Air conditioner

Installation manual

AC***BXU*CH

- Before operating this unit, please read this manual carefully and retain it for future reference.

Contents

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.

Safety Information

California Proposition 65 Warning (US)

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

⚠ 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.

General information

⚠ WARNING

- Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as 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.
- The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electricity and/or the requirements set forth in the "Operating limits" table, included in the Technical Data Book. Doing so shall immediately void the product warranty.
- Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact SAMSUNG's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- Always remember to inspect the unit, electric connections, refrigerant pipe 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.
- All the materials used for the manufacture and packaging of the air conditioner are recyclable.
- The packing material must be disposed of in accordance with current laws.
- The air conditioner contains a refrigerant that has to 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 that it can be disposed of correctly and safely.
- Wear protective equipment (such as safety gloves, goggles, and headgear) during installation and maintenance works. Installation/repair technicians may be injured if protective equipment is not properly equipped.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Safety Information

Installing the unit

⚠ WARNING

IMPORTANT: When installing the unit, always remember to connect first the refrigerant pipes, then the electrical lines.

- Connecting one indoor unit to this product is prohibited.
- 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 the 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 release free flames to avoid the occurrence of fires, explosions or injuries.
- Our units should be installed in compliance with the spaces shown in the installation manual, to ensure accessibility from both sides and allow repairs or maintenance operations to be carried out. The unit's components should be accessible and easy to disassemble without endangering people and objects.
- For this reason, when provisions of the installation manual are not complied with, the cost required to access and repair the units (in SAFETY CONDITIONS, as set out in prevailing regulations) with harnesses, ladders, scaffolding or any other elevation system will NOT be considered part of the warranty and will be charged to the end customer.
- Ensure that the condensate water drains properly from the unit to allow the base pan heater to properly prevent frost build up at low ambient temperatures. If the installation does not allow the condensate to properly drain, ice buildup can damage the unit and stop the system operation.
- Do not disassemble or alter the base pan heater.

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 in compliance with 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 in accordance with 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.
- Be sure not to perform power cable modification, extension wiring, and multiple wire connection.
  - It may cause electric shock or fire due to poor connection, poor insulation, or current limit override.

Installation Procedure

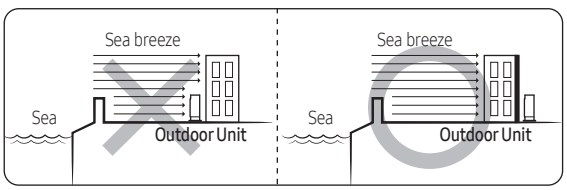
Step 1 Choosing the installation location

Installation location requirements

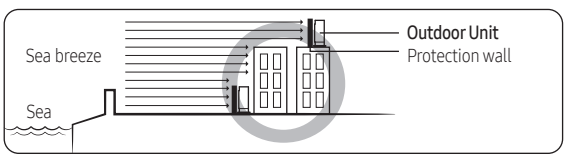
- Do not place the outdoor unit on its side or upside down. Failing to do so may cause the compressor lubrication oil to run into the cooling circuit and lead to serious damage to the unit.
- Install the unit in a well-ventilated location away from strong winds.
- Install the unit in a location that would not obstruct any passageways or thoroughfares.
- Install the unit in a location that would not inconvenience or disturb your neighbors, as they could be affected by the noise or the airflow coming from the unit.
- Install the unit in a location where the pipes and the cables can be easily connected to the indoor unit.
- Install the unit on a flat, stable surface that can withstand the weight of the unit. Otherwise, the unit can generate noise and vibration during operation.
- Install the unit so that the air flow has adequate clearance, as noted in the manual.

⚠ CAUTION

- This device must be installed according to the national electrical rules.
- If your outdoor unit exceeds a net weight of 132.2 lb(60 kg), do not install it on a suspended wall, but stand it on a floor.
- The reliability of our product cannot be guaranteed under conditions of -13 °F (-25 °C) or less.
- When installing the outdoor unit at the seaside, make sure that it is not directly exposed to sea breeze. If you cannot find an adequate place free from direct sea breeze, construct a protection wall or a protective fence.
  - Install the outdoor unit in a place (such as near buildings etc.) where it can be prevented from sea breeze. Failure to do so may cause a damage to the outdoor unit.



- Construct a protection wall with a solid material such as concrete to block the sea breeze. Make sure that the height and the width of the wall are 1.5 times larger than the size of the outdoor unit. Also, secure a space larger than 27.6 inch(700mm) between the protection wall and the outdoor unit for exhausted air to ventilate.



⚠ CAUTION

- Depending on the condition of the power supply, unstable power or voltage may cause malfunction of parts or control system (example: on a boat or places using power supplied from electric generator, etc.).

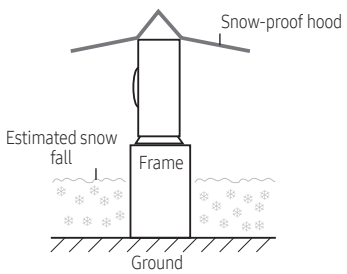
Installation Procedure

- Install the unit in a place where water can drain smoothly.
- If you have any difficulty finding installation location as prescribed above, contact your manufacturer for details.
- Consider that the salinity particles clinging to the external panels should be sufficiently washed out. Be sure to clean sea water and dust from the outdoor unit heat exchanger and apply a corrosion inhibitor on it at least once a year.
- Because the residual water at the bottom of the outdoor unit significantly promotes corrosion, make sure that the slope does not disturb drainage.
  - Keep the floor level so that rain does not accumulate.
  - Be careful not to block the drain hole.
- Check the condition of the product periodically.
  - Check the installation site every 3 months and perform anti-corrosion treatment such as commercial water repellent grease and wax, etc., based on the product condition.
  - When the product is to be shut down for a long period of time, such as off-peak hours, take appropriate measures like covering the product.
- If the product installed within 1640.4 ft (500 m) of seashore, special anti-corrosion treatment is required.

  ※ Please contact your local SAMSUNG representative for further details.

⚠ CAUTION

- In areas with heavy snow fall, piled snow could block the air intake. To avoid this incident, install a frame that is higher than estimated snow fall. In addition, install a snow-proof hood to avoid snow from piling on the outdoor unit.

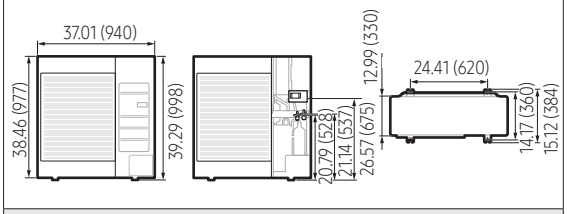


Outdoor unit dimensions

Unit : inch (mm)

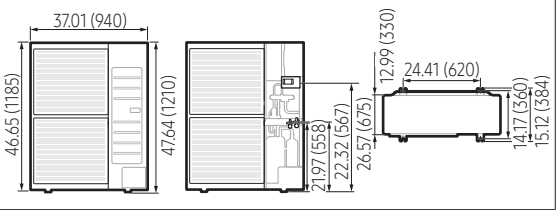
A Type

AC024BXUPCH, AC036BXUDCH



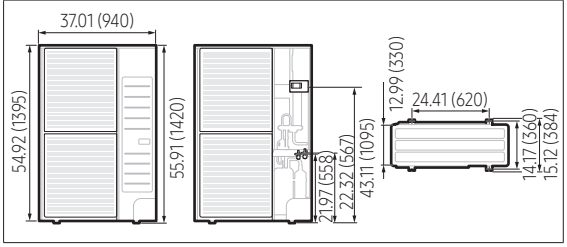
B Type

AC036/048BXUPCH



C Type

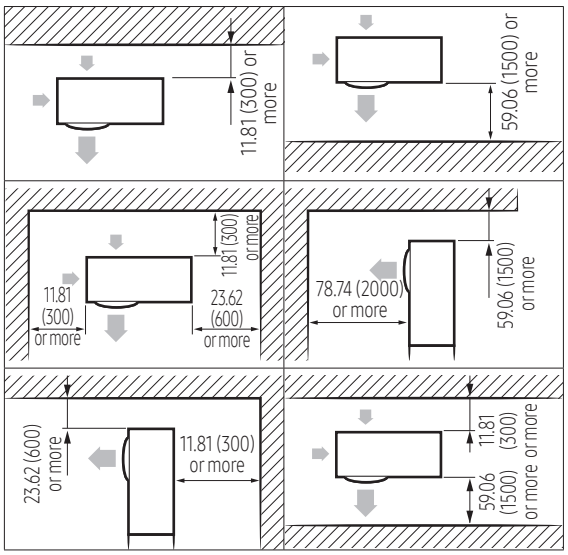
AC060BXUPCH



Minimum clearances for the outdoor unit

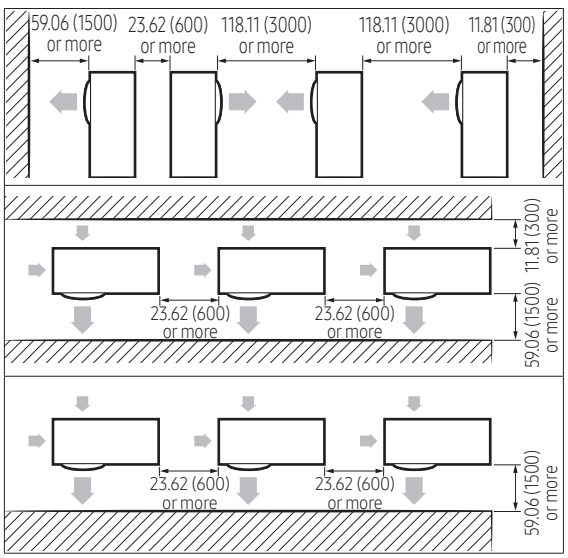
When installing 1 outdoor unit

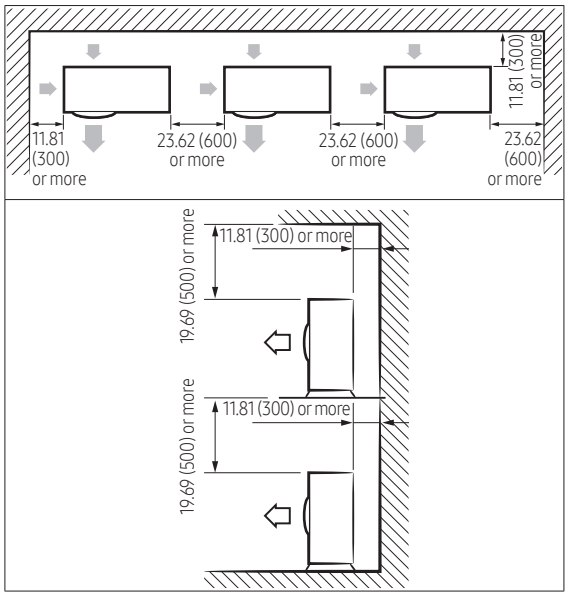
Unit : inch (mm)



When installing more than 1 outdoor unit

Unit : inch (mm)





⚠ CAUTION

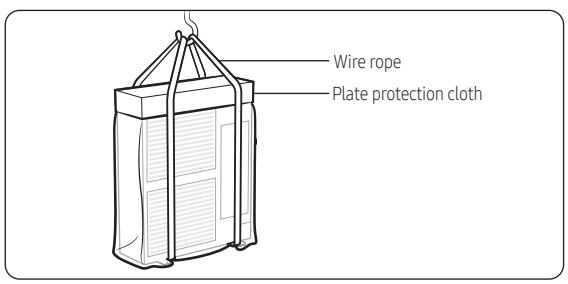
- The outdoor unit must be installed according to the specified distances in order to permit accessibility from each side, and to guarantee correct operation, maintenance, and repair of the unit.
  The components of the outdoor unit must be reachable and removable under safe conditions for people and the unit.

Moving the outdoor unit with wire rope

1 Before carrying the outdoor unit, fasten two wire ropes of 26.25 ft (8m) or longer, as shown in the figure.

2 To prevent damages or scratches effectively, insert a piece of cloth between the outdoor unit and the ropes.

3 Move the outdoor unit.



Installation Procedure

Step 2 Checking and preparing accessories and tools

Energy Label	Rubber Leg
	
Installation Manual	
	

Step 3 Fixing the outdoor unit in place

Install the outdoor unit on a rigid and stable base to prevent disturbance from any noise caused by vibration. When installing the unit on tall stands or in a location exposed to strong winds, fix the unit securely to the ground or structure.

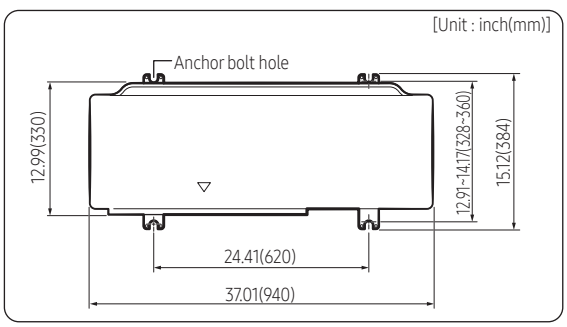
1 Position the outdoor unit so that the air flow is directed towards the outside, as indicated by the arrows on the top of the unit.

2 Attach the outdoor unit to the appropriate support using anchor bolts.

3 If the outdoor unit is exposed to strong winds, install wind baffles around the outdoor unit, so that the fan can operate correctly.

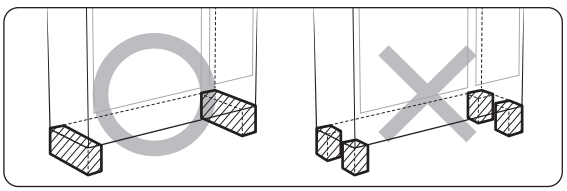
NOTE

- Install provided rubber legs to prevent vibration and noise.



CAUTION

- Install a drain outlet at the lowest end around the base for outdoor unit drainage
- When installing the outdoor unit on the roof, waterproof the unit and check the ceiling strength.



Step 4 Connecting the power cables and communication cables

You must connect the following two electrical cables to the outdoor unit:

- The main power cables between the auxiliary circuit breaker and the outdoor unit.
- The communication cables between the outdoor unit and AHU Control Unit.

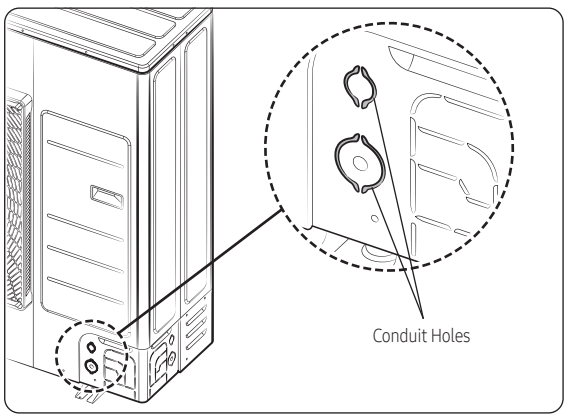
CAUTION

- During installation, first make the refrigerant connections and then the electrical connections. If the unit is being removed, first disconnect the electrical cables and then the refrigerant connections.
- Connect the air conditioner to ground before making the electrical connections.

Connecting wire conduits

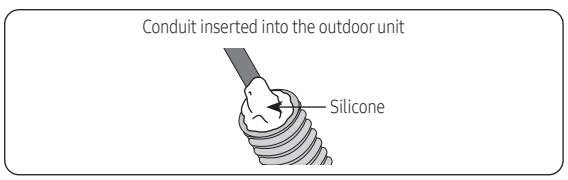
When connecting cables between the indoor unit and the outdoor unit, use conduits to protect the cables.

1 Drill holes on the conduit plate in accordance with their use and quantity.
   – Use a nipper to remove conduit holes from the lower part of the cabinet.
   (Do not remove it by hammering.)



2 Insert the cables through the conduits, and then fix the conduits to the conduit plate with the lock nuts.

3 Apply silicone to the end of the hose to prevent rain from entering the hose.

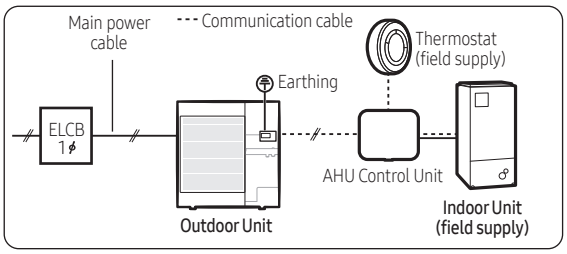


4 Connect the cables to the outdoor units.
Refer to the next page for connection details.

5 Attach the conduit plate to the product.

Air conditioning system examples

When using earth leakage circuit breaker (ELCB) for a single phase



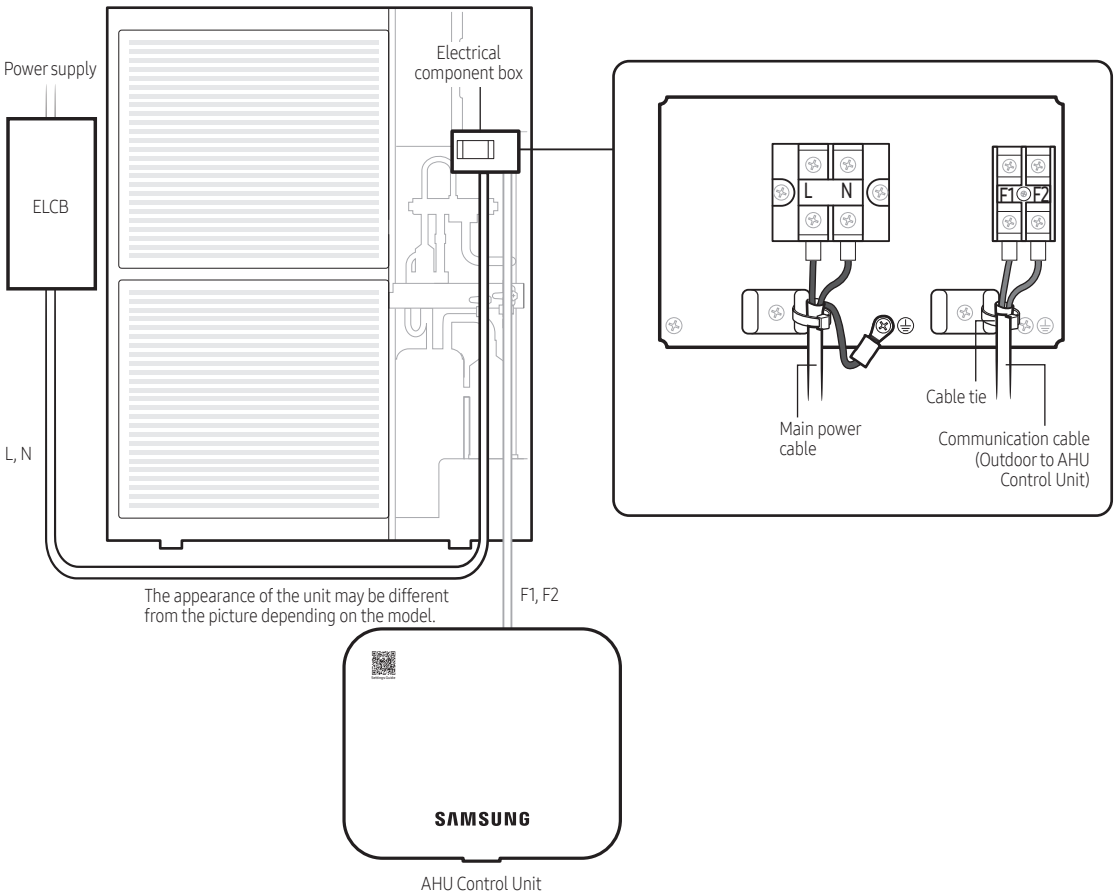
※ The appearance of the unit may be different from the picture depending on the model.

⚠ CAUTION

- ELCB must be installed since this product is equipped with a base heater.

Installation Procedure

Connecting the main power cable

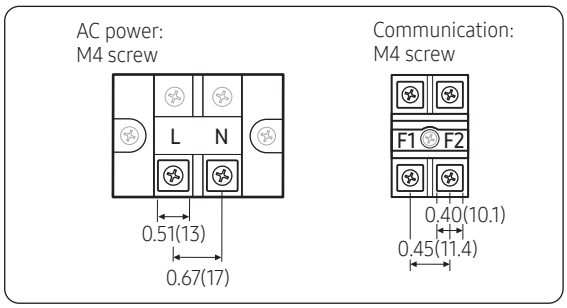


⚠ CAUTION

- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 2% of supply rating.
- If the power is unbalanced greatly, it may shorten the life of the condenser.
- To protect the product from water and possible shock, run the power cable and the communication cable within the appropriate weatherproof conduit and fittings.
- Ensure that main supply connection is made through a switch that disconnects all poles, with contact gap of a least 0.12 inch(3mm).
- Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.
- Keep distances of 1.97 inch(50mm) or more between power cable and communication cable.

Main power terminal block specifications

[Unit : inch(mm)]



Main power cable specifications

The power cable is not supplied with air conditioner.

Ensure the power wiring is sizing and specifications comply with all national, state, and local codes and regulations.

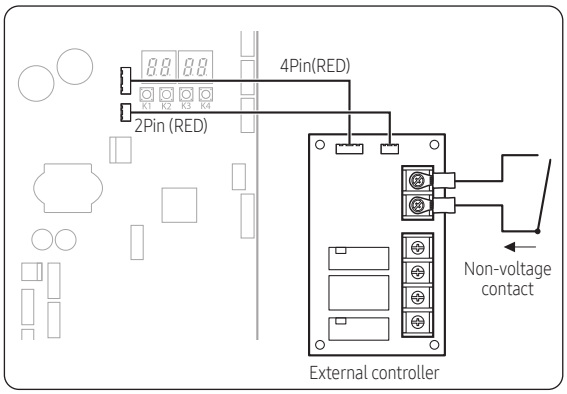
Model	Power Source	RLA (A)	MOC		MCA (A)	MOP (A)
Outdoor			FAN1(A)	FAN2(A)		
AC024BXUPCH	208 - 230 V 60 Hz	17.6	1.25	-	24.1	30
AC036BXUDCH		17.8	1.25	-	24.4	35
AC036BXUPCH		17.8	1.25	1.25	25.6	35
AC048BXUPCH		23.5	1.25	1.25	32.7	40
AC060BXUPCH		23.9	1.25	1.25	33.2	40

NOTE

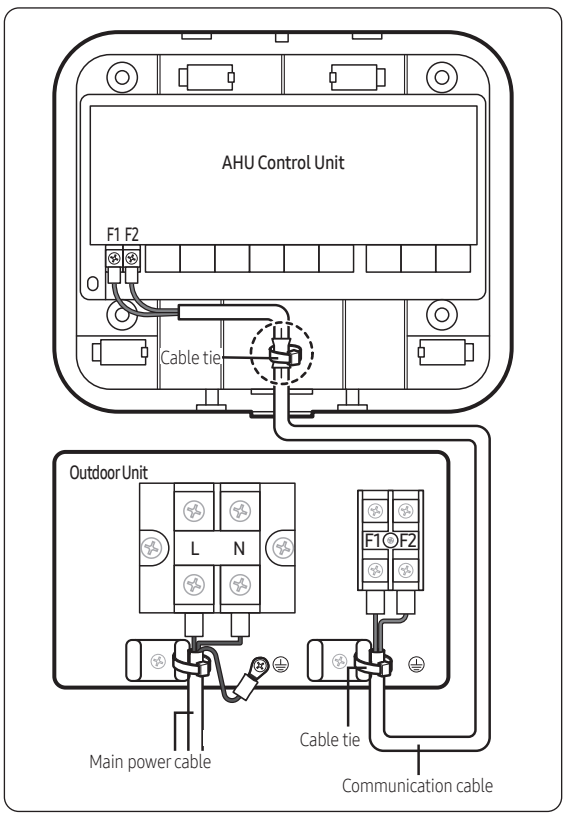
- Outdoor units are installed using different power sources from that of indoor units, and this installation manual only provides the MCA/MOP values for outdoor units.
  For the MCA/MOP values for indoor units, refer to the installation manual for the indoor unit installed.
- RLA is based on AHRI 210/240 cooling standard condition [Indoor temp. : 26.7 °C / 80 °F(DB) / 19.46 °C / 67 °F(WB), Outdoor temp. : 35 °C / 95 °F(DB)]
- Voltage tolerance is ± 10 %.
- Maximum allowable voltage between legs is 2 %.
- Symbols
  - RLA: Rated Load Ampere (A)
  - MOC: Maximum Operating Current (A)
  - MCA: Minimum Circuit Ampere (A)
  - MOP: Maximum Overcurrent Protective Device (A)
- Voltage range
  - Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- Wire size & type must comply with the applicable local and national code.

Installation Procedure

Silence mode controller wiring diagram with External controller



Connecting the main power cable and outdoor-to-AHU Control Unit communication cable



NOTE

- Lay the electrical wiring so that the front cover does not rise up when doing wiring work and attach the front cover securely.
- Ground wire for the outdoor unit connection cable must be clamped to a soft copper tin-plated eyelet terminal.
- The appearance of the unit may be different from the picture depending on the model.

Outdoor-to-AHU Control Unit communication cable

- Connect the cables to the terminal board using the compressed ring terminal.
- Cover a solderless ring terminal and a connector part of the power cable and then connect it.
- Connect the rated cables only.
- Connect using a driver which is able to apply the rated torque to the screws.
- If the terminal is loose, fire may occur caused by arc. If the terminal is connected too firmly, the terminal may be damaged.

	Tightening torque	
	lbf•ft	N•m
M4	0.87 to 1.30	0.8 to 1.2
M5	1.45 to 2.17	2.0 to 3.0

⚠ CAUTION

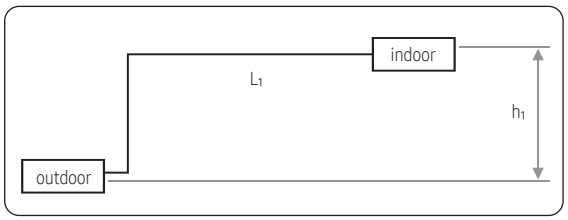
- When connecting cables, you can connect the cables to the electrical part or connect them through the holes below depending on the spot.
- Connect the communication cable between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.
- Remove all burrs at the edge of the knock-out hole and secure the cable to the outdoor knock-out using lining and bushing with an electrical insulation.
- Must keep the cable in a protection tube.
- Keep distances of 1.97 inch(50mm) or more between power cable and communication cable.
- When the cables are connected through the hole, remove the Plate bottom.

Power supply		
Power supply	Max/Min (V)	Power cable
1Φ, 208-230V~, 60Hz	±10%	0.0039 inch² ↑ (2.5mm² ↑), 3 wires
Communication cable		
18 AWG, 2 wires, solid or stranded		

Step 5 Connecting the refrigerant pipe

Maximum allowable pipe length [ft]

	Model Name	Max pipe length (L1)	Max pipe height difference between outdoor and indoor unit (h1)
2Ton	AC024BXUPCH	98	49
3Ton (single fan)	AC036BXUDCH	164	98
3Ton (dual fan)	AC036BXUPCH	164	98
4Ton	AC048BXUPCH	164	98
5Ton	AC060BXUPCH	98	49



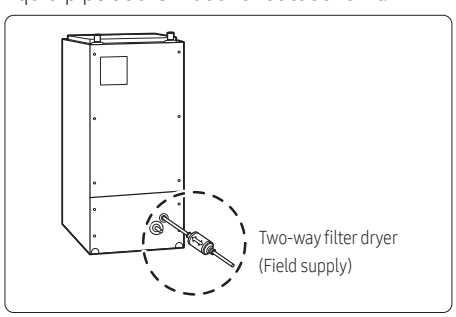
Recommended liquid and gas pipe diameters [inch]

	Model Name	Liquid Pipe Diameter	Gas Pipe Diameter		
			Standard	Min	Max
2Ton	AC024BXUPCH	Φ3/8	Φ3/4	Φ5/8	Φ7/8
3Ton (single fan)	AC036BXUDCH	Φ3/8	Φ3/4	Φ5/8	Φ7/8
3Ton (dual fan)	AC036BXUPCH	Φ3/8	Φ7/8	Φ3/4	Φ1-1/8
4Ton	AC048BXUPCH	Φ3/8	Φ7/8	Φ3/4	Φ1-1/8
5Ton	AC060BXUPCH	Φ3/8	Φ7/8	Φ3/4	Φ1-1/8

Reuse existing refrigerant lines

To retrofit the outdoor unit by using the existing piping, be sure to:

- Confirm that the existing pipe diameter, length, and height difference between outdoor and indoor unit meet the requirements list above.
- Confirm that the maximum pressure for the indoor unit is equal or higher than the maximum pressure for the outdoor unit.
- Confirm that the indoor unit is compatible with R-410A, and utilizes a Thermostatic Expansion Valve (TXV). If existing indoor unit utilizes an orifice plate, replace the orifice plate with a R-410A TXV.
- Flush the inside of the piping to remove moisture, oil and any other foreign matter.
- If the unit will be configured as a heat pump, a heat pump TXV must be installed.
- For newly installed pipes or when using existing refrigerant pipes, always install a new, two-way filter dryer on the liquid pipe at the indoor or outdoor unit.



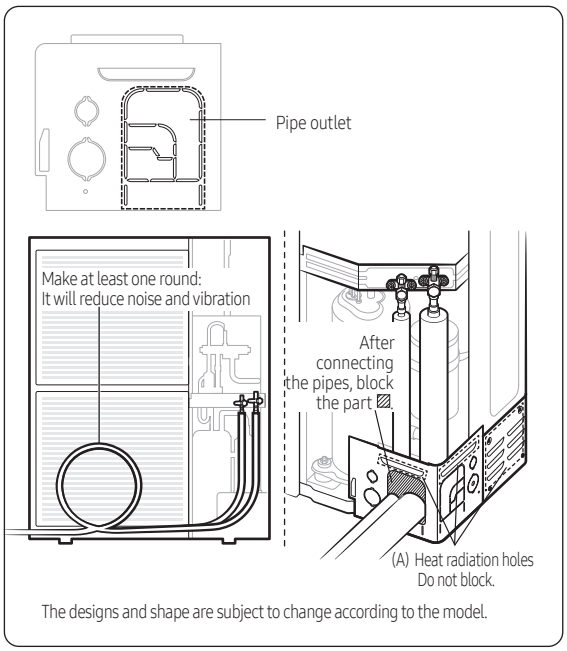
NOTE

- Make sure to remove the transparent covers at the edge of the pipes before connecting the pipes.

Installation Procedure

⚠ CAUTION

- While on site and prior to installation, protect or enclose refrigerant tubing to avoid mechanical damage.



The designs and shape are subject to change according to the model.

- The refrigerant pipe can be pulled out from front, side, rear and bottom side, so install it depending on the installation site condition.

⚠ CAUTION

- Cut the pipe outlet to the exact pipe size. In addition, remove foreign substances and burr around the outlet.
- Make sure not to damage the exterior of the outdoor unit.
- Perform cutting with only a cutter (ex. nipper) and never tap with a hammer near the pipe outlet. Otherwise, it may cause product damage such as warping of the cabinet.
- After connecting the pipes block the space around the pipes where they enter the outdoor unit chassis to prevent small animals from entering. However, the radiant heat hole (A) should be able to intake air.

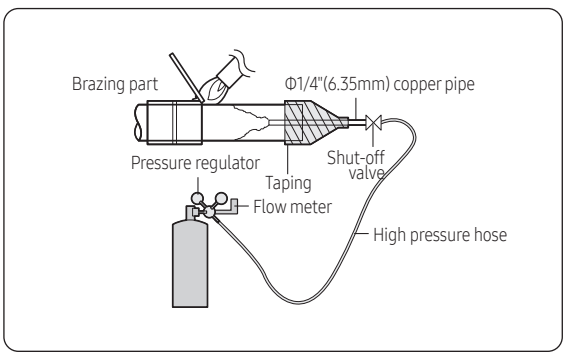
Step 6 Brazing the refrigerant pipe

Important information for refrigerant pipe work

- Make sure that there is no moisture inside the pipe.
- Make sure that there are no foreign materials and impurities in the pipe.
- Make sure that there is no leak.
- Make sure to follow the instruction when brazing and installing the pipe.

Nitrogen flushing while brazing

- Use dry nitrogen gas when brazing the pipes as shown in the picture.
- If you do not perform nitrogen flushing when brazing the pipes, oxide may form inside the pipes which can cause damage to the compressor, valves, etc.
- Adjust the flow rate of the Nitrogen flushing with a pressure regulator to maintain 0.03 CFH(0.05m³/hr) or less.

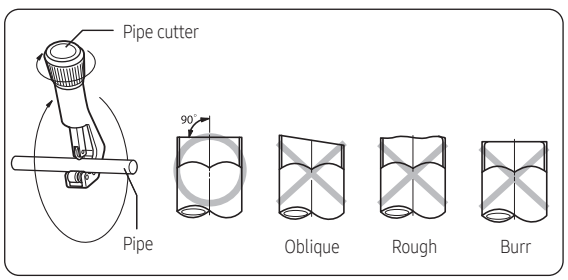


Direction of the pipe when brazing

- Brazing the pipe should be done with the pipe angled downward or horizontally.
- Avoid brazing with the pipe angled upward.

Cutting the pipes

- Make sure that you prepared the required tools.
  - Pipe cutter, reamer, flaring tool and pipe holder, etc.
- 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.



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

Step 7 Vacuum drying the refrigerant circuit

HIGH PRESSURE LEAK TEST WITH DRY NITROGEN(before opening valves)

In order to determine if there are any leaks in the refrigerant piping system prior to vacuum drying, the system must be pressure tested using a dry nitrogen leak test.

First, pressurize the system with dry nitrogen up to 100 psi. Hold for 5 minutes and observe if the pressure decreases. If the pressure does decrease, a leak is likely present and should be repaired before repeating the high pressure leak test.

If the system holds pressure at 100 psi for 5 minutes, then proceed to increase the pressure to 300 psi and again determine if there may be leaks by waiting 5 minutes and observing if there is a pressure drop in the system.

If the system holds pressure at 300 psi, then proceed to increase the pressure to 500 psi. Hold for one hour and observe if there is any loss in pressure after1 hour. Repair any leaks, if necessary, and repeat the high pressure leak check, or proceed to evacuate and vacuum dry the system as indicated in the next steps.

⚠ CAUTION

- Perform this triple evacuation procedure to remove all noncondensables and moisture from the system before charging. Failure to do so will result in reduced performance and shorter equipment life.

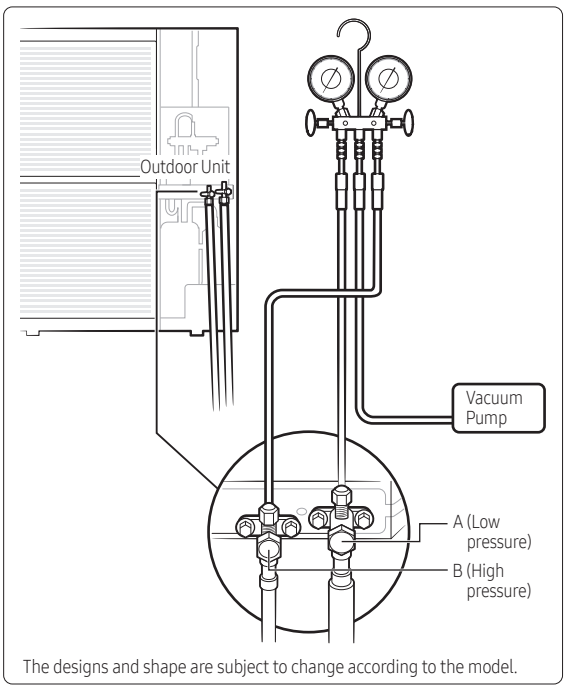
Installation Procedure

The time required to perform each evacuation will depend on the capacity (CFM) of the vacuum pump used.

1. Use a micron gauge to measure the degree of vacuum during the evacuation step. The micron gauge should be placed as far as possible from the pump in order to ensure an accurate reading.
2. Install the high and low side hoses to the manifold gauge, and to the high and low service ports of the outdoor unit service valves.
3. Attach a vacuum pump to the common hose of the manifold set.
4. To ensure optimal performance, verify that the vacuum pump's oil has been changed recently.
5. If desired, first verify the manifold gauge and hoses are leak free.
6. Energize the vacuum pump and begin vacuuming.
7. Evacuate until 4000 microns is achieved, for at least 10 minutes.
8. Close the gauge manifold valve, shut off the vacuum pump, and remove the common hose.
9. Connect the hose to the nitrogen pressure regulator of the dry nitrogen cylinder and bleed the hose by opening the end of the common hose closest to the manifold.
10. Open the manifold valves and slowly bring the system pressure to atmosphere (0 psig). Hold the system at atmospheric pressure for 15 minutes.
11. Close the manifold and nitrogen cylinder and remove the common hose.
12. Reconnect the common hose to the vacuum pump. Repeat steps 6 through 11, alternating between breaking the vacuum with dry nitrogen and evacuating, until system evacuation has occurred three times, to the following vacuum levels:

Evacution	Microns
First	4000
Second	2000
Third	500

13. After evacuating to at least 500 microns for the third time, close the gauge manifold valve and wait 60 minutes, making sure that the vacuum level in the system does not decrease. If it does, a small leak is likely. Repair the leak and repeat the evacuation process.



The designs and shape are subject to change according to the model.

Step 8 Adjusting refrigerant (R-410A)

The outdoor unit comes with an optimized amount of refrigerant for the outdoor unit when connected to the AHRI listed indoor unit used as part of the tested basic model group (tested combination).

If the outdoor unit has been retrofitted to third-party air handler, be sure to adjust the amount of refrigerant to the amount calculated by using the internal coil volume of the indoor unit and the length of the installed piping.

If the internal coil volume of the indoor unit cannot be determined, calculate the total refrigerant amount by using following tables.

The calculated total refrigerant amount cannot exceed the maximum refrigerant amount shown on page18.

⚠ CAUTION

- Charging an excessive amount of refrigerant may damage the compressor. If the outdoor unit has been retrofitted, be sure to adjust the amount of refrigerant by taking into account the internal volume of the heat exchanger.

1 Check if the stop valve is closed completely.

2 Charge the refrigerant through the service port of the liquid stop valve.

NOTE

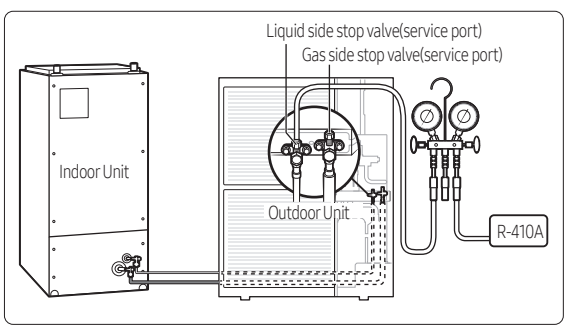
- Do not charge the refrigerant through the service port of the gas stop valve.

3 If you have any difficulty charging the refrigerant as described in the steps above, take the following steps:

   a Open the liquid stop valve and gas stop valve.

   b Operate the air conditioner by pressing the K2 button once on the outdoor unit PCB.

   c After the system has stabilized, charge the refrigerant through the service port of the liquid service valve.



Installation Procedure

Calculating the additional refrigerant charge

When connecting to an AHRI listed indoor unit used as part of the tested basic model group (tested combination).

Total refrigerant amount = Amount charged at factory + Additional refrigerant amount to fit piping length[1)]

When installing in a retrofit application

Total refrigerant amount = Amount charged at factory + Amount of refrigerant addition/reduction by internal volume of indoor unit[2)] + Additional refrigerant amount to fit piping length[1)]

When installing in a retrofit application and internal coil volume of indoor unit is not known.

Total refrigerant amount = Standard refrigerant amount for retrofitting[3)] + Additional refrigerant amount based on piping length[1)]

1) See Table1.

2) See Table2.

3) See Table3.

Table1 : Additional refrigerant amount by total piping length

	0~24.6ft	24.6ft over
All Model (AC***BXU*CH)	0	0.5 oz/ft

Table2 : Amount of refrigerant adjusted by internal coil volume of indoor heat exchanger

	Model Name	Factory Charging	Required Charge Adjustment for Indoor Coil Internal Volume [in³]										
			61	91.5	122	152.6	183.1	213.6	244.1	274.6	305.1	335.6	366.1
2Ton	AC024BXUPCH	7.06 lbs	/	-1.43 lbs	-1.04 lbs	-0.64 lbs	-0.24 lbs	0	/	/	/	/	/
3Ton	AC036BXUDCH	7.94 lbs	/	/	-1.76 lbs	-1.32 lbs	-0.44 lbs	-0.53 lbs	0	/	/	/	/
3Ton	AC036BXUPCH	9.26 lbs	/	/	/	-2.38 lbs	-1.98 lbs	-1.59 lbs	-1.19 lbs	-0.79 lbs	-0.4 lbs	0	/
4Ton	AC048BXUPCH	9.26 lbs	/	/	/	-2.38 lbs	-1.98 lbs	-1.59 lbs	-1.19 lbs	-0.79 lbs	-0.4 lbs	0	/
5Ton	AC060BXUPCH	10.58 lbs	/	/	/	/	-0.37 lbs	0					

/ : Not allowed

0 : No addition or reduction

Table3 : Standard refrigerant amount for retrofitting (when internal volume of indoor unit is not known)

	Model Name	Factory Charge	Standard refrigerant amount for retrofitting
2Ton	AC024BXUPCH	7.06 lbs	5.63 lbs
3Ton	AC036BXUDCH	7.94 lbs	6.62 lbs
3Ton	AC036BXUPCH	9.26 lbs	7.67 lbs
4Ton	AC048BXUPCH	9.26 lbs	7.67 lbs
5Ton	AC060BXUPCH	10.58 lbs	9.7 lbs

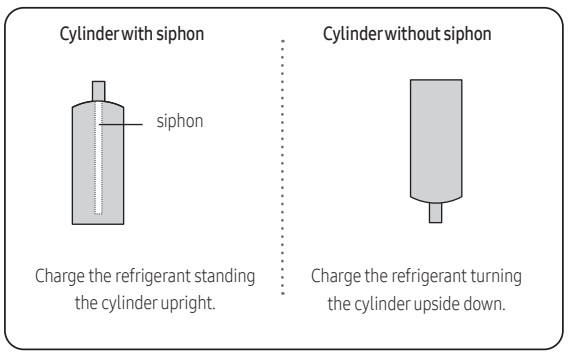
Table4 : Total maximum refrigerant amount

	Model Name	Factory Charge	Total maximum refrigerant amount (Factory charge + additional charge)
2Ton	AC024BXUPCH	7.06 lbs	9.36 lbs
3Ton	AC036BXUDCH	7.94 lbs	12.29 lbs
3Ton	AC036BXUPCH	9.26 lbs	13.62 lbs
4Ton	AC048BXUPCH	9.26 lbs	13.62 lbs
5Ton	AC060BXUPCH	10.58 lbs	12.89 lbs

Charging the system with liquid refrigerant

R-410A is a mixed type of refrigerant. It is necessary for recharging under conditions of liquid. When charging refrigerant from the refrigerant cylinder to the equipment, follow the instructions below.

- Before charging, check whether the cylinder has a siphon or not. There are two ways to recharge the refrigerant.



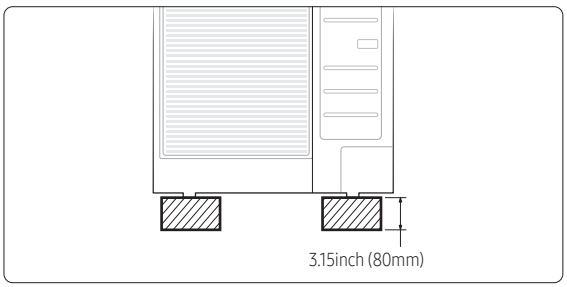
NOTE

- If R-410A refrigerant is charged as a gas, the composition of the charged refrigerant changes and the characteristics of the equipment vary.
- While adding refrigerant, use an electronic scale to measure the volume added. If the refrigerant cylinder doesn't have a siphon, turn it upside-down.

Step 9 Draining the water naturally

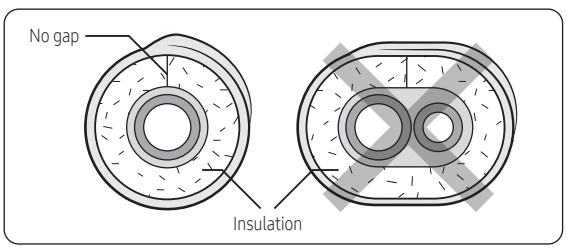
When using the air conditioner in the heating mode, ice may accumulate. During de-icing (defrost operation), the defrosting water must be drained off safely.

- Do not install a drain hose, a drain plug and a cap. (Let the water drain naturally).
- Ice may form on the ground. Take appropriate measures to prevent ice formation.



Step 10 Insulating the refrigerant pipes

1 Once you have checked that there are no leaks in the system, you can insulate the suction pipe.



NOTE

- When insulating the pipe, be sure to overlap the insulation.
- Use insulation with the appropriate specifications to conform to all national, state, and local codes and regulations. Refer to the following page for minimum performance properties of the insulation.

⚠ CAUTION

- When insulating the pipe, use non-slit insulator.

Installation Procedure

2 Select the insulation of the refrigerant pipe.

- Insulate the gas side pipe referring to the thickness according to the pipe size.
- Less than Indoor temperature of 86°F(30°C) and humidity of 85% is the standard condition. If installing in a high humidity condition, use one grade thicker insulation by referring to the table below. If installing in an unfavourable conditions, use thicker one.
- 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%]	High humidity [86°F(30°C), over 85%]	
		EPDM, NBR		
	inch	inch	inch	
Gas pipe	1/4	1/2	3/4	Heating resisting temperature over 248°F(120°C)
	3/8~1	3/4	1	
	1-1/8 ~ 1-3/4	3/4	11/4	
	2	1	11/2	

- 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.)
– Restaurant ceiling, sauna, swimming pool etc.

‹Building construction condition›

– The ceiling frequently exposed to moisture and cooling is not covered.
– e.g. The pipe is 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.

Step 11 Performing final check and trial operation

1 Check the power supply between the outdoor unit and the auxiliary circuit breaker.

- 1 phase power supply : L, N

2 Check the indoor unit and the ACU(AHU Control Unit) Kit.

- Check that you have connected the power and communication cables correctly.

3 Press K1 or K2 on the outdoor unit PCB to start and end the test modes.

Key	Push type		Mode	Display			
				SEG1	SEG 2	SEG 3	SEG 4
K1	Short	1st	Heating test mode [1]	H	1	0	0
		2nd	Defrost test mode [2]	H	3	0	0
		3rd	End Key operation	0	0	0	0
K2	Short	1st	Cooling test mode [3]	H	2	0	0
		2nd	Inverter check	H	4	0	0
		3rd	Pump down	H	6	0	0
		4th	Reserved	H	8	0	0
		5th	On Device Inverter Checker (Comp#1) [4]	H	A	0	0
		6th	Auto test mode [5]	H	C	0	0
		7th	Auto check [6] (Install commissioning mode)	H	E	0	0
		8th	End Key operation	0	0	0	0
K3	Short	1st	Reset	0	0	0	0

	SEG1	SEG2	SEG3	SEG4	Action to take
Fault detection is in progress	7	1	-	-	-
OK	7	1	0	F	-
NG	7	1	n	0	PBA defect: Replace the PBA
Check	7	1	C	h	Manual inspection is required
Going into fault detection mode failed	7	1	F	L	Try fault detection again

[1] Heating test mode : system operates in heating mode (set 104°F (40°C)) and checks for any error.

[2] Defrost test mode operates when outdoor temperature is under 50°F(10°C) for 1 minute after pressing K1 for defrost test mode.

[3] Cooling test mode : system operates in cooling mode (set 37.4°F (3°C)) and checks for any error.

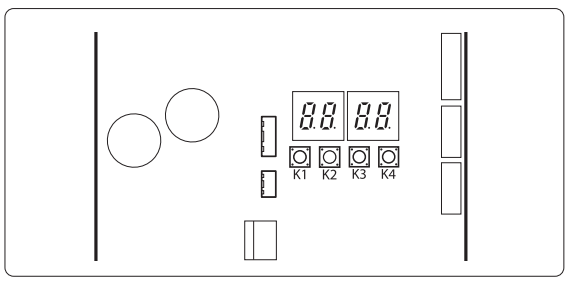
[4] Indication on the display and action to take when an inverter fault is detected

[5] Auto Test Mode: System will determine test mode (cool or heat) based on ambient temperature

* Test mode will continue to operate for 10 hours; any K button press pressing any K button will terminate the test mode
* If an error occurs during the test operation, the test mode will terminate and display the associated error codes

[6] Auto Check Mode: System will determine test mode (cool or heat) based on ambient temperature

* Test mode will continue to operate for 10~20mins and self-terminate test mode if no errors are found; pressing any K button press will terminate the test mode
* If an error occurs during the test operation, the test mode will terminate and display the associated error codes



4 After 12 minutes of operation, check the discharge air temperature of the indoor unit

- Cooling mode(indoor unit) differential → Inlet air temp. - Outlet air temp.: 18°F (10°C) or higher
- Heating mode(indoor unit) differential → Outlet air temp. - Inlet air temp.: 19.8°F (11°C) or higher
- In heating mode, the indoor fan motor can remain off to avoid cold air blown into air-conditioned space.

5 How to reset the power supply of the outdoor unit and deactivate the eco mode (standby mode):

- Press and hold the K3 button for more than 1 second to reset the power supply of the outdoor unit and deactivate the eco mode (standby mode).

※ Eco mode : Standby for minimizing power consumption

Installation Procedure

6 View mode: When the K4 switch is pressed, you can see information about the system status.

- For a function that is not supported, "-" is shown for SEG2, SEG3 or SEG4.

K4 short push	Display contents	SEG1	SEG2	SEG3	SEG4	Unit
1	Order frequency	1	Hundreds digit	Tens digit	Units digit	Hz
2	Current frequency	2	Hundreds digit	Tens digit	Units digit	Hz
3	The number of preset indoor units	3	Hundreds digit	Tens digit	Units digit	EA
4	Ambient temperature sensor	4	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
5	Compressor discharge sensor	5	Hundreds digit	Tens digit	Units digit	°F or °C 2)
6	Eva-Mid sensor	6	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
7	Condenser sensor	7	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
8	Current	8	Tens digit	Units digit	The first place of decimals	A
9	Outdoor fan RPM	9	Thousands digit	Hundreds digit	Tens digit	rpm
10	Target discharge temperature	A	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
11	EEV	B	Hundreds digit	Tens digit	Units digit	step
12	The capacity sum of indoor units	C	Tens digit	Unit digit	The first place of decimals	kBtu/h or kW 3)
13	Protective control	D	0: Cooling 1: Heating	Protective control 0: No Protective control 1: Freezing 2: Non-stop defrosting 3: Over-load 4: Discharge 5: Total electric current	Frequency status 0: Normal 1: Hold 2: Down 3: Up_limit 4: Down_limit	-
14	IPM temperature	E	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
15	The number of connected indoor units	F	0	Tens digit	Units digit	EA
16	ESC EEV(CAM)	G	Hundreds digit	Tens digit	Units digit	step
17	ESC IN sensor	H	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
18	ESC OUT sensor	I	Hundreds digit or "-" 1)	Tens digit	Units digit	°F or °C 2)
19	Suction sensor	J	+ / - Hundreds for Fahrenheit	Tens digit	Units digit	°F or °C 2)
20	Pressure sensor	K	+ / - Hundreds for Fahrenheit	Tens digit	Units digit	psi or kg/cm² 4)

1) Sub-zero temperatures are expressed as a minus, instead of hundreds digit.
2) The temperature unit can be switched between Fahrenheit and Celsius through Setting outdoor unit option switches.
3) If the temperature unit is set to Celsius through Setting outdoor unit option switches, the value is expressed in the unit of kW.
4) If the temperature unit is set to Celsius through Setting outdoor unit option switches, the value is expressed in the unit of kW.

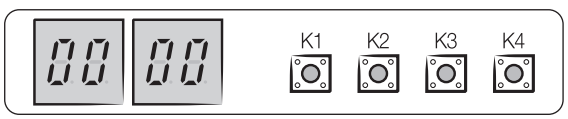
		Display contents	SEG1	SEG2	SEG3	SEG4
K4 long push	-	Main micom version	Year (Dec)	Month (Hex)	Date (Tens digit)	Date (Units digit)
	After short push 1	Inverter micom version	Year (Dec)	Month (Hex)	Date (Tens digit)	Date (Units digit)
	After short push 2	E2P version	Year (Dec)	Month (Hex)	Date (Tens digit)	Date (Units digit)
	After short push 3	Page 1 - AUTO Page 2 - (SEG1,2 - Indoor : "A","0") (SEG3,4 - Address : ex) 00)				
	After short push 4	Page 1 - MANU Page 2 - (SEG1,2 - Indoor : "A","0") (SEG3,4 - Address : ex) 00)				

Long push K4 (Main micom ver.) → short push 1 more (Inv. micom ver.) → short push 1 more (E2P. ver.) → short push 1 more (Automatic address) → short push 1 more (Manual address) → short push 1 more (Main micom ver.) → ..... → Long push K4 (View mode end)

7 Setting outdoor unit option switch and address manually

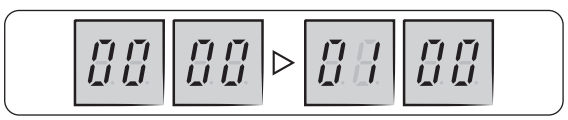
a Setting the option

- Press and hold K2 to enter the option setting. (Only available when the operation is stopped)
  - If you enter the option setting, display will show the following.



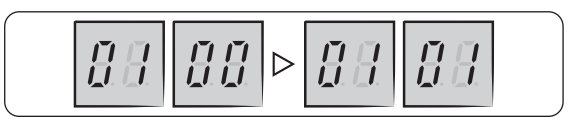
  - Seg 1 and Seg 2 will display the number for selected option.
  - Seg 3 and Seg 4 will display the number for set value of the selected option.
- If you have entered option setting, you can shortly press the K1 switch to adjust the value of the Seg 1, Seg 2 and select the desired option.

Example)



- If you have selected desired option, you can shortly press the K2 switch to adjust the value of the Seg 3, Seg 4 and change the function for the selected option.

Example)



- After selecting the function for options, press and hold the K2 switch for 2 seconds. Edited value of the option will be saved when entire segments blinks and tracking mode begins.

Option item	SEG1	SEG2	SEG3	SEG4	Function
Channel address	0	0	A	U	Automatic setting (Factory default)
			00~15		Manual setting
Snow accumulation prevention control	0	1	0	0	Disabled (Factory default)
			0	1	Enabled
Step for Silence mode	0	2	0	0	Disabled (Factory default)
			0	1	Step1
			0	2	Step2
			0	3	Step3
Type of Silence mode	0	3	0	0	Automatic Silence mode (Factory default)
			0	1	Manual Silence mode
Temperature unit	0	4	0	0	Celsius
			0	1	Fahrenheit (default)

Installation Procedure

Option item	SEG1	SEG2	SEG3	SEG4	Function
Current restriction rate [1]	0	6	0	0	100% (Factory default)
			0	1	95%
			0	2	90%
			0	3	85%
			0	4	80%
			0	5	75%
			0	6	70%
			0	7	65%
			0	8	60%
			0	9	55%
			1	0	50%
			1	1	100%
Dedicated mode for cooling/ heating	0	7	0	0	Cooling / Heating operation (default)
			0	1	Cooling operation only
			0	2	Heating operation only
Long-piping pressure calibration [2]	0	8	0	0	Within 98.4 ft (30 m) (Factory default)
			0	1	98.4 ~ 164.0 ft (30 ~ 50 m) (Cooling:-9.96psi, Heating:+4.27psi)
Target low pressure calibration for cooling [3]	0	9	0	0	Initial set pressure for cooling (Factory default)
			0	1	-2.84 psi
			0	2	-5.69 psi
			0	3	-8.53 psi
			0	4	-11.38 psi
			0	5	-14.22 psi
			0	6	+2.84 psi
			0	7	+5.69 psi
			0	8	+8.53 psi
			0	9	+11.38 psi
			1	0	+14.22 psi

Option item	SEG1	SEG2	SEG3	SEG4	Function
Target high pressure calibration for heating	1	0	0	0	Initial set pressure for heating (Factory default)
			0	1	+2.84 psi
			0	2	+5.69 psi
			0	3	+8.53 psi
			0	4	+11.38 psi
			0	5	+14.22 psi
			0	6	-2.84 psi
			0	7	-5.69 psi
			0	8	-8.53 psi
			0	9	-11.38 psi
			1	0	-14.22 psi

- [1] Current restriction rate : When restriction option is set, cooling and heating performance may decrease.

[2] Set this value when the installed piping length exceeds 98 ft.
Do NOT use it for performance enhancement purposes.

[3] Target low pressure for cooling can be set in a range of 113.79–170.68 psi.

⚠ CAUTION

- Edited option will not be saved if you do not end the option setting as explained in above instruction.

※ While you are setting the option, you may press and hold the K1 button to reset the value to previous setting.

※ If you want to restore the setting to factory default, press and hold the K4 button while you are in the option setting mode.

– If you press and hold the K4 button, setting will be restored to factory default but it doesn't mean that restored setting is saved. Press and hold the K2 button. When the segments shows that tracking mode is in progress, setting will be saved.

Extra Procedures

Pumping down refrigerant

⚠ WARNING

- After installing the product, be sure to perform leak tests on the piping connections. After pumping down refrigerant to inspect or relocate the outdoor unit, be sure to stop the compressor and then remove the connected pipes.
  - Do not operate the compressor while a valve is open due to refrigerant leakage from a pipe or an unconnected or incorrectly connected pipe. Failure to do so may cause air to flow into the compressor and too a high pressure to develop inside the refrigerant circuit, leading to an explosion or product malfunction.

PUMP DOWN purpose

- To transport the product or repair the indoor unit, run the operation that recovers the refrigerant to the outdoor unit, to minimise refrigerant leakage from the system.

Precautions during PUMP DOWN

- The amount of refrigerant that can be accommodated by the outdoor unit is limited.
- Pump most of the refrigerant in the system into a refrigerant recovery container, and then pump down the left-over refrigerant only. The maximum amount of refrigerant that can be accommodated by the outdoor unit is the factory charge weight.
  (any additional refrigerant charge that was adding during installation must be pumped into a container).
- If the amount of refrigerant in the system exceeds the maximum amount of accommodatable refrigerant, the pressure increases, causing the compressor to trip or become damaged.

Pumping down the refrigerant

- Prior to the PUMP DOWN operation, perform a primary recovery of the refrigerant into an empty container.
- Lock the manifold gauge.
- Lock the service valve on the liquid pipe.
- Press the K2 button on the outdoor unit PCB three times. (The outdoor unit PCB LED displays Ⱶ5.)
- When the compressor starts operation, use the manifold gauge to monitor the low pressure level.
- If the low pressure level decreases to 0 Mpa or lower, immediately lock the service valve on the gas pipe and end the PUMP DOWN operation. (To end the PUMP DOWN operation, press either the K2 button or K3 button to reset the system.)

⚠ CAUTION

- Use a suitable recovery tank. If a common refrigerant container is illegally modified, the container may explode, causing injury or damage.
- If the compressor operates for an extended period of time with a low pressure of 0 MPa(0 psi) or lower, the compressor and/or circuit element may malfunction. After checking the pressure level, immediately end the PUMP DOWN operation.
- Do not perform the PUMP DOWN operation if there is a refrigerant leak or the refrigerant piping is not connected properly. Air enters the piping to increase the internal pressure, causing an explosion or malfunction.

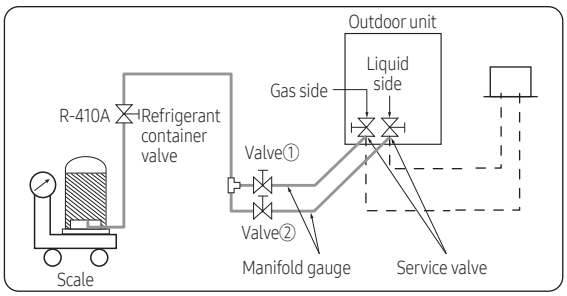
Putting refrigerant in a refrigerant container prior to PUMP DOWN

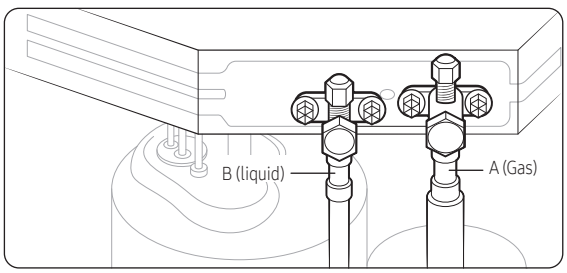
※ If the amount of refrigerant contained in the system exceeds the maximum amount of accommodatable refrigerant, perform a primary recovery of the refrigerant into a refrigerant container, as follows, and then perform the PUMP DOWN operation.

- Prepare a dedicated rechargeable refrigerant container, scale and manifold gauge.
- Check the amount of refrigerant contained in the whole system.
- Open the refrigerant container valve and valve ② on the manifold gauge connected to the liquid pipe, to allow the refrigerant to flow from the liquid pipe to the refrigerant container.

Extra Procedures

- Use the scale to check the change in the container weight. When the desired amount of refrigerant has been inserted into the container, lock the valves and remove the manifold gauge.



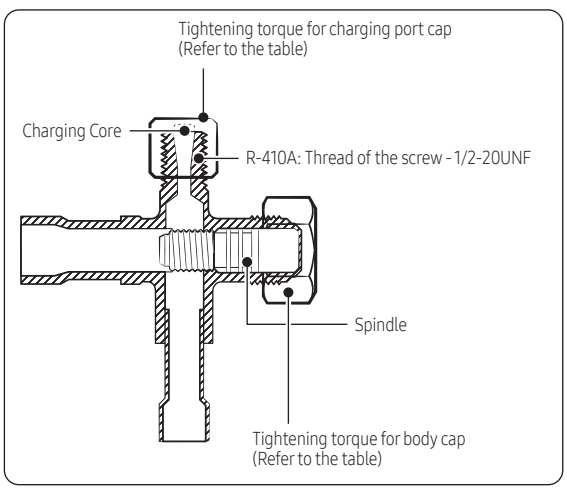


Using the stop valve

Opening the stop valve

1 Open the cap and turn the stop valve anticlockwise by using a hexagonal wrench.

2 Turn it until the axis is stopped.



3 Tighten the cap securely.

Outer Diameter [inch]	Tightening torque	
	Body cap [lbf·ft(N·m)]	Charging port cap [lbf·ft(N·m)]
Ø 1/4	14.75 ~ 18.44 (20~25)	7.38 ~ 8.85 (10~12)
Ø 3/8	14.75 ~ 18.44 (20~25)	
Ø 1/2	18.44 ~ 22.13 (25~30)	
Ø 5/8	22.13 ~ 25.81 (30~35)	
Over Ø 3/4	25.81 ~ 29.50 (35~40)	

NOTE

- Do not apply excessive force to the stop valve and always use proper tools.

Closing the stop valve

1 Remove the cap.

2 Turn the stop valve clockwise by using a hexagonal wrench.

3 Tighten the axis until the valve reached the sealing point.

4 Tighten the cap securely.

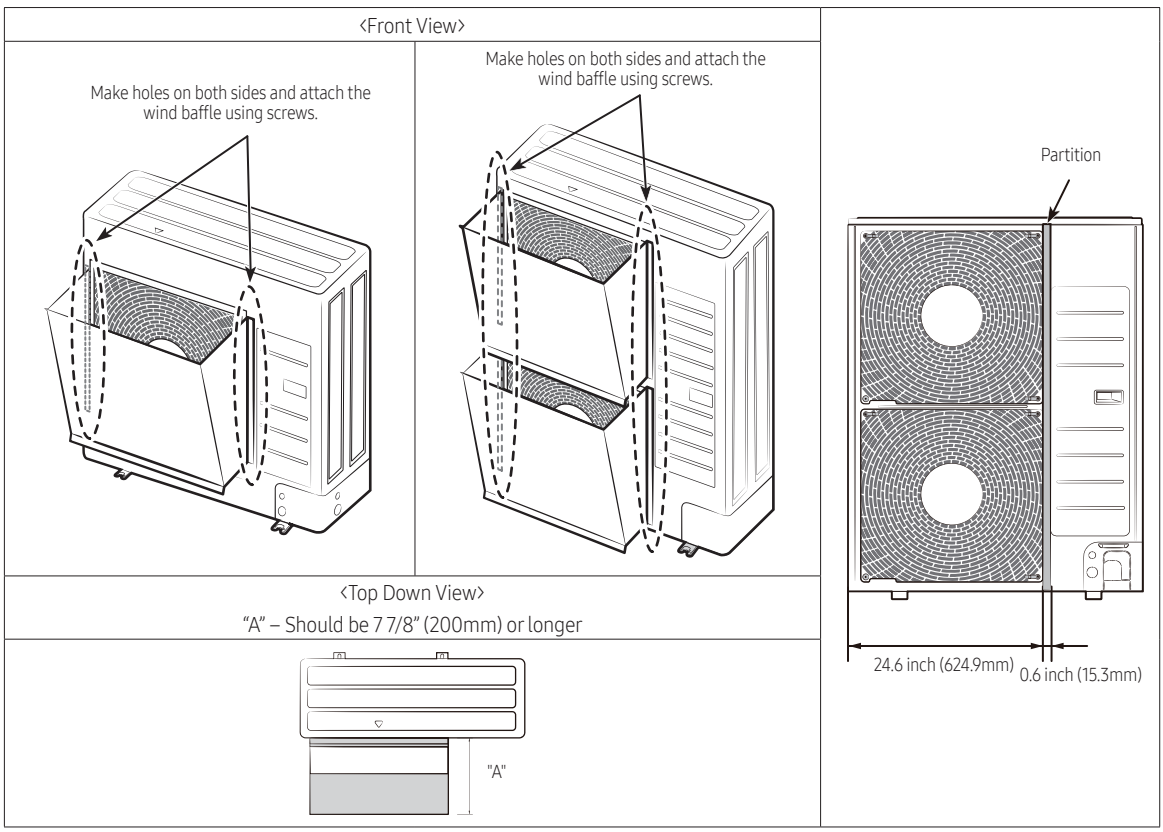
⚠ CAUTION

- When you use the service port, always use a charging hose, too.
- Check the leakage of refrigerant gas after tightening the cap.
- Must use a spanner and wrench when you open/tighten the stop valve.

Installing the wind baffle

When the outdoor unit might be faced with strong wind directly, the wind baffle should be installed to prevent the outdoor unit fan from operating in reverse way.

※ Wind baffle is not supplied with the product.



⚠ CAUTION

- When attaching the wind baffle using screws, be careful that the screws do not damage the partition and the heat exchanger.

NOTE

- Install outdoor units with the back surface facing wall side to eliminate the effects of external wind.

Appendix

Troubleshooting

The table below lists the self-diagnostic routines. For some of error codes, you must contact an authorized distributor, or Samsung HVAC tech support.

If an error occurs during operation, it is displayed on the outdoor unit PCB LED, both MAIN PCB and INVERTER PCB.

No.	Error Code	Meaning	Remarks
1	E201	Communication error between the indoor unit and outdoor unit (Pre-tracking failure or when the actual number of indoor units are different from the indoor unit quantity setting on the outdoor unit) Error due to communication tracking failure after initial power is supplied (The error occurs regardless of the number of units.)	Check indoor quantity setting in outdoor
2	E202	Communication error between ACU Kit and outdoor unit (When there is no response from indoor units after tracking is completed)	Check electrical connection and setting between ACU Kit and outdoor unit
3	E203	Communication error between the outdoor unit and main micom (For PF #4 to #6 controllers, error will be determined from the time when the compressor is turned on.)	Check electrical connection and setting between outdoor unit MAIN PBA - INVERTER PBA
4	E221	Error on outdoor temperature sensor (Short or Open)	Check Outdoor sensor Open / Short
5	E231	Error on outdoor COND OUT sensor (Short or Open)	Check Cond-Out sensor Open / Short
6	E251	Error on discharge temperature sensor of compressor1 (Short or Open)	Check Discharge sensor Open / Short
7	E291	High pressure SENSOR ERROR (OPEN/SHORT)	While in operating COMP only, detect 1. Short Error : less than 0.4v, Error detect 2. Open Error : over 4.2v, Error detect
8	E308	Error on outdoor SUCTION sensor(Short or Open)	Check SUCTION sensor Short/Open
9	E320	Error on OLP sensor (Short or Open)	Check OLP sensor Open / Short
10	E403	Compressor down due to freeze protection control	Check Outdoor Cond.
11	E404	System stop due to overload protection control	Check Comp. when it starts
12	E407	COMP down due to High Pressure Sensor Protection Control 1	Check refrigerant pipe line blockage Check high pressure sensor Check refrigerant amount
13	E410	COMP down due to Low Pressure Sensor Protection Control 1	Check low pressure sensor Check refrigerant amount(leakage) Check that the indoor unit inlet and outlet are not covered by anything Check that the indoor unit motor is operating Check that the indoor heat exchanger is not frozen
14	E416	COMP down due to disharge temperature protection control 1	Check refrigerant amount Check EEV Check service valve blocked Check defective discharge temperature sensor
15	E440	Heating operation restricted at outdoor temperature over the limit	1. Check the range of temperature limited for heating operation 2.Check the outdoor temperature sensor

No.	Error Code	Meaning	Remarks
16	E441	Cooling operation restricted at outdoor temperature below the limit	1. Check the range of temperature limited for cooling operation 2. Check the outdoor temperature sensor
17	E458	Fan speed error	FAN1 ERROR
18	E461	Error due to operation failure of inverter compressor	-
19	E462	System stop due to full current control	-
20	E463	Over Load Protection Error	Check OLP sensor
21	E464	IPM Over Current(O.C)	1. Check if the service valve is open 2. Check the state of refrigerant 3. Check if connecting wire and the pipe are OK 4. Check the compressor
22	E465	Comp. Over load error	-
23	E466	DC-Link voltage under/over error	Check AC Power and DC Link Voltage
24	E467	Error due to abnormal rotation of the compressor or unconnected wire of compressor	Check Comp wire
25	E468	Error on current sensor (Short or Open)	Check Outdoor Inverter PBA.
26	E469	Error on DC-Link voltage sensor (Short or Open)	-
27	E470	Outdoor unit EEPROM Read/Write error (Option)	Check Outdoor EEPROM Data
28	E471	Outdoor unit EEPROM Read/Write error (H/W)	Check Outdoor EEPROM PBA
29	E474	Error on IPM Heat Sink sensor of inverter1 (Short or Open)	Check Outdoor Inverter PBA.
30	E475	Error on inverter fan 2	FAN2 ERROR
31	E483	Overvoltage of H/W detect DC link	Check AC Power
32	E484	PFC Overload (Over current) Error	Check Outdoor Inverter PBA.
33	E485	Error on input current sensor of inverter1 (Short or Open)	Check Outdoor EEPROM PBA
34	E488	Inverter input voltage sensor error	Check Outdoor Inverter PBA
35	E500	IPM over heat error on inverter1	Check Outdoor Inverter PBA.
36	E507	Error due to high pressure switch open or compressor down by high pressure	-
37	E534	Blockage detected on high pressure pipe during heating operation.	1. Check if the service valve is open 2. Check if there's any blockage on the refrigerant cycle (indoor unit/outdoor unit) 3. Check the EEV connection and operation 4. Check if connecting wire and the pipe are OK 5. Check the compressor 6. Check the troubleshooting of E464, 465 as well.
38	E554	Gas leak detected	Check the refrigerant
39	E590	Inverter EEPROM Checksum error	-

Memo

SAMSUNG