DAIKIN

AIR INTELLIGENCE

INSTALLATION MANUAL

SPLIT SYSTEM Air Conditioners

MODELS
Ceiling-mounted Duct type

FBQ18TBVJU
FBQ24TBVJU
FBQ30TBVJU
FBQ36TBVJU
FBQ42TBVJU
FBQ48TBVJU

Indoor Unit

English

Français

Español

Read these instructions carefully before installation.
Keep this manual in a handy place for future reference.
This manual should be left with the equipment owner.

Lire soigneusement ces instructions avant l'installation.
Conserver ce manuel à portée de main pour référence ultérieure.
Ce manuel doit être donné au propriétaire de l'équipement.

Lea cuidadosamente estas instrucciones antes de instalar.
Guarde este manual en un lugar a mano para leer en caso de tener alguna duda.
Este manual debe permanecer con el propietario del equipo.

CONTENTS

1. SAFETY CONSIDERATIONS

Read these ***SAFETY CONSIDERATIONS for Installation*** carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.

Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.

Always use a licensed installer or contractor to install this unit. Improper installation can result in water or refrigerant leakage, electric shock, fire or explosion.

Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

DANGER .....Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE .....Indicates situations that may result in equipment or property damage accidents only.

DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.
- Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.
- If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.
- After completing the installation work, check that the refrigerant gas does not leak throughout the system.
- Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.
- Safely dispose of all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injury or death by suffocation.

WARNING

- Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock or fire.
- When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.
- Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shock, fire or the unit falling.
- Install the air conditioner or heat pump on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injury.
- Take into account strong winds, typhoons, or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local, state and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shock or fire.
- Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.
- When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shock, fire or the terminals overheating.
- Before touching electrical parts, turn off the unit.

- This equipment can be installed with a Ground-Fault Circuit Interrupter (GFCI). Although this is a recognized measure for additional protection, with the grounding system in North America, a dedicated GFCI is not necessary.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.
- Do not install in a wet room such as a bathroom or laundry room due to a risk of fire or electric shock.

⚠ CAUTION

- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Heat exchanger fins are sharp enough to cut.
  To avoid injury wear gloves or cover the fins when working around them.
- Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- Be careful when transporting the unit.
- Do not turn off the power supply immediately after stopping operation. Always wait for at least 5 minutes before turning off the power supply. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.
- Refrigerant R410A in the system must be kept clean, dry, and tight.
  (a) Clean and Dry - Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight - R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping Work and follow the procedures.
- Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a gaseous state, its composition can change and the system will not work properly.
- The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.
- Handheld remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner or heat pump in the following locations:
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause fire.

⚠ NOTE

- Install the power supply and transmission wires for the indoor and outdoor units at least 3.5 ft. (1 m) away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 ft. (1 m) may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant may deteriorate.
- This air conditioner or heat pump is an appliance that should not be accessible to the general public.
- As design pressure is 580 psi (4.0 MPa), the wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.

2. BEFORE INSTALLATION

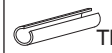
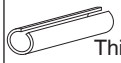
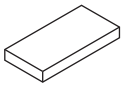
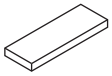
When unpacking the indoor unit or moving the unit after unpacked, hold the hanger brackets (4 locations) and do not apply force to other parts (particularly refrigerant piping, drain piping).

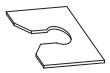
- Make sure to check in advance that the refrigerant to be used for installation work is R410A.
  (The air conditioner will not properly operate if a wrong refrigerant is used.)
- For installation of the outdoor unit and additional refrigerant charge, refer to the installation manual attached to the outdoor unit.
- Do not throw away the accessories until the installation work is completed.
- Do not damage the equipment or property when carrying the indoor unit into the room.
  (1) Measure the unit with packaging to ensure the unit can be carried safely while still packaged.
  (2) Determine the route to carry the unit into the room.
  (3) Do not unpack the unit until it is carried to the installation location.
  Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the indoor unit.
- After the indoor unit is carried into the room, to avoid the indoor unit from getting damaged, take measures to protect the indoor unit with packing materials.
- Have the customer actually operate the air conditioner while looking at the operation manual.
  Instruct the customer how to operate the air conditioner (particularly cleaning of the air filters, operation procedures, and temperature adjustment).
- Do not use the air conditioner in a salty atmosphere such as coastal areas, vehicles, vessels or where voltage fluctuation is frequent such as factories.
- Take off static electricity from the body when carrying out wiring and the control box cover is removed.
  The electric parts may be damaged.

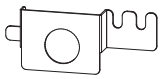
2-1 ACCESSORIES

Check if the following accessories are attached to the indoor unit.

Name	(1) Metal clamp	(2) Drain hose	(3) Duct flange connection screw		
Quantity	1 pc.	1 pc.	See below		
Shape				18·24 type	18 pcs.
				30·36·42·48 type	30 pcs.

Name	Joint insulating material	(6) Sealing material	(7) Sealing material	(8) Clamp
Quantity	1 each	1 sheet	2 sheets	8 pcs.
Shape	 Thin (4) For liquid piping  Thick (5) For gas piping	 Large (Dark gray)	 Medium (Dark gray)	

Name	(9) Washer clamp	(10) Wire sealing material	(11) Washer for hanger bracket
Quantity	4 pcs.	2 sheets	8 pcs.
Shape		 Small (Gray)	

Name	(12) Conduit mounting plate	Others
Quantity	1 pc.	• Operation manual • Installation manual • Warranty card
Shape		

2-2 OPTIONAL ACCESSORIES

- **A remote controller is required for the indoor unit.**
- There are 2 kinds of remote controllers; wired type and wireless type.
  Install the remote controller to the place where the customer has given consent.
  Refer to the catalog for the applicable model.
  (Refer to the installation manual attached to the remote controller for how to install.)
- **The indoor unit can be switched to lower suction. (Refer to 4. PREPARATION BEFORE INSTALLATION.)**
  The side cover plate (KDBD63A160) is required in the case of wiring from the bottom surface at bottom suction.
  For installation work, refer to the installation manual provided with the side cover plate. <Except for 30·36·42·48 type>

CARRY OUT THE WORK GIVING CAUTION TO THE FOLLOWING ITEMS AND AFTER THE WORK IS COMPLETED CHECK THESE AGAIN.

(1) Items to be checked after the installation work is completed

Items to be checked	In case of defective	Check column
Are the indoor and outdoor units rigidly fixed?	Drop · vibration · noise	
Are the installation works of the outdoor and indoor units completed?	Does not operate · burnout	
Have you carried out air tight test with the test pressure specified in the outdoor unit installation manual?	Does not cool/ Does not heat	
Is the insulation of refrigerant piping and drain piping completely carried out?	Water leakage	
Does the drain flow out smoothly?	Water leakage	
Is the power supply voltage identical to that stated on the name plate of the air conditioner?	Does not operate · burnout	
Are you sure that there is no wrong wiring or piping or no loose wiring?	Does not operate · burnout	

Items to be checked	In case of defective	Check column
Is grounding completed?	Danger in case of leakage	
Are the sizes of electric wiring according to the specification?	Does not operate · burnout	
Are any of discharge or suction of the indoor and outdoor units blocked with obstacles? (It may lead to capacity drop due to fan speed drop or malfunction of equipment.)	Does not cool/ Does not heat	
Is the external static pressure set correctly?	Does not cool/ Does not heat	
Have you recorded the refrigerant piping length and the refrigerant charge amount added?	Refrigerant charge amount is not clear	

Make sure to recheck the items of “SAFETY CONSIDERATIONS”.

(2) Items to be checked at delivery

Items to be checked	Check column
Have you carried out field setting? (if necessary)	
Are the control box cover, the air filter and the suction grille attached?	
Does the cool air discharge during the cooling operation and the warm air discharge during the heating operation? Does the indoor unit makes unpleasant sound of air discharge?	
Have you explained how to operate the air conditioner showing the operation manual to the customer?	
Have you explained the description of cooling, heating, program dry and automatic (cooling/heating) given in the operation manual to the customer?	
If you set the fan speed at thermostat OFF, did you explain the set fan speed to the customer.	
Have you handed the operation manual and the installation manual to the customer?	
Have you checked that there is no generation of abnormal noise (i.e., noise resulting from contamination or missing parts)?	
If an optional accessory is in use, did you check the operation of the optional accessory and make field settings as needed?	
Is the remote controller icon displayed? Is the remote controller connected to the master unit if the system is in simultaneous multi operation?	
Have you explained failure examples of **3. SELECTION OF INSTALLATION LOCATION**?	

Points of the operation explanation

In addition to the general usage, since the items in the operation manual with the ⚠ WARNING and ⚠ CAUTION marks are likely to result in human bodily injuries and property damages, it is necessary not only to explain these items to the customer but also to have the customer read them.
Furthermore, it is necessary to have the customer read through the troubleshooting items while explaining the above items.

3. SELECTION OF INSTALLATION LOCATION

Hold the hanger brackets at 4 locations to move the indoor unit when unpacking or after unpacked, and do not apply force to the piping (refrigerant and drain) and discharge flange.
If the temperature and humidity in the ceiling is likely to exceed 86°F (30°C), RH80%, use the additional insulation stick to the indoor unit (Field supply).
Use the insulation such as glass wool or polyethylene that has thickness of 3/8 in. (10 mm) or more. However, keep the insulated outside dimension smaller than the ceiling opening so that the unit may go through the opening at installation.

(1) Select the installation location that meets the following conditions and get approval of the customer.

- Where the cool and warm air spreads evenly in the room.
- Where there are no obstacles in the air passage.
- Where drainage can be ensured.
- Where the ceiling’s lower surface is not remarkably inclined.
- Where there is sufficient strength to withstand the weight of the indoor unit. (If the strength is insufficient, the indoor unit may vibrate and get in contact with the ceiling and generate unpleasant chattering noise.)
- Where a space sufficient for installation and service can be ensured. **(Refer to Fig. 1 and Fig. 2)**
- Where the piping length between the indoor and the outdoor units is ensured within the allowable length. (Refer to the installation manual attached to the outdoor unit.)
- Where there is no risk of flammable gas leak.

[Required installation space [in. (mm)]]
Figures indicate the minimum required installation space.

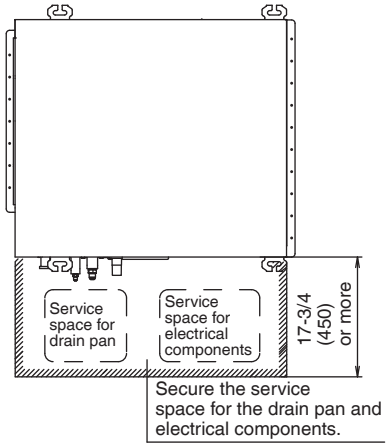


Fig. 1

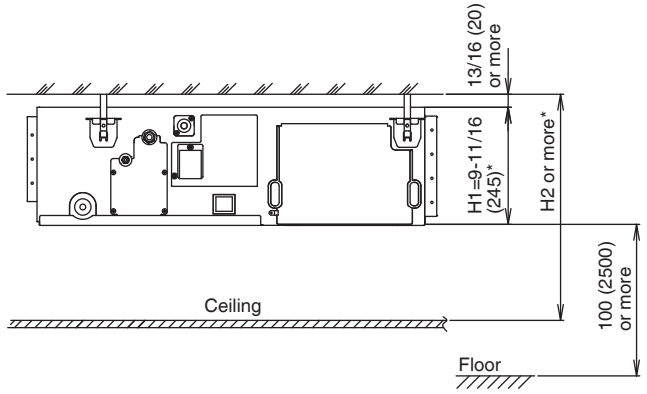


Fig. 2

- * Dimension H1 indicates the unit height.
- * Secure a downward slope of at least 1/100 specified in **7. DRAIN PIPING WORK** and determine dimension H2.

<Failure example>
If there is an obstacle in the airflow path or proper installation space is not provided, the indoor unit will cause air volume reduction and take in air blown out of the indoor unit, thus resulting in performance degradation or turning the thermostat OFF frequently.

⚠ CAUTION

- Install the indoor and outdoor units, power supply wiring, remote controller wiring and transmission wiring at least 3.5 ft. (1 m) away from televisions or radios to prevent image interference or noise.
  (Depending on the radio waves, a distance of 3.5 ft. (1 m) may not be sufficient to eliminate the noise.)
- Install the indoor unit as far as possible from fluorescent lamps.
  If a wireless remote controller kit is installed, the transmission distance may be shorter in a room where an electronic lighting type (inverter or rapid start type) fluorescent lamp is installed.

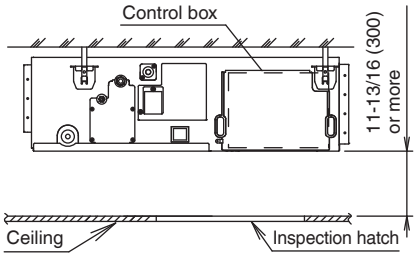
(2) Use suspension bolts for installation.
Investigate if the installation place can withstand the weight of the indoor unit and, if necessary, hang the indoor unit with bolts after it is reinforced by beams etc.

4. PREPARATION BEFORE INSTALLATION

(1) Check the relation of location between the ceiling opening and the indoor unit suspension bolts.

- Provide one of the following service spaces for the maintenance and inspection of the control box and drain pump or for other services.

1. Inspection hatches 1 and 2 17-3/4×17-3/4 in. (450×450 mm) (Fig. 3-1) and a minimum space of 11-13/16 in. (300 mm) at the bottom of the unit (Fig. 3).
2. Inspection hatch 1 17-3/4×17-3/4 in. (450×450 mm) on the control box side and inspection hatch 2 on the bottom of the unit. (Fig. 4, arrow A-1)
3. Inspection hatch 3 on the bottom of the unit and on the bottom side of the control box. (Fig. 4, arrow A-2)



< In the case of (1)-1 >

Fig. 3

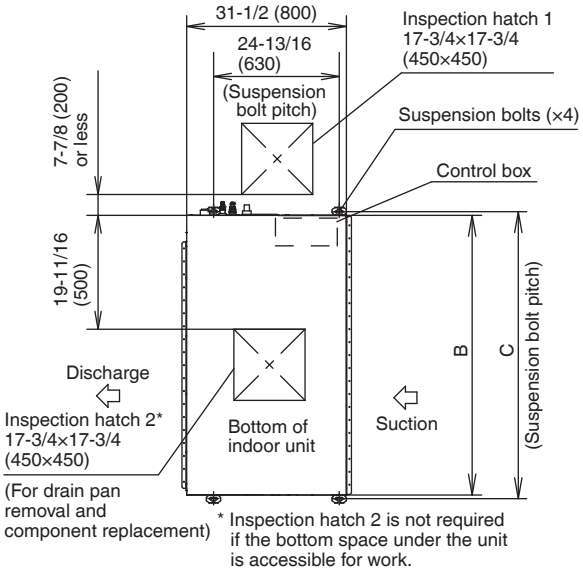


Fig. 3-1

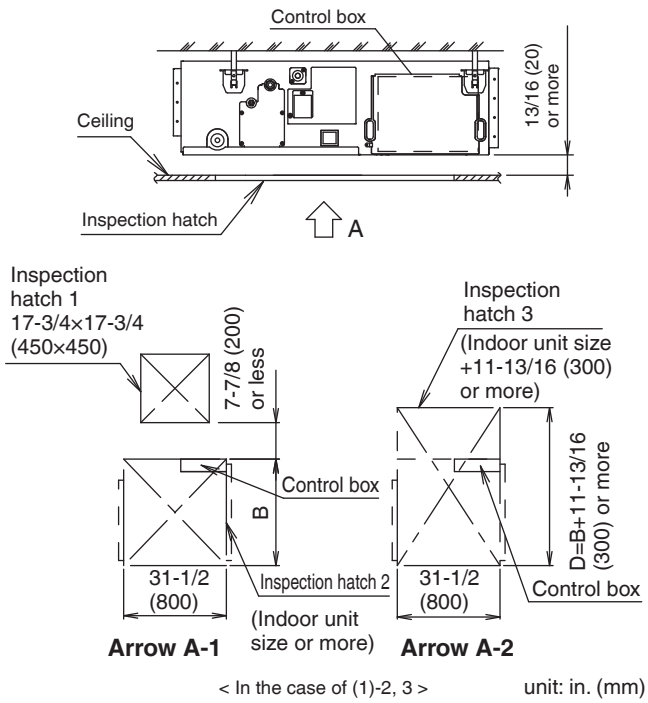


Fig. 4

Table 1 (unit [in. (mm)])

Model	B	C	D
18·24 type	39-3/8 (1000)	40-7/8 (1038)	51-3/16 (1300)
30·36·42·48 type	55-1/8 (1400)	56-5/8 (1438)	66-15/16 (1700)

(2) Mount canvas ducts to the discharge and suction so that the vibration of the indoor unit will not be transmitted to the ducts or ceiling. Furthermore, attach sound absorbing material (thermal insulation material) to the duct inner walls and anti-vibration rubber to the suspension bolts (refer to 8. DUCT WORK).

(3) The indoor unit is set to standard external static pressure.

- If external static pressure is higher or lower than the standard set value, the remote controller may be used to make field setting change in the external static pressure.
  Refer to **10. FIELD SETTING**.

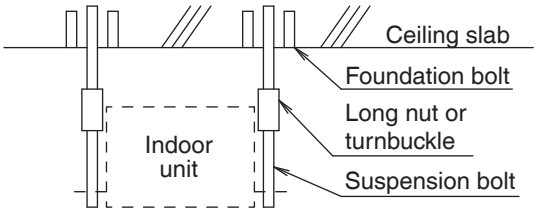
(4) Open installation holes (in the case of installation onto the existing ceiling).

- Open the installation holes on the ceiling of the installation location, and work on the refrigerant piping, drain piping, remote controller wiring (unless a wireless remote controller is used), and wiring between the indoor and outdoor units to the piping connection port and wiring connection port of the indoor unit (refer to each piping and wiring procedure items).
- Ceiling framework reinforcement may be required in order to keep the ceiling horizontal and prevent ceiling vibration after opening the ceiling holes. For details, consult your building and interior work contractors.

(5) Install the suspension bolts.

- Use either a M8-M10 size bolt or equivalent.
  Use hole-in-anchors for the existing bolts and embedded inserts or foundation bolts for new bolts, and fix the indoor unit firmly to the building so that it may withstand the weight of the unit.
  In addition, adjust clearance (2-4 in. (50-100 mm)) from the ceiling in advance.

<Installation examples>



Note) Components shown in the figure above are all local procurement.

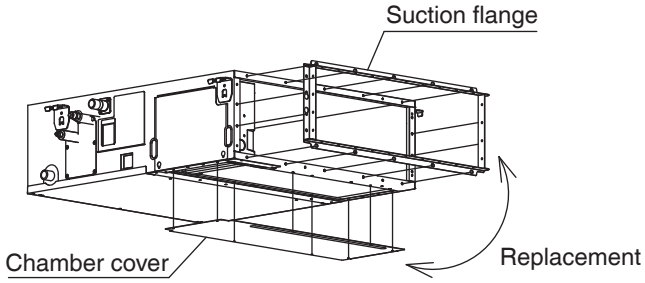
(6) In the case of changing the preset suction to bottom side suction, replace the chamber cover and the suction flange. (Refer to Fig. 5)

1. Remove the suction flange and chamber cover.
2. Replace the suction flange and the chamber cover.

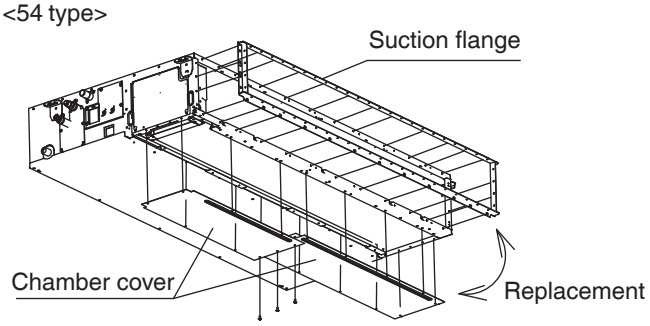
⚠ CAUTION

- Secure a sufficient service space for the drain pan and electrical components before installing the indoor unit.
- Secure a sufficient service space for the filter chamber, and peripheral components before installing the indoor unit.

<05-48 type>



<54 type>



Note)
1. Be sure to remove chamber cover one side by one side.
2. For this model, maintenance of the control box through side is only available.
   Maintenance through bottom is not available.

Fig. 5

5. INSTALLATION OF INDOOR UNIT

Depending on the optional accessories, it may be easier to attach them before installing the indoor unit. Refer to also the installation manual attached to the optional accessories.
For installation, use the attached and specified accessories.

(1) Install the indoor unit temporarily.
- Fix the hanger bracket to the suspension bolt.
  Make sure to securely fix the hanger bracket with the nut and the washer for hanger bracket (11) from the upper and lower side. **(Refer to Fig. 6)**
  If the washer clamp (9) is used, the upper side washer for hanger bracket (11) may be protected from falling off. **(Refer to Fig. 7)**

[Fix the hanger bracket]

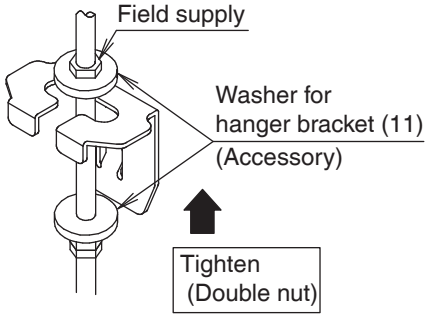


Fig. 6

[Washer fixing]

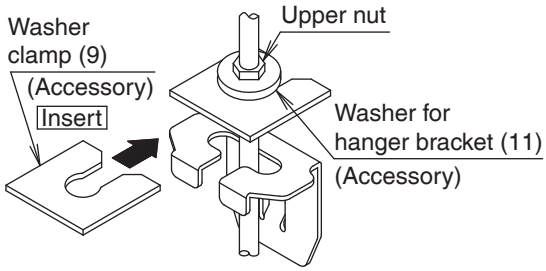


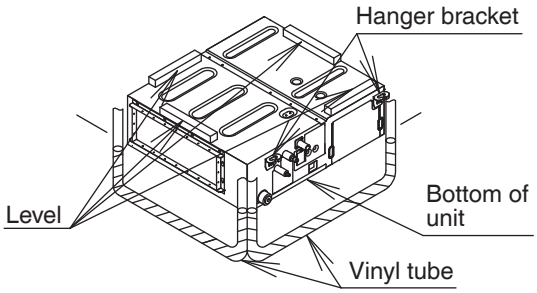
Fig. 7

- Keep the discharge covered with a protective sheet to prevent weld spatter and other foreign materials from entering the indoor unit and damaging the resin drain pan.
  (If holes or cracks are generated in the resin drain pan, water can leak.)

(2) Adjust so that the unit is properly positioned.

(3) Check the level of the unit. **(Refer to Fig. 8)**

(4) Remove the washer clamp (9) used for preventing the washer for hanger bracket (11) from dropping and tighten the upper side nut.



Feed water into the tube and set the indoor unit to the water levels on the left and right.

[Maintaining horizontality]

Fig. 8

⚠ CAUTION

- **Install the indoor unit leveled.**
  If the indoor unit is inclined and the drain piping side gets high, it may cause malfunction of float switch and result in water leakage.
- **Attach nuts on the upper and lower side of hanger bracket.**
  If there is no upper nut and the lower nut is over-tightened, the hanger bracket and the top plate will deform and cause abnormal sound.
- **Do not insert materials other than that specified into the clearance between the hanger bracket and the washer for hanger bracket (11).**
  Unless the washers are properly attached, the suspension bolts may come off from the hanger bracket.

⚠ WARNING

The indoor unit must be securely installed on a place that can withstand the weight.
If the strength is insufficient, the indoor unit may fall down and cause injuries.

6. REFRIGERANT PIPING WORK

- For the outdoor unit refrigerant piping, refer to the installation manual attached to the outdoor unit.
- Carry out insulation of both gas and liquid refrigerant piping securely. If not insulated, it may cause water leakage. For gas piping, use insulation material of which heat resistant temperature is not less than 250°F (120°C).
  For use under high humidity, strengthen the insulation material for refrigerant piping. If not strengthened, the surface of insulation material may sweat.
- Before installation work, make sure that the refrigerant is R410A. (Unless the refrigerant is R410A, the normal operation cannot be expected.)

⚠ CAUTION

This air conditioner is a dedicated model for refrigerant R410A. Make sure to meet the requirements shown below and carry out installation work.

- **Use dedicated piping cutters and flaring tools for R410A.**
- **When making a flare connection, coat the flared inner surface only with ether oil or ester oil.**
- **Use only the flare nuts attached to the air conditioner. If other flare nuts are used, it may cause refrigerant leakage.**
- **To prevent contamination or moisture from getting into the piping, take measures such as pinching or taping the pipings.**

Do not mix substance other than the specified refrigerant such as air into the refrigeration circuit.
If the refrigerant leaks during the work, ventilate the room.

- The refrigerant is pre-charged in the outdoor unit.
- When connecting the pipings to the air conditioner, make sure to use a spanner and a torque wrench as shown in **Fig. 9**.
- For the dimension of flared part and the tightening torque, refer to the Table 2.
- When making a flare connection, coat the flared inner surface only with ether oil or ester oil.
  (Refer to Fig. 10)
  Then, turn the flare nut 3 to 4 times with your hand and screw in the nut.

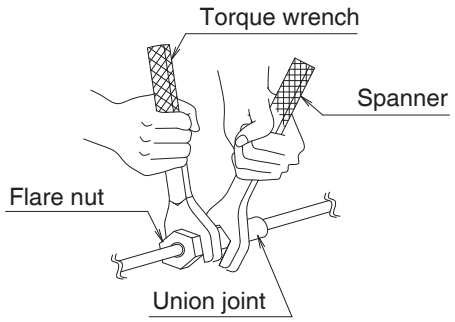


Fig. 9

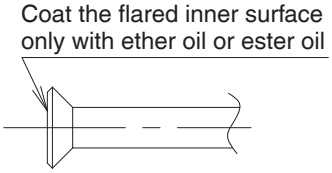
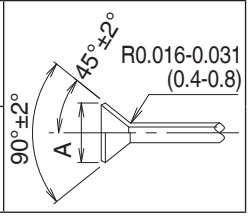


Fig. 10

Table 2

Piping size [in. (mm)]	Tightening torque [lbf·ft. (N·m)]	Dimension for processing flare A [in. (mm)]	Flare shape [in. (mm)]
ϕ 3/8 (9.5)	24.1–29.4 (36.3±3.6)	0.504–0.520 (13.0±0.2)	
ϕ 5/8 (15.9)	45.6–55.6 (68.6±6.8)	0.760–0.776 (19.5±0.2)	

⚠ CAUTION

Do not have oil adhere to the screw fixing part of resin parts.
If oil adheres, it may weaken the strength of screwed part.

Do not tighten flare nuts too tight.
If a flare nut cracks, the refrigerant may leak.

- If there is no torque wrench, use Table 3 as a rule of thumb.
  When tightening a flare nut with a spanner harder and harder, there is a point where the tightening torque suddenly increases.
  From that position, tighten the nut additionally at the angle shown in Table 3.
  After the work is finished, check securely that there is no gas leak.
  If the nut is not tightened as instructed, it may cause slow refrigerant leak and result in malfunction (such as does not cool or heat).

Table 3

Piping size [in. (mm)]	Tightening angle	Recommended arm length of tool used [in. (mm)]
ϕ 3/8 (9.5)	60°–90°	Approx. 8 (200)
ϕ 5/8 (15.9)	30°–60°	Approx. 12 (300)

⚠ CAUTION

Insulation of field piping must be carried out up to the connection inside the casing.
If the piping is exposed to the atmosphere, it may cause sweating, burn due to touching the piping, electric shock or fire due to the wiring touching the piping.

- After leak test, referring to **Fig. 11**, insulate both the gas and liquid piping connection with the attached joint insulating material (4) and (5) to prevent the pipings from getting exposed.
  Then, tighten both the ends of insulating material with the clamp (8).
- Wrap the sealing material (Medium) (7) around the joint insulating material (4) and (5) (flare nut section), both the gas and liquid piping.
- Make sure to bring the seam of joint insulating material (4) and (5) to the top.

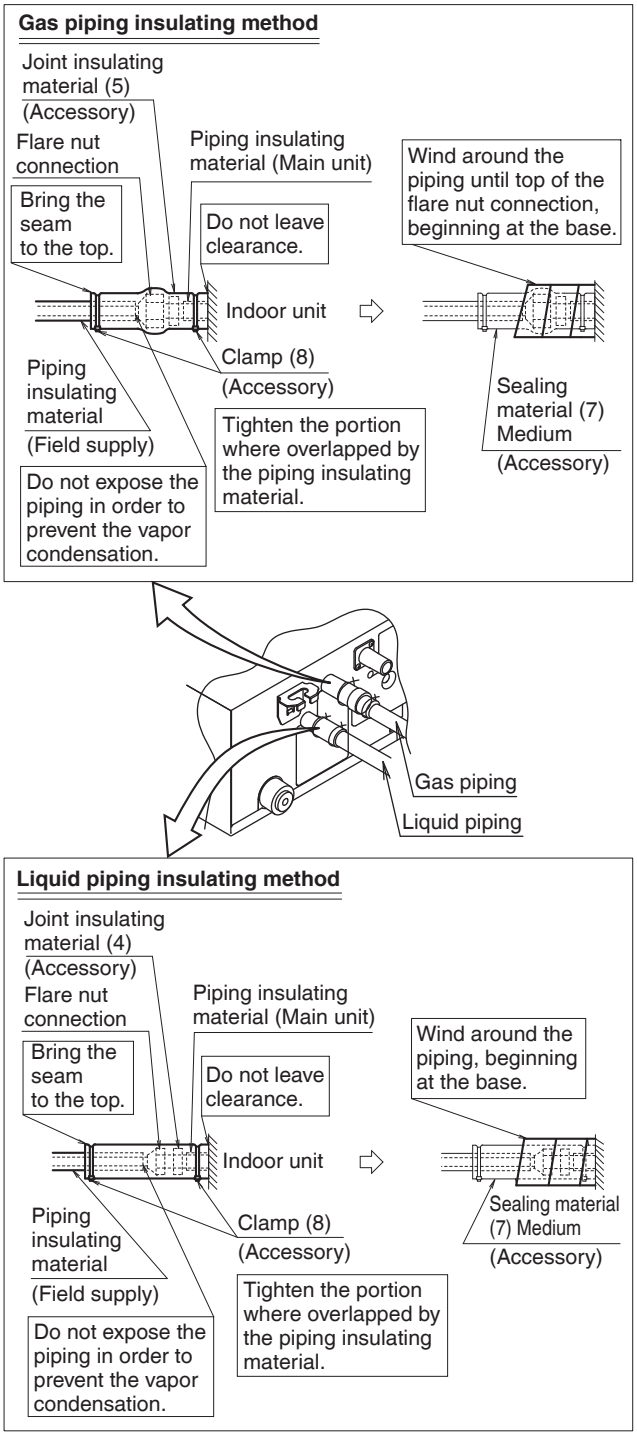


Fig. 11

- Before brazing refrigerant piping, have nitrogen flow through the refrigerant piping and substitute air with nitrogen (NOTE 1) **(Refer to Fig. 12)**. Then, carry out brazing (NOTE 2).
  After all the brazing works are finished, carry out flare connection with the indoor unit. **(Refer to Fig. 11)**

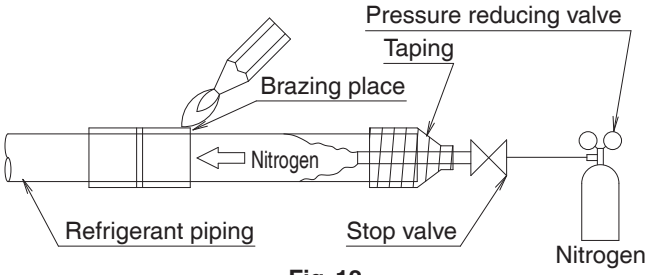


Fig. 12

NOTE

1. The proper pressure for having nitrogen flow through the piping is approximately 2.9 psi (0.02 MPa) , a pressure that makes one feel like slight breeze and can be obtained through a pressure reducing valve.
2. Do not use flux when brazing refrigerant piping.
   Use phosphor copper brazing filler metal (BCuP-2/ B-Cu93P-710/795: ISO 3677) that does not require flux.
   (If chlorinated flux is used, the piping will be corroded and, in addition if fluorine is contained, the refrigerant oil will be deteriorated and the refrigerant circuit will be affected badly.)
3. When carrying out air tight test of refrigerant piping and the indoor unit after the installation of indoor unit is finished, confirm the connecting outdoor unit installation manual for test pressure.
   Refer to also the outdoor unit installation manual or technical document for refrigerant piping.
4. In case of refrigerant shortage due to forgetting additional refrigerant charge etc., it will result in malfunction such as does not cool or does not heat.
   Refer to the outdoor unit installation manual or technical document for refrigerant piping.

⚠ CAUTION

Do not use antioxidant when brazing piping.
It may result in malfunction of components and clogging of piping due to residue.

7. DRAIN PIPING WORK

(1) Carry out drain piping.

Carry out drain piping so that drainage is ensured.

- Select the piping diameter equal to or larger than (except for riser) that of the connection piping (polyvinyl chloride piping, nominal diameter 13/16 in. (25 mm), outside diameter 1-1/4 in. (32 mm)).
- Install the drain piping as short as possible with downward inclination of 1/100 or more and without such that air may not stagnate. **(Refer to Fig. 13)** (It may cause abnormal sound such as bubbling noise.)

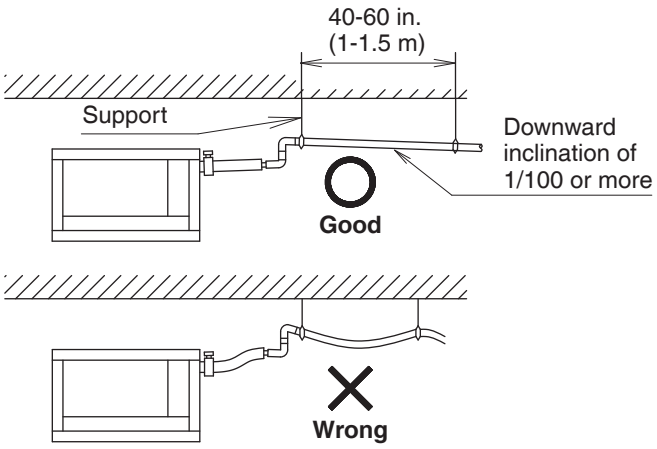


Fig. 13

⚠ CAUTION

If drain stagnates in the drain piping, the piping may be clogged.

- If sufficient downward inclination cannot be ensured, carry out upward drain piping.
- Install supports at a distance of 40-60 in. (1 to 1.5 m) so that the piping may not deflect. **(Refer to Fig. 13)**
- Make sure to use the attached drain hose (2) and the metal clamp (1).
  Insert the drain hose (2) into the drain socket up to the point where the socket diameter becomes larger.
  Put the metal clamp (1) to the taped hose end and tighten the metal clamp (1) with torque 0.9-1.1 lbf·ft. (1.2-1.5 N·m).

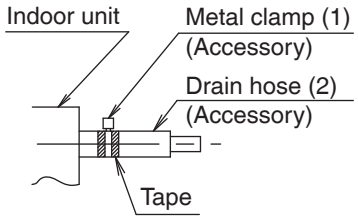


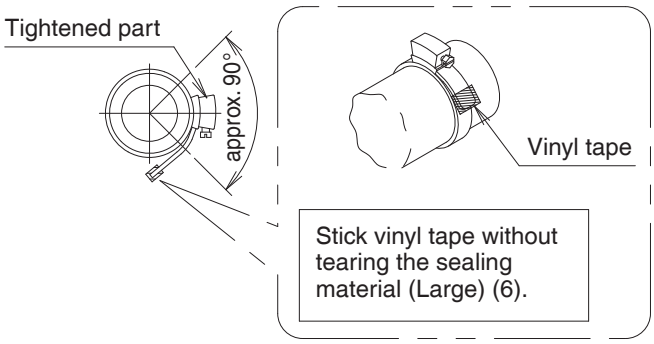
Fig. 14

⚠ CAUTION

- Do not tighten the metal clamp (1) with the torque more than the specified value.
  The drain hose (2), the socket or the metal clamp (1) may be damaged.

- Wrap the vinyl tape around the end of the metal clamp (1) so that the sealing material (Large) (6) to be used at the next process may not be damaged with the clamp end or bend the tip of the metal clamp (1) inward as shown. **(Refer to Fig. 15)**

<In case of sticking vinyl tape>



<In case of bending the tip>

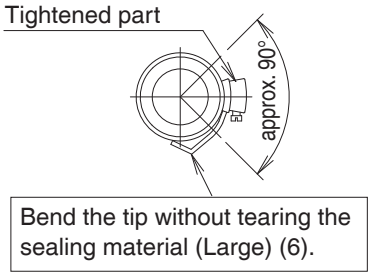


Fig. 15

< Caution to be taken when carrying out upward drain piping (Refer to Fig. 16) >

- The maximum height of the drain riser is 26-9/16 in. (675 mm). Since the drain pump mounted on this indoor unit is a high head type, from the characteristic point of view, the higher the drain riser the lower the draining noise.
  Therefore, the drain riser of 11-13/16 in. (300 mm) or higher is recommended.
- For upward drain piping, keep the horizontal piping distance of 11-13/16 in. (300 mm) or less between the drain socket root to the drain riser.

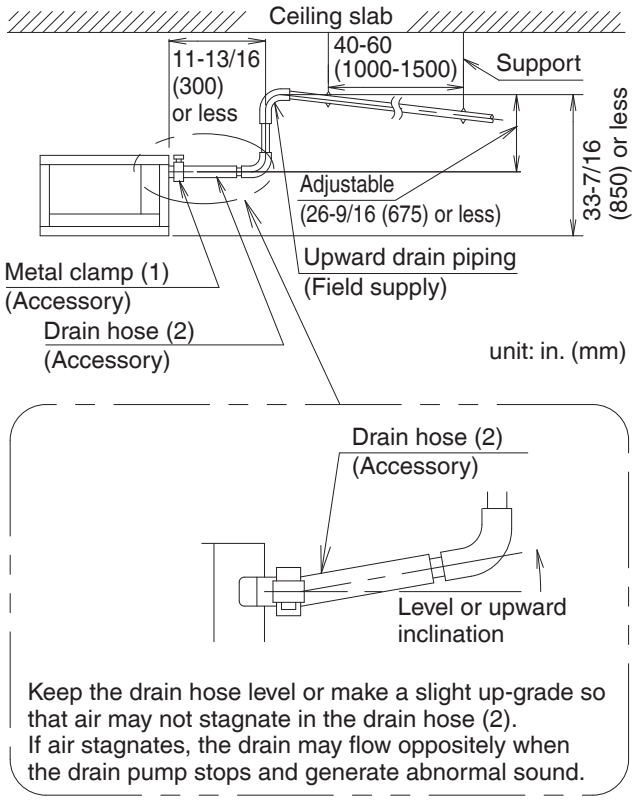


Fig. 16

⚠ CAUTION

- To avoid the attached drain hose (2) getting excessive force, do not bend nor twist it.
  It may cause water leakage.
- As for drain piping connection, do not connect the drain hose directly to a sewage that gives off ammonia odor. (The ammonia in the sewage may go through the drain piping and corrode the heat exchanger of the indoor unit.)
- In case of centralized drain piping, carry out piping work according to the procedure shown in the following **Fig. 17**.

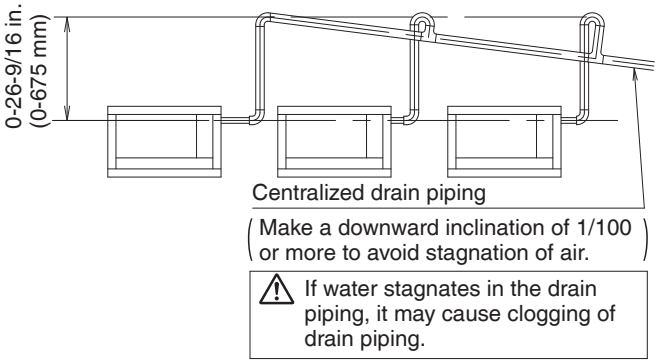


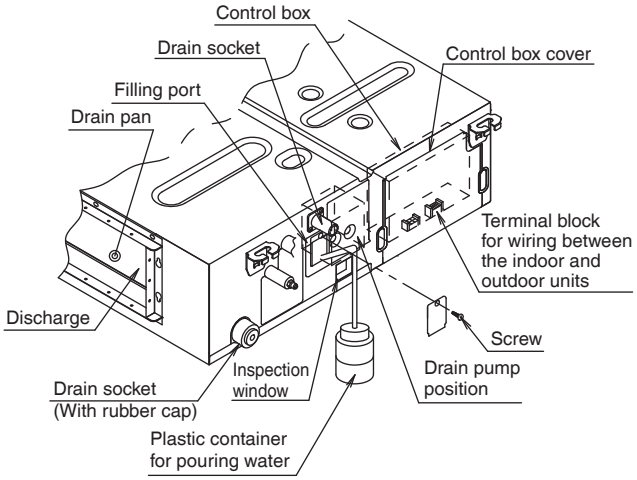
Fig. 17

- As for the size of centralized drain piping, select the size that meets the capacity of indoor units to be connected. (Refer to the technical document.)
- Positioning the upward drain piping at an angle may cause float switch malfunction and lead to water leakage.
- While replacing with new indoor unit, use the attached new drain hose (2) and the metal clamp (1).
  If an old drain hose or a metal clamp is used, it may cause water leakage.

(2) After piping is finished, check if the drain flows smoothly.

[When the electric wiring work is finished]

- Gradually pour 1/4 gal. (1 ℓ) of water from the filling port at the bottom of the drain socket or the discharge into the drain pan, and be careful spraying water to the electric components such as drain pump and confirm drainage by operating the indoor unit under cooling mode according to **10. FIELD SETTING**. **(Refer to Fig. 18)**



[Method of adding water]

Fig. 18

[When the electric wiring work is not finished]

- The electric wiring works (including grounding) must be carried out by a qualified electrician.
- If a qualified person is not present, after the electric wiring work is finished, check the drainage according to the method specified in **[When the electric wiring work is finished]**.

1. Open the control box cover and connect the single phase 208/230 V power supply to the terminal (L1, L2) on the terminal block (X1M).
Connect the ground wiring to the ground terminal.

2. Make sure the control box cover is closed before turning on the power supply.
- Throughout the whole process, carry out the work giving caution to the wiring around the control box so that the connectors may not come off.

3. Gradually pour 1/4 gal. (1 ℓ) of water from the discharge into the drain pan, and be careful spraying water to the electric components such as drain pump. **(Refer to Fig. 18)**

4. When the power supply is turned on, the drain pump will operate. Drainage can be checked at the transparent part of the drain socket.
(The drain pump will automatically stop after 10 minutes.)
The drainage of water can be confirmed with water level change in the drain pan through the access window.
- Do not connect the drain piping directly to the sewage that gives off ammonia odor.
The ammonia in the sewage may go through the drain piping and corrode the heat exchanger of the indoor unit.
- Do not apply external force to the float switch. (It may result in malfunction)
- Do not touch the drain pump.
Touching the drain pump may cause electric shock.

5. Turn off the power supply after checking drainage, and remove the power supply wiring.

6. Attach the control box cover as before.

(3) Sweating may occur and result in water leakage. Therefore, make sure to insulate the following 2 locations (drain piping that laid indoors and drain sockets).

- Use the provided sealing material (Large) (6), and perform the thermal insulation of the metal clamp (1) and drain hose (2) after checking the drainage of water. **(Refer to Fig. 19)**

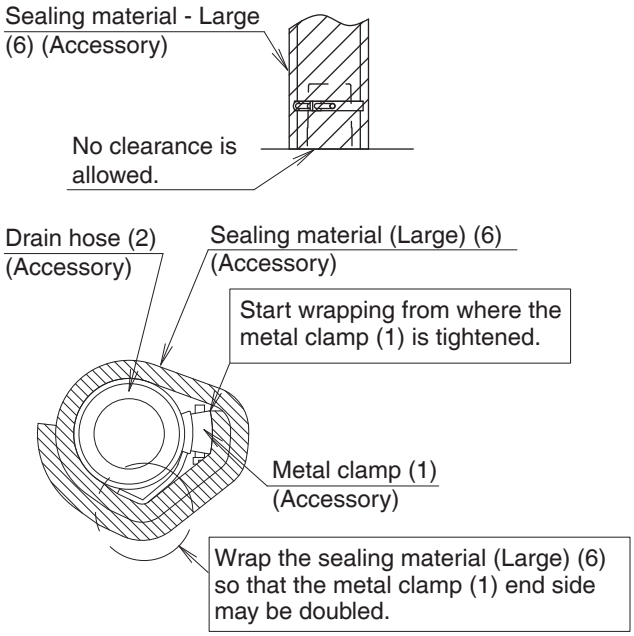


Fig. 19

8. DUCT WORK

Pay the utmost attention to the following items and conduct the duct work.

- Check that the duct is not in excess of the setting range of external static pressure for the unit. (Refer to the technical datasheet for the setting range.)
- Attach a canvas duct each to the discharge and suction so that the vibration of the equipment will not be transmitted to the duct or ceiling.
  Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the suspension bolts.
- At the time of duct welding, perform the curing of the duct so that the sputter will not come in contact with the drain pan for the filter.
- If the metal duct passes through a metal lath, wire lath, or plate of a wooden structure, separate the duct and wall electrically.
- Be sure to heat insulate the duct for the prevention of dew condensation. (Material: Glass wool or styrene foam; Thickness: 31/32 in. (25 mm))
- Be sure to attach the field supply air filter to the suction of the unit or field supply suction in the air passage on the suction side. (Be sure to select an air filter with a dust collection efficiency of 50 weight percent.)
- Explain the operation and washing methods of the locally procured components (i.e., the air filter, suction grille, and discharge grille) to the customer.
- Locate the discharge grille on the indoor side for the prevention of drafts in a position where indirect contact with people.
- The air conditioner incorporates a function to adjust the fan to rated speed automatically. **(10. FIELD SETTING)**
  Therefore, do not use booster fans midway in the duct.

Connection method of ducts on suction and outlet sides.

- Connect the field supply duct in alignment with the inner side of the flange.
- Connect the flange and unit with the flange connection screw (3).
- Wrap aluminum tape around the flange and duct joint in order to prevent air leakage.

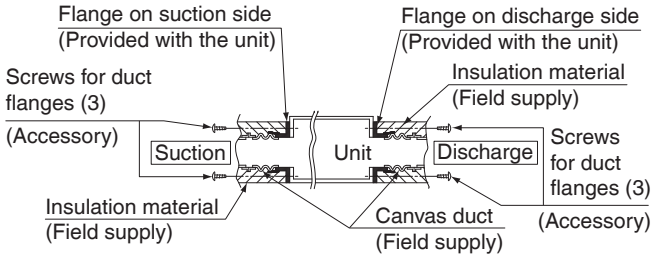


Fig. 20

⚠ CAUTION

Connect the flange and unit with the flange connection screw (3) regardless of whether the duct is connected to the suction side.

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- Make certain that all electric wiring work is carried out by qualified personnel according to the applicable legislation and this installation manual, using a separate dedicated circuit.
  Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shock or fire.
- Make sure to install a ground leakage breaker.
  Failure to do so may cause electric shock and fire.
- Do not turn on the power supply (branch switch, branch overcurrent circuit breaker) until all the works are finished.
- Make sure to ground the air conditioner.
  Grounding resistance should be according to applicable legislation.
- Do not connect the ground wiring to gas or water pipings, lightning conductor or telephone ground wiring.
  - Gas piping .....Ignition or explosion may occur if the gas leaks.
  - Water piping.....Hard vinyl tubes are not effective grounds.
  - Lightning conductor or telephone ground wiring .....
    Electric potential may rise abnormally if struck by a lightning bolt.
- For electric wiring work, refer to also the “WIRING DIAGRAM” attached to the control box cover.
- Carry out wiring between the outdoor units, indoor units and the remote controllers according to the wiring diagram.
- Carry out installation and wiring of the remote controller according to the “installation manual” attached to the remote controller.
- Do not touch the Printed Circuit Board assembly. It may cause malfunction.

9-2 ELECTRICAL CHARACTERISTICS

Table 4

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MOP	HP	FLA
FBQ18TBVJU	60	208/230	MAX. 253V MIN. 187V	1.9	15	0.31 (230)	1.5
FBQ24TBVJU				1.9	15	0.31 (230)	1.5
FBQ30TBVJU				3.0	15	0.49 (364)	2.4
FBQ36TBVJU				3.1	15	0.49 (364)	2.5
FBQ42TBVJU				3.6	15	0.49 (364)	2.9
FBQ48TBVJU				3.6	15	0.49 (364)	2.9

MCA: Minimum Circuit Ampacity (A);
MOP: Maximum Overcurrent Protective Device (A)
HP: Fan Motor Rated Output (Hp (W));
FLA: Full Load Ampere (A)

9-3 SPECIFICATION FOR FIELD SUPPLY FUSES AND WIRING

Table 5

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	MOP	Size	Wiring	Size
FBQ18TBVJU	15A	Wiring size and length must comply with local codes.	2-conductor, stranded nonshielded copper cable PVC/vinyl jacket (NOTE 1)	AWG18-16 (0.75-1.25 mm^2)
FBQ24TBVJU				
FBQ30TBVJU				
FBQ36TBVJU				
FBQ42TBVJU				
FBQ48TBVJU				

The lengths of remote controller wiring and transmission wiring are as follows:

(1) Remote controller wiring (indoor unit - remote controller) .....Max. 1,640 ft. (500 m)

(2) Transmission wiring Outdoor unit - Indoor unit .....Max. 3,280 ft. (1,000 m)

NOTE

1. Vinyl cord with sheath or cable (Insulated thickness : 1/16 in. (1 mm) or more)

9-4 WIRING CONNECTION METHOD

⚠ CAUTION FOR WIRING

- For connection to the terminal block, use ring type crimp style terminals with insulation sleeve or insulate the wirings properly.

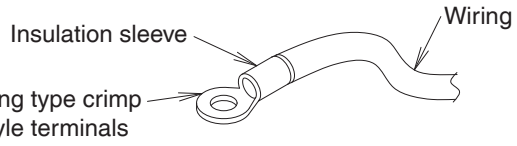


Fig. 21

- Connect the terminal as shown in Fig. 22.
- Do not carry out soldering finish when stranded wires are used. (Otherwise, the loosening of wires may result in abnormal heat radiation.)

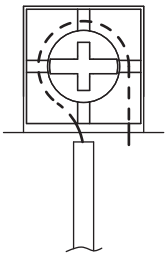


Fig. 22

(Abnormal heating may occur if the wirings are not tightened securely.)

- Use the required wirings, connect them securely and fix these wirings securely so that external force may not apply to the terminals.
- Use a proper screw driver for tightening the terminal screws.
  If an improper screw driver is used, it may damage the screw head and a proper tightening cannot be carried out.
- If a terminal is over tightened, it may be damaged.
  Refer to the table shown below for tightening torque of terminals.

Table 6

	Tightening torque [lbf·ft. (N·m)]
Terminal for remote controller and transmission wirings	0.65 ± 0.07 (0.88 ± 0.08)
Terminal for power supply	1.08 ± 0.10 (1.47 ± 0.14)
Ground terminal	

- Do not carry out soldering finish when stranded wirings are used.

⚠ WARNING

- When wiring, form the wirings orderly so that the control box cover can be securely fastened. If the control box cover is not in place, the wirings may come out or be sandwiched by the box and the cover and cause electric shock or fire.

(1) Remove the control box cover.

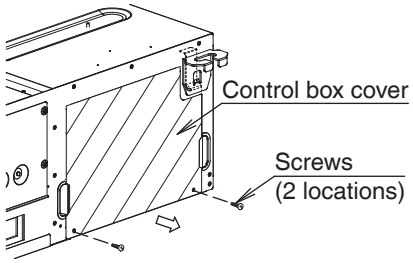


Fig. 23

(2) Attach the conduit to the conduit mounting plate (12).

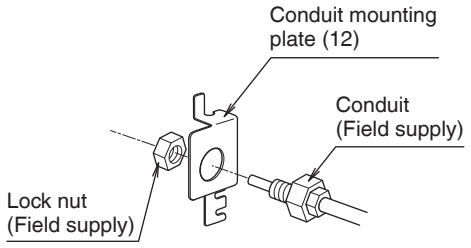


Fig. 24-1

- Attach the wire sealing material (small) (10) to the conduit, the power supply wiring and the ground wiring.

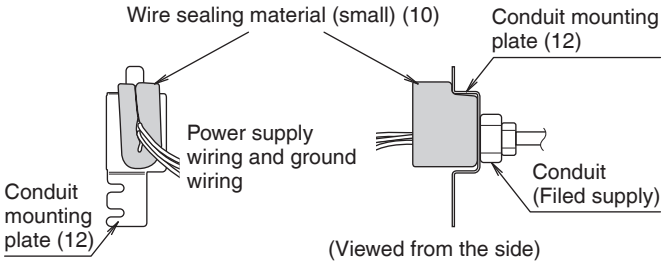


Fig. 24-2

- Loosen the screws (2 locations) in part A.

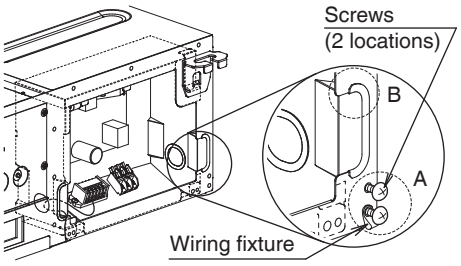


Fig. 24-3

- Insert the hook part of the conduit mounting plate (12) into part B and secure the conduit mounting plate (12) with the screws loosened (2 locations).

NOTE

1. Remove the wiring fixture if you have difficulty in performing this step.

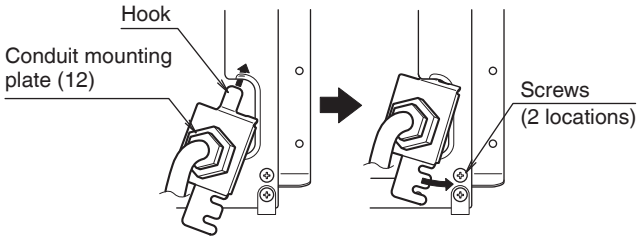


Fig. 24-4

(3) Connect the wiring into the control box through the wiring intake beside the control box.

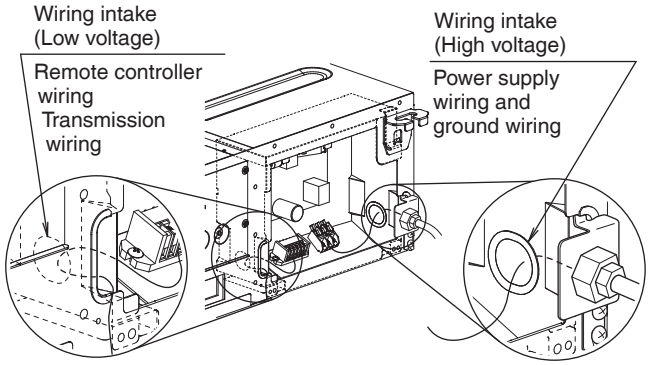


Fig. 25

(4) Follow the instructions below and perform wiring in the control box.

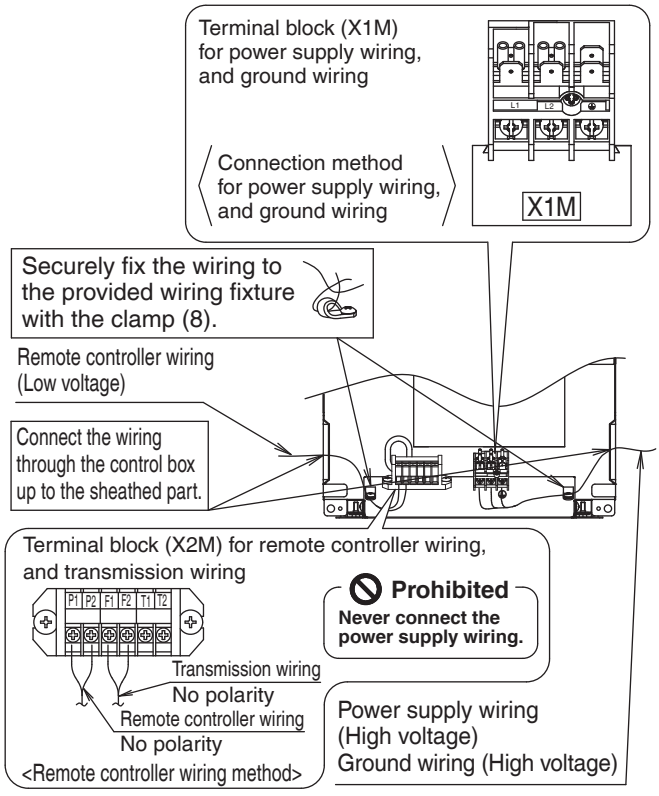


Fig. 26

NOTE

1. Secure the wiring between the wiring intake and conduit with the clamp (8) so that the wiring will not become loose.

(5) Mount the control box cover and wrap the wire sealing material (small) (10) so that the wiring through hole will be covered by the sealing material.

- Seal the clearance around the wirings with putty or insulating material (Field supply).
  (If insects and small animals get into the indoor unit, short-circuiting may occur inside the control box.)

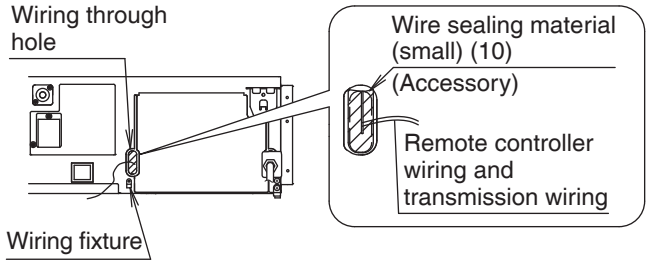


Fig. 27

(6) Securely fix each wire with the provided clamp material (8).

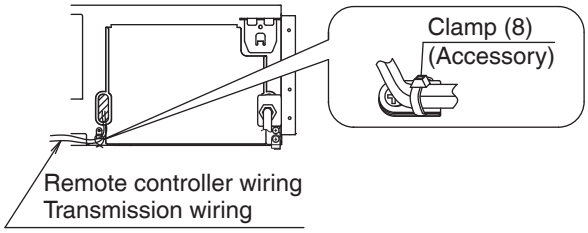
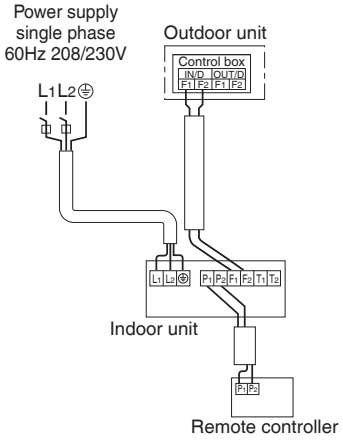


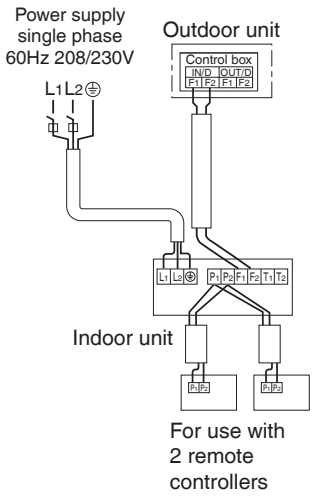
Fig. 28

9-5 WIRING EXAMPLE

< No. 1 system: When using 1 remote controller (Normal operation) >



< No. 2 system: When using 2 remote controllers >



NOTE

1. Remote controller wiring and transmission wiring have no polarity.

9-6 FOR CONTROL WITH 2 REMOTE CONTROLLERS (TO CONTROL 1 INDOOR UNIT WITH 2 REMOTE CONTROLLERS)

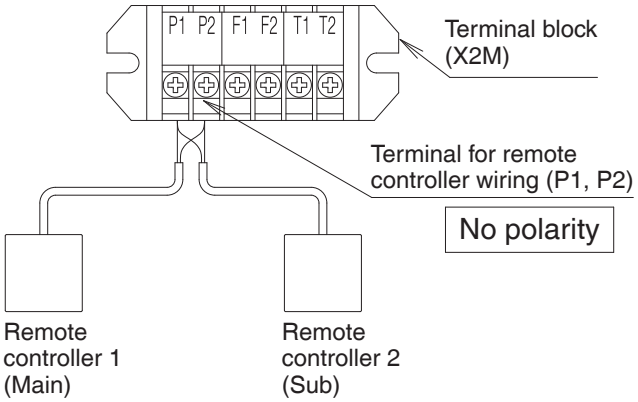
- For control with 2 remote controllers, set one remote controller as Main and the other remote controller as Sub.

  < Changeover method from Main to Sub and vice versa >
  Refer to the installation manual attached to the remote controller.

  < Wiring method >

  (1) Remove the control box cover.

  (2) Carry out additional wiring from the remote controller 2 (Sub) to the terminals (P1, P2) for remote controller wiring on the terminal block (X2M) in the control box.



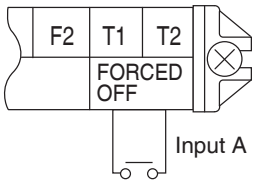
9-7 FOR CENTRALIZED CONTROL

- When centralized equipment (such as centralized controller) is used for control, it is required to set the group No. on the remote controller.
  For details, refer to the manuals attached to the centralized equipment.
- Connect the centralized equipment to the indoor unit connected to the remote controller.

9-8 FOR REMOTE CONTROL (FORCED OFF OR ON / OFF OPERATION)

(1) Wiring method and specification

- Remote control is available by connecting the external input to the terminal T1 and T2 on the terminal block for remote controller and transmission wiring (X2M).



Wiring specification	Sheathed vinyl cord or 2 core cable
Wiring size	AWG 18-16 (0.75-1.25 mm^2)
Wiring length	Max. 328 ft. (100 m)
External contact spec	Contact that can make and break the min. load of DC 15 V · 1 mA

(2) Actuation

- Input A of FORCED OFF and ON/OFF OPERATION will be as the table shown below.

	Input A = ON	Input A = OFF
In case of FORCED OFF	Remote controller prohibited	Remote controller permitted
In case of ON/OFF OPERATION	Operation	Stop

(3) How to choose FORCED OFF or ON/OFF OPERATION

- For choosing FORCED OFF or ON/OFF OPERATION, setting by remote controller is required.
  (Refer to **10. FIELD SETTING**)

10. FIELD SETTING

⚠ CAUTION

Before carrying out field setting, check the items mentioned in **(1) Items to be checked after the installation work is completed** on page 3.

- Check if all the installation and piping works for the air conditioner are completed.
- Check that the outside panel and piping cover of the indoor and outdoor units are closed.

< FIELD SETTING >

After turning on the power supply, carry out field setting from the remote controller according to the installation state.

- Carry out setting at 3 places, “Mode No.”, “FIRST CODE No.” and “SECOND CODE No.”.
  The settings shown by ▭ in the following tables indicate those when shipped from the factory.
- The method of setting procedure and operation is shown in the installation manual attached to the remote controller.
- Ask your customer to keep the manual attached to the remote controller together with the operation manual.
- Do not carry out settings other than those shown in the table.
- Settings are performed by selecting “Mode No.”, “FIRST CODE No.”, and “SECOND CODE No.”.

10-1 Settings for external static pressure

- Make settings in either method (a) or method (b).

(a) Make settings with Air volume automatic adjustment function.

"Air volume automatic adjustment" function: The air volume is adjusted to the rated air volume automatically.

⚠ CAUTION

- Be sure to check that the external static pressure is within the specification range before making settings. The external static pressure will not be automatically adjusted and air volume insufficiency or water leakage may result if the external static pressure is outside the range. (Refer to the technical document for the setting range of external static pressure.)

(1) Check that the electrical wiring and duct work have been completed.
(If the closing damper is set midway, be sure to check that the damper is opened. Furthermore, check that the air passage on the suction side is provided with an air filter (field supply)).

(2) If air conditioner has more than one discharge and suction, be sure to make adjustments so that the air volume ratio of each discharge and the corresponding suction will conform to the designed air volume ratio.
In that case, set the operating mode to "Fan". (In the case of changing the air volume, press the fan speed button on the remote controller and change the current selection to "High", "Medium", or "Low".)

(3) Make settings to adjust the air volume automatically.
After setting the operating mode to "Fan", set the air conditioner to field setting mode with the operation of the air conditioner stopped. Select Mode No. [21], select FIRST CODE No. "7", and set the SECOND CODE No. to "03".
Return to the "Basic screen" ("Normal mode" if a wireless remote controller is used), and press the ON/OFF button. The operation lamp is lit, and the indoor unit will go into fan operation for air volume automatic adjustments (at which time, do not adjust the opening of the discharge or suction). The air volume adjustments will automatically terminate approximately 1 to 15 minutes after the indoor unit comes into operation, and the operation lamp will be OFF and the indoor unit will come to a stop.

Table 7

Mode No.	FIRST CODE No.	Setting content	SECOND CODE No.		
			01	02	03
21	7	Air volume adjustment	OFF	Air volume adjustment completion	Air volume adjustment start

(4) After the air conditioner comes to a stop, be sure to check with Mode No. [21] per indoor unit that the above SECOND CODE No. is "02". If the operation of the air conditioner does not stop automatically or the SECOND CODE No. is not set to "02", repeat the setting procedure from (3).

⚠ CAUTION

- If airflow pathway changes, such as duct and discharge changes, are made after air volume adjustments, be sure to make "Air volume automatic adjustment" again.
- If airflow pathway changes, such as duct and discharge changes, are made after **11. TEST OPERATION** or air conditioner relocation, contact your dealer.

(b) Select external static pressure with the remote controller.

Check with Mode No. [21] per indoor unit that the SECOND CODE No. for the above "Air volume adjustment" is set to "01" (OFF). (The SECOND CODE No. is factory set to "01" (OFF).)
Change the SECOND CODE No. by referring to the table below according to the external static pressure of the duct to be connected.

Table 8

External static pressure	Mode No.	FIRST CODE No.	SECOND CODE No.
0.20 inWG (50 Pa)	23	6	02
0.24 inWG (60 Pa)			03
0.28 inWG (70 Pa)			04
0.32 inWG (80 Pa)			05
0.36 inWG (90 Pa)			06
0.40 inWG (100 Pa)			07
0.44 inWG (110 Pa)			08
0.48 inWG (120 Pa)			09
0.52 inWG (130 Pa)			10
0.56 inWG (140 Pa)			11
0.60 inWG (150 Pa)			12
0.64 inWG (160 Pa)			13
0.72 inWG (180 Pa)			14
0.80 inWG (200 Pa)			15

10-2 SETTING WHEN AN OPTIONAL ACCESSORY IS ATTACHED

- For setting when attaching an optional accessory, refer to the installation manual attached to the optional accessory.

10-3 SETTING FAN SPEED DURING THERMOSTAT OFF

- Set the fan speed according to the using environment after consultation with your customer.
- When the fan speed is changed, explain the set fan speed to your customer.

Table 9

Setting		Mode No.	FIRST CODE No.	SECOND CODE No.
Fan speed during cooling thermostat OFF	LL (Extra low)	22	6	01
	Setting			02
Fan speed during heating thermostat OFF	LL (Extra low)	22	3	01
	Setting			02

10-4 SETTING FILTER SIGN

- A message to inform the air filter cleaning time will be indicated on the remote controller.
- Set the SECOND CODE No. shown in the Table 10 according to the amount of dust or pollution in the room.
- The periodical filter cleaning time can be shortened depending on the environment.

Table 10

Dust level	Hours until indication	Mode No.	FIRST CODE No.	SECOND CODE No.
Normal	Approx. 2500 hrs	20	0	01
More contaminated	Approx. 1250 hrs			02
With indication			3	01
No indication*				02

* Use “No indication” setting when cleaning indication is not necessary such as the case of periodical cleaning being carried out.

10-5 SETTING THERMOSTAT DIFFERENTIAL

- For setting when remote sensor is used, change over thermostat differential.

Table 11

Differential	Mode No.	FIRST CODE No.	SECOND CODE No.
1.8°F (1°C)	22	2	01
0.9°F (0.5°C)			02

10-6 SETTING DRY MODE SET TEMPERATURE

- For changing dry mode set temperature.

Table 12

Setting	Mode No.	FIRST CODE No.	SECOND CODE No.
Room temperature	21	12	01
Same as cooling mode set temperature			02

11. TEST OPERATION

- After cleaning the indoor unit inside, carry out test operation according to installation manual attached to the outdoor unit.
- When the remote controller operation lamp flashes, it shows that something is abnormal.
  Check the malfunction codes on the remote controller.
  The relation between the malfunction codes and malfunction details is described in the operation manual attached to the outdoor unit.
  Particularly, if the indication is one of those shown in the Table 13, it may be an error in the electrical wiring or the power supply is disconnected. Therefore, recheck wiring.

Table 13

Remote controller indication	Details
Though the centralized control is not carried out, the indicating the central control turns on.	• The terminals (T1 · T2) for FORCED OFF on the indoor unit transmission terminal block is short circuited.
“U4” turns on “UH” turns on	• The power supply to the outdoor unit is not connected. • The power supply wiring to the outdoor unit is not carried out. • The transmission wiring and the remote controller wiring and FORCED OFF wiring are connected wrongly. • The transmission wiring is disconnected.
No indication	• The power supply to the indoor unit is not connected. • The power supply wiring to the indoor unit is not carried out. • The remote controller wiring and the transmission wiring and FORCED OFF wiring are connected wrongly. • The remote controller wiring is disconnected.

⚠ CAUTION

After test operation is completed, check the items mentioned in **2. BEFORE INSTALLATION (2) Items to be checked at delivery** on page 4.
If the interior finish work is not completed when the test operation is finished, for protection of the air conditioner, ask the customer not operate the air conditioner until the interior finish work is completed.
If the air conditioner is operated, the inside of the indoor units may be polluted by substances generated from the coating and adhesives used for the interior finish work and cause water splash and leakage.

⚠ To the operator carrying out test operation

After test operation is completed, before delivering the air conditioner to the customer, confirm that the control box cover, the air filter and suction grille are attached.
In addition, explain the power supply status (power supply ON/OFF) to the customer.

DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P.

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3P493125-7F EM21A037A [2209] HT

DAIKIN

AIR INTELLIGENCE

INSTALLATION MANUAL

SPLIT SYSTEM Air Conditioners

English

Français

Español

MODEL

RZQ18TBVJUA	**RZR18TBVJUA**
RZQ24TBVJUA	**RZR24TBVJUA**
RZQ30TBVJUA	**RZR30TBVJUA**
RZQ36TBVJUA	**RZR36TBVJUA**
RZQ42TBVJUA	**RZR42TBVJUA**
RZQ48TBVJUA	**RZR48TBVJUA**

Outdoor Unit

Read these instructions carefully before installation.
Keep this manual in a handy place for future reference.
This manual should be left with the equipment owner.

Lire soigneusement ces instructions avant l'installation.
Conserver ce manuel à portée de main pour référence ultérieure.
Ce manuel doit être donné au propriétaire de l'équipement.

Lea cuidadosamente estas instrucciones antes de instalar.
Guarde este manual en un lugar a mano para leer en caso de tener alguna duda.
Este manual debe permanecer con el propietario del equipo.

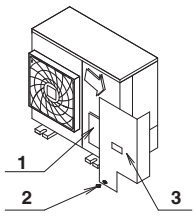
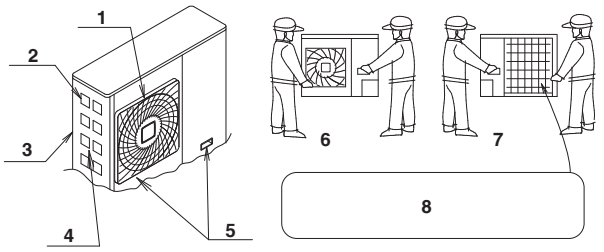


figure 1



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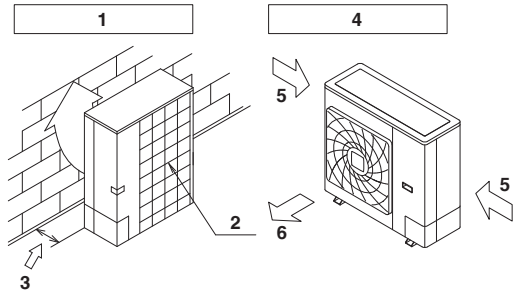

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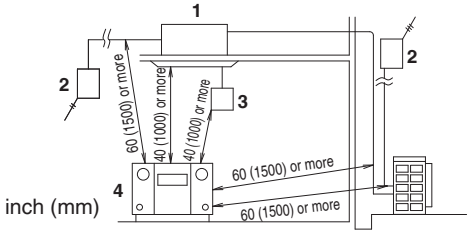

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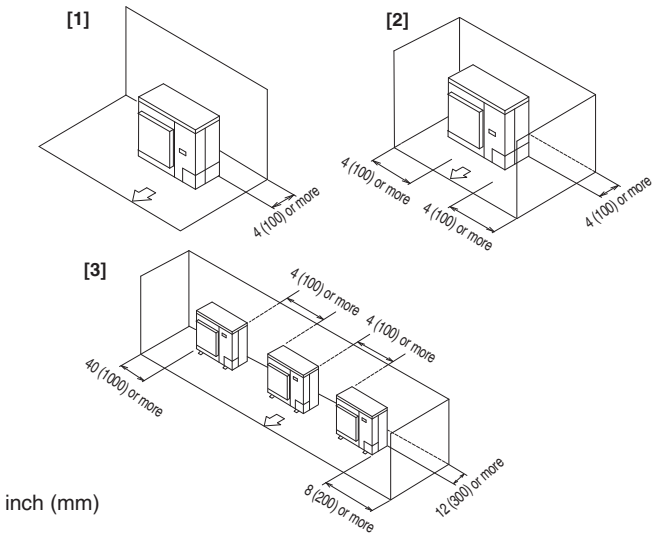

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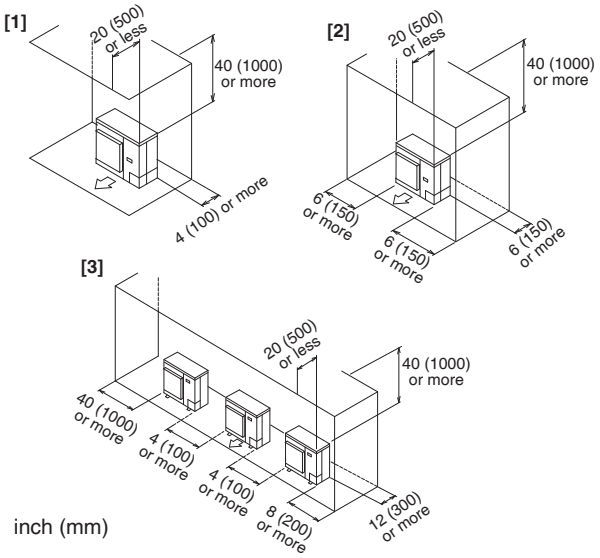

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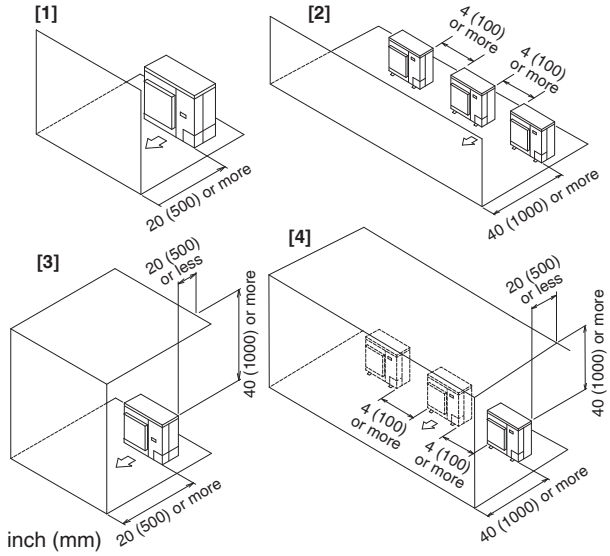

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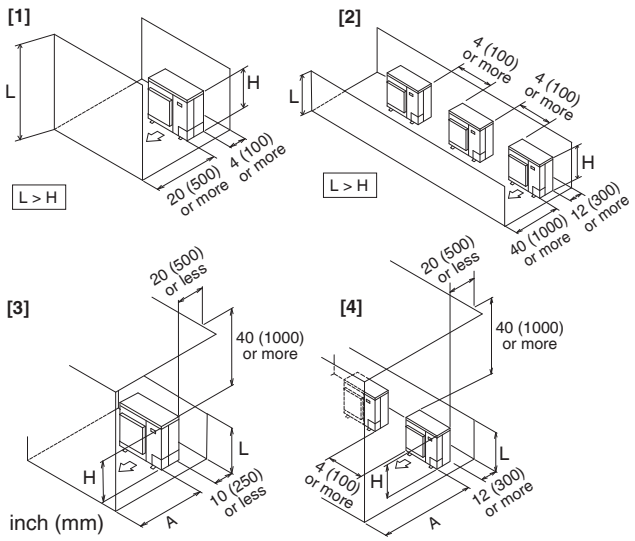

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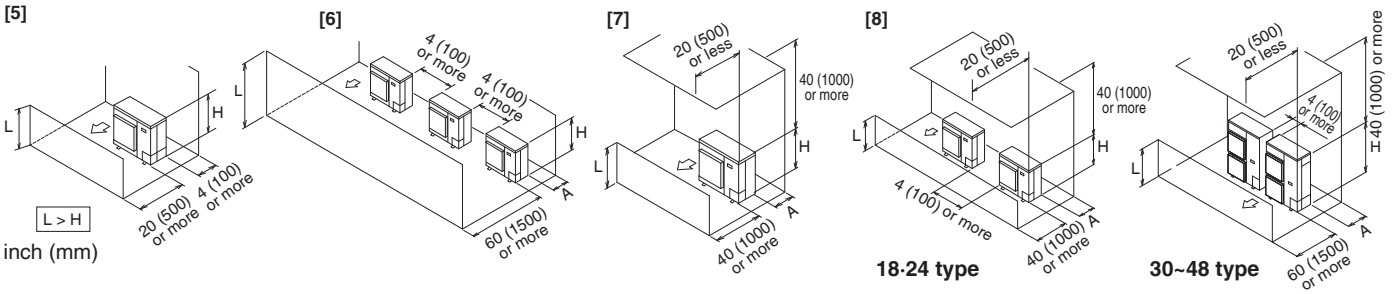

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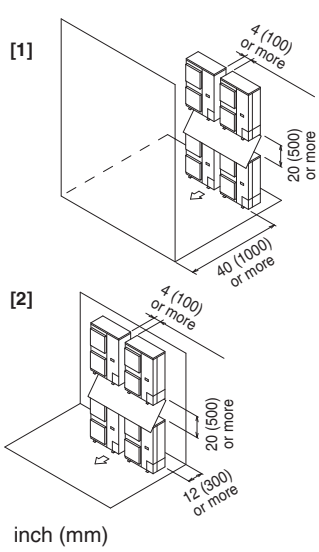

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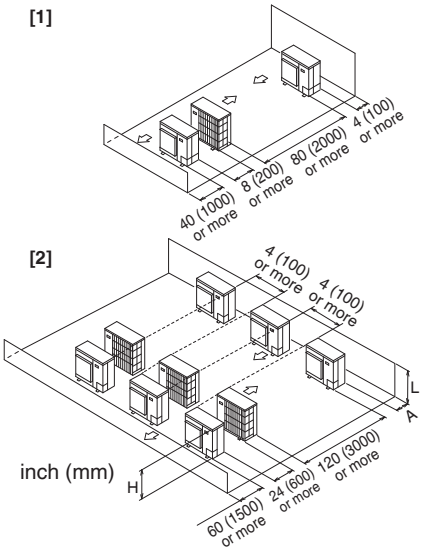
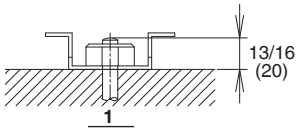


figure 10



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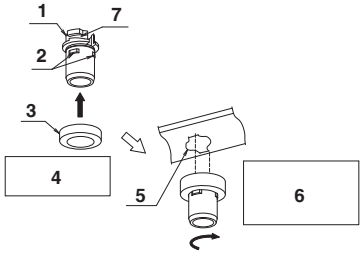

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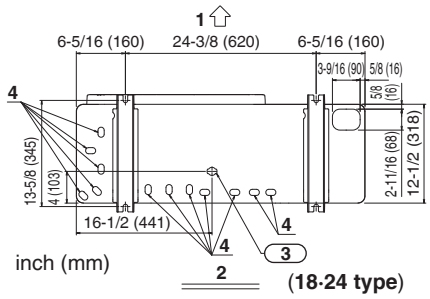

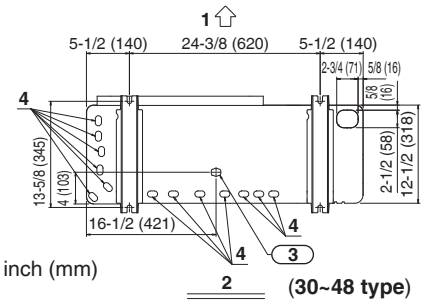

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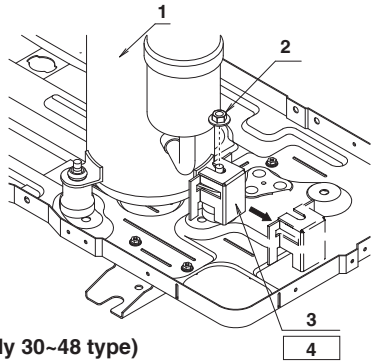

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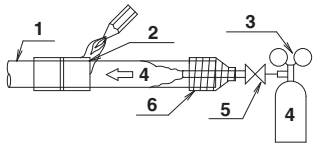

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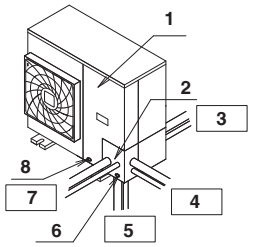

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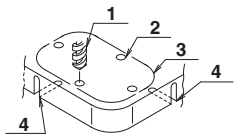

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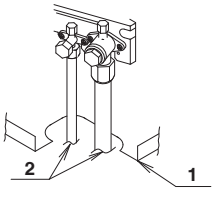

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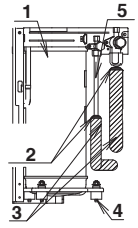

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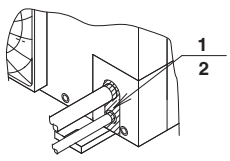


figure 20

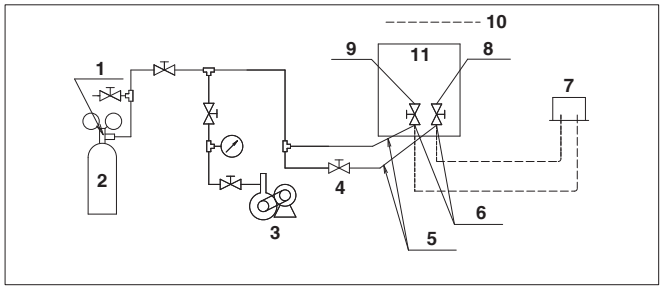


figure 21

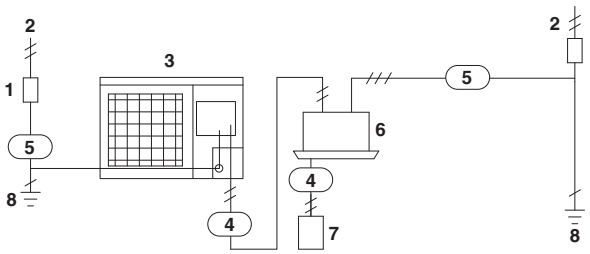
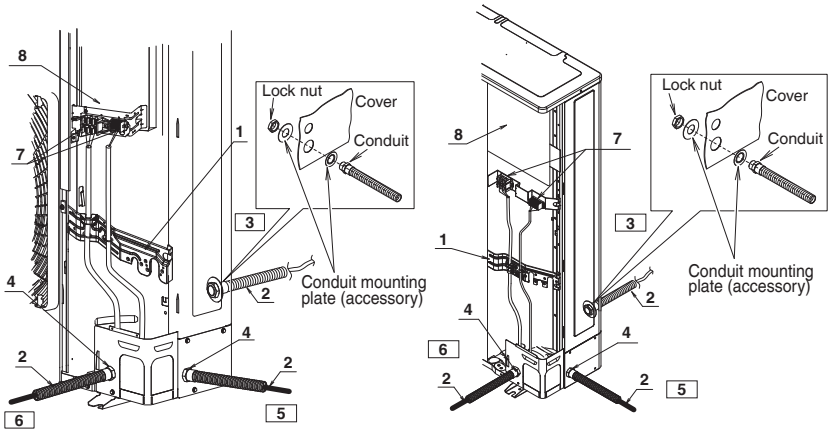


figure 22



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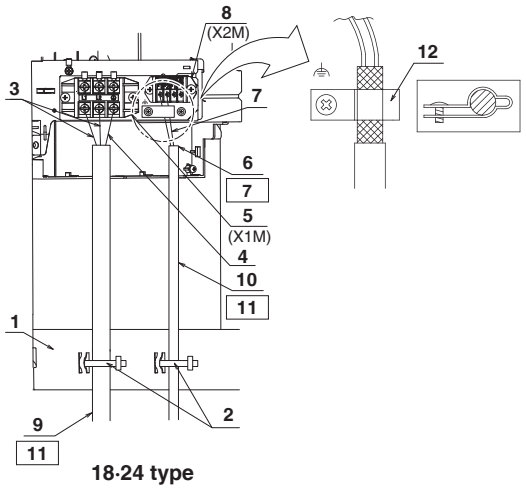


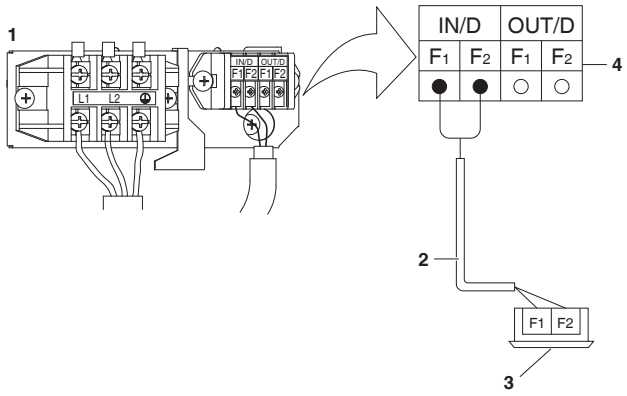


figure 25

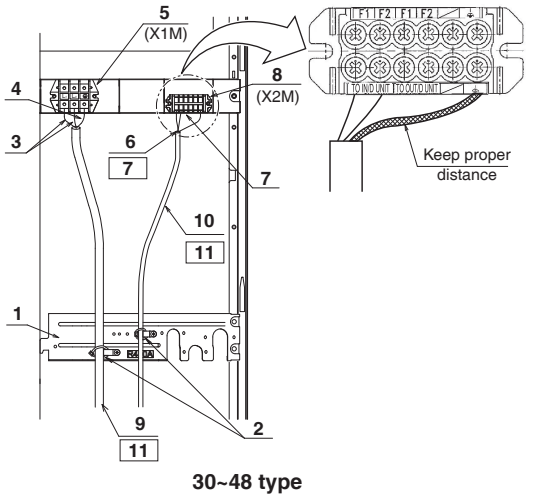


figure 24

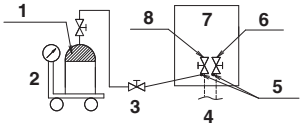


figure 26

CONTENTS

1. SAFETY CONSIDERATIONS

Read these “SAFETY CONSIDERATIONS for Installation” carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation. Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual for future reference.

Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.

Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** .... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE**..... Indicates situations that may result in equipment or property damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard will result in serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding will result a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes will result a gas leak and potential explosion causing in severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas will result in producing toxic gas if it comes into contact with fire. Exposure to this gas will result in severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that will result in serious injury or death.**
- **Safely dispose of all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation will result in injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation could result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, could result in oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts could result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner or heat pump on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength could result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation could result in the unit falling and causing accidents.**
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local, state and national regulations. An insufficient power supply capacity or improper electrical construction could result in electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation could result in fire.**
- **Before touching electrical parts, turn off the unit.**
- **This equipment can be installed with a Ground-Fault Circuit Interrupter (GFCI). Although this is a recognized measure for additional protection, with the grounding system in North America, a dedicated GFCI is not necessary.**

- **When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit could result in abnormal pressure rise or rupture, resulting in injury.**
- **Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion could result.**

⚠ CAUTION

- **Do not touch the switch with wet fingers. Touching a switch with wet fingers may result in electric shock.**
- **Do not allow children to play on or around the unit or it may result in injury.**
- **Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. It may result in your hands getting burns or frostbite if you touch the refrigerant pipes.**
  To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- **The heat exchanger fins are sharp enough to cut, and may result in injury if improperly used. To avoid injury, wear gloves or cover the fins when working around them.**
- **Insulate piping to prevent condensation.**
- **Be careful when transporting the product.**
- **Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.**
- **Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.**
- **Refrigerant R410A in the system must be kept clean, dry, and tight.**
  (a) Clean and Dry - Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight - R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation.
  R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation.
  Read the chapter Refrigerant Piping and follow the procedures.
- **Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a gaseous state, its composition can change and the system will not work properly.**
- **The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.**
- **Remote controller transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.**
- **Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors. This unit is for outdoor use.**
- **Do not install the air conditioner or heat pump in the following locations:**
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions may result in a fire.
- **Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts may result in malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.**

⚠ NOTE

- **Install the power supply and transmission wires for the indoor and outdoor units at least 3.5 ft. (1 m) away from televisions or radios to prevent image interference or noise.**
  Depending on the radio waves, a distance of 3.5 ft. (1 m) may not be sufficient to eliminate the noise.
- **Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.**
- **Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.**
- **If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant result in deterioration.**
- **This air conditioner or heat pump is an appliance that should not be accessible to the general public.**
- **As design pressure is 478 psi (3.3 MPa), the wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.**

Codes and Regulations

This product is designed and manufactured to comply with national codes. Installation in accordance with such codes and/or prevailing local codes/regulations is the responsibility of the installer. The manufacturer assumes no responsibility for equipment installed in violation of any codes or regulations. Rated performance is achieved after 20 hours of operation.

2. INTRODUCTION

1. This series uses R410A refrigerant. Be absolutely sure to comply with "**6. REFRIGERANT PIPING**", because even greater caution is needed to prevent impurities from entering R410A (mineral oils and water).
2. The design pressure is 478psi (3.3MPa), which means that piping may be thicker than conventionally, so please refer to "**6. REFRIGERANT PIPING**".
3. This is a mixed refrigerant, so charge as a liquid when adding refrigerant. (If charged as a gas, the composition of the refrigerant may change, preventing normal operation.)
4. The indoor unit must use R410A. See the catalog for indoor unit models which can be connected. (Normal operation is not possible when connected to other units.)
5. The power supply of this series is single-phase, 208/230V, 60Hz.

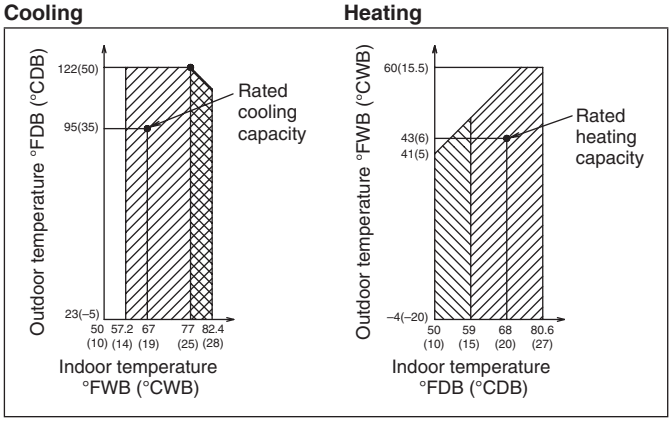
2-1 Standard operation limit

Normal operation

The figures below assume following operating conditions for indoor and outdoor units:

Equivalent pipe length..... 25 ft. (7.6 m)
Level difference..... 0 ft. (0 m)

Cooling **Heating**

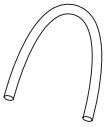


Range for operation
Range for pull down operation
Range for warming up operation

2-2 Standard supplied accessories

Make sure that the accessories shown below are all present.
(The accessories can be found behind the front panel.)

Name	Clamp	Conduit mounting plate		Wire clamp and screw
Quantity	4 pcs.	2 pcs.	2 pcs.	1 (only 18·24 type)
Shape				

Name	Insulation tube		Installation manual	Warranty card
Quantity	1 pc.	1 pc.	1	1
Shape	 (Large)	 (Small)		

(Refer to figure 1)

1. Accessories
2. Screw for front panel
3. Front panel

3. BEFORE INSTALLATION

<Transporting the Unit>

As shown in figure 2, move the unit slowly. (Take care not to let hands or other objects come in contact with rear fins.)

(Refer to figure 2)

1. Air outlet grille
2. Intake hole
3. Corner
4. Outdoor unit
5. Handle
6. Front
7. Rear
8. Always hold the unit by the corners, as holding it by the side intake holes on the casing may cause them to deform.

Use only accessories and parts which are of the designated specification when installing.

4. SELECTING INSTALLATION SITE

(1) Select an installation site where the following conditions are satisfied and that meets with your customer's approval.

- Places which are well-ventilated.
- Places where the unit does not bother next-door neighbors.
- A location where small animals will not make nests in the unit.
- Safe places which can withstand the unit's weight and vibration and where the unit can be installed level.
- A locations where there is enough space to install the unit.
- Places where the indoor and outdoor unit's piping and wiring lengths come within the allowable ranges.
- A location where there is no risk of flammable gas leaking.

(2) If the unit is installed in a location where it might be exposed to strong wind, install as per figure 3.

- 11 mph (5 m/s) or higher winds blown against the outdoor unit's exhaust cause a deterioration in the system performance. High winds force re-circulation of the exhaust air into the inlet, which is known to cause the following effects:
  - Reduction in performance.
  - Increased frost formation in heating mode.
  - System shut down due to increased pressures.
- If very strong wind blows continuously on the air outlet side of the outdoor unit, the fan may turn in reverse at high speed and break, so install as per figure 3.

(Refer to figure 3)

1. Turn the air outlet side toward the building's wall, fence or windbreak screen.
2. Air inlet grille
3. Ensure there is enough space for installing the unit.
4. Set the outlet side at a right angle to the direction of the wind.
5. Strong wind
6. Blown air

(3) When installing the unit in a place frequently exposed to snow, pay special attention to the following:

- Install the outdoor unit on a stand (field supply), so that the bottom frame is more than 20 in. (500 mm) higher than the expected snow fall to prevent it from being covered by snow.
- Attach a snow hood (field supply) and a snow vizor (field supply).
- Avoid installation at the place where a snowdrift is generated.
- Further, perform the following countermeasures, since there is risk that the drain water produced at the defrost operation freezes.
- Install the outdoor unit so that its bottom place level has a sufficient height from foundation level, so that ice does not grow at the lower surface of the bottom place of the outdoor unit. (Recommended clearance: 20 in. (500 mm) or more)

- In areas where the outside air temperature drops below 32°F (0°C) for more than 12 hours continuously, install a drain-pan heater (optional accessory) on the bottom frame to prevent the drain from freezing.
- An optional drain pan heater is available when the unit is installed in a climate where the drain may freeze.
- The installer should use their local knowledge to determine if this accessory is necessary to prevent the drain from freezing.
- Do not use a concentrated drain plug (field supply).
  (If a drain plug and/or drain pipe are/is used, there is a risk of freezing.)
- If there is a problem with drain dripping from the bottom frame drain, set up a roof (field supply) below the outdoor unit, or enact other countermeasures.
- Remove the rear inlet grille to prevent snow from accumulating on the rear fins.

(4) When there is possibility of short-circuit depending on the ambient situation, use the wind direction adjusting plate (optional accessory).

(5) The refrigerant gas (R410A) is a safe, non-toxic and non-flammable gas, but if it leaks into the room, the concentration may exceed tolerance levels, especially in small rooms, so steps need to be taken to prevent refrigerant leakage. See the equipment design reference for details.

(6) Inverter-type air conditioners sometimes cause static in other electrical appliances.
When selecting an installation location, make sure the air conditioner and all wiring are sufficiently far away from radios, computers, stereos, and other appliances, as shown in figure 4.
Particularly for locations with weak reception, ensure there is a distance of at least 9.8 ft. (3 m) for indoor remote controllers, place power supply wiring and transmission wiring in conduits, and ground the conduits. Use non-shielded wire for transmission wiring.

(Refer to figure 4)
1. Indoor unit
2. Fuse/Breaker
3. Remote controller
4. Personal computer or radio

(7) Space needed for installation
<Precautions when installing units in series>
- The direction for field piping is either forward or down when installing units in series, as shown in the figure (5~10).
- If the piping is brought out from the back, the outdoor unit will require at least 10 in. (250 mm) from its right side.

(7)-1 IN CASE OBSTACLES EXIST ONLY IN FRONT OF THE AIR INLET

When nothing is obstructing the top

1. Installation of single unit
   - In case obstacles exist only in front of the air inlet **(Refer to figure 5-[1])**
   - In case obstacles exist in front of the air inlet and on both sides of the unit **(Refer to figure 5-[2])**
2. In case of installing multiple units (2 units or more) in lateral connection per row
   - In case obstacles exist in front of the air inlet and on both sides of the unit **(Refer to figure 5-[3])**

When something is obstructing the top

1. Installation of single unit
   - In case obstacles exist only in front of the air inlet **(Refer to figure 6-[1])**
   - In case obstacles exist in front of the air inlet and on both sides of the unit **(Refer to figure 6-[2])**
2. In case of installing multiple units (2 units or more) in lateral connection per row
   - In case obstacles exist in front of the air inlet and on both sides of the unit **(Refer to figure 6-[3])**

(7)-2 IN CASE OBSTACLES EXIST IN FRONT OF THE OUTLET SIDE

When nothing is obstructing the top

1. Installation of single unit **(Refer to figure 7-[1])**
2. In case of installing multiple units (2 units or more) in lateral connection per row **(Refer to figure 7-[2])**

When something is obstructing the top

1. Installation of single unit **(Refer to figure 7-[3])**
2. In case of installing multiple units (2 units or more) in lateral connection per row **(Refer to figure 7-[4])**

(7)-3 IN CASE OBSTACLES EXIST IN FRONT OF BOTH THE AIR INLET AND OUTLET SIDES

Pattern 1: Where obstacle in front of the air outlet is higher than the unit.
(There is no height limit for obstructions on the intake side.)

When nothing is obstructing the top

1. Installation of single unit **(Refer to figure 8-[1])**
2. In case of installing multiple units (2 units or more) in lateral connection per row **(Refer to figure 8-[2])**

When something is obstructing the top

1. Installation of single unit **(Refer to figure 8-[3])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

	L	A
L ≤ H	0 < L ≤ 1/2H	30(750)
	1/2H < L ≤ H	40(1000)
H < L	Set the frame to be L ≤ H	

Note)
Close the area under the frame so the outlet air does not bypass there.

2. Series installation (up to two units) **(Refer to figure 8-[4])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

	L	A
L ≤ H	0 < L ≤ 1/2H	40(1000)
	1/2H < L ≤ H	50(1250)
H < L	Set the frame to be L ≤ H	

Note)
1. Close the area under the frame so the outlet air does not bypass there.
2. No more than two units can be installed in series.

Pattern 2: Where obstacles in front of the air outlet is lower than the unit.
(There is no height limit for obstructions on the intake side.)

When nothing is obstructing the top

1. Installation of single unit **(Refer to figure 8-[5])**
2. In case of installing multiple units (2 units or more) in lateral connection per row **(Refer to figure 8-[6])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

L	A
0 < L ≤ 1/2H	10(250)
1/2H < L ≤ H	12(300)

When something is obstructing the top

1. Installation of single unit **(Refer to figure 8-[7])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

	L	A
L ≤ H	0 < L ≤ 1/2H	4(100)
	1/2H < L ≤ H	8(200)
H < L	Set the frame to be L ≤ H	

Note)
Get the lower part of the frame sealed so that air from the outlet does not bypass.

2. Series installation (up to two units) **(Refer to figure 8-[8])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

	L	A
L ≤ H	0 < L ≤ 1/2H	10(250)
	1/2H < L ≤ H	12(300)
H < L	Set the frame to be L ≤ H	

Note)
1. Get the lower part of the frame sealed so that air from the outlet does not bypass.
2. Only two units at most can be installed in series.

(7)-4 IN CASE OF STACKED INSTALLATION

(1) In case obstacles exist in front of the outlet side
(Refer to figure 9-[1])

(2) In case obstacles exist in front of the air inlet **(Refer to figure 9-[2])**

Note)
1. No more than two units should be stacked.
2. If there is a danger of water from the drain falling on the lower outdoor unit and freezing, install a roof (field supply) as shown in the figure 9.
3. To prevent the formation and growth of ice in the bottom frame of the 2nd level outdoor unit, install the outdoor unit so that the bottom frame will be sufficiently higher than the roof. (It is recommended to leave 19.6 in. (500 mm) or more)
4. About 4 in. (100 mm) is required as the dimension for laying the upper outdoor unit's drain pipe.
5. Shut off the Z part (the area between the upper outdoor unit and the lower outdoor unit) so that outlet air does not bypass.

(7)-5 IN CASE OF MULTIPLE-ROW INSTALLATION (FOR ROOF TOP USE, ETC.)

1. In case of installing one unit per row **(Refer to figure 10-[1])**
2. In case of installing multiple units (2 units or more) in lateral connection per row **(Refer to figure 10-[2])**
   Relation of dimensions of H, A, and L are shown in the table below.

inch (mm)

	L	A
L ≤ H	0 < L ≤ 1/2H	10(250)
	1/2H < L ≤ H	12(300)
H < L	Installation impossible.	

5. PRECAUTIONS ON INSTALLATION

- Before installation, make sure the unit is level and the foundation is sturdy enough to prevent vibration and noise.
- Fasten the unit in place using 4 foundation bolts M12 or equivalent. It is best to screw in the foundation bolt until their length remains 13/16 in. (20 mm) above the foundation surface.

(Refer to figure 11)

1. Diagram of lower surface

<Drain pipe installation>

- Locations where drain water from the outdoor unit might be a problem.
  In such locations, for example, where the drain water might drip onto passersby, lay the drain pipe using the separately sold drain plug and seal up the drain holes in the bottom frame. For details, please contact your dealer.
  In case of installing the outdoor unit in cold climates, do not take this centralized drainage way. Otherwise, drain pipe freeze-up and ice build-up on the bottom frame way occur.
- When laying the drain pipe, at least 4 in. (100 mm) from the bottom of the outdoor unit is needed.
- Make sure the drainage works properly.
  (Watch out for water leaks if piping is brought out the bottom.)

(Refer to figure 12)

1. Drain plug
2. 4 tabs
3. Drain receiver
4. Insert the drain receiver into the drain plug and hook the tabs.
5. Bottom frame drain hole
6. (1) Insert the drain plug through the drain hole in the bottom frame shown in figure 13.
(2) Turn the drain plug along the guides until it stops (approx. 40°).
7. Guide

(Refer to figure 13)

1. Air outlet side
2. Diagram of lower surface
3. Drain hole (For plug)
4. Drain hole

[How to remove the transport bracket] (30·36·42·48 type)

- A yellow transport bracket and washer are attached to the leg of the compressor to protect the unit during transportation, so remove them as shown in figure 14.

(Refer to figure 14)

1. Compressor
2. Securing nut
3. Transport bracket (Yellow)
4. Turn in the direction of the arrow and remove.

(1) Open the sound-proof cover as shown in figure 14.
Do not pull the sound-proof cover or remove it from the compressor.
(2) Remove the securing nut.
(3) Remove the washer.
(4) Remove the transport bracket as shown in figure 14.
(5) Retighten the securing nut.
(6) Return the sound-proof cover as it was.

6. REFRIGERANT PIPING

⚠ CAUTION

- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant cycle, such as air, nitrogen, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.
- Use R410A only when adding refrigerant.

6-1 Installation tools

Make sure to use speciality tools to withstand the pressure and to prevent foreign materials from mixing into the system.

Gauge manifold Charge hose	• Make sure to use installation tools that are exclusively made for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils such as SUNISO and moisture) from mixing into the system.
Vacuum pump	• Use a 2-stage vacuum pump with a non-return valve. • Make sure the pump oil does not flow backward into the system while the pump is not working. • Use a vacuum pump which can evacuate to 500 microns.

6-2 Selecting piping material

⚠ CAUTION

Piping and other pressure containing parts shall comply with the applicable legislation and shall be suitable for refrigerant. Use phosphoric acid deoxidized seamless copper for refrigerant.

⚠ CAUTION

- All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.
- After piping work is complete, do not under any circumstances open the stop valve until **7. ELECTRIC WIRING** on page 8 and **9. POST-WORK CHECKS** on page 11 are complete.
- Do not use flux when brazing the refrigerant piping. Use the phosphor copper brazing filler metal (B-Cu93P-710/795:ISO 3677) which does not require flux. Flux has extremely negative effect on refrigerant piping systems. For instance, if the chlorine based flux is used, it will cause pipe corrosion or, in particular, if the flux contains fluorine, it will damage the refrigerant oil.

- Use only pipes which are clean inside and outside and which do not accumulate harmful sulfur, oxidants, dirt, cutting oils, moisture, or other contamination. (Foreign materials inside pipes including oils for fabrication must be 0.14 gr/10 ft. (30 mg/10 m) or less.)
- Use the following items for the refrigerant piping.
  Material: Jointless phosphor-deoxidized copper pipe.
  Thickness: Select a thickness for the refrigerant piping which complies with national and local laws.
- Maximum piping length and height difference between the outdoor and indoor units.

Model	18·24 type	30~48 type
Maximum piping length	164 ft. (50 m)	230 ft. (70 m)
Maximum height difference	98 ft. (30 m) (outdoor unit above indoor unit) 98 ft. (30 m) (outdoor unit below indoor unit)	

6-3 Protection against contamination when installing pipes

- Cover the ends of pipe to prevent moisture, dirt, dust, etc. from entering the piping.
- Exercise caution when passing copper piping through the through-holes and when passing them out to the outside.

Place	Installation	Protection method
	More than a month	Pinch the pipe
	Less than a month	Pinch or tape the pipe
	Regardless of the period	

6-4 Pipe connection

- See "Stop valve operation procedure" in "**6-7 Air tight test and vacuum drying**" regarding handling of the stop valve.
- Only use the flare nuts included with the unit. Using different flare nuts may cause the refrigerant to leak.
- **Be sure to perform a nitrogen blow when brazing.**
  (Brazing without performing nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film on the inside of the pipes, adversely affecting valves and compressors in the refrigerating system and preventing normal operation.)

  (Refer to figure 15)
  1. Refrigerant pipe
  2. Location to be brazed
  3. Regulator
  4. Nitrogen
  5. Manual valve
  6. Taping

6-5 Connecting the refrigerant piping

- Connection to larger pipe sizes.
  In certain configurations this system is designed to be connected to larger diameter pipe sizes than the standard factory service valves. If the installation requires use of larger pipe diameters, a field setting change is required for the system to operate smoothly.
- The local field piping is connectable in four directions.

  (Refer to figure 16)
  1. Front panel
  2. Pipe outlet panel
  3. Backward
  4. Sideways
  5. Downward
  6. Pipe outlet panel screw
  7. Forward
  8. Screw for front panel
- **When connecting the pipings downward, remove the knockout by making four holes in the middle on the each side of the knockout with a drill.**

  (Refer to figure 17)
  1. Drill
  2. Center area around knockout hole
  3. Knockout hole
  4. Slit

- After knocking out the knockout, it is recommended to apply repair paint to the edge and the surrounding end surfaces to prevent rusting.

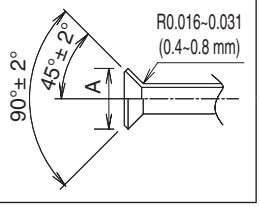
(Refer to figure 18)

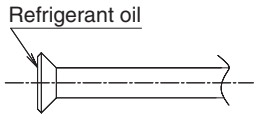
1. Bottom frame
2. Field piping

<Precautions when connecting pipes>

- Please refer to the Table 1 for the dimensions for processing flares.
- When connecting the flare nut, coat the flare both inside and outside with refrigerating unit oil and initially tighten by hand 3 or 4 turns before tightening firmly.
- Please refer to the Table 1 for the tightening torque. (Too much tightening will end up in splitting of the flare.)

Table 1

Pipe size (in.)	Tightening torque (ft·lbf)	A dimensions for processing flares (in.)	Flare shape (in.)
ϕ 3/8" (9.5 mm)	24.1~29.4 (32.7~39.9 N·m)	0.504~0.520 (12.8~13.2 mm)	
ϕ 5/8" (15.9 mm)	45.6~55.6 (61.8~75.4 N·m)	0.760~0.776 (19.3~19.7 mm)	



- After all the piping has been connected, use nitrogen to perform a gas leak check.

Precautions for connecting pipes

- Be careful not to let the field piping come into contact with the compressor terminal cover.
  Adjust the height of the insulation material on liquid pipe when it has the possibility of getting in contact with the terminal. Also make sure that the field piping does not touch the mounting bolt of the compressor.

(Refer to figure 19)

1. Compressor
2. Corking, etc.
3. Insulation material
4. Bolts
5. Field piping

- If installing the outdoor unit higher than the indoor unit, caulk the space around insulation and tubes because condensation on the check valve can seep through to the indoor unit side.

[Preventing foreign objects from entering]

- Plug the pipe through-holes with putty or insulating material (pro cured locally) to stop up all gaps, as shown in figure 20. (Figure 20 indicates the forward case. Do the same in case of other directions.) Insects or small animals entering the outdoor unit may cause a short in the control box.

(Refer to figure 20)

1. Putty or insulating material
2. (field supply)

6-6 Thermal insulation of piping

- Insulate the field piping (liquid and gas-side). (Not insulating them may cause leaking.)
- The insulation dimension is recommended as following:

Ambient temperature: 86°F (30°C), humidity : Below 80% RH	Ambient temperature: 86°F (30°C), humidity : 80% RH and above
Minimum thickness : 9/16 inch (15 mm)	Minimum thickness : 3/4 inch (20 mm)

- When using commercial copper pipes and fittings, observe the following:
  a) Insulation of pipes should be done after performing air tight test and vacuum drying.
  b) Heat transfer rate: 0.024 to 0.030 BTU/fth°F (0.041 to 0.052 W/Mk (0.035 to 0.045 kcal/mh°C))
  c) Be sure to use insulation that is designed for use with HVAC Systems.
  d) The highest temperature that the gas-side piping can reach is around 248°F (120°C), so be sure to use insulating material which is sufficiently resistant to this temperature.

⚠ CAUTION

For local insulation, be sure to insulate all the way to the pipe connections inside the unit.
Exposed piping may cause leaks or burns on contact.

6-7 Air tight test and vacuum drying

After doing the piping, perform the following inspections.

Air tight test

Be sure to use nitrogen gas. (See the figure ("Stop valve operation procedure") for the location of the service port.)

[Procedure]
Pressurize from the liquid pipes and gas pipes to 550 psi (3.8 MPa) (and not above 550 psi (3.8 MPa)). If there is not pressure drop over the next 24 hours, the equipment has passed the test.
If the pressure drops, check for leakage positions. (Confirm that there is no leakage, then release nitrogen.)
If a FTQ indoor unit is used, only pressurize to 450 psi (3.1 MPa).

Vacuum drying

Use a vacuum pump that can create a vacuum down to at least 500 microns.

[Procedure]
Operate the vacuum pump for **at least 2 hours** from **both the liquid and gas pipes** and decrease the pressure to at least 500 microns.
Leave at below 500 microns for at least 1 hour and make sure that the vacuum gauge does not rise. (If it does rise, there is either still moisture in the system or a leak.)

Cases where moisture might enter the piping (i.e., if doing work during the rainy season, if the actual work takes long enough that condensation may form on the inside of the pipes, if rain might enter the pipes during work, etc.)
After performing the vacuum drying for 2 hours, pressurize to 7.2 psi (0.05 MPa) (i.e., vacuum breakdown) with nitrogen gas, then depressurize down to at least 500 microns a for an hour using the vacuum pump (vacuum drying). (If the pressure does not reach at least 500 microns even after depressurizing for at least 2 hours, repeat the vacuum breakdown - vacuum drying process.) Leave as a vacuum for 1 hour after that, and make sure the vacuum gauge does not rise.

(Refer to figure 21)

1. Decompression valve
2. Nitrogen
3. Vacuum pump
4. Valve (Open)
5. Charge hose
6. Stop valve service port
7. Indoor unit
8. Gas line stop valve (Close)
9. Liquid line stop valve (Close)
10. Indicates local procurement
11. Outdoor unit

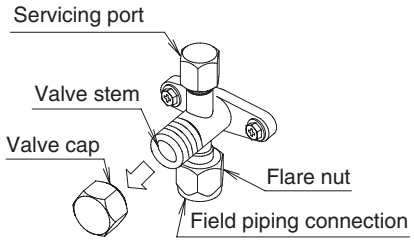
NOTE

The stop valve must always be turned to “closed”.
Otherwise the refrigerant in the outdoor unit will pour out.

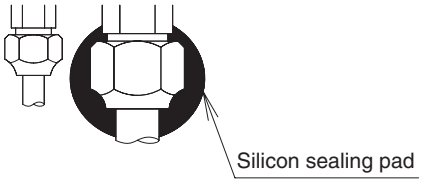
Stop valve operation procedure

Precautions when handling the stop valve

- The names of parts needed to operate the stop valve are shown in the figure below. The unit is shipped from the factory with the stop valve turned to the “closed” position.



- Since the side boards may be deformed if only a torque wrench is used when loosening or tightening flare nuts, always lock the stop valve with a wrench and then use a torque wrench.
- In cases where the unit is run in heating mode when the outside temperature is low or in other situations where the operating pressure might drop, seal the gas-side flare nut on the stop valve with silicon sealant or the like to prevent it from freezing.



(Make sure that there is no gap)

Stop valve operation procedure

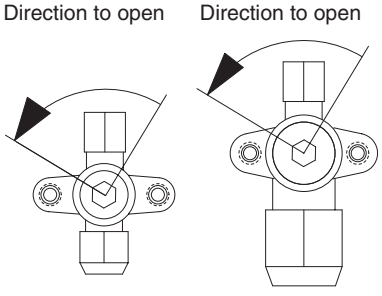
Have a hex wrench ready (size: 0.2 in. (4 mm) and 0.3 in. (6 mm)).

Opening the valve

1. Place the hex wrench on the valve stem and turn counter-clockwise.
2. Stop when the valve stem no longer turns. It is now open.

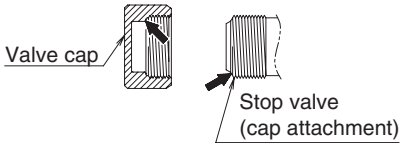
Close the valve

1. Place the hex wrench on the valve stem and turn clockwise.
2. Stop when the valve stem no longer turns. It is now closed.



Precautions for handling valve cap

- A seal is attached to the point indicated by the arrow. Take care not to damage it.



- Be sure to tighten the valve cap securely after operating the valves.

Liquid-side tightening torque	Gas-side tightening torque
10.0 ~ 12.2 ft·lbf (13.5 ~ 16.5 N·m)	16.6 ~ 20.3 ft·lbf (22.5 ~ 27.5 N·m)

Precautions for handling servicing port

- Use a push-rod-provided charging hose for operation.
- Be sure to tighten the valve cap securely after operation.
  Tightening torque.....8.5 ~ 10.3 ft·lbf (10.8 ~ 14.7 N·m)

7. ELECTRIC WIRING

⚠ CAUTION

To the electrician

- Do not operate until refrigerant piping work is completed. (Failure to adhere by this caution may lead to irrepairable compressor damage.)

7-1 Wiring connection example for whole system

- Electrical wiring work should be done by a certified professional.
- Follow the “Wiring diagram” label when carrying out any electrical wiring.
  Only proceed with wiring work after turning off all power.
- Always ground wires in accordance with relevant local and national regulations.
- Ground the indoor and outdoor units.
- Do not connect the ground wire to gas pipes, sewage pipes, lightning rods, or telephone ground wires.
  - **Gas pipes:** can explode or catch fire if there is a gas leak.
  - **Sewage pipes:** no grounding effect is possible if hard plastic piping is used.
  - **Telephone ground wires and lightning rods:** dangerous when struck by lightning due to abnormal rise in electrical potential in the grounding.
- Use copper wire.
- When doing the electrical wiring, always shut off the power supply before working, and do not turn on the switch until all work is complete.
- This unit has an inverter, so it must be grounded in order to reduce noise and prevent it affecting other appliances, and also to release any electrical build-up in the unit case due to leaked current.
- Do not install a power-factor improving phase-advancing capacitor under any circumstances.
  (Not only will this not improve the power factor, but it might cause a fire.)
- Connect the wire securely using designated wire and fix it with attached clamp without applying external pressure on the terminal parts (terminal for power supply wiring, terminal for transmission wiring and ground terminal). See “**7-3 How to connect the power supply wiring**”.
- Leftover wiring should not be wrapped and stuffed into the unit.
- Secure the wiring with the included clamp so that it does not come in contact with the piping or stop valve.
  (See “**7-3 How to connect the power supply wiring**”.)

⚠ CAUTION

- Use a conduit for field wiring.
- Outside the unit, make sure the communication wiring (i.e. for the remote controller wire, between units, etc.) and the high voltage wiring do not pass near each other, **keeping them at least 2 in. (50 mm) apart**.
  Proximity may cause electrical interference, malfunctions, and breakage.
- Be sure to connect the power supply wiring to the power supply wiring terminal block and secure it as described in "**7-3 How to connect the power supply wiring**".
- Transmission wiring should be secured as described in "**7-4 Transmission wiring connection procedure**".
- Secure wiring with clamp (accessory) to avoid contact with piping.
- Make sure the wiring and the front panel do not stick up above the structure, and close the panel firmly.

(Refer to figure 22)

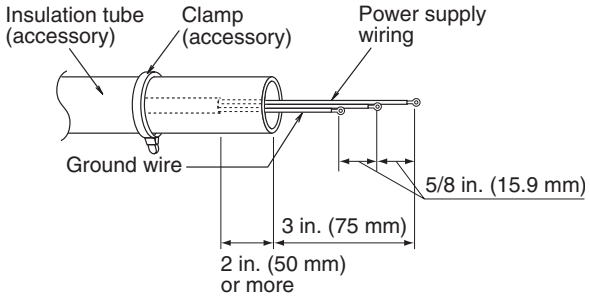
1. Fuse/Breaker
2. Power supply
3. Outdoor unit
4. 16V
5. 208/230V
6. Indoor unit
7. Remote controller
8. Ground wire

7-2 How to lay the power supply wiring and transmission wiring

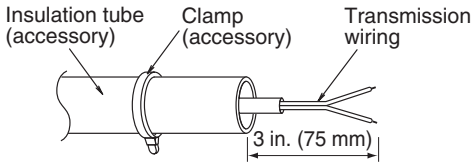
Let the power supply wiring and transmission wiring with a conduit pass through one of the knockout on the front or side cover, and let the transmission wiring with a conduit pass through another knockout.

- For protection from uninsulated live parts, thread the power supply wiring and the transmission wiring through the included insulation tube and secure it with the included clamp.

<Power supply wiring>

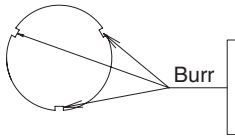


<Transmission wiring>



Precautions knockout

- Open the knockout with a hammer or the like.
- After knocking out the knockout, we recommend you remove burrs in the knockout and paint the edges and areas around the edges using the repair paint to prevent rusting.
- When passing wiring through knockout, make sure there are no burrs, and protect the wiring with protective tape.



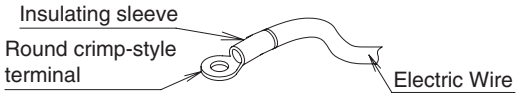
If small animals might enter the unit, block the knockout with an appropriate material (field supply).

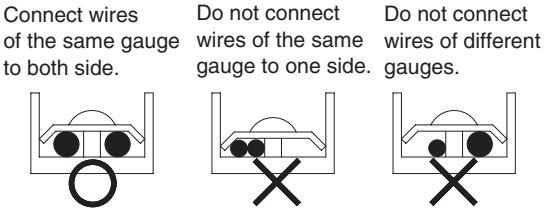
(Refer to figure 23)

1. Stop valve fixing plate
2. Power supply wiring (including ground wire) or transmission wiring.
3. Back of unit
4. Knockout
5. Side of unit
6. Front of unit
7. Terminal block
8. Control Box

<Precautions when laying power supply wiring>

- Wiring of different thicknesses cannot be connected to the power supply terminal block.
  (Slack in the power supply wiring may cause abnormal heat.)
- Use sleeve-insulated round pressure terminals for connections to the power supply terminal block. When none are available, connect wire of the same diameter to both sides, as shown in the figure.





Follow the instructions below if the wiring gets very hot due to slack in the power supply wiring.

- For wiring, use the designated power wire and connect firmly, then secure using the included clamping material to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screw may break it.

See the table below the tightening torque of the terminal screws.

Tightening torque (ft·lbf / N·m)		
M5	Power supply terminal	1.76~2.15 / 2.39~2.91
M4	Shield ground	0.87~1.06 / 1.18~1.44
M3	Transmission wiring terminal block	0.58~0.72 / 0.8~0.97

7-3 How to connect the power supply wiring

⚠ CAUTION

Attach a circuit breaker or fuse.

Model	Phase and frequency	Voltage	Maximum overcurrent protective device	Minimum circuit ampacity
18·24 type	1~60Hz	208/230V	20A	16.5A
30·36·42·48 type	1~60Hz	208/230V	35A	29.1A

⚠ CAUTION

- The wiring should be selected in compliance with local laws and regulations. See the table above.
- Always turn off the power before doing wiring work.
- Grounding should be done in compliance with local laws and regulations.
- As shown in figure 25, when connecting the power supply wiring to the power supply terminal block, be sure to clamp securely.
- Once wiring work is completed, check to make sure there are no loose connections among the electrical parts in the control box.

(Refer to figure 24)

1. Stop valve fixing plate
2. Clamp (accessory)
3. Connecting power supply wiring
4. Ground wire (Yellow/Green)
5. Terminal block (X1M)
6. Transmission wiring
7. (To X2M [TO IN/ D UNIT] (F1, F2))
8. Terminal block (X2M)
9. Insulation tube (Large) (accessory)
10. Insulation tube (Small) (accessory)
11. Cut off the insulation tube sticking out of the outdoor unit.
12. Wire clamp and screw (accessory)

7-4 Transmission wiring connection procedure

- If an excessive force is applied while connecting a wire to the terminal block, the connection may be damaged.

(Refer to figure 25)

1. Terminal block (X2M)
2. Use balance type shield wire (with no polarity).
3. Indoor unit
4. Under no circumstances should 208/230V be connected.

Precautions regarding the length of wiring between units

Exceeding the following limits may cause transmission malfunctions, so observe them.

Max. wiring length Max. 3280 ft. (1000 m)

Precautions regarding wiring between units

- **Do not connect 208/230V power supply wiring to terminals for the transmission wiring. Doing so would destroy the entire system.**
- Wiring to the indoor unit should be wired to F1 and F2 (TO IN/D unit) on the outdoor unit's terminal block (X2M).

NOTE

- The above wiring should be wired using AWG18-16 (0.75-1.25 mm^2) stranded, non-shielded wiring.
  (See figure 25 for how to ground the shielded parts.)
- All transmission wiring is to be procured on site.

8. ADDITIONAL REFRIGERANT CHARGE

⚠ WARNING

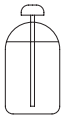
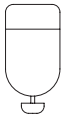
- When leaving the unit with the power on, be sure to switch with another person doing the installation or close the front panel.

8-1 Before adding refrigerant

- Make sure the following work and inspection is complete, in accordance with the installation manual.
  - Piping
  - Wiring
  - Air tight test, Vacuum drying

8-2 Checking the refrigerant tank

- Charge the refrigerant to the liquid pipe in its liquid state.
  Since R410A is a mixed refrigerant, its composition changes if charged in a gaseous state and normal system operation would no longer be assured.
- Check whether the tank has a siphon pipe before charging and place the tank so that the refrigerant is charged in liquid form. (See the figure below.)

Tank with siphon pipe	Other tanks
 There is a siphon pipe inside, so the cylinder need not be upside-down to fill with liquid. (Stand the cylinder upright when filling.)	 Stand the tank upside down and charge.

8-3 Adding refrigerant

⚠ WARNING

- To avoid injury always use protective gloves and eye protection when charging refrigerant.
- To avoid injury do not charge with unsuitable substances. Use only the appropriate refrigerant.

⚠ NOTE

- Refrigerant cannot be charged until field wiring has been completed. Refrigerant may only be charged after performing the airtight test and the vacuum drying (see above).
  When charging refrigerant into the system, take care that its maximum allowable charge is never exceeded, in view of the danger of liquid slugging.
  Refrigerant containers shall be opened slowly.
  To avoid compressor breakdown, do not charge the refrigerant more than the specified amount to raise the condensing pressure.

Filling after calculating the amount of refrigerant to add

1. Calculate the amount of refrigerant to add as described below.

<Calculation for refrigerant charging amount>

Refrigerant equivalent to 25 ft. (7.6 m) liquid piping is factory-charged in the outdoor unit.

Calculate the refrigerant charging amount based on the following formula.

- If the liquid piping length is 25 ft. (7.6 m) or less (lbs)

		Additional refrigerant charging amount [**A**]
Indoor unit type	FBQ30, 36, 42, 48	0
	FCQ30, 36, 42, 48	
	FAQ, FBQ18	0.15
	FBQ24	0.20
	FCQ18, 24	0.36
	FTQ18, 24	0.46
	FTQ30, 36	1.07
	FTQ42, 48	1.41

- If the liquid piping length is more than 25 ft. (7.6 m)

[**A**]	+	(Liquid piping length–25) ft. × 0.036	=	Additional refrigerant charging amount
lbs		lbs		lbs

Record the additional amount to the label stuck on the back of front panel.

2. After the vacuum drying is finished, open valve A and charge the calculated amount of refrigerant through the service port for the liquid-side stop valve.
   (See "Stop valve operation procedure" in "**6. REFRIGERANT PIPING**" for details on how to use the stop valve.)

(Refer to figure 26)

1. R410A Tank (Siphon system)
2. Measuring instrument
3. Valve A
4. Indoor unit
5. Stop valve service port
6. Gas line stop valve
7. Outdoor unit
8. Liquid line stop valve

State of valve A and the stop valve	Valve A	Liquid line stop valve	Gas line stop valve
Before starting to charge the refrigerant	Close	Close	Close
During charging of the refrigerant	Open	Close	Close

3. Close valve A after charging is complete.

Note: If all the refrigerant to be added cannot be charged using the above procedure, re-charge the refrigerant as below.

If all the refrigerant could not be added

Add refrigerant referring to the "Service Precautions" plate attached to the outdoor unit for details on the settings for adding refrigerant.

9. POST-WORK CHECKS

Perform the following checks after work is complete.

(1) Drain pipe connection, removal of transport bracket →
See "**5. PRECAUTIONS ON INSTALLATION**".

(2) Incorrect power supply wiring, loose screws →
See "**7-3 How to connect the power supply wiring**".

(3) Incorrect transmission wiring, loose screws →
See "**7-4 Transmission wiring connection procedure**".

(4) Incorrect refrigerant piping connections →
See "**6. REFRIGERANT PIPING**".

(5) Piping sizes, use of insulation →
See : "**6-2 Selecting piping material**".
"**6-6 Thermal insulation of piping**".

(6) Stop valve check →
Make sure both the liquid-side and gas-side stop valves are open.

(7) Record of Amount of Refrigerant Added →
Record it on "Record of Amount of Refrigerant Added" on the "Service Precautions" label.

(8) Measuring the insulation of the main power circuit →
- Use a 500V mega-tester.
- Do not use the mega-tester for low voltage other than 208/230V. (Transmission wiring)

⚠ CAUTION

To the piping installer

After completing installation, be sure to open the valves.
(Operating the unit with the valve shut will break the compressor.)

10. TEST OPERATION

This unit is equipped with a crank case heater to ensure smooth startup. Be sure to turn the power on at least 6 hours before operation in order to have power running to the crank case heater.

⚠ WARNING

When leaving the unit with the power on, be sure to switch with another person doing the installation or close the front panel.

Precautions before turning the power on

- Using insulating sheets, tape electric parts as described in the "Service Precautions" label on the back of the front panel.
- The indoor unit connected to the outdoor unit operates automatically. Complete work on the indoor unit in order to ensure maximum safety.

10-1 Power On–Check Operation

- Make sure to perform the check operation after installation. (If the air conditioner is operated using the indoor remote controller without performing the check operation, the malfunction code "U3" is displayed in the indoor remote controller, and normal operation is disabled.)
- When making settings on the outdoor unit PC board (A1P or A2P) after turning the power on, do not touch anything other than the push-button switches and dip switches. (See the "Service Precautions" label for the locations of the push-button switches (BS1-5) and dip switches (DS1-1, 2) on the PC board (A1P or A2P).)
- During the operation, monitor the outdoor unit operation status and check for any incorrect wiring.

1. Close the outdoor unit's front panel. **Turn the power** on for the outdoor unit and the indoor unit.

Caution: Be sure to turn the power on at least 6 hours before operation in order to have power running to the crank case heater.

2. • Open the outdoor unit's front panel.
• Make sure the LED display on the outdoor unit's PC board (A1P or A2P) is as shown in the following table.

<18·24 type>	A1P	A2P						
LED display (Default status before delivery)	HAP	H1P	H2P	H3P	H4P	H5P	H6P	H7P
	◑	●	●	☼	●	●	●	●

<30~48 type>	A1P							
LED display (Default status before delivery)	HAP	H1P	H2P	H3P	H4P	H5P	H6P	H7P
	◑	●	●	☼	●	●	●	●

LED display: ● OFF ☼ ON ◑ Blinking

⚠ To avoid the risk of electric shock, do not touch anything other than the push-button switches on the PC board (A1P or A2P) when making settings.

3. • When the customer requests quiet operation or demand operation, make these settings using the push-button switches (BS1-5) on the outdoor unit's PC board (A1P or A2P).
• Operate the push-button switches through the opening after protecting it with an insulation cover. (See the "Service Precautions" label for details.)

⚠ Use caution to avoid electric shock while working, since the outdoor unit is on.
- Only set the push-button switches (BS1-5) after making sure the operation pilot lamp on PC board is lit up.
- See the "Service Precautions" label on the back side of the front panel for details on how to make the settings. (Do not forget to write the settings down on the "Service Precautions" label.)
- The dip switch (DS1-1) does not need to be set, so do not touch it. Doing so may cause malfunction.

4. • Check that the liquid and gas-side stop valves are open, and if they are closed, open them.

Caution: Do not leave any stop valve closed otherwise the compressor will fail.

5. Press the test operation button (BS4) for at least five seconds and perform check operation. For details, see "How to perform check operation" on the "Service Precautions" label.

- If you have to leave the outdoor unit during check operation, either switch with another worker or close the front panel.
- The system operates for about 30 minutes (60 minutes at maximum) and automatically stops the check operation.
- The system can start normal operation about 3 minutes **after the check operation if** the remote controller does not display any malfunction code. The remote controller will show the test operation display during check operation.

6. Close the front panel of the outdoor unit after check operation is complete.

<Precautions During Check Operation>

- **If operation is performed within 12 minutes of the indoor and outdoor units being turned on, H2P will light up, and the compressor will not run.**
  Only perform operation after checking that the LED display is as shown in "**10-1 Power On–Check Operation**" 2. table.
- In order to ensure uniform refrigerant distribution, it may take up to around 10 minutes for the compressor to start up after the unit begins running. This is not a malfunction.
- The check operation cannot be performed in other modes.
- If the discharge pipe thermistor (R2T), the suction pipe thermistor (R3T), and the pressure sensors (S1NPH and S1NPL) are removed before operation, the compressor might burn out, so avoid this under all circumstances.

10-2 Temperature control operation checklist

- After check operation is complete, check the temperature control using normal operation.
  (Heating is not possible if the outdoor temperature is 75°F (24°C) or higher.)
  (1) Make sure the indoor and outdoor units are operating normally. (If liquid compression by the compressor or other abnormal noises can be heard, stop the unit immediately, heat the crank case for a sufficient amount of time, and try again.)
  (2) Check to see if cold (or hot) air is coming out of the indoor unit.
  (3) Press the fan direction and fan speed buttons on the indoor unit to see if they operate properly.

<Precautions during temperature control checks>

- For around 5 minutes after the compressor stops, the compressor will not run even if the "On/Off" button on the remote controller is pressed.
- When the system operation is stopped by the remote controller, the outdoor unit may continue operating for up to 1 minute.
- Malfunction code "U3" is displayed if check operation is not performed using the test operation button the first time after installation. Perform the check operation in accordance with "**10-1 Power On–Check Operation**".

[Remote controller displays malfunction code]
(Check on a remote controller)

Malfunction code	Installation error	Remedial action
E3	The stop valve of outdoor unit is left closed.	Open the gas-side stop valve and the liquid-side stop valve.
	Refrigerant overcharge.	Recalculate the required amount of refrigerant from the piping length and correct the refrigerant charge level by recovering any excessive refrigerant with a refrigerant recovery unit.
F6	Refrigerant overcharge.	Recalculate the required amount of refrigerant from the piping length and correct the refrigerant charge level by recovering any excessive refrigerant with a refrigerant recovery unit.
E4	The stop valve of outdoor unit is left closed.	Open the gas-side stop valve and the liquid-side stop valve.
	Insufficient refrigerant.	Check if the additional refrigerant charge has been finished correctly.
		Recalculate the required amount of refrigerant from the piping length and add an adequate amount of refrigerant.
F3	Refrigerant overcharge.	Recalculate the required amount of refrigerant from the piping length and correct the refrigerant charge level by recovering any excessive refrigerant with a refrigerant recovery unit.
	The stop valve of outdoor unit is left closed.	Open the gas-side stop valve and the liquid-side stop valve.
	Insufficient refrigerant.	Check if the additional refrigerant charge has been finished correctly.
		Recalculate the required amount of refrigerant from the piping length and add an adequate amount of refrigerant.
U2	Insufficient power supply voltage	Check to see if the power supply voltage is supplied properly.
U3	If check operation has not been performed.	Perform check operation.
U4	No power is supplied to outdoor unit.	Turn the power on for the outdoor unit.
UA	If no dedicated indoor unit is being used.	Check the indoor unit. If it is not a dedicated unit, replace the indoor unit.
UF	The stop valve of outdoor unit is left closed.	Open the gas-side stop valve and the liquid-side stop valve.
	If the right indoor unit piping and wiring are not properly connected to the outdoor unit.	Make sure that the right indoor unit piping and wiring are properly connected to the outdoor unit.
UH	If the transmission wiring has not be connected or it has shorted.	Make sure the transmission wiring is correctly attached to terminals (X2M) F1/F2 (TO IN/D UNIT) on the outdoor unit circuit board.

- When using a central controller, see the installation manual or service manual which came with the central controller.

[If nothing is displayed on the remote controller]

- There might be a problem with the connections or communication between the indoor unit and the remote controller.
  Make sure all the wiring is properly connected.

⚠ CAUTION

To the piping installer, To the electrician
After the test operation, when handing the unit over to the customer, make sure the front panel on the unit and all screws are attached.

10-3 Final refrigerant charge adjustment

It is not necessary to do this final adjustment normally, but perform the following operation only when the most adequate refrigerant charge for the best performance is required and the piping length between the outdoor and indoor units is less than 50 ft.(15 m).
The outdoor temperature must be between 65°F (18°C) and 105°F (40°C).

The number of revolutions of the compressor must be greater than or equal to the charge mode. (It can be confirmed by LED display on PC board)

The number of revolutions of the compressor LED display.
(○◑●●●●○:Chargeable ○◑●●●●●:Impossible to charge)

Run the system for 60 minutes in cooling by the forced operation using the field setting mode 2, No.20 LED ○●:ON, mode 2, No.7 LED ○●:ON, (Refer to Service Manual.) to allow pressures to stabilize.

Check subcooling of outdoor unit at LSV. Systems should have the target subcooling in the table below.

a. If the subcooling is low, add charge little by little to raise subcooling to the target value. (The maximum additional charge is 2.2 lbs. (1kg))
b. If the subcooling is high, remove charge to lower the subcooling to the target value.

Model	Target subcooling
18·24 type	6±1°F (3.33±0.56°C)
30·36 type	7±1°F (3.89±0.56°C)
42 type	8±1°F (4.44±0.56°C)
48 type	9±1°F (5.00±0.56°C)

However, if the connected indoor unit is FCQ or FBQ, refer to the table below.

Model	Target subcooling
18·24·30 type	6±1°F (3.33±0.56°C)
36 type	7±1°F (3.89±0.56°C)
42 type	8±1°F (4.44±0.56°C)
48 type	9±1°F (5.00±0.56°C)

11. ENERGY SAVING AND OPTIMUM OPERATION

The unit is equipped with advanced energy saving functionality. Depending on the priority, emphasis can be put on energy saving or comfort level. Several parameters can be selected, resulting in the optimal balance between energy consumption and comfort for the particular application.

Several patterns are available and explained below. Modify the parameters to the needs of your building and to realize the best balance between energy consumption and comfort.

Refer to Service Manual for changing the field settings.
Setting definition: [A-B]=C; A=mode, B=setting NO., C=setting value.

11-1 Three main operation methods are available:

- **Basic**
  The refrigerant temperature is fixed independent from the situation. It corresponds to the standard operation which is known and can be expected from/under previous systems:
  - To activate this operation method under cooling operation: change field setting [2-8]=2.
  - To activate this operation method under heating operation: change field setting [2-9]=2.
- **Automatic (default)**
  The refrigerant temperature is set depending on the outdoor ambient conditions. As such adjusting the refrigerant temperature to match the required load (which is also related to the outdoor ambient conditions). E.g., when your system is operating in cooling, you do not need as much cooling under low outdoor ambient temperatures (e.g., 77°F (25°C)) as under high outdoor ambient temperatures (e.g., 95°F (35°C)).
  Using this idea, the system automatically starts increasing its refrigerant temperature, automatically reducing the delivered capacity and increasing the system's efficiency.
  - To activate this operation method under cooling operation: change field setting [2-8]=3 (default).

  E.g., when your system is operating in heating, you do not need as much heating under high outdoor ambient temperatures (e.g., 59°F (15°C)) as under low outdoor ambient temperatures (e.g., 23°F (–5°C)).
  Using this idea, the system automatically starts decreasing its refrigerant temperature, automatically reducing the delivered capacity and increasing the system's efficiency.
  - To activate this operation method under heating operation: change field setting [2-9]=1 (default).
- **Hi-sensible (cooling)**
  The refrigerant temperature is set higher (cooling) compared to basic operation. The focus under high sensible mode is improved comfort for the customer.
  The selection method of indoor units is important and has to be considered as the available capacity is not the same as under basic operation. For details concerning to Hi-sensible applications, please contact your dealer.
  - To activate this setting under cooling operation: change field setting [2-8] to the appropriate value, matching the requirements of the pre-designed system containing a high sensible solution.

Value	To target
4	46°F (8°C)
5	48°F (9°C)
6	50°F (10°C)
7	52°F (11°C)

11-2 Several comfort settings are available

For each of above modes a comfort level can be selected. The comfort level is related to the timing and the effort (energy consumption) which is put in achieving a certain room temperature by temporarily changing the refrigerant temperature to different values in order to achieve requested conditions more quickly.

- **Powerful**
  Overshoot (during heating operation) or undershoot (during cooling operation) is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The overshoot is allowed from the start up moment.
  In case of cooling operation the evaporating temperature is allowed to go down to 37°F (3°C) on temporary base depending on the situation.
  In case of heating operation the condense temperature is allowed to go up to 120°F (49°C) on temporary base depending on the situation.
  When the request from the indoor units becomes more moderate, the system will eventually go to the steady state condition which is defined by the operation method above.
  - To activate the powerful comfort setting under cooling operation, change field setting [2-41]=3.

  This setting is used in conjunction with setting [2-8].
  - To activate the powerful comfort setting under heating operation, change field setting [2-42]=3.

  This setting is used in conjunction with setting [2-9].
- **Quick**
  Overshoot (during heating operation) or undershoot (during cooling operation) is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The overshoot is allowed from the start up moment.
  In case of cooling operation the evaporating temperature is allowed to go down to 43°F (6°C) on temporary base depending on the situation.
  In case of heating operation the condense temperature is allowed to go up to 115°F (46°C) on temporary base depending on the situation.
  When the request from the indoor units becomes more moderate, the system will eventually go to the steady state condition which is defined by the operation method above.
  - To activate the quick comfort setting under cooling operation, change field setting [2-41]=2.

  This setting is used in conjunction with setting [2-8].
  - To activate the quick comfort setting under heating operation, change field setting [2-42]=2.

  This setting is used in conjunction with setting [2-9].
- **Mild**
  Overshoot (during heating operation) or undershoot (during cooling operation) is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The overshoot is not allowed from the start up moment. The start up occurs under the condition which is defined by the operation mode above.
  In case of cooling operation the evaporating temperature is allowed to go down to 43°F (6°C) on temporary base depending on the situation.
  In case of heating operation the condense temperature is allowed to go up to 115°F (46°C) on temporary base depending on the situation.
  When the request from the indoor units becomes more moderate, the system will eventually go to the steady state condition which is defined by the operation method above.
  The start up condition is different from the powerful and quick comfort setting.
  - To activate the mild comfort setting under cooling operation, change field setting [2-41]=1.

  This setting is used in conjunction with setting [2-8].
  - To activate the mild comfort setting under heating operation, change field setting [2-42]=1.

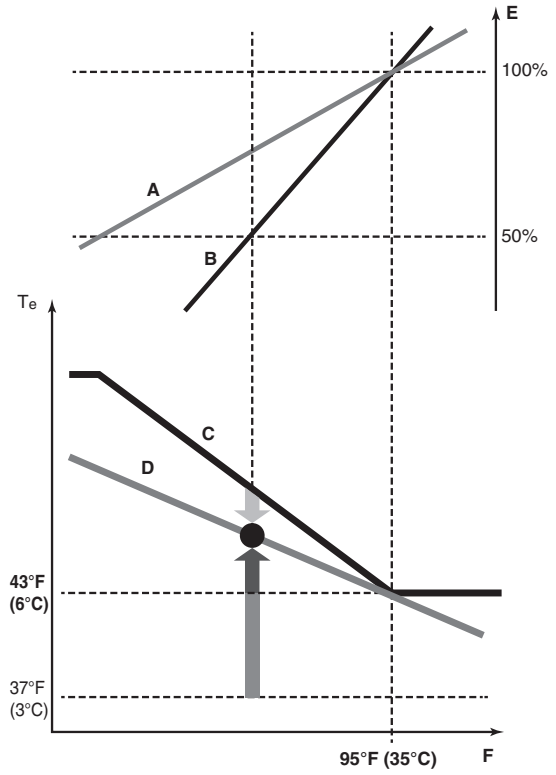
  This setting is used in conjunction with setting [2-9].
- **Eco**
  The original refrigerant temperature target, which is defined by the operation method (see above) is kept without any correction, unless for protection control.
  - To activate the mild comfort setting under cooling operation, change field setting [2-41]=0.

  This setting is used in conjunction with setting [2-8].
  - To activate the mild comfort setting under heating operation, change field setting [2-42]=0.

  This setting is used in conjunction with setting [2-9].

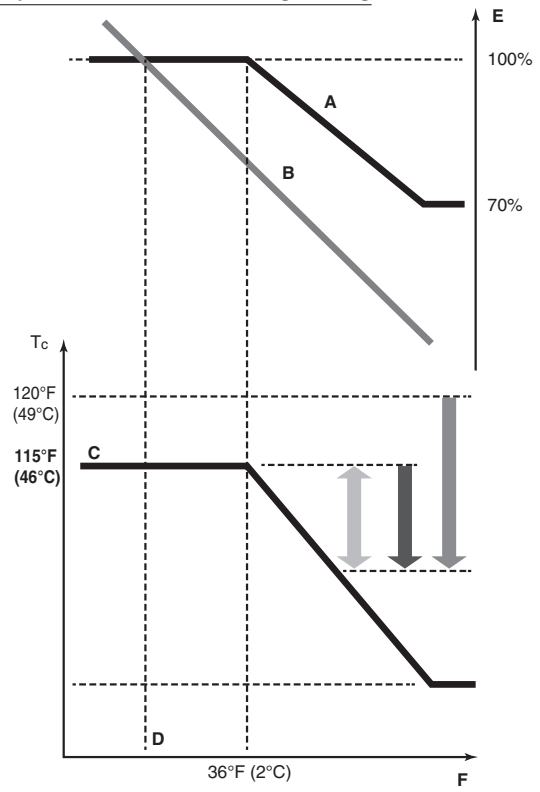
No matter which control is selected, variations on the behavior of the system are still possible due to protection controls to keep the unit operating under reliable conditions. The intentional target, however, is fixed and will be used to obtain the best balance between energy consumption and comfort, depending on the application type.

Example: Automatic mode during cooling



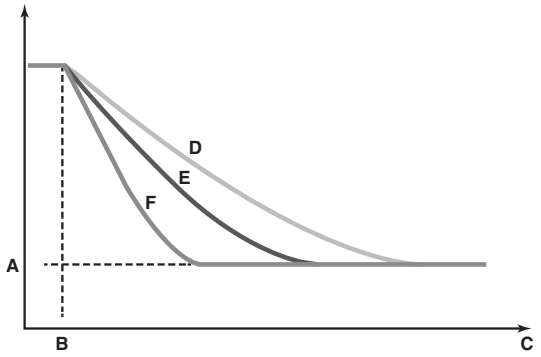
A Actual load curve
B Virtual load curve (initial capacity automatic mode)
C Virtual target value (initial evaporation temperature value automatic mode)
D Required evaporation temperature value
E Load factor
F Outside air temperature
Te Evaporating temperature
Quick
Powerful
Mild

Example: Automatic mode during heating



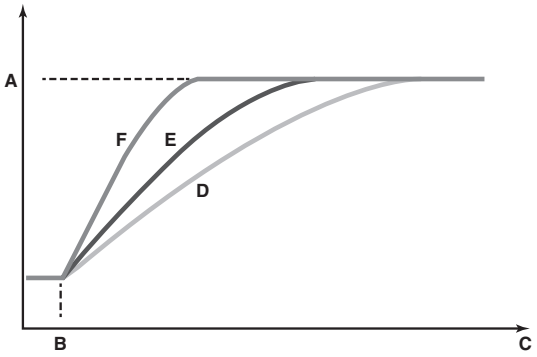
A Virtual load curve (default automatic mode peak capacity)
B Load curve
C Virtual target value (initial condensation temperature value automatic mode)
D Design temperature
E Load factor
F Outside air temperature
Tc Condensing temperature
Quick
Powerful
Mild

Room temperature evolution:



A Indoor unit set temperature
B Operation start
C Operating time
D Mild
E Quick
F Powerful

Room temperature evolution:



A Indoor unit set temperature
B Operation start
C Operating time
D Mild
E Quick
F Powerful

11-3 Setting of Heat Pump Lockout and Emergency Heat Mode

Heat pump is locked out when the setting below and/or external input to ABC terminal has been made.

No.	Setting item display								Setting condition display
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P	*Factory setting
				IND H3P	Master H4P	Slave H5P			
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF ○ ● ● ● ● ● ○ * ON ○ ● ● ● ● ○ ●
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF ○ ● ● ● ● ● ● * Mode 1 ○ ● ● ● ● ● ○ Mode 2 ○ ● ● ● ● ○ ● Mode 3 ○ ● ● ● ● ○ ○ Mode 4 ○ ● ● ● ○ ● ● Mode 5 ○ ● ● ● ○ ● ○ Mode 6 ○ ● ● ● ○ ○ ●

Type		Description	Actions					
			Field setting	Shorted between	Heating Thermo-on		Heating Thermo-off	
					Heater	Fan	Heater	Fan
I	–	Heat-pump heating is always locked out	2-16: ON	–	ON	ON (H/L)	OFF	LL
II	Mode 1	Lockout is controlled by ABC terminals	2-37: Mode 1	A-C	ON	ON (H/L)	OFF	LL
				B-C				OFF
	Mode 2 (for a heater which does not need airflow)		2-37: Mode 2	A-C		LL		LL
				B-C		OFF		OFF
	Mode 3	Lockout is controlled by the outdoor ambient temperature and setpoint which is configured by the field setting 2-57 and 2-47	2-37: Mode 3	Same as 2-37: Mode 1, A-C shorted				
	Mode 4		2-37: Mode 4	Same as 2-37: Mode 1, B-C shorted				
	Mode 5		2-37: Mode 5	Same as 2-37: Mode 2, A-C shorted				
	Mode 6		2-37: Mode 6	Same as 2-37: Mode 2, B-C shorted				

Heat pump lockout temperature

Heat pump would be locked out when the outdoor ambient temperature is smaller than the heat pump lockout temperature.
This setting is only effective when heat pump lockout mode has been set.
And should make the field setting of indoor unit. Refer to Service Manual for details.

No.	Setting item display								Setting condition display
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P	
				IND H3P	Master H4P	Slave H5P			*Factory setting
57	Heat pump lockout temperature	○	○	○	○	●	●	○	–26.1°C (–15°F) ○ ● ● ● ● ● ● *
									–23.3°C (–10°F) ○ ● ● ● ● ● ○
									–20.5°C (–5°F) ○ ● ● ● ● ○ ●
									–17.7°C (0°F) ○ ● ● ● ● ○ ○
									–15°C (5°F) ○ ● ● ● ○ ● ●
									–12.2°C (10°F) ○ ● ● ● ○ ● ○
									–9.4°C (15°F) ○ ● ● ● ○ ○ ●
									–6.6°C (20°F) ○ ● ● ● ○ ○ ○
									–3.8°C (25°F) ○ ● ● ○ ● ● ●
									–1.1°C (30°F) ○ ● ● ○ ● ● ○
									1.6°C (35°F) ○ ● ● ○ ● ○ ●
									4.4°C (40°F) ○ ● ● ○ ● ○ ○
									7.2°C (45°F) ○ ● ● ○ ○ ● ●
									10°C (50°F) ○ ● ● ○ ○ ● ○
									Forced heat pump lockout ○ ● ● ○ ○ ○ ●

Heat pump lockout release differential

Heat pump would be resumed when the outdoor ambient temperature is recovered by differential above the heat pump lockout temperature.

No.	Setting item display								Setting condition display
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P	
				IND H3P	Master H4P	Slave H5P			*Factory setting
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F) ○ ● ● ● ● ● ●
									5.6°C (10°F) ○ ● ● ● ● ● ○ *
									8.3°C (15°F) ○ ● ● ● ● ○ ●

Automatic lockout

When heat pump lockout mode has been set, the auto backup function will automatically be set. This will allow the auxiliary or secondary heat source to be automatically energized in the event of a system failure related to outdoor units.

12. CAUTION FOR REFRIGERANT LEAKS

(Points to note in connection with refrigerant leaks)

Introduction

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

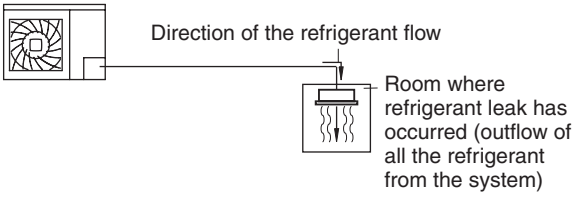
The SPLIT System, like other air conditioning systems, uses R410A as refrigerant. R410A itself is an entirely safe non-toxic, non-combustible refrigerant. Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

Maximum concentration level

The maximum charge of refrigerant and the calculation of the maximum concentration of refrigerant is directly related to the humanly occupied space in to which it could leak.

The unit of measurement of the concentration is lb./ft^3 (the weight in lb. of the refrigerant gas in 1ft^3 volume of the occupied space).

Compliance to the local applicable regulations and standards for the maximum allowable concentration level is required.



Pay a special attention to the place, such as a basement, etc. where refrigerant can stay, since refrigerant is heavier than air.

Procedure for checking maximum concentration

Check the maximum concentration level in accordance with steps 1 to 4 below and take whatever action is necessary to comply.

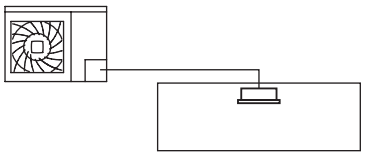
1. Calculate the amount of refrigerant (lb.) charged to each system separately.

amount of refrigerant in the unit (amount of refrigerant with which the system is charged before leaving the factory)	+	additional charging amount (amount of refrigerant added locally in accordance with the length or diameter of the refrigerant piping and type of indoor unit)	=	total amount of refrigerant (lb.) in the system

NOTE

- Where a single refrigerant facility is divided into 2 entirely independent refrigerant systems then use the amount of refrigerant with which each separate system is charged.

2. Calculate a room volume (ft^3)



3. Calculating the refrigerant concentration by using the results of the calculations in steps 1 and 2 above.

$$\frac{\text{total amount of refrigerant in the refrigerant system}}{\text{volume (ft}^3\text{) of the room in which there is an indoor unit installed}} \leq \text{maximum concentration level (lb./ft}^3\text{)}$$

4. Dealing with the situations where the result exceeds the maximum concentration level.
Where the installation of a facility results in a concentration in excess of the maximum concentration level then it will be necessary to revise the system.
Please consult your dealer.

DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P.

Daikin Texas Technology Park,
19001 Kermier Road,
Waller, TX, 77484, U.S.A.

3P591321-10E EM22A013A (2208) SP

EN DKN PLUS INTERFACE

Wi-Fi controller to manage Sky Air and VRV / Residential Daikin units remotely from the Cloud. Online control with the “DKN Cloud NA” App (available for iOS and Android). Wireless Wi-Fi connection. Externally powered by the Daikin unit.
Functionalities:

- Control of the parameters of the unit.
- Temperature and operating mode time schedules.
- Multi-user and multi-session.
- Port for integration via Modbus protocol MODBUS RTU or BACnet MSTP.
- Cloud and/or third party smart thermostat integrations (3PTI).
- On/Off output and input.

FR INTERFACE DKN PLUS

Contrôleur Wi-Fi pour la gestion des unités Daikin Sky Air et VRV / Residential à distance, via le cloud. Contrôle au travers de l’App DKN Cloud NA (disponible pour iOS et Android). Connexion sans fil au réseau via Wi-Fi. Alimentation externe au travers de l’unité intérieure Daikin.
Fonctionnalités :

- Contrôle des différents paramètres du système.
- Programmation horaire de température et de mode de fonctionnement.
- Multiutilisateur et multisession.
- Port pour l’intégration via le protocole Modbus RTU ou BACnet MS-TP.
- Intégration cloud et / ou connexion avec thermostat intelligent tiers (3PTI).
- Sortie et entrée marche / arrêt.

ES INTERFAZ DKN PLUS

Controlador Wi-Fi para la gestión de equipos Daikin de la gama Sky Air y VRV / Residental de forma remota mediante servicios Cloud. Control a través de la App “DKN Cloud NA” (disponible para iOS y Android). Conexión inalámbrica a red mediante Wi-Fi. Alimentación externa a través del equipo Daikin.
Funcionalidades:

- Control de los distintos parámetros del equipo.
- Programación horaria de temperatura y modo de funcionamiento.
- Multiusuario y multisesión.
- Puerto para la integración mediante protocolo Modbus RTU o BACnet MSTP.
- Integración Cloud y/o conexión con termostatos inteligentes de terceros (3PTI).
- Entrada y salida paro-marcha.

(EN) TECHNICAL SPECS / (FR) CARACTERÍSTIQUES TECHNIQUES / (ES) CARACTERÍSTICAS TÉCNICAS

Power supply and consumption / Alimentation et consommation Alimentación y consumo	
Type of power supply / Type d’alimentation / Tipo de alimentación	Vcc
V max	18 V
I max	220 mA
V in	12-16 V
Consumption / Consommation / Consumo	1.08 W
3PTI External power supply / 3PTI alimentation externe /3PTI Fuente de alimentación externa	24 Vac
Supplied wire length / Longueur du câble/ Longitud del cable	2.5 m (8.2 ft)
Wi-Fi Communication port / Port de communication Wi-Fi Puerto de comunicaciones Wi-Fi	
Protocol / Protocole / Protocolo	WiFi – CERTIFIED TM 802.11a/b/g/n/ac (802.11n up to 150 Mbps)
Model / Modèle / Modelo	LBEE5HY1MW
Communication frequency / Fréquence de communication / Frecuencia de comunicación	2,4/5 GHz
Maximum power-Antenna power / Puissance maximum-Puissance d’antenne / Potencia máxima-Potencia de antena	19.5 dBm
Sensitivity / Sensibilité / Sensibilidad	-82 dBm
IP address / Adresse IP / Dirección IP	Static-DHCP / Statique DHCP Estático-DHCP
Bluetooth Communication / Communications Bluetooth / Comunicaciones Bluetooth	
Protocol / Protocole / Protocolo	Bluetooth v5.0 EDR and BLE specification
Bluetooth class / Catégorie Bluetooth / Clase Bluetooth	Class-1, class-2 and class-3 transmitter
Modbus-BACnet : Port / Port / Puerto	
Wire type / type de fil / Tipo de cable	2 x 0,22 (AWG 23 – 2 wired) shielded twisted pair
Communication protocol / Protocole de communication / Protocolo de comunoicación	Modbus RS-485 Par BACnet MSTP *from 300 to 115200bps
Operating temperatures / Températures opérative / Temperaturars operativas	
Storage / De stockage / Almacenaje	-20 ... 70 ºC (-4 ... 158 ºF)
Operation / De fonctionnement / Funcionamiento	0 ... 50 ºC (32 ... 113 ºF)
Operating humidity range / Plage de d’humidité de fonctionnement / Rango de humedad de funcionamiento	5 ... 90% (non-condensing)
Mechanical aspects / Aspects mécaniques / Aspectos mecánicos	
Protection class / Degré de protection /Grado de protección	IP 41
Weight / Poids / Peso	130 g (0.29 lb)
Dimensions / Dimensions / Dimensiones(WxHxD)	92x80x29 mm (3.62x3.15x1.14”)
Relay outputs / Saídas de relé / Salidas de relé	
Nº of relays / Nº de relés / Nº de relés	1
V max	24 Vac
I max	1 A
External power input / Alimentación exterior / Alimentation externe	
V max	24 Vac
I max	1 A
Smart Thermostat	
Wire type / type de fil / Tipo de cable	4 x 0.25mm² (AWG 23 – 2 wired)
Nº of ports / Nombre de ports / Nº de puertos	6
Supplied wire length / Longueur du câble/ Longitud del cable	2.5 m (8.2 ft)
V max	24 Vac
P max	12 W
Min. wire cross section / Min. section transversale du fil / min. sección cable	0.25mm² (24 AWG)
Digital inputs / Entrées numériques / Entradas digitales	
Nº input / Nombre d’entrées / Nº de entradas	1
State / État / Estado	Voltage-free / Libre de tension / Libre de tensión
Maximum distance / Distance maximale /Distancia máxima	10 m (32.8 ft)

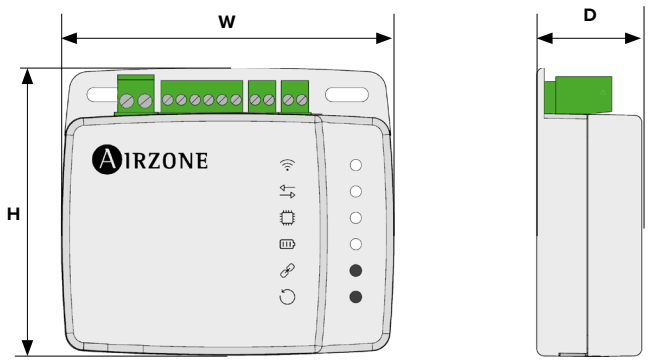
AZAI6WSPDKC

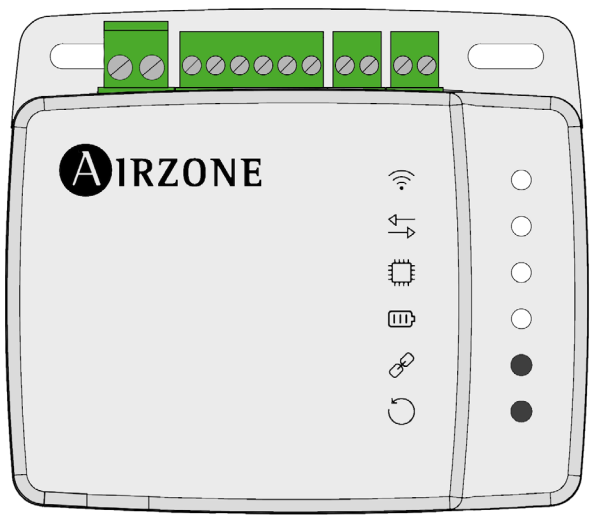
AIRZONE

Contains FCC ID: VPYLBEE5HY1MW
Contains IC: 772C-LBEE5HY1MW

FTAZAI6WDKCA104

EN FR ES





(EN) ENVIRONMENTAL POLICY (FR) POLITIQUE ENVIRONNEMENTALE (ES) POLÍTICA MEDIOAMBIENTAL

(EN) Do not dispose of this equipment in the household waste. Electrical and electronic equipment contain substances that may damage the environment if they are not handled appropriately. The symbol of a crossed-out waste bin indicates that electrical equipment should be collected separately from other urban waste. For correct environmental management, it must be taken to the collection centers provided for this purpose, at the end of its useful life.

(FR) Ne jetez pas l’unité dans la poubelle des déchets ménagers. Les appareils électriques et électroniques contiennent des substances qui peuvent être nocives pour l’environnement si ceux-ci ne sont pas traités correctement. Le symbole de la poubelle barrée d’une croix indique une collecte sélective des appareils électriques, différente du reste de déchets urbains. Dans l’intérêt d’une bonne gestion environnementale, ledit appareil devra être déposé dans les centres prévus à cet effet, à la fin de sa durée de vie utile.

(ES)No tire nunca este equipo con los desechos domésticos. Los productos eléctricos y electrónicos contienen sustancias que pueden ser dañinas para el medioambiente si no se les da el tratamiento adecuado. El símbolo del contenedor de basura tachado indica la recogida selectiva de aparatos eléctricos, diferenciándose del resto de basuras urbanas. Para una correcta gestión ambiental, deberá ser llevado a los centros de recogida previstos, al final de su vida útil.

DKN CLOUD NA APP

Download on the App Store

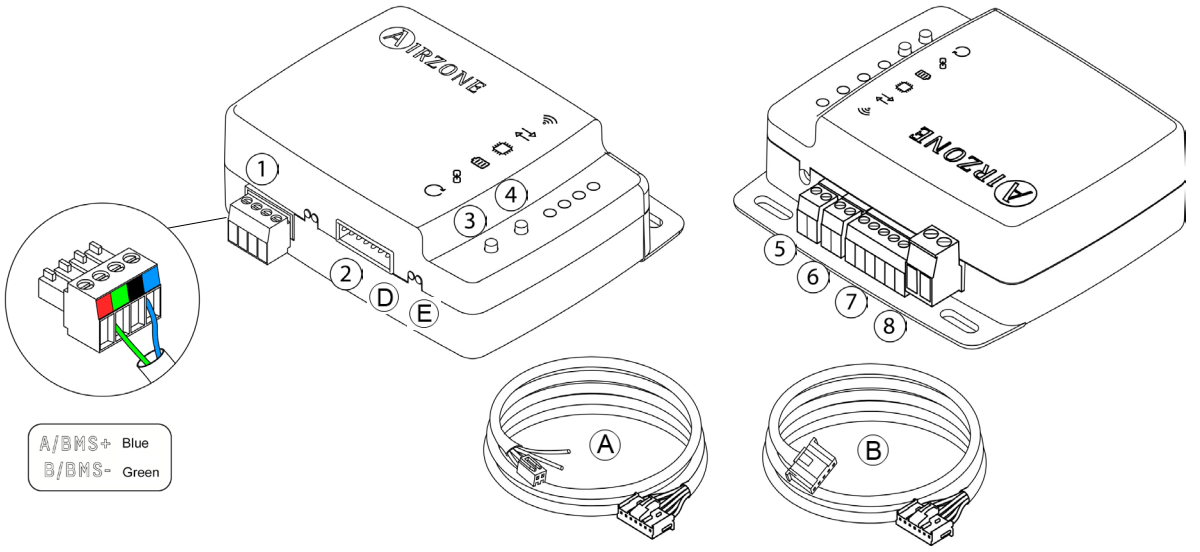
GET IT ON Google Play

(EN) SELF-DIAGNOSIS / (FR) AUTODIAGNOSTIC / (ES) AUTODIAGNÓSTICO

	Meaning / Signification / Significado		
	Wi-Fi Controller connecting to Wi-Fi network Wi-Fi Controller connexion au réseau Wi-Fi Wi-Fi Controller conectándose a red Wi-Fi	Blinking Clignotement Parpadeo	Yellow Jaune Amarillo
	Wi-Fi Controller connected to Wi-Fi network Wi-Fi Controller connecté au réseau Wi-Fi Wi-Fi Controller conectado a red Wi-Fi	Steady Fixe Fijo	Green Vert Verde
	Wi-Fi Controller connected to the server Wi-Fi Controller connecté au serveur Wi-Fi Controller conectado al servidor	Steady Fixe Fijo	Blue Bleu Azul
	Wi-Fi Controller not configured Wi-Fi Controller non configuré Wi-Fi Controller no configurado	Off Éteint Apagado	
	DKN Controller internal communication Communication interne Contrôleur DKN Comunicación interna Controlador DKN	On On Encendido	Red Rouge Rojo
	Microprocessor activity Activité du microcontrôleur Actividad del microprocesador	Blinking Clignotement Parpadeo	Green Vert Verde
	Power supply Alimentation Alimentación	Steady Fixe Fijo	Red Rouge Rojo
D	Data transmission to the indoor unit Transmission des données à l’unité intérieure Transmisión de datos hacia la unidad interior	Blinking Clignotement Parpadeo	Red Rouge Rojo
E	Data reception from the indoor unit Réception des données de l’unité intérieure Recepción de datos desde la unidad interior	Blinking Clignotement Parpadeo	Green Vert Verde

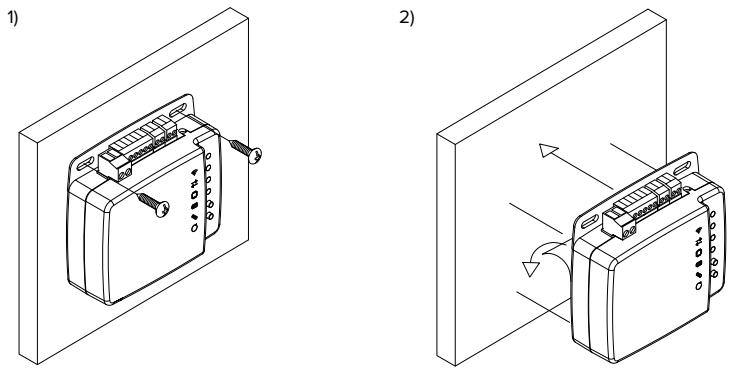
(EN) DEVICE ELEMENTS / (FR) ÉLEMENTS DU DISPOSITIF / (ES) ELEMENTOS DEL DISPOSITIVO

	Significado / Meaning / Significado
Ⓐ	Wiring cable for P1P2 communication / Câblage pour la communication P1P2 / Cable para P1P2 comunicación
Ⓑ	Wiring cable for S21 communication / Câblage pour la communication S21 / Cable para S21 comunicación
①	Modbus-BACnet port / Port Modbus-BACnet / Puerto Modbus-BACnet https://dkncloudna.com/modbus/MI_AZAI6_MODBUS_A4_MUL.pdf
②	Indoor unit port / Connexion à l'unité intérieure / Puerto unidad interior
③	Device reboot / Réinitialisation du dispositif / Reinicio del dispositvo
④	Association process reset / Réinitialisation du processus d'association / Reinicio proceso de asociación
⑤	Digital input / Entrée numérique / Entrada digital
⑥	On-Off output / Sortie marche-arrêt / Salida paro-marcha
⑦	Smart thermostat connection / Connexion thermostat intelligent / Conexión termostato inteligente
⑧	External power input / entrée d'alimentation externe / Entrada de fuente de alimentación externa



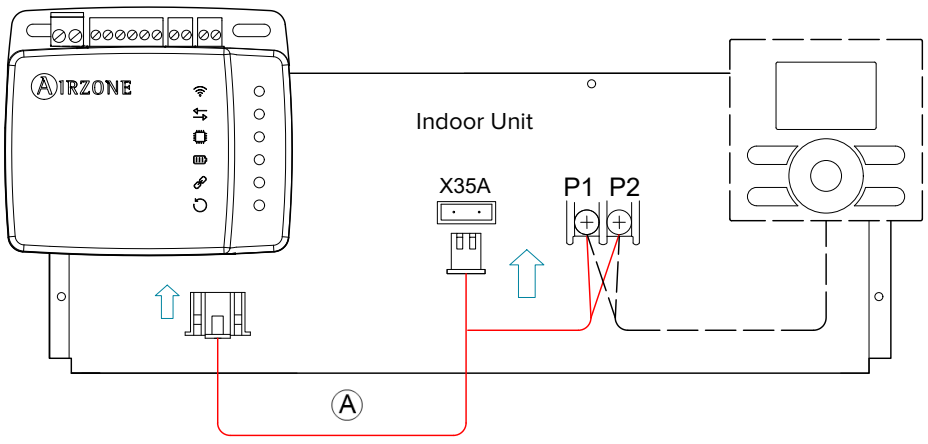
(EN) ASSEMBLY / (FR) MONTAGE / (ES) MONTAJE

1) Screw attachment / Par vis / Mediante tornillos
2) Double-sided adhesive attachment / Par adhésif à double face / Mediante adhesivo de doble cara

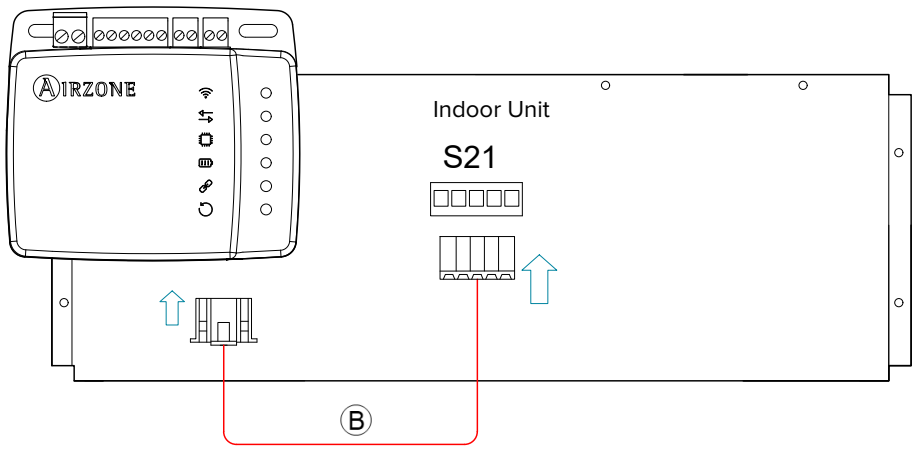


(EN) P1P2 CONNECTION / (FR) CONNEXION P1P2 / (ES) CONEXIÓN P1P2 (A+B)

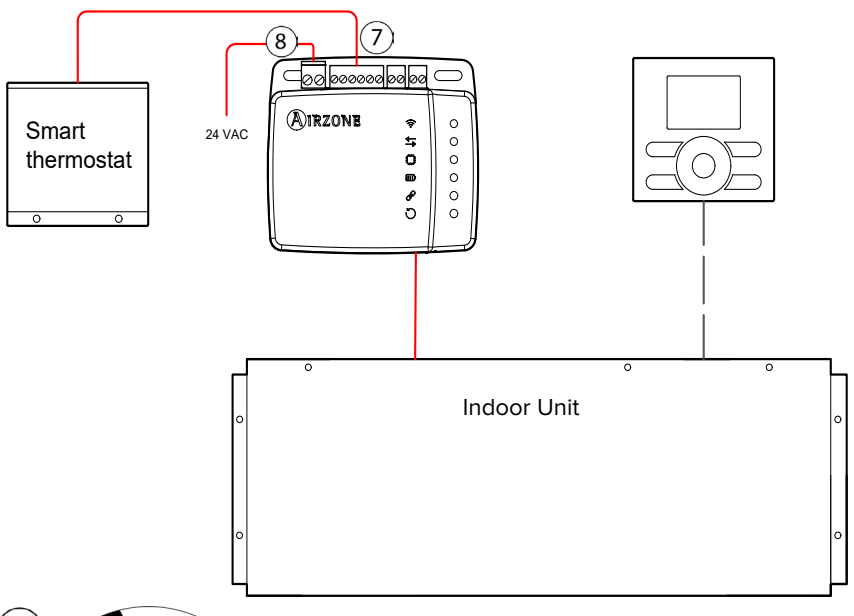
(EN) Important: It is optional for the Daikin Remote Controller to remain connected to the P1 P2 port of the unit, when connect to the DKN Cloud.
(FR) Attention : La télécommande Daikin peut rester connectée au port P1 P2 de l'unité, lors de la connexion au cloud DKN.
(ES) Importante: Es opcional que el mando a distancia Daikin permanezca conectado al puerto P1 P2 de la unidad, cuando se conecte a DKN Cloud.

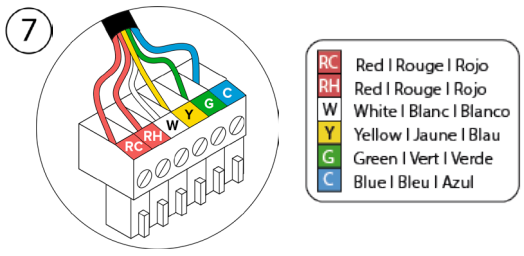


(EN) S21 CONNECTION / (FR) CONNEXION S21 / (ES) CONEXIÓN S21 (A+C)



(EN) SMART THERMOSTAT CONNECTION / (FR) CONNEXION THERMOSTAT INTELLIGENT / (ES) CONEXIÓN DE TERMOSTATO INTELIGENTE

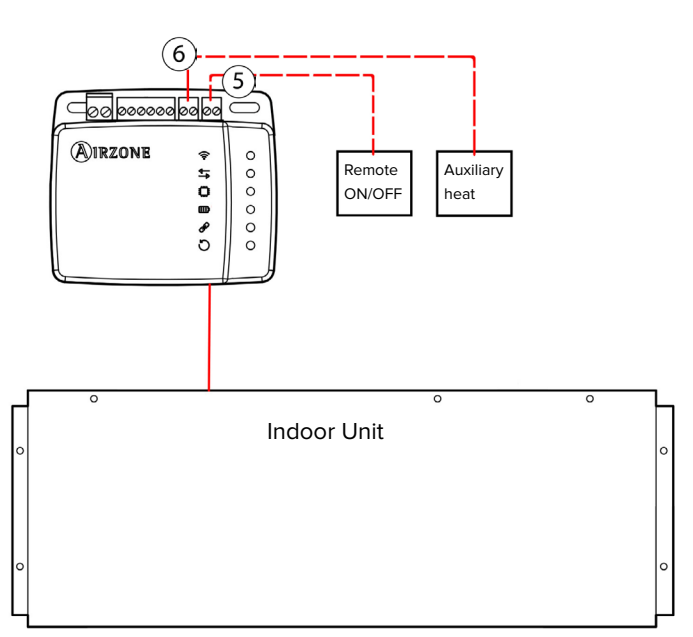




RC Red | Rouge | Rojo
RH Red | Rouge | Rojo
W White | Blanc | Blanco
Y Yellow | Jaune | Blau
G Green | Vert | Verde
C Blue | Bleu | Azul

8 External power input for smart thermostat / Entrée d'alimentation externe pour thermostat intelligent / Entrada de fuente de alimentación externa parar el termostato inteligente

(EN) DIGITAL INPUT/OUTPUT CONNECTION / (FR) CONNEXION ENTRÉE/SORTIE NUMÉRIQUE / (ES) CONEXIÓN ENTRADA/SALIDA DIGITAL



5 Remote ON/OFF // Marche/Arrêt à distance // Paro/Marcha remoto

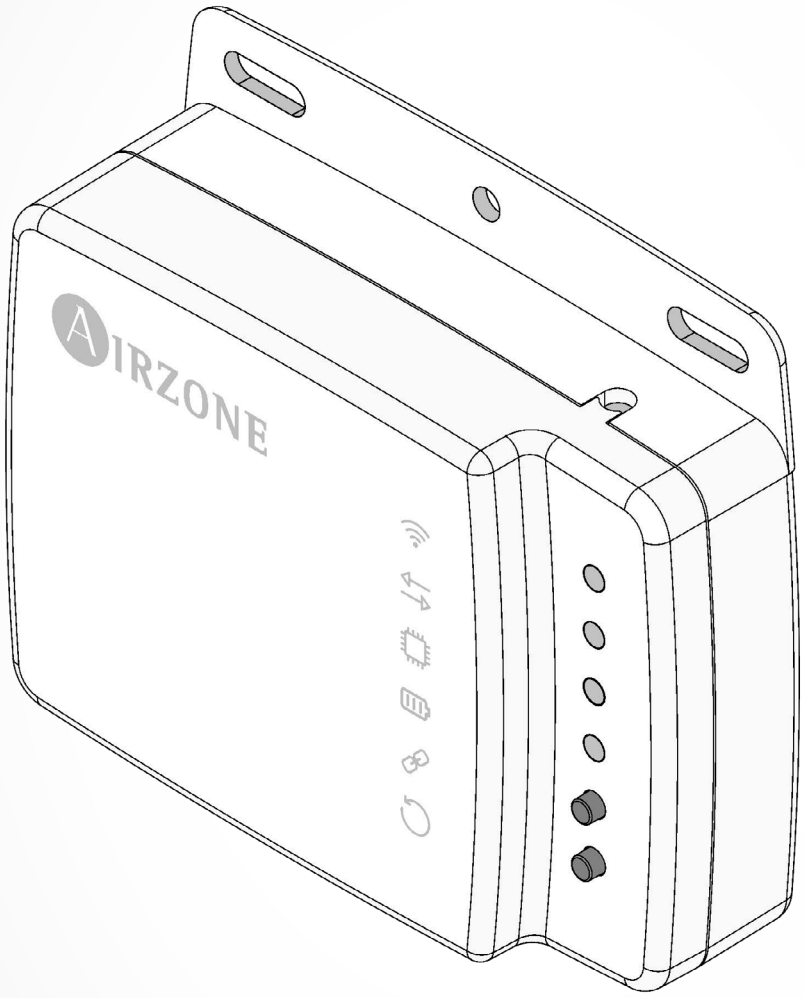
6 Auxiliary heat / Chauffage auxiliaire / Calor auxiliar

(EN) OPTIONAL
(FR) OPTIONNEL
(ES) OPCIONAL

Integration manual

EN
FR
ES

DKN Cloud Wi-Fi Adaptor



AZAI6WSCDKA
AZAI6WSCDKB
AZAI6WSPDKC

INDEX

PRECAUTIONS AND ENVIRONMENTAL POLICY

PRECAUTIONS

For your security, and to protect the devices, follow these instructions:

- Do not manipulate the system with wet or damp hands.
- Disconnect the power supply before making any connections.
- Take care not to cause a short circuit in any of the system connections.

ENVIRONMENTAL POLICY

	Do not dispose of this equipment in the household waste. Electrical and electronic equipment contain substances that may damage the environment if they are not handled appropriately. The symbol of a crossed-out waste bin indicates that electrical equipment should be collected separately from other urban waste. For correct environmental management, it must be taken to the collection centers provided for this purpose, at the end of its useful life. The equipment components may be recycled. Act in accordance with current regulations on environmental protection. If you replace it with other equipment, you must return it to the distributor or take it to a specialized collection center. Those breaking the law or by-laws will be subject to such fines and measures as are laid down in environmental protection legislation.

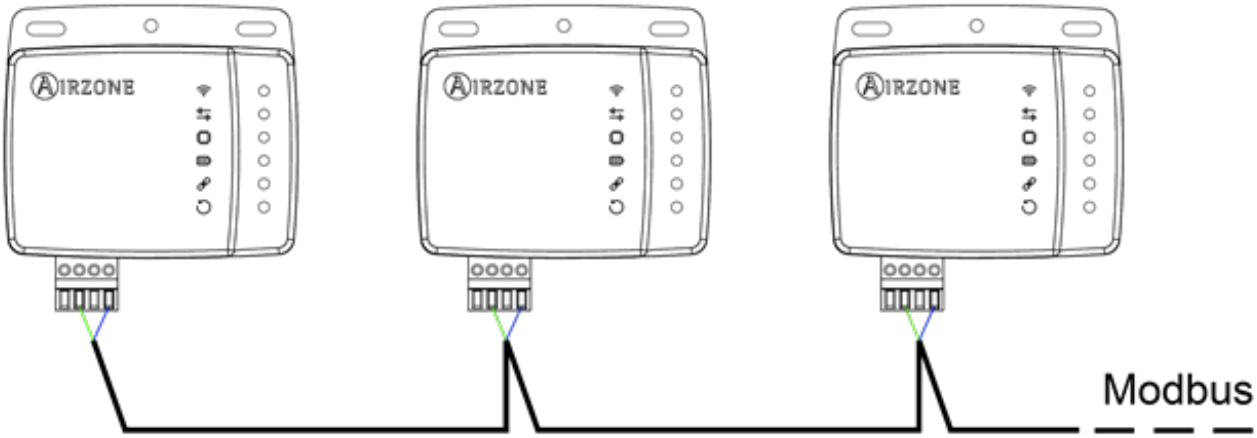
RS-485 COMMUNICATION PORT

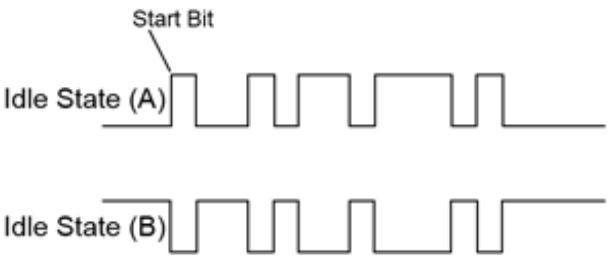
RS-485, also known as EIA-485, is a communication standard in bus.

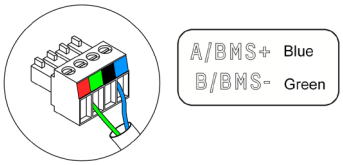
Integration bus	
Speed of the communication port	from 300 to 115200bps
Communication	Half duplex
Frame length	8-bit
Stop bit	1-bit
Stream control	None
Parity	Even

CONNECTION

For proper operation of the system, verify that only the communication cables (green-blue) are connected to their matching domotic buses. Attach the wires with the terminal screws following the color code.







MODBUS PROTOCOL

MODBUS Protocol is a communication structure used to establish **master-slave/client-server communication** between intelligent devices connected on different types of buses or networks.

Each device intended to communicate using Modbus is given a unique address. Master devices send a command in a frame which contains the address of the device or the end-devices (slaves). All devices are sent the frame, but only the recipient interprets and executes the command. Modbus commands contain checksum information, to allow the recipient to detect transmission errors.

Note: *It possible to send information to multiple devices simultaneously using a frame called "Broadcast".*

Each message includes redundant information that ensures it is properly received. If, after a certain time, the master does not receive a confirmation it interprets that an error has occurred and terminates communication.

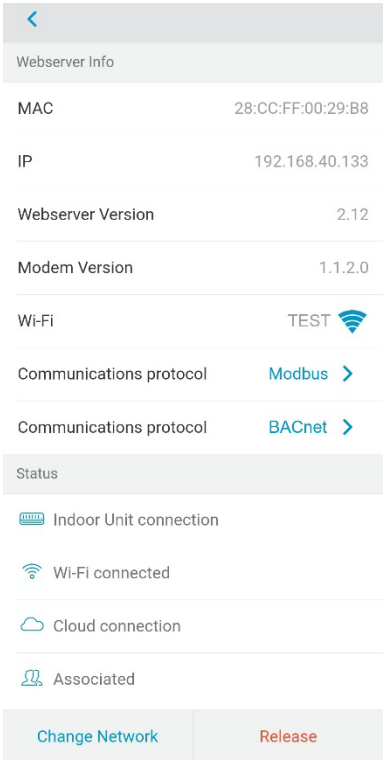
The mode of transmission used is MODBUS-RTU. Each byte of data is represented by two 4-bit characters in hexadecimal format. The format of the frame is the following:

Start	0	1	2	3	4	5	6	7	Parity	Stop

DKN WI-FI CONTROLLER

The DKN is **a Modbus slave device**, so it is necessary to indicate its address. To do this, associate your DKN via the "DKN NA" app (available for iOS and Android) by following these steps:

1. On the drop-down menu press the option Add device.
2. Select the unit from the list of available units to get info.
   Note: *If your unit does not appear, confirm the Bluetooth function of your iOS or Android is activated. Verify that the DKN is working properly.*
3. Enter the pin code located in the DKN if required and tap Send button.
4. Enter the Communication protocol > Modbus (slave address) to with you want to point within **Webserver Information**.



MODBUS FUNCTION CODES

Modbus basic commands allow the control of a device to change the value of its registers (memory slot) or to request the content of these registers, depending on the codes:

Code	Function:
03	Read holding registers
04	Read input registers
06	Preset/write single holding register
16	Preset/write multiple holding registers

MODBUS COMMANDS

The format of the commands for the read/write operations is as follows (8 byte):

Slave address	Operation code	Register address	Data	CRC
1 byte	1 byte	1 byte	1…2·N bytes	2 bytes

- **Slave address** Defines the system to access. A Modbus command contains the Modbus address of the device it is intended for (1 to 247). 0 address is reserved for a transmission to all devices (broadcast).
- **Operation code.** Specifies the operation to be performed.
- **Register address.** Specifies the operation to be accessed. In commands to be performed in multiple registers, defines the boot log, from which you want to operate consecutively.
- **Data.** Formed by 2 bytes (simple operations) or a set of 2 bytes (multiple operations) that contain the information in the command.
- **CRC.** Two bytes are added to the end of the stream in order to detect transmission o reception errors. This action is done using the Cyclic Redundant Code.

- Generator polynomial: **CRC-16 = $x^{16} + x^{15} + x^2 + 1$.**

WRITE COMMANDS

Write a single holding register

Byte	Field
0	Address of the slave (1-247) (0: Broadcast)
1	Write single register (6)
2	Register address
3	
4	Data to be written
5	
6	CRC
7	

The response, as long as there is no error type, must be exactly the same format as the write command.

Write multiple registers

Byte	Field
0	Address of the slave (1-247) (0: Broadcast)
1	Write multiple register (16)
2	Starting register address
3	Number of registers to be written (N)
4	
5	Total number of bytes of write data (2·N)
6	Data to be written in register 1
7	
…	
5+2·N	Data to be written in register N
6+2·N	
7+2·N	CRC
8+2·N	

The response, as long as it is error-free, will be:

Byte	Field
0	Address of the slave (1-247) (0: Broadcast)
1	Write multiple registers (16)
2	Starting register address
3	
4	Number of registers to be written (N)
5	
6	CRC
7	

READ COMMAND

Question

Byte	Field
0	Address of the slave (1-247) (0: Broadcast)
1	Reading records (3/4)
2	Starting register address
3	
4	Number of registers to be read (N)
5	
6	CRC
7	

Response

Byte	Field
0	Slave address (1-247) (0: Broadcast)
1	Read holding registers (3/4)
2	Number of response bytes (2·N)
3	Data to be read in register 0
4	
…	
3+2·N	Data to be read in register N
4+2·N	
5+2·N	CRC
6+2·N	

REGISTERS

SYSTEM REGISTERS

Register address (decimal)	Description	Values	Operations	DKA	DKB	DKC	
						P1P2	S21
0	On/Off: The DKN Plus Interface will report the status. Using the Building management system, any indoor unit may be configured as on/off. These are Read/Write objects.	0 : Off 1 : On	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
1	Setpoint*:The indoor unit setpoint, and this value is reported to the Building management system and can be changed from it. These are Read/Write objects.	Setpoint x 10 *Example: 22.5 ºC : 225*	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
2	Room temperature (Localtemp)**: The Building management system can obtain the actual room temperature. These are read only objects.	Localtemp x 10 Example: 22.5 ºC is 225	0x03, 0x04	•	•	•	•
3	Modes: The DKN Plus Interface will report the operation mode of the indoor unit, represented by a number. These are Read/Write objects.	1 : Auto 2 : Cooling 3 : Heating, 4 : Fan 5 : Dry	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
4	Speeds: This parameter refers to the IU fan speed. Depending on the value selected, the IU fan will run at a given speed, and the step at which the fan is running is reported to the BMS platform. This is read only object.	0-100% 0: Automatic	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
5	Louvers Vertical: The DKN Plus Interface will report the position of the unit louvers represented by a number. These are Read/Write objects.	0 - 7 : Louvers position 8 : Auto 9 : Swing 10 : Swirl	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
7	Unit Error Code 1: If the indoor unit generates an error, it will be reported by the DKN Plus Interface to the BMS platform. This is Read only object.	Ascii value: *Example: 'C4'*	0x03, 0x04	•	•	•	•
8	Unit Error Code 2: If the indoor unit generates an error, it will be reported by the DKN Plus Interface to the BMS platform. This is Read only object.	Ascii value	0x03, 0x04	•	•	•	•
14	Available Modes: The DKN Plus Interface will report the available modes. This is Read only object.	Bit 0: Auto Mode Bit 1: Cool Mode Bit 2: Heat Mode Bit 3: Vent. Mode Bit 4: Dry Mode	0x03, 0x04	•	•	•	•
15	Available Speeds: The DKN Plus Interface will report the available speeds. This is Read only object.	Bit 0: Auto Bit 1: Super-Low Bit 2: Low Bit 3: Medium-Low Bit 4: Medium Bit 5: Medium-High Bit 6: High Bit 7: Super-High	0x03, 0x04	•	•	•	•

16	Available Louvers: indica la posición de las lamas disponibles en la unidad. This is Read only object.	Bit 0: Auto U/D Bit 3: Swing U/D Bit 4: Swing L/R Bit 5: Swril Bit 8-11: Vertical positions (0-7) Bit 12-15: Horiz. Positions (0-7)	0x03, 0x04	•	•	•	•
35	External Temp: The Building management system can obtain the external temperature. These are read only objects.	Temperature x 10	0x03, 0x04		•		•
36	Return Temp: The Building management system can obtain the return temperature. These are read only objects.	Temperature x 10	0x03, 0x04	•	•	•	•
37	Liquid pipe Temperature: The Building management system can obtain the exchange heat temperature of indoor unit. These are read only objects.	Temperature x 10	0x03, 0x04	•		•	
38	Gas Pipe Temp Indoor Unit: The Building management system can obtain the gas pipe temperature of indoor unit. These are read only objects.	Temperature x 10	0x03, 0x04	•		•	
42	Position expansion valve Indoor Unit	Pulse units	0x03, 0x04	•		•	
53	Work Temperature: The Building management system can obtain the work temperature for any zone. These are read only objects.	Temperature x 10 *Example: 22.5 ºC is 225*	0x03, 0x04	•	•	•	•
54	Speeds numeric	0,1,2,3…. 0 *:* Auto	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
55	Error value	Value of error *Example: 0x24*	0x03, 0x04	•	•	•	•
56	Modbus address	Modbus slave address (Default 1)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
57	Config port baudrate	0: 100 bps 1: 300 bps 2: 500 bps 3: 1200 bps 4: 2400 bps 5: 4800 bps 6: 7800 bps 7: 9600 bps 8: 19200 bps (default) 9: 57600 bps 10: 115200 bps	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
58	Config port parity	0: None 1: Odd 2: Even (default)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
59	Heater status. Monitor the Aux heater status (digital output contact).	0: Deactivated 1: Activated	0x03,0x04			•	•
60	Digital Input status. Monitor the digital input operation status	0: Deactivated 1: Activated	0x03,0x04			•	•

Notes:

(*) Maximum/Minimum limits depend on your A/C unit. (**) Should be greater than 0.

TABLE DES MATIÈRES

PRÉCAUTIONS ET POLITIQUE ENVIRONNEMENTALE

PRÉCAUTIONS

Pour votre propre sécurité et pour protéger les dispositifs, suivez ces instructions :

- Ne pas manipuler le système avec les mains humides ou mouillées.
- Débrancher l'alimentation avant de procéder à toute connexion.
- Veiller à ne pas provoquer de court-circuit sur une des connexions du système.

POLITIQUE ENVIRONNEMENTALE

	Ne mettez pas cet appareil au rebut avec les déchets ménagers. Les appareils électriques et électroniques contiennent des substances qui peuvent porter atteinte à l'environnement si elles ne sont pas manipulées correctement. Le symbole d'une poubelle barrée d'une croix indique que les appareils électriques doivent être collectés séparément du reste de déchets urbains. Dans l'intérêt d'une bonne gestion environnementale, l'appareil devra être déposé dans les centres de collecte prévus à cet effet, à la fin de sa durée de vie utile. Les composants de l'appareil sont recyclables. Suivez les normes en vigueur en matière de protection de l'environnement. Si vous remplacez l'appareil par un autre, vous devez rendre l'ancien appareil au distributeur ou bien le déposer dans un centre de collecte spécialisé. Les personnes enfreignant la loi ou les règlements sont passibles des sanctions et mesures prévues par la loi en matière de protection de l'environnement.

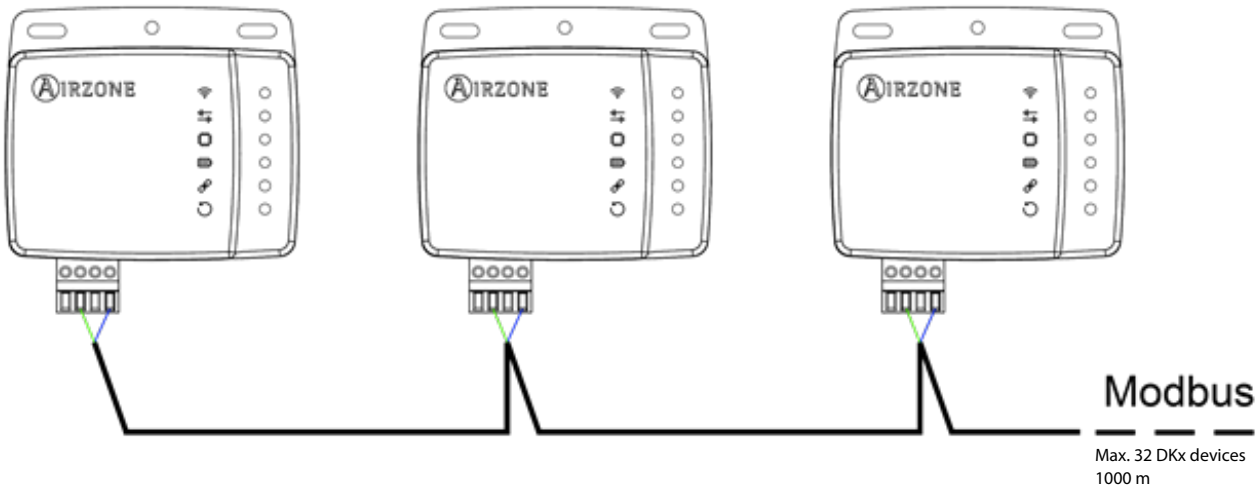
PORT DE COMMUNICATION RS-485

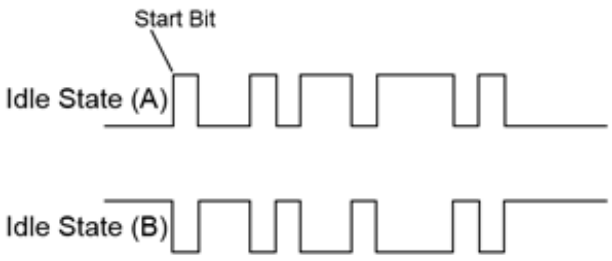
Le RS-485, également appelé EIA-485, est un standard de communication par bus.

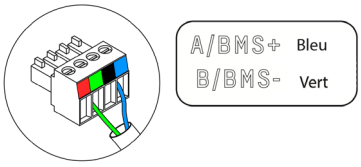
Bus d'intégration	
Vitesse du port de communication	De 300 à 115 200 bps
Communication	Half-duplex
Longueur de trame	8 bits
Bit d'arrêt	1 bit
Contrôle de flux	Aucun
Parité	Paire

CONNEXION

Afin de veiller au bon fonctionnement du système, vérifiez que seuls les câbles de communication (vert-bleu) sont connectés à leurs bus domotiques respectifs. Fixez les câbles à l'aide des vis des bornes, en respectant le code couleur.







PROTOCOLE MODBUS

Le protocole Modbus est une structure de communication utilisée pour établir la **communication principale-esclave/client-serveur** entre les dispositifs intelligents connectés sur différents types de bus ou de réseaux.

Chaque dispositif destiné à communiquer via Modbus reçoit une seule adresse. Les dispositifs principaux émettent une commande dans une trame, qui contient l'adresse du dispositif ou des dispositifs finaux (esclaves). Tous les dispositifs reçoivent la trame, mais seul le destinataire interprète et exécute la commande. Les commandes Modbus contiennent des informations de somme de contrôle, afin que le destinataire détecte les erreurs de transmission.

Note : *Il est possible d'envoyer les informations à plusieurs dispositifs de manière simultanée en utilisant une trame appelée « Broadcast ».*

Chaque message comprend des informations redondantes qui assurent sa bonne réception. Si, passé un certain délai, le principal ne reçoit pas de confirmation, il interprète cela comme une erreur et met fin à la communication.

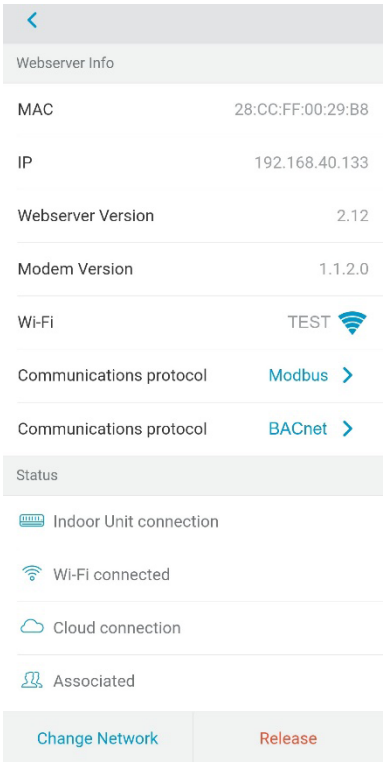
Le mode de transmission utilisé est MODBUS-RTU. Chaque octet de données est représenté par deux caractères de 4 bits en format hexadécimal. Le format de la trame est le suivant :

Départ	0	1	2	3	4	5	6	7	Parité	Arrêt

CONTRÔLEUR WI-FI DKN

Le DKN est **un dispositif esclave Modbus**. Il est donc nécessaire d'indiquer son adresse. Pour cela, associez votre DKN grâce à l'application « DKN NA » (disponible sur iOS et Android) en suivant les étapes suivantes :

1. Dans le menu déroulant, appuyez sur l'option « Ajouter dispositif ».
2. Sélectionnez l'unité parmi la liste des unités disponibles pour obtenir plus d'informations.
   Note : *Si votre unité n'apparaît pas, vérifiez que la fonction Bluetooth de votre dispositif iOS ou Android est activée. Vérifiez que le DKN fonctionne correctement.*
3. Saisissez le code PIN du DKN, s'il vous est demandé, puis appuyez sur le bouton **Envoyer**.
4. Saisissez le protocole de communication > Modbus (adresse de l'esclave) cible dans **Informations du Webserver**.



CODES DE FONCTION MODBUS

Les commandes basiques de Modbus permettent de contrôler un dispositif pour modifier la valeur de ses registres (emplacement de mémoire) ou demander le contenu desdits registres, selon les différents codes de fonction :

Code	Fonction :
03	Lecture des registres de maintien
04	Lecture des registres d'entrée
06	Prédéfinition/écriture d'un seul registre de maintien
16	Prédéfinition/écriture de plusieurs registres de maintien

COMMANDES MODBUS

Le format des commandes pour les opérations de lecture/écriture est le suivant (8 octets) :

Adresse de l'esclave	Code d'opération	Adresse de registre	Données	CRC
1 octet	1 octet	1 octet	1…2·N octets	2 octets

- **Adresse de l'esclave.** Définit le système auquel vous allez accéder. Une commande Modbus contient l'adresse Modbus du dispositif cible (de 1 à 247). L'adresse 0 est réservée à la transmission à tous les dispositifs (Broadcast).
- **Code d'opération.** Indique l'opération qui va être effectuée.
- **Adresse de registre.** Indique l'opération à laquelle vous allez accéder. Dans les commandes qui seront appliquées à plusieurs registres, définissez le registre de démarrage à partir duquel vous souhaitez effectuer des opérations consécutives.
- **Données.** Formé par 2 octets (opérations simples) ou par un ensemble de 2 octets (opérations multiples) qui contiennent l'information de la commande.
- **CRC.** Deux octets sont ajoutés en fin de flux afin de détecter les erreurs de transmission ou de réception. L'action est réalisée grâce au code de redondance cyclique (CRC).

- Polynôme générateur : **CRC-16 = $x^{16} + x^{15} + x^2 + 1$.**

COMMANDES D'ÉCRITURE

Écriture d'un seul registre de maintien

Octet	Champ
0	Adresse de l'esclave (1-247) (0 : Broadcast)
1	Écriture d'un seul registre (6)
2	Adresse de registre
3	
4	Données à écrire
5	
6	CRC
7	

À condition qu'il n'existe aucun type d'erreur, la réponse doit avoir toujours exactement le même format que la commande d'écriture.

Écriture de plusieurs registres

Octet	Champ
0	Adresse de l'esclave (1-247) (0 : Broadcast)
1	Écriture de plusieurs registres (16)
2	Adresse du registre de départ
3	Nombre de registres à écrire (N)
4	
5	Nombre total d'octets de données d'écriture (2 N)
6	Données à écrire sur le registre 1
7	
…	
5+2 N	Données à écrire sur le registre N
6+2 N	
7+2 N	CRC
8+2 N	

À condition qu'il n'existe aucune erreur, la réponse est :

Octet	Champ
0	Adresse de l'esclave (1-247) (0 : Broadcast)
1	Écriture de plusieurs registres (16)
2	Adresse du registre de départ
3	
4	Nombre de registres à écrire (N)
5	
6	CRC
7	

COMMANDES DE LECTURE

Question

Octet	Champ
0	Adresse de l'esclave (1-247) (0 : Broadcast)
1	Lecture des registres (3/4)
2	Adresse du registre de départ
3	
4	Nombre de registres à lire (N)
5	
6	CRC
7	

Réponse

Octet	Champ
0	Adresse de l'esclave (1-247) (0 : Broadcast)
1	Lecture des registres de maintien (3/4)
2	Nombre d'octets de la réponse (2 N)
3	Données à lire sur le registre 0
4	
…	
3+2 N	Données à lire sur le registre N
4+2 N	
5+2 N	CRC
6+2 N	

REGISTRES

REGISTRES DU SYSTÈME

Adresse de registre (décimal)	Description	Valeurs	Opérations	DKA	DKB	DKC	
						P1P2	S21
0	Marche/Arrêt : l'interface DKN Plus signalera l'état. Toutes les unités intérieures peuvent être configurées sur On/Off à l'aide du système de gestion de bâtiments. Il s'agit d'objets de lecture/écriture.	0 -> Arrêt 1 -> Marche	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
1	Température de consigne* : la température de consigne de l'unité intérieure ; cette valeur est signalée au système de gestion de bâtiments et peut être modifiée. Il s'agit d'objets de lecture/écriture.	Température de consigne x 10 Exemple : 22,5 °C -> 225	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
2	Température ambiante (Templocal)** : le système de gestion de bâtiments peut obtenir la température ambiante réelle. Il s'agit d'objets de lecture seule.	Templocal x 10 Exemple : 22,5 °C -> 225	0x03, 0x04	•	•	•	•
3	Modes : l'interface DKN Plus signalera le mode de fonctionnement de l'unité intérieure, représenté par un numéro. Il s'agit d'objets de lecture/écriture.	1 -> Automatique 2 -> Refroidissement 3 -> Chauffage 4 -> Ventilation 5 -> Déshumidification	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
4	Vitesses : ce paramètre fait référence à la vitesse du ventilateur de l'unité intérieure. En fonction de la valeur sélectionnée, le ventilateur de l'unité intérieure fonctionne à une vitesse déterminée et cette vitesse est signalée à la plateforme BMS. Il s'agit d'un objet de lecture seule.	0-100% 0: Automatique	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
5	Lames verticales : l'interface DKN Plus signalera la position des lames de l'unité, représentée par un numéro. Il s'agit d'objets de lecture/écriture. Ces positions vont du 1 au 9, et le mode d'oscillation correspond au numéro 10.	0 - 7 -> Position des lames 8 -> Automatique 9 -> Oscillation 10 -> Tourbillon	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
7	Code d'erreur de l'unité 1 : si l'unité intérieure produit une erreur, l'interface DKN Plus le signalera à la plateforme BMS. Il s'agit d'un objet de lecture seule.	Valeur ASCII : Exemple : 'C4'	0x03, 0x04	•	•	•	•
8	Code d'erreur de l'unité 2 : si l'unité intérieure produit une erreur, l'interface DKN Plus le signalera à la plateforme BMS. Il s'agit d'un objet de lecture seule.	Valeur ASCII	0x03, 0x04	•	•	•	•
14	Modes disponibles : l'interface DKN Plus signalera les modes disponibles. Il s'agit d'un objet de lecture seule.	Bit 0 : mode automatique Bit 1 : mode refroidissement Bit 2 : mode chauffage Bit 3 : mode ventilation Bit 4 : mode déshumidification	0x03, 0x04	•	•	•	•

15	Vitesses disponibles : l'interface DKN Plus signalera les vitesses disponibles. Il s'agit d'un objet de lecture seule.	Bit 0 : automatique Bit 1 : très faible Bit 2 : faible Bit 3 : moyenne-faible Bit 4 : moyenne Bit 5 : moyenne-élevée Bit 6 : élevée Bit 7 : très élevée	0x03, 0x04	•	•	•	•
16	Lames disponibles : indiquez la position des lames disponibles sur l'unité. Il s'agit d'un objet de lecture seule.	Bit 0 : automatique haut/bas Bit 3 : oscillation haut/bas Bit 4 : oscillation gauche/droite Bit 5 : tourbillon Bits 8-11 : positions verticales (0-7) Bits 12-15 : positions horizontales (0-7)	0x03, 0x04	•	•	•	•
35	Temp. externe : le système de gestion de bâtiments peut obtenir la température externe. Il s'agit d'objets de lecture seule.	Température x 10	0x03, 0x04		•		•
36	Temp. de reprise : le système de gestion de bâtiments peut obtenir la température de reprise. Il s'agit d'objets de lecture seule.	Température x 10	0x03, 0x04	•	•	•	•
37	Temp. échange chaleur unité intérieure : le système de gestion de bâtiments peut obtenir la température d'échange de chaleur de l'unité intérieure. Il s'agit d'objets de lecture seule.	Température x 10	0x03, 0x04	•		•	
38	Temp. gaine gaz unité intérieure : le système de gestion de bâtiments peut obtenir la température de la gaine de gaz de l'unité intérieure. Il s'agit d'objets de lecture seule.	Température x 10	0x03, 0x04	•		•	
42	Position du robinet détendeur de l'unité intérieure	Unités d'impulsion	0x03, 0x04	•		•	
53	Température de travail : le système de gestion de bâtiments peut obtenir la température de travail de n'importe quelle zone. Il s'agit d'objets de lecture seule.	Température x 10 Exemple : 22,5 °C -> 225	0x03, 0x04	•	•	•	•
54	Vitesses numériques	0,1,2,3…. 0 -> Automatique	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
55	Valeur d'erreur	Valeur d'erreur Exemple : 0x24	0x03, 0x04	•	•	•	•
56	Adresse Modbus	Adresse de l'esclave Modbus (valeur prédéterminée 1)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
57	Configurer le débit en bauds du port	0: 100 bps 1: 300 bps 2: 500 bps 3: 1200 bps 4: 2400 bps 5: 4800 bps 6: 7800 bps 7: 9600 bps 8: 19200 bps (default) 9: 57600 bps 10: 115200 bps	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
58	Configurer la parité du port	0: None 1: Odd 2: Even (default)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
59	État du chauffage. Contrôle l'état du chauffage auxiliaire (contact de sortie numérique).	0 : Désactivé 1 : Activé	0x03,0x04			•	•
60	État de l'entrée numérique. Contrôle l'état de fonctionnement de l'entrée numérique.	0 : Désactivé 1 : Activé	0x03,0x04			•	•

Notes :

(*) Les limites maximum/minimum dépendent de l'unité A/C. (**) Doit être supérieure à 0.

ÍNDICE

PRECAUCIONES Y POLÍTICA MEDIOAMBIENTAL

PRECAUCIONES

Por su seguridad, y para proteger los dispositivos, siga estas instrucciones:

- No manipule el sistema con las manos húmedas o mojadas.
- Desconecte la alimentación antes de realizar cualquier conexión.
- Tenga cuidado de no causar un cortocircuito en alguna de las conexiones del sistema.

POLÍTICA MEDIOAMBIENTAL

	No deseche este equipo junto con la basura doméstica. Los equipos eléctricos y electrónicos contienen sustancias que pueden dañar el medioambiente si no se manipulan adecuadamente. El símbolo de un contenedor de basura tachado indica que los equipos eléctricos deben recogerse por separado del resto de residuos urbanos. Para una correcta gestión ambiental, se deberá llevar el equipo a los centros de recogida previstos al final de su vida útil. Los componentes del equipo pueden reciclarse. Siga las normativas actuales sobre protección medioambiental. Si sustituye el equipo por otro, deberá devolver el primero al distribuidor o depositarlo en un centro de recogida especializado. Aquellos que infrinjan la ley o los reglamentos estarán sujetos a las sanciones y medidas estipuladas en la legislación sobre protección medioambiental.

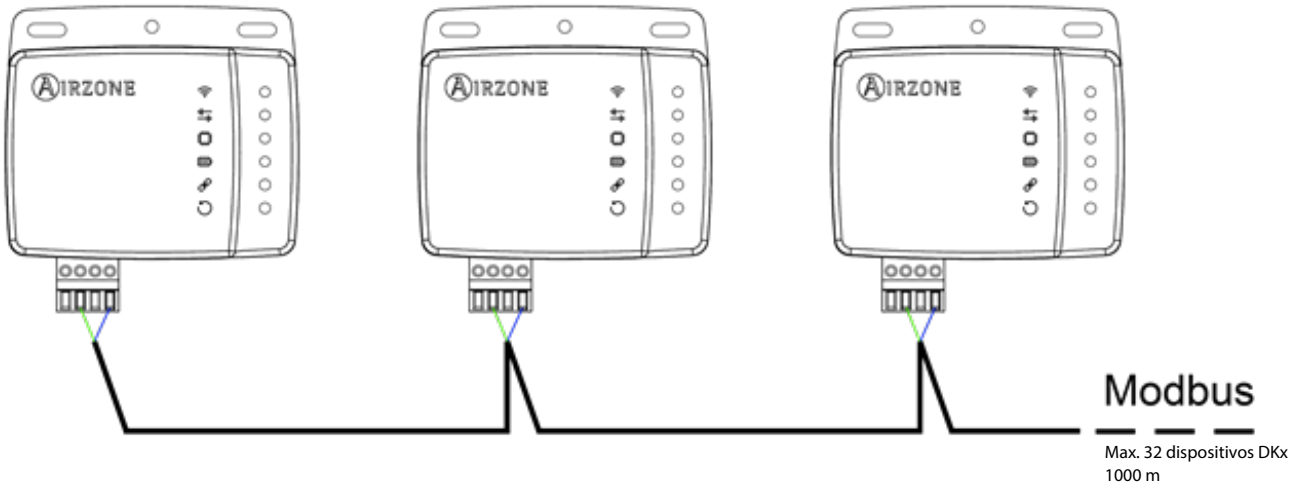
PUERTO DE COMUNICACIONES RS-485

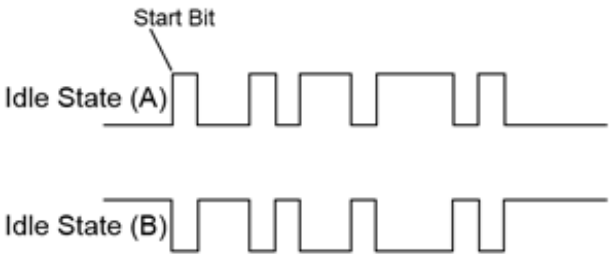
El RS-485, también conocido como EIA-485, es un estándar de comunicaciones en bus.

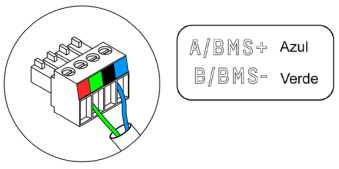
Bus de integración	
Velocidad del puerto de comunicaciones	De 300 a 115.200 bps
Comunicación	Half-duplex
Longitud de la trama	8 bits
Bit de parada	1 bit
Control de flujo	Ninguno
Paridad	Par

CONEXIÓN

Para el correcto funcionamiento del sistema, compruebe que solo los cables de comunicación (ver-de-azul) estén conectados a sus buses domóticos correspondientes. Fije los cables con los tornillos de las bornas respetando el código de colores.







PROTOCOLO MODBUS

El protocolo Modbus es una estructura de comunicación que se utiliza para establecer la **comunicación maestro-esclavo/ cliente-servidor** entre dispositivos inteligentes conectados en distintos tipos de buses o redes.

Cada dispositivo destinado a comunicarse mediante Modbus recibe una dirección única. Los dispositivos maestros envían un comando en una trama que contiene la dirección del dispositivo o los dispositivos finales (esclavos). Todos los dispositivos reciben la trama, pero solo el destinatario interpreta y ejecuta el comando. Los comandos Modbus contienen información de suma de comprobación para que el destinatario detecte errores de transmisión.

Nota: *Es posible enviar información a varios dispositivos simultáneamente utilizando una trama denominada "Broadcast".*

Cada mensaje incluye información redundante que garantiza su correcta recepción. Si, pasado un tiempo, el maestro no recibe confirmación, interpreta que se ha producido un error y termina la comunicación.

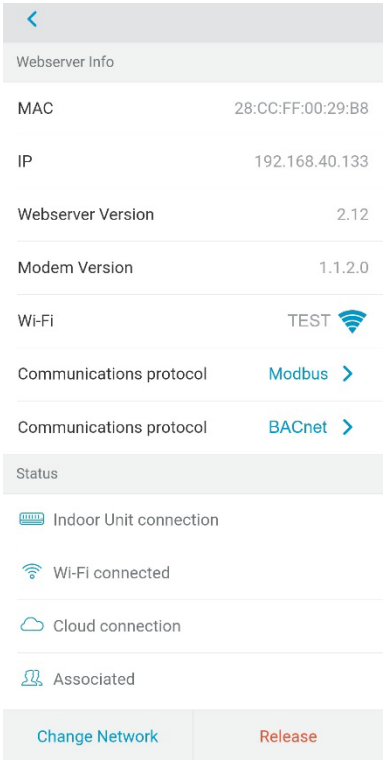
El modo de transmisión utilizado es MODBUS-RTU. Cada byte de datos se representa mediante dos caracteres de 4 bits en formato hexadecimal. El formato de la trama es el siguiente:

Inicio	0	1	2	3	4	5	6	7	Paridad	Parada

CONTROLADOR WI-FI DKN

El DKN es **un dispositivo esclavo Modbus,** de modo que es necesario indicar su dirección. Para ello, asocie su DKN mediante la aplicación "DKN NA" (disponible para iOS y Android) siguiendo estos pasos:

5. En el menú desplegable, pulse la opción "Añadir dispositivo".
6. Seleccione la unidad de la lista de unidades disponibles para obtener información.
   Nota: *Si no aparece su unidad, confirme que la función Bluetooth de su dispositivo iOS o Android está activada. Compruebe que el DKN funciona correctamente.*
7. Introduzca el código PIN que se encuentra en el DKN si se le solicita y pulse el botón **Enviar**.
8. Introduzca el protocolo de comunicaciones > Modbus (dirección del esclavo) al que desea apuntar en **Información del Webserver**.



CÓDIGOS DE FUNCIÓN MODBUS

Los comandos básicos Modbus permiten controlar un dispositivo para cambiar el valor de sus registros (ranura de memoria) o para solicitar el contenido de dichos registros, según los diferentes códigos de función:

Código	Función:
03	Lectura de registros de retención
04	Lectura de registros de entrada
06	Preestablecimiento/escritura de un solo registro de retención
16	Preestablecimiento/escritura de varios registros de retención

COMANDOS MODBUS

El formato de los comandos para las operaciones de lectura/escritura es el siguiente (8 bytes):

Dirección del esclavo	Código de operación	Dirección de registro	Datos	CRC
1 byte	1 byte	1 byte	1…2·N bytes	2 bytes

- **Dirección del esclavo.** Define el sistema al que se va a acceder. Un comando Modbus contiene la dirección Modbus del dispositivo al que está destinado (de 1 a 247). La dirección 0 está reservada para una transmisión a todos los dispositivos (Broadcast).
- **Código de operación.** Especifica la operación que se va a realizar.
- **Dirección de registro.** Especifica la operación a la que se va a acceder. En los comandos que van a realizarse en varios registros, define el registro de arranque desde el que desea operar consecutivamente.
- **Datos.** Formado por 2 bytes (operaciones simples) o un conjunto de 2 bytes (operaciones múltiples) que contienen la información del comando.
- **CRC.** Se añaden dos bytes al final del flujo para detectar errores de transmisión o recepción. Esta acción se realiza mediante el código de redundancia cíclica (CRC).

- Polinomio generador: **CRC-16 = $x^{16} + x^{15} + x^2 + 1$.**

COMANDOS DE ESCRITURA

Escritura de un solo registro de retención

Byte	Campo
0	Dirección del esclavo (1-247) (0: Broadcast)
1	Escritura de un solo registro (6)
2	Dirección de registro
3	
4	Datos que escribir
5	
6	CRC
7	

Siempre que no haya ningún tipo de error, la respuesta debe tener exactamente el mismo formato que el comando de escritura.

Escritura de varios registros

Byte	Campo
0	Dirección del esclavo (1-247) (0: Broadcast)
1	Escritura de varios registros (16)
2	Dirección del registro de inicio
3	Número de registros que escribir (N)
4	
5	Número total de bytes de datos de escritura (2·N)
6	Datos que escribir en el registro 1
7	
…	
5+2·N	Datos que escribir en el registro N
6+2·N	
7+2·N	CRC
8+2·N	

Siempre que no haya errores, la respuesta será:

Byte	Campo
0	Dirección del esclavo (1-247) (0: Broadcast)
1	Escritura de varios registros (16)
2	Dirección del registro de inicio
3	
4	Número de registros que escribir (N)
5	
6	CRC
7	

COMANDOS DE LECTURA

Pregunta

Byte	Campo
0	Dirección del esclavo (1-247) (0: Broadcast)
1	Lectura de registros (3/4)
2	Dirección del registro de inicio
3	
4	Número de registros que leer (N)
5	
6	CRC
7	

Respuesta

Byte	Campo
0	Dirección del esclavo (1-247) (0: Broadcast)
1	Lectura de registros de retención (3/4)
2	Número de bytes de la respuesta (2·N)
3	Datos que leer en el registro 0
4	
…	
3+2·N	Datos que leer en el registro N
4+2·N	
5+2·N	CRC
6+2·N	

REGISTROS

REGISTROS DEL SISTEMA

Dirección de registro (decimal)	Descripción	Valores	Operaciones	DKA	DKB	DKC	
						P1P2	S21
0	On/Off: La interfaz DKN Plus notificará el estado. Cualquier unidad interior puede configurarse como On/Off mediante el sistema de gestión de edificios. Estos son objetos de lectura/escritura.	0 → Off 1 → On	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
1	Temperatura de consigna*: La temperatura de consigna de la unidad interior; este valor se notifica al sistema de gestión de edificios y puede modificarse. Estos son objetos de lectura/escritura.	Temperatura de consigna x 10 *Ejemplo: 22,5 °C -> 225*	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
2	Temperatura ambiente (Templocal)**: El sistema de gestión de edificios puede obtener la temperatura ambiente real. Estos son objetos de solo lectura.	Templocal x 10 *Ejemplo: 22,5 °C -> 225*	0x03, 0x04	•	•	•	•
3	Modos: La interfaz DKN Plus notificará el modo de funcionamiento de la unidad interior, representado mediante un número. Estos son objetos de lectura/escritura.	1 → Automático 2 → Frío 3 → Calor 4 → Ventilación 5 → Seco	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
4	Velocidades: Este parámetro hace referencia a la velocidad del ventilador de la unidad interior. Según el valor seleccionado, el ventilador de la unidad interior funcionará a una velocidad determinada, y dicha velocidad se notificará a la plataforma BMS. Este es un objeto de solo lectura.	0-100% 0: Automático	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
5	Lamas verticales: La interfaz DKN Plus notificará la posición de las lamas de la unidad, representada mediante un número. Estos son objetos de lectura/escritura.	0 - 7 → Posición de las lamas 8 → Automático 9 → Oscilación 10 → Remolino	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
7	Código de error de la unidad 1: Si la unidad interior genera un error, la interfaz DKN Plus se lo notificará a la plataforma BMS. Este es un objeto de solo lectura.	Valor ASCII: *Ejemplo: 'C4'*	0x03, 0x04	•	•	•	•
8	Código de error de la unidad 2: Si la unidad interior genera un error, la interfaz DKN Plus se lo notificará a la plataforma BMS. Este es un objeto de solo lectura.	Valor ASCII	0x03, 0x04	•	•	•	•
14	Modos disponibles: La interfaz DKN Plus notificará los modos disponibles. Este es un objeto de solo lectura.	Bit 0: Modo automático Bit 1: Modo frío Bit 2: Modo calor Bit 3: Modo ventilación Bit 4: Modo seco	0x03, 0x04	•	•	•	•

15	Velocidades disponibles: La interfaz DKN Plus notificará las velocidades disponibles. Este es un objeto de solo lectura.	Bit 0: Automática Bit 1: Superbaja Bit 2: Baja Bit 3: Media-baja Bit 4: Media Bit 5: Media-alta Bit 6: Alta Bit 7: Superalta	0x03, 0x04	•	•	•	•
16	Lamas disponibles: Indica la posición de las lamas disponibles en la unidad. Este es un objeto de solo lectura.	Bit 0: Automática arriba/abajo Bit 3: Oscilación arriba/abajo Bit 4: Oscilación izquierda/derecha Bit 5: Remolino Bit 8-11: Posiciones verticales (0-7) Bit 12-15: Posiciones horizontales (0-7)	0x03, 0x04	•	•	•	•
35	Temp. externa: El sistema de gestión de edificios puede obtener la temperatura externa. Estos son objetos de solo lectura.	Temperatura x 10	0x03, 0x04		•		•
36	Temp. de retorno: El sistema de gestión de edificios puede obtener la temperatura de retorno. Estos son objetos de solo lectura.	Temperatura x 10	0x03, 0x04	•	•	•	•
37	Temp. intercambio calor unidad interior: El sistema de gestión de edificios puede obtener la temperatura de intercambio de calor de la unidad interior. Estos son objetos de solo lectura.	Temperatura x 10	0x03, 0x04	•		•	
38	Temp. tubo gas unidad interior: El sistema de gestión de edificios puede obtener la temperatura del tubo de gas de la unidad interior. Estos son objetos de solo lectura.	Temperatura x 10	0x03, 0x04	•		•	
42	Posición de la válvula de expansión de la unidad interior	Unidades de pulso	0x03, 0x04	•		•	
53	Temperatura de trabajo: El sistema de gestión de edificios puede obtener la temperatura de trabajo de cualquier zona. Estos son objetos de solo lectura.	Temperatura x 10 *Ejemplo: 22,5 ºC -> 225*	0x03, 0x04	•	•	•	•
54	Velocidades numéricas	0,1,2,3…. 0 -> Automático	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
55	Valor de error	Valor de error *Ejemplo: 0x24*	0x03, 0x04	•	•	•	•
56	Dirección Modbus	Modbus slave address (Default 1)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
57	Configurar la tasa de baudios del puerto	0: 100 bps 1: 300 bps 2: 500 bps 3: 1200 bps 4: 2400 bps 5: 4800 bps 6: 7800 bps 7: 9600 bps 8: 19200 bps (default) 9: 57600 bps 10: 115200 bps	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
58	Configurar la paridad del puerto	0: Ninguno 1: Impar 2: Par (por defecto)	0x03, 0x04, 0x06, 0x10, 0x16	•	•	•	•
59	Estado del calentador. Monitoriza el estado del calentador auxiliar (contacto de salida digital). Monitor the Aux heater status (digital output contact).	0: Desactivado 1: Activado	0x03,0x04			•	•
60	Estado de la entrada digital. Monitoriza el estado de funcionamiento de la entrada digital	0: Desactivado 1: Activado	0x03,0x04			•	•

Notas:

(*) Los límites máximo/mínimo dependen de la unidad de A/A. (**) Debe ser mayor que

airzonecontrol.com

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v 100.8

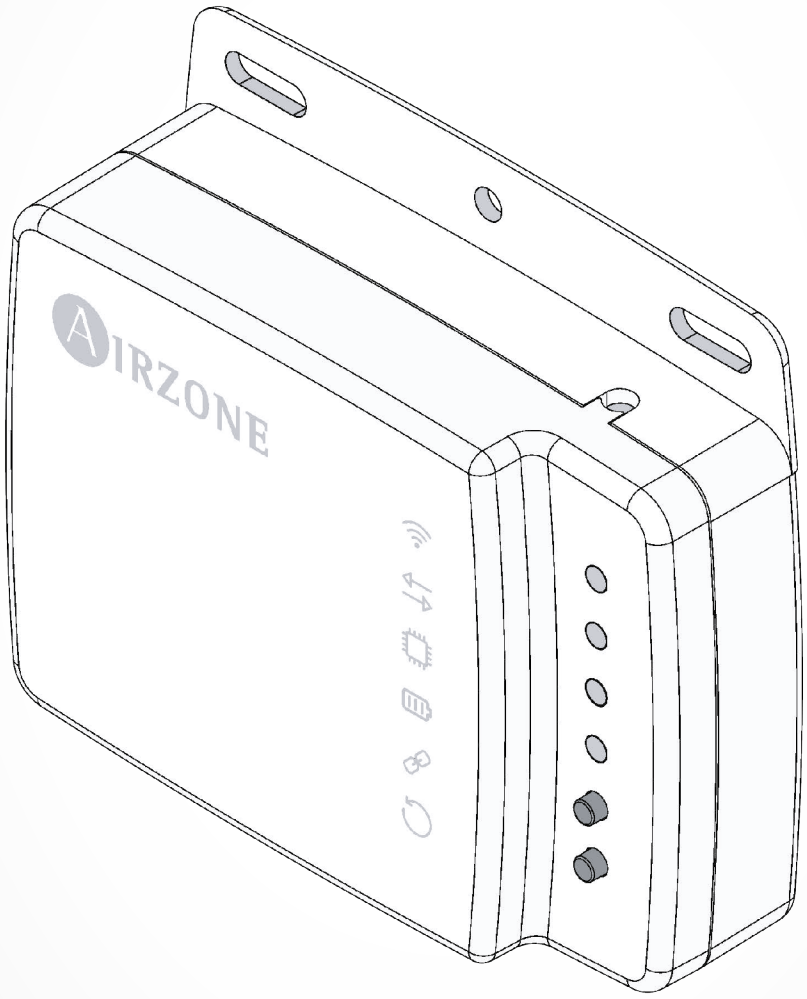
Operation manual

English

Français

Español

DKN Cloud Wi-Fi Adaptor



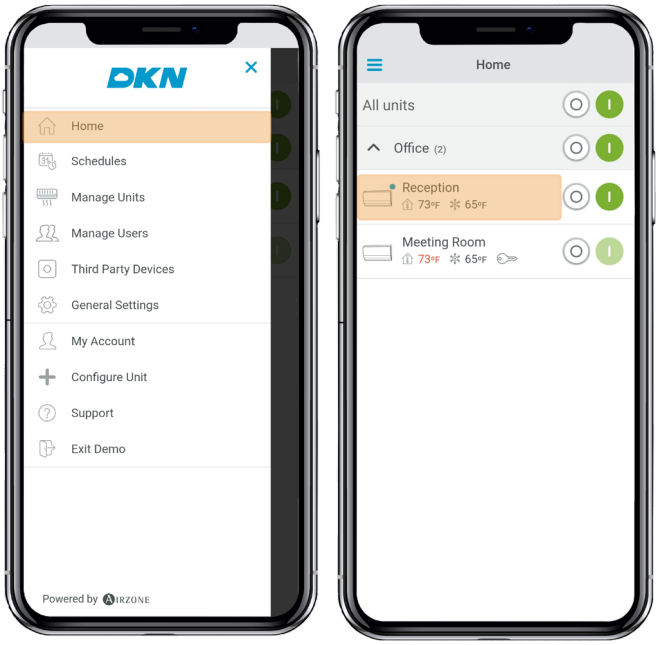
AZAI6WSCDKA
AZAI6WSCDKB
AZAI6WSPDKC

AIRZONE

TABLE OF CONTENTS

UNIT CONTROL

From the Home screen tap on the Menu icon and select the Daikin unit to control.



Depending on the installation, the reference temperature will be measured from:

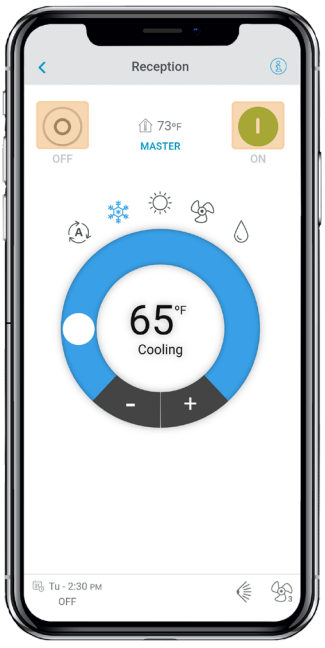
IU 73°F The Indoor Unit

T 73°F The Thermostat

M 73°F Both

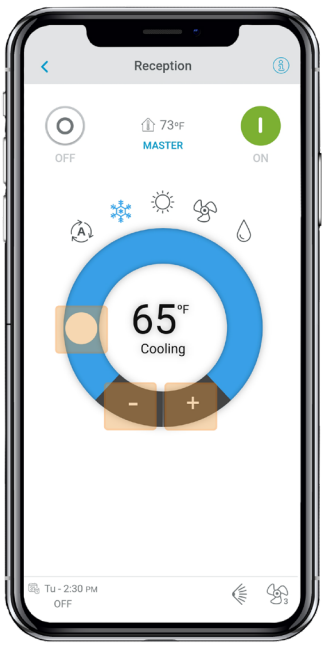
Setting the unit on/off

Tap on the On and Off buttons individually or by groups from the Home screen or tap the unit to access the control screen for turning on and off the zone.



Setting the set-point temperature

Adjust the set-point temperature by sliding your finger around the ring on the screen or by tapping the + and - buttons.



Setting the operating mode

The available modes, depending on the installation type, are:

Auto. Allows automatic switching between cooling and heating (Not applicable for VRV Heat pump and Multi-split systems).

Cooling. The air conditioning unit will start a cooling cycle.

Heating. The air conditioning unit will start a heating cycle.

Fan. The system works exclusively in fan mode.

Dry. The air conditioning unit will start a dehumidification cooling cycle decreasing the humidity.

Getting information from unit

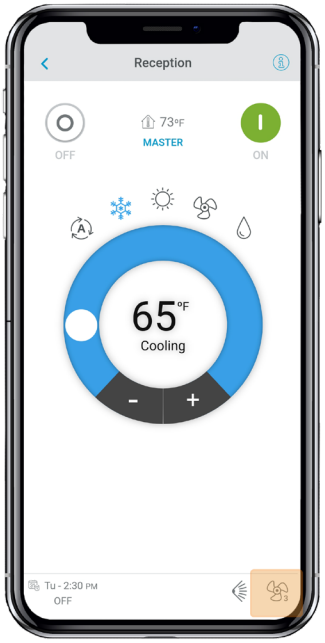
Open the drop-down menu, tap on Home icon and select the Daikin unit to control.

Tap on unit information which shows the device MAC address, firmware version running and Wi-Fi signal and Modbus address.

Tap the "Ok" button to return to the previous screen.

Setting the fan-speed

Tap the fan icon to select from the available speeds.



Setting the louver

Tap the louver icon to select from the available positions.

Emergency Heat

Emergency heat forces the activation of auxiliary heat to support the heat pump even if the conditions for auxiliary heat activation are not met.
This function is only available in installations with auxiliary heat activated and set as external auxiliary heat.

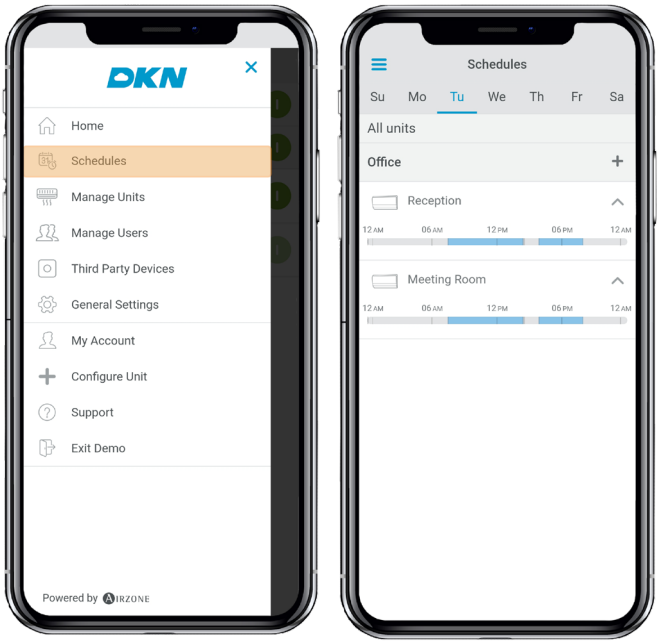
1. From the drop-down menu, click on Home.

2. Click on the AC unit to access its control screen.

3. Activate or deactivated Emergency Heat.

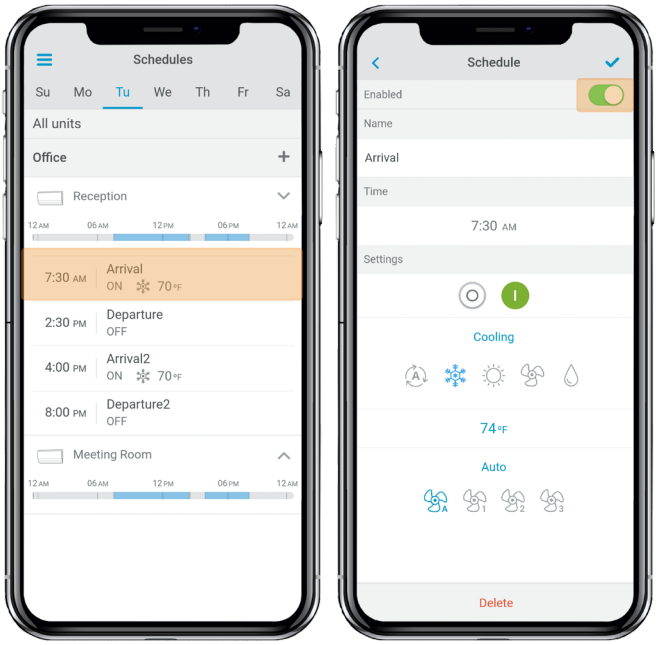
SCHEDULES

From the Home screen tap on the Menu icon and go to Schedules.



Activating/deactivating a schedule

Tap the day of the week to see the schedule associated to that day.
Select a unit to see all the schedules associated to it.
Select a schedule and activate/deactivate it by tapping the switch within the schedule.



Creating a new schedule

From the Home screen tap on the Menu icon and go to Schedules.
Each system group can set up to 24 schedules.
Follow the steps below to set the schedule:

1. Tap the + icon in the group where the schedule is going to be created.
2. Create a name for the schedule
3. Set the starting time of the schedule.
4. Select the parameters of the schedule:
   . On and off.
   . Operation mode.
   . Set-point temperature.
   . Fan-speed.
5. Select the days of the week when the schedules will take place.
6. Assign the schedule to the units.
7. Tap the confirmation icon to save the schedule or < to go back.

Important: *The schedules do not have an automatic end time, hence it is necessary to create a schedule event to turn ON/OFF the unit.*

Editing a schedule

From the Home screen tap on the Menu icon and go to Schedules.
Follow the steps described below:

1. Tap the schedule to be edited.
2. Change the selected parameters.
3. Assign the schedule to the units.
4. Tap the confirmation icon to save the schedule or < to go back.

To delete the schedule, tap Delete Schedule.
Important*: The schedules do not have an automatic end time, hence it is necessary to create a schedule event to turn ON/OFF the unit.*

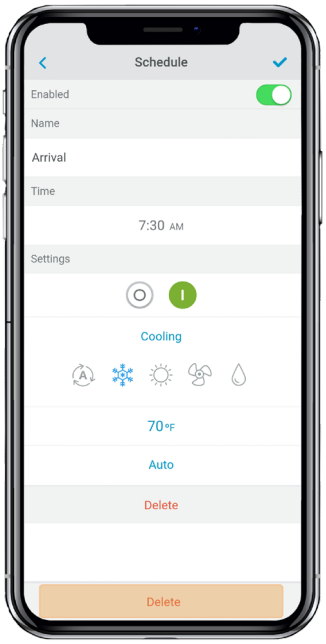
Seeing a schedule

Tap the day of the week to see the schedule associated to that day.
Select a unit to see all the schedules associated to it.
Schedules can also be seen at the Unit control menu.

Deleting a schedule

Follow the steps described below:

1. Tap the schedule to be deleted.
2. Tap Delete.
3. If you do not want to delete the schedule, tap the icon < to go back.



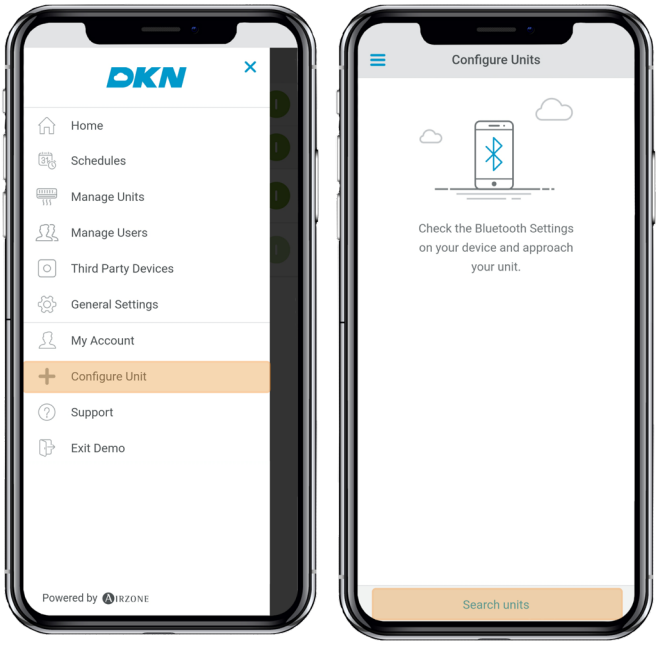
UNITS MANAGEMENT

Adding a unit

From the Home screen tap on the Menu icon and tap Configure Unit.
To add a new Daikin unit, tap Search units and follow the steps below.
***Important**: The Bluetooth connection must be enabled on your smartphone to add the unit.*
***Important**: Depending on your device, a notification may show up requesting access to the geolocation, confirm and continue.*

1. Select the unit from the list of available units to add.
   ***Note**: If your unit does not appear, confirm if the bluetooth function is enabled on your iOS or Android device and the DKN Cloud Wi-Fi Adaptor LED operation light is green and blinking.*
2. Tap the selected unit again to access.
3. Tap Connect to Network to choose the network to connect, select the network and enter its password.
   Note: If the Wi-Fi connected status is displayed red, please verify that the password is correct.
4. Tap Associate.
5. Set the name, group and unit icon. If there is no group, create a new one and set the name, temperature units and time zone of the group.

If the unit has already been added and it needs to be released in order to be added by other user, tap Release and enter the pin code located in the DKN Cloud Wi-Fi Adaptor.



Releasing unit

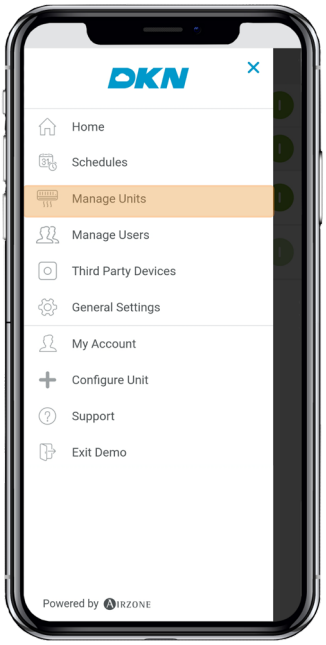
From the Home screen tap on the Menu icon and tap Configure Unit.
To find a Daikin unit, tap Search units.
***Important**: The Bluetooth connection must be enabled on your smartphone to add the unit.*
Tap Release and enter the pin code located in the DKN Cloud Wi-Fi Adaptor if required.

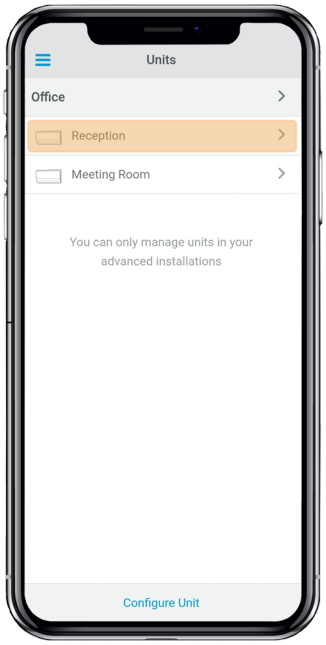
Changing unit network

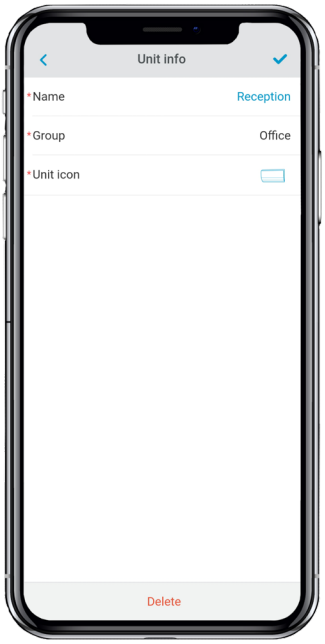
From the Home screen tap on the Menu icon and tap Configure Unit.
To add a new Daikin unit, tap Search units and follow the steps below.
***Important**: The Bluetooth connection must be enabled on your smartphone to add the unit.*
1. Select the unit from the list of available units to add.
***Note**: If your unit does not appear, confirm the Bluetooth function of your iOS or Android is activated and the DKN Cloud Wi-Fi Adaptor LED operation light is green and blinking*
2. Tap the selected unit again to access.
3. Tap Change Network to change the network to connect, select the network and enter its password.
***Note**: If the Wi-Fi connection status is displayed red, please verify that the password is correct.*

Editing unit data

From the Home screen tap on the Menu icon and tap Manage Units.
Select the unit to be edited.
Edit the parameters: Name and Unit icon.
Tap Delete to remove the unit.
If there is no unit, tap Configure Unit and enter the following parameters:

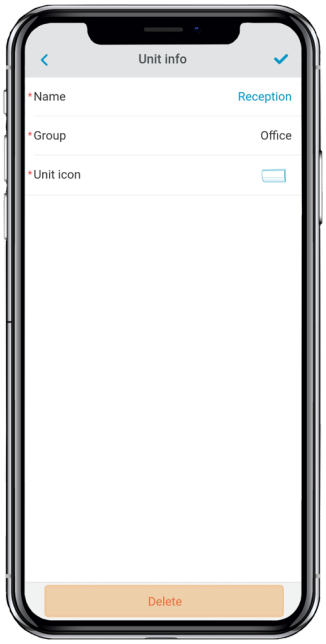






Removing the unit from the app

From the Home screen tap on the Menu icon and tap Manage Units.
Tap the unit to be removed or restored.
Tap Delete to remove the unit.



Editing group data

From the Home screen tap on the Menu icon and tap Manage Units.
Tap the group to edit and set the following parameters:
Group parameters: Name and Time zone.
Units: Select the units which belong to the group.
Tap the confirmation icon to save changes.
Tap Delete to remove the group and unlink the units associated.

Removing a group

From the Home screen tap on the Menu icon and tap Manage Units.
Tap the group to be removed.
Tap Delete to remove the group and unlink the units associated with the app.

Configuring the Communication Protocol

The communication protocol settings menu is only available on DKN Plus devices and can only be configured in the initial association process.

1) Press Communication Protocol to access the settings menu.

2) Select Modbus or BACnet as the communication protocol the device will use.

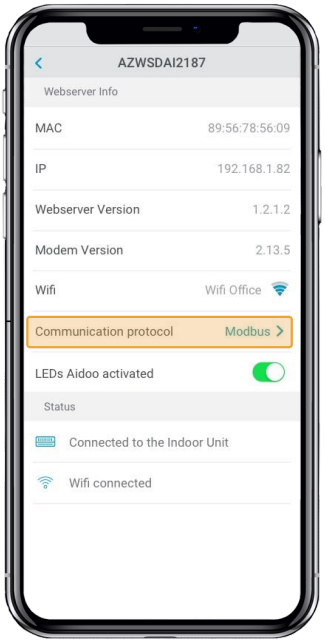
3) You can adjust the following settings parameters for each communication protocol.

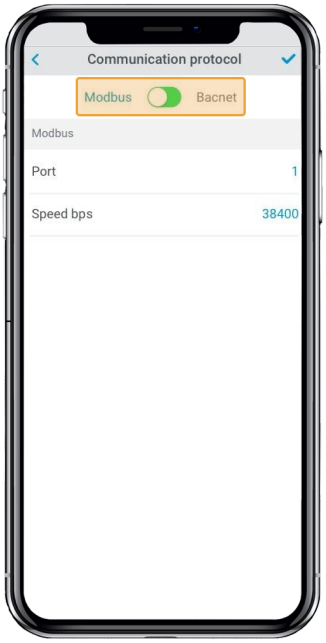
Modbus

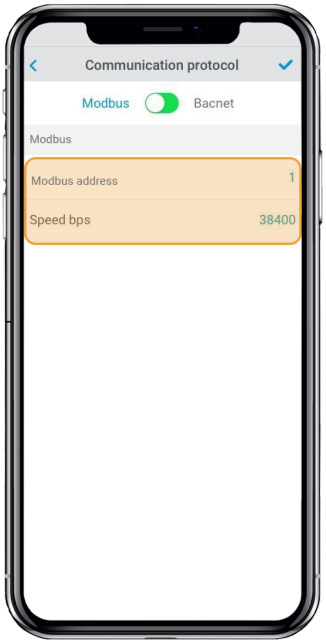
- Modbus address: Configurable value between 1 and 256.
- Speed bps: Value selectable from among the available options.

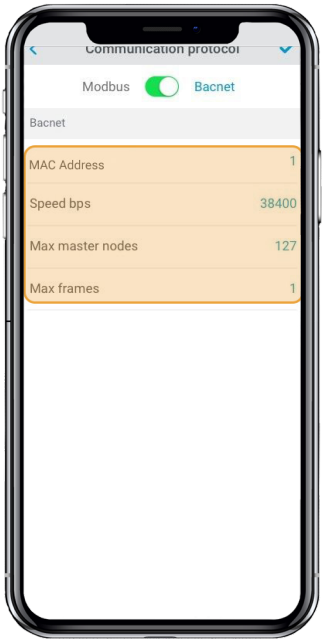
BACnet

- MAC Address: Configurable value between 0 and 127.
- Instance Number: Configurable value between 0 to 4, 194, 302.
- Speed bps: Value selectable from among the available options.
- Max master nodes: Configurable value between 1 and 127.
- Max frames: Configurable value between 1 and 127.









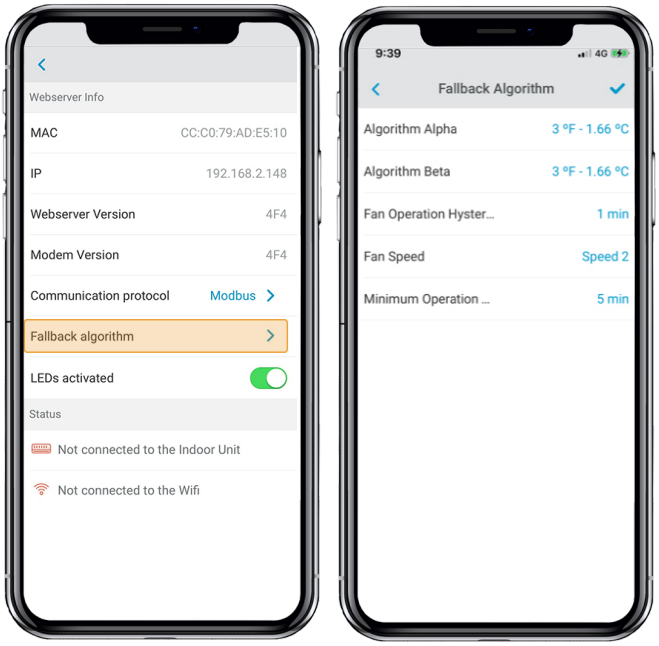
Configuring the Fallback Algorithm

The DKN+ Fallback logic enables the control of indoor unit by a thermostat using G, Y and W contacts. The DKN+ Fallback logic is available as a default until the adaptor is connected to the cloud. Once the adaptor is connected to the cloud the Fallback logic is disabled automatically.

Thermostat Command	Indoor unit Mode	Indoor unit On/Off	Indoor unit Setpoint
G	Fan	On	N/A
Y	Cool	On	Calculated by the fallback logic. Larger Alpha = Large Setpoint corrections, smaller Alpha = smaller alpha corrections.
W	Heat	On	Calculated by the fallback logic. Larger Beta = Large Setpoint corrections, smaller Beta = smaller setpoint corrections.
G,Y,W open	Last Mode	Off	N/A

The Fallback logic works by dynamically adjusting indoor unit's internal setpoint with reference to the room temperature based operation signal from the thermostat. When the adaptor is first connected to the indoor unit, the minimum cooling setpoint or maximum heating setpoint is used as initial setpoint. As the adaptor continues to receive the signal from thermostat, the new setpoint is calculated to maintain thermo-on status. The **Alpha** (cooling) and **Beta** (heating) numbers affect the calculation of new setpoint. Higher alpha or beta values cause the setpoint correction to increase or decrease by a larger amount. The alpha and beta value are fixed during commissioning by the installer.

Alpha	Beta
3ºF - 1.66ºC	3ºF - 1.66ºC
5ºF - 22.78ºC	5ºF - 22.78ºC
7ºF - 3.89ºC	7ºF - 3.89ºC



Residual Operation: Most Thermostats have a residual operation period that keeps fan (G) energized for a few seconds to few minutes to dissipate heat/cool from the unit. During this time, the unit is commanded to a high setpoint (cooling) or a low setpoint (heating) for a period of time and the fan remains operational. Once residual fan operation is stopped the unit turns Off. The residual operation time is 70 seconds by default and adjustable by the DKN App for the DKN+ adaptor. The setting should be at least 10 seconds higher than value set at the thermostat.

Fan Speed: During the fallback logic, the indoor unit will use its last fan speed set at the indoor unit. At the time of install make sure to set the desired fan speed in cooling and heating from the DKN+ or using the VRV Remote controller.

Requirements for Fallback logic.

1) The thermostat is hardwired to the DKN+ adaptor.
2) The DKN+ adaptor is not connected to the cloud.
3) The DKN+ adaptor is the P1P2 Main Remote Controller.
4) A return air temperature (R1T) sensor must be available at the indoor unit or remote temperature sensor
5) Set the field setting to enable fan operation in thermo-Off condition to the user set value at the indoor unit.
6) Set the field setting to allow indoor unit to operation with deadband of 0.9°F or 0.5°C.

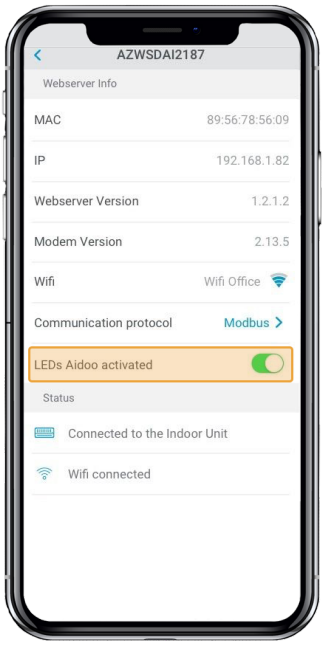
LED Settings

Select whether you want to keep the status LEDs on your DKN device working or prefer that they always remain off.

1) Press Communication Protocol to access the settings menu.

Note: The power LED will always remain on.

You can change this setting later in the Edit Unit section.



USERS MANAGEMENT

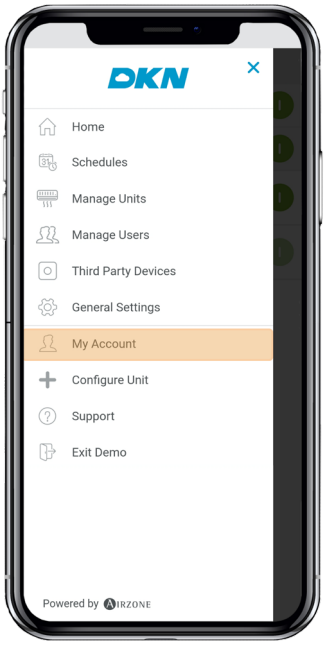
Editing my account

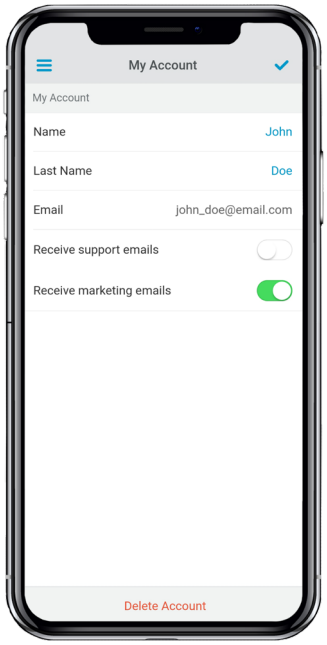
From the Home screen tap on the Menu icon ☰, tap My Account.

This menu allows the editing of the first and last name and e-mail of the user.

This screen enables/disables the notifications.

Tap Delete Account to delete the account. This action will prevent the user's email account from accessing the unit.





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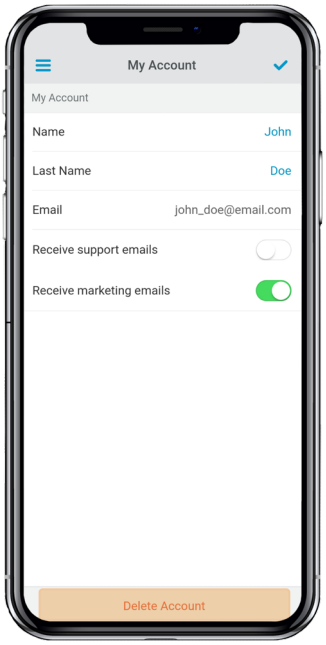
From the Home screen tap on the Menu icon ☰, tap My Account.

Tap Delete Account to delete the account. This action will prevent the user's email account from accessing the unit.



Inviting a user

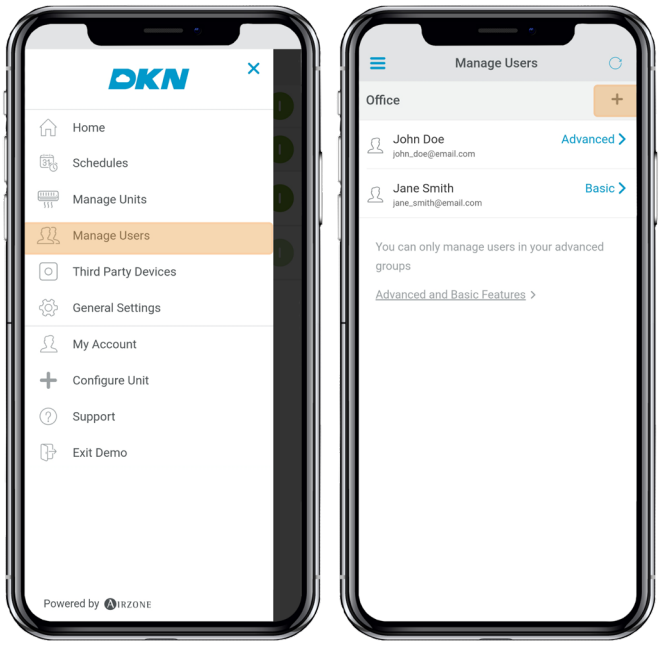
From the Home screen tap on the Menu icon, tap Manage Users.
Tap the + icon and set the following parameters:

Email.

User type. Advanced or Basic.

Select the units to control. Advanced users can control all the units. Basic users are only able to control allowed units.

Tap the confirmation icon.
Tap Advanced and Basic features to know the differences between advanced and basic users.



Editing user permission

From the Home screen tap on the Menu icon, tap Manage Users.

Tap the user to edit and change the parameters:

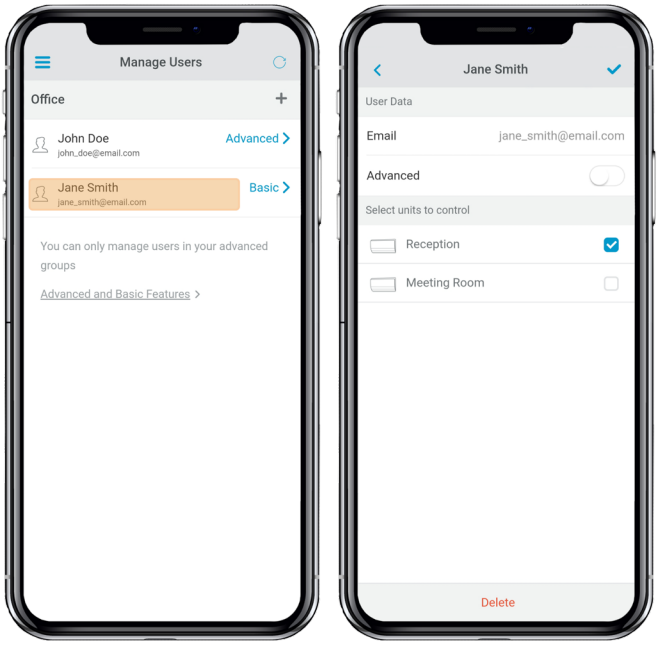
User type. Advanced or Basic.

Select the units to control. Advanced users can control all the units. Basic users are only able to control allowed units.

Tap the confirmation icon.
Tap Advanced and Basic Features know the differences between advanced and basic users.

Removing a user

From the Home screen tap on the Menu icon, tap Manage Users.
Select the user to remove.
Tap Delete to remove the access to a unit.



THIRD PARTY DEVICES (3PTI)

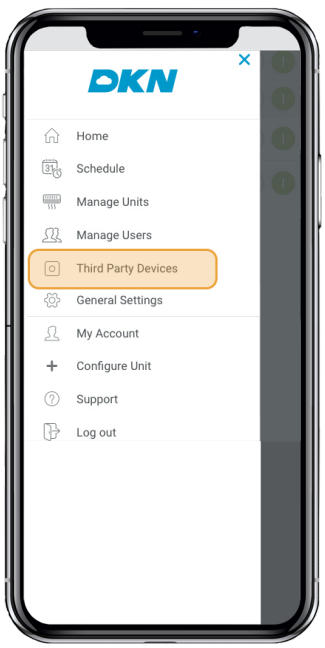
This option is only available on DKN Plus devices.

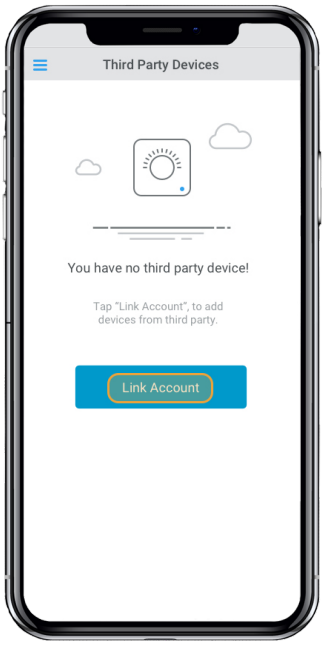
Linking the account of third party device

From the Home screen tap on the Menu icon ☰, tap Third Party Devices.
To link your DKN Plus with another manufacturer, you will need to have a previously registered account.

1) Press Link Account to associate your other manufacturer's account with your DKN Plus.

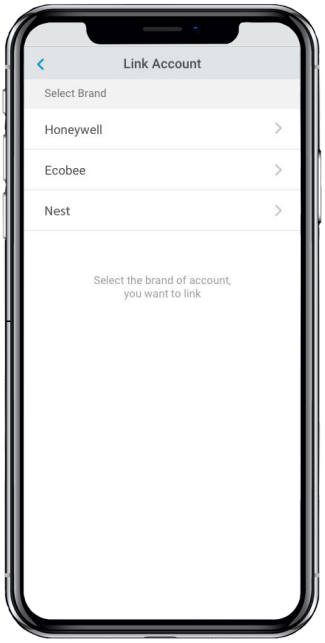
2) Select the manufacturer whose account you wish to associate from among the compatible manufacturers.

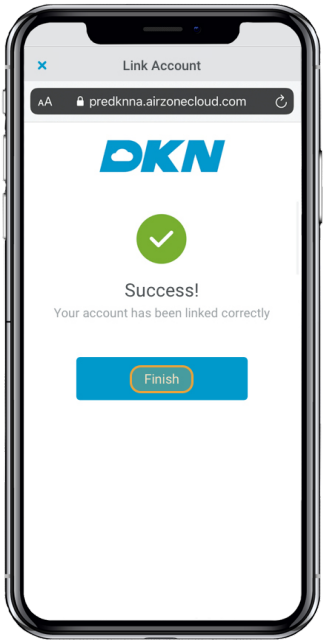




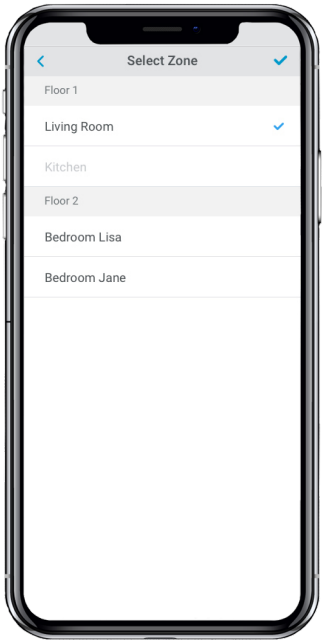
3) You will be redirected to the manufacturer's website to authorize the link through your user credentials.

4) Once the account has been successfully linked, a list of the thermostats linked to that user account is displayed. Select the one you wish to associate with a zone.





5) Select from the list of available zones which you wish to associate your thermostat with.

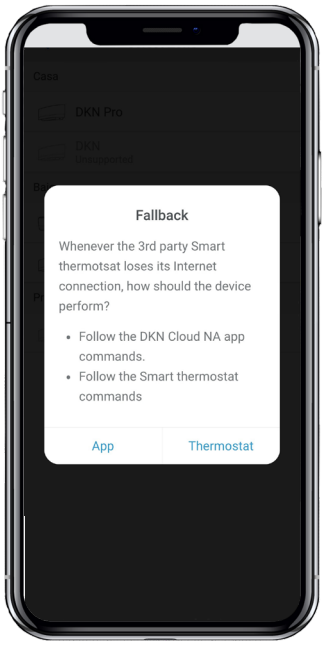


6) Finally, you must choose from the following options how the indoor unit will behave if the thermostat loses its Internet connection:

1. The indoor unit will follow the commands of the DKN Plus device.

2. The indoor unit will follow the commands of the associated smart thermostat.

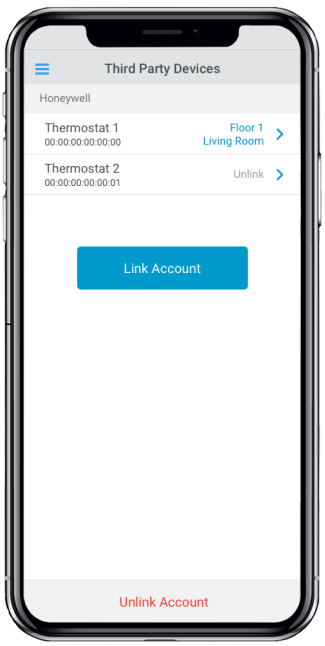
Important: If you choose to have the indoor unit follow the commands of the associated smart thermostat, it is possible that when the thermostat loses the Internet connection, communications with your DKN Plus device will also be lost, preventing you from interacting with the thermostat from the application.



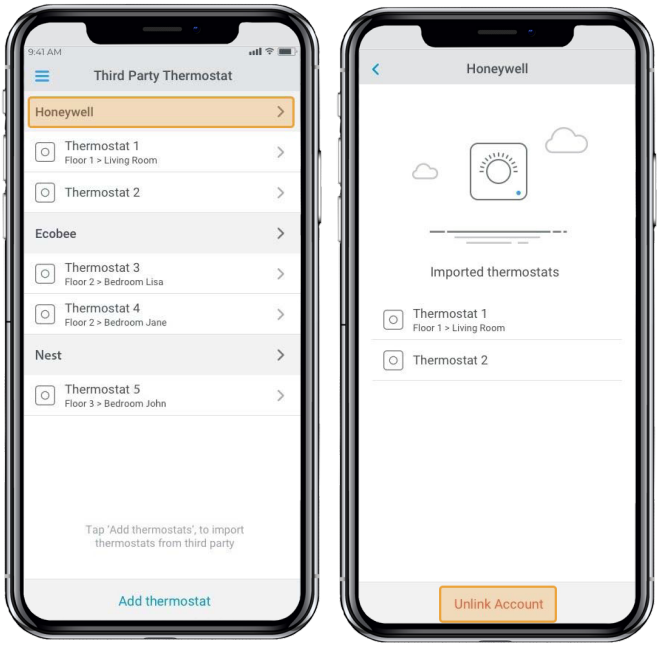
Unlink your DKN Plus third-party account

From the Home screen tap on the Menu icon ☰, tap Third Party Devices.

1) Select the manufacturer whose account you wish to unlink from your installation.



2) Press the lower button Unlink account to unlink the manufacturer's account from your installation.



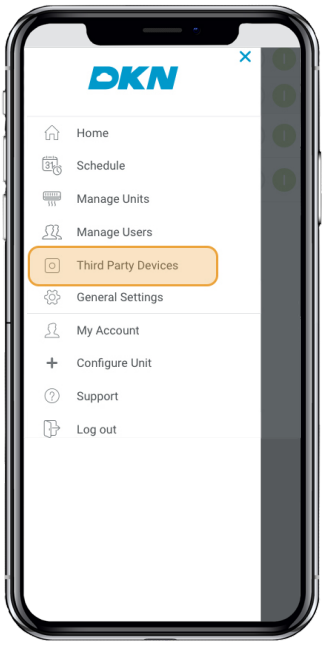
Changing the zone

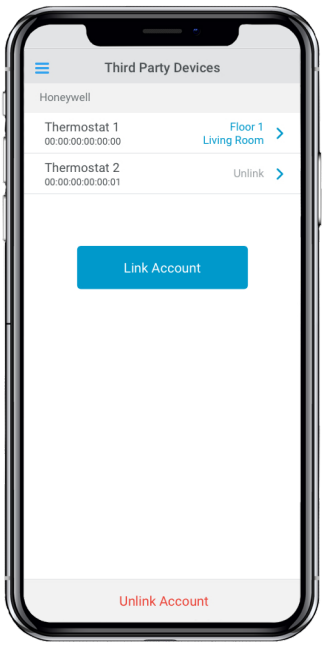
From the Home screen tap on the Menu icon ☰, tap Third Party Devices.

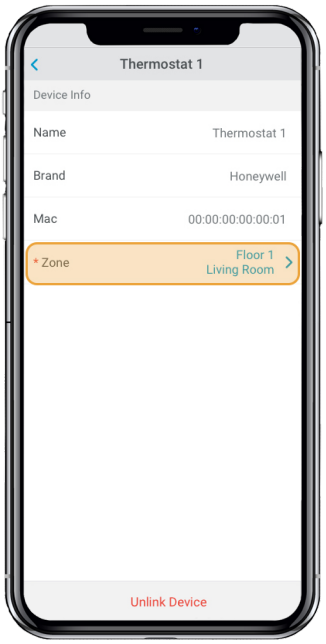
1) Select the device whose zone you wish to change.

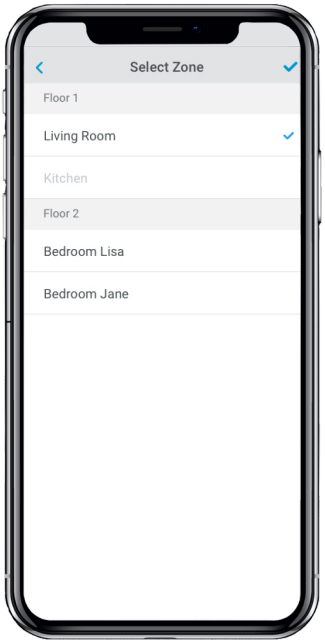
2) Press Zone to access the list of available zones.

3) You will be redirected to the manufacturer's website to authorize the link through your user credentials.
Important: It is only possible to select a zone from those with a DKN Plus device and with no other thermostat previously associated.





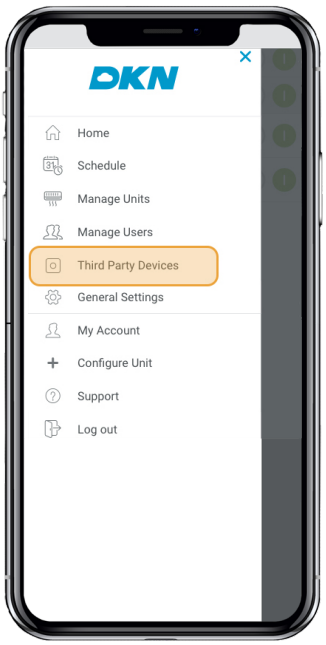


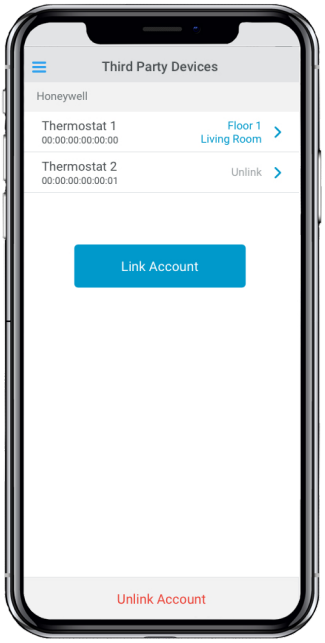


Unlinking a third party device from your DKN Plus

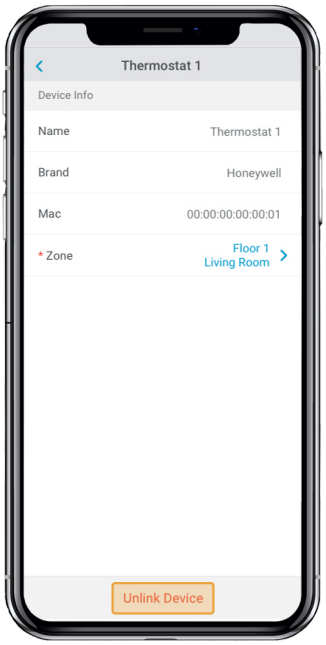
From the Home screen tap on the Menu icon ☰, tap Third Party Devices.

1) Select the device you wish to unlink from your installation.





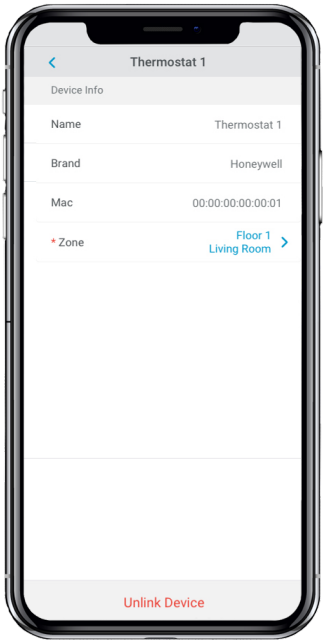
2) Press the lower button Unlink device and confirm to unlink the thermostat.
Important: When a device is unlinked it does not disappear from the list of available devices, it is unlinked from any zone to which it was associated.



Information 3PTI

From the Home screen tap on the Menu icon ☰, tap Third Party Devices.

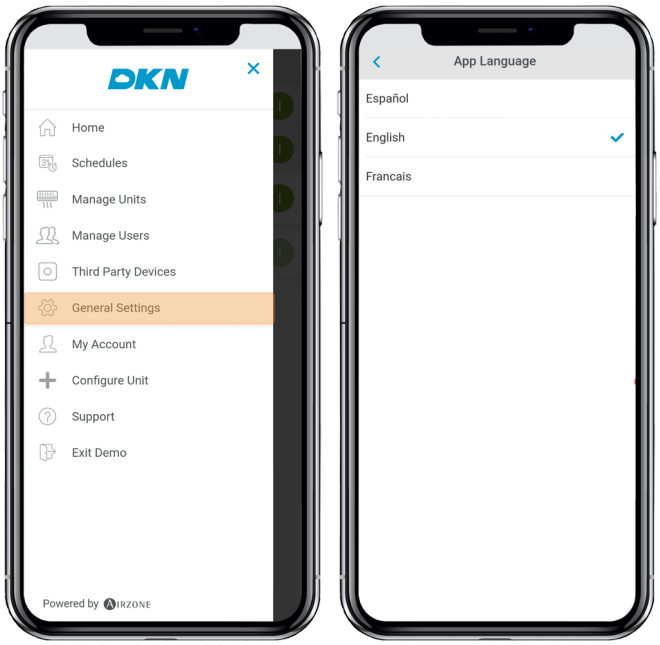
1) Below is a list of third party devices linked to your DKN Plus together with the zone to which each is associated. Select the device you wish to consult to access complete information.



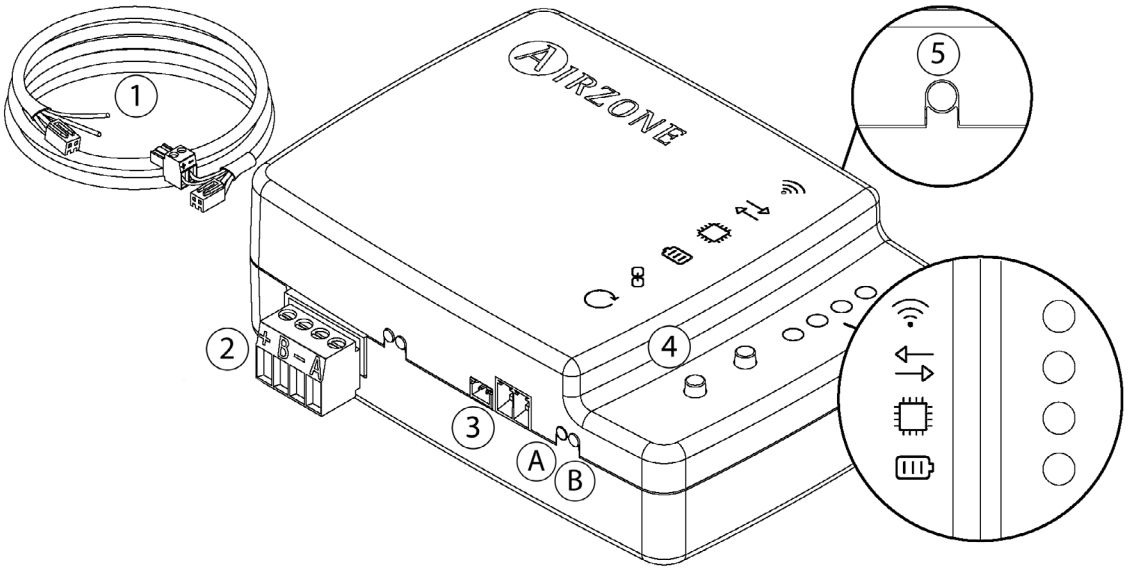
SETTINGS

Changing language

From the Home screen tap on the Menu icon ☰
Tap on General Settings.
Select the language to set in the app.



INSTALLATION - DKN CLOUD WI-FI ADAPTOR FOR VRV/SKYAIR (AZAI6WSCDKA)



Package content

	Meaning
1	Wiring cable for power supply and P1P2 communication
2	Modbus port
3	Indoor unit port for wiring cable
4	Wi-Fi connection reset
5	Account association reset

Modbus Manual

LED Operation

The DKN Cloud Wi-Fi Adaptor have integrated LEDs that detects the operation of the device.

Depending on the LED operation, it indicates:

1. **Off**. Wi-Fi not configured.
2. **Blinking green**. Connecting to Wi-Fi network.
3. **Steady green**. Connected to Wi-Fi network.
4. **Steady blue**. Connected to the server.

Blinks red to indicate the cloud communication.

Blinks green to indicate microprocessor performance.

Stays red to indicate that the device is on.

A Blinks red to indicate the data transmission to the indoor unit.

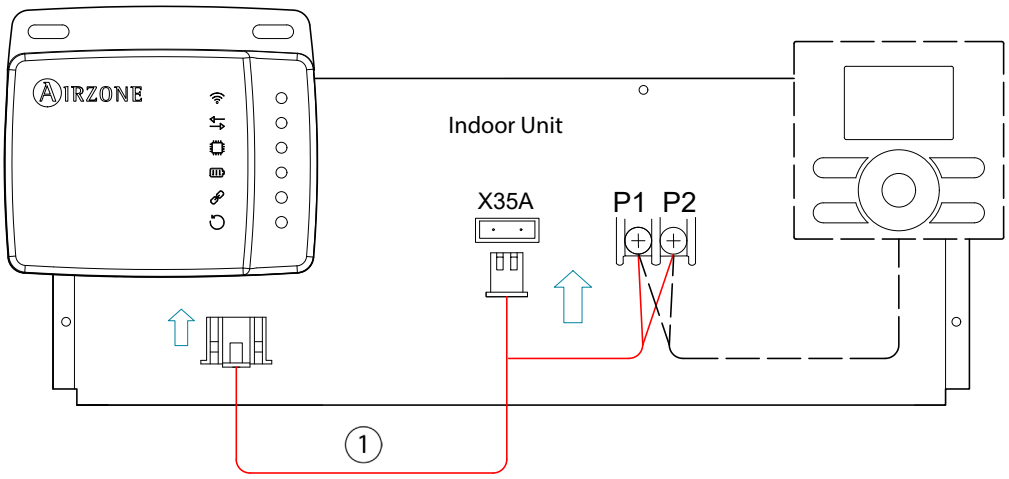
B Blinks green to indicate the data reception from the indoor unit.

Connection (AZAI6WSCDKA)

The DKN Cloud Wi-Fi Adaptor for VRV/SkyAir units has 4 connecting wires: 2 for communication with the indoor unit (red and black) and 2 for the power supply. Follow these steps to connect them:

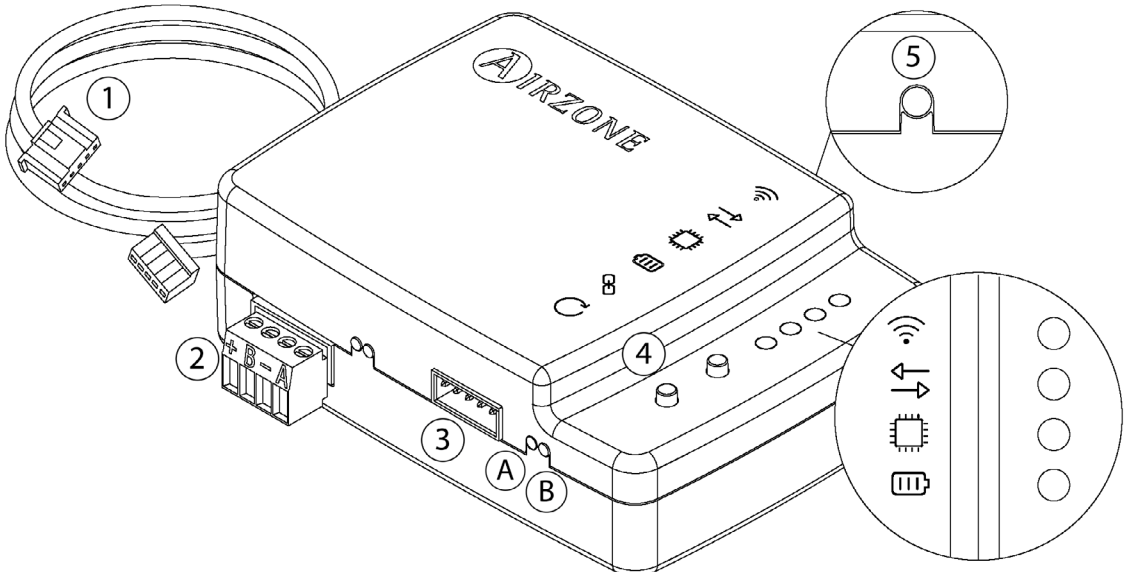
1. Disconnect the indoor unit power.
2. Connect the DKN to the terminals of the indoor unit using the supplied cable, **X35A/X18A/X9A** (depending on the indoor unit) and **P1 P2**.
3. Power the indoor unit. Check the LEDs (see LED Operation section).

The LED of the DKN Cloud Wi-Fi Adaptor for VRV/SkyAir stays blinking in green when the connection is correct.



***Note**: To facilitate the access to the DKN Cloud Wi-Fi Adaptor for VRV/SkyAir units, place it in an accessible location.*
***Note:** For FXTQ_PA(B) and FTX_PA(B) indoor units, use the **X9A** terminal on the A2P PCB for power supply.*
***Note:** When room temperature is to be sent to the indoor unit from the DKN Cloud Adaptor from Modbus the adaptor must be set as the main controller.*

INSTALLATION - DKN RESIDENTIAL CLOUD WI-FI ADAPTOR FOR DUCTLESS (AZAI6WSCDKB)



Package content

	Meaning
1	Wiring cable for power supply and S21 connection
2	Modbus port
3	Indoor unit port for wiring cable
4	Wi-Fi connection reset
5	Account association reset

Modbus Manual

LED Operation

The DKN Cloud Wi-Fi Adaptor have integrated LEDs that detects the operation of the device.

Depending on the LED operation, it indicates:

1. **Off**. Wi-Fi not configured.
2. **Blinking green**. Connecting to Wi-Fi network.
3. **Steady green**. Connected to Wi-Fi network.
4. **Steady blue**. Connected to the server.

Blinks red to indicate the cloud communication.

Blinks green to indicate microprocessor performance.

Stays red to indicate that the device is on.

A Blinks red to indicate the data transmission to the indoor unit.

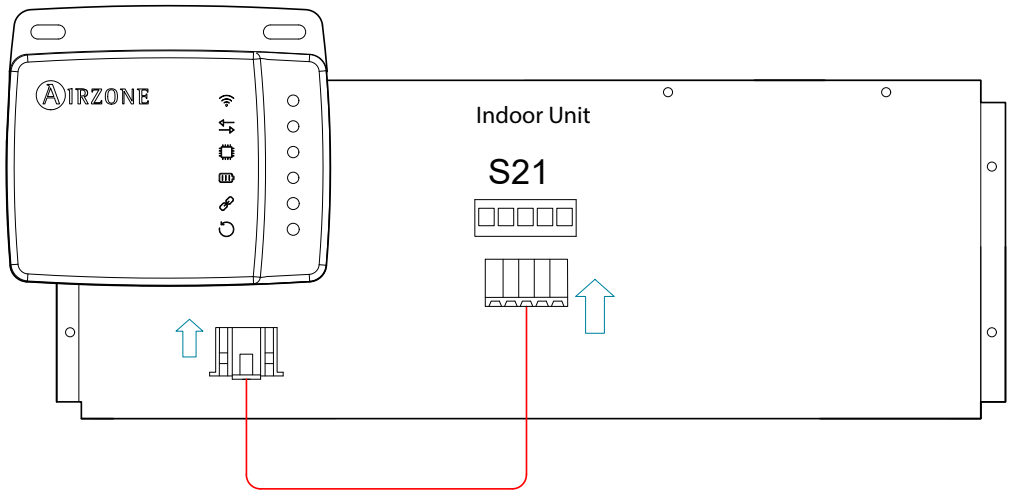
B Blinks green to indicate the data reception from the indoor unit.

Connection (AZAI6WSCDKB)

The DKN Residential Cloud Wi-Fi Adaptor for Ductless units has one wiring cable. Follow these steps to connect it:

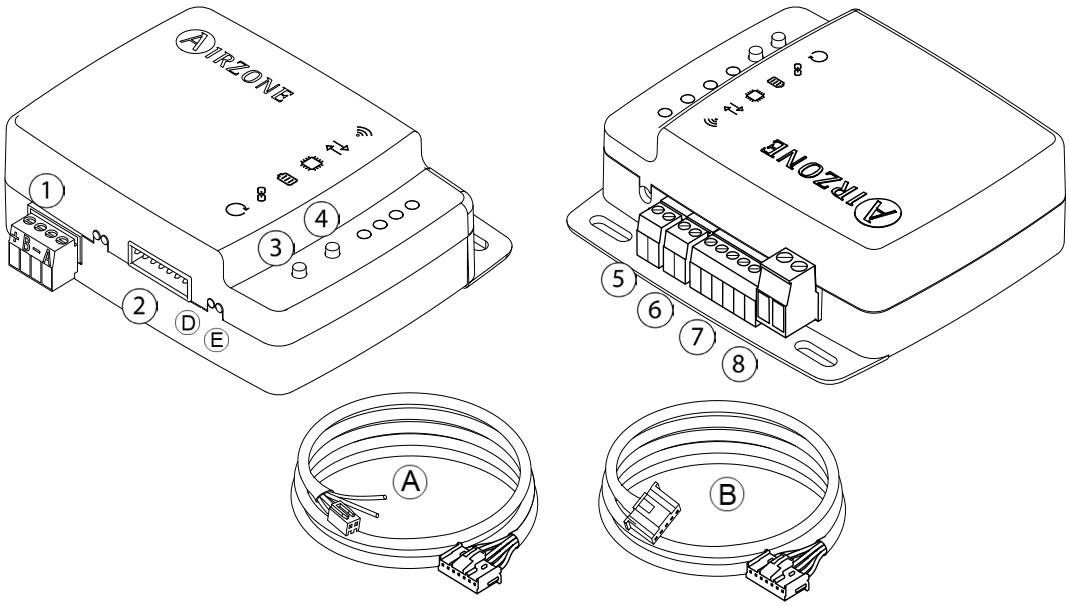
1. Disconnect the indoor unit power.
2. Connect the supplied cable to **S21** connector on the indoor unit or an accessory adapter (ordered separately).
3. Power the indoor unit. Check the LEDs (see LED Operation section).

The LED of the DKN Residential Cloud Wi-Fi Adaptor for Ductless stays blinking in green when the connection is correct.



***Note**: To facilitate the access to the DKN Residential Cloud Wi-Fi Adaptor for Ductless units, place it in an accessible location.*

INSTALLATION - DKN PLUS ADAPTOR FOR VRV/SKYAIR/DUCTLESS (AZAI6WSPDKC)



Package content

Meaning			
Ⓐ	Wiring cable for P1P2 communication	④	Association process reset
Ⓑ	Wiring cable for S21 communication	⑤	Digital input
①	Modbus port	⑥	On-Off output
②	Indoor unit port	⑦	Smart thermostat connection
③	Device reboot	⑧	External power input

Modbus Manual

LED Operation

The DKN Cloud Wi-Fi Adaptor have integrated LEDs that detects the operation of the device.

Depending on the LED operation, it indicates:

1. **Off**. Wi-Fi not configured.
2. **Blinking green**. Connecting to Wi-Fi network.
3. **Steady green**. Connected to Wi-Fi network.
4. **Steady blue**. Connected to the server.

Blinks red to indicate the cloud communication.

Blinks green to indicate microprocessor performance.

Stays red to indicate that the device is on.

Ⓓ Blinks red to indicate the data transmission to the indoor unit.

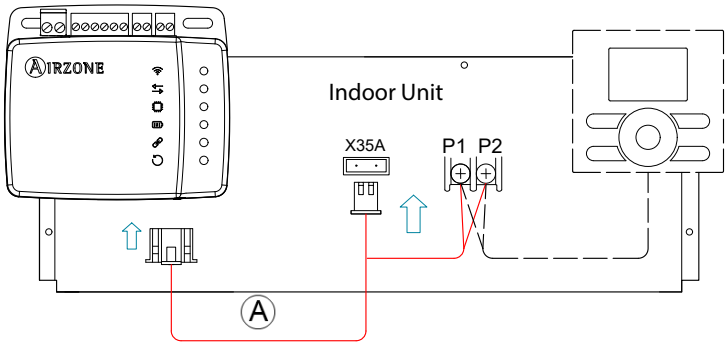
Ⓔ Blinks green to indicate the data reception from the indoor unit.

P1P2 Connection (AZAI6WSPDKC)

The DKN Plus Adaptor for VRV/SkyAir units has 4 connecting wires: 2 for communication with the indoor unit (red and black) and 2 for the power supply. Follow these steps to connect them:

1. Disconnect the indoor unit power.
2. Connect the DKN to the terminals of the indoor unit using the **A** supplied cable, **X35A/X18A/X9A** (depending on the indoor unit) and **P1 P2**.
3. Power the indoor unit. Check the LEDs (see LED Operation section).

The LED of the DKN Cloud Wi-Fi Adaptor for VRV/SkyAir stays blinking in green when the connection is correct.



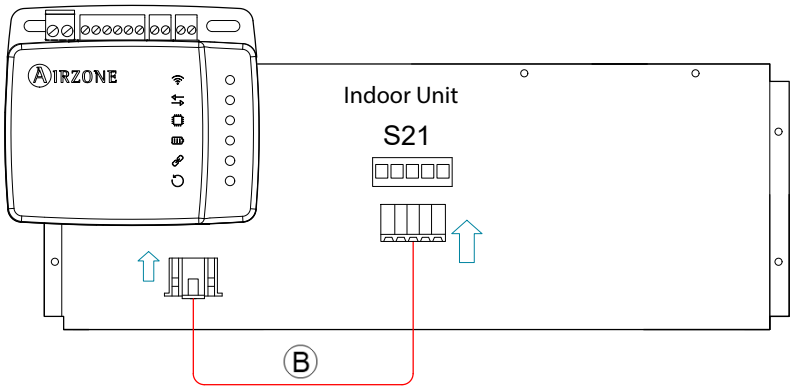
***Note**: To facilitate the access to the DKN Cloud Wi-Fi Adaptor for VRV/SkyAir units, place it in an accessible location.*
***Note:** For FXTQ_PA(B) and FTX_PA(B) indoor units, use the **X9A** terminal on the A2P PCB for power supply.*

S21 Connection (AZAI6WSPDKC)

The DKN Plus Adaptor for Ductless units has one wiring cable. Follow these steps to connect it:

1. Disconnect the indoor unit power.
2. Connect the **B** supplied cable to **S21** connector on the indoor unit or an accessory adapter (ordered separately).
3. Power the indoor unit. Check the LEDs (see LED Operation section).

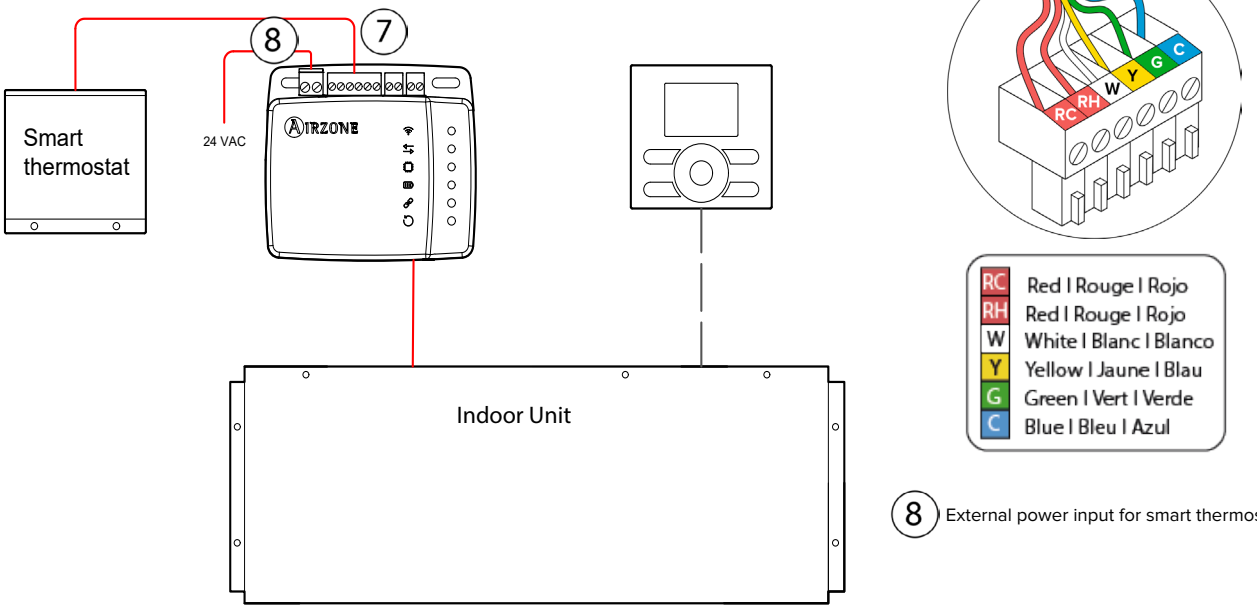
The LED of the DKN Residential Cloud Wi-Fi Adaptor for Ductless stays blinking in green when the connection is correct.



***Note**: To facilitate the access to the DKN Residential Cloud Wi-Fi Adaptor for Ductless units, place it in an accessible location.*

Smart thermostat connection

The DKN Plus adaptor can also be paired to a third party device. For the connection follow the wiring diagram shown below:



RC	Red I Rouge I Rojo
RH	Red I Rouge I Rojo
W	White I Blanc I Blanco
Y	Yellow I Jaune I Blau
G	Green I Vert I Verde
C	Blue I Bleu I Azul

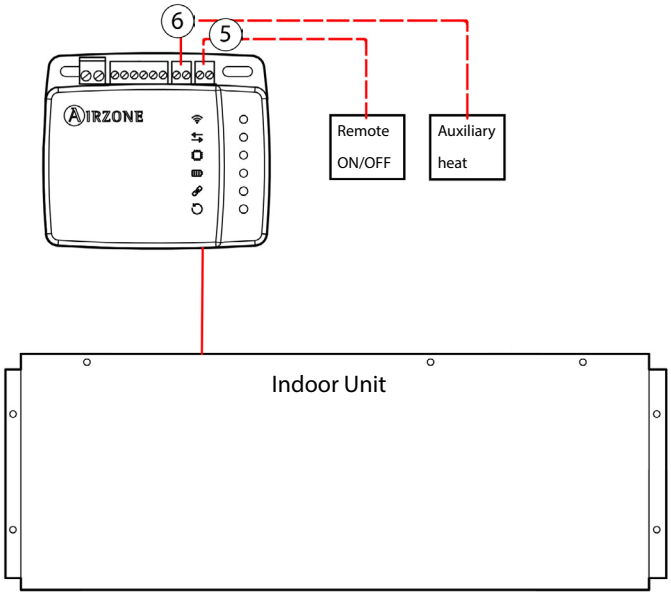
8 External power input for smart thermostat

To finish the installation it is necessary to link the account of your third party thermostat following the instruccions of the Third Party Device epigraph.

***Note**: When room temperature is to be sent to the indoor unit from the DKN Plus Adaptor from the third party device via API, Modbus or BACnet the adaptor must be set as the main controller.*

Digital input/output connection

The DKN PLUS offers the possibility of connecting a digital output for the auxiliary heating mode, as well as a digital input that allows adding a remote on/off (e.g.: window contact, presence sensor, ...). This connection is detailed in the following diagram:



5 Remote ON/OFF

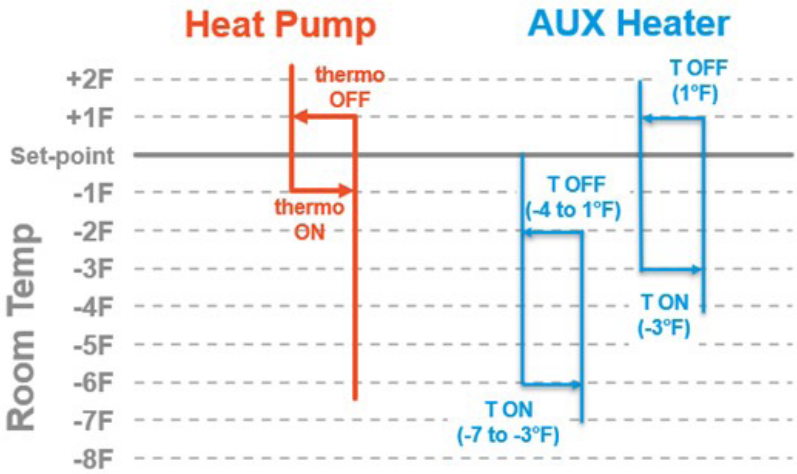
6 Auxiliary heat

DKN PLUS SETTINGS

Auxiliary Heat

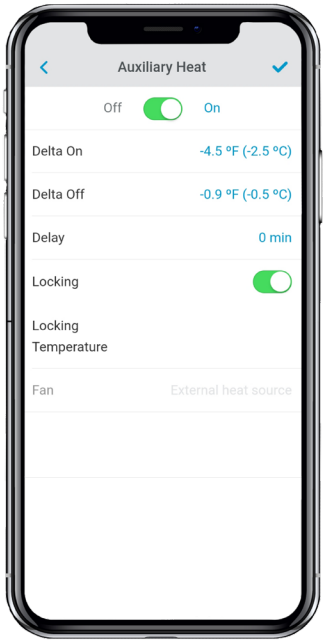
The auxiliary heat function is intended to provide control over the heat supply stages. This function is disabled by default.

The auxiliary heat source turns on and off independently according to the Delta on and Delta off temperature differentials with respect to the set-point temperature. It can be set to turn off below the set-point, or to remain on with the heat pump up to 1°F above the set-point.



1. In the drop-down menu, click on the option Configure Unit.

2. Select the AC unit you want to configure and then click on Auxiliary Heat to set the parameters.



- **Delta On:** Offset to be applied to the set-point temperature. When the room temperature is lower than this value, the auxiliary heat is activated depending on the settings. Range: -7.2 °F (-4.0 °C) / -3.6 °F (-2.0 °C).

- **Delta Off:** Offset to be applied to the set-point temperature. When the room temperature is higher than this value, the auxiliary heat is deactivated. Range: -0.9 °F (-0.5 °C) / 0.9 °F (0.5 °C).

- **Delay:** Delay time before deactivating the Daikin indoor unit fan after stopping the external auxiliary heat. Range: 0-30 min.

- **Fan:** Select the type of auxiliary heat according to your installation.
  - *Duct heat (only for P1P2 connection)*: Heat source located inside the duct that requires activation of the Daikin indoor unit's fan to provide airflow.
  - *External heat source:* External heat source which incorporates its own ventilation source, so it does not require the Daikin indoor unit to be turned on for auxiliary heat to operate.

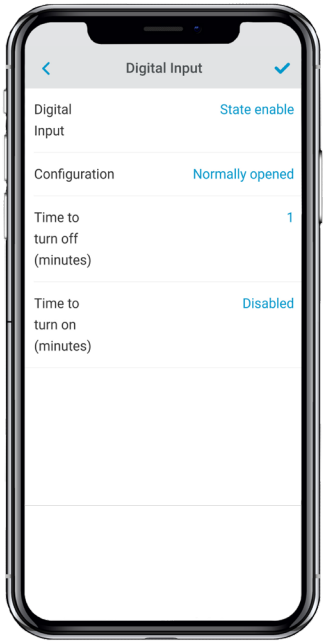
- **Locking** (Only for S21 connection): Sets a lockout outdoor temperature for activation of the Auxiliary Heat function. If the outdoor temperature is higher than the set lockout temperature, the Auxiliary Heat function will not be activated even if the activation conditions are met. This parameter is only available for Daikin units with outdoor temperature reading. Range: -0 °F (-17.8 °C) / 65 °F (18.3 °C).

Digital Input

The device has a digital input that can be used as a window contact or similar to turn the AC unit off / on if the input changes value. This function is disabled by default.

1. In the drop-down menu, click on the option Configure Unit.

2. Select the AC unit you want to configure and then click on Digital Input to set the parameters.



The Digital Input can be configured in three states:

- **Disabled**: the digital input logic does nothing.

- **State enable**: the status imposed on the Daikin unit is persistent. In other words, if the input is enabled, the Daikin unit will be forced to shut down while in that status.

- **Edge enable**: the status imposed on the AC unit is temporary. The command is only sent to switch the Daikin unit on/off (depending on the output status) at the moment when the imposed open or close condition is met for the first time.

This allows you to set whether the input is normally open (default) or normally closed.

Note: The Digital Input only turns on the Daikin unit if you have previously switched it off.

Also, it is possible to indicate the time in seconds that the input must remain activated before proceeding to switch off the AC unit (Range: 1-30 min). Similarly, there will be a time that the input must remain disabled to turn the AC unit back on (Range: Disabled - 30 min).

REGULATIONS

Interference statement
This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Wireless notice
This device complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CAN ICES-3 (B) / NMB-3 (B)
This Class B digital apparatus complies with Canadian ICES-003.

FCC Class B digital device notice
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Declaration of conformity
To access the declaration of conformity, please follow the link below:
http://doc.airzone.es/Certificates/Product/SDoC_AZAI6WSCDKA_FCC_A4_EN.pdf

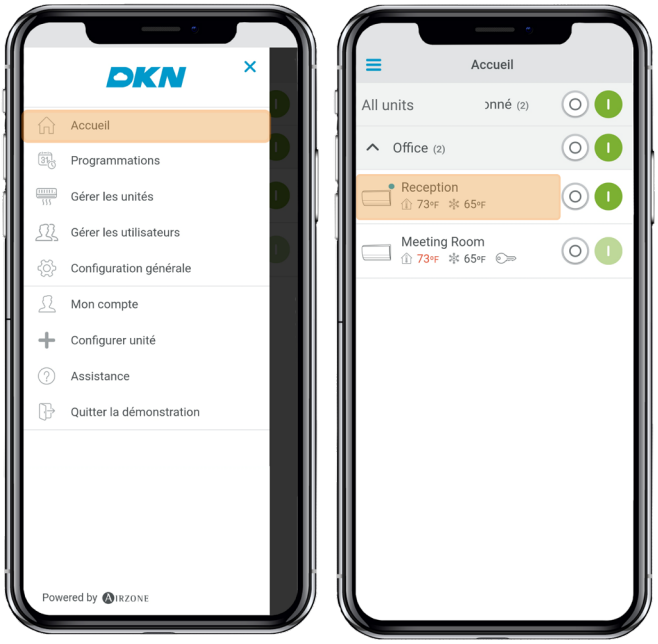
Modification statement
Corporación Empresarial Altra S.L. has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

AIRZONE

TABLE DES MATIÈRES

CONTRÔLE DE L'UNITÉ

Sur l'écran Accueil, appuyez sur l'icône de menu et sélectionnez l'unité Daikin à contrôler.



Selon l'installation, la température de référence sera mesurée à partir :

- IU 73°F de l'unité intérieure
- T 73°F du thermostat
- M 73°F des deux

Activer ou désactiver l'unité

Appuyez sur les boutons On et Off individuellement ou de manière groupée à partir de l'écran Accueil, ou bien appuyez sur l'unité pour accéder à l'écran de contrôle pour activer et désactiver la zone.

Établir la température de consigne

Réglez la température de consigne en faisant glisser votre doigt sur le cercle affiché à l'écran ou en appuyant sur les boutons + et -.

Établir le mode de fonctionnement

Les modes disponibles, en fonction du type d'installation, sont :

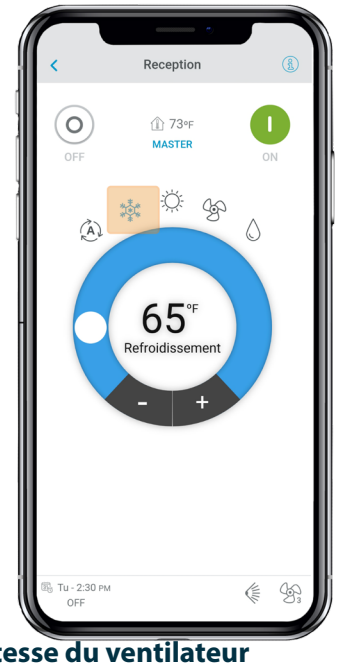
Auto (Non applicable pour les systèmes VRV Heat pump et Multi-split). Permet d'alterner automatiquement entre refroidissement et chauffage.

Refroidissement. L'unité de chauffage et refroidissement entame un cycle de refroidissement.

Chauffage. L'unité de chauffage et refroidissement entame un cycle de chauffage.

Ventilation. Le système fonctionne exclusivement en mode ventilation.

Déshumidification. L'unité de chauffage et refroidissement entame un cycle de refroidissement avec déshumidification, qui permet de diminuer l'humidité.



Établir la vitesse du ventilateur

Appuyez sur l'icône du ventilateur pour faire votre choix parmi les vitesses disponibles.

Obtenir des informations de l'unité

Ouvrez le menu déroulant, appuyez sur l'icône Accueil , puis sélectionnez l'unité Daikin à contrôler.

Appuyez sur les informations de l'unité, qui affichent l'adresse MAC du dispositif, la version de firmware en cours d'exécution, ainsi que le signal Wi-Fi et l'adresse Modbus.

Appuyez sur le bouton « OK » pour revenir à l'écran précédent.

Régler l'ailette

Appuyez sur l'icône d'ailette pour faire votre choix parmi les positions disponibles.

Chauffage d'urgence

Le chauffage d'urgence force l'activation du chauffage auxiliaire pour qu'il aide la pompe à chaleur, même si les conditions d'activation du chauffage auxiliaire ne sont pas remplies.

Cette fonction n'est disponible que sur les installations sur lesquelles le chauffage auxiliaire est activé et configuré comme chauffage auxiliaire externe.

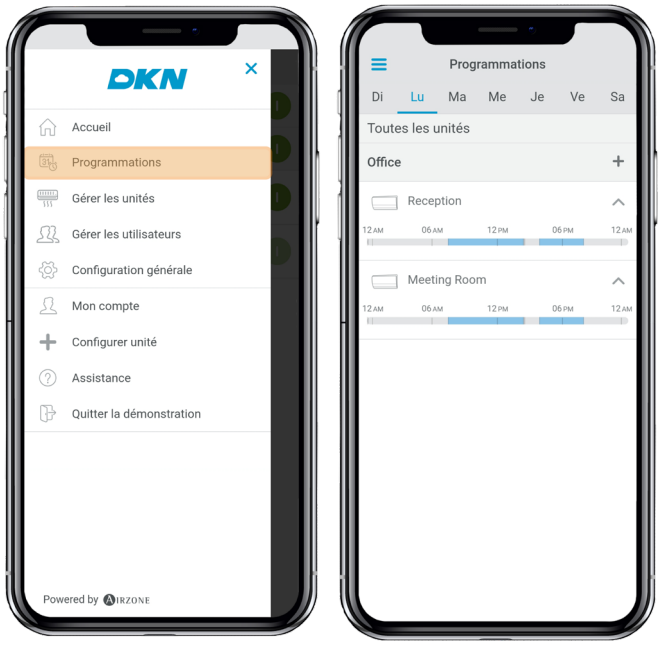
1. Dans le menu déroulant, appuyez sur Accueil.

2. Appuyez sur une unité pour accéder à son écran de contrôle.

3. Activez ou désactivez le chauffage d'urgence.

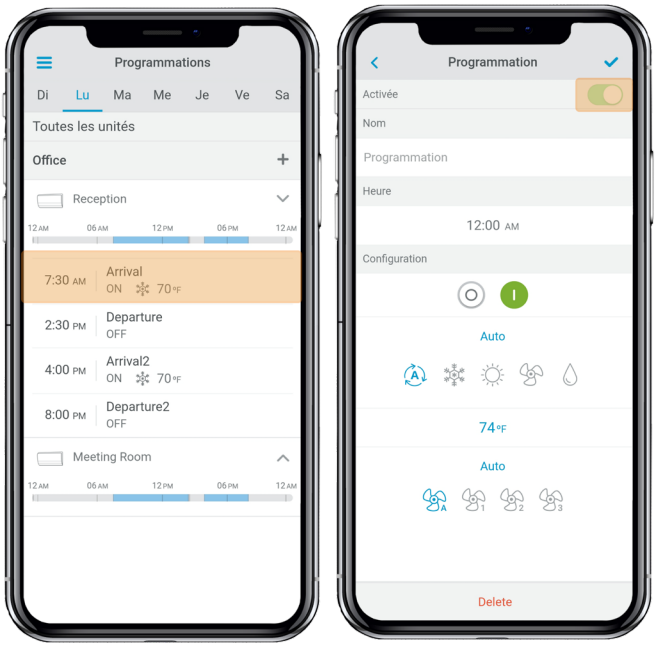
PROGRAMMATIONS

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis rendez-vous sur Programmations.



Activer/désactiver une programmation

Appuyez sur le jour de la semaine pour voir la programmation qui y est associée.
Sélectionnez une unité pour voir toutes les programmations qui lui sont associées.
Sélectionnez une programmation et activez/désactivez-la en appuyant sur le commutateur se trouvant dans la programmation.

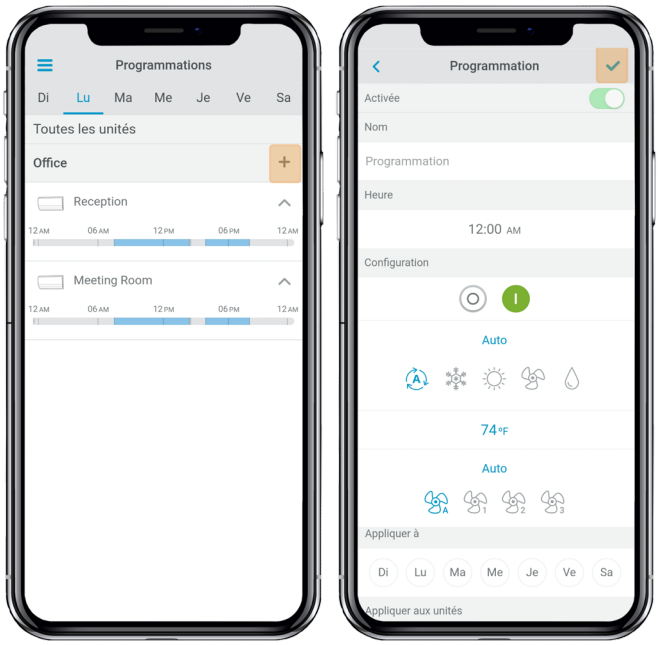


Créer une nouvelle programmation

Sur l'écran Accueil, appuyez sur l'icône de menu , puis rendez-vous sur Programmations.
Chaque groupe de système peut définir jusqu'à 24 programmations.
Suivez les étapes décrites ci-dessous pour définir la programmation :

1. Appuyez sur l'icône + dans le groupe dans lequel la programmation va être créée.
2. Donnez un nom à la programmation.
3. Définissez l'heure de début de la programmation.
4. Sélectionnez les paramètres de la programmation :
   - Activation et désactivation.
   - Mode de fonctionnement.
   - Température de consigne.
   - Vitesse du ventilateur.
5. Sélectionnez les jours de la semaine pendant lesquels les programmations seront utilisées.
6. Assignez la programmation aux unités.
7. Appuyez sur l'icône de confirmation pour enregistrer la programmation ou < pour revenir en arrière.

Important : *Les programmations ne disposent pas d'une heure de fin automatique. Il est donc nécessaire de créer un évènement de programmation pour activer/désactiver l'unité.*



Modifier une programmation

Sur l'écran Accueil, appuyez sur l'icône de menu , puis rendez-vous sur Programmations.
Suivez les étapes décrites ci-dessous :

1. Appuyez sur la programmation à modifier.
2. Modifiez les paramètres sélectionnés.
3. Assignez la programmation aux unités.

4. Appuyez sur l'icône de confirmation pour enregistrer la programmation ou < pour revenir en arrière.
Appuyez sur Supprimer pour supprimer la programmation.

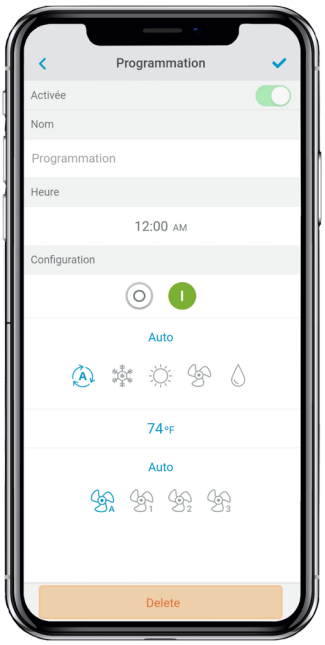
Important *: Les programmations ne disposent pas d'une heure de fin automatique. Il est donc nécessaire de créer un évènement de programmation pour activer/désactiver l'unité.*

Voir une programmation

Appuyez sur le jour de la semaine pour voir la programmation qui y est associée.
Sélectionnez une unité pour voir toutes les programmations qui lui sont associées.
Les programmations peuvent également être consultées dans le menu Contrôle de l'unité.

Supprimer une programmation

Suivez les étapes décrites ci-dessous :
1. Appuyez sur la programmation à supprimer.
2. Appuyez sur Supprimer.
3. Si vous ne souhaitez pas supprimer la programmation, appuyez sur l'icône < pour revenir en arrière.



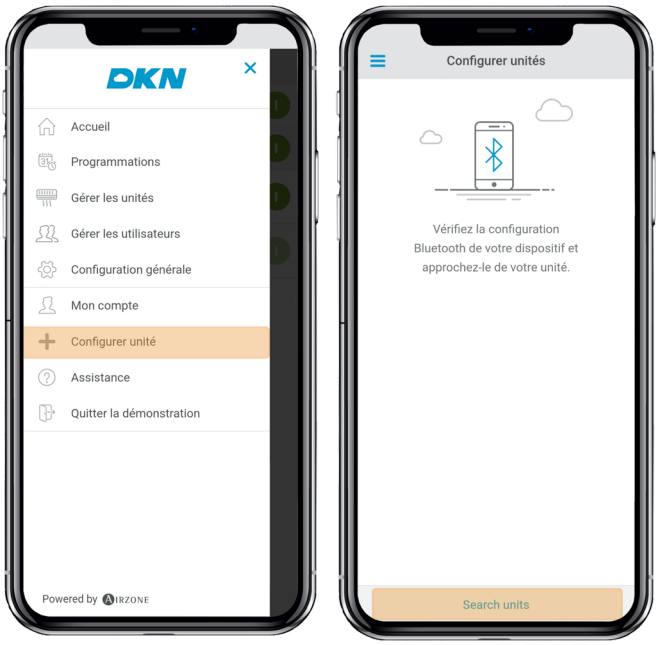
GESTION DES UNITÉS

Ajouter une unité

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Configurer unité.
Pour ajouter une nouvelle unité Daikin, appuyez sur Chercher des unités et suivez les étapes ci-dessous.
***Important** : La connexion Bluetooth doit être activée sur votre smartphone pour ajouter l'unité.*
***Important** : En fonction de votre dispositif, une notification peut s'afficher pour vous demander d'autoriser l'accès à la géolocalisation. Confirmez, puis continuez.*

1. Sélectionnez l'unité dans la liste des unités pouvant être ajoutées.
   ***Remarque** : Si votre unité n'apparaît pas, vérifiez que la fonction Bluetooth de votre dispositif iOS ou Android est activée et que la LED de fonctionnement de l'adaptateur DKN Cloud Wi-Fi clignote en vert.*
2. Appuyez à nouveau sur l'unité sélectionnée pour y accéder.
3. Appuyez sur Se connecter au réseau pour choisir le réseau auquel se connecter, sélectionnez le réseau, puis saisissez son mot de passe.
   Remarque : Si le statut de connexion Wi-Fi est affiché en rouge, veuillez vérifier que le mot de passe est correct.
4. Appuyez sur Associer.
5. Définissez le nom, le groupe et l'icône de l'unité. S'il n'existe pas de groupe, créez-en un nouveau et définissez son nom, ses unités de température et son fuseau horaire.

Si l'unité a déjà été ajoutée et doit être libérée afin d'être ajoutée par un autre utilisateur, appuyez sur Libérer et saisissez le code PIN situé dans l'adaptateur DKN Cloud Wi-Fi.



Libérer une unité

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Configurer unité.
Pour trouver une unité Daikin, appuyez sur Chercher des unités.
***Important** : La connexion Bluetooth doit être activée sur votre smartphone pour ajouter l'unité.*
Appuyez sur Libérer et saisissez le code PIN situé dans l'adaptateur DKN Cloud Wi-Fi, si nécessaire.

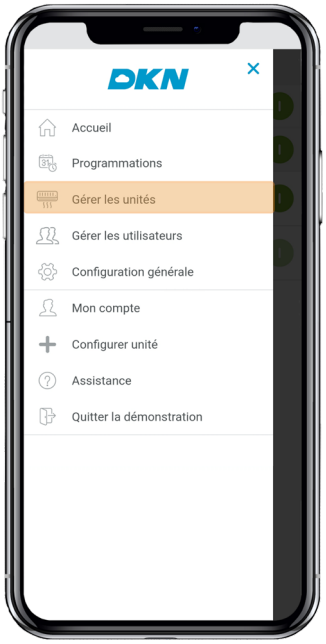
Changer le réseau de l'unité

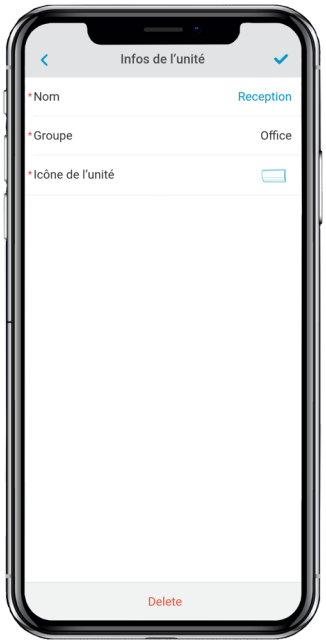
Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Configurer unité.
Pour ajouter une nouvelle unité Daikin, appuyez sur Chercher des unités et suivez les étapes ci-dessous.
***Important** : La connexion Bluetooth doit être activée sur votre smartphone pour ajouter l'unité.*
1. Sélectionnez l'unité dans la liste des unités pouvant être ajoutées.
***Remarque** : Si votre unité n'apparaît pas, vérifiez que la fonction Bluetooth de votre dispositif iOS ou Android est activée et que la LED de fonctionnement de l'adaptateur DKN Cloud Wi-Fi clignote en vert.*
2. Appuyez à nouveau sur l'unité sélectionnée pour y accéder.
3. Appuyez sur Changer de réseau pour procéder au changement, sélectionnez le réseau, puis saisissez son mot de passe.

Remarque : Si le statut de connexion Wi-Fi est affiché en rouge, veuillez vérifier que le mot de passe est correct.

Modifier les données d'une unité

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les unités.
Sélectionnez l'unité à modifier.
Modifier les paramètres : Nom et Icône de l'unité.
Appuyez sur Supprimer pour supprimer l'unité.
Si aucune unité ne s'affiche, appuyez sur Configurer unité et saisissez les paramètres suivants :





Supprimer une unité de l'application

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les unités.
Appuyez sur l'unité à supprimer ou restaurer.
Appuyez sur Supprimer pour supprimer l'unité.

Modifier les données d'un groupe

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les unités.
Appuyez sur le groupe à modifier et définissez les paramètres suivants :
Paramètres du groupe : Nom et Fuseau horaire.
Unités : Sélectionnez les unités qui appartiennent au groupe.
Appuyez sur l'icône de confirmation pour enregistrer les modifications.
Appuyez sur Supprimer pour supprimer le groupe et dissocier les unités associées.

Supprimer un groupe

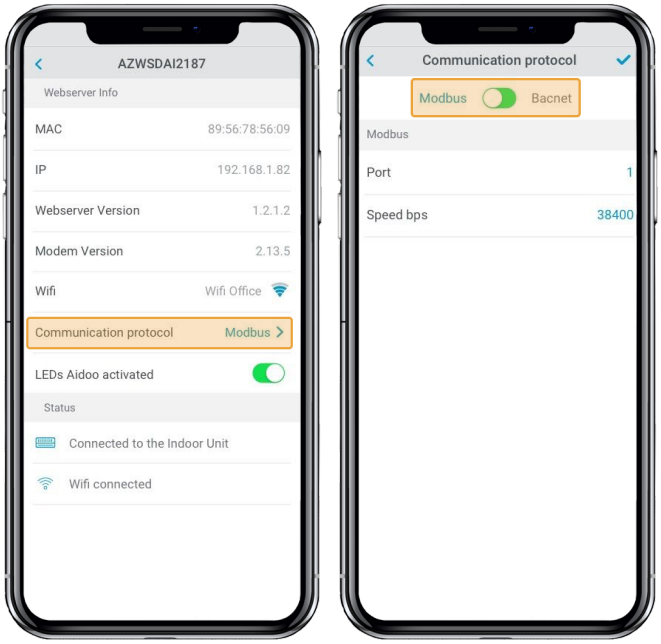
Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les unités.
Appuyez sur le groupe à supprimer.
Appuyez sur Supprimer pour supprimer le groupe et dissocier les unités associées à l'application.

Configurez le protocole de communication

Le menu de configuration du protocole de communication n'est disponible que sur les dispositifs DKN Plus et ne peut être configuré qu'au cours du processus d'association initial.

1. Appuyez sur Protocole de communication pour accéder au menu de configuration.

2. Sélectionnez Modbus ou BACnet comme protocole de communication qui sera utilisé par le dispositif.



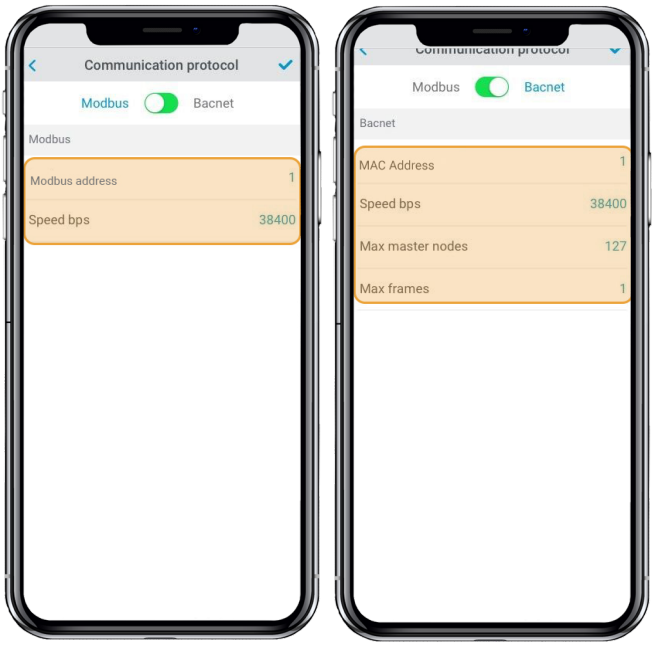
3. Vous pouvez régler les paramètres de configuration suivants pour chaque protocole de communication.

Modbus

- Adresse Modbus : Valeur paramétrable entre 1 et 256.
- Vitesse de communication bps : Valeur à choisir parmi les options disponibles.

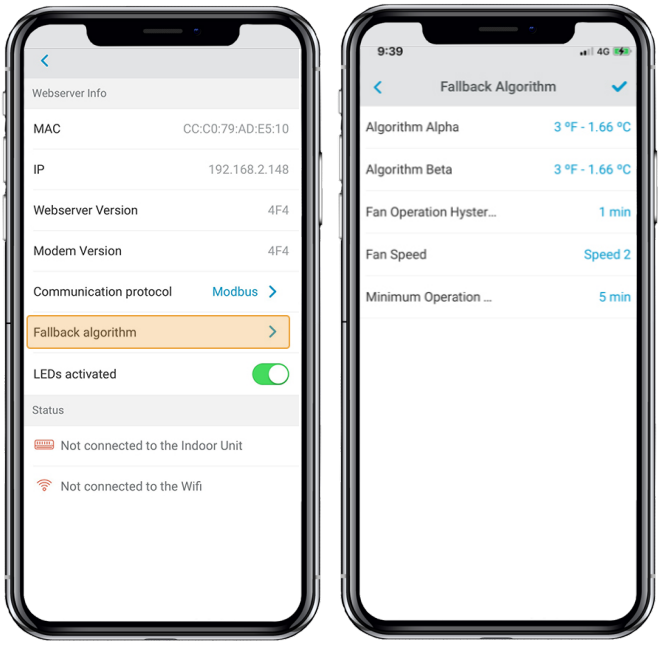
BACnet

- MAC Adresse : Valeur paramétrable entre 0 et 127.
- BACnet ID : Valeur paramétrable entre 0 et 4, 194, 302.
- Vitesse de communication bps : Valeur à choisir parmi les options disponibles.
- Nombre maximum de nœuds principaux : Valeur paramétrable entre 1 et 127.
- Nombre maximum de trames : Valeur paramétrable entre 1 et 127.



Configuration de l'algorithme Fallback

The DKN+ Fallback logic enables the control of indoor unit by a thermostat using G, Y and W contacts. The DKN+ Fallback logic is available as a default until the adaptor is connected to the cloud. Once the adaptor is connected to the cloud the Fallback logic is disabled automatically.



Thermostat Command	Indoor unit Mode	Indoor unit On/Off	Temperatura de la unidad interior
G	Fan	On	N/A
Y	Cool	On	Calculated by the fallback logic. Larger Alpha = Large Setpoint corrections, smaller Alpha = smaller alpha corrections.
W	Heat	On	Calculated by the fallback logic. Larger Beta = Large Setpoint corrections, smaller Beta = smaller setpoint corrections.
G,Y,W open	Last Mode	Off	N/A

The Fallback logic works by dynamically adjusting indoor unit's internal setpoint with reference to the room temperature based on operation signal from the thermostat. When the adaptor is first connected to the indoor unit, the minimum cooling setpoint or maximum heating setpoint is used as initial setpoint. As the adaptor continues receive the signal from thermostat, the new setpoint is calculated to maintain thermo-on status. The **Alpha** (cooling) and **Beta** (heating) numbers affect the calculation of new setpoint. Higher the alpha or beta values cause the setpoint correction to increase or decrease by a larger amount. The alpha and beta value is fixed during commissioning by the installer.

Alpha	Beta
3°F - 1.66°C	3°F - 1.66°C
5ªF - 22.78°C	5ªF - 22.78°C
7°F - 3.89°C	7°F - 3.89°C

Residual Operation: Most Thermostats have a residual operation period that keeps fan (G) energized for a few seconds to few minutes to dissipate heat/cool from the unit. During this time, the unit is commanded to a high setpoint (cooling) or a low setpoint (heating) for a period of time and the fan remains operational. Once residual fan operation is stopped the unit turns Off. The residual operation time is 70 seconds by default and adjustable by the DKN App for the DKN+ adaptor. The setting should be at least 10 seconds higher than value set at the thermostat.

Fan Speed: During the fallback logic the indoor unit will use its last fan speed set at the indoor unit. At the time of install make sure to set the desired fan speed in cooling and heating from the DKN+ or using the VRV Remote controller.

Requirements for Fallback logic.

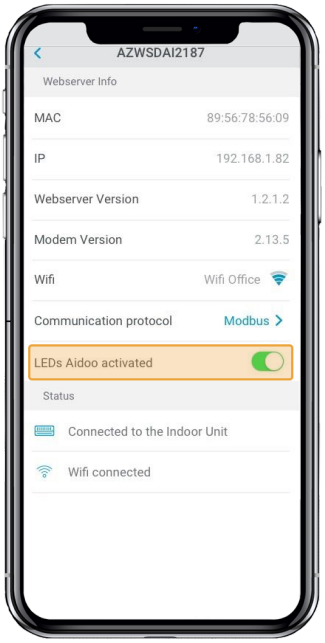
1) The thermostat is hardwired to the DKN+ adaptor.
2) The DKN+ adaptor is not connected to the cloud.
3) The DKN+ adaptor is the P1P2 Main Remote Controller.
4) A return air temperature (R1T) sensor must be available at the indoor unit or remote temperature sensor
5) Set the field setting to enable fan operation in thermo-Off condition to the user set value at the indoor unit.
6) Set the field setting to allow indoor unit to operation with deadband of 0.9°F or 0.5°C.

Configuration des LED

Sélectionnez si vous souhaitez que les LED d'état de votre dispositif DKN continuent de fonctionner ou si vous préférez qu'elles restent toujours éteintes.

Note : La LED d'alimentation restera toujours allumée.

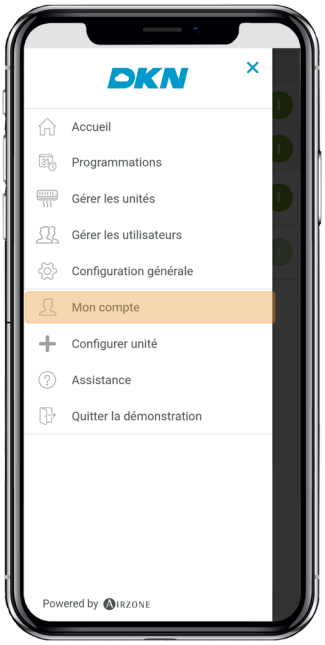
Vous pourrez modifier cette configuration ultérieurement dans la section **Éditer unité**

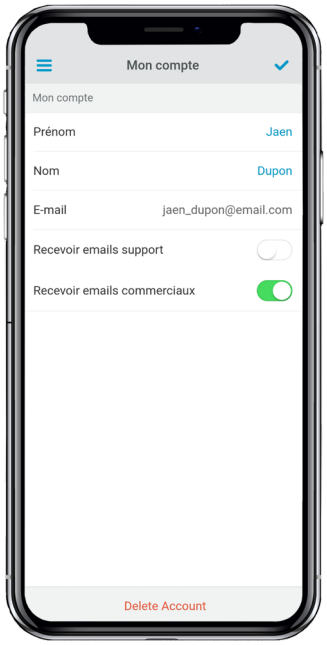


GESTION DES UTILISATEURS

Modifier mon compte

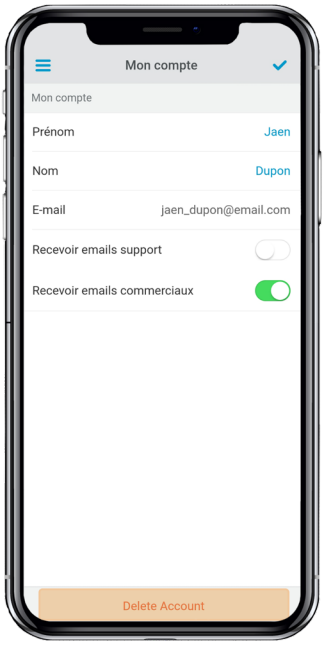
Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Mon compte.
Ce menu permet de modifier le prénom, le nom et l'adresse e-mail de l'utilisateur.
Cet écran active/désactive les notifications.
Appuyez sur Supprimer compte pour supprimer le compte.
Cette action empêche le compte e-mail de l'utilisateur d'accéder à l'unité.





Supprimer mon compte

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Mon compte.
Appuyez sur Supprimer compte pour supprimer le compte.
Cette action empêche le compte e-mail de l'utilisateur d'accéder à l'unité.



Inviter un utilisateur

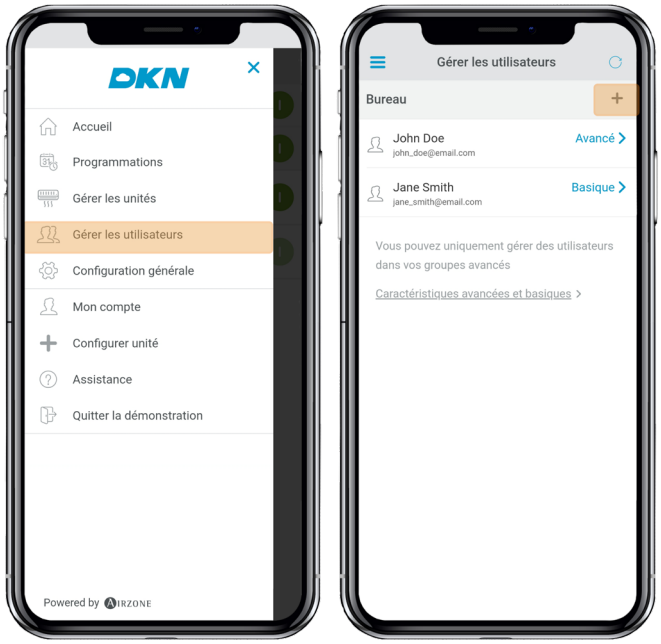
Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les utilisateurs.
Appuyez sur l'icône + et définissez les paramètres suivants :

E-mail.

Type d'utilisateur. Avancé ou Basique.

Sélectionner les unités à contrôler. Les utilisateurs avancés peuvent contrôler toutes les unités. Les utilisateurs basiques peuvent uniquement contrôler les unités autorisées.

Appuyez sur l'icône de confirmation.
Appuyez sur Caractéristiques avancées et basiques pour connaître les différences entre les utilisateurs avancés et basiques.



Modifier l'autorisation d'un utilisateur

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les utilisateurs.
Appuyez sur Caractéristiques avancées et basiques pour connaître les différences entre les utilisateurs avancés et basiques.
Appuyez sur l'utilisateur pour modifier les paramètres :

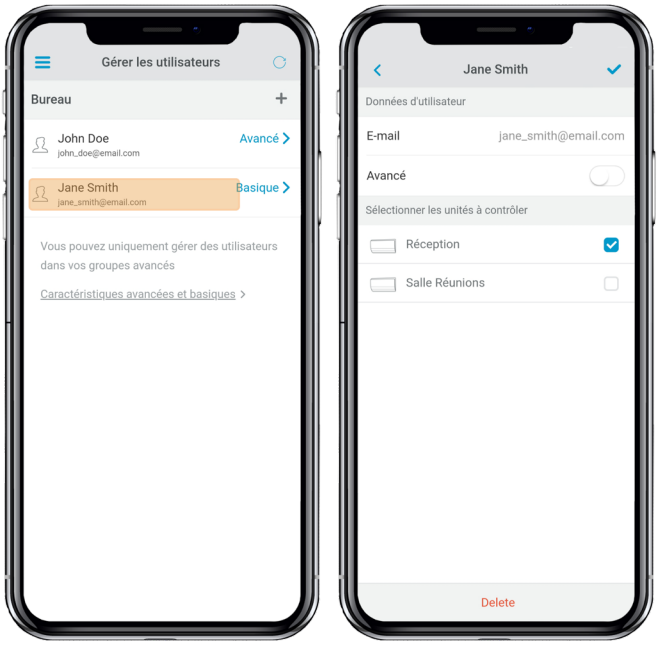
Type d'utilisateur. Avancé ou Basique.

Sélectionner les unités à contrôler. Les utilisateurs avancés peuvent contrôler toutes les unités. Les utilisateurs basiques peuvent uniquement contrôler les unités autorisées.

Appuyez sur l'icône de confirmation.

Supprimer un utilisateur

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Gérer les utilisateurs.
Sélectionnez l'utilisateur à supprimer.
Appuyez sur Supprimer pour supprimer l'accès à une unité.



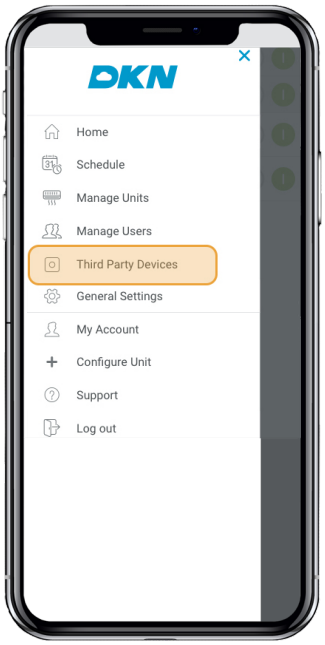
DISPOSITIFS DE TIERS (3PTI)

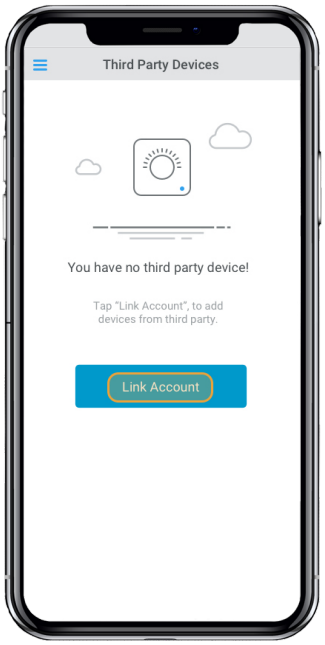
Cette option n'est disponible que sur les dispositifs DKN Plus.

Associer DKN Plus avec le compte de fabricants tiers

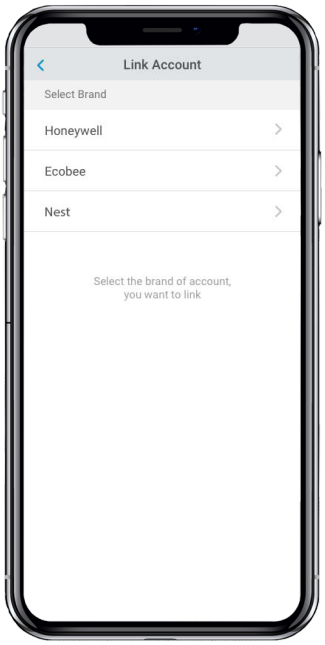
Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Dispositifs de tiers .
Pour associer votre DKN Plus avec un autre fabricant, il faudra avoir créé, au préalable, un compte chez ce dernier.

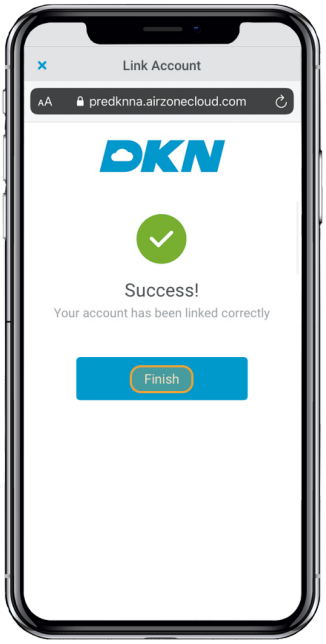
1) Dans le menu déroulant, appuyez sur **Dispositifs de tiers**.
2) Select the manufacturer whose account you wish to associate from among the compatible manufacturers.



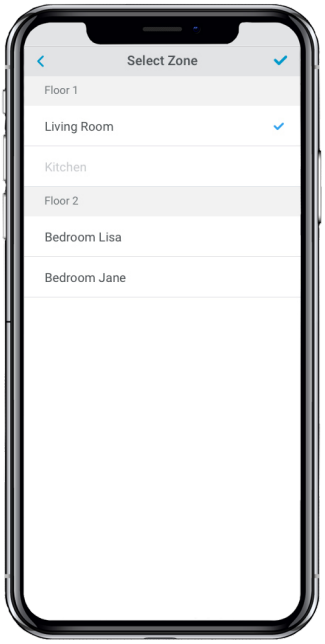


3) Sélectionnez le fabricant dont vous souhaitez associer le compte parmi les fabricants compatibles.
4) Vous serez redirigé vers le site web du fabricant afin d'autoriser l'association en saisissant vos identifiants d'utilisateur.



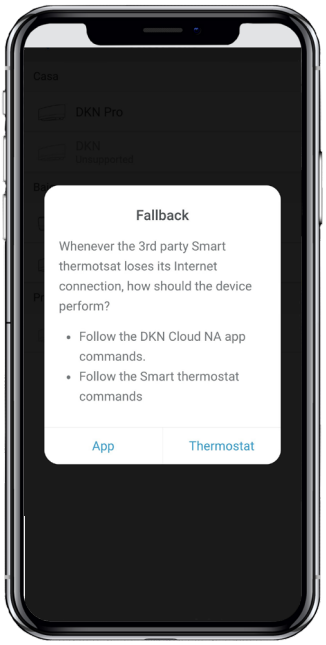


5) Une fois que le compte sera correctement associé, une liste de thermostats associés à ce compte d'utilisateur s'affichera. Appuyez sur celui que vous souhaitez associer à une zone.
6) Dans la liste des zones disponibles, sélectionnez celle à laquelle vous souhaitez associer votre thermostat.



7) Enfin, vous devez choisir, parmi les options suivantes, le comportement de l'unité intérieure si le thermostat perd la connexion Internet :
1. L'unité intérieure suivra les ordres du DKN Plus.
2. L'unité intérieure suivra les ordres du thermostat intelligent associé.

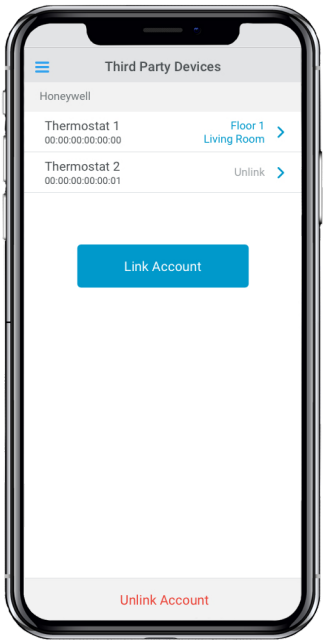
Attention : Si vous choisissez de faire suivre à l'unité intérieure les ordres du thermostat intelligent associé, il est possible que lorsque la connexion Internet du thermostat se perde, les communications avec votre DKN Plus se perdent aussi, ce qui empêchera l'interaction avec le thermostat depuis l'application.



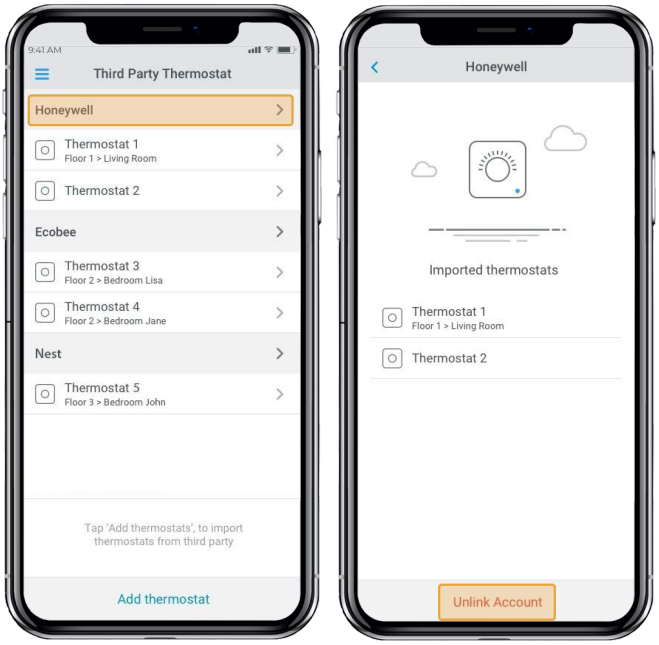
Dissocier le compte de fabricants tiers de votre DKN Plus

Sur l'écran Accueil, appuyez sur l'icône de menu ☰, puis sur Dispositifs de tiers .

1) Sélectionnez le fabricant dont vous souhaitez dissocier le compte de votre installation.



2) Appuyez sur le bouton **Dissocier compte** afin de dissocier le compte du fabricant de votre installation. Attention : En dissociant le compte, tous les dispositifs associés à ce dernier seront éliminés.



Modifier une zone associée à un dispositif

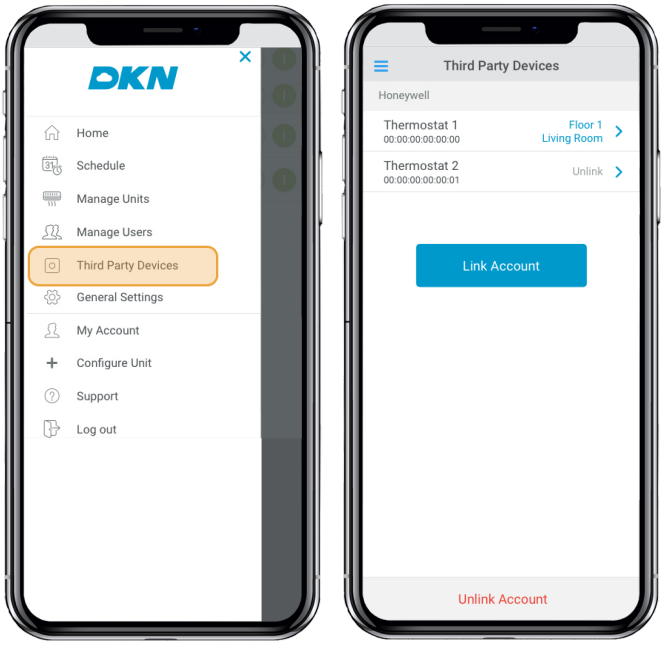
Sur l'écran Accueil, appuyez sur l'icône de menu , puis sur Dispositifs de tiers .

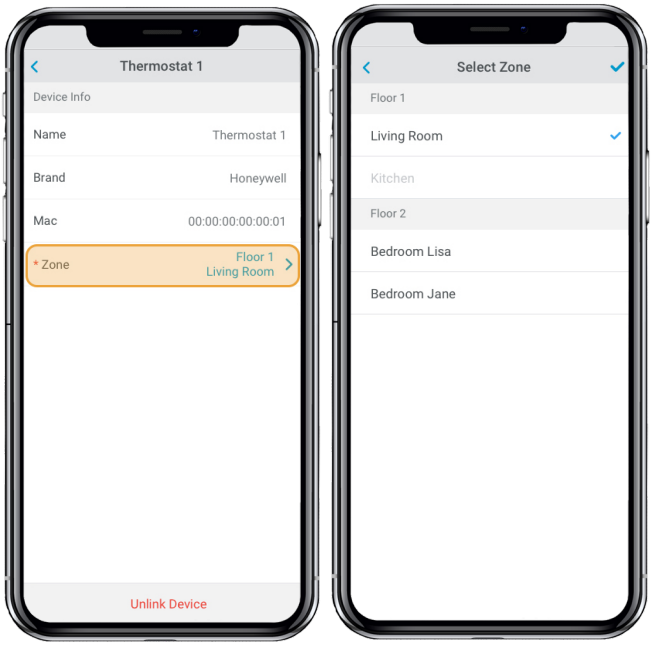
1) Sélectionnez le dispositif dont vous souhaitez modifier la zone.

2) Appuyez sur **Zone** pour accéder à la liste des zones disponibles.

3) Sélectionnez la zone à laquelle vous souhaitez associer votre dispositif.

Attention : Si possible, sélectionnez une zone parmi celles ayant un dispositif DKN Plus et n'ayant pas un autre thermostat associé au préalable.

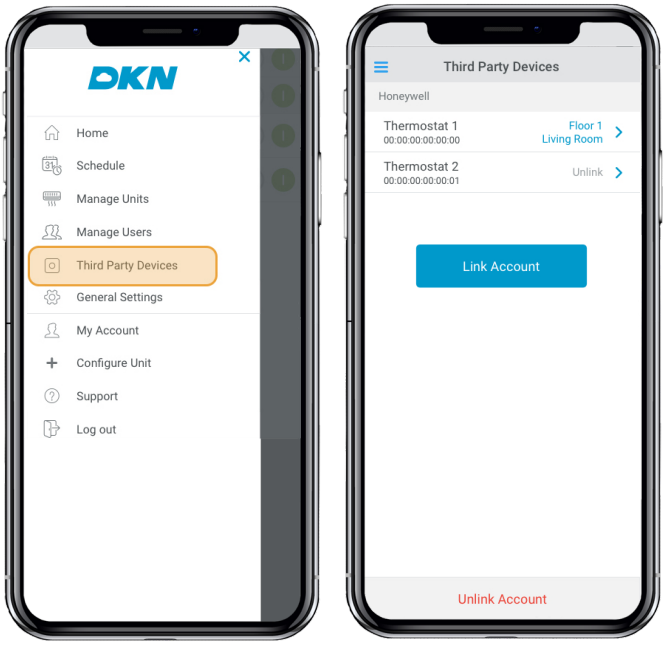




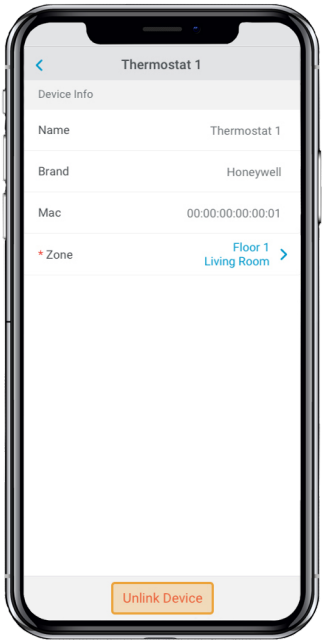
Dissocier un dispositif de tiers de votre DKN Plus

Sur l'écran Accueil, appuyez sur l'icône de menu , puis sur Dispositifs de tiers .

1) Sélectionnez le dispositif que vous souhaitez dissocier de votre installation.



2) Appuyez sur le bouton inférieur **Dissocier dispositif** puis confirmez afin de dissocier le thermostat.
Attention : Lorsque vous dissociez un dispositif, ce dernier ne disparaît pas de la liste des dispositifs disponibles, il se dissocie de toute zone à laquelle il était associé.

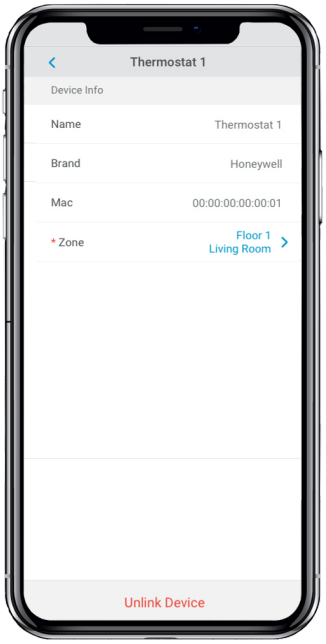


Informations sur les dispositifs associés 3PTI

Sur l'écran Accueil, appuyez sur l'icône de menu , puis sur Dispositifs de tiers .

1) Ensuite, vous accéderez à la liste des dispositifs de tiers associés à votre DKN Plus ainsi qu'à la zone à laquelle chacun d'entre eux est associé. Sélectionnez le dispositif que vous souhaitez consulter pour accéder à l'information complète :

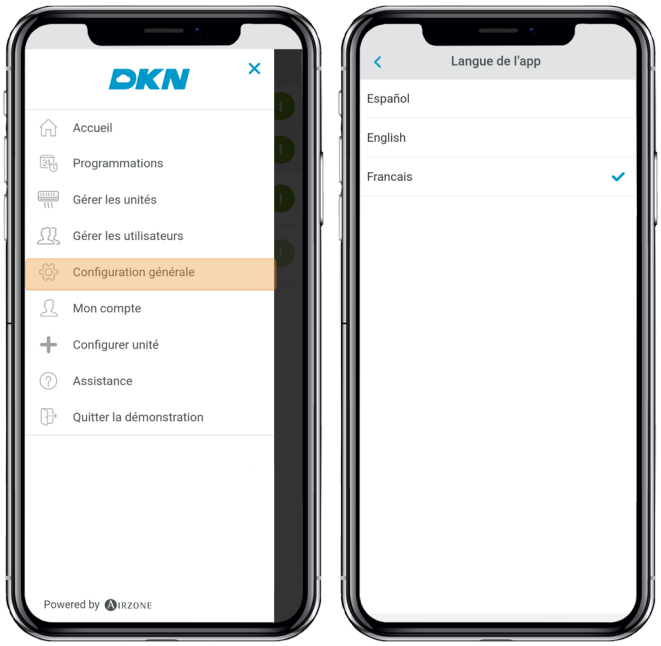
- Nom
- Fabricant
- MAC
- Zone



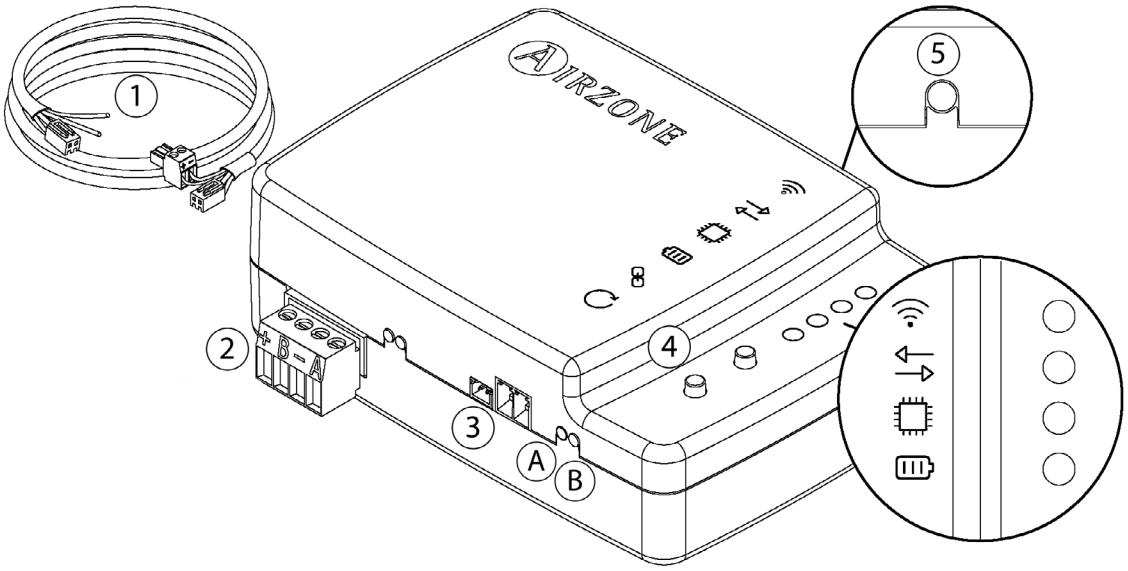
CONFIGURATION

Changer de langue

Sur l'écran Accueil, appuyez sur l'icône de menu .
Appuyez sur Configuration générale.
Sélectionnez la langue à utiliser dans l'application.



INSTALLATION - ADAPTATEUR DKN CLOUD WI-FI POUR UNITÉS VRV/SKYAIR (AZAI6WSCDKA)



Contenu de l'emballage

	Signification
1	Câblage pour l'alimentation et la communication P1P2
2	Port Modbus
3	Port d'unité intérieure pour le câblage
4	Réinitialisation de connexion Wi-Fi
5	Réinitialisation de l'association de compte

Modbus Manual

Fonctionnement LED

L'adaptateur DKN Cloud Wi-Fi dispose de LED intégrées qui détectent le fonctionnement du dispositif.

En fonction de son état, la LED peut indiquer différentes choses :

1. **Éteinte**. Wi-Fi non configuré.
2. **Vert clignotant**. En cours de connexion au réseau Wi-Fi.
3. **Vert fixe**. Connecté au réseau Wi-Fi.
4. **Bleu fixe**. Connecté au serveur.

Clignote en rouge pour indiquer la communication avec le cloud.

Clignote en vert pour indiquer l'activité du microprocesseur.

Reste allumée en rouge pour indique que le dispositif est sous tension.

A Clignote en rouge pour indiquer la transmission de données à l'unité intérieure.

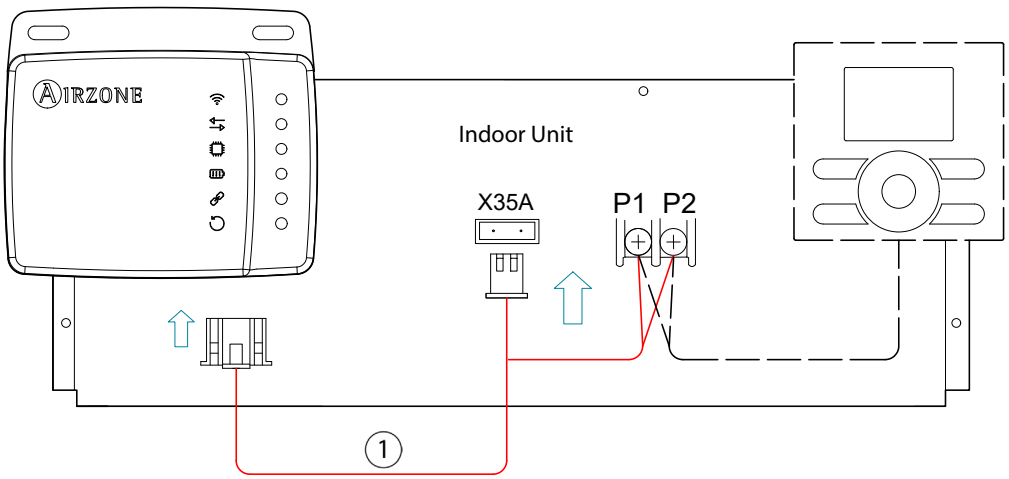
B Clignote en vert pour indiquer la réception de données de l'unité intérieure.

Connexion (AZAI6WSCDKA)

Le DKN Cloud Wi-Fi Adaptor for VRV/SkyAir units dispose de quatre fils de connexion : deux pour les communications avec l'équipement Daikin (rouge et noir) et deux pour l'alimentation. Pour réaliser la connexion :

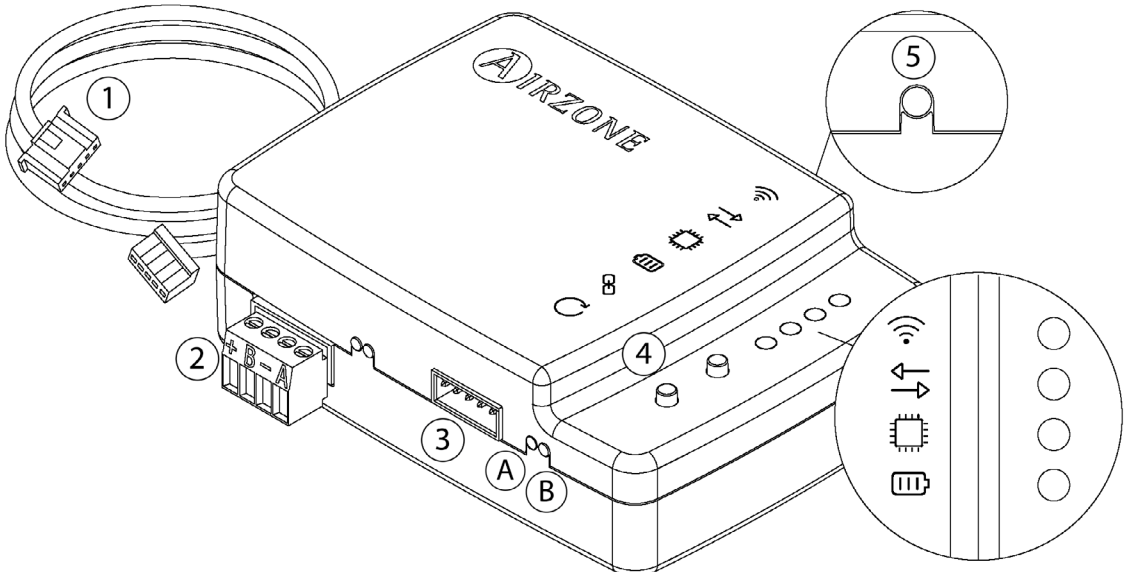
1. Coupez l'alimentation de l'unité intérieure Daikin.
2. Connectez le DKN aux bornes de l'unité intérieure en utilisant le câble **X35A/X18A/X9A** (en fonction de l'unité intérieure) fourni et les connecteurs **P1 P2**.
3. Rétablir l'alimentation de l'unité intérieure. Vérifiez l'état des LED (voir la section autodiagnostic).

La LED éclairée de façon continue vous indiquera que le Residential DKN Wi-Fi Controller est correctement connecté.



***Note**: Afin de faciliter l'accès au DKN WServer, veillez à le placer à un endroit facile d'accès.*
***Note:** Pour les unités intérieures FXTQ_PA(B) et FTX_PA(B), utilisez la borne **X9A** sur le circuit imprimé A2P pour l'alimentation.*
***Note** : Lorsque la température ambiante doit être envoyée à l'unité intérieure depuis l'adaptateur DKN Cloud Adaptor de Modbus, l'adaptateur doit être configuré comme contrôleur principal.*

INSTALLATION - ADAPTATEUR DKN RESIDENTIAL CLOUD WI-FI POUR UNITÉS NON GAINABLES (AZAI6WSCDKB)



Contenu de l'emballage

	Signification
1	Câblage pour l'alimentation et la communication S21
2	Port Modbus
3	Port d'unité intérieure pour le câblage
4	Réinitialisation de connexion Wi-Fi
5	Réinitialisation de l'association de compte

Modbus Manual

Fonctionnement LED

L'adaptateur DKN Cloud Wi-Fi dispose de LED intégrées qui détectent le fonctionnement du dispositif.

En fonction de son état, la LED peut indiquer différentes choses :

1. **Éteinte**. Wi-Fi non configuré.
2. **Vert clignotant**. En cours de connexion au réseau Wi-Fi.
3. **Vert fixe**. Connecté au réseau Wi-Fi.
4. **Bleu fixe**. Connecté au serveur.

Clignote en rouge pour indiquer la communication avec le cloud.

Clignote en vert pour indiquer l'activité du microprocesseur.

Reste allumée en rouge pour indique que le dispositif est sous tension.

Ⓐ Clignote en rouge pour indiquer la transmission de données à l'unité intérieure.

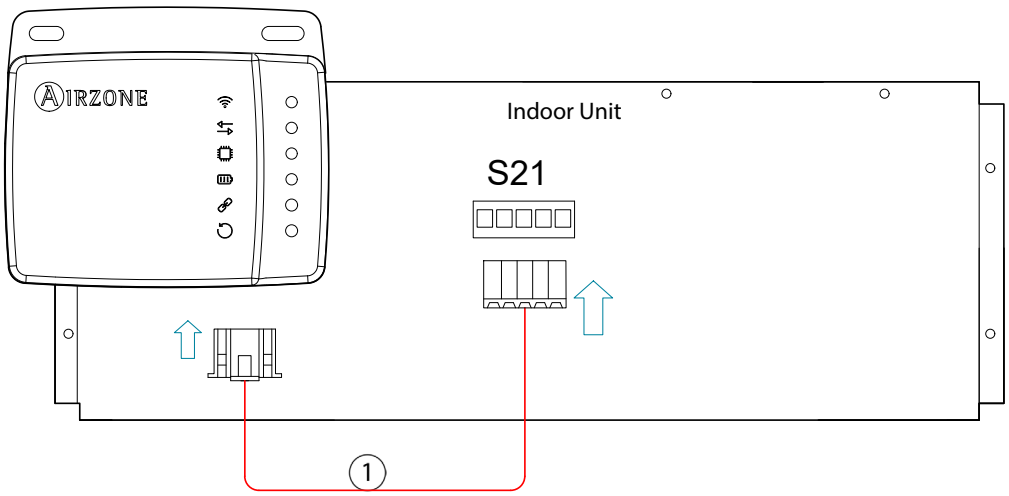
Ⓑ Clignote en vert pour indiquer la réception de données de l'unité intérieure.

Connexion (AZAI6WSCDKB)

L'adaptateur DKN Residential Cloud Wi-Fi pour unités non gainables units dispose de quatre fils de connexion : deux pour les communications avec l'équipement Daikin (rouge et noir) et deux pour l'alimentation. Pour réaliser la connexion :

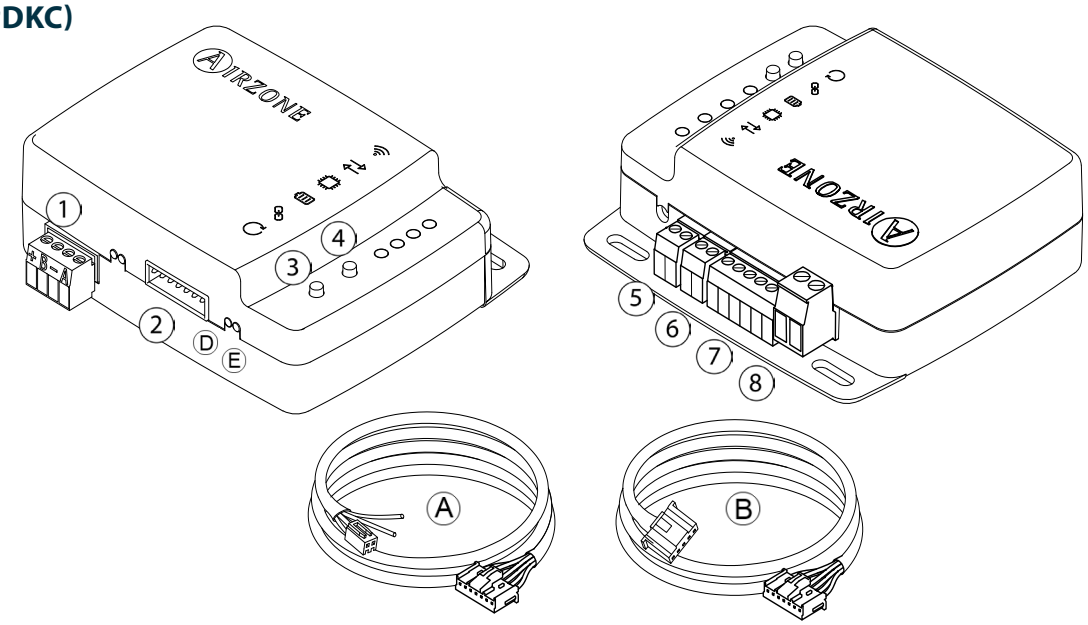
1. Coupez l'alimentation de l'unité intérieure Daikin.
2. Connectez le câble fourni au connecteur **S21** de l'unité intérieure ou à un adaptateur accessoire (à commander séparément).
3. Rétablir l'alimentation de l'unité intérieure. Vérifiez l'état des LED (voir la section autodiagnostic).

La LED éclairée de façon continue vous indiquera que le Residential DKN Wi-Fi Controller est correctement connecté.



***Note**: Afin de faciliter l'accès au DKN WServer, veillez à le placer à un endroit facile d'accès.*

INSTALLATION - ADAPTATEUR DKN PLUS POUR UNITÉS VRV/SKYAIR/NON GAINABLES (AZAI6WSPDKC)



Contenu de l'emballage

Ⓐ	Câblage pour la communication P1P2	④	Réinitialisation du processus d'association
Ⓑ	Câblage pour la communication S21	⑤	Entrée numérique
①	Port Modbus	⑥	Sortie marche-arrêt
②	Connexion à l'unité intérieure	⑦	Connexion thermostat intelligent
③	Réinitialisation du dispositif	⑧	Entrée d'alimentation externe

Modbus Manual

Fonctionnement LED

L'adaptateur DKN Cloud Wi-Fi dispose de LED intégrées qui détectent le fonctionnement du dispositif.

En fonction de son état, la LED peut indiquer différentes choses :

1. **Éteinte**. Wi-Fi non configuré.
2. **Vert clignotant**. En cours de connexion au réseau Wi-Fi.
3. **Vert fixe**. Connecté au réseau Wi-Fi.
4. **Bleu fixe**. Connecté au serveur.

Clignote en rouge pour indiquer la communication avec le cloud.

Clignote en vert pour indiquer l'activité du microprocesseur.

Reste allumée en rouge pour indique que le dispositif est sous tension.

Ⓓ Clignote en rouge pour indiquer la transmission de données à l'unité intérieure.

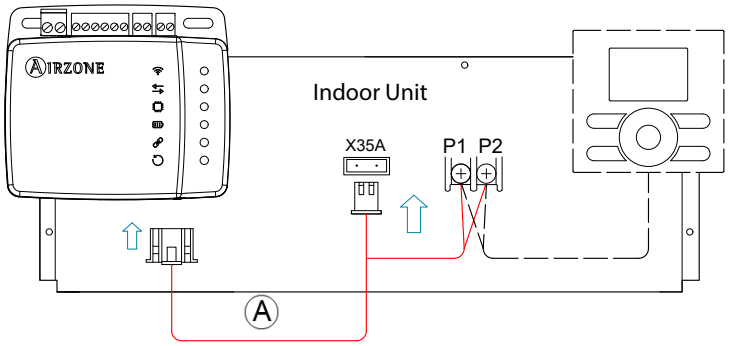
Ⓔ Clignote en vert pour indiquer la réception de données de l'unité intérieure.

P1P2 Connexion (AZAI6WSPDKC)

Le DKN Cloud Wi-Fi Adaptor for VRV/SkyAir units dispose de quatre fils de connexion : deux pour les communications avec l'équipement Daikin (rouge et noir) et deux pour l'alimentation. Pour réaliser la connexion :

1. Coupez l'alimentation de l'unité intérieure Daikin.
2. Connectez le DKN aux bornes de l'unité intérieure en utilisant le **A** câble **X35A/X18A/X9A** (en fonction de l'unité intérieure) fourni et les connecteurs **P1 P2**.
3. Rétablir l'alimentation de l'unité intérieure. Vérifiez l'état des LED (voir la section autodiagnostic).

La  LED éclairée de façon continue vous indiquera que le Residential DKN Wi-Fi Controller est correctement connecté.



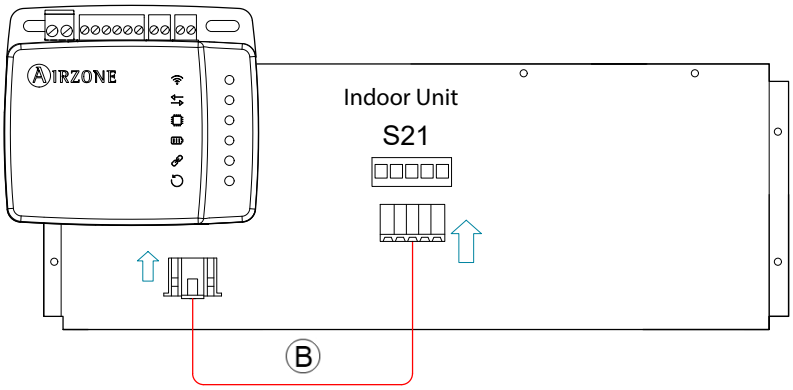
***Note**: Afin de faciliter l'accès au DKN WServer, veillez à le placer à un endroit facile d'accès.*
***Note:** Pour les unités intérieures FXTQ_PA(B) et FTX_PA(B), utilisez la borne **X9A** sur le circuit imprimé A2P pour l'alimentation.*

S21 Connexion (AZAI6WSPDKC)

L'adaptateur DKN Residential Cloud Wi-Fi pour unités non gainables units dispose de quatre fils de connexion : deux pour les communications avec l'équipement Daikin (rouge et noir) et deux pour l'alimentation. Pour réaliser la connexion :

1. Coupez l'alimentation de l'unité intérieure Daikin.
2. Connectez le **B** câble fourni au connecteur **S21** de l'unité intérieure ou à un adaptateur accessoire (à commander séparément).
3. Rétablir l'alimentation de l'unité intérieure. Vérifiez l'état des LED (voir la section autodiagnostic).

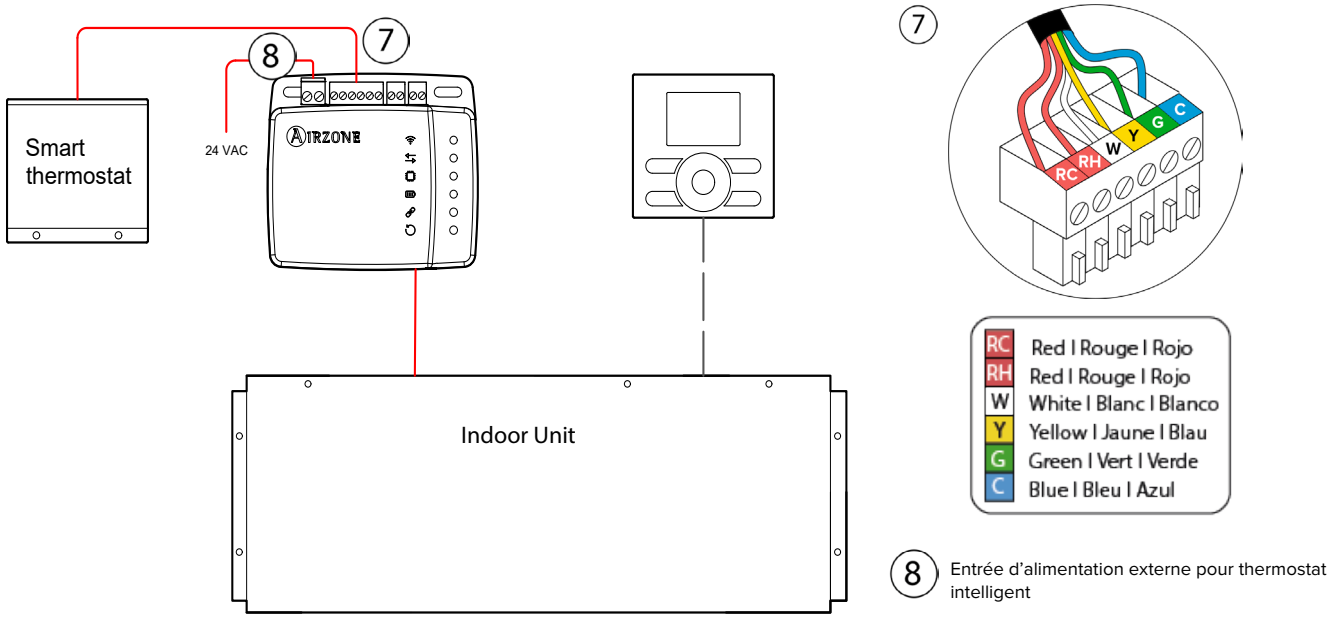
La LED  éclairée de façon continue vous indiquera que le Residential DKN Wi-Fi Controller est correctement connecté.



***Note**: Afin de faciliter l'accès au DKN WServer, veillez à le placer à un endroit facile d'accès.*

Connexion thermostat intelligent

Le DKN PLUS peut être associé à un thermostat tiers. Suivez le schéma ci-dessous pour la connexion :

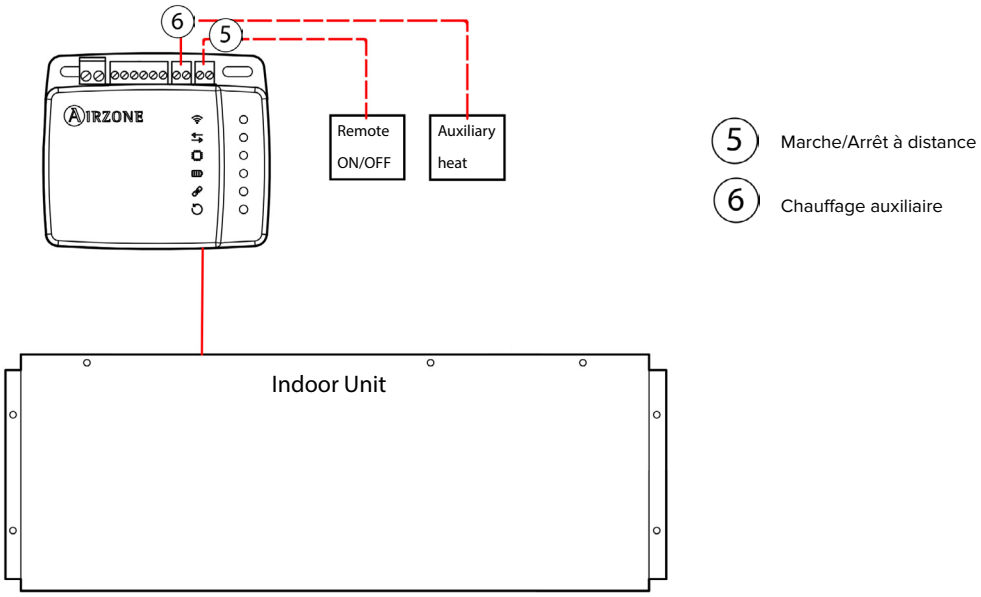


Pour terminer l'installation, il faut associer le compte de ce thermostat en suivant les instructions figurant dans la section des Dispositifs tiers.

***Note** : Lorsque la température ambiante doit être envoyée à l'unité intérieure depuis l'adaptateur DKN Cloud Adaptor de API, Modbus ou BACnet l'adaptateur doit être configuré comme contrôleur principal.*

Connexion entrée/sortie numérique

Le DKN PLUS peut être connecté à une sortie numérique pour la fonction de chauffage auxiliaire, ainsi qu'à une entrée numérique qui permet d'ajouter une fonction de marche/arrêt à distance (par ex. : contact de fenêtre, détecteur de présence, etc.). Cette connexion est détaillée sur le schéma suivant :

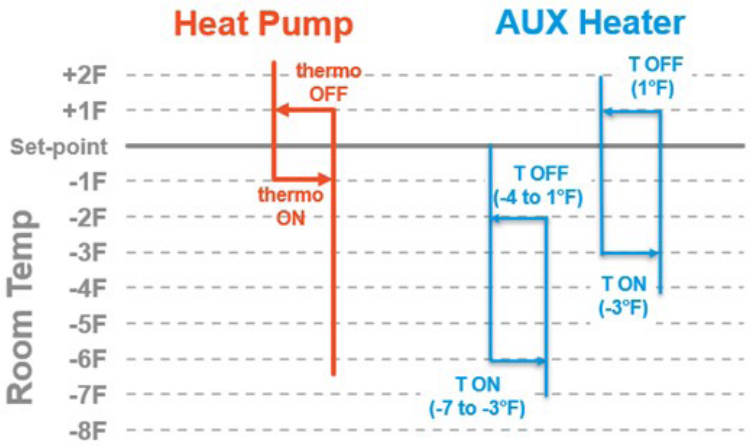


CONFIGURATION DKN PLUS

Chauffage auxiliaire

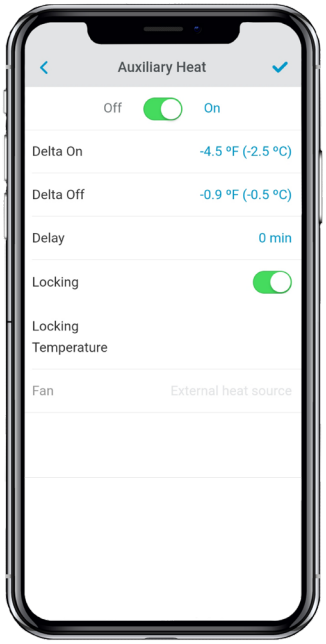
La fonction Chauffage auxiliaire permet de contrôler les étapes de chauffage d'appoint. Cette fonction est désactivée par défaut.

La source de chauffage auxiliaire s'allume et s'éteint de manière indépendante en fonction des différentiels de température Delta On et Delta Off par rapport à la température de consigne. Vous pouvez la configurer pour qu'elle s'éteigne lorsqu'elle passe en dessous de la température de consigne, ou pour qu'elle reste allumée avec la pompe à chaleur, jusqu'à 1 °F au-dessus de la température de consigne.



1. Dans le menu déroulant, appuyez sur l'option Configurer unité.

2. Sélectionnez l'unité que vous souhaitez configurer, puis appuyez sur Chauffage auxiliaire pour configurer les paramètres.



- **Delta On** : offset qui sera appliqué à la température de consigne. Quand la température ambiante est inférieure à cette valeur, le chauffage auxiliaire s'active en fonction de la configuration. Plage : -7,2 °F (-4,0 °C) / -3,6 °F (-2,0 °C).

- **Delta Off** : offset qui sera appliqué à la température de consigne. Quand la température ambiante est supérieure à cette valeur, le chauffage auxiliaire se désactive. Plage : -0,9 °F (-0,5 °C) / 0,9 °F (0,5 °C).

- **Temps de retard** : temps de retard de désactivation du ventilateur de l'unité intérieure Daikin après l'arrêt du chauffage auxiliaire externe. Plage : 0-30 min.

- **Type de ventilation** : sélectionnez le type de chauffage auxiliaire, en fonction de votre installation.
  - *Chauffage de gaine (uniquement pour la connexion P1P2)* : source de chaleur située à l'intérieur de la gaine, qui nécessite l'activation du ventilateur de l'unité intérieure Daikin pour souffler de l'air.
  - *Chauffage auxiliaire externe* : source de chaleur externe qui intègre sa propre source de ventilation. L'activation de l'unité intérieure Daikin n'est donc pas nécessaire au fonctionnement du chauffage auxiliaire.

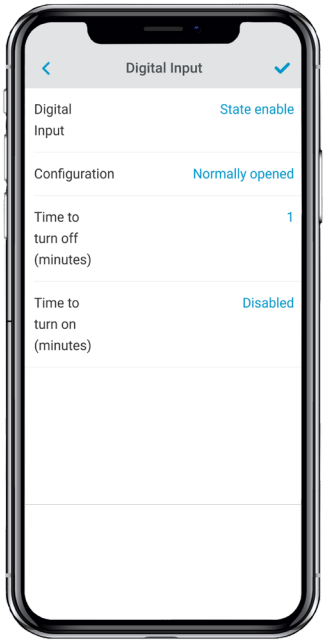
- **Blocage** (uniquement pour la connexion S21): détermine une température extérieure de blocage de l'activation de la fonction Chauffage auxiliaire. Si la température extérieure est supérieure à la température de blocage établie, la fonction Chauffage auxiliaire ne s'active pas, même si les conditions d'activation sont réunies. Ce paramètre est disponible uniquement pour les unités Daikin disposant d'une fonction de lecture de la température extérieure. Plage : -0 °F (-17.8 °C) / 65 °F (18.3 °C).

Entrée numérique

Le dispositif dispose d'une entrée numérique qui peut être utilisée comme contact de feuillure ou similaire pour éteindre/allumer l'unité si l'entrée change de valeur. Cette fonction est désactivée par défaut.

1. Dans le menu déroulant, appuyez sur l'option Configurer unité.

2. Sélectionnez l'unité que vous souhaitez configurer, puis appuyez sur Entrée numérique pour configurer les paramètres.



L'entrée numérique peut être configurée sur trois états :

- **Désactivée** : la logique d'entrée numérique est inactive.
- **Activée par état** : l'état imposé à l'unité Daikin est permanent. Cela signifie que si l'entrée est activée, l'unité Daikin est obligée de s'éteindre tant que l'entrée se trouve dans cet état.

- **Activée par front** : l'état imposé à l'unité est ponctuel. L'ordre est envoyé uniquement à la mise sous/hors tension de l'unité Daikin (en fonction de l'état de la sortie) au moment où la condition d'ouverture ou fermeture imposée est remplie pour la première fois.

Permet de configurer si l'entrée est normalement ouverte (prédéterminé) ou normalement fermée.

Note : L'entrée numérique n'allume l'unité Daikin que si elle l'a éteinte auparavant.

Vous pouvez également indiquer la durée, en secondes, pendant laquelle l'entrée doit rester activée pour pouvoir éteindre l'unité (Plage : 1-30 min). De la même manière, l'entrée devra rester désactivée pendant un certain temps pour pouvoir rallumer l'unité (Plage : Désactivée-30 min). unit back on (Range: Disabled - 30 min).

RÈGLEMENTS

Déclaration d'interférence
Le présent dispositif est conforme à la section 15 du règlement de la FCC et à la norme ou aux normes CNR d'Industrie Canada applicables aux dispositifs exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) ce dispositif ne doit pas produire d'interférence, et (2) ce dispositif doit accepter toute interférence, même si celle-ci est susceptible de perturber le fonctionnement du dispositif.

Avis concernant le fonctionnement sans fil
Le présent dispositif est conforme aux limites d'exposition aux radiations FCC/ISDE définies pour un environnement non contrôlé et répond aux directives d'exposition aux radiofréquences (RF) de la FCC et aux exigences CNR-102 des règles d'exposition aux radiofréquences de l'ISDE. Cet émetteur ne doit pas fonctionner conjointement avec une autre antenne ou un autre émetteur, ni être installé à côté d'un de ces dispositifs.

CAN ICES-3 (B) / NMB-3 (B)
Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

Notice relative aux appareils numériques FCC Classe B
Cet équipement a été testé et déclaré conforme aux limites imposées aux appareils numériques de classe B, conformément à la section 15 du règlement de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie radiofréquence. S'il n'est pas installé et utilisé conformément aux instructions, il peut causer des interférences nuisibles aux communications radio. Cependant, rien ne garantit que des interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception de radio ou de télévision, ce qui peut être déterminé en éteignant et en rallumant l'équipement, l'utilisateur est invité à tenter de corriger l'interférence en appliquant une ou plusieurs des mesures suivantes :
- Réorienter ou déplacer l'antenne de réception.
- Augmenter la distance entre l'équipement et le récepteur.
- Connecter l'équipement à une prise d'un circuit différent de celui auquel le récepteur est connecté.
- Consulter le revendeur ou un technicien radio/télévision expérimenté.

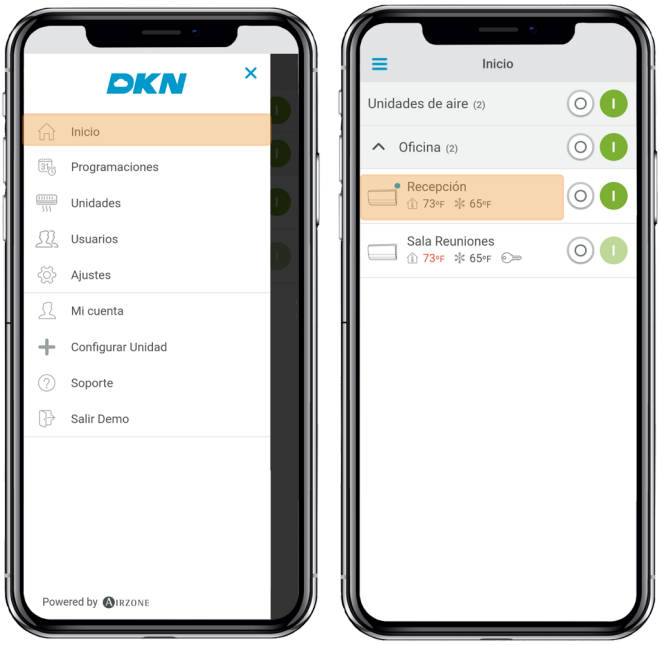
Déclaration de conformité
Pour accéder à la déclaration de conformité, suivez le lien ci-dessous :
http://doc.airzone.es/Certificates/Product/SDoC_AZAI6WSCDKA_FCC_A4_EN.pdf

Déclaration de modification
Corporación Empresarial Altra S.L. n'approuve aucune modification ni changement apporté à ce dispositif par l'utilisateur. Tout changement ou modification peut annuler le droit d'utilisation de l'appareil par l'utilisateur.

TABLA DE CONTENIDOS

CONTROL DE LA UNIDAD

En el menú desplegable , pulse inicio y selecciona la unidad Daikin a controlar.



Dependiendo de la instalación, la temperatura de referencia será medida desde :

IU 73°F la unidad interior
T 73°F el termostato
M 73°F ambas

Encender o apagar una unidad

Pulse los botones On y Off en la pantalla de inicio o acceda a la pantalla de control de la unidad para apagar o encender una zona.

Establecer la temperatura de consigna

Ajuste la temparatura de consigna deslizando su dedo sobre el círculo en la pantalla o pulse los botones + y -.

Establecer un modo de funcionamiento

Los modos disponibles, dependiendo del tipo de instalación son:
Automático (no aplicable para VRV bomba de calor y sistemas Multi-split). Permite el cambio automático entre frío y calor por parte del equipo.
Frío. La unidad de aire empezará un ciclo de enfriamiento.
Calor. La unidad de aire empezará un ciclo de calentamiento.
Ventilación. El sistema trabaja únicamente con el equipo de aire en modo ventilación.
Seco. La unidad de aire empezará un ciclo de enfriamiento priorizando su funcionamiento para reducir la humedad.

Establecer la velocidad del ventilador

Pulse el icono de ventilación para elegir entre las velocidades disponibles.

Obtener información de la unidad

En el menú desplegable ☰, pulse inicio y selecciona la unidad Daikin a controlar.
Pulse en el icono de información que mostrará la dirección MAC, la versión de firmware, la señal Wi-Fi y la dirección Modbus.
Pulse el botón de OK para volver a la pantalla anterior.

Ajustar lamas horizontales y/o verticales

En el menú desplegable ☰, pulse inicio y selecciona la unidad Daikin a controlar.
Pulse sobre el icono de ajuste de lamas para seleccionar la posición y comportamiento de las lamas horizontales y/o verticales.

Calor de emergencia

El Calor de Emergencia fuerza la activación del Calor Auxiliar para dar apoyo a la bomba de calor aunque no se cumplan las condiciones para la activación del Calor Auxiliar.

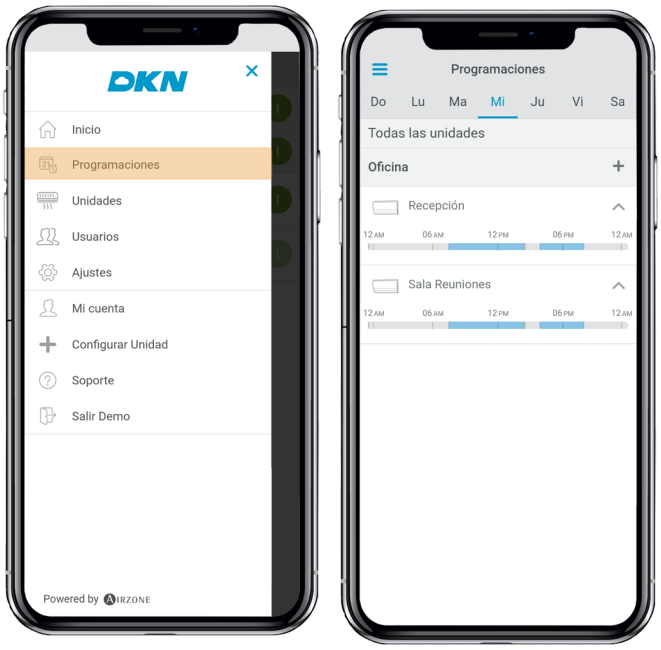
Esta función solo está disponible en instalaciones con Calor Auxiliar activado y configurado como Calor auxiliar externo.
1. En el menú desplegable, pulse inicio.

2. Pulse sobre una unidad para acceder a su pantalla de control.

3. Active o Desactive el Calor de Emergencia.

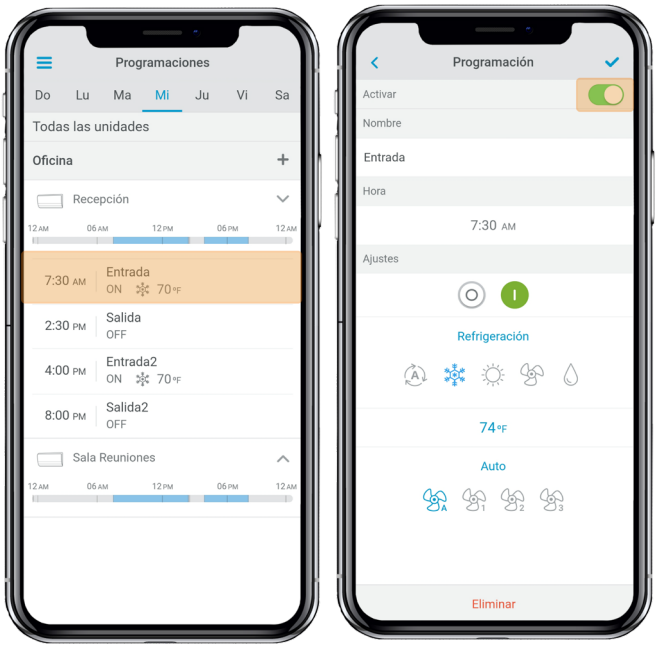
PROGRAMACIONES

En el menú desplegable ☰, pulse inicio y selecciona programaciones.



Activar/Desactivar una programación

Selecciona el día de la semana y la unidad para ver la programación asociada.
Pulse la programación y active o desactive marcando el botón activar.

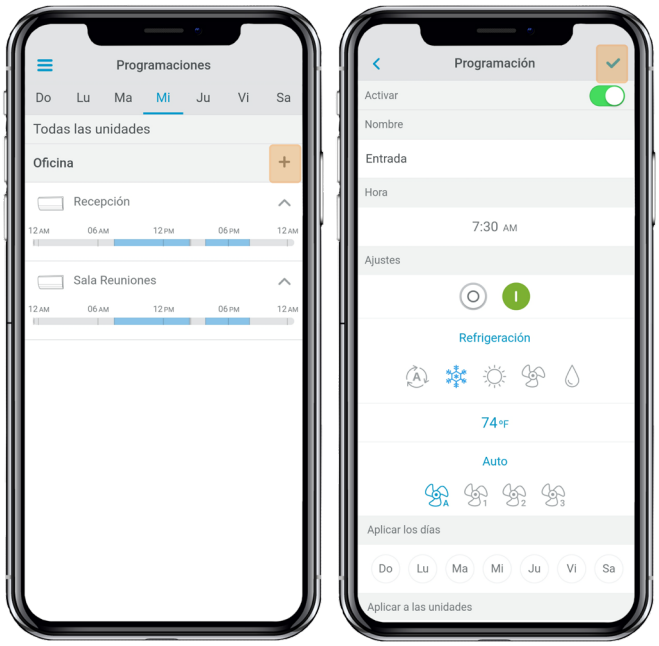


Crear una nueva progamación

En el menú desplegable ☰, pulse inicio y selecciona programaciones.
Se pueden configurar hasta 24 progamas por cada sistema.
Siga los siguientes pasos para la nueva progamación:

1. Marca el icono + en el grupo donde va a ser creada la programación.
2. Nombre la progamación.
3. Establezca la hora de inicio.
4. Seleccione los parámetros:
   - On y Off.
   - Modo de opetación.
   - Temperatura de consigna.
   - Velocidad del ventilador.
5. Seleccionar los días de la semana cuando se active la programación.
6. Asigne el programa a una unidad.
7. Marque el icono de confirmación para guardar o ir atrás.

Importante: *Las programaciones no tienen un tiempo automático de acabado, por lo que es necesario crear una programación para apagar/encender la unidad.*



Editar una programación

En el menú desplegable ☰, pulse inicio y selecciona programaciones.
Siga los siguientes pasos:

1. Pulse la programación a ser editada.
2. Cmabie los parámetros seleccionados.
3. Asigne la programación a una unidad.
4. Marque el icono de confirmación para guardar o ir atrás.

Puede eliminar una programación pulsando en eliminar.
Importante: *Las programaciones no tienen un tiempo automático de acabado, por lo que es necesario crear una programación para apagar/encender la unidad.*

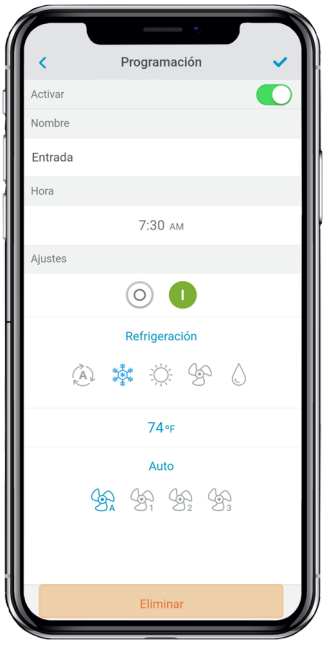
Ver programaciones

Selecciona el día de la semana y la unidad para ver la programación asociada.
Las programaciones también se pueden ver en el menú de control de la unidad.

Eliminar una programación

Siga los siguientes pasos.

1. Seleccione la unidad que tenga la programación.
2. Seleccione eliminar.
3. Si no quiere eliminar la programación, marque el icono < para ir a la pantalla anterior.



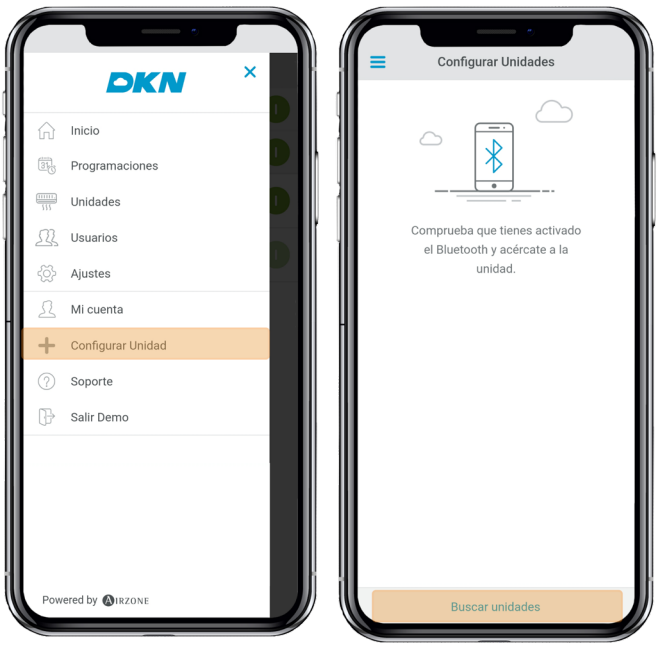
GESTIÓN DE UNIDADES

Añadir una unidad

En el menú desplegable ☰, pulse inicio y selecciona gestión de unidades.
Para añadir una unidad nueva Daikin, seleccione buscar unidad y siga los siguientes pasos:
***Importante**: La conexión Bluetooth debe estar activo en tu smartphone para añadir la unidad.*
***Importante**: Dependiendo de su dispositivo,deberá aparecer una notificación pidiendo acceso a la geolocalización, confirma y continue.*

1. Selecciona la unidad de la lista disponible de unidades.
   ***Nota**: Si la unidad no aparece, confirme si la función bluetooth está activada en su dispositivo y el LED de operacion DKN Cloud Wi-Fi Adaptor está verde y parpadeando.*
2. Marque la unidad de nuevo para acceder.
3. Pulse Conectar a red para elegir la red a la que desea conectarse, seleccione la red deseada e introduzca la contraseña de red.
   Nota: Si el estado Wifi connected aparece en rojo verifique que la contraseña de red es correcta.
4. Pulse Asociar.
5. Establezca el nombre, grupo e icono de la unidad a añadir. Si no se ha creado ningún grupo, cree uno nuevo y establezca el nombre del grupo, unidades de temperatura y la zona horaria.

Si una unidad ya ha sido añadida y quiere liberarse para ser añadida por otro usuario, pulse liberar e introduzca el código pin que se encuentra en el DKN WiFi Adaptor.



Liberar una unidad

En el menú desplegable ☰, pulse inicio y selecciona gestión de unidades.
Para encontrar una unidad Daikin, seleccione buscar unidad.
***Importante**: Es necesario tener activada la función Bluetooth en su dispositivo iOS o Android para poder añadir la unidad.*
Pulse liberar para liberar y en caso de ser necesario introduzca el código pin que se encuentra en el DKN WiFi Adaptor if required.

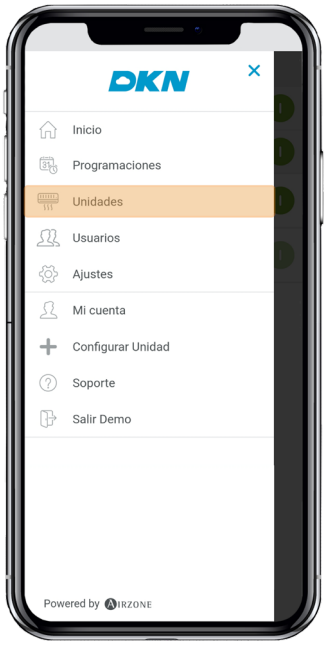
Cambiar red de la unidad

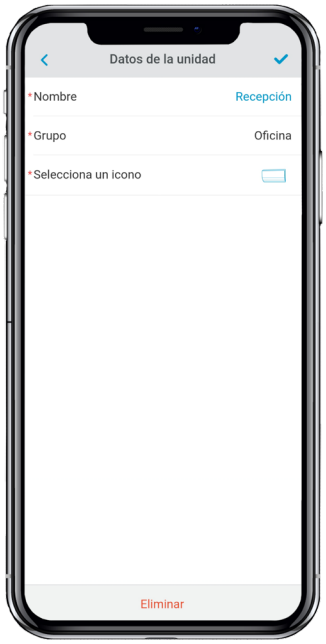
En el menú desplegable ☰ pulse la opción configurar unidad.
Para añadir una nueva unidad Daikin pulse buscar unidades y siga los pasos descritos a continuación.
***Importante**: Es necesario tener activada la función Bluetooth en su dispositivo para poder añadir la unidad.*

1. Seleccione la unidad del listado de unidades disponibles que desea añadir para obtener información.
   ***Nota**: Si su unidad no aparece confirme que la función bluetooth de su dispositivo iOS o Android está activado y que el DKN WIFI Controller está encendido y funciona correctamente.*
2. Selecciónela de nuevo para acceder a la unidad.
3. Pulse Cambiar la red para elegir la red a la que desea conectarse, seleccione la red deseada e introduzca la contraseña de red.
   ***Nota**: Si el estado Wifi connected aparece en rojo verifique que la contraseña de red es correcta.*

Editar datos de un grupo

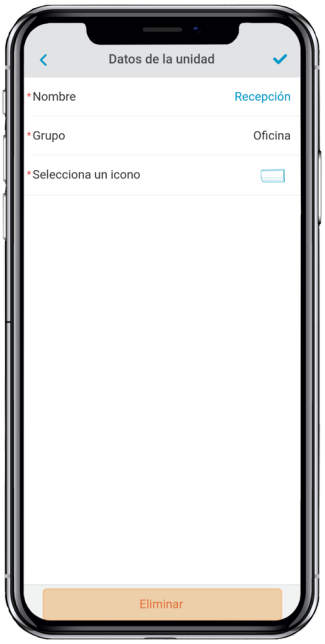
En el menú desplegable , pulse inicio y selecciona gestión de unidades.
Pulse el grupo que desea editar.
Edite los parámetros: nombre e icono de la unidad.
Seleccione eliminar para borrar la unidad.





Eliminar una unidad de la app

En el menú desplegable , seleccione Unidades.
Seleccione la unidad a eliminar o restablecer y pulse en el botón eliminar.



Editar datos de un grupo

En el menú desplegable , seleccione Unidades.
Pulse el grupo que desea editar.
Parámetros del grupo. Nombre, y zona horaria.
Unidades. Seleccione las unidades que pertenecen al grupo.
Pulse el icono de confirmar para guardar los cambios.
Pulse eliminar para eliminar el grupo y desvincular las unidades asociadas al mismo.

Borrar un grupo

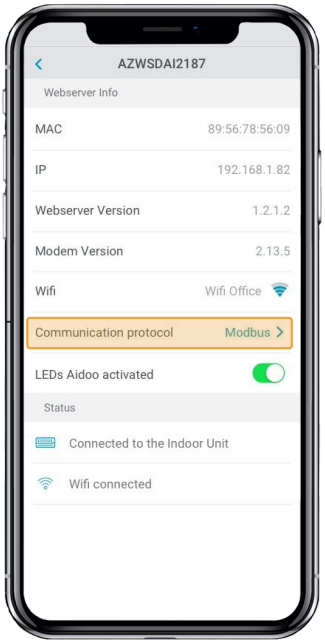
En el menú desplegable , seleccione Unidades.
Pulse el grupo que desea borrar.
Pulse eliminar para eliminar el grupo y desvincular las unidades asociadas al mismo.

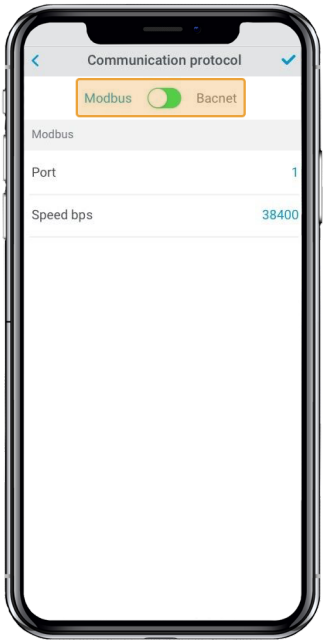
Configurar el protocolo de comunicaciones

El menú de configuración del protocolo de comunicaciones únicamente está disponible en los dispositivos DKN Plusy únicamente puede ser configurado en el proceso de asociación inicial.

1) Pulse en Protocolo de comunicaciones para acceder al menú de configuración.

2) Elija Modbus o BACnet como el protocolo de comunicaciones con el que trabajará el dispositivo.





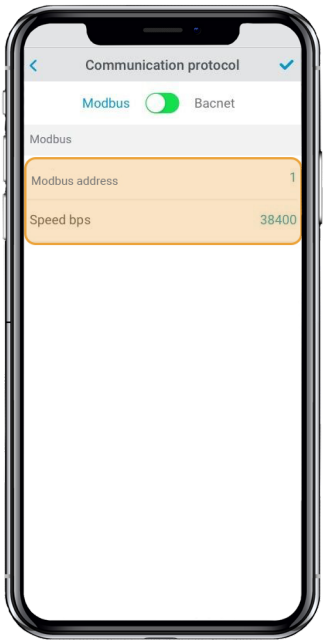
3) Puede ajustar los siguientes parámetros de configuración para cada protocolo de comunicaciones.

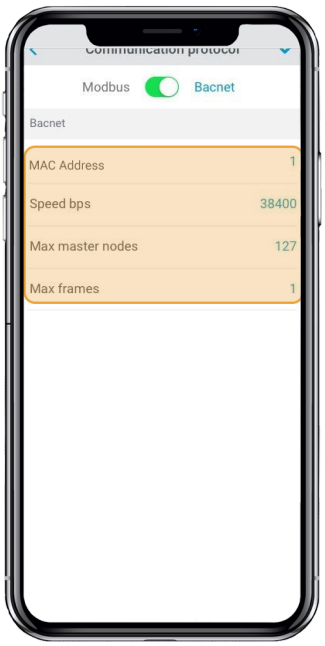
Modbus

- Dirección Modbus: Valor configurable entre 1 y 256.
- Velocidad de comunicaciones bps: Valor elegible entre las opciones disponibles.

BACnet

- Dirección MAC: Valor configurable entre 0 y 127.
- BACnet ID: Valor configurable entre 0 y 4, 194, 302.
- Velocidad de comunicaciones bps: Valor elegible entre las opciones disponibles.
- Número máximo de nodos maestros: Valor configurable entre 1 y 127.
- Número máximo de tramas: Valor configurable entre 1 y 127.





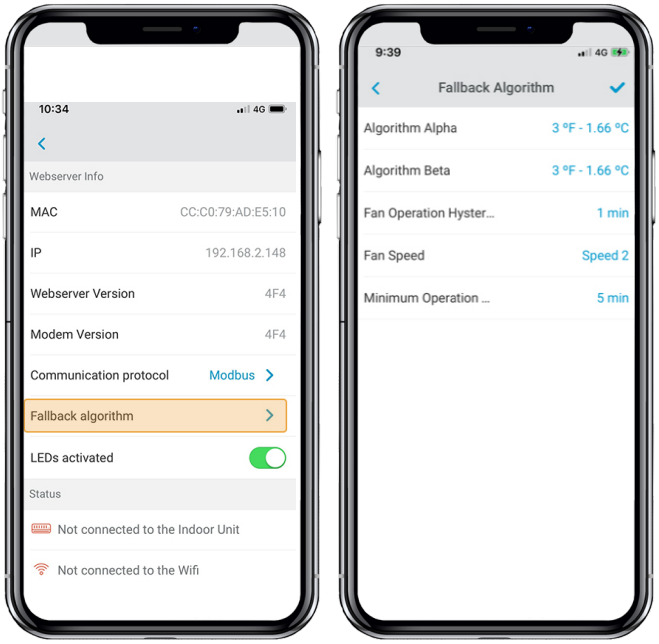
Configurar el Algoritmo Fallback

La lógica DKN + Fallback permite el control de la unidad interior mediante un termostato, utilizando contactos G, Y y W. La lógica DKN + Fallback está disponible de forma predeterminada hasta que el adaptador se conecta a Cloud. Una vez que el adaptador está conectado a Cloud, la lógica DKN + Fallback se desactiva automáticamente.

Comando del Termostato	Modo de la unidad interior	On/Off de la unidad interior	Temperatura de trabajo de la unidad interior
G	Ventilación	On	--
Y	Frío	On	Calculado con la lógica Fallback. Un mayor Alpha= Una corrección mayor de la temperatura de trabajo , Un menor Alpha = Una corrección menor de la temperatura de trabajo.
W	Calor	On	Calculado con la lógica fallback. Larger Beta = Large Setpoint corrections, smaller Beta = smaller setpoint corrections.
G,Y,W abierto	Último modo	Off	--

La lógica de Fallback ajusta dinámicamente la temperatura de la unidad interior con referencia a la temperatura ambiente en función de la señal de funcionamiento del termostato. Cuando el adaptador se conecta por primera vez a la unidad interior, el punto de ajuste de refrigeración mínimo o el punto de ajuste de calefacción máximo se utiliza como punto de ajuste inicial. A medida que el adaptador continúa recibiendo la señal del termostato, se calcula el nuevo punto de ajuste para mantener el estado de encendido. Los números **Alpha** (refrigeración) y **Beta** (calefacción) afectan el cálculo del nuevo punto de ajuste. Los valores alfa o beta más altos hacen que la corrección del punto de ajuste aumente o disminuya en una cantidad mayor. El valor alfa y beta lo fija el instalador durante la puesta en servicio.

Alpha	Beta
3ºF - 1.66ºC	3ºF - 1.66ºC
5ºF - 22.78ºC	5ºF - 22.78ºC
7ºF - 3.89ºC	7ºF - 3.89ºC



Histéresis de funcionamiento del ventilador: La mayoría de los termostatos tienen un período de funcionamiento residual que mantiene el ventilador (G) funcionando durante unos segundos a unos minutos para disipar el calor/frío de la unidad. Durante este tiempo, la unidad recibe un comando para un punto de ajuste alto (enfriamiento) o un punto de ajuste bajo (calefacción) durante un período de tiempo y el ventilador permanece operativo. Una vez que se detiene el funcionamiento del ventilador residual, la unidad se apaga. El tiempo de funcionamiento residual es de 70 segundos por defecto y ajustable por la aplicación DKN para el adaptador DKN Plus. La configuración debe ser al menos 10 segundos más alta que el valor establecido en el termostato.

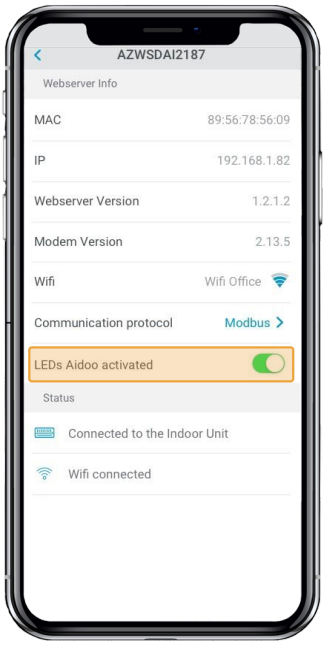
Tiempo mínimo de funcionamiento: Durante la lógica de Fallback, la unidad interior utilizará su última velocidad de ventilador establecida en la unidad interior. En el momento de la instalación, asegúrese de establecer la velocidad deseada del ventilador en refrigeración y calefacción desde el DKN Plus o utilizando el mando a distancia VRV.

Requisitos para la lógica de Fallback:

1) El termostato está cableado al adaptador DKN Plus.
2) El adaptador DKN Plus no está conectado a la nube.
3) El adaptador DKN Plus es el control remoto principal P1P2.
4) Debe haber un sensor de temperatura de retorno (R1T) disponible en la unidad interior o en el sensor de temperatura remoto.
5) Establezca la configuración de campo para habilitar el funcionamiento del ventilador en condición de apagado térmico al valor establecido por el usuario en la unidad interior.
6) Establezca la configuración de campo para permitir que la unidad interior funcione con una banda muerta de 0,9 ° F o 0,5 ° C.

Configuración de los LED

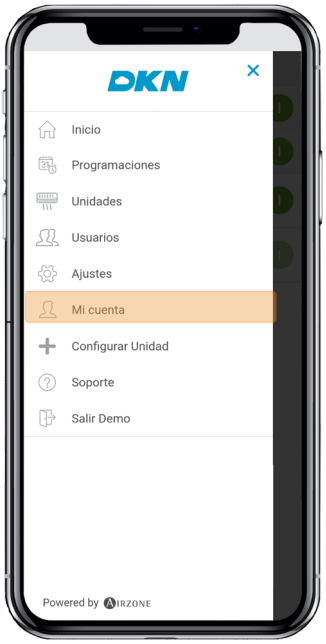
Seleccione si desea mantener funcionando los LED de estado de su dispositivo DKN o prefiere que permanezcan siempre apagados.
Nota: El LED de alimentación siempre permanecerá encendido.
Podrá modificar posteriormente esta configuración en el apartado de Editar unidad.

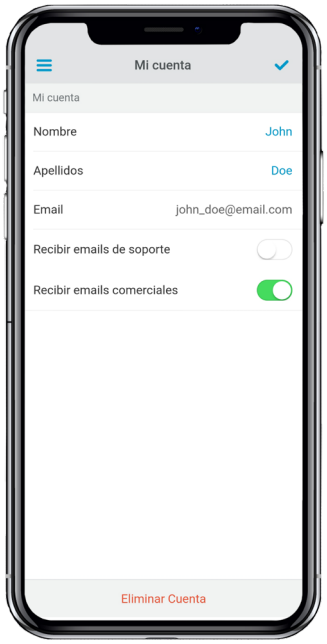


GESTIÓN DE USUARIOS

Editar mi cuenta

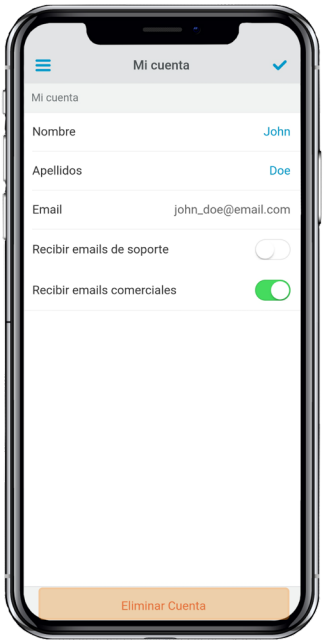
En el menú desplegable ☰, pulse inicio y selecciona Mi cuenta.
Esta pantalla permite editar el nombre, apellido y e-mail del usuario.
Desde esta pantalla se permite activar/desactivar las notificaciones.
Pulse el icono de confirmar para guardar los cambios.
Pulse eliminar cuenta para eliminar la cuenta, esta acción restringirá el acceso a la aplicación.





Borrar mi cuenta

En el menú desplegable ☰, pulse inicio y selecciona Mi cuenta.
Pulse Eliminar cuenta para eliminar la cuenta, esta acción restringirá el acceso a la aplicación.



Invitar a un usuario

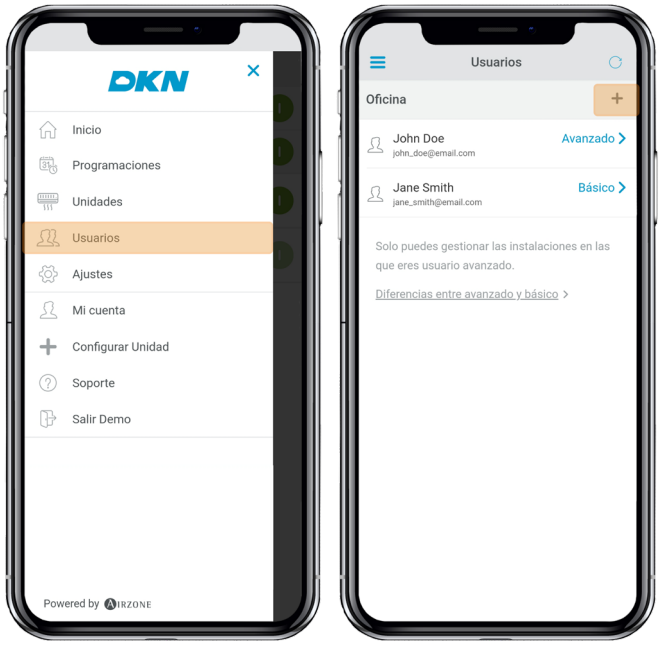
En el menú desplegable ☰, pulse inicio y selecciona Usuarios.
Pulse el icono + en el grupo a controlar y establezca los siguientes parámetros:

Email.

Tipo de usuario. Avanzado o básico.

Seleccionar unidades a controlar. Si el usuario es avanzado podrá controlar todas las unidades del grupo, si es básico únicamente podrá controlar las unidades permitidas.

Pulse el icono de confirmar para guardar los cambios.
Puede consultar las diferencias entre un usuario avanzado y un usuario básico pulsando en "diferencias entre avanzado y básico".



Editar permisos de un usuario

En el menú desplegable ☰, pulse inicio y selecciona Usuarios.
Puede consultar las diferencias entre un usuario avanzado y un usuario básico pulsando en "diferencias entre avanzado y básico".
Pulse sobre el usuario que desea editar y edite el tipo de usuario y las unidades a controlar.

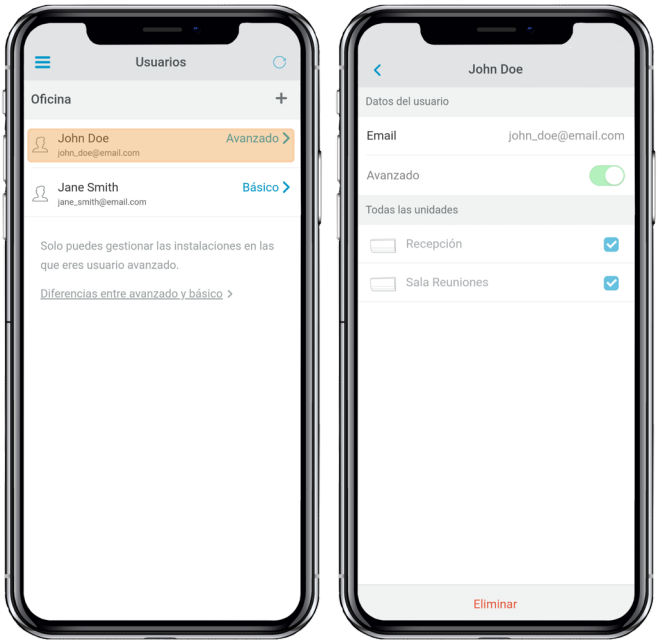
Tipo de usuario. Avanzado o básico.

Seleccionar unidades a controlar. Si el usuario es avanzado podrá controlar todas las unidades del grupo, si es básico únicamente podrá controlar las unidades permitidas.

Pulse el icono de confirmar para guardar los cambios.

Borrar un usuario

En el menú desplegable ☰, pulse inicio y selecciona Usuarios.
Pulse el usuario que desea borrar.
Pulse eliminar para quitarle a un usuario el acceso a la unidad.



DISPOSITIVOS DE TERCEROS (3PTI)

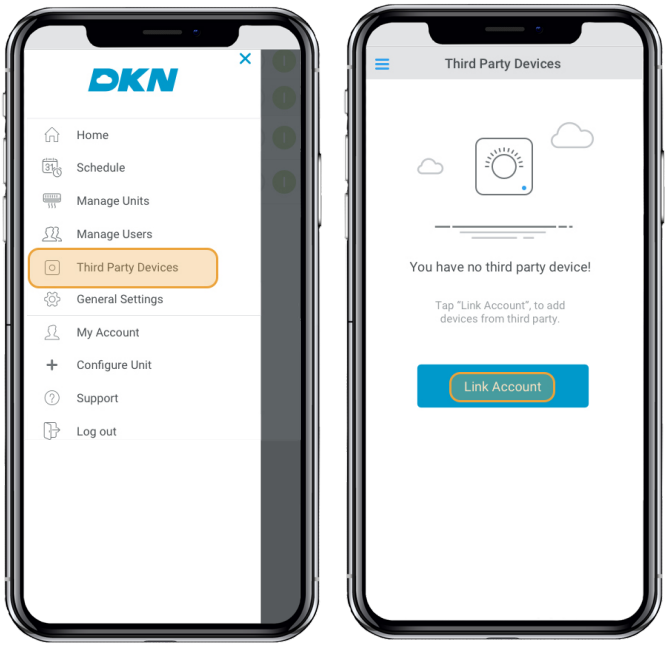
Esta opción solo está disponible en los dispositivos DKN Plus.

Vincular DKN Plus con la cuenta de terceros fabricantes

En el menú desplegable ☰, pulse Dispositivos de terceros. Para vincular su DKN Plus con otro fabricante, será necesario tener una cuenta del mismo previamente dada de alta.

1) En el menú desplegable, pulse Dispositivos de terceros.

2) Pulse en Vincular cuenta para asociar su cuenta de otro fabricante con su DKN Plus.

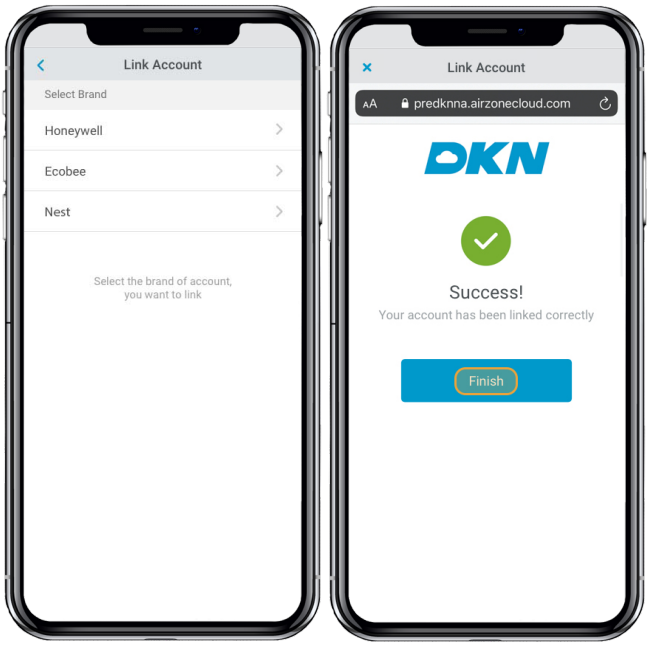


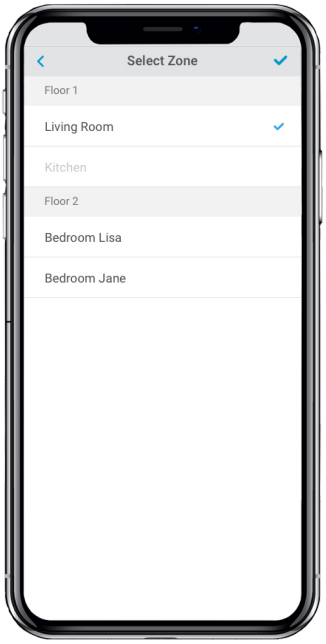
5) Una vez que la cuenta se ha vinculado satisfactoriamente, se muestra un listado de los termostatos vinculados a esa cuenta de usuario, pulse sobre el que desee asociar a una zona.

6) Seleccione del listado de zonas disponibles a cual de ellas desea asociar su termostato.

3) Seleccione el fabricante cuya cuenta quiere asociar de entre los fabricantes compatibles.

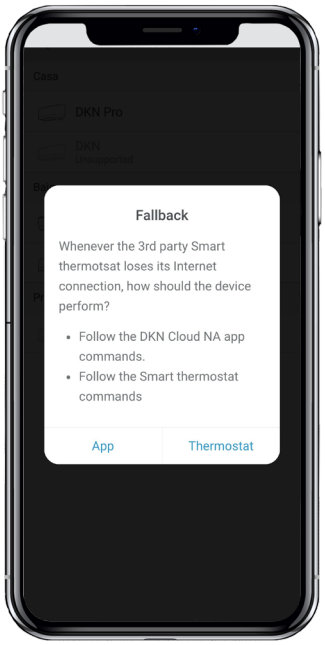
4) Será redirigido a la web del fabricante para autorizar la vinculación mediante sus credenciales de usuario.





7) Finalmente, se debe elegir el comportamiento de la instalación en caso de que el termostato pierda la conexión a internet de entre las siguientes opciones:
1. La unidad interior seguirá las ordenes del DKN Plus.
2. La unidad interior seguirá las ordenes del termostato asociado.

Importante: En caso de seleccionar que la unidad interior siga las ordenes del termostato asociado, es posible que cuando se pierda la conexión a internet entre en el termostato también se pierdan las comunicaciones con su DKN Plus, impidiendo interacturar con el termostato desde la aplicación.

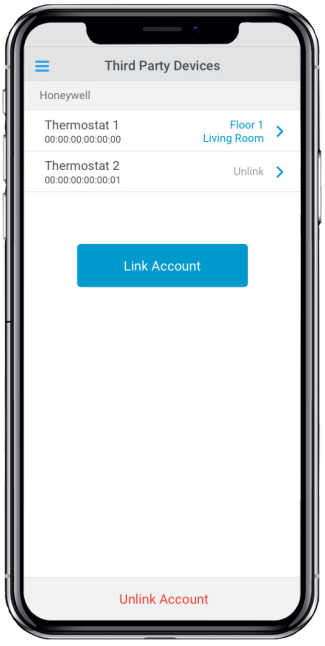


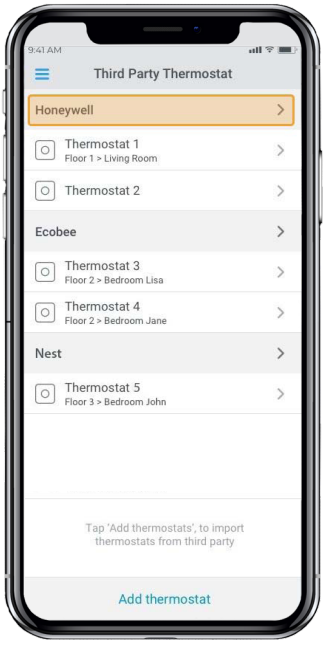
Desvincular la cuenta de terceros fabricantes de su DKN Plus

En el menú desplegable , pulse Dispositivos de terceros.
1) En el menú desplegable, pulse Dispositivos de terceros.

2) Pulse en el fabricante cuya cuenta desee desvincular de su instalación.
3) Pulse en el botón inferior Desvincular cuenta para desvincular la cuenta del fabricante de su instalación.

Importante: Al desvincular la cuenta se eliminarán todos los dispositivos asociados a dicha cuenta.





Cambiar zona asociada

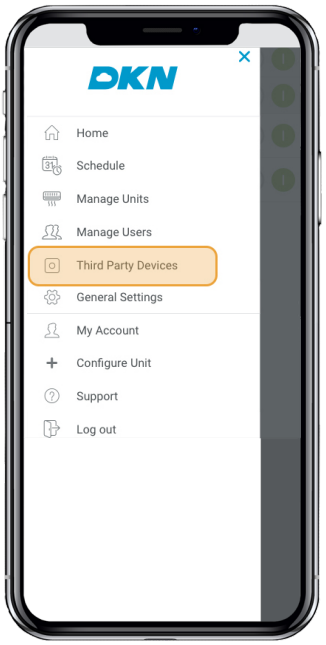
En el menú desplegable ☰, pulse Dispositivos de terceros.

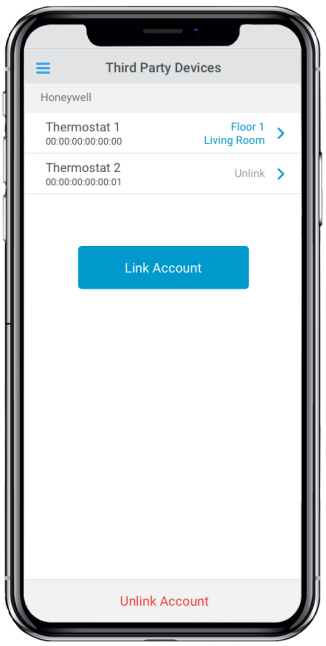
1) Pulse en el dispositivo cuya zona desea modificar.

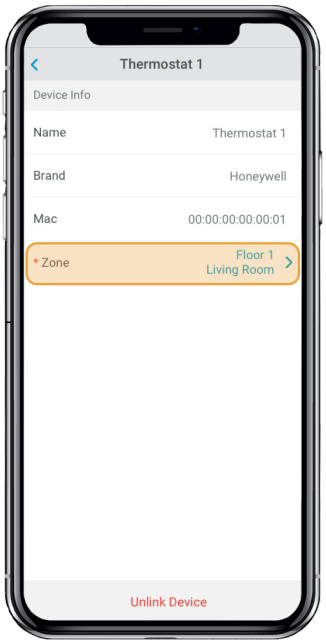
2) Pulse en Zona para acceder al listado de zonas disponibles.

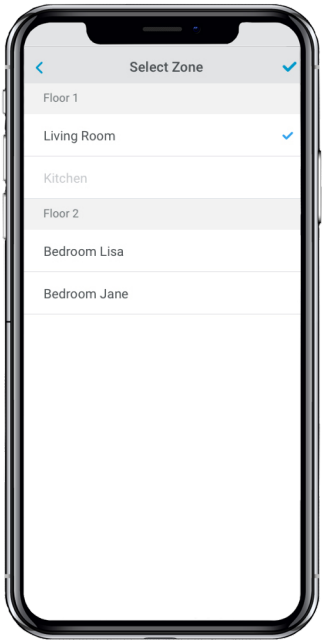
3) Pulse en la zona a la que desee asociar su dispositivo.

Importante: Solo es posible seleccionar una zona de entre las que cuenten con un dispositivo DKN Plus y no tengan otro termostato asociado previamente.





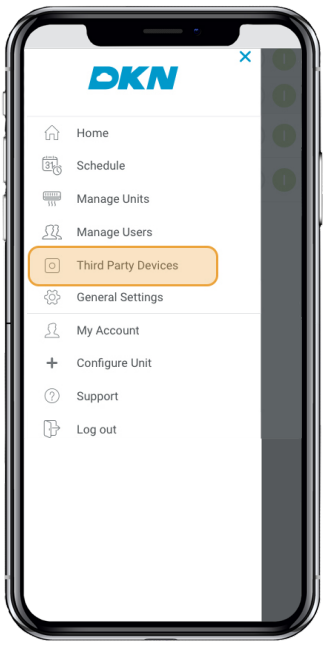


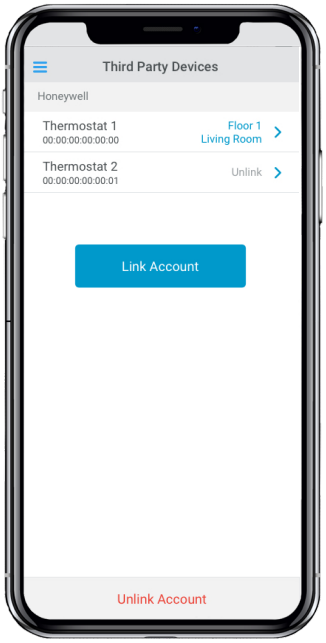


Desvincular un dispositivo de terceros de su DKN Plus

En el menú desplegable ☰, pulse Dispositivos de terceros.

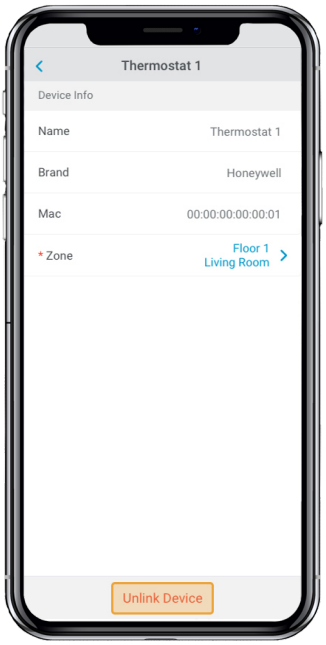
1) Pulse en el dispositivo que desee desvincular de su instalación.





2) Pulse en el botón inferior Desvincular dispositivo y confirme para desasociar el termostato.

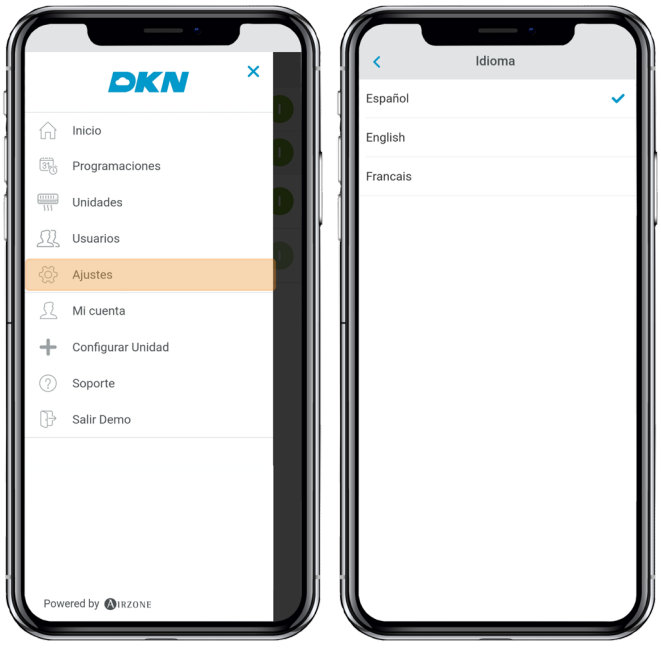
Importante: Al desvincular un dispositivo este no desaparece del listado de dispositivos disponibles, se desasocia de cualquier zona a la que estuviera asociado.



AJUSTES

Cambiar idioma

En el menú desplegable ☰, pulse inicio y seleccione Mi cuenta.
Seleccione el lenguaje de la app.

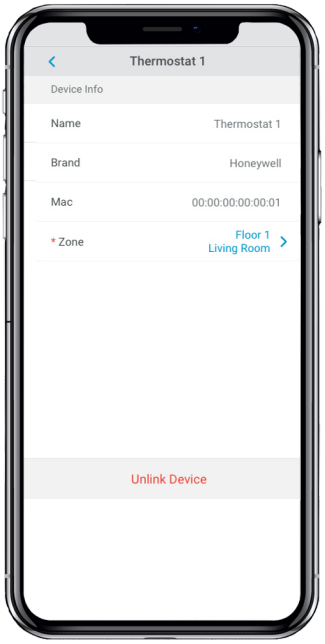


Información de los dispositivos vinculados

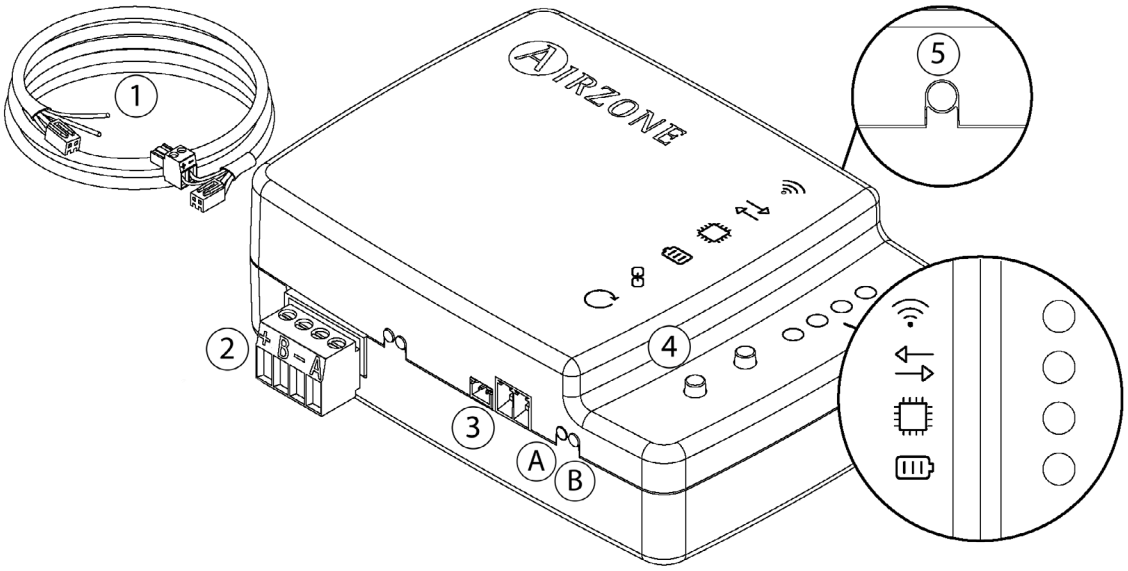
En el menú desplegable ☰, pulse Dispositivos de terceros.

1) A continuación se accede al listado de dispositivos de terceros vinculados a su DKN Plus junto con la zona a la que está asociado cada uno. Pulse en el dispositivo que desee consultar para acceder a la información completa:

* Nombre
* Fabricante
* MAC
* Zona



INSTALACIÓN - DKN CLOUD WI-FI ADAPTOR FOR VRV/SKYAIR (AZAI6WSCDKA)



Contenido de la caja

	Significado
1	Cable de alimentación y puerto de comunicación P1P2
2	Modbus puerto
3	Puerto para cable hacia la unidad interior
4	Reset de la Conexión Wi-Fi
5	Reset de la asociación de la cuenta

Modbus Manual

Operación de los LEDs

El DKN Cloud Wi-Fi Adaptor consta de los siguientes LEDs que permiten identificar el funcionamiento del dispositivo.

Dependiendo del funcionamiento del LED, puede indicar.

1. **Apagado**. Wi-Fi no configurado.
2. **Parpadeo verde**. Conectando a la red Wi-Fi.
3. **Verde fijo**. Conectado a la red Wi-Fi.
4. **Azul fijo**. Conectado al servidor.

Parpadea rojo para indicar comunicación con la nube.

Parpadea verde para indicar actividad del microprocesador.

Permanece rojo para indicar que el dispositivo esta encendido.

A Permanece rojo para indicar la transmisión de datos con la unidad interior.

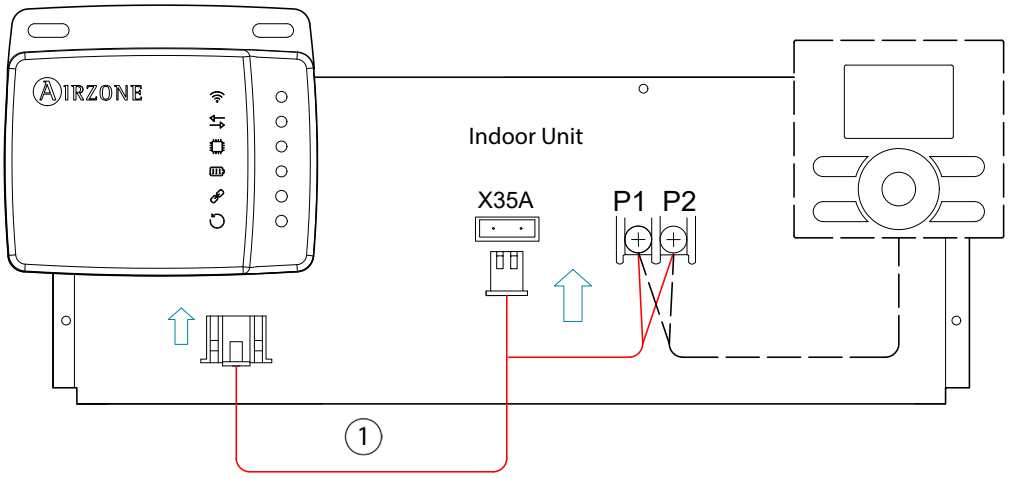
B Parpadea verde para indicar la recepción de datos de la unidad interior.

Conexión (AZAI6WSCDKA)

El DKN Cloud Wi-Fi Adaptor para unidades VRV/SkyAir tiene 4 cables de conexión: 2 para comunicación con la unidad interior (rojo y negro) y 2 para la alimentación. Siga estos pasos para conectarlos:

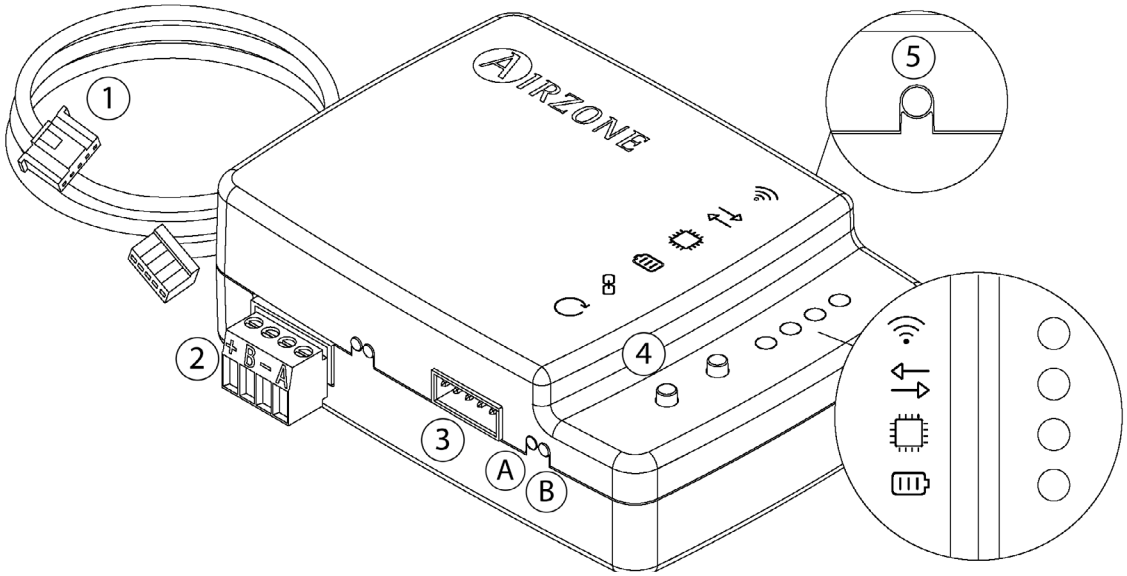
1. Desconecte la unidad interior de la alimentación.
2. Conecte el DKN a los teminales de la unidad interior usando el cable suministrado, **X35A/X18A/X9A** (Dependiendo de la unidad interior) y **P1 P2**.
3. Alimente la unidad interior. Compruebe los LEDs (Ver sección Operación de los LEDs).

El LED del Cloud Wi-Fi Adaptor para unidades VRV/SkyAir permanece parpadeando en verde cuando la conexión esté correcta.



***Nota**: Para facilitar el acceso al DKN Cloud Wi-Fi Adaptor para unidades VRV/SkyAir, sitúelo en un lugar accesible.*
***Nota:** Para las unidades interiores FXTQ_PA(B) y FTX_PA(B), use el terminal **X9A** en el A2P PCB para la alimentación.*
***Nota**: Cuando se envíe la temperatura ambiente a la unidad interior desde el DKN Cloud Adaptor a través de Modbus, el DKN adaptor debe configurarse como controlador principal.*

INSTALACIÓN - DKN RESIDENTIAL CLOUD WI-FI ADAPTOR FOR DUCTLESS (AZAI6WSCDKB)



Contenido de la caja

	Meaning
1	Cable de alimentación y puerto de conexión S21
2	Modbus puerto
3	Puerto para cable hacia la unidad interior
4	Reset de la Conexión Wi-Fi
5	Reset de la asociación de la cuenta

Modbus Manual

Operación de los LEDs

El DKN Cloud Wi-Fi Adaptor consta de los siguientes LEDs que permiten identificar el funcionamiento del dispositivo.

Dependiendo del funcionamiento del LED, puede indicar.

1. **Apagado**. Wi-Fi no configurado.
2. **Parpadeo verde**. Conectando a la red Wi-Fi.
3. **Verde fijo**. Conectado a la red Wi-Fi.
4. **Azul fijo**. Conectado al servidor.

Parpadea rojo para indicar comunicación con la nube.

Parpadea verde para indicar actividad del microprocesador.

Permanece rojo para indicar que el dispositivo esta encendido.

A Permanece rojo para indicar la transmisión de datos con la unidad interior.

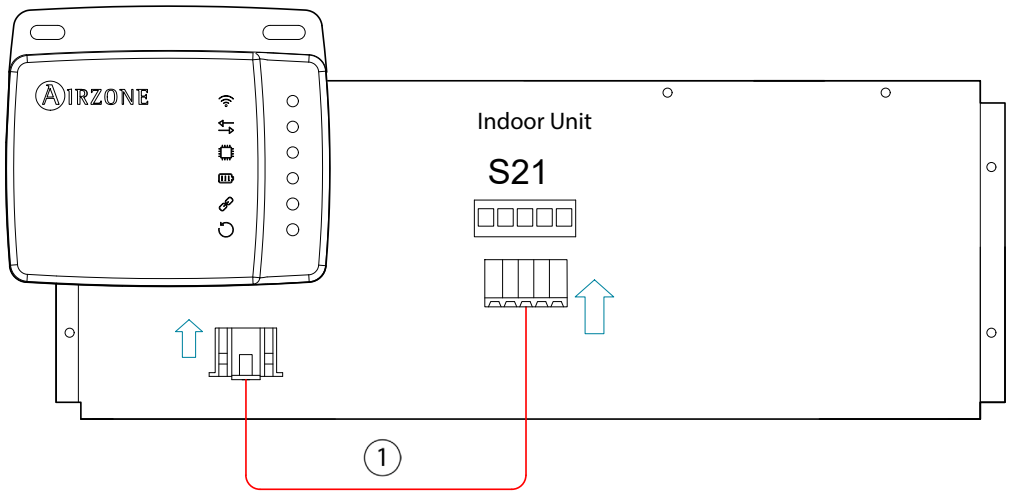
B Parpadea verde para indicar la recepción de datos de la unidad interior.

Conexión (AZAI6WSCDKB)

El DKN Residential Cloud Wi-Fi Adaptor para unidades Ductless tiene un único cable. Siga estos pasos para conectarlo:

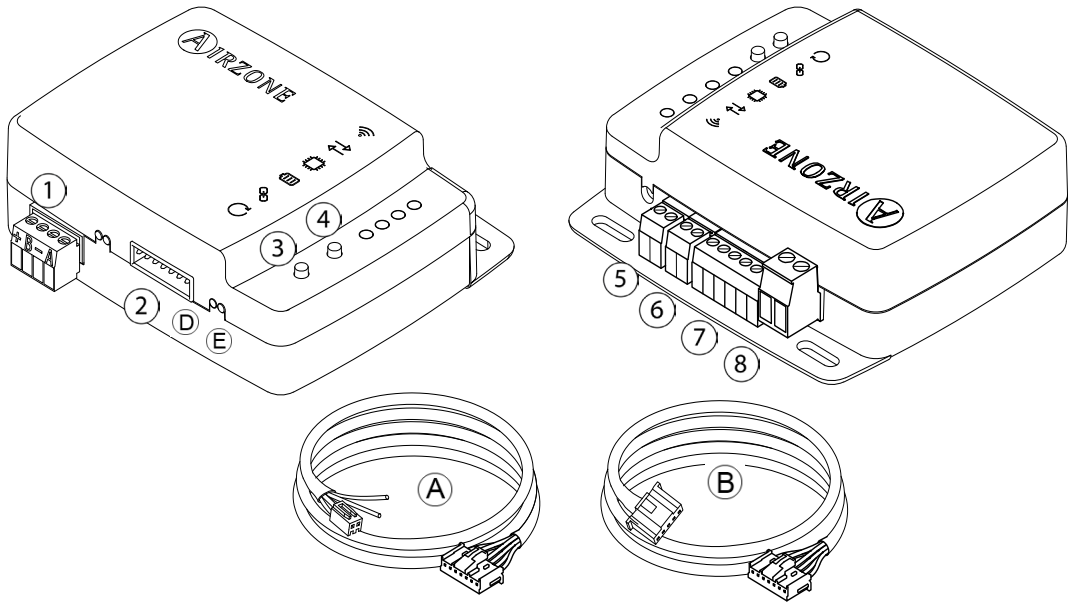
1. Desconecte la unidad interior de la alimentación.
2. Conecte el cable suministrado al S21 conector on the indoor unit or an accessory adapter (ordered separately).
3. Alimente la unidad interior. Compruebe los LEDs (Ver sección Operación de los LEDs).

El LED del Cloud Wi-Fi Adaptor para unidades VRV/SkyAir permanece parpadeando en verde cuando la conexión esté correcta.



***Nota**: Para facilitar el acceso al DKN Cloud Wi-Fi Adaptor para unidades VRV/SkyAir, sitúelo en un lugar accesible.*

INSTALACIÓN - DKN PLUS ADAPTOR FOR VRV/SKYAIR/DUCTLESS (AZAI6WSPDKC)



Contenido de la caja

	Significado		
Ⓐ	Cable para P1P2 comunicación	④	Reinicio proceso de asociación
Ⓑ	Cable para S21 comunicación	⑤	Entrada digital
①	Puerto Modbus	⑥	Salida paro-marcha
②	Puerto unidad interior	⑦	Conexión termostato inteligente
③	Reinicio del dispositvo	⑧	Entrada de fuente de alimentación externa

Modbus Manual

Operación de los LEDs

El DKN Cloud Wi-Fi Adaptor consta de los siguientes LEDs que permiten identificar el funcionamiento del dispositivo.

Dependiendo del funcionamiento del LED, puede indicar.

1. **Apagado**. Wi-Fi no configurado.
2. **Parpadeo verde**. Conectando a la red Wi-Fi.
3. **Verde fijo**. Conectado a la red Wi-Fi.
4. **Azul fijo**. Conectado al servidor.

Parpadea rojo para indicar comunicación con la nube.

Parpadea verde para indicar actividad del microprocesador.

Permanece rojo para indicar que el dispositivo esta encendido.

Ⓓ manece rojo para indicar la transmisión de datos con la unidad interior.

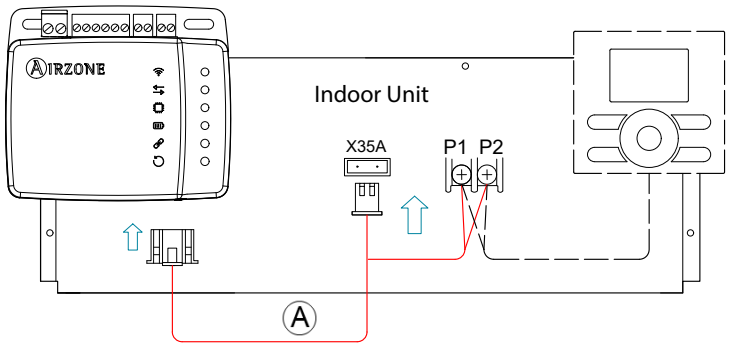
Ⓔ padea verde para indicar la recepción de datos de la unidad interior.

Conexión P1P2 (AZAI6WSPDKC)

Siga estos pasos para conectarlos:

1. Desconecte la unidad interior de la alimentación.
2. Conecte el DKN a los teminales de la unidad interior usando el cable **A** suministrado, **X35A/X18A/X9A** (Dependiendo de la unidad interior) y **P1 P2**.
3. Alimente la unidad interior. Compruebe los LEDs (Ver sección Operación de los LEDs).

El LED del Cloud Wi-Fi Adaptor para unidades VRV/SkyAir permanece parpadeando en verde cuando la conexión esté correcta.



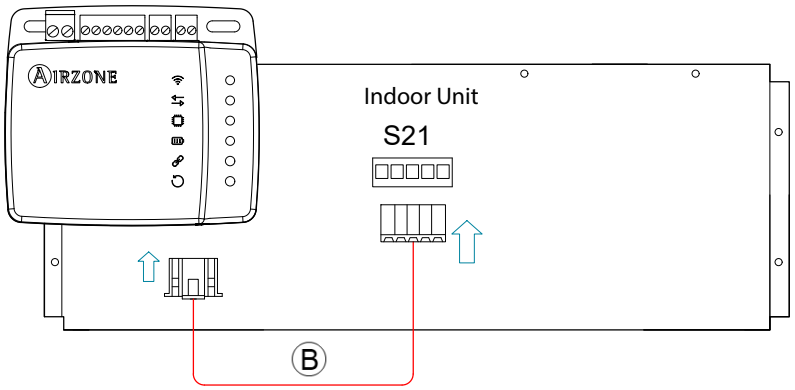
***Nota**: Para facilitar el acceso al DKN Cloud Wi-Fi Adaptor para unidades VRV/SkyAir, sitúelo en un lugar accesible.*
***Nota:** Para las unidades interiores FXTQ_PA(B) y FTX_PA(B), use el terminal **X9A** en el A2P PCB para la alimentación.*

Conexión S21(AZAI6WSPDKC)

Siga estos pasos para conectarlo:

1. Desconecte la unidad interior de la alimentación.
2. Conecte el cable **B** suministrado al S21 conector on the indoor unit or an accessory adapter (ordered separately).
3. Alimente la unidad interior. Compruebe los LEDs (Ver sección Operación de los LEDs).

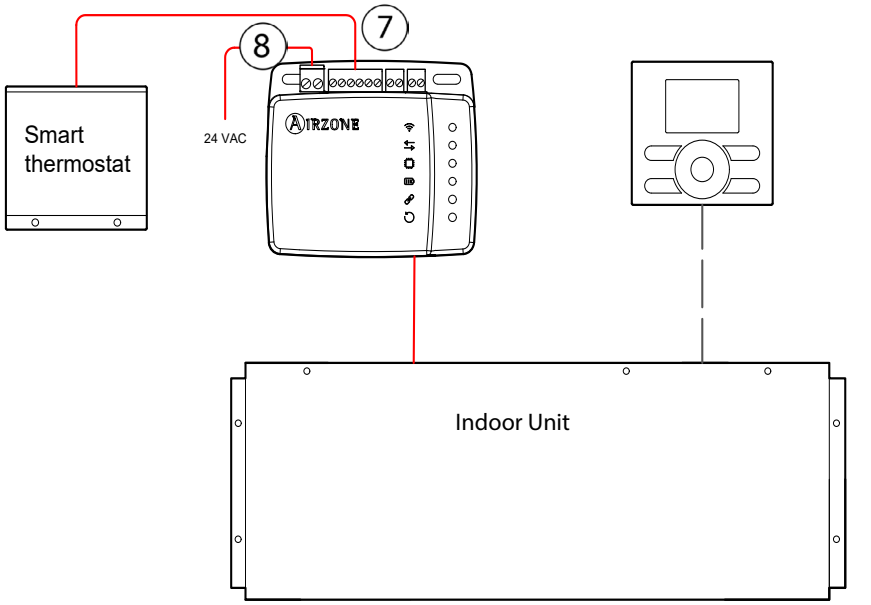
El LED del Cloud Wi-Fi Adaptor para unidades VRV/SkyAir permanece parpadeando en verde cuando la conexión esté correcta.

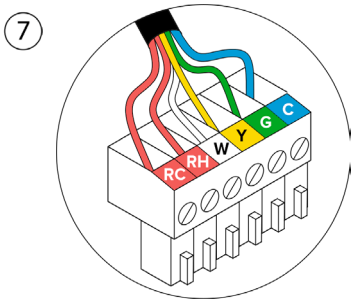


***Nota**: Para facilitar el acceso al DKN Cloud Wi-Fi Adaptor para unidades VRV/SkyAir, sitúelo en un lugar accesible.*

Conexión termostato inteligente

El DKN PLUS puede ser emparejado con un termostato de terceros. Para la conexión siga el esquema siguiente:





RC	Red I Rouge I Rojo
RH	Red I Rouge I Rojo
W	White I Blanc I Blanco
Y	Yellow I Jaune I Blau
G	Green I Vert I Verde
C	Blue I Bleu I Azul

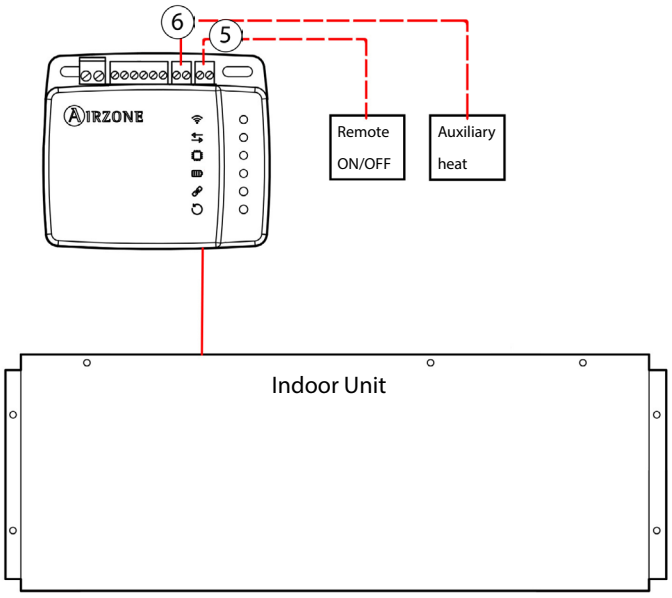
8 Entrada de fuente de alimentación externa parar el termostato inteligente

Para terminar la instalación es necesario asociar la cuenta de este termostato siguiendo las instrucciones del apartado de Dispositivos de terceros.

***Nota**: Cuando se envíe la temperatura ambiente a la unidad interior desde el DKN Cloud Adaptor a través de la API, Modbus o BACnet, el DKN adaptor debe configurarse como controlador principal.*

Conexión entrada/salida digital

El DKN PLUS ofrece la posibilidad de conectarle una salida digital para la función calor auxiliar, así como una entrada digital que permite añadir un paro/marcha remoto (ej.: contacto ventana, sensor de presencia, ...). Dicha conexión se detalla en el siguiente esquema:



5 Paro/Marcha remoto

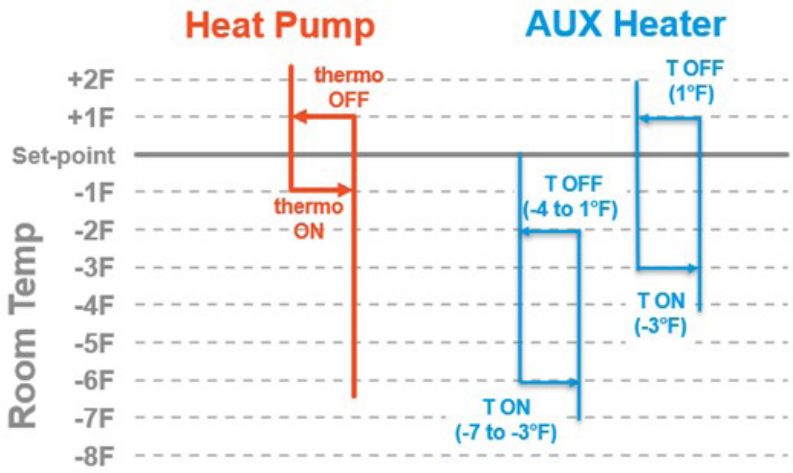
6 Calor auxiliar

CONFIGURACIÓN DKN PLUS

Calor Auxiliar

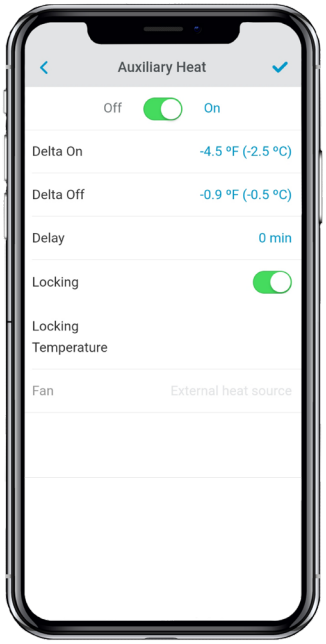
La función Calor Auxiliar está destinada a proporcionar control sobre las etapas de calor de apoyo. Esta función está deshabilitada por defecto.

La fuente de calor auxiliar se enciende y apaga independientemente según los diferenciales de temperatura Delta on y Delta off respecto al setpoint. Se puede configurar para apagarse por debajo del setpoint, o para permanecer encendido con la bomba de calor hasta 1 °F por encima del setpoint.



1. En el menú desplegable pulse la opción Configurar Unidad.

2. Seleccione sobre la unidad que desea configurar y posteriormente pulse en Calor Auxiliar para configurar los parámetros.



- **Delta On**: Offset que se aplicará a la temperatura de consigna. Cuando la temperatura ambiente es menor que ese valor, la calefacción auxiliar se activa dependiendo de la configuración. Rango: -7.2 °F (-4.0 °C) / -3.6 °F (-2.0 °C).

- **Delta Off**: Offset que se aplicará a la temperatura de consigna. Cuando la temperatura ambiente es superior a ese valor, la calefacción auxiliar se desactiva. Rango: -0.9 °F (-0.5 °C) / 0.9 °F (0.5 °C).

- **Tiempo de retraso**: Tiempo de retraso para desactivar el ventilador de la unidad interior Daikin tras detener el Calor auxiliar externo. Rango: 0-30min.

- **Tipo de ventilación**: Seleccione el tipo de Calor Auxiliar según su instalación.
  - *Calefacción de conducto (sólo para conexión P1P2)*: Fuente de calor situada en el interior del conducto que requiere la activación del ventilador de la unidad interior Daikin para proporcionar flujo de aire.
  - *Calor auxiliar externo*: Fuente de calor externa la cual incorpora su propia fuente de ventilación, por lo que no requiere encender la unidad interior Daikin para que funcione el Calor Auxiliar.

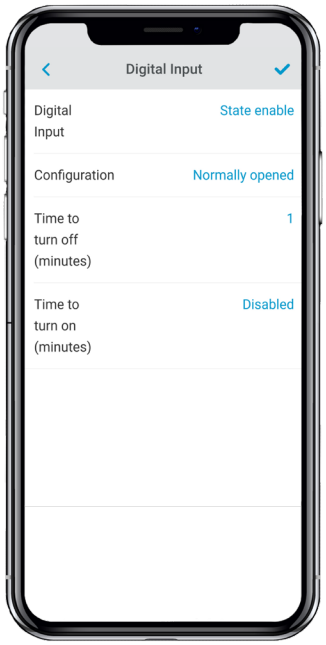
- **Bloqueo** *(sólo para conexión S21)*: Establece una temperatura exterior de bloqueo de activación de la función Calor Auxiliar. Si la temperatura exterior es superior a la establecida de bloqueo, no se activará la función Calor Auxiliar aunque se cumplan las condiciones de activación. Este parámetro solo está disponible para unidades Daikin que dispongan de lectura de temperatura exterior. Rango: -0 °F (-17.8 °C) / 65 °F (18.3 °C).

Entrada Digital

El dispositivo tiene una entrada digital que se puede utilizar como contacto de ventana o similar para apagar / encender la máquina en caso de que la entrada cambie de valor. Esta función está deshabilitada por defecto.

1. En el menú desplegable pulse la opción Configurar Unidad.

2. Seleccione sobre la unidad que desea configurar y posteriormente pulse en Entrada Digital para configurar los parámetros.



La Entrada Digital se puede configurar en tres estados:

- **Deshabilitado**: la lógica de entrada digital no hace nada.

- **Habilitado por estado**: el estado impuesto a la unidad Daikin es persistente. Es decir, si la entrada está activada, la unidad Daikin se verá obligada a apagarse mientras esté en ese estado.

- **Habilitado por flanco:** el estado impuesto a la máquina es puntual. La orden solo se envía al encendido / apagado de la unidad Daikin (dependiendo del estado de salida) en el momento en que se cumple por primera vez la condición de apertura o cierre impuesta.

Permite configurar si la entrada está normalmente abierta (predeterminado) o normalmente cerrada.

Nota: La Entrada Digital solo enciende la unidad Daikin, si la ha apagado previamente.

También, es posible indicar el tiempo en segundos que la entrada debe permanecer activada para proceder a apagar la máquina (Rango: 1-30 min). Del mismo modo, habrá un tiempo en que la entrada deberá permanecer desactivada para volver a encender la máquina (Rango: Deshabilitado - 30 min).

REGULACIONES

Declaración de interferencias.
Este dispositivo cumple con el apartado 15 de las Normas FCC y con la licencia estándar RSS de la industria de Canadá. El funcionamiento del dispositivo está sujeto a las dos condiciones siguientes: (1) este dispositivo no debe causar interferencias, y (2) este dispositivo debe aceptar cualquier interferencia, incluyendo interferencias que puedan causar funcionamientos no deseados en el dispositivo.

Wireless notice.
Este dispositivo cumple con los límites de exposición a la radiación establecidos para un entorno no controlado FCC/ISED y cumple con las pautas de exposición a radiofrecuencia (RF) de la FCC y RSS-102 de las reglas de exposición a radiofrecuencia (RF) de ISED. Este transmisor no debe situarse ni funcionar junto a otra antena o transmisor.

CAN ICES-3 (B) / NMB-3 (B).
Este aparato digital de clase B cumple con la norma canadiense ICES-003.

FCC Class B digital device notice
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Declaration of conformity
To access the declaration of conformity, please follow the link below:
http://doc.airzone.es/Certificates/Product/SDoC_AZAI6WSCDKA_FCC_A4_EN.pdf

Modification statement
Corporación Empresarial Altra S.L has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

airzonecontrol.com

Marie Curie, 21
29590 Málaga
Spain

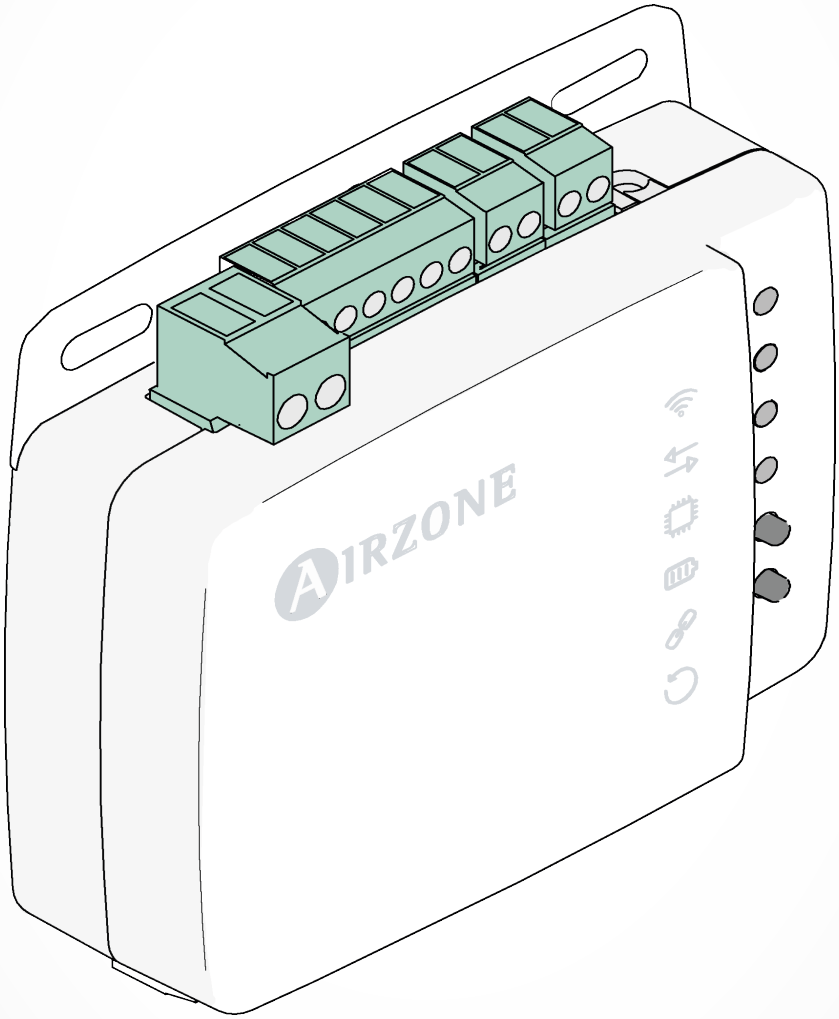
v 100.8

Integration manual

EN
FR
ES

DKN Plus Interface

ASHRAE BACnet™



AZAI6WSPDKC

INDEX

PRECAUTIONS AND ENVIRONMENTAL POLICY

PRECAUTIONS

For your security, and to protect the devices, follow these instructions:

- Do not manipulate the system with wet or damp hands.
- Disconnect the power supply before making any connections.
- Take care not to cause a short circuit in any of the system connections.

ENVIRONMENTAL POLICY

Do not dispose of this equipment in the household waste. Electrical and electronic equipment contain substances that may damage the environment if they are not handled appropriately. The symbol of a crossed-out waste bin indicates that electrical equipment should be collected separately from other urban waste. For correct environmental management, it must be taken to the collection centers provided for this purpose, at the end of its useful life.

The equipment components may be recycled. Act in accordance with current regulations on environmental protection.

If you replace it with other equipment, you must return it to the distributor or take it to a specialized collection center.

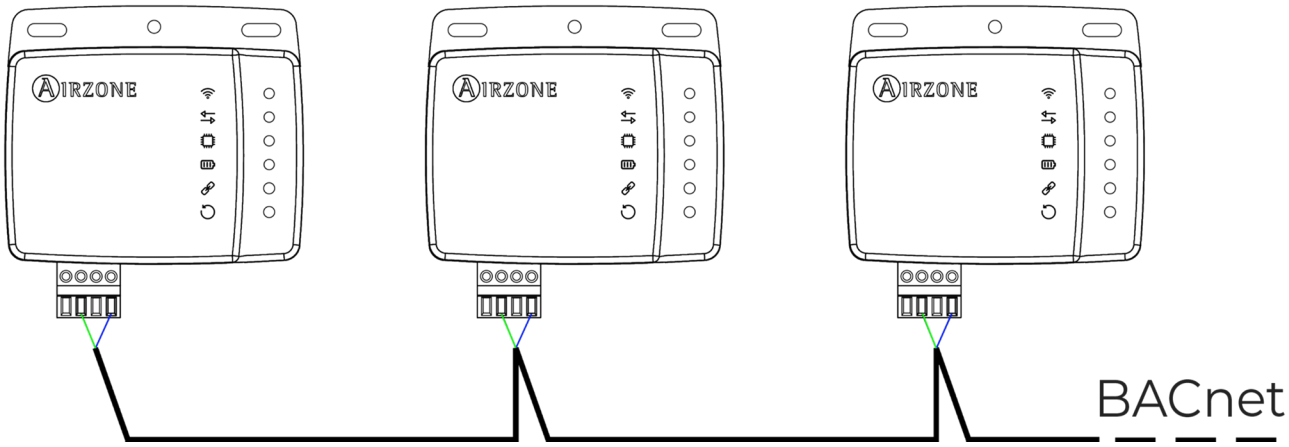
Those breaking the law or by-laws will be subject to such fines and measures as are laid down in environmental protection legislation.

RS-485 COMMUNICATION PORT

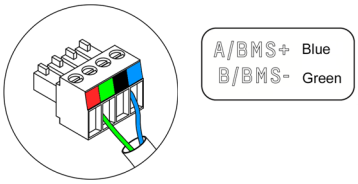
RS-485, also known as EIA-485, is a communication standard in bus.

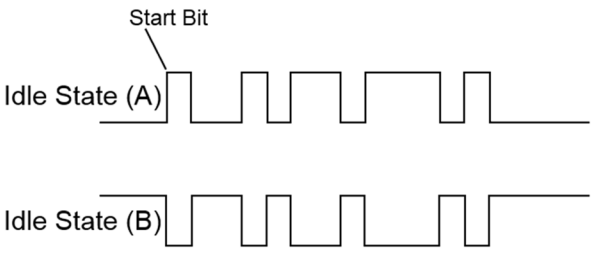
Integration bus	
Speed of the communication port	from 300 to 115200bps
Communication	Half duplex
Frame length	8-bit
Stop bit	1-bit
Stream control	None
Parity	Even

CONNECTION



For proper operation of the system, verify that only the communication cables (green-blue) are connected to their matching domotic buses. Attach the wires with the terminal screws following the color code.





BACNET PROTOCOL

The DKN Plus Interface allows a Building Management System to control all variables of the Airzone systems. The BACnet interface uses a standard open protocol based on ASHRAE Standard 135, and its objects are compatible with:

BACnet (ANSI /ASHRAE-135)

BACnet MS-TP

The DKN Plus Interface is a Plug&Play device, and it allows controlling and monitoring the following variables:

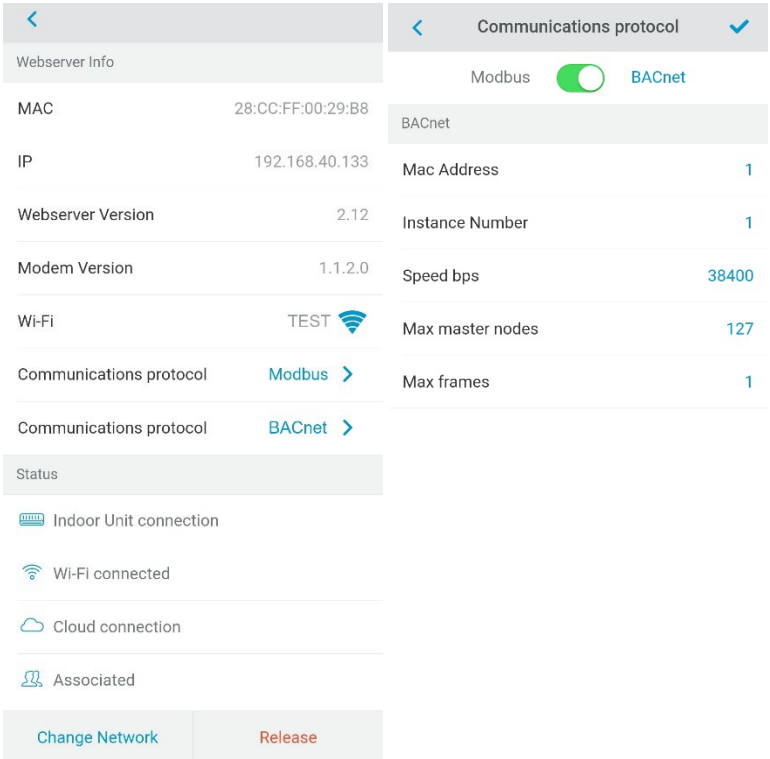
- On/Off control.
- Room temperature.
- Set point setting.
- Operation Mode Control status.
- Fan status and Fan Speed.

DKN WI-FI CONTROLLER

The DKN Plus Interface is **a BACnet slave device**, so it is necessary to indicate its address. To do this, associate your DKN via the **DKN Cloud NA** app (available for iOS and Android) by following these steps:

1. From the Home screen tap on the Menu icon and select Configure Units.
2. Select the unit from the list.

   Note: *If your unit does not appear, confirm the Bluetooth function of your iOS or Android is activated. Verify that the DKN is working properly.*
3. Enter the pin code located in the DKN if required and tap **Send** button.
4. Enter the Communication protocol > BACnet (slave address) to with you want to point within **Webserver Information**.



OBJECTS

SUPPORTED OBJECT TYPE

Supported DKN Plus Interface monitoring/control items are mapped to the standard object types defined by the BACnet.

Object Type		Supported	Airzone management point
Accumulator	23		
Analog-Input	0	√	Measured room temperature
Analog-Output	1		
Analog-Value	2	√	Set point temperature
Averaging	18		
Binary-Input	3	√	IU communication
Binary-Output	4	√	Auxiliary Heat
Binary-Value	5	√	On and off
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Operating mode (setting)
Multistate-Value	19	√	Fancoil Speed (setting)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

OBJECTS LIST

Below is the full list of objects available in the DKN Plus Interface. The availability of the communication objects depends on the Airzone system configuration.

The availability of the communication object in the Airzone system is indicated in the parameter "out of service" of each communication object indicating whether it is available or not in the system.

The communication object will only have correct/valid values when the "out of service" is FALSE.

***Note:** R: Read and W: Write*

Object type	Index	Read-Write	Description	Values
Binary-value	**0**	R/W	On/Off	0 → off, 1 → on
Binary-input	**0**	R	IU communication	0 → No communication, 1 → IU ready
Binary-input	**1**	R	IU error	0 → No error, 1 → IU with error
Binary-input*	**2**	R	Digital Input	0 → Inactive, 1 → Active
Binary-output*	**0**	R	Auxiliary Heat	0 → Inactive, 1 → Active
Analog-value	**0**	R/W	Setpoint	Setpoint
Analog-value	**1**	R/W**	Localtemp	Room temperature
Analog-input	**0**	R	Return temperature	Return temperature sensor value
Multi-state-value	**0**	R/W	Modes	1 → Auto, 2 → Cooling, 3 → Heating, 4 → Fan, 5 → Dry
	1	R/W	Speeds	0 → Automatic, 1 → Speed 1, 2 → Speed 2, 3 → Speed 3
	2	R/W	Louvers	X → Position X [1-9] 10 - swing
Character-string-value	**1**	R	Errors	IU error code

*Available with the version 4.03 or higher.

** Writable in P1P2 connection only.

DETAILED DESCRIPTION OF THE OBJECTS

COMMON TO ALL OBJECTS

When the indoor unit is communicating normally, a communication can be established between the DKN Plus Interface and the indoor unit. The BACnet building management system will then have access to the unit's objects.

If the communication between the DKN Plus Interface and the system is not correct, or if a request for information related to a communication object that is not present in the Airzone system the object's property "Out of service" is activated.

ON/OFF

The DKN Plus Interface will report the status. Using the Building management system, any indoor unit may be configured as on/off. These are Read/Write objects.

IU COMMUNICATION

If the IU lose the communication, it will be reported by the DKN Plus Interface to the BACnet platform. This is read only object.

IU ERRORS

If the IU generates an error, it will be reported by the DKN Plus Interface to the BACnet platform. This is read only object.

DIGITAL INPUT

The DKN Plus Interface will report the status of the digital input. This is read only object.

AUXILIARY HEAT

The DKN Plus Interface will report the status of the auxiliary heat. This is read only object.

SET POINT

The indoor unit setpoint, and this value is reported to the Building management system and can be changed from it. These are Read/Write objects.

LOCALTEMP

The Building management system can obtain the actual room temperature for any zone.

- P1P2 connection: the Localtemp value can be written by the BMS (read/write)
- S21 connection: the Localtemp value will be equal to the return temperature value (read-only)

RETURNTEMP

The Building management system can obtain the return temperature sensor value for each indoor unit (read-only)

OPERATION MODE

The DKN Plus Interface will report the operation mode of the indoor unit, represented by a number. These are Read/Write objects. These modes are:

0 → Stop

2 → Cooling

3 → Heating

4 → Dry

6 → Ventilation

INDOOR UNIT (IU) SPEED

This parameter refers to the IU fan speed. Depending on the number of open zones and the value selected, the IU fan will run at a given speed, and the step at which the fan is running is reported to the BACnet platform. This is read only object.

LOUVERS

The DKN Plus Interface will report the position of the unit louvers represented by a number. These are Read/Write objects. These positions are from 1 to 9 and swing mode is 10.

ERRORS

If the indoor unit generates an error, it will be reported by the DKN Plus Interface to the BACnet platform. This is Read only object.

BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT

Date: Feb. 15,2021
Vendor Name: ALTRA S.L.
Product Name: DZK Plus Interface
Product Model Number: AZAI6WSPDKC
Applications Software Version: 4.01 **Firmware Revision:** 0.8.2 **BACnet Protocol Revision:** 12

Product Description:
This product provides the function of monitoring and control the Residential /Sky Air and VRV Daikin DX units

BACnet Standardized Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)

☐ BACnet Building Controller (B-BC)

☐ BACnet Advanced Application Controller (B-AAC)

■ BACnet Application Specific Controller (B-ASC)

☐ BACnet Smart Sensor (B-SS)

☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadProperyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WriteProperyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Analog Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default, COV_Increment Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

☐ BACnet IP, (Annex J)

☐ BACnet IP, (Annex J), Foreign Device

☐ ISO 8802-3, Ethernet (Clause 7)

☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)

☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____

■ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200

☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-

☐ Point, EIA 232 (Clause 10), baud rate(s) : _____

☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____

☐ LonTalk, (Clause 11), medium : _____

☐ Other : _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS / TP slaves and certain other devices.) ☐ Yes ■ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.

☐ Annex H, BACnet Tunneling Router over IP

☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

■ ANSI X3.4 ☐ IBM™ / Microsoft™ DBCS ☐ ISO 8859-1

☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

DKN Cloud (IP)

Modbus slave

GYW control for HVAC 3º party thermostat

TABLE DES MATIÈRES

PRÉCAUTIONS ET POLITIQUE ENVIRONNEMENTALE

PRÉCAUTIONS

Pour votre propre sécurité et pour protéger les dispositifs, suivez ces instructions :

- Ne pas manipuler le système avec les mains humides ou mouillées.
- Débrancher l'alimentation avant de procéder à toute connexion.
- Veiller à ne pas provoquer de court-circuit sur une des connexions du système.

POLITIQUE ENVIRONNEMENTALE

Ne mettez pas cet appareil au rebut avec les déchets ménagers. Les appareils électriques et électroniques contiennent des substances qui peuvent porter atteinte à l'environnement si elles ne sont pas manipulées correctement. Le symbole d'une poubelle barrée d'une croix indique que les appareils électriques doivent être collectés séparément du reste de déchets urbains. Dans l'intérêt d'une bonne gestion environnementale, l'appareil devra être déposé dans les centres de collecte prévus à cet effet, à la fin de sa durée de vie utile.

Les composants de l'appareil sont recyclables. Suivez les normes en vigueur en matière de protection de l'environnement.

Si vous remplacez l'appareil par un autre, vous devez rendre l'ancien appareil au distributeur ou bien le déposer dans un centre de collecte spécialisé.

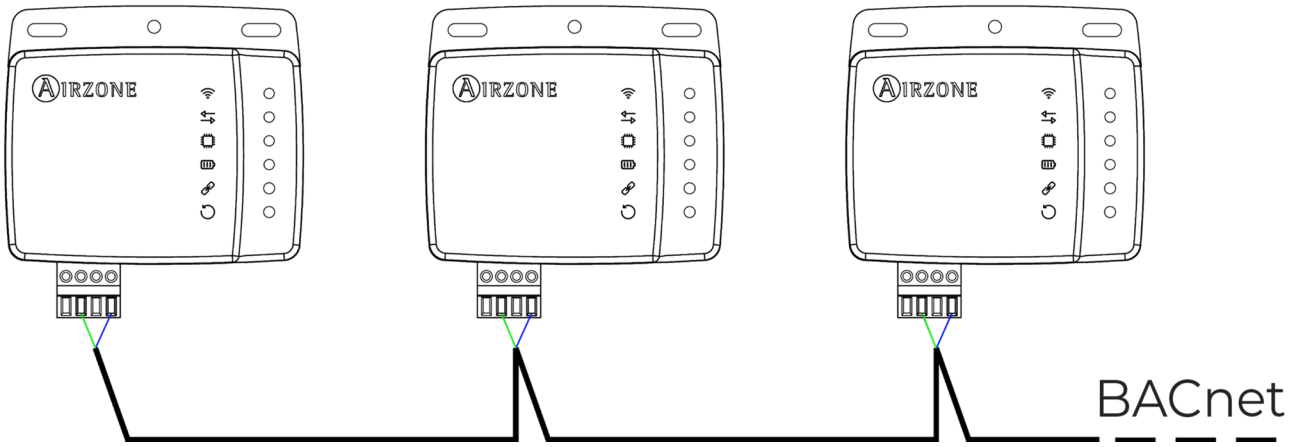
Les personnes enfreignant la loi ou les règlements sont passibles des sanctions et mesures prévues par la loi en matière de protection de l'environnement.

PORT DE COMMUNICATION RS-485

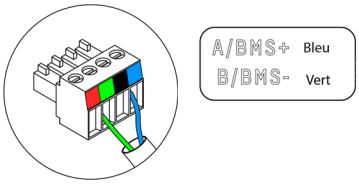
Le RS-485, également appelé EIA-485, est un standard de communication par bus.

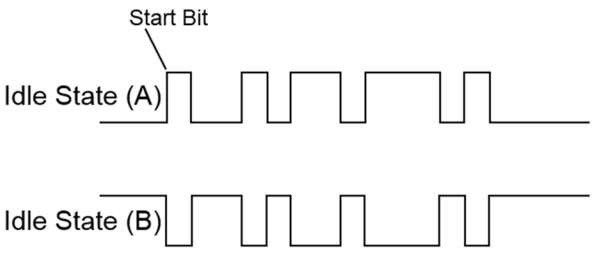
Bus d'intégration	
Vitesse du port de communication	De 300 à 115 200 bps
Communication	Half-duplex
Longueur de trame	8 bits
Bit d'arrêt	1 bit
Contrôle de flux	Aucun
Parité	Paire

CONNEXION



Afin de veiller au bon fonctionnement du système, vérifiez que seuls les câbles de communication (vert-bleu) sont connectés à leurs bus domotiques respectifs. Fixez les câbles à l'aide des vis des bornes, en respectant le code couleur.





PROTOCOLE BACNET

L'interface DKN Plus permet à un système de gestion de bâtiments de contrôler toutes les variables des systèmes Airzone. L'interface BACnet utilise un protocole ouvert standard basé sur le standard ASHRAE 135. Ses objets sont compatibles avec :

BACnet (ANSI/ASHRAE-135)

BACnet MS-TP

L'interface DKN Plus est un dispositif Plug&Play qui permet de contrôler et de surveiller les variables suivantes :

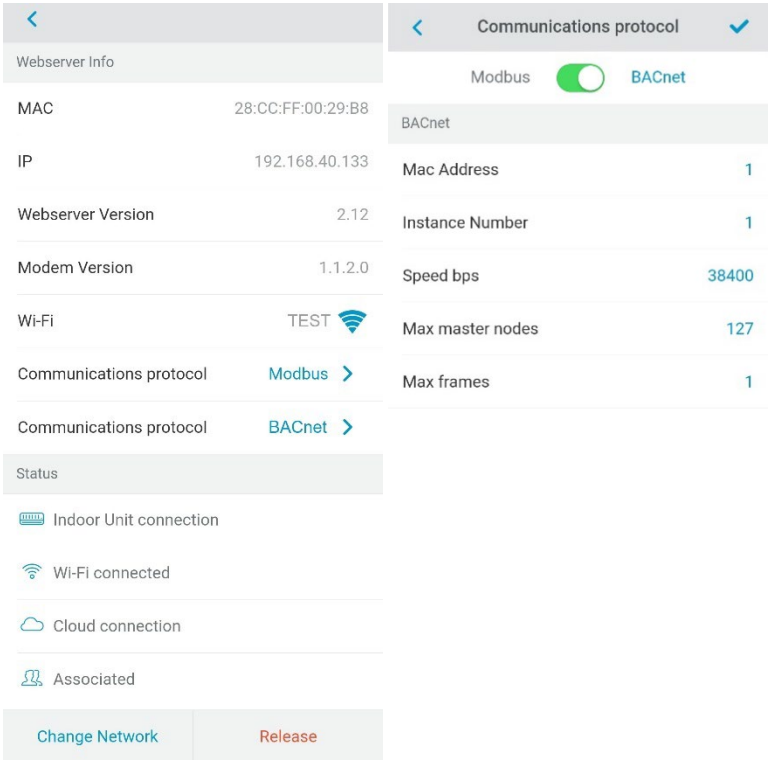
- Contrôle de marche/arrêt
- Température ambiante
- Définition de la température de consigne
- État de contrôle du mode de fonctionnement
- État et vitesse du ventilateur

CONTRÔLEUR WI-FI DKN

L'interface DKN Plus est **un dispositif esclave BACnet**. Il est donc nécessaire d'indiquer son adresse. Pour cela, associez votre DKN grâce à l'application « **DKN Cloud NA** » (disponible sur iOS et Android) en suivant les étapes suivantes :

1. Sur l'écran d'accueil, appuyez sur l'icône de menu et sélectionnez Configurer unité.
2. Sélectionnez l'unité dans la liste.

   Note : *Si votre unité n'apparaît pas, vérifiez que la fonction Bluetooth de votre dispositif iOS ou Android est activée. Vérifiez que le DKN fonctionne correctement.*
3. Saisissez le code PIN du DKN, s'il vous est demandé, puis appuyez sur le bouton **Envoyer**.
4. Saisissez le protocole de communication > BACnet (adresse de l'esclave) cible dans **Informations du Webserver**.



OBJETS

TYPE D'OBJET COMPATIBLE

Les éléments de contrôle/surveillance de l'interface DKN Plus compatibles sont assignés aux types d'objet standard définis par BACnet.

Type d'objet		compatible	Poste de gestion Airzone
Accumulator	23		
Analog-Input	0	√	Température ambiante mesurée
Analog-Output	1		
Analog-Value	2	√	Température de consigne
Averaging	18		
Binary-Input	3	√	Communication avec l'unité intérieure
Binary-Output	4	√	Chauffage auxiliaire
Binary-Value	5	√	Marche et Arrêt
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Mode de fonctionnement (configuration)
Multistate-Value	19	√	Vitesse du ventilo-convecteur (configuration)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

LISTE D'OBJETS

Vous trouverez ci-dessous la liste complète des objets disponibles sur l'interface DKN Plus. La disponibilité des objets de communication dépend de la configuration du système Airzone.

La disponibilité de l'objet de communication du système Airzone est indiquée dans le paramètre « out of service » (hors service) de chaque objet de communication, qui indique s'il est disponible ou non dans le système.

L'objet de communication a les valeurs correct/valid (correcte/valable) uniquement quand le paramètre « out of service » est FALSE (FAUX).

**** Note :*** *L : Lecture et E : Écriture*

Type d'objet	Index	Lecture-écriture	Description	Valeurs
Binary-value	**0**	L/E	Marche/Arrêt	0 → Arrêt, 1 → Marche
Binary-input	**0**	L	Communication avec l'unité intérieure	0 → Sans communication, 1 → Unité intérieure prête
Binary-input	**1**	L	Erreur de l'unité intérieure	0 → Sans erreur, 1 → Erreur de l'unité intérieure
Binary-input*	**2**	L	Entrée numérique	0 → Inactive, 1 → Active
Binary-output*	**0**	L	Chauffage auxiliaire	0 → Inactif, 1 → Actif
Analog-value	**0**	L/E	Température de consigne	Température de consigne
Analog-value	**1**	L/E**	Templocal	Température ambiante
Analog-input	**0**	L	Température de retour	Valeur du capteur de température de retour
Multi-state-value	**0**	L/E	Modes	1 → Automatique, 2 → Refroidissement, 3 → Chauffage, 4 → Ventilation, 5 → Déshumidification
	1	L/E	Vitesses	0 → Automatique, 1 → Vitesse 1, 2 → Vitesse 2, 3 → Vitesse 3
	2	L/E	Lames	X → Position X [1-9] 10 - Oscillation
Character-string-value	**1**	L	Erreurs	Code d'erreur de l'unité intérieure

* Disponible avec la version 4.03 ou supérieure.

** Écriture uniquement dans la connexion P1P2

DESCRIPTION DÉTAILLÉE DES OBJETS

COMMUN À TOUS LES OBJETS

Quand l'unité intérieure communique normalement, il est possible d'établir une communication entre l'interface DKN Plus et l'unité intérieure. Le système de gestion de bâtiments BACnet aura ainsi accès aux objets de l'unité.

Si la communication entre l'interface DKN Plus et le système n'est pas bonne ou si une demande d'information est liée à un objet de communication qui n'est pas dans le système Airzone, la propriété de l'objet « out of service » (hors service) est activée.

MARCHE/ARRÊT

L'interface DKN Plus signalera l'état. Toutes les unités intérieures peuvent être configurées sur On/Off à l'aide du système de gestion de bâtiments. Il s'agit d'objets de lecture/écriture.

COMMUNICATION AVEC L'UNITE INTERIEURE

Si la communication avec l'unité intérieure est perdue, l'interface DKN Plus le signalera à la plateforme BACnet. Il s'agit d'un objet de lecture seule.

ERREURS DE L'UNITÉ INTÉRIEURE

Si l'unité intérieure produit une erreur, l'interface DKN Plus le signalera à la plateforme BACnet. Il s'agit d'un objet de lecture seule.

ENTRÉE NUMÉRIQUE

L'interface DKN Plus signalera l'état de l'entrée numérique. Il s'agit d'un objet de lecture seule.

CHAUFFAGE AUXILIAIRE

L'interface DKN Plus signalera l'état du chauffage auxiliaire. Il s'agit d'un objet de lecture seule.

TEMPÉRATURE DE CONSIGNE

La température de consigne de l'unité intérieure ; cette valeur est signalée au système de gestion de bâtiments et peut être modifiée. Il s'agit d'objets de lecture/écriture.

TEMPLOCAL

Le système de gestion de bâtiments peut obtenir la température ambiante réelle de n'importe quelle zone.

- P1P2 connexion : la valeur Templocal peut être écrite par le BMS (lecture/écriture)
- S21 connexion : la valeur Templocal sera égale à la valeur de la température de retour (lectura seule)

TEMPERATURE DE RETOUR

Le système de gestion de bâtiments peut obtener la valeur du capteur de température de retour pour chaque unité intérieure (lectura seule)

MODE DE FONCTIONNEMENT

L'interface DKN Plus signalera le mode de fonctionnement de l'unité intérieure, représenté par un numéro. Il s'agit d'objets de lecture/écriture. Ces modes sont les suivants :

0 → Stop

2 → Refroidissement

3 → Chauffage

4 → Déshumidification

6 → Ventilation

VITESSE DE L'UNITÉ INTÉRIEURE (IU)

Ce paramètre fait référence à la vitesse du ventilateur de l'unité intérieure. En fonction du nombre de zones ouvertes et de la valeur sélectionnée, le ventilateur de l'unité intérieure fonctionne à une vitesse déterminée et cette vitesse est signalée à la plateforme BACnet. Il s'agit d'un objet de lecture seule.

LAMES

L'interface DKN Plus signalera la position des lames de l'unité, représentée par un numéro. Il s'agit d'objets de lecture/écriture. Ces positions vont du 1 au 9, et le mode d'oscillation correspond au numéro 10.

ERREURS

Si l'unité intérieure produit une erreur, l'interface DKN Plus le signalera à la plateforme BACnet. Il s'agit d'un objet de lecture seule.

DÉCLARATION DE CONFORMITÉ DE LA MISE EN PLACE DU PROTOCOLE BACNET

Date: Feb. 15,2021
Vendor Name: ALTRA S.L.
Product Name: DZK Plus Interface
Product Model Number: AZAI6WSPDKC
Applications Software Version: 4.01 **Firmware Revision:** 0.8.2 **BACnet Protocol Revision:** 12

Product Description:
This product provides the function of monitoring and control the Residential /Sky Air and VRV Daikin DX units

BACnet Standardized Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)

☐ BACnet Building Controller (B-BC)

☐ BACnet Advanced Application Controller (B-AAC)

■ BACnet Application Specific Controller (B-ASC)

☐ BACnet Smart Sensor (B-SS)

☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadProperyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WriteProperyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Analog Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default, COV_Increment Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

☐ BACnet IP, (Annex J)

☐ BACnet IP, (Annex J), Foreign Device

☐ ISO 8802-3, Ethernet (Clause 7)

☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)

☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____

■ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200

☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-

☐ Point, EIA 232 (Clause 10), baud rate(s) : _____

☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____

☐ LonTalk, (Clause 11), medium : _____

☐ Other : _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS / TP slaves and certain other devices.) ☐ Yes ■ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.

☐ Annex H, BACnet Tunneling Router over IP

☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

■ ANSI X3.4 ☐ IBM™ / Microsoft™ DBCS ☐ ISO 8859-1

☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

DKN Cloud (IP)

Modbus slave

GYW control for HVAC 3º party thermostat

ÍNDICE

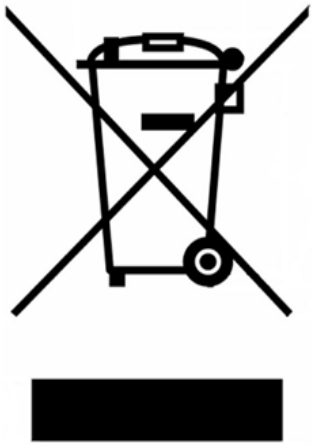
PRECAUCIONES Y POLÍTICA MEDIOAMBIENTAL

PRECAUCIONES

Por su seguridad, y para proteger los dispositivos, siga estas instrucciones:

- No manipule el sistema con las manos húmedas o mojadas.
- Desconecte la alimentación antes de realizar cualquier conexión.
- Tenga cuidado de no causar un cortocircuito en alguna de las conexiones del sistema.

POLÍTICA MEDIOAMBIENTAL



No deseche este equipo junto con la basura doméstica. Los equipos eléctricos y electrónicos contienen sustancias que pueden dañar el medioambiente si no se manipulan adecuadamente. El símbolo de un contenedor de basura tachado indica que los equipos eléctricos deben recogerse por separado del resto de residuos urbanos. Para una correcta gestión ambiental, se deberá llevar el equipo a los centros de recogida previstos al final de su vida útil.

Los componentes del equipo pueden reciclarse. Siga las normativas actuales sobre protección medioambiental.

Si sustituye el equipo por otro, deberá devolver el primero al distribuidor o depositarlo en un centro de recogida especializado.

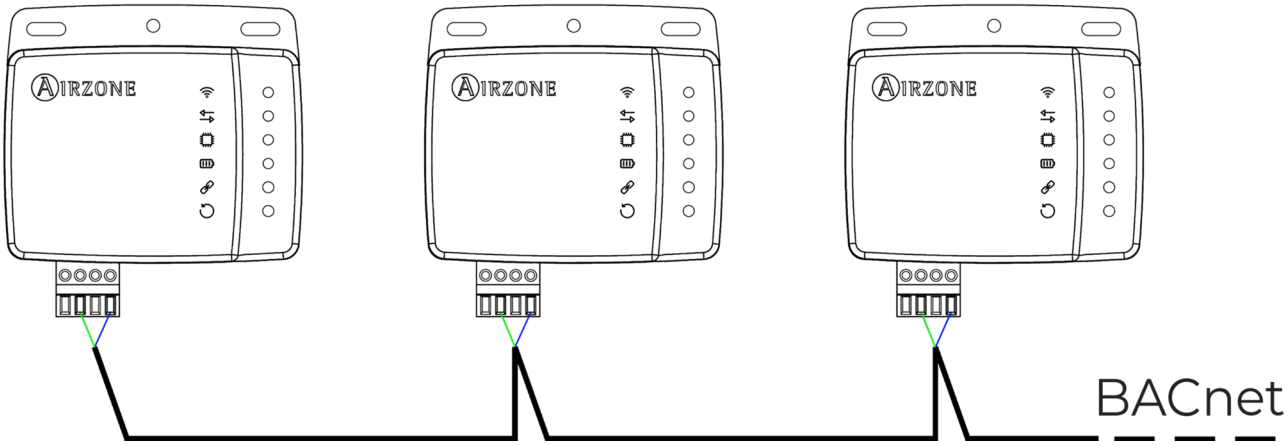
Aquellos que infrinjan la ley o los reglamentos estarán sujetos a las sanciones y medidas estipuladas en la legislación sobre protección medioambiental.

PUERTO DE COMUNICACIONES RS-485

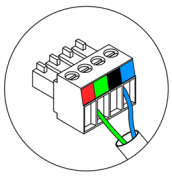
El RS-485, también conocido como EIA-485, es un estándar de comunicaciones en bus.

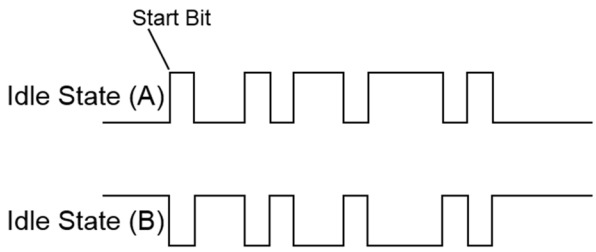
Bus de integración	
Velocidad del puerto de comunicaciones	De 300 a 115.200 bps
Comunicación	Half-duplex
Longitud de la trama	8 bits
Bit de parada	1 bit
Control de flujo	Ninguno
Paridad	Par

CONEXIÓN



Para el correcto funcionamiento del sistema, compruebe que solo los cables de comunicación (verde-azul) estén conectados a sus buses domóticos correspondientes. Fije los cables con los tornillos de las bornas respetando el código de colores.





PROTOCOLO BACNET

Mediante la interfaz DKN Plus, un sistema de gestión de edificios puede controlar todas las variables de los sistemas Airzone. La interfaz BACnet utiliza un protocolo abierto estándar basado en el estándar ASHRAE 135, y sus objetos son compatibles con:

BACnet (ANSI/ASHRAE-135)

BACnet MS-TP

La interfaz DKN Plus es un dispositivo Plug&Play que permite controlar y supervisar las siguientes variables:

- Control On/Off
- Temperatura ambiente
- Definición de la temperatura de consigna
- Estado de control del modo de funcionamiento
- Estado y velocidad del ventilador

CONTROLADOR WI-FI DKN

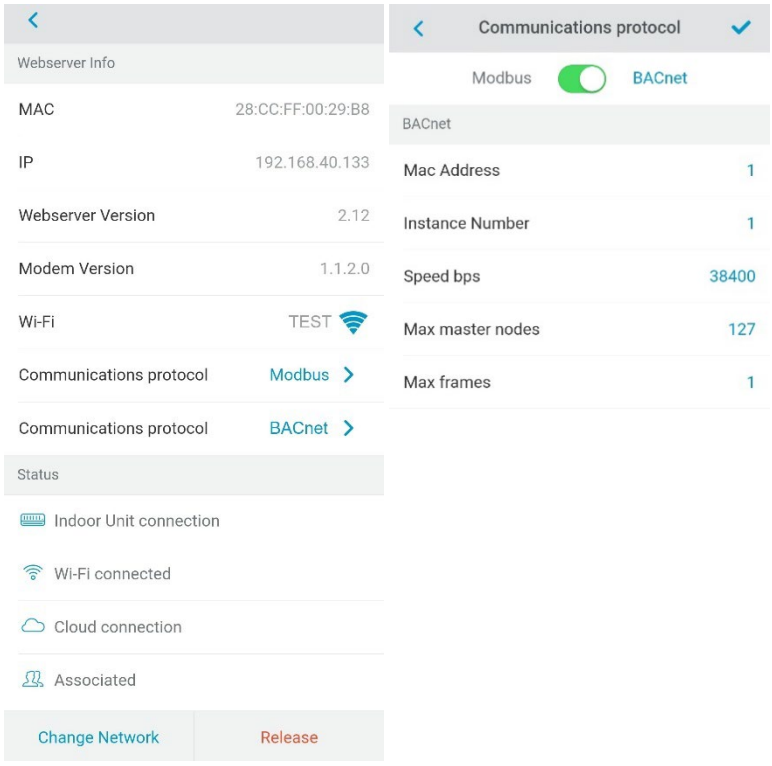
La interfaz DKN Plus es **un dispositivo esclavo BACnet,** de modo que es necesario indicar su dirección.

Para ello, asocie su DKN mediante la aplicación "**DKN Cloud NA**" (disponible para iOS y Android) siguiendo estos pasos:

5. En la pantalla de inicio, pulse en el icono de menú y seleccione Configurar unidad.
6. Seleccione la unidad de la lista.

   Nota: *Si no aparece su unidad, confirme que la función Bluetooth de su dispositivo iOS o Android está activada. Compruebe que el DKN funciona correctamente.*

7. Introduzca el código PIN que se encuentra en el DKN si se le solicita y pulse el botón **Enviar**.
8. Introduzca el protocolo de comunicaciones > BACnet (dirección del esclavo) al que desea apuntar en **Información del Webserver**.



OBJETOS

TIPO DE OBJETO COMPATIBLE

Los elementos de control/supervisión de la interfaz DKN Plus compatibles se asignan a los tipos de objeto estándar definidos por BACnet.

Tipo de objeto		compatible	Punto de gestión Airzone
Accumulator	23		
Analog-Input	0	√	Temperatura ambiente medida
Analog-Output	1		
Analog-Value	2	√	Temperatura de consigna
Averaging	18		
Binary-Input	3	√	Comunicación con la unidad interior
Binary-Output	4	√	Calor auxiliar
Binary-Value	5	√	On y Off
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Modo de funcionamiento (configuración)
Multistate-Value	19	√	Velocidad del fancoil (configuración)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

LISTA DE OBJETOS

A continuación, figura la lista completa de objetos disponibles en la interfaz DKN Plus. La disponibilidad de los objetos de comunicación depende de la configuración del sistema Airzone.

La disponibilidad del objeto de comunicación del sistema Airzone se indica en el parámetro "out of service" (fuera de servicio) de cada objeto de comunicación, que indica si está disponible o no en el sistema.

El objeto de comunicación solo tendrá valores correct/valid (correcto/válido) cuando el parámetro "out of service" es FALSE (FALSO).

***Nota:** L: Lectura y E: Escritura*

Tipo de objeto	Índice	Lectura-escritura	Descripción	Valores
Binary-value	**0**	L/E	On/Off	0 → Off, 1 → On
Binary-input	**0**	L	Comunicación con la unidad interior	0 → Sin comunicación, 1 → Unidad interior lista
Binary-input	**1**	L	Error de la unidad interior	0 → Sin errores, 1 → Error de la unidad interior
Binary-input*	**2**	L	Entrada digital	0 → Inactivo, 1 → Activo
Binary-output*	**0**	L	Calor auxiliar	0 → Inactivo, 1 → Activo
Analog-value	**0**	L/E	Temperatura de consigna	Temperatura de consigna
Analog-value	**1**	L/E**	Templocal	Temperatura ambiente
Analog-input	**0**	L	Temperatura de retorno	Valor del sensor de temperatura de retorno
Multi-state-value	**0**	L/E	Modos	1 → Automático, 2 → Frío, 3 → Calor, 4 → Ventilación, 5 → Seco
	1	L/E	Velocidades	0 → Automático, 1 → Velocidad 1, 2 → Velocidad 2, 3 → Velocidad 3
	2	L/E	Lamas	X → Posición X [1-9] 10 - Oscilación
Character-string-value	**1**	L	Errores	Código de error de la unidad interior

*Disponible con la versión 4.03 o superior.

** Escritura disponible únicamente en conexión P1P2.

DESCRIPCIÓN DETALLADA DE LOS OBJETOS

COMÚN A TODOS LOS OBJETOS

Cuando la unidad interior se comunica con normalidad, se puede establecer una comunicación entre la interfaz DKN Plus y la unidad interior. El sistema de gestión de edificios BACnet tendrá acceso entonces a los objetos de la unidad.

Si la comunicación entre la interfaz DKN Plus y el sistema no es correcta, o si una solicitud de información está relacionada con un objeto de comunicación que no está presente en el sistema Airzone, se activa la propiedad del objeto "out of service" (fuera de servicio).

ON/OFF

La interfaz DKN Plus notificará el estado. Cualquier unidad interior puede configurarse como On/Off mediante el sistema de gestión de edificios. Estos son objetos de lectura/escritura.

COMUNICACIÓN CON LA UNIDAD INTERIOR

Si se pierde la comunicación con la unidad interior, la interfaz DKN Plus se lo notificará a la plataforma BACnet. Este es un objeto de solo lectura.

ERRORES DE LA UNIDAD INTERIOR

Si la unidad interior genera un error, la interfaz DKN Plus se lo notificará a la plataforma BACnet. Este es un objeto de solo lectura.

ENTRADA DIGITAL

La interfaz DKN Plus notificará el estado de la entrada digital. Este es un objeto de solo lectura.

CALOR AUXILIAR

La interfaz DKN Plus notificará el estado del calor auxiliar. Este es un objeto de solo lectura.

TEMPERATURA DE CONSIGNA

La temperatura de consigna de la unidad interior; este valor se notifica al sistema de gestión de edificios y puede modificarse. Estos son objetos de lectura/escritura.

TEMPLOCAL

El sistema de gestión de edificios puede obtener la temperatura ambiente real de cualquier zona.

- Conexión P1P2: el valor Templocal puede ser escrito por el sistema de gestión de edificios (lectura/escritura)
- Conexión S21: el valor Templocal será igual al del sensor de temperatura de retorno (lectura/escritura)

TEMPERATURA DE RETORNO

El sistema de gestión de edificios puede obtener el valor del sensor de temperatura de retorno de cada unidad interior (solo lectura)

MODO DE FUNCIONAMIENTO

La interfaz DKN Plus notificará el modo de funcionamiento de la unidad interior, representado mediante un número. Estos son objetos de lectura/escritura. Estos modos son:

0 → Stop

2 → Frío

3 → Calor

4 → Seco

6 → Ventilación

VELOCIDAD DE LA UNIDAD INTERIOR (UI)

Este parámetro hace referencia a la velocidad del ventilador de la unidad interior. Según el número de zonas abiertas y el valor seleccionado, el ventilador de la unidad interior funcionará a una velocidad determinada, y dicha velocidad se notificará a la plataforma BACnet. Este es un objeto de solo lectura.

LAMAS

La interfaz DKN Plus notificará la posición de las lamas de la unidad, representada mediante un número. Estos son objetos de lectura/escritura. Estas posiciones van de la 1 a la 9, y el modo de oscilación es 10.

ERRORES

Si la unidad interior genera un error, la interfaz DKN Plus se lo notificará a la plataforma BACnet. Este es un objeto de solo lectura.

DECLARACIÓN DE CONFORMIDAD DE LA IMPLEMENTACIÓN DEL PROTOCOLO BACNET

Date: Feb. 15,2021
Vendor Name: ALTRA S.L.
Product Name: DZK Plus Interface
Product Model Number: AZAI6WSPDKC
Applications Software Version: 4.01 **Firmware Revision:** 0.8.2 **BACnet Protocol Revision:** 12

Product Description:
This product provides the function of monitoring and control the Residential /Sky Air and VRV Daikin DX units

BACnet Standardized Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)

☐ BACnet Building Controller (B-BC)

☐ BACnet Advanced Application Controller (B-AAC)

■ BACnet Application Specific Controller (B-ASC)

☐ BACnet Smart Sensor (B-SS)

☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadProperyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WriteProperyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Analog Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default, COV_Increment Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps
Writable Properties :	Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

☐ BACnet IP, (Annex J)

☐ BACnet IP, (Annex J), Foreign Device

☐ ISO 8802-3, Ethernet (Clause 7)

☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)

☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____

■ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200

☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-

☐ Point, EIA 232 (Clause 10), baud rate(s) : _____

☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____

☐ LonTalk, (Clause 11), medium : _____

☐ Other : _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS / TP slaves and certain other devices.) ☐ Yes ■ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.

☐ Annex H, BACnet Tunneling Router over IP

☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

■ ANSI X3.4 ☐ IBM™ / Microsoft™ DBCS ☐ ISO 8859-1

☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

DKN Cloud (IP)

Modbus slave

GYW control for HVAC 3º party thermostat

airzonecontrol.com

Marie Curie, 21
29590 Málaga
Spain

v 100.6

DKN PLUS LOCAL API

1. INTRODUCTION

This document defines the REST API available in DKN PLUS.

2. REST API

Requests are made pointed to an address, port and application.

e.g http://XXX.XXX.XXX.XX:3000/api/v1/xxx

Where XXX.XXX.XXX.XX is the IP address of the DKN PLUS device and the port is 3000

There are available commands using PUT and POST requests.

POST method: extract device data.

PUT method: modify device data.

2.1 POST method

The **POST** method is used to extract the data of the device.

This method is used as below:

POST http://XXX.XXX.XXX.XX:3000/api/v1/hvac

Where XXX.XXX.XXX.XX is the IP address of DKN PLUS.

The port by default is 3000.

The application where is pointed is api/v1/hvac.

With the following body

{

"systemID": 1,

"zoneID": 1

}

POST request parameters

If the **POST** method is correctly requested the response is indicated with code **200** and will give back a response with parameters. The API works with a full list of parameters for Airzone systems. For DKN PLUS devices only applies:

Parameters	Value type	Description	Available values	
on	Boolean	Zone status. On/Off	true	
			false	
setpoint	Integer	Setpoint temperature	15 to 30 for ºC	
			59 to 86 for ºF	
roomtemp	Integer	Room temperature	Number	
maxtemp	Integer	Upper limit setpoint temperature	Number	
mintemp	Integer	Lower limit setpoint temperature	Number	
mode	Integer	Selected operation mode	1	Stop
			2	Cooling
			3	Heating
			4	Fan
			5	Dry
			7	Auto
speeds	Integer	Available fan speeds	1-5	Speeds
speed	Integer	Selected fan speed	0	Auto
			1-5	Speed X
units	Integer	Temperature measurement units	0	Celsius
			1	Fahrenheit

If the **POST** request is wrong, the response is indicated with code **500** and will give back the following parameters:

Parameters	Value type	Description	Available values	
errors	Array	Error	request malformed	Wrong request format
			zoneid not provided	Zone not present in the request
			systemid not provided	System not present in the request
			zoneid out of range	Zone not valid
			systemid out of range	System not valid
			zoneid not available	Zone not available
			internal error	Internal error in the application
			method not supported	Unsupported method

2.2 PUT method

The **PUT** method is used to modify the data of a specified zone.

This method is used as below:

PUT http://XXX.XXX.XXX.XX:3000/api/v1/hvac

Where XXX.XXX.XXX.XX is the IP address of DKN PLUS

The port by default is 3000.

The application where is pointed is api/v1/hvac.

With the following body

{

"systemID": 1,

"zoneID": 1,

"parameter" (parameter to modify, e.g “setpoint”): f (value),

}

PUT request parameters

The PUT method allows to modify the following parameters:

Parameters	Value type	Description	Available values	
on	Boolean	On/Off	0	Off
			1	On
setpoint	Integer	Setpoint temperature	ºC/ºF	
mode	Integer	Operation mode	1	Stop
			2	Cooling
			3	Heating
			4	Fan
			5	Dry
			7	Auto
speed	Integer	Fan speed	0	Auto
			1-5	Speed X

If the **PUT** method is correctly requested the response is indicated with code **200** and will give back the system parameters.

If the **PUT** method is requested wrong the response is indicated with code **500** and will give back the system parameters.

Parameters	Value type	Description	Available values	
errors	Array	Error	request malformed	Wrong request format
			zoneid not provided	Zone not present in the request
			systemid not provided	System not present in the request
			zoneid out of range	Zone not valid
			systemid out of range	System not valid
			zoneid not available	Zone not available
			internal error	Internal error in the application
			driver not provided	The driver is not indicated in the request