VRF (Variable Refrigerant Flow)
Installation manual

VVCD***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.

Safety Information

⚠ 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.

LEAK DETECTION SYSTEM installed. Unit must be powered except for service.

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 in accordance with Table 1 in the outdoor unit installation manual.
- 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.

Safety Information

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.

General Information

The following list includes important facts and information regarding the electric air handler and its inclusions.

1 Air handler is rated at 230 volts AC at 60 Hertz
2 Air handler size varies by model
3 Two-wire, wired controller operation (VSTAT04P-1).
4 Two-wire system communication
5 Lennox wired controller required
6 Air handlers are equipped with blower for A/C or heat pump operation.
7 The air entering the air handler must be filtered.
8 This air handler is designed for horizontal application.
9 This air handler must not be operated without the door installed.
10 This air handler will not operate without an outdoor unit connected, completing the system.

NOTE

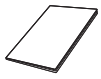
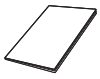
- This air handler and its components listed on the A/C and heat pump equipment sticker were listed in combination as a system by ETL for the United States and Canada.
  - These models may be used with or without electric heat.
  - Only use electric heat that is designed for this unit and provided by Lennox.
  - The direct drive, five speed constant torque motors provide a selection of air volume to match the application.
  - The unit can be positioned for air return through the end of the unit in the horizontal position.

Product Inspection

As soon as the air handler is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier's freight bill. A separate request for inspection by the carrier's agent should be made in writing. Before installing the air handler you should check the cabinet for screws or bolts which may have loosened in transit. There are no shipping or spacer brackets which need to be removed before startup. See local Distributor for more information. Lennox assumes no liability for freight damage. Also check to be sure all accessories such as heater kits, and coils are available. Installation of these accessories should be accomplished before the air handler is set in place or the connecting of the wiring, electric heat, ducts or piping.

Accessories

The following accessories are supplied with the indoor unit.

User manual	Installation manual	Warranty card
		

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 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.

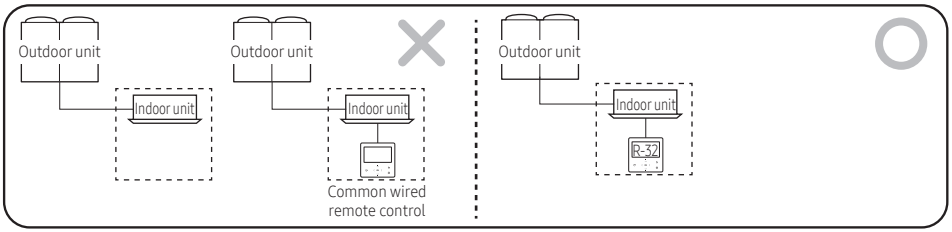
Use R-32-capable wired remote controls.

※ VSTAT04P-1

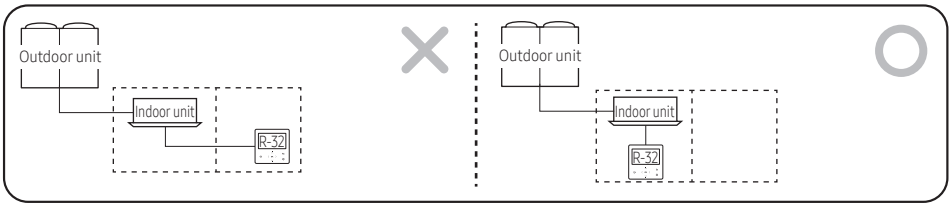
※ R-32-capable wired remote controls should be purchased separately.

⚠ WARNING

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

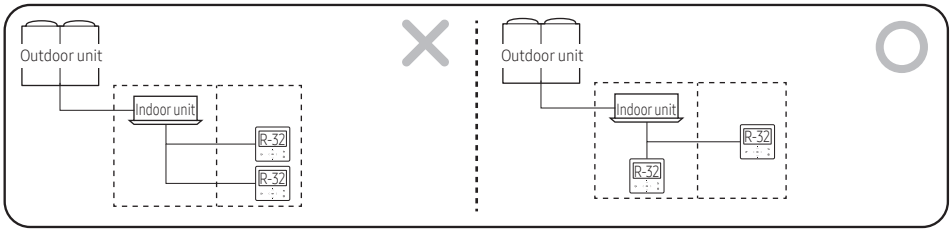


Make sure R-32-capable wired remote controls are located in the same room as the indoor units.



Choosing the installation location

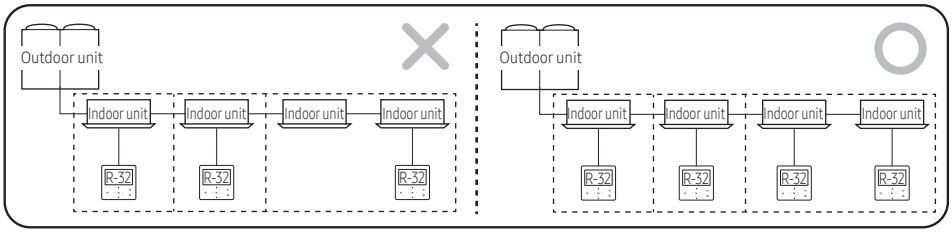
If using two or more R-32-capable wired remote controls, at least one of them must be placed in the same room as the indoor units.



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.

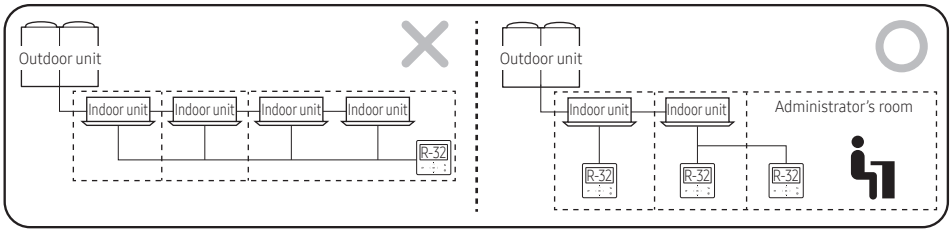
Group control is not possible.



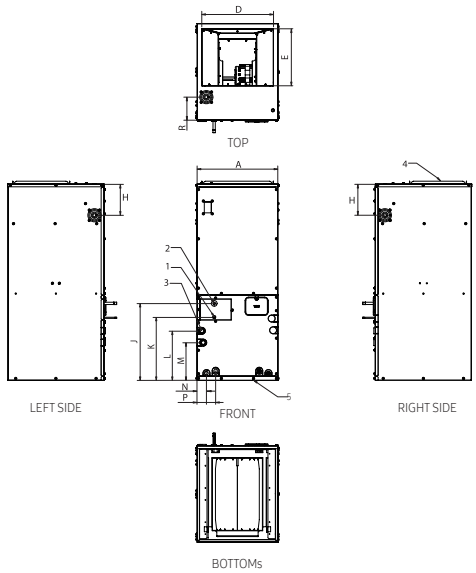
For the occupancy listed below, the safety alarm system shall also warn at a supervised location, such as the night porter's location, as well as the occupied space:

- 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.



Dimensions



DIMENSIONAL DATA MULTI-POSITION AIR HANDLER																
MODEL		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
VVCD0 12/18/24 S6-5P	inch	17.5	43	21	15.5	12.5	13.5	11	6.75	16.75	14	11	8.5	2	4	2
	mm	444.5	1092.2	533.4	393.7	317.5	342.9	279.4	171.45	425.45	355.6	279.4	215.9	50.8	101.6	50.8
VVCD0 30/36 S6-5P	inch	21	48	21	19	12.5	15.375	13	6.75	20	17	12.75	10.3	2.3	4.35	2.5
	mm	533.4	1219.2	533.4	482.6	317.5	339.73	330.2	171.45	508	431.8	323.85	261.62	58.42	110.49	63.5
VVCD0 48/54/60 S6-5P	inch	24.5	58.75	21.75	19.5	16.25	19.75	17.25	6.75	26	23	16.75	14.35	2.3	4.35	2
	mm	622.3	1492.25	552.45	495.3	412.75	501.65	438.15	171.45	660.4	584.2	425.45	364.49	58.42	110.49	50.8

NOTE

- ALL DIMENSION ARE IN INCHES AND ARE APPROXIMATE. ALL DIMENSIONS ARE ROUNDED

No.	Name	Pipe Specification
1	Liquid pipe connection	**012/018**: ø 1/4"(Φ6.35mm) **024/030/036/048/054/060**: ø 3/8"(Φ9.52mm)
2	Gas pipe connection	**012/018**: ø 1/2"(Φ12.70mm) **024/030/036**: ø 5/8"(Φ15.88mm) **048/054/060**: ø 3/4"(Φ19.05mm)
3	Drain pipe connection	3/4" NPT
4		-
5		-

Indoor unit installation

Refrigerant pipe work must be done before installing the indoor unit.

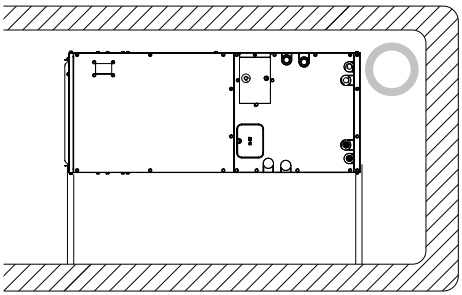
Location

Access for servicing is an important factor in the location of any air handler. Provide a minimum of 30 inches (762 mm) in front of the appliance for access to the control box, heating elements, blower and air filters. This access may be provided by a closet door or by locating the appliance so that a wall or partition is not less than 30 inches (762 mm) from the front access panel. Location is usually predetermined. Refer to figure below. Check with owner's or dealer's installation plans. If location has not been decided, consider the following in choosing a suitable location.

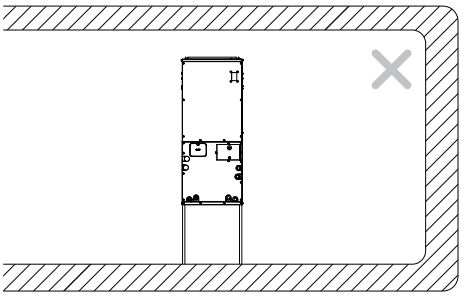
1 Select a location with adequate structural support, space for service access, and clearance for return and supply duct connections.

⚠ CAUTION

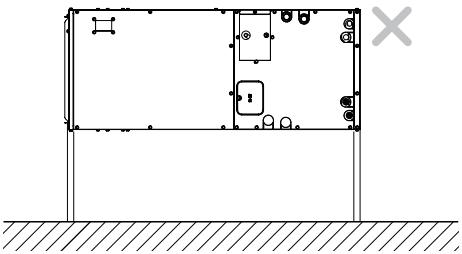
- Be sure to install the product horizontally on the ceiling. Do not install the product vertically on the ceiling. Do not install it on the floor.



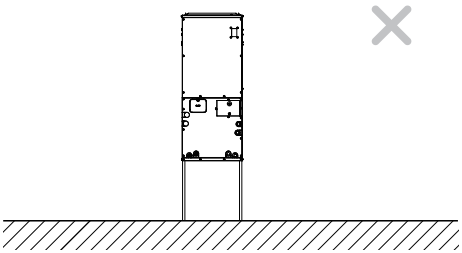
Celing/Horizontal installation



Celing, Vertical installation



Floor, Horizontal installation



Floor, Vertical installation

2 Normal operating sound levels may be objectionable if the air handler is placed directly over or under some rooms such as bedrooms, study, etc.

3 Caution should be taken to locate the unit so that supply and return air ducts are about the same length causing even air distribution of supply and return air to and from the living spaces.

4 Locate appliance where electrical supply wiring can be easily routed to main electrical panel and where electrical wiring will not be damaged.

5 Locate appliance where control wiring can be easily routed to the controller and where the wiring will not be damaged.

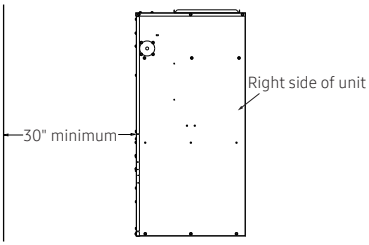
6 Locate appliance where refrigerant lines can be easily routed from the evaporator coil to the system.

7 Locate the appliance where condensate lines can be easily routed to an available drain. Be sure to route condensate drain piping so as not to obstruct access to the air filter.

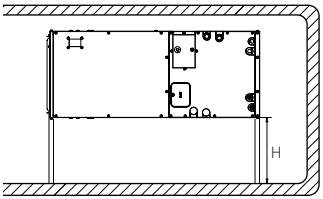
8 The coil is installed in a draw-thru application and will create a negative pressure situation in the condensate drain system. To prevent condensate from being drawn into the blower it is recommended to trap the primary (Main) and secondary (Overflow) drain line. Refer to Drain Pipe and Drain Hose section in these instructions. If the secondary drain is not used, it must be capped. This unit has a connection terminal for drain system monitoring. Refer to Wiring Work section for information regarding connection of field-provided condensate overflow devicesin these instructions.

9 The draw-thru design will cause exterior surface of cabinet to sweat when unit is installed in a non-conditioned space such as an attic or garage. Installer must provide protection such as full size auxiliary drain pan on all units installed in a non-conditioned space to prevent damage from condensation runoff. Some states, cities and counties require additional insulation to be installed on the exterior casing of the air handler to prevent sweating. Refer to the state, city, county or local code for insulation requirement to be sure the installation is in compliance. It is recommended that air handlers installed in non-conditioned spaces be insulated on the exterior of the entire cabinet, including the front access panel with one (1) inch (25.4 mm) thick fiberglass with the vapor barrier on the outside.

10 Ensure sufficient space for the bottom of the product (H dimension) so that a downward slope of 1/100 can be maintained for drain piping, as described for the intake duct installation and in “Drain pipe installation”.



Clearance - Access for service



Horizontal installation

This appliance is approved for zero (0) inches (0 mm) clearance to combustible material on any part of the air handler exterior casing and the inlet or outlet ducts providing NO electric heater is being used. There is a one (1) inch (25.4 mm) clearance on the supply plenum and supply air duct when an electric heater is installed in the appliance. Refer to Table below for clearance to combustibles information.

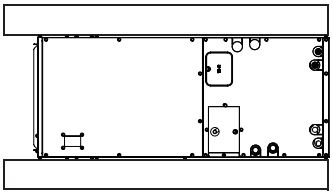
Unit : inch (mm)

Top	Back	Sides	Front of unit		Duct
			Alcove	Closet	
0 (0)	0 (0)	0 (0)	30 (762)	6 (152.4)	1 (25.4) *

* when electric heat kit accessory is installed

Indoor unit installation

Return air requirements



Return Air Requirements

In order for the air handler to work properly, a closet or alcove must have a certain total free area opening for the return air.

For A/C and HP Air Handlers 1/3 HP Blower Motor

Minimum 200 in^2 free area opening

- Use Return Grille that can supply sufficient air to ensure proper performance.

For A/C and HP Air Handlers 1/2 HP Blower Motors

- Minimum 250 in^2 free area opening
- Use Return Grille that can supply sufficient air to ensure proper performance.

For A/C and HP Air Handlers with Electric Heat use 3/4 HP Blower Motor

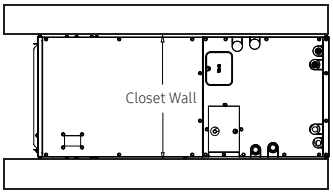
- Minimum 390 in^2 free area opening
- Use Return Grille that can supply sufficient air to ensure proper performance.

For A/C and HP Air Handlers use 1.0 HP Blower Motor)

- Minimum 430 in^2 free area opening
- Use Return Grille with a minimum 430 in^2 free area opening

The return air opening can be located in the floor, on a closet front door or in a side wall above the air handler casing. If opening for the return air is located in the floor, side walls, or closet door anywhere below the appliance casing, a 6 inch (152.4 mm) minimum clearance between the appliance and the wall or door must be provided on the side where the return is located to provide for proper air flow. The 6 inch (152.4 mm) minimum clearance is not required if there is a return grille installed above the appliance casing, providing the grille has a sufficient return air opening.

Return air requirements

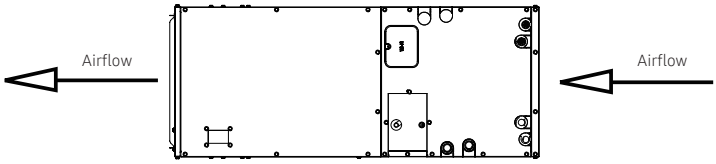


Typical Closet Installations

Provisions shall be made to permit the air in the rooms and the living spaces to return to the air handler. Failure to comply may cause a reduction in the amount of return air available to the blower, causing reduced air flow resulting in improper heating and cooling of the living space. The reduced air may cause the air flow handler to cycle on the limit causing premature heating element failure (if electric heat kits are installed).

Arrangement:

Unit is shipped from the factory arranged to be installed in or horizontal left (right to left air flow) position. Horizontal left means when the unit is laid on its side and you are facing the unit, the supply air opening is to the left and the return opening is to the right. These models are field convertible to a horizontal right (left to right) air flow position.

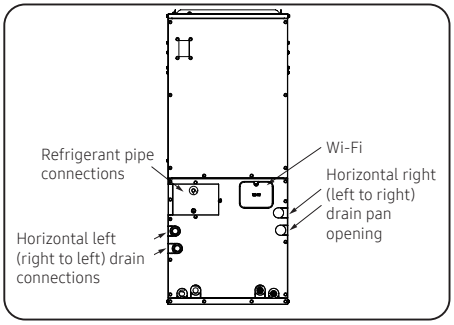


Horizontal left arrangement

Horizontal application

Horizontal applications will normally be used in an attic or crawl space. This type of installation requires supply air plenum or duct to be connected to the supply collar and a return air plenum or duct be attached to the unit inlet collar. The supply ducts will be connected to the supply air plenum and routed through the attic to a register in each room. Use a Non-tape sealant such as mastic or an aerosol sealant to prevent leaks in the ducts and the plenum.

The opposite end of the return air duct is attached to a return filter grille housing. The filter grille is usually located in a wall, just below the ceiling or the ceiling in a hallway. Use a Non-tape sealant such as mastic or an aerosol sealant to prevent leaks in the ducts and the plenum.



Indoor unit installation

Horizontal right application (left to right)

The unit is shipped to be installed without modification in a right to left configuration. For left to right applications:

1 Remove the unit access panels

2 Remove the cooling coil after disassembling bracket coil and plate.

3 Move the condensate drain pan to the right side of the unit chassis.

4 Move the Evap In temperature sensor to holder of the right side.

5 Move the RDS sensor to coil assembly of the right side.

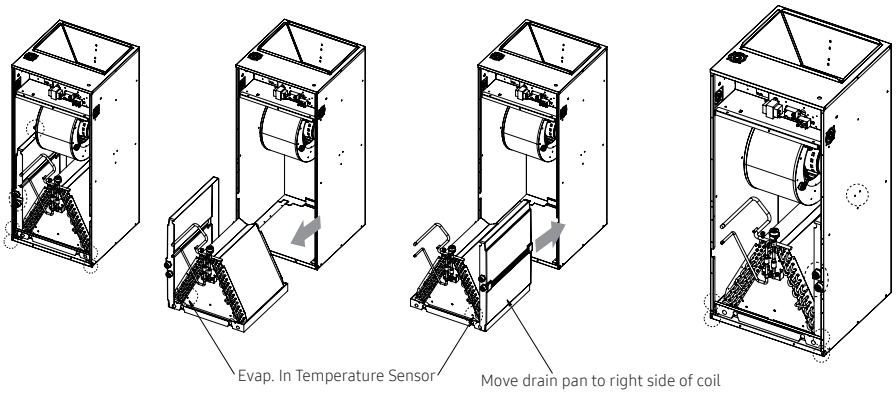
6 Reinstall the cooling coil.

7 Connect the condensate drains and refrigerant lines. DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.

8 Reinstall unit access panels.

※ In all horizontal applications in which the unit is installed above a finished ceiling and/or living space, it is recommended that a secondary drain pan (field supplied) is installed under the entire unit to avoid damage to the ceiling in the event of condensate overflow.

※ When removing the cooling coil, make sure to pull the lower drain pan. If you hold the pipe and remove the cooling coil, the pipe may be damaged.



How to change the position of the wires

Please change the position of the refrigerant detection sensor as shown in the image below.

Please proceed with the fixing way of the wires according to the position of the drain pan as shown in the image below.

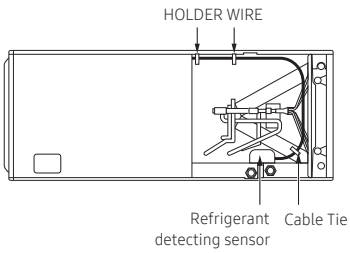
Use a cable tie to attach the refrigerant detector wires to the third hairpin turn on the coil.

⚠ WARNING

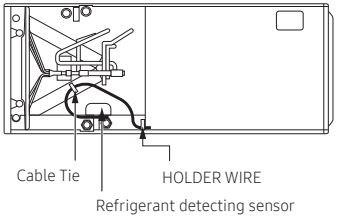
- It is mandatory to relocate the refrigerant detection sensor when installing this unit in horizontal-right applications. Failure to relocate the sensor can result in unsafe concentrations of A2L refrigerant, creating a fire risk.

VVCD012/018/024S6-5P

When installing by laying it on the left side

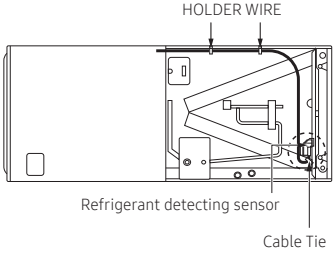


When installing by laying it on the right side

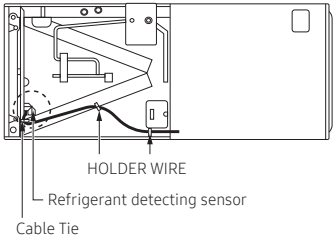


VVCD030/036/048/054/060S6-5P

When installing by laying it on the left side



When installing by laying it on the right side



Indoor unit installation

Closet installation

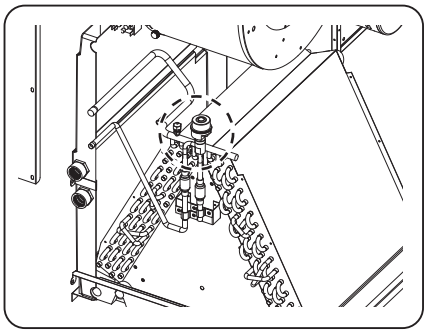
Prior to installing the air handler make sure holes are cut into the floor for refrigerant tubing, drain line, electrical wiring, and control wiring.

1 Remove the top shipping cover and corner posts.
2 Remove the bottom shipping cover.
3 Remove the blower and control box access panel (door).
4 Remove the coil compartment access panel (door).
5 Place the unit into position by sliding the unit over the duct opening until the opening in the unit lines up with the duct opening in the floor.
6 Secure the unit to the floor by drilling two holes through the air handler base at the left and right front inside corners of the cabinet. Use two screws to secure the unit to the floor.
7 Use calking, sealers, and/or tape to seal between the floor base and the opening on the unit or between the opening on the unit and the duct in the floor.
8 Connect the electrical supply wires and the control wires in the control box.
9 Connect the refrigerant lines to the coil. DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.
10 Re-install the coil compartment access panel (door) and secure with the screws that were removed in step 3.
11 Re-install the blower and control box access panel (door) and secure with the screws that were removed in step 2.

Refrigerant piping

NOTE

- The evaporator coil liquid and suction pipes are closed and comes filled with high pressure nitrogen.
  Before opening the liquid and suction pipe ends you must first release the high pressure nitrogen using the service port on the suction pipe. Ensure that the service port cap is installed before pressurizing the system.



Air Handlers with DX type evaporator coils require liquid and suction piping sized in accordance with condensing unit manufacturer's instructions. The evaporator coils have sweat copper connections. Refrigerant lines should be soldered with silver solder or high temperature brazing alloy.

DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.

REFER TO OUTDOOR UNIT INSTALLATION MANUALS FOR PRESSURE CHECKING AND VACUUM DRYING PROCEDURES.

There are two refrigerant pipes of differing diameters:

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

Prepare the connecting pipe referring to the list below.

- Refrigerant pipe diameters

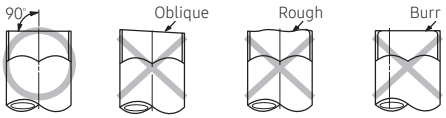
Unit : inch (mm)

	VVCD012/18S6-5P	VVCD024/30/36S6-5P	VVCD048/54/60S6-5P
Liquid pipe	Φ1/4 (Φ6.35)	Φ3/8 (Φ9.52)	Φ3/8 (Φ9.52)
Gas pipe	Φ1/2 (Φ12.70)	Φ5/8 (Φ15.88)	Φ3/4 (Φ19.05)

Cutting the pipes

1 Make sure that you prepared the required tools. (pipe cutter, reamer, aring tool and pipe holder)

2 If you want to shorten the pipe, cut it using a pipe cutter ensuring that the cut edge remains at 90° with the side of the pipe. There are some examples of correctly and incorrectly cut edges below.



Performing leak test & insulation

Leak test

LEAK TEST WITH NITROGEN (before opening valves)

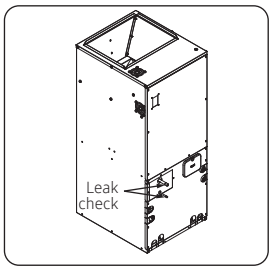
To detect basic refrigerant leaks, before creating a vacuum and circulating the R-32, its the responsibility of the installer to pressurize the whole system with nitrogen (using a pressure regulator) at a pressure above 29.0 PSI (0.2 MPa), less than 594.7 PSI (4.1 MPa)

LEAK TEST WITH R-32 (after opening valves)

Before opening valves, discharge all the nitrogen in the system and create a vacuum. After opening valves check leaks using a leak detector for refrigerant R-32.

⚠ CAUTION

- Discharge all the nitrogen to create a vacuum and charge the system



Insulation

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

- To avoid condensation problems, place 0.51" (T13.0mm) or thicker Acrylonitrile Butadien Rubber separately around each refrigerant pipe.
- You can contact the gas side and liquid side pipes but the pipes should not be pressed together tightly.
- When contacting the gas side and liquid side pipe, use 1 grade thicker insulator.

NOTE

- Always make the seam of pipes face upwards.

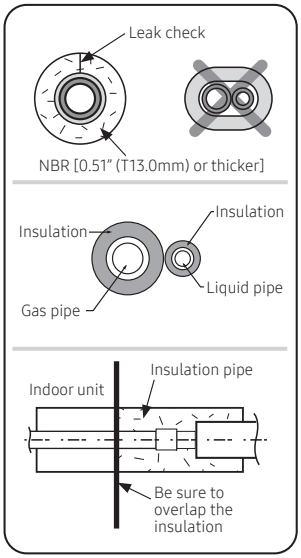
2 Wind insulating tape around the pipes and drain hose avoiding to compress the insulation too much.

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/straps.

⚠ CAUTION

- All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.



⚠ CAUTION

- Must fit tightly against body without a gap.

Performing leak test & insulation

5 Select the insulation of the refrigerant pipe.

- Insulate the gas side and liquid side pipe referring to the thickness according to the pipe size.
- Indoor temperature of 86 °F(30 °C) and humidity of 85% is the standard condition. If install in a high humidity condition,use one grade thicker insulator by referring to the table below. If installing in an unfavorable conditions, use a thicker wall insulation.
- Insulator's heat-resistance temperature should be more than 248 °F (120 °C).

Pipe	Outer diameter		Insulation Type (Cooling/Heating)				Remarks
			General [86°F (30°C), 85% or below]		High humidity [86°F (30°C), more than 85%]		
			EPDM, NBR				
	mm	inch	mm	inch	mm	inch	
Liquid pipe	6.35~9.52	1/4~3/8	9	3/8	9	3/8	Internal temperature is higher than 248 °F (120 °C)
	12.7~50.8	1/2~2	13	1/2	13	1/2	
Gas pipe	6.35	1/4	13	1/2	19	3/4	
	9.52~25.4	3/8~1	19	3/4	25	1	
	28.58~44.45	1 1/8~1 3/4	19	3/4	32	1 1/4	
	50.8	2	25	1	38	1 1/2	

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

  ‹Geological condition›

  – High humidity places such as shoreline, hot spring, near lake or river, and ridge (when the part of the building is covered by earth and sand.)

  ‹Operation purpose condition›

  – Restaurant ceiling, sauna, swimming pool etc.

  ‹Building construction condition›

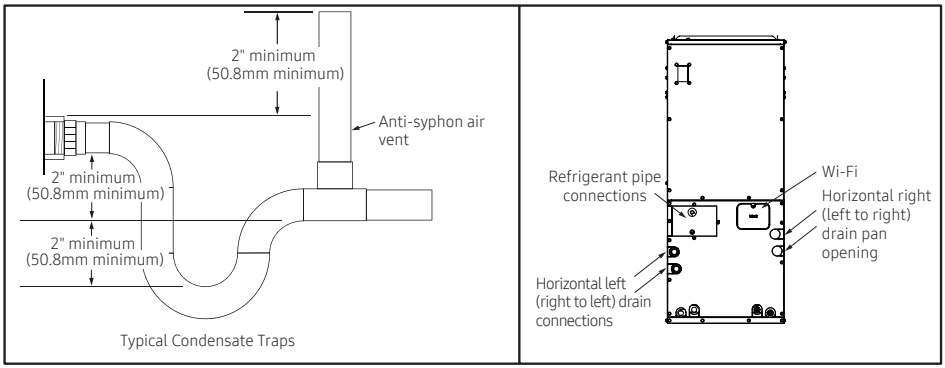
  – The ceiling frequently exposed to moisture and cooling is not covered.
    e.g. The pipe installed at a corridor of a dormitory and studio or near an exit that opens and closes frequently.
  – The place where the pipe is installed is highly humid due to the lack of ventilation system.

Additional refrigerant

- System refrigerant volume is based on linear feet of liquid line pipe and indoor equipment model/quantity.
- Refer to the outdoor unit installation manuals for information regarding refrigerant volume for system components.

Drain pipe installation

The air handler "A" coil drain pan has two ¾" NPT (Φ19.05mm) female primary and two secondary connections (left or right hand). The horizontal pan has two ¾" NPT (Φ19.05mm) females, one primary and one secondary. Piping from each fitting used is to have 2 inches (50.8mm) minimum trap and each runs in such a manner as to provide enough slope for adequate drainage to a visible area. Do not pipe these two fittings together into a common drain. Prime drain with water before operating the unit by pouring water into the condensate pan. Cap unused connections.



⚠ CAUTION

- Make sure to keep the drain hose from getting tangled or loosened (on the connection part).
- Insulate all condensate pipes connected to the indoor unit to prevent condensation formation. Condensate formation on condensate pipes can lead to property damage and unsafe environment conditions.

⚠ CAUTION

- Since the draining is of natural drain type, install the drain hose in downward direction.
- If you do not tie the drain hose with a cable tie, leakage may occur
- Drain pipe may get clogged if there is any foreign substances within the drain pan, so you must remove any foreign substances after completing the installation.

Water leakage test

1 Pour water into the condensate pan.

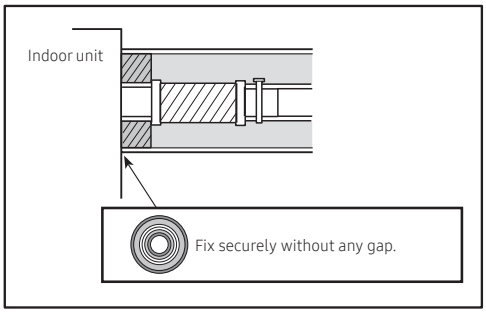
2 Make sure that draining is done properly by checking end of the drain pipe.

3 If water leakage occurs, make sure the indoor unit is level. Also verify the drain pipe is installed with a downward slope away from the indoor unit.

⚠ CAUTION

- After connecting the drain pipe to the indoor unit, you must perform leakage test. If the drain test has not done properly, water may get into the indoor and cause property damage.
- Empty the condensation water in the drain pan before any repair/maintenance service.

Drain pipe insulation



⚠ CAUTION

- You must insulate drain pipes.
- Make sure to prevent any gap between the insulation on drain pipe elbows.
- Make sure that insulation is overlapped.

Wiring Work

⚠ WARNING

- For personal safety be sure to turn the electrical power "OFF" at the main entrance (Home Circuit Breaker Box) and at the unit control box circuit breakers before attempting any service or maintenance operations. Homeowners should never attempt to perform any maintenance which requires opening the air handler control box door.
- This air handler is not equipped with a shield that covers the line voltage electrical supply wires and the circuit breaker connections. Take precautions to prevent accidental electrical shock. Be sure to turn the electrical power "OFF" at the main entrance (Home Circuit Breaker Box) and at the control box circuit breakers before removing the front panel.

Power supply wiring

- The unit internal wiring is complete except for the power supply and control wires.
- The use of cable connectors on incoming power supply wires to relieve any strain on wiring is recommended.
- Follow the steps below to connect the power supply wires.
- Supply voltage is 208/230V, 1ø, 60 Hz.
- If you are installing optional heat kits, refer to the heat kit installation instructions for line voltage connection instructions

Single circuit line wiring connections

⚠ CAUTION

- If an accessory heat kit is installed, power must enter the unit on the top or the top-left side of the unit as shown below (A).

1 Before wiring work, you must turn off all power source.

2 Indoor unit power should be supplied through the breaker (ELCB or MCCB+ELB) separate from the outdoor power.
ELCB : Earth Leakage Circuit Breaker
MCCB : Molded Case Circuit Breaker
ELB : Earth Leakage Breaker

3 Only copper power cables should be used.

4 Remove the blower and control box access panel (door).

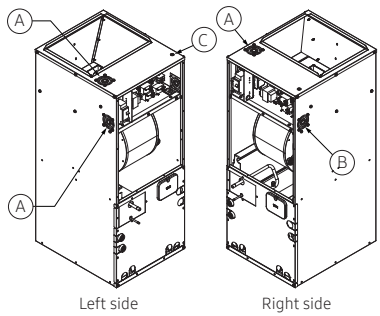
5 Install the cable connectors on the 7/8" diameter holes on the right side of the control box.

6 Insert the wires through the holes in the casing and through the cable connectors.

7 Connect the black supply wire to the L1[1(L)] high voltage connection terminal with compressed ring terminals.

8 Connect the white supply wire to the L2[2(N)] high voltage connection terminal with compressed ring terminals.

9 Connect the green wire to the ground lug near the supply wire connections with a compressed ring terminal and tighten the ground screw. Make sure to leave extra slack in the ground wire to allow service to the unit without disconnecting the ground wire.



Left side Right side

A - Power conduit connection opening (must use when installing accessory electric heat kit).

B - Power conduit connection opening (do not use when installing accessory electric heat kit).

C - Communication wire conduit connection opening

IMPORTANT - All insulation on field wiring must be rated at 140°F (60ºC) or higher. Please refer to the wiring diagrams on the air handler or the tables in this manual for more information.

IMPORTANT - Refer to the NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for wiring material requirements.

Wiring Work

Power supply wiring with accessory electric heat kit

1 Before wiring work, you must turn off all power source.

2 Indoor unit power should be supplied through the breaker (ELCB or MCCB+ELB) separate from the outdoor power.
ELCB : Earth Leakage Circuit Breaker
MCCB : Molded Case Circuit Breaker
ELB : Earth Leakage Breaker

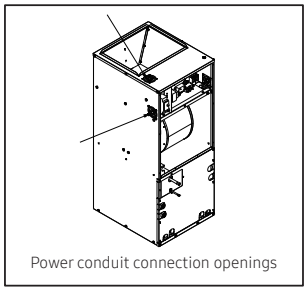
3 Only copper power cables should be used.

4 Remove the blower and control box access panel (door).

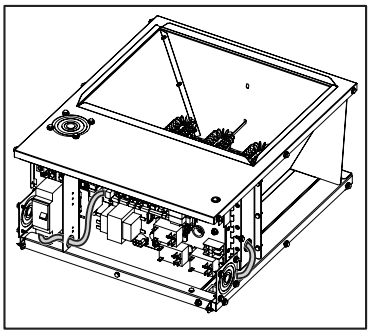
5 Install the cable connectors on the 7/8" diameter holes on the left side of the control box.

6 Connect the included power pigtail leads with ring connectors (included with heat kit) to 1(L) and 2(N) terminals located on the right side of the control box.

7 Route the power pigtail leads through the control box opening pictured below and route to the left side of the control box for connection to the heat breakers in a later step.

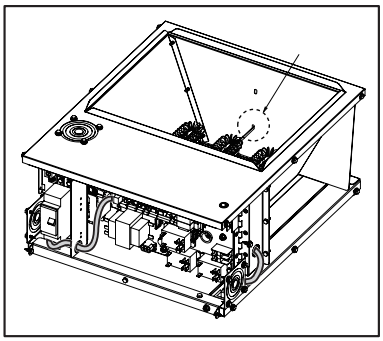


Power conduit connection openings



8 Swing the hinged control plate outward exposing the back side of the control box. Remove the screws holding the electric heat kit block off plate. Save the screws.

9 Carefully pass the accessory heating element through the rectangular opening in the discharge of the air handler and secure the heating element with the screws from step 8. Heating element support rod must be seated in the hole on the opposite side of the discharge.



10 Install the breakers at the front-left of the control box.

11 Connect the power pigtail leads that are connected to 1(L) and 2(N) to the bottom of the breakers.

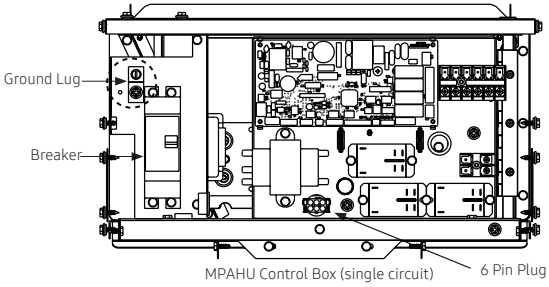
12 Insert the power wires through the holes in the casing and through the cable connectors.

13 Strip ½" of the insulation on the end of each power wire.

14 Connect the black supply wire to the high voltage connection lug on the accessory heat kit breaker.

15 Connect the white supply wire to the other high voltage connection lug on the accessory heat kit breaker.

16 Connect the green (ground) wire to the ground lug to the left of the accessory heat kit breakers and tighten the ground lug screw. Make sure to leave extra slack in the ground wire to allow service to the unit without disconnecting the ground wire. If the heat kit requires 2 circuits (dual circuit) , both circuit ground wires must be connected to a ground lug (dual circuit kits have two individual ground lugs).

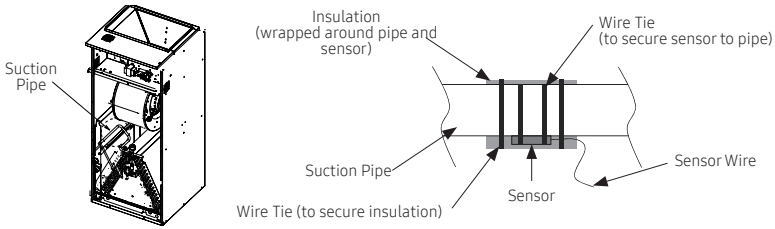


17 Connect the six pin male plug on the electric heater assembly to the six pin female plug mounted at the bottom of the control assembly door.

Wiring Work

18 Remove the wiring diagram from the accessory heat kit. Remove the paper that covers the adhesive back and place the electric heat wiring diagram over the wiring diagram located on the blower housing.

a Route temperature sensor from the accessory electric heat kit to the lower section of the AHU cabinet. Attach the sensor to the bottom of the suction pipe as shown below with included wire ties.



19 Wrap included insulation around the sensor and secure with included wire ties.

20 Remove the breaker opening cover plate on the AHU door and secure the doors to the unit.

NOTE

- The electric heat kits are equipped with either one or two circuit breakers. These circuit breakers protect the wiring inside of the AHU in the event of a short circuit. Additionally, these breakers provide a means of disconnecting the power to the unit. The circuit breakers in the AHU's are not meant to protect the branch circuit wiring between the furnace and the building's breaker panel. If sheathed cable is used, refer to NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for additional requirements concerning supply circuit wiring. Electrical data can be found in Tables 2-5.

IMPORTANT - All installation on field wiring must be rated at 60ºC or higher. Please refer to the wiring diagrams on the furnace or the tables this manual for more information. The 15kW and 20kW models may be connected to a single or dual branch circuit. Refer to the NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for wiring material requirements.

Power supply connections

If the air handler has been installed prior to installing the electric heaters or if an older unit is being replaced, the supply power wires must be checked to make sure the wires are the proper sizes to handle the current load for the heaters. Refer to table below for correct wire size. If the supply power wire size is incorrect, new wires will need to be installed. Follow the instructions "Power supply wiring" on page 27 of these instructions for proper installation.

ELECTRICAL DATA														
Indoor Unit Models	Motor Data					Electric Heater Data								
	Volts 1 Ph	Motor Type	Motor HP	208V Motor Amps (FLA)	230V Motor Amps (FLA)	Field Installed Kit Model Number	Circuit Qty.	kW (208V)	kW (230V)	Amps 208V Circuit 1	Amps 208V Circuit 2	Amps 230V Circuit 1	Amps 230V Circuit 2
SMALL CABINET-NOMINAL1.0, 1.5, 2.0 TONS (0 To 5 kW)													
VVCD012S6-5P	208/240	Endura Pro	1/3	2.53	2.80	No Heat - Blower Only	1	0.00	0.00	0.00	-	0.00	-
						V1EHK01-1P	1	2.25	2.76	10.83	-	11.98	-
VVCD018S6-5P VVCD024S6-5P	208/240	Endura Pro	1/3	2.53	2.80	No Heat - Blower Only	1	0.00	0.00	0.00	-	0.00	-
						V1EHK01-1P	1	2.25	2.76	10.83	-	11.98	-
						V1EHK02-1P	1	3.76	4.59	18.06	-	19.97	-
MEDIUM CABINET-NOMINAL 2.5, 3.0 TONS (0 To 10 kW)													
VVCD030S6-5P VVCD036S6-5P	208/240	Endura Pro	1/2	3.71	4.10	No Heat - Blower Only	1	0.00	0.00	0.00	-	0.00	-
						V1EHK03-1P	1	3.76	4.59	18.06	-	19.97	-
						V1EHK04-1P	1	7.51	9.18	36.11	-	39.93	-
LARGE CABINET-NOMINAL 4.0, 4.5, 5.0 TONS (0 To 15 kW)													
VVCD048S6-5P VVCD054S6-5P	208/240	Endura Pro	3/4	5.43	6.00	No Heat - Blower Only	1	0.00	0.00	0.00	-	0.00	-
						V1EHK05-1P	1	3.76	4.59	18.06	-	19.97	-
						V1EHK06-1P	1	7.51	9.18	36.11	-	39.93	-
						V1EHK07-1P	2	11.27	13.78	36.11	18.06	39.93	19.97
VVCD060S6-5P	208/240	Endura Pro	3/4	5.43	6.00	No Heat - Blower Only	1	0.00	0.00	0.00	-	0.00	-
						V1EHK05-1P	1	3.76	4.59	18.06	-	19.97	-
						V1EHK06-1P	1	7.51	9.18	36.11	-	39.93	-
						V1EHK07-1P	2	11.27	13.78	36.11	18.06	39.93	19.97
						V1EHK08-1P	2	15.02	18.37	36.11	36.11	39.93	39.93

ELECTRICAL DATA								
Indoor Unit Models	Minimum Circuit Ampacity (MCA)				Maximum Overcurrent Protection (MOCP)			
	208V Circuit 1	208V Circuit 2	230V Circuit 1	230V Circuit 2	208V (3,4) Circuit 1	208V (3,4) Circuit 2	230V (3,4) Circuit 1	230V (3,4) Circuit 2
SMALL CABINET-NOMINAL1.0, 1.5, 2.0 TONS (0 To 5 kW)								
VVCD012S6-5P	3.17	-	3.50	-	15.0	-	15.0	-
	16.71	-	18.47	-	20.0	-	20.0	-
VVCD018S6-5P VVCD024S6-5P	3.17	-	3.50	-	15.0	-	15.0	-
	16.71	-	18.47	-	20.0	-	20.0	-
	25.73	-	28.46	-	30.0	-	30.0	-
MEDIUM CABINET-NOMINAL 2.5, 3.0 TONS (0 To 10 kW)								
VVCD030S6-5P VVCD036S6-5P	4.63	-	5.13	-	15.0	-	15.0	-
	27.20	-	30.08	-	30.0	-	35.0	-
	49.77	-	55.04	-	50.0	-	60.0	-
LARGE CABINET-NOMINAL 4.0, 4.5, 5.0 TONS (0 To 15 kW)								
VVCD048S6-5P VVCD054S6-5P	6.78	-	7.50	-	15.0	-	15.0	-
	29.35	-	32.46	-	30.0	-	35.0	-
	51.92	-	57.41	-	60.0	-	60.0	-
	51.92	22.57	57.41	24.96	60.0	25.0	60.0	30.0
VVCD060S6-5P	6.78	-	7.50	-	15.0	-	15.0	-
	29.35	-	32.46	-	30.0	-	35.0	-
	51.92	-	57.41	-	60.0	-	60.0	-
	51.92	22.57	57.41	24.96	60.0	25.0	60.0	30.0
	51.92	45.14	57.41	49.91	60.0	50.0	60.0	60.0

Wiring Work

ELECTRICAL DATA						
Indoor Unit Models	Minimum Wire Size (AWG)				Short-Circuit Current Rating	
	Circuit 1		Circuit 2		"SCCR"	
	167°F (75°C) / 194°F (90°C)	140°F (60°C)	167°F (75°C) / 194°F (90°C)	140°F (60°C)	kA rms symmetrical	V maximum
SMALL CABINET-NOMINAL1.0, 1.5, 2.0 TONS (0 To 5 kW)						
VVCD012S6-5P	#14	#14	-	-	N/A	N/A
	#12	#12	-	-	N/A	N/A
VVCD018S6-5P VVCD024S6-5P	#14	#14	-	-	N/A	N/A
	#12	#12	-	-	N/A	N/A
	#10	#10	-	-	N/A	N/A
MEDIUM CABINET-NOMINAL 2.5, 3.0 TONS (0 To 10 kW)						
VVCD030S6-5P VVCD036S6-5P	#14	#14	-	-	N/A	N/A
	#10	#8	-	-	N/A	N/A
	#6	#4	-	-	N/A	N/A
LARGE CABINET-NOMINAL 4.0, 4.5, 5.0 TONS (0 To 15 kW)						
VVCD048S6-5P VVCD054S6-5P	#14	#14	-	-	N/A	N/A
	#10	#8	-	-	N/A	N/A
	#6	#4	-	-	N/A	N/A
	#6	#4	#10	#10	5	240
VVCD060S6-5P	#14	#14	-	-	N/A	N/A
	#10	#8	-	-	N/A	N/A
	#6	#4	-	-	N/A	N/A
	#6	#4	#10	#10	5	240
	#6	#4	#6	#4	5	240

1 Rated Motor Amps (at DOE External Static Rating Point)

2 Fuse or HACR Breaker

3 Maximum Overcurrent Device, Overcurrent Protection Installed On Breaker Models Are Sized Per MCA

- To prevent damage, carefully insert the electric heating assembly through the rectangular opening in the front of the discharge opening so the heat element support rod is seated into the hole on the back side of the discharge opening.
- After installing the electric heater, a one (1) inch (25.4mm) clearance must be maintained on all sides of the supply air duct and/or plenum for a minimum of thirty six (36) inches (914.4mm) from the air handler discharge opening.

Communication wiring connections

- Communication wires connect through side of air handler and be 2 X 16 AWG shielded.
- Use an approved connector at the cabinet of the unit to prevent pulling or shorting of control wires.
- F1/F2 in the air handler must connect to the F1/F2 communication bus for that system between all indoor units, MCU's, EEV kits, and the outdoor unit.

⚠ ATTENTION

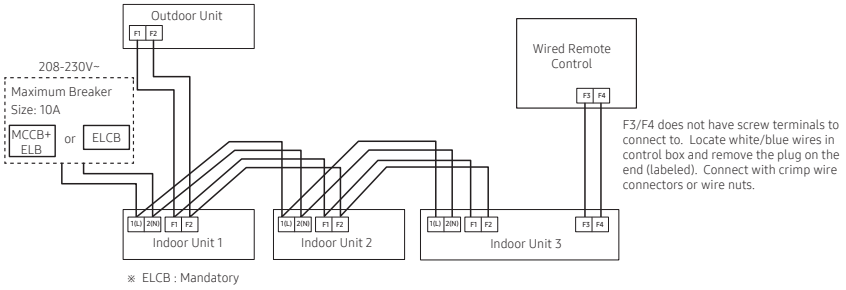
- Control wire must be rated for 600V minimum.
- Control wire insulation must be rated for temperatures up to 90°C.

1 Insert the wires through the holes of the right side on the top casing and through the cable connectors.

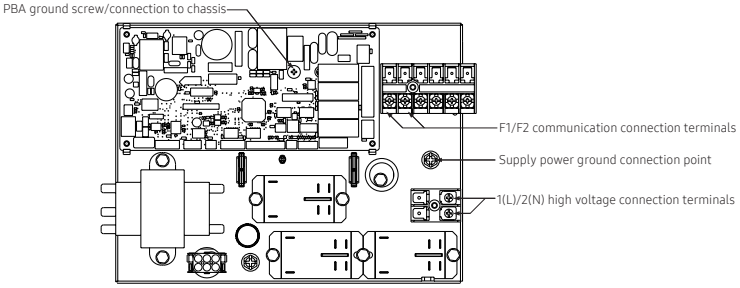
2 Connect the communication wires to the F1/F2 connection terminal with compressed ring terminals.

3 Connect F3, F4 (for communication) when installing the wired remote control. F3/F4 does not have screw terminals to connect to. Locate white/blue wires in control box and remove the plug on the end (labeled). Connect with crimp wire connectors or wire nuts. Up to 16 indoor units can connect to a single wired controller (group control). Compatible wired controllers: VSTAT04P-1, VSTAT02P-1.

- Below is an example how to wire the main system communication wires and wired controller wires.
- The example below is for indoor units without accessory electric heat kits. If an accessory heat kit is installed in an indoor unit, that unit must be on its own dedicated circuit.
- The sum of all indoor unit MCA must be below 10A on a single circuit. Refer to "Specification of Electronic Wire" section for information regarding wire size calculation.

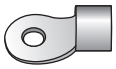


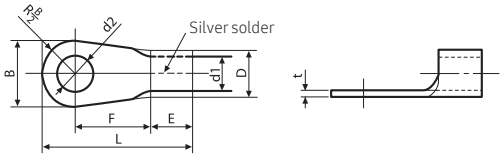
※ When Installing ELCB(MCCB + ELB) indoor unit, do not connect with other indoor units attached to other outdoor units.



Wiring Work

Selecting compressed ring terminal





Nominal dimensions for cable [inch²(mm²)]	Nominal dimensions for screw [inch(mm)]	B		D		d1		E	F	L	d2		t
		Standard dimension [inch(mm)]	Allowance [inch(mm)]	Standard dimension [inch(mm)]	Allowance [inch(mm)]	Standard dimension [inch(mm)]	Allowance [inch(mm)]	Min. [inch(mm)]	Min. [inch(mm)]	Max. [inch(mm)]	Standard dimension [inch(mm)]	Allowance [inch(mm)]	Min. [inch(mm)]
0.0023 (1.5)	0.16(4)	0.26(6.6)	±0.0079 (±0.2)	0.13(3.4)	+0.012(+0.3) -0.0079 (-0.2)	0.067(1.7)	±0.0079 (±0.2)	0.16(4.1)	0.24(6.0)	0.63(16.0)	0.17(4.3)	+0.0079 (+0.2) 0(0)	0.028(0.7)
	0.16(4)	0.31(8.0)											
0.0039 (2.5)	0.16(4)	0.26(6.6)	±0.0079 (±0.2)	0.17(4.2)	+0.012(+0.3) -0.0079 (-0.2)	0.091(2.3)	±0.0079 (±0.2)	0.24(6.0)	0.24(6.0)	0.69(17.5)	0.17(4.3)	+0.0079 (+0.2) 0(0)	0.031(0.8)
	0.16(4)	0.33(8.5)											
0.0062 (4.0)	0.16(4.0)	0.37(9.5)	±0.0079 (±0.2)	0.22(5.6)	+0.012(+0.3) -0.0079 (-0.2)	0.134(3.4)	±0.0079 (±0.2)	0.24(6.0)	0.24(6.0)	0.79(20.0)	0.17(4.3)	+0.0079 (+0.2) 0(0)	0.035(0.9)

Specification of electronic wire

Power supply	MCCB	ELB or ELCB	Power cable	Earth cable	Communication cable
Min : 187V Max : 253V	XA	XA, 30 mA 0.1 sec	14 AWG (2.5 mm²)	14 AWG (2.5 mm²)	18~15 AWG (0.75~1.5 mm²)

※ Run transmission wiring between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.

- Decide the capacity of ELCB(or MCCB+ELB) by below formula.

The capacity of ELCB(or MCCB+ELB) X [A] = 1.25 X 1.1 X ΣAi

※ X : The capacity of ELCB(or MCCB+ELB).

※ ΣAi : Sum of Rating currents of each indoor unit.

※ Refer to each installation manual about the rating current of indoor unit.

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

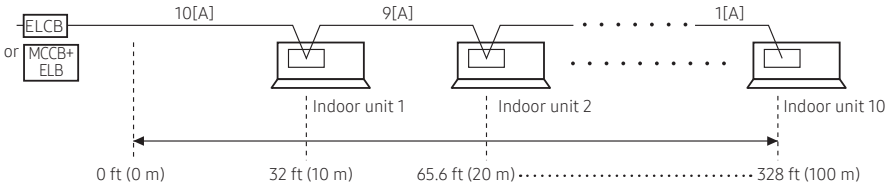
$$\sum_{k=1}^{n} \left(\frac{Coef \times 35.6 \times L_k \times i_k}{1000 \times A_k} \right) < \text{10\% of input voltage[V]}$$

※ Coef: 1.55

※ L_k: Distance among each indoor unit[m]
A_k: Power cable specification[mm²] i_k:
Running current of each unit[A]

Example of Installation

- Total power cable length L = 328 ft(100 m), Running current of each units 1[A]
- Total 10 indoor units were installed

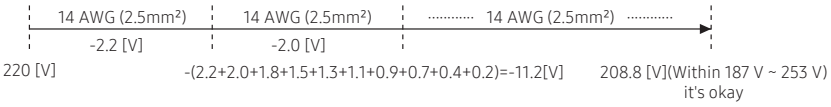


• Apply following equation.

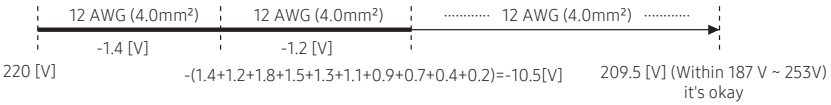
$$\sum_{k=1}^{n} \left(\frac{Coef \times 35.6 \times L_k \times i_k}{1000 \times A_k} \right) < \text{10 \% of input Voltage [V]}$$

※ Calculation

• Installing with 1 sort wire.



• Installing with 2 different sort wire.



⚠ CAUTION

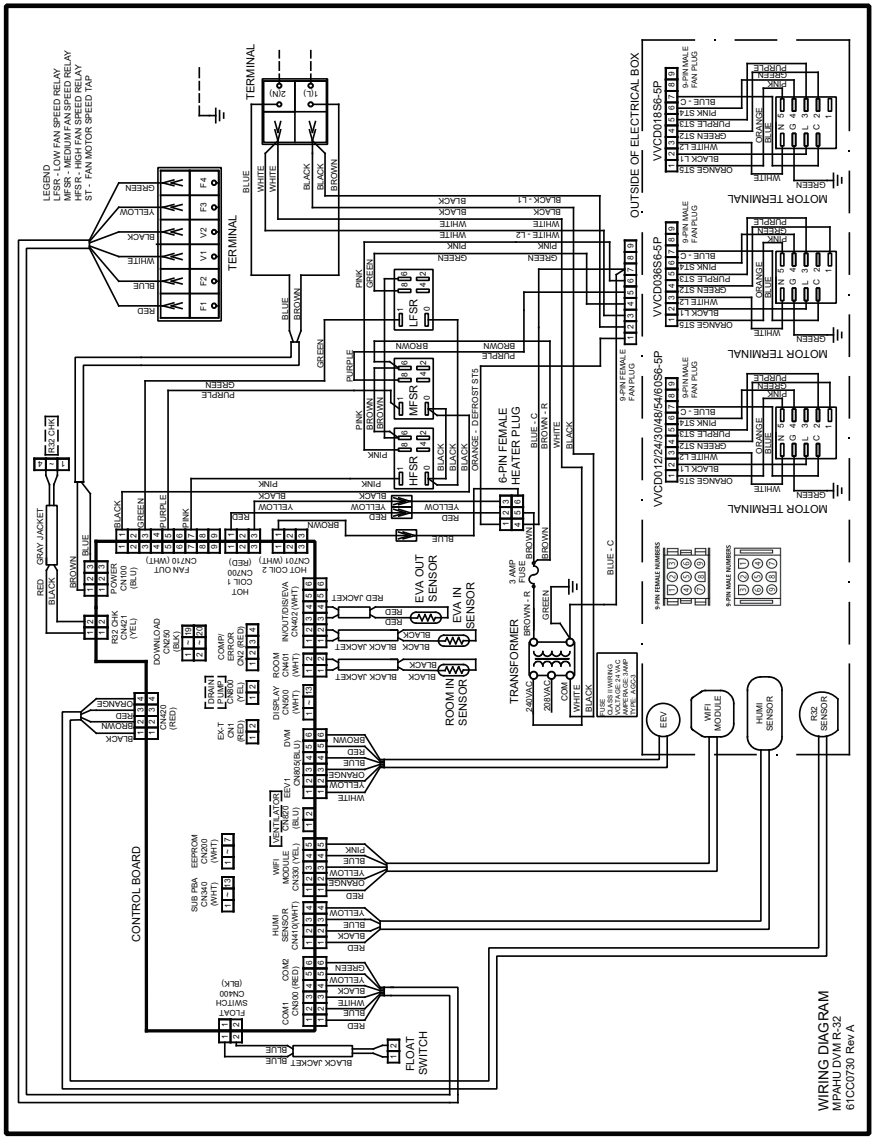
- Select the power cable in accordance with relevant local and national regulations.
- Wire size must comply with local and national code.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flixible cord. (Code designation H07RN-F or H05RN-F)
- 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.
- To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units in conduit.
- Connect the power cable to the auxiliary circuit breaker.
- An all pole disconnection from the power supply must be incorporated in the field wiring[≥1/8" (3 mm)].
- You must keep the cable in a protective conduit.

Wiring Work

- Keep distances of 2" (50 mm) or more between power cable and communication cable.
- 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(ELCB or MCCB+ELB) capacity should be increased if many indoor units are connected to one breaker.
- Use round pressure/crimp 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.
- See the table below for tightening torque for the terminal screws.

	Tightening torque	
	N•m	lbf•ft
M3.5	0.8~1.2	0.59~0.89
M4	1.2~1.8	0.89~1.33

Wiring Diagram



Selecting motor speed

Selecting the Constant Torque Blower Speed

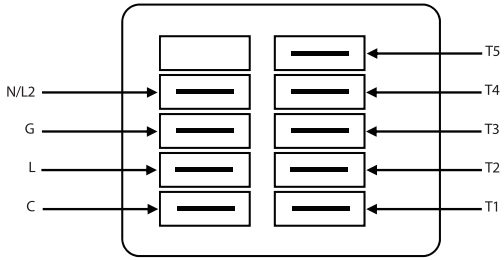
This air handler uses a Constant Torque high efficiency motor. This motor operates on 240 VAC. The motor speed taps are 24 VAC, 0.03 amps, 60 Hz, 1 PH. The speed taps can be adjusted according to installation needs. Table 4 shows the motor lead connection labeling and the connection definitions. See blower tables in later section for airflow data.

When using optional electric heat kits, the heat kits will have a fan speed wire that will be connected to the fan motor on speed tap 5 from the factory. Refer to the heat kit installation manual for minimum CFM for electric heat kit use before adjusting this speed tap wire (speed tap 5 is recommended)

Total 24 VAC circuit amps are 0.14 amps.

Change Motor Speeds

1. Turn off all electrical supply circuits to the air handler at the main service (House Circuit Breaker) panel.
2. Remove the blower door and switch air handler circuit breaker(s) to "OFF".
3. Disconnect the wire from the isolation relay terminal and reconnect the desired wire to the terminal. The BLACK wire is high (standard) speed. The WHITE wire is low (reduced) speed. The ORANGE wire is electric heat high fan speed. The ORANGE wire must be connected to a speed tap that will provide sufficient airflow for the size of the electric heat kit. Refer to the heat kit installation manuals for minimum CFM for electric heat kit activation (usually speed tap 5).
4. Turn the circuit breakers on and reinstall air handler blower door.
5. Turn on all electrical supply circuits to the air handler at the main service (House Circuit Breaker) panel.
6. When black wire(Standard) is required to be connected to tap 5, the orange wire which originally is connected to tap 5 can be connected to any tap except tap 5.



Terminal	Connection	Default speed tap settings		
		VVCD012 / 24 / 30 / 48 / 54 / 60S6-5P	VVCD018S6-5P	VVCD036S6-5P
C	Speed tap common - 24 VAC common			
L	Supply voltage - 240 VAC Line 1			
G	Ground connection			
N/L2	Supply voltage - 240 VAC Line 2			
T1	Low speed tap - 24 VAC input	"LOW" speed		"LOW" speed
T2	Medium-low speed tap - 24 VAC input	"MID" speed	"LOW" speed	
T3	Medium speed tap - 24 VAC input		"MID" speed	"MID" speed
T4	Medium-high speed tap - 24 VAC input	"HIGH" speed	"HIGH" speed	"HIGH" speed
T5	High speed tap - 24 VAC input	High speed for electric heat	High speed for electric heat	High speed for electric heat
Motor control/voltage taps				

Blower CFM tables

VVCD012S6-5P, VVCD018S6-5P, VVCD024S6-5P

VVCD012S6-5P

HP: 1/3
Default motor taps:
high = 4, mid = 2, low = 1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	545	603
	0.2	496	670
	0.25	492	719
	0.3	475	745
	0.4	423	817
	0.5	382	903
4	0.1	523	590
	0.2	449	647
	0.25	426	681
	0.3	400	717
	0.4	373	796
	0.5	302	882
3	0.1	519	586
	0.2	426	634
	0.25	399	670
	0.3	374	703
	0.4	320	816
	0.5	269	873
2	0.1	512	585
	0.2	399	626
	0.25	374	657
	0.3	346	694
	0.4	280	817
	0.5	234	860
1	0.1	502	578
	0.2	376	609
	0.25	346	646
	0.3	320	684
	0.4	241	819
	0.5	179	894

VVCD018S6-5P

HP: 1/3
Default motor taps:
high = 4, mid = 3, low = 1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	685	765
	0.2	658	812
	0.25	639	839
	0.3	634	873
	0.4	610	921
	0.5	575	970
	0.6	532	1029
	0.7	495	1080
4	0.1	630	717
	0.2	595	763
	0.25	580	785
	0.3	575	834
	0.4	531	882
	0.5	508	934
	0.6	455	995
	0.7	411	1053
3	0.1	549	642
	0.2	525	718
	0.25	504	748
	0.3	485	780
	0.4	467	846
	0.5	427	901
	0.6	458	996
	0.7	416	1053
2	0.1	528	629
	0.2	485	692
	0.25	488	730
	0.3	463	768
	0.4	423	828
	0.5	405	896
	0.6	288	987
	0.65	271	1008
1	0.1	491	596
	0.2	446	662
	0.25	425	695
	0.3	397	734
	0.4	351	801
	0.5	296	901
	0.55	248	923

VVCD024S6-5P

HP: 1/3
Default motor taps:
high = 4, mid = 2, low = 1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	874	902
	0.2	856	964
	0.25	846	977
	0.3	835	998
	0.4	806	1,054
	0.5	779	1,094
	0.6	730	1,125
	0.7	670	1,155
4	0.1	794	844
	0.2	764	887
	0.25	760	916
	0.3	748	949
	0.4	706	999
	0.5	689	1,047
	0.6	656	1,075
	0.7	633	1,124
3	0.1	715	768
	0.2	698	836
	0.25	685	858
	0.3	662	890
	0.4	630	958
	0.5	595	1,007
	0.6	570	1,032
	0.7	548	1,088
2	0.1	653	725
	0.2	620	780
	0.25	615	824
	0.3	595	845
	0.4	548	908
	0.5	531	978
	0.6	494	1,011
	0.7	453	1,092
1	0.1	570	655
	0.2	520	729
	0.25	502	752
	0.3	478	788
	0.4	452	859
	0.5	432	898
	0.6	364	1,000
	0.7	314	1,058

Blower CFM tables

VVCD030S6-5P, VVCD036S6-5P, VVCD048S6-5P

VVCD030S6-5P

HP: 1/2
Default motor taps:
high=4, mid=2, low=1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	1,318	826
	0.2	1,281	864
	0.25	1,270	876
	0.3	1,246	896
	0.4	1,207	938
	0.5	1,183	978
	0.6	1,152	997
	0.7	1,120	1,032
	0.8	1,077	1,061
	0.9	1,043	1,097
	1	994	1,126
4	0.1	1,165	748
	0.2	1,121	786
	0.25	1,110	809
	0.3	1,089	832
	0.4	1,053	877
	0.5	1,021	903
	0.6	982	946
	0.7	941	976
	0.8	906	1,016
	0.9	872	1,042
	1	816	1,108
3	0.1	1,039	684
	0.2	992	743
	0.25	980	752
	0.3	952	780
	0.4	921	828
	0.5	884	860
	0.6	841	903
	0.7	809	929
	0.8	767	984
	0.9	715	1,049
	1	643	1,132
2	0.1	989	670
	0.2	943	711
	0.25	940	737
	0.3	911	762
	0.4	878	810
	0.5	829	851
	0.6	791	881
	0.7	752	933
	0.8	682	1,010
	0.9	635	1,074
	1	568	1,122
1	0.1	888	615
	0.2	850	671
	0.25	826	691
	0.3	800	718
	0.4	762	771
	0.5	714	808
	0.6	663	879
	0.7	605	947
	0.8	524	1,016
	0.9	487	1,059
	1	431	1,105

VVCD036S6-5P

HP: 1/2
Default motor taps:
high=4, mid=3, low=1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	1,318	826
	0.2	1,281	864
	0.25	1,270	876
	0.3	1,246	896
	0.4	1,207	938
	0.5	1,183	978
	0.6	1,152	997
	0.7	1,120	1,032
	0.8	1,077	1,061
	0.9	1,043	1,097
	1	994	1,126
4	0.1	1,165	748
	0.2	1,121	786
	0.25	1,110	809
	0.3	1,089	832
	0.4	1,053	877
	0.5	1,021	903
	0.6	982	946
	0.7	941	976
	0.8	906	1,016
	0.9	872	1,042
	1	816	1,108
3	0.1	1,039	684
	0.2	992	743
	0.25	980	752
	0.3	952	780
	0.4	921	828
	0.5	884	860
	0.6	841	903
	0.7	809	929
	0.8	767	984
	0.9	715	1,049
	1	643	1,132
2	0.1	989	670
	0.2	943	711
	0.25	940	737
	0.3	911	762
	0.4	878	810
	0.5	829	851
	0.6	791	881
	0.7	752	933
	0.8	682	1,010
	0.9	635	1,074
	1	568	1,122
1	0.1	888	615
	0.2	850	671
	0.25	826	691
	0.3	800	718
	0.4	762	771
	0.5	714	808
	0.6	663	879
	0.7	605	947
	0.8	524	1,016
	0.9	487	1,059
	1	431	1,105

VVCD048S6-5P

HP: 3/4
Default motor taps:
high=4, mid=2, low=1

Motor Tap	ESP (inch)	CFM	RPM
5	0.3	1,671	729
	0.4	1,629	775
	0.5	1,598	811
	0.6	1,558	850
	0.7	1,517	884
	0.8	1,480	923
	0.9	1,463	946
	1	1,401	987
4	0.1	1,550	595
	0.4	1,410	723
	0.5	1,369	762
	0.6	1,323	805
	0.7	1,294	841
	0.8	1,234	886
	0.9	1,182	963
	1	1,052	1,040
3	0.1	1,509	577
	0.2	1,360	599
	0.4	1,264	700
	0.5	1,219	745
	0.6	1,192	777
	0.7	1,110	884
	0.8	1,010	923
	0.9	922	983
	1	836	1,027
2	0.1	1,441	563
	0.2	1,299	585
	0.3	1,166	615
	0.4	1,110	672
	0.5	1,058	723
	0.6	984	796
	0.7	865	879
	0.8	811	922
	0.9	741	965
	1	603	1,032
1	0.1	1,388	544
	0.2	1,239	564
	0.3	1,034	805
	0.5	839	721
	0.6	720	814
	0.7	654	865
	0.8	547	910
	0.9	495	949
	1	431	998

VVCD054S6-5P, VVCD060S6-5P

VVCD054S6-5P

HP: 3/4
Default motor taps:
high=4, mid=2, low=1

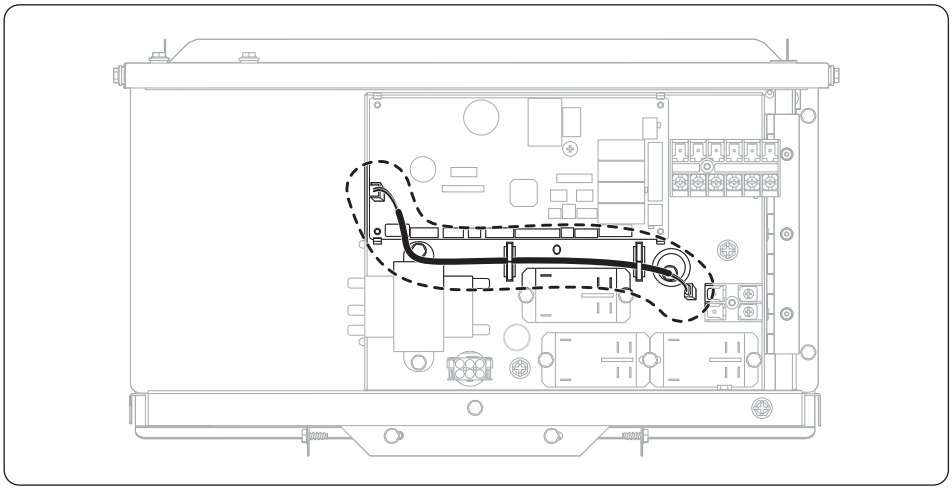
Motor Tap	ESP (inch)	CFM	RPM
5	0.1	1,951	707
	0.2	1,942	716
	0.25	1,942	717
	0.3	1,942	735
	0.4	1,915	772
	0.5	1,888	801
	0.6	1,790	840
	0.7	1,741	880
	0.8	1,702	910
	0.9	1,666	943
	1	1,630	971
4	0.1	1,687	610
	0.2	1,677	624
	0.4	1,603	703
	0.5	1,560	751
	0.6	1,469	789
	0.7	1,422	824
	0.8	1,385	855
	0.9	1,341	885
	1	1,282	936
3	0.1	1,593	580
	0.2	1,549	589
	0.25	1,493	606
	0.3	1,470	626
	0.5	1,386	723
	0.6	1,289	764
	0.7	1,242	789
	0.8	1,192	832
	0.9	1,126	873
	1	1,055	936
2	0.1	1,538	562
	0.2	1,481	576
	0.25	1,398	585
	0.3	1,322	596
	0.6	1,087	735
	0.7	1,019	788
	0.8	955	837
	0.9	911	876
	1	776	968
1	0.1	1,458	538
	0.2	1,361	555
	0.25	1,309	567
	0.3	1,200	577
	0.4	1,031	611
	0.5	980	649
	0.6	810	728
	0.7	678	816
	0.8	618	855
	0.9	530	908
	1	463	946

VVCD060S6-5P

HP: 3/4
Default motor taps:
high=4, mid=2, low=1

Motor Tap	ESP (inch)	CFM	RPM
5	0.1	2,027	750
	0.2	2,036	757
	0.25	2,027	762
	0.3	2,036	775
	0.4	2,011	810
	0.5	1,976	837
	0.6	1,983	877
	0.7	1,931	906
	0.8	1,895	933
	0.9	1,859	968
	1	1,831	998
4	0.25	1,806	698
	0.3	1,796	708
	0.4	1,768	741
	0.5	1,729	788
	0.6	1,695	839
	0.7	1,665	866
	0.8	1,623	895
	0.9	1,580	929
	1	1,536	958
3	0.1	1,648	611
	0.4	1,564	719
	0.5	1,520	762
	0.6	1,491	795
	0.7	1,445	828
	0.8	1,409	864
	0.9	1,372	885
	1	1,295	946
2	0.1	1,564	580
	0.2	1,474	597
	0.25	1,439	611
	0.5	1,316	728
	0.6	1,285	765
	0.7	1,238	795
	0.8	1,181	834
	0.9	1,113	890
	1	1,025	942
1	0.1	1,486	554
	0.2	1,367	572
	0.25	1,303	583
	0.3	1,166	598
	0.6	970	738
	0.7	903	789
	0.8	808	863
	0.9	747	914
	1	714	971

Connecting External Float switch



1 Connect the external float switch to the 2PIN wire (BLK).

2 If the connector types of the external float switch and 2PIN wire do not match, cut off the end of the 2PIN wire before connecting the wire to the external float switch.

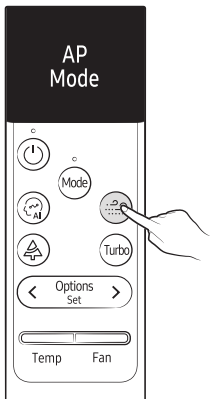
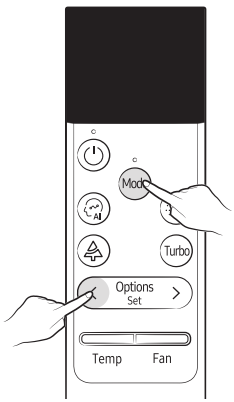
3 Set SEG8 for the install option (Refer to "Setting an indoor unit installation option")

NOTE

- The External Floating switch is not sold separately by Lennox.

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 button for 5 seconds	Press the and button for 5 seconds

Setting an indoor unit address and installation option

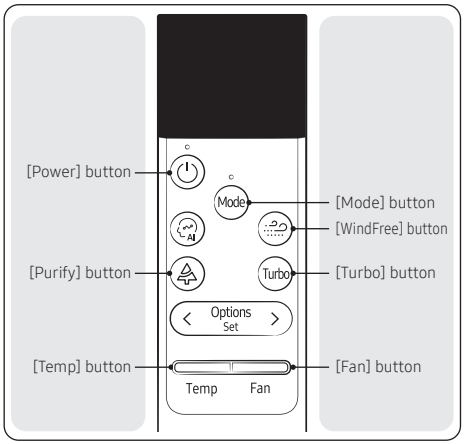
Setting the indoor unit addresses and the installation options with wireless remote controller

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

Receiver & display unit must be connected to the indoor unit to set options with the wireless remote control.

Common steps for setting the addresses and options

Remote controls



NOTE

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

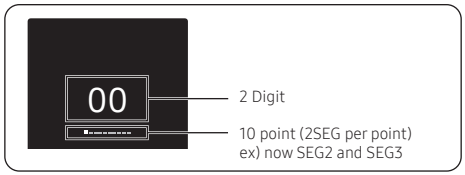
1 Enter the mode for setting the options.

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.

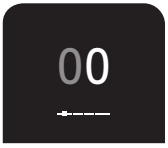
⚠ CAUTION

- 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

Take the steps presented in the following table:

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

Setting an indoor unit address and installation option

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

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

Setting an indoor unit address and installation option

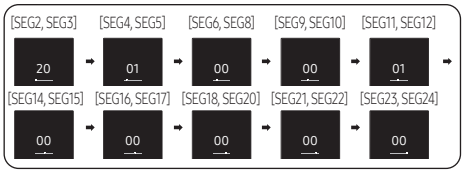
Steps	Remote control display
13 Set the SEG16 and SEG17 values: **a** Set the SEG16 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. **b** Set the SEG17 value by pressing the Fan button repeatedly until the value you want to set appears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

Installation

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

Setting an indoor unit address and installation option

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



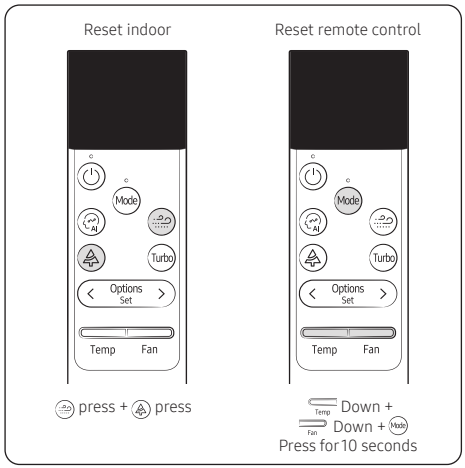
EX) VVCD***S6-5P
020010-101000- 2000E0-300000

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:

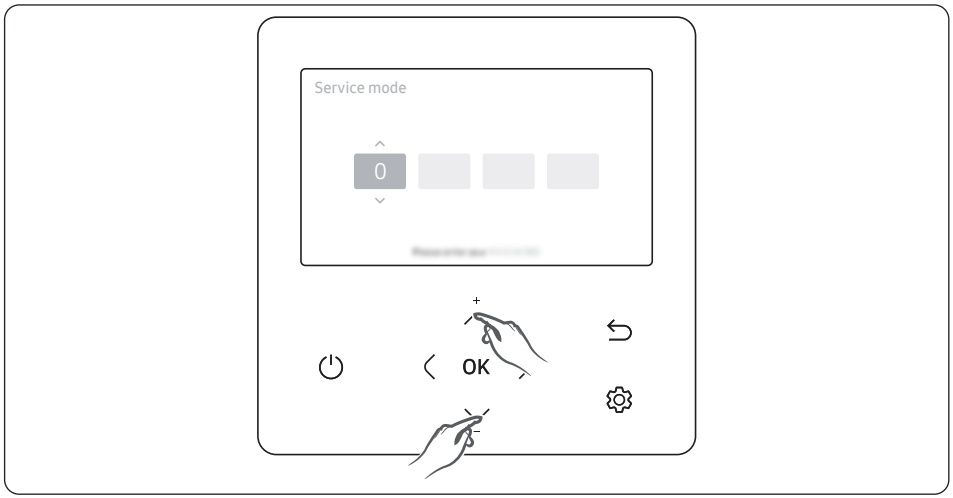
a Reset the indoor or outdoor unit.
- Indoor Unit : Press button + button for 5 seconds
- Outdoor Unit : Press the K3 button

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



Installation

Setting the indoor unit option code with the wired remote control



1 If you want to use the various additional functions for your Wired Remote Control, press the ∧ and ∨ buttons at the same time for more than 3 seconds.
   - The password entry screen appears.

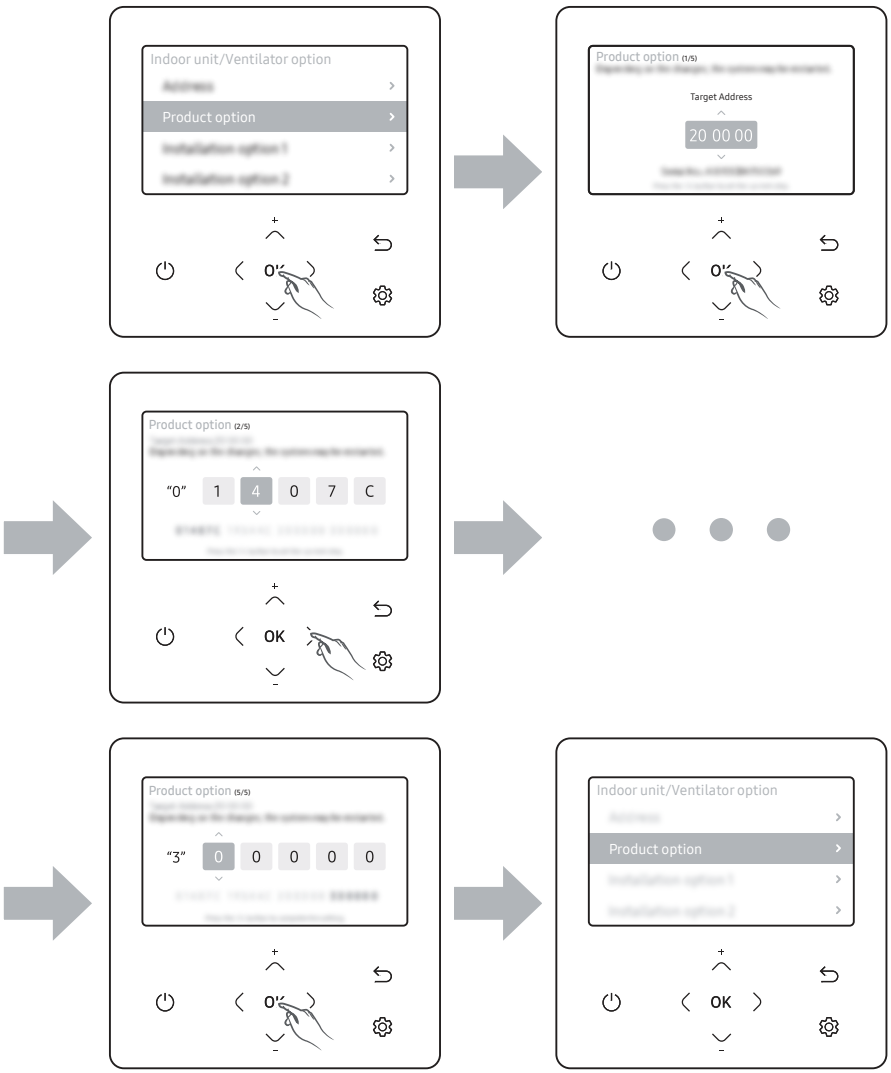
2 Enter the password, "0202," and then press the **OK** button.
   - The settings screen for installation mode/Service mode appears.

3 See the list of additional functions for the Wired Remote Control on the next page, and then select the Product option menu.
   - Once you have entered the settings screen, the current setting appears.
   - Refer to the chart for data setting.
   - Using the ∧ / ∨ buttons, change the settings and press the 〉button to move to the next setting.
   - Press the **OK** button to save the new setting.
   - Press the ⮌ button to move to the Home screen.

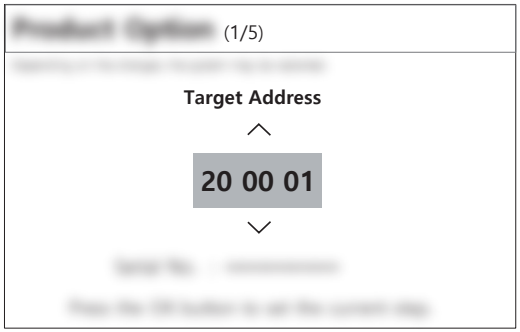
NOTE

- While setting the data, you can press the ⮌ button to move to the Home screen after checking the saving status at a pop-up screen.
- While setting the data, you can press the ⮌ button to move to the Home screen after checking the saving status at a pop-up screen.

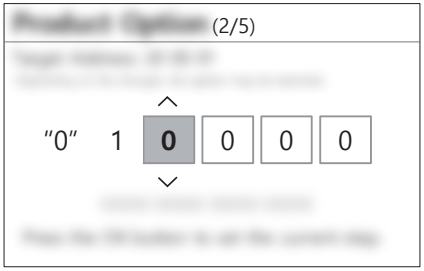
Setting an indoor unit address and installation option



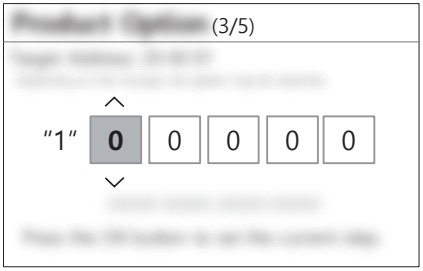
[Product option 1page]



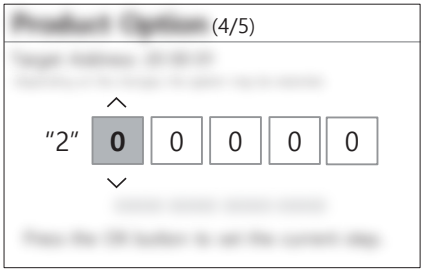
[Product option 2page]



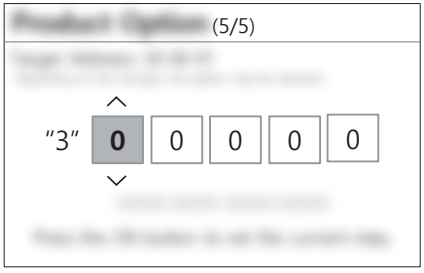
[Product option 3page]



[Product option 4page]



[Product option 5page]



Setting an indoor unit address and installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	*	*	*	*	*

Page number

SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	*	*	*	*	*

Page number

SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	*	*	*	*	*

Page number

SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	*	*	*	*	*

Page number

⚠ CAUTION

- Option code will not be applied if you don't press the **OK** button.
- Setting the indoor unit option code is only possible in the Main wired remote Control. You can only check the indoor unit option code in Sub wired remote Control.
- Setting an indoor unit option code is possible when one indoor unit is connected. If more than 2 indoor units are connected, you can only check the Main indoor unit option code.

Setting indoor unit addresses and installation options with wired remote control

Set the indoor unit address and installation option with the remote control option. Set each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time. You need to set twice when setting the indoor unit address and installation option.

Setting an indoor unit address

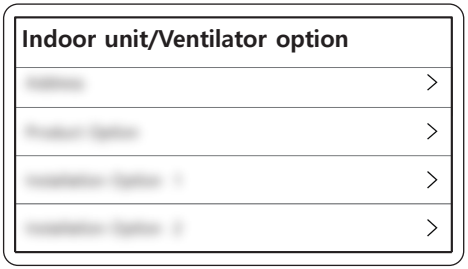
1 If you want to use the various additional functions for your Wired Remote control, press the ∧ and ∨ buttons at the same time for more than 3 seconds.
   - The password entry screen appears.

2 Enter the password, "0202," and then press the OK button.
   - The settings screen for installation mode/Service mode appears.

3 See the list of additional functions for the Wired Remote control on the next page, and then select the Address menu.
   - Once you have entered the settings screen, the current setting appears.
   - Refer to the chart for data setting.
   - Using the ∧ / ∨ buttons, change the settings and press the 〉button to move to the next setting.
   - Press the OK button to save the new setting.
   - Press the ⮌ button to move to the Home screen.

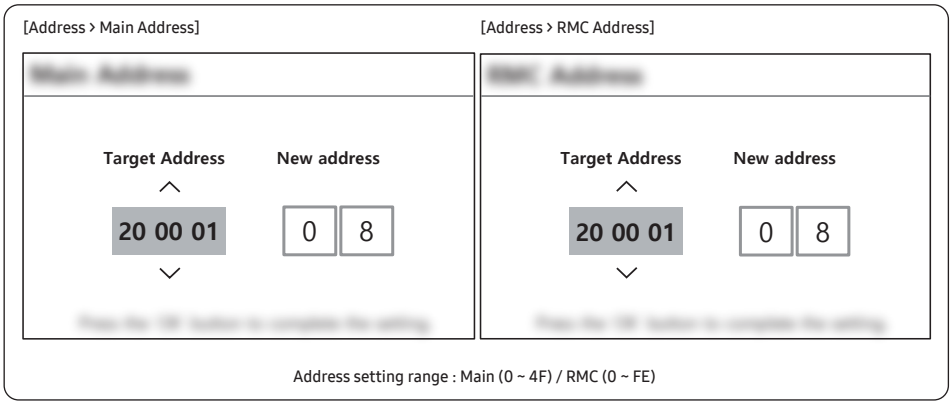
NOTE

- While setting the data, you can press the ⮌ button to move to the Home screen after checking the saving status at a pop-up screen.



1	Address - Move to 'Address' page.
2	Product Option - Move to 'Product option' page.
3	Installation Option 1 - Move to 'Installation option 1' page.
4	Installation Option 2 - Move to 'Installation option 2' page.

Setting an indoor unit address and installation option



NOTE

- Press the ⮌ button anytime during setup to exit without setting.
- Address will not be applied if you don't press OK button.
- Setting the Main/RMC Address of an Indoor unit is available only with a Main wired remote control.

Setting an indoor unit installation option

1 If you want to use the various additional functions for your Wired Remote control, press the ∧ and ∨ buttons at the same time for more than 3 seconds.
   - The password entry screen appears.

2 Enter the password, "0202," and then press the OK button.
   - The settings screen for installation mode/Service mode appears.

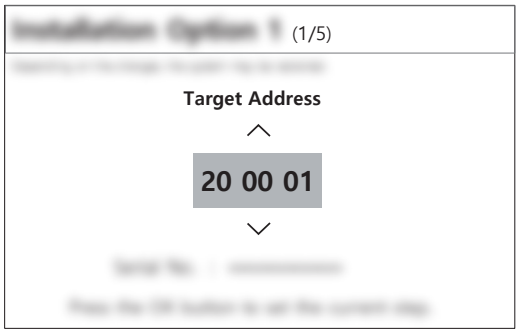
3 See the list of additional functions for the Wired Remote control on the next page, and then select the Installation Option 1 menu.
   - Once you have entered the settings screen, the current setting appears.
   - Refer to the chart for data setting.
   - Using the ∧ / ∨ buttons, change the settings and press the 〉button to move to the next setting.
   - Press the OK button to save the new setting.
   - Press the ⮌ button to move to the Home screen.

NOTE

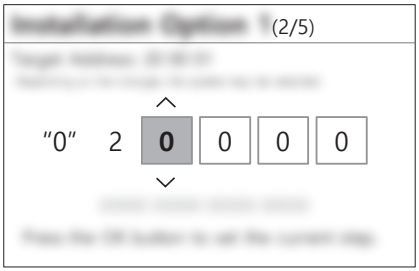
- While setting the data, you can press the ⮌ button to move to the Home screen after checking the saving status at a pop-up screen.

Installation

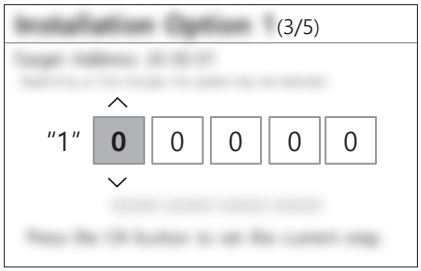
[Installation option 1-1page]



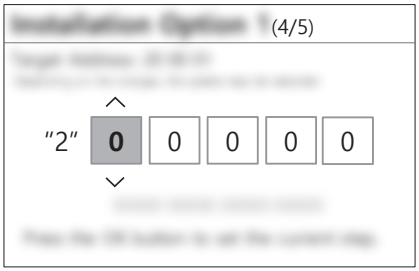
[Installation option 1-2page]



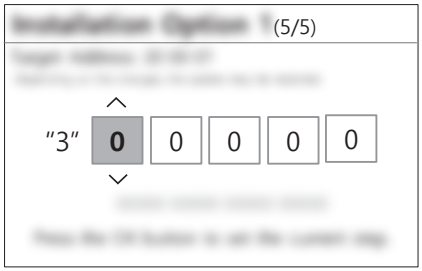
[Installation option 1-3page]



[Installation option 1-4page]



[Installation option 1-5page]



Setting an indoor unit address and installation option

Check operation

1 Set the indoor unit address and installation option with remote controller option. Set the each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time. You need to set twice when setting indoor unit address and installation option.

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

3 Reset Indoor Unit after option code programming.

Setting an indoor unit address (MAIN/RMC)

1 Check whether power is supplied or not.
   – When the indoor unit is not plugged in, there should be additional power supply in the indoor unit.

2 Before installing the indoor unit, assign an address to the indoor unit according to the air conditioning system plan.

3 Assign an indoor unit address by wireless remote controller.
   – The initial setting status of indoor unit ADDRESS(MAIN/RMC) is "0A0000-100000-200000-300000" (address: 00, RMC1: 0, RMC2: 0).

Option No. : 0AXXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Setting Main address		100-digit of indoor unit address		10-digit of indoor unit		The unit 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	0~9	100 -digit	0~9	10 -digit	0~9	A unit digit
					1	Main address setting mode						
Option	**SEG7**		**SEG8**		**SEG9**		**SEG10**		**SEG11**		**SEG12**	
Explanation	PAGE		-		Setting RMC address		-		Group channel(*16)		Group address	
Indication and Details	Indication	Details	-		Indication	Details	-		Indication	Details	Indication	Details
	1				0	No RMC address			RMC1	0~F	RMC2	0~F
					1	RMC address setting mode						

⚠ CAUTION

- When "A"~"F" is entered to SEG5~6, the indoor unit MAIN ADDRESS is not changed.
- If you set the SEG 3 as 0, the indoor unit will maintain the previous MAIN ADDRESS even if you input the option value of SEG5~6.
- If you set the SEG 9 as 0, the indoor unit will maintain previous RMC ADDRESS even if you input the option value of SEG11~12.
- You cannot set SEG11 and SEG12 as F value at the same time.

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

1 Check whether power is supplied or not.
   – When the indoor unit is not plugged in, there should be additional power supply in the indoor unit.
2 Set the installation option according to the installation condition of an air conditioner.
   – The default setting of an indoor unit installation option is "020010-101000- 2000E0-300000".
3 Set the indoor unit option by wireless remote controller.

02 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	-	Use of external temperature sensor / Minimizing fan operation when thermostat is off	Use of central control	-
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	Use of drain pump	Use of hot water heater	Settings for load operation during heater control 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	-	-

- 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).

Setting an indoor unit address and installation option

02 series installation option(Detailed)

Option No. : 02XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3	SEG4			SEG5		SEG6
Function	Page		Mode		-	Use of external temperature sensor / Minimizing fan operation when thermostat is off			Use of central control		-
Indication and details	Indication	Details	Indication	Details	-	Indication	Details		Indication	Details	-
							Use of external temperature sensor	Minimizing fan operation when thermostat is off			
	0		2			0	Disuse	(Cooling, Heating) Disuse	0	Disuse	
						1	Use	(Cooling, Heating) Disuse			
						2	Disuse	(Heating) Use (*1)	1	Use	
						3	Use	(Heating) Use (*1)			
						4	Disuse	(Cooling) Use			
						5	Use	(Cooling) Use			
						6	Disuse	(Cooling, Heating) Use (*1)			
						7	Use	(Cooling, Heating) Use (*1)			

Option	SEG7		SEG8		SEG9		SEG10			SEG11		SEG12
Function	Page		Use of drain pump		Use of heater		Settings for load operation during heater control 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			

Setting an indoor unit address and installation option

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		

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 or 1	Indoor 1	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)		
	3		4	Indoor 4	4	3.6 °F (2 °C)	Use (*5)		
					5	9 °F (5 °C)	Use (*5)		
Option	SEG23				SEG24				
Function	-				-				
	-				-				

(*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 (MCM-C200) 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 (MCM-C200) 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.

Setting an indoor unit address and installation option

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

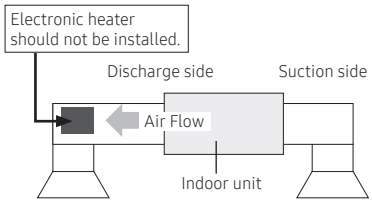
(*5) If the air conditioner operates in the Heat mode immediately after finishing the cooling operation, the condensated water in the drain pan becomes water steam by the heat of the indoor unit heat exchanger. Since the water steam might be condensed on the indoor unit, which may fall into a living 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.

⚠ CAUTION

- Do not install the electronic heater in the external supply duct connected to the AHU.



05 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	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
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	(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	Use of MTFC (Multi Tenant Function controller)	-
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	-	-	-	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

Setting an indoor unit address and installation option

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		MTFC (*3)		-
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	
	1		0	1	0	5 min.	0	The default value is used.	0	Default	-
			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.	2	Use	
			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 lockout) setting		Dual fuel (compressor lockout) setting		-
Indication and details	-	-	Indication	Detail	Indication	Detail	-
			0	Disuse	0	Disuse	
			1	65 °F (18.3 °C)	1	45 °F (7.2 °C)	
			2	60 °F (15.6 °C)	2	40 °F (4.4 °C)	
			3	55 °F (12.8 °C)	3	35 °F (1.7 °C)	
			4	50 °F (10.0 °C)	4	30 °F (-1.1 °C)	
			5	45 °F (7.2 °C)	5	25 °F (-3.9 °C)	
			6	40 °F (4.4 °C)	6	20 °F (-6.7 °C)	
			7	35 °F (1.7 °C)	7	15 °F (-9.4 °C)	
			8	30 °F (-1.1 °C)	8	10 °F (-12.2 °C)	
			9	25 °F (-3.9 °C)	9	5 °F (-15 °C)	
			A	20 °F (-6.7 °C)	A	0 °F (-17.8 °C)	
			B	15 °F (-9.4 °C)	B	-5°F (-20.6 °C)	
			C	10 °F (-12.2 °C)	C	-9 °F (-23.0 °C)	
			D	5 °F (-15 °C)	D	-15 °F (-26.0 °C)	
			E	0 °F (-17.8 °C)	E	-20 °F (-29.0 °C)	
			F	Cannot be used	F	Cannot be used	

Option	SEG18 (*4)	
Function	Control variables when the 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.

Setting an indoor unit address and installation option

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
					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

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	-	-	-	-	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

(*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))

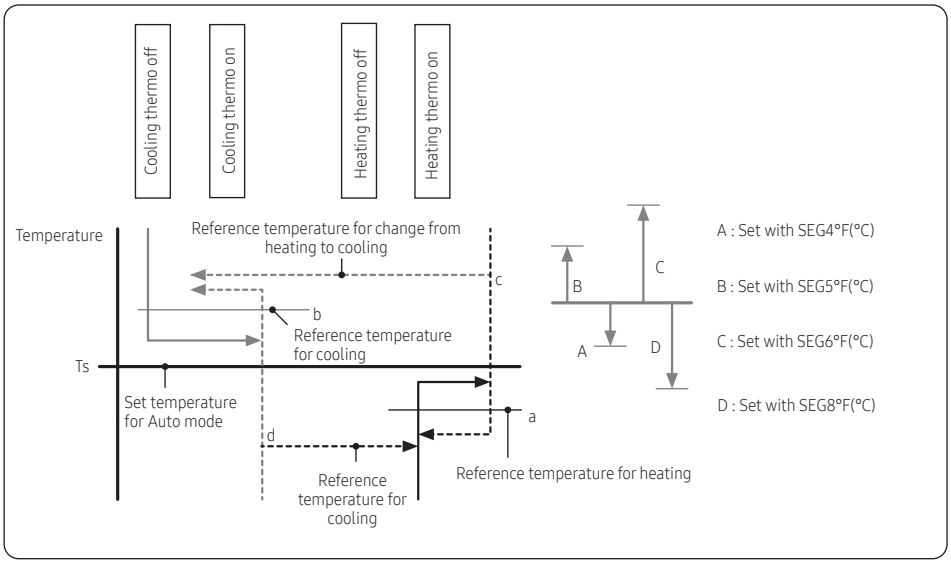
(*3) For MTFC option, MTFC(Multi Tenant Function Controller) kit is required.

(*4) 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.

Setting an indoor unit address and installation option

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 44.

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 main indoor unit by using the remote control, the outdoor unit automatically operate in the current mode of the main indoor unit.

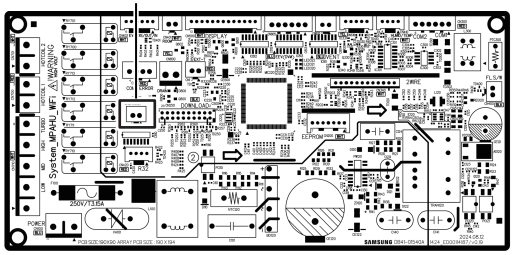
Installing external outputs

- 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.

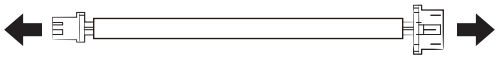
Setting an indoor unit address and installation option

For controlling AC LAMP (On/Off)

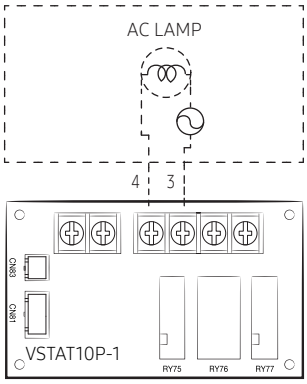
R-32 CHECK : CN421(YELLOW)



※ Use of the WIRE HARNESS included in the product manual

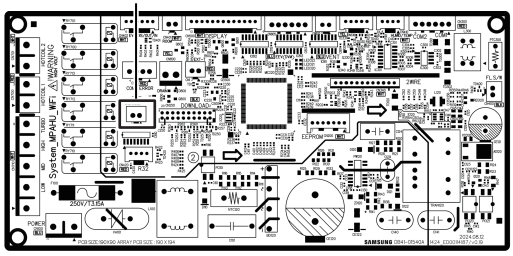


To Main PBA

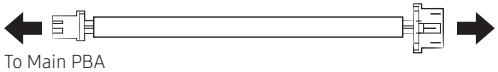


For controlling EXTERNAL ALARM (On/Off)

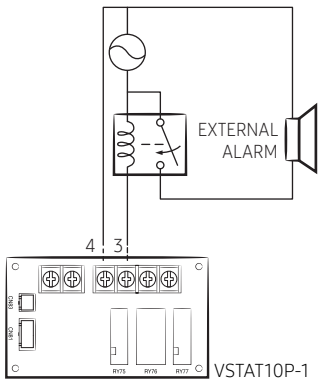
R-32 CHECK : CN421(YELLOW)



※ Use of the WIRE HARNESS included in the product manual



To Main PBA



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).

Final Checks and User Tips

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

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

Providing information for user

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 set the timers
5 How to clean and replace the filters

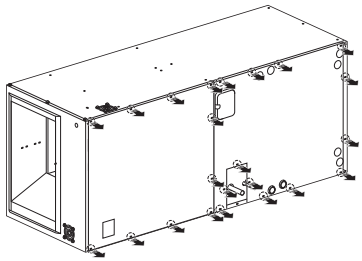
NOTE

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

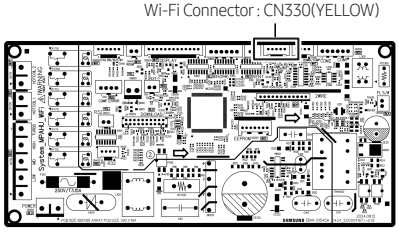
Wi-Fi module reinstallation guide

In some cases, the Wi-Fi module may need to be removed and relocated to improve the Wi-Fi signal connection.

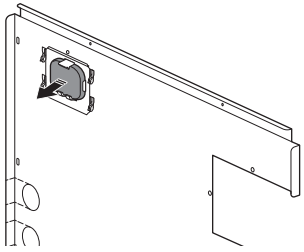
1 Disassemble the front frame. (23 screws)



2 Disconnect Wi-Fi connector

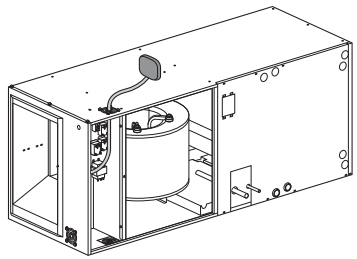


3 Pull the Wi-Fi wire through the wiring hole, and then take out the Wi-Fi module..

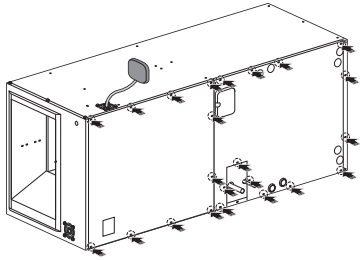


Providing information for user

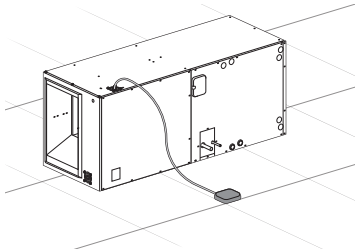
4 Connect the Wi-Fi wire connector through the wire hole.



5 Assemble the front frame (23 screws)



6 Fix the Wi-Fi module to the Ceiling to avoid the steel structure.



Troubleshooting

- If an error occurs during the operation, one or more 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

Abnormal conditions	Error code	Indicators					Remarks
		Concealed Type					
		GREEN	RED				
		Standard Type					
Power reset		◑	X	X	X	X	
Error on indoor temperature sensor (Short or Open)	E121	X	X	◑	X	X	
1. Error on Eva-in sensor (Short or Open) 2. Error on Eva-out sensor (Short or Open) 3. Discharge sensor error (Short or Open)	E122 E123 E126	◑	X	◑	X	X	
Error of Fan motor in the indoor unit	E154	X	X	X	◑	X	
Error of Outdoor Error indicating a shor/open or fault signal in the refrigerant leak sensor Error indicating the refrigerant leak sensor's lifespan cannot be predicted Error indicating a primary refrigerant leak detected Error indicating a secondary refrigerant leak detected Error indicating a malfunction of the refrigerant leak sensor Error indicating a refrigerant leak sensor replacement is required Error indicating the refrigerant leak sensor's lifespan expired Error indicating another indoor unit that shares the outdoor unit detects the R-32 refrigerant.	- E116 E695 E696 E697 E698 E699 E700 E797	X	X	◑	◑	◑	
Clogging of outdoor's service valve	-	◑	X	X	◑	◑	
1. Detection of the float switch 2. Emergency alarm system on (Emergency Stop)	E153 E665	X	X	X	◑	◑	
1. Error of EEPROM 2. Error of Option setting	E162 E163	◑	◑	◑	◑	◑	

Troubleshooting

Abnormal conditions	Error code	Indicators					Remarks
		Concealed Type					
		GREEN	RED				
		Standard Type					
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. The indoor unit receiving the communication error from the outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking. (Communication error for more than 2 minutes)	E101 E102 E202 E201	X	X	◑	◑	◑	

● On ◑ Flickering X Off

- If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

Appendix

Wired remote controller

If an error occurs, TEST is displayed on the wired remote controller. If you would like to see an error code, press the Test button.

Error mode	Contents	Error type
101	Indoor unit communication error	Communication error
108	Duplicated address setting error	Communication error
109	No response error address from indoor unit	Communication error
116	Error indicating a short-circuit, open-circuit or fault signal in the refrigerant leak sensor	R-32 detecting sensor error
118	Indoor fan PCB over heat error	
121	Indoor temperature sensor (open/short error)	Indoor sensor error
122	Indoor unit Eva In sensor (Open/Short)	Indoor sensor error
123	Indoor unit Eva Out sensor (Open/Short)	Indoor sensor error
154	Error of Fan motor in the indoor unit	
162	EEPROM error (Hardware)	Indoor EEPROM error
163	EEPROM option error	Indoor EEPROM error
198	Error on thermal fuse of indoor unit (Open)	Indoor Terminal Block error
202	Indoor/outdoor communication error (1 min)	Communication error
203	Communication error between indoor/outdoor INV↔MAIN MICOM (1 min)	Communication error
221	Outdoor temperature sensor error	Outdoor sensor error
231	COND temperature sensor error	Outdoor sensor error
251	[Inverter] Emission temperature sensor error	Outdoor sensor error
403	Detection of Indoor Freezing (when Comp. Stops)	Outdoor unit protection control error
404	Protection of Outdoor Overload (when Comp. Stops)	Outdoor unit protection control error
416	Emission temperature excessively high	Outdoor unit protection control error

Troubleshooting

Error mode	Contents	Error type
422	High pressure blockage error (Refrigerant completely Leakage error)	Self diagnostic error
440	Heating operation blocked	Self diagnostic error
441	Cooling operation blocked	Self diagnostic error
458	Outdoor fan 1 error	Self diagnostic error
461	[Inverter] Compressor startup error	Outdoor unit protection control error
462	[Inverter] Total current error/PFC over current error	Outdoor unit protection control error
463	OLP Overheat and Comp. Stop	Outdoor unit protection control error
464	[Inverter] IPM over current error	Outdoor unit protection control error
465	Compressor V limit error	Outdoor unit protection control error
466	DC LINK over/low voltage error	Outdoor unit protection control error
467	[Inverter] Compressor rotation error	Outdoor unit protection control error
468	[Inverter] Current sensor error	Outdoor unit protection control error
469	[Inverter] DC LINK voltage sensor error	Outdoor unit protection control error
470	EEPROM Read/Write error	Outdoor unit protection control error
471	[Inverter] OTP error	Outdoor unit protection control error
472	AC ZERO CROSSING SIGNAL OUT error	Outdoor unit protection control error
473	Compressor LOCK error	Outdoor unit protection control error
475	Outdoor fan 2 error	Self diagnostic error
500	IPM Overheat Error for Outdoor Unit Inverter Comp.	Outdoor unit protection control error
554	Gas leak error	Self diagnostic error
557	Option code miss matching among the indoors (only for DPM)	Check indoor option code
556	Capacities not matched	Outdoor unit protection control error
601	Communication error between the indoor unit and wired remote controller	Wired remote controller error

Error mode	Contents	Error type
	Communication error between the main and sub wired remote controllers	Wired remote controller error
	Error of communication down between the indoor unit and wired remote controller after completion of 10 times tracking.	Wired remote controller error
	COM1/COM2 Cross-installed error	
	Error of Main wired remote controller and Sub wired remote controller setting	
	Emergency alarm system on (Emergency Stop)	
	Error indicating the refrigerant leak sensor's lifespan cannot be predicted	R-32 detecting sensor error
	Error indicating a primary refrigerant leak detected	
	Error indicating a secondary refrigerant leak detected	
	Error indicating a malfunction of the refrigerant leak sensor	
	Error indicating a refrigerant leak sensor replacement is required	
	Error indicating the refrigerant leak sensor's lifespan expired	
	Error indicating another indoor unit that shares the outdoor unit detects the R-32 refrigerant.	