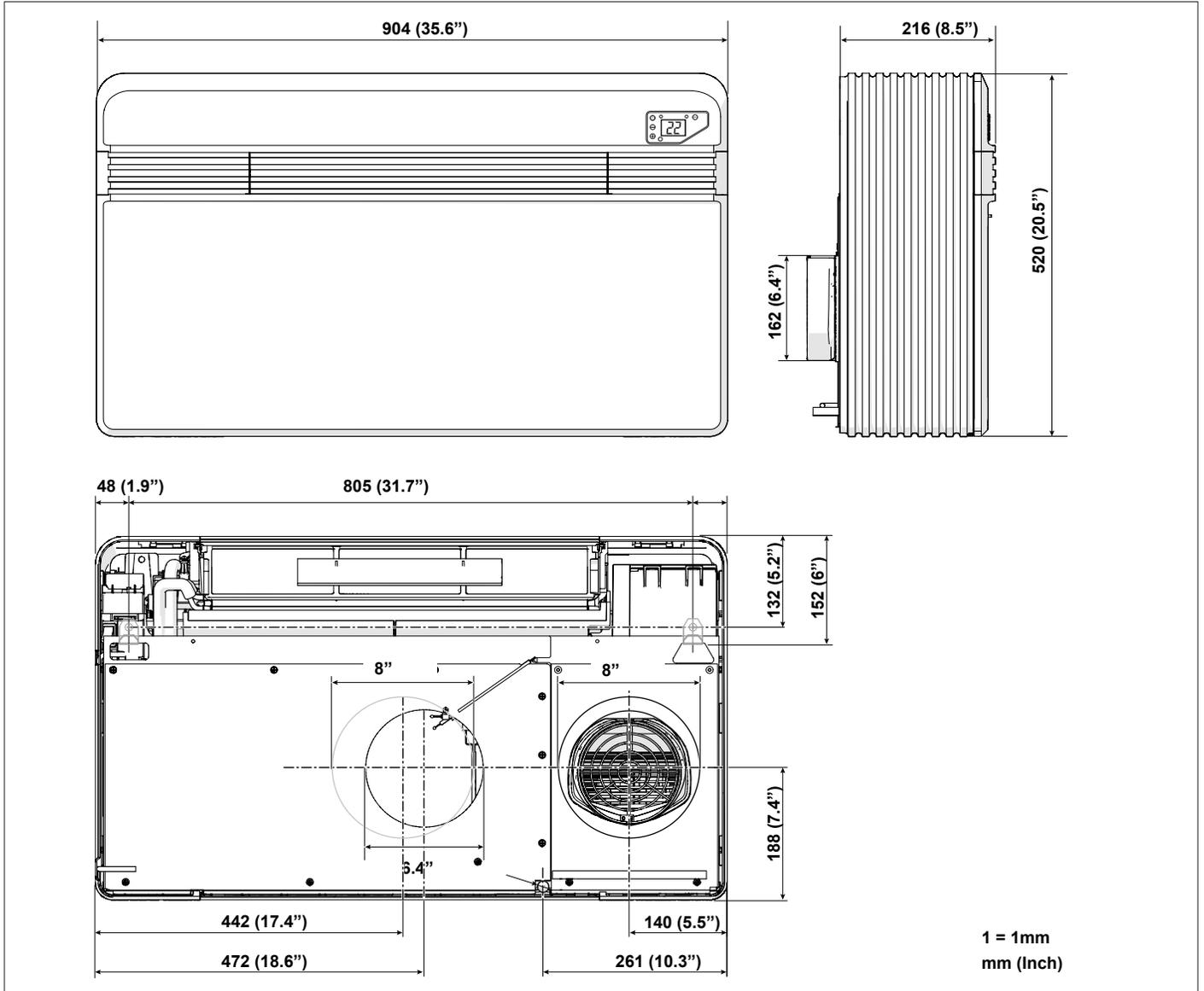
Description		MAESTRO PRO 12 HP
Model		01925
Voltage (min. 109, max 127)	AC Volts/Phase/Hertz	115-1-60
Nominal cooling / heating capacity(1)	BTU/H	8150
Maximum cooling / heating capacity (2)	BTU/H	11,600/10,600
Nominal energy consumption - Cooling	Watts	830
Nominal energy consumption - heating	Watts	850
Combined energy efficiency ratio - cooling (3)	CEER	9.74
Combined energy efficiency ratio - heating (3)	CEER	9.74
Estimated coefficient of performance	COP	3.8
Compressor	Type	Rotary Inverter
Nominal load current of the compressor	R.L.A.	4.9
Dehumidification capacity	Pints/hr	3.0
Indoor fan	Type	ECM
Indoor fan speed	# of revolutions	Variable
Ampere at full load of the indoor fan	F.L.A.	.33
Indoor air volume (cooling mode)	CFM	Up to 290
Indoor air volume (heating mode)	CFM	Up to 290
Outdoor fan speed	# of revolutions	Variable
Intake / Exhaust Hole Diameter (2)	Inches	8" each
Maximum range of the remote control	Feet	26'
Noise level(4)	dBa min-max	32-43
Indoor / outdoor - transmission class (5)	OITC	25
Sound Transmission Class (5)	STC	36
Refrigerant	ASHRAE #	R-410A
Refrigerant Factory Charge	lbs - oz	1 – 5

- (1) Test Condition: Data refers to conditions and parameters as required by the DOE requirements governing this type of product.
 HEATING MODE: outdoor ambient temperature DB 47°F/8.3°C WB 43°F/6°C; Indoor environment DB 70°F/21°C - WB 60°F/15.6°C COOLING
 MODE: outdoor ambient temperature DB 95°F/35°C BU 75°F/24°C; Indoor ambient temperature DB 80°F/26.7°C - WB 67°F/19.4°C
- (2) Maximum capacity achieved with Power Pro Boost inverter technology. Openings of 8 inches in diameter are recommended for full capacity and efficiency. Alternatively, it is possible to use openings with a diameter of 6.4 inches, however there is a corresponding loss of capacity and efficiency that can vary according to the specific application.
- (3) The CEER is calculated according to the ANSI RAC-1 2015 standard. The Combined Energy Efficiency Ratio (CEER) is a standard that measures efficiency of the unit when it is in standby and when it is cooling a space.
- (4) The test conditions for the acoustic assessments are conducted according to the DOA classification, carried out in the acoustic chamber at a distance of 6.5 feet (2 meters). The minimum noise values are detected only in fan only mode.
- (5) STC and OITC are calculated by an independent third party in accordance with ASHRAE standards.

DESCRIPTION			MAESTRO PRO 12 HP
Indoor temperature	Maximum operating temperature in cooling mode	°F/°C	DB 95°F/35°C - WB 75°F/24°C
	Minimum operating temperature in cooling mode	°F/°C	DB 64°F/18°C
	Maximum operating temperature in heating mode	°F/°C	DB 81°F/27°C
	Minimum operating temperature in heating mode	°F/°C	-
outdoor temperature	Maximum operating temperature in cooling mode	°F/°C	DB 109°F/43°C - WB 90°F/32°C
	Minimum operating temperature in cooling mode	°F/°C	DB 14°F/-10°C
	Maximum operating temperature in heating mode	°F/°C	DB 75°F/24°C - WB 64°F/18°C
	Minimum operating temperature in heating mode	°F/°C	DB 5°F/-15°C

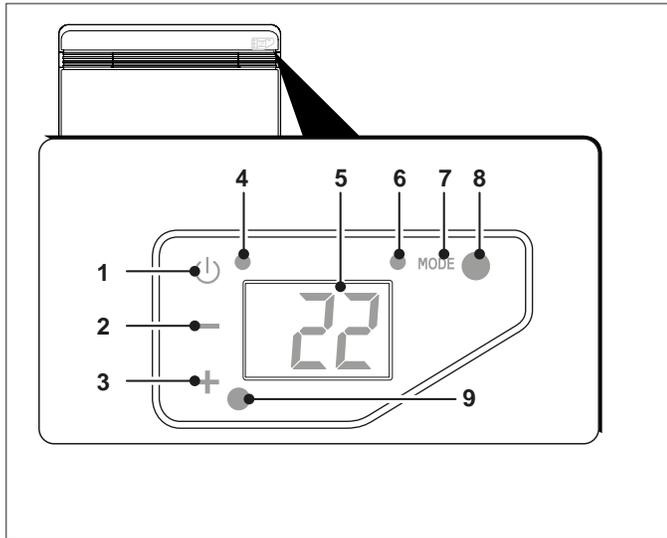
(*) Since the company is constantly engaged in the continuous improvement of all its production, the aesthetic and dimensional characteristics, technical data, equipment and accessories may be subject to change. Please refer to the latest publication.

2.3 Dimensions of Maestro Pro 12 HP



DESCRIPTION		MAESTRO PRO 12 HP
Dimensions (without packaging)	mm (inches)	900 x 518 x 215 (35.5" x 20.4" x 8.5")
Dimensions (with packaging)	mm (inches)	980 x 609 x 330 (38.6" x 24" x 13")
Weight (without packaging)	kg (lbs)	39 (86)
Weight (with packaging)	kg (lbs)	42 (93)

2.4 Control panel



KEY	DESCRIPTION
1	ON/OFF - Short touch for speed selection - Long touch for activation / deactivation
2	Setpoint decrease - min 16°C (61°F) heating 18°C (64°F) cooling
3	Setpoint increase - max 30°C (86°F)
4	LED1 Timer signal, YELLOW color if active
5	DISPLAY Information display
6	LED5 STATUS reporting: - RED: heating - LIGHT BLUE: cooling / dehumidification - WHITE: Ventilation only / Stand-By
7	MODE Operation mode selection and setting parameters - Short touch for operating mode selection - Long touch to enable parameter setting if in stand-by
8	(BEEP) Acoustic signal
9	(IR) Infrared receiver

2.4.1 Operating conditions

FUNCTION	DISPLAY	LED5	LED1
Stand-by	OFF	OFF	OFF
Cooling down	18-30°C	ON BLUE	-
	64-86°F		
Warm up	18-30°C	ON RED	-
	61-86°F		
Dehumidification	- -	ON BLUE	-
Fan	- -	OFF	-
Automatic	AA	-	-
Maximum fan speed	HI	-	-
Medium fan speed	ME	-	-
Minimum fan speed	Lo	-	-
Automatic fan speed	AV	-	-
Timer enabled	-	-	ON
Dirty filter warning	FI	-	-
Energy Boost - opening contact (par. PI>0)	E	-	-
System enabled - contact opening (par. PI=0)	P	OFF	OFF
Keyboard locked	bl	-	-
Configuration parameter on the upper wall/ lower	PO	OFF	OFF
Ceiling installation	uP	OFF	OFF
Floor installation	d0	OFF	OFF

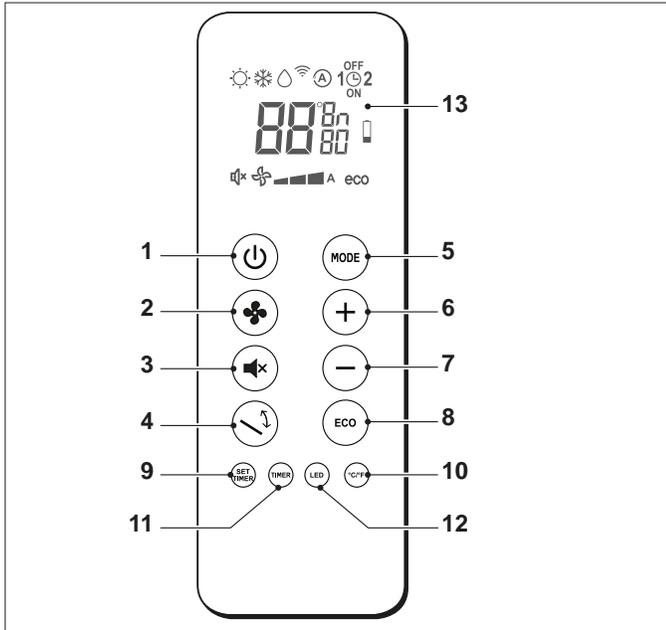
2.4.2 Main Function

FUNCTION	KEYS	OPERATION
Filter alarm reset	and	Simultaneously press the keys indicated for at least 5 seconds.
Lock / Unlock	and	Simultaneously press the keys indicated for at least 5 seconds.

2.5 Remote control

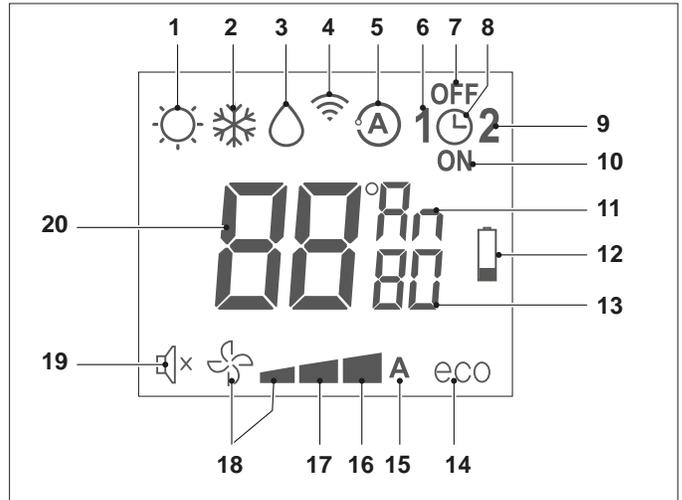
The remote control is the interface between the unit and the end user, it is very important to learn all the functions, the use of the various commands and the meaning of the symbols shown on it.

2.5.1 Keys



KEY	DESCRIPTION
1	ON/OFF unit
2	Fan speed setting
3	Silent mode on/off
4	Flap oscillation on/off
5	Selection of the operating mode
6	Increase the set values of: temperature/clock / programming. Press together with the button - to change the °F/°C temperature unit.
7	Decrease the set values of: temperature/clock / programming. Press together with the + button to change the °F/°C temperature unit.
8	ECO mode activation / deactivation. Reduces power consumption by 50%
9	Clock setting / programming
10	Temperature unit setting °C/°F (if present)
11	Activation / deactivation of program 1 / program 2 functions
12	Activation / deactivation of the unit display
13	Display Activation / deactivation of the display of the report unit

2.5.2 Display



SIMBOLO	DESCRIZIONE
1	Heating
2	Cooling
3	Dehumidification
4	Command transmission in progress
5	Automatic mode
6	1 Program 1
7	OFF Setting the program shutdown time
8	Clock / Program setting
9	2 Program 2
10	ON Setting the program start time
11	Rn Temperature / time unit of measurement
12	Low battery warning
13	00 Minute timer
14	eco ECO function enabled
15	A Automatic fan speed
16	Maximum fan speed
17	Medium fan speed
18	Minimum fan speed
19	QUIET MODE function activated
20	00 Desired temperature / clock / schedule

2.5.3 SILENT (quiet) mode

This mode can be selected from the infrared receiver (button B3) or from the serial port and can only be used in combination with the cooling or heating modes. When the quiet cooling mode is activated, the outdoor fan and the Indoor fan are forced to run at low speed. The compressor is forced to operate at a fixed frequency set (default 40Hz) and Tset is automatically increased by 1° C after 1 hour and by another degree after 2 hours (starting from the activation of any function or subsequent modification of the Tset).

All the cooling subprograms are still enabled, in this way the outdoor fan can be switched to higher speeds if required by the usual algorithm.

When the quiet heating mode is activated, the outdoor fan and the Indoor fan a to run at low speed. The compressor is forced to operate at a fixed frequency set via IPM EEPROM ADDR1F6 (default 40Hz) and Tset is automatically reduced by 1°C after 1 hour and by a further degree after 2 hours (starting from the activation of a function or subsequent modification of the Tset).

All heating subroutines are still enabled.

In cases where the low noise mode is deactivated, Tset is changed from the remote control, the unit is placed in standby mode or the power is cut off, the operation timer is reset and Tset is reset to the last received value from the remote control.

In this condition all the foreseen malfunction warnings are enabled.

2.5.4 ECO Mode

This mode can be selected from the infrared receiver (button B8) or from the serial port; no message appears on the display. The IPM board already includes HIGH VOLTAGE limits, which refers to the total voltage absorbed by the power and IPM boards and their accessories: maximum voltage limit in cooling mode (e.g. 7 Ampere)

maximum voltage limit in heating mode (e.g. 7 Ampere)

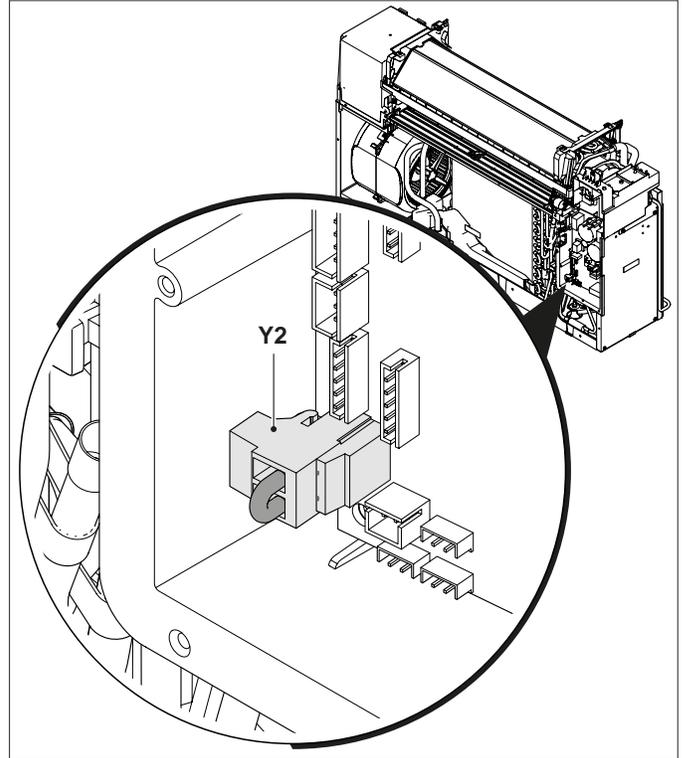
If Economy mode is activated, a lower voltage limit is introduced: The percentage (%) of the voltage limit is set to 50%.

Example:

5 Ampere x 50% = 2.5 Ampere

In order not to exceed 2.5 Amps, the compressor frequency is limited.

2.5.5 Energy BOOST / System ENABLE



⚠ WARNING



DANGER OF ELECTROCUTION

Before carrying out any maintenance or cleaning, disconnect the appliance from the power supply. ALL electrical connections and wiring MUST be done by a qualified electrician and in compliance with local regulations. Failure to follow these instructions can cause damage to property, personal injury

It can be used both as a window contact (on off of the appliance based on the opening / closing of the contact) or as an ENERGY BOOST function.

Based on the setting of the PI parameter, it is possible to select whether and which of the functions are to be activated. The input located on the terminal (Y2) of the main board can be used to activate the ENERGY BOOST or SY-STEM ENABLE functions of the air conditioner.

Configuration and use of the ENERGY BOOST or SYSTEM ENABLE input:

- Insert the plug into the socket to power the air conditioner then make sure it is in stand-by mode.
- On the control panel, press the MODE button for more than 10 seconds, until an acoustic signal is emitted.
- The display shows parameter P0.

- Release the MODE key and press it again until parameter PI is selected.
- Release the MODE key and press it again for 2 seconds.
- Press the + or - keys to select the desired configuration.
- With PI value = 0, the input works as a SYSTEM ENABLE. When the contact opens, the air conditioner is forced into stand-by mode. When the contact closes, the air conditioner restores the previous operating state.
- With PI value \neq 0, the input works as ENERGY BOOST. When the contact opens, the display shows code E, the desired temperature is reduced by PI °C if the air conditioner is in cooling mode, or increased by PI °C if the air conditioner is in heating mode. When the contact closes, the air conditioner restores the previous operating state. The ENERGY BOOST input has no effect when the unit is in fan only, dehumidifier or automatic mode.

2.5.5.1 System ENABLE

Contact WINDOW

Contact open: unit in stand-by, cannot be activated by remote control or by touch keyboard.

Contact closed: the unit is ready and can be activated.

Contact closed: when the contact closes, the unit restores the previous operating condition.

2.5.5.2 Energy BOOST

Remote setpoint increase / decrease

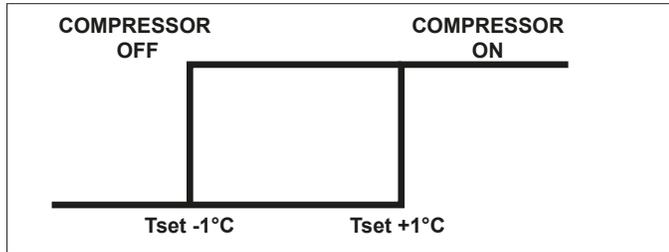
Contact open: regular set point set by remote control or keyboard.

Contact closed: the set point is increased in heating and reduced in cooling by a certain offset that can be set by parameter.

3 OPERATING LOGIC

3.1 Cooling

Compressor: modulation and shutdown in relation to setpoint and room temperature.



Indoor fan: in automatic mode.

- MINIMUM SPEED

Ambient temperature $< T_{set} + 1^{\circ}\text{C}$

- AVERAGE SPEED

$T_{set} + 1^{\circ}\text{C} < \text{Ambient temperature} < T_{set} + 3^{\circ}\text{C}$

- FULL SPEED

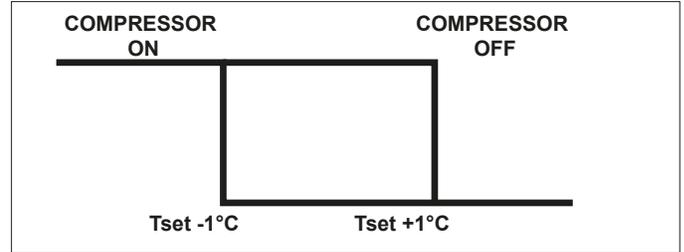
Ambient temperature $> T_{set} + 3^{\circ}\text{C}$

outdoor fan: the speed of the outdoor fan is calculated by the IPM board in relation to the outdoor air and outdoor coil temperature.

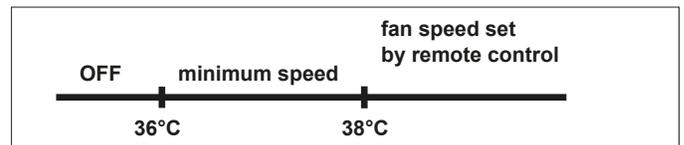
Reversing valve: NOT POWERED

3.2 Heating

Compressor: modulation and shutdown in relation to setpoint and room temperature.



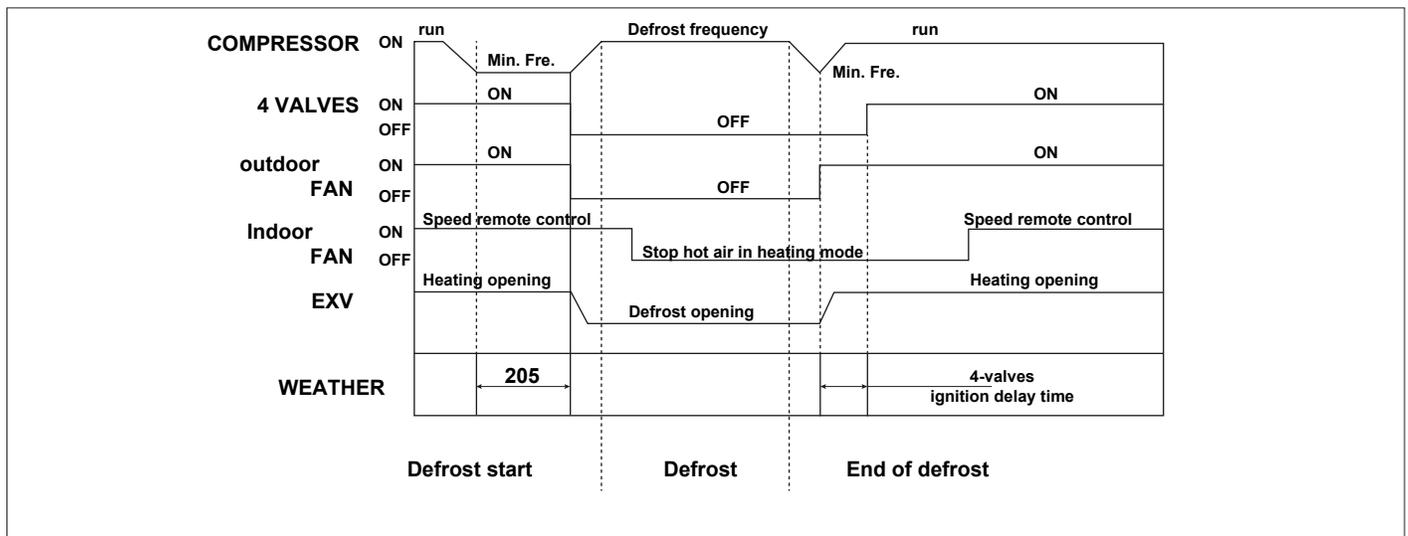
Indoor fan: minimum Indoor coil temperature control.



outdoor fan: the speed of the outdoor fan is calculated by the IPM board in relation to the outdoor air temperature.

Reversing valve: POWERED

3.3 Defrost



Activation conditions:

- outdoor $T. > 5^{\circ}\text{C}$ (41°F) and $T_{coil} < -3^{\circ}\text{C}$ (27°F)
- $5^{\circ}\text{C} > \text{outdoor } T. > -1^{\circ}\text{C}$ (30°F) and $T_{coil} < -10^{\circ}\text{C}$ (14°F)
- $-1^{\circ}\text{C} > \text{outdoor } T. > -8^{\circ}\text{C}$ (18°F) and $T_{coil} < -13^{\circ}\text{C}$ (9°F)
- outdoor $T. < -8^{\circ}\text{C}$ (18°F) and $T_{coil} < -15^{\circ}\text{C}$ (5°D)
- outdoor $T. < -8^{\circ}\text{C}$ (8°F) and the appliance has been running for 120 min.

Stop conditions:

- If after 1 minute the coil temperature is higher than 12°C (54°F), the function ends immediately.
- After 10 minutes in any condition.

3.4 Dehumidification

It is possible to select the dehumidification mode only from the infrared receiver (button B5) or from the serial port (not from the display); the user interface displays the messages LED6 = '-' and LED5 = 'ON Blue'.

Dehumidification basically consists of a cooling mode in which Tset is changed periodically:

- Starting the dehumidification mode (from standby, heating, cooling or any other condition);
- - The IDU FAN starts to work at low speed;
- - The COMPRESSOR is forced off;
- - After 3 minutes the room temperature is reached, stored as Troom (0) and used for the following calculation:

$$\begin{aligned}Tset1 &= Troom(0) - 3^{\circ}\text{C} \\ Tset2 &= Troom(0) + 1^{\circ}\text{C}\end{aligned}$$

The unit starts operating in cooling mode.

- Tset1 for IPM EEPROM ADDR101 (default 6 minutes);
- Tset2 for IPM EEPROM ADDR102 (default value 10 minutes);
- Tset1 for IPM EEPROM ADDR101 (default value 6 minutes);
- Tset2 for IPM EEPROM ADDR102 (default value 10 minutes);

When the dehumidification mode is activated, the first 6 minutes after the 3 minutes of operation of the indoor unit fan may vary depending on the timer programming. Operation in dehumidification mode is the same as in cooling mode:

- The compressor can be activated / deactivated according to the difference between Tset1 / Tset2 and Troom (ambient temperature);
- The high frequency of the compressor is defaulted to 55 Hz, the low frequency is defaulted to 35 Hz;
- After switching off the compressor and before subsequent use, you must wait for at least 180 seconds.
- The compressor is always started simultaneously with the fan of the outdoor unit (without delayed starts).

In dehumidification mode, the indoor unit fan continues to run at low speed. The time count in 6 and 10 minute intervals continues to run even if the compressor stops.

3.5 Fan Only

This mode can only be selected from the infrared receiver (B5 key), from the display (K4 key) or from the serial port; the display shows the messages LED6 = '-' and LED5 = OFF.

In this mode the only Indoor fan is always powered and you can select the desired speed at any time by pressing the relevant button on the remote control or on the display.

All other outputs are disabled except the reversing valve for 2 minutes, if the heating mode was previously selected except the water valve if 3 minutes have not yet elapsed since the previous continuous operation of the pump.

If only the DIRTY FILTER warning is enabled (LED6 = 'FI') it's possible to select the air cleaning mode at any time (oscillation or fixed position mode). The fan operation mode is not affected by the temperature sensor readings.

3.6 Automatic mode

It is possible to select the heating mode from the infrared receiver (button B5) or from the serial port; the display shows the message LED6 = 'A' (in this case, LED5 = 'ON Red' if the unit is in self-heating mode, LED5 = 'ON Blue' in self-cooling mode, or LED5 = OFF in self-ventilation, as indicated below).

In "Automatic", the operating mode of the appliance is automatically selected based on the ambient temperature, which is monitored continuously:

- Heating, compressor operation referred to a temperature (T) set at 21°C (70°F)
- If Troom < 17°C (63°F), the appliance works in heating mode and the maximum speed of the indoor unit is enabled;
- If 17°C (63°F) < Troom < 19°C (66°F), the appliance works in heating mode and medium speed is enabled;
- If 19°C (66°F) < Troom < 21°C (70°F), the appliance works in heating mode and the minimum speed is enabled;
- If 21°C (70°F) < Troom ≤ 24°C (75°F), the appliance operates in ventilation mode and the minimum speed is enabled;

Cooling, compressor operation referred to a temperature (Tset) fixed at 24°C (75°F):

- If 24°C (75°F) < Troom ≤ 25°C (77°F), the appliance operates in cooling mode and the minimum speed is enabled;
- If 25°C (75°F) < Troom ≤ 27°C (81°F), the appliance works in cooling mode and medium speed is enabled;
- If Troom > 27°C (81°F), the appliance works in cooling mode and the maximum speed is enabled.

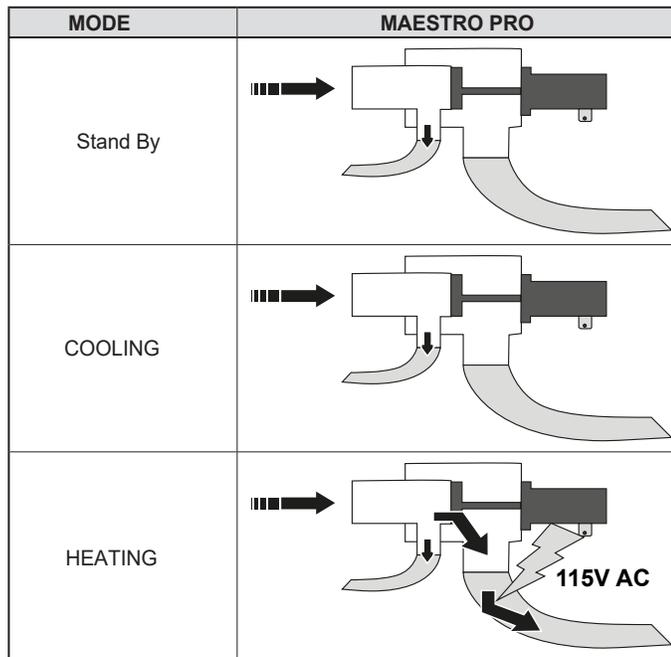
After each change, the operating mode remains unchanged for at least 3 minutes to avoid sudden changes.

In this mode, the room temperature correction is always disabled.

3.7 Thermoactuator

The cooling/dehumidification thermo-actuator logic is shown in the table.

ACTION MANAGED BY BOARD ON ACTUAOR AND OUTDOOR FAN IN COOLING AND DEHUMIDIFICATION MODE		MAESTRO PRO
Micro pump closed > 1 minute	Actuator	115V AC Open (3 minites)
	outdoor fan	--
Text <15°C (59°F) (until it goes back > 17°C(63°F)	Actuator	115V AC



3.8 Condensate disposal pump

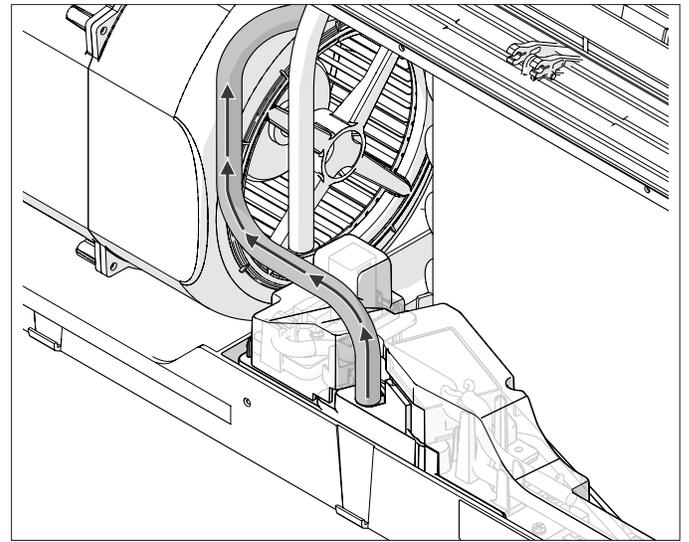
Pump activation conditions in cooling and dehumidification.

Only with active compressor

If the run contact remains closed for less than 0.5 seconds, the pump will not start.

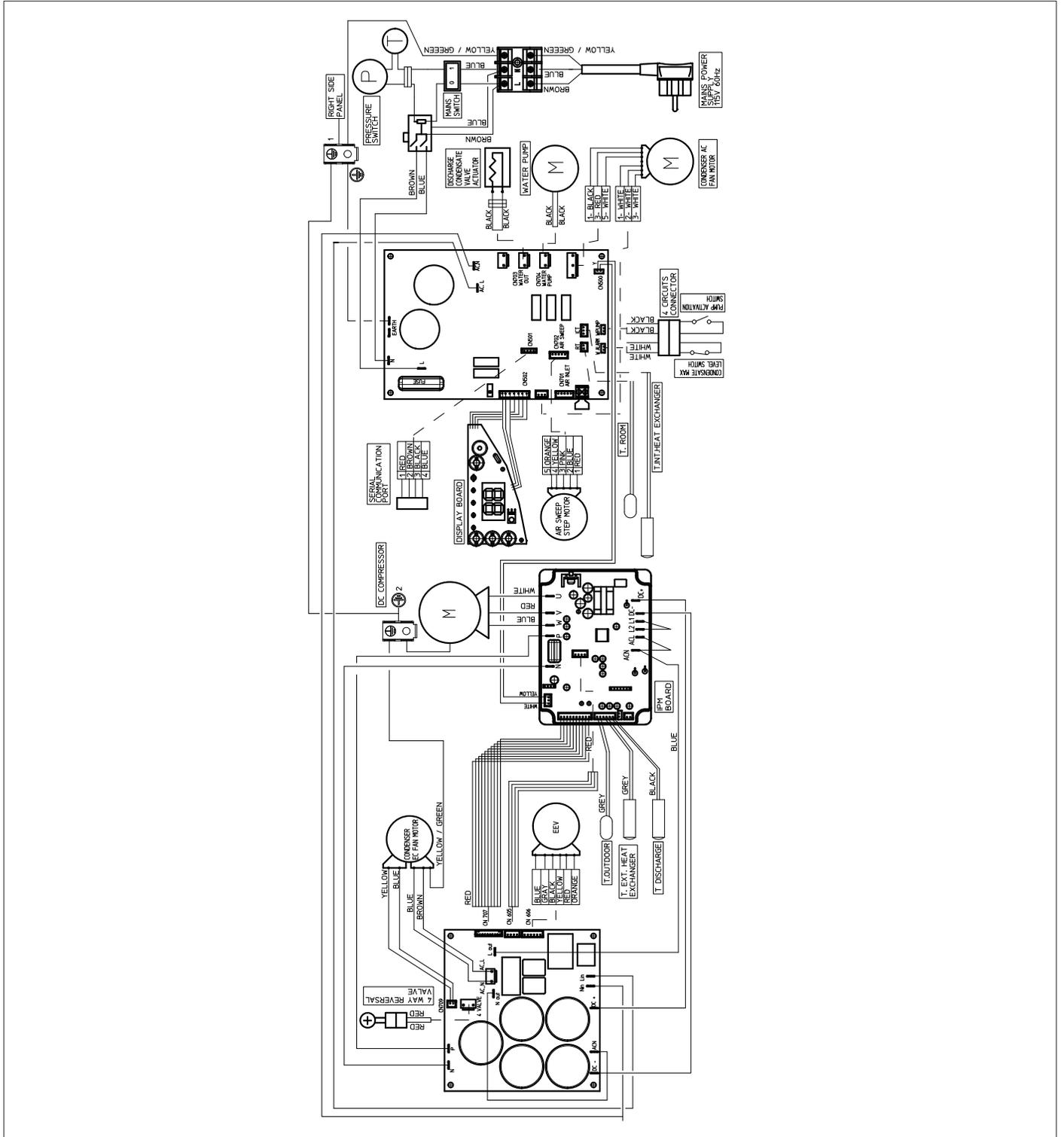
If the start contact remains closed for at least 0.5 seconds, the pump activates and stays on until the contact opens.

If the pump remains active continuously for more than 1 minute, the thermoactuator is activated until the pump is switched off (opening of the start contact) and for a minimum of 3 minutes. If at the end of the 3 minutes the pump is off, the thermoactuator is also deactivated, otherwise it remains active until the pump stops.



ALWAYS OFF IN HEATING AND FAN ONLY MODES.

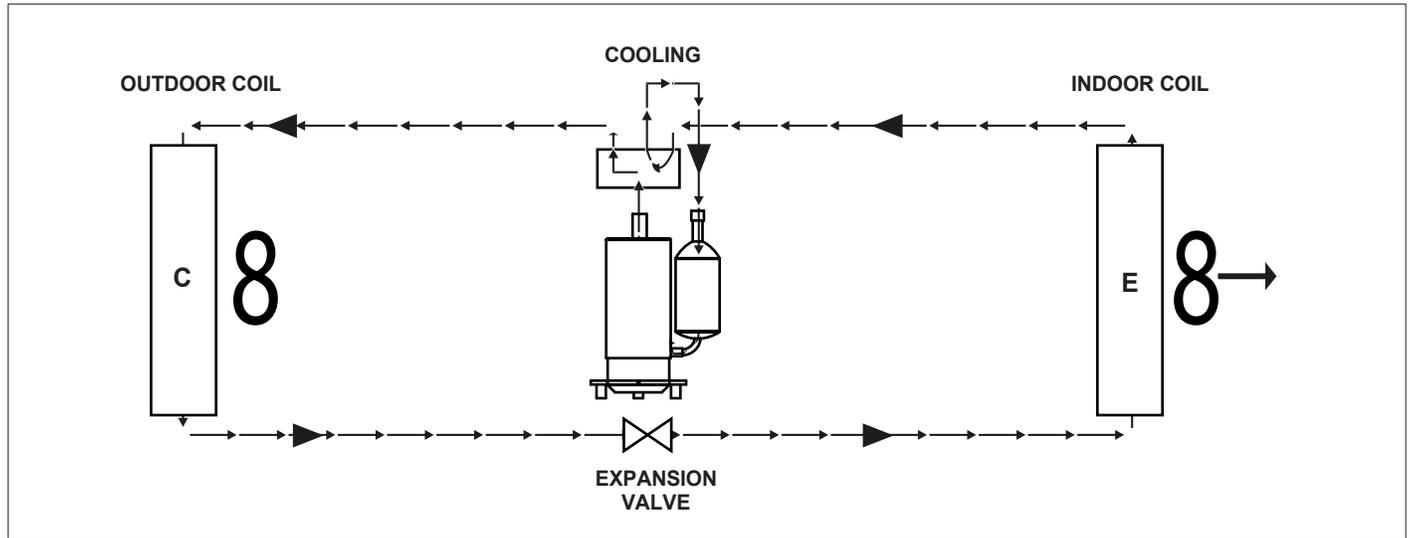
4 ELECTRICAL DIAGRAM



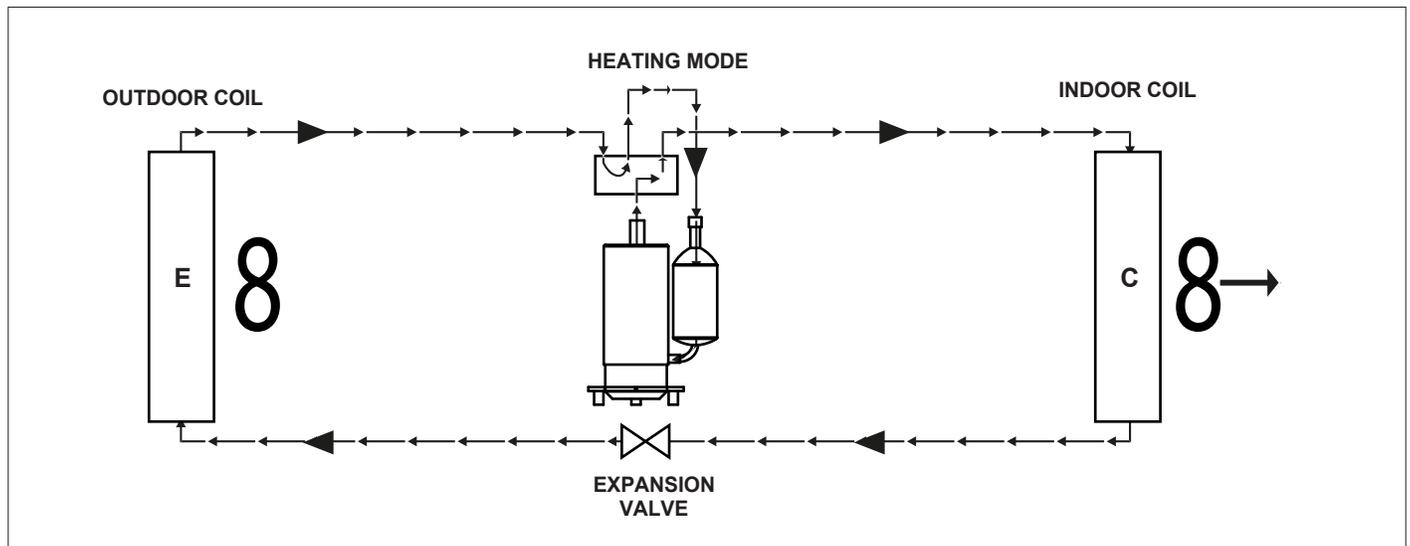
DESCRIPTION	MAESTRO PRO 12 HP 1	
Supply voltage (min.109 - max 127)	115	AC Volt
	1	Phase
	60	Hertz

5 REFRIGERANT CIRCUIT

5.1 Cooling refrigerant circuit with Reversing valve



5.2 Heating cooling circuit with reversing valve

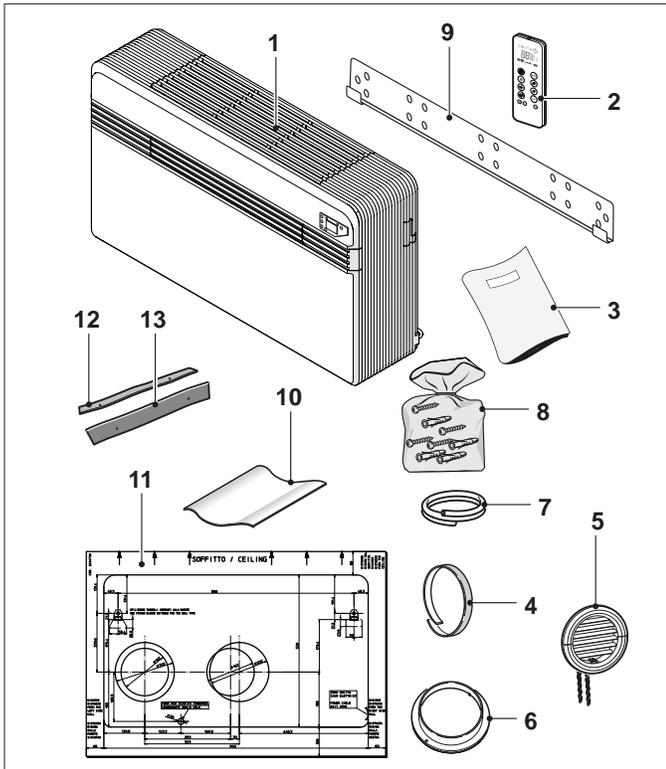


DESCRIPTION	TYPE	AMOUNT	
Refrigerant charge by factory	R-410 A	500 - (1.1)	gr (lbs)

NOTE: The refrigeration circuit is hermetically sealed.

6 INSTALLATION

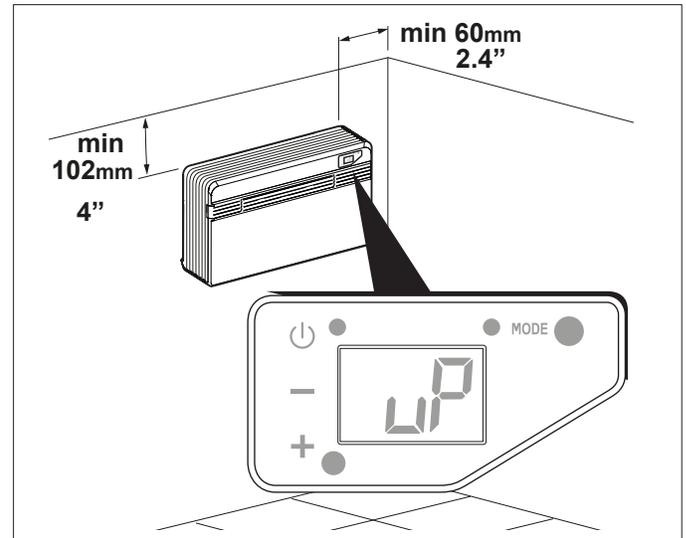
6.1 Items supplied



RIF.	DESCRIZIONE	PEZZI
1	MAESTRO PRO	1
2	Remote control including batteries	1
3	Use and maintenance manuals + warranty	1
4	Adhesive insulation strip	2
5	outdoor grids for air inlet and outlet including chains and kit for installing grids	2
6	Indoor flange	2
7	Condensate drain pipe	1
8	Mounting hardware	1
9	Wall mounting bracket	2
10	Sheets used for wall ducts	2
11	Paper template for drilling holes	1
12	Air purification filter (green color)	1
13	Activated carbon filter (black color)	1

6.2 Position

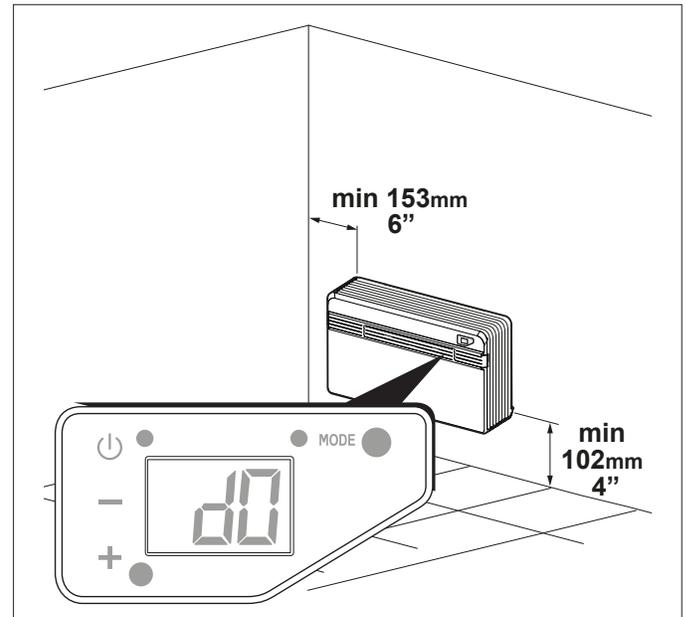
6.2.1 LOW WALL installation



NOTICE

Check that in this type of installation the parameter "P0" is set on "uP".

6.2.2 LOW WALL installation

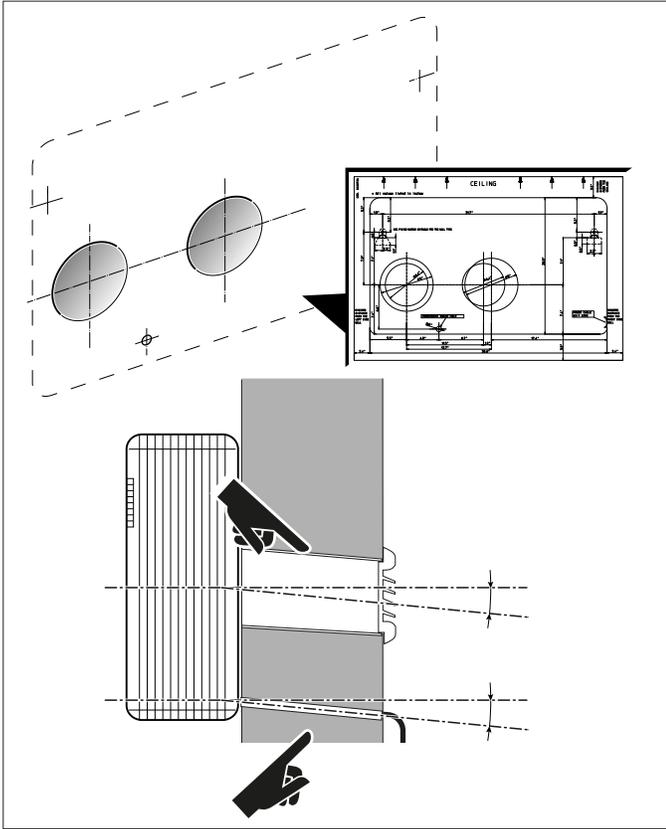


NOTICE

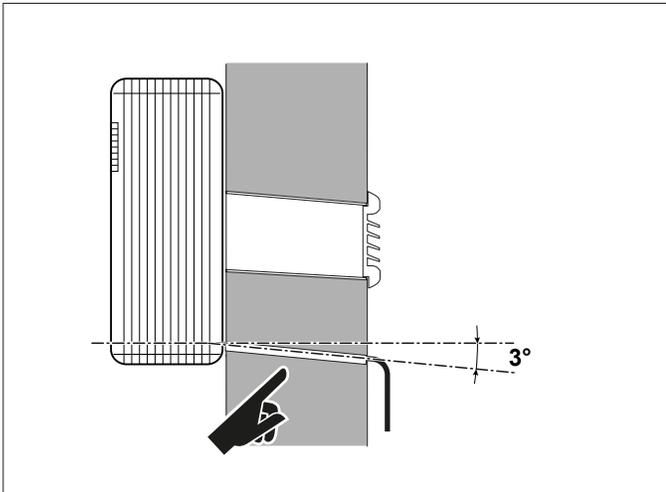
Check that in this type of installation the parameter "P0" is set on "d0".

6.3 Assembly

6.3.1 Wall drilling

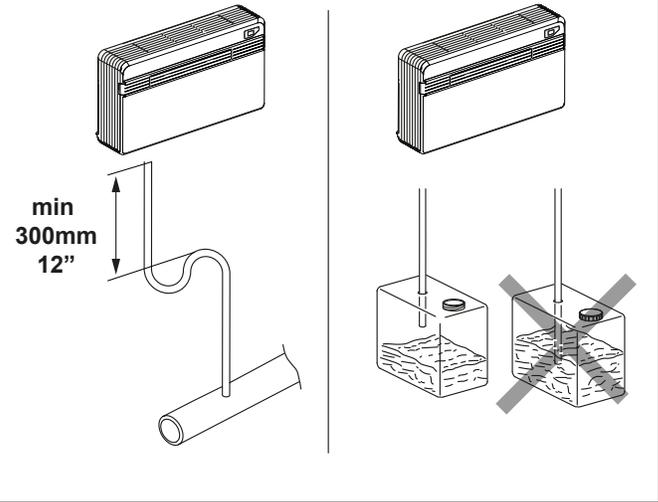


6.3.2 Condensate drain

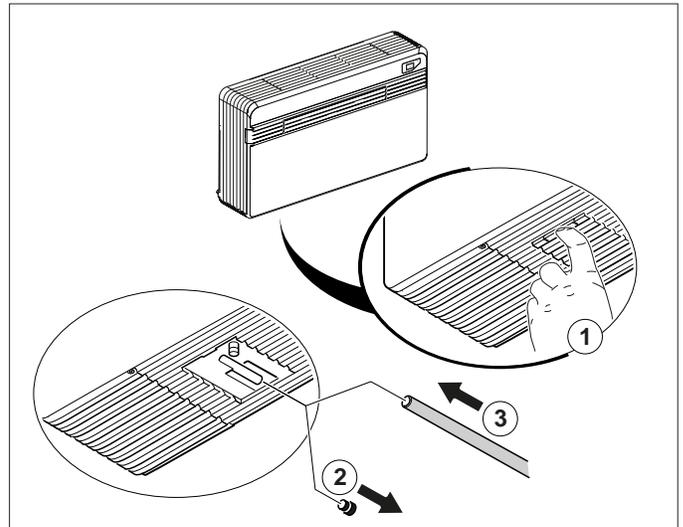


In wall drain requires trap

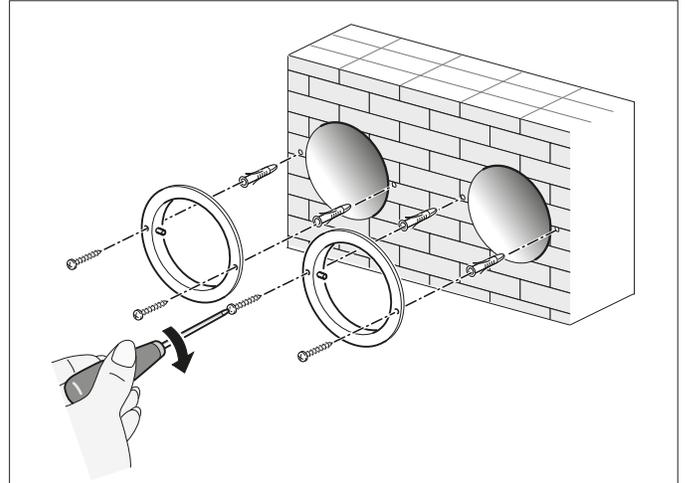
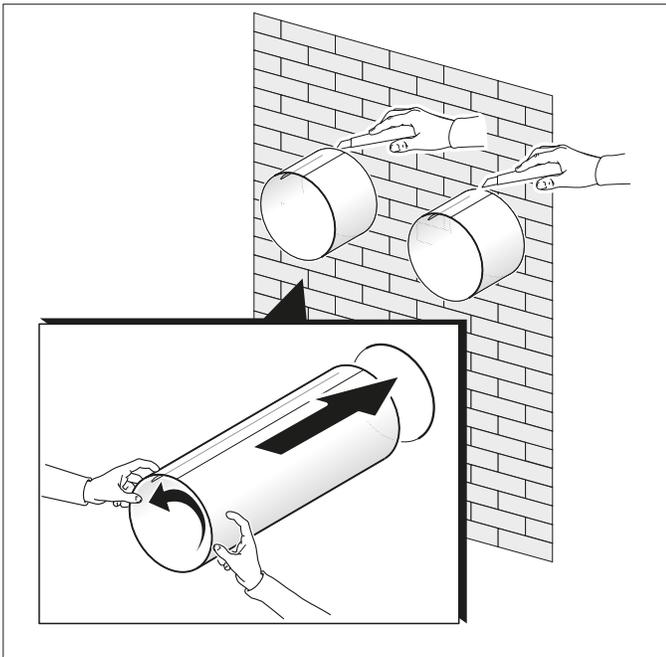
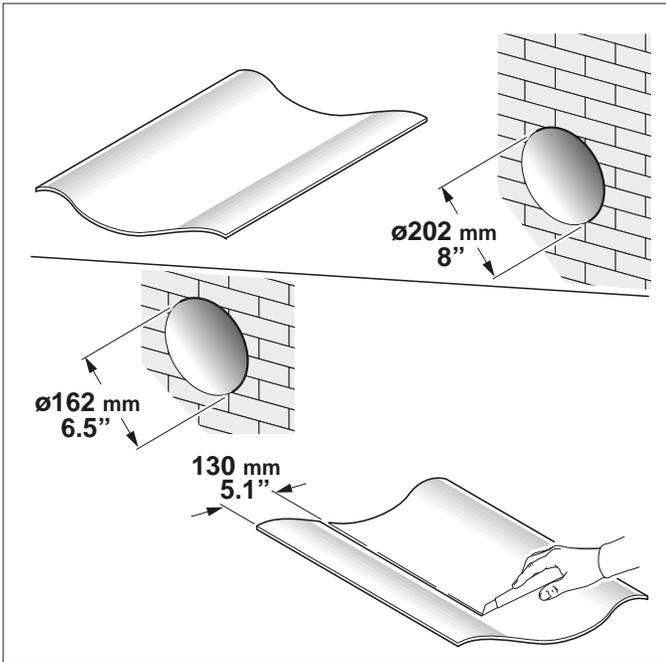
TANK



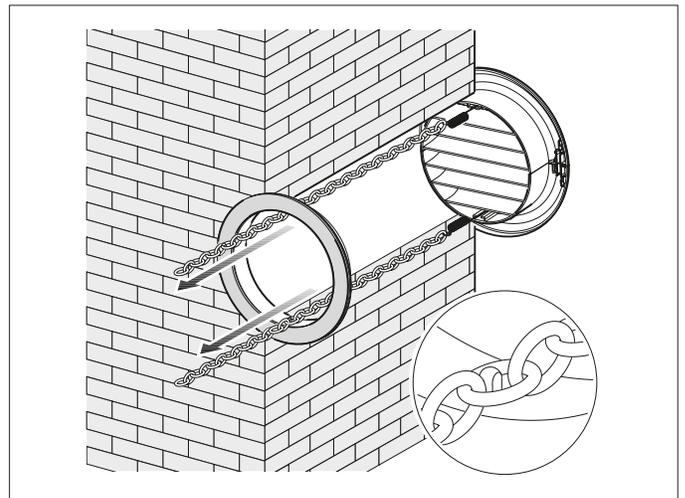
6.3.3 Condensate drain connection to the unit



6.3.4 Air ducts



6.3.5 Outdoor grid

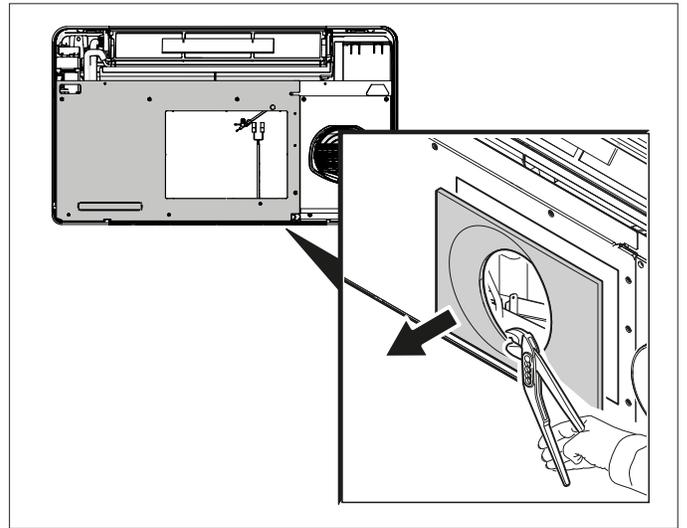
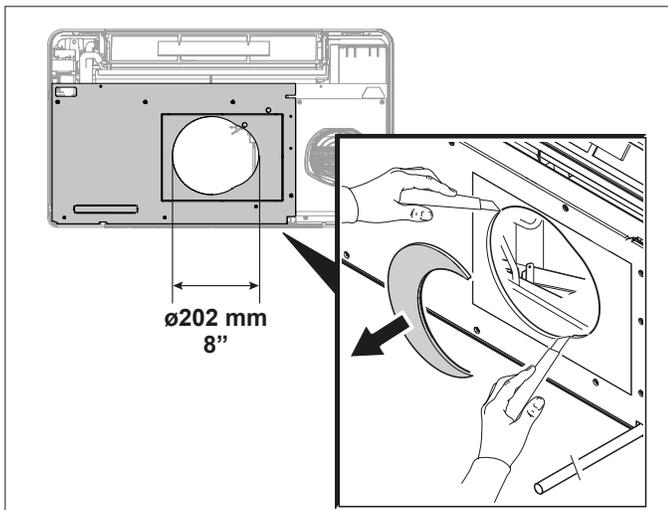
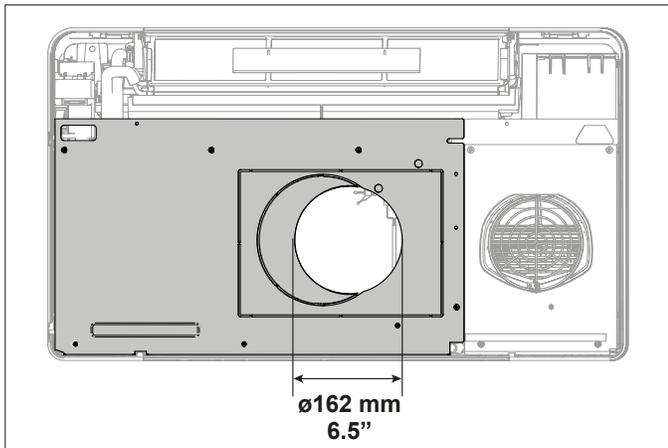
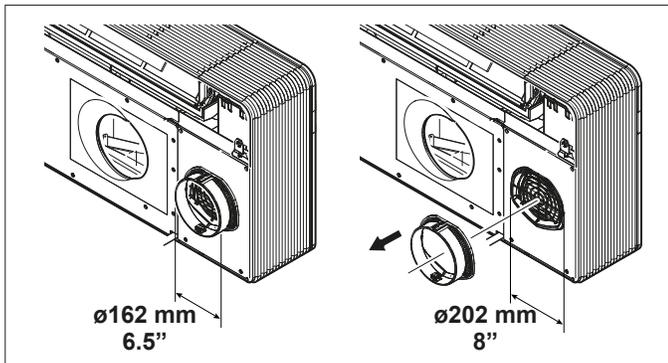


6.3.6 Preparation of holes on the unit

⚠ ATTENTION

DANGER OF CUTS
Although great care has been taken to minimize sharp edges, use gloves or other hand protection when handling the appliance.

Failure to follow these instructions can result in minor to moderate personal injury.

6.4 Hook the unit

⚠ ATTENTION

EXCESSIVE WEIGHT HAZARD
Use two or more people when installing the air conditioner. Observe the maximum weight that can be lifted per person. Failure to observe this precaution could result in back injury or other injuries.



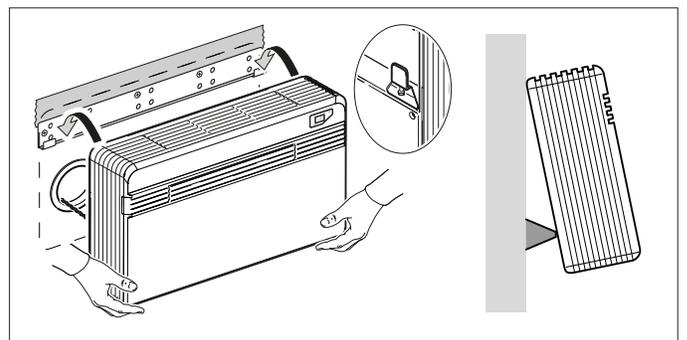
⚠ WARNING

DANGER OF FALLING OBJECTS
Failure to comply with the installation instructions for assembling the appliance can cause damage to property, personal injury or death.



NOTICE

Copper refrigerant pipes are NOT handles.
DO NOT use pipes to lift or move the appliance.



6.5 Electrical connections

WARNING

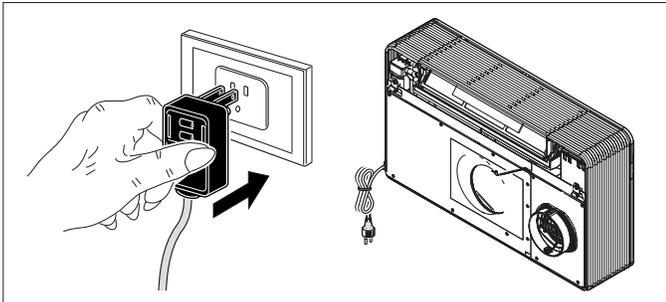
DANGER OF ELECTROCUTION AND/OR OPERATION OF THE APPLIANCE

Failure to observe this warning can cause personal injury or death and/or damage to the unit.

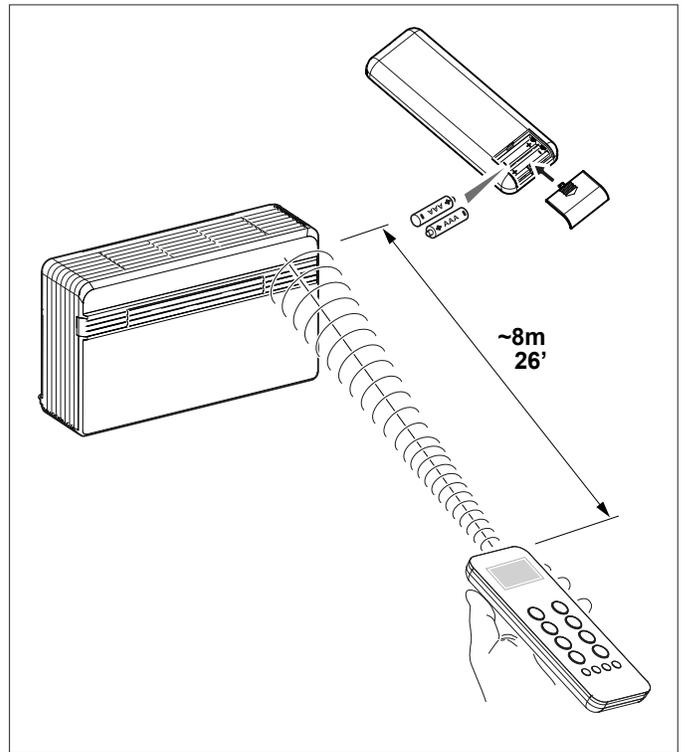
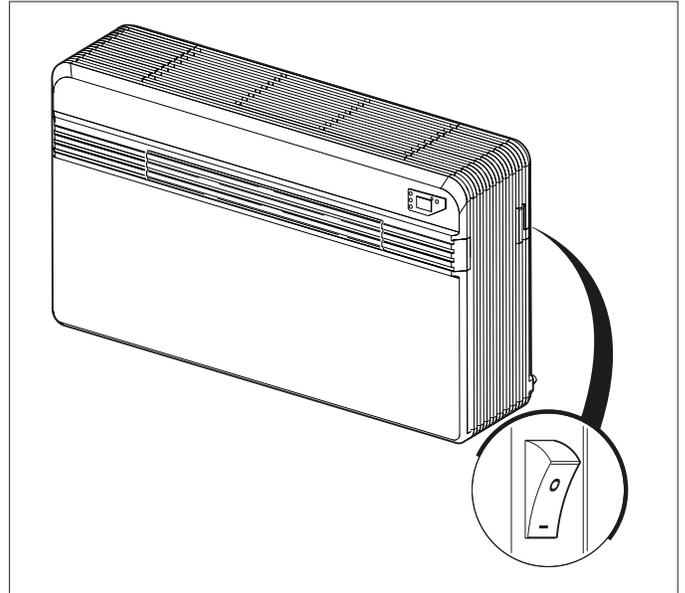
- The unit **MUST BE** connected to a proper earth ground.
- Do not use an extension cord.
- Aluminum wiring in the building may be compromised - consult a licensed electrician.
- When the unit is in the STOP position, there is still voltage to the electrical controls.
- Disconnect the power supply before performing maintenance:
- disconnect the power cord (if present) from the wall socket.
- Set the main system switch to "off" (OFF)



The product must be connected via the power socket supplied, it is not possible to modify the terminal block to connect directly to the main electrical network.



6.6 Switching on the unit

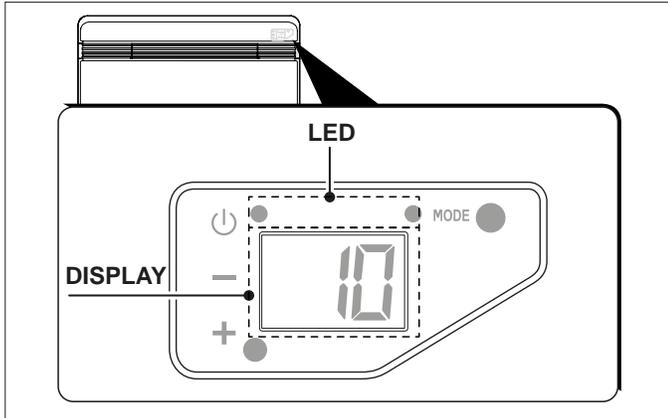


7 ALARM DIAGNOSTICS

When an alarm occurs the compressor stops and the display shows an alarm code.

The alarm can be automatically reset in 3 minutes (if conditions are normal) or by turning the unit off and on again (from the ON / OFF power button).

On the main display there are two LEDs that indicate the same alarm shown on the display.



7.1 Alarms display board

7.1.1 outdoor part alarms

DESCRIPTION	DISPLAY
Failure of the outdoor air temperature sensor	1
outdoor coil temperature sensor fault (Tehx)	2
Failure of the supply air temperature sensor compressor	3
Compressor current protection	4
IPM - IDU communication error	5
Power overcurrent	6
Compressor not detected	7
DC overvoltage	8
Failure	9
outdoor coil temperature too high (HTE)	10
IPM protection	11
EEPROM error	12
Compressor discharge temperature too high	13

7.1.2 Indoor part alarms

DESCRIPTION	DISPLAY
Indoor air temperature sensor failure (T.room)	14
Indoor coil temperature sensor failure (Tihx)	15
Indoor coil temperature too low (LT)	16
Indoor coil temperature too high (HTI)	17
IPM - IDU card communication alarm	5
AC Zero crossing (not present)	18
Indoor fan motor failure	19
High water level	20
EEPROM - read error	21

7.2 LED alarm codes

7.2.1 IPM board alarms

The following table indicates the number of flashes of the yellow LED and of the red LED.

Example: EEPROM - writing error
 YELLOW LED: 4 consecutive flashes
 RED: 1 flash

The flashing sequence is repeated until the alarm is present.

DESCRIPTION	FLASHING	
	Yellow	Red
Air temperature sensor failure outdoor	1	0
outdoor coil temperature probe fault (Tehx)	2	0
Failure of the supply air temperature sensor compressor	3	0
Compressor protection	4	0
IPM - IDU communication error	5	0
Supply overcurrent	6	0
Compressor not detected	7	0
DC overvoltage	8	0
Current failure	9	0
outdoor coil temperature too high (HTE)	0	1
Defrost ON	1	1
IPM protection	2	1
EEPROM - reading error	3	1
EEPROM - writing error	4	1
TCompressor discharge temperature too high	7	1

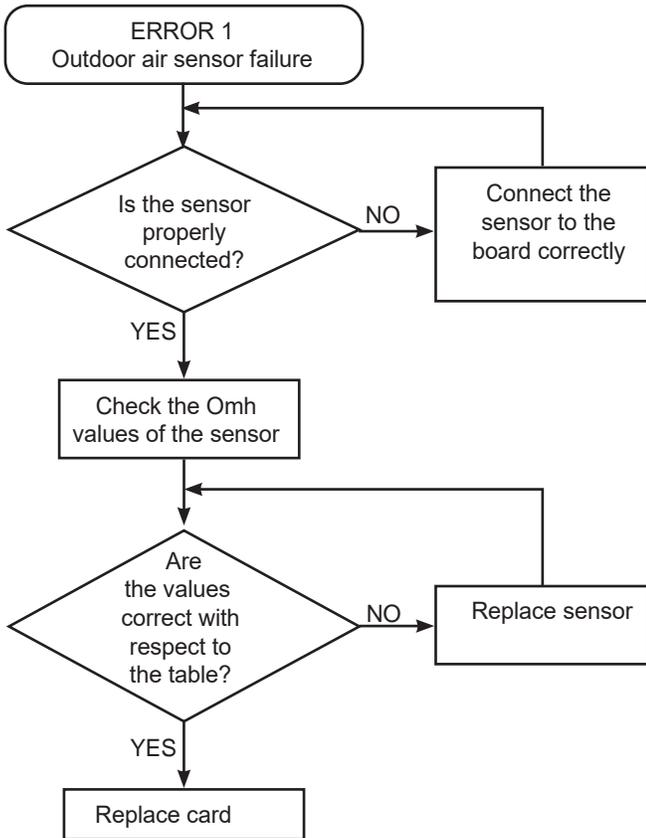
7.2.2 Compressor frequency restrictions

The table shows the Compressor Frequency restrictions

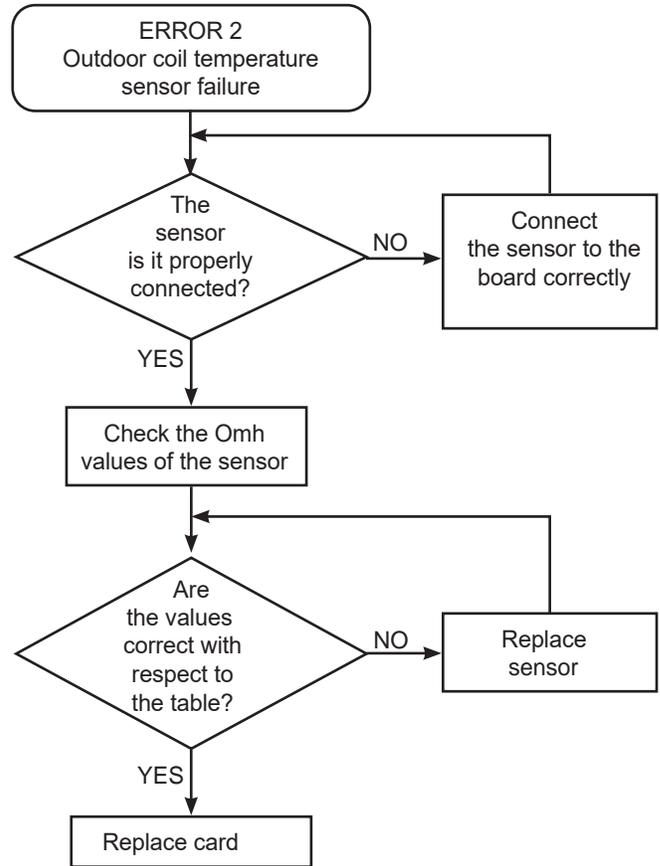
DESCRIPTION	MODE	RESULT	N. Yellow FLASHES
outdoor coil temperature too high	Cooling	Limitation of the frequency of the compressor	3
outdoor coil temperature too low	Cooling	The outdoor fan turns off	3
Indoor coil temperature too high	Heating	Compressor frequency limitation	3
Indoor coil temperature too low	Cooling	Compressor frequency limitation	6
Power overcurrent	Cooling or Heating	Compressor frequency limitation	4
Compressor outlet temperature too high	Cooling or Heating	Compressor frequency limitation	5
Compressor phase overcurrent	Cooling or Heating	Compressor frequency limitation	10

7.3 IPM board alarms

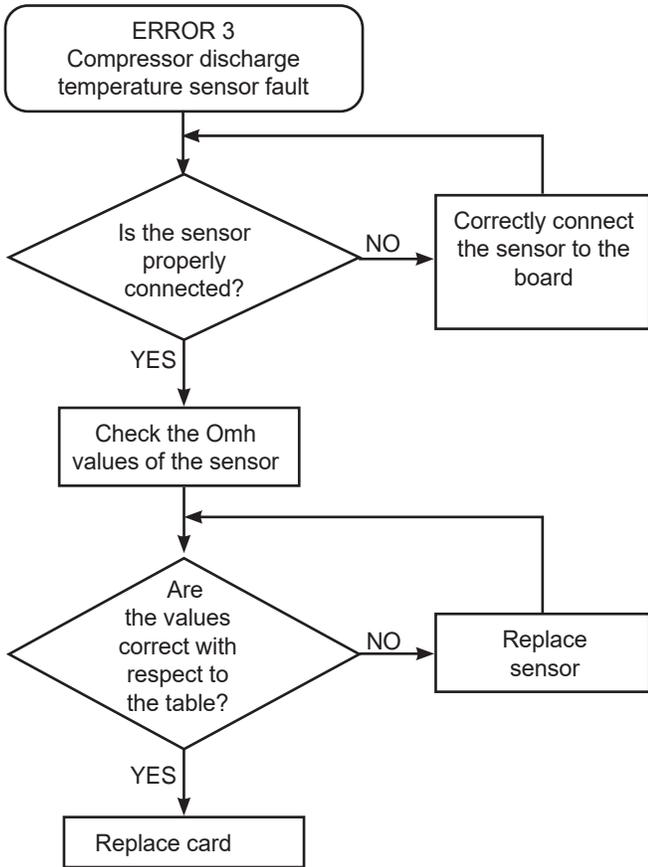
7.3.1 ERROR 1 - Outside air temperature sensor failure



7.3.2 ERROR 2 - Outdoor coil temperature sensor fault

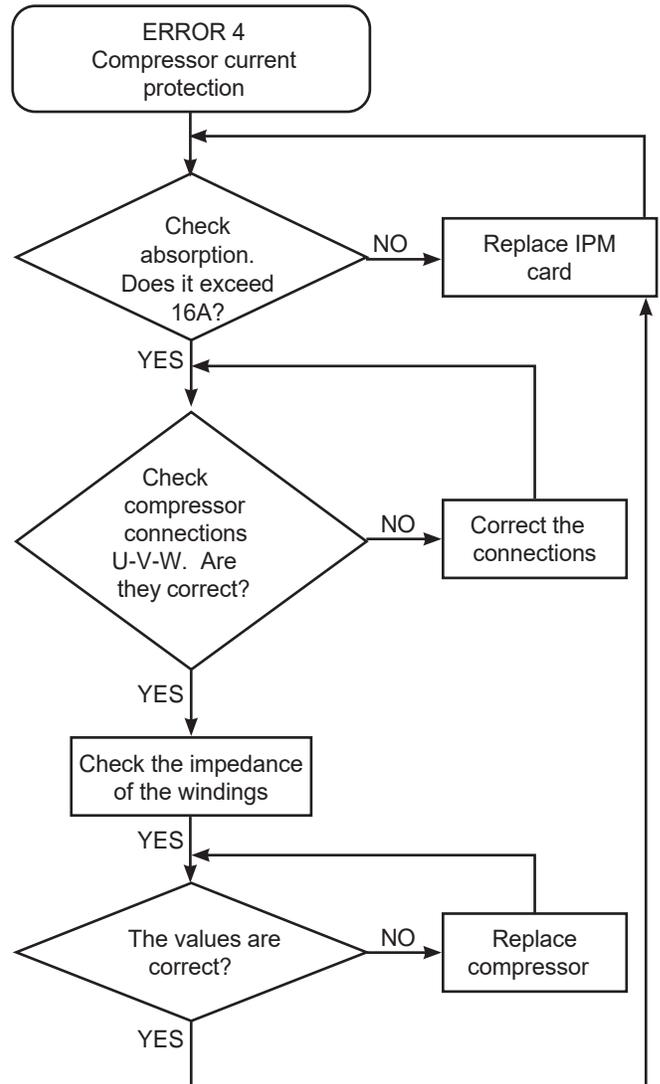


7.3.3 ERROR 3 - Compressor discharge temperature sensor failure

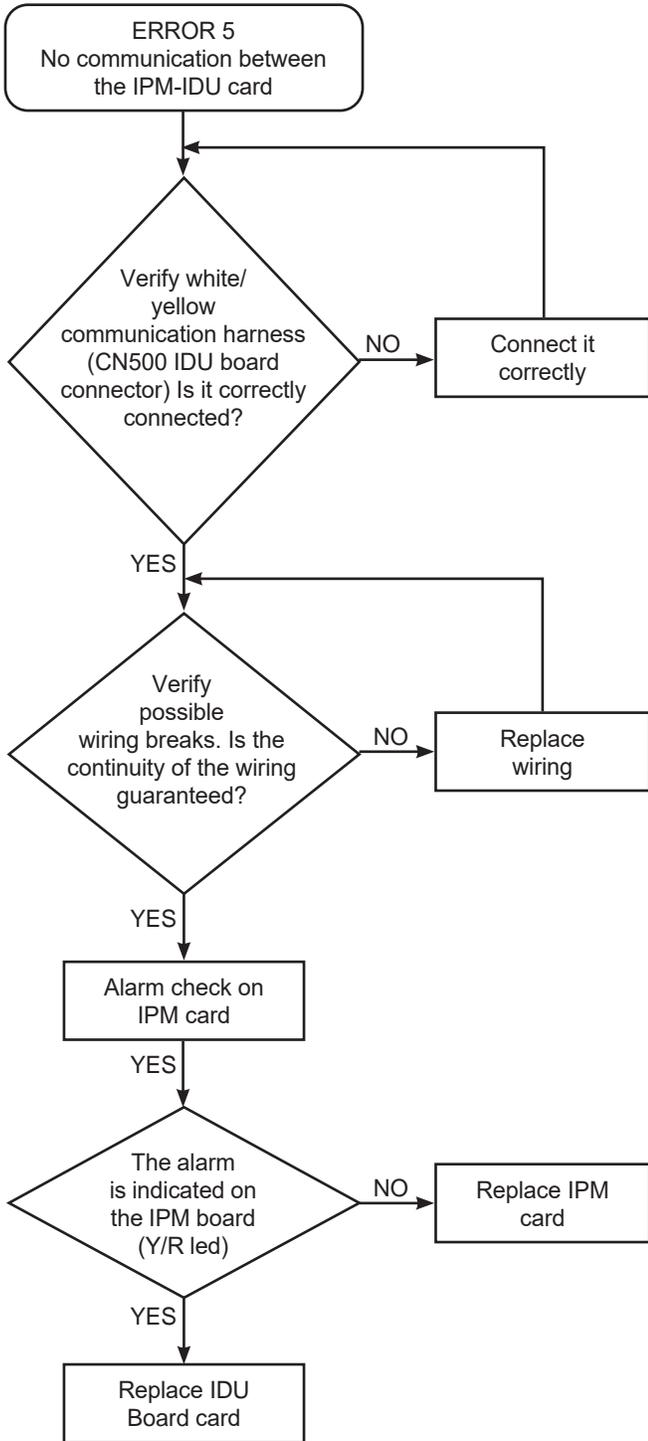


7.3.4 ERROR 4 - Compressor current protection

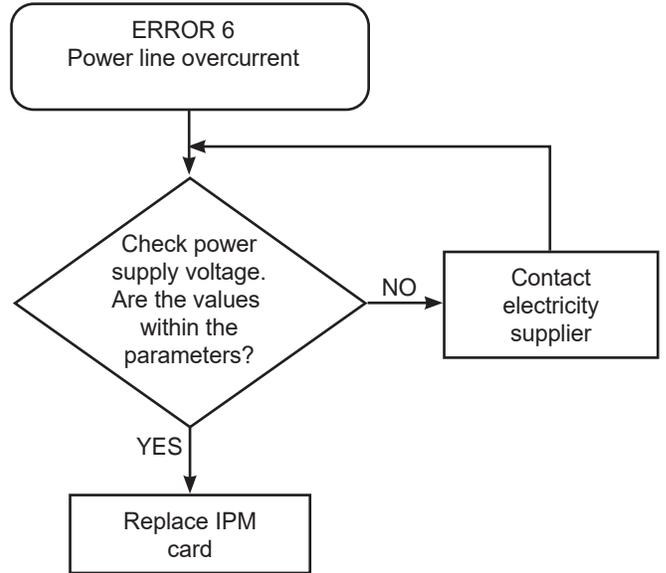
Winding		U-V	V-W	W-U
Dimension (AWG / mm ²)	mm (inch)	Ø 0.4 (0.015")	Ø 0.4 (0.015")	Ø 0.4 (0.015")
Type		MW30-C	MW30-C	MW30-C
Turns		--	--	--
Volts		--	--	--
Amps		--	--	--
Dc resistance (Ω) ± 10%	Ω/°C	8.2 /20	8.2 /20	8.2 /20



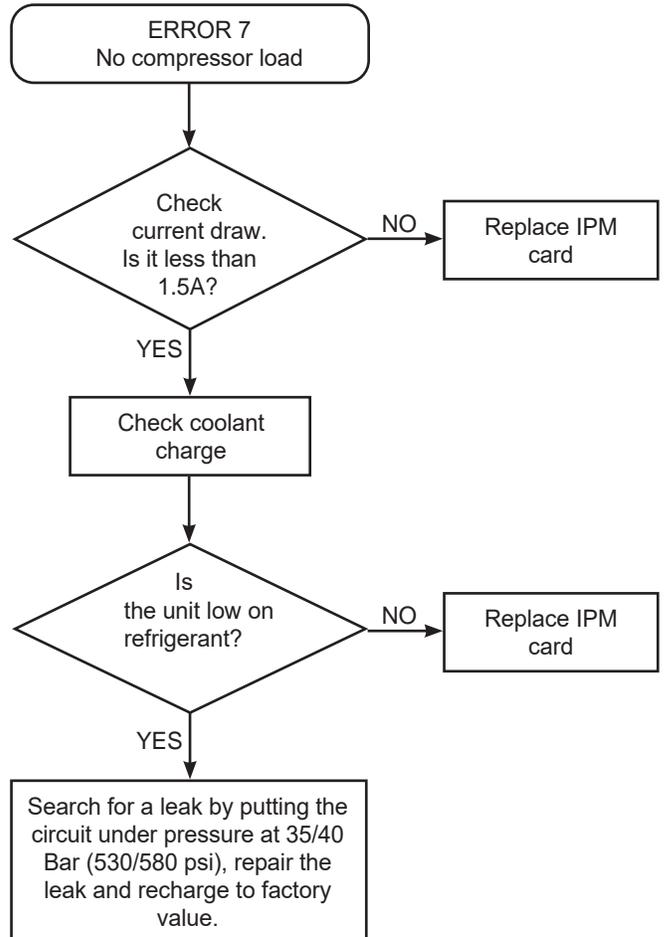
7.3.5 ERROR 5 - No communication between IPM - IDU boards



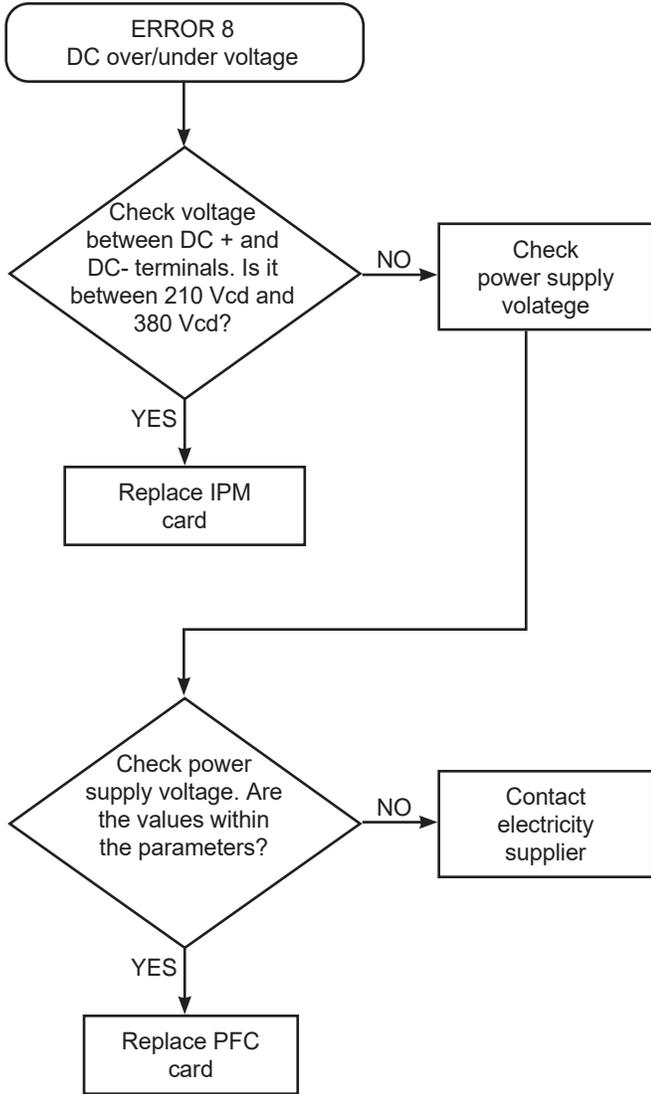
7.3.6 ERROR 6 - Power line overcurrent



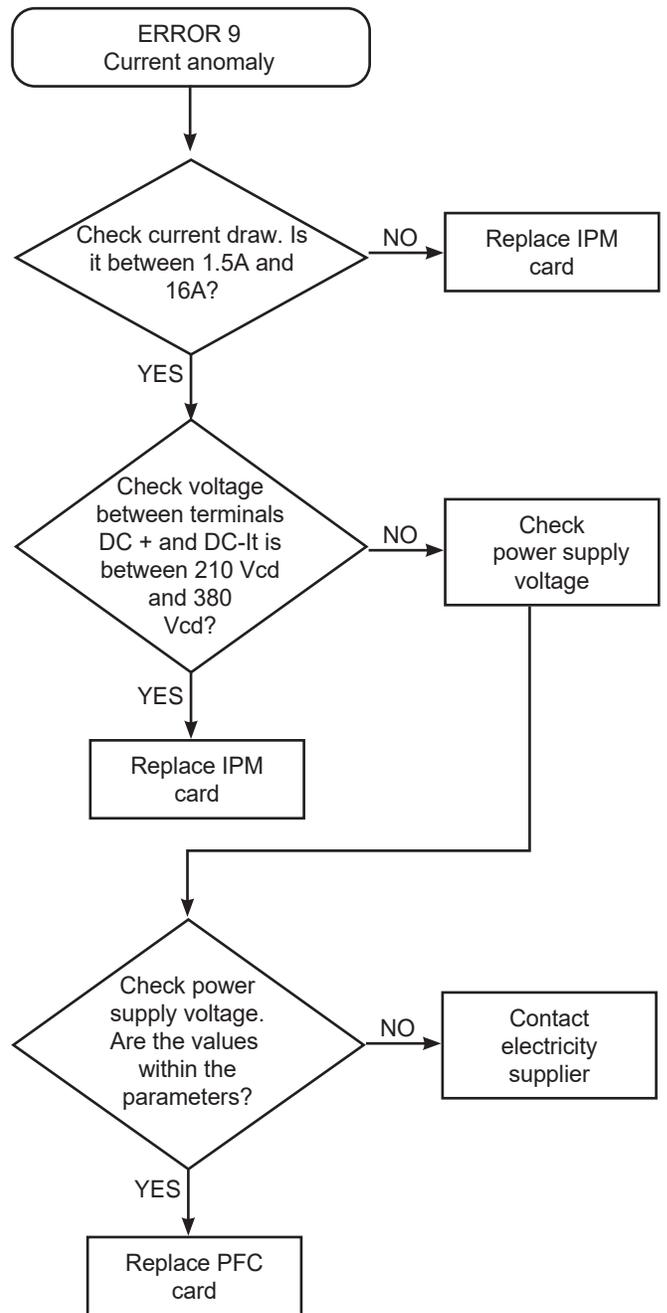
7.3.7 ERROR 7 - No compressor load



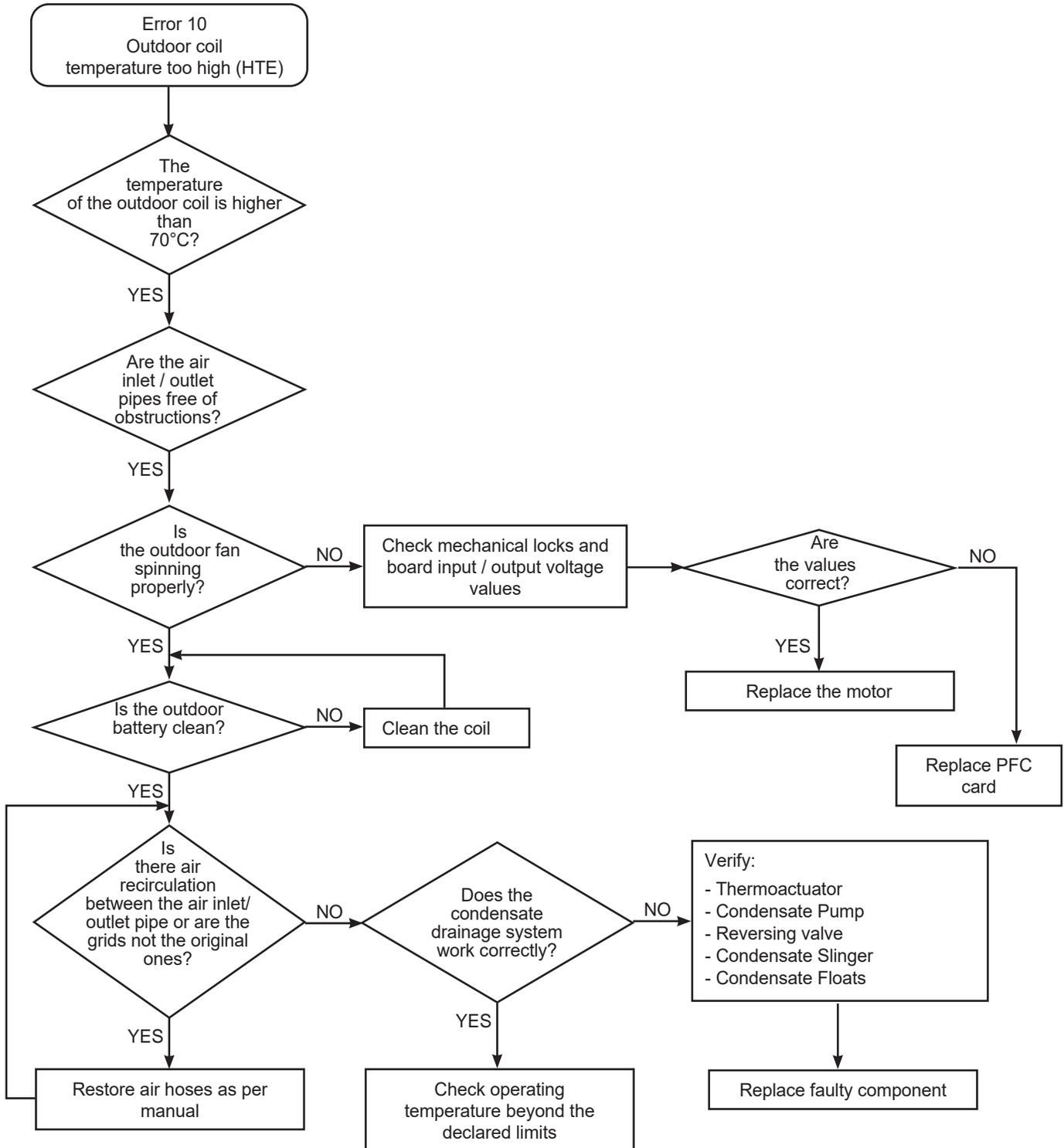
7.3.8 ERROR 8 - DC over/under voltage



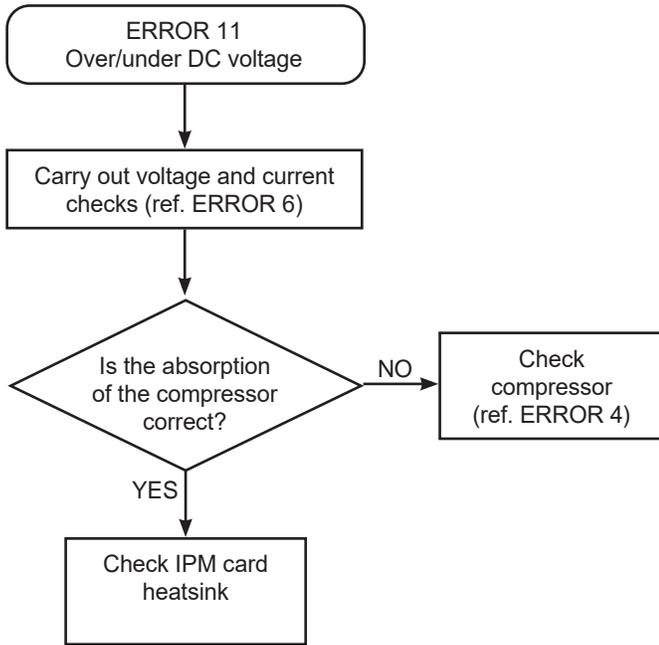
7.3.9 ERROR 9 - Current anomaly



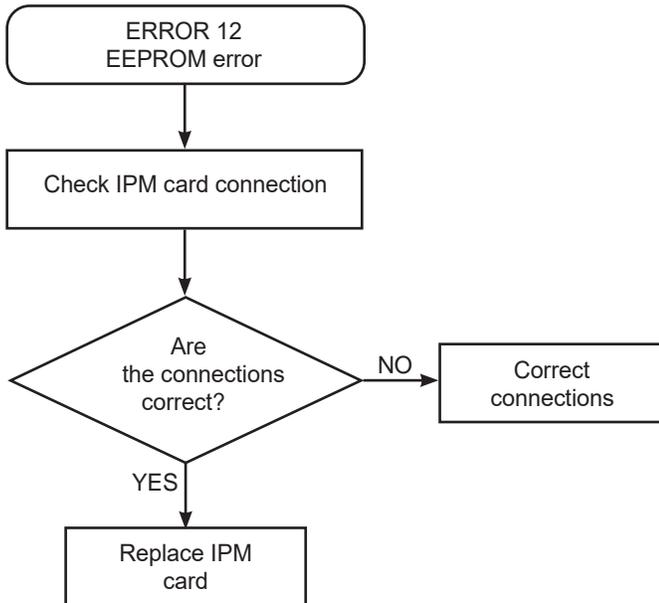
7.3.10 Error 10 - outdoor coil temperature too high (HTE)



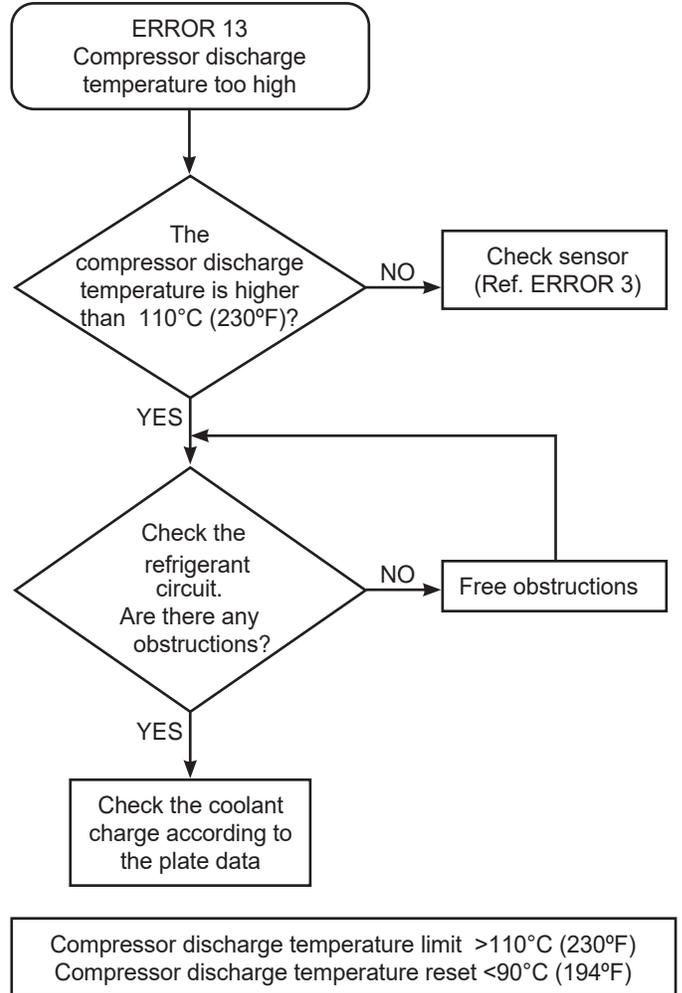
7.3.11 ERROR 11 - over/under DC voltage



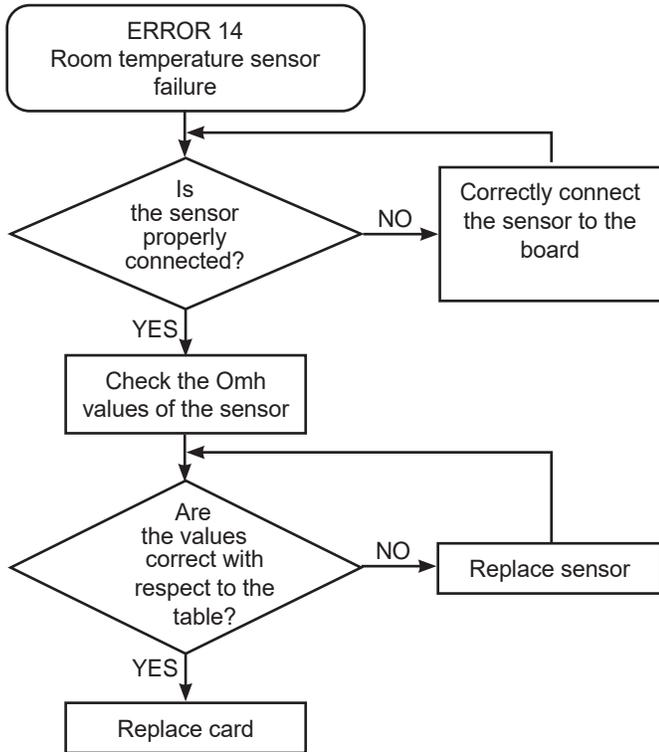
7.3.12 ERROR 12 - EEPROM error



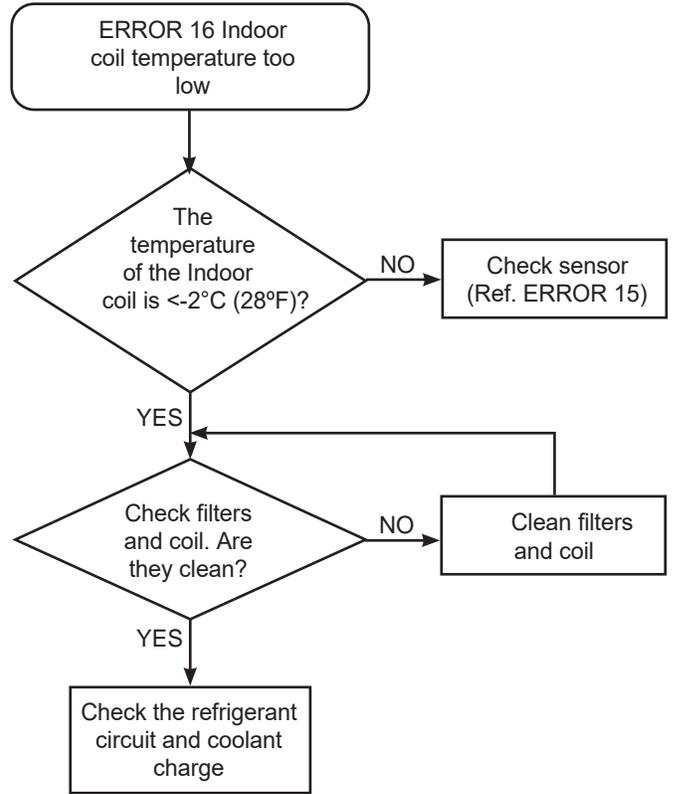
7.3.13 ERROR 13 - Compressor discharge temperature too high



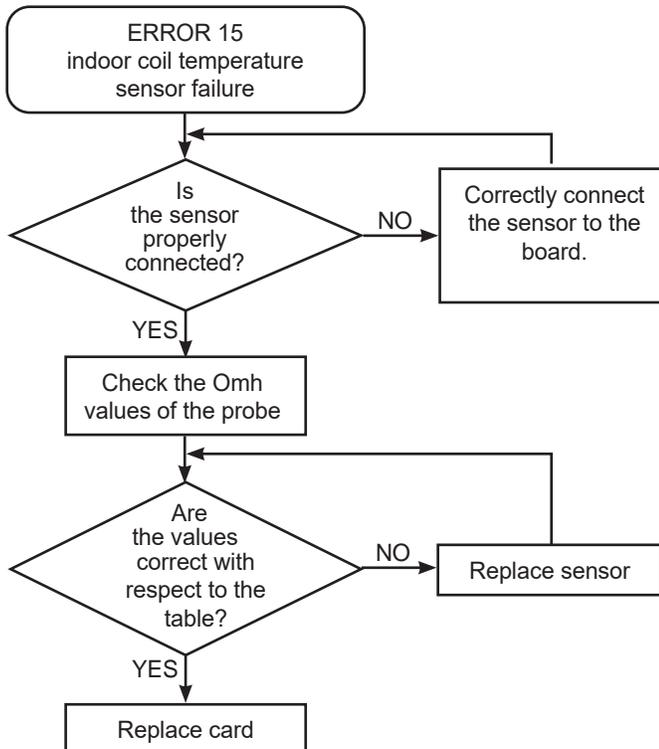
7.3.14 ERROR 14 - Room temperature sensor failure



7.3.16 ERROR 16 - Indoor coil temperature too low

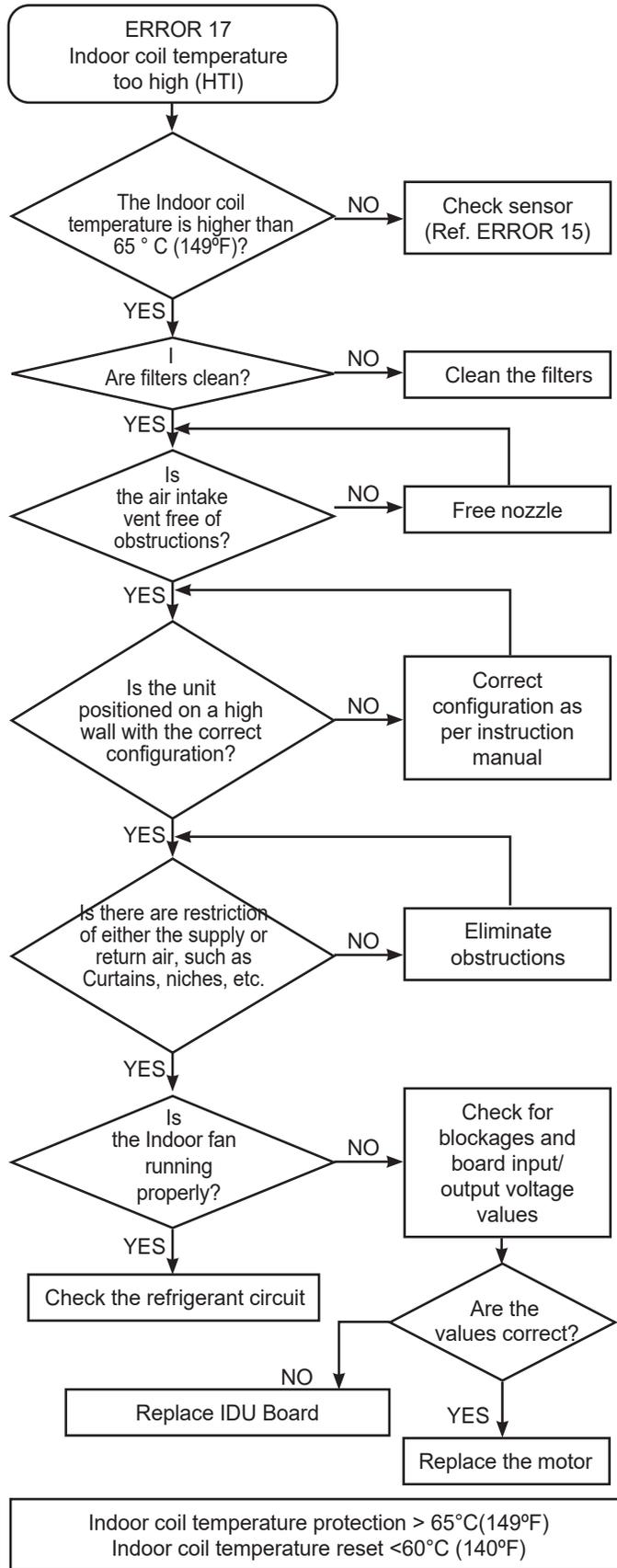


7.3.15 ERROR 15 - Indoor coil temperature sensor failure

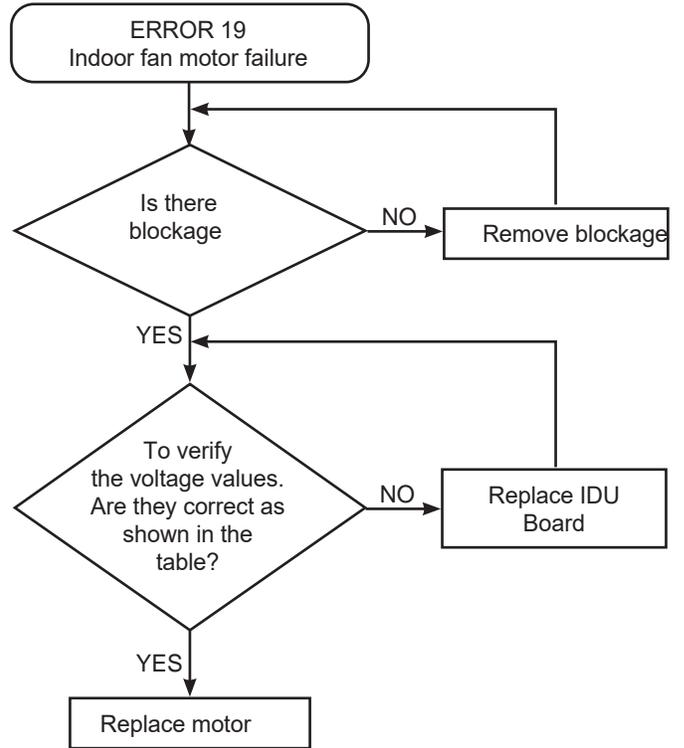


Indoor coil temperature frost protection <-2°C (28°F) for 5 min. Indoor coil temperature reset> 7°C (45°F)

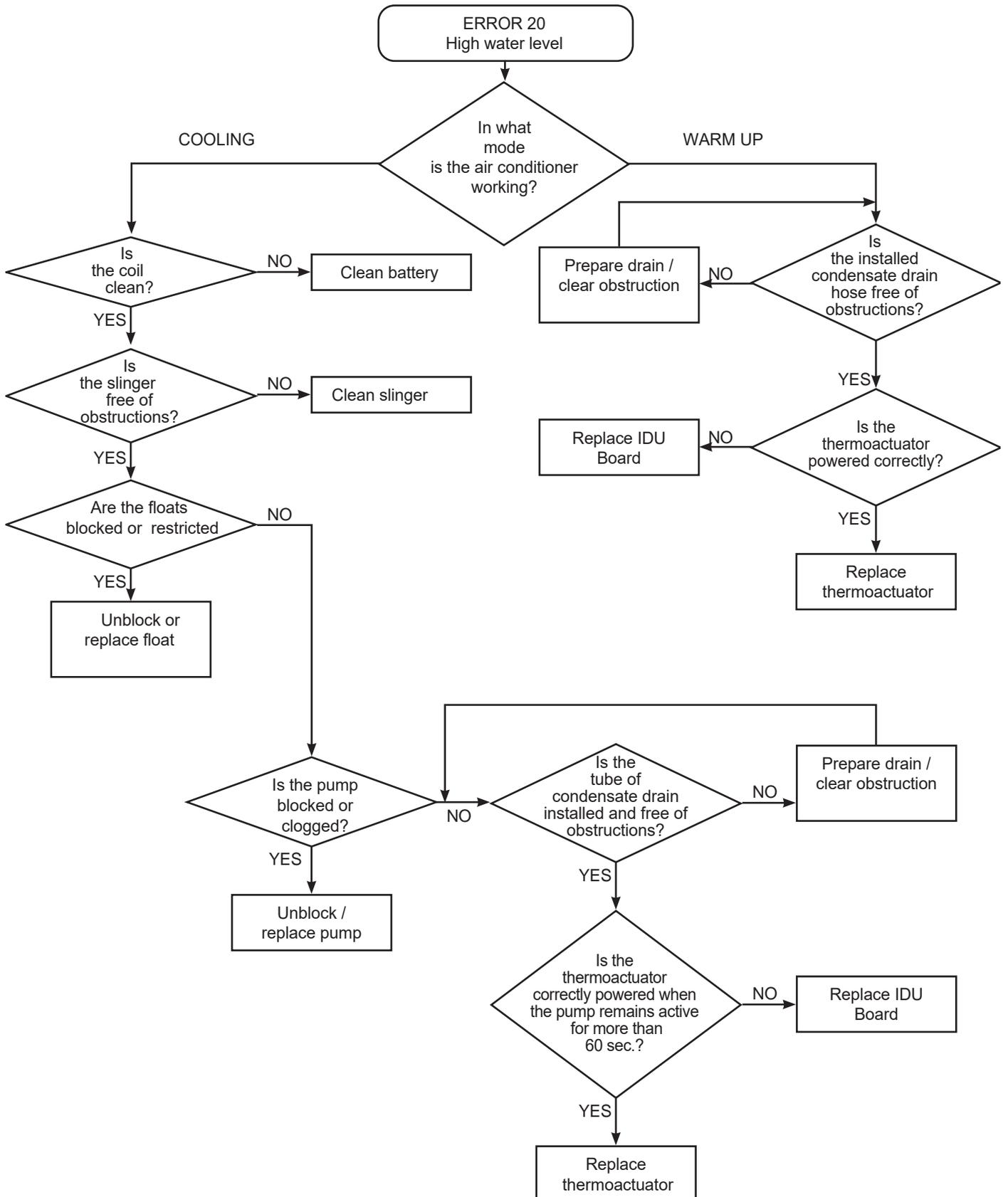
7.3.17 ERROR 17 - Indoor coil temperature too high (HTI)



7.3.18 ERROR 19 - Indoor fan motor failure

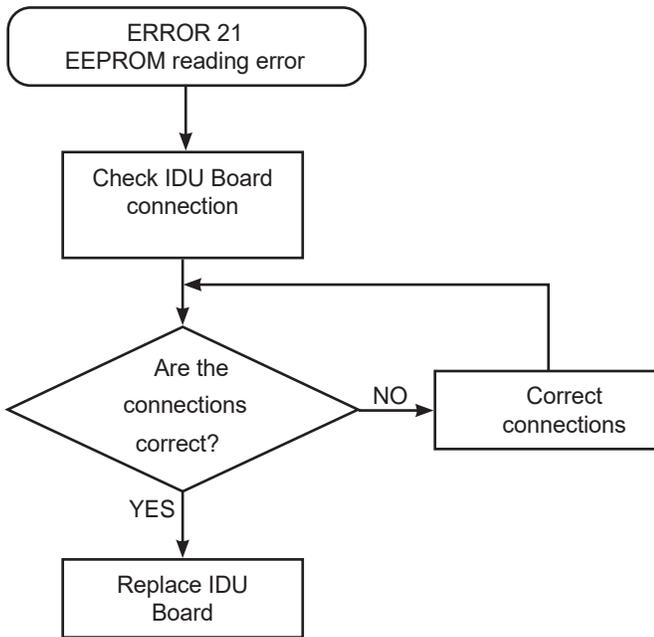


7.3.19 ERROR 20 - High water level



8 COMPONENTS

7.3.20 ERROR 21 - EEPROM reading error



WARNING

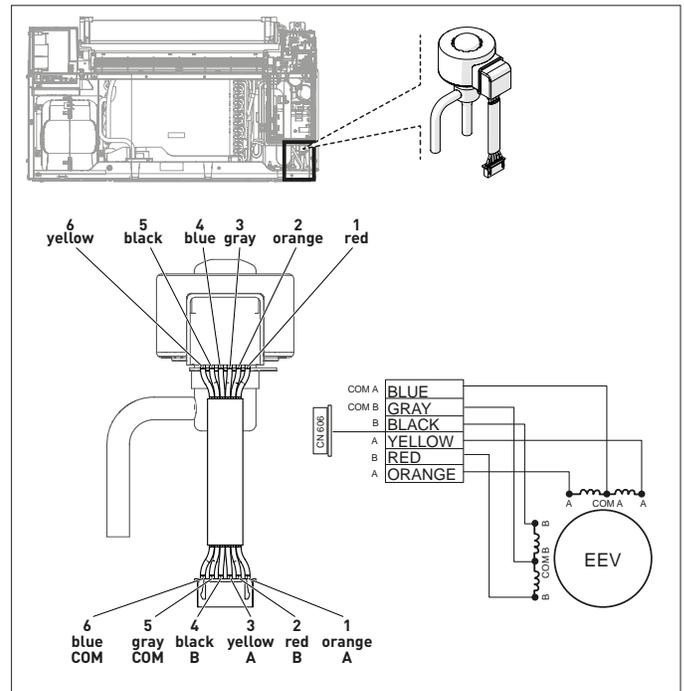


RISK OF ELECTROCUTION

Before carrying out any maintenance or cleaning, disconnect the appliance from the power supply.

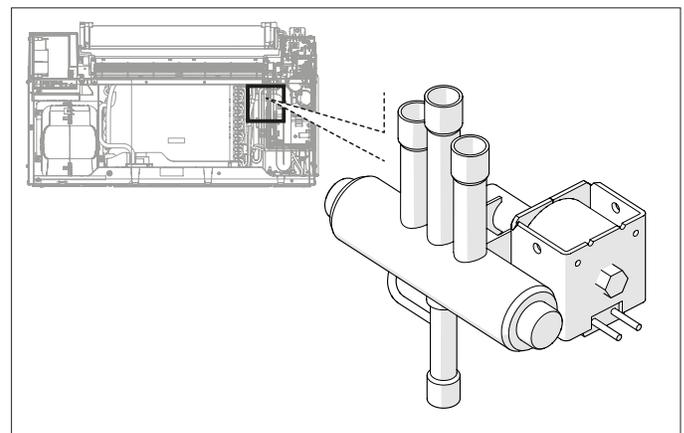
Failure to follow these instructions can result in electric shock, serious injury or death.

8.1 EXV- Electronic expansion valve

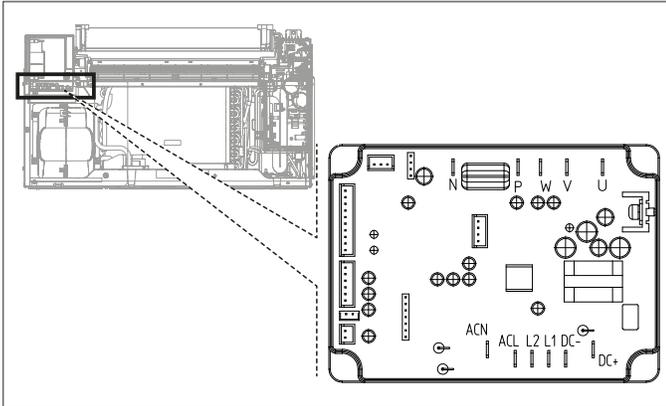


DESCRIPTION		VALUE
COM A - A	Ω	46
COM B - B	Ω	46
Supply	VDC	12

8.2 Reversing valve



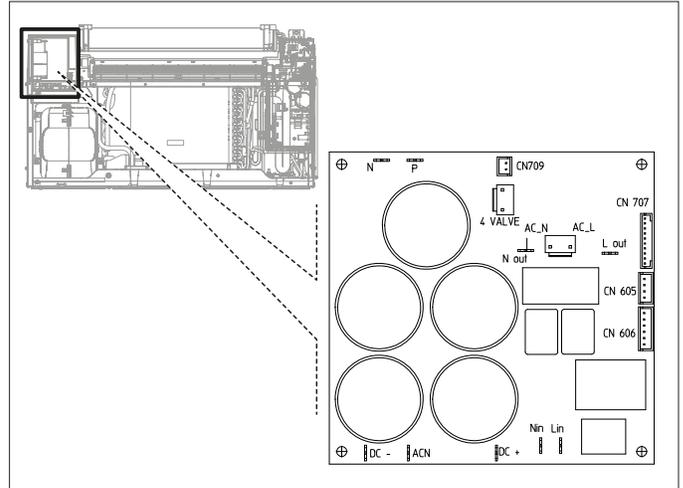
8.3 IPM card



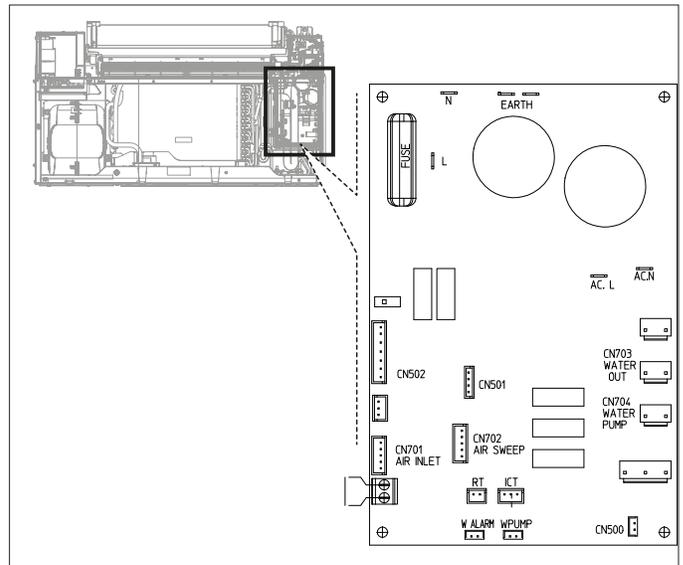
EEPROM parameters

Addr	EEPROM (P187) LongerTek E2 type: AT24C04 - Compressor GMCC ASK89 - 115Vac 60Hz Date: 20210621 derived from EEprom 92A2 - 20210604	Default HEX	Checksum 9240	
B6	Odu fan speed 6 PWM% (low speed)	03	3	%
1F6	Low noise max compressor frequency (equal for Cooling and Heating)	34	52	Hz
CC	Heating max 230Vac current limit (if overtaken the frequency is reduced) (Es 8Ax**ADDR D4**=80dec=50hex)	62	14	A
CD	Cooling max 230Vac current limit (if overtaken the frequency is reduced) (Es 8Ax**ADDR D4**=80dec=50hex)	62	14	A
10F	Percentage of CURRENT LIMIT in Economy	32	50	%
E5	Compressor waiting time before restart after stop (unit: second)	B4	180	sec.
100	Compressor LOW frequency when Dehu- midification (unit: minute)	23	35	Hz
101	The time for compressor HIGH frequency when Dehumidification (unit: minute)	06	6	mi- nuti
102	The time for compressor LOW frequency when Dehumidification (unit: minute)	0A	10	mi- nuti

8.4 PFC card



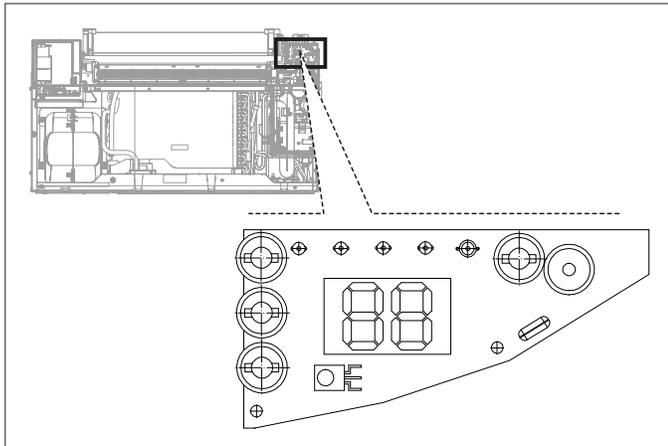
8.5 MAIN card



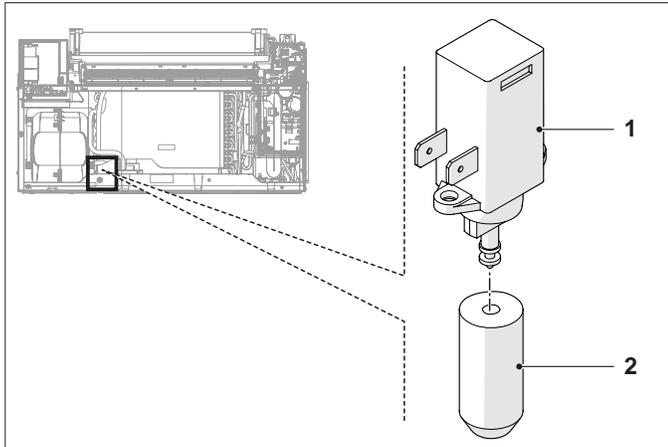
EEPROM parameters

Addr	EEPROM 115V LongerTek MAIN board HP/ ASK 89 [MCU D62E] Date: 20210604 derived from 1892 - 20210512	Default DEC	Checksum 1912
1E	LOW speed IDU fan motor	950 Rpm	5F
19	LOW speed IDU fan motor	950 Rpm	5F

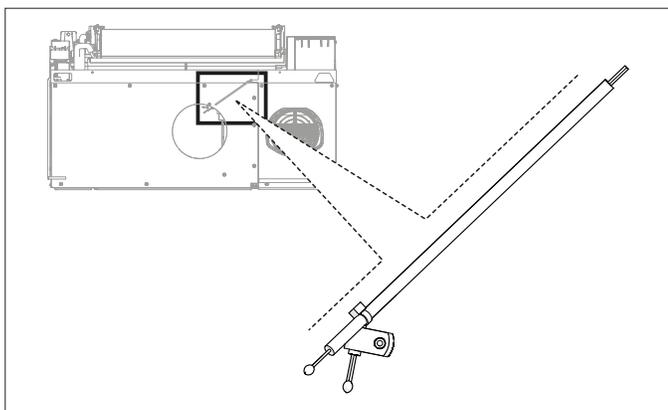
8.6 Display



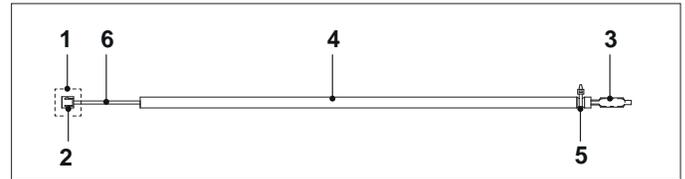
8.7 Thermoactuator and plug



8.8 Outdoor air sensor



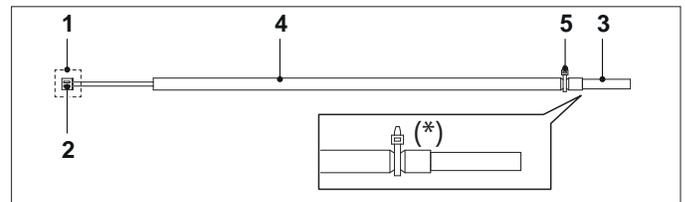
8.9 Indoor air sensor



POSITION	DESCRIPTION	
1 Housing	HELI XH-2Y (Alternative)	White
	CWB TJC3	White (Alternative)
	JST XhP-2	White (Alternative)
2 Clamp	HELI XH-2Y	-
	CWB TJC3	Alternative
	JSTSXH-001T-P0,6	Alternative
3 Temperature sensor	R25 - 10 KOhm $\pm 3\%$ B25/100 = 3988 K $\pm 0.5\%$ Temp. range of operation: -30°C (-22°F) to +80°C (176°F)	
4 Tube	PVC 105°C 300V Hose $\varnothing 4\text{mm}$	590mm (black)
5	Nylon strap	
6 Cable	PVC 105°C 300V 2xAWG26	620 mm

Length [mm]	Tolerance
0 - 100	± 3
100 - 200	± 5
200 - 1000	± 10
1000 - 5000	± 30
> 5000	± 50

8.10 IDU sensor

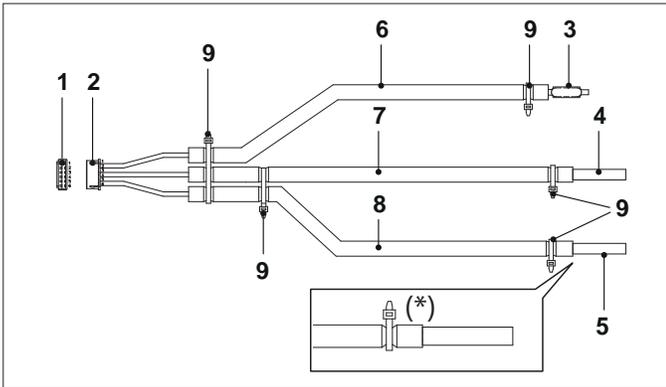


POSITION	DESCRIPTION	
1 Housing	JST EHR-2	Red
2 Clamp	JST SEH-001T-P0,6	530 mm
3 Temperature sensor	R25 - 10 k Ω $\pm 3\%$ B25/100 = 3988 K $\pm 0.5\%$ Operating Temp. Range -30°C (-22°F) to +80°C (176°F)	
4 Tube	Rubber hose PVC $\varnothing 4\text{mm}$ 150°C	530 mm
5	Nylon strap	

(*) The tube must be placed at the end of the sensor

Length [mm]	Tolerance
0 - 100	± 3
100 - 200	± 5
200 - 1000	± 10
1000 - 5000	± 30
> 5000	± 50

8.11 ODU sensor

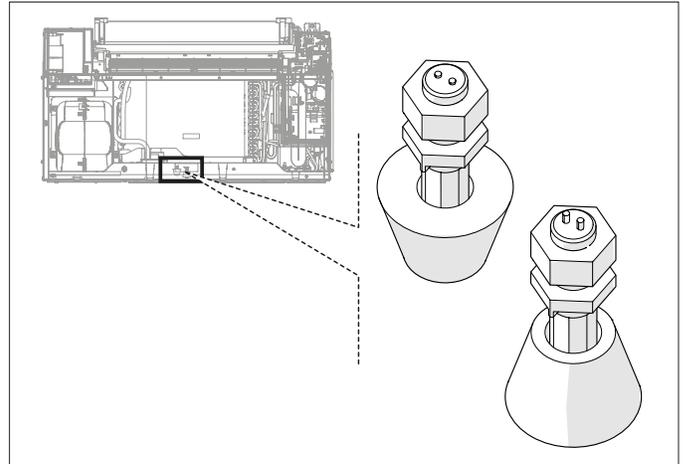


POSITION	DESCRIPTION		
1	Housing	JST XHP-6	
2	Clamp	JST SXH-001T-P0.6	
3	outdoor temperature sensor	KELIAN G08061500012 -30°C ÷ +105°C R0 15kΩ ±2% B0/100 3450 k ±2% cable 26AWG 105°C 300V	Alternative
		BEILU 150-532-87010 -30°C ÷ +105°C R0 15kΩ ±2% B0/50 3450 k ±2%	
4	Temp sensor outdoor heat coil	KELIAN G08061500010 -30°C ÷ +105°C R0 15kΩ ±2% B0/100 3450 k ±2% cable 26AWG 105°C 300 V	Alternative
		BEILU 150-532-97017 -30°C ÷ +105°C R0 15kΩ ±2% B0/50 3450 k ±2%	
5	Exhaust temperature sensor	KELIAN G08061500011 -30°C ÷ +125°C R100 3,77kΩ ±2,5%B0/100 3979 k ±1% cable 26AWG 150°C 600V	Alternative
		BEILU 150-583-97007 -30°C ÷ +125°C R100 3,77kΩ ±2% B0/100 3979 k ±2	
6	Tube	Rubber hose PVC Ø4mm 150°C	480 mm (Grey)
7	Tube	Rubber hose PVC Ø4mm 150°C	1120 mm (Grey)
8	Tube	Rubber hose PVC Ø4mm 150°C	1120 mm (Black)
9		Nylon strap	

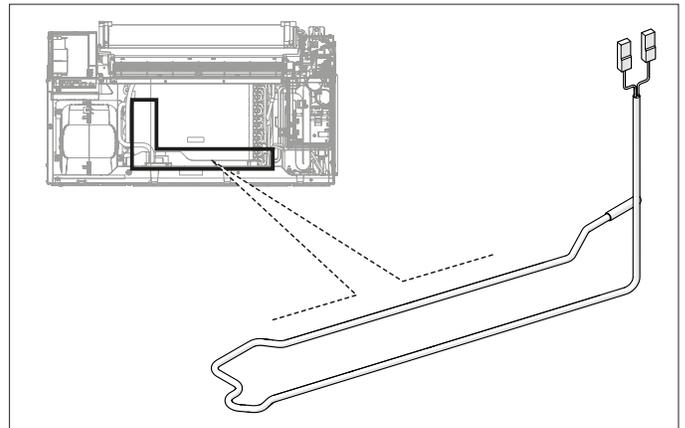
(*) The tube must be placed at the end of the sensor

Length [mm]	Tolerance
0 - 100	±3
100 - 200	±5
200 - 1000	±10
1000 - 5000	±30
> 5000	±50

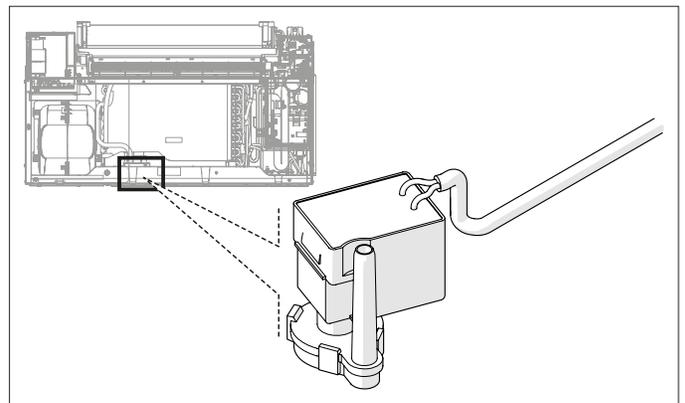
8.12 FLOATS



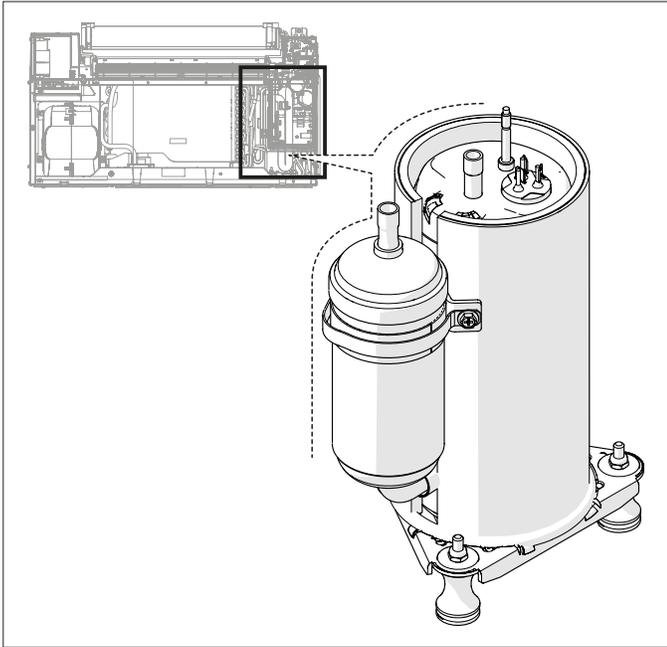
8.13 Pan Heater Kit



8.14 Pump

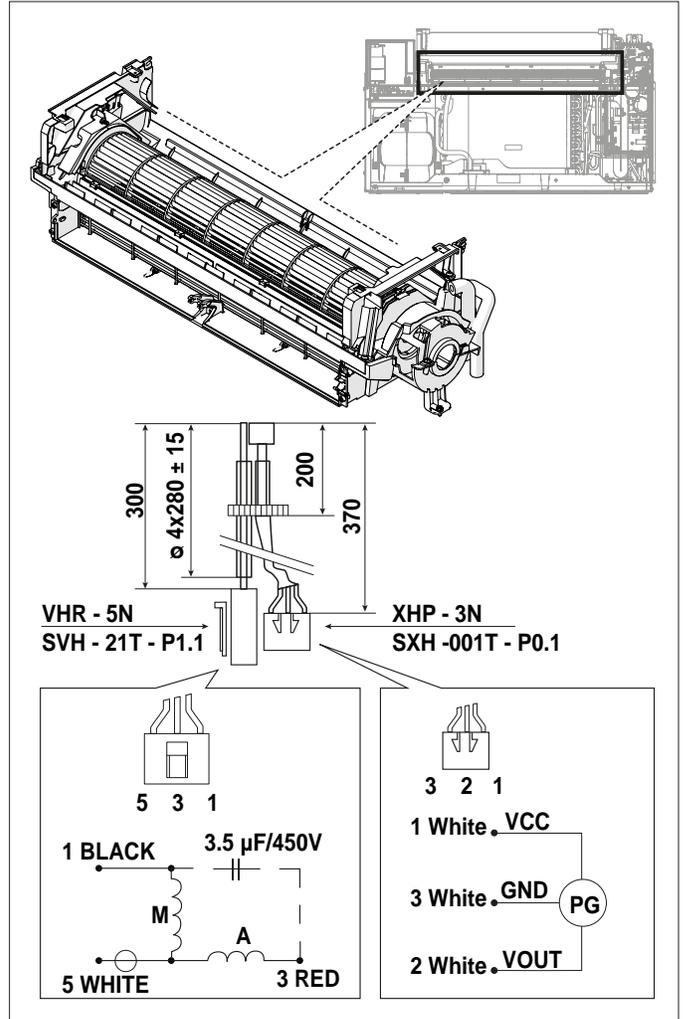


8.15 Compressor



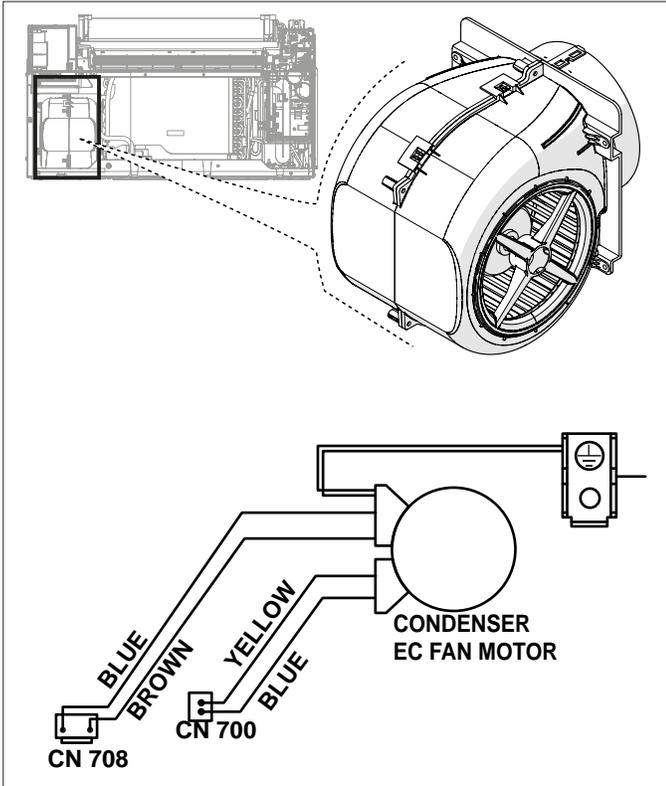
WIRING		U-V	V-W	W-U
Cable size (AWG / mm2)	mm (inch)	Ø 0.4 (0.015")	Ø 0.4 (0.015")	Ø 0.4 (0.015")
Cable type		MW30-C	MW30-C	MW30-C
Coils		-	-	-
Volt		-	-	-
Amp		-	-	-
Resistance CC ±10% a 20°C	Ω	8.2	8.2	8.2

8.16 Indoor fan



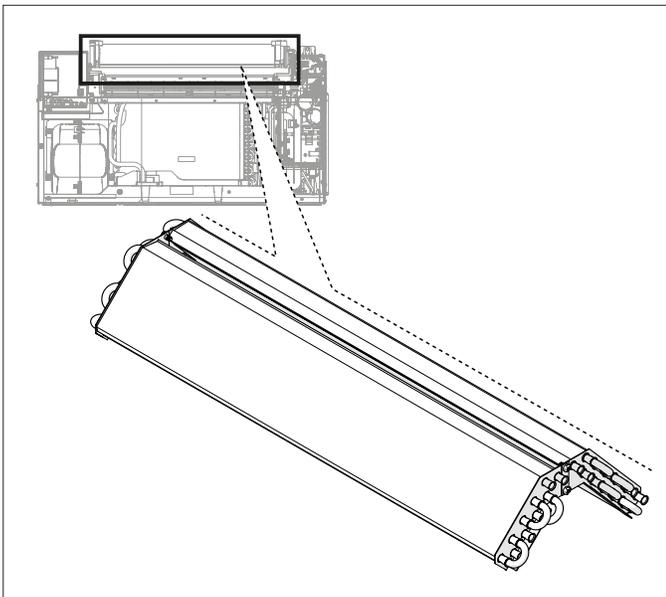
1 - 5			
Minimum voltage	60 V		Motor start speed
Maximum voltage	115V		Maximum engine speed
Resistance (20°C)			
M	20 °C	Ω	82.5 ±13%
A	20 °C	Ω	88.2 ±13%
Thermal protector 110°C ±5 open			

8.17 Outdoor fan

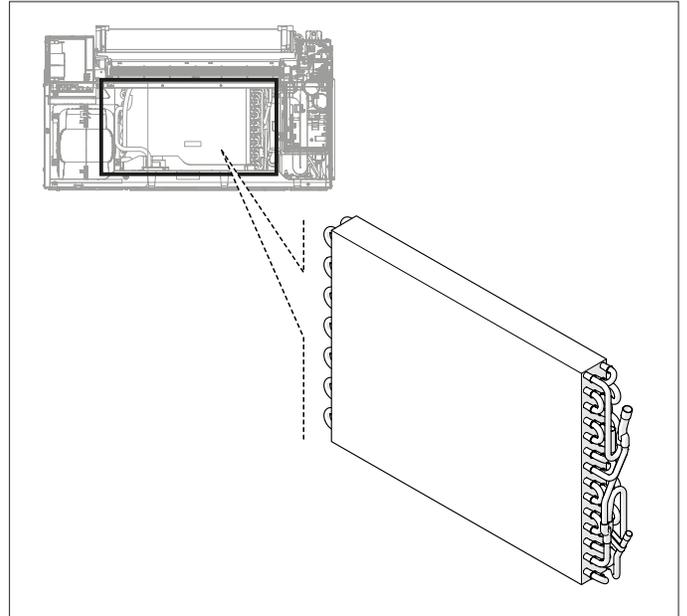


Supply			
CN 708	Blue - Brown	VAC	115
Speed command			
CN 700	Blue - Yellow	VDC	0 - 10
Minimum speed		vdc/rpm	1
Full speed		vdc/rpm	9

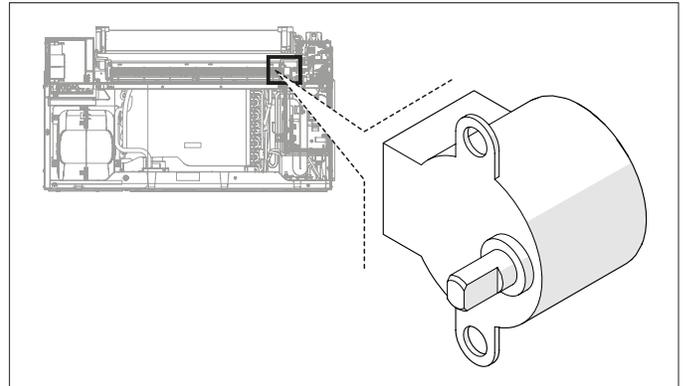
8.18 Indoor Coil



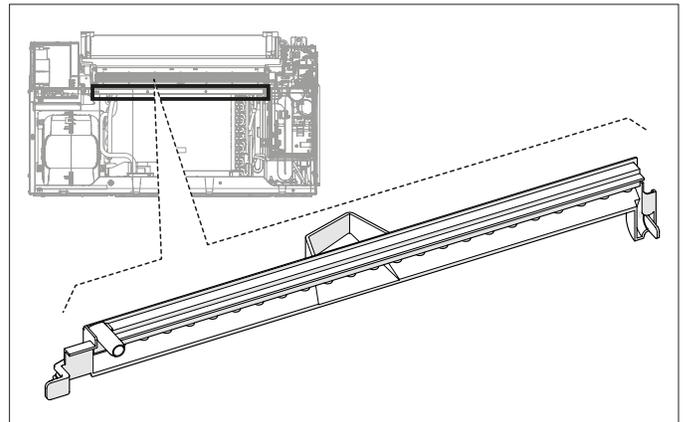
8.19 Condenser Coil



8.20 Flapper motor



8.21 Condensate Slinger



9 DISASSEMBLY OF COMPONENTS

 WARNING	
	<p>RISK OF ELECTROCUTION Before carrying out any maintenance or cleaning, disconnect the appliance from the power supply.</p> <p>Failure to follow these instructions can result in electric shock, serious injury or death.</p>

NOTICE	
<p>DANGER OF FIRE The use of flame requires extreme caution. Follow all recommended safety precautions and protect surrounding areas with fireproof materials. Keep a fire extinguisher handy. Failure to observe this warning could cause moderate to severe damage.</p>	

 WARNING	
	<p>HIGH PRESSURE DANGER The refrigeration circuit contains high pressure coolant and oil. Proper safety procedures must be followed and appropriate protective equipment worn when working with refrigerants.</p> <p>Failure to follow these instructions can result in serious injury or death.</p>

 WARNING	
	<p>MOVING PARTS DANGER OF CUT</p> <ul style="list-style-type: none"> - It is forbidden to operate the unit if it is out of order or with the front grid removed. - It is forbidden to put your hands within the radius of action of the fan. <p>Failure to follow these instructions can result in serious injury.</p>

 ATTENTION	
	<p>DANGER OF BURNING Proper safety procedures must be followed and suitable protective equipment be worn when working with a flame.</p> <p>Failure to follow these instructions can result in moderate or severe injury.</p>

 WARNING	
	<p>DANGER OF MOVING PARTS Reposition all panels before putting the appliance into operation.</p> <p>Failure to follow these instructions can result in serious personal injury or death and product damage.</p>

 ATTENTION	
	<p>DANGER OF FREEZING Proper safety procedures must be followed and appropriate protective equipment worn when working with refrigerants.</p> <p>Failure to follow these instructions can result in moderate or severe injury.</p>

 WARNING	
	<p>Component maintenance and disassembly operations require the presence of two operators.</p>

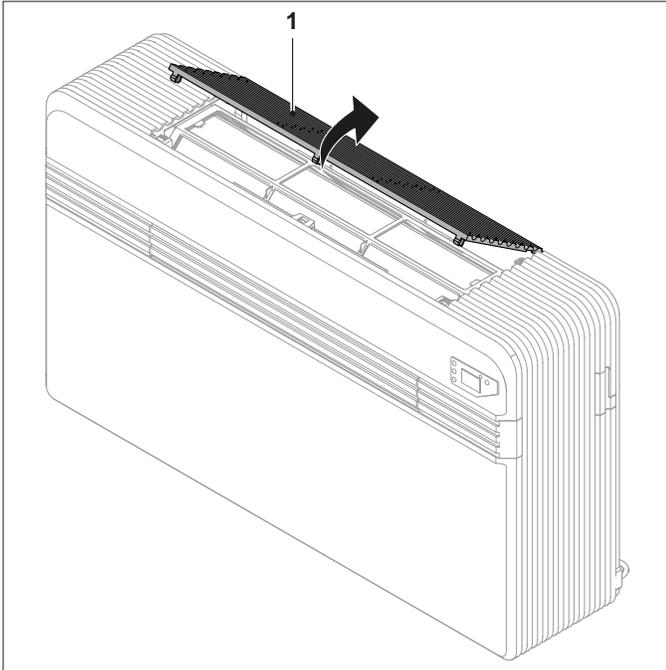
NOTE: All the operations described below are graphically represented with the device with front coolant charge and are also valid for the device with rear coolant charge.

If there is a need to operate differently, the operations to be carried out for both devices are graphically represented.

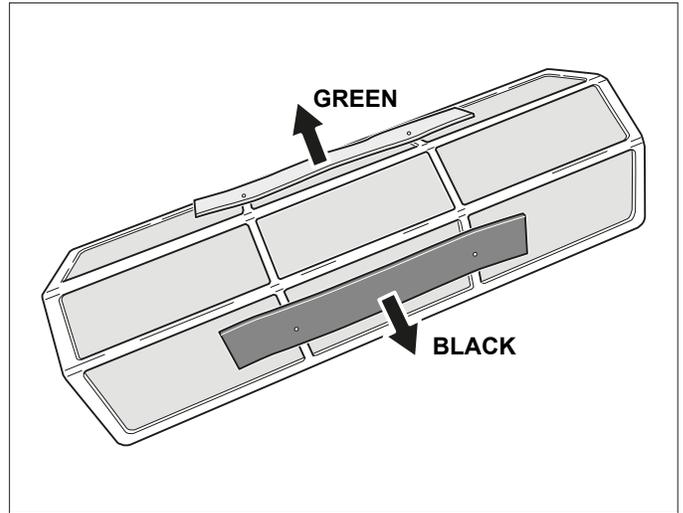
 WARNING	
	<p>DANGER OF EXPLOSION The use of nitrogen requires a pressure regulator. Proper safety procedures must be followed and appropriate protective equipment worn.</p> <p>Failure to follow these instructions can result in serious injury or death.</p>

9.1 Filter removal

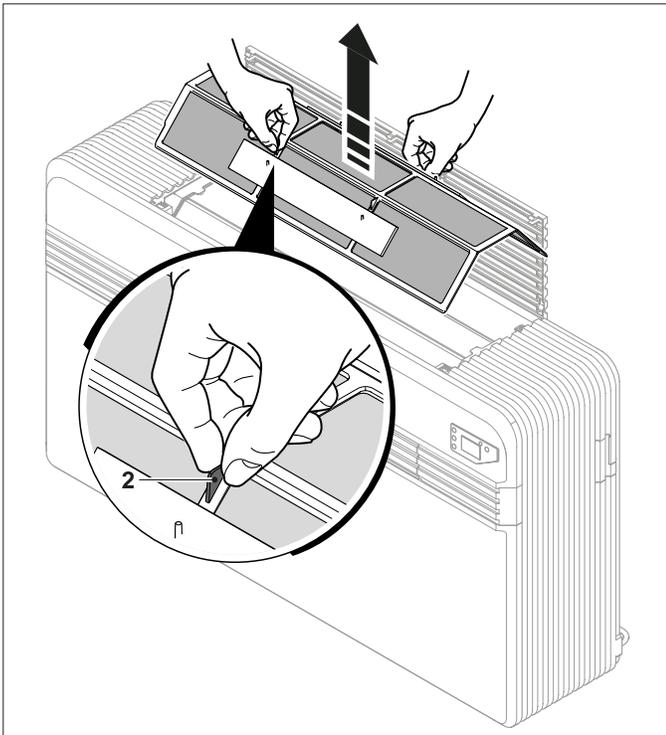
Lift the upper grate (1).



Remove the air purifying filter (green) and carbon filter (black) from the filter assembly.

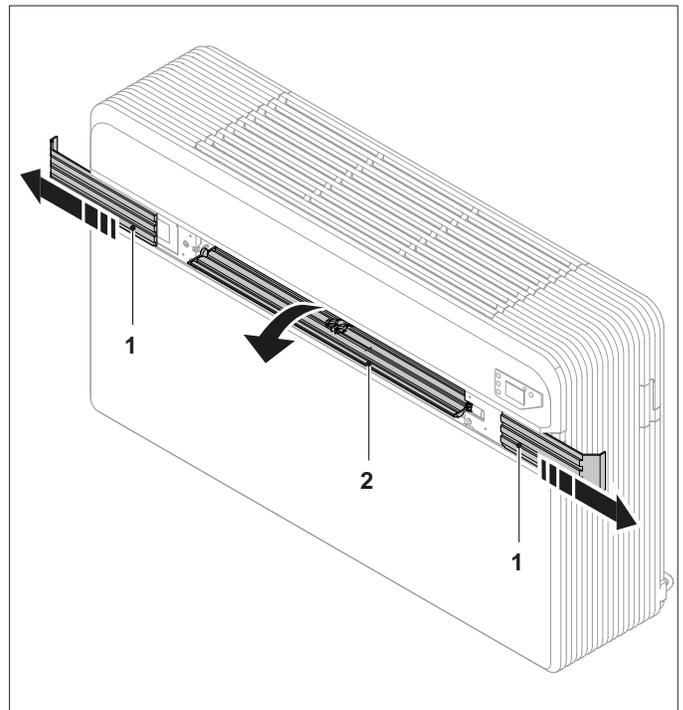


Grasp the tabs (2), pull upwards and extract the filter unit.

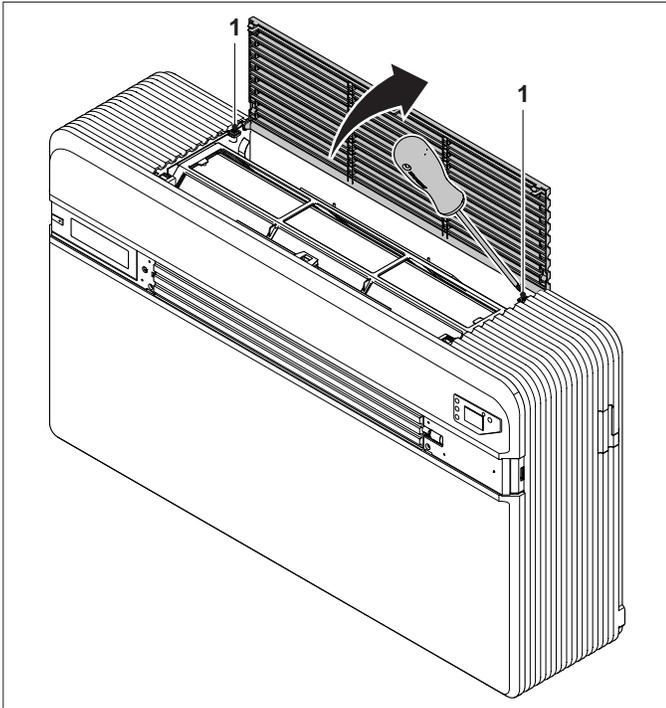


9.2 Body removal

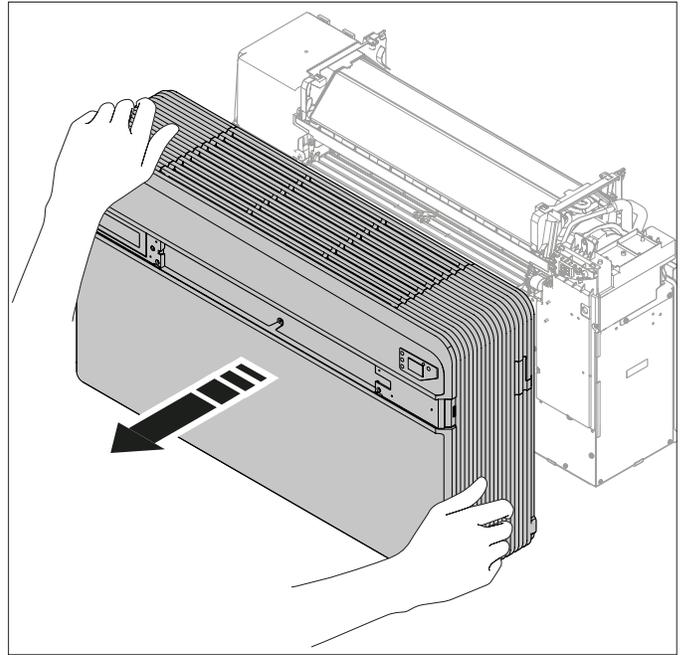
Remove the masks (1) by sliding them outwards. Carefully rotate the flap forward (2).



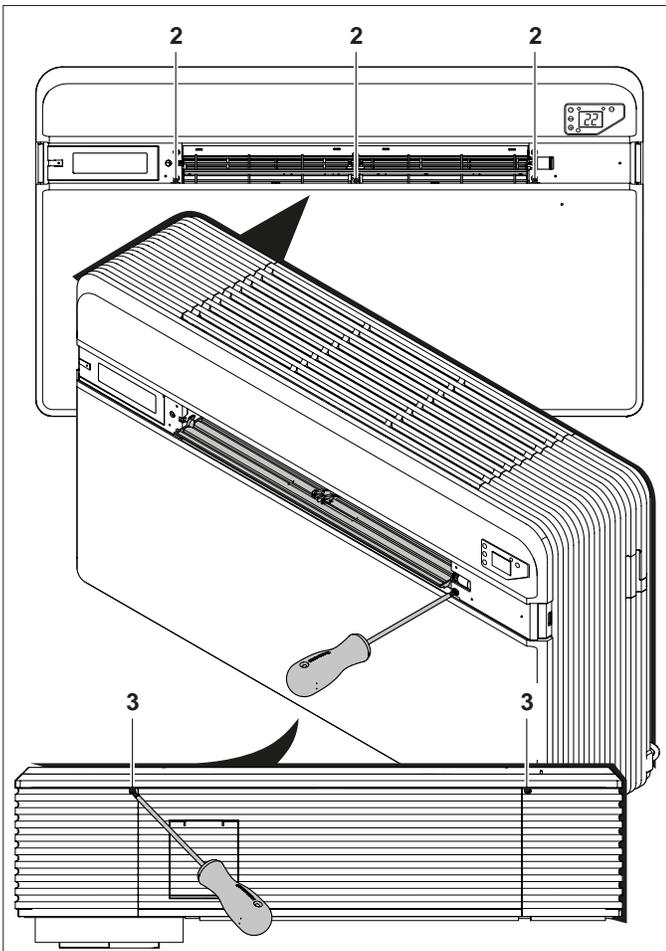
Open the upper grille and remove the fixing screws (1).



Remove the body.

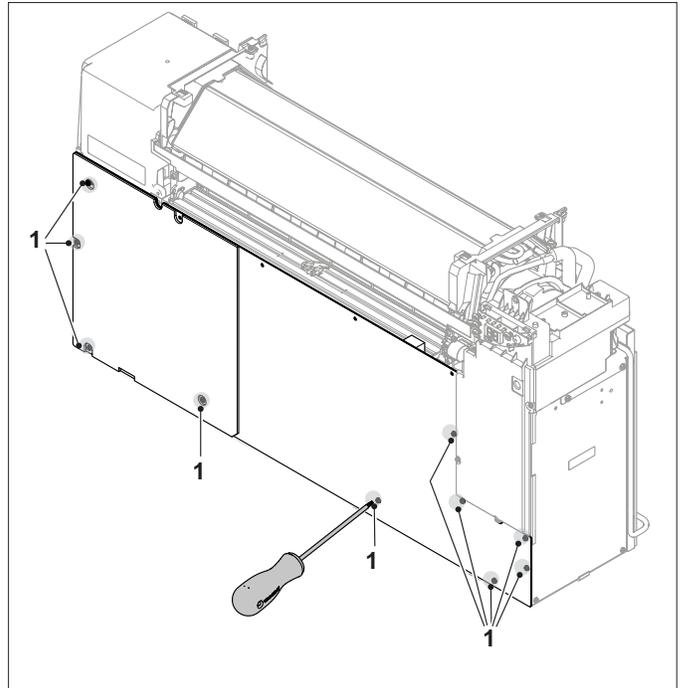


Remove the fixing screws (2) located behind the flap and the fixing screws (3) located on the bottom.

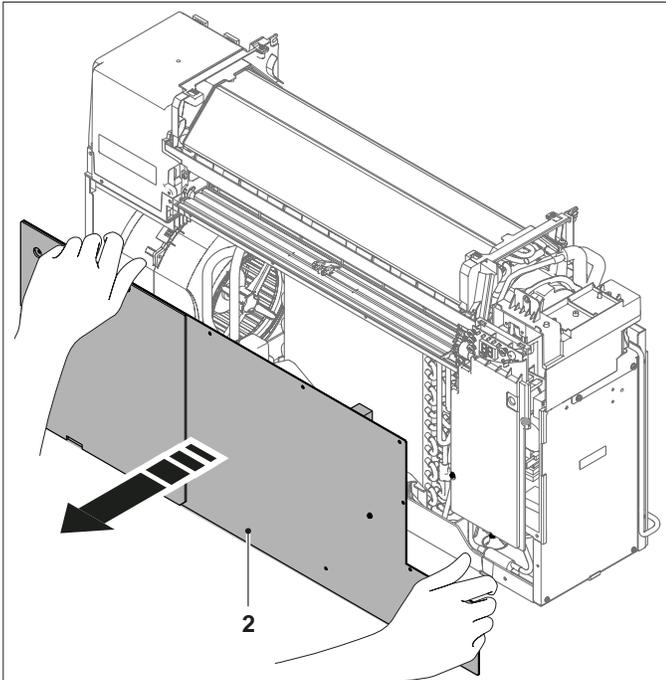


9.3 Front cover removal

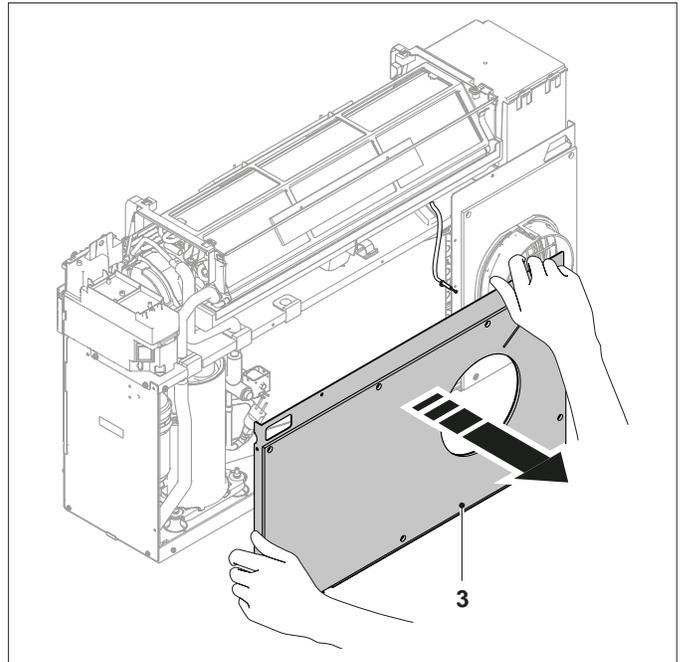
Remove screws (1).



Remove the cover (2).

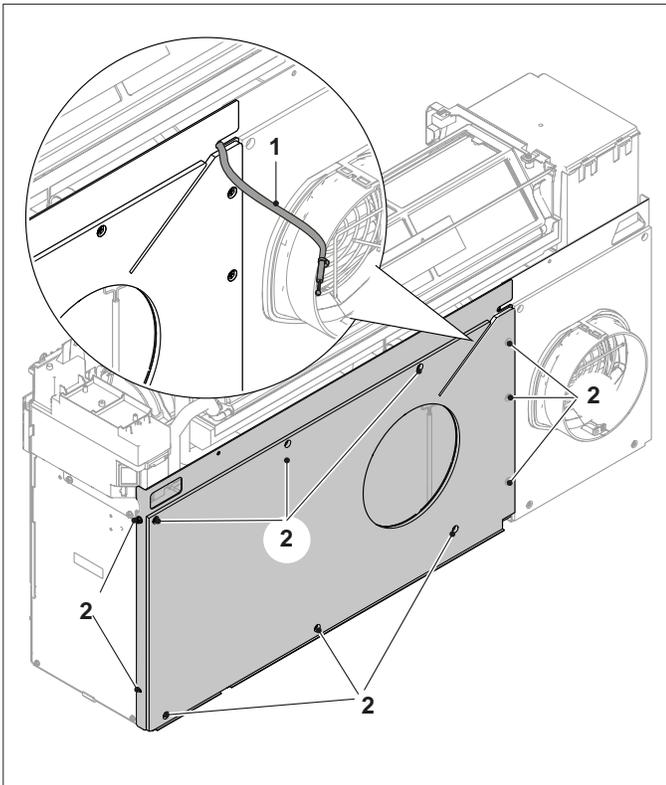


Remove the backrest (3) paying attention to the connections and to the outdoor air probe.



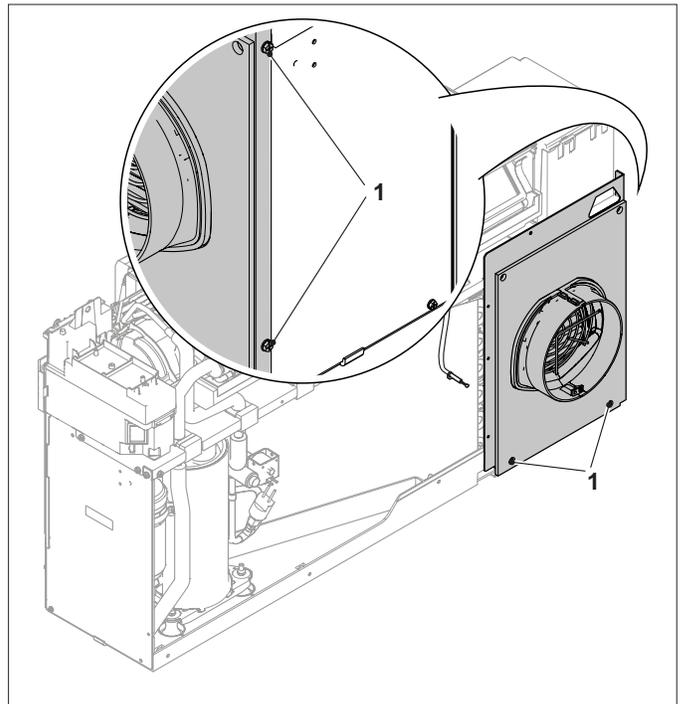
9.4 Backrest removal

Remove the body (ref. "9.2 Removing the body" on page 39).
Disconnect the outdoor air probe (1).
Remove all fixing screws (2).

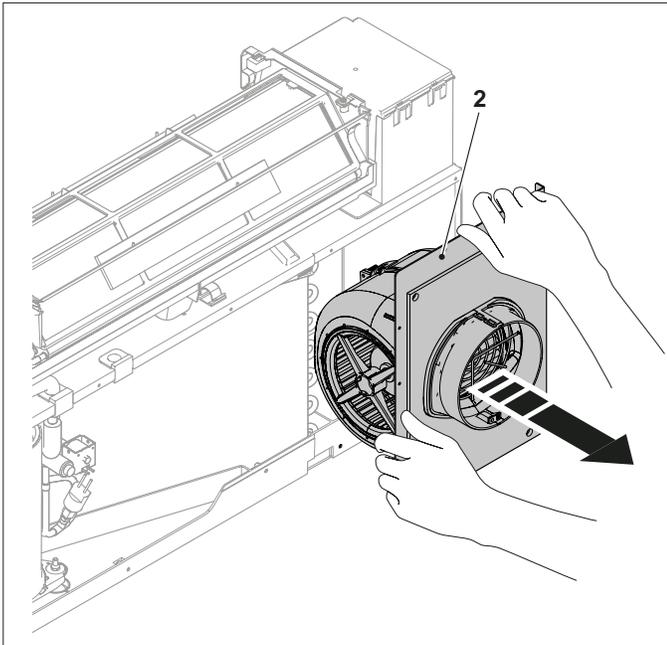


9.5 Removing the outdoor fan

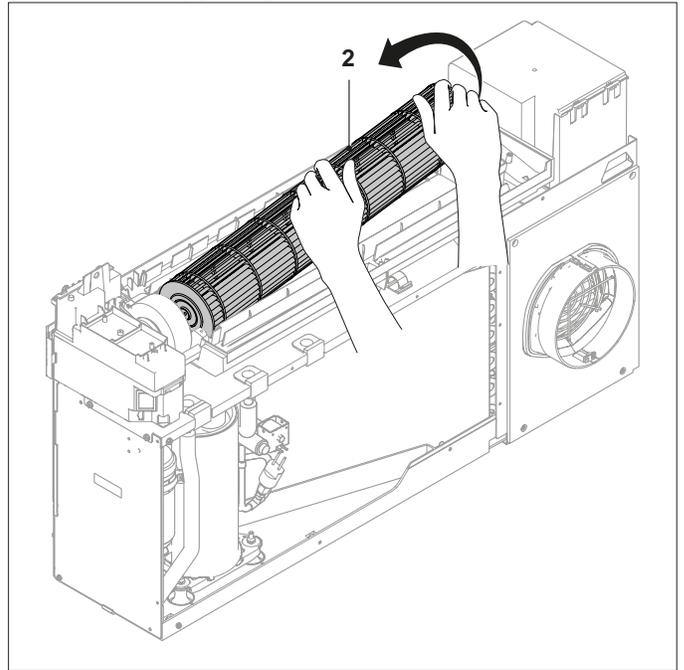
Remove the body (ref. "9.2 Removing the body" on page 39).
Remove the backrest (ref. "9.4 Removing the backrest" on page 41).
Remove all fixing screws (1).



Gently extract the outdoor fan (2) and disconnect the electrical connections.

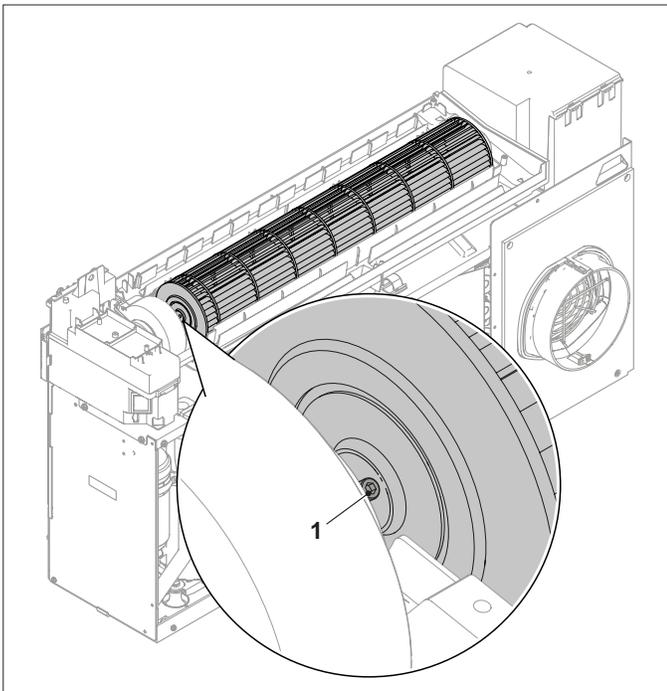


Remove the fan (2), being careful not to break the fins.



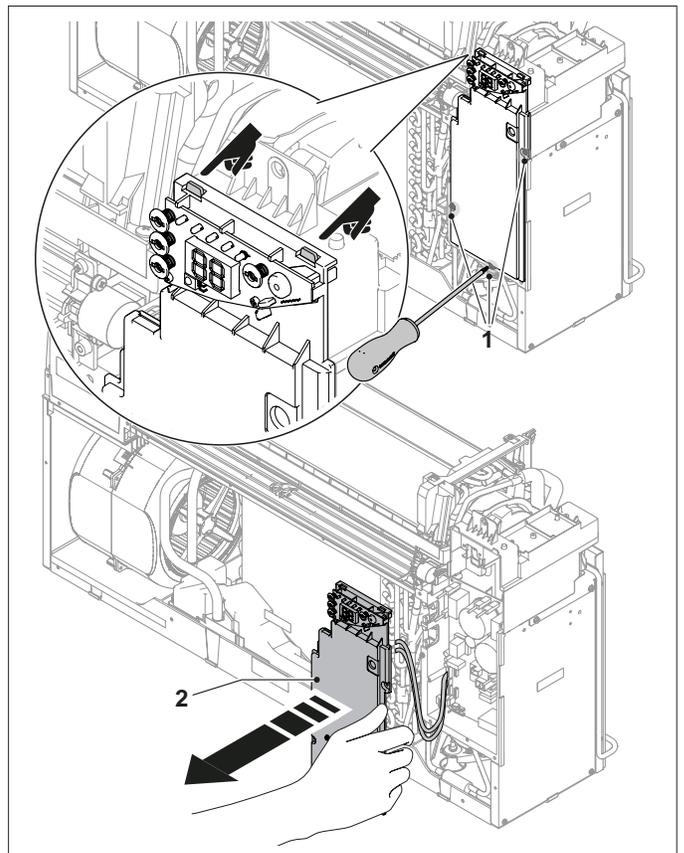
9.6 Indoor fan removal

Remove the body (ref. "9.2 Removing the body" on page 39).
Remove the backrest (ref. "9.4 Removing the backrest" on page 41).
Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the indoor coil (ref. "9.21 Removing the outdoor coil" on page 49).
Loosen the Allen screw (1).



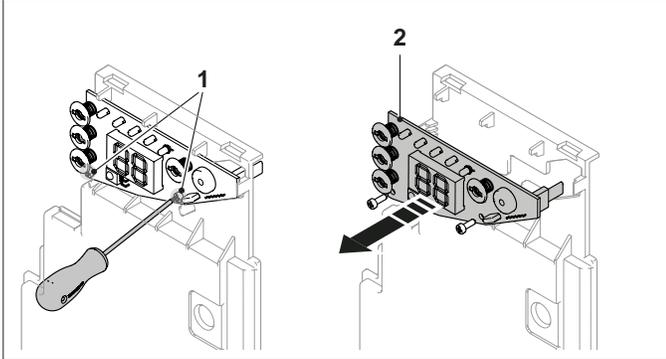
9.7 IDU electronic front cover removal

Remove all screws (1).
Remove the IDU electronics front cover (2) and remove the connectors from the board.



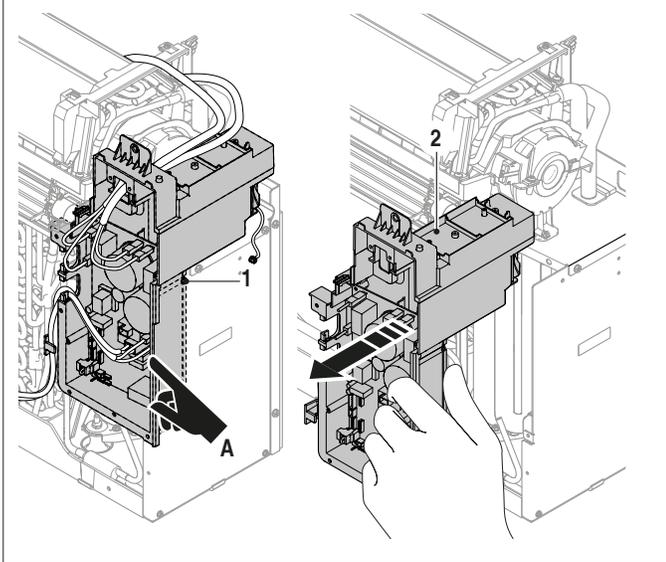
9.8 Removing the inverter display board

Disconnect the connectors.
Remove all fixing screws (1).
Gently extract the inverter display board (2) from its seat.



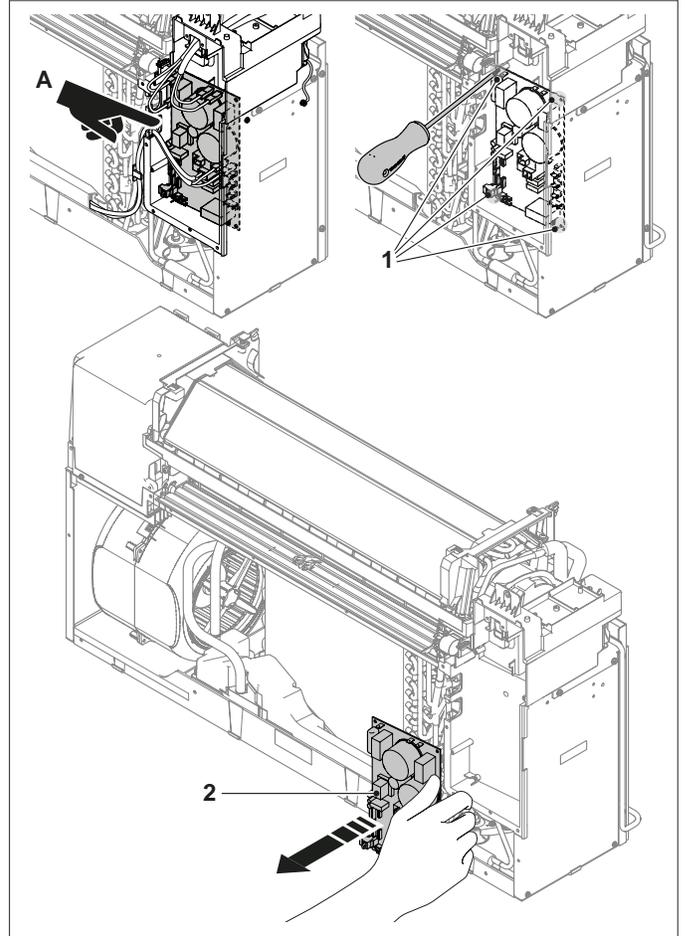
9.9 MAIN board box removal

Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the IDU electronic front cover (ref. "9.7 Removing the IDU electronic front cover" on page 42).
Disconnect all connectors from the MAIN board (A).
Remove the fixing screw (1).
Gently extract the box (2) from its seat.



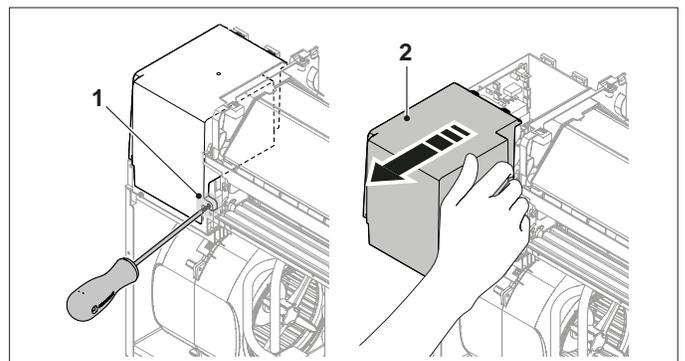
9.10 MAIN card removal

Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the IDU electronic front cover (ref. "9.7 Removing the IDU electronic front cover" on page 42).
Disconnect all connectors from the MAIN board (A).
Remove all fixing screws (1).
Gently remove the MAIN board (2) from its seat.



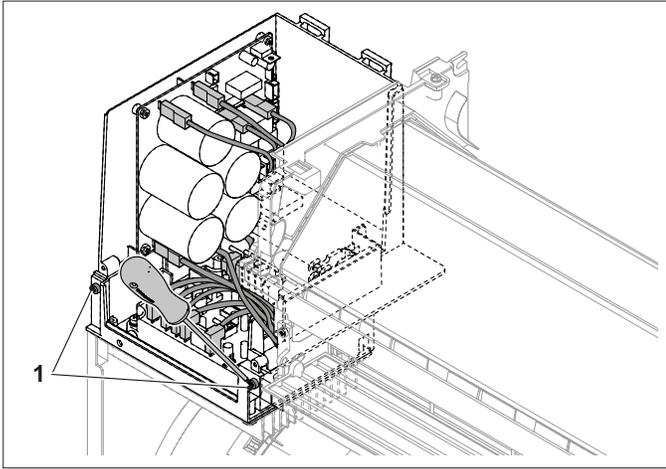
9.11 ODU electronic cover removal

Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the fixing screw (1).
Pull the ODU electronics cover (2) towards you and remove it.

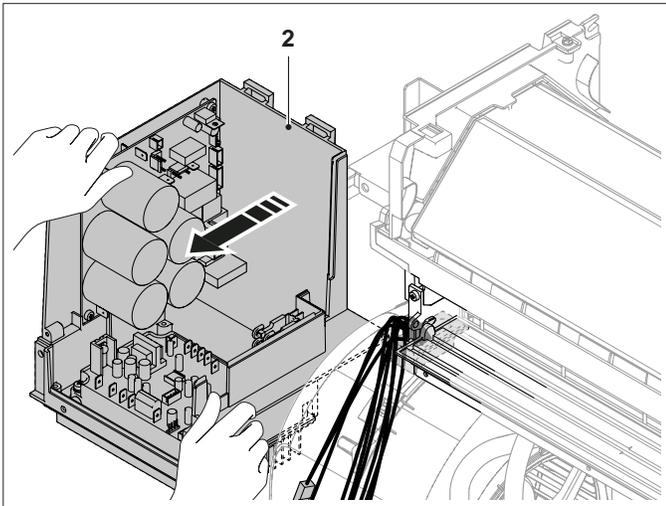


9.12 Removal of the ODU electronic unit

Remove the cover (ref. "9.11 Removing the ODU electronic cover" on page 43). Disconnect all the electrical connectors and remove the fixing screws (1).

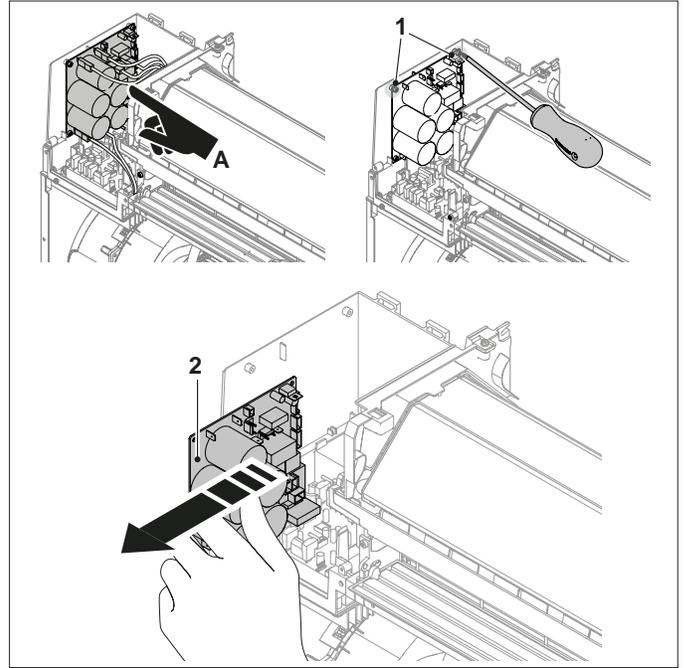


Gently extract the ODU electronics unit (2) from its seat.



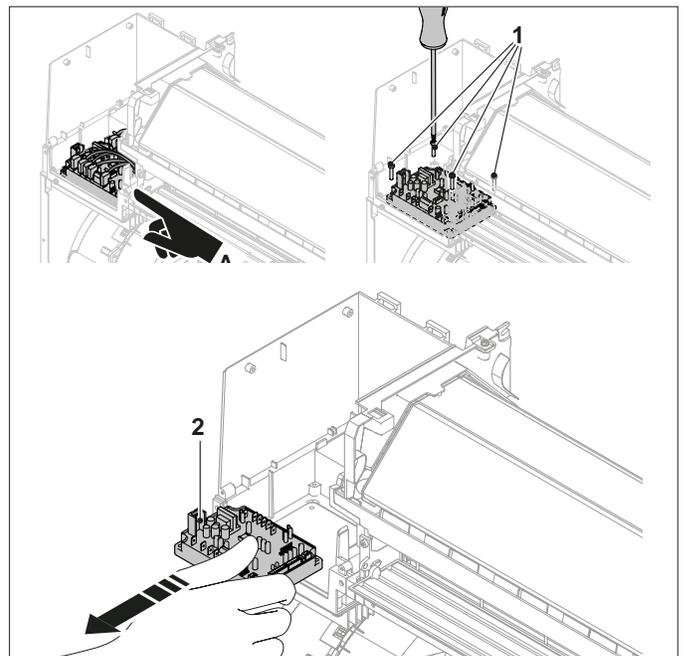
9.13 PFC card removal

Remove the cover of the ODU electronic unit (ref. "9.7 Removing the IDU electronic front cover" on page 42). Disconnect all the electrical connectors and remove the fixing screws (1). Gently remove the PFC card (2) from its seat.



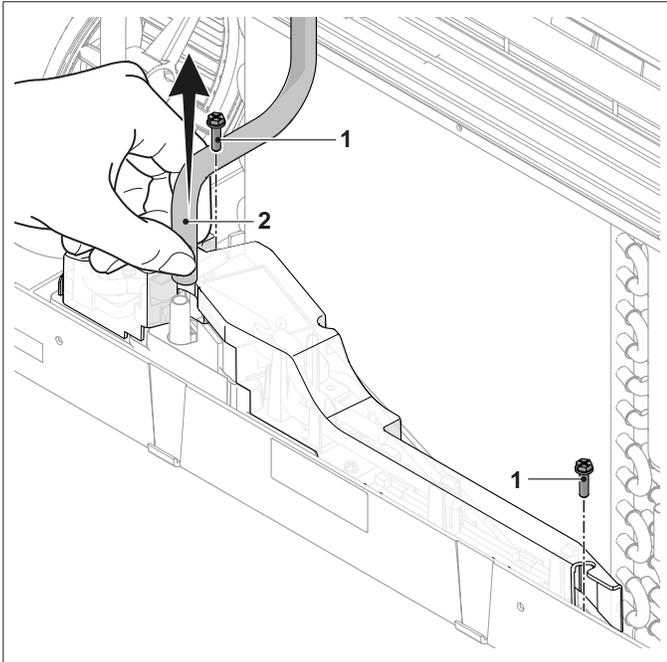
9.14 IPM card removal

Remove the cover of the ODU electronic unit (ref. "9.7 Removing the IDU electronic front cover" on page 42). Remove the PFC card (ref. "9.13 Removing the PFC card" on page 44). Disconnect all the electrical connectors and remove the fixing screws (1). Gently extract the IPM board (2) from its seat.

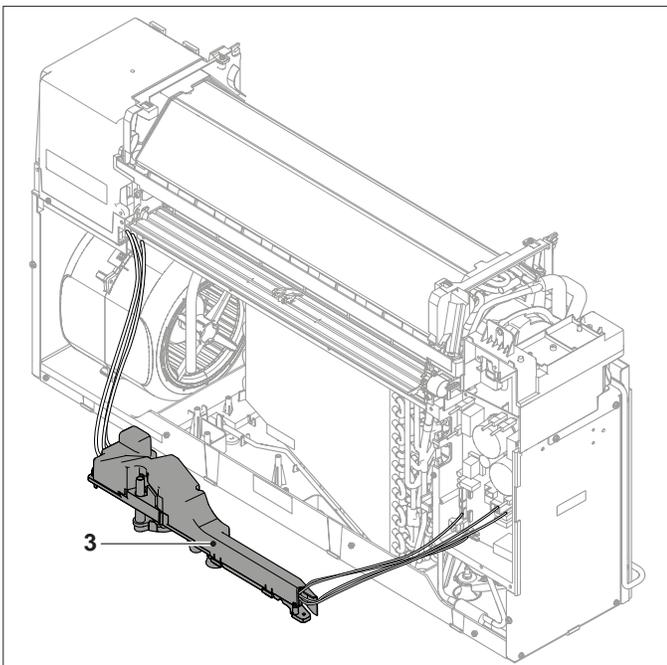


9.15 Removal of pump unit - sensors - shutter

Remove the condensate pipe (1).
Remove the fixing screws (2)

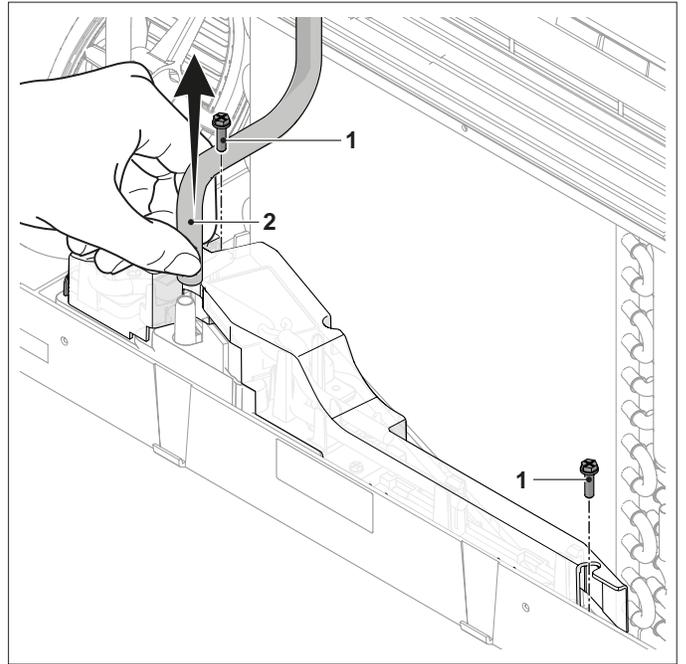


Gently extract the unit (3) paying attention to the wiring.

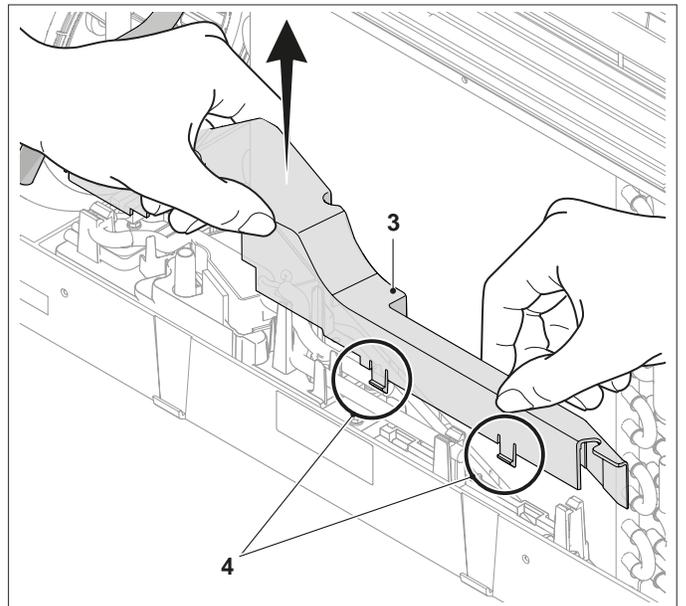


9.16 Cable cover removal

Remove the cover fixing screw (1) and the condensate pipe (2).

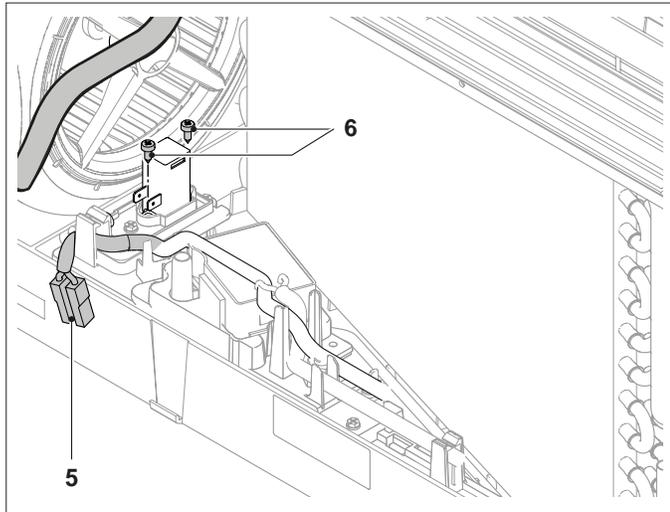


Remove the cover (3) taking care not to damage the fixing tabs (4).

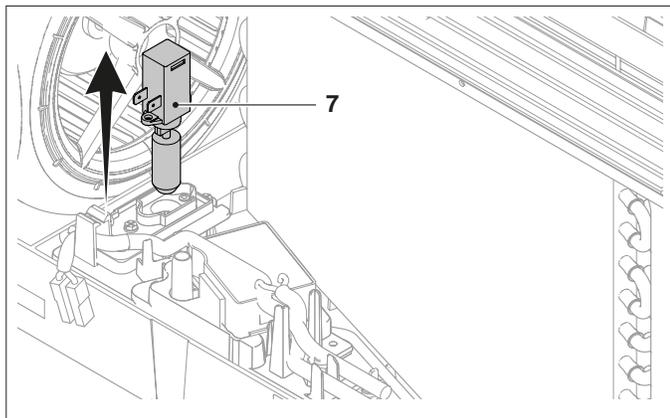


9.17 Removal of thermoactuator and plug

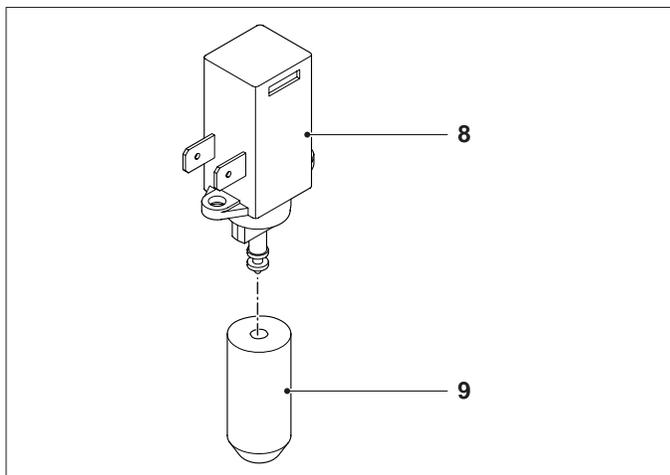
Remove the cable cover (ref. "9.15 Removing the pump - sensors - thermoactuator" on page 45).
Disconnect the connectors (5) from the thermoactuator and remove the fixing screws (6).



Remove the thermoactuator / plug assembly (7).

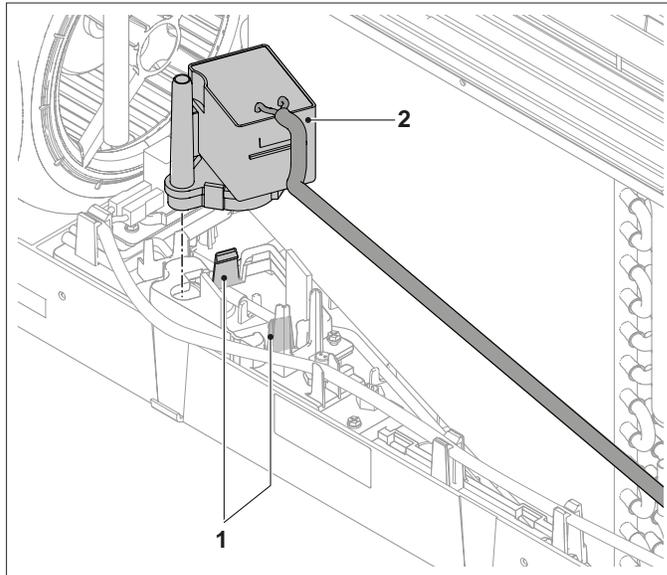


Remove the plug (9) from the thermoactuator (8).



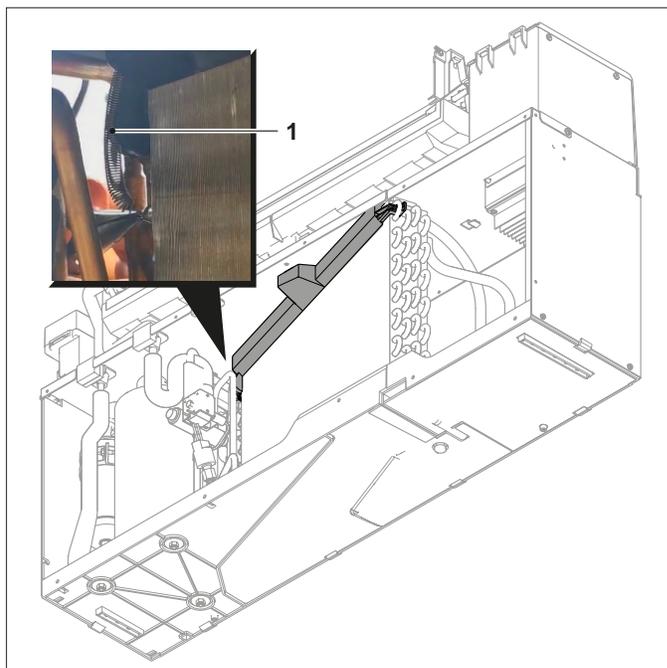
9.18 Pump removal

Remove the cable cover (ref. "9.15 Removing the pump - sensors - obturator unit" on page 45).
Act on the tabs (1) to release the pump (2) and extract it, paying attention to the electrical wiring.

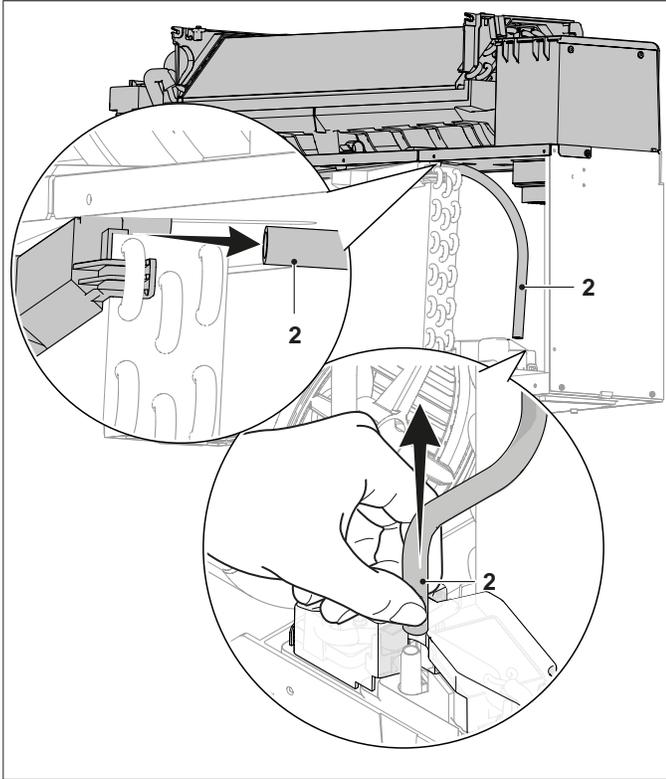


9.19 Removing the condensate slinger

Remove the body (ref. "9.2 Removing the body" on page 39).
Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the backrest (ref. "9.4 Removing the backrest" on page 41).
Remove the outdoor fan (ref. "9.5 Removing the outdoor fan" on page 41).
Remove the fixing spring of the condensate distributor unit (1).

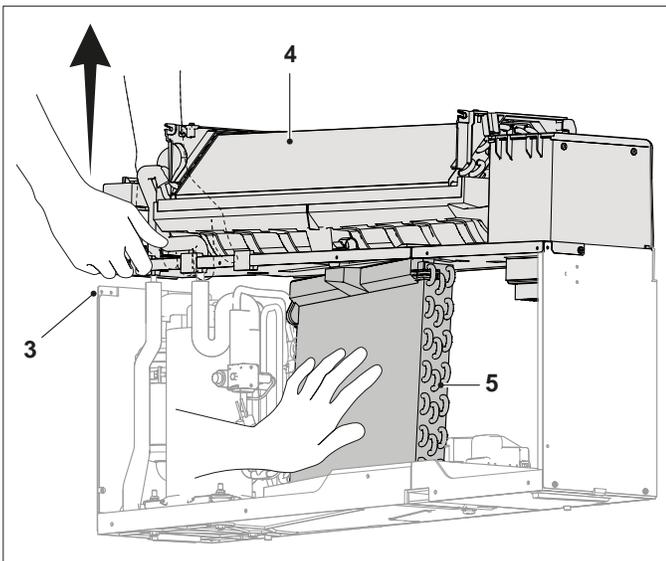


Remove the pump - sensors - slinger (ref. "9.15 Removing the pump - sensors - slinger on page 45). Disconnect the condensate drain pipe (2).



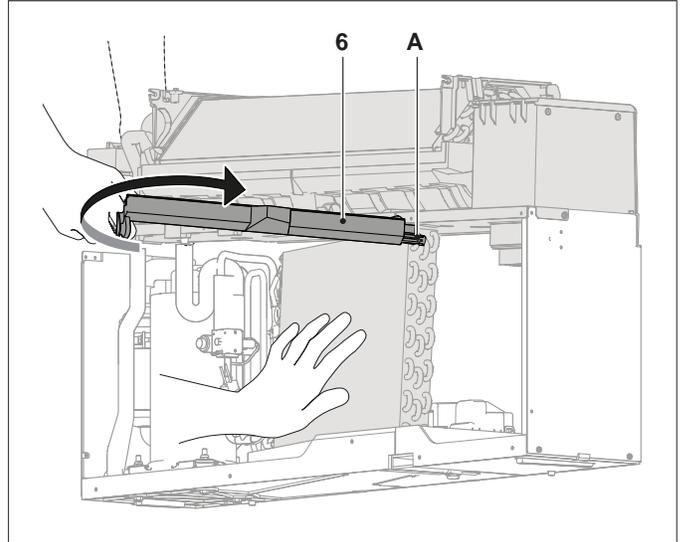
Remove the screws (3) and keep the whole evaporator unit (4) slightly raised. Push the outdoor coil (5) slightly forward and hold it in place.

NOTE: Be careful not to force too much and damage the pipes.

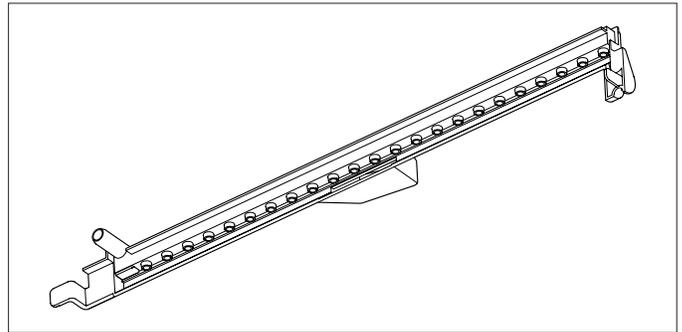


Rotate the condensate slinger (6) and remove it.

NOTE: Be careful not to break the attachment point (A).



NOTE: To clean the slinger, it is recommended to fill it with water, shake it and empty it. Repeat the operation several times in order to remove as much Indoor dirt as possible that would obstruct the condensate drain holes.



9.20 Charging/discharging the coolant

9.20.1 Device with front loading

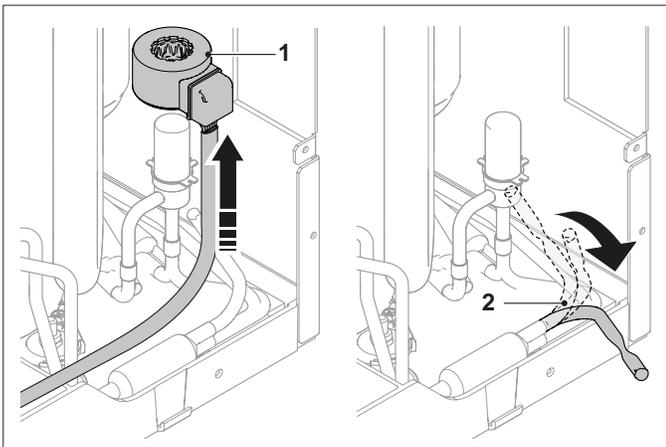
Remove the front cover (ref. "9.3 Removing the front cover" on page 40).

Remove the IDU electronic front cover (ref. "9.7 Removing the IDU electronic front cover" on page 42).

Remove the MAIN box / board lock (ref. "9.9 Removing the MAIN board box" on page 43).

Remove the cable cover (ref. "9.15 Removing the pump - sensors - obturator unit" on page 45).

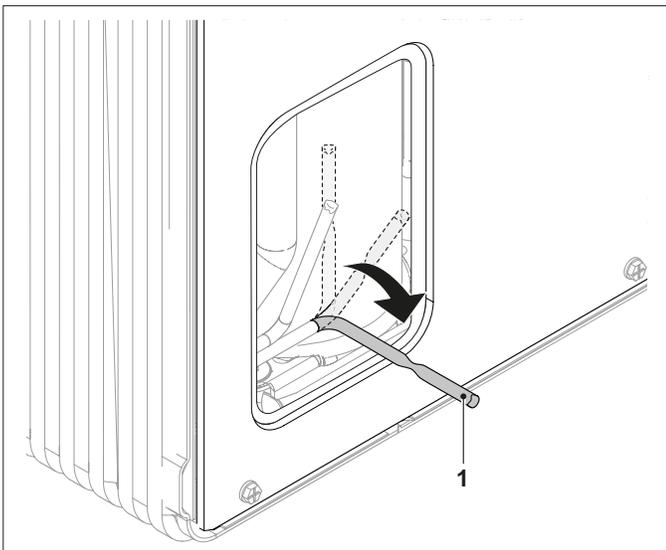
Remove the electrical part of the electronic expansion valve (1). Gently rotate the coolant loading/discharging tube forward (2).



9.20.2 Device with rear charge

The rear-loading device has an access opening to the coolant discharge pipes.

Gently rotate the coolant charging/discharging tube (1) forward.



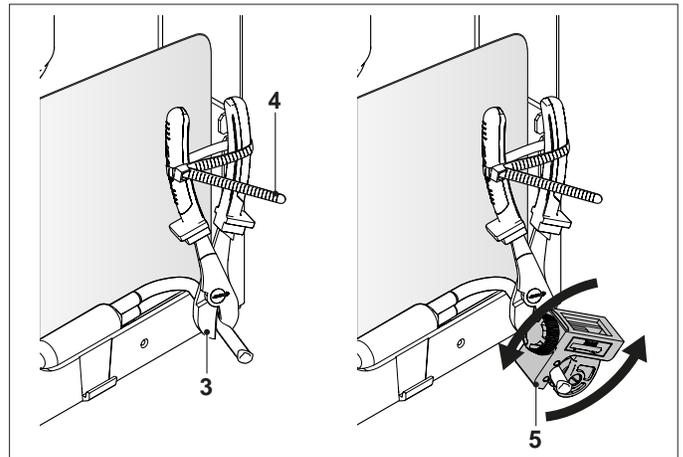
9.20.3 General procedure

NOTE: the images refer to the front-loading device, the procedure remains the same also for the rear-loading devices.

Close the restriction on the charging/discharging pipe with a nipper (3). Secure the nippers with a clamp to keep it firm and tightly closed (4).

NOTE: the use of the nippers serves to prevent the coolant from leaking once the tube is open, the choke is not hermetic.

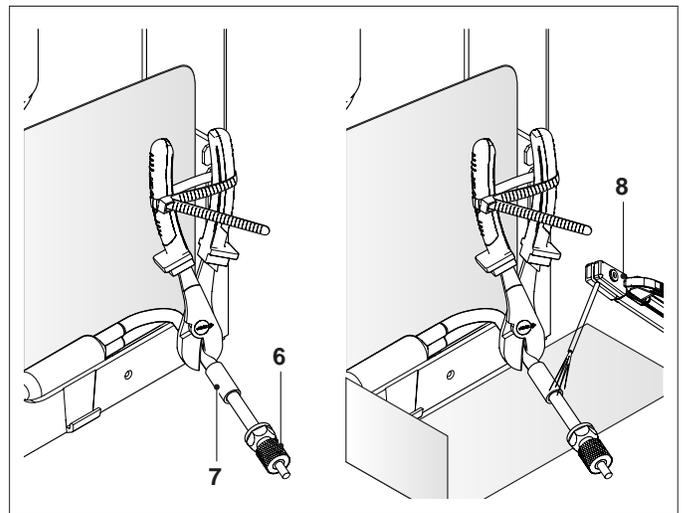
Using a mini pipe cutter, remove the welded upper part of the inlet/outlet pipe (5).



Place the filling valve with tube (6) on the charging/discharging tube and weld (8).

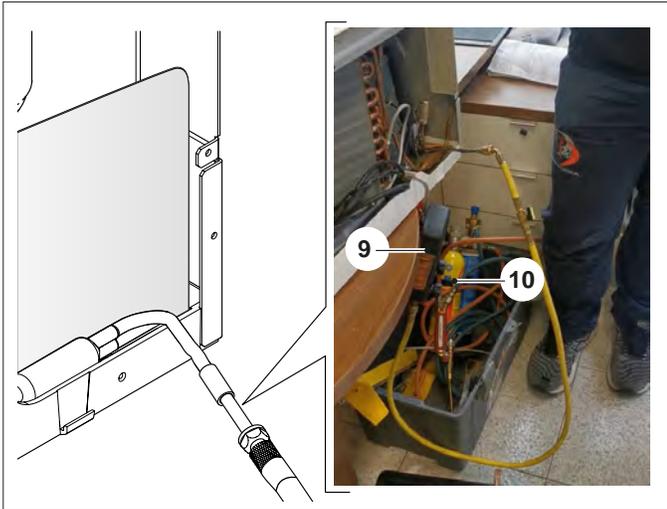
It is recommended to use a piece of pipe with a larger diameter as a connection between the two (7).

NOTE: Protect components during the soldering process.



NOTE: Before inserting the Indoor valve, cool the tube with the help of a damp cloth to prevent it from burning.

Remove the nippers and restore the pipe at the throttling point in order to proceed with the discharge/charge of the gas. Connect the pressure gauge (digital vacuum gauge for evacuating refrigeration systems and heat pumps) (9) and the recovery unit (10) for recall and recovery of the gas. Wait until the circuit is empty (pressure gauge at zero) before working on the components of the refrigerant circuit.



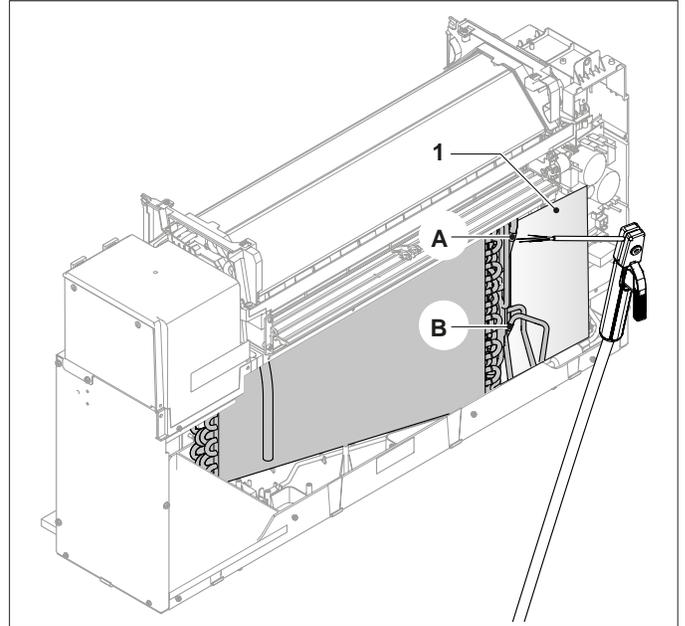
Once the coolant charging/discharging operations have been completed, restore the hermetic seal of the circuit:

- recreate the restriction on the charging tube
- remove the filling valve with the tube
- seal the end of the coolant charge pipe with welding

9.21 Outdoor Coil Removal

Remove the body (ref. "9.2 Removing the body" on page 39).
 Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
 Remove the backrest (ref. "9.4 Removing the backrest" on page 41).
 Remove the outdoor fan (ref. "9.5 Removing the outdoor fan" on page 41).
 Remove the pump - sensors - obturator unit (ref. "9.15 Removing the pump - sensors - obturator unit" on page 45). Discharge the coolant circuit from the gas (ref. "9.20 Charging/uncharging the coolant" on page 48).

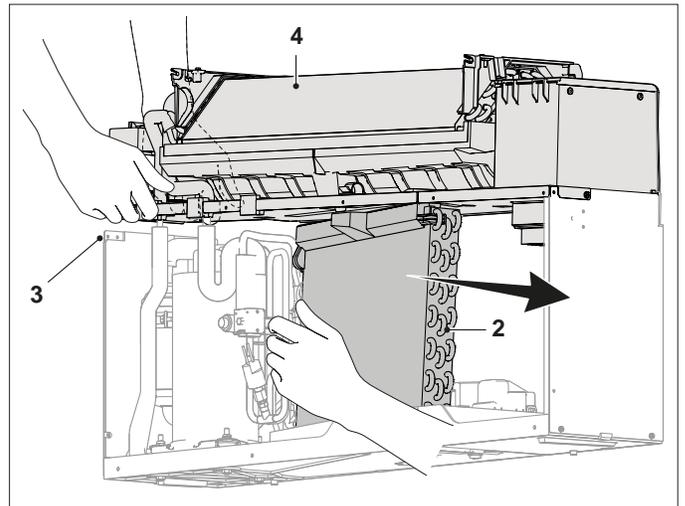
Remove the insulation from the pipes (if present)
 Place a guard (1) to protect the appliance and proceed with the desoldering of the pipes in the points (A)(B).



Remove the screws (3) and keep the whole evaporator unit (4) slightly raised.

Push the condenser battery (2) slightly forward and gently remove it, sliding it in the direction of installation (oblique).

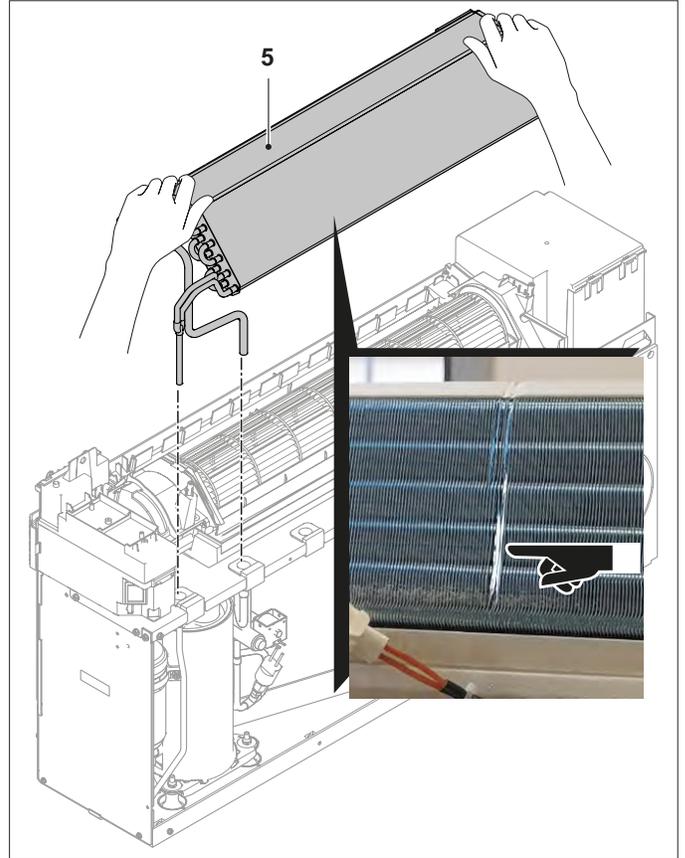
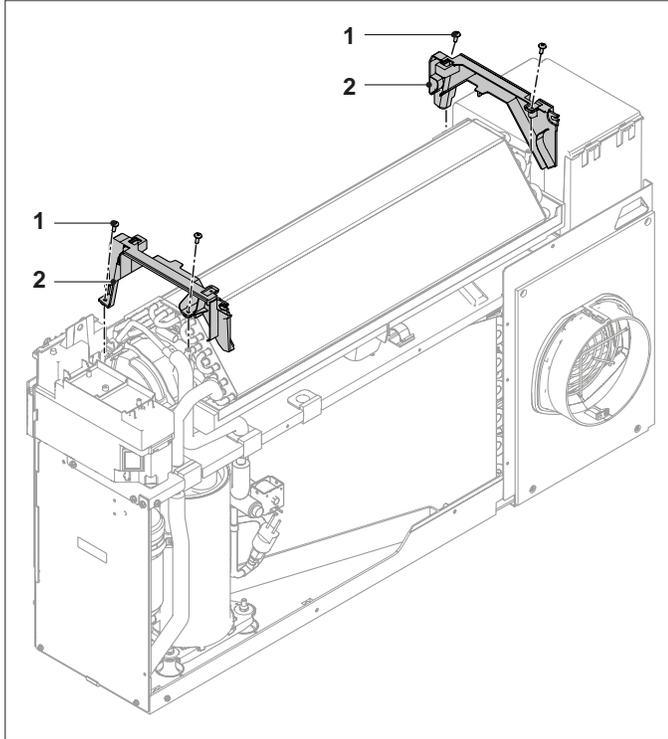
NOTE: Be careful not to force too much and damage the pipes.



NOTE: in case of flattened fins, use the appropriate comb to restore them.

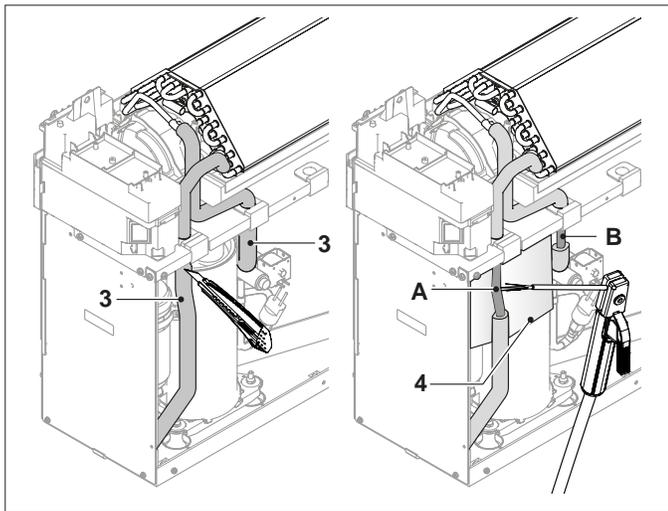
9.22 Indoor Coil Removal

Remove the body (ref. "9.2 Removing the body" on page 39).
Remove the backrest (ref. "9.4 Removing the backrest" on page 41).
Discharge the coolant circuit from the gas (ref. "9.20 Charging/ discharging the coolant" on page 48).
Remove the fixing screws (1) and remove the locking brackets (2).



NOTE: in case of flattened fins, use the appropriate comb to restore them.

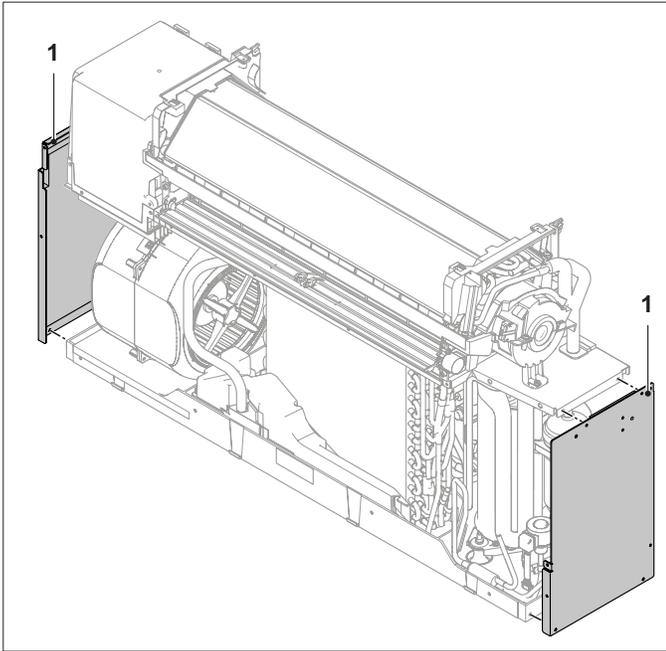
Remove the insulation from the pipes (3)
Place a guard (4) to protect the appliance and proceed with the desoldering of the pipes in the points (A)(B).



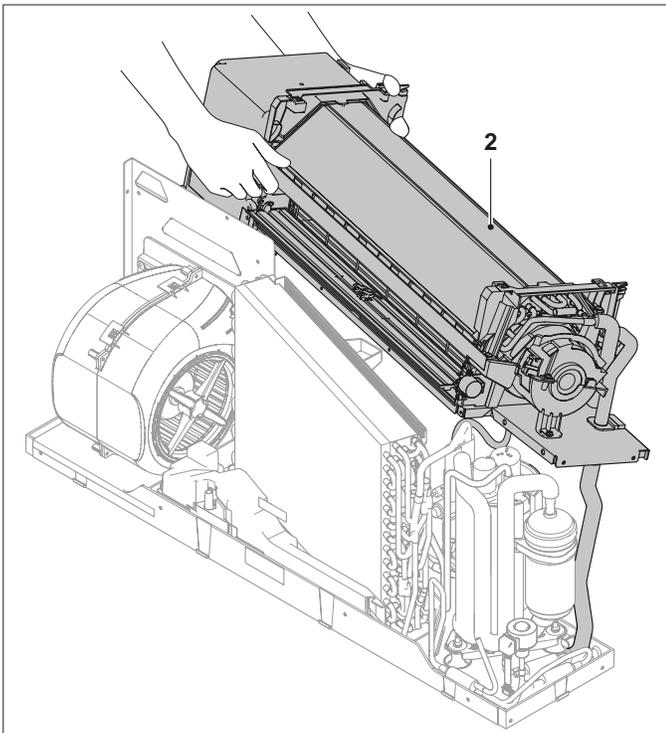
Remove the indoor coil (5) taking care not to crush the fins.

9.23 Compressor removal

Remove the body (ref. "9.2 Removing the body" on page 39).
Remove the front cover (ref. "9.3 Removing the front cover" on page 40).
Remove the backrest (ref. "9.4 Removing the backrest" on page 41). Remove the MAIN board box (ref. "9.9 Removing the MAIN board box" on page 43).
Discharge the refrigerant circuit from the gas (ref. "9.20 Charging/ discharging the coolant" on page 48).
Remove the screws and remove the side panels (1).

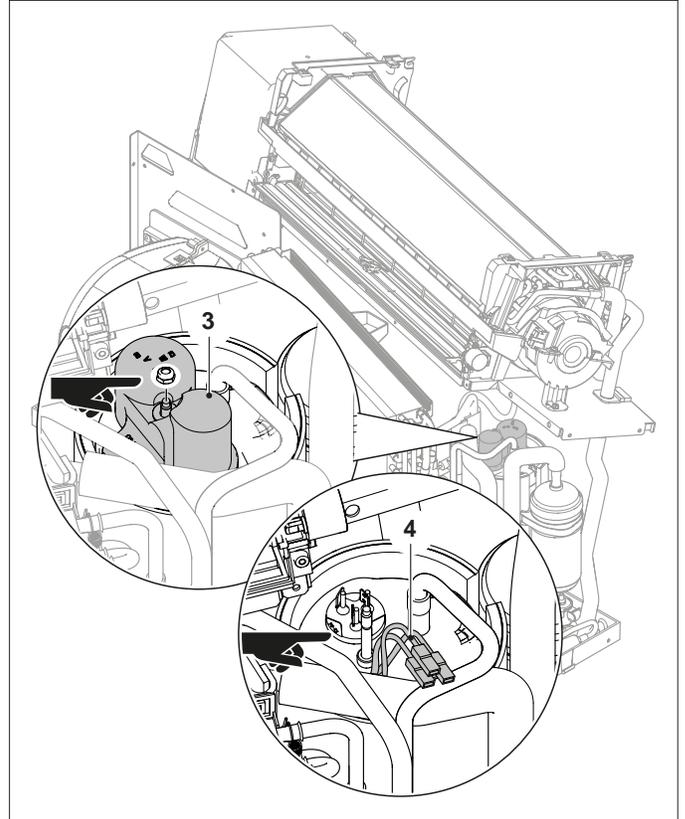


Move the whole evaporator unit (2) back, handle carefully and without forcing.

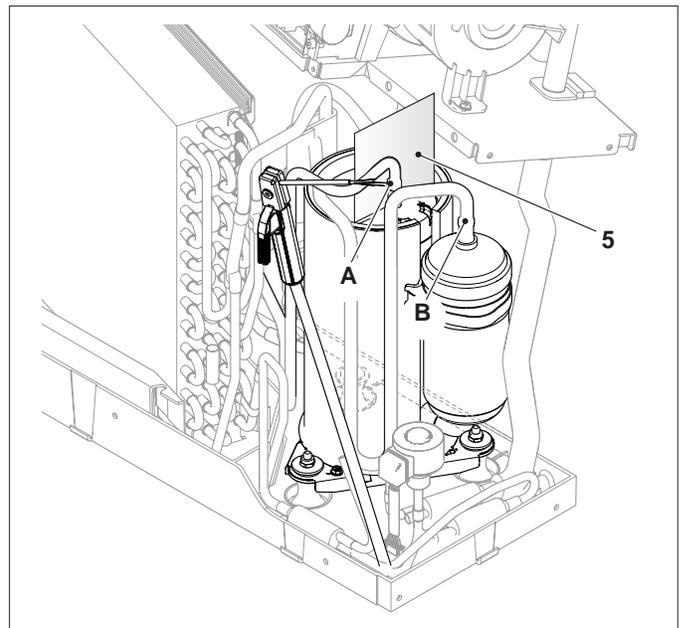


NOTE: Make sure the evaporator assembly is stable before continuing.

Remove the screw and remove the cap of the electrical connections (3).
Disconnect the cables (4).

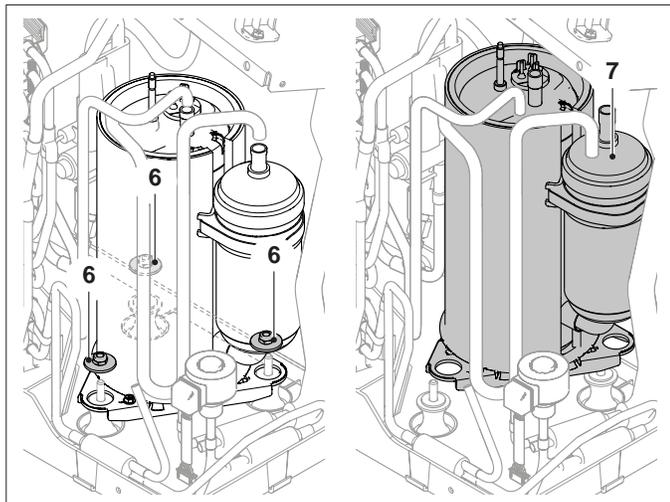


Remove the insulation from the pipes (if present)
Place a guard (5) to protect the appliance and proceed with the desoldering of the pipes in the points (A)(B).



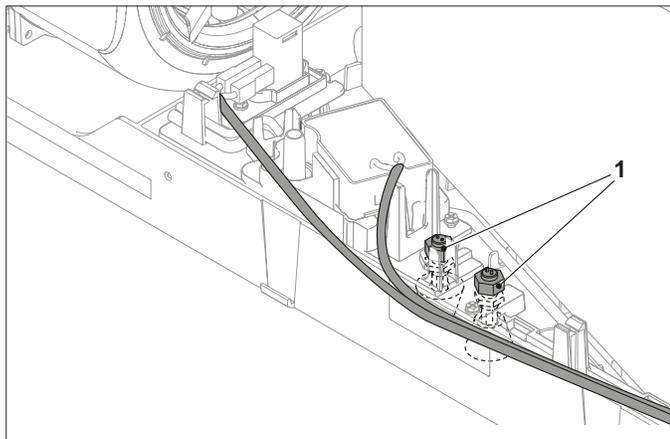
10 ACCESSORY CONNECTIONS

Unscrew the fixing bolts to the compressor base (6)
Gently remove the compressor (7).

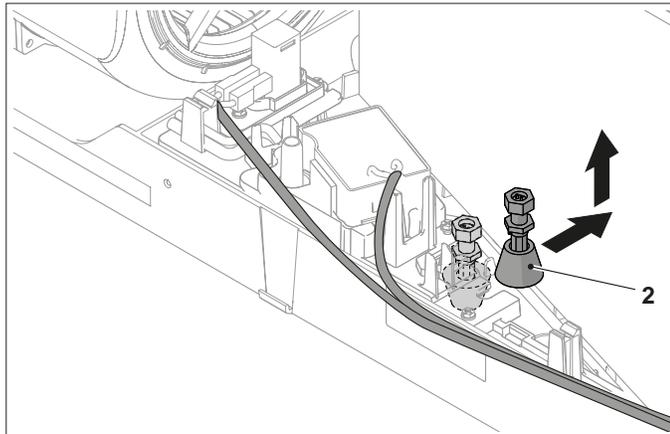


9.24 Float removal

Remove the cable cover (ref. "9.17 Removing the thermo-actuator and plug" on page 46).
Loosen the bolts (1) of the floats paying attention to the electrical connections.



Remove the floats(2) one at a time, being careful not to damage them.



10.1 WiFi Kit B1018

10.1.1 General

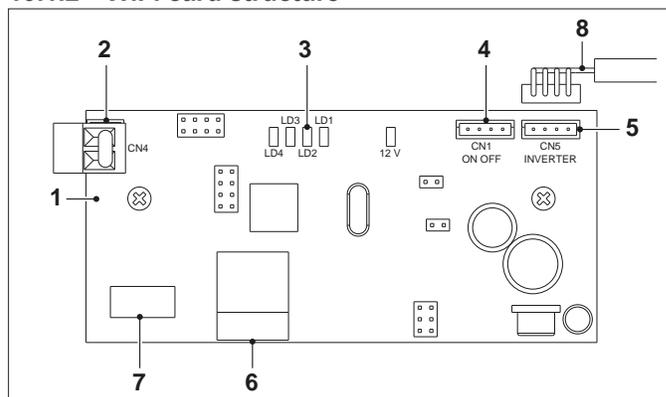
The WiFi Kit B1018 allows you to control the operation of the air conditioner to which it is connected, based on the commands provided by the app installed on a smartphone, iphone, tablet or Ipad. The WiFi kit must be installed in an air conditioner located near the wireless router.

In case of excessive weakening of the WiFi signal, the Smart App could disconnect all the more easily as the signal weakens.

In order to use the WiFi card, the smartphone must be able to communicate via Bluetooth, WiFi or 3G channel based on its location with respect to the air conditioner.

The quality of the connection to a wireless network could be influenced by the presence of electromagnetic smog.

10.1.2 WiFi card structure



RIF.	DESCRIPTION
1	Electronic board
2	Enabling contact (if not used, leave the connector with wire bridge, as supplied)
3	Functional LEDs
4	CN1 connector
5	CN5 connector
6	WiFi radio module
7	Bluetooth module
8	Communication cable

10.1.3 Technical data

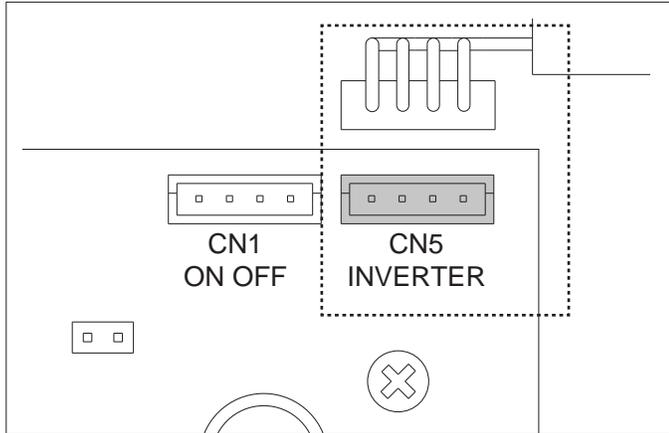
BLUETOOTH	
Operating frequency band	2.4 GHz a 2.44835 GHz
Maximum transmitted power	-2.7 dBm
Communication standard	Bluetooth LE
Antenna	Integrated in the PCB

WI-FI	
Operating frequency band	2.4 GHz a 2.44835 GHz
Maximum transmitted power	10.1 dBm
Communication standard	IEEE 80211 b/g/n
	HTTPS - Porta 443
	Local socket - Porta 2000
Antenna	Integrated in the PCB

10.1.4 WiFi card installation

10.1.4.1 Location of the connection cable

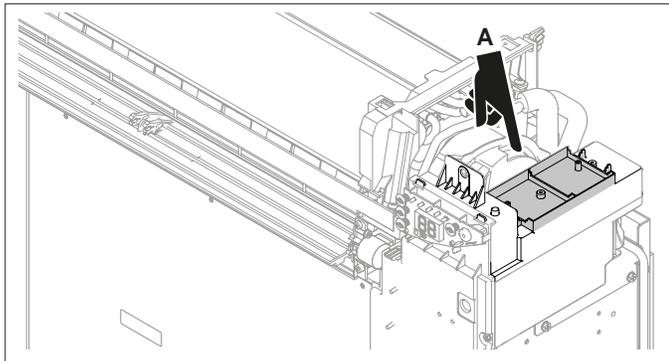
Connect the communication cable included in the kit to the CN5 connector.



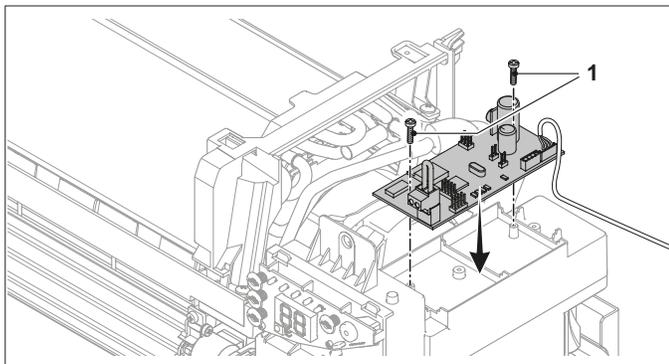
10.1.4.2 Choice of the interface installation position

The compartment to house the B1015 card is located at the top right

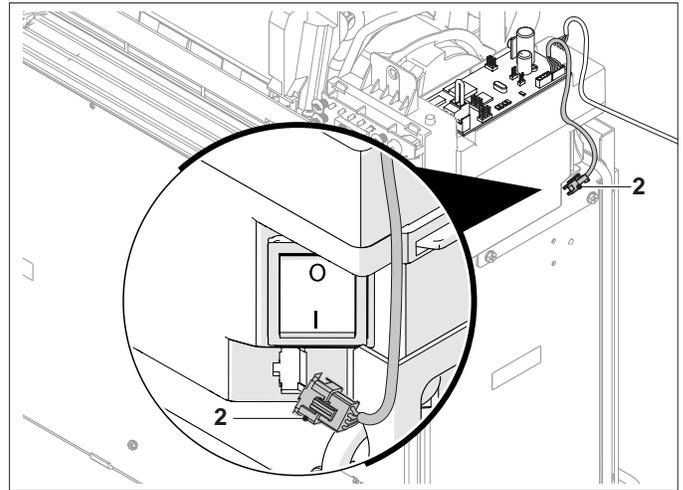
- Disconnect the air conditioner power supply
- Remove the machine from the wall bracket
- Remove the body (ref. "9.2 Removing the body" on page 39) to access the housing compartment (A) of the board.



- Secure the B1015 board in its housing with the appropriate screws (1)



- Connect the communication cable to the serial port (2) located under the power button

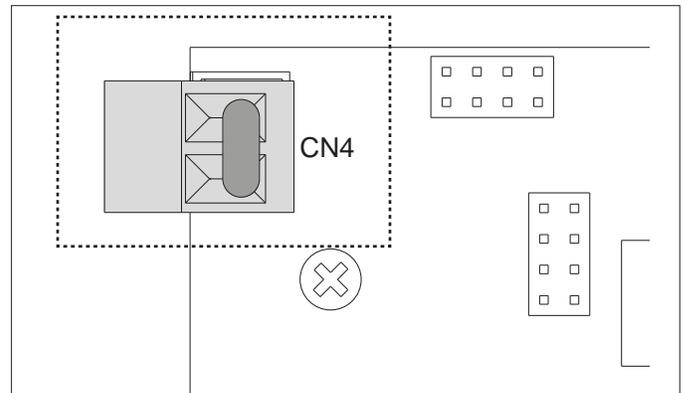


- Put the body back on and reassemble the machine on the wall.

10.1.4.3 Contact enabling

The B1018 board manages an enabling contact which, when open, forces the air conditioner into standby and the open contact alarm is shown on the App.

When the contact is closed, the B1018 board forces the air conditioner to start in the previous mode.



10.2 OLIMPIA SPLENDID application

10.2.1 App download and installation

The OLIMPIA SPLENDID App can be downloaded to your device directly from the Google Play Store or Apple App Store. For the supported operating systems, refer to the information in the relevant Play Store or App Store.

The OLIMPIA SPLENDID App may be subject to changes without notice to improve its features and performance. At the first start the app immediately shows the ADD CLIMATIZER screen.

10.2.2 App configuration on smartphone

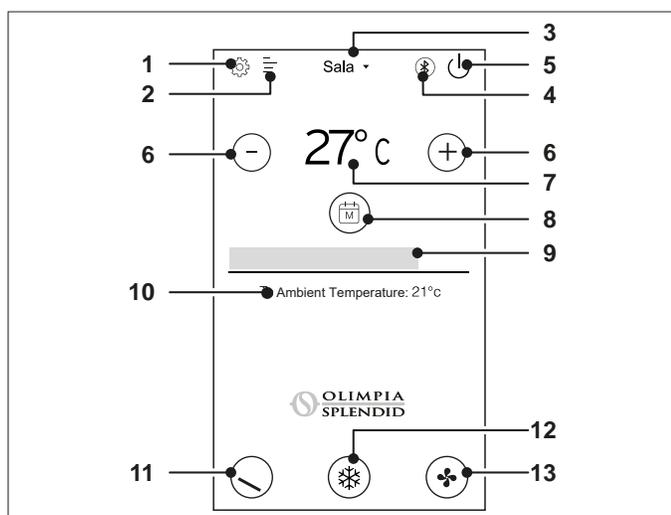
Before configuring the App:

- activate the GPS;
- activate Airplane mode;
- activate Bluetooth;
- position yourself within 2 meters of the air conditioner..

To configure the App, proceed as described below:

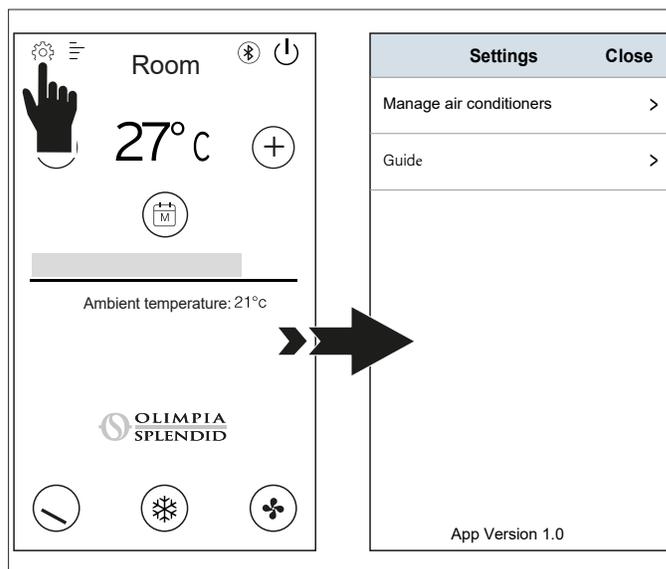
- start the App and accept the information on personal data;
- allow the App access to the location;
- from the list that appears, select your air conditioner to proceed with the configuration;
- enter the PIN and select NEXT. The PIN is visible on the back of the WiFi kit or in the product documentation supplied;
- WiFi connection (automatic procedure);
- setup completed.

10.2.3 Controls screen



Button	DESCRIPTION
1	Settings: access the app settings
2	Alarm history: access the alarm history
3 Room	Air conditioner selection: indicates the connected air conditioner to the app, it allows the selection of another air conditioner installed
4	Communication channel indicator: Displays the channel of communication used by the app
5	Ignition: Activation/Deactivation of the air conditioning
6	Temperature control: setting the desired room temperature
7 27° C	Set temperature indicator: displays the set room temperature
8	Timer: the activation/deactivation of the timer and access related settings
9	Temperature control sliderbar: setting the desired room temperature
10	Current room temperature indicator: displays the room temperature detected by the air conditioner
11	Checking the air deflector: select fixed or swinging mode of the air deflector
12	Mode: select the desired operating mode
13	Air speed selection: selects the fan operating speed

10.2.4 Air conditioning setting



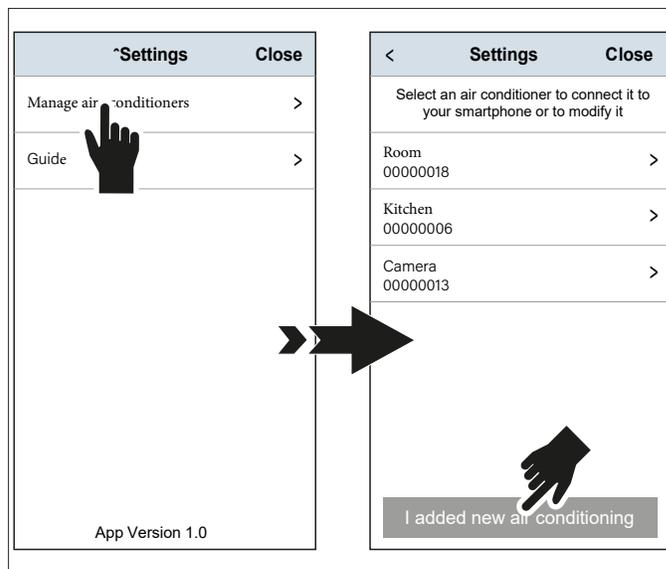
By pressing the SETTINGS button you can access

- to the sub-menu MANAGE AIR CONDITIONERS;
- to an online guide relating to the functions of the app.

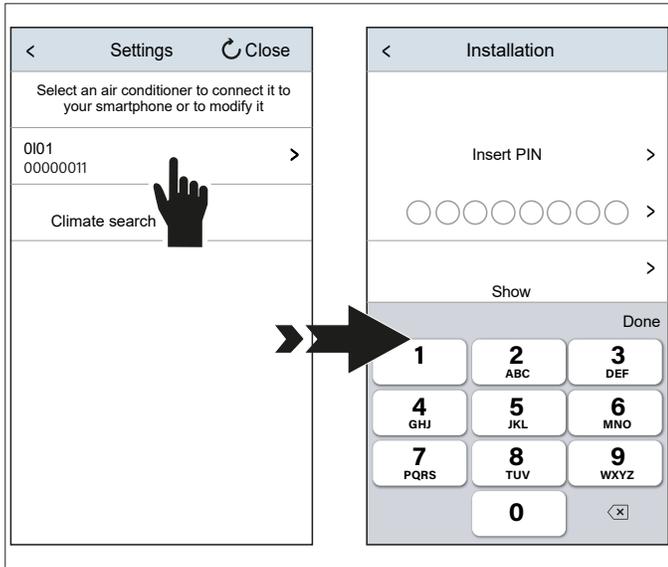
The online guide can also be accessed via a browser at the address <http://www.olimpiasplendid.it/area-download>

10.2.4.1 Add and manage air conditioner

By pressing the MANAGE AIR CONDITIONERS button you access the SETTINGS submenu. By selecting "ADD AIR CONDITIONER" it is possible to add air conditioners not yet registered on the app.



NOTE: To carry out this operation, the smartphone's bluetooth must be active and the air conditioner to be registered must be within the bluetooth communication range.



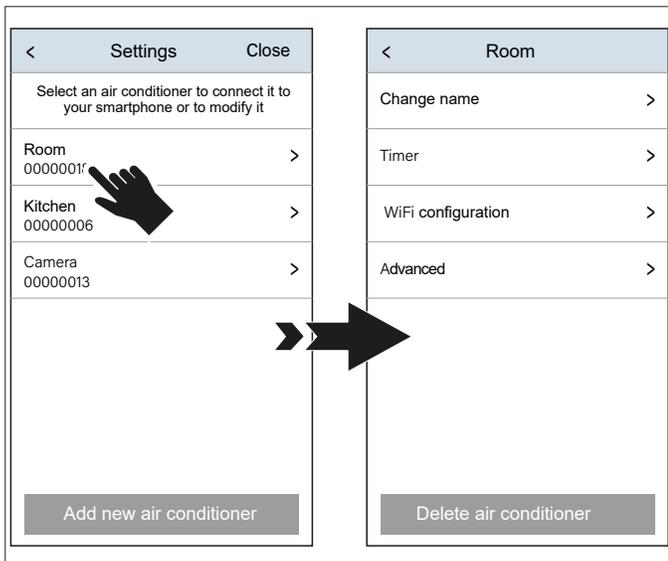
Once the air conditioner has been selected and the pin supplied with the B1015 kit has been inserted, the WiFi configuration page is accessed.

NOTICE

The pin cannot be changed, and is unique for each B1018 kit, so it must be carefully stored for any new registrations of the air conditioner on the app. It is therefore suggested to apply one of the labels supplied in the kit near the machine data plate.

Once registration is complete, the “control screen” is displayed. By selecting the individual air conditioner, you can access the following settings:

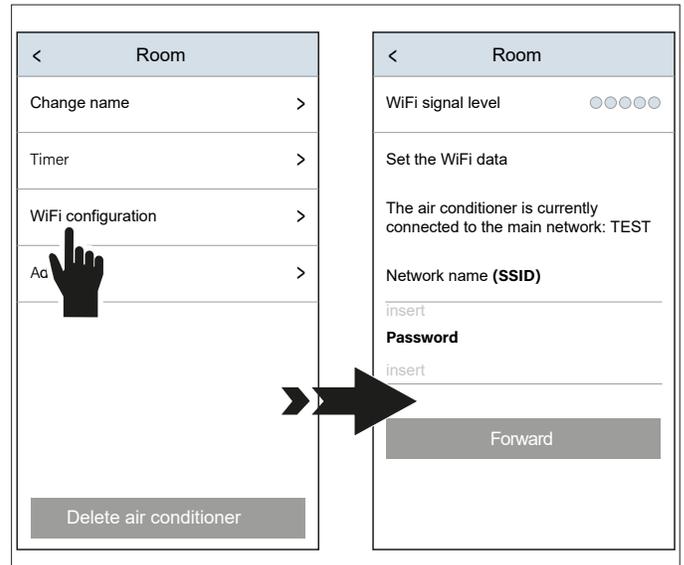
- change the name of the air conditioner (the name can have a maximum of 6 characters);
- timer programming;
- WiFi communication configuration;
- advanced configurations.



10.2.4.2 Configure WiFi

Selecting CONFIGURE WiFi is possible:

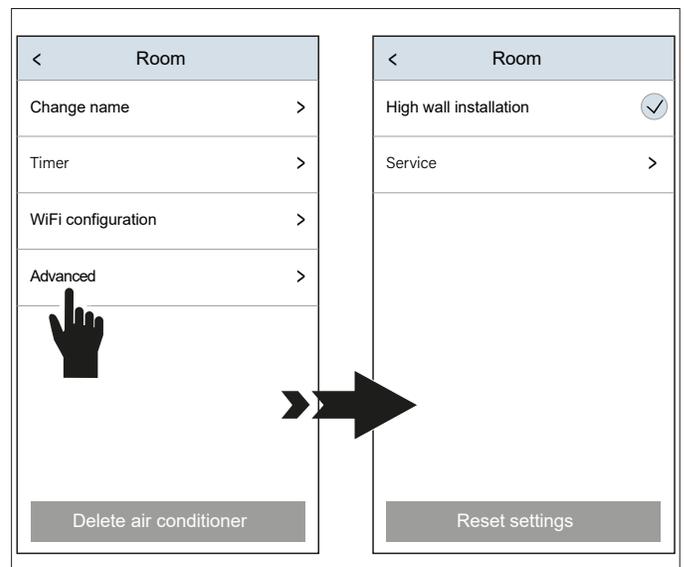
- check the intensity of the WiFi network signal detected by the B1015 kit installed in the unit;
- set the Network Name (SSID) and the password of the WiFi network to associate the card with.



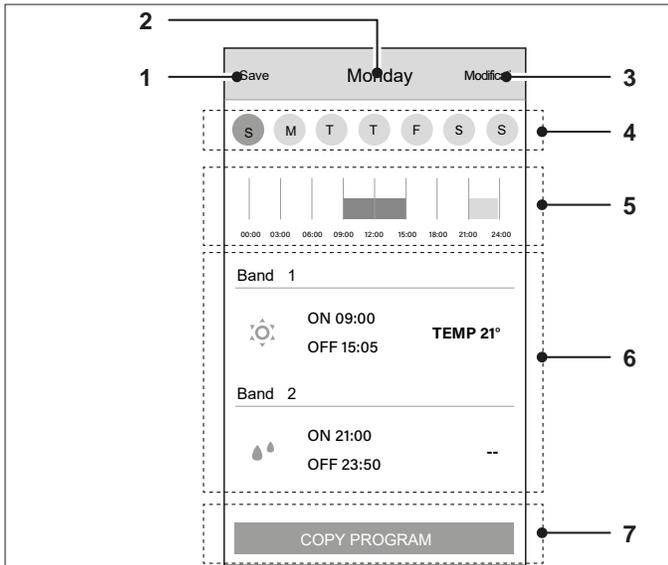
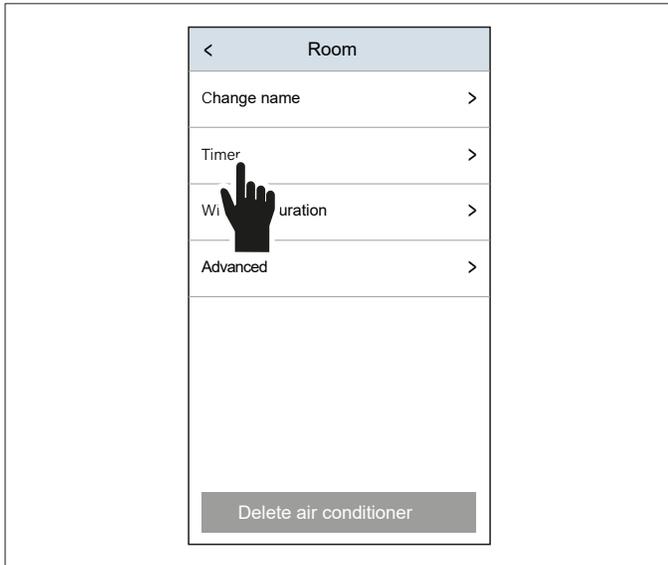
10.2.4.3 Advanced

Selecting ADVANCED is possible:

- set the installation position of the air conditioner;
- access the service page (Olimpia Splendid exclusive access).



By selecting TIMER it is possible to access the timer programming screen.



BUTTONS		DESCRIPTION
1	Back / Save	It is used to confirm the settings and return to the "Manage Air conditioners"
2	Day indicator	Displays the day of the week selected
3	Edit programming	Access the page of modification of the schedule of selected day
4	Day selection	Used to select another day of the week
5	Daily schedule chart	Graphic display of the hourly programming for the day selected
6	Indicator of the programming inserted	Displays the details of the time bands entered
7	Copy programming	It is used to copy the timer setting to other days of the week

10.3 Anomalies diagnostics

DESCRIPTION	LED1 (Green)	LED1 (Red)	LED1 (Yellow)	LED4 (Yellow)
Problems communication between card WiFi and air conditioning	Flashing	-	-	-
WiFi network configured but without connection to the internet	-	Flashing	-	-
WiFi network NOT configured	-	OFF	-	-
Bluetooth not working	-	-	Flashing	-
Enable contact OPEN	-	-	-	ON

DESCRIPTION	Blue LED on WiFi module
Communication problems between the WiFi card and the air conditioner	-
WiFi network configured but without connection to the internet	Flashing
WiFi network NOT configured	Flashing
Bluetooth not working	-
Enable contact OPEN	-

11 MAINTENANCE

⚠ WARNING	
	RISK OF ELECTROCUTION Before carrying out any maintenance or cleaning, disconnect the appliance from the power supply.
	Failure to follow these instructions can result in electric shock, serious injury or death.

11.1 Filter replacement

To ensure effective Indoor air filtration and good operation of your air conditioner, it is essential to periodically clean the air filter.

The need for this important maintenance operation is signaled after a suitable period of operation, from the ignition of the "F1" alarm code on the control panel display.

- Switch off the air conditioner and then remove the air conditioner filter (see "9.1 Removing the filter" on page 39).
- Wash the filter with a jet of water directed in the opposite direction to that of dust accumulation.
- In case of dirt that is difficult to remove (grease or other types of encrustations), first immerse the filter in a solution of water and neutral detergent.
- If the filter is damaged, replace it.
- Make sure the filter is completely dry.
- Properly reposition the filter in its seat.
- Vacuum any fluff from the grill.

11.2 Maintenance

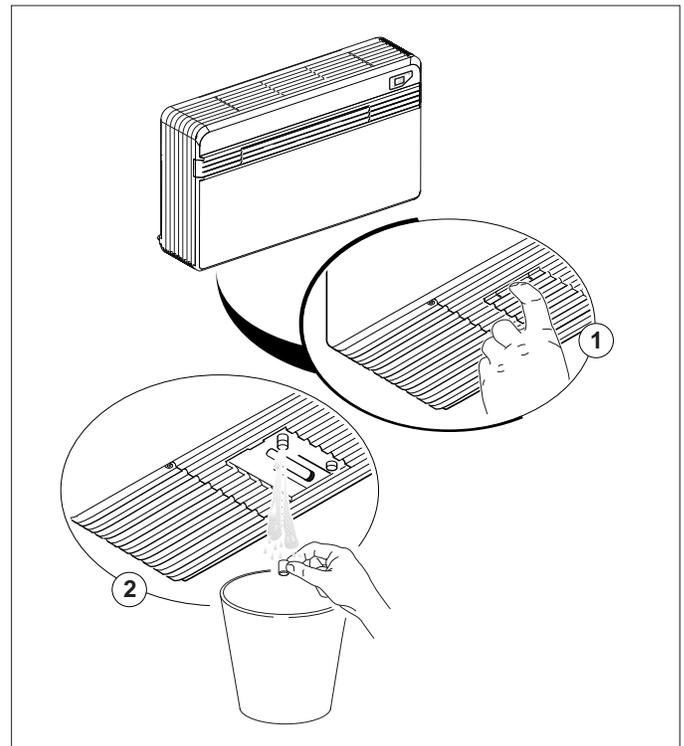
If you plan not to use the appliance for a long time, do the following:

- Operate the fan only mode for a few hours (about 1-2 hours) to dry the inside of the appliance.
- Stop the unit and disconnect the power supply.
- Clean the air filter.
- Completely drain the condensation water.
- Remove the batteries from the remote control.

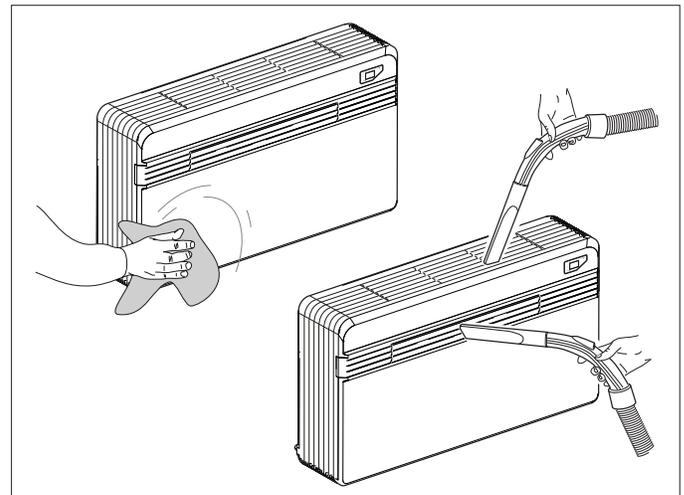
Check before restarting the unit:

- After a long period of inactivity of the air conditioner, clean the filters.
- Check that the air outlet or inlet are not obstructed (especially after a long period of inactivity of the air conditioner).

11.3 Condensate water drain



11.4 outdoor cleaning



11.5 Periodic maintenance table

OPERATION		FREQUENCY
outdoor cleaning		Annual, before winter use
Filter unit cleaning	Cleaning the air purification filter (green)	Annual, before winter use
	Carbon filter cleaning (black)	Annual, before winter use
Condensate water drain		Annual, before winter use
Condensate water drain		Annual, before winter use

12 THERMISTER RESISTANCE VALUES

12.1 Sensor table

ALL SENSORS EXCEPT THE COMPRESSOR SENSOR(10 KOHM 25 C)							
°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ
-20	115.266	0	352.024	20	126.431	40	517.519
-19	108.146	1	333.269	21	120.561	41	496.392
-18	101.517	2	315.635	22	115.000	42	476.253
-17	963.423	3	299.058	23	109.731	43	457.050
-16	895.865	4	283.459	24	104.736	44	438.736
-15	842.190	5	268.778	25	10.000	45	421.263
-14	793.110	6	254.954	26	955.074	46	404.589
-13	745.360	7	241.932	27	912.445	47	388.673
-12	701.698	8	225.662	28	871.983	48	373.476
-11	660.898	9	218.094	29	833.566	49	358.962
-10	622.756	10	207.184	30	797.078	50	345.097
-9	587.079	11	196.891	31	762.411	51	331.847
-8	563.694	12	187.177	32	729.464	52	319.183
-7	522.438	13	178.005	33	698.142	53	307.075
-6	493.161	14	169.341	34	668.355	54	295.896
-5	465.725	15	161.156	35	640.021	55	284.421
-4	440.000	16	153.418	36	613.059	56	273.823
-3	415.878	17	146.181	37	587.359	57	263.682
-2	398.239	18	139.180	38	562.961	58	253.973
-1	371.988	19	132.631	39	539.689	59	244.677

12.2 Compressor sensor table

COMPRESSOR DRAIN SENSOR							
°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ
-20	542,7	18	75,2	56	15,7	94	4,4
-19	511,9	19	71,9	57	15,2	95	4,3
-18	483	20	68,6	58	14,6	96	4,2
-17	455,9	21	65,6	59	14,1	97	4
-16	430,5	22	62,7	60	13,6	98	3,9
-15	406,7	23	60	61	13,1	99	3,8
-14	384,3	24	57,4	62	12,7	100	3,7
-13	363,3	25	54,9	63	12,2	101	3,6
-12	343,6	26	52,5	64	11,8	103	3,5
-11	325,1	27	50,3	65	11,4	104	3,4
-10	307,7	28	48,1	66	11	105	3,3
-9	291,3	29	46,1	67	10,6	106	3,2
-8	275,9	30	44,2	68	10,3	107	3,1
-7	261,4	31	42,3	69	9,9	108	3
-6	247,8	32	40,6	70	9,6	109	2,9
-5	234,9	33	38,9	71	9,3	110	2,9
-4	222,8	34	37,3	72	8,9	111	2,8
-3	211,4	35	35,8	73	8,6	112	2,7
-2	200,7	36	34,3	74	8,4	113	2,6
-1	190,5	37	32,9	75	8,1	114	2,6
0	180,9	38	31,6	76	7,8	115	2,5
1	171,9	39	30,4	77	7,6	116	2,4
2	163,3	40	29,2	78	7,3	117	2,4
3	155,2	41	28	79	7,1	118	2,3
4	147,6	42	26,9	80	6,9	119	2,2
5	140,4	43	25,9	81	6,6	120	2,1
6	133,5	44	24,8	82	6,4	121	2
7	127,1	45	23,9	83	6,2	122	2
8	121	46	22,9	84	6	123	1,9
9	115,2	47	22,1	85	5,8	124	1,9
10	109,8	48	21,3	86	5,7	125	1,9
11	104,6	49	20,5	87	5,5	126	1,8
12	99,7	50	19,7	88	5,3	127	1,8
13	95,1	51	19	89	5,2	128	1,7
14	90,7	52	18,3	90	5	129	1,7
15	86,5	53	17,6	91	4,8	130	1,6
16	82,5	54	16,9	92	4,7		
17	78,8	55	16,3	93	4,6		



CONTACT INFORMATION

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870 International Parkway
Suite 120
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Technical Support (800) 408-5196 ext 102 or 103
techservices@olimpiasplendidusa.com