VRF (Variable Refrigerant Flow)
Installation manual

VWMD***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 A2L	Refrigerant safety group

Symbol	Meaning
	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.

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.

Safety Information

- 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.
- 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.
- After unpacking the air conditioner, keep all packaging materials well out of the reach of children, as packaging materials can be dangerous to children.
  - If a child places a bag over its head, it may result in suffocation.
- 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.)
- During the transportation of the indoor unit, the pipelines shall be covered with brackets for protection. Do not move the product by holding the refrigerant or drain pipe connections.
  - It may cause gas leakage.
- 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.
- Fix the outdoor unit firmly so that the electric part of the outdoor unit is not exposed.
  - Failing to do so may result in electric shock or fire.
- Do not pull or excessively bend the power line. Do not twist or tie the power line. Do not hook the power line over a metal object, place a heavy object on the power line, insert the power line between objects, or push the power line into the space behind the appliance.
  - This may result in electric shock or fire.
- Use the power line with the power specifications of the product or higher and use the power line for this appliance only.
  In addition, do not use an extension line.
  - Extending the power line may result in electric shock or fire.
  - Do not use an electric transformer. This may result in electric shock or fire.
  - If the voltage/frequency/rated current condition is different, it may cause fire.

⚠ 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 measures. 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.

Safety Information

Precautions for using R-32 refrigerant

General

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

General information on Servicing

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

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

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

Initial checks of electrical devices shall include the following.

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

Electrical repair safety measures

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

Detection of flammable refrigerants

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

Removal and Evacuation

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

Charging procedure

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

Decommissioning

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

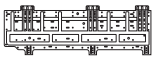
About Refrigerant Detection System(RDS)

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

Installation Procedure

Step 1 Checking and preparing accessories

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

Installation plate	Installation manual
	
User manual	PE indoor unit cover
	

Step 2 Choosing the installation location

Installation location requirements

- There must be no obstacles near the air inlet and outlet.
- Install the indoor unit on a ceiling that can support its weight.
- Maintain sufficient clearance around the indoor unit.
- Before installing the indoor unit, be sure to check whether the chosen location is well-drained.
- The indoor unit must be installed such that it is beyond public access and is not touchable by users.
- A vibration-resistant location that is not inclined (If the indoor unit is installed on a structure that is not sturdy, it may fall and get damaged or cause injury.)
- Where it is not exposed to direct sunshine.
- Where the air filter can be removed and cleaned easily.
- A location where animals cannot access and urinate on the product. Ammonia may be generated.
- The amount of refrigerant to add differs, depending on the installation conditions (e.g., the total piping length and the indoor unit combination), and the minimum indoor-unit installation area depends on the final amount of refrigerant.
  Minimum floor area of the room shall be in compliance with the min. room area according to the total charge of the installation according to Table 1 in the outdoor unit installation manual.

⚠ WARNING

- Because your air conditioner contains R-32 refrigerant, make sure that it is installed, operated, and stored in a room whose floor area is larger than the minimum required floor area specified.
- Refer to the "R-32 system arrangement requirements" section in the user manual for the combined outdoor units, and use a permanent marker pen to write down the indoor-unit installation area for the final refrigerant amount in the "Minimum Room Area" section on the "Rating label" on the indoor unit.
  ※ This information is mandatory for "Annex 101.DVF Caution/Warning Standards" and must be filled in. If it is not filled in, the installer will be held responsible for any breakage or damage.

⚠ CAUTION

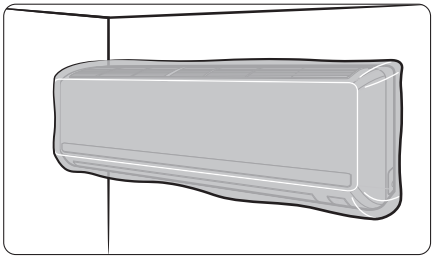
- As a rule, the unit cannot be installed at a height of less than 5.9ft (1.8m).
- If you install a cassette type indoor unit on the ceiling when the temperature is over 80.6°F (27°C) and humidity is over 80%, you must apply an extra 0.39inch (10mm) thick polyethylene insulation or a similar type of 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.

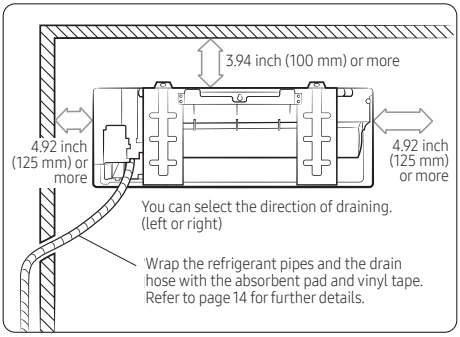
- Gas may leak and it may cause fire.
- The place that is close to heat sources.
- Do not use the indoor unit for the preservation of food items, plants, equipment, and artwork. This may cause deterioration of their quality.
- Do not install the indoor unit if it has any drainage problems.

Please cover the air conditioner with PE BAG after installation,and remove it when you start to run air conditioner.



Space requirements for installation & service

Observe the clearances and maximum lengths as seen in the picture below when installing the air conditioner.



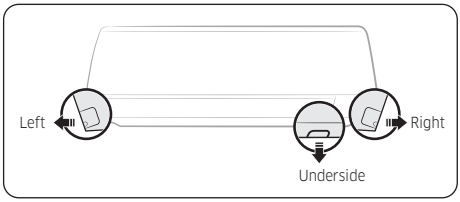
NOTE

- The appearance of the unit may be different from the diagram depending on the model.

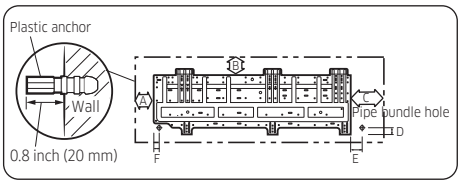
Step 3 Installing the indoor unit

Before fixing the installation plate to the wall or window frame, you must determine the position of the 2.5 inch (65 mm) hole through which the cable, pipe and hose pass to connect the indoor unit to the outdoor unit.
When facing the wall, the pipe and cable can be connected from the:

- Right
- Left
- Underside (right)
- Rear (right or left)



1 Determine the position of the pipe and drain hose hole as seen in the picture and drill the hole with an inner diameter of 2.5 inch (65 mm) so that it slants slightly downwards.



Pipe bundle hole: Ø 2.5 inch (Ø 65 mm) (Unit : inch (mm))

Model	A	B	C	D	E	F
VWMD032S6-5P	6.1(156)	2.6(67)	14.3(364)	1.4(34.5)	2.5(64.5)	0.8(19.5)

2 If you fix the indoor unit to a wall, fix the installation plate to the wall giving attention to the weight of the indoor unit.

NOTE

- If you mount the plate to a concrete wall by using plastic anchors, make sure that gaps between the wall and the plate, created by projected anchor, are less than 0.8 inch (20 mm).

Installation Procedure

3 If you fix the indoor unit to a window frame, follow 4 to 6.

4 Determine the positions of the wooden uprights to be attached to the window frame.

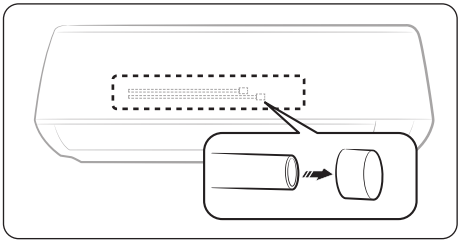
5 Attach the wooden uprights to the window frame giving attention to the weight of the indoor unit.

6 Attach the installation plate to the wooden uprights using tapping screw.

Step 4 Purging the unit

Upon delivery, there may be inert gas inside the indoor unit. Purge the gas from the indoor unit before connecting the assembly pipe.

- Unscrew the caps at the end of each pipe. All inert gas exhausts from the indoor unit.



NOTE

- To prevent dirt or foreign substances from getting into the pipes during installation, do NOT remove the caps completely until you are ready to connect the pipes.

Step 5 Connecting the refrigerant pipe

Connect indoor and outdoor units with field-supplied copper pipes by means of flare connections. Use insulated seamless refrigeration grade pipe only, (Cu DHP type according to ISO1337), degreased and deoxidized, suitable for operating pressures of at least 4200 kPa (609.2 psig) and for burst pressure of at least 20700 kPa (3002.3 psig). Under no circumstances must sanitary type copper pipe be used.

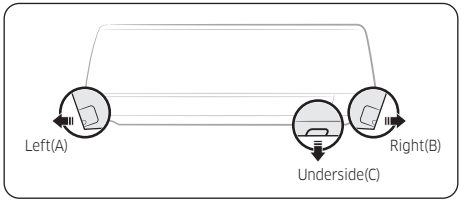
There are 2 refrigerant pipes of different diameters:

- The smaller one is for the liquid refrigerant
- The larger one is for the gas refrigerant

A short pipe is already fitted to the air conditioner. You may need to extend the pipe using the assembly pipe. (optional)

The connection procedure for the refrigerant pipe varies according to the exit position of the pipe when facing the wall:

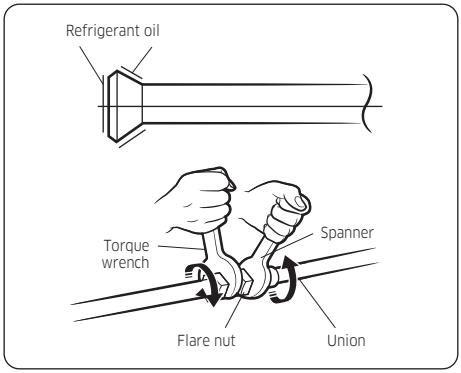
- Right (A)
- Left (B)
- Underside (C)
- Rear



1 Cut out the appropriate knock-out piece on the rear of the indoor unit unless you connect the pipe directly from the rear.

2 Smooth the cut edges.

3 Remove the protection caps of the pipes and connect the assembly pipe to each pipe. Tighten the nuts first with your hands, and then with a torque wrench, applying the following torque:



Outer Diameter		Torque	
mm	inch	N·m	lbf.ft
Ø6.35	1/4	14 to 18	10.3 to 13.3
Ø9.52	3/8	34 to 42	25.1 to 31.0
Ø12.70	1/2	49 to 61	36.1 to 45.0
Ø15.88	5/8	68 to 82	50.2 to 60.5

(1N·m=10kgf·cm)

NOTE

- If you want to shorten or extend pipes, refer to **Step 6 Cutting or flaring the pipes**.

4 Cut off the remaining foam insulation.

5 If necessary, bend the pipe to fit along the bottom of the indoor unit. Then pull it out through the appropriate hole.
   - The pipe should not project from the rear of the indoor unit.
   - The bending radius should be 4 inch (100 mm) or more.

6 Pass the pipe through the hole in the wall.

7 For further details on how to connect to the outdoor unit and purge the air, refer to **Step 4 Purging the unit.**

NOTE

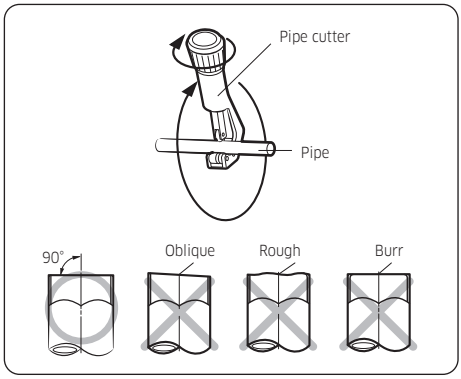
- The pipe will be insulated and fixed permanently into position after finishing the installation and the gas leak test; refer to page **12** for further details.
- DO NOT WALL UP THE PIPE CONNECTION!

  All refrigerant pipe connection must be easy accessible and serviceable.

Step 6 Cutting or flaring the pipes

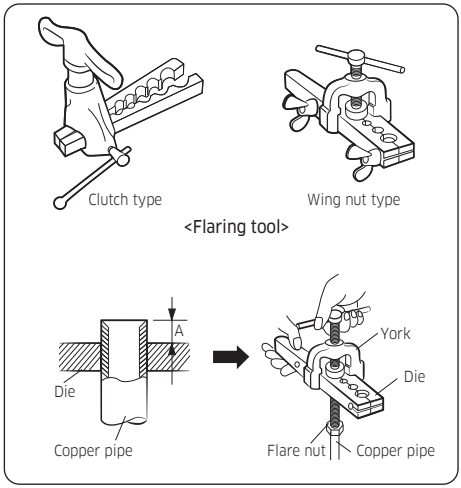
1 Make sure that you prepared the required tools. (pipe cutter, reamer, flaring tool and pipe holder)

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.



3 To prevent a gas leak, remove all burrs at the cut edge of the pipe using a reamer.

4 Carry out flaring work using flaring tool as shown below.

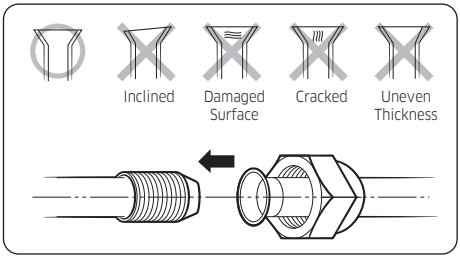


Installation Procedure

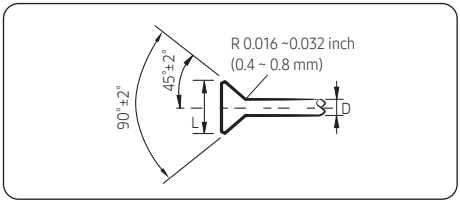
(Unit: inch (mm))

Outer diameter		A					
		Flare tool for R-32 clutch type		Conventional flare tool			
				Clutch type		Wing nut type	
mm	inch	mm	inch	mm	inch	mm	inch
6.35	1/4	0~0.5	0~0.02	1.0~1.5	0.04~0.06	1.5~2.0	0.06~0.08
9.52	3/8	0~0.5	0~0.02	1.0~1.5	0.04~0.06	1.5~2.0	0.06~0.08
12.70	1/2	0~0.5	0~0.02	1.0~1.5	0.04~0.06	1.5~2.0	0.06~0.08
15.88	5/8	0~0.5	0~0.02	1.0~1.5	0.04~0.06	1.5~2.0	0.06~0.08

5 Check if you flared the pipe correctly. There are some examples of incorrectly flared pipes below.



6 Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.



Outer Diameter (D)		Connection Torque		Flare dimension (L)	
mm	inch	N·m	lbf.ft	mm	inch
Ø6.35	1/4	14~18	10.3~13.3	8.70~9.10	0.34~0.36
Ø9.52	3/8	34~42	25.1~31.0	12.80~13.20	0.50~0.52
Ø12.70	1/2	49~61	36.1~45.0	16.20~16.60	0.64~0.65
Ø15.88	5/8	68~82	50.2~60.5	19.30~19.70	0.76~0.78

(1N·m=10kgf·cm)

⚠ CAUTION

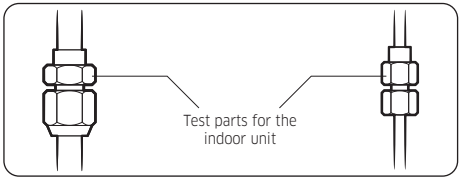
- In case of needing brazing, you must work with nitrogen gas blowing.

Step 7 Performing leak test

Leak test

LEAK TEST WITH NITROGEN (before opening valves)
In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R-32, it's responsible of installer to pressurize the whole system with nitrogen (using a pressure regulator) at a pressure above 4.1 MPa (594.7 psig) (gauge).

LEAK TEST WITH R-32 (after opening valves)
Before opening valves, discharge all the nitrogen into the system and create vacuum. After opening valves check leaks using a leak detector for refrigerant R-32.



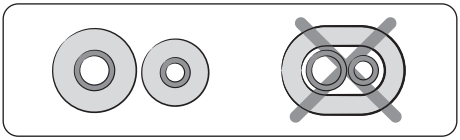
⚠ CAUTION

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

Step 8 Wrapping the pipes with the insulation

After checking for gas leaks in the system, insulate the pipe, hose and cables. Then place the indoor unit on the installation plate.

1 To avoid condensation problems, place heat-resistant poly-ethylene foam separately around each refrigerant pipe in the lower part of the indoor unit.



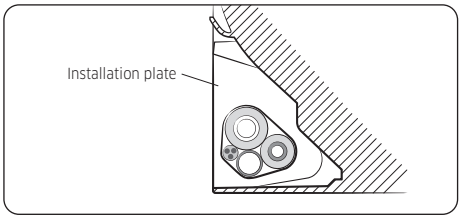
2 Wrap the refrigerant pipe and the drain hose in the rear of the indoor unit with the absorbent pad.

NOTE

- Wind the pipe and hose three times to the end of the indoor unit with the absorbent pad. [0.787 inch (20mm) interval]

3 Wind the pipe, assembly cable and drain hose with insulation tape.

4 Place the bundle (the pipe, assembly cable and drain hose) in the lower part of the indoor unit carefully so it doesn't project from the rear of the indoor unit.



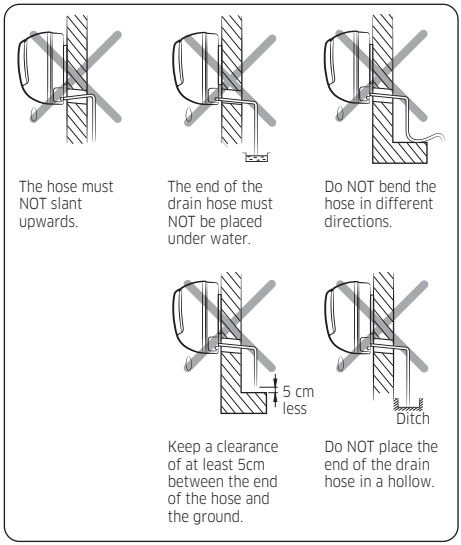
5 Hook the indoor unit to the installation plate and move the unit to the right and left until it is securely in place.

6 Wrap the rest of the pipe with vinyl tape.

7 Attach the pipe to the wall using clamps (optional).

Step 9 Installing the drain hose

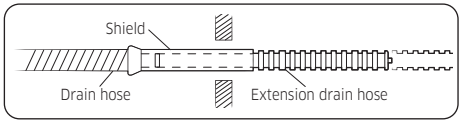
When installing the drain hose for the indoor unit, check if condensation draining is adequate. When passing the drain hose through the 2.5 inch (65-mm) hole drilled in the wall, check the following:



1 If necessary, connect the 2-meter extension drain hose to the drain hose.

2 If you use the extension drain hose, insulate the inside of the extension drain hose with a shield.

3 Fit the drain hose into 1 of 2 drain hose holes, then fix the end of the drain hose tightly with a clamp.



NOTE

- If you don't use the other drain hose hole, block it with a rubber stopper.

Installation Procedure

4 Pass the drain hose under the refrigerant pipe, keeping the drain hose tight.

5 Pass the drain hose through the hole in the wall. Check if it slants downwards as seen in the picture.

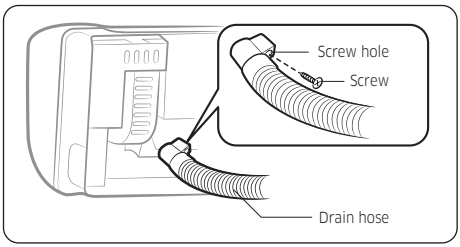
NOTE

- The hose will be fixed permanently into position after finishing the installation and the gas leak test; refer to page 12 for further details.
- DO NOT WALL UP THE DRAIN HOSE CONNECTION!
  Drain hose connection must be easy accessible and serviceable.

Step 10 Optional: Changing direction of the drain hose

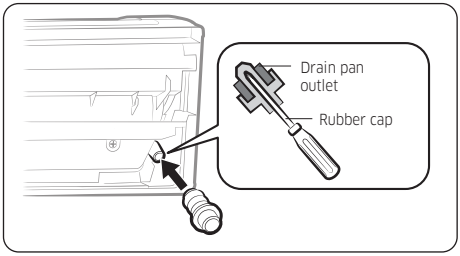
You can select the direction of the drain hose, depending on where you want to install the indoor unit.

1 Detach the rubber cap with the flyer.



2 Detach the drain hose by pulling it and turning to the left.

3 Insert the drain hose by fixing it into the groove of the drain hose and the outlet of the drain pan.



4 Attach the rubber cap with a screwdriver by turning it to the right until it fixes to the end of the groove.

Step 11 Connecting the power and communication cables

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

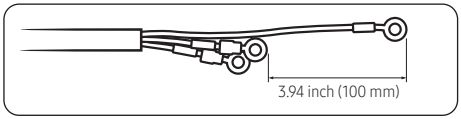
2 Indoor unit power should be supplied through the breaker(ELCB or MCCB+ELB) separated by the outdoor power.

- ELCB:Earth Leakage Circuit Breaker
- MCCB:Molded Case Circuit Breaker
- ELB:Earth Leakage Breaker

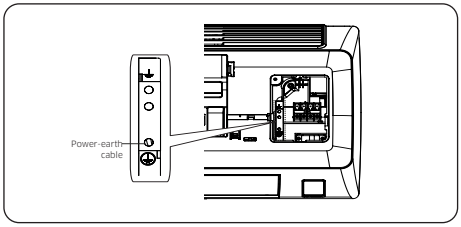
3 The power cable should be used only copper wires.

4 Connect the power cable{1(L), 2(N)} among the units within maximum length and communication cable(F1, F2) each.

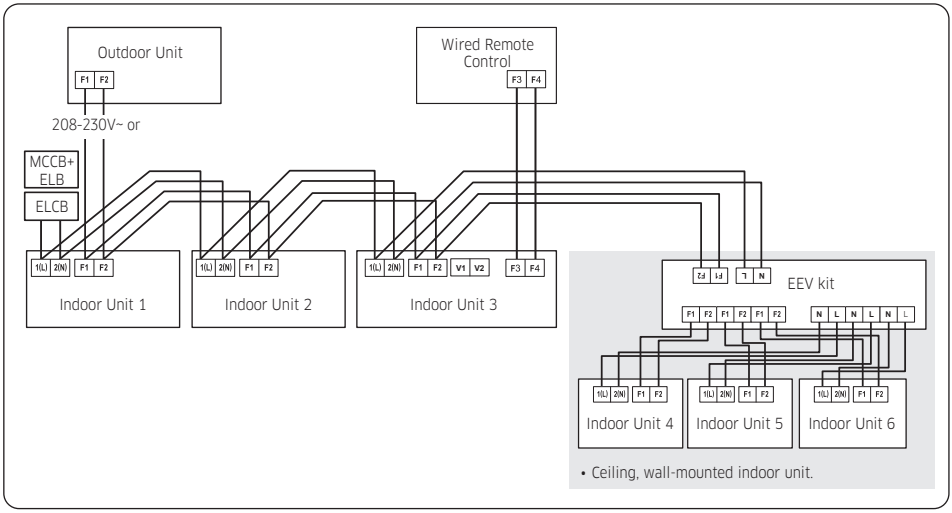
5 Cut the cable as like the following picture. The earth cable need to be longer than the power cable (1(L), 2(N)) by 3.94 inch (100 mm).



6 Connect the earth cable to the plate on the evaporator as like the following picture.



7 Connect F3, F4(for communication) wires at the back side of the indoor unit when installing the wired remote control.



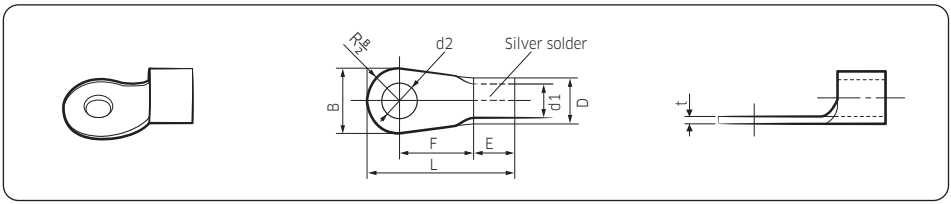
- ELCB : Essential Installation
- The EEV Kit is optional component.

⚠ WARNING

- Power off before connecting any wires;Indoor PBA will be damaged while V1,V2,F3,F4 short each other.
- You must connect the earth cable. If earthing is not complete, electric shock or fire may occur.

Installation Procedure

Ring terminal selection



Nominal dimensions for cable [Inch² (mm²)]		0.0023 (1.5)		0.0039 (2.5)		0.0062 (4)
Nominal dimensions for screw [Inch (mm)]		0.157 (4)	0.157 (4)	0.157 (4)	0.157 (4)	0.157 (4)
B	Standard dimension [Inch (mm)]	0.260 (6.6)	0.315 (8.0)	0.260 (6.6)	0.335 (8.5)	0.374 (9.5)
	Allowance [Inch (mm)]	±0.008 (±0.2)		±0.008 (±0.2)		±0.008 (±0.2)
D	Standard dimension [Inch (mm)]	0.134 (3.4)		0.165 (4.2)		0.220 (5.6)
	Allowance [Inch (mm)]	+0.012 (+0.3) -0.008 (-0.2)		+0.012 (+0.3) -0.008 (-0.2)		+0.012 (+0.3) -0.008 (-0.2)
d1	Standard dimension [Inch (mm)]	0.067 (1.7)		0.091 (2.3)		0.134 (3.4)
	Allowance [Inch (mm)]	±0.008 (±0.2)		±0.008 (±0.2)		±0.008 (±0.2)
E	Min. [Inch (mm)]	0.161 (4.1)		0.236 (6)		0.236 (6)
F	Min. [Inch (mm)]	0.236 (6)		0.236 (6)		0.236 (6)
L	Max. [Inch (mm)]	0.630 (16)		0.689 (17.5)		0.787 (20)
d2	Standard dimension [Inch (mm)]	0.169 (4.3)		0.169 (4.3)		0.169 (4.3)
	Allowance [Inch (mm)]	+0.008 (+0.2) 0 (0)		+0.008 (+0.2) 0 (0)		+0.008 (+0.2) 0 (0)
t	Min. [Inch (mm)]	0.028 (0.7)		0.031 (0.8)		0.035 (0.9)

Specification of electronic wire

Power supply	MCCB	ELB or ELCB	Power cable	Earth cable	Communication cable
Max : 253V / Min : 187V	XA	XA, 30 mmA, 0.1 s	13 AWG (2.5 mm²)	13 AWG (2.5 mm²)	18~15 AWG (0.75~1.5 mm²)

- Refer to the unit nameplate for rating current.
- Decide the capacity of ELCB(or MCCB+ELB) by below formula.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F or IEC:60245 IEC 66 / CENELEC: H07RN-F)

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

- X : The capacity of ELCB(or MCCB+ELB).
- ∑Ai : Sum of Rating currents of each indoor unit.
- Refer to each installation manual about the rating current of indoor unit.

Rated currents

Model	Rating current (A)
VWMD032S6-5P	0.47

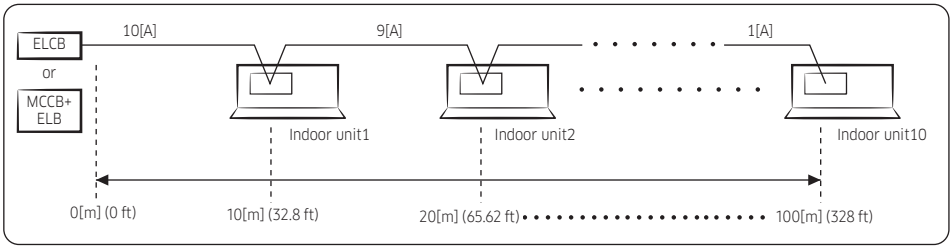
- Decide the power cable specification and maximum length within 10% power drop among indoor units.

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

- coef: 1.55
- Lk: Distance among each indoor unit[m],
  Ak: Power cable specification[mm²]
  ik: Running current of each unit[A]

Example of Installation

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



- Apply following equation.

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

Installation Procedure

- Calculation

  - Installing with 1 sort wire

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

  - Installing with 2 different sort wire.

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

⚠ CAUTION

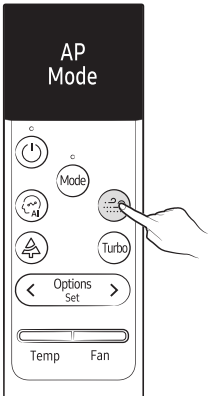
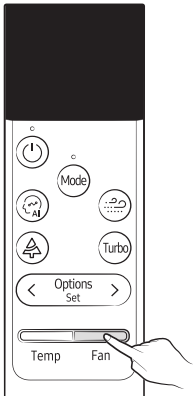
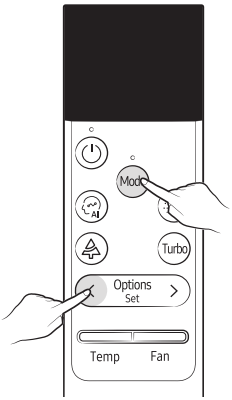
- Select the power cable in accordance with relevant local and national regulations.
- Wire size must comply with local and national code.
- For the power cable, use the grade of H07RN-F or H05RN-F materials.
- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- 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 the iron pipe.
- Connect the power cable to the auxiliary circuit breaker. An all pole disconnection from the power supply must be incorporated in the fixed wiring [≥0.12 inch (3mm)]
- You must keep the cable in a protection tube.
- Keep distances of 1.97 inch (50mm) 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) should be considered more capacity if many indoor units are connected from one breaker.
- Use round pressure terminal for connections to the power terminal block.
- For wiring, use the designated power cable and connect it firmly, then secure to prevent out-side 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

(1N·m=10kgf·cm)

Step 12 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 (Mode) button for 5 seconds	Press the (Fan) button for 5 seconds	Press the (Mode) and (Options Set) button for 5 seconds

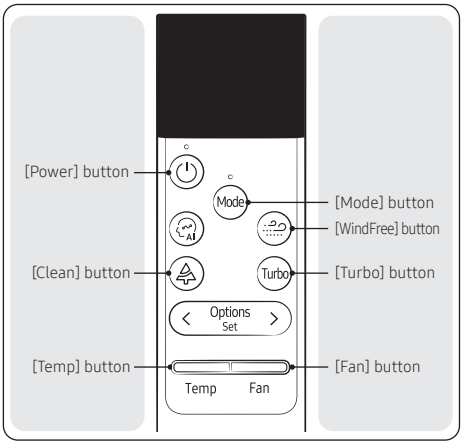
Installation Procedure

Step 13 Setting an indoor unit address and installation option

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

Common steps for setting the addresses and options

Remote controls

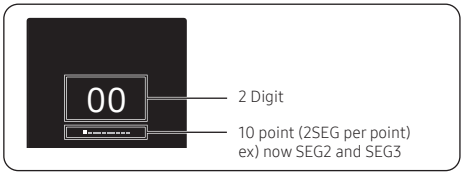


NOTE

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

1 Enter the mode for setting the options.

- **a** Reset remote control: Temp button Down + Fan button Down + Mode Press for 10 seconds
- **b** You can see the "SW Initialization" message and enter the following in 5 seconds.
- **c** Press WindFree 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

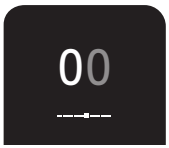
- You can set the next SEG by pressing the Mode button.
- You can change the digit value through the following operation.
  Left value: Temp up or down, range : 0 ~ F
  Right value: Fan up or down, range : 0 ~ F

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.	

Installation Procedure

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.	

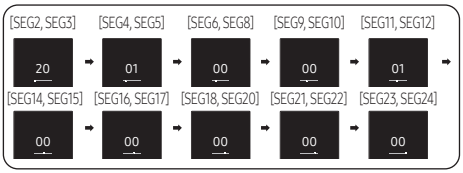
Installation Procedure

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.	

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

Installation Procedure

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



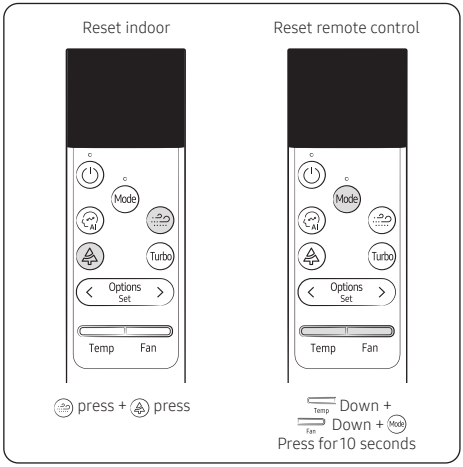
4 Save the option values into the indoor unit:
Point the remote control to the remote control sensor on the indoor unit and then press the (⏻) button on the remote control twice.
Make sure that this command is received by the indoor unit. When it is successfully received, you can hear a short sound from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

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

a Reset the indoor or outdoor unit.

- Indoor Unit : Press (≋) button + (△) button for 5 seconds
- Outdoor Unit : Press the K3 button

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



Setting an indoor unit address (MAIN/RMC/MSB/SVB port)

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/MSB/SVB port) is "0A0000-100000-200000-300000".

NOTE

- Also set the MSB/SVB and Indoor units address on HASS.

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						
Option	SEG13		SEG14		SEG15		SEG16		SEG17		SEG18	
Explanation	PAGE		-		Setting MSB/SVB PORT address		10-digit of MSB/SVB address		1-digit of MSB/SVB		MSB/SVB PORT address	
Indication and Details	Indication	Details			Indication	Details	Indication	Details	Indication	Details	Indication	Details
	2		-		0	No MSB/SVB PORT	0~1	10-digit	0~9	1-digit	A~F	PORT Location
					1	MSB/SVB PORT address setting mode						

※ MSB/SVB Port address settings initialization : Configure SEG15/16/17/18 as 1/0/0/0.

⚠ 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.
- If the indoor unit is connected to the MSB/SVB, you can set the SEG 15~18.
  Ex.) If you want to set the indoor unit to 'A' port of MSB/SVB #1. (0A0000 – 100000 – 20101A -30000)

Installation Procedure

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 020010-100000-2000E0-300000.
   - Individual control of a remote control(SEG20) is the function that controls an indoor unit individually when there is more than one indoor unit.

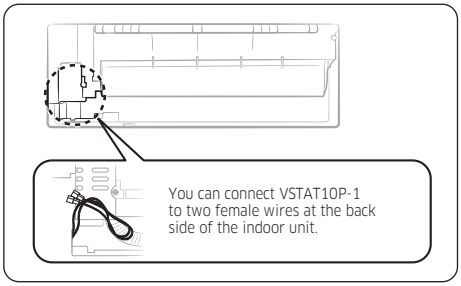
3 Set the indoor unit option by wireless remote control.

02 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	Evaporator Drying	Use of external room temperature sensor / Minimizing fan operation when thermostat is off	Use of central control	-
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	Use of drain pump	-	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 signal / Cooling operation signal / Free Cooling control signal	-	Buzzer control / whether to use humidity sensor / whether to use APP UX DSP (Dual Set Point) / whether to use R-32 sensor	Hours of filter usage
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	Individual control of a remote controller	Heating setting compensation / Removing condensate water in heating mode	Adjusted EEV step of stopped unit during oil return /defrost mode.	-	Louver Swing Speed

- When setting the option other than above SEG values, the option will be set as "0".
- SEG5 central control option is basically set as 1 (Use), so you don't need to set the central control option additionally.

  However, if the central control is not connected but it doesn't indicate an error message, you need to set the central control option as 0 (Disuse) to exclude the indoor unit from the central control.
- The external output of SEG15 is generated by VSTAT10P-1 connection. (Refer to the manual of VSTAT10P-1.)



02 series installation option(Detailed)

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

Option	SEG1		SEG2		SEG3		SEG4			SEG5		SEG6
Explanation	PAGE		MODE		Evaporator Drying		Use of external room temperature sensor / Minimizing fan operation when thermostat is off			Use of central control		-
	Indication	Details	Indication	Details	Indication	Details	Indication	Details		Indication	Details	-
								Use of External room temperature sensor	Minimizing fan operation when thermostat is off			
Indication and Details	0		2		0	Disuse	0	Default	Default	0	Disuse	-
							1	Use	Disuse			
							2	Disuse	Use (Heating) (*2)			
					2	Use (5min) (*1)	3	Use	Use (Heating) (*2)			
							4	Disuse	Use (Cooling) (*2)			
							5	Use	Use (Cooling) (*2)			
					4	Use (10min) (*1)	6	Disuse	Use (Heating / Cooling) (*2)	1	Use	
							7	Use	Use (Heating / Cooling) (*2)			
							8	Disuse	Use (Cooling Ultra Low Fan) (*2)			
					6	Use (30min) (*1)	9	Use	Use (Cooling Ultra Low Fan) (*2)			
							A	Disuse	Use (Heating / Cooling Ultra Low Fan) (*2)			
							B	Use	Use (Heating / Cooling Ultra Low Fan) (*2)			

Installation Procedure

Option	SEG7		SEG8		SEG9	SEG10			SEG11		SEG12
Explanation	PAGE		Use of drain pump		-	Settings for load operation during heater control Fan control during defrost mode / Heater control during defrost mode			EEV Step when heating stops		-
Indication and Details	Indication	Details	Indication	Details	-	Indication	Details		Indication	Details	-
							Fan control during Indication	Heater control during defrost mode			
	1		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			
						4	Fan Off	On			
						5	Fan turns on when heater turns on	On			
						6	Fan Off	On	1	Adjusted EEV Step setting	
						7	Fan turns on when heater turns on	On			
			8	Use of external drain pump		8	Fan Off	Off			
						9	Fan turns on when heater turns on	Off			
						A	Fan Off	Off	2~B	Opening EEV Step setting (*3)	
						B	Fan turns on when heater turns on	Off			
						C	Fan Off	On			
						D	Fan turns on when heater turns on	On			
						E	Fan Off	On			
						F	Fan turns on when heater turns on	On			

Option	SEG13		SEG14		SEG15		SEG16	SEG17					SEG18	
Explanation	PAGE		Use of external control		Setting the output of external control / External heater signal / Cooling operation signal / Free Cooling control signal		-	Buzzer control / whether to use humidity sensor / whether to use APP UX DSP (Dual Set Point) / whether to use R-32 sensor					Hours of filter usage	
Indication and Details	Indication	Details	Indication	Details	Indication	Details		Indication	Details				Indication	Details
									Buzzer Control	Humidity sensor	APP UX DSP	R-32 sensor		
	2		0	Disuse	0	External control (Thermo On)		0	Use Buzzer	Disuse	Disuse	Disuse	2	1000 Hour
								1	Disuse Buzzer	Disuse	Disuse	Disuse		
			1	ON/OFF control	1	External control (Operation On)		2	Use Buzzer	Use	Disuse	Disuse		
								3	Disuse Buzzer	Use	Disuse	Disuse		
					2	External heater signal (*4)		4	Use Buzzer	Disuse	Use	Disuse		
								5	Disuse Buzzer	Disuse	Use	Disuse		
			2	OFF control	3	External heater signal (*4)		6	Use Buzzer	Use	Use	Disuse		
								7	Disuse Buzzer	Use	Use	Disuse		
					4	Cooling operation signal (*5)		8	Use Buzzer	Disuse	Disuse	Use	6	2000 Hour
								9	Disuse Buzzer	Disuse	Disuse	Use		
			3	Window ON/OFF control	5	Free Cooling control (Cooling Thermo On) (*6)		A	Use Buzzer	Use	Disuse	Use		
								B	Disuse Buzzer	Use	Disuse	Use		
					6	Free Cooling control (Cooling/ Dry Thermo On) (*6)		C	Use Buzzer	Disuse	Use	Use		
								D	Disuse Buzzer	Disuse	Use	Use		
								E	Use Buzzer	Use	Use	Use		
								F	Disuse Buzzer	Use	Use	Use		

Installation Procedure

Option	SEG19		SEG20		SEG21			SEG22		SEG23	SEG24	
Explanation	PAGE		Individual control of a remote controller		Heating setting compensation / Removing condensate water in heating mode			Adjusted EEV step of stopped unit during oil return / defrost mode.		-	Louver Swing Speed	
						Details						
	Indication	Details	Indication	Details	Indication	Heating Setting Compensation	Removing Condensate Water in Heating Mode	Indication	Details	-	Indication	Details
Indication and Details	3		0 or 1	channel 1	0	Default (*7)	Disuse	0	Default	-	0	21ms(Default)
											1	27 ms
			2	channel 2	1	3.6 °F (2 °C)	Disuse				2	24 ms
					2	9 °F (5 °C)	Disuse				3	21 ms
			3	channel 3	3	Default (*7)	Use (*8)	1	Adjusted EEV positon		4	18 ms
					4	3.6 °F (2 °C)	Use (*8)				5	15 ms
			4	channel 4	5	9 °F (5 °C)	Use (*8)				6	12 ms
											7	9 ms

(*1) When Cooling or dry mode is off. The indoor fan operate in setting minutes.

(*2) Minimizing fan operation when thermostat is off

- Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
- Fan stops or operates Ultra low in Coolong when thermostat is off.

(*3) It is only for wall-mounted indoor unit with EEV Integrated. If any design condition meets either of the following below, please set SEG11 to "7".

a The total number of wall-mounted indoor units with EEV Integrated in one (modular) system is more than 20.

b The total number of wall-mounted indoor units with EEV Integrated in one (modular) system is more than "the total of one(modular) system's capacity(kW) / 2" ("the total of one(modular) system's capacity(BTU/h) / 6800"). ex) Outdoor capacity 28kW → 28 /2 = 14. The total number of wall-mounted indoor units with EEV Integrated in one (modular) system is more than 14.Please refer to the EEV step table below for the system (for heating) at stop.

Indication	0	2	3	4	5	6	7	8	9	A	B
Stopped Unit's EEV step	Default	90↔160	100↔160	110↔160	120↔160	130↔160	160	200	250	300	400

(*4) When the following 2 or 3 is used as external heater On/Off signal, the signal for monitoring external contact control will not be output.
2: Fan is turned on continually when the external heater is turned on,
3: Fan is turned off when the external heater is turned on with cooling only indoor unit
Cooling only indoor unit: To use this option, install the Mode Select switch(VCTRL07P-1) on the outdoor unit and fix it as Cool mode.
- If 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 controller sensor to detect indoor temperature exactly.

(*5) When indoor unit is in cooling or Dry mode, The output signal is "ON".

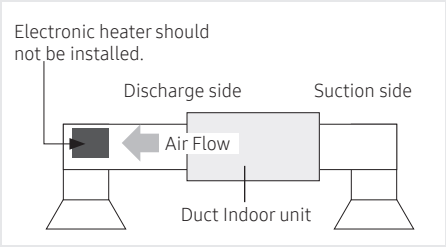
(*6) For free cooling control, Economizer controller is required.

(*7) Default setting value depends on the product option.

(*8) If the air conditioner operates the heating mode immediately after finishing the cooling mode, the condensate water in the drain pan becomes water vapor by the heat of the indoor unit heat exchanger. Since the water vapor might be condensed on the indoor unit, which may fall into a living space, use this function to get rid of the water vapor out of the indoor unit by operating the fan (for maximum 20 minutes) even when the indoor unit is turned off after cooling mode is turned to heating mode.

⚠ CAUTION

Do not install electronic heaters in the ductwork of the indoor unit, unless the heater complies with the latest edition of UL-60335-2-40, ASRHAE 15, and all federal, state and local codes.



05 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	Use of Auto Change Over for HR only in Auto mode / Whether to use SVB	(When setting SEG3) Standard heating temp. Offset	(When setting SEG3) Standard cooling temp. Offset	(When setting SEG3) Standard for mode change Heating → Cooling
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	(When setting SEG3) Standard for mode change Cooling →Heating	(When setting SEG3) Time required for mode change	Compensation option for Long pipe or height difference between indoor units	MTFC (*3)	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	-	Dual fuel (heater lock) setting	Dual fuel (HP lock) setting	-	Control variables when using hot water / external heater (*4)
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	-	-	-	Forced FAN Operation for Heating and Cooling	Whether to use BLE Onboarding / whether to allow fan speed control during auto mode

Installation Procedure

05 series installation option(Detailed)

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

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Use of Auto Change Over for HR only in Auto mode / Whether to use SVB		(When setting SEG3) Standard heating temp. Offset		(When setting SEG3) Standard cooling temp. Offset		(When setting SEG3) Standard for mode change Heating → Cooling	
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		5		0	Default	0	0 °F (0°C)	0	0 °F (0°C)	0	1.8 °F (1°C)
							1	0.9 °F (0.5 °C)	1	0.9 °F (0.5 °C)	1	2.7 °F (1.5°C)
					1	Auto change over for HR only used	2	1.8 °F (1°C)	2	1.8 °F (1°C)	2	3.6 °F (2°C)
							3	2.7 °F (1.5°C)	3	2.7 °F (1.5°C)	3	4.5 °F (2.5°C)
					2	Disuse	4	3.6 °F (2°C)	4	3.6 °F (2°C)	4	5.4 °F (3°C)
							5	4.5 °F (2.5°C)	5	4.5 °F (2.5°C)	5	6.3 °F (3.5°C)
					3	SVB not used for HP only (Consult qualified installer)	6	5.4 °F (3°C)	6	5.4 °F (3°C)	6	7.2 °F (4°C)
							7	6.3 °F (3.5°C)	7	6.3 °F (3.5°C)	7	8.1 °F (4.5°C)

Option	SEG7		SEG8		SEG9		SEG10		SEG11		SEG12	
Explanation	PAGE		(When setting SEG3) Standard for mode changing Cooling → Heating mode		(When setting SEG3) Time required for mode change		Compensation option for Long pipe or height diffference between indoor units		MTFC (*3)		-	
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details		
	1		0	1.8 °F (1°C)	0	5min	0	Default	0	Default		
			1	2.7 °F (1.5°C)	1	7min	1	(*1) Height difference is more than 30m or (*2) Distance is longer than 110m				
			2	3.6 °F (2°C)	2	9min						
			3	4.5 °F (2.5°C)	3	11min						
			4	5.4 °F (3°C)	4	13min	2	(*1) Height difference is 15~30m or (*2) Distance is 50~110m	2	Use		
			5	6.3 °F (3.5°C)	5	15min						
			6	7.2 °F (4°C)	6	20min						
			7	8.1 °F (4.5°C)	7	30min						

Option	SEG13		SEG14	SEG15		SEG16		SEG17	SEG18		
Explanation	PAGE		-	Dual fuel (heater lock) setting		Dual fuel (HP lock) setting		-	Control variables when using hot water / external heater (*4)		
Indication and Details	Indication	Details	-	Indication	Detail	Indication	Detail	-	Indication	Details	
										Set temp. for heater On/Off	Delay time for heater On
	2		-	0	Disuse	0	Disuse	-	0	At the same time as thermo on	No delay
				1	64.9°F (18.3°C)	1	45.0°F (7.2°C)		1	At the same time as thermo on	10 minutes
				2	60.1°F (15.6°C)	2	39.9°F (4.4°C)		2	At the same time as thermo on	20 minutes
				3	55.0°F (12.8°C)	3	35.1°F (1.7°C)		3	2.7 °F (1.5 °C)	No delay
				4	50.0°F (10.0°C)	4	30.0°F (-1.1°C)		4	2.7 °F (1.5 °C)	10 minutes
				5	45.0°F (7.2°C)	5	25.0°F (-3.9°C)		5	2.7 °F (1.5 °C)	20 minutes
				6	39.9°F (4.4°C)	6	19.9°F (-6.7°C)		6	5.4 °F (3.0 °C)	No delay
				7	35.1°F (1.7°C)	7	15.1°F (-9.4°C)		7	5.4 °F (3.0 °C)	10 minutes
				8	30.0°F (-1.1°C)	8	10.0°F (-12.2°C)		8	5.4 °F (3.0 °C)	20 minutes
				9	25.0°F (-3.9°C)	9	5.0°F (-15°C)		9	8.1 °F (4.5 °C)	No delay
				A	19.9°F (-6.7°C)	A	0°F (-17.8°C)		A	8.1 °F (4.5 °C)	10 minutes
				B	15.1°F (-9.4°C)	B	-5.1°F (-20.6°C)		B	8.1 °F (4.5 °C)	20 minutes
				C	10.0°F (-12.2°C)	C	-9.4°F (-23.0°C)		C	10.8 °F (6.0 °C)	No delay
				D	5.0°F (-15°C)	D	-14.8°F (-26.0°C)		D	10.8 °F (6.0 °C)	10 minutes
				E	0°F (-17.8°C)	E	-20.2°F (-29.0°C)		E	10.8 °F (6.0 °C)	20 minutes

Installation Procedure

Option	SEG19		SEG20	SEG21	SEG22	SEG23			SEG24		
Explanation	PAGE		-	-	-	Forcing FAN Operation for Heating and Cooling			Whether to use BLE Onboarding / whether to allow fan speed control during auto mode		
Indication and Details	Indication	Details	-	-	-	Indication	Details		Indication	Detail	
							Cooling Fan Setting	Heating Fan Setting		BLE Onboarding	Whether to allow fan speed control during auto mode
	3		-	-	-	0	Disuse	Disuse	0	Disuse	Disuse
						1	Disuse	Use (Fan: User setting)			
						2	Disuse	Use (Fan: High)			
						3	Disuse	Use (Fan: Low)			
						4	Use (Fan: User setting)	Disuse	2	Use	Disuse
						5	Use (Fan: User setting)	Use (Fan: User setting)			
						6	Use (Fan: User setting)	Use (Fan: High)			
						7	Use (Fan: User setting)	Use (Fan: Low)			
						8	Use (Fan: High)	Disuse	4	Disuse	Use
						9	Use (Fan: High)	Use (Fan: User setting)			
						A	Use (Fan: High)	Use (Fan: High)			
						B	Use (Fan: High)	Use (Fan: Low)			
						C	Use (Fan: Low)	Disuse	6	Use	Use
						D	Use (Fan: Low)	Use (Fan: User setting)			
						E	Use (Fan: Low)	Use (Fan: High)			
						F	Use (Fan: Low)	Use (Fan: Low)			

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

(*2) Distance : The difference between the pipe length of the indoor unit istalled at farthest place from an outdoor unit and the pipe length of the corresponding indoor unit from an outdoor unit. For example, when the farthest pipe length is 328 ft. (100 m) and the corresponding indoor unit is 131.23 ft.(40 m) away from an outdoor unit, select the option "2". (100 - 40 = 196.85 ft.(60m))

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

(*4) Heater operation when the SEG9 of 02 series installation option is set to using hot water heater or when SEG15 is set to using external heater

e.g. 1) Setting 02 series SEG9 ="1" / Setting 05 series SEG18 = "0": Hot water heater is turned on at the same time as the heating thermostat is on, and turned off when the heating thermostat is off.

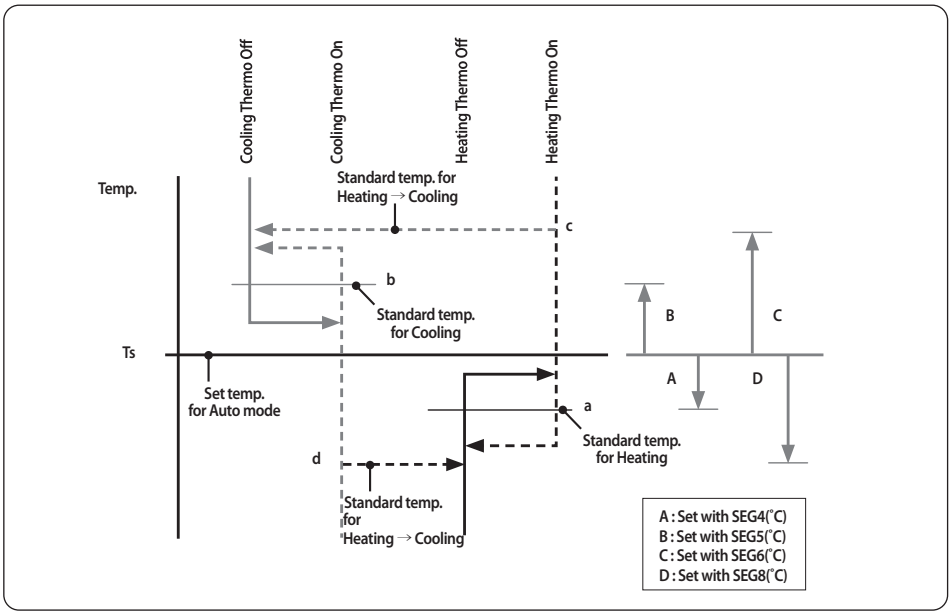
e.g. 2) Setting 02 series SEG15 ="2" / Setting 05 series SEG18 ="A":Room temp. ≤ set temp. + f(heating compensation temp.)

- External heater is turned on when the temperature is maintained as 8.1 °F (4.5 °C) for 10 minutes. Room temp. › set temp. + f(heating compensation temp.)
- External heater is turned off when the temperature is maintained as 8.1 °F (4.5 °C) + 1.8 °F (1 °C).

  (1.8 °F (1 °C) is the Hysteresis for On/Off selection.)

SEG 3, 4, 5, 6, 8, 9 additional information

When the SEG 3 is set as "1" and follow Auto Change Over for HR only operation, it will operate as follows.



Cooling/Heating mode can be changed when Thermo Off status is maintained during the time with SEG9.

Installation Procedure

Changing a particular option

You can change each digit of set option.

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		The option mode you want to change		The tens' digit of an option SEG you will change		The unit digit of an option SEG you will change		Changed value	
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		D		Option mode	1~6	Tens' digit of SEG	0~9	Unit digit of SEG	0~9	The changed value	0~F

NOTE

- When changing a digit of an indoor unit address setting option, set the SEG3 as 'A'.
- When changing a digit of indoor unit installation option, set the SEG3 as '2'.

Ex) When setting the 'buzzer control' into disuse status.

Option	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Explanation	PAGE	MODE	The option mode you want to change	The tens' digit of an option SEG you will change	The unit digit of an option SEG you will change	Changed value
Indication	0	D	2	1	7	1

⚠ CAUTION

- If you are using heat pump model, mixed operation mode (two or more indoor units operating in different operation mode simultaneously) is not available when the indoor units are connected to same outdoor unit. If you set the master indoor unit with a remote control, outdoor unit will operate in the mode which was set in the master indoor unit.

Installing external outputs

An external output signal occurs if the R-32 sensor in the indoor unit detects a refrigerant leak, or the sensor has a malfunction or short circuit.

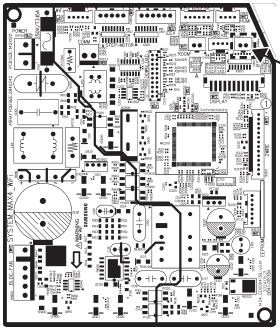
Based on this signal, safety measures required for the indoor unit, such as ventilation system activation and alarm activation, can be taken.

VSTAT10P-1 (External Contact Control Module) can be used to link the GAS LEAK output.

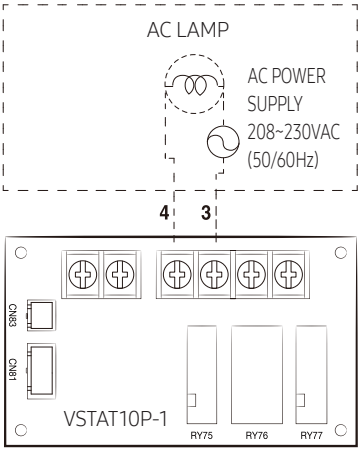
NOTE

- 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).

For controlling AC LAMP (On/Off)



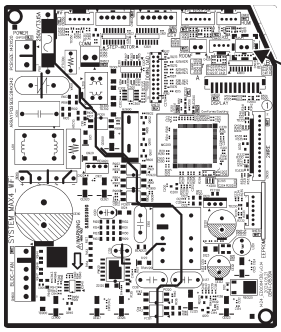
R-32 CHECK :
CN802(YELLOW)



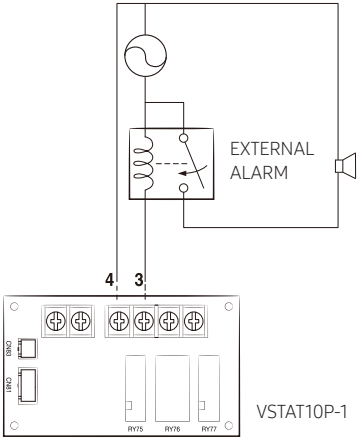
※ Use of the WIRE HARNESS included in the accessory kit(VSTAT10P-1) manual.

To Main PBA

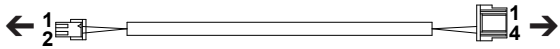
For controlling EXTERNAL ALARM (On/Off)



R-32 CHECK :
CN802(YELLOW)



※ Use of the WIRE HARNESS included in the accessory kit(VSTAT10P-1) manual.



To Main PBA

Installation Procedure

Step 14 Performing the final check

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

1 Check the following:
- Strength of the installation site
- Tightness of pipe connection to detect gas leak
- Electric wiring connection
- Heat-resistant insulation of the pipe
- Drainage
- Grounding conductor connection
- Correct operation (follow the steps below)

2 Press the ⏻ button and check the following:
- The indicator on the indoor unit lights up.
- The airflow blade opens and the fan gears up for operation.

3 Press any button and check the following:
- The appropriate indicator lights up and the air conditioner operates according to the selected mode or function.

4 Press the Fan button and check the following:
- The airflow blades work properly.

Step 15 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 & installation manual.

1 How to start and stop the air conditioner

2 How to select the modes and functions

3 How to adjust the temperature and fan speed

4 How to adjust the airflow direction

5 How to set the timers

6 How to clean and replace the filters

NOTE

- When you complete the installation successfully, hand over the user & installation manual to the user for storage in a handy and safe place.

Troubleshooting

Detection of errors

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

LED Display

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

● : On, ◑ : Flickering, X: Off

Abnormal condition	Error code	LED Display		
		⏻	◷	ᯤ
• Error on indoor temperature sensor (Short or Open)	E121	X	◑	X
• Error on Eva-in sensor (Short or Open) • Error on Eva-out sensor (Short or Open) • Discharge sensor error (Short or Open)	E122 E123 E126	◑	◑	X
• Indoor fan error	E154	X	X	◑
• Error on outdoor temperature sensor (Short or Open) • Error on cond sensor • Error on discharge sensor Other outdoor unit sensor error that is not on the above list	E221 E237 E251	◑	X	◑
• When there is no communication between the indoor·outdoor units for 2 minutes • Communication error received from the outdoor unit • 3 miniute tracking error on outdoor unit • Communication error after tracking due to unmatching number of installed units • Error due to repeated communication address • Communication address not confirmed • Error indicating a short-circuit, open-circuit or fault signal in the refrigerant leak sensor • Error indicating the refrigerant leak sensor's lifespan cannot be predicted • 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 Other outdoor unit communication error that is not on the above list	E101 E102 E202 E201 E108 E109 E116 E695 E697 E698 E699 E700	X	◑	◑

Troubleshooting

Abnormal condition	Error code	LED Display		
		⏻	◷	ᯤ
Self diagnosis error display • Error due to opened EEV (2nd detection) • Error due to closed EEV (2nd detection) • Eva in sensor is detached • Eva out sensor is detached • Thermal fuse error (Open)	 E151 E152 E128 E129 E198	●	◑	◑
• COND mid sensor is detached • Refrigerant leakage (2nd detection) • Abnomally high temperature on Cond (2nd detection) • Low pressure s/w (2nd detection) • Abnomally high temperature on discharged air on outdoor unit (2nd detection) • Indoor operation stop due to unconfirmed error on outdoor unit • Error due to reverse phase detection • Comp stop due to freeze detection (6th detection) • High pressure sensor is detached • Low pressure sensor is detached • Outdoor unit copression ration error • Outdoor sump down_1 prevetion control • Compressor down due to low pressure sensor prevention control_1 • Simultaneous opening of cooling/heating MSB SOL valve (1st detection) • Simultaneous opening of cooling/heating MSB SOL valve (2nd detection) • Indoor unit R-32 sensor short/open • 1st refrigerant leak detection error • 2nd refrigerant leak detection error (Error-causing indoor unit) • Refrigerant leak sensor failure error • Refrigerant leak sensor replacement notification error • Refrigerant leak sensor lifetime expiration error • 2nd refrigerant leak detection error (Not Error-causing indoor unit) • MSB or SVB unit R32 sensor short/open • 2nd refrigerant leak detection error (Error-causing MSB or SVB unit) • Refrigerant leak sensor failure error (Error-causing MSB or SVB unit) • Refrigerant leak sensor replacement notification error (Error-causing MSB or SVB unit) • Refrigerant leak sensor lifetime expiration error (Error-causing MSB or SVB unit) • MSB or SVB unit communication address not confirmed • Communication error between wired remote controller and indoor unit • Wired remote control incompatible device connection error • Communication error between wired remote controller and indoor unit Other outdoor unit self-diagnosis error that is not on the above list	E241 E554 E450 E451 E416 E559 E425 E403 E301 E306 E428 E413 E410 E180 E181 E116 E696 E697 E698 E699 E700 E797 E686 E687 E688 E689 E690 E693 E601 E633 E641	●	◑	◑

Abnormal condition	Error code	LED Display		
		⏻	🕒	📶
EEPROM error	E162	◑	◑	◑
EEPROM option error	E163	◑	◑	◑
Error due to incompatible indoor unit	E164	◑	●	◑