# VRF (Variable Refrigerant Flow)
# **Installation manual**

## V36D0**S6-5P

- Thank you for purchasing this Lennox Product.
- Before operating this unit, please read this manual carefully and retain it for future reference.

LENNOX Powered by SAMSUNG

# Contents

# Safety Information



California Proposition 65 Warning (US)

**⚠ WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

IMPORTANT – This product has been designed and manufactured to meet ENERGY STAR criteria for energy efficiency when matched with appropriate coil components.

However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency.

Installation of this product should follow the manufacturer's refrigerant charging and air flow instructions.

Failure to confirm proper charge and airflow may reduce energy efficiency and shorten equipment life.

## ⚠ WARNING

- Hazards or unsafe practices that may result in severe personal injury or death.

## ⚠ CAUTION

- Hazards or unsafe practices that may result in minor personal injury or property damage.
- Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.

## ⚠ WARNING

- Always disconnect the air conditioner from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- Verify that the air conditioner is not installed in an easily accessible area.

| Symbol | Meaning |
|---|---|
|  | Flammable gas |
|  | Flammable materials |
|   | Refrigerant safety group |
|  | Read installation manual |
|  | Refer to installation manual |
|  | Read service manual |

## ⚠ WARNING

**The installation and testing of this appliance must be performed by a qualified technician.**

- The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe installation of the appliance.

**Always install the air conditioner in compliance with current local, state, and federal safety standards.**

- Do not use means to accelerate the defrost operation or to clean, other than those recommended by LENNOX.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.

# Safety Information



## General information

### ⚠ WARNING

- Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place to be able to use it as a reference after installation.
- For maximum safety, installers should always carefully read the following warnings.
- Store the operation and installation manual in a safe location and remember to hand it over to the new owner if the air conditioner is sold or transferred.
- This manual explains how to install an indoor unit with a split system with two LENNOX units. Using other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non-compliant units.
- The manufacturer shall not be responsible for damage from unauthorized changes or improper electrical connections. The requirements outlined in the "Operating limits" table, included in the manual, shall immediately invalidate the warranty.
- All pipe work including piping material, pipe routing, and installation shall include protection from physical damage in operation and service and comply with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. Any field joints shall be accessible for inspection before being covered or enclosed.
- The air conditioner should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- To prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact LENNOX's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- Inspect the unit, electrical connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- The unit contains moving parts, which should always be kept out of the reach of children.
- Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.
- Do not place containers with liquids or other objects on the unit.
- The air conditioner contains a refrigerant that must be disposed of as special waste. At the end of its life cycle, the air conditioner must be disposed of in authorized centers or returned to the retailer so it can be disposed of correctly and safely.
- Wear protective equipment (such as safety gloves, goggles, and headgear) during installation and maintenance work. Installation/repair technicians may be injured if protective equipment is not properly equipped.
- This unit is a partial unit air conditioner, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying with corresponding partial unit requirements of this International Standard.
- 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 the use of the appliance by a person responsible for their safety.
  Children should be supervised to ensure they do not play with the appliance.

## Installing the unit

### ⚠ WARNING

**IMPORTANT: When installing the unit, always connect the refrigerant tubes first, and then the electrical lines.**

- Always disassemble the electric lines before the refrigerant tubes.
- Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it, and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)
- After completing the installation, always carry out a functional test and provide instructions on how to operate the air conditioner to the user.

- Do not use the air conditioner in environments with hazardous substances or close to equipment that releases free flames to avoid the occurrence of fires, explosions or injuries.
- Do not install the product on a ship or a vehicle (such as a campervan). Salt, vibration or other environmental factors may cause the product to malfunction, electric shock or fire.
- Excessive indoor humidity or clogged condensate drain lines may cause water to drip from indoor units. Do not install the indoor unit where dripping could result in property damage, such as over electronic equipment or other sensitive instruments.
- Our units must be installed in compliance with the space specifications presented in the installation manual to ensure accessibility from both sides and allow repairs or maintenance operations to be carried out.
  The unit's components must be accessible and easy to disassemble without endangering people and objects.
- For this reason, where it is not observed as indicated in the Installation Manual, the cost necessary to reach and repair the unit (safely as required by local regulations) with slings, trucks, scaffolding or any other means of elevation won't be considered in-warranty and charged to end user.
- If any gas or impurities, except R-32 refrigerant, come into the refrigerant pipe, a serious problem may occur and it may cause injury.
  Use the supplied accessories, specified components and tools for the installation.
  - Do not use the pipe and the installation product used for the R-22, R-410A refrigerant.
  - Failure to use the specified components can cause the product to fall, water leakage, electrical shock, and fire. (The pipe and flare components used for R-22, R-410A refrigerant must not be used)

## Power supply line, fuse or circuit breaker

### ⚠ WARNING

- Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner following current local safety standards.
- Always verify that a suitable grounding connection is available.
- Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- Always verify that the cut-off and protection switches are suitably dimensioned.
- Verify that the air conditioner is connected to the power supply following the instructions provided in the wiring diagram included in the manual.
- Always verify that electric connections (cable entry, section of leads, protections...) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of air conditioners.
- Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.

### ⚠ CAUTION

**Make sure that you ground the cables.**

- Do not connect the earth wire to the gas pipe, water pipe, lightning rod or telephone wire. If grounding is not complete, electric shock or fire may occur.

**Install the circuit breaker.**

- If the circuit breaker is not installed, electric shock or fire may occur.

**Make sure that the condensed water dripping from the drain hose runs out properly and safely.**

**Install the power cable and communication cable of the indoor and outdoor unit at least 1m away from the electric appliance.**

**Install the indoor unit away from a lighting apparatus using the ballast.**

- If you use the wireless remote control, reception error may occur due to the ballast of the lighting apparatus.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons to avoid a hazard.

**Do not use the indoor unit for the preservation of food items, plants, equipment, and artwork. This may cause deterioration of their quality.**

**Do not install the indoor unit if it has any drainage problems.**

**This unit is equipped with electrically powered safety measure. For the safety measures to be effective, the unit must be electrically powered at all times after installation, other than when servicing.**

**This unit is equipped with a leak detection system for safety. For leak detection to be effective, the unit must be electrically powered at all times after installation, other than when servicing.**

# Safety Information

## Precautions for using R-32 refrigerant

### General

- This product is pre-charged with mildly flammable gas classified as A2L by ASHRAE. The following precautions and instruction manuals must be followed during installation, operation, servicing and decommissioning of the product.
- The appliance shall be stored in a room without continuously operating ignition sources, like open flames or a gas appliance or an electric heater.
- All national and local regulations shall be observed at all times.
- All pipe-work including piping material, pipe routing and installation shall include protection from physical damage in operation and service, and comply with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection before being covered or enclosed.
- All field piping and joints shall be pressure tested with an inert gas according to prevalent industry standards before refrigerant charging and system commissioning.
- Where additional field charging is required. The installer shall write with a permanent marker the field charge added on the ODU label provided, such that the Total Charge = Factory 'Pre-charge' + field charge.
- For ducted systems, any auxiliary systems that are potential ignition sources shall not be installed in the duct work. Examples of ignition sources are hot surfaces with temperatures exceeding 700°C and electric switching devices.
- Any auxiliary device installed must be approved by LENNOX and must be suitable for operating with the refrigerant marked on the label.
- For mechanical ventilation the lower edge of the air extraction opening shall not be more than 100mm above the floor. The exhaust location outside the building must be at least 3 m away from the building opening and mechanical air intake openings.
- To handle, purge, and dispose of the refrigerant, or break into the refrigerant circuit, the worker should have a certificate from an industry-accredited authority.
- Non-ducted systems may be installed in areas such as false ceilings not being used as return air plenum if the conditioned air does not mix with the air in the false ceilings.
- For ducted appliances false ceilings or drop ceilings may be used as return air plenum if a refrigerant leak detection system is provided in the system and any external connections are also provided with a sensor immediately below the return air plenum duct joint.
- Installation, servicing, and any type of maintenance or repair must be performed by certified personnel who are competent to carry out such activity following national and local regulations.

### General information on Servicing

- Do not work in a confined space. Ensure adequate ventilation is provided at the workspace during the entirety of the duration of the work to safely disperse any released refrigerant.
- All maintenance staff and others working in the local area shall be instructed on the nature of the work being performed and instructed to follow all instructions provided by LENNOX, national and local authorities.
- The area shall be checked with an approved refrigerant detector before and during any work on the system.
- Have a dry $CO_2$ fire extinguisher adjacent to the charging area and workspace.
- The service personnel shall not use any ignition sources in a manner that may lead to the risk of fire or explosion.
- Potential ignition sources shall be kept away from the work area where the flammable refrigerant can be released into the surrounding area.
- The work area should be checked to ensure that there are no flammable hazards or ignition risks. The "No Smoking" sign shall be attached.
- Under no circumstances shall potential sources of ignition be used upon detection of leakage.

The following checks shall be applied to installations and maintenance operations.

- The actual total refrigerant charge is in accordance with the room size.
- The ventilation machinery and outlets are operating adequately and are not obstructed.
- Markings on the equipment are visible and legible.
- Refrigerant pipes or components are installed in a position where they are unlikely to be exposed to any substance that may corrode refrigerant containing components.

Initial checks of electrical devices shall include the following.

- that capacitors are discharged safely to avoid sparking.
- that no live electrical components and wiring are exposed while charging, recovering or purging the system.
- That there is continuity to earth bonding.
- Check that cabling is not worn, corroded or damaged in any manner.

## Electrical repair safety measures

- All electrical components used or replaced must be to LENNOX's specifications.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.
- Sealed electrical components and intrinsically safe components shall be replaced and not repaired.
- Cabling should be protected from excessive vibration, pressure, sharp edges, and other adverse environmental factors.

## Detection of 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.)
- Make sure that the detector is not a potential source of ignition.
- Leak detection equipment shall be set at a percentage of the LFL (Lower flammable limit) of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed.
- The use of detergents containing chlorine shall be avoided for cleaning because the chlorine may react with the refrigerant and corrode the piping.
- If leakage is suspected, naked flames shall be removed.
- If a leakage is found while brazing, the entire refrigerant shall be recovered from the product or isolated (e.g. using shut-off valves). It shall not be directly released into the environment. Oxygen-free nitrogen (OFN) shall be used for purging the system before and during the brazing process.
- The work area shall be checked with an appropriate refrigerant detector before and during work.
- Ensure that the leakage detector is appropriate for use with flammable refrigerants.

## Removal and Evacuation

- When removing refrigerant for servicing it is recommended to remove the entire quantity.
- When removing refrigerant follow local and national regulations and follow best practices including;
  - evacuate;
  - purge the circuit with inert gas (optional for A2L);
  - evacuate (optional for A2L);
  - continuously flush or purge with inert gas when using a flame to open the circuit; and
  - open the circuit.
- Use proper recovery cylinders appropriate for the type of refrigerant.
- Follow prescribed industry best practices for purging and evacuation.
- Oxygen free nitrogen shall be used for purging the system.

## Charging procedure

- Follow industry standard refrigerant charging best practices.
- Before recharging the system shall be pressure tested with oxygen free nitrogen gas.
- Ensure that contamination of different refrigerants does not occur when charging.
- Cylinders shall be kept in the appropriate position as per instructions.
- The refrigerant system should be grounded before charging the system.
- Label the system when charging is completed.
- Take extreme care not to overfill the refrigeration system.
- The system shall be leak tested on completion of charging before commissioning.

## Decommissioning

- Only qualified licensed professionals shall perform refrigerant recovery and decommissioning.
- Isolate the system electrically.
- All recovery equipment and cylinders shall conform to appropriate standards. Only approved cylinders, with pressure relief valves, for the type of refrigerant shall be used.
- Recover refrigerant following industry standard procedure for flammable refrigerants.
- When draining compressors oil care must be taken that there is no flammable refrigerant in the compressor and that the compressor is not hot. Oil should be handled according to local and federal regulations.
- After decommissioning, the system shall be labeled stating that it has been decommissioned. The label shall be dated and signed. The label should state that it "contains flammable refrigerant".
- Ensure that there are labels on the equipment indicating the equipment contains flammable refrigerant.
- Recovered refrigerant shall not be mixed or reused. It shall be processed according to national, state and local regulations.

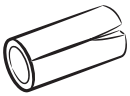
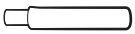
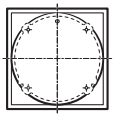
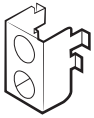
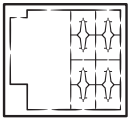
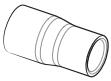
## About Refrigerant Detection System(RDS)

- This system includes a refrigerant detection system (RDS) and automatic leak mitigation controls.
- When a leak is detected, the RDS will stop the compressor and energize the indoor unit(s) fan for air circulation to disperse the leaked gas and display an error code.
- The RDS sensor does automatic self-test each hour and does not require any periodic maintenance.
- The sensor should be replaced upon end of life when <error Code E700> is displayed.
- For complete replacement instructions, please refer to the Service Manual.
- The RDS sensor must only be replaced with sensors as specified by Lennox. Sensor replacement must be performed by a certified technician.

# Installation Procedure

## Step 1 Checking and preparing accessories

The following accessories are supplied with the indoor unit. The type and quantity may differ, depending on the specifications.

| | |
|---|---|
| Insulation pipe (3 ea) | Cable-tie (6 ea) |
|  |  |
| Drain hose (1 ea) | Installation manual (1 ea) |
|  |  |
| Clamp (1 ea) | User manual (1 ea) |
|  |  |
| Installation template (1 ea) | Bushing bracket (1 ea) |
|  |  |
| Dimension gauge (1 ea) | Reducer (1 ea) |
|  |  |

## Step 2 Choosing the installation location

### Installation location requirements

- There must be no obstacles near the air inlet and outlet.
- Install the indoor unit on a ceiling that can support its weight.
- Maintain sufficient clearance around the indoor unit.
- Before installing the indoor unit, be sure to check whether the chosen location is well-drained.
- The indoor unit must be installed such that it is beyond public access and is not touchable by users.
- A vibration-resistant location that is not inclined (If the indoor unit is installed on a structure that is not sturdy, it may fall and get damaged or cause injury.)
- Where it is not exposed to direct sunshine.
- Where the air filter can be removed and cleaned easily.
- A location where animals cannot access and urinate on the product. Ammonia may be generated.
- The amount of refrigerant to add differs, depending on the installation conditions (e.g., the total piping length and the indoor unit combination), and the minimum indoor-unit installation area depends on the final amount of refrigerant.

  Minimum floor area of the room shall be in compliance with the min. room area according to the total charge of the installation according to Table 1 in the outdoor unit installation manual.

### ⚠ WARNING

- Because your air conditioner contains R-32 refrigerant, make sure that it is installed, operated, and stored in a room whose floor area is larger than the minimum required floor area specified.
- Refer to the "R-32 system arrangement requirements" section in the user manual for the combined outdoor units, and use a permanent marker pen to write down the indoor-unit installation area for the final refrigerant amount in the "Minimum Room Area" section on the "Rating label" on the indoor unit.

  ※ This information is mandatory for "Annex 101.DVF Caution/Warning Standards" and must be filled in. If it is not filled in, the installer will be held responsible for any breakage or damage.

## ⚠ CAUTION

- As a rule, the unit cannot be installed at a height of less than 8.2ft (2.5m).
- If you install a cassette type indoor unit on the ceiling when the temperature is over 80.6°F (27°C) and humidity is over 80%, you must apply an extra 0.39inch (10mm) thick polyethylene insulation or a similar type of insulation to the body of the indoor unit.

### Do not install the air conditioner in the following places.

- A place where there is mineral oil or arsenic acid. resin parts flame and the accessories may drop, or water may leak. The capacity of the heat exchanger may be reduced, or the air conditioner may be out of order.
- A place with exposure to mineral oil, oil vapor or a cooking area where there is spray (If oil adheres to the heat exchanger, performance degradation, spray or condensation scattering may occur. If oil adheres to a plastic component, the component may deform or get damaged. Such issues may result in a system failure or refrigerant leak.)
- A place with aromatic diffusers, aromatherapy, scented candles or perfumes as the chemicals may react to the product's materials and may result in system failure or refrigerant leaks.
- The place where corrosive gas such as sulphuric acid gas is generated from the vent pipe or air outlet.
- The copper pipe or connection pipe may corrode and the refrigerant may leak.
- The place where there is a machine that generates electromagnetic waves. The air conditioner may not operate normally due to the control system.
- The place where there is a danger of existing combustible gas, carbon fiber or flammable dust.
- The place where thinner or gasoline is handled.
  Gas may leak and it may cause fire.
- The place that is close to heat sources.
- Do not use the indoor unit for the preservation of food items, plants, equipment, and artwork. This may cause deterioration of their quality.
- Do not install the indoor unit if it has any drainage problems.

# Installation Procedure

## Installation conditions for indoor units and wired remote controls

- Make sure to install a dedicated R-32-capable wired remote control for each indoor unit.
  See the installation examples below for reference.

Make sure to use R-32-capable wired remote controls. The product will not operate if an R-32-capable wired remote control is not located in the vicinity or if users try to control the product using a common wired remote control.

※ E694: This error occurs if an installed R-32 indoor unit and R-32-capable wired remote control are not a correct combination.

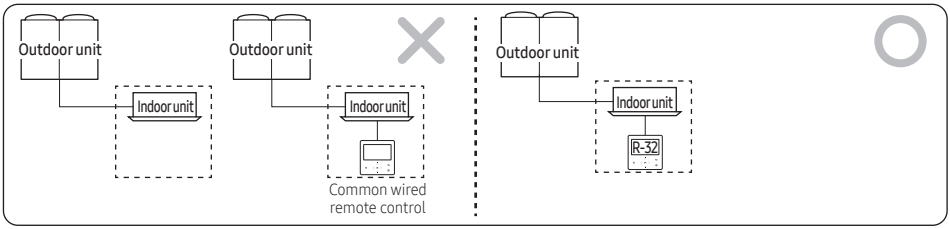
Use R-32-capable wired remote controls.

※ VSTAT04P-1

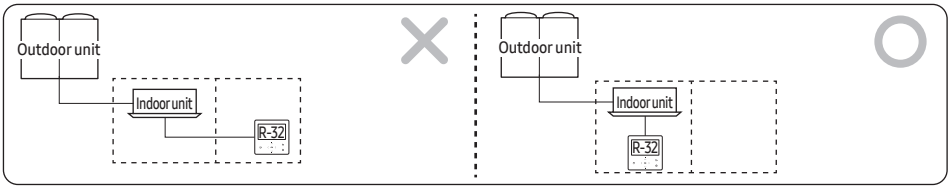
※ R-32-capable wired remote controls should be purchased separately.

### ⚠ WARNING

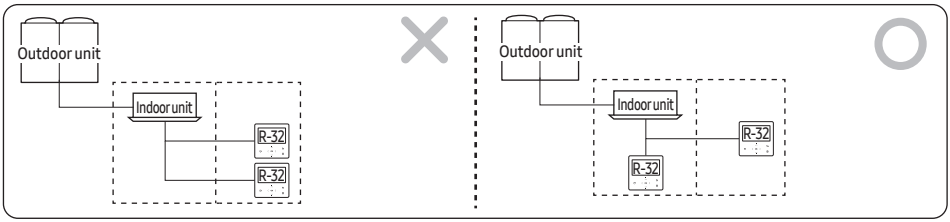
- LENNOX is not responsible for any loss or damage to the product resulting from using anything but the specified wired remote control.




Make sure R-32-capable wired remote controls are located in the same room as the indoor units.



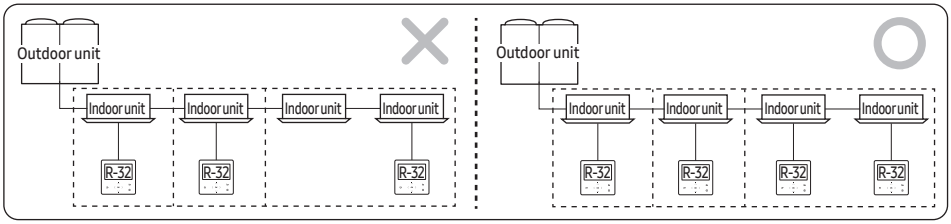

If using two or more R-32-capable wired remote controls, at least one of them must be placed in the same room as the indoor units.



Make sure to connect all indoor units to respective R-32-capable wired remote controls.

At least one remote control must be installed for each indoor unit, even if multiple indoor units are installed in the same room.

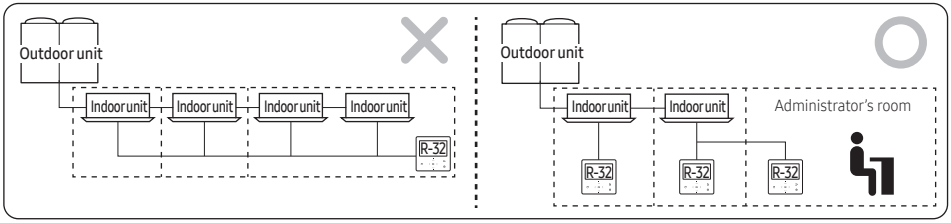
Group control is not possible.




For the occupancy listed below, the safety alarm system shall also warn at a supervised location, such as the night porter's location, as well as the occupied space:

- rooms, parts of buildings, building where sleeping facilities are provided,
- rooms, parts of buildings, building where people are restricted in their movement,
- rooms, parts of buildings, building where an uncontrolled number of people are present, or
- rooms, parts of buildings, building to which any person has access without being personally acquainted with the necessarysafety precautions.

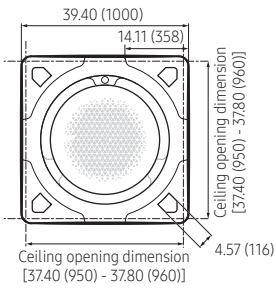
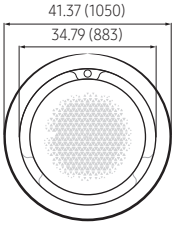
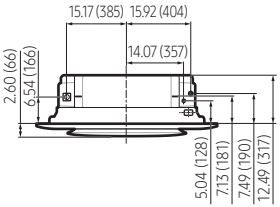
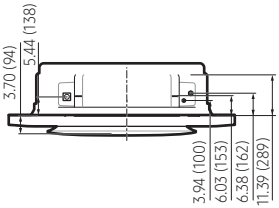
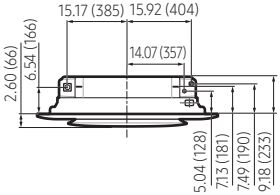
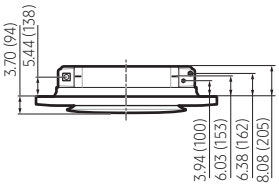
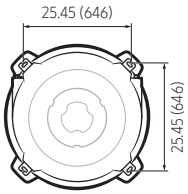
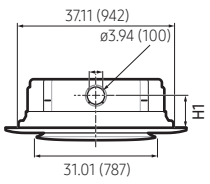
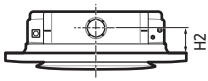
A wired remote control must be installed in the administrator's room, using wired remote control supervisor mode. For details on how to set wired remote control supervisor mode, refer to the wired remote control installation manual.



# Installation Procedure

## Indoor unit dimensions

Unit : inch (mm)

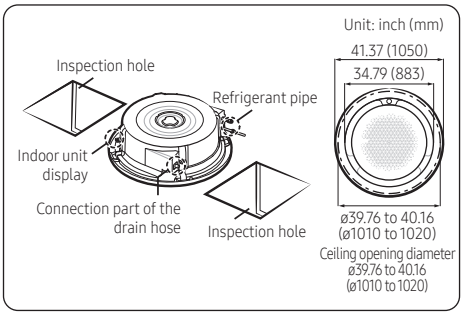
| Category | Square panel | Circular panel |
|---|---|---|
| Front |  |  |
| Large |  |  |
| Small |  |  |
| Common |  |  <br>Square panel |
| | | H1 → Large: 7.09 (180), Small: 5.91 (150)<br>H2 → Large: 5.98 (152), Small: 4.80 (122)<br>  <br>Circular panel |

| Model | | V36D009S6-5P<br>V36D012S6-5P<br>V36D018S6-5P | V36D024S6-5P | V36D030S6-5P<br>V36D036S6-5P<br>V36D048S6-5P |
|---|---|---|---|---|
| Net dimension (W x D x H) | inch (mm) | 37.28 x 37.28 x 11.06<br>(947 x 947 x 281) | | 37.28 x 37.28 x 14.37<br>(947 x 947 x 365) |
| Liquid pipe connection | inch (mm) | 1/4 (6.35) | 3/8 (9.52) | 3/8 (9.52) |
| Gas Pipe connection | inch (mm) | 1/2 (12.7) | 5/8 (15.88) | 5/8 (15.88) |
| Drain hose connection | inch (mm) | 3/4 inch [OD 1.05 inch (26.67 mm)] | | |

- The circular panel is by default available in the exposed installation.
- Make inspection holes in the ceiling for easier installation and maintenance, as shown in the following table. (The size of an inspection hole must be at least 17.72 x 17.72 inch (450 X 450 mm)
- A suspended ceiling structure can substitute for the inspection holes.

| Category | Inspection hole | | |
|---|---|---|---|
| | Recessed installation | | Exposed installation |
| | Integrated | suspended | |
| Square panel | 1 ea | - | |
| Circular panel | 2 ea | | |

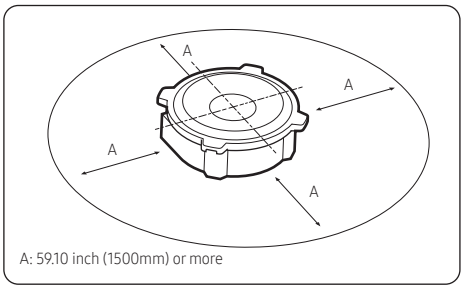
- For the recessed installation of the circular panel

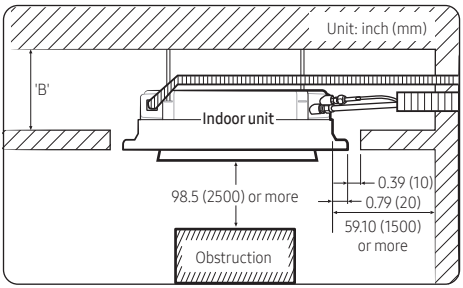



**NOTE**

- The clearance between the panel and the inspection hole is 0.59 to 0.79 inches (15 to 20 mm) on a side.

## Spacing requirements



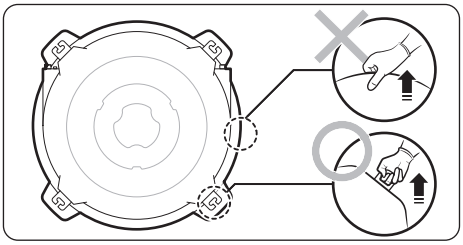




| Model | | V36D009S6-5P<br>V36D012S6-5P<br>V36D018S6-5P<br>V36D024S6-5P | V36D030S6-5P<br>V36D036S6-5P<br>V36D048S6-5P |
|---|---|---|---|
| B | inch (mm) | 10.27 (261) | 13.58 (345) |

# Installation Procedure

## ⚠ CAUTION

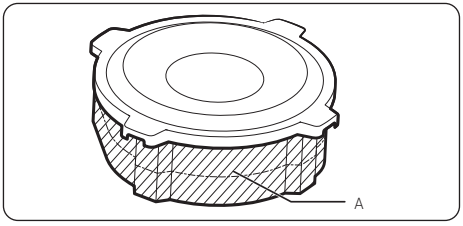
- Comply with the length and height limits described in the figure above.
- The indoor unit must be installed according to the specified distances to permit accessibility from each side, to guarantee correct operation, maintenance, and repair of the unit.
  The components of the indoor unit must be reachable and removable under safe conditions for people and the unit.
- Do not hold the discharge while carrying the indoor unit to avoid the possibility of breakage.
- You must hold the hanger plate on the corner and carry the indoor unit.



## Step 3 Optional: Insulating the body of the indoor unit

If you install a cassette type indoor unit on the ceiling when the temperature is over 80.6°F (27°C) and humidity is over 80%, you must apply an extra 0.39 inch (10 mm) thick polyethylene insulation or a similar type of insulation to the body of the indoor unit.

Cut away the part where pipes are pulled out for the insulating work.




Insulate the end of the pipe and some curved areas by using a separate insulator.

**NOTE**

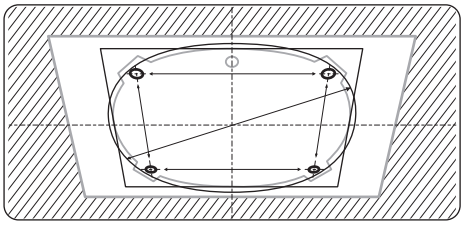
- A: Reference for the outer circumference of the unit (When insulating the body of the indoor unit, use A as the reference for its outer circumference.)

| Indoor unit type and models | | Dimensions |
|---|---|---|
| 360 cassette type<S><br>37.28 x 37.28 x 11.06 inch<br>(947 x 947 x 281 mm) | V36D009S6-5P<br>V36D012S6-5P<br>V36D018S6-5P<br>V36D024S6-5P | 102.76 x 5.12 inch<br>(2610 x 130 mm) |
| 360 cassette type<L><br>37.28 x 37.28 x 14.37 inch<br>(947 x 947 x 365 mm) | V36D030S6-5P<br>V36D036S6-5P<br>V36D048S6-5P | 102.76 x 8.46 inch<br>(2610 x 215 mm) |

## Step 4 Installing the indoor unit

When deciding on the location of the air conditioner the following restrictions must be considered.

1 Determine the positions of the pipe and the drain hose hole as shown in the pattern sheet and drill the hole with an inner diameter of 0.55 inch (14 mm).



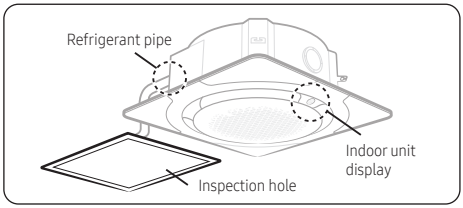
**NOTE**

- Since the diagram is made of paper, it may shrink or stretch slightly due to temperature or humidity. For this reason, before drilling the holes, be sure to verify the correct dimensions between the markings.

**2** Perform the following steps to install inspection holes per panel type.

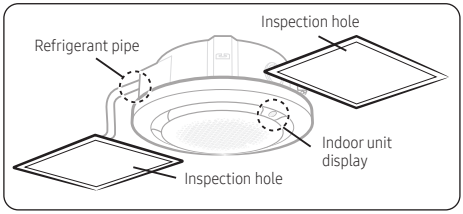
**a** For the recessed installation of the square panel.

- Install an inspection hole in the direction of the connection parts of the refrigerant pipe and the drain hose. (1 point)

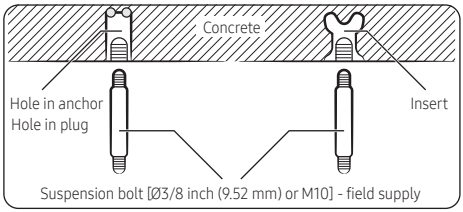



**b** For recessed installation of the circular panel

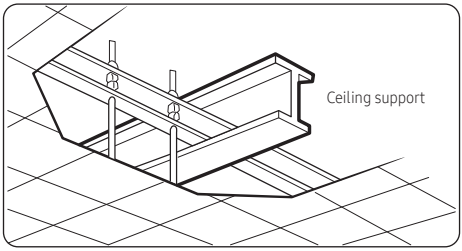
- Install inspection holes in both directions of the connection part of the refrigerant pipe and the drain hose and of the indoor unit display. (2 points)




**3** Insert bolt anchors, use existing ceiling supports or construct a suitable support as shown in the figure.




**4** Install the suspension bolts, depending on the ceiling type.




## ⚠ CAUTION

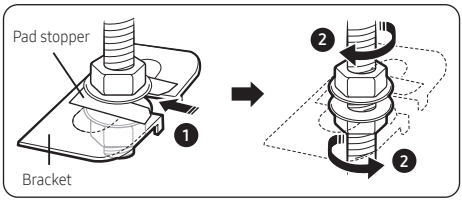
- Make sure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
- If the length of the suspension bolt is more than 4.92 ft (1.5 m), you are required to prevent vibration.

**5** Screw eight pairs of nuts and washers to the suspension bolts, making space for hanging the indoor unit.

## ⚠ CAUTION

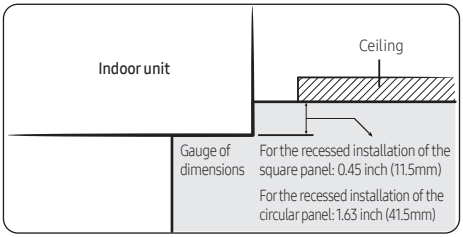
- You must install all of the suspension rods.
- It is important to leave sufficient space in the false ceiling to allow access for maintenance or repairs to the drainage pipe connection, and the refrigerant pipe connection, or to remove the unit if necessary.

**6** Hang the indoor unit to the suspension bolts between two nuts. Screw the nuts to suspend the unit. Cut a pad stopper and place it on the bracket at this time.



# Installation Procedure

7 Adjust the unit to the appropriate position, considering the installation area for the front panel.
- Place the pattern sheet on the indoor unit.
- Adjust the space between the ceiling and the indoor unit by using a dimension gauge.
- Fix the indoor unit securely after adjusting the level of the unit by using a level.
- Remove the pattern sheet and install the front panel.

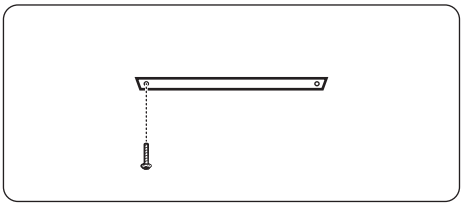



## Step 5 Optional: Installing the circular panel

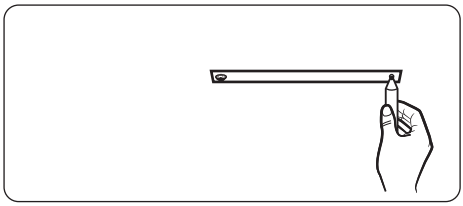
**Making a circular opening on the ceiling**

Use a paper compass printed on the indoor unit package. (attached inside to the upper part)

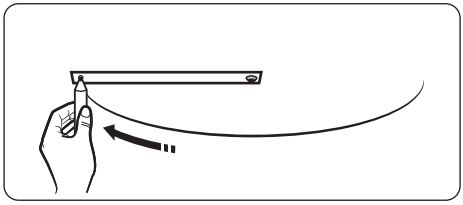
1 Use a bolt or a pin to fix the pivot point of the paper compass on the center of the ceiling. (in the middle of location for installation)



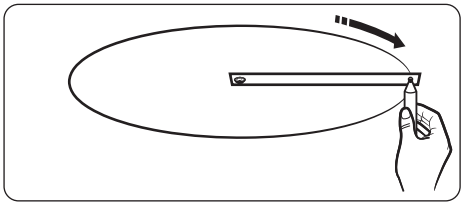
2 Put a pencil at the opposite side of the pivot point fixed in place.



3 Rotate the paper compass on its pivot point to draw a line on the ceiling.



4 Rotate the paper compass diametrically to draw a circle on the ceiling.



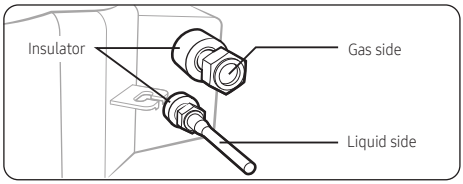
**Making a circular opening on the ceiling**

- Make sure to only apply paints and varnishes for resins (ABS, HIPS) or paint thinners.
- If you apply lacquers for general use on the panel, it may lead to discoloration or erosion on the surface of the panel.

## Step 6 Purging inert gas from the indoor unit

The indoor unit comes with nitrogen gas (inert gas) charged at the factory. Therefore, all inert gas must be purged before connecting the assembly piping.

**Unscrew the pinch pipe at the end of each refrigerant pipe.**



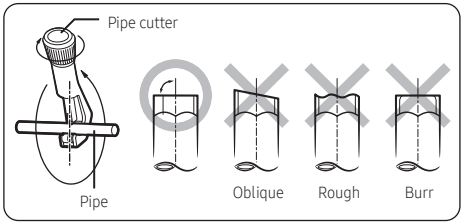

**NOTE**

- To prevent dirt or foreign objects from getting into the pipes during installation, do not remove the pinch pipe completely until you are ready to connect the piping.

## Step 7 Cutting and flaring the pipes

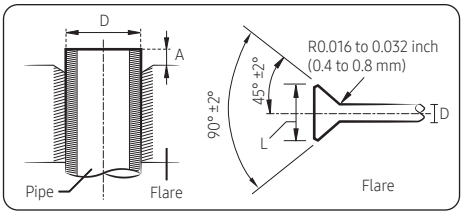
1 Make sure that you have the required tools available: pipe cutter, reamer, flaring tool, and pipe holder.

2 If you wish to shorten the pipes, cut them with a pipe cutter, ensuring that the cut edge remains at a 90° angle to the side of the pipe. Refer to the illustrations below for examples of edges cut correctly and incorrectly.



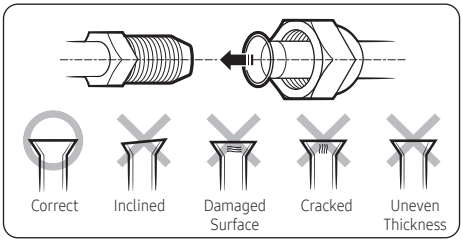

3 To prevent any gas from leaking out, remove all burrs at the cut edge of the pipe, using a reamer.

4 Slide a flare nut onto the pipe and modify the flare.




| Outer Diameter (D) | | Depth (A) | | Flare dimension (L) | |
|---|---|---|---|---|---|
| inch | mm | inch | mm | inch | mm |
| 1/4 | 6.34 | 0.051 | 1.3 | 0.34 to 0.36 | 8.7 to 9.1 |
| 3/8 | 9.52 | 0.071 | 1.8 | 0.5 to 0.52 | 12.8 to 13.2 |
| 1/2 | 12.7 | 0.079 | 2.0 | 0.64 to 0.65 | 16.2 to 16.6 |
| 5/8 | 15.88 | 0.087 | 2.2 | 0.76 to 0.78 | 19.3 to 19.7 |
| 3/4 | 19.05 | 0.087 | 2.2 | 0.93 to 0.95 | 23.6 to 24.0 |

5 Check that the flaring is correct, refer to the illustrations below for examples of incorrect flaring.



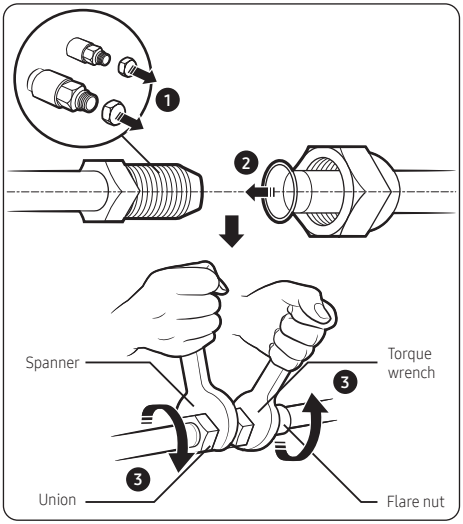
# Installation Procedure

## Step 8 Connecting the assembly pipes to the refrigerant pipes

There are two refrigerant pipes of different diameters:

- A smaller one for the liquid refrigerant.
- A larger one for the gas refrigerant. The inside of the copper pipe must be clean and have no dust.

1 Remove the pinch pipe on the pipes and connect the assembly pipes to each pipe, tightening the nuts, first manually and then with a torque wrench, and a spanner applying the following torque.




| Outer Diameter | | Torque | |
|---|---|---|---|
| inch | mm | lbf·ft | N·m |
| 1/4 | 6.35 | 10.3 to 13.3 | 14 to 18 |
| 3/8 | 9.52 | 25.1 to 31.0 | 34 to 42 |
| 1/2 | 12.7 | 36.1 to 45.0 | 49 to 61 |
| 5/8 | 15.88 | 50.2 to 60.5 | 68 to 82 |
| 3/4 | 19.05 | 73.8 to 88.5 | 100 to 120 |

(1N·m=10kgf·cm)

**NOTE**

- If the pipes must be shortened, see **Step 7 Cutting and flaring the pipes** on page **17**.

2 Be sure to use an insulator thick enough to cover the refrigerant tube to protect the condensate water on the outside of the pipe falling onto the floor and to improve the efficiency of the unit.

3 Cut off any excess foam insulation.

4 Make sure that there are no cracks or waves on the bent area.

5 It would be necessary to double the insulation thickness (0.39 inch (10 mm) or more) to prevent condensation even on the insulator when the installed area is warm and humid.

6 Do not use joints or extensions for the pipes connecting the indoor and outdoor units. The only permitted connections are those for which the units are designed.

**⚠ CAUTION**

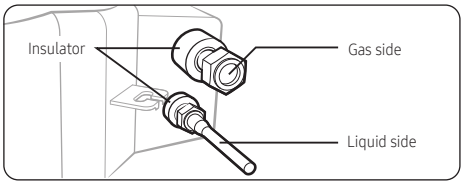
- Connect the indoor and outdoor units using pipes with flared connections (not supplied). For the lines, use insulated, unwelded, degreased and deoxidized copper pipe (Cu DHP type to ISO 1337 or UNI EN 12735-1), Operating pressure depends on outdoor unit specifications. Check the outdoor unit installation manual.
- For sizing and limits (height difference, line length, max. bends, refrigerant charge, etc.) see the outdoor unit installation manual.
- All refrigerant connections must be accessible, to permit either unit maintenance or removal.
- If the pipes require brazing, make sure that oxygen free nitrogen (OFN) is flowing through the system.
- The nitrogen blowing pressure range is 0.02 to 0.05 Mpa (2.9 to 7.25 psi).

## Step 9 Performing the gas leak test

To identify potential gas leaks in the indoor unit, inspect the connection area of each refrigerant pipe using a leak detector for R-32.

Before creating a vacuum and circulating the refrigerant gas, pressurize the whole system with nitrogen (using a cylinder with a pressure reducer) at a pressure above 0.2 MPa(29.0 psi), less than 4.0 MPa(594.7 psi) (gauge) to immediately detect leaks on the refrigerant fittings.

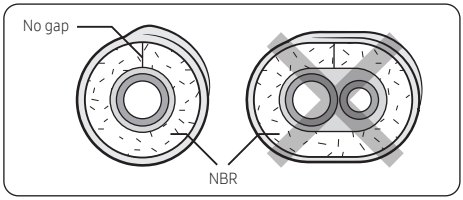
Refer to the outdoor unit installation manual for the complete steps for pressure testing and vacuuming the system before charging with refrigerant.




## Step 10 Insulating the refrigerant pipes

Once you have checked that there are no leaks in the system, you can insulate the piping and hose.

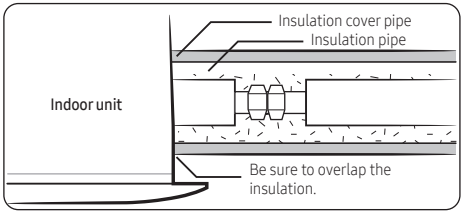
1 To avoid condensation problems, place Acrylonitrile Butadiene Rubber separately around each refrigerant pipe.




**NOTE**

- Always make the seam of pipes face upwards.

2 Wind insulating tape around the pipes and drain hose to avoid compressing the insulation too much.




### ⚠ CAUTION

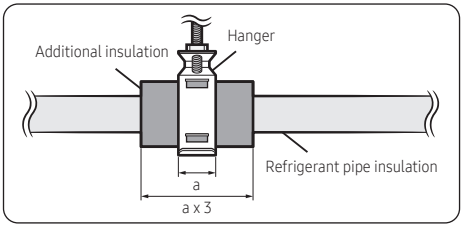
- Be sure to wrap the insulation tightly without any gaps.

3 Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.

4 The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.

### ⚠ CAUTION

- Must fit tightly against the body without any gap.
- Make sure that all refrigerant connections are accessible for easy maintenance and detachment.
- Install the insulation not to get wider and use the adhesives on the connection part of it to prevent moisture from entering.
- Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight.
- Install the refrigerant pipe respecting that the insulation does not get thinner on the bent part or hanger of pipe.
- Add additional insulation if the insulation plate gets thinner.




5 Select the insulation of the refrigerant pipe.

- Insulate the gas side and liquid side pipe, noting the insulation thickness that must differ according to the pipe size.
- Standard: Less than an indoor temperature of 86°F (30°C), with humidity at 85%. If installing in a high humidity environment, use one grade thicker insulator by referring to the table below.
  If installing in an unfavorable environment, use a thicker one.
- The heat-resistance temperature of the insulator must be more than 248°F (120°C).

# Installation Procedure

| Pipe | Pipe size | | Insulation type (heating/cooling) | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | General [86°F (30°C), 85%] | | High humidity [86°F (30°C), 85%] | | |
| | | | EPDM, NBR | | | | |
| | inch | mm | inch | mm | inch | mm | |
| Liquid pipe | 1/4 to 3/8 | 6.35 to 9.52 | 3/8 | 9 | 3/8 | 9 | Heating resisting temperature over 248°F (120°C) |
| | 1/2 to 2 | 12.7 to 50.80 | 1/2 | 13 | 1/2 | 13 | |
| Gas pipe | 1/4 | 6.35 | 1/2 | 13 | 3/4 | 19 | |
| | 3/8 to 1 | 9.52 to 25.40 | 3/4 | 19 | 1 | 25 | |
| | 1 1/8 to 1 3/4 | 28.58 to 44.45 | 3/4 | 19 | 1 1/4 | 32 | |
| | 2 | 50.80 | 1 | 25 | 1 1/2 | 38 | |

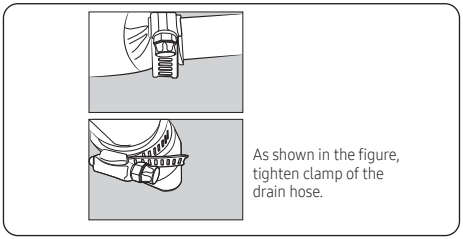
- When installing insulation in the places and conditions below, use the same insulation that is used for high humidity conditions.

| |
|---|
| <Geological condition> |
| High humidity locations such as shorelines, hot springs, lakes or riversides, and ridges (when part of the building is covered by earth and sand) |
| <Operation purpose condition> |
| Restaurant ceiling, sauna, swimming pool etc. |
| <Building construction condition> |
| Ceilings frequently exposed to moisture and cooling are not covered. For example, pipes installed in a corridor of a dormitory and studio or near an exit that opens and closes frequently. |
| Places (where the pipes are installed) that are highly humid due to a lack of ventilation. |

## Step 11 Installing the drain hose and drainpipe

1 Push the supplied drain hose as far as possible over the drain socket.

2 Tighten the metal clamp as shown in the picture.

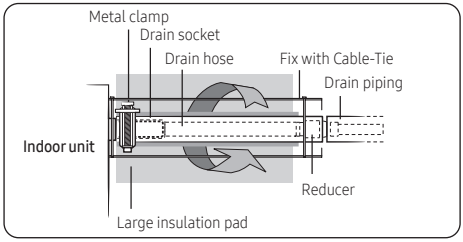


As shown in the figure, tighten clamp of the drain hose.

3 Wrap the supplied large sealing pad over the metal clamp and drain hose to insulate and fix it with clamps.

4 Insulate the complete drain piping inside the building (field supply).
If the drain hose cannot be sufficiently set on a slope, fit the hose with drain raising piping (field supply).

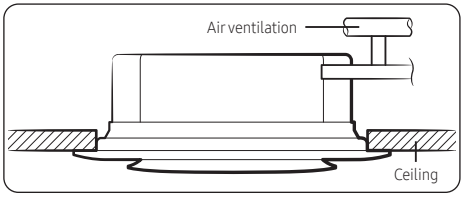
5 Push the drain hose up to the insulation when connecting the drain hose to the drain socket.



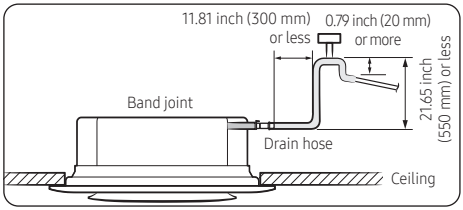

### ⚠ CAUTION

**Check that the indoor unit is level with the ceiling by using the level.**

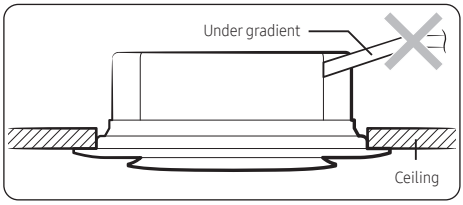
- Install an air vent to drain condensation smoothly.



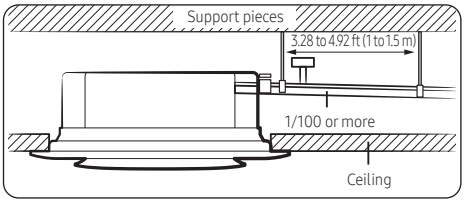

- Place the drainpipe at a height of 11.81 to 21.65 inches (300 to 550 mm) within 11.81 inches (300 mm) from the drain hose and install it with a drop-off of at least 0.79 inches (20 mm).
- If the slope of the horizontal drainpipe is less than 1/100, install an air vent with a height of at least 7.87 inches (200 mm) or a backflow prevention vent at each drain inlet, to ensure smooth condensate flow.
- If the slope of the drainpipe is less than 1/100 and no air vent is installed, the air conditioner will not operate properly because condensate is not discharged.
- If an air vent with a height of less than 7.87 inches (200 mm) or a vent without backflow prevention functionality is installed, the drainpipe may become clogged, causing water to leak through the vent.



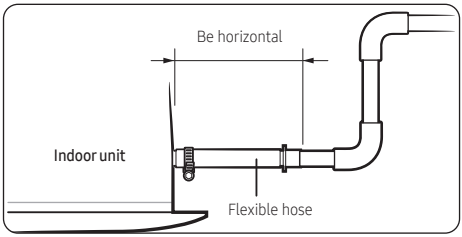

- Do not give the hose an upward slope beyond the connection port. This will cause water to flow backward when the unit is stopped, resulting in water leaks.



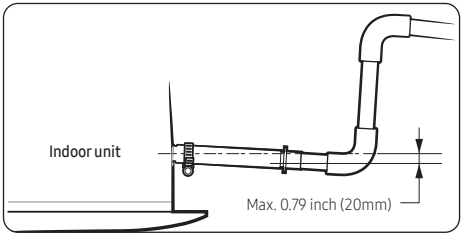

- Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.
- Install the horizontal drainpipe and copper pipe at an slope of at least 1/100, and attach a full-thread bolt hanger every 39.37 to 59.05 inches (1 to 1.5 m) along the pipe to fix it in place.



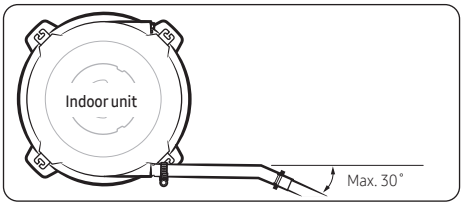

- Install horizontally.




- Max. allowable axis gap.



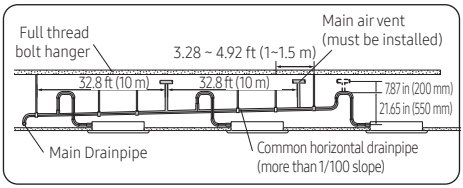

- Max. allowable bending angle.



# Installation Procedure

**NOTE**

- If a common drainpipe is installed, refer to the figure below.




- If 3 or more units are installed, install a main air vent in front of the farthest indoor unit from the main drainpipe.
- To prevent water from flowing back to indoor units, install an individual air vent at the top of each indoor unit.
  - The air vents should be T or 7 shaped to prevent dust or foreign substances from entering.
  - You may not need to install an air vent if the horizontal drainpipe has a proper slope.

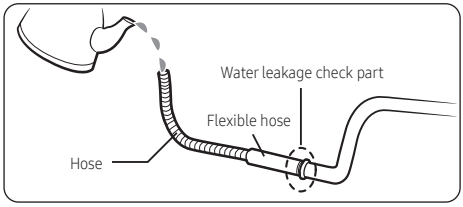
① If the common horizontal drainpipe is 32.8 ft (10 m) or longer, install an air vent every 32.8 ft (10 m).
  - If the common horizontal drainpipe is shorter than 32.8 ft (10 m), install an air vent in front of the indoor unit farthest from the main drainpipe.

② Install the common horizontal drainpipe at an incline of at least 1/100, and attach a full-thread bolt hanger every 3.28 to 4.92 ft (1 to 1.5 m) along the pipe to fix it in place.
  - If the slope of the common horizontal drainpipe is less than 1/100, install an air vent with a height of at least 7.87 inches (200 mm) or a backflow prevention vent at each drain inlet, to ensure smooth condensate flow.
  - If the slope of the common horizontal drainpipe is less than 1/100 and no air vent is installed, the air conditioner may not operate properly because condensate is not discharged.
  - If an air vent with a height less than 7.87 inches (200 mm) or a vent without backflow prevention functionality is installed, the drainpipe may become clogged, causing condensation to flow back through the vent.

## Step 12 Performing the drainage test

**1** Do a leak test at the connection part of the flexible hose and the drainpipe:

**a** Connect a general hose to the connection part of the flexible hose of the indoor unit and pour in some water.




**b** After pouring some water, reassemble the rubber cap on the connection part of a flexible hose of the indoor unit and firmly tighten it with a band to prevent leakage.

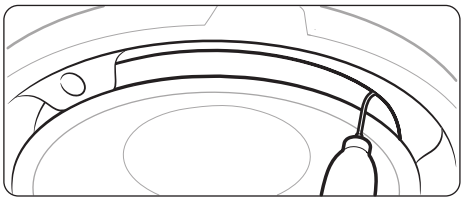
**c** Check the leak test at the part where the adhesive for the flexible hose and the drainpipe is used.

**⚠ CAUTION**

- The leak test must be performed for at least 24 hours.

**2** Check the condensed water drainage:

**a** Pour about 2 liters (0.54 gal) of water into the indoor unit drain pan as shown in the picture.



**b** When the electric cable connection is completed

- Turn on the indoor unit and outdoor unit.
- Operate in the Cool mode.

### ⚠ CAUTION

- Correct operation of the drain pump can only be checked in Cool mode.

When the electric cable connection has not been completed

- Remove the control box cover of the indoor unit.
- Connect the power supply to the L and N terminals.
- Reassemble the control box cover and turn on the indoor unit.

### ⚠ CAUTION

- When the float switch is not detected due to insufficient water on the drain pan, the drain pump will not work.
- If the power supply is directly connected to the L and N terminals, a communication error message might appear.
- After completing the drainage check, turn the unit off and disconnect the power supply.
- Reassemble the control box cover.

**c** Check whether the drain pump works correctly.

**d** Check whether the drainage is performing correctly at the end of the drainpipe.

**e** Check for leakage at the drainpipe and drainpipe connection part.

**f** When leakage occurs, check whether the indoor unit is level and check the drain hose connection part, drainpipe connection part and drain pump connection.

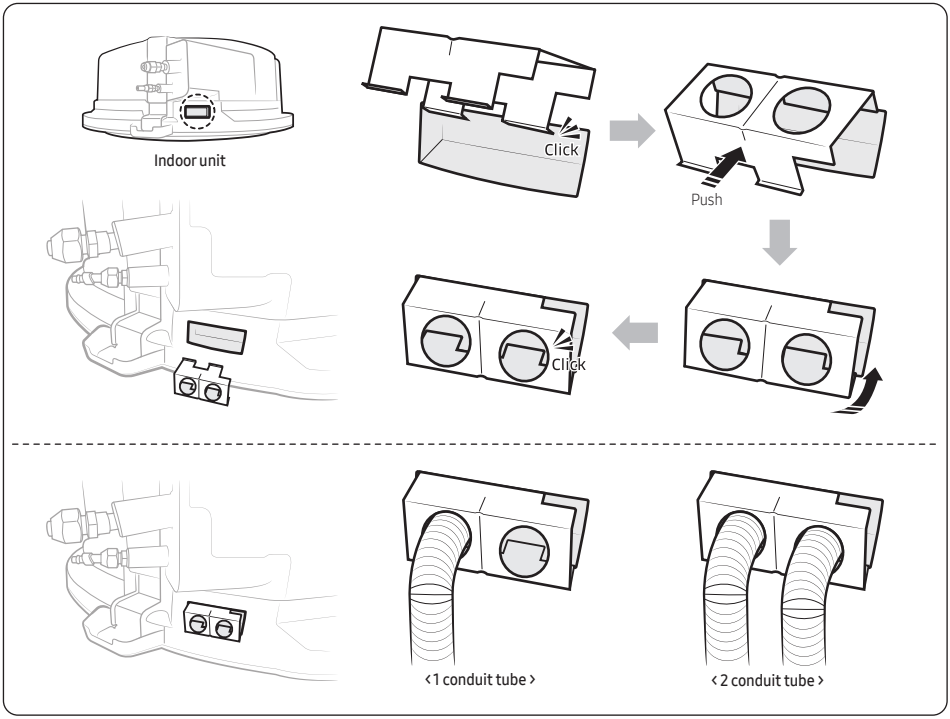
**g** When the drainage check is completed and the condensed water remains on the drain pan, remove the water.

# Installation Procedure

## Step 13 Connecting the power and communication cables

### Bushing bracket installation

When conduit is used, conduit mounting brackets must be installed as shown in the picture to attach the conduit.




**NOTE**

- Please follow national and local electrical codes. Additional electrical connection components may be required.

## Connecting the power and communication cables

### ⚠ CAUTION

- Always remember to connect the refrigerant pipes before performing the electric connections.
  When disconnecting the system, always disconnect the electric cables before disconnecting the refrigerant pipes.
- For the product that uses the R-32 refrigerant, be cautious not to generate a spark by keeping the following requirements:
  – Do not remove fuses with power on.
- Always remember to connect the air conditioner to the grounding system before performing the electric connections. Use a crimp ring terminal at the end of each wire.

The indoor unit is powered through the outdoor unit using a H05 RN-F connection cable (or a more powerful model), with insulation in synthetic rubber and a jacket in polychloroprene (neoprene), following the requirements specified in the standard EN 60335-2-40.

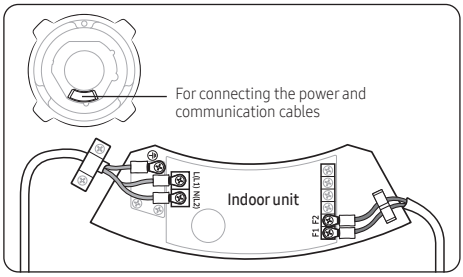
1 Remove the screw on the electrical component box and remove the cover plate.

2 Route the connection cord through the side of the indoor unit and connect the cable to the terminals refer to the figure below.

3 Route the other end of the cable to the outdoor unit through the ceiling & the hole in the wall.

4 Reassemble the electrical component box cover, carefully tightening the screw.

## Power and communication cable connection

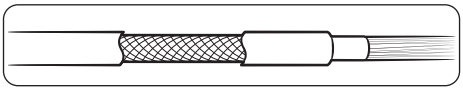



- Before wiring work, you must turn off all power source.
- Connect the power and communication cable among the units within maximum length to set the voltage drop under 10%.
- The auxiliary circuit breaker (ELCB, MCCB, ELB) should be considered more capacity if many indoor units are connected from one breaker.
- Connect F3, F4(for communication) to the communication cable of the wired remote control.
- Tighten the electric wires with a proper tool within the torque limit to connect and fix them firmly, and then organize the wires to prevent outside pressure being exerted on the covers and other parts. Failure to do so may result in overheating, electric shock, and fire.

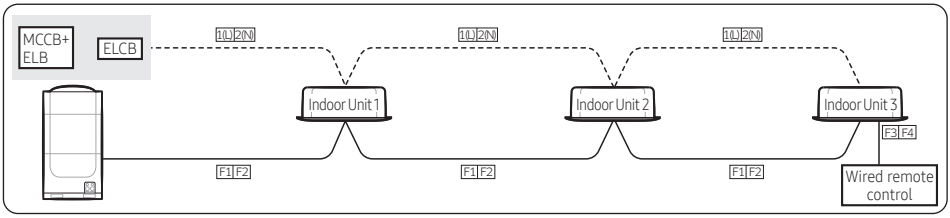
| Tightening torque ft•lb(N• m) | |
|---|---|
| M3.5 | (0.58 to 0.87) 0.8 to 1.2 |
| M4 | (0.87 to 1.31) 1.2 to 1.8 |

(1 N•m = 10 kgf•cm)

- To protect the product from water and possible shock, you should keep the power and the communication cables of the indoor and outdoor units in the iron pipe.
- Connect the power cable to the auxiliary circuit breaker (ELCB, MCCB, ELB).
- Keep distances of 1.97inch (50mm) or more between power cable and communication cables.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F or IEC:60245 IEC 66 / CENELEC: H07RN-F)
- Screws on terminal block must not be unscrewed with the torque less than 0.87 lbf•ft (12 kgf•cm).
- When installing the indoor unit in a computer room, use the double shielded (tape aluminum / polyester braid + copper) cable of FROHH2R type.



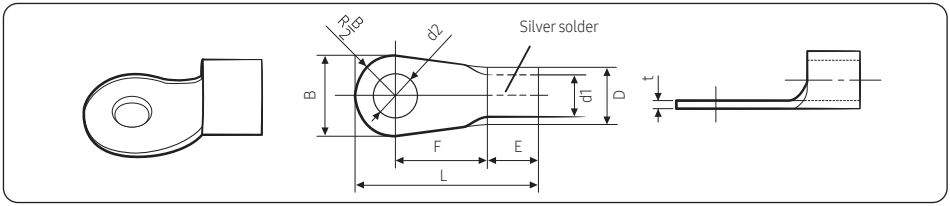
# Installation Procedure




## Selecting the crimping terminal lug

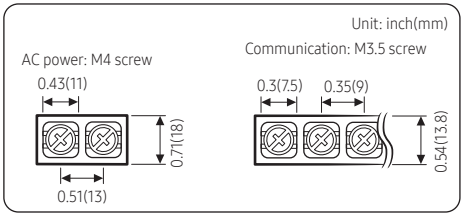
1 Select the crimping terminal lug based on the norminal dimension of the power cable.

2 Cover the connection part of the power cable and crimping terminal lug to insulate it.




| Norminal dimensions for cable [inch²(mm²)] | | 0.0023 (1.5) | | 0.0039 (2.5) | | 0.0062 (4) |
|---|---|---|---|---|---|---|
| Norminal dimensions for screw [inch(mm)] | | 0.157 (4) | 0.157 (4) | 0.157 (4) | 0.157 (4) | 0.157 (4) |
| B | Standard dimension [inch(mm)] | 0.260 (6.6) | 0.315 (8) | 0.260 (6.6) | 0.335 (8.5) | 0.374 (9.5) |
| | Allowance [inch(mm)] | ± 0.008 (0.2) | | ± 0.008 (0.2) | | ± 0.008 (0.2) |
| D | Standard dimension [inch(mm)] | 0.134 (3.4) | | 0.165 (4.2) | | 0.220 (5.6) |
| | Allowance [inch(mm)] | +0.012 (0.3)<br>-0.008 (0.2) | | +0.012 (0.3)<br>-0.008 (0.2) | | +0.012 (0.3)<br>-0.008 (0.2) |
| d1 | Standard dimension [inch(mm)] | 0.067 (1.7) | | 0.091 (2.3) | | 0.134 (3.4) |
| | Allowance [inch(mm)] | ± 0.008 (0.2) | | ± 0.008 (0.2) | | ± 0.008 (0.2) |
| E | Min. [inch(mm)] | 0.161 (4.1) | | 0.236 (6) | | 0.236 (6) |
| F | Min. [inch(mm)] | 0.236 (6) | | 0.236 (6) | | 0.236 (6) |
| L | Max. [inch(mm)] | 0.630 (16) | | 0.689 (17.5) | | 0.787 (20) |
| d2 | Standard dimension [inch(mm)] | 0.169 (4.3) | | 0.169 (4.3) | | 0.169 (4.3) |
| | Allowance [inch(mm)] | +0.008 (0.2)<br>0 (0) | | +0.008 (0.2)<br>0 (0) | | +0.008 (0.2)<br>0 (0) |
| t | Min. [inch(mm)] | 0.028 (0.7) | | 0.031 (0.8) | | 0.035 (0.9) |

## Specifications of the terminal blocks




| Power supply (single phase) | MCCB | ELB |
|---|---|---|
| Min : 187V<br>Max : 253V | XA | XA, 30 mA<br>0.1 s |
| Power cable | Earth cable | Communication cable |
| 13 AWG<br>(2.5 mm²) | | 18~15 AWG<br>(0.75~1.5 mm²) |

Decide the power cable specification and maximum length by formula **2**.

**1** Decide the capacity of ELB and MCCB by below formula.

**The capacity of ELB, MCCB X[A] = 1.25 X 1.1 X ΣAi**

**NOTE**

- X : The capacity of ELB, MCCB
- ΣAi : Sum of rating currents of each indoor unit.

Rated currents

| Model | Rating current (A) |
|---|---|
| V36D009S6-5P | 0.18 |
| V36D012S6-5P | 0.18 |
| V36D018S6-5P | 0.18 |
| V36D024S6-5P | 0.28 |
| V36D030S6-5P | 0.42 |
| V36D036S6-5P | 0.57 |
| V36D048S6-5P | 0.75 |

**2** Decide the power cable specification and maximum length within 10% voltage drop among indoor units.

$$\sum_{k=1}^{n} \left( \frac{Coef \times 35.6 \times Lk}{1000 \times Ak} \times ik \right) < 10\% \text{ of input voltage[V]}$$

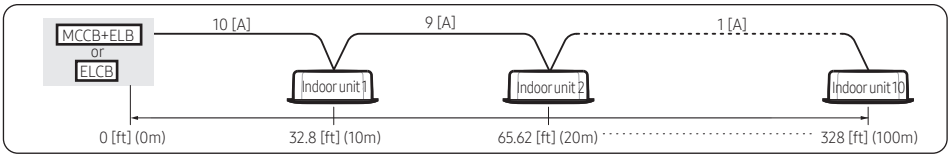
**NOTE**

- Coef: 1.55
- Lk: Distance among each indoor unit[m], Ak: Power cable specification[$mm^2$]
- ik: Running current of each unit[A]

# Installation Procedure

**Example of Installation**

Total power cable length L = 328.08ft(100m), Initial pull-in current = 10[A], Running current of each units = 1[A], Total 10 indoor units were installed




- Apply following equation.

$$\sum_{k=1}^{n}\left(\frac{Coef\times 35.6\times Lk}{1000\times Ak}\times ik\right) < 10\%\ \text{of input voltage[V]}$$

- Calculation
  - Installing with 1 sort wire.


-(2.2+2.0+1.8+1.5+1.3+1.1+0.9+0.7+0.4+0.2)=-11.2 [V]

  - Installing with 2 different sort wire.

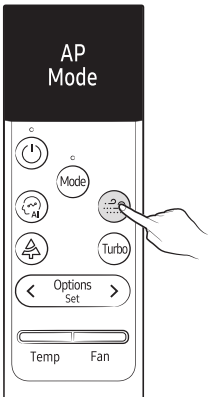
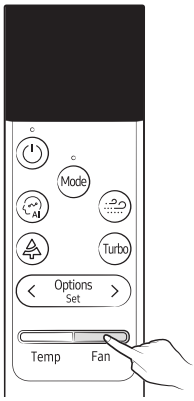
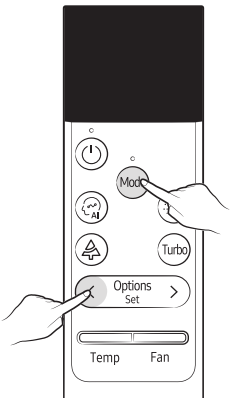

-(1.4+1.2+1.8+1.5+1.3+1.1+0.9+0.7+0.4+0.2)=-10.5 [V]

## ⚠ CAUTION

- Select the power cable in accordance with relevant local and national.
- Wire size must comply with local and national code.
- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 10% of supply rating among whole indoor units.
- If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 10% of supply rating, the indoor unit is protected, stopped and the error mode indicates
- Connect the power cable to the auxiliary circuit breaker. An all pole disconnection from the power supply must be incorporated in the fixed wiring (≥0.12 inch (3mm)).
- You must keep the cable in a protection tube.
- Maximum length of power cables are decided within 10% of power drop. If it exceeds, you must consider another power supplying method.
- The circuit breaker(MCCB, ELB) should be considered more capacity if many indoor units are connected from one breaker.
- Use round pressure terminal for connections to the power terminal block.
- For wiring, use the designated power cable and connect it firmly, then secure 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 screws may break them.

## Step 14 Optional : LED Display indicator specifications when checking Wi-Fi Easy Setup and Wi-Fi status

The wireless remote control can be used for Easy Setup, checking the internet connection status and connecting or disconnecting Wi-Fi.

| Easy Setup | Check internet connection status | Enable/Disable Wi-Fi |
|---|---|---|
|  |  |  |
| Press the button for 5 seconds | Press the Fan button for 5 seconds | Press the Mode and Options Set button for 5 seconds |

# Installation Procedure

## LED Indicator Status

| 360 Cassette | | LED Display | | | | | | | Remarks | Measure |
|---|---|---|---|---|---|---|---|---|---|---|
| | | LED color of indicator lights | | | | LED indicator for wind direction | | | | |
| | | Ice blue | blue | Yellow green | Red | Wide | Mid | Spot | | |
| Easy Setup | AP entry | ● | X | X | X | ● | ● | ● | All LED lights are on | - |
| | Check device | ◑ | X | X | X | ◑ | ◑ | ◑ | All LED lights flash | - |
| | Registering devices | X | X | X | X | X | ◑ | X | Rotating | - |
| | Connected | ◑ | X | X | X | ◑ | ◑ | ◑ | All LED lights flash for 3 seconds | - |
| | Connection failed | X | X | X | ● | X | X | X | Red LED indicator lights turn on, all LED lights for wind direction turns off | Retry AP settings, change Wi-Fi module |
| Check internet connection status | If AP/internet is connected successfully | ● | X | X | X | ● | ● | ● | All LED lights turn on for 5 seconds | Normal operation |
| | If no AP connection | X | X | X | X | X | X | X | All LED turns off for 5 seconds | AP settings, change Wi-Fi module |
| Wi-Fi | Enable | ◑ | X | X | X | ◑ | ◑ | ◑ | All LED lights flash once | - |
| | Disable | | X | X | X | | | | | - |
| If AP is set up using the wired remote controller | | ◑ | X | X | X | ◑ | ◑ | ◑ | All LED lights flash simultaneously (max. 10 mins) | - |

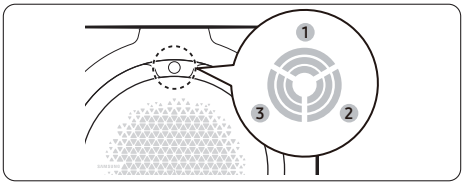
| Spot | LED Display | | | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | Airflow direction indication | | | | | | | | | |
| | Wide | | | Mid | | | Spot | | | |
| | Airflow direction | | | Airflow direction | | | Airflow direction | | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | |
| Connection info reset | ● | | | ● | | | ● | | | Sequential light-up [1] |
| All devices reset | ● | | | ● | | | ● | | | Sequential light-up [2] |

[1] Spot → (Spot + Mid) → (Spot + Mid + Wide) → Spot → •••

[2] Wide → (Wide + Mid) → (Wide + Mid + Spot) → Wide → •••

**NOTE**

- LED indication status of airflow direction

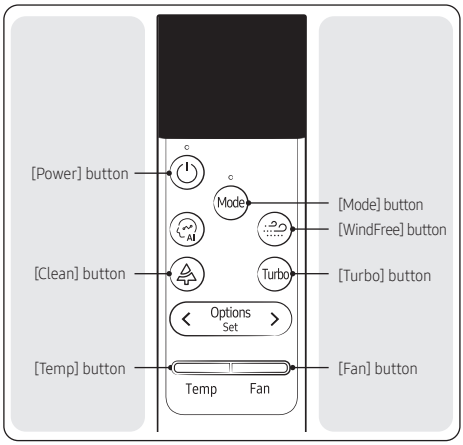


## Step 15 Setting the indoor unit addresses and the installation options

You cannot set both indoor unit addresses and the installation options in a batch: set both respectively.

### Common steps for setting the addresses and options

**Remote controls**




**NOTE**

- The remote control display and buttons may vary depending on the model.

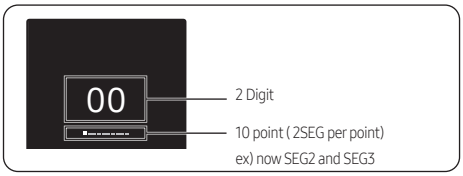
**1** Enter the mode for setting the options.

**a** Reset remote control: Temp button Down + Fan button Down + Mode Press for 10 seconds

**b** You can see the "SW Initialization" message and enter the following in 5 seconds.

**c** Press button and Turbo button for 5 seconds.

**d** Make sure that you are entered to the mode for setting options.




**2** Set the option values.

### ⚠ CAUTION

- The total number of available options are 24 : SEG1 to SEG24
- Because SEG1, SEG7, SEG13 and SEG19 are the page options used by the previous remote control models, the modes to set values for these options are skipped automatically.
- Set a 2-digit value for each option pair in the following order.
- You can see 20 SEG ( except SEG1, SEG7, SEG13, SEG19) SEG2 → ...→ SEG6 → SEG8 → .....→ SEG12 → SEG14 → .... → SEG18 → SEG20 → ... → SEG24

| SEG1 | SEG2 | SEG3 | SEG4 | SEG5 | SEG6 |
|---|---|---|---|---|---|
| 0 | X | X | X | X | X |
| SEG7 | SEG8 | SEG9 | SEG10 | SEG11 | SEG12 |
| 1 | X | X | X | X | X |
| SEG13 | SEG14 | SEG15 | SEG16 | SEG17 | SEG18 |
| 2 | X | X | X | X | X |
| SEG19 | SEG20 | SEG21 | SEG22 | SEG23 | SEG24 |
| 3 | X | X | X | X | X |

- You can set the next SEG by pressing the Mode button.
- You can change the digit value through the following operation.
  Left value: Temp up or down, range : 0 ~ F
  Right value: Fan up or down, range : 0 ~ F

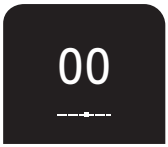
# Installation Procedure

Take the steps presented in the following table:

| Steps | Remote control display |
|---|---|
| **1** Set the SEG2 and SEG3 values:<br>**a** Set the SEG2 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG3 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG2<br>  <br>SEG3 |
| **2** Press the Mode button to move to the next page. |  |
| **3** Set the SEG4 and SEG5 values:<br>**a** Set the SEG4 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG5 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG4<br>  <br>SEG5 |
| **4** Press the Mode button to move to the next page. |  |

| Steps | Remote control display |
|---|---|
| **5** Set the SEG6 and SEG8 values:<br>**a** Set the SEG6 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG8 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG6<br>  <br>SEG8 |
| **6** Press the Mode button to move to the next page. |  |
| **7** Set the SEG9 and SEG10 values:<br>**a** Set the SEG9 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG10 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG9<br>  <br>SEG10 |
| **8** Press the Mode button to move to the next page. |  |

# Installation Procedure

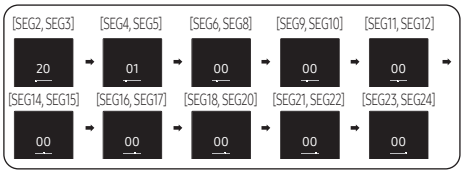
| Steps | Remote control display |
|---|---|
| **9** Set the SEG11 and SEG12 values:<br>**a** Set the SEG11 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG12 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG11<br>  <br>SEG12 |
| **10** Press the Mode button to move to the next page. |  |
| **11** Set the SEG14 and SEG15 values:<br>**a** Set the SEG14 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG15 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG14<br>  <br>SEG15 |
| **12** Press the Mode button to move to the next page. |  |

| Steps | Remote control display |
|---|---|
| **13** Set the SEG16 and SEG17 values:<br>**a** Set the SEG16 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG17 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG16<br>  <br>SEG17 |
| **14** Press the Mode button to move to the next page. |  |
| **15** Set the SEG18 and SEG20 values:<br>**a** Set the SEG18 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG20 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG18<br>  <br>SEG20 |
| **16** Press the Mode button to move to the next page. |  |

# Installation Procedure

| Steps | Remote control display |
|---|---|
| **17** Set the SEG21 and SEG22 values:<br>**a** Set the SEG21 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG22 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG21<br>  <br>SEG22 |
| **18** Press the Mode button to move to the next page. |  |
| **19** Set the SEG23 and SEG24 values:<br>**a** Set the SEG23 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display.<br>**b** Set the SEG24 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display.<br>When you press the Fan or Temp button, values appear in the following order:<br>0 → 1 → ··· E → F |  <br>SEG23<br>  <br>SEG24 |

3 Check whether the option values you have set are correct by pressing the Mode button repeatedly.

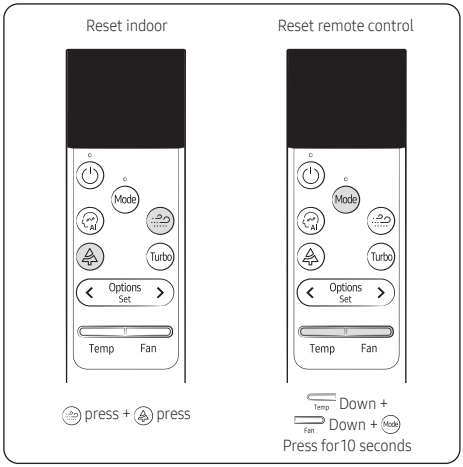



4 Save the option values into the indoor unit:
Point the remote control to the remote control sensor on the indoor unit and then press the button on the remote control twice.
Make sure that this command is received by the indoor unit. When it is successfully received, you can hear a short sound from the indoor unit. If the command is not received, press the button again.

5 Check whether the air conditioner operates following the option values you have set:

**a** Reset the indoor or outdoor unit.
- Indoor Unit : Press button + button for 5 seconds
- Outdoor Unit : Press the K3 button

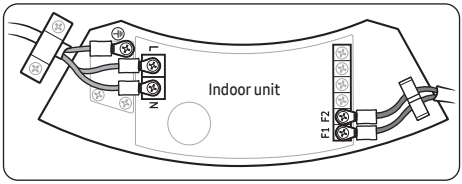
**b** Reset remote control: Temp button Down + Fan button Down + Mode Press for 10 seconds
You can see the "SW Initialization" message.




## Setting the indoor unit addresses (MAIN/RMC/MCU)

1 Make sure that the power is supplied to the indoor unit.
- If the indoor unit is not plugged in, it must include a power supply.

2 Make sure that the panel or display is connected to the indoor unit so that it can receive options.




3 Set an address (MAIN/RMC/MCU port) for each indoor unit using the remote control, according to your air conditioning system plan.
- The indoor unit addresses (MAIN/RMC/MCU port) are set to 0A0000-100000-200000-300000 by default.

# Installation Procedure

## Setting the installation options in a batch

Option No. for an indoor unit address: 0AXXXX-1XXXXX-2XXXXX-3XXXXX

| Option | SEG1 | | SEG2 | | SEG3 | | SEG4 | | SEG5 | | SEG6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Mode | | Setting main address | | 100-digit of an indoor unit address | | 10-digit of an indoor unit address | | The single digit of an indoor unit | |
| Indication and details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details |
| | 0 | | A | | 0 | No main address | 0 to 9 | 10-digit | 0 to 9 | A single digit | 0 to 3 | A single digit |
| | | | | | 1 | Main address setting mode | | | | | | |

| Option | SEG7 | | SEG8 | SEG9 | | SEG10 | SEG11 | | SEG12 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | - | Setting RMC address | | - | Group channel (x16) | | Group address | |
| Indication and details | Indication | Details | - | Indication | Details | - | Indication | Details | Indication | Details |
| | 1 | | | 0 | No RMC address | | RMC1 | 0 to F | RMC2 | 0 to F |
| | | | | 1 | RMC address setting mode | | | | | |

| Option | SEG13 | | SEG14 | SEG15 | | SEG16 | | SEG17 | | SEG18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | - | Setting MCU PORT address | | 10-digit of MCU address | | 1-digit of MCU | | MCU PORT address | |
| Indication and details | Indication | Details | - | Indication | Details | Indication | Details | Indication | Details | Indication | Details |
| | 2 | | | 0 | No MCU PORT | 0~1 | 10-digit | 0~9 | 1-digit | A~F | PORT Location |
| | | | | 1 | MCU PORT address setting mode | | | | | | |

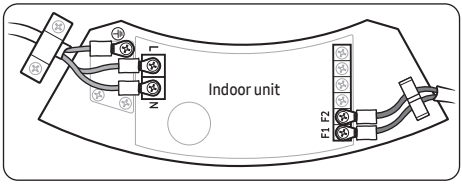
## ⚠ CAUTION

- If you enter A to F to the SEG5 or SEG6, the indoor unit main address is not changed.
- If you enter 0 to the SEG3, the indoor unit maintains the previous main address although you enter the option value for the SEG5 or SEG6.
- If you enter 0 to the SEG9, the indoor unit maintains previous RMC address although you enter the option value for the SEG11 or SEG12.
- You cannot set the SEG11 or SEG12 to F value at the same time.
- If the indoor unit is connected to the MCU, you can set the SEG 15~18.
- Ex.) If you want to set the indoor unit to 'A' port of MCU #1.
  (0A0000 – 100000 – 20101A -30000)

### Setting the indoor unit installation option (suitable for the condition of each installation location)

1 Make sure that the power is supplied to the indoor unit.
   - If the indoor unit is not plugged in, it must include a power supply.

2 Make sure that the panel or display is connected to the indoor unit so that it can receive options




3 Set an address for each indoor unit using the remote control, according to your air conditioning system plan.
   - The indoor unit addresses are set to 020010-100000-2000E0-300000 by default.
   - The SEG20 option, Individual control with remote control, allows you to control multiple indoor units individually by using the remote control.

# Installation Procedure

**Installation options for the 02 series**

| SEG1 | SEG2 | SEG3 | SEG4 | SEG5 | SEG6 |
|---|---|---|---|---|---|
| 0 | 2 | - | Use of external temperature sensor / Minimizing fan operation when thermostat is off | Use of central control | Compensation of the fan RPM |
| **SEG7** | **SEG8** | **SEG9** | **SEG10** | **SEG11** | **SEG12** |
| 1 | Use of drain pump | Use of hot water heater | Settings for load operation during heater control<br>Fan control during defrost mode / heater control during defrost mode | EEV step when heating stops | - |
| **SEG13** | **SEG14** | **SEG15** | **SEG16** | **SEG17** | **SEG18** |
| 2 | Use of external control | Setting the output of external control / External heater On or Off signal | - | Buzzer control / whether to use humidity sensor / whether to use APP UX DSP (Dual Set Point) / whether to use R-32 sensor | Maximum filter usage time |
| **SEG19** | **SEG20** | **SEG21** | **SEG22** | **SEG23** | **SEG24** |
| 3 | Individual control with remote control | Heating setting compensation offset / Removing condensated water in the Heat mode | EEV step of stopped unit during the oil return or the defrost mode | Setting the MDS Kit installation option | Cycle time of Swing |

- Even if you set the Use of drain pump (SEG8) option to 0, it is automatically set to 2 (the drain pump is used with 3 minute delay).
- If you set the Maximum filter usage time (SEG18) option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).
- If you set an option to a value that is out of range specified above, the option is automatically set to 0 by default.
- The SEG5 option (Use of central control) is set to 1 (Use) by default. Therefore, you don't need to set the SEG5 option additionally. Note that even if the central control system is not connected, no errors occur. If you want a specific indoor unit not to be controlled by the central control system, set the SEG option of that indoor unit to 0 (Disuse).
- The external output of SEG15 is generated via VSTAT10P-1 connection. (Refer to the manual of VSTAT10P-1.)
- If you set the Individual control with remote control (SEG20) option to a value other than 0 to 4, it is automatically set to 0 (Indoor 1).

### Installation options for the 02 series (detailed)

Option No. for an indoor unit address: 02XXXX-1XXXXX-2XXXXX-3XXXXX

<table>
<tr><th>Option</th><th colspan="4">SEG1</th><th colspan="4">SEG2</th><th>SEG3</th><th colspan="4">SEG4</th><th colspan="2">SEG5</th><th colspan="2">SEG6</th></tr>
<tr><td>Function</td><td colspan="4">Page</td><td colspan="4">Mode</td><td>-</td><td colspan="4">Use of external temperature sensor / Minimizing fan operation when thermostat is off</td><td colspan="2">Use of central control</td><td colspan="2">Compensation of the fan RPM</td></tr>
<tr><td rowspan="10">Indication and details</td><td colspan="2">Indication</td><td colspan="2">Details</td><td colspan="2">Indication</td><td colspan="2">Details</td><td rowspan="10">-</td><td rowspan="2">Indication</td><td colspan="2">Details</td><td rowspan="2">Indication</td><td rowspan="2">Details</td><td rowspan="2">Indication</td><td rowspan="2">Details</td></tr>
<tr><td colspan="2">0</td><td colspan="2">2</td><td>Use of external temperature sensor</td><td>Minimizing fan operation when thermostat is off</td></tr>
<tr><td>0</td><td>Disuse</td><td>(Cooling, Heating) Disuse</td><td rowspan="2">0</td><td rowspan="2">Disuse</td><td rowspan="2">0</td><td rowspan="2">Disuse (recessed installation)</td></tr>
<tr><td>1</td><td>Use</td><td>(Cooling, Heating) Disuse</td></tr>
<tr><td>2</td><td>Disuse</td><td>(Heating) Use (*1)</td><td rowspan="6">1</td><td rowspan="6">Use</td><td rowspan="2">1</td><td rowspan="2">High-ceiling mode (recessed installation)</td></tr>
<tr><td>3</td><td>Use</td><td>(Heating) Use (*1)</td></tr>
<tr><td>4</td><td>Disuse</td><td>(Cooling) Use</td><td rowspan="2">4</td><td rowspan="2">Disuse (exposed installation)</td></tr>
<tr><td>5</td><td>Use</td><td>(Cooling) Use</td></tr>
<tr><td>6</td><td>Disuse</td><td>(Cooling, Heating) Use (*1)</td><td rowspan="2">5</td><td rowspan="2">High-ceiling mode (exposed installation)</td></tr>
<tr><td>7</td><td>Use</td><td>(Cooling, Heating) Use (*1)</td></tr>
</table>

# Installation Procedure

| Option | SEG7 | | SEG8 | | SEG9 | | SEG10 | | | SEG11 | | SEG12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Use of drain pump | | Use of hot water heater | | Settings for load operation during heater control<br>Fan control during defrost mode / Heater control during defrost mode | | | EEV step when heating stops | | - |
| | | | | | | | | Detail | | | | |
| | Indication | Details | Indication | Details | Indication | Details | Indication | Fan control during defrost mode | Heater control during defrost mode | Indication | Details | |
| Indication and detail | 1 | | 0 | Disuse | 0 | Disuse | 0 | Fan Off | Off | 0 | Default | - |
| | | | | | | | 1 | Fan turns on when heater turns on | Off | | | |
| | | | | | | | 2 | Fan Off | Off | | | |
| | | | | | | | 3 | Fan turns on when heater turns on | Off | | | |
| | | | 1 | Use | 1 | Use (*2) | 4 | Fan Off | On | 1 | Noise decreasing setting | |
| | | | | | | | 5 | Fan turns on when heater turns on | On | | | |
| | | | | | | | 6 | Fan Off | On | | | |
| | | | | | | | 7 | Fan turns on when heater turns on | On | | | |
| | | | 2 | Use with 3 minute delay | 2 | - | 8 | Fan Off | Off | | | |
| | | | | | | | 9 | Fan turns on when heater turns on | Off | | | |
| | | | | | | | A | Fan Off | Off | | | |
| | | | | | | | B | Fan turns on when heater turns on | Off | | | |
| | | | | | 3 | Use (*2) | C | Fan Off | On | | | |
| | | | | | | | D | Fan turns on when heater turns on | On | | | |
| | | | | | | | E | Fan Off | On | | | |
| | | | | | | | F | Fan turns on when heater turns on | On | | | |

| Option | SEG13 | | SEG14 | | SEG15 | | | SEG16 | | SEG17 | | | | | SEG18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Use of external control | | Setting the output of external control / External heater On or Off signal | | | S-Plasma ion | | Buzzer control / whether to use humidity sensor / whether to use APP UX DSP (Dual Set Point) / whether to use R-32 sensor | | | | | Maximum filter usage time | |
| | | | | | | Details | | | | | Detail | | | | | |
| | Indication | Details | Indication | Details | Indication | Setting the output of external control | External heater On or Off signal | Indication | Details | Indication | Buzzer Control | Humidity sensor | APP UX DSP | R-32 sensor | Indication | Details |
| Indication and details | 2 | | 0 | Disuse | 0 | Thermo On | - | 0 | Disuse | 0 | Use Buzzer | Disuse | Disuse | Disuse | 2 | 1000 hours |
| | | | | | | | | | | 1 | Disuse Buzzer | Disuse | Disuse | Disuse | | |
| | | | | | | | | | | 2 | Use Buzzer | Use | Disuse | Disuse | | |
| | | | | | | | | | | 3 | Disuse Buzzer | Use | Disuse | Disuse | | |
| | | | | | | | | | | 4 | Use Buzzer | Disuse | Use | Disuse | | |
| | | | | | | | | | | 5 | Disuse Buzzer | Disuse | Use | Disuse | | |
| | | | | | | | | | | 6 | Use Buzzer | Use | Use | Disuse | | |
| | | | | | | | | | | 7 | Disuse Buzzer | Use | Use | Disuse | | |
| | | | 1 | ON or OFF control | 1 | Operation On | - | 1 | Use | 8 | Use Buzzer | Disuse | Disuse | Use | 6 | 2000 hours |
| | | | | | | | | | | 9 | Disuse Buzzer | Disuse | Disuse | Use | | |
| | | | 2 | OFF control | 2 | - | Use (*3) | | | A | Use Buzzer | Use | Disuse | Use | | |
| | | | | | | | | | | B | Disuse Buzzer | Use | Disuse | Use | | |
| | | | 3 | Window ON or OFF control | 3 | - | Use (*3) | | | C | Use Buzzer | Disuse | Use | Use | | |
| | | | | | | | | | | D | Disuse Buzzer | Disuse | Use | Use | | |
| | | | | | | | | | | E | Use Buzzer | Use | Use | Use | | |
| | | | | | | | | | | F | Disuse Buzzer | Use | Use | Use | | |

# Installation Procedure

| Option | SEG19 | | SEG20 | | SEG21 | | | SEG22 | |
|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Individual control with remote control | | Heating setting compensation offset / Removing condensated water in the Heat mode | | | EEV step of stopped unit during the oil return or the defrost mode | |
| Indication and details | Indication | Details | Indication | Details | Indication | Details | | Indication | Details |
| | | | | | | Heating setting compensation offset | Removing condensated water in the Heat mode | | |
| | 3 | | 0 or1 | Indoor1 | 0 | Default (*4) | Disuse | 0 | Default |
| | | | | | 1 | 3.6 °F (2 °C) | Disuse | 1 | Oil return or Noise decreasing in defrost mode |
| | | | 2 | Indoor 2 | 2 | 9 °F (5 °C) | Disuse | | |
| | | | 3 | Indoor 3 | 3 | Default (*4) | Use (*5) | | |
| Indication and details | 3 | | 4 | Indoor 4 | 4 | 3.6 °F (2 °C) | Use (*5) | 1 | Oil return or Noise decreasing in defrost mode |
| | | | | | 5 | 9 °F (5 °C) | Use (*5) | | |

| Option | SEG23 | | | SEG24 | |
|---|---|---|---|---|---|
| Function | Motion detection sensor | | | Cycle time of Swing | |
| | Setting the MDS Kit installation option | | | Indication | Details |
| | Indication | | Details | 0 | 34 seconds (default) |
| | 0 | | Disuse (Soft Off+Hard off) (*6) | | |
| | Standard | 1 | Off after 20 min. (Soft Off+Hard off) | 1 | 30 seconds |
| | | 2 | Off after 40 min. (Soft Off+Hard off) | | |
| | | 3 | Off after 80 min. (Soft Off+Hard off) | | |
| | Premium | 4 | Off after 20 min. (Soft Off+Hard off) | | |
| | | 5 | Off after 40 min. (Soft Off+Hard off) | | |
| | | 6 | Off after 80 min. (Soft Off+Hard off) | | |
| | Standard | 7 | Off after 20 min. (Soft Off only) | 2 | 38 seconds |
| | | 8 | Off after 40 min. (Soft Off only) | | |
| | | 9 | Off after 80 min. (Soft Off only) | | |
| | Premium | A | Off after 20 min. (Soft Off only) | | |
| | | B | Off after 40 min. (Soft Off only) | | |
| | | C | Off after 80 min. (Soft Off only) | | |

**(*1)** Minimizing fan operation when thermostat is off: The fan operates for 20 seconds at an interval of 5 minutes in the Heat mode.

**(*2)** 1: The fan is turned on continually when the hot water heater is turned on, 3: The fan is turned off when the hot water heater is turned on with cooling only indoor unit.

(Cooling only indoor unit: To use this option, install the Mode Select switch (VCTRL07P-1) on the outdoor unit and fix it to the Cool mode.)

**(*3)** When the following 2 or 3 is used as external heater On or Off signal, the signal for monitoring external contact control will not be output.

2: The fan is turned on continually when the external heater is turned on,

3: The fan is turned off when the external heater is turned on with cooling only indoor unit

(Cooling only indoor unit: To use this option, install the Mode Select switch (VCTRL07P-1) on the outdoor unit and fix it to the Cool mode.)

**NOTE**

- If the fan is set to off for cooling only indoor unit by setting the SEG9=3 or SEG15=3, you need to use an external sensor or wired remote control sensor to detect indoor temperature exactly.

**(*4)** Default setting value: 9 °F (5 °C)

**(*5)** If the air conditioner operates in the Heat mode immediately after finishing the cooling operation, the condensated water in the drain pan becomes water steam by the heat of the indoor unit heat exchanger. Since the water steam might be condensed on the indoor unit, which may fall into a living space, use this function to remove the water steam out of the indoor unit by operating the fan (for maximum 20 minutes) although the indoor unit is turned off after the Cool mode is turned to the Heat mode.

**(*6)** SOFT OFF: The indoor unit turns off its operation at the indicated time in the table for Installation Option after its final motion detection. But, it turns on again if the MDS detects motion.

HARD OFF: Designated time after SOFT OFF, it cannot turn on automatically when it detects motion. Users should control to turn on the indoor unit with remote control, etc.

**Installation options for the 05 series**

| SEG1 | SEG2 | SEG3 | SEG4 | SEG5 | SEG6 |
|---|---|---|---|---|---|
| 0 | 5 | Use of the HR-specific auto changeover function in the Auto mode | (When setting SEG3)<br>Offset for the heating reference temperature | (When setting SEG3)<br>Offset for the cooling reference temperature | (When setting SEG3)<br>Reference for change from Heat mode to Cool mode |
| **SEG7** | **SEG8** | **SEG9** | **SEG10** | **SEG11** | **SEG12** |
| 1 | (When setting SEG3)<br>Reference for change from Cool mode to Heat mode | (When setting SEG3)<br>Time required for mode change | Compensation option for a long pipe and the height difference between indoor units | - | - |
| **SEG13** | **SEG14** | **SEG15** | **SEG16** | **SEG17** | **SEG18** |
| 2 | - | Dual fuel (heater lock) setting | Dual fuel (HP lock) setting | - | Control variables when the hot water heater or an external heater is used |
| **SEG19** | **SEG20** | **SEG21** | **SEG22** | **SEG23** | **SEG24** |
| 3 | - | - | - | - | Whether to use UV LED / whether to use BLE Onboarding / whether to allow fan speed control during auto mode / MDS (motion detection sensor) control UX type |

# Installation Procedure

**Installation options for the 05 series (detailed)**

Option No. : 05XXXX-1XXXXX-2XXXXX-3XXXXX

| Option | SEG1 | | SEG2 | | SEG3 | | SEG4 | | SEG5 | | SEG6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Mode | | Use of the HR-specific auto changeover function in the Auto mode | | (When setting SEG3) Offset for the heating reference temperature | | (When setting SEG3) Offset for the cooling reference temperature | | (When setting SEG3) Reference for change from Heat mode to Cool mode | |
| Indication and details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details |
| | 0 | | 5 | | 0 | The product options are followed. | 0 | 0 | 0 | 0 | 0 | 1 |
| | | | | | 1 | The HR-specific auto changeover function is used. | 1 | 0.5 | 1 | 0.5 | 1 | 1.5 |
| | | | | | | | 2 | 1 | 2 | 1 | 2 | 2 |
| | | | | | | | 3 | 1.5 | 3 | 1.5 | 3 | 2.5 |
| | | | | | | | 4 | 2 | 4 | 2 | 4 | 3 |
| | | | | | | | 5 | 2.5 | 5 | 2.5 | 5 | 3.5 |
| | | | | | | | 6 | 3 | 6 | 3 | 6 | 4 |
| | | | | | | | 7 | 3.5 | 7 | 3.5 | 7 | 4.5 |

| Option | SEG7 | | SEG8 | | SEG9 | | SEG10 | | SEG11 | SEG12 |
|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | (When setting SEG3) Reference for change from Cool mode to Heat mode | | (When setting SEG3) Time required for mode change | | Compensation option for a long pipe and the height difference between indoor units | | - | - |
| Indication and details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | - | - |
| | 1 | | 0 | 1 | 0 | 5 min. | 0 | The default value is used. | | |
| | | | 1 | 1.5 | 1 | 7 min. | 1 | 1) The height difference (*1) is more than 30 m. - or - 2) The distance (*2) is longer than 110 m. | | |
| | | | 2 | 2 | 2 | 9 min. | | | | |
| | | | 3 | 2.5 | 3 | 11 min. | | | | |
| | | | 4 | 3 | 4 | 13 min. | 2 | 1) The height difference (*1) is 15 to 30 m. - or - 2) The distance(*2) is 50 to 110 m. | | |
| | | | 5 | 3.5 | 5 | 15 min. | | | | |
| | | | 6 | 4 | 6 | 20 min. | | | | |
| | | | 7 | 4.5 | 7 | 30 min. | | | | |

| Option | SEG13 | SEG14 | SEG15 | | SEG16 | | SEG17 |
|---|---|---|---|---|---|---|---|
| Function | - | - | Dual fuel (heater lock) setting | | Dual fuel (HP lock) setting | | - |
| Indication and details | - | - | Indication | Detail | Indication | Detail | - |
| | | | 0 | Disuse | 0 | Disuse | |
| | | | 1 | 64.9 °F (18.3 °C) | 1 | 45.0 °F (7.2 °C) | |
| | | | 2 | 60.1 °F (15.6 °C) | 2 | 39.9 °F (4.4 °C) | |
| | | | 3 | 55.0 °F (12.8 °C) | 3 | 35.1 °F (1.7 °C) | |
| | | | 4 | 50.0 °F (10.0 °C) | 4 | 30.0 °F (-1.1 °C) | |
| | | | 5 | 45.0 °F (7.2 °C) | 5 | 25.0 °F (-3.9 °C) | |
| | | | 6 | 39.9 °F (4.4 °C) | 6 | 19.9 °F (-6.7 °C) | |
| | | | 7 | 35.1 °F (1.7 °C) | 7 | 15.1 °F (-9.4 °C) | |
| | | | 8 | 30.0 °F (-1.1 °C) | 8 | 10.0 °F (-12.2 °C) | |
| | | | 9 | 25.0 °F (-3.9 °C) | 9 | 5.0 °F (-15 °C) | |
| | | | A | 19.9 °F (-6.7 °C) | A | 0 °F (-17.8 °C) | |
| | | | B | 15.1 °F (-9.4 °C) | B | -5.1 °F (-20.6 °C) | |
| | | | C | 10.0 °F (-12.2 °C) | C | -9.4 °F (-23.0 °C) | |
| | | | D | 5.0 °F (-15 °C) | D | -14.8 °F (-26.0 °C) | |
| | | | E | 0 °F (-17.8 °C) | E | -20.2 °F (-29.0 °C) | |
| | | | F | Cannot be used | F | Cannot be used | |

| Option | SEG18 (*3) | | |
|---|---|---|---|
| Function | Control variables when the hot water heater or an external heater is used | | |
| Indication and details | Indication | Details | |
| | | Offset temperature for heater on | Delay time for heater on |
| | 0 | At the same time with thermo on | No delay |
| | 1 | At the same time with thermo on | 10 min. |
| | 2 | At the same time with thermo on | 20 min. |
| | 3 | 2.7 °F (1.5 °C) | No delay |
| | 4 | 2.7 °F (1.5 °C) | 10 min. |
| | 5 | 2.7 °F (1.5 °C) | 20 min. |
| | 6 | 5.4 °F (3 °C) | No delay |
| | 7 | 5.4 °F (3 °C) | 10 min. |
| | 8 | 5.4 °F (3 °C) | 20 min. |
| | 9 | 8.1 °F (4.5 °C) | No delay |
| | A | 8.1 °F (4.5 °C) | 10 min. |
| | B | 8.1 °F (4.5 °C) | 20 min. |
| | C | 10.8 °F (6 °C) | No delay |
| | D | 10.8 °F (6 °C) | 10 min. |
| | E | 10.8 °F (6 °C) | 20 min. |

# Installation Procedure

| Option | SEG19 | SEG20 | SEG21 | SEG22 | SEG23 | | | SEG24 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | - | - | - | - | Forcing FAN Operation for Heating and Cooling | | | Whether to use UV LED / whether to use BLE Onboarding / whether to allow fan speed control during auto mode / MDS (motion detection sensor) control UX type | | | | |
| Indication and details | - | - | - | - | Indication | Details | | Indication | Detail | | | |
| | | | | | | Cooling Fan Setting | Heating Fan Setting | | UV LED | BLE Onboarding | Whether to allow fan speed control during auto mode | MDS (motion detection sensor) control UX type |
| | | | | | 0 | Disuse | Disuse | 0 | Disuse | Disuse | Disuse | Fan speed and power saving mode can be set simultaneously |
| | | | | | 1 | Disuse | Use (Fan: User setting) | 1 | Use | Disuse | Disuse | Fan speed and power saving mode can be set simultaneously |
| | | | | | 2 | Disuse | Use (Fan: High) | 2 | Disuse | Use | Disuse | Fan speed and power saving mode can be set simultaneously |
| | | | | | 3 | Disuse | Use (Fan: Low) | 3 | Use | Use | Disuse | Fan speed and power saving mode can be set simultaneously |

| Option | SEG19 | SEG20 | SEG21 | SEG22 | SEG23 | | | SEG24 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | - | - | - | - | Forcing FAN Operation for Heating and Cooling | | | Whether to use UV LED / whether to use BLE Onboarding / whether to allow fan speed control during auto mode / MDS (motion detection sensor) control UX type | | | | |
| Indication and details | - | - | - | - | 4 | Use (Fan: User setting) | Disuse | 4 | Disuse | Disuse | Use | Fan speed and power saving mode can be set simultaneously |
| | | | | | 5 | Use (Fan: User setting) | Use (Fan: User setting) | 5 | Use | Disuse | Use | Fan speed and power saving mode can be set simultaneously |
| | | | | | 6 | Use (Fan: User setting) | Use (Fan: High) | 6 | Disuse | Use | Use | Fan speed and power saving mode can be set simultaneously |
| | | | | | 7 | Use (Fan: User setting) | Use (Fan: Low) | 7 | Use | Use | Use | Fan speed and power saving mode can be set simultaneously |
| | | | | | 8 | Use (Fan: High) | Disuse | 8 | Disuse | Disuse | Disuse | Only fan speed or power saving mode can be set at a time |
| | | | | | 9 | Use (Fan: High) | Use (Fan: User setting) | 9 | Use | Disuse | Disuse | Only fan speed or power saving mode can be set at a time |
| | | | | | A | Use (Fan: High) | Use (Fan: High) | A | Disuse | Use | Disuse | Only fan speed or power saving mode can be set at a time |
| | | | | | B | Use (Fan: High) | Use (Fan: Low) | B | Use | Use | Disuse | Only fan speed or power saving mode can be set at a time |
| | | | | | C | Use (Fan: Low) | Disuse | C | Disuse | Disuse | Use | Only fan speed or power saving mode can be set at a time |
| | | | | | D | Use (Fan: Low) | Use (Fan: User setting) | D | Use | Disuse | Use | Only fan speed or power saving mode can be set at a time |
| | | | | | E | Use (Fan: Low) | Use (Fan: High) | E | Disuse | Use | Use | Only fan speed or power saving mode can be set at a time |
| | | | | | F | Use (Fan: Low) | Use (Fan: Low) | F | Use | Use | Use | Only fan speed or power saving mode can be set at a time |

# Installation Procedure

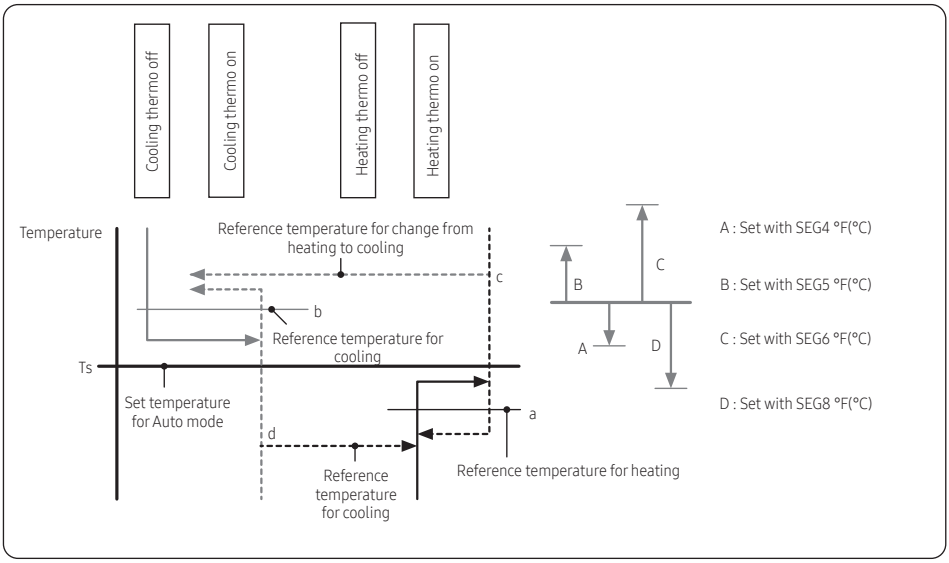
**(*1)** Height difference: The difference of the height between the target indoor unit and the indoor unit installed at the lowest place. For example, When the target indoor unit is installed 131.23 ft. (40 m) higher than the indoor unit installed at the lowest place, set the option to 1.

**(*2)** Distance: The difference between the pipe length of the target indoor unit from the outdoor unit and the pipe length of the indoor unit installed at the farthest place from the outdoor unit. For example, when the longest pipe length is 328 ft. (100 m) and the pipe length of the target indoor unit is 131.23 ft. (40 m), set the option to 2. (100 - 40 = 196.85 ft. (60 m))

**(*3)** The heater operation when SEG9 of the 02 series functional options is set to 'the hot water heater is used' or when SEG15 is set to 'an external heater is used.'
Example 1: When SEG9 of the 02 series functional options is set to 1 or when SEG18 of the 05 series functional options is set to 0:
The hot water heater is immediately turned on when the heating thermostat is turned on and is immediately turned off when the heating thermostat is turned off.
Example 2: When SEG15 of the 02 series functional options is set to 2 or when SEG18 of the 05 series functional options is set to A:
If the condition "room temperature ≤ set temperature + f(heating compensation temperature) - 8.1 °F (4.5 °C)" is maintained for 10 minutes, the external heater is turned on.
If the condition "room temperature > set temperature + f(heating compensation temperature) - 8.1 °F (4.5 °C) + 1.8 °F (1 °C)" occurs, the external heater is turned off, where 1.8 °F (1 °C) is the hysteresis for determining whether to turn on or off the external heater.

**Additional information on SEG3, 4, 5, 6, 8, 9**

When SEG 3 is set to 1 and the HR-specific auto changeover function is run, the indoor unit operates as shown in the following figure:




The mode change between the Cool and Heat modes is made only when the thermo off state is maintained for the period of time set with SEG9.

## Changing the addresses and options individually

When you want to change the value of a specific option, refer to the following table and follow the steps in **Common steps for setting the addresses and options** on page **31**.

| Option | SEG1 | | SEG2 | | SEG3 | | SEG4 | | SEG5 | | SEG6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | Page | | Mode | | Type of the option to change | | Tens position of the option number | | Units position of the option number | | New value | |
| Indication and details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details | Indication | Details |
| | 0 | | D | | Option type | 0 to F | Tens position value | 0 to 9 | Units position value | 0 to 9 | New value | 0 to F |

Example: Changing the Buzzer control (SEG17) option of the installation options to 1 disuse.

| Option | SEG1 | SEG2 | SEG3 | SEG4 | SEG5 | SEG6 |
|---|---|---|---|---|---|---|
| Function | Page | Mode | Type of the option to change | Tens position of the option number | Units position of the option number | New value |
| Indication | 0 | D | 2 | 1 | 7 | 1 |

## ⚠ CAUTION

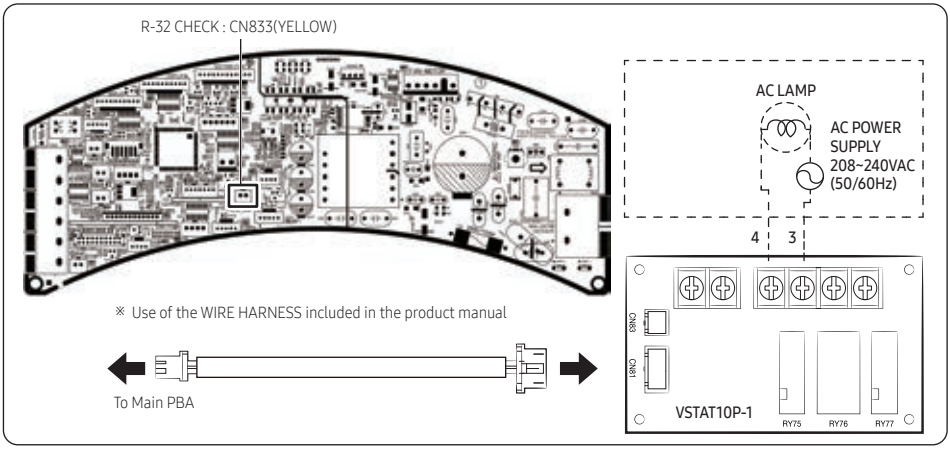
- If your indoor units support both cooling and heating, the mixed operation (two or more indoor units operate in different modes simultaneously) is not available when the indoor units are connected to the same outdoor unit. If you set an indoor unit as the master indoor unit by using the remote control, the outdoor unit automatically operate in the current mode of the master indoor unit.

## Installing external outputs

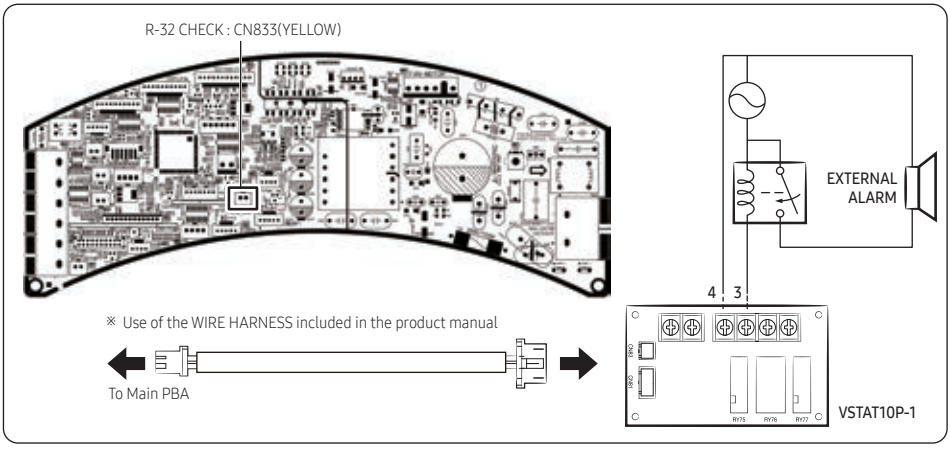
- An external output signal occurs if the R-32 sensor in the indoor unit detects a refrigerant leak, or the sensor has a malfunction or short circuit.
- Based on this signal, safety measures required for the indoor unit, such as ventilation system activation and alarm activation, can be taken.
- VSTAT10P-1 (External Contact Control Module) can be used to link the GAS LEAK output.

# Installation Procedure

## For controlling AC LAMP (On/Off)




## For controlling EXTERNAL ALARM (On/Off)




**NOTE**

- The VSTAT10P-1 can be connected to the required load on connectors 3 and 4.
- The load is AC (208-230), AC 2.25Amax
- When an error occurs due to a gas leak or R-32 sensor error, 3 and 4 are in a short state (the relay operates).

## Performing final check and trial operation

**To complete the installation, perform the following checks and tests to ensure that the air conditioner operates correctly.**

1 Check the followings.
- Strength of the installation site
- Tightness of pipe connection to detect a gas leak
- Electric wiring connections
- Heat-resistant insulation of the pipe
- Drainage
- Earth conductor connection
- Correct operation (follow the steps below)

**After finishing the installation of the air conditioner, you should explain the following to the user. Refer to appropriate pages in the User's Manual.**

1 How to start and stop the air conditioner
2 How to select the modes and functions
3 How to adjust the temperature and fan speed
4 How to adjust the airflow direction
5 How to set the timers
6 How to clean and replace the filters

**NOTE**

- When you complete the installation successfully, hand over the User's Manual and this Installation Manual to the user for storage in a handy and safe place.

# Appendix

## Troubleshooting

Detection of errors

- If an error occurs during the operation, an LED flickers and the operation is stopped except the LED.
- If you re-operate the air conditioner, it operates normally at first, then detect an error again.

### LED Display on the receiver & display unit

| Condition of the indoor unit | Error code | Indoor unit display indications | | | |
|---|---|---|---|---|---|
| | | Ice blue | Yellow green | Blue | Red |
| Power reset (blinking once every 2 seconds) | No error | ◑ | X | X | X |
| In the defrost operation (blinking once every 10 seconds) | No error | ◑ | X | X | X |
| Open or short circuit error of the indoor-temperature sensor | E121 | X | X | X | ◑ |
| Open or short circuit error of the evaporator-in sensor | E122 | X | ◑ | X | ◑ |
| Open or short circuit error of the evaporator-out sensor | E123 | | | | |
| Error of the fan in the indoor unit | E154 | X | X | ◑ | ◑ |
| 1. Open or short circuit error of the outdoor-temperature sensor | E221 | X | X | ◑ | X |
| 2. Open or short circuit error of the condenser sensor | E237 | | | | |
| 3. Open or short circuit error of the discharge sensor | E251 | | | | |
| Errors of the sensors of the outdoor unit other than the errors listed above | | | | | |
| 1. Error due to the opened EEV (2nd detection) | E151 | | | | |
| 2. Error due to the closed EEV (2nd detection) | E152 | | | | |
| 3. The evaporator-in sensor is detached. | E128 | | | | |
| 4. The evaporator-out sensor is detached. | E129 | | | | |
| 5. The condenser mid sensor is detached. | E241 | | | | |
| 6. Refrigerant leakage (2nd detection) | E554 | | | | |
| 7. Abnormal high temperature on the condenser (2nd detection) | E450 | | | | |
| 8. Low pressure switch (2nd detection) | E451 | | | | |
| 9. Abnormal high temperature on the air discharged from the outdoor unit (2nd detection) | E416 | | | | |
| 10. The indoor unit stops due to an unknown error of the outdoor unit. | E559 | | | | |
| 11. Error of detection of a reverse phase | E425 | | | | |
| 12. The compressor stops due to freeze detection (6th detection) | E403 | | | | |
| 13. The high pressure sensor is detached. | E301 | | | | |
| 14. The low pressure sensor is detached. | E306 | | | | |
| 15. Compression ratio error of the outdoor unit | E428 | X | X | ◑ | X |
| 16. Outdoor sump down_1 prevention control | E413 | | | | |
| 17. Compressor shutdown due to the low-pressure-sensor prevention control_1 | E410 | | | | |
| 18. Simultaneous opening of the cooling and heating MCU SOL valves (1st detection) | E180 | | | | |
| 19. Simultaneous opening of the cooling and heating MCU SOL valves (2nd detection) | E181 | | | | |
| Self-diagnosis errors other than the errors listed above | | | | | |

| Condition of the indoor unit | Error code | Indoor unit display indications | | | |
|---|---|---|---|---|---|
| | | Ice blue | Yellow green | Blue | Red |
| No communication occurs between the indoor and outdoor units for 2 minutes. | E101 | X | ◑ | X | X |
| Communication error received from the outdoor unit | E102 | | | | |
| Error of 3 minute tracking on the outdoor unit | E202 | | | | |
| The number of the installed indoor units that is transmitted via communication after the tracking is different. | E201 | | | | |
| Error of duplicated communication addresses (NASA only) | E108 | | | | |
| The communication address is not confirmed. (NASA only) | E109 | | | | |
| Indoor unit R-32 sensor short/open | E116 | | | | |
| Installation combination of indoor unit and wired remote control Error | E694 | | | | |
| Refrigerant leak sensor lifetime unpredictable error | E695 | | | | |
| 1st refrigerant leak detection error | E696 | | | | |
| 2nd refrigerant leak detection error (Error-causing indoor unit) | E697 | | | | |
| Refrigerant leak sensor failure error | E698 | | | | |
| Refrigerant leak sensor replacement notification error | E699 | | | | |
| Refrigerant leak sensor lifetime expiration error | E700 | | | | |
| 2nd refrigerant leak detection error (Not Error-causing indoor unit) | E797 | | | | |
| Communication errors other then the errors listed above | | | | | |
| Error of the second detection of the float switch | E153 | X | ◑ | ◑ | X |
| EEPROM error | E162 | ◑ | ◑ | X | ◑ |
| EEPROM option error | E163 | | | | |
| Error of incompatibility of the indoor unit | E164 | ◑ | X | X | ◑ |
| Error of mixed operation | E161 | ◑ | ◑ | X | X |
| Open circuit error of the thermal fuse | E198 | ◑ | X | ◑ | X |
| MDS (Motion Detecting Sensor) Error | | ◑ | ◑ | ◑ | X |

● : On, ◑ : Blinking, X : Off

- If you turn off the air conditioner when the LED is flickering, the LED is also turned off.
- If you re-operate the air conditioner, it operates normally at first, then detect an error again.
- When E108 error occurs, change the address and reset the system.
  Ex.) When address of the indoor unit #1 and #2 are set as 5, address of the indoor unit #1 will become 5 and indoor unit #2 will display E108, A002.