

PACKAGED TERMINAL HEAT PUMP
Owner's Manual
Installation & Operation



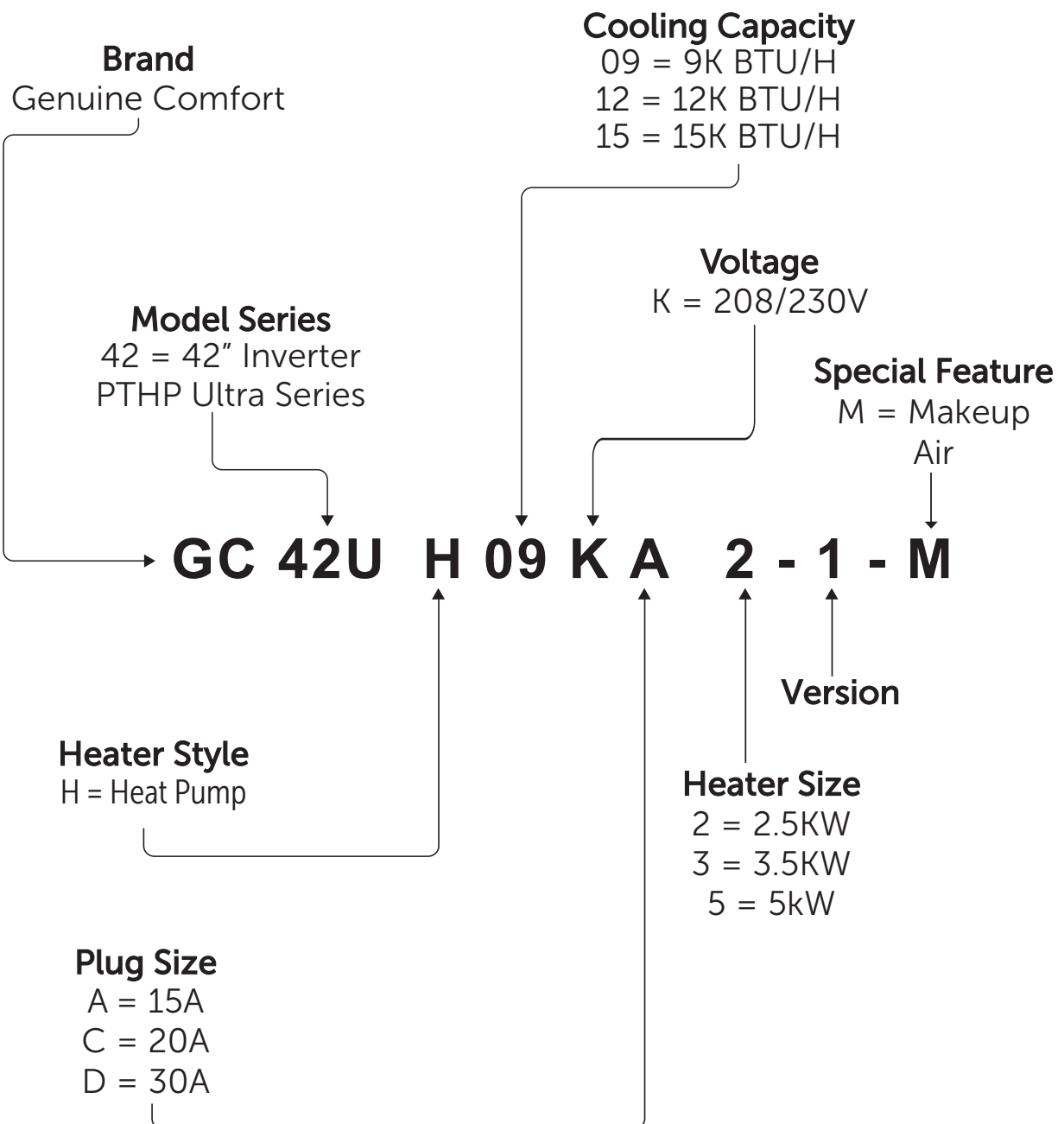
GENUINE COMFORT
DELIVERING COMFORT CONSISTENTLY

Ultra Series 42" Inverter PTHP

MODELS

9,000 BTU	12,000 BTU	15,000 BTU
GC42U-H09KA2-1	GC42U-H12KC3-1	GC42U-H15KC3-1
GC42U-H09KC3-1	GC42U-H12KD5-1	GC42U-H15KD5-1
GC42U-H09KA2-1-M	GC42U-H12KC3-1-M	GC42U-H15KC3-1-M
GC42U-H09KC3-1-M	GC42U-H12KD5-1-M	GC42U-H15KD5-1-M

MODEL CODING



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IMPORTANT NOTE:
Read this manual and SAFETY MANUAL (if any) carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

Safety Precautions

You must read the Safety Precautions before operating and installing. Incorrect installation due to ignoring instructions can cause serious damage or injury. The seriousness of potential damage or injuries is classified as either a WARNING or CAUTION.

Explanation of Symbols



WARNING

This signal word indicates a hazard with a moderate level of risk that, if not avoided, may result in death or serious injury.



CAUTION

This signal word indicates a hazard of low risk that, if not avoided, may result in minor or moderate injury.



NOTE

This signal word indicates important information (e.g., damage to property), but not danger.

Read these operating instructions carefully and attentively before using/commissioning the unit and keep them in the immediate vicinity of the installation site or unit for later use!



CAUTION

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons to avoid a hazard.
- The appliance shall be installed in accordance with national wiring regulations.
- Do not operate your air conditioner in a wet room such as a bathroom or laundry room.
- The appliance with an electric heater shall have at least 3.28 feet or 1 meter of space from the combustible materials.

WARNING

- State of California Proposition 65 Warning (US Only). This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
- Plug in the power plug properly. Otherwise, it may cause electric shock or fire due to excess heat generation.
- Do not operate or stop the unit by inserting or pulling out the power plug. It may cause electric shock or fire due to heat generation.
- Do not damage or use an unspecified power cord. It may cause electric shock or fire.
- Always install a circuit breaker and a dedicated power circuit. Incorrect installation may cause fire and an electric shock. Do not operate with wet hands or in a damp environment. It may cause electric shock. Do not direct airflow at room occupants only. This could damage your health.
- Always ensure effective grounding. The ground prong shouldn't be cut, and if the wall receptacle is not equipped with one, an electrician should replace it. Incorrect grounding may cause electric shock.
- Do not allow water to run into electric parts. It may cause failure of the machine or electric shock.
- Do not modify the power cord length or share the outlet with other appliances. It may cause electric shock or fire due to heat generation.
- Unplug the unit if strange sounds, smells, or smoke come from it. It may cause fire and electric shock.
- Do not use the socket if it is loose or damaged. It may cause fire and electric shock.
- Do not open the unit during operation. It may cause an electric shock.
- Keep firearms away. It may cause fire. Do not use the power cord close to heating appliances. It may cause fire and electric shock. Do not use the power cord near flammable gases or combustibles, such as gasoline, benzene, thinner, etc. It may cause an explosion or fire.
- Ventilate the room before operating the air conditioner if there is a gas leakage from another appliance. It may cause an explosion, fire, or burns. Do not disassemble or modify the unit. It may cause failure and electric shock.

CAUTION

- When the air filter is to be removed, do not touch the metal parts of the unit. It may cause an injury.
- Ventilate the room well when used together with a stove, etc. An oxygen shortage may occur.
- Do not use strong detergents such as wax or thinner; use a soft cloth. Appearance may be deteriorated due to a change of product color or the scratching of its surface. Do not clean the air conditioner with water. Water may enter the unit and degrade the insulation. It may cause an electric shock. Do not use for special purposes. Do not use this air conditioner to preserve precision devices, food, pets, plants, or art objects. It may cause deterioration of quality, etc.
- Stop the operation and close the window in a storm or hurricane. Operation with windows open may cause wetting of indoor surfaces and soaking of household furniture. When the unit is to be cleaned, switch it off and turn off the circuit breaker.
- Do not clean the unit when the power is on, as it may cause fire and electric shock, which may cause injury.
- Always insert the filters securely. Operating the unit without filters can cause failure. Please clean the filter once every 3 months.

⚠ CAUTION

- Hold the plug by its head when removing it. It may cause electric shock and damage. Turn off the main power switch when not using the unit for a long time. It may cause failure of the product or fire.
- Do not place obstacles around air inlets or inside air outlets. It may cause failure of the appliance or an accident. Do not place a heavy object on the power cord, and ensure that the cord is not compressed. There is a danger of fire or electric shock.
- Don't drink water drained from the air conditioner. It contains contaminants and could make you sick.
Use caution when unpacking and installing. Sharp edges could cause injury.
- If water enters the unit, turn off the unit at the power outlet and switch off the circuit breaker. Isolate the supply by taking the power plug out and contacting a qualified service technician.
- Contact the qualified service technician for repair or maintenance of this unit.
- Contact the qualified installer for installation of this unit.

💡 NOTE

This air conditioner is designed to be operated under the following conditions:

Cooling operation	Outdoor temp.	32°F-122°F/0°C-50°C
	Indoor temp.	61°F-90°F/16°C-32°C
Heating operation	Outdoor temp.	23°F-75°F/-5°C-24°C
	Indoor temp.	32°F-81°F/0°C-27°C

Performance may be reduced outside of these operating temperatures.

Operation of Current Device

The power cord is a LCDI (Leakage Current Detection and Interruption) power cord and not a GFCI (Ground Fault Circuit Interrupter). The power supply cord contains a current device that senses damage to the power cord. To test your power supply cord, do the following:

- Plug in the unit.
- The power supply cord will have TWO buttons on the plug head. Press the TEST button, and you will notice a click as the RESET button pops out.
- Press the RESET button, and you will notice a click as the button engages.
- The power supply cord is now supplying electricity to the unit. (On some products, this is also indicated by a light on the plug head).

💡 NOTE

Receptacles/ Sub-bases						
Power Supply	230/208V 15 Amp	230/208V 20 Amp	230/208V 30 Amp	265V 15 amp	265V 20 amp	265V 30 amp

The shape may be different depending on the model.

CAUTION

1. Do not pour water into the air outlet.
2. When restarting heating mode after powering off, the unit has a built-in 3-minute anti-short-cycling delay in cool or heat mode for compressor protection.
3. If the self-cleaning function is activated, the unit will continue operating to complete the self-cleaning cycle before shutting down.
4. When paired with a fresh air system, note that the fresh air intake may affect indoor temperature and energy consumption. In auto mode, the unit will regulate the fresh air system according to preset control logic.
5. For non-internal drainage installations, ensure a 3-degree outward tilt during installation.
6. If a high-heat unit is equipped with a water pump, clean the pump every three months. A slight water-pumping sound may occur when condensate levels are low.
7. Electric heating mode defaults to high airflow setting.
8. The airflow grille can be rotated 180° for installation, requiring removal of the limiter posts on the grille in such cases.
9. A mild odor may occur during the first 10 minutes of initial use, after prolonged inactivity, or when activating the electric heating function. Maintain ventilation during these scenarios.
10. Do not put obstacles around the air inlet or inside of air outlet of the unit, such as a window curtain etc. Do not allow liquid to run into the air inlet or air outlet.
11. Moving and hot parts. Do not operate the unit with the front panel and rear grille removed.
12. The indoor coil must be cleaned once every three months by qualified service technician.

⚠ WARNING

Electrical Information

The complete electrical rating of your new PTHP equipment is stated on the serial plate. Refer to the rating when checking the electrical requirements.

- Be sure the equipment is properly grounded. To minimize shock and fire hazards, proper grounding is important. The power cord is equipped with a three-prong grounding plug for protection against shock hazards.
- Your equipment must be used in a properly grounded wall receptacle. If the wall receptacle you intend to use is not adequately grounded or protected by a time delay fuse or circuit breaker, have a qualified electrician install the proper receptacle. Ensure the receptacle is accessible after the unit installation.
- Do not run the equipment without a side protective cover in place. This could result in mechanical damage within the air conditioner.
- Do not use an extension cord or an adapter plug.

For Your Safety

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Avoid fire hazard or electric shock. Do not use an extension cord or an adapter plug. Do not remove any prongs from the power cord.

Prevent Accidents

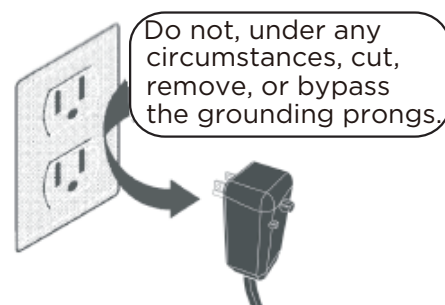
To reduce the risk of fire, electrical shock, or injury to persons when using your air conditioner, follow basic precautions, including the following:

- Be sure the electrical service is adequate for the model you have chosen. This information can be found on the serial plate, which is located on the side of the cabinet and behind the grille.
- Be sure the equipment has been securely and correctly installed according to the installation instructions in this manual. Save this manual for possible future use in removing or installing this unit. When handling the air conditioner, be careful to avoid cuts from sharp metal fins on the front and rear coils.

💡 NOTE

- The power supply cord with this air conditioner contains a current detection device designed to reduce the risk of fire. If the power cord is damaged, it cannot be repaired – it must be replaced with a cord from the product manufacturer.
- Do not use this device to turn the unit on or off.
- Always make sure the RESET button is pushed in for correct operation.
- The power supply cord must be replaced if it fails to reset when either the TEST button is pushed or if it cannot be reset. A new one can be obtained from the product manufacturer.
- If the power supply cord is damaged, it cannot be repaired. It **MUST** be replaced by one obtained from the product manufacturer.
- When 265V units are to be installed, the power supply must be permanent wiring. Permanent wiring may be done through the accessory subbase. An exposed cord connection on 265V units is not permitted.

Grounding-type wall receptacle



Power supply cord with 3-prong grounding plug and current detection device.

WARNING

Electrical Requirements

Electrical Shock and Personal Injury Hazard

Electrical ground is required on this appliance.

DO NOT ground to a gas line.

If cold water pipe is interrupted by plastic, non-metallic gaskets, or other insulating materials,

DO NOT use for grounding.

Check with a qualified electrician if you are in doubt as to whether the appliance is properly grounded.

DO NOT modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.

DO NOT have a fuse in the neutral or grounding circuit. A fuse in the neutral, or grounding circuit, could result in an electrical shock.

DO NOT use an extension cord with this appliance.

Failure to follow these instructions could result in electrical shock, serious injury, or death.

Observe all local governing codes and ordinances. Do not, under any circumstances, remove the power supply cord grounding prong.

NOTE: If codes permit, and a separate grounding wire is used, it is recommended that a qualified electrician determine that the grounding path is adequate and not interrupted by plastic, non-metallic gaskets, or other insulating materials.

Receptacle wiring

Receptacle wiring should be a minimum of 14-gauge. Use copper wire only. It is your responsibility to provide proper and adequate receptacle wiring, installed by a qualified electrician.

Electrical requirements

A time delay fuse or time delay circuit breaker is also required.

A separate circuit, serving only this appliance, **MUST** be provided.

NOTE: For details about the parameters of the electric heating function, see the nameplate on the unit.

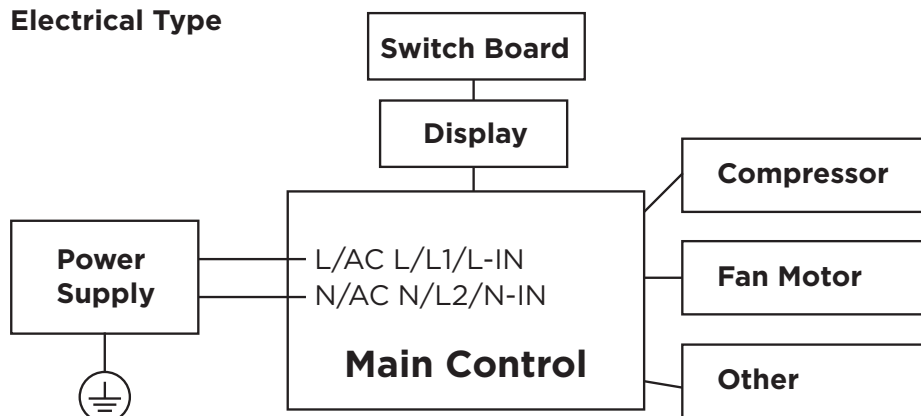
Electrical Work



WARNING:

BEFORE PERFORMING ANY ELECTRICAL OR WIRING WORK, TURN OFF THE MAIN POWER TO THE SYSTEM.

Electrical Type



NOTE: Please strictly follow the wiring label attached to the unit for all wiring connections. The wiring diagram may vary for different units. Please refer to the wiring diagram on the unit you have purchased. The above wiring diagram is a simplified version for preliminary illustration purposes only.



A2L

CAUTION: Risk of fire flammable materials

IMPORTANT NOTE: Read this manual carefully before installing or operating your new appliance unit. Make sure to save this manual for future reference.

Explanation of symbols displayed on the unit

	CAUTION	This symbol shows that the operation manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	CAUTION	This symbol shows that information is available such as the operating manual or installation manual.

WARNING

- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- DO NOT modify the length of the power cord or use an extension cord to power the unit.
- DO NOT share a single outlet with other electrical appliances. Improper power supply can cause fire or electrical shock.
- Please follow the instructions carefully to handle, install, clean, and service the appliance to avoid any damage or hazard.

Flammable

This PTHP is charged with A2L refrigerant R32. According precautions should be used.

- When maintaining or disposing of the appliance, the refrigerant (R32) shall be recovered properly and shall not be discharged to the air directly.
- Compliance with national gas regulations shall be observed.
- Keep ventilation openings clear of obstruction.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current, valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry-recognized assessment specification. All training shall follow the ANNEX HH requirements of UL 60335-2-40 4th Edition.

Examples for such working procedures are:

- breaking into the refrigerating circuit;
- opening of sealed components;
- opening of ventilated enclosures.

-No open fire or device like switch which may generate spark/arcing shall be around appliance to avoid causing ignition of the flammable refrigerant used.

Please follow the instructions carefully when storing or maintaining the appliance to prevent mechanical damage from occurring.

-Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

-The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance) and ignition sources or (for example: an operating electric heater) close to the appliance.

-Do not pierce or burn.

-Be aware that the refrigerants may not contain an odor.

- No method other than that recommended by the manufacturer should be used to accelerate the defrosting process or for cleaning.
- The unit shall be stored in a room without continuously operating ignition sources (i.e., open flames, an operating gas appliance or an operating electric heater).
- Appliance should be installed, operated and stored in a room with a floor area according to the amount of refrigerant to be charged. For specific information on the type of gas and the amount, please refer to the relevant label on the unit itself.
- Appliance should be installed, operated and stored in a room with a floor area larger than 4 m²
- The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).

1. Transport of equipment containing flammable refrigerants

See transport regulations.

2. Marking of equipment using signs

See local regulations.

3. Disposal of equipment using flammable refrigerants

See national regulations.

4. Storage of equipment/appliances

The storage of the appliance should be in accordance with the applicable regulations or instructions, whichever is more stringent.

5. Storage of packed (unsold) equipment

Storage package protection should be constructed such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge. The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

6. Information on servicing

1) Checks to the area

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

- 2) Work procedure
Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.
- 3) General work area
All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.
- 4) Checking for presence of refrigerant
The area shall be checked with an appropriate refrigerating detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e., non-sparking, adequately sealed or intrinsically safe.
- 5) Presence of fire extinguisher
If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.
- 6) No ignition sources
No person carrying out work in relation to a refrigerating system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. No Smoking signs shall be displayed.
- 7) Ventilated area
Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- 8) Checks to the refrigerating equipment
Where electrical components are being changed, they shall be fit for the purpose and to the correct specifications. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using flammable refrigerants: the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed; the ventilation machinery and outlets are operating adequately and are not obstructed; if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant; marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected; and refrigerating pipe or components are installed in a position where

they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

9) Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised. Initial safety checks shall include:

That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking; that there no live electrical components and wiring are exposed while charging, recovering or purging the system; that there is continuity of earth bonding.

7. Sealed electrical components shall be replaced.

8. Intrinsically safe components must be replaced.

9. Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

10. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants. Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed. Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Removal and evacuation.

11. Removal and evacuation

When breaking into the refrigerant circuit to make repairs—or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

- Safely remove refrigerant following local and national regulations;
- Evacuate;
- Purge the circuit with inert gas (optional for A2L);
- Evacuate (optional for A2L);
- continuously flush or purge with inert gas when using flame to open circuit; and
- open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used. The system shall be vented down to atmospheric pressure to enable work to take place. The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

12. Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed. Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them. Cylinders shall be kept in an appropriate position according to the instructions. Ensure that the refrigeration system is earthed prior to charging the system with refrigerant. Label the system when charging is complete (if not already). Extreme care shall be taken not to overfill the refrigeration system. Prior to recharging the system, it shall be pressure tested with OFN. The system shall be leak tested on completion charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

13. Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure ensure that: mechanical handling equipment is available, if required, for handling refrigerant cylinders; all personal protective equipment is available and being used correctly; the recovery process is supervised at all times by a competent person; recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.

- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with instructions.
- h) Do not overfill cylinders. (No more than 80% volume liquid charge.)
- i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

14. Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

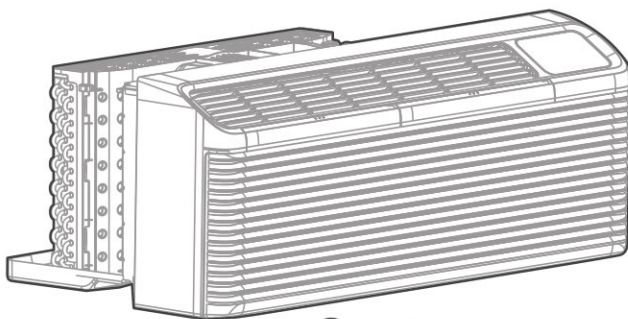
15. Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e., special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs. The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

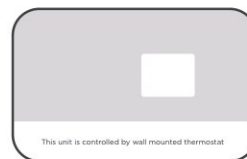
Before You Get Started

Accessories

What is in the Package



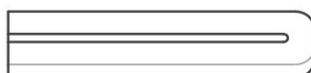
① Unit



② Control panel sticker



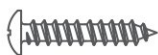
③ Owner's manual



④ Insulation A



⑤ Insulation B * 2

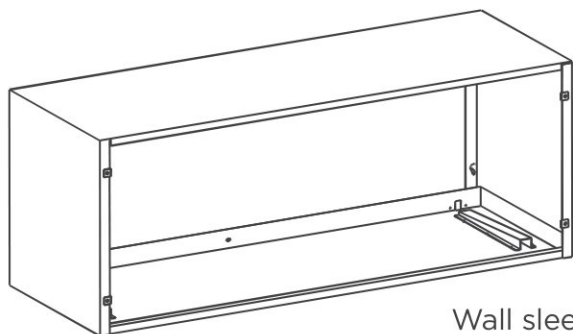


⑥ Screws* 4
(for installing the wall sleeve)



⑦ Cable (optional)

What you need to purchase



Wall sleeve

(Not Included)

Prepare the following tools



Gloves



Goggles
& masks



Screwdriver



Pencil



Drill



Ruler or tape measure



Level

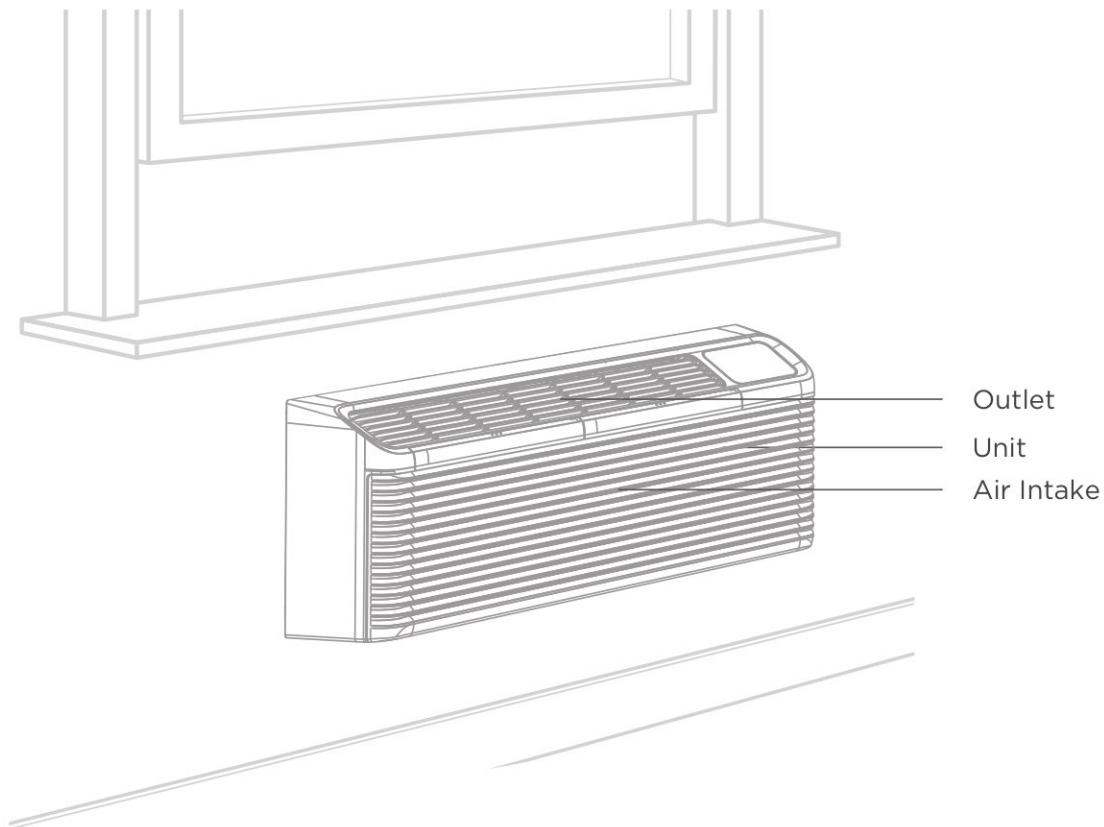
(Not Included)

Installation Overview



NOTE ON ILLUSTRATIONS:

Illustrations in this manual are for explanatory purposes. The actual shape of your unit may be slightly different. The actual shape shall prevail.



WARNING:

Read these instructions completely and carefully.

- **IMPORTANT** - Save these instructions.
- **IMPORTANT** - Observe all governing codes and ordinances.

When handling the unit, be careful to avoid cuts from sharp metal edges and aluminum fins on front and rear coils. Please wear cut-resistant gloves.

- The cold climate version can discharge condensed water or defrost water outdoors in the form of a spray. Before installing the unit, please ensure there are no sidewalks, roads, or obstacles within 2 meters (for details, please refer to the installation scenario leaflet). If the installation requirements are not met, please conduct an on-site assessment with the installer.
- The cold climate version can also drain water through a water pump or use the conventional drainage method by draining through a wall sleeve.
- The water system components (water pump, filter, and screen) require regular maintenance. Please refer to the maintenance manual for detailed maintenance procedures.

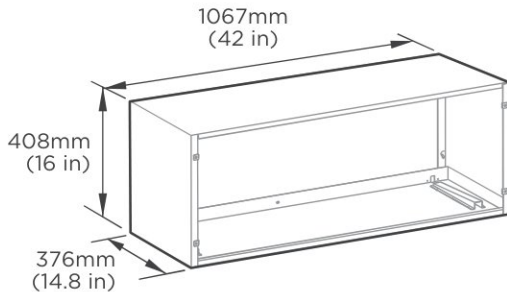
Product Installation

1 Preparing for Installation

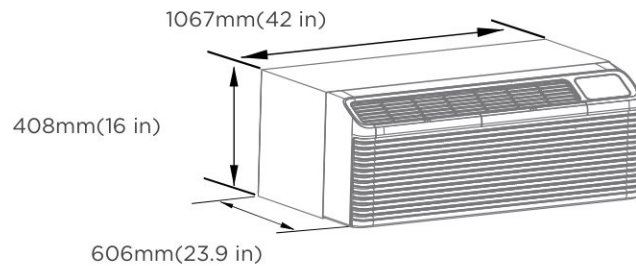
⚠ CAUTION

- There are sharp edges that can cause serious cuts.
- When lifting the air conditioner, it is HEAVY. Use 2 people to lift.

Installation size confirmation:

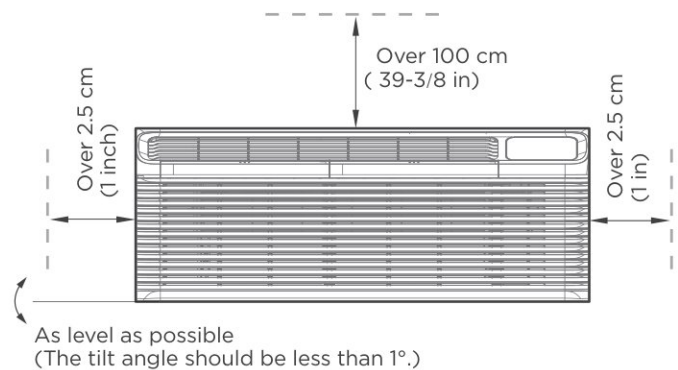
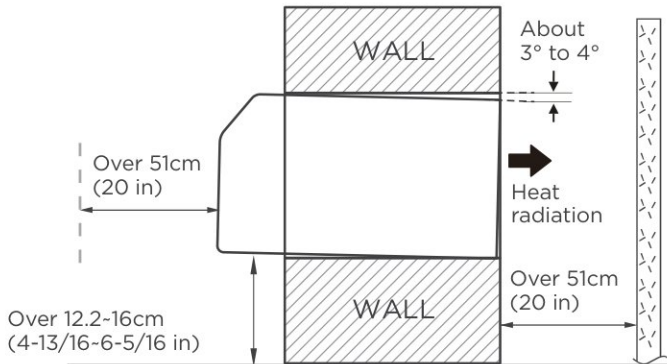


Wall sleeve size requirements (wall hole size should refer to the wall sleeve size)



Product size

Confirmation of installation position::



- For the existing sleeve, you should measure the wall sleeve dimensions.
- Install the new air conditioner according to these installation instructions to achieve the best performance. All wall sleeves used to mount the new air conditioner must be in good structural condition and have a rear grille that securely attaches to the sleeve or the flange of the sleeve to secure the new air conditioner.
- To avoid vibration and noise, make sure the unit is installed securely and firmly.
- When installing the sleeve, make certain there is nothing within 20 inches of the back that would interfere with heat radiation and exhaust airflow.



NOTE: To ensure better performance, do not place any obstacles near the air outlet.

Step 1: Attach insulation A to the wall sleeve.

- If using the old wall sleeve, the insulation on the wall sleeve needs to be replaced. First, remove the old insulation from the sleeve, then attach insulation A from the accessories. (See Fig. 1.)
- If using the new wall sleeve, simply attach insulation A. (See Fig. 1.)

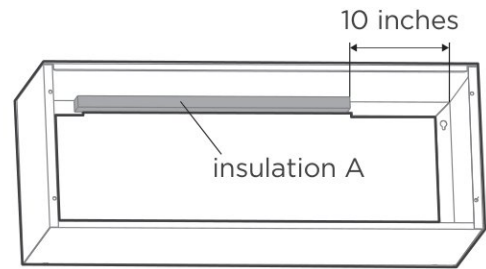


Fig. 1

Step 2: Install the wall sleeve (if any).

Refer to the installation instructions of the sleeve assembly for details. To avoid vibration and noise, make sure the wall sleeve is installed securely and firmly. (See Fig. 2.)

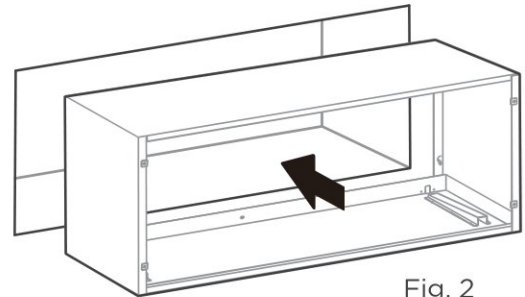


Fig. 2

Step 3: Remove the front panel.

1. Pull out at the bottom to release it from the tabs.
2. Lift the front panel up. (See Fig. 3.)

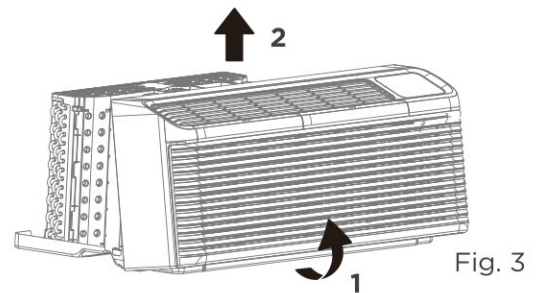


Fig. 3

Step 4: Open and close the vent door (if needed).

- Remove the 2 shipping screws and the metal cover plate to open the vent door. (See Fig. 4.)
- Reinstall the metal cover plate to close the vent door.

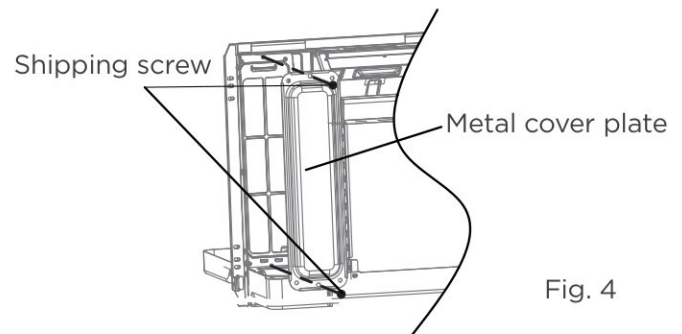


Fig. 4

**NOTE:**

The metal cover plate should be properly stored when removed. It needs to be reinstalled to close the vent door.

After removing the metal cover plate, reinstall the screws back into their original holes.

NOTE: When the metal cover plate is removed, some outdoor air will be drawn into the room. This will reduce heating or cooling efficiency.

Energy Tip: Keep the metal cover plate in the closed position to prevent unconditioned air from entering the room.

Step 5: Attach insulation B to the rear panel.

If using the old rear grille, remove the insulation from the rear grille, then attach insulation B to the unit's rear panel. (See Fig. 5.)

If using the new rear grille, do not attach any insulation to the rear grille; attach insulation B to the unit's rear panel. (See Fig. 5.)

Align the two insulation strips with the left and right edges of the rear panel respectively, then adhere them.

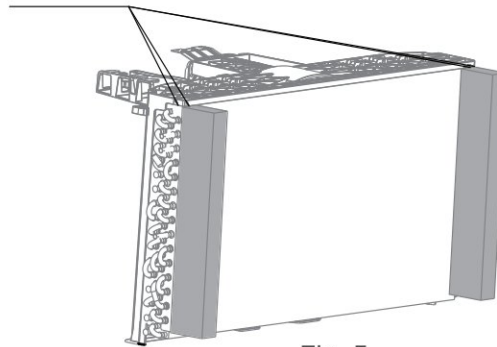


Fig. 5

Step 6: Install the unit.

Lift the unit level and then slide unit into the wall sleeve until firmly against the front of the wall sleeve and secure with 4 screws and washers (supplied in the SLEEVE ASSEMBLY) through the unit flange holes. (See Fig. 6 and Fig. 7.)

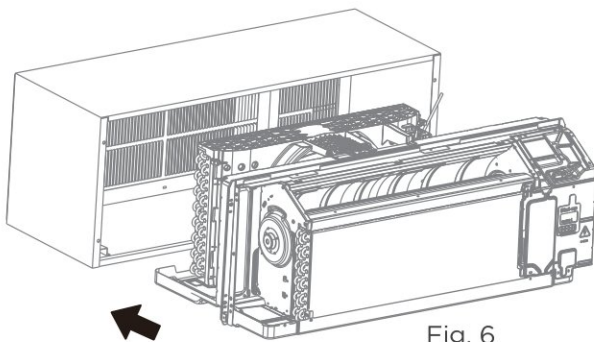


Fig. 6

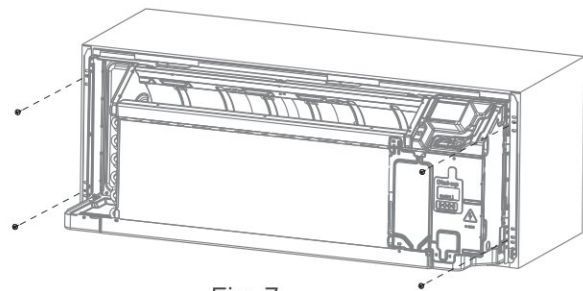


Fig. 7

Step 7: Install the front panel.

1. Place tabs over the top rail.
2. Push inward at the bottom until the panel snaps into place.

(See Fig. 8.)

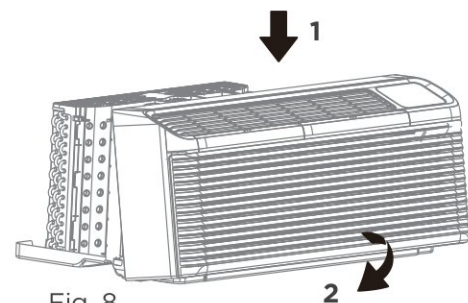


Fig. 8

⚠ CAUTION

- Do not put obstacles around the air inlet or outlet of the unit, such as window curtain etc.
- Always insert the filter securely, clean the filter once every 3 months, as required.

DIP Switch Configurations

⚠ CAUTION

The unit must be powered off to effectively change the DIP switch configuration.

Removing the front panel

Step 1: Pull out at the bottom to release it from the tabs, then lift the front panel up. See Fig. 9.

Step 2: Remove the rubber grommet to set the DIP switches. Reinstall the rubber grommet after you finish. Do not discard the rubber grommet. See Fig. 10.

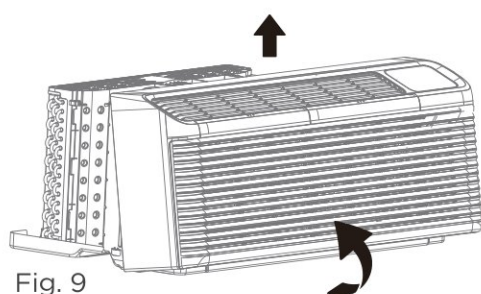


Fig. 9

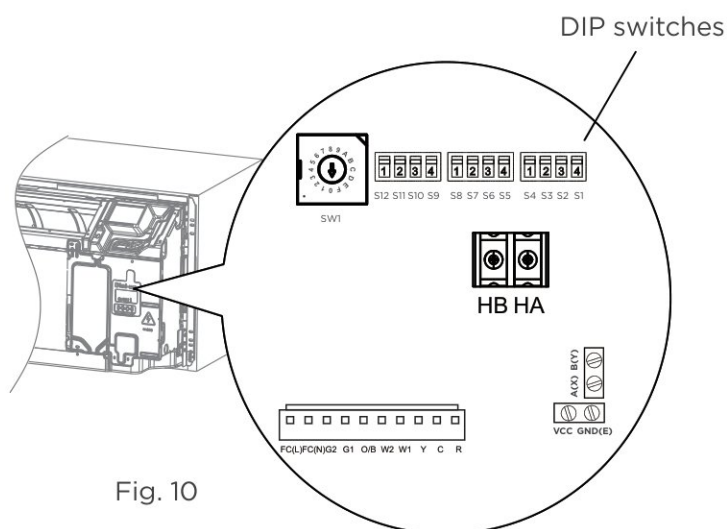


Fig. 10

DIP SWITCH CONFIGURATIONS

- See Table 1 (on the next page) and Fig. 11 for DIP Switch configurations and functions of each DIP switch position.

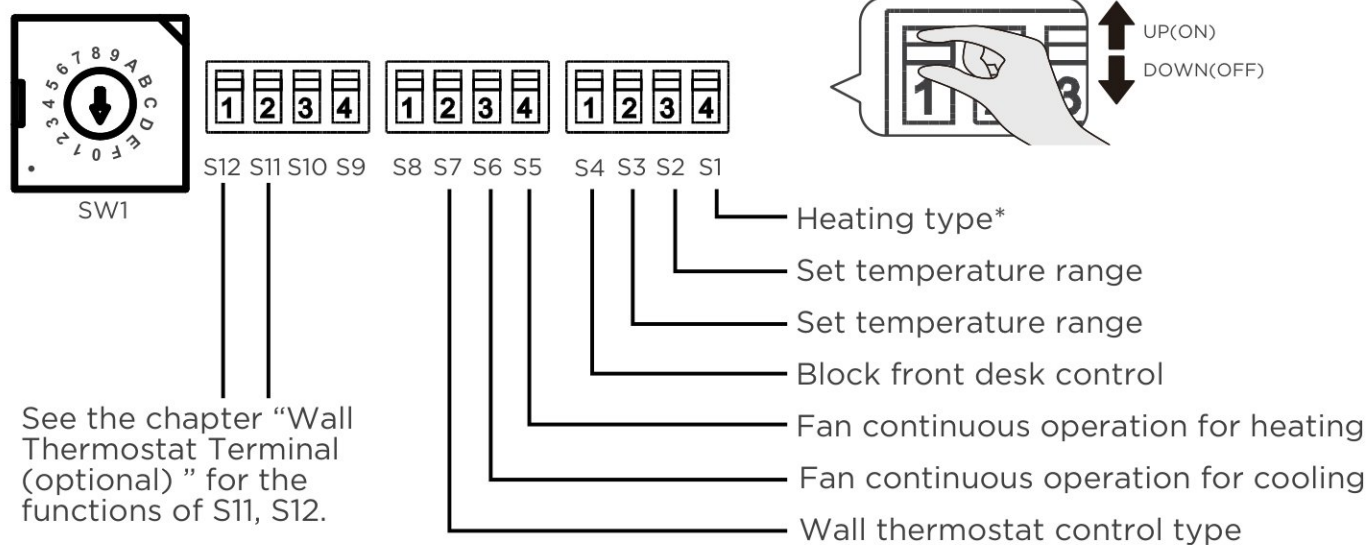


Fig. 11

*: S1 only works for units with electric heating.

Table 1 - DIP switch configurations

Dip Switch	Up(ON)-1	Down(OFF)-0
S1	Heating mode with only electric heating	Heating mode with electric heating or heat pump heating
S2 S3	Setting Temperature Range: S2=OFF, S3=OFF: 60°F-86°F; S2=ON, S3=OFF: 63°F-80°F; S2=OFF, S3=ON: 65°F-78°F; S2=ON, S3=ON: 68°F-75°F.	
S4	Block front desk control	Allow front desk control
S5	Indoor fan continuous operation is enabled in heating mode. Allows the fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting.	Indoor fan continuous operation is disabled in heating mode. After both the compressor and electric heating are turned off, the fan will cycle on and off.
S6	Indoor fan continuous operation is enabled in cooling mode. Allows the fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting.	Indoor fan continuous operation is disabled in cooling mode. After the compressor is turned off, the fan will cycle on and off.
S7	The device can only be controlled by the wall thermostat.	The device can be controlled by the panel, wall thermostat, and wired controller. Signals from the wall thermostat have the highest priority.

S1: Heating mode

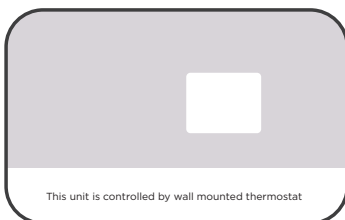
When your unit doesn't come with electric heating, this switch doesn't take effect.

S2, S3: Set Temperature range limits

Set the range of temperature control.

S7: Wall Thermostat control

A wall thermostat can be connected to the unit. If the DIP switch is set to ON, the device will only process inputs from the thermostat. Inputs from the panel, remote control, etc., will be invalid. If the DIP switch is set to OFF, the device can be controlled by the panel, remote control, wired controller, and thermostat. When the thermostat outputs a control signal to the air conditioner, the air conditioner will prioritize the input from the thermostat.



Control panel sticker

NOTE: When S7 is set to ON, the device displays LC. The control panel does not respond. The unit can be controlled by using the Wall Thermostat only. You can install the accessory on the control panel.

When powering on and entering the LC for the first time, the buzzer will be turned off, and the display will automatically turn off.

NOTE:

Each time you set the DIP switches, first turn off the unit and then disconnect the power. Then adjust the DIP switches. Wait for 2 minutes before reconnecting the power for the settings to take effect.

Panel Control Configurations (optional)

Activate panel control configurations

- Press the power button to switch the unit to standby status. Press and hold the $\vee$ and $\wedge$ simultaneously for 3 seconds to activate panel control configurations. (See Fig. 12.)

Configuration

- See Table 2 for panel control configurations and functions.
- Press the $\vee$ button to adjust the serial number, press the down button to adjust the function corresponding to that serial number.
- The LED will display Sx, Fx, Hx(x could be 1, 2, 3, etc.), and other letters, such as ON, OF, HY, EH, etc., used to indicate the current function serial number and function switch status.

Exit panel control configurations

- Press and hold the $\vee$ and $\wedge$ simultaneously for 3 seconds again, or wait for 30 seconds to exit panel control configurations. The unit will save the latest settings.

NOTE: Exit panel control configurations and turned on the device. Press and hold $\vee$ and $\wedge$ simultaneously for 3 seconds will alternate the temperature display between $^{\circ}\text{C}$ & $^{\circ}\text{F}$ scales.

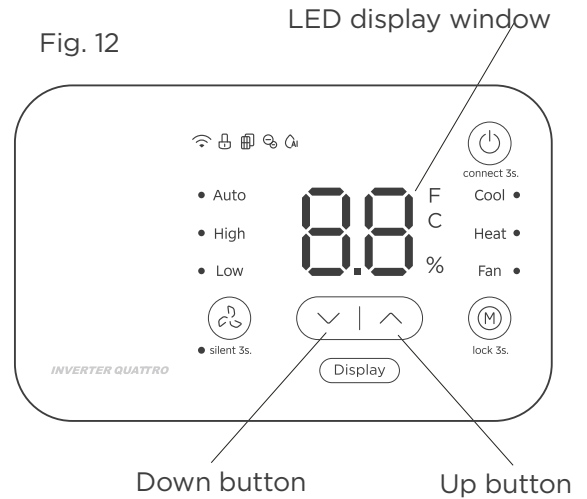
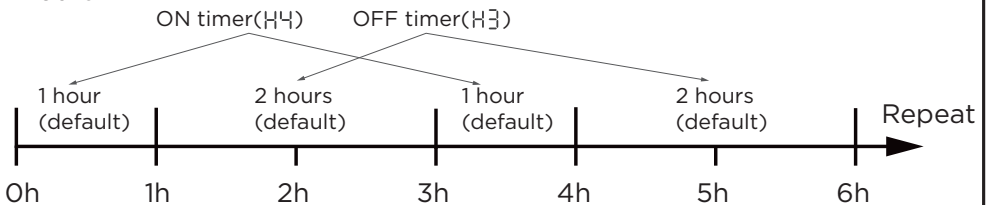


Table 2 - Panel control configurations

Aux Display	Function	Settings
50	Control method	AC Panel control. DIP switches do not work. DP Configure through DIP switches. Status displayed for S1-S7 can only be viewed and cannot be adjusted on the panel.
51	Heating mode (optional)	EH Electric heating only HY Electric heating or heat pump NOTE: When your unit doesn't come with electric heating, this switch doesn't take effect.
52 53	Temperature range:	52 → ...0...60... 53 → ...0...86... =60°F-86°F; 52 → ...0...63... 53 → ...0...80... =63°F-80°F; 52 → ...0...65... 53 → ...0...78... =65°F-78°F; 52 → ...0...68... 53 → ...0...75... =68°F-75°F. 52 → ...0...60... 53 → ...0...86... =60°F-86°F (Default range of the unit) NOTE: S2, S3 work together. When you change either S2 or S3, the other one will change accordingly,
54	Blocking front desk control	ON Block front desk control OF Allow front desk control NOTE: Adjust the DIP switch S4 to OFF and F6 on the panel to F6 for configuration of 54 on the panel to take effect.

Aux Display	Function	Settings									
55	Indoor fan continuous operation in heating mode	ON Indoor fan continuous operation is enabled in heating mode. Allows the fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting. OF Indoor fan continuous operation is disabled in heating mode. After both the compressor and electric heating are turned off, the fan will cycle on and off. NOTE: This setting is invalid in 24V mode.									
56	Indoor Fan Continuous Operation in Cooling Mode	ON Indoor fan continuous operation is enabled in cooling mode. Allows the fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting. OF Indoor fan continuous operation is disabled in cooling mode. After the compressor is turned off, the fan will cycle on and off. NOTE: This setting is invalid in 24V mode.									
57	Wall thermostat control	TH The device can only be controlled by the wall thermostat HY The device can be controlled by the panel, remote control, wired controller, and thermostat. When the thermostat outputs a control signal to the air conditioner, the air conditioner will prioritize the input from the thermostat.									
F1	Air flow speed of the makeup air system (optional)	Auto fan <table border="0"> <tr> <td>...1...00... 60CFM</td> <td>..0...70... 45CFM</td> <td>..0...40... 30CFM</td> </tr> <tr> <td>..0...90... 55CFM</td> <td>..0...60... 40CFM</td> <td>..0...01... 20CFM</td> </tr> <tr> <td>..0...80... 50CFM</td> <td>..0...50... 35CFM</td> <td>OF 0CFM</td> </tr> </table> NOTE: Airflow data are based on tests conducted without the MERV 8 filter installed.	...1...00... 60CFM	..0...70... 45CFM	..0...40... 30CFM	..0...90... 55CFM	..0...60... 40CFM	..0...01... 20CFM	..0...80... 50CFM	..0...50... 35CFM	OF 0CFM
...1...00... 60CFM	..0...70... 45CFM	..0...40... 30CFM									
..0...90... 55CFM	..0...60... 40CFM	..0...01... 20CFM									
..0...80... 50CFM	..0...50... 35CFM	OF 0CFM									
F2	Smart dehumidification level	40 ~ 60 40%~60% (Percent RH) Auto Auto OF The device won't control the humidity level NOTE: For F2 to take effect, you need to set the device to cooling mode when it's powered on, before you turn the unit to standby status and activate the panel control configurations. Switching to another mode will cancel this function.									
F3	Negative ions function (optional)	ON On OF Off NOTE: Only works if the device comes with negative ions function. When the function is on, the ion generator is energized and will help to remove pollen and impurities from the air and trap them in the filter.									

Aux Display	Function	Settings	
F4	Indoor low temperature protection	Degree Fahrenheit ...0...32... ~ ...0...60... Degree Celsius ...0...00... ~ ...0... 16... OF	When the indoor temperature is below the set temperature(32°F-60°F or 0°C-16°C), the device automatically starts heating. When the low temperature protection is triggered, the panel displays FP. Low temperature protection is disabled.
F5	Indoor high temperature protection	Degree Fahrenheit ...0...86... ~ ...0...99... Degree Celsius ...0...30... ~ ...0...37... OF	When the indoor temperature is above the set temperature(86°F-99°F or 30°C-37°C), the device automatically starts cooling. When the high temperature protection is triggered, the panel displays HP. High temperature protection is disabled.
F6	Front Desk Control Mode or Occupancy Control (optional)	FC Front Desk Control Mode OC Occupancy Control Mode. When your system is connected to an occupancy signal, you can fine-tune the response behavior of the makeup air system through channel H5 in the settings menu.	
H1	Outdoor low temperature protection of makeup air system (optional)	Degrees Fahrenheit ...0...23... ~ ...0...41... Degrees Celsius ...0...-5... ~ ...0...05... OF	When the outdoor temperature is below the set temperature(23°F-41°F or -5°C-5°C), the makeup air system stops working. Low temperature protection of makeup air system is disabled.
H2	Outdoor high temperature protection of makeup air system (optional)	Degrees Fahrenheit ...0...99... ~ ...1...13... Degrees Celsius ...0...37... ~ ...0...45... OF	When the outdoor temperature is above the set temperature(99°F-113°F or 37°C-45°C), the makeup air system stops working. High temperature protection of makeup air system is disabled.

Aux Display	Function	Settings	
H3	Makeup air system OFF timer (optional)	01~24 OF	Makeup air system OFF timer: 1-24 hours, in 1-hour increments. Makeup air system OFF timer is disabled
H4	Makeup air system ON timer (optional)	01~24 OF	Makeup air system ON timer: 1-24 hours, in 1-hour increments. Makeup air system ON timer is disabled. Make up air system cycle timer function description To keep indoor air fresh while saving energy, this system supports a “cycle ventilation” mode. You can customize how long the makeup air system runs each time and how long it remains off between runs. The system will then automatically cycle according to the set schedule. -Example: Within every 3-hour period, the device runs for 1 hour and stops for 2 hours.  - Operation Tips Flexible configuration: If you don't want to use this cycle function, set both H3 and H4 to OF. If you want to use the cycle function later, both the timer ON and timer OFF settings must be configured; otherwise, the system will operate with the default 1-hour setting.
H5	Makeup air system behavior when occupancy signal is received (optional)	OF When there are people in the room, the makeup air system doesn't run. When there's nobody in the room, the makeup air system runs according to relevant settings. ON When there are people in the room, the makeup air system runs according to relevant settings. When there's nobody in the room, the makeup air system doesn't run. -E The makeup air system ignores the occupancy signal, and runs according to relevant settings. NOTE: Only works when F5 is set to 0C.	
H6	Humidity protection of the makeup air system behavior (optional)	35~85 Set an upper humidity limit (35%-85% RH). The system monitors the indoor humidity in real time. Once the current indoor humidity is detected to exceed your set value, the makeup air system stops working. OF The makeup air system ignores the humidity level, and works according to relevant settings.	

Wall Thermostat Terminal (optional)



IMPORTANT

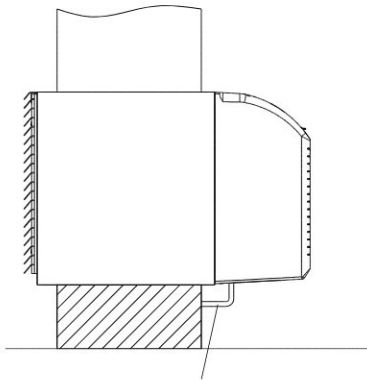
Only trained, qualified personnel should access the electrical panel on the unit and install electrical accessories. Please contact your local electrical contractor, dealer, or distributor for assistance.

Step 1:

Thermostat Wire Routing

Thermostat wire is field-supplied. Recommended wire gauge is 18- to 20-gauge solid thermostat wire.

NOTE: It is recommended that extra wires be run to the unit in case any are damaged during installation. Thermostat wire should always be routed around or under, NEVER through, the wall sleeve. The wire should then be routed behind the front panel to the easily accessible terminal connector. (See Fig. 13.)



THE THERMOSTAT WIRE ROUTING
(UNDER SLEEVE, BEHIND FRONT PANEL)

Fig. 13 - Proper Wire Routing Beneath Unit

NOTE: Refer to thermostat installation instructions for details on installing the wall thermostat.

Step 2:

Installation instructions for some types of wall thermostats (you can consult with the sales agency or manufacturer for details)

Remove 5 screws as shown below and remove the cover panel.

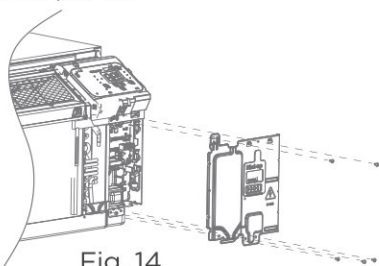
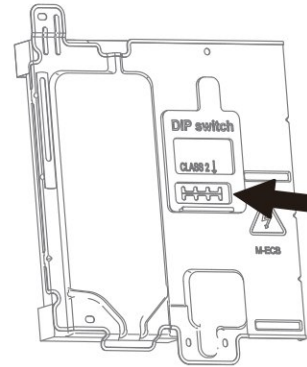


Fig. 14

CAUTION: It is very important to retighten these five screws after completion.



CAUTION:

If you need to route the wire out through the fireproof sheet-metal area, you may remove the rubber grommet, and then reinstall it. Do not discard the rubber grommet.

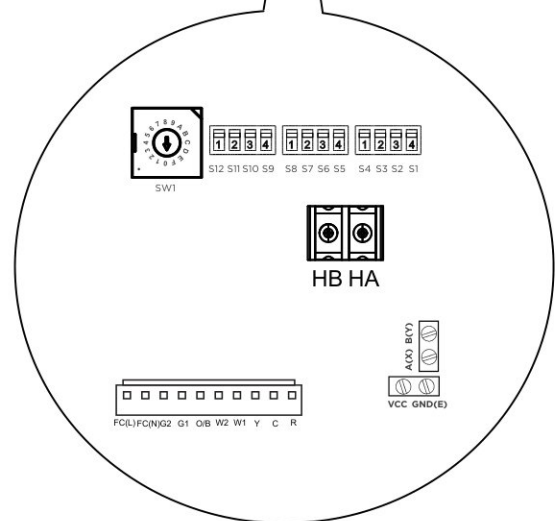
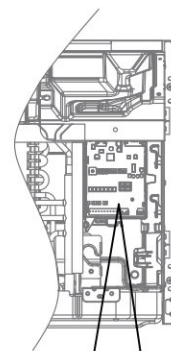
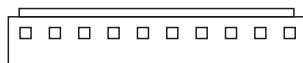


Fig. 15

1. Wall Thermostat (24V AC) (optional)

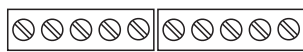
PTHP terminal connections for other wall thermostats

MODE A (standard)



FC(L) FC(N) G2 G1 O/B W2 W1 Y C R

MODE B (optional)



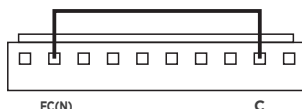
FC(L) FC(N) G2 G1 O/B W2 W1 Y C R

Terminal	Designation	MODE A wire color
FC(L)	Front desk control terminal L	Brown
FC(N)	Front desk control terminal N	Pink
G2	Low fan speed	Purple
G1	High fan speed	Green
O/B	4-way valve; Reverse cycle (Energized in Heat) for heat pump models	Blue
W2	Electric heater stage 1	White
W1	Electric heater stage 1&2	White
Y	Compressor	Yellow
C	24V AC terminal N (Neutral), Common	Black
R	24V AC terminal L	Red

Occupancy signal wiring (If the thermostat supports occupancy signal.)

If you decide to use the occupancy function, front desk control will not be available.

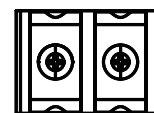
	Actual terminal	Wiring method
OC(L)	FC(L)	Connect to the thermostat's occupancy signal.
OC(N)	FC(N)	Connect FC(N) to C



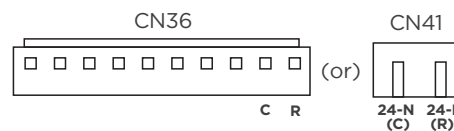
Note

1. If the thermostat has only one G signal, connect it to G1 first.
2. If the thermostat has only one W signal, connect it to W1 first. The system will automatically operate electric heater stage 1 or stage 2.
3. Thermostat output: O/B + G + Y signals, the unit will automatically operate in heat pump mode or electric heating mode, with heat pump operation given priority.
4. Thermostat output: G + W signals. The unit will operate electric heating only.
5. Please confirm the wiring method according to the unit's 24V control logic and the thermostat being used. If you are unable to confirm, please contact your dealer.

2. NON-POLARITY WIRED CONTROLLER (optional, developing)

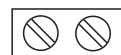
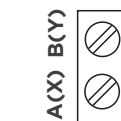


HB HA

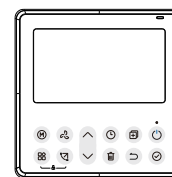


HA	COMMUNICATION	NON-POLARITY WIRED CONTROLLER
HB		
R	24V AC	
C		

3. Wired Controller (12V) (optional)

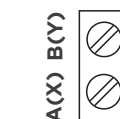


VCC GND(E)



VCC	12V, RS485 wired controller
GND	
A	
B	

4. CCM(optional)



GND(E)

E	RS485 CCM
X	
Y	

Network address is configured via DIP switch S12, S11 and SW1. The corresponding address assignment is as follows:

S12	S11	Base Address
OFF	OFF	0
OFF	ON	16
ON	OFF	32
ON	ON	48

FRONT DESK CONTROL

The controller can handle a switch signal from FC(L) and FC(N) inputs, called front desk control. Input must be 24VAC. If the system does not receive a 24VAC signal, it will turn off; otherwise, the unit runs in normal control. The S4 DIP switch can control the FRONT DESK CONTROL feature.

CAUTION

UNIT DAMAGE HAZARD

- Failure to follow this caution may result in equipment damage or improper operation.
- Improper wiring may damage the unit's electronics. Common busing is not permitted. Damage or erratic operation may result.

NOTE:

- Use 4-way terminal for heat pump connection only.
- The wall thermostat must energize the 4-way valve on heat pump mode.
- For thermostats that have only one fan speed output (on or auto), the fan speed is determined by how the terminal connector is wired. If a Low fan is desired, wire the G output from the thermostat to (G2) on the unit's terminal block. If a High fan is desired, wire the G output from the thermostat to (G1) on the units' terminal block.
- The wall thermostat must be set according to the proper unit type: heat pump or no heat pump.
- If the S7 is set to simultaneous control by the wall thermostat and the display panel, then when the terminal signal input is correct, the LED will display LC.
- Please do not remove the control panel.

Operation Instructions

Control Panel

NOTE:

The control panel keypad will look like the following Fig. 16. For some models with REMOTE SIGNAL RECEPTOR, the unit can be controlled by either the control panel alone or the remote controller. (Some models have no REMOTE SIGNAL RECEPTOR.)

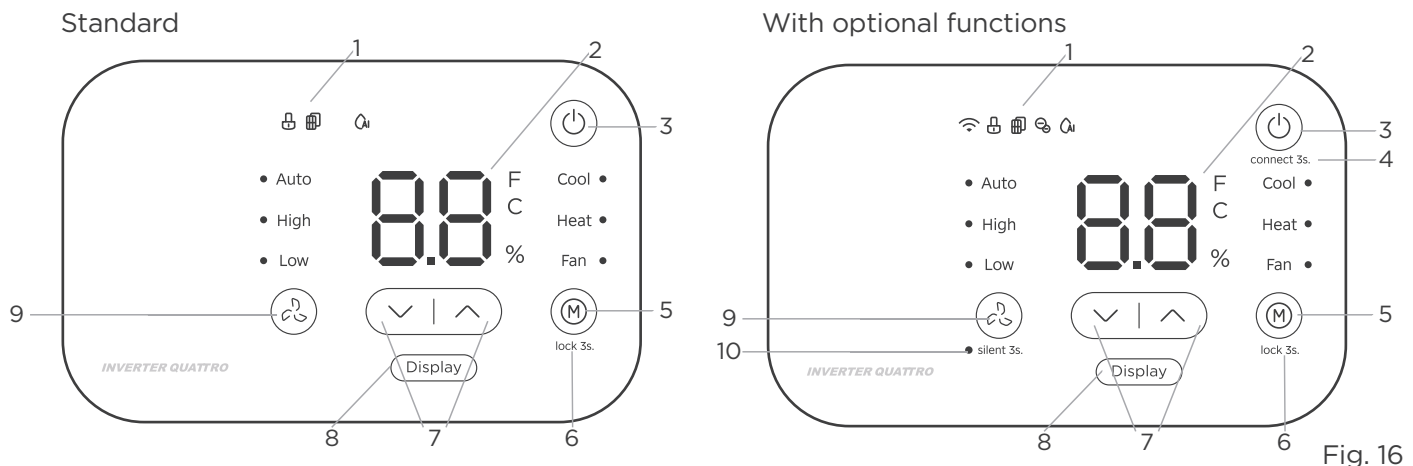
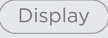


Fig. 16

The illustrations of the unit in this manual are for illustrative purposes only and may differ from the actual unit you purchased. Please refer to the actual unit you purchased for specific details.

		Description
1	Lock Icon	The icon appears to indicate that the panel lock has been turned on.
	Check Filter Icon	The icon appears to indicate that the air filter, pump filter (some units), and make up air filter (optional) needs to be cleaned. The filter indicator will illuminate after 900 hours of operation. Contact an authorized service technician for cleaning filters. Pressing the Display button for 3 seconds will reset the filter clean indicator.
	Connect Icon (optional)	The icon appears to indicate that the wireless module has been activated.
	Negative Ion Icon (optional)	The icon appears to indicate that the negative ion function has been activated.
	Smart dehumidification (optional)	Icon appears to indicate that the smart dehumidification function has been activated.
2	Display	Shows the set temperature in°C or °F. While on Fan only mode, it shows the room temperature. Control code (on some models): L $\square$ - Pads on the control panel are not available. The unit can be set by using the wired controller only. F $\square$ - Pads on the control panel and the wired controller are not available. The unit can only be controlled using FRONT DESK CONTROL Other codes: L $\square$ - Room temperature is lower than 0°C/32°F; H $\square$ - Room temperature is higher than 37°C/99°F; FP - Indoor low temperature protection. HP - Indoor high temperature protection.

		Description
2	 Display	Error codes: The unit may stop operating due to a malfunction with the unit. If this occurs, an error code may appear on the display as shown below. Wait 10 minutes as the problem may resolve itself. If not, disconnect the power, then reconnect it. Turn the unit on. If the problem persists, disconnect the power and contact customer service. Error codes appear and begin with the letters as noted below in the window display of the indoor unit: EH(xx), EL(xx), EE(xx), PH(xx), PL(xx), PE(xx). NOTE: When an error occurs, unplug the unit. Wait for a few minutes and plug it back in. If the error is repeated, call for service. NOTE: All the illustrations in this manual are for explanatory purposes only. Your air conditioner may be slightly different. The actual shape shall prevail.
3	 Power - Function	· Press the POWER button to turn the unit on or off.
4	 Wireless connection (optional)	· To connect your equipment to wireless, press the power button for 3 seconds to initiate the wireless connection mode. The display shows RP to indicate the unit is in the wireless connection mode. Refer to the wireless section for further instructions. · If the connection is successful within 8 minutes, the unit will exit wireless connection mode automatically, and the connect LED will illuminate. · If the connection fails within 8 minutes, the unit exits wireless connection mode automatically, and the connect LED will not illuminate. · After the wireless connection is successful, you can press and hold the power and Down buttons for 3 seconds to turn off the wireless function, and the LED display will show 0F for 3 seconds. Press the power and up buttons for 1 second to turn the wireless function back on, and the LED display will show 0N for 3 seconds.
5	 Mode - Function	· Push this button to cycle through the modes. The indicator light beside the "MODE" option will illuminate, identifying the mode selected. To operate in Cool mode : Choose Cool Mode to set the cooling function. Use the Up (^) and Down (v) buttons to choose the desired temperature. When Cool Mode is selected, the fan speed can be adjusted by pressing the fan button. To operate in Fan Only Use this function only when cooling is not desired. You can choose any fan speed you prefer. During this function, the display will show the actual room temperature, not the set temperature, as in the cooling mode. In Fan Only mode, the set temperature cannot be adjusted. To operate in Heat mode (not suitable for cooling-only models): Choose Heat mode to set the heating function. Use the Up and Down buttons to choose the desired temperature. When Heat mode is selected, the fan speed can be adjusted by pressing the fan button. NOTE: The heat pump and electric heater cannot be run at the same time. NOTE: If the unit has a DIP SWITCH feature, the temperature range is controlled by the DIP switches. See DIP SWITCH CONFIGURATIONS for details.

		Description
6	 lock 3s Panel locking - Function	Pressing the mode button for 3 seconds will turn on or off the lock panel function. The remote control still works. The panel locking indicator turns on when you lock the control panel. NOTE: When the control panel is locked, pressing any other key will make the panel locking indicator flash for 3 seconds.
7	 Up and down buttons	Push the UP (or DOWN) button to increase (or decrease) the set temperature of the unit in cooling or heating mode. The temperature can be set in increments of 1°C (1°F). The setting temperature appears in the display. NOTE: When the unit is turned on, press and hold the  and  buttons simultaneously for 3 seconds will alternate the temperature display between °C & °F scales.
8	 Display button	Press the Display button to turn the LED display and air conditioner buzzer on and off, which creates a comfortable environment.
9	 Fan (fan speed) - Function	Each time you press this button, the fan speed cycles through the settings.
10	 silent 3s. Silent- Function (optional)	Pressing the Fan button for 3 seconds will turn on or off the silent function. The fan will run at the silent setting.

NOTE: When there are wide differences between the **USERS MANUAL** and the **Remote controller Illustration** on function description, the description in the **USERS MANUAL** shall prevail.

Care and Maintenance

⚠ CAUTION

UNIT DAMAGE HAZARD Failure to follow this caution may result in equipment damage or improper operation. Airflow restriction may cause damage to the unit.

FRONT PANEL AND CASE

- Always **TURN OFF** your AC system and disconnect its power supply before cleaning or maintenance.
- Only use a soft, dry cloth to wipe the unit clean. You can use a cloth soaked in warm water to wipe it clean if the unit is especially dirty.
- Do not use chemicals or chemically treated cloths to clean the unit
- Do not use benzene, paint thinner, polishing powder or other solvents to clean the unit. They can cause the plastic surface to crack or deform.
- Do not use water hotter than 40°C (104°F) to clean the front panel. This can cause the panel to deform or become discolored.

OUTDOOR COIL

- The coil on the outdoor side of the unit should be checked regularly.
- Any maintenance and cleaning of the outdoor coil should be performed by an authorized dealer or a licensed service provider.

NOTE: Never use a high-pressure spray on the coil.

AIR FILTERS

⚠ CAUTION

Failure to follow this caution may result in equipment damage or improper operation. Do not operate the unit without filters in place. If a filter becomes torn or damaged, it should be replaced immediately. Operating without filters in place or with a damaged filter will allow dirt and dust to reach the indoor coil and reduce cooling, heating, airflow, and efficiency of the unit. Airflow restriction may cause damage to the unit.

- The most important thing you can do to maintain unit efficiency is to clean the filters once every two weeks as required. Clogged filters reduce cooling, heating, and airflow

- Keeping filters clean will:

- Decrease the cost of operation.
- Save energy.
- Prevent clogged indoor coil.
- Reduce risk of premature component failure.

- To Clean Air Filters:

Vacuum to remove heavy dirt. Run water through the filter. Dry thoroughly before replacing.

-Removing Air Filters

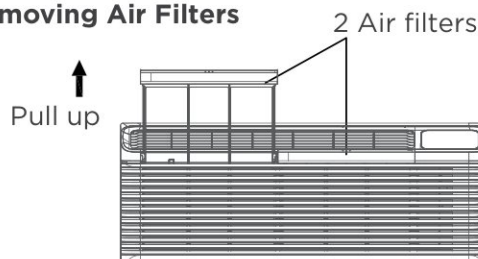


Fig. 18

-Replacing Air Filters

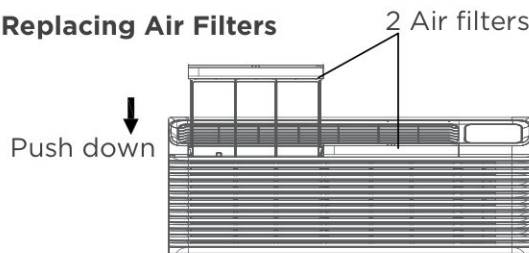


Fig. 19

VENT DOOR FILTER

Contact an authorized service technician for cleaning the vent door filter of this unit.

IMPORTANT: TURN THE UNIT OFF BEFORE CLEANING.

Clean the vent every 3 months or as required.

- Make sure to remove the shipping screw from the vent door. (See Fig. 4.)
- Press down and remove the vent door filter as shown below.
- Clean the filter. Dry thoroughly before replacing.
- Reinstall the vent door filter.

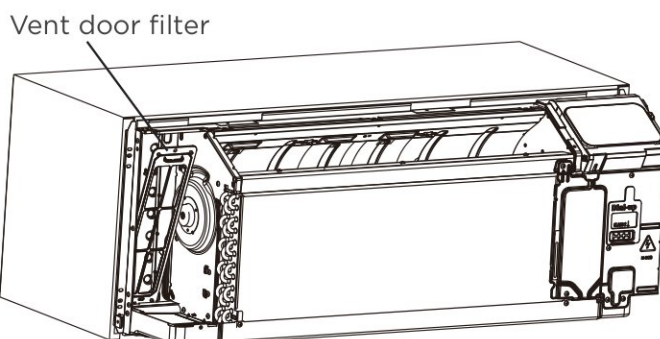


Fig. 20

Troubleshooting

Before calling for service, review this list. It may save you time and money. This list includes common occurrences that are not the result of defective workmanship or materials in this appliance.

Problem	Solution
UNIT DOES NOT START	The unit may have become unplugged. Check that the plug is plugged securely into the wall receptacle. NOTE: Plug has a test/reset button on it. Make sure that the plug has not tripped.
	Fuse may have blown. Replace the fuse. See Note 1.
	The circuit breaker may be off. Reset the circuit breaker. See Note 1.
UNIT NOT COOLING/ HEATING ROOM	The unit air discharge section is blocked. Make sure that curtains, blinds, or furniture are not restricting or blocking the unit's airflow.
	The temperature setting is not high or low enough. NOTE: Set-point limits may not allow the unit to heat or cool the room to the desired temperature. Check the section on DIP switch settings. Reset to a lower or higher temperature setting.
	The unit air filters are dirty. Remove and clean filters.
	The room is excessively hot or cold when the unit is turned on. Allow enough time for the unit to heat or cool the room. Start heating or cooling early before outdoor temperature, cooking heat, or gatherings of people make the room uncomfortable.
	Vent door left open. Close the vent door.
	The unit may be in protection mode. Check the DIP switch and wall thermostat settings for desired comfort.
DISPLAY HAS STRANGE NUMBERS/ CHARACTERS ON IT	The compressor is in a time delay. Wait approximately 3 minutes for the compressor to restart.
	Wait 10 minutes as the problem may resolve itself. If not, disconnect the power, then connect it again. Turn the unit on. If the problem persists, disconnect the power and contact customer service.
UNIT MAKING NOISES	Clicking, gurgling, and whooshing noises are normal during the operation of the unit.
WATER DRIPPING OUTSIDE	If a drain kit has not been installed, condensation running off during very hot and humid weather is normal. See Note 2. If a drain kit has been installed and is connected to a drain system, check gaskets and fittings around the drain for leaks and plugs.
WATER DRIPPING INSIDE	The wall sleeve is not installed level. The wall sleeve must be installed level for proper drainage of condensation. Check that the installation is level and make any necessary adjustments.

Problem	Solution
ICE OR FROST FORMS ON INDOOR COIL	Low outdoor temperature. When the outdoor temperature is approximately 55°F or below, frost may form on the indoor coil when the unit is in Cooling mode. Switch the unit to FAN operation until ice or frost melts.
	The filters are dirty. Remove and clean filters.
COMPRESSOR PROTECTION	Power may have cycled, so the compressor is in a restart protection. Random Compressor restart - Whenever the unit is plugged in or power has been restarted, a random compressor restart will occur. After a power outage, the compressor will restart after approximately 3 minutes. Compressor Protection - To prevent short cycling of the compressor, there is a random startup delay of 3 minutes and a minimum compressor run time of 3 minutes.
DISPLAY “E0” AND “07”	An outdoor fan stall fault has occurred. The causes of the fault include: low-temperature freezing of the fan blades, fan blade jamming, poor wiring connections, electrical control issues, or motor damage, etc.

NOTES:

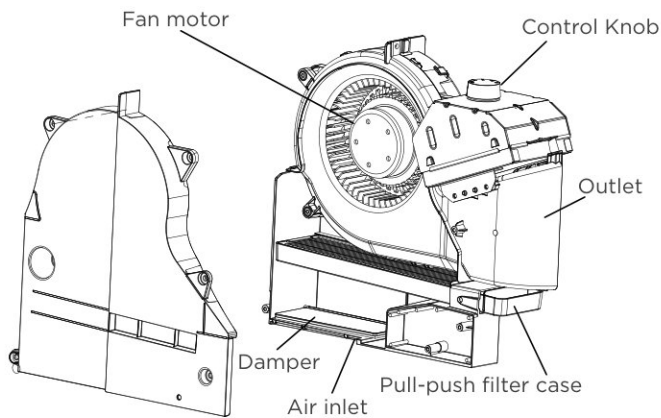
1. If the circuit breaker is tripped or the fuse is blown more than once, contact a qualified electrician.
2. If the unit is installed where condensation drainage could drip in an undesirable location, an accessory drain kit should be installed and connected to the drain system.

Makeup Air Function (optional)

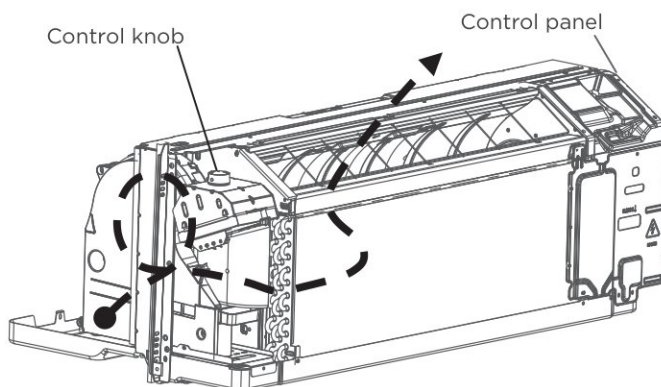
Makeup Air Introduction

Our PTHP can be equipped with a Makeup Air system, providing another option for standard building ventilation design. The Makeup air system is equipped with a dedicated fan, providing positive pressure fresh air for users that do not want to install the system on the roof and connect it to each individual room with ductwork. The Makeup air PTHP offers standard individual room zone control in both cooling and heating applications. The Makeup Air system is connected to the outdoors via a dedicated fan, providing continuous dehumidified fresh air at 10 preset speeds (0 - 60 CFM). Our PTHP and its inverter system can adjust cooling and dehumidification as needed.

The Makeup air system is an independent system that continuously provides makeup air from outdoor air.



Our makeup air system does not introduce humid air directly to indoor room. The air flow path forces the outside air to hit the evaporator first and so it helps to dehumidify (in Cooling mode) or heat up (in Heating mode) the air before mixing with indoor air.



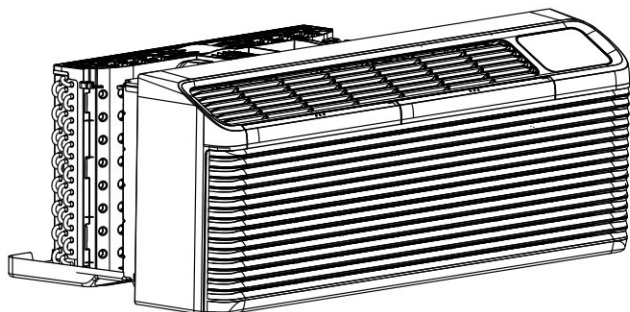
Main Functions

- The module supports control through the control knob, panels, and the mobile app in multiple ways.
- A dedicated fan is set up in the makeup air system, which can be adjusted to 10 preset speeds, ranging from 0 to 60 cubic feet/minute.
- The makeup air system will automatically adjust its operating conditions based on outdoor air conditions when the device is powered (even if the device is in standby mode).
- Paired with our patented inverter tel system, the makeup air system can achieve dehumidification/ pre-cooling (cooling) and pre-heating (heating) of the incoming fresh air.
- The makeup air system comes standard with a humidity sensor. The makeup air system stops operating when the humidity exceeds 60%. The humidity level can be set according to your preference. This feature is available when the control knob is set to AUTO mode.
- The drawer-style filter design allows for cleaning/replacement of the filter without disassembling the entire unit from the wall sleeve.
- The module has a modular design, and easy to maintain.
- It is compatible with optional MERV 8 ventilation filter.
- The module comes with an electric damper, providing better airflow adjustment and preventing heat leakage.
- Power-off memory function is standard. There is no need to reset even in case of power outage.
- The makeup air system is equipped with outdoor temperature protection. When the outdoor temperature is too high or too low, the makeup air system will stop operating. (When the control knob is set to low, medium, high mode, the temperature protection is disabled. It is recommended to use AUTO mode.)
- The unit is equipped with indoor temperature protection. When the indoor temperature is too high or too low, the unit will automatically start cooling or heating.
- The makeup air system is equipped with a purification filter cleaning and replacement reminder function. When cleaning/ replacement is needed, the check filter icon will illuminate.
- This system can be used in conjunction with an approved occupancy system, allowing the ventilation system to be turned on or off as needed when the room is unoccupied.

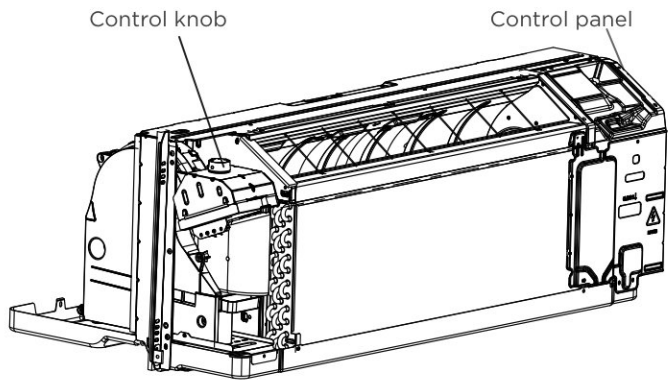
Notice

- It is not recommended to install a makeup air system within 1-2 miles of the coast, as the unit is not treated with anti-corrosion protection and avoid introducing corrosive air into living spaces.
- The makeup air module will increase the heating and cooling load requirements of the room.
 - Please consult your architect or engineer to ensure the PTHP unit is appropriately upsized to accommodate this additional load.
 - Due to this increased load, the energy costs for the room will rise after installation of the makeup air module.
 - It is recommended to set it to the AUTO mode and combine it with an approved occupancy system.
 - Because makeup air raises the room's heat load and requires additional cooling or heating from the unit the building's electrical demand may be affected.
- Additional dehumidification of outdoor air will result in increased condensate production. Therefore, the use of an external drainage pipe is recommended.
- When using an occupancy sensor thermostat with makeup air functionality, the building's overall air design should be considered, as these units may shut off the makeup air function when the room is unoccupied.
- In areas with high external noise levels (e.g., traffic, highways, airports), special consideration is needed to avoid unintentionally introducing noise into the room, which could disturb guests. The operation of makeup air will also generate additional noise, please confirm whether it is acceptable.
- Please keep a distance of at least 1 meter from the makeup air unit, as direct exposure to the airflow may cause discomfort due to either cold or hot air being blown onto your body.
- It is the responsibility of architects, engineers, contractors, and clients to ensure the product complies with all local regulatory requirements.

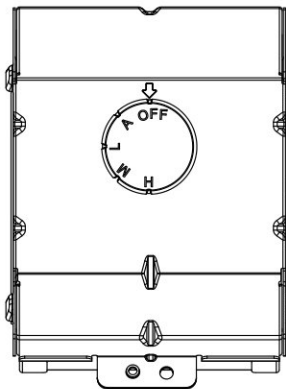
Operating Instructions



- The control knob can be preset to the most required mode for customers.
- The owner is responsible for ensuring that the makeup air is set to the required functions.



- There are various modes that can be set using the auxiliary setting button.
- The control knob has the highest priority. The control knob can be set to off, low, medium, high, and AUTO mode.



- When set to low, medium, or high mode, the makeup air system operates according to the room's makeup air requirements, temperature and humidity, and occupancy status.

Mechanical Knob Settings	Control Value
Low	30CFM
Mid	40CFM
High	50CFM

Airflow data are based on tests conducted without the MERV 8 filter installed.

- Setting the control knob to Low, Mid, or High may lead to condensation formation, increased energy consumption ,and reduced occupant comfort. Selection of AUTO mode is therefore recommended.
- When the knob is set to off, the makeup air system stops operating.

- When the control knob is set to AUTO mode, you can activate the panel control configurations to alter the airflow settings as shown below. See “Panel Control Configurations of Makeup Air System” and table3 for detailed instructions

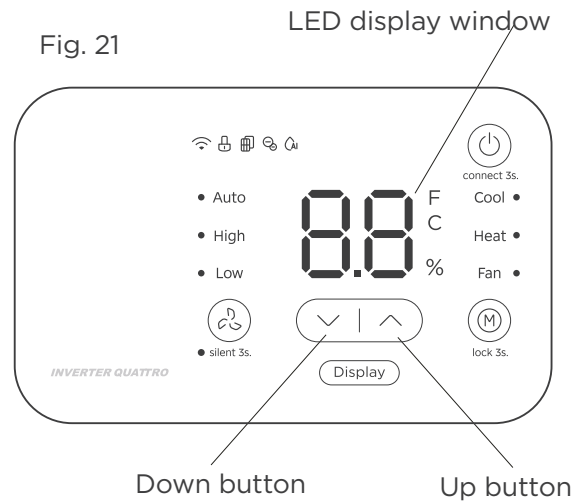
Display	Control Value
A _u	Auto fan
...1...00...	60CFM
...0...90...	55CFM
...0...80...	50CFM
...0...70...	45CFM
...0...60...	40CFM
...0...50...	35CFM
...0...40...	30CFM
...0...01...	20CFM
0F	0CFM

Airflow data are based on tests conducted without the MERV 8 filter installed.

- In AUTO mode, turning off the unit or setting the fan to OFF will cancel fan operation. The next time you need to turn it on, you must set it again.
 - If you do not want to use the fresh-air function, simply turn the control knob to the OFF position.
 - In AUTO mode, the following conditions may prevent the makeup air system from turning on:
 - The makeup air function may have been cancelled because the unit was turned off or the function was disabled.
 - It may be turned off due to excessively high humidity.
 - It may be turned off due to outdoor high-temperature or low-temperature protection.
 - The system may be operating during the timer OFF period.
 - The occupancy function may prevent operation, if it is involved.
- Other fault protections for the makeup air system may be active.

Panel Control Configurations of Makeup Air System

Fig. 21



Activate panel control configurations

- Press the power button to switch the unit to standby status. Press and hold the $\vee$ and $\wedge$ simultaneously for 3 seconds to activate panel control configurations.(See Fig. 21.)

Configuration

- See Table 2 for panel control configurations and functions.
- Press the up button to adjust the serial number, press the down button to adjust the function corresponding to that serial number.
 - The LED will display Sx, Fx, Hx(x could be 1, 2, 3, etc.), and other letters, such as ON, OF, HY, EH, etc., used to indicate the current function serial number and function switch status.

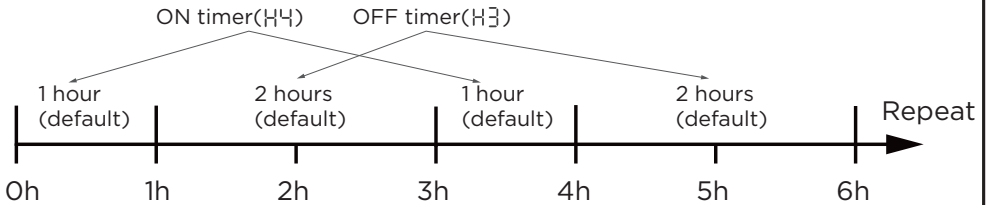
Exit panel control configurations

- Press the up and down buttons together for 3 seconds again, or wait for 30 seconds to exit panel control configurations. The unit will save the last settings.

NOTE: Exit panel control configurations and turn on the unit. Press and hold $\vee$ and $\wedge$ simultaneously for 3 seconds will alternate the temperature display between °C & °F scales.

Table 3 - Panel control configurations of the makeup air system

Aux Display	Function	Settings
F1	Air flow speed of the makeup air system	Auto fan ...1...00... 60CFM ..0...70... 45CFM ..0...40... 30CFM ..0...90... 55CFM ..0...60... 40CFM ..0...01... 20CFM ..0...80... 50CFM ..0...50... 35CFM 0F 0CFM NOTE: Airflow data are based on tests conducted without the MERV 8 filter installed.
F2	Smart dehumidification level	40~60 40%~60% (Percent RH) Auto 0F The device won't control the humidity level NOTE: For F2 to take effect, you need to set the device to cooling mode when it's powered on, before you turn the unit to standby status and activate the panel control configurations. Switching to another mode will cancel this function.
H1	Outdoor low temperature protection of makeup air system	Degrees Fahrenheit When the outdoor temperature is below the set temperature(23°F~41°F or -5°C~5°C), the makeup air system stops working. ...0...23... ~ ...0...41... Degrees Celsius ...0...-5... ~ ...0...05... 0F Low temperature protection of makeup air system is disabled.
H2	Outdoor high temperature protection of makeup air system	Degrees Fahrenheit When the outdoor temperature is above the set temperature(99°F~113°F or 37°C~45°C), the makeup air system stops working. ...0...99... ~ ...1...13... Degrees Celsius ...0...37... ~ ...0...45... 0F High temperature protection of makeup air system is disabled.

Aux Display	Function	Settings	
H3	Makeup air system OFF timer	01~24 OF	The makeup air system OFF timer: 1-24 hours, in 1-hour increments. The makeup air system OFF timer is disabled
H4	Makeup air system ON timer	01~24 OF	The makeup air system ON timer: 1-24 hours, in 1-hour increments. The makeup air system ON timer is disabled. The makeup air system cycle timer function description To keep indoor air fresh while saving energy, this system supports a “cycle ventilation” mode. You can customize how long the makeup air system runs each time and how long it remains off between runs. The system will then automatically cycle according to the set schedule. -Example: In every 3-hour period, the device runs for 1 hour and stops for 2 hours.  - Operation Tips Flexible configuration: If you don't want to use this cycle function, set both H3 and H4 to OF. If you want to use the cycle function later, both the timer ON and timer OFF settings must be configured; otherwise, the system will operate with the default 1-hour setting.
H5	Makeup air system behavior when occupancy signal is received	OF ON -E	When there are people in the room, the makeup air system doesn't run. When there's nobody in the room, the makeup air system runs according to relevant settings. When there are people in the room, the makeup air system runs according to relevant settings. When there's nobody in the room, the makeup air system doesn't run. The makeup air system ignores the occupancy signal, and runs according to relevant settings. NOTE: Only works when F6 is set to 0C.
H6	Humidity protection of the makeup air system behavior	35~85 OF	Set an upper humidity limit (35%-85% RH). The system monitors the indoor humidity in real time. Once the current indoor humidity is detected to exceed your set value, the makeup air system stops working. The makeup air system ignores the humidity level, and works according to relevant settings.

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website. Please check for the latest version.

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