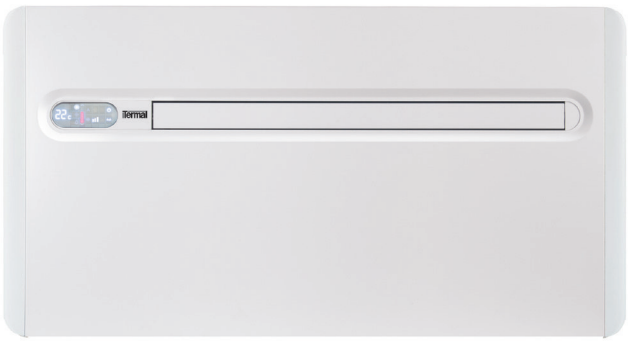
ONLY IN
DC Inverter Heat Pump without Outdoor Unit
with R410A Refrigerant

# TTWIS 2350 X

## Installation Manual



New Model 2019

Termal Group

CE

www.termal.it

## *Table of Contents*

# 1. SAFETY PRECAUTIONS

This Unit complies with European Directives:

- Low voltage 2014/35/EU
- Electro-magnetic compatibility 2014/30/EU
- Use restrictions of hazardous substances in electrical and electronic equipment 2011/65/EC (RoHS2)
- Waste electrical and electronic equipment 2012/19/EC (WEEE)
- Energy consumption indication on the labels of energy-related products 2010/30/EU
- ErP Directive 2009/125/EC and regulation 2012/20EC.

*Safety pictograms*

The pictograms in the next chapter provide the necessary information for correct, safe use of the machine in a rapid, unmistakable way.

| | |
|---|---|
| **WARNING** | It indicates actions that require caution and a suitable preparation. |
| **DO NOT** | Refers to actions that absolutely must not be performed. |

| **WARNING** |
|---|
| After unpacking, check that he contents are intact and that all parts are included. If they're not, please contact the Retailer of the appliance. |
| The appliance must be installed by Authorized Technicians. Once the work is done, the Technicians must issue a declaration of conformity to the Customer, in compliance with current Regulations and with indications on the User Manual supplied with the appliance. |
| These appliances have been designed for conditioning and/or heating rooms and they must be destined solely for this purpose compatibly with their performance characteristics.<br>The Manufacturer refuses any contractual or extra-contractual responsibilities for damage caused to people, animals or things resulting from incorrect installation, adjustment, maintenance or improper use. |
| In the event of water leaks, turn off the main switch and close the water taps.<br>The final User must Immediately call the Authorized Technical Service and must never intervene personally on the appliance. |

## *SAFETY PRECAUTIONS*

**WARNING**

If the temperature is set too low or too high, not only it is unhealthy, but it is also a useless waste of energy.
Avoid prolonged direct contact with the air flow.

Do not leave the room closed for a long time. Open the windows periodically to change the air.

This Installation Manual is an integral part of the appliance and therefore must be kept with care and must ALWAYS accompany the appliance even when the latter is transferred to another Owner or User or transferred to another system.
If it gets damaged or lost, please request another copy to the local Authorized Technical Service.

Any repair or maintenance operations must be performed by the Authorized Technical Service, in accordance with this Manual. Do not modify or tamper with the appliance as this could lead to dangerous situations and the Manufacturer will not be liable for any damage caused.

The appliance is declared to have an IPXO protection rating, therefore, it cannot be installed outdoors or in laundry rooms.

**DO NOT**

We would like to remind you that some fundamental safety rules should be followed when using products that work with electricity and water.

The use of the appliance by children and unassisted disabled persons is forbidden.

It is forbidden to touch the appliance if barefoot or with wet or humid parts of the body.

It is forbidden to clean the appliance without having first disconnected the appliance from the mains power supply by turning off the main switch.

It is forbidden to modify safety or adjustment devices wthout authorisation and the indications from the Manufacturer.

It is forbidden to pull out ot twist the electric cables coming out of the appliance, even if they are disconnected from the mains power supply.

It is forbidden to introduce objects and substances through the air inlet and outlet grids.

It is forbidden to open the access doors to the internal parts of the appliance without having turned off the main switch first.

It is forbidden to dispose of and leave within the reach of children the packing materials as they could be a source of danger.

It is forbidden to clim onto the appliance and/or to place any type of object on top of it.

# 2. OUTLINE OF THE UNIT

## *2.1 Outline of TTWIS 2350 X*

TTWIS 2350 X is a new solution that represents a significant step towards reducing the aesthetic impact of air conditioners.
Being only 16 centimetres deep, TTWIS 2350 X is very thin and less bulky, therefore both the internal and external aesthetic impact is kept to a minimum.

Optimized capacity
The conditioning capacity of TTWIS 2350 X has been optimized so as to obtain the right temperature for the best level of comfort, and therefore less consumption and less noise. Thanks to the careful choice of sound insulation materials, the noise level is similar to that of a standard wall split, and consumption is drastically reduced thanks to the new direct current fan.

162 millimetre holes
An important choice not only design-wise, but also because of a considerable installation advantage: it is easier to find drilling tools as there's no need for professional ones, with lower aesthetic impact.

BLDC inverter technology
We have perfected the inverter technology to offer the best in terms of acoustic comfort (noise) and performance: reduction of consumptions, maintenance of the best temperature level and humidity level in the room.
Thanks to the use of the cutting edge BLDC (brushless direct current) inverter regulation, vibrations have been completely eliminated and acoustic emissions have been lowered to exceptional levels.
Both ventilation motors are BLDC to reduce consumption still further and make flow adjustment more precise.
The energy consumption is extremely low thanks to absorption values falling below 300 W in the case of partial load. At the nominal cooling power of 2.35 kW, TTWIS 2350 X has an EER equal to 3.22, which allows an energy efficiency ratio of "A+" to be obtained: this is the cutting edge in the sector of monobloc climate control systems with fixed installation.

Easy to install
TTWIS 2350 X can be installed on any perimeter wall either low or high. Everything needed for installation (template, support bracket, hole pipes and external grids) - excluding the drill and drill bit - is included in the box.

Folding external grids
TTWIS 2350 X is equipped with folding grids activated by inlet and outlet air. They open when the Unit is working and close when the Unit is turned off. Better indoor comfort, less dust, noise and pollution, less maintenance and even less outdoor visibility.

Remote Control & Touch-Screen Display
In addition to the Remote Control, the Touch-Screen Display on the Unit enables the setting of any function. There is even a "lock" mode to avoid any improper use.
It is possible to deactivate the "Heating" mode by simply touching the screen. The Unit then works in "cool only" mode, without the need to use the condensation drain pipe.
The orientation of the air flaps can also be adjusted by simply pressing one key.

## *2.2 Storage*

The packing is made of suitable material and carried out by expert personnel. All Units are checked and tested and are delivered complete and in perfect conditions, however please perform the following instructions to check the quality of shipping services:

- upon receipt, check if the box is damaged. If that is the case, accept the goods with reservations and keep photographic evidence of any damage found
- unpack and check the contents against the packing list
- check that none of the parts have been damaged during shipment. In case of damage, report it to the shipping company within 3 days of receipt by registered letter with return receipt and attching photographic documentation. A copy should also be sent by fax to the MANUFACTURER. No notice of damage incurred will be accepted after 3 days from delivery.

Keep the packing at least for the whole length of warranty, should you need to ship the appliance to the Authorized Service Centre for repair.
Dispose of the packing materials in compliance with current regulations on waste disposal.

Do not turn the carton upside down.

## *2.3 Handling*

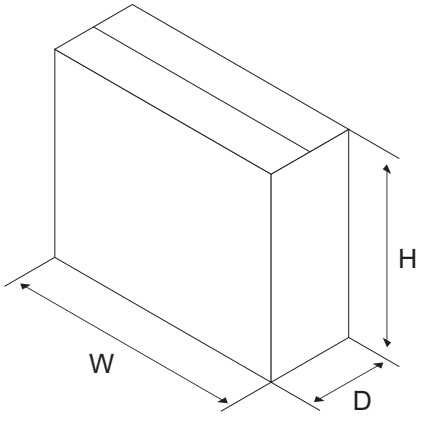
The Unit is packed singularly in a cardboard box. Boxes can either be carried singularly by hand by two operators or loaded on a cart, for a maximum of three Units.

Handling must be performed by qualified personnel, with specific tools and with equipment suitable for the weight of the appliance.

The appliance is unbalanced on the right (compressor side).

During transportation, the appliance must be kept in vertical position.

## *2.4 Shipping dimensions and weight*



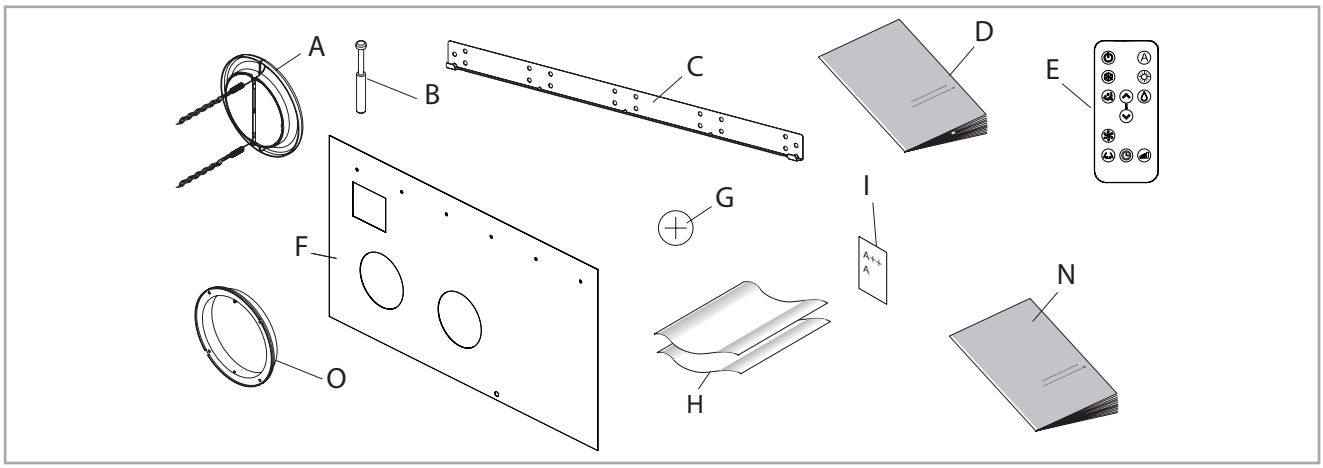
| **Packaging** | M.E. | **TTWIS 2350 X** |
|---|---|---|
| **Dimensions** | | |
| Weight | kg | 48.5 |
| W | mm | 1110 |
| H | mm | 660 |
| D | mm | 260 |

*2.5 Supplied components*

The supply includes the parts listed in the following Table.
Before assembly, please check that all the parts are within reach.

| | |
|---|---|
| **A** | External fixed grid for air inlet and outlet (front view) |
| **B** | Screws and plugs kit (6 pcs) |
| **C** | Bracket for wall mounting |
| **D** | User Manual |
| **E** | Remote control |

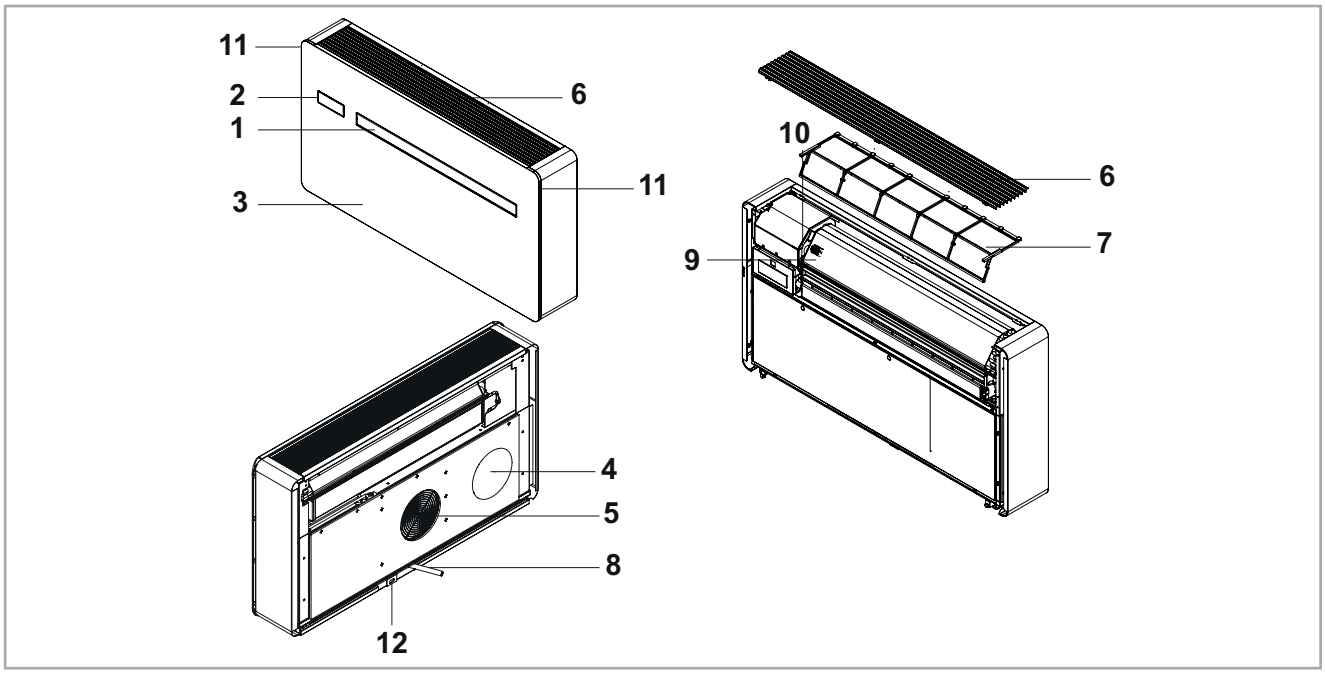
| | |
|---|---|
| **F** | Paper template for holes |
| **G** | CR2025 3V remote control battery |
| **H** | Wall inlet pipes (2 pcs) |
| **I** | Energy efficiency label |
| **N** | Installation Manual |
| **O** | External fixed grid for air inlet and outlet (rear view) |



*2.6 Unit parts*

| | |
|---|---|
| **1** | Air outlet flaps |
| **2** | Touch Screen Display |
| **3** | Front panel |
| **4** | Outdoor air suction |
| **5** | Outdoor air outlet |
| **6** | Internal air intake grille |

| | |
|---|---|
| **7** | Air Filter |
| **8** | Condensation drain pipe |
| **9** | Room air probe |
| **10** | Power supply terminal block |
| **11** | Decorative side panel |
| **12** | Anti-lifting bracket |



# 3. INSTALLATION

## *3.1 Installation mode*

Before installing the air conditioner, it is essential to calculate the summer and winter thermal loads of the room. The more these calculations are correct, the better the Product will work. Please refer to current regulations to carry out calculations.

For big installations, please call an agency specialized in thermotechnics.

Please try to reduce the thermal load of the room following the instructions below:

- Cover large windows exposed to sunlight with curtains or with external maskings (blinds, porches, reflecting films, etc.);
- The room must remain closed for as long as possible;
- Avoid using halogen lamps or other high energy consumption appliances such as small ovens, steam irons, cooking plates, etc..

## *3.2 Choosing the position of the Unit*

For a better performance of the appliance and to avoid malfunctions or dangerous situations, the location of the Unit must meet the following requirements:

- Respect the minimum distances indicated in the Figure;
- The wall on which you wish to anchor the Unit must be strong and able to support its weight;
- Leave enough space around the Unit to perform maintenance operations;
- When used exclusively to heat, avoid “high wall” installation in rooms with a height greater than 3 metres.
- Nothing must obstruct the air flow both in the top air inlet part (curtains, plants, furniture) and in the lower outlet part, as it could cause vibrations which might prevent the appliance from working correctly.

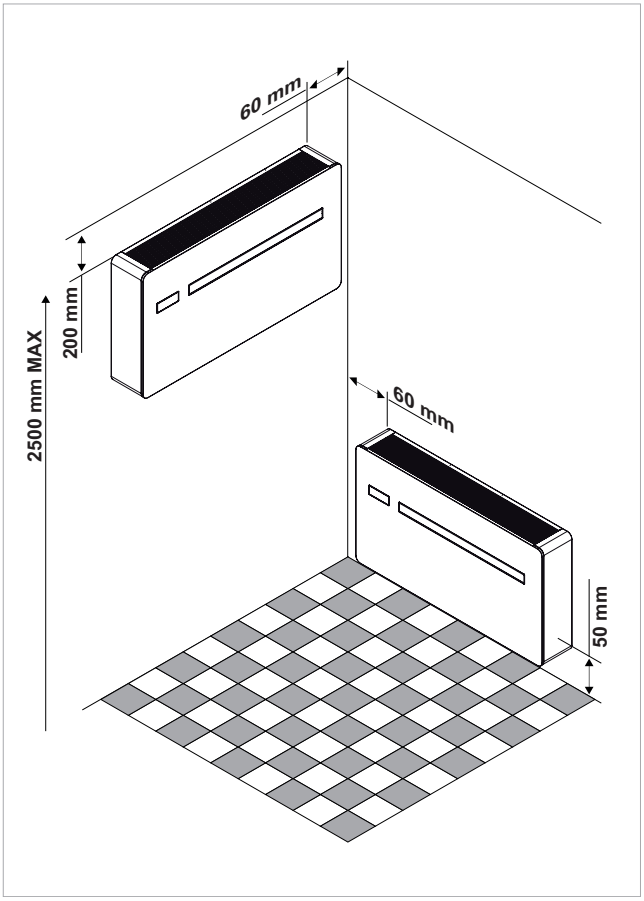
The appliance must be installed against a wall communicating with the outside.

Check that there are no structures or systems (beams, pillars, hydraulic pipes, electrical cables, etc.) in the part that must be drilled. Check that nothing is placed in front of the holes thus obstructing the air flow (plants and leaves, panelling, shutters, thick grates or grids, etc.).

The Unit should not be installed in a position where the air flow aims directly at the people nearby.

Do not force the air flap open.

The appliance must not be installed directly above another electrical appliance (TV, radio, fridge, etc.) or above a source of heat.



*3.3 Assembling the Unit*

In order to work, the Unit requires that two holes Ø162 must be placed as indicated on the template.

The maximum allowed length of the holes is of 1 m and there must be no bends. Use the supplied grids, or grids with the same characteristics.

The holes on the wall must be drilled using a suitable equipment that makes your work easy and does not cause damage or excessive inconvenience to your Customer. The best tools to make big holes on walls are special drills (called “core drills”) with a high torque and whose rotation speed can be adjusted according to the diameter of the hole to make and to the material. In order to avoid excessive dust and debris in the room, “core drills” can be combined with suction systems consisting of a vacuum connected to a suction cup placed next to the perforation tip, for example.
To make the holes, please proceed as follows:
- Place the drilling template provided against the wall respecting the minimum distances: from the ceiling, from the floor and from the side walls, indicated on the template itself, which can be held in the correct position by using some tape.
- Carefully mark the centre of each hole with a small drill or a punch before actual drilling.
- Using the core drill, make two holes for inlet and outlet air.

The holes must be drilled slightly downwards to avoid water from entering.

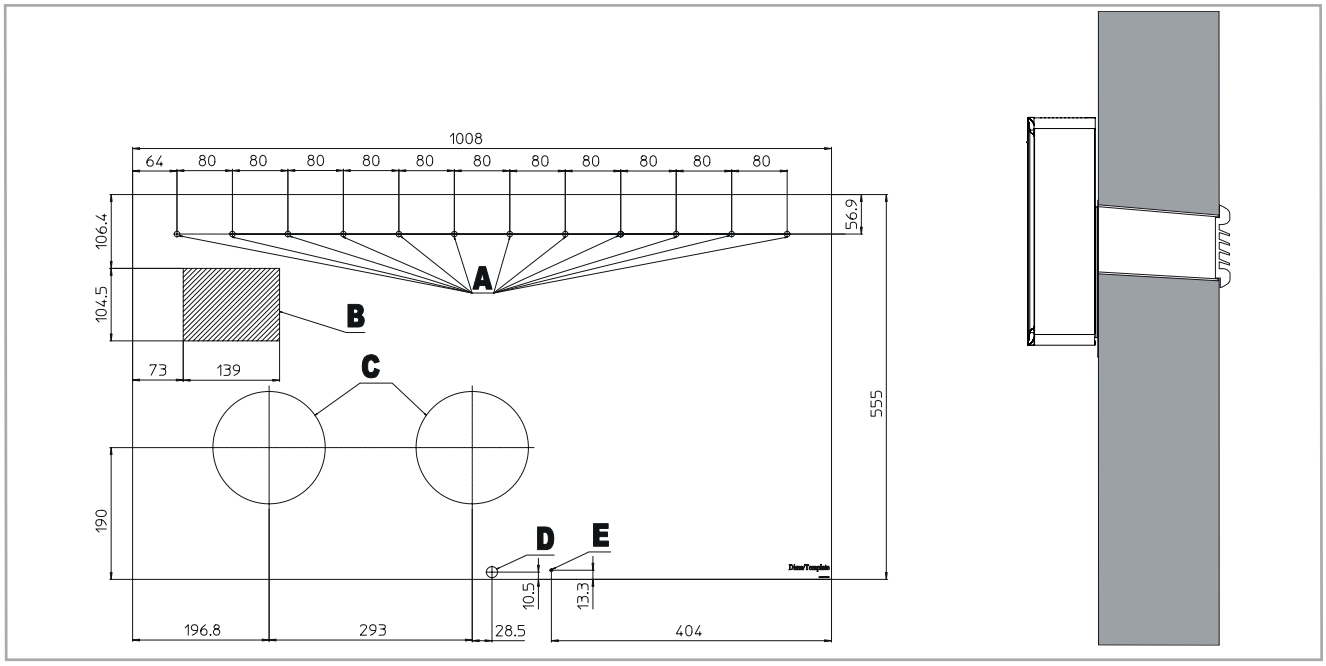
Most of the removed material is expelled outwards, so please be careful that it does not hit people or objects. In order to avoid breaking the outer plaster, be careful while drilling the final part of the hole and ease the pressure on the core drill.
Drill the 6 holes for the bracket as indicated on the template.
The appliance weighs more on the right, so make sure to secure it properly on this side. The holes must have an 8 mm diameter to accommodate the 6 supplied plugs.
A thorough examination of the characteristics and the consistency of the wall must always be carried out to determine the number of fixing points to be made and to choose specific plugs in particular conditions. In the case of installation on a plasterboard or on walls with low density, place a bracket, if necessary on the outside, that can support the appliance safety.

The Manufacturer cannot be held responsible for any underestimates of the structural consistency of the anchoring arranged by the Installer. Therefore, please pay the utmost attention to this operation as, if performed badly, it could cause serious damage to people and property.

Drill a hole in the position indicated on the template for those heat-pump appliances without a condensation drain hose built in the wall in order to enable the draining of condensation.

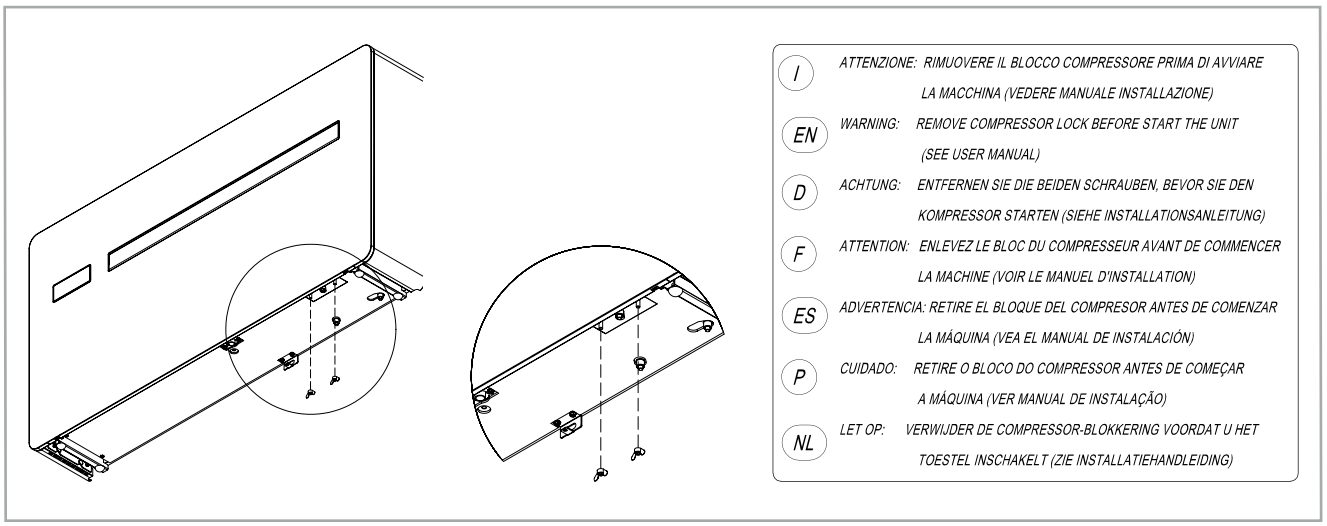
A hole is also indicated on the template to secure the appliance on the wall with an anti-lifting bracket, which is already on the appliance.

| | |
|---|---|
| **A** | Holes for M8 plugs |
| **B** | Electrical connection area |
| **C** | Ø 162 mm holes for air ducting |
| **D** | Ø 16 mm drain hose |
| **E** | Anti-lifting bracket hole |




### *3.4 Removing the compressor block*

To prevent the compressor and the pipes from moving during transportation and installation, a bracket is used to block the compressor. This bracket must be removed before starting up the compressor: in the lower right part of the appliance, by the red label, there are two wing nuts that must be completely unscrewed to free the compressor.



### *3.5 Condensation drain preparation*

For heat pump appliances, a drain pipe (Ø 16 mm, internal, not supplied) must connect the Unit to the pipe at the bottom of the appliance.
A solenoid valve will start the flow of the condensation from the internal drain pan when the maximum level has been reached.
As it is a gravity drain, it is essential for the line to have at least a 3% slope minimum in every point.
A rigid or flexible pump can be used with a minimum internal diameter of 10 mm. If the line flows into a sewage system, it is necessary to perform a siphoning operation before inserting the pipe in the main drainage. Said siphon must be placed at least 300 mm under the mouth of the appliance.

If the drain pipe flows into a container (e.g. a tank), do not close the container hermetically and avoid immersing the drain pipe into the water.

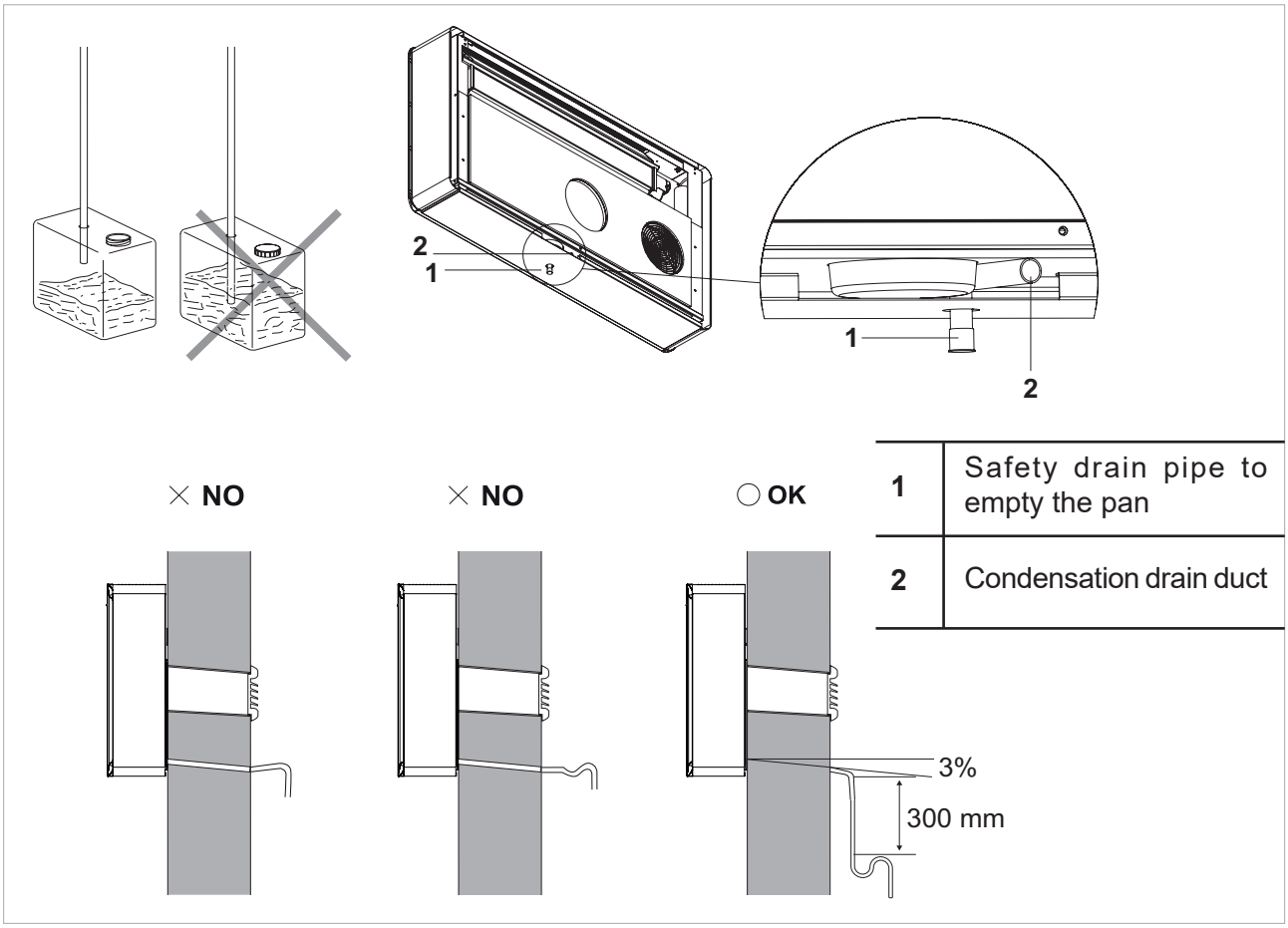
The hole for the condensation pipe must always lean towards the outside.

The exact position in which to place the pipe mouth is indicated on the template.

Check that the expelled water does not cause any damage or problems to people or property. During winter, this water may create sheets of ice outside.

When connecting the condensation drain pipe, be careful not to squeeze the rubber duct.

It is possible to empty the condensate drain pan using the safety drain pipe at the base of the appliance if necessary.



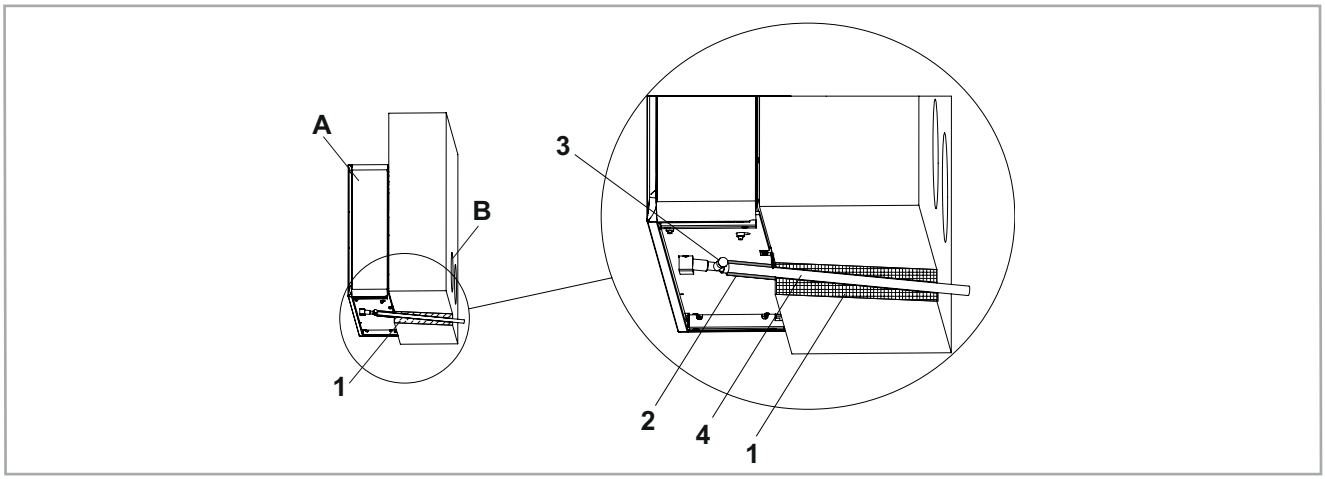

| | |
|---|---|
| 1 | Safety drain pipe to empty the pan |
| 2 | Condensation drain duct |

**Insulation of the internal condensation drain pipe**

N.B.: when laying the condensation drain pipe towards the outside, the internal pipe supplied with the appliance should be lined with anti-condensation insulating material with an internal diameter of 10 mm (see point 2 in the diagram).
The insulating material should be fitted up to the mouth of the external condensation drain pipe fixed in the wall.

| | |
|---|---|
| **1** | Wall section |
| **2** | Insulation |
| **3** | Emergency drain |

| | |
|---|---|
| **4** | External condensation drain pipe |
| **A** | TTWIS 2350 X Air Conditioner |
| **B** | Ventilation hole |




*3.6 Assembling air ducts and external grids*

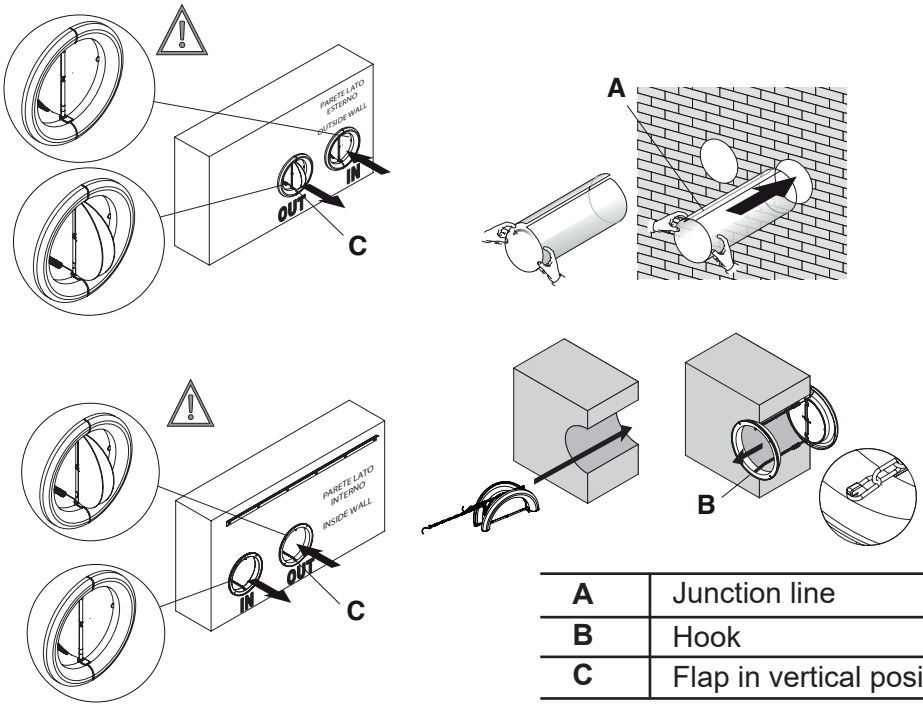
Once the holes have been made, place the supplied plastic sheets inside them.
Roll up the sheet and insert it in the hole, checking that the “A” connection line is positioned upwards.
Use a cutter to remove any excess pipe.
To place the external grids, proceed as follows:
- connect the chains to the ends of the springs;
- fold the external grids;
- insert your arm in the hole to push the grid outside while holding the ends of the chains with the other hand, to prevent the grid from falling down;
- open the grid outside the hole;
- rotate the grid to bring the flap C in vertical position;
- pull the chains by tensioning the springs;
- use a bolt cutter to remove any excess chain;
- anchor the hook of the chain to wall B.

Use only the supplied grids, or grids with the same characteristics.

The shutters must be positioned with the flap in vertical.

The shutters are different. Should be distinguished from that position on the recovery from the one place on the delivery, according to the opening direction of the fins.

Once installation of the grilles is complete, check their opening (towards the inside of the duct for the air inlet grid “IN” and towards the outside of the duct for the air outlet grid “OUT”). Remember that the grilles open when the external air flow is activated, to allow the cooling and heating functions to be operated. The air conditioner must be activated for cooling or heating in order to test them.

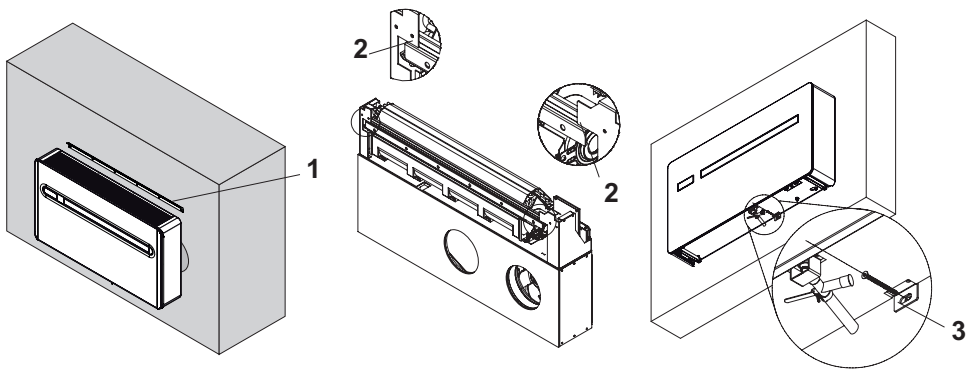



| | |
|---|---|
| **A** | Junction line |
| **B** | Hook |
| **C** | Flap in vertical position |

*3.7 Mounting the appliance on the bracket*

After checking that the fixing bracket is anchored to the wall and that all necessary electrical connections and condensation drain preparation have been made, you can mount the air conditioner. Lift it by the sides of its bottom base until the bracket fits on all the right spots on the appliance. In order to make the operation easy, slightly tilt the appliance towards you.
Direct electrical connections (disconnecting the power supply cable) and the anchoring of the condensation drain pipe must be carried out after having spaced the appliance from the wall using a wooden wedge or any other similar object.
Once the work is done, check that there are no openings on the back of the appliance, especially where the air ducts are connected. To improve installation safety, the machine can be secured to the wall with a dedicated anti-lifting bracket which is located on the rear part of the machine. The drilling position is indicated on the installation template.

| | |
|---|---|
| **A** | Bracket |
| **B** | Bracket anchoring points |
| **C** | Anti-lifting bracket |



*3.8 Electrical connection*

The appliance is equipped with a power cord and plug (Y-type connection; the cord can only be replaced by the Manufacturer or the Authorized Technical Centre). If using a socket near the appliance, simply insert the plug.

Before connecting the air conditioner, check that:
- The power supply voltage and frequency values complies with the data plate of the appliance.
- The power supply line is provided with a suitable earth connection and that is dimensioned for the maximum power input of the air conditioner (minimum cable section equal to 1.5 $mm^2$).
- Power is only supplied using a suitable socket through the supplied plug.

If the supply cable is replaced, this must be done exclusively by the Authorized Technical Service, and in compliance with current national regulations.

The appliance must be connected 230V/50Hz mains via an omnipolar switch with a contact opening distance of minimum 3 mm, or using a device enabling the complete disconnection of the appliance in overvoltage III category conditions.

It is possible to carry out the wiring using a cable inside the wall, as indicated in the installation template (recommended for installations on the upper part of the wall).
Please check that the power supply is provided with suitable protections against overloads and/or short-circuits (using a 10 Amp Time delay fuse or other equivalent devices is recommended).

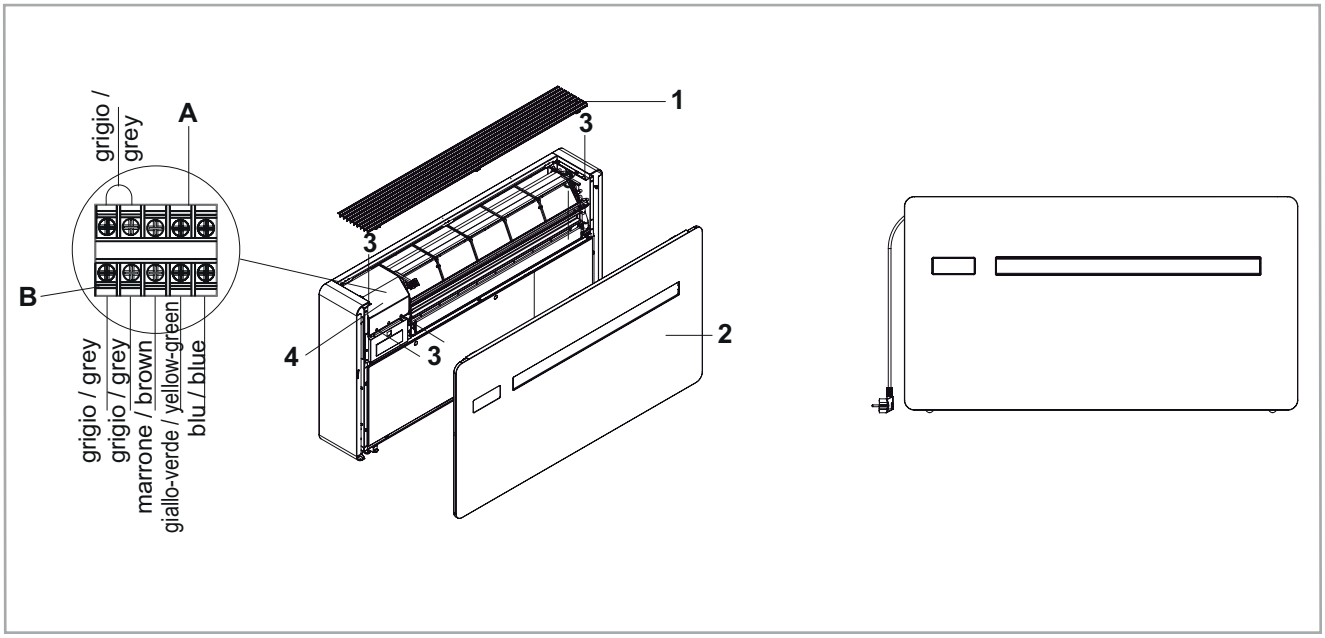
In order to avoid any risk of electric shock, it is essential to disconnect the main circuit breaker before making electric connections or performing any maintenance on the Units.
To carry out direct connections and replace the power cord using the cable in the wall, proceed as follow:
- Remove the upper grille;
- Undo the 2 upper screws that fasten the front panel and remove it, lifting it slightly;
- Undo the 2 upper screws that fasten the electrical part cover and remove it;
- Disconnect the power cord by unscrewing the 3 screws from the terminal block;
- Connect the wall cable, checking that the power supply line is provided with a suitable earth connection and that it is correctly dimensioned for the max. power input of the air conditioner (minimum cable section equal to 1.5 $mm^2$).

**CP occupancy contact input connection**

When the CP contact opens (very low voltage, connected to a free non-live contact) the appliance is put in stand-by and CP appears on the display.
Using this contact, it is possible to connect an external device that inhibits the functioning of the appliance, such as: open window contact, on/off remote, infrared presence sensors, enabling badge, etc.).
We recommend using a double insulation cable.

| | |
|---|---|
| **A** | 230V/50 Hz Electrical power supply terminal block |
| **B** | CP contact presence |
| **1** | Upper grill |

| | |
|---|---|
| **2** | Front panel |
| **3** | Fixing screws |
| **4** | Electrical part cover |




*3.9 High/low installation configuration*

The Unit can be installed either in the lower part (near the floor) or in the upper part (near the ceiling) of the wall.
In order to optimize air distribution and comfort, the direction of the air flow can be modified by adjusting the position of the air flap.
The appliance is supplied ready to be installed in the lower part of the wall, so the air flow is dispensed upwards. The same configuration can also be used in the upper part of the wall in Cooling mode, which increases the air flow in the room (coanda effect).
In this case, purchase the lower cover decorative kit code GB0737.

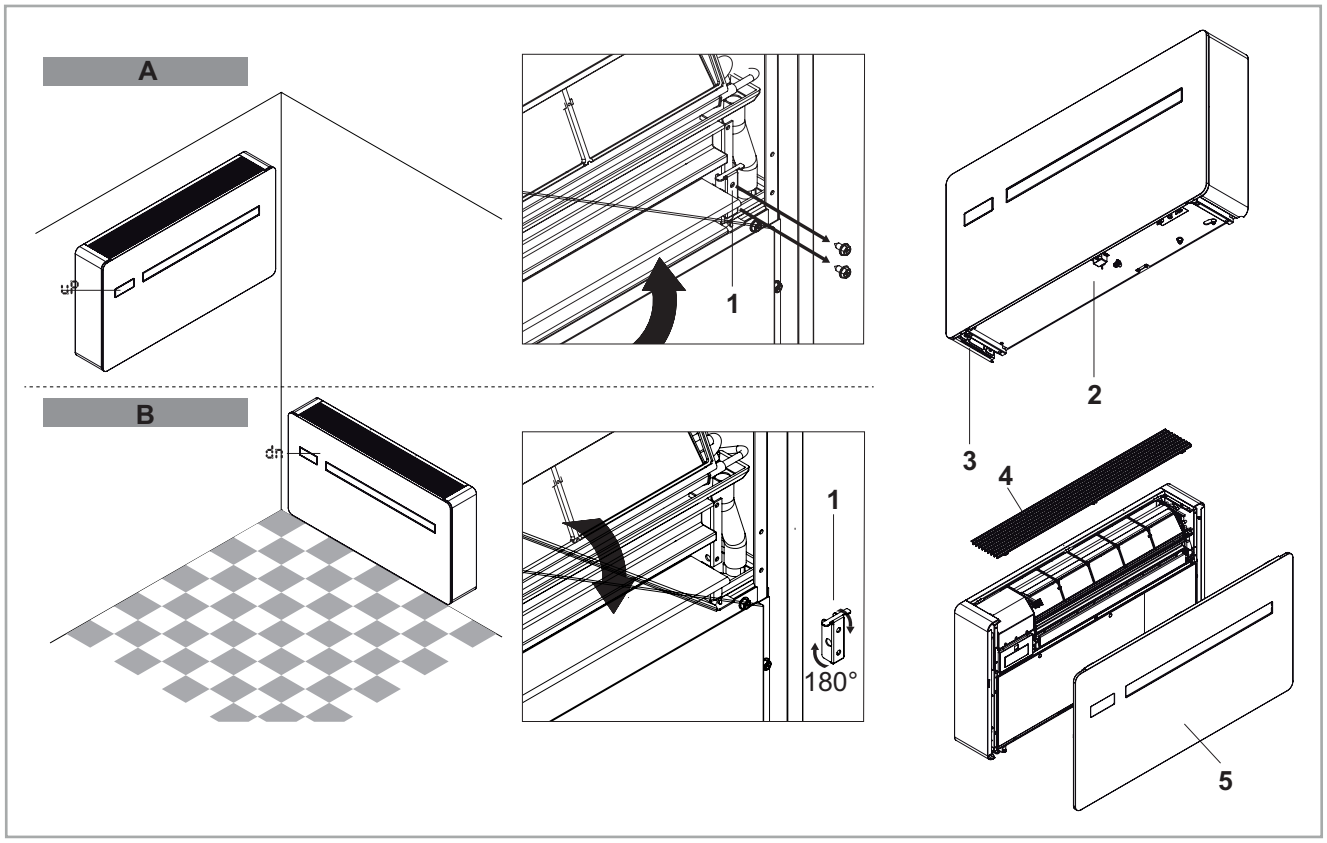
This operation must be performed while the appliance is switched off and disconnected.

**Modification from lower wall to the upper wall installation**

- Remove the upper grill
- Remove the aesthetic panel by unscrewing the two screws in the upper part
- Position the lower cover and fix it with the screws supplied (optional kit GB0737)
- Rotate the aileron right support bracket by 180°, removing the screws and then reinstalling them
- Reassemble the aesthetic panel in the reverse order
- Replace the grill

| | |
|---|---|
| **A** | High installation |
| **B** | Low installation (factory settings) |
| **1** | Block insert |
| **2** | Lower cover (kit code GB0737) |

| | |
|---|---|
| **3** | Fixing screws (supplied with the optional kit GB0737) |
| **4** | Upper grill |
| **5** | Front panel |
| | |




After adjusting the air outlet flap position, it is necessary to set up the lectronic control of the appliance:

- Keep pressed the button on the display for 5 seconds;
- The “**dn**” (lower wall) symbol lights up on the display;
- Press the button again;
- The “**uP**” (upper wall) symbol lights up on the display;
- If no other operations are performed in the following 2 seconds, the new setting is memorized.

For the appliance to work properly, each time the configuration of the air outlet flap is modified, the electronic control must be set.

### *3.10 Setting Cool Only or Heat Only modes*

it is possible to deactivate the Heating or the Cooling mode following a simple procedure.
Keep the A key on the Touch-Screen Display pressed for 5 seconds until HC (Heating and Cooling) appears on the display.
Press the A key for 1 second for the Co (Cooling only) mode.
Press the A key again to switch back to Ho (Heating only) mode.
Wait for 3 seconds without touching anything to memorize the setting.

### *3.11 Brightness regulation*

The display brightness sensor can be disabled (leaving the maximum brightness at all times), by pressing and holding the night button ( ) for 10 seconds.
“ds” (disabled) or “En” (enabled) will appear on the display.

### *3.12 Touch-Screen display key lock*

The key lock is activated by keeping the Timer symbol on the touch-screen display pressed for three seconds.
The User cannot perform any actions.
The stand-by symbol flashes every second.
To deactivate the lock, keep the Timer symbol pressed for three seconds once again.
The lock remains active also for the next operations performed via remote control and in the event of a power failure.

### *3.13 Hotel function*

Press and hold the air exchange key ( ) for 10 seconds to enable the function (“En” displayed); the dehumidification and Auto functions are disabled (leaving active only Ventilation, Heating and Cooling) and the settable set range is reduced from 22 to 28 in Cooling mode and from 16 to 24 in Heating mode.

### *3.14 Detecting possible faults*

If the air conditioner blocks because of an alarm (see following Table), please communicate to the Authorized Technical Centre the code on the display to facilitate interventions.

| **Display indications** | **Cause** |
|---|---|
| E1 | Faulty room temperature RT sensor |
| E2 | Faulty internal heat exchanger IPT sensor |
| E3 | Faulty outdoor air temperature OT sensor |
| E4 | Faulty outdoor heat exchanger OPT sensor |
| E5 | Faulty indoor air fan motor |
| E6 | Faulty outdoor air fan |
| E7 | Lack of communication with the display |
| E8 | Compressor discharge probe failure (only for DC Inverter Models) |

### *3.15 Open CP contact*

If the presence contact is not closed, the appliance will not start and the **CP** alarm appears on the display.

### *3.16 Evacuation of condensate water in the event of an emergency*

Shoud any anomaly occur in the condensation water system, the maximum level float switch stops the air conditioner and the **OF** code appears on the display.
During Cooling and ry modes, electronics switches the compressor off and keeps the water distribution system active with the heat exchanger - together with the fan - to disperse excess water in the condensate pan. If the problem persists, please contact the Authorized Technical Service.
During Heating, condensation should drain freely through the specific pipe. In the event of an alarm, check that the condensation pipe is not bent or obstructed, thus preventing the water from flowing out.

**Use of the appliance**

Objects or structural obstacles (furniture, curtains, plants, leaves, blinds, etc.) must not obstruct the normal air flow both from the internal and from the external grids.

Do not lean against, or worse sit on the body of the air conditioner: this would damage the appliance.

Do not move the horizontal air outlet flap manually. Always use the remote control to perform such operation.

In the event of water leaks, turn off the appliance and disconnect the electric power supply. Call the nearest Authorized Technical Centre.

During Heating mode, the air conditioner eliminates periodically any ice formed on the outdoor heat exchanger. In such situation, the machine keeps on working, but it does not dispense warm air to the room. This phase can last from 3 up to maximum 10 minutes.

The appliance must not be installed in rooms where explosive gases develop or where there are humidity and temperature conditions that exceed the maximum levels reported on the Installation Manual.

Clean the air filter regularly as described in the specific paragraph.

### *3.17 Operations after installation*

Before leaving the site, the packaging should be gathered up and all traces of dirt that have deposited on the Unit during assembly should be eliminated with a damp cloth.
These operation, which are not strictly necessary, in any case allow for a more professional appearance of the installation in the eyes of the User.
In order to avoid unnecessary calls by the User, before leaving the site it is also a good idea to:
- outline the contents of the Manual,
- show them how to clean the filter,
- explain when and how they should contact the Authorized Technical Service.

# 4. CLEANING & MAINTENANCE OF THE AIR CONDITIONER

*4.1 Periodic maintenance*

The air conditioner you have bought has been designed to keep maintenance operations to a minimum, in fact, they only include the following cleaning operations.

## External cleaning

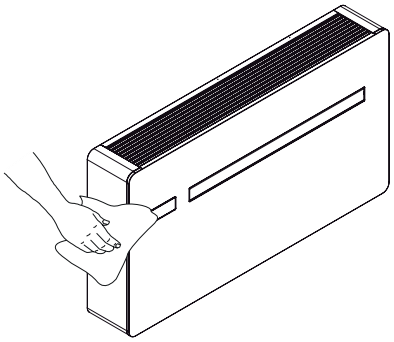
Before any cleaning and maintenance operation, disconnect the unit from power supply by switching off the main switch.

Wait until the parts have cooled down to avoid getting burned.

Pay attention to the sharp edges.

Do not use abrasive sponges or abrasive or corrosive detergents to avoid damaging varnished surfaces.

When necessary, clean the external surfaces with a soft clamp cloth.



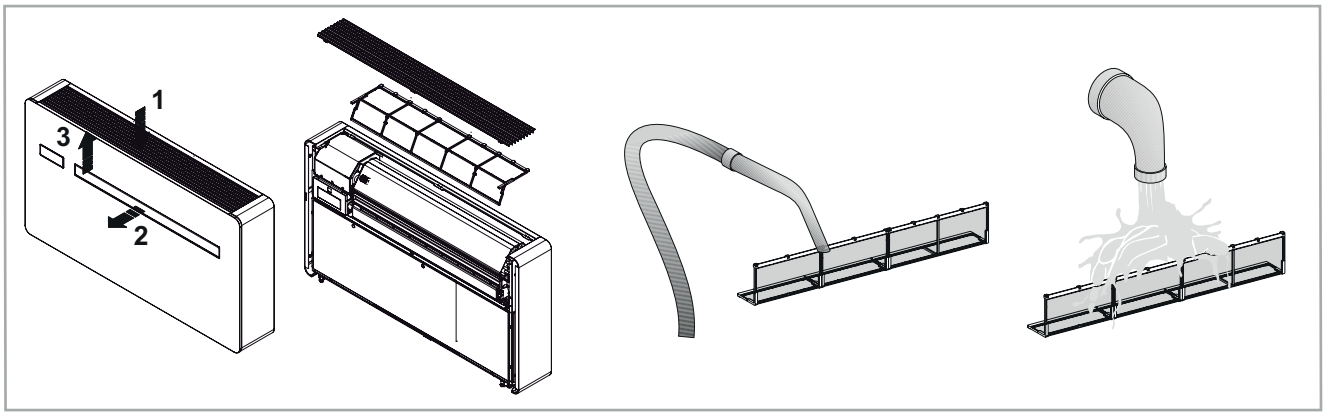
## Cleaning the air filter

The air conditioner you have bought has been designed to keep maintenance operations to a minimum, in fact, they only include the following cleaning operations:
Clean the air filter after a period of continuous use and according to the concentration of impurities in the air, or when you wish to start-up the appliance after a period of inactivity.
N.B:: before performing any operation, take care with the hot and/or sharp surfaces of the metal.
The air filter is located in the top part of the appliance.

To remove the filter:
- open the grille and carry out operations 1, 2, 3 then remove it from its housing;
- remove the filter by lifting it;
- remove the dust from the filter with a vacuum cleaner or by washing it in running water without using detergents or solvents and let the filter dry;
- put the filter back on top of the coils, taking care to position them correctly;
- put the grille back in reverse order.

After filter cleaning, check if the panel is properly mounted.

It is forbidden to use the device without its mesh filter.




*4.2 Problems and possible solutions*

In the event of a malfunction, please refer to the following Table. If after performing the suggested checks, the problem is not solved, please contact the Authorized Technical Service.

| FAULT | POSSIBLE CAUSES | SOLUTION |
|---|---|---|
| The appliance does not switch on. | • No power supply. | • Check the voltage (by turning the light on, for example). |
| | | • Check that the exclusive magneto-thermic switch that protects the appliance has not intervened (if it has, reset it). If the problem repeats immediately, please call the Service Centre and avoid trying to make the appliance work. |
| | • Batteries ran out. | • Check that the appliance can be turned on using the touch-screen display and substitute the batteries. |
| The appliance does not cool/ heat enough. | • The temperature set is too high or too low. | • Check and adjust the temperature. |
| | • The air filter is clogged. | • Check the air filter and clean it if necessary. |
| | • Check that there are no other obstacles of the air flow both inside and outside. | • Remove anything that might block the air flow. |
| | • The thermal refrigeration load has increased (for example, a door or a window has been left open or an appliance has been installed in the room which generates a lot of heat). | • Try to reduce the thermal refrigeration load of the room following instructions below:<br>Cover large windows exposed to sunlight with curtains or with external maskings (blinds, porches, reflecting films, etc.);<br>The room must remain closed for as long as possible;<br>Avoid using halogen lamps or other high energy consumption appliances such as small ovens, steam irons, cooking plates, etc. |

## Display alarms

An alarm code appears on the display in case of anomalies. Some of the functions remain active nonetheless (see FUNCTIONING column).

| ALARM DISPLAYED | CAUSE | FUNCTIONING |
|---|---|---|
| **E1** | Broken room temperature RT sensor. | It is still possible to activate the Cooling, Dehumidification and Heating modes. It only monitors the antifreeze function of the internal heat exchanger. |
| **E2** | Broken internal heat exchanger IPT sensor. | None of the modes can be activated. |
| **E3** | Broken outside temperature OT sensor. | None of the modes can be activated. |
| **E4** | Broken outside heat exchanger OPT sensor. | It is still possible to activate the Cooling, Dehumidification and Heating modes. Defrosting is performed at fixed times. |
| **E5** | Broken internal fan motor. | None of the modes can be activated. |
| **E6** | Broken external fan motor. | None of the modes can be activated. |
| **E7** | Lack of communication with the display (*). | None of the modes can be activated. |
| **E8** | Compressor discharge probe failure (*). | None of the modes can be activated. |
| **CP** | Open CP contact. | The appliance only works if the contact is closed. Check that the clamps are connected. |
| **OF** | Maximum level float intervention. | During Cooling and Dehumidification, electronics switches the compressor off and keeps the water distribution system active with the heat exchanger - together with the fan - to disperse excess water. During Heating, condensations should drain freely through the specific pipe. In the event of an alarm, check that the condensation pipe is not bent or obstructed, thus preventing the water from flowing out. |

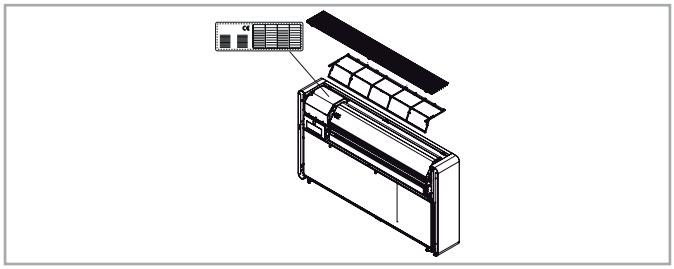
(*) For DC Inverter Models: lack of communication between the main, power, driver or display boards.

**The only way to solve the problem is to disconnect and reconnect the appliance. If the alarm still appears, please contact the Authorised Technical Assistance.**

*4.3 Technical specifications*

Please read data plate to obtain the technical data listed below:

- Serial number to enter the App
- Power supply voltage
- Maximum power input
- Maximum absorbed current
- Amount of refrigerant gas
- Casing protection rating



| | U.M. | **TTWIS 2350 X** |
|---|---|---|
| **Technical Specifications** | | |
| Cooling power (1) | kW | 2,35 |
| Power in max. Cooling Mod. Dual Power | kW | 3,10 |
| Heating power (2) | kW | 2,36 |
| Additional power electrical resistance | kW | - |
| Power in max. Heating Mod. Dual Power | kW | 3,05 |
| Power input - Cooling (1) | W | 730 |
| Power input - Heating (2) | W | 720 |
| Dehumidification capacity | L/h | 0,9 |
| Power supply voltage | V-F-Hz | 230-1-50 |
| EER | W/W | 3,22 |
| COP | W/W | 3,28 |
| Energy efficiency class when cooling | | A+ |
| Energy efficiency class when heating | | A |
| Internal-external ventilation speed | No | 3 |
| Internal-external air flow at max speed | $m^3/h$ | 400/480 |
| Internal-external air flow at medium speed | $m^3/h$ | 320/390 |
| Internal-external air flow at min. speed | $m^3/h$ | 270/340 |
| Dimensions (W x H x D) | mm | 1010 x 549 x 165 |
| Weight including packaging | kg | 48,5 |
| Sound pressure level (min-max) (4) | dB(A) | 41/27 |
| Unit sound power level inside (min-max) (5) | dB(A) | 45/58 |
| Wall holes diameter | mm | 162 |
| Wall holes distance | mm | 293 |
| Refrigerant gas | | R410A |

(*) with Dual Power function activated during Heating.

**Reference conditions**

| | | Room Temp. | Outdoor Temp. |
|---|---|---|---|
| (1) | Cooling mode tests (EN 14511) | DB 27°C - WB 19°C | DB 35°C - WB 24°C |
| (2) | Heating mode tests (EN 14511) | DB 20°C - WB 15°C | DB 7°C - WB 6°C |
| (3) | Heating mode tests | DB 20°C - WB 15°C | DB -7°C - WB -8°C |
| (4) | Indoor sound pressure measured in semi-anechoic chamber at a distance of 2 m. | | |
| (5) | Indoor sound pressure measured in accordance with regulation EN 12102 | | |

**Operating limits**

| | Indoor Temp. | Outdoor Temp. |
|---|---|---|
| Maximum operating temp. in Cooling mode | DB 35°C - WB 24°C | DB 43°C - WB 32°C |
| Minimum operating temp. in Cooling mode | DB 18°C | DB -5°C |
| Maximum operating temp. in Heating mode | DB 27°C | DB 24°C - WB 18°C |
| Minimum operating temp. in Heating mode | DB 5°C | DB -10°C |

# NOTES

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Due to on-going technological development of the products by the manufacturer, we reserve the right to vary the technical specifications at any time without notice.

A causa della continua evoluzione tecnologica dei prodotti, ci riserviamo il diritto di variare le specifiche tecniche in qualsiasi momento e senza darne preavviso.

Avec le souci d'améliorer sa production, le constructeur se réserve le droit de modifier les spécifications techniques des produits sans préavis.

Aufgrund der ständigen technologischen Weiterentwicklung der Produkte durch den Hersteller behalten wir uns das Recht vor, die technischen Spezifikationen jederzeit ohne vorherige Ankündigung zu ändern.

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