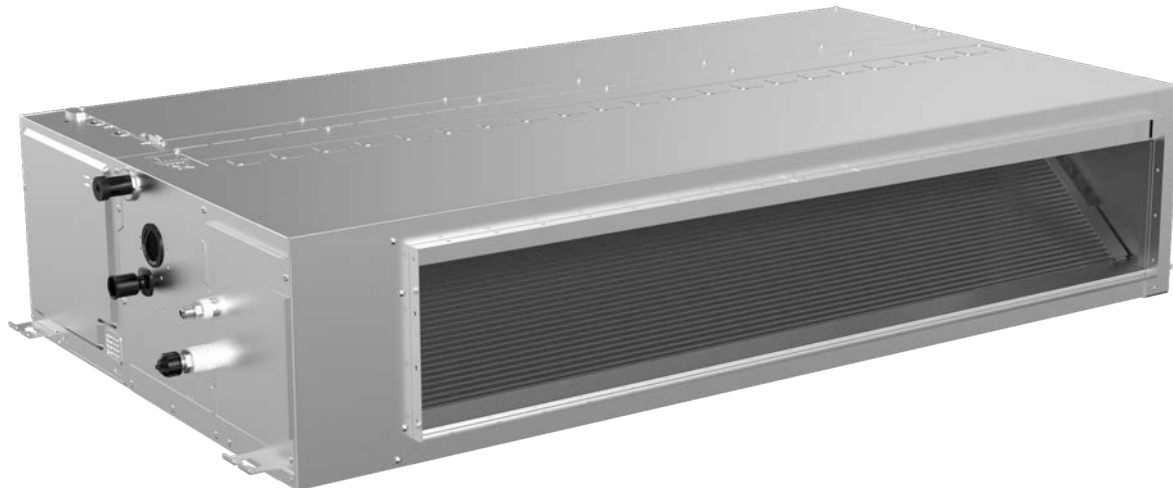


ECOFLEX MINI VRF R32 SERIES

High Static Indoor Unit

Installation and Commissioning Guide



Model Numbers

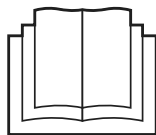
MHD-056CS
MHD-071CS
MHD-080CS
MHD-090CS

MHD-112CS
MHD-125CS
MHD-140CS
MHD-160CS



CAUTION:

The system is charged with flammable refrigerant, safety checks are necessary to ensure that the risk of ignition is minimised.



IMPORTANT NOTE:

Please read the R-32 Safety Manual and this manual carefully before installing or operating your air conditioning unit.

Information in this manual is to be used in conjunction with the R-32 Safety Manual.

Make sure to save this manual for future reference.

Table of Contents

01. Preface	3
02. Safety Warning	4
02.01. Warning Signs	4
02.02. Safety Precautions	5
02.03. Electric Safety Requirements	6
02.04. Appendix	7
03. PRECAUTIONS	10
03.01. Qualification and Safety Regulation Requirements	10
03.02. Precautions for Carrying and Lifting the Air Conditioner	12
03.03. Precautions for Installation sites	12
03.04. Recommended Installation Sites	13
04. Installation Layout	14
05. Product Dimensions	15
06. Accessories	16
06.01. Standard Accessories	16
06.02. Accessories available to be purchased separately	17
06.03. Heat Insulation Material Requirements	17
07. Preparations Before Installation	18
07.01. Unpacking Check	18
07.02. Filter Installation	18
07.03. Indoor Unit Positioning	19
08. Indoor Unit Installation	19
08.01. Installation of Suspension Bolts	19
08.02. Indoor Unit Installation	20
08.03. Air Inlet Panel for Air Return Plenum	22
09. Refrigerant Connecting Piping Installation	22
09.01. Length and Level Difference Requirements	22
09.02. Pipe Layout	23
09.03. Pipe Connection Steps	23
09.04. Pipe Connection	23
09.05. Refrigerant Piping Fixing	26
09.06. Vacuum Pumping	26
10. Drainage Pipe Installation	28
10.01. Installation of Water Discharge Pipe for the Indoor Unit	28
10.02. Water Discharge Test	31
11. Air Duct Installation	32
12. Electrical Connection	34
12.01. Electrical Characteristics	35
12.02. Schematic diagram of the main terminal blocks of main control board	35
12.03. Wiring	36
13. Error Codes	52
13.01. Error Codes and Definitions	52
13.02. Operating Status Codes and Definitions (Non-Error)	54
13.03. Spot Check Description	55
14. Settings	56
14.01. ESP Setting	56
15. Test Run	61
15.01. Checklist Before Test Run	61
15.02. Indoor Unit	62
15.03. Outdoor Unit	62

01. Preface

Dear users,

Thank you for purchasing and using our product. Please read this manual carefully before you install, use, maintain or troubleshoot this product so that you can familiarize yourself with the product and use it correctly.





For Outdoor Units or other Indoor Units, please refer to the applicable installation & owner's manuals provided with them.

For detailed operation of auxiliary control devices, such as wired, remote and centralized controllers, please refer to their instructions.

- To ensure the correct installation and operation of the product, the following instructions are provided:
- To ensure the correct and safe operation of the product, please strictly follow the requirements listed in this manual.
- All figures and contents in this manual are for reference only. Due to continuing product improvement, the specifications are subject to change without notice.
- Regular cleaning and maintenance of the product are required for intended performance and long service life. Each year before using the air conditioner, please contact your local dealer, and we will assign professionals to provide paid services of cleaning, maintenance, and inspection.
- Please retain this manual for future reference.




02. Safety Warning

Please thoroughly read and ensure that you fully understand the safety precautions (including the signs and symbols) in this manual, and follow relevant instructions during use to prevent damage to health or property.

	WARNING	This symbol shows that this appliance used a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	CAUTION	This symbol shows that the operation manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	CAUTION	This symbol shows that information is available such as the operating manual or installation manual.

02.01. Warning Signs

Different marks are used to indicate the levels of hazard severity. Please follow the instructions and ensure safe operation:

	DANGER	Failure to observe the warning will result in severe personal injury or death.
	WARNING	Failure to observe the warning could result in severe personal injury or death, property damage, or electrical or fire hazards.
	CAUTION	Failure to observe the warning could result in minor personal injury, product or property damage, or other unsafe situations.
	NOTE	Useful operation and maintenance information.

Warning Contets



Ensure Proper Grounding



Professional Only

Prohibition signs



No Flammable Materials



No Strong Current



No Open Fire



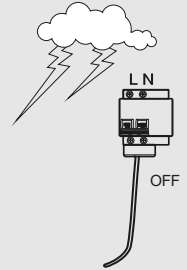
No Acid or Alkali Materials

02.02. Safety Precautions

DANGER

During thunderstorms, disconnect the main power switch. Otherwise, lightning may damage the unit.

In the event of refrigerant leakage, smoking and open flames are prohibited. Disconnect the main power switch immediately, open windows to allow ventilation, keep away from the leakage point, and contact your local dealer or technical support to request a professional repair.



WARNING

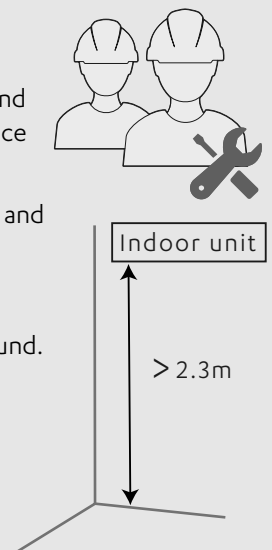
Air conditioner installation must comply with local standards and electrical codes, and relevant instructions in this manual.

Do not use any liquid cleanser, liquefied cleanser, or corrosive cleanser to wipe this unit or spray water or other liquids on the unit. Otherwise, the plastic parts of the unit will become damaged and an electrical shock may occur. Disconnect the main power switch before cleaning and maintenance to avoid accidents.

Ask a professional to remove and reinstall the air conditioner. Ask a professional for maintenance and repair assistance.

This air conditioner is classified as an “appliance which is not accessible to the general public”.

The Indoor Unit shall be placed at a height not accessible to children, at least 2.3m above the ground.



CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

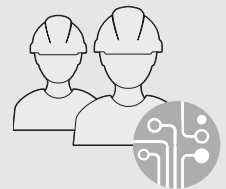
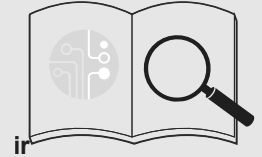
Children should be supervised to ensure that they do not play with the appliance.

The units are partial unit air conditioners, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.

02.03. Electric Safety Requirements

WARNING

- The air conditioner shall be installed according to the local wiring specifications. Wiring work must be completed by qualified electricians.
- All wiring work must comply with electrical safety specifications.
- The air conditioner must be well grounded. Specifically, the main switch of the air conditioner must have a reliable grounding cable.
- Before contacting wiring devices, cut off all the power supplies.
- The user **MAY NOT** disassemble or repair the air conditioner. Doing so can be dangerous. In the event of a fault, immediately cut off the power and contact your local dealer or technical support.
- A separate power supply that meets the rated parameter values must be provided for the air conditioner.
- The fixed wiring to which the air conditioner is connected must be equipped with a power cut-off device that meets the wiring requirements.
- To avoid danger, a damaged power cable must be replaced by professionals from the maintenance department or a similar department of the manufacturer.
- The air conditioner's circuit board (PCB) is designed with a fuse to provide overcurrent protection.
- The specifications of the fuse are printed on the circuit board.



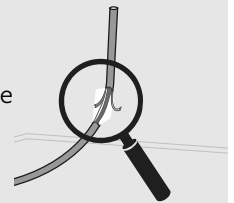
NOTE: For the units with R32 refrigerant , only the blast-proof ceramic fuse can be used.

CAUTION

Always ground the main power switch.

Do not use a damaged power cable and replace it if it is damaged.

When the air conditioner is used for the first time or is in a power-off state for a long time, it needs to be connected to the power supply and warmed up for at least 12 hours before use.



02.04. Appendix

WARNING

The following applies to R32 refrigerant systems.

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized.
- For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.
- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.
- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
- If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.
- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance.
- The following checks shall be applied to installations using flammable refrigerants:
 - the charge size is in accordance with the room size within which the refrigerant containing parts are installed;
 - the ventilation machinery and outlets are operating adequately and are not obstructed;
 - if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant; which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.
- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.
- Initial safety checks shall include:
 - that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
 - that no live electrical components and wiring are exposed while charging, recovering or purging the system;
 - that there is continuity of earth bonding.
- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
- Replacement parts shall be in accordance with the manufacturer's specifications.
- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.
- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of ageing or continual vibration from sources such as compressors or fans.
- When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, it is important that best practice is followed.
- Since flammability is a consideration. The following procedure shall be adhered to:
 - remove refrigerant;
 - purge the circuit with inert gas;
 - evacuate;
 - purge again with inert gas;
 - open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.

- This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
- This operation is absolutely vital if brazing operations on the pipe-work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.
- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Prior to recharging the system it shall be pressure tested with OFN.

DD.12 Decommissioning:

1. Become familiar with the equipment and its operation.
2. Isolate system electrically.
3. Before attempting the procedure ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.
4. Pump down refrigerant system, if possible.
5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
6. Make sure that cylinder is situated on the scales before recovery takes place.
7. Start the recovery machine and operate in accordance with manufacturer's instructions.
8. Do not overfill cylinders. (No more than 80 % volume liquid charge).
9. Do not exceed the maximum working pressure of the cylinder, even temporarily.

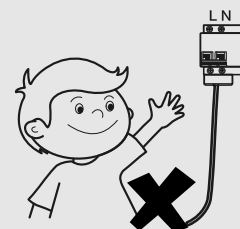
10. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
 11. Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.
- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.
 - When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
 - When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
 - The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
 - The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.
 - If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.
 - Warning: disconnect the appliance from its power source during service and when replacing parts.
 - These units are partial unit air conditioners, complying with partial unit requirements of this International Standard, and must only be connected to other units that have been confirmed as complying to corresponding partial unit requirements of this International Standard.

03. PRECAUTIONS

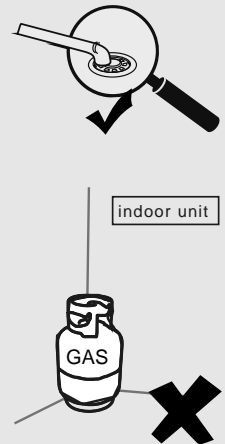
03.01. Qualification and Safety Regulation Requirements

WARNING

- **Make sure to carry out the installation according to local legislation.**
- **Ask your local dealer or professionals to install the product.**
This unit must be installed by qualified persons. Users MAY NOT install the unit themselves; otherwise, faulty operations may cause the risks of fire, electrical shock, injury, or leakage, which could harm you or others or damage the air conditioner.
- **Never modify or repair the unit on your own.**
Otherwise, a fire, electric shock, injury or water leakage may occur. Get your local dealer or a professional to do so.
- **Make sure that the residual current device is installed.**
The residual current device must be installed. Failure to install it may result in electric shock.
- **When powering the unit, follow the regulations of the local electric companies.**
Make sure that the unit is earthed reliably in accordance with laws. If the earthing is not completed correctly, it may cause electrical shock.
- **When moving, disassembling or reinstalling the air conditioner, get the assistance of your local dealer or a professional.**
If installed improperly, fire, electrical shock, injury, or water leakage may occur.
- **Use the optional accessories specified by local dealer.**
The installation of these accessories must be carried out by professionals. Improper installation may cause fire, electrical shock, water leakage and other hazards.
- **Use only power supply cable and communication cables that meet specification requirements. Properly connect all the wiring to make sure that no external forces are acting on the terminal blocks, power supply cable and communication cables. Improper wiring or installation may cause a fire.**
- **The air conditioner must be earthed. Check whether the earth line is securely connected or broken. Do not connect the earth line to gas cans, water piping, lightning rods or telephone earth lines.**
- **The main power switch of the air conditioner should be put in a position that is out of the reach of children.**
It should not be obstructed by flammable objects such as curtains.
- **Open flames are prohibited when refrigerant leaks are present.**
If the air conditioner is not cooling/heating properly, this may be caused by a refrigerant leak. If this occurs, contact your local dealer or a professional. The refrigerant in the air conditioner is safe, and usually does not leak.
If there is refrigerant leakage in the room, it is easy for a fire to occur after contact with the heating units of the heater/electric stove/stove. Please disconnect the power supply of the air conditioner, extinguish the flames of appliances that produce a flame, and open the windows and doors of the room to allow ventilation and ensure that the concentration of refrigerant leakage in the room does not exceed a critical level; keep away from the leakage point, and contact the dealer or professional personnel.
- **After the refrigerant leakage is repaired, do not start the product until the maintenance personnel confirms that the leakage is well repaired.**



- **Before and after installation, exposing the unit to water or moisture will cause electrical short circuit.**
Do not store the unit in a humid basement or expose it to rain or water.
- **Make sure the installation base and lifting are robust and reliable;**
Insecure installation of the base may cause the air conditioner to fall, leading to an accident. Take into full consideration the effects of strong winds, typhoons and earthquakes, and reinforce the installation.
- **Check whether the drain pipe can drain the water smoothly.**
Improper installation of the pipeline may lead to water leakage, damaging furniture, electric appliances, and the carpet.
- **After installation, check whether the refrigerant is leaking.**
- **Do not install the product in a location where there is a danger of flammable gas leaks.**
In the event of leakage of combustible gas, the combustible gas surrounding the indoor unit may cause a fire.



CAUTION

- **Keep the indoor unit, outdoor unit, power supply cable, and connecting wires at least 1m away from the high-power radio equipment, to prevent electromagnetic interference and noise. For some electromagnetic waves, it is not enough to prevent noise even at a distance of more than 1m.**
- **In a room equipped with fluorescent lamps (rectifier type or fast start type), the signal transmission distance of the remote controller (wireless) may not reach the predetermined value. Install the indoor unit as far away from the fluorescent lamp as possible.**
- **Do not touch the fins of the heat exchanger, as this could cause injury.**
- **For safety, please dispose of the packing materials properly.**
Nails and other packaging materials may cause personal injury or other risks. Tear up the plastic packaging bag and dispose of it properly to prevent children from playing with it, leading to suffocation.
- **Do not cut off the power supply immediately after the indoor unit stops running.**
Some parts of the indoor unit like the valve body and water pump are still in operation. Please wait for at least 5 minutes before cutting off the power supply. Otherwise, water leakage and other faults may occur.
- **If the length and direction of the air inlet/outlet panel or connecting duct have been changed, complete the following settings on the controller before use the air conditioner again: (For details, see the Application Control section)**
Reset the initial static pressure on the controller or perform a trial run on the outdoor unit (performed by the installer), and set the current state as a reference state for the unit to determine the filter status.
- **If the above operations are not performed, then the unit may not detect the state of the filter accurately.**
- **For evaporating units and condensing units, the instructions or markings shall include a wording to assure that the maximum operating pressure is considered when connecting to any condenser unit or evaporator unit.**
- **For evaporating units, condensing units and condenser units, the instructions or markings shall include refrigerant charging instructions.**
- **A warning to assure that partial units shall only be connected to an appliance suitable for the same refrigerant.**
- **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 to corresponding partial unit requirements of this International Standard.**
- **The electrical interfaces shall be specified with purpose, voltage, current, and safety class of construction.**
- **The SELV connection points, if provided, are to be clearly indicated in the instructions.**
- **The connection point should be marked with the “read the instructions” symbol per ISO 7000-0790 (2004-01) and the Class III symbol according to IEC 60417-5180 (2003-02).**
- **For R32 Refrigerant only.**
This unit is equipped with a refrigerant leak detector for safety. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.
If any supplemental unit is employed to detect leaked refrigerant, such unit shall also apply this marking or be accompanied by such instructions.

03.02. Precautions for Carrying and Lifting the Air Conditioner

1. Before carrying the air conditioner, determine the route that will be used to move it to the installation site.
2. Do not unseal the air conditioner until it is moved to the installation site.
3. When unpacking and moving the air conditioner, you must hold the hanger seat and not apply force to other parts, especially the refrigerant piping, drainage pipe and plastic accessories, so as to avoid damaging the air conditioner and causing personal injury.
4. Before installing the air conditioner, make sure that the refrigerant specified on the nameplate is used. For the installation of the Outdoor Unit, refer to the installation instructions in the Installation & Owner's Manual attached with the Outdoor Unit.

03.03. Precautions for Installation sites

WARNING

Do not install or use the air conditioner in the following places

1. A place filled with mineral oil, fumes or mist, like a kitchen. Plastic parts will age and the heat exchanger will become dirty, eventually causing the air conditioner performance to deteriorate or leak water.
2. A place where there are corrosive gases, such as acid or alkaline gases. Copper pipes and copper welds will be corroded, resulting in refrigerant leakage.
3. A place exposed to combustible gases and using volatile combustible gases such as diluent or gasoline. The electronics in the air conditioner may cause the surrounding gas to ignite.
4. A place where there is equipment emitting electromagnetic radiation. The control system will fail and the air conditioner will not function properly.
5. A place where there is a high salt content in the air like a coastal area.
6. A place where an explosion may occur.
7. In vehicles or cabin rooms.
8. Factories with major voltage fluctuations in the power supplies.
9. Other special environmental conditions.

NOTE

Air conditioner units of this series are designed to provide comfort. Don't install the unit in mechanical rooms and rooms with precision instruments, food, plants, animals, or artwork.

Avoid installation in an environment with a lot of organic compounds such as ink and siloxane.

The total refrigerant charge in the system cannot exceed the requirements for minimum room size of the smallest one that is served.

NOTE

Wooden buildings, newly renovated houses, and frequent use of disinfectants may contain acidic components in the air, such as formic acid, acetic acid, and hypochlorous acid, which can corrode copper pipes and solder joints, leading to refrigerant leaks.

Factories, chemical plants, livestock farms, vegetable markets, sewage pits, and other environment may contain sulfides, acid gases such as sulfur dioxide, ammonia, and chlorides in the air, which can corrode copper pipes and solder joints, leading to refrigerant leaks.

Please contact a dealer for assistance.

03.04. Recommended Installation Sites

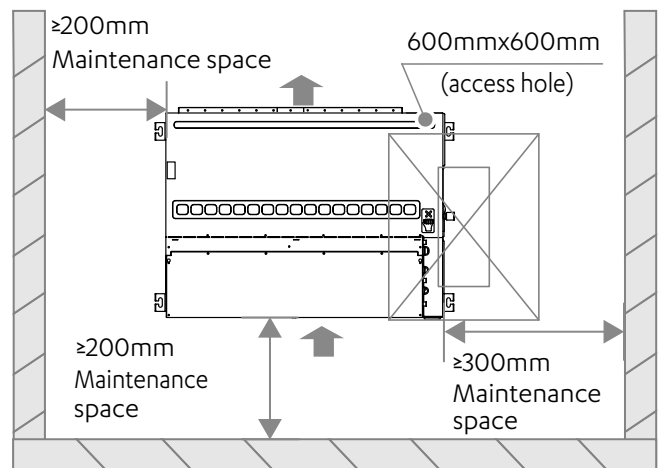
03.04.01. Selection principle for the installation site

It is recommended to install the air conditioner according to the design drawing of the HVAC engineer. The selection principle for the installation site is as follows:

1. Ensure that the airflow in and out of the indoor unit is reasonably organized to form an air circulation in the room.
2. Prevent the air conditioner from blowing directly at the human body.
3. Keep the air-conditioning return air away from direct exposure to the sun in the room.
4. The indoor unit should not be lifted in the places like load-bearing beams and columns that affect the structural safety of the house.
5. The wired controller and the indoor unit should be in the same installation space, otherwise, the sampling point setting of the wired controller needs to be changed.

Choose a site that fully complies with the following conditions and user requirements to install the air conditioning unit:

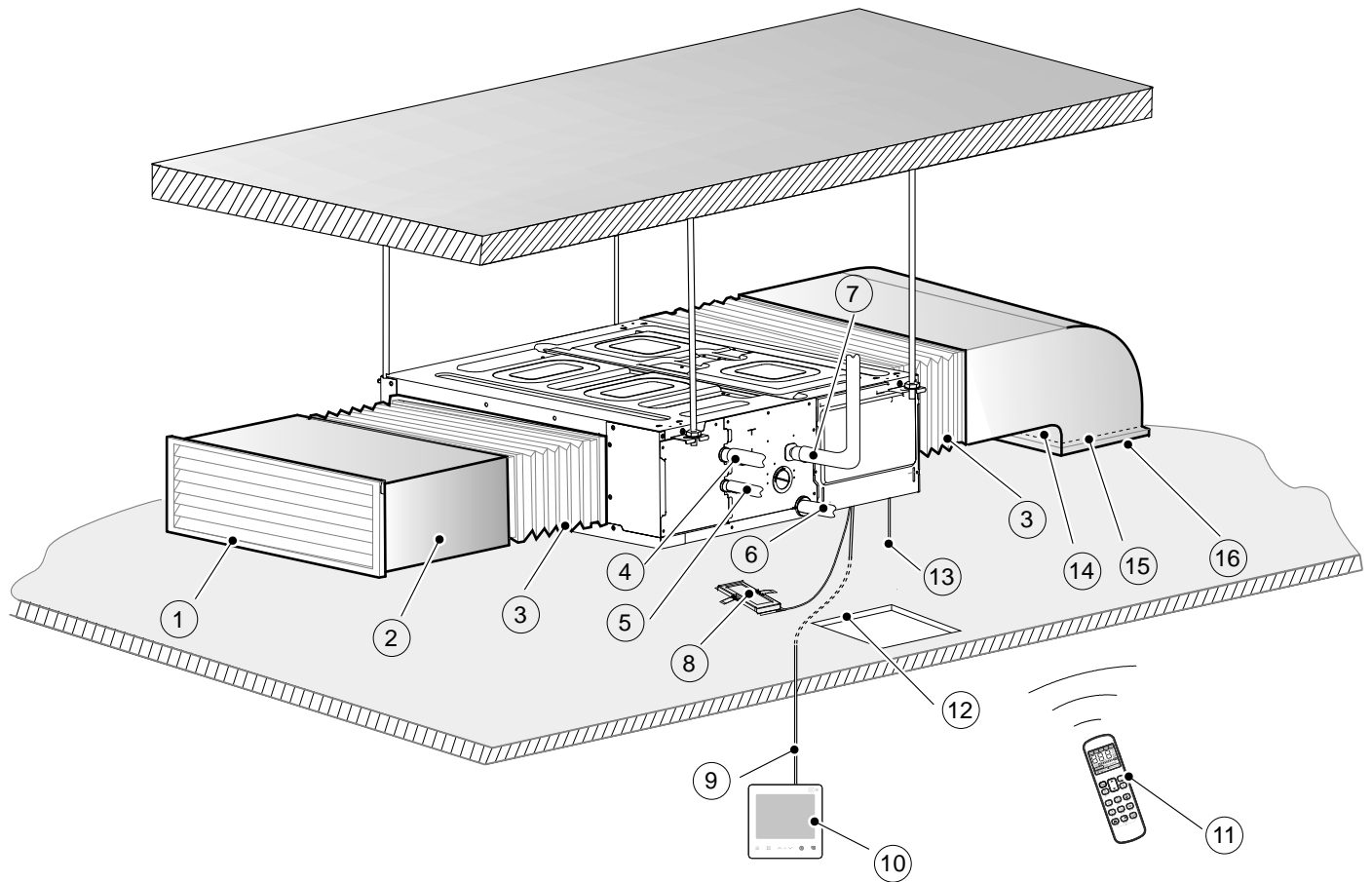
- There is enough space for installation and maintenance.
- The ceiling is level, and the structure is strong enough to support the indoor unit. If necessary, take measures to reinforce the unit's stability.
- Airflow in/out of the unit is not obstructed.
- It is easy to supply airflow to every corner of the room.
- It is easy to drain for water drain piping.
- There is no direct heat radiation.
- Avoid installation in narrow spaces or where there are more stringent noise requirements.
- Install the indoor unit at a place 2.3m above ground.
- The length of the piping between the indoor and outdoor units is within the permitted range. Refer to the Installation and Operation Manual attached with the outdoor unit.



NOTE

In case of conditions in the ceiling exceed 30°C and relative humidity of 80%, or when fresh air is inducted into the ceiling, the additional insulation is required (minimum 10 mm thickness polyethylene foam).

04. Installation Layout



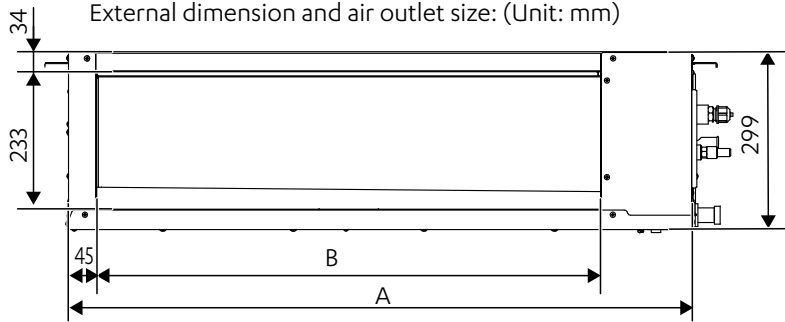
1	*Air outlet grille	2	*Air outlet pipe	3	*Soft flexible hose
4	Gas pipe	5	Liquid pipe	6	Drainage pipes for models without a water pump
7	Drainage pipes for models with a water pump	8	Display box (optional)		
9	*Connection wire	10	Wired controller (optional)	11	Remote controller (optional)
12	Access hole	13	*Power cable and ground wire	14	*Air return pipe
15	Air filter	16	*Return air grille	* To be purchased separately on site.	

NOTE

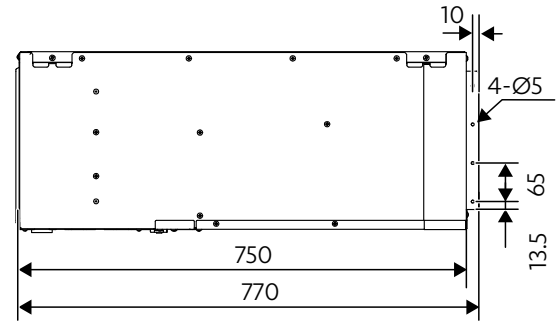
- All the optional accessories should be from our company.
- For optional accessories such as wired controllers, please refer to the instructions of the product.
- All the figures in the manual explain only the general appearance and functions of the product. The appearance and functions of the product you purchased may not be completely consistent with those listed in the figures. Please refer to the actual product.

05. Product Dimensions

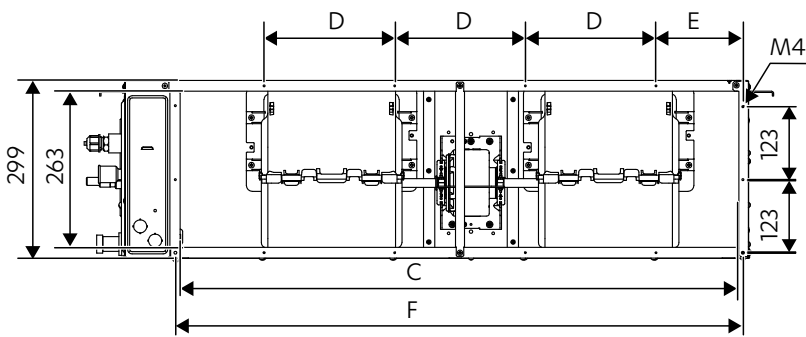
External dimension and air outlet size: (Unit: mm)



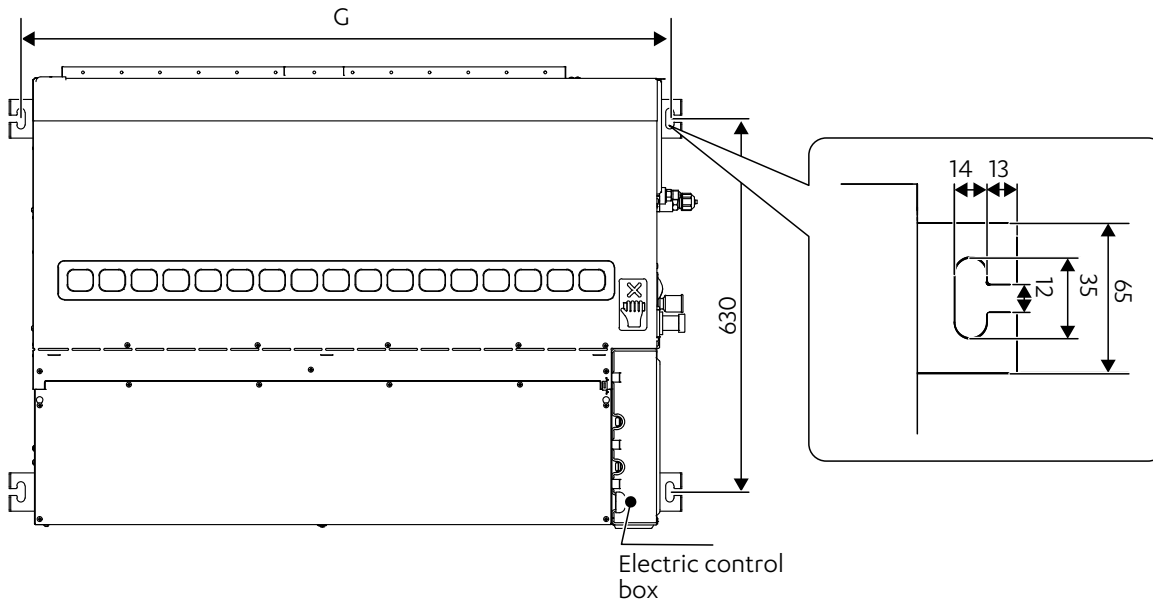
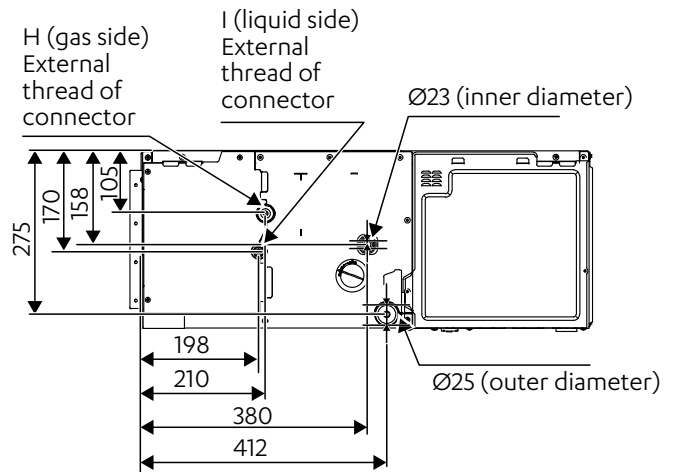
Size of return air inlet:



Dimension of pipe and water pipe:



Size of return air inlet, and the distance between the lugs:



Capacity (kW)	A	B	C	D	E	F	G	H	I
kW≤5.6	1050	850	940	220	146	956	1095	3/4-16 UNF	7/16-20 UNF
5.6<kW≤9.0	1050	850	940	220	146	956	1095	7/8-14 UNF	5/8-18 UNF
9.0<kW≤16.0	1400	1200	1290	220	213	1306	1445	7/8-14 UNF	5/8-18 UNF

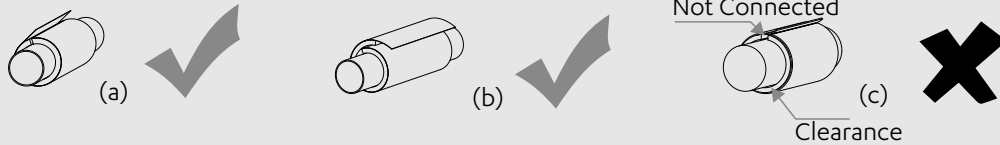
06. Accessories

06.01. Standard Accessories

List of accessories			
Installation & Owner's Manual X 1 Indoor Unit Installation Instructions (Make sure to hand it over to the user)	Flare nut X 2 For use in the installation of connecting pipe (the quantity is one for models with a process pipe)	Cable tie X 4 To tighten the drainage hose tightly to the drainage outlet and PVC piping of the Indoor Unit.	Thermal insulation pipe X 2 Used for insulation and anti-condensation at pipe connections.
Screw Package X 1 Used for fastening the filter	Air filter X 2		

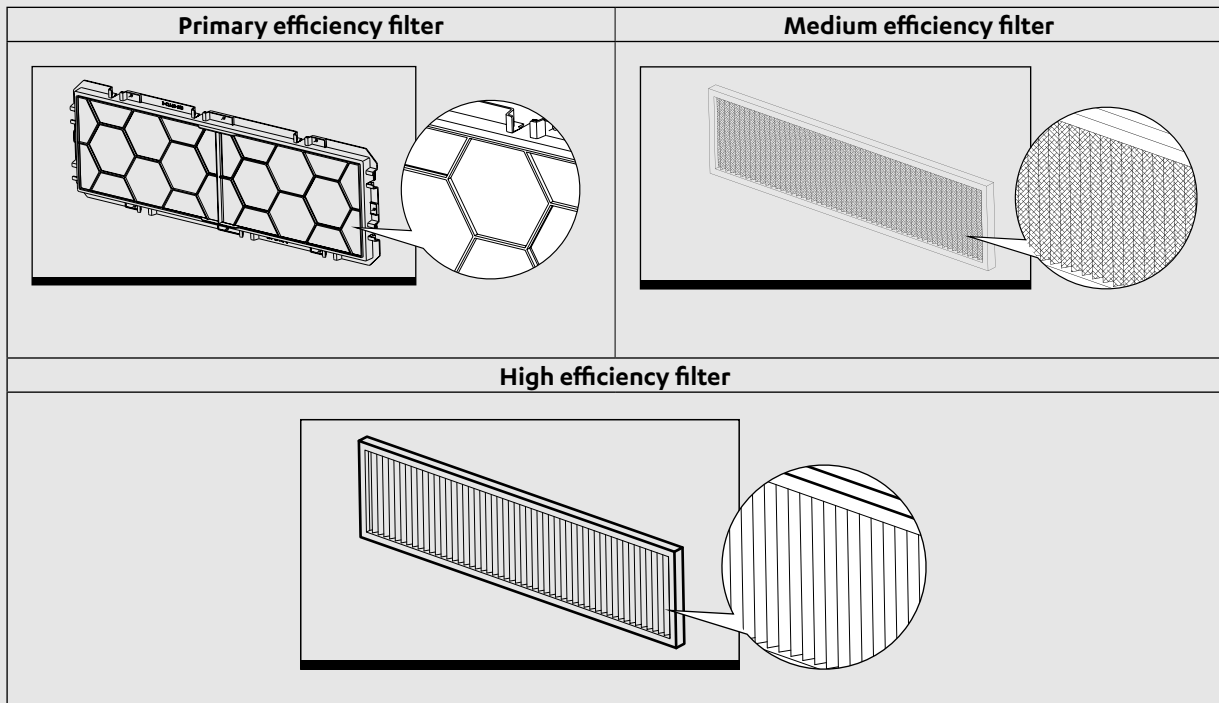
CAUTION

When installing the insulation pipe on site, please cut it according to the actual needs. (Either method (a) or (b) is OK. Method (c) is incorrect. There must be no gap between the insulation pipe and the copper pipe.)

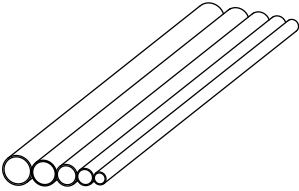
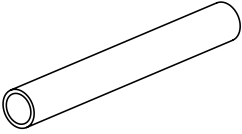
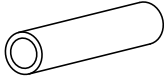


NOTE

- Check the accessory kit for the above items and contact your local dealer for any missing items.
- Do not throw away any accessories that may be required for installation until the installation is complete.
- Customers are free to choose to buy wired controllers, display boxes, remote controllers (with a seven-speed wind controller) and other optional accessories.
- Air filters are divided into primary efficiency filters, medium efficiency filters, and high efficiency filters. High efficiency filters can be customized by the dealer.



06.02. Accessories available to be purchased separately

	Copper pipe specification (Unit: mm)			
	Model (kW)	Piping	Liquid side	Gas side
	kW≤5.6		Ø6.35×0.75	Ø12.7×0.75
	5.6<kW≤16		Ø9.52×0.75	Ø15.9×1.0
	Remarks	For connection of the Indoor Unit refrigerant system, it is recommended to use a soft copper tube (T2M), with the length selected according to the actual situation.		
	PVC water discharge pipe		Thermal insulation pipe	
	This is used as the Indoor Unit's drainage pipe, 25mm in diameter. The length is determined according to actual needs		The thickness of the insulation pipe for the copper pipe is usually 10mm or above; and the thickness of the insulation pipe for the rigid polyethylene plastic tube is usually 15mm or above. If the pipe is used in a closed humid area, the thickness should be increased.	

⚠ CAUTION

Materials, including copper pipes, drainage pipes, lifting screws, various fasteners (such as pipe supports, clamps, screws), power cables, and signal cables, to be used for field installation need to be purchased on site by the installation operator. Materials and specifications must comply with relevant national or industry standards.

06.03. Heat Insulation Material Requirements

Copper pipe insulation	1	The insulation work should only be carried out after the successful completion of the air tight test. Use polyethylene foam as insulation material, fire rating class is B1 and heat resistance is over 120°C.
	2	Thickness of the insulation pipe: 1. When the diameter is equal to or greater than 15.9mm, the insulation thickness is at least 20mm. 2. When the diameter is equal to or smaller than 12.7mm, the insulation thickness is at least 15mm.
	3	In cold climates, for heating application, the insulation thickness of outdoor refrigerant pipe is at least 40mm, the insulation thickness of indoor refrigerant pipe is at least 20mm.
	4	Use glue to seal the jointed areas of thermal insulation pipes, and then wrap them with electrical tape with a width of not less than 50mm to ensure the connection is sealed.
	5	Make sure the insulation between the refrigerant pipes and the Indoor unit are entire to prevent the condensation.
Air duct insulation	1	The insulation of the air duct shall be carried out after the air leakage test of the air duct system has passed.
	2	Use glass wool or polyethylene form materials for thermal insulation. Make sure the insulation of air duct is entire to prevent the condensation.
	3	Wrap the outlet-side flange and the duct connection area with aluminum tape or something similar to prevent air escaping.
	4	The supports, suspension brackets, and brackets of the air duct shall be arranged outside the insulation layer with protective pad.
	5	Insulation thickness of glass wool: 1. The insulation thickness of air duct shall not be less than 40mm in rooms without air conditioning. 2. The insulation thickness of air duct shall not be less than 25mm in rooms with air conditioning. 3. If the insulation layer is made of other materials, the thickness of the insulation shall be obtained according to design requirements or calculations.

Drainage pipe insulation	1	After the drainage test shows that there are no leaks, carry out the insulation of the drain piping.
	2	Drain pipe connection hole shall be insulated to prevent condensation.
	3	Drain piping passing indoors shall be insulated to prevent condensation, and insulation sleeves should be thicker than 10mm.
	4	Use glue to seal the jointed areas of thermal insulation pipes. The head of the metal clamp should be at the top, and metal clamp should be well insulated.

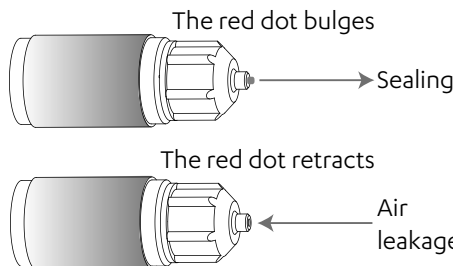
⚠ CAUTION

The materials and specifications of insulation materials must meet national or industry standards.

07. Preparations Before Installation

07.01. Unpacking Check

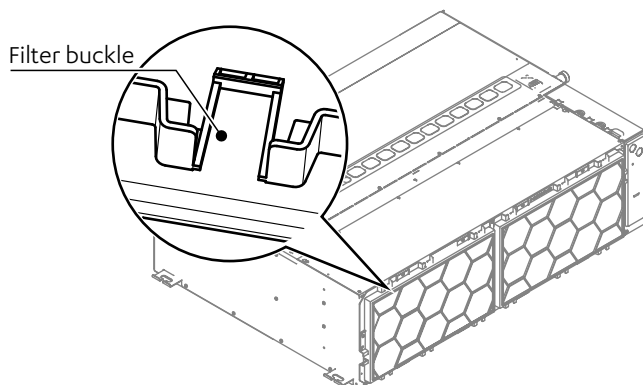
1. After unpacking, check whether the packing materials are in good condition, whether the accessories that come with the product are complete, whether the air conditioner is intact, whether the surfaces of the heat exchanger and other parts are not worn, and whether there are oil stains on the stop valves of the unit.
2. Check the two sealing nuts of the refrigerant pipe, and observe whether the red dot on the surface of the sealing nut of the gas pipe bulges. If it bulges, the refrigerant system is well sealed; if it retracts, it is leaking, and need to contact local dealer.



3. Check the model before installation.
4. After indoor unit and outdoor unit inspection, pack them with plastic bags to avoid intake of foreign matters.

07.02. Filter Installation

Press the buckle on the filter and remove the filter according to the diagram and install the filter outside the air return pipe as shown in the Part Description section.



⚠ CAUTION

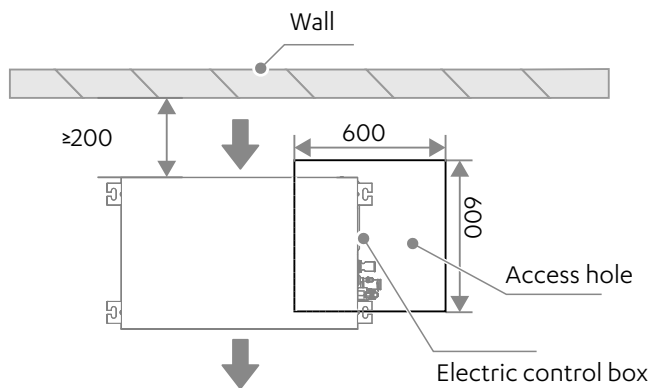
When installing it on the outside of the air return pipe, tighten the screw into the screw hole on the filter.

07.03. Indoor Unit Positioning

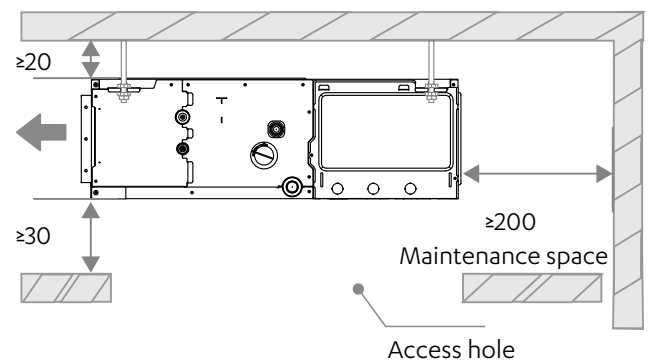
Determine the positions of the air conditioning unit and suspension bolts.

1. Determine the air outlet/return mode and the lifting position of the Indoor Unit according to the design drawing.
2. Draw lines to locate the drilling positions of the bolts according to the three-dimensional diagram of the unit.
3. Make an access hole at the electric control box side (recommended size: 600×600mm).
4. For ease of disassembly of the motor, the rear end of the indoor unit shall be at least 200mm away from the wall.
5. There shall be no obstacle within 200mm of the return air inlet.
6. It is suggested to use an infrared ray locator for line drawing.

Top view



Side view



08. Indoor Unit Installation

⚠ CAUTION

- Install the air conditioner in a location with sufficient strength to support the weight of the unit. Take reinforcement measures when necessary.
- The unit may fall and cause personal injury if the location is not strong enough. Unstable installation may cause the unit to fall and cause an accident.
- Before wiring/pipe layout, make sure that the installation area (walls and floor) is safe and free of water, power, gas, and other hidden dangers.

08.01. Installation of Suspension Bolts

1. Using a pencil, mark the positions on the ceiling where the suspension bolts need to be fixed based on the distance between the four hanging holes on the indoor unit. After drilling the holes, install 4 anchors bolts and fasten them, using turnbuckle nuts connecting or welding 4 suspension bolts (Ø10mm) with fully threaded bolt that is 490mm long to the 4 anchors bolts, and attach three nuts to the each suspension bolt, divide the nuts into two groups, with one nut on top as one group and two nuts at the bottom as another group, then install the indoor unit through the four lugs and nuts.
2. The diameter of the suspension bolt shall not be less than 10mm.
3. When the length of the hanger rod exceeds 1.5 meters, it is necessary to add two diagonal support rods to enhance stability.
4. Because the ceilings and other architectural structures vary, it is necessary to discuss building details with the owner.
 - a. Ceiling treatment: Reinforce the ceiling pedestal to make sure that the ceiling is level and to prevent ceiling vibrations.
 - b. Cut off and dismantle the ceiling pedestal.


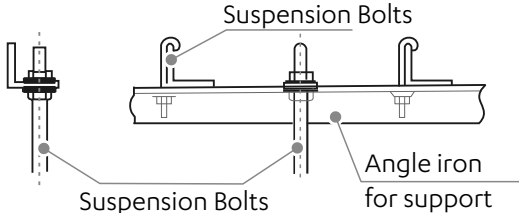
- c. Reinforce the remaining surface after the ceiling is removed. Add further reinforcements to the pedestal on two ends of the ceiling.
- d. Once the main unit has been lifted and mounted, carry out the piping and wiring tasks within the ceiling. Determine the outlet direction of the piping after the installation site has been finalized.

For sites where the ceiling is already available, first connect and put in position the refrigerant piping, water discharge piping, and connecting wires of the Indoor Unit and wired controller before you hoist and mount the unit.

CAUTION

- High-quality carbon steel bolts (galvanized or with other anti-rust paint applied) or stainless steel bolts are used.
- How the ceiling is treated will differ with the type of building. For specific measures, please consult the building and renovation engineers.
- How the lifting bolt is secured varies according to the specific situation, and it must be secure and reliable.

Refer to the following table on installation using the Suspension Bolts .

Sites with concrete slabs Use embedded bolts and pull bolts.	Sites with steel frame Directly set and use an angle iron for support.
	

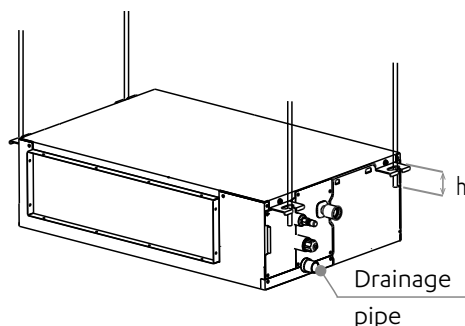
08.02. Indoor Unit Installation

CAUTION

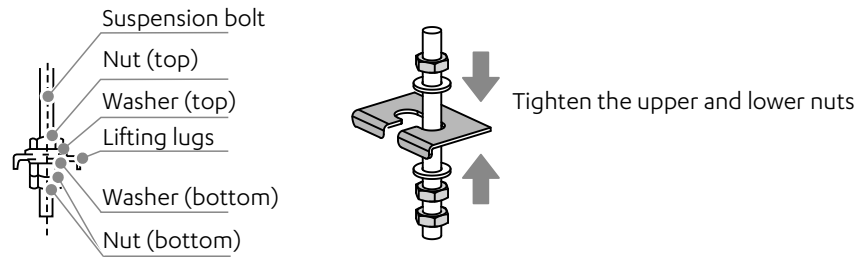
The indoor unit must not be too close to the ceiling. It shall be installed level or at an angle within 1° towards the drainage side. (For units without a drain pump, ensure a slope of 1/100 towards the drainage side. Do not tilt towards the non-drainage side.) Otherwise, water cannot drain smoothly and leaks can easily occur.

Keep the indoor unit free from dust or foreign particles. Use the plastic bags provided with the product to cover the unit

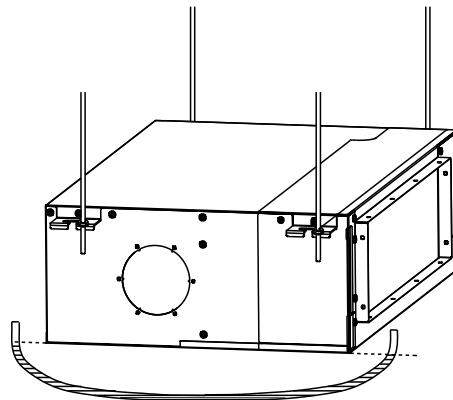
1. Adjust the positions of the nuts. The size of the gap between the washer (bottom) and the ceiling should be based on the actual environment where the unit is being installed. The distance *h* between the lifting lug and the lifting bolt shall be kept within the range of 40mm-80mm, so as to facilitate the pipe connection and assembly and disassembly of the electrical appliance cover.



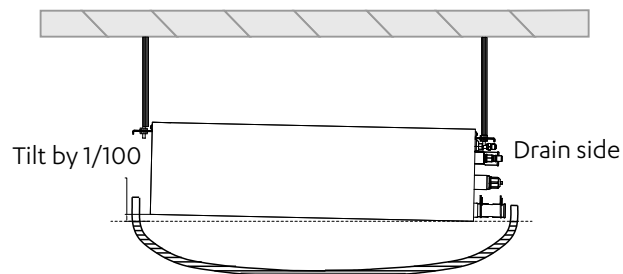
- Slot the Suspension Bolts in the oblong holes of the lifting lugs. Secure the top and bottom of lugs with washers and nuts.



- Use a transparent hose or a level to observe the water level (principle of communicating vessels) and verify the levelness of the unit body in the depth direction. Keep the unit body level.



- Use a transparent hose or a level to observe water level (principle of communicating vessels) and verify the tilt angle of the unit body in the length direction, ensuring a downward slope of 1/100 towards the drainage side. Do not tilt it towards the non-drainage side.

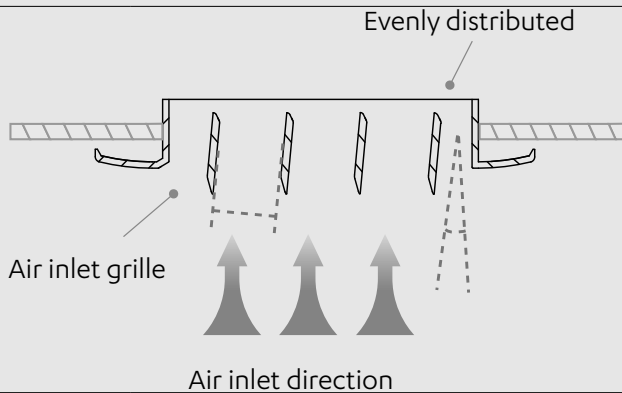


08.03. Air Inlet Panel for Air Return Plenum

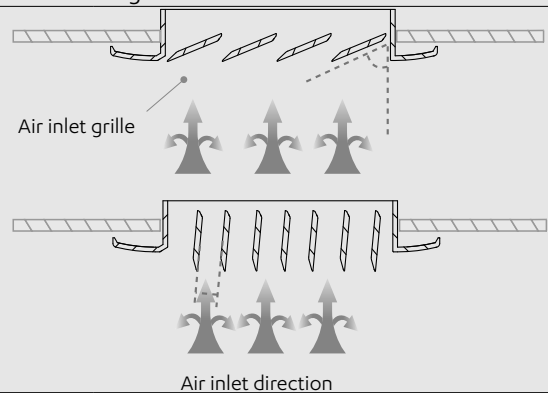
CAUTION



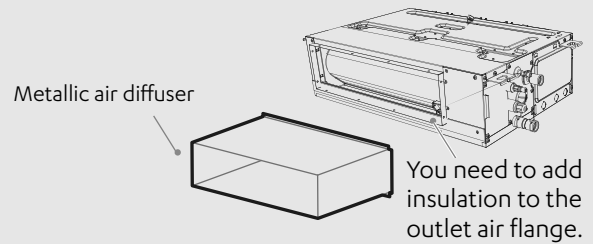
When designing the air inlet panel of the air return plenum, pay attention to the spacing between the air inlet grilles and try to keep the air inlet grilles in parallel with the air inlet direction.



The spacing between return air grilles should be neither too large nor too small, and the angle between the air grilles and the direction of the air inlet should not be too large.



If the air outlet panel is far away from the unit body and needs to be connected to the outlet air flange through a metal air duct, make sure to attach a insulation to the metal to the contact surface.



09. Refrigerant Connecting Piping Installation

09.01. Length and Level Difference Requirements

Length and Level Difference Requirements for the Pipe Connections of Indoor Unit and Outdoor Unit

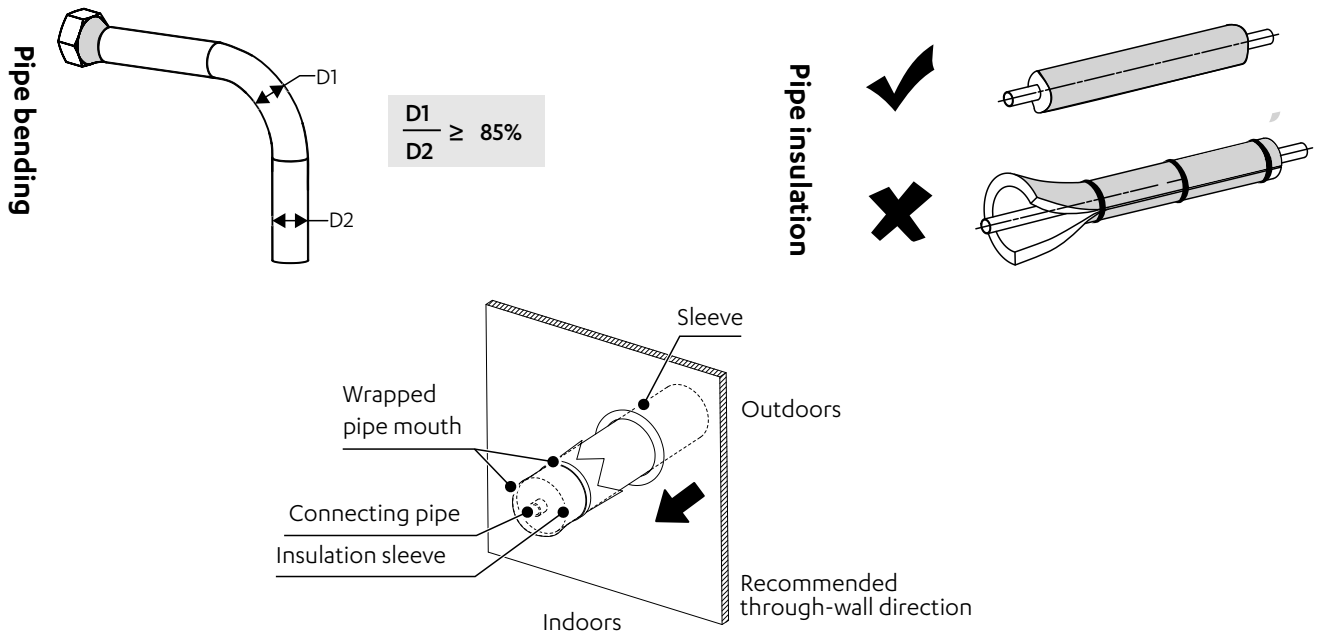
Different Outdoor Units have different requirements for length and level differences for the piping. Refer to the Installation & Owner's Manual attached with the Outdoor Unit.

WARNING

- The installation of pipe-work shall be kept to a minimum.
- During the installation of the connecting pipes, do not allow air, dust, and other debris to penetrate the piping system, and make sure the interior of the pipes is dry.
- Install the connecting pipes only when the indoor units and outdoor units are mounted.
- When installing the connecting pipes, record the actual installation length of the liquid pipe so that additional refrigerant can be added.
- The connecting pipes must be wrapped with thermal insulation materials when they are installed.
- In the event of refrigerant gas leakage during operation, please ventilate immediately.

09.02. Pipe Layout

1. The deformed pipe area must not exceed 15% .
2. A protective sleeve should be installed at the wall or floor hole.
3. The weld joint must not be inside the insulation.
4. The drill hole on the external wall must be sealed.



09.03. Pipe Connection Steps

	<p>Bend and arrange pipes carefully without damaging the pipes and their insulating layers.</p>		<p>Do not let the interface of the Indoor Unit bear the weight of the connecting pipe; otherwise, the connecting pipe may be crushed and deformed, which will affect the unit's cooling (heating) abilities, or the thermal insulation materials may become compressed, resulting in air leakage and condensation.</p>
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The connecting pipes to the outdoor units. Please refer the Installation and Operation Manual of the outdoor units.

09.04. Pipe Connection

Processing method

Mechanical bending processing: Wider application (Ø6.35mm–Ø28mm), using spring pipe bender, manual pipe bender or electric pipe bender.

CAUTION

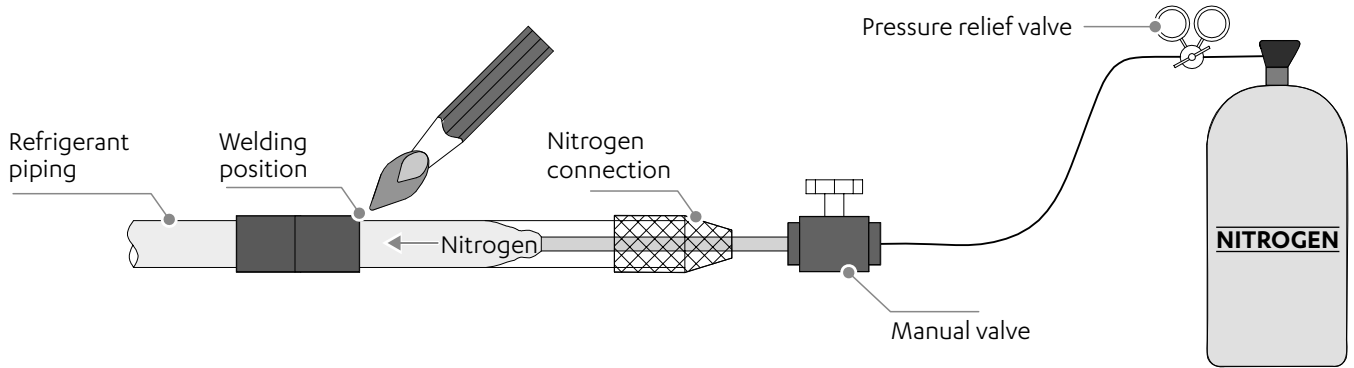
- The bending angle should not exceed 90°; otherwise, wrinkles will be formed in the pipe, which can easily break.
- The bending radius should not be smaller than 3.5D (pipe diameter) and should be as large as possible to prevent the pipe from becoming flattened or crushed.
- When mechanically bending the pipe, the pipe bender inserted into the copper pipe must be cleaned.

09.04.01. Brazing pipes

When brazing pipes, fill the pipes with nitrogen. First evenly heat the inner pipes, then the outer pipes, and fill the joints with welding material.

⚠ WARNING

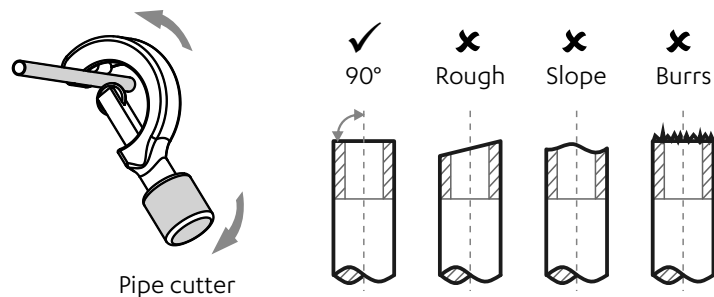
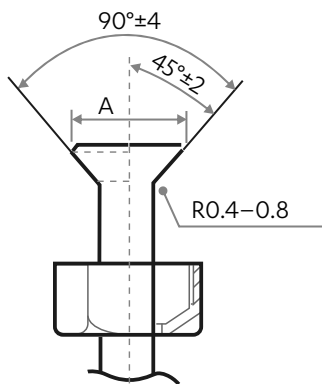
- When it is necessary to fill the piping with nitrogen during welding, the pressure must be kept at 0.02MPa using a pressure relief valve.
- Do not use flux when soldering the refrigerant connection piping. Use a phosphor copper solder that does not require flux.
- Do not use any antioxidants when soldering the piping. The piping may become clogged with residual antioxidants, which may block components such as electronic expansion valves during operation.



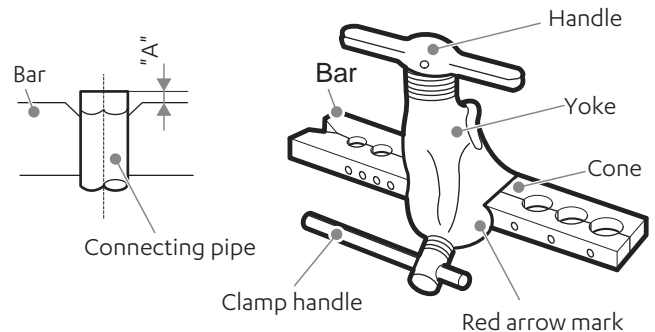
09.04.02. Flaring

To cut the piping with a pipe cutter, rotate the pipe cutter repeatedly.

Put the pipe into the connecting nut flaring, and both the gas pipe and liquid pipe of the Indoor Unit are connected by flaring.

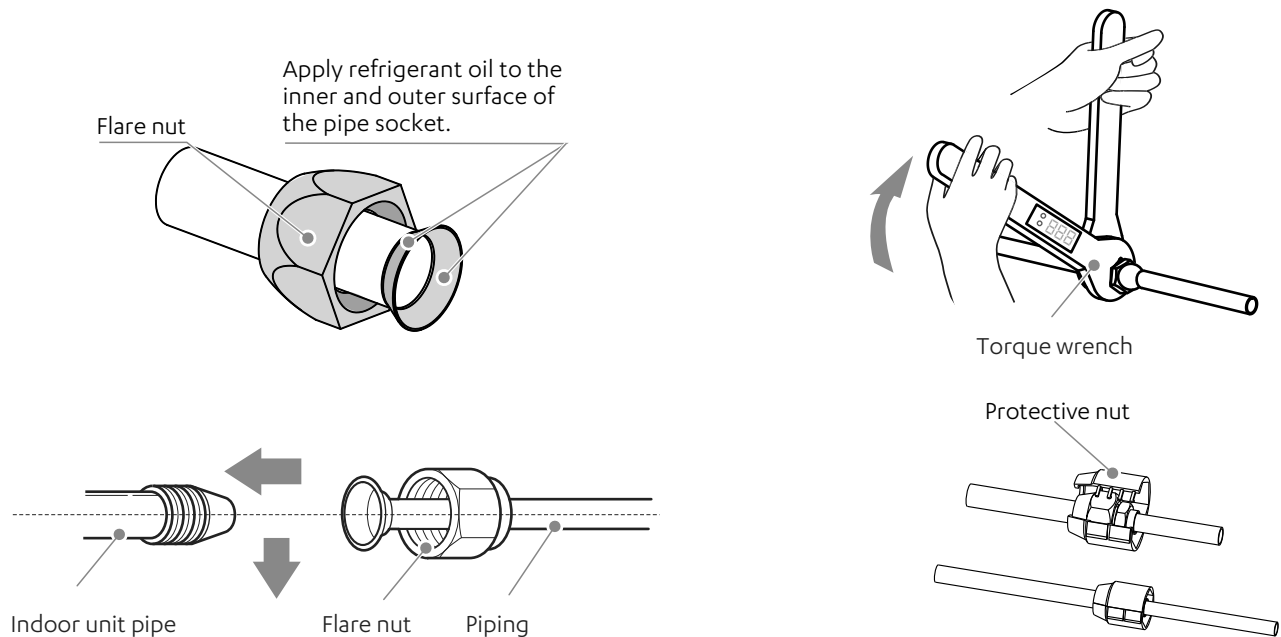


Outer diameter (mm)	A (mm)	
	Max.	Min.
Ø6.35	8.7	8.3
Ø9.52	12.4	12.0
Ø12.7	15.8	15.4
Ø15.9	19.1	18.6
Ø19.1	23.3	22.9



09.04.03. Nut fastening

1. Connect the indoor unit first, then connect the outdoor unit. Before tightening the flare nut, apply refrigeration oil on the inner and outer surface of the pipe flare (must use refrigeration oil compatible with the refrigerant for this model), and turn it 3 or 4 turns by hand to tighten it. When connecting or removing a pipe, use two wrenches at the same time.
2. Align the connecting piping, firstly tighten most of the thread of the connecting nut by hand, and then use a wrench to tighten the last 1-2 turns of the thread as shown in the figure.
3. The welding is done on site, and the bell mouth cannot be used indoors. (For IEC/EN 60335-2-40 except IEC 60335-2-40: 2018)
4. The protective nut is a one-time part, it can not be reused. In case it is removed, it should be replaced with a new one. (For IEC 60335-2-40: 2018 only)



⚠ CAUTION

When flared joints are reused indoors, the flare part should be re-fabricated.

Pipe size (mm)	Tightening torque [N.m (kgf.cm)]
Ø6.35	14.2–17.2 (144–176)
Ø9.52	32.7–39.9 (333–407)
Ø12.7	49.5–60.3 (504–616)
Ø15.9	61.8–75.4 (630–770)
Ø19.1	97.2–118.6 (990–1210)

⚠ CAUTION

Excessive torque will damage the flared mouth and nut, and too small torque cannot tighten the nut, which will cause refrigerant leakage. Please refer to the above table to determine the appropriate tightening torque.

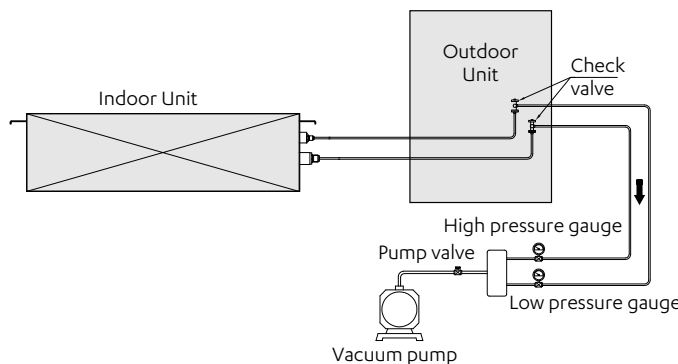
09.05. Refrigerant Piping Fixing

Angle iron brackets or round steel hangers should be used for fixing. When the liquid pipe and gas pipe are suspended together, the size of the liquid pipe shall prevail.

Pipe outer diameter (mm)	≤20	20~40	≥40
Horizontal pipe distance (m)	1.0	1.5	2.0
Stand pipe distance (m)	1.5	2.0	2.5

09.06. Vacuum Pumping

Connect the vacuuming unit through a manifold to the service port of all stop valves.



Do not purge the air with refrigerant of outdoor unit, it will cause fire or system malfunction.

09.06.01. Leak Detection

The leak test must satisfy local ANZ Standards

1. To check for leaks: Vacuum leak test

- Evacuate the system from the liquid and gas piping to -100.7 kPa (-1.007 bar) (5 Torr absolute) for more than 2 hours.
- Once reached, turn off the vacuum pump and check that the pressure does not rise for at least 1 minute.
- Should the pressure rise, the system may either contain moisture (see vacuum drying below) or have leaks.

2. To check for leaks: Pressure leak test

- Test for leaks by applying a bubble test solution to all piping connections.
- Discharge all nitrogen gas.
- Break the vacuum by pressurising with nitrogen gas to a minimum gauge pressure of 0.2 MPa (2 bar). Never set the gauge pressure higher than the maximum operation pressure of the unit, i.e. 4.0 MPa (40 bar).

CAUTION

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

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.

NOTE

ALWAYS use a recommended bubble test solution from your wholesaler.

NEVER use soap water:

Soap water may cause cracking of components, such as flare nuts or stop valve caps.

Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.

Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

09.06.02. Refrigerant Charge

The refrigerant is pre-charged in the outdoor unit at the factory, but additional refrigerant may be necessary depending on the field piping.

⚠ WARNING

Compliance with national gas regulations shall be observed.

Keep ventilation openings clear of obstruction.

Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.

Label the system when charging is complete (if not already).

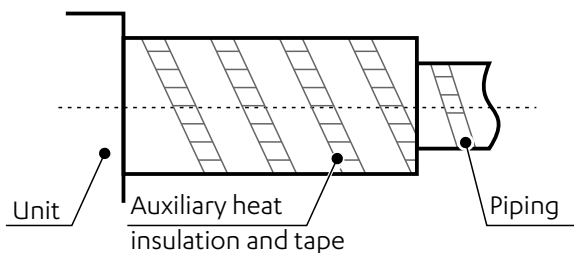
Extreme care shall be taken not to overfill the refrigeration system.

⚠ CAUTION

Cylinders shall be kept upright if a siphon tube is present.

09.06.03. Insulation Treatment

Pipes on the liquid and air sides have a low temperature during cooling. Take sufficient insulation measures to prevent condensation.

**NOTE**

- Be sure to use a thermal insulation material with a heat resistance of 120°C or higher for the gas pipe.
- The attached insulation material for the part of the Indoor Unit where the pipe connects must undergo heat insulation treatment that leaves no gaps.
- For outdoor pipelines, additional protective treatments should be performed, such as adding metal duct boxes or wrapping the pipes with aluminum foil materials. Thermal insulation materials directly exposed to the open air will degrade and lose their insulating properties

10. Drainage Pipe Installation

⚠ CAUTION

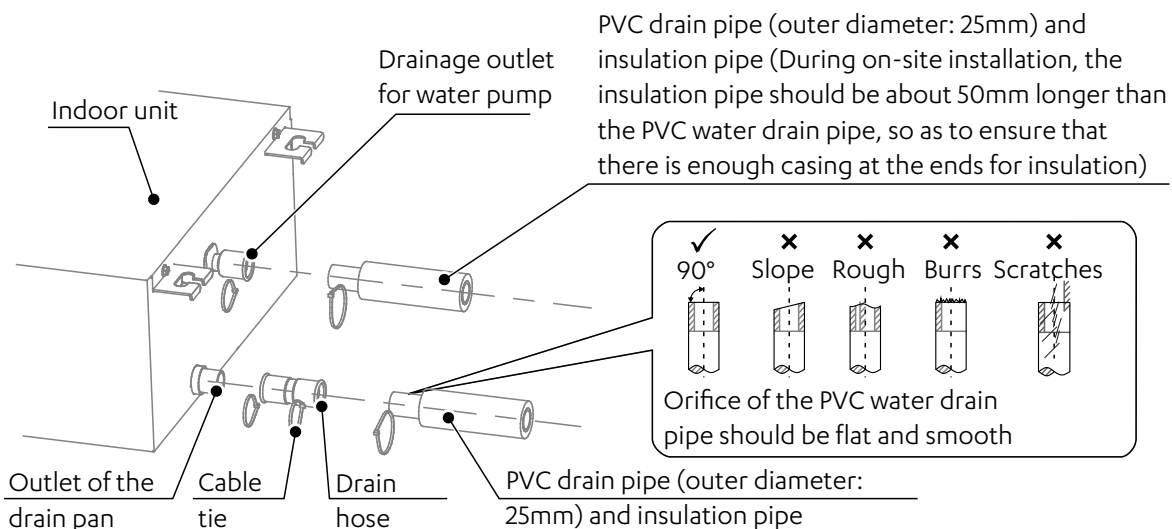
- Before installation of the drain pipe, determine its direction and elevation to avoid intersection with other pipelines to ensure that the slope is straight.
- The highest point of the drain pipe should be equipped with a vent port to ensure the smooth drainage of condensate water, and the vent port must face downwards to prevent dirt from entering the pipe.
- Do not connect the drain pipe to the wastewater pipe, sewage pipe, or other pipes that produce corrosive gases or odors. Otherwise, the indoor unit (especially the heat exchanger) may be corroded and odor may enter the room, negatively impacting the heat exchange effects and user experience. The user will assume responsibility for any consequences resulting from failure to abide by instructions.
- After the pipeline connection is completed, a water test and a full water test should be done to check whether the drainage is smooth and whether the pipeline system leaks.
- The air conditioner drain pipe must be installed separately from other sewage pipes, rainwater pipes and drain pipes in the building.
- Adverse slope, convex and concave pipes are prohibited, as improper airflow will cause poor drainage.
- Drain pipes need to be evenly wrapped with thermal insulation pipes to prevent condensation.
- All joints of the drainage system must be sealed to prevent water leakage.
- Please connect the drain pipes in the following ways. Improper installation of the pipes may result in water leakage and damage to furniture and property.

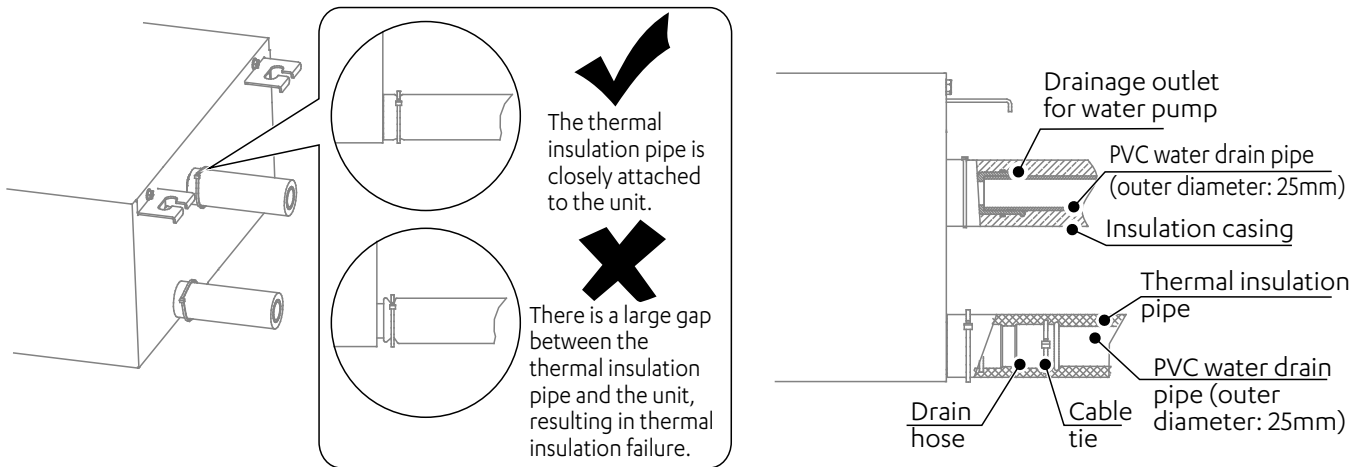
10.01. Installation of Water Discharge Pipe for the Indoor Unit

1. **Units without pumps:** Use the attached drainage hose to connect to the drain pan outlet and PVC pipe, and fasten the two ends of the drainage hose with a cable tie. Then push the thermal insulation pipe to be closely attached to the main body, and finally fasten the end with a cable tie.

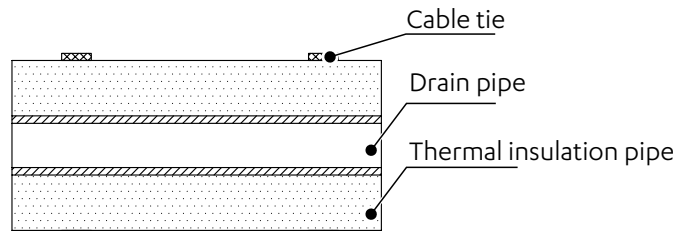
Units with pumps: Connect a PVC pipe to the water pump outlet, and fasten it with a cable tie. Then push the thermal insulation pipe until it is closely attached to the main body, and finally fasten the end with a cable tie.

The connection between the two ends of the drainage pipes and the connection of the water pump outlet need to be fastened with a cable tie, in combination with PVC/rubber adhesives. Pay attention to the instructions for the use of the adhesives to prevent corrosion to the EPDM rubber. Use hard PVC adhesives for connecting to other water piping. Check that the connections are tight with no leakage.

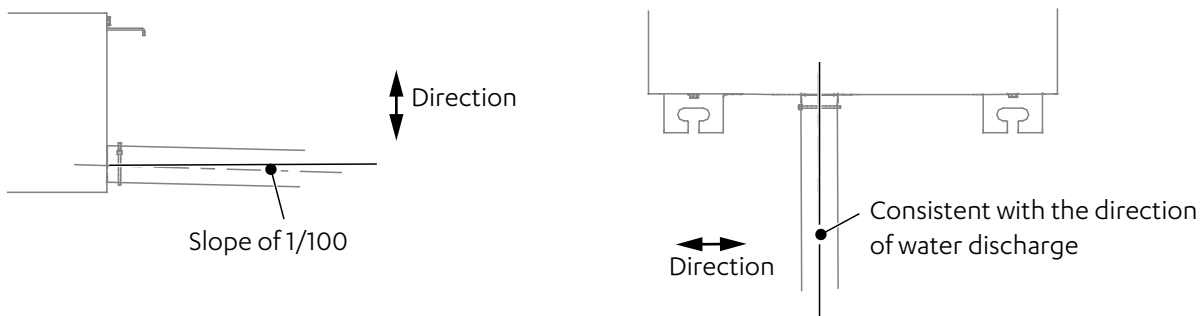




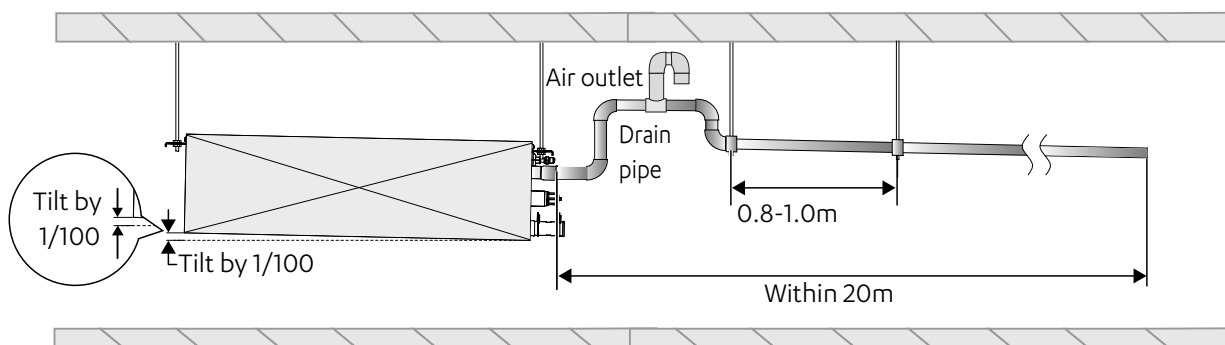
- The water pump connecting pipe and drainage pipe (in the indoor part) must be wrapped with heat insulation pipe evenly and bound with cable ties to prevent air from entering and producing condensate.



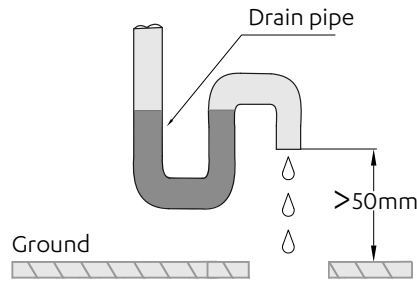
- To prevent water from flowing back into the air conditioner when it stops running, the drainage pipe should be inclined downward to the outdoor side (drainage side), with a downward slope of 1/100 or above. The drainage pipe should be positioned in the same direction as the drainage outlet of the unit body in the left and right direction, so that the drainage pipe does not expand and collect water; otherwise, it may cause abnormal noise.



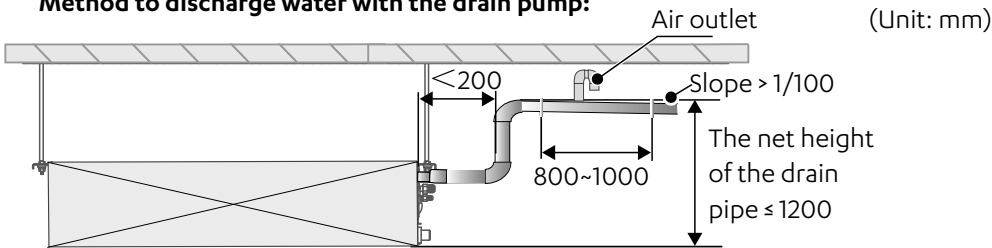
- When connecting the drainage pipe, do not pull the drainage pipe forcefully, or it may become loose. The lateral length of the drainage pipe should be within 20m, and a support point should be set every 0.8–1.0m to avoid air resistance caused by the deformation of the drainage pipe. The drainage pipe shall be equipped with a support point every 1.5-2.0m.



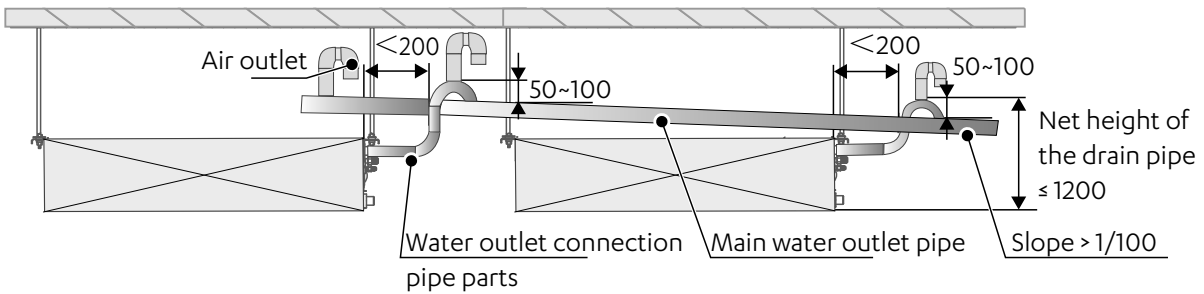
- The end of the drainage pipe must be more than 50mm above the ground or from the base of the water discharge slot. In addition, do not submerge it in water. To discharge the condensed water directly into a ditch, the water discharge pipe must bend upwards to form a U-shaped water plug to stop odors from entering the room via the water discharge pipe.



Method to discharge water with the drain pump:

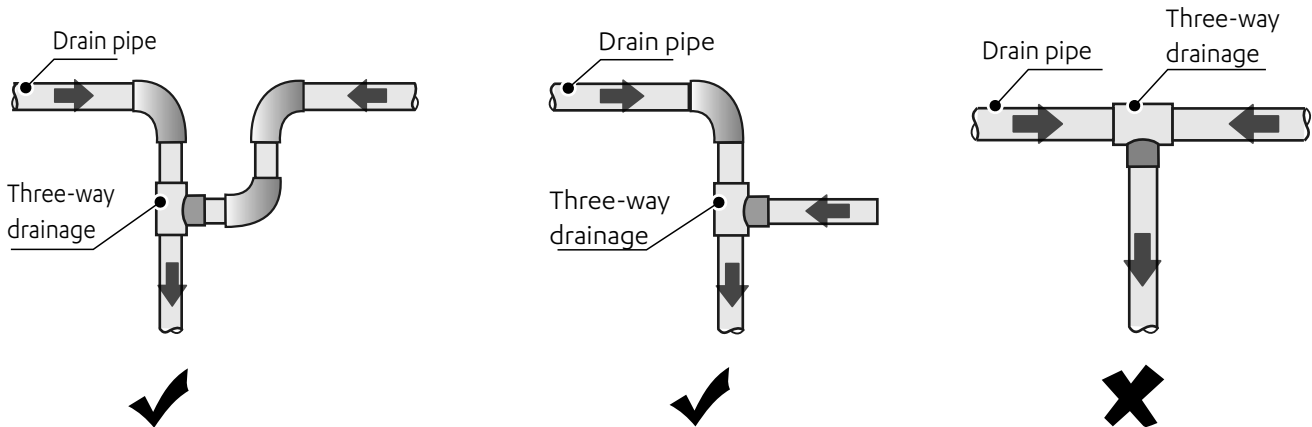


How to connect the drain pipe for the drain pump of a single unit

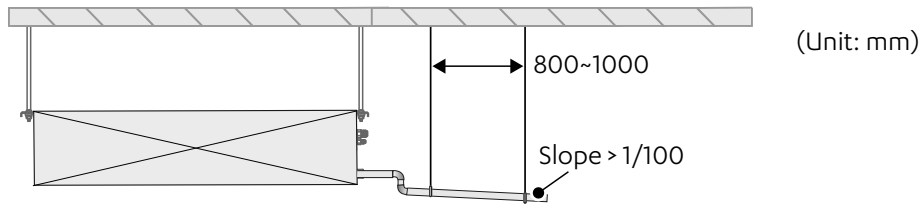


Drainage pipes from drain pumps of multiple units are connected to the main drainage pipe to be discharged through the sewage pipe.

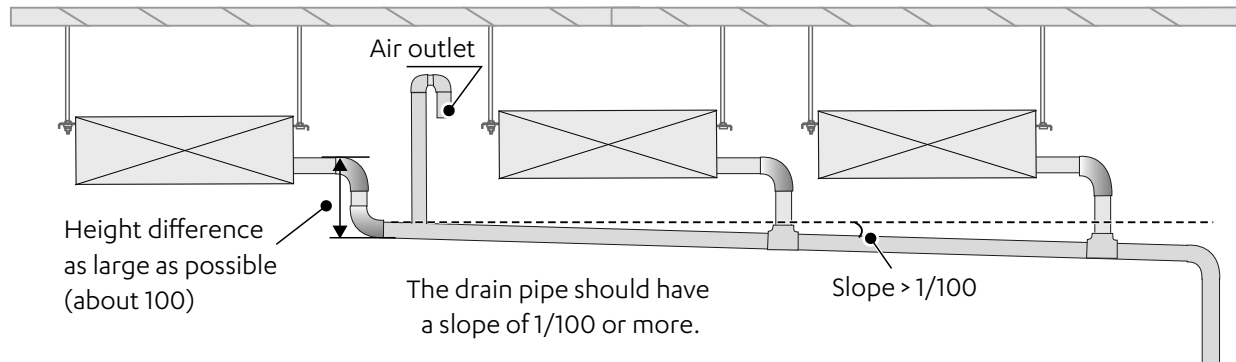
Inconsistent drainage directions must be prevented for horizontal drain pipes to avoid adverse slopes and poor drainage.



How to discharge water without the drain pump:



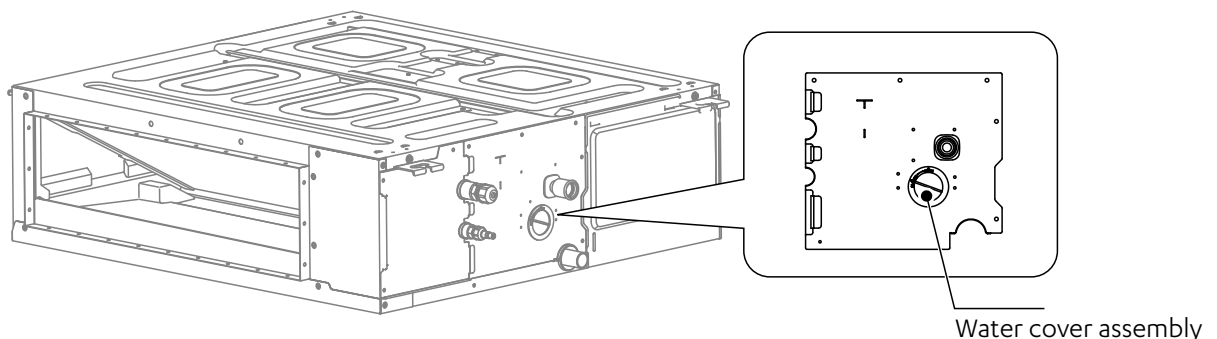
Method to connect the drain pipe for a single unit

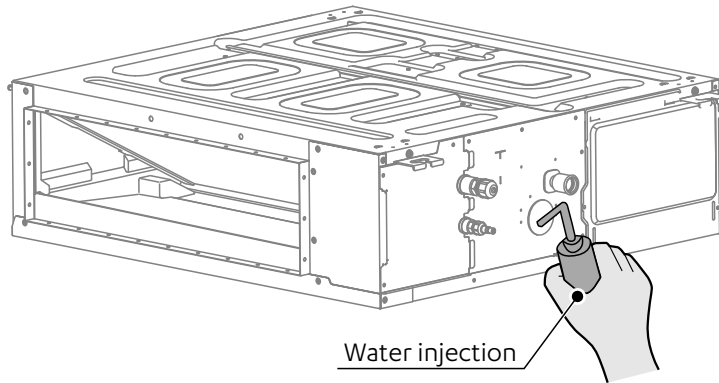


Drain pipes from multiple units are connected to the main drain pipe to be drained through the sewage pipe.

10.02. Water Discharge Test

1. Before the test, make sure that the water discharge pipeline is smooth, and check that each connection is properly sealed.
2. Conduct the water discharge test in a new room before the ceiling is plastered.
 - Inject water into the drain pan with the water injection pipe. The amount of water injected is shown in the table below.
 - Connect the power supply, and set the air conditioner to operate in cooling mode. Check whether drainage outlets normally discharge water (based on drainage pipe length, water will be drained 1 minute later), and check connectors for leakage.
 - If water is discharged through the Indoor Unit drain pump, loosen the water cover (black round plastic piece) on the unit during the drainage test and check whether the drain pump is operating. If the drain pump has not been started, check whether the drain pump has malfunctioned. Note: The drain pump only starts in cooling mode. While in heating mode, the drain pump remains turned off. After the water discharge test is completed, install the water cover assembly in position. For details on the water cover assembly and the water injection pipe, see figure below.



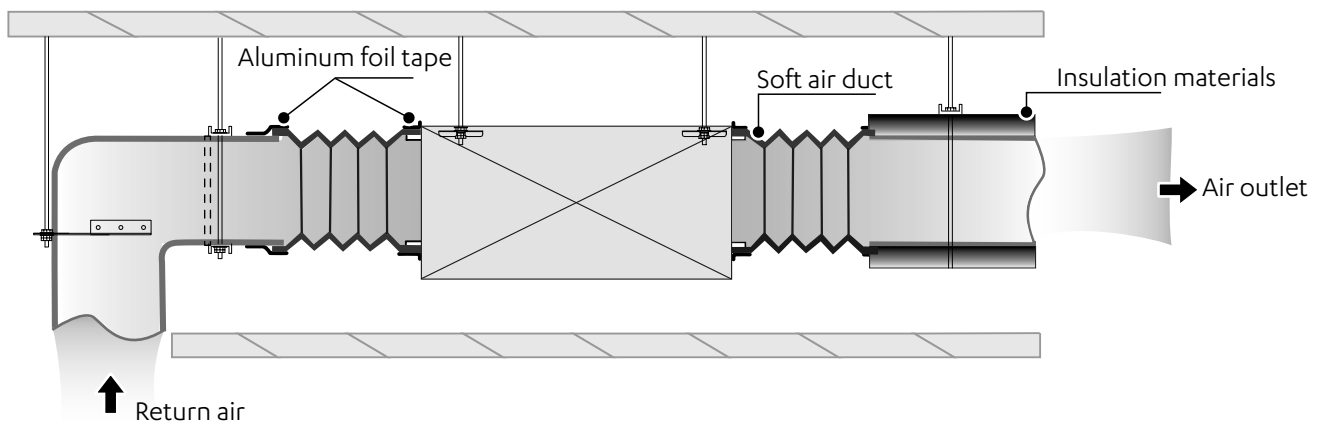


Water injection amount:

Indoor Unit capacity (kW)	Water injection amount (Unit: ml)
kW≤9.0	2200
9.0<kW≤16.0	3000

11. Air Duct Installation

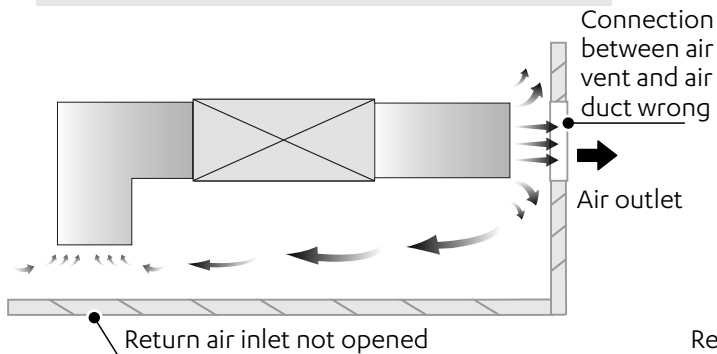
1. Please use locally purchased air ducts and soft air ducts (Use environmentally friendly, odorless materials, otherwise the air conditioner may generate odor when it runs).
2. Install the flange at the air return side, and use aluminum foil tape to seal the connection part between the flange and the air duct to avoid air leakage.
3. Use aluminum foil tape to seal the connection part between the flange at the air supply side and the air duct to avoid air leakage.
4. The air ducts on the air supply side shall be insulated to prevent condensation.
5. When installing the air duct and its components, you need to fix and adjust the supports and suspension brackets to ensure they are in the right position and subject to uniform force.
6. Make sure that the air duct and its components are clean before installation.
7. After installation, carry out the air tightness test on the air duct to ensure its air leakage complies with the relevant council, state/federal codes, regulations and building code standards.



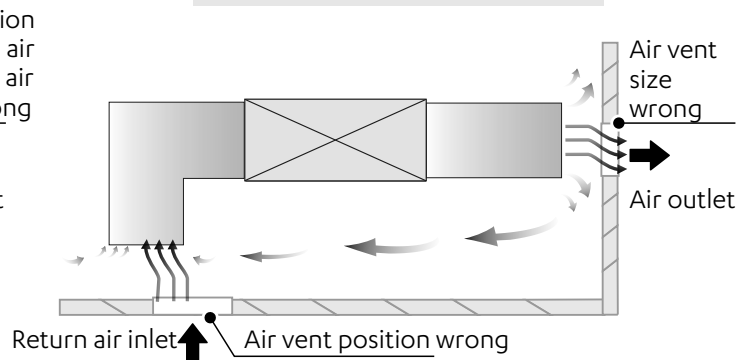
⚠ CAUTION

- Connect the air outlet and return air inlet to the ceiling opening properly to avoid short circuit caused by return air. (See the figure below)
- Use canvas or soft air duct to connect the Indoor Unit and air duct at a distance (width) of 150-300mm.
- Do not lay wires, cables or other pipes containing toxic, flammable, and explosive gases or liquids inside the air ducts.
- The air duct regulating device shall be installed in a position that is easily accessible, flexible, and reliable. The air duct should be securely connected to the vent.
- The frame shall fit snugly into the building decoration, and should appear neat and flexible. It shall not be twisted or warped.
- If the air vent is installed horizontally, its deviation shall not exceed 3/1000; if installed vertically, its deviation shall not exceed 2/1000.
- All the air vents in one room shall be neatly installed at the same height.
- All metal accessories (including supports, suspension brackets, and brackets) for the piping system shall undergo anti-corrosion treatment.

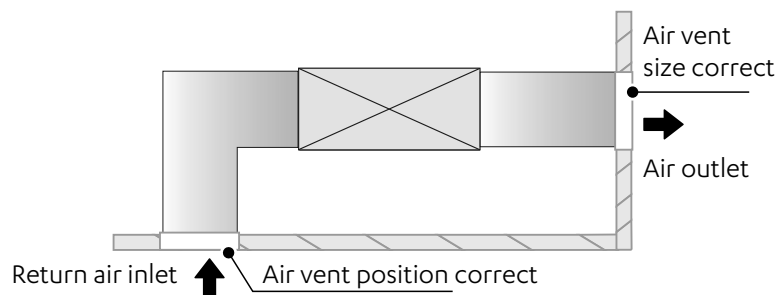
Connection between air vent and air duct wrong



Air vent size and position wrong



Air vent size and position correct



12. Electrical Connection

DANGER

- The power supply must be cut off before any electrical work is carried out. Do not conduct electrical work when the power is on; otherwise, it may cause serious personal injury.
- The air conditioning unit must be grounded reliably and must meet the requirements of the local country/region. If the grounding is not reliable, serious personal injury due to electric leakage may occur.

WARNING

- Installation, inspection or maintenance operations must be completed by professional technicians. All parts and materials must comply with the relevant regulations of the local country/region.
- The air conditioning unit must be equipped with a special power supply, and the power supply voltage should conform to the nominal working voltage range of the air conditioning unit.
- The power supply of the air conditioning unit must be equipped with a power disconnect device that conforms to the requirements of relevant local technical standards for electrical equipment. The power disconnecting device must be equipped with short circuit protection, overload protection and electric leakage protection. The clearance between open contacts of the power disconnecting device shall be at least 3mm.
- Cable selection can be determined from AS/NZS 3000 Electrical Installations (known as the Australian/New Zealand Wiring Rules) or AS/NZS 3008 Electrical installations - Selection of Cables.
- The power cable and the ground wire should be secured reliably to avoid stress on the terminals. Do not pull the power cable forcibly; otherwise, the wiring may become loosened or the terminal blocks may be damaged.

CAUTION

- Bonding and connecting the communication line should be avoided, but if it is used, at the very least, ensure a reliable connection by crimping or soldering and make sure the copper wire at the connection is not exposed; otherwise, communication failure may occur.
- The power cable and communication line must be routed separately, with a distance of over 5 cm. Otherwise, communication failure may occur.
- Do not connect the ground wire to the gas pipe, water pipe, lightning rod ground wire or telephone ground wire. Gas pipe: Risk of explosion and fire when gas leaks.
- Water pipe: If rigid plastic pipes are used, there will be no grounding effect.
- Lightning rod ground wire or telephone ground wire: In the event of lightning strikes, abnormal ground potential may rise.
- After all wiring is completed, check carefully before turning on the power supply.

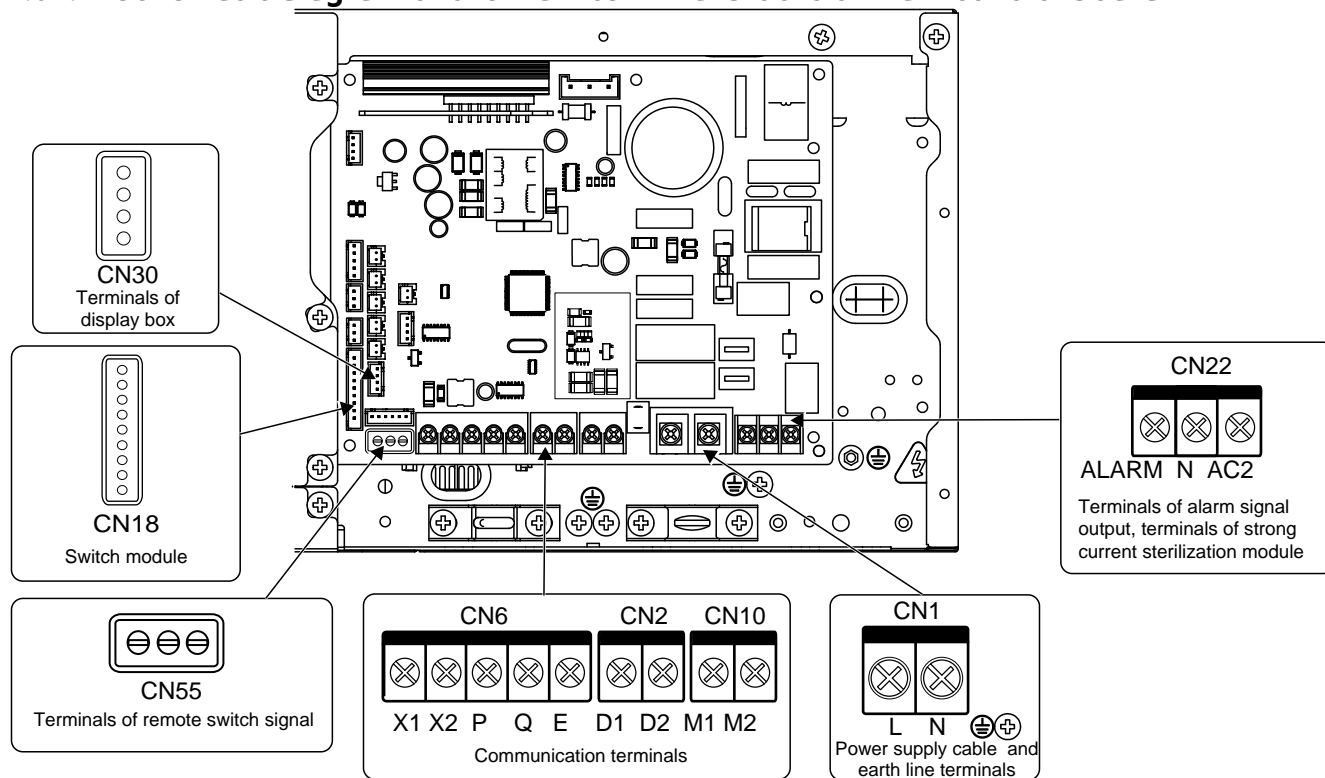
12.01. Electrical Characteristics

Capacity (kW)	Electric specifications of the Indoor Unit				Indoor Fan Motor	
	Frequency (Hz)	Voltage (V)	MCA (A)	MFA (A)	Rated Motor Output (W)	FLA (A)
5.6	50/60	243.8 - 216.2	2.33	15	240	1.86
7.1			2.33		240	1.86
8.0			2.33		240	1.86
9.0			2.46		240	1.97
11.2			3.34		560	2.67
12.5			3.38		560	2.70
14.0			3.75		560	3.00
16.0			4.13		560	3.30

NOTES

- MCA: Min. Circuit Amps. (A), which is used to select the minimum circuit size to ensure safe operation over a long period of time.
- MFA: Max. Fuse Amps. (A), which is used to select the circuit breaker.
- FLA: Full Load Amps. (A), which is the full load current of the indoor fan motor (reliable operation at the fastest speed setting).

12.02. Schematic diagram of the main terminal blocks of main control board



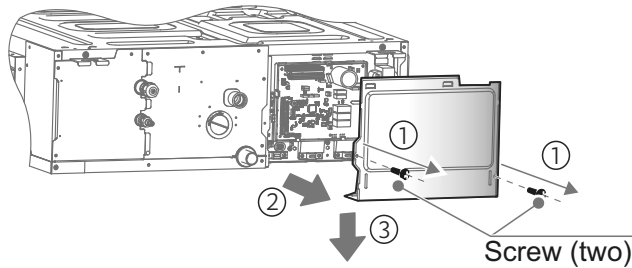
CAUTION



All weak point connection points meet SELV, such as X1, X2, P, Q, E, M1, M2, CN18, CN55 etc

12.03. Wiring

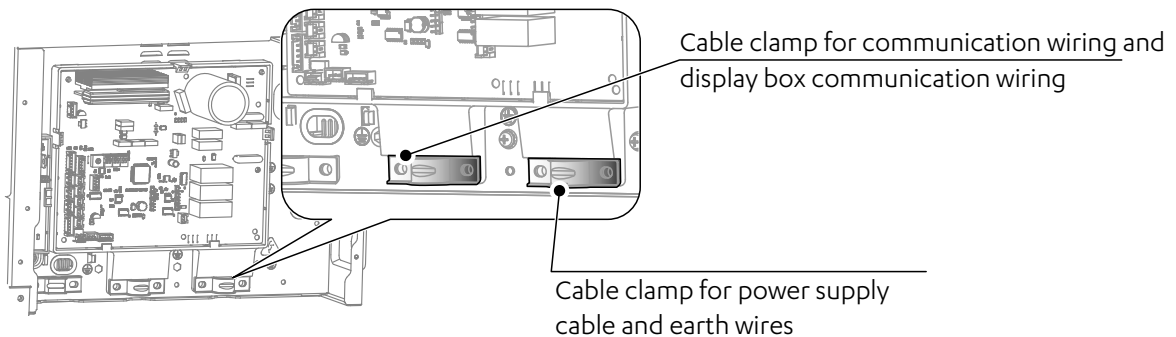
12.03.01. Open the Indoor Unit's electric control box cover



1. Remove the two screws at the positions shown in the figure;
2. Pull the bottom end of the electric control box cover horizontally outward;
3. Remove the electric control box cover by pulling downwards.

12.03.02. Connect weak and strong current wires

Use cable clamps as shown below for the power supply, communication and alarm signal cables for cable entry.



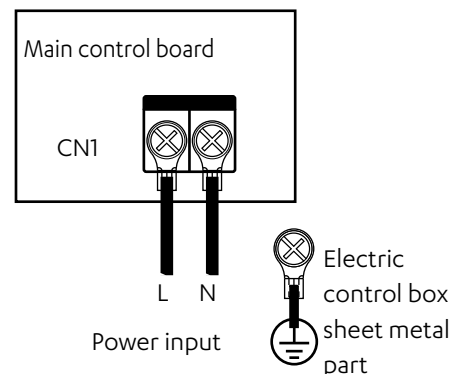
CAUTION

- Power supply cable must be routed separately from the other cable such as communication wiring and display box communication wiring.
- The strong and weak current wires must be separated.
- The strong current sterilization module and expansion board are optional.

12.03.03. Power cable connection

12.03.03.01. Connection between the power cable and power supply terminal

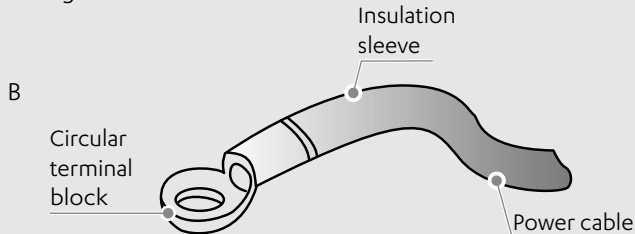
The power supply terminal of the indoor unit is fixed on the main control board, the power supply cable is connected to the power supply terminal labeled "CN1" on the main control board. The live and neutral wires are connected according to the main control board logos "L" and "N", and the earth wires is directly connected to the electric control box sheet metal part.



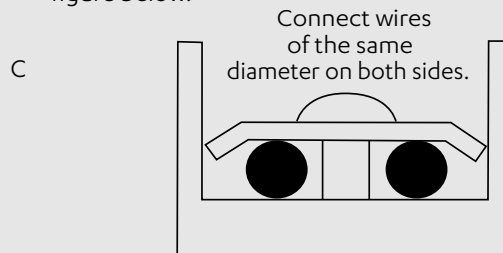
⚠ CAUTION

A Do not bond and connect the power cable. Bonding and connecting the power cable may cause it to heat up, resulting in a fire.

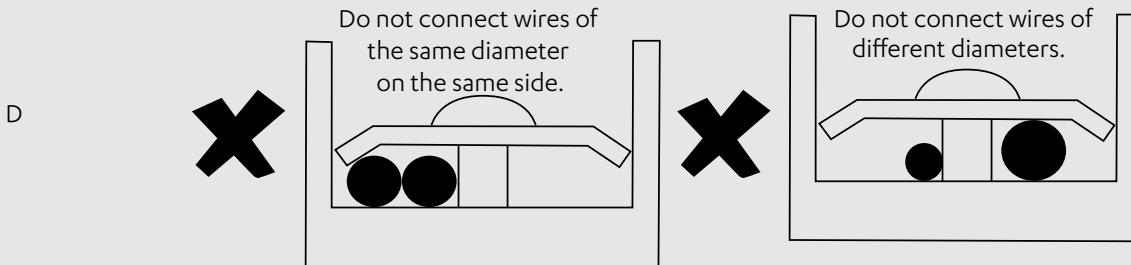
The power cable must be crimped reliably using an insulated ring lug, and then connected to the power supply terminal of the Indoor Unit, as shown in the figure below.



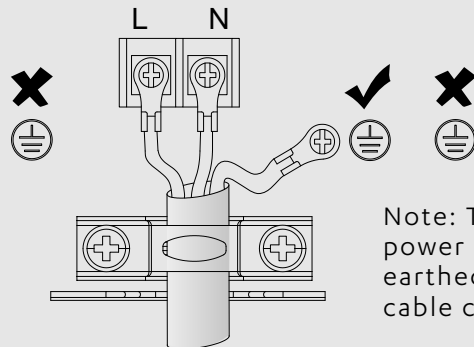
If it fails to crimp the insulated circular terminal block due to on-site limitations, connect the power cables of the same diameter to both sides of the power supply terminal block of the Indoor Unit, as shown in the figure below.



Do not press the power cables of the same wire diameter on the same side of the terminal.



E The connected power cable should be secured with a wire clamp to prevent loosening, as shown in the right figure.



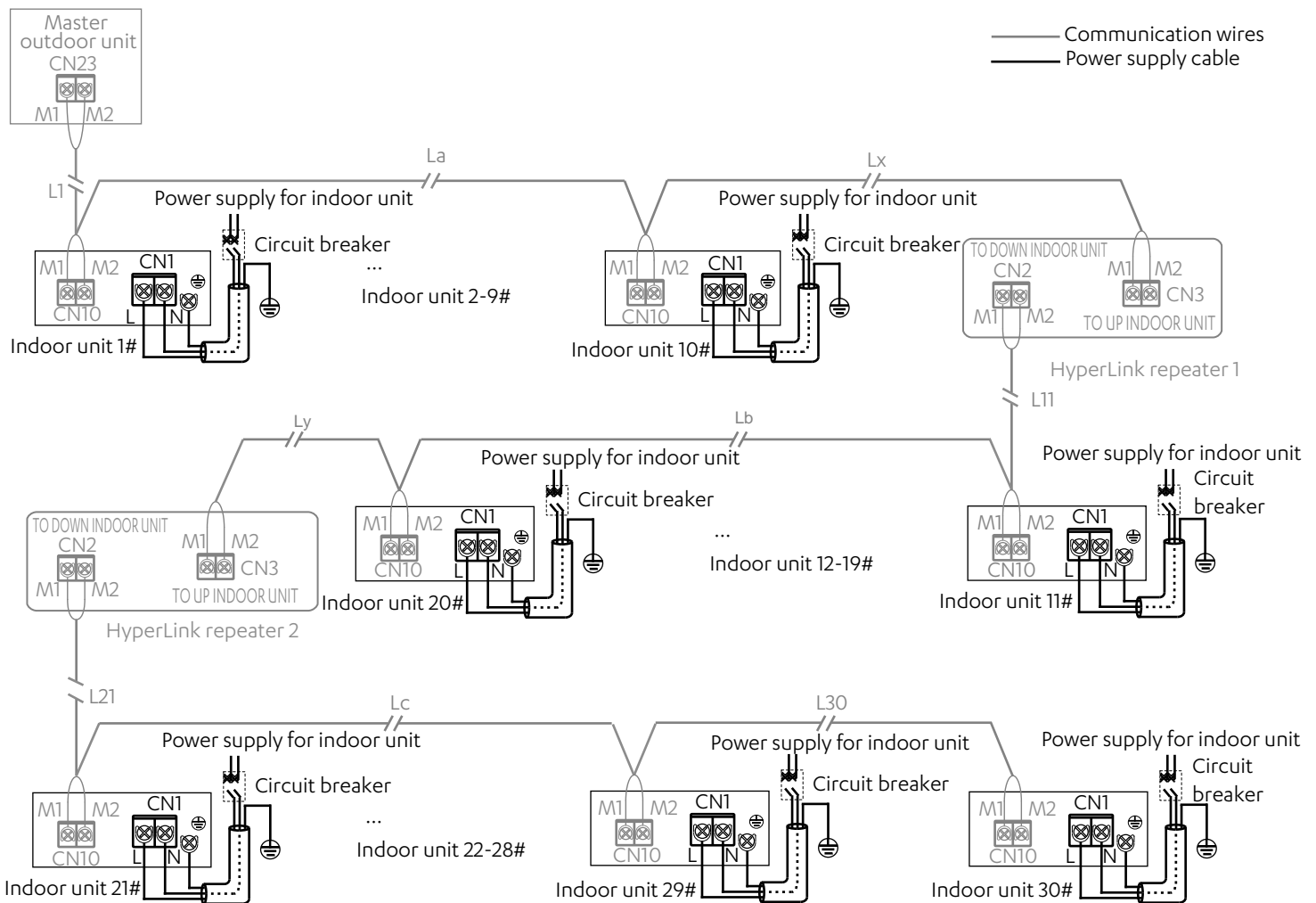
Note: The main power supply is earthed near the cable clamp.

12.03.03.02. Power cable system connection

Power cable system connection depends on the forms of communication between the Indoor Unit and Outdoor Unit. For the HyperLink communication form with an independent power supply, Indoor Units are allowed to have an independent power supply. For other communication forms, Indoor Units should be provided with uniform power supply.

A. Indoor Units are provided with independent power supplies*, which are wired as follows:

For HyperLink communication with an independent power:

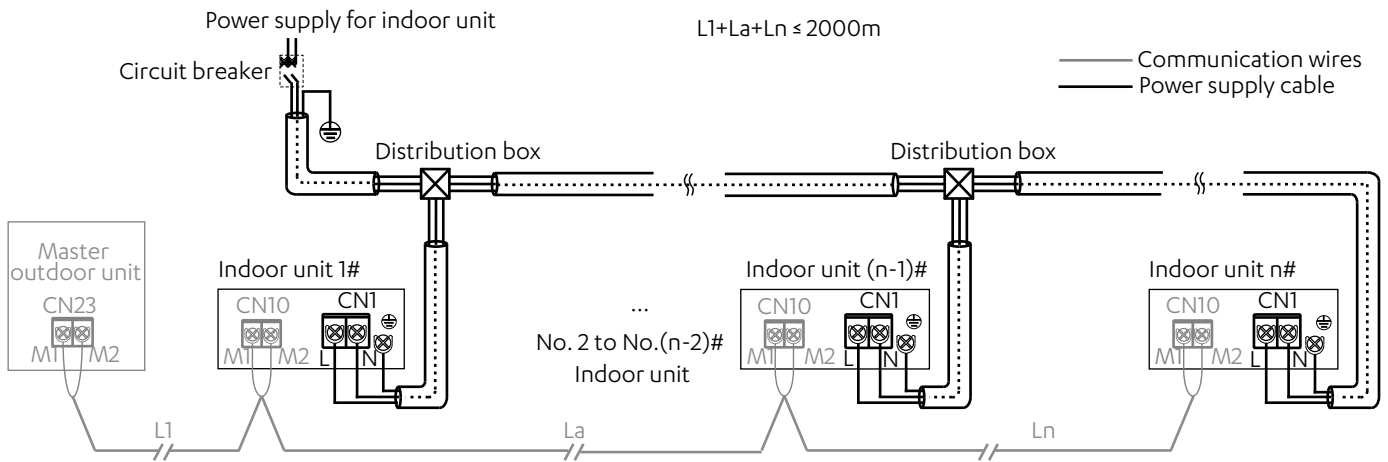


⚠ CAUTION

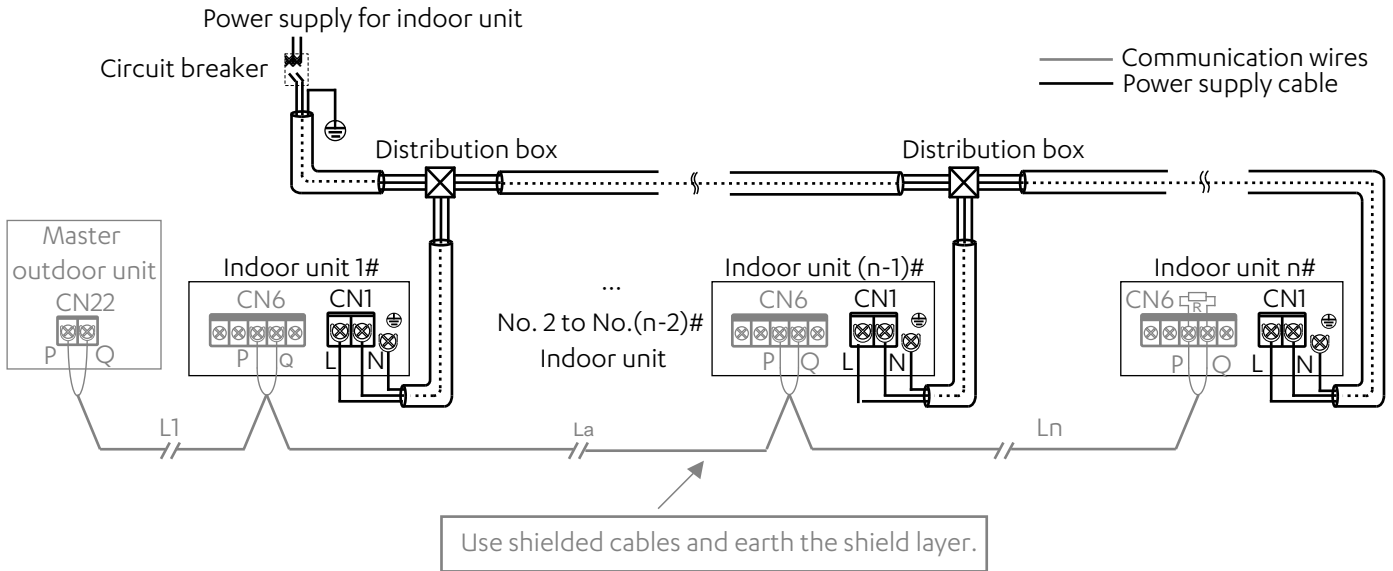
- When the indoor units are provided with independent power supplies, the indoor units in the same refrigerant system should be EcoFlex indoor units*, and the communication between indoor units and outdoor unit adopts a HyperLink (M1M2) with an independent power supply.
- This connection method has the function of an independent power supply, so in the same refrigerant system, the number of indoor units must not exceed 30 sets, and a maximum of only two repeaters may be installed*.
- For each additional 10 indoor units or 200 m of communication wire length, a repeater shall be installed.

B. Indoor Units are provided with uniform power supply*, which are wired as follows:

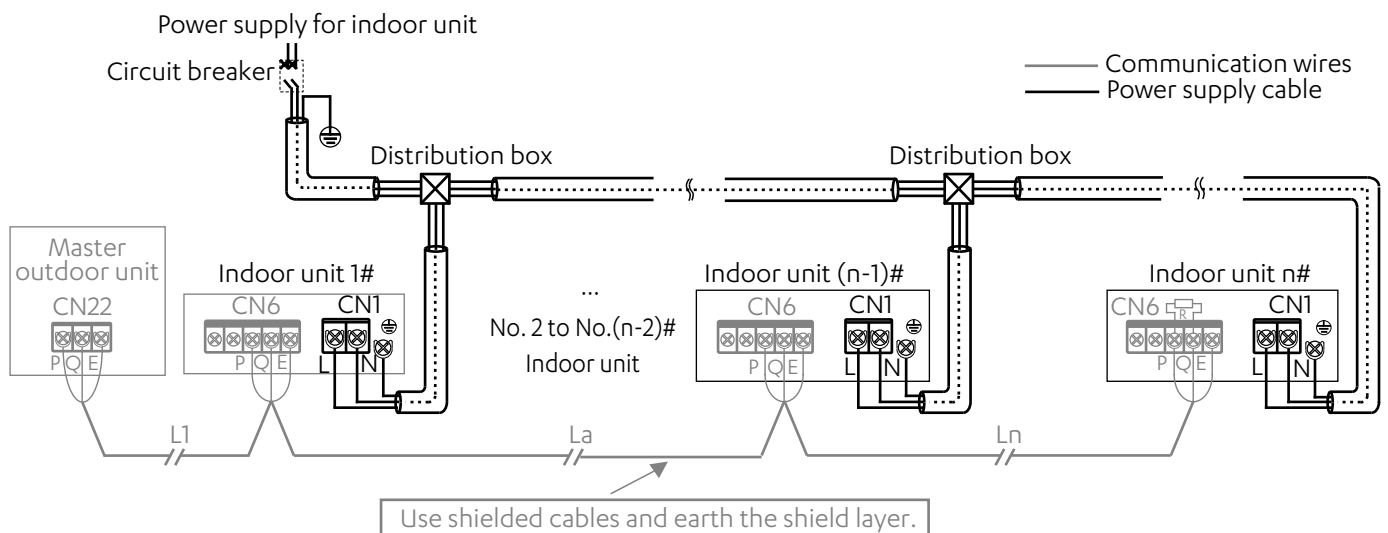
1. HyperLink communication with the uniform power supply:



2. P/Q communication:



3. P/Q/E communication:



⚠ CAUTION

- When the Indoor Units are provided with a uniform power supply, if the Indoor Units in the same refrigerant system are ECOFLEX Indoor Units, then Indoor Units and Outdoor Unit can communicate either via HyperLink with a uniform power supply, or via P/Q communication. If some of the Indoor Units in the same refrigerant system are non-ECOFLEX series, then Indoor Units and Outdoor Unit can only communicate via P/Q or P/Q/E communication.
- Both P/Q communication and HyperLink communication (M1M2) are indoor and outdoor communication, and only one of them can be selected. Do not connect P/Q communication and HyperLink communication at the same time in the same system. Do not connect HyperLink communication to P/Q or D1D2 communication.

NOTE

- ECOFLEX Indoor Units: with ECOFLEX printed on the packaging carton
- Independent power supply: With separate circuit breakers, the power supply for each Indoor Unit can be controlled independently.
- Uniform power supply: All the Indoor Units in the system are controlled by one circuit breaker.
- Repeater: power supply repeater, which is used to compensate for the pressure drop due to excessive length of line or line resistance when the main control board of the Outdoor Unit provides an independent power supply for Indoor Units through the HyperLink communication line. It is only used in refrigerant systems where Indoor Units are provided with an independent power supply.

12.03.04. Communication line connection

12.03.04.01. Selection of communication method for Indoor Units

Equipped with independently developed HyperLink (M1M2) communication, ECOFLEX series Indoor Units also preserve the previous RS-485 (PQE) communication method. They are compatible with non-ECOFLEX Indoor Units. Pay attention to the type of Indoor Unit you have purchased before connecting communication lines. Please refer to the following table to select an appropriate communication method.

Indoor Unit type	Optional communication method between Indoor Units and Outdoor Unit	Remarks
Where all Indoor Units are ECOFLEX series	HyperLink (M1M2) communication	<ol style="list-style-type: none"> 1. Independent power supply for Indoor Units*. 2. Any topology connection of communication lines. 3. Two-core and non-polar communication for M1M2.
	RS-485 (PQ) communication	<ol style="list-style-type: none"> 1. The Indoor Units need to be powered uniformly. 2. The communication cables must be connected in serial. 3. Two-core and non-polar communication for PQ.
Where some Indoor Units are non-ECOFLEX series	RS-485 (PQE) communication	<ol style="list-style-type: none"> 1. The Indoor Units need to be powered uniformly. 2. The communication cables must be connected in serial. 3. PQE cables must be 3-core and PQ non-polar.

12.03.04.02. Table of selection of communication line diameter

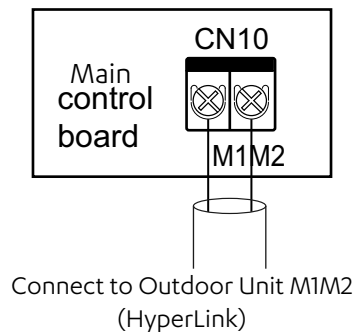
Function	Indoor Unit and Outdoor Unit communication				One controller to one Indoor Unit (Two controllers to one Indoor Unit) Communication	One-to-more (centralized controller) Communication
Item	HyperLink communication (Indoor Units are powered independently)	HyperLink communication (Indoor Units are powered uniformly)	P/Q communication (Indoor Units are powered uniformly)	P/Q/E communication (Indoor Units are powered uniformly)	X1X2 communication	D1D2 communication
Wire diameter	2 × 1.5mm ² Wire resistance ≤ 1.33Ω/100m	2 × 0.75mm ²	2 × 0.75mm ² (shielded cable)	3 × 0.75mm ² (shielded cable)	2 × 0.75mm ² (shielded cable)	2 × 0.75mm ² (shielded cable)
Length	≤ 600m (add two repeaters)	≤ 2000m	≤ 1200m	≤ 1200m	≤ 200m	≤ 1200m

 CAUTION

- Please select the communication line according to the requirements in the above reference table. Use shielded cables for communication when strong magnetism or interference is present.
- On-site wiring must comply with the relevant regulations of the local country/region and must be completed by professionals.
- Do not connect the communication line when the power is on.
- Do not connect the power cable to the communication terminal; otherwise, the main control board may be damaged.
- The standard value of the screw torque of the communication line terminal is 0.5N·m. Insufficient torque may cause poor contact; excessive torque may damage the screws and power supply terminals.
- Both HyperLink communication and PQ communication are internal and external, so only one of the two can be selected. Do not connect both HyperLink communication line and PQ communication line to the same system, otherwise the Indoor Unit and Outdoor Unit cannot communicate normally.
- If some of the Indoor Units in the same refrigerant system are non-ECOFLEX series, only P/Q/E communication can be selected for the Indoor Unit and Outdoor Unit communication. The three-core shielded cable of 3×0.75mm² is required to connect "P", "Q", and "E".
- Do not bundle the communication line with the refrigerant pipeline, power cable, etc. When the power cable and the communication line are laid in parallel, a distance of more than 5cm should be maintained to prevent interference from the signal source.
- When the construction personnel of the Indoor Unit and Outdoor Unit are working separately, information communication and synchronization are required. Do not connect the Outdoor Unit to HyperLink and the Indoor Unit to PQ. Do not connect the Outdoor Unit to PQ and the Indoor Unit to HyperLink.
- Bonding and connecting the communication line should be avoided, but if it is used, at the very least, ensure a reliable connection by crimping or soldering and make sure the copper wire at the connection is not exposed; otherwise, communication failure may occur.

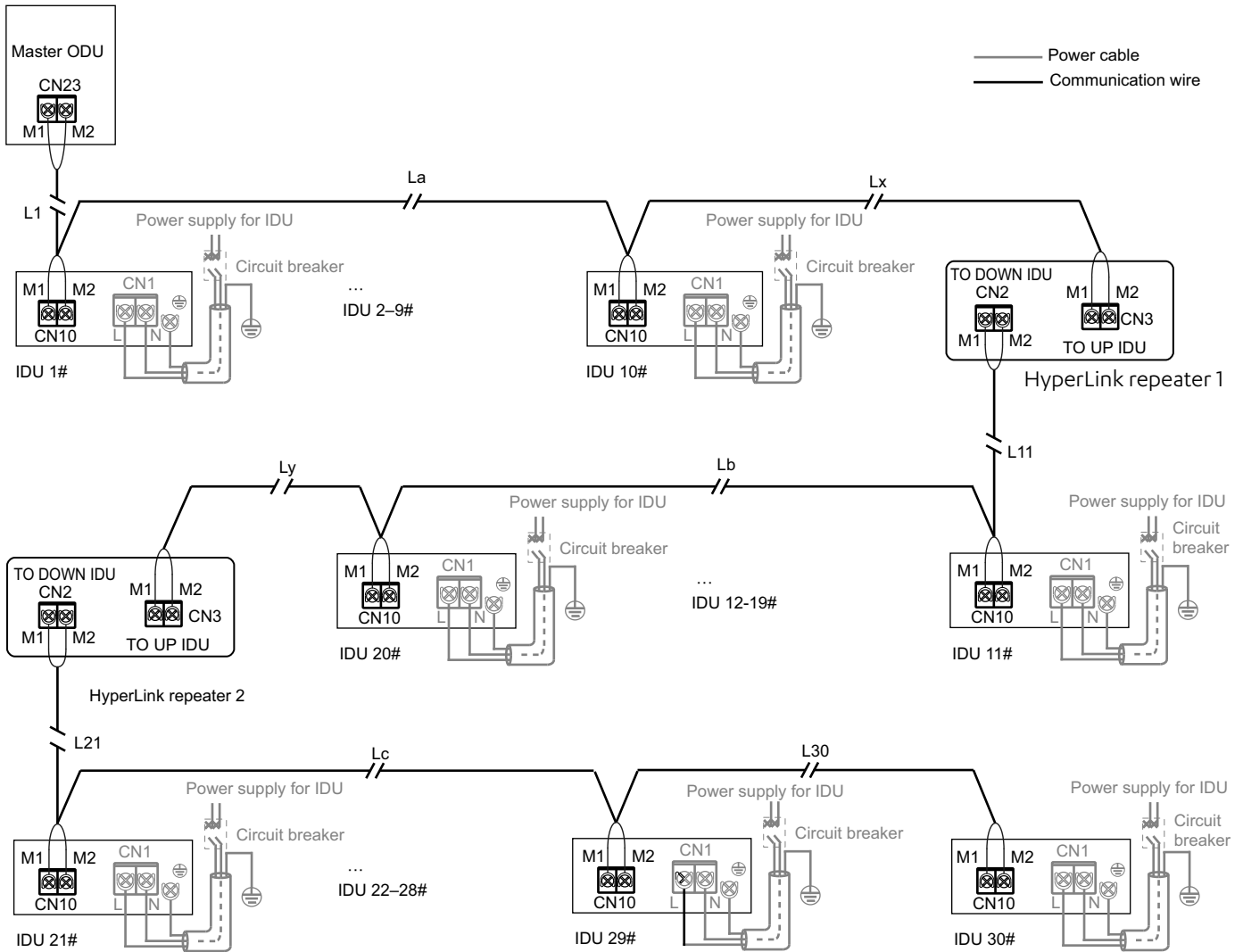
12.03.04.03. Indoor Unit and Outdoor Unit communication**a. HyperLink (M1M2) communication (with independent power supply)**

Single unit: HyperLink (M1M2) communication is a new type of indoor unit and outdoor unit communication technology. When the indoor units are provided with independent power supplies, use 2×1.5mm² communication cables. M1 and M2 ports are located at terminal block “CN10” of the main control board. There is no distinction between negative and positive electrodes. For details, see the following figure:

**CAUTION**

- Do not connect the HyperLink communication line to the PQ or D1D2 communication line.

System: The HyperLink communication line with an independent power supply between the Indoor Unit and Outdoor Unit can reach up to 600 meters, supporting any connection topology. The following figure shows a serial connection:



$L1+La+Lx \leq 200m$ $L11+Lb+Ly \leq 200m$ $L21+Lc+L30 \leq 200m$

IDU : Indoor Unit

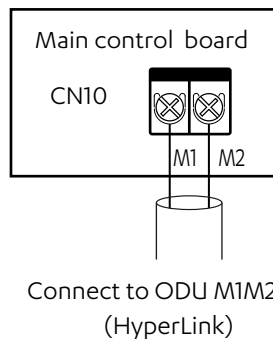
For other connection methods (tree topology, star topology, ring topology), please refer to the technical manual or consult technical personnel.

 **CAUTION**

- If the total distance is $\leq 200\text{m}$ and the total number of Indoor Units is ≤ 10 sets, the valve is powered and controlled by the master Outdoor Unit.
- If the total distance is longer than 200m or the total number of Indoor Units is more than 10 sets, a repeater is required to increase the bus voltage.
- The load capacity of the repeater is the same as that of the Outdoor Unit, and it can load a bus length of 200m or 10 Indoor Units. The number of Indoor Units requiring power supply in the same refrigerant system does not exceed 30 sets.
- A maximum of two repeaters can be installed in the same refrigerant system.
- Keep the power on/off for both the repeater and the Outdoor Unit, or use an uninterruptible power supply.
- For repeater installation, refer to the repeater installation manual. Do not connect the upstream and downstream Indoor Unit ports of the repeater in reverse; otherwise, it will cause a communication failure.
- The repeater is optional. If you need to purchase it, please contact your local dealer.

b. HyperLink (M1M2) communication (with unified power supply)

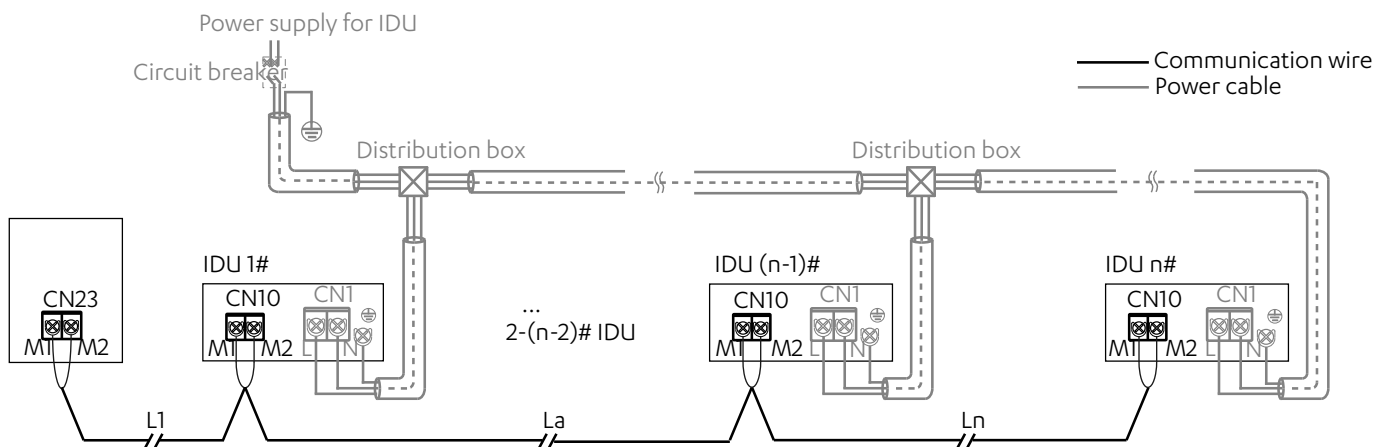
Single unit: When the indoor units are provided with unified power supply, it is not necessary for HyperLink (M1M2) communication wiring to provide an independent power supply for indoor units. In this case, use $2 \times 0.75\text{mm}^2$ communication cables. M1 and M2 ports are located at terminal block "CN10" of the main control board. There is no distinction between negative and positive electrodes. For details, see the following figure:



 **CAUTION**

Do not connect the HyperLink communication line to the PQ or D1D2 communication line.

System: The HyperLink (M1M2) communication wiring with a unified power supply between indoor unit and outdoor unit can reach a length of up to 2000 meters, supporting any topology connection. The following figure shows a serial connection:



$$L1+La+Ln \leq 2000m$$

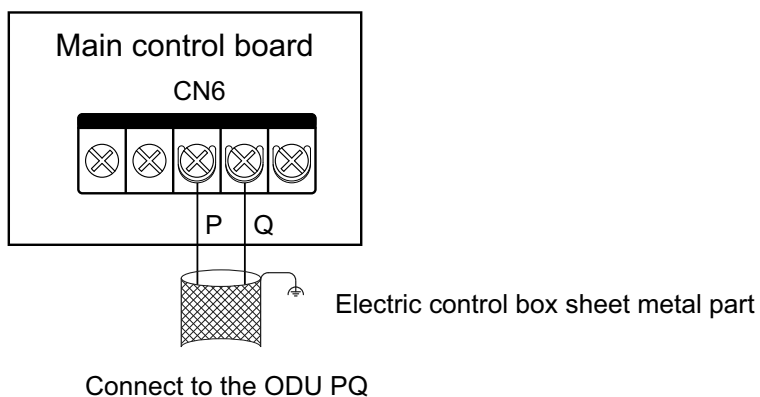
For other connection methods (tree topology, star topology, ring topology), please refer to the technical manual or consult technical personnel

CAUTION

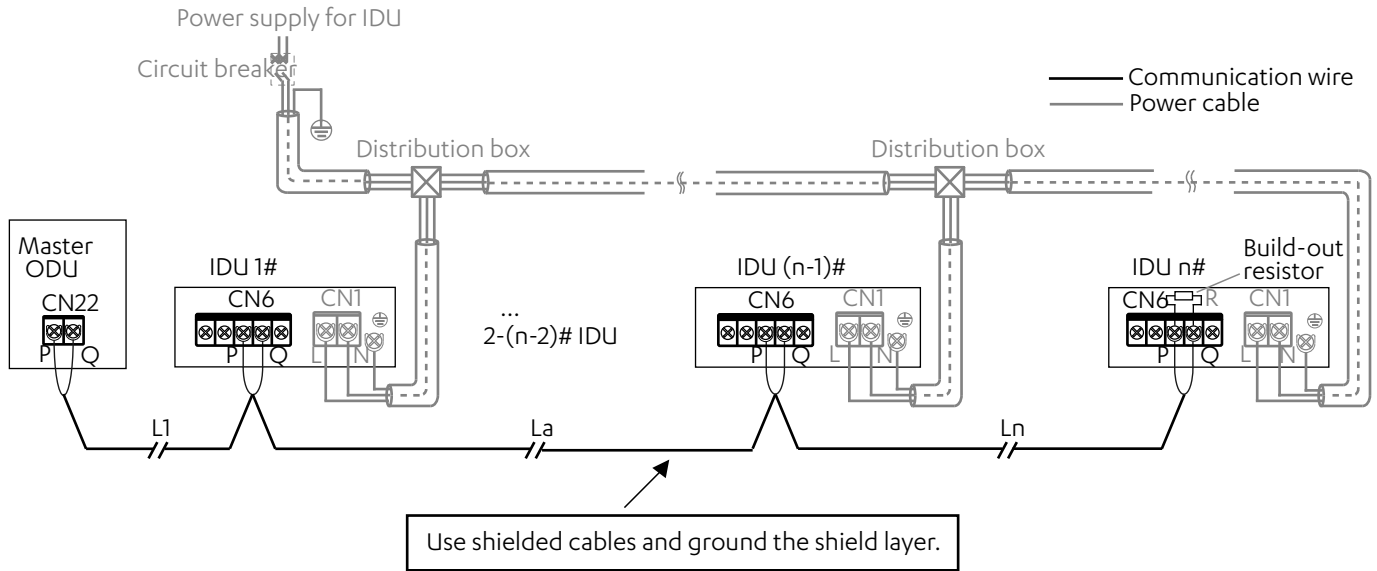
- When HyperLink (M1M2) with a unified power supply is available, a unified power supply for indoor units is required. For details, see "Power supply cable Connection".
- When HyperLink (M1M2) with a unified power supply is available, there is no need to connect a repeater to the system.

c. P/Q communication

Single unit: Use a shielded cable for the P/Q communication and properly ground the shield layer. P and Q ports are located at terminal block "CN6" of the main control board. There is no distinction between negative and positive electrodes. Connect the shield layer to the sheet metal of the electric control box, as shown in the following figure:



System: The maximum total length of the P/Q communication cable of the Indoor unit and outdoor unit can be up to 1200m, and can be connected in serial, as shown in the figure below:

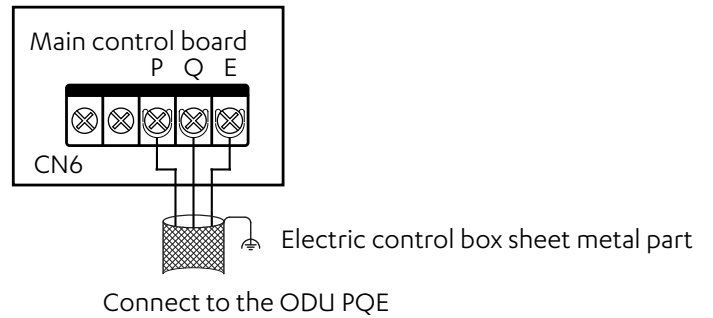


$$L1 + La + Ln \leq 1200m$$

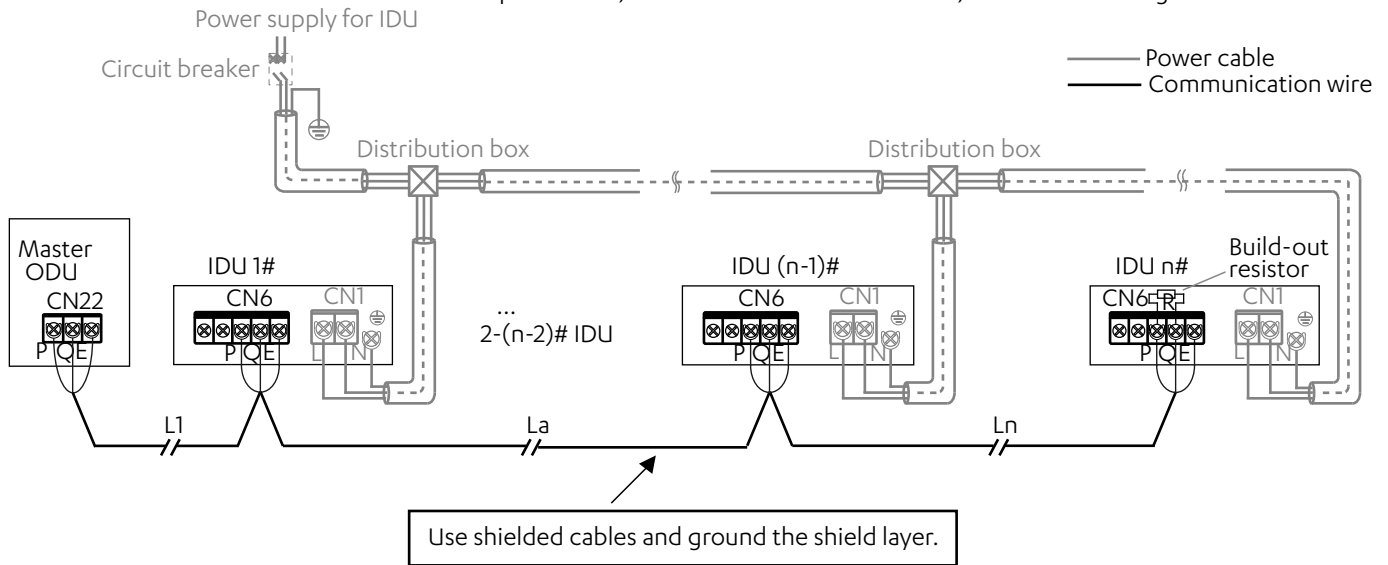
d. P/Q/E communication

If some of the indoor units in the same refrigerant system are non-EcoFlex series, it is required to connect "P", "Q", and "E" for P/Q/E communication.

Single unit: Use a shielded cable for the P/Q/E communication and properly earth the shield layer. P, Q, and E ports are located at terminal block "CN6" of the main control board. There is no distinction between negative and positive electrodes. Connect the shield layer to the sheet metal of the electric control box, as shown in the following figure:



System: The maximum total length of the P/Q/E communication cable of the indoor unit and outdoor unit can be up to 1200m, and can be connected in serial, as shown in the figure below:



$$L1 + La + Ln \leq 1200m$$

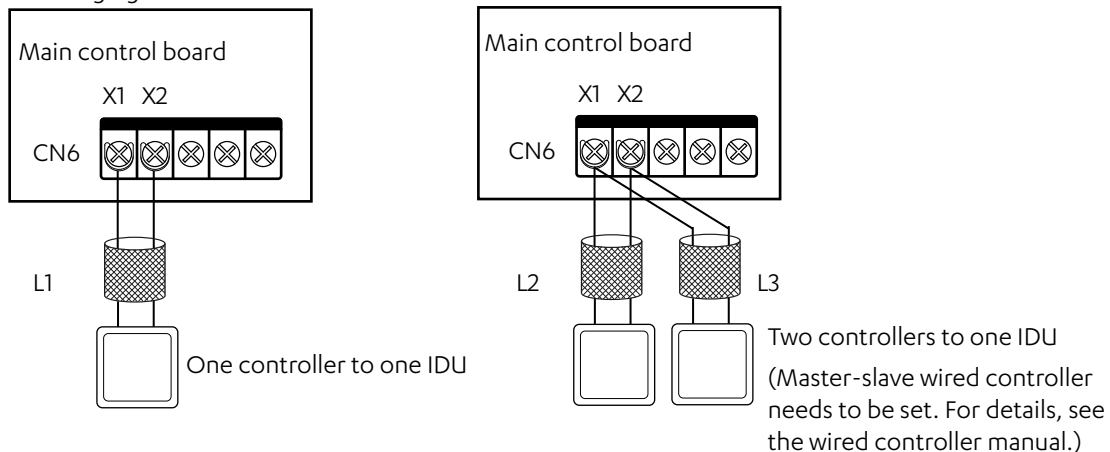


CAUTION

- When P/Q or P/Q/E communication is used, the Indoor Units need to be powered uniformly.
- Either P/Q, P/Q/E communication or HyperLink communication can be selected. If it is required for Indoor Units to have independent power supplies, then HyperLink communication must be selected.
- Use only shielded cables for P/Q or P/Q/E communication. Otherwise, the Indoor Unit and Outdoor Unit communication may be affected.
- A matching resistor needs to be added to the last Indoor Unit on the PQ (in the accessory bag of the Outdoor Unit).

12.03.04.04. X1/X2 communication cable connection

The X1/X2 communication line is mainly connected to the wired controller to achieve one controller per Indoor Unit and two controllers per Indoor Unit. The total length of the X1/X2 communication line can reach 200 meters. Please use shielded wires, but the shield layer cannot be grounded. X1 and X2 ports are located at terminal block "CN6" of the main control board. There is no distinction between negative and positive electrodes. For details, see the following figure:



$$L1 \leq 200m, L2 + L3 \leq 200m.$$

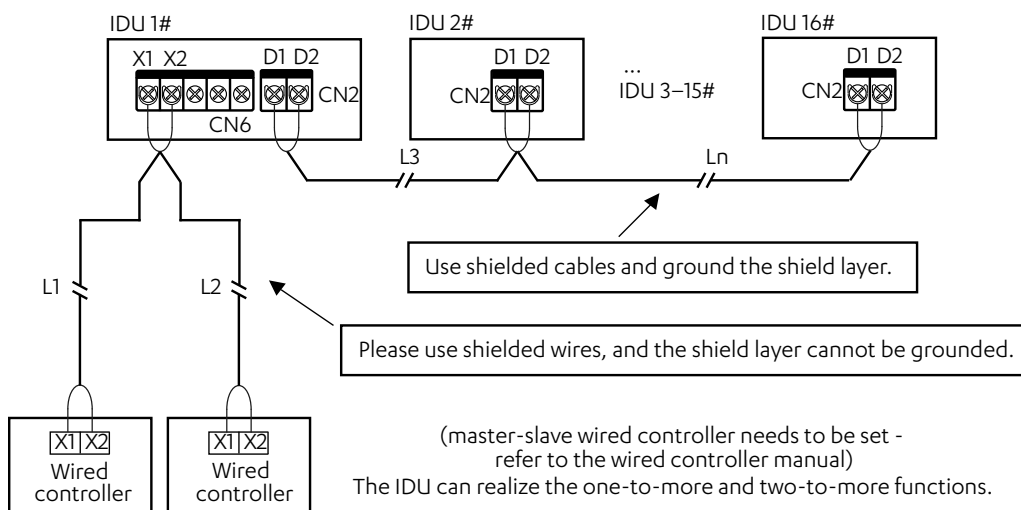
CAUTION

Two wired controllers of the same model can be used to control one Indoor Unit at the same time. In this case, you need to set one controller to be the master and the other to be the slave. For details, see the wired controller manual.

12.03.04.05. D1D2 communication wiring connection (limited to outdoor unit and system configuration)

A. Achieving one-to-multiple and two-to-multiple functions of the Indoor Unit wired controller through D1D2 communication (a maximum of 16 sets)

D1D2 communication is 485 communication. The one-to-more and two-to-more functions of the Indoor Unit wired controller can be achieved through D1D2 communication, as shown in the figure below:



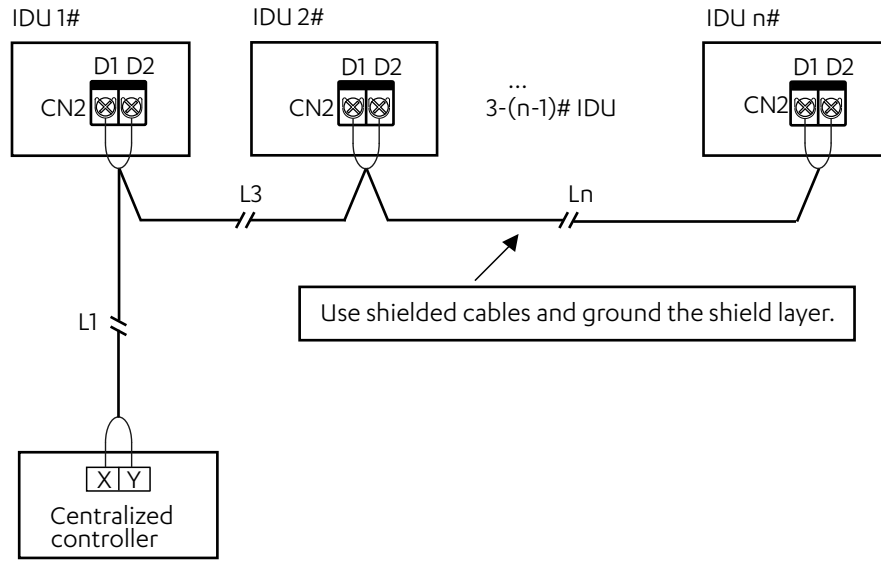
$L1+L2 \leq 200m, L3+Ln \leq 1200m$

CAUTION

- When the Indoor Units in the same refrigerant system are ECOFLEX Indoor Units, D1D2 communication can enable one-to-multiple and two-to-multiple functions of the Indoor Unit wired controller.
- To enable two-to-multiple functions, wired controllers must be of the same model.

B. Achieving centralized control of the Indoor Unit through D1D2 communication

The D1D2 communication line can also be connected to the centralized controller to achieve centralized control of the Indoor Unit, as shown in the figure below:



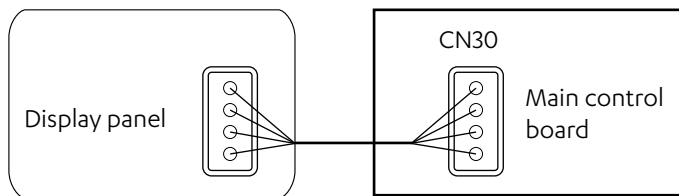
$$L1+L3+Ln \leq 1200m$$

12.03.05. External board connection (limited to Outdoor Unit and system configuration)

The external board is a connection module outside the main control board, including a display panel, a function module adapter board, and 1# and 2# Expansion boards .

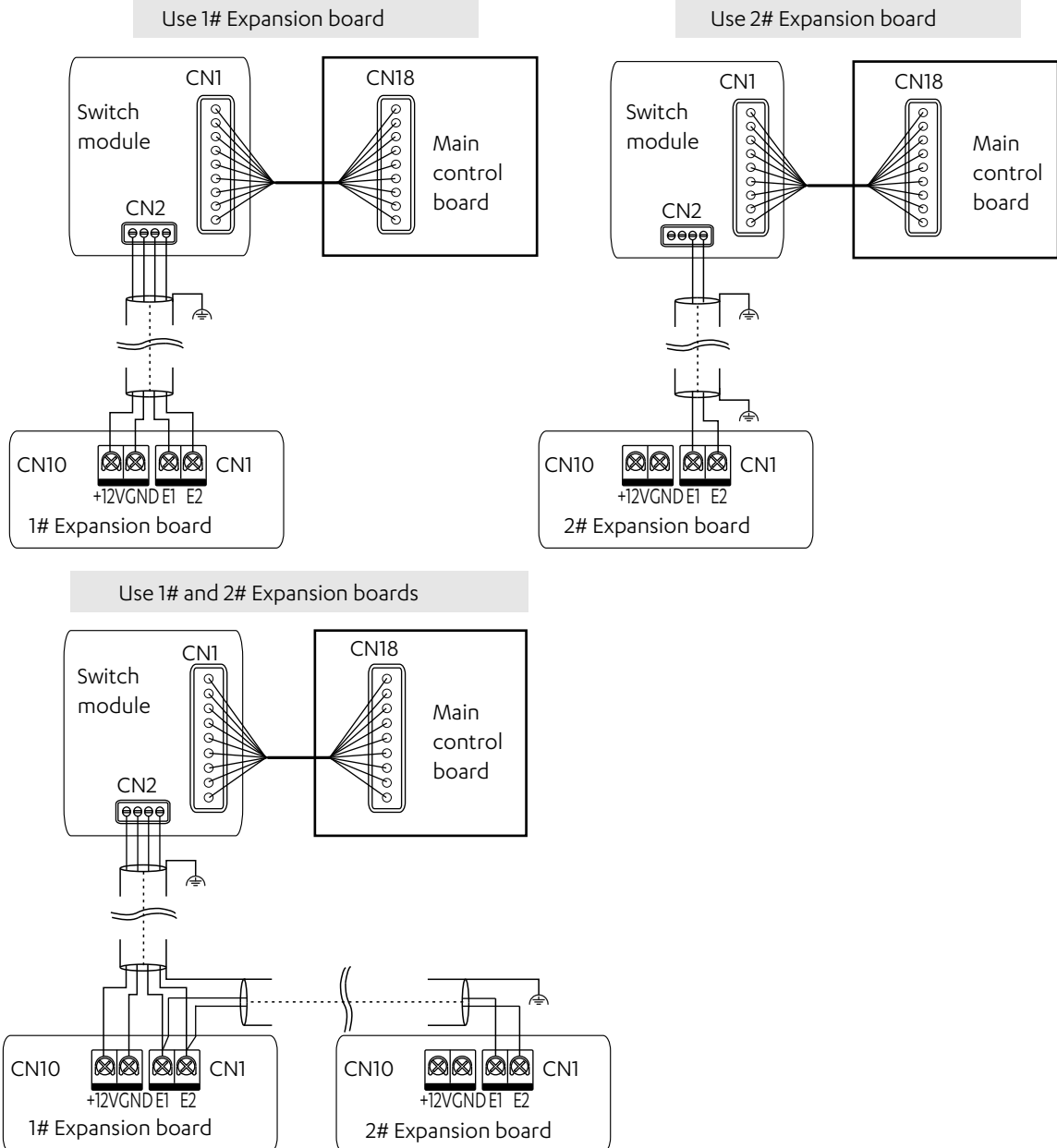
12.03.05.01. Connection of Display Box

The display panel is connected to the main control board through a 4-core cable, and is connected to the “CN30” socket of the main control board, as shown in the following figure:



12.03.05.02. Switch module connection

Expansion boards can communicate with the main control board through the Switch board. Use one or both of the two expansion boards. The wiring figures are as follows:

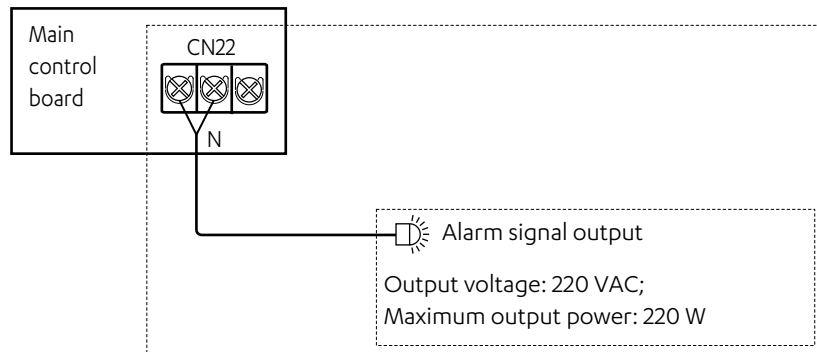


⚠ CAUTION

For the function introduction of the function module adapter board, function expansion board 1#, and function expansion board 2#, please refer to the function module manual.

12.03.06. Alarm signal

Refer to the following figure for the wiring of alarm signal.



⚠ CAUTION

The output voltage is 220-240V~.

12.03.07. Remote On/Off control

Refer to the following figure for using Remote On/Off control.

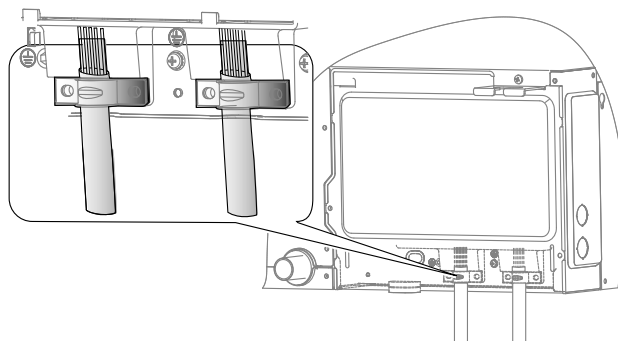
Remote Switch	Air Conditioning System
ON	OFF
OFF	ON

NOTE

- The priority of remote control is higher than that of the wired controller.
- More remote control functions, such as delayed control, air conditioning system is on when remote control is on, please refer to the manual of wired controller.

12.03.08. Reclose the electric control box cover

Straighten out the connecting wires and lay them flat, and close the electric control box cover again.



⚠ CAUTION

- Do not cover the electric control box during power-on.
- When covering the electric control box, arrange the cables carefully and do not clip the connecting wires on the electric control box cover.

13. Error Codes

13.01. Error Codes and Definitions

The error code is displayed on the display box and the wired controller display.

Error code	Error
A01	Emergency stop
A11	R-32 refrigerant leaks, ⚠ DANGER requiring shutdown immediately
A51	Outdoor Unit fault
A71	The fault of the linked FAPU is transmitted to the master Indoor Unit (series setting)
A72	The fault of the linked humidifying Indoor Unit is transmitted to the master Indoor Unit
A73	The fault of the linked FAPU is transmitted to the master Indoor Unit (non-series setting)
A74	The fault of the AHU Kit slave unit is sent to the master unit
A81	Self-check fault
A82	MS (refrigerant flow direction switching device) fault
A91	Mode conflict (Non-ECOFLEX communication protocol adopted)
b11	1# EEV coil fault
b12	1# EEV body fault
b13	2# EEV coil fault
b14	2# EEV body fault
b34	Stall protection on 1# water pump
b35	Stall protection on 2# water pump
b36	Water level switch alarm
b71	Reheating electric heater fault
b72	Preprocessing electric heater fault
b81	Humidifier fault
C11	Duplicate Indoor Unit address code
C21	Abnormal communication between the Indoor Unit and Outdoor Unit
C41	Abnormal communication between the Indoor Unit main control board and fan drive board
C51	Abnormal communication between the Indoor Unit and wired controller
C52	Abnormal communication between the Indoor Unit and Wi-Fi Kit
C61	Abnormal communication between the Indoor Unit main control board and display board
C71	Abnormal communication between the AHU Kit slave unit and master unit
C72	Number of AHU Kits is not the same as the set number
C73	Abnormal communication between the linked humidifying Indoor Unit and master Indoor Unit
C74	Abnormal communication between the linked FAPU and master Indoor Unit (series setting)
C75	Abnormal communication between the linked FAPU and master Indoor Unit (non-series setting)
C76	Abnormal communication between the main wired controller and secondary wired controller
C77	Abnormal communication between the Indoor Unit main control board and 1# function expansion board

Error code	Error
C78	Abnormal communication between the Indoor Unit main control board and 2# function expansion board
C79	Abnormal communication between the Indoor Unit main control board and adapter board
d16	Air inlet temperature of the Indoor Unit is too low in heating mode
d17	Air inlet temperature of the Indoor Unit is too high in cooling mode
d81	Alarm for exceeding temperature and humidity range
dE1	Sensor control board fault
dE2	PM2.5 sensor fault
dE3	CO2 sensor fault
dE4	Formaldehyde sensor fault
dE5	INTELLECTUAL EYE sensor fault
E21	T0 (fresh inlet air temperature sensor) short-circuits or cuts off
E22	The upper dry bulb temperature sensor short-circuits or cuts off
E23	The lower dry bulb temperature sensor short-circuits or cuts off
E24	T1 (Indoor Unit return air temperature sensor) short-circuits or cuts off
E31	The built-in room temperature sensor of the wired controller short-circuits or cuts off
E32	The wireless temperature sensor short-circuits or cuts off
E33	The external room temperature sensor short-circuits or cuts off
E61	Tcp (pre-cooled fresh air temperature sensor) short-circuits or cuts off
E62	Tph (pre-heated fresh air temperature sensor) short-circuits or cuts off
E81	TA (outlet air temperature sensor) short-circuits or cuts off
EA1	Outlet air humidity sensor fault
EA2	Return air humidity sensor fault
EA3	Upper wet bulb sensor fault
EA4	Lower wet bulb sensor fault
EC1	R-32 refrigerant leakage sensor fault
F01	T2A (heat exchanger inlet temperature sensor) short-circuits or cuts off
F11	T2 (heat exchanger middle temperature sensor) short-circuits or cuts off
F12	T2 (heat exchanger middle temperature sensor) overtemperature protection
F21	T2B (heat exchanger outlet temperature sensor) short-circuits or cuts off
P71	Main control board EEPROM fault
P72	Indoor Unit display control board EEPROM fault
U01	Locked (electronic lock)
U11	Unit model code not set
U12	Horsepower code not set
U14	Horsepower code setting error
U15	AHU Kit fan control input signal DIP setting error
U38	Address code not detected

Error code	Error
J01	Motor failed more than once
J1E	IPM (fan module) overcurrent protection
J11	Instantaneous overcurrent protection for phase current
J3E	Low bus voltage fault
J31	High bus voltage fault
J43	Phase current sample bias error
J45	Motor and Indoor Unit are unmatched
J47	IPM and Indoor Unit are unmatched
J5E	Motor startup failure
J52	Motor blocking protection
J55	Speed control mode setting error
J6E	Phase lack protection of motor

13.02. Operating Status Codes and Definitions (Non-Error)

Code	Definition
d0	Oil return or preheating operation
dC	Self-cleaning
dd	Mode conflict (ECOFLEX communication protocol adopted)
dF	Defrosting
d51	Static pressure detection
d61	Remote shutdown
d71	Indoor Unit backup operation
d72	Outdoor Unit backup operation
OTA	Main control program upgrading

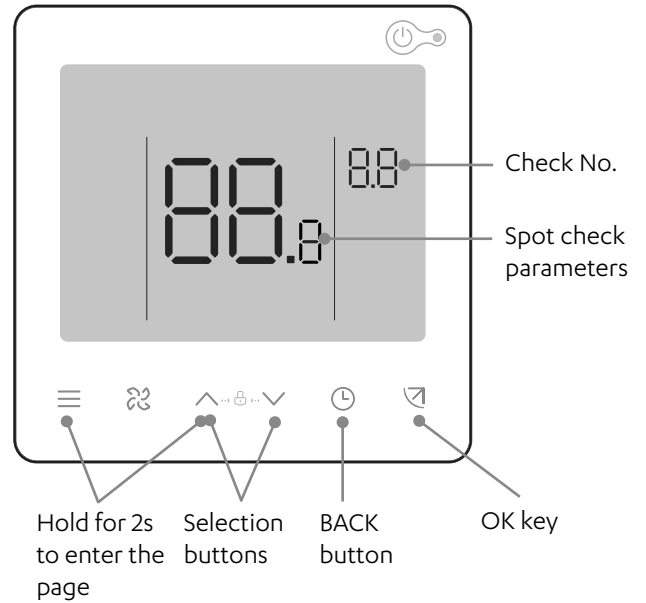
 **CAUTION**

- Error codes are displayed only for certain Outdoor Unit models and Indoor Unit configurations (including the wired controller and display panel).
- When the main control program is being upgraded, make sure that the Indoor Unit and Outdoor Unit remain powered on. Otherwise, the upgrading process will stop.

13.03. Spot Check Description

Use the bi-directional communication wired controller (for example, MWC-B01CS) to activate the spot check function in the following steps:

1. On the main page, hold "≡" and "^" for 2s to enter the query page. The Outdoor Unit displays u00-u03, the Indoor Unit displays n00-n63 (the last two digits show the Indoor Unit address), and the wired controller displays CC. Press the "^" or "v" key to select the Indoor Unit, and press the "↵" key to enter the parameter query page.
2. Press the "^" or "v" key to query the parameters, and the parameters can be queried cyclically. See the spot check list below for details.
3. Press the "⌚" key to exit the query function.
4. On the top of the query page, the "Timing area" displays the spot check serial number, and the "Temperature area" displays the content of the spot check parameters.



No.	Displayed content	No.	Displayed content
1	Indoor unit address	13	Air-blow pipe temperature
2	Capacity HP of Indoor Unit	14	Compressor discharge temperature
3	Actual set temperature Ts	15	Target superheat
4	Set temperature of the unit that is operating currently, Ts (Remarks: The temperature displayed is the actual set temperature Ts)	16	EXV opening (actual opening/8)
5	Actual T1 indoor temperature	17	Software version No.
6	Modified indoor temperature T1_modify	18	Historical error code (recent)
7	T2 heat exchanger intermediate temperature	19	Historical error code (sub-recent)
8	T2A heat exchanger liquid pipe temperature	20	Fan drive version No.
9	T2B heat exchanger gas pipe temperature	21	[— — —] is displayed
10	Actual set humidity RHs		
11	Actual RH indoor humidity		
12	Actual fresh air processing unit TA air supply temperature		

14. Settings

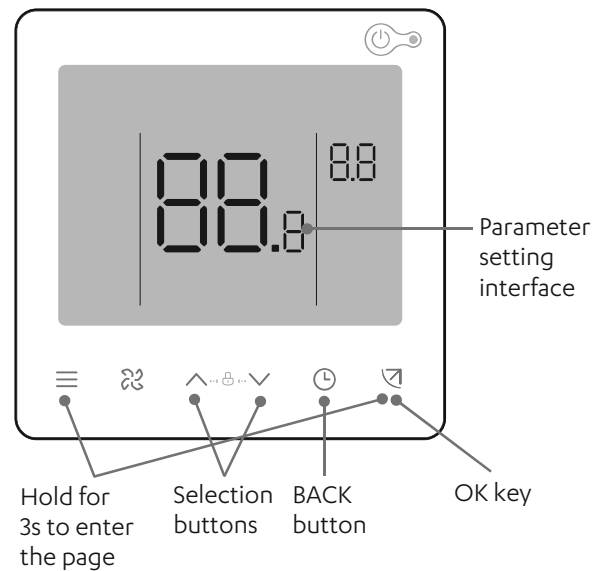
14.01. ESP Setting

Use the bi-directional communication wired controller (for example, MWC-B01CS) to set the unit external static pressure, which can be divided into the following two situations:

14.01.01. Constant Air Flow Mode

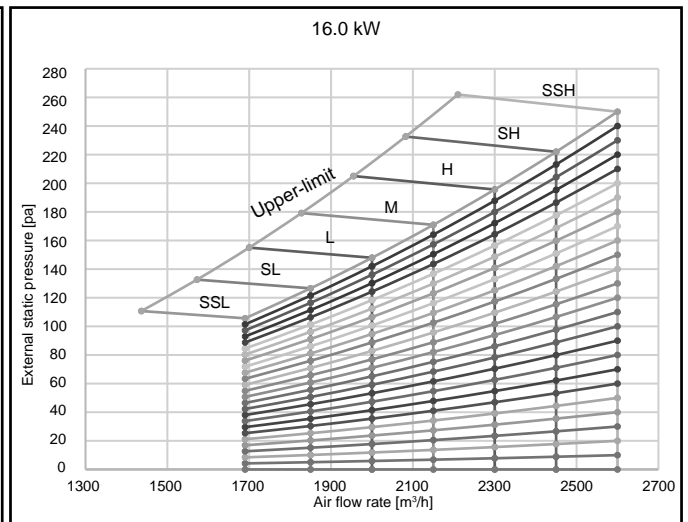
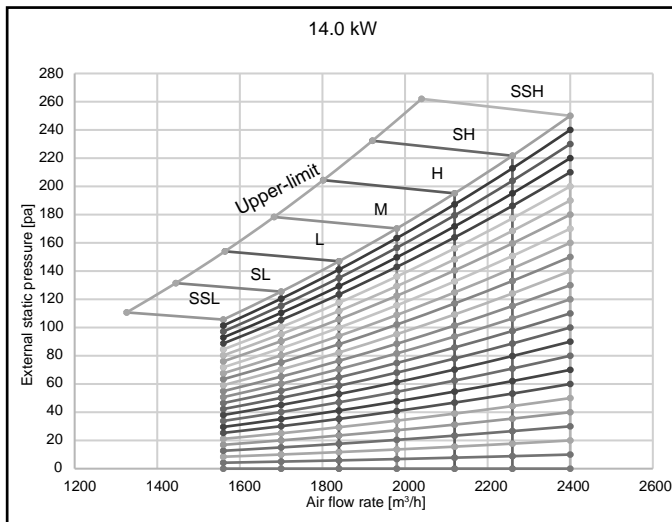
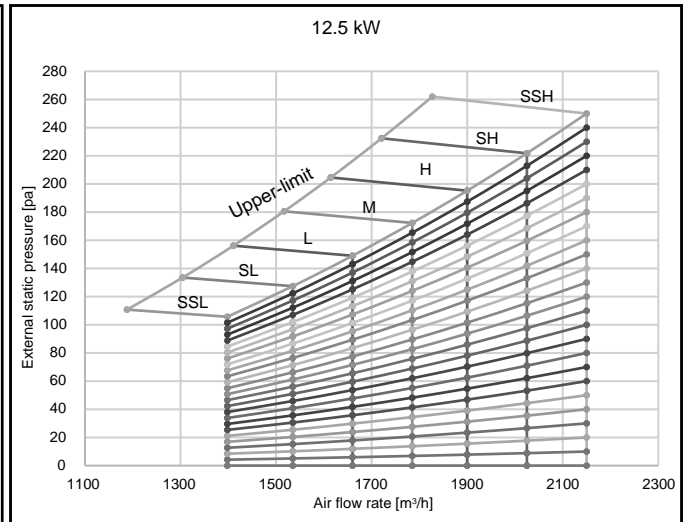
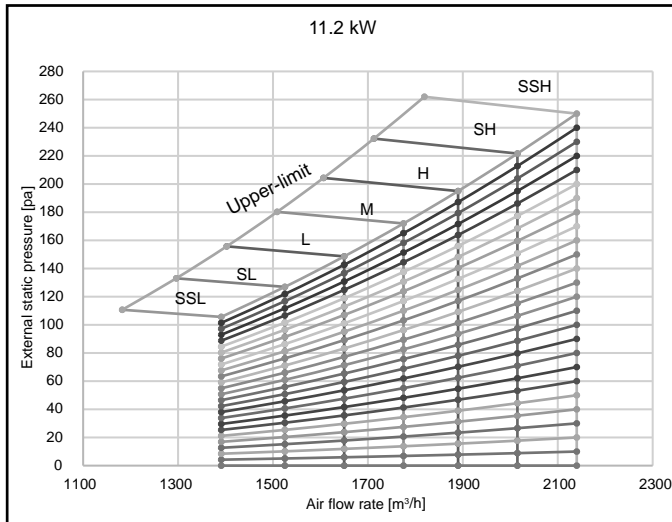
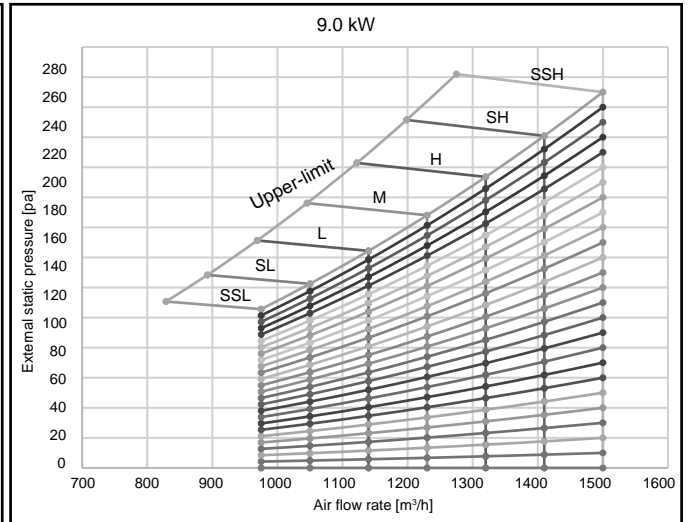
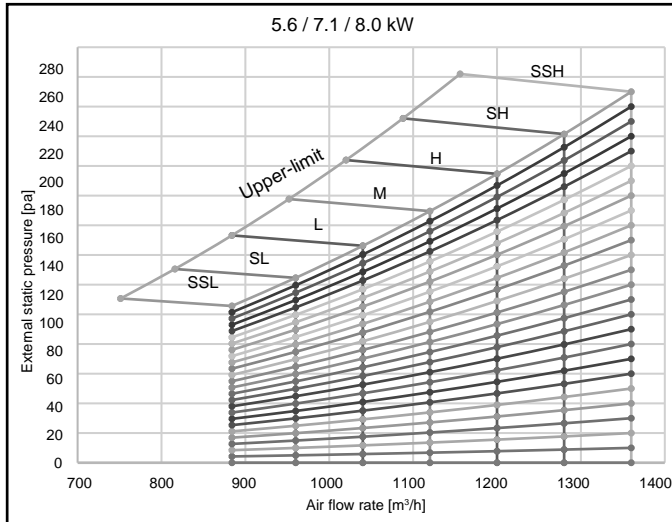
Indoor Units that are equipped with a constant air flow function are set to the constant air flow mode when they leave the factory. After the units are installed, they should undergo initial static pressure test before use. The steps are as follows:

1. On the main page, hold “≡” and “↵” for 3s. The wired controller displays “CC”. Press the “^” or “v” key to select the Indoor Unit address n00-n63 (indicating the address of a specific Indoor Unit), and press the “↵” key to enter the parameter setting page. The wired controller displays “n00”.
2. On the parameter setting page, press the “^” and “v” keys to switch the “Parameter code” to the initial static pressure detection code “n58”, press “↵” key to enter the specific parameter setting, and then press “^” and “v” to set the parameter value to “01”. Then, press the “↵” key to save the settings. Then the wired controller will send the initial static pressure detection command to Indoor Units. Wait a few minutes for the Indoor Unit to complete the initial static pressure detection.
3. Press “⌚” to return to the previous page until exiting the parameter settings or perform no operations for 60s and the system will automatically exit the parameter settings.



Parameter code	Parameter name	Parameter range	Default value	Remarks
n58	Initial static pressure detection	00/01	00	00: Not reset; 01: Reset

14.01.02. Air Pressure Curve: Constant air flow



CAUTION

- The air flow is constant when the actual installed static pressure is within 250Pa; when the pressure exceeds 250Pa, the air flow begins to decay, and installation of this model is not recommended outside this static pressure range.
- SSL, SL, L, M, H, SH, and SSH represent fan speeds from level 1 to level 7.

14.01.03. Constant speed mode

The bi-directional communication wired controller must be used to set the unit external static pressure parameters to overcome the air outlet resistance. The steps are as follows:

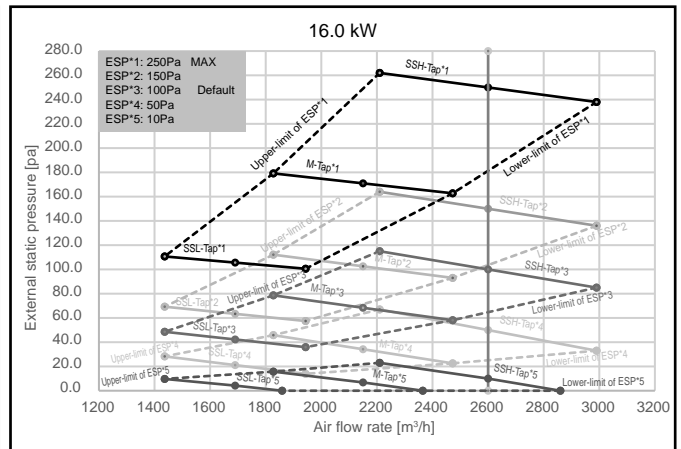
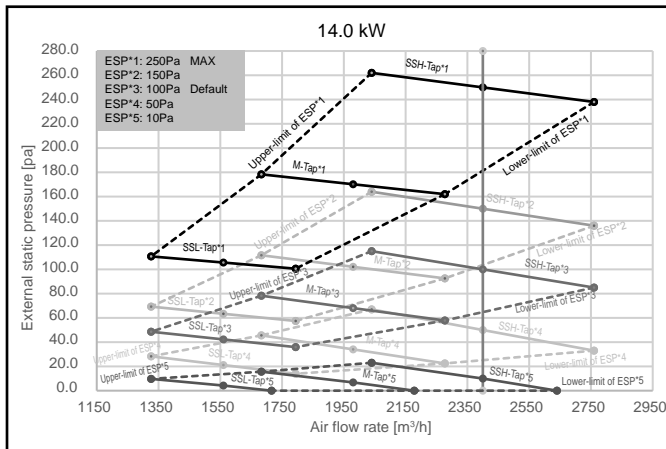
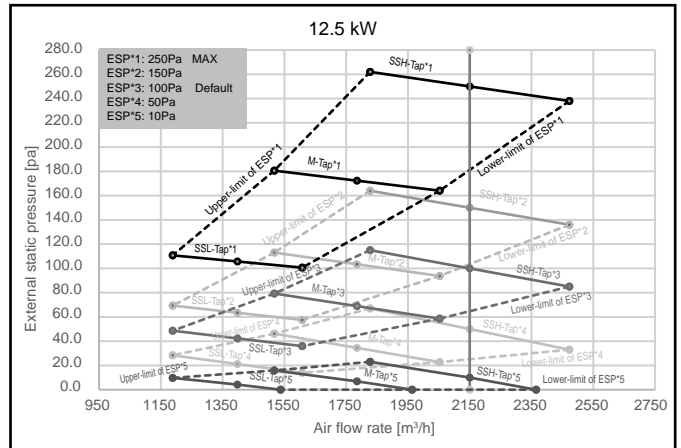
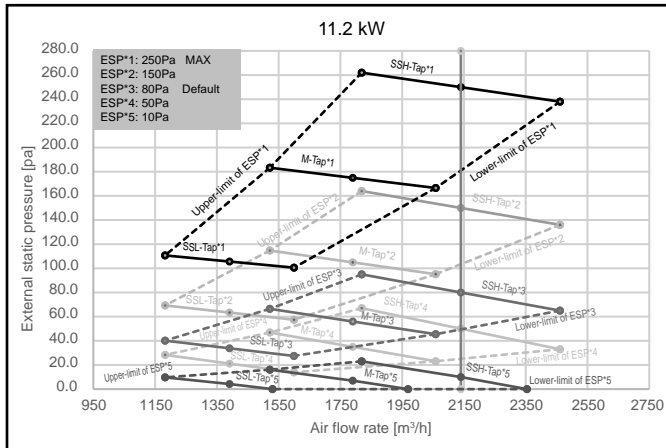
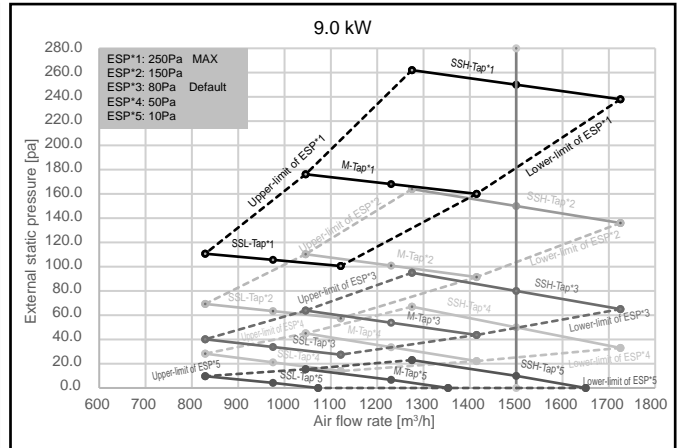
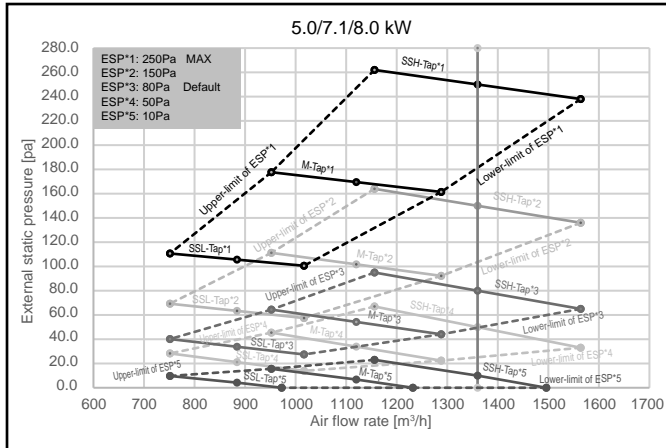
1. On the main page, hold “≡” and “↶” for 3s. The wired controller displays “CC”. Press the “^” or “v” key to select the Indoor Unit address n00-n63 (indicating the address of a specific Indoor Unit), and press the “↶” key to enter the parameter setting page. The wired controller displays “n00”.
2. On the parameter setting page, the wired controller displays “n00”. Press the “↶” key to enter the specific parameter setting, and then press “^” and “v” to adjust the parameter value of the unit external static pressure. Then, press the “↶” key to save the parameters. The unit external static pressure parameter has now been set.
3. Press “⌚” to return to the previous page until exiting the parameter settings or perform no operations for 60s and the system will automatically exit the parameter settings.

Parameter code	Parameter name	Parameter range	Default value	Remarks
n00	Unit external static pressure	Unit external static pressure stop: 02/04/06/07/08/09/~ /19	5.6-11.2kW: 08 12.5-16.0kW: 10	Set the corresponding static pressure value FF of the Indoor Unit according to the Indoor Unit speed

Static pressure setting parameter table

Unit power	Static pressure settings																			
	Level 00	Level 01	Level 02	Level 03	Level 04	Level 05	Level 06	Level 07	Level 08	Level 09	Level 10	Level 11	Level 12	Level 13	Level 14	Level 15	Level 16	Level 17	Level 18	Level 19
HP	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa
56 (2.0HP)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	160	180	200	220	250
71 (2.5HP)																				
80 (3.0HP)																				
90 (3.2HP)																				
112 (4.0HP)																				
125 (4.5HP)																				
140 (5.0HP)																				
160 (5.7HP)																				

14.01.04. Air Pressure Curve : Constant Speed



14.01.05. Switch between Constant Air Flow and Constant Speed

The two operating modes are switched as follows:

1. On the main page, hold “≡” and “↵” for 3s. The wired controller displays “CC”. Press the “^” or “v” key to select the Indoor Unit address n00-n63 (indicating the address of a specific Indoor Unit), and press the “↵” key to enter the parameter setting page. The wired controller displays “n00”.
2. On the parameter setting page, press the “^” and “v” to switch the “Parameter code” to the constant air flow setting parameter code “n30”, press the “↵” key to enter the specific parameter setting, and then press the “^” and “v” to adjust the parameter value of the operating mode. Then press the “↵” key to save the parameters. The operating mode parameter has now been set.
3. Press “⌚” to return to the previous page until exiting the parameter settings or perform no operations for 60s and the system will automatically exit the parameter settings.

Parameter code	Parameter name	Parameter range	Default value	Remarks
n30	Constant air flow setting	00/01	01	00: Constant speed; 01: Constant air flow

CAUTION

- Parameters can be set while the unit is powered on or powered off.
- On the parameter setting page, the wired controller does not respond to a remote signal, and does not respond to the app remote control signal.
- When it is in the parameter settings page, the mode, fan speed, and switch buttons are invalid. Please refer to the remote controller manual for the setting parameters of the remote controller. For other Indoor Unit parameter settings, please refer to the manual of the wired controller.

15. Test Run

15.01. Checklist Before Test Run

After the installation of the unit, check the items listed below first.



CAUTION

Do not power on the system.

Pass/Fail	Check list
	Read the complete installation and operation manual.
	Installation Check that the units are properly installed, to avoid abnormal noises and vibrations when starting up the units.
	Compressor and others shipping brackets removed.
	'The Piping Length' and 'Additional Refrigerant Charge' are calculated and recorded on the table of the unit.
	Be sure that the stop valves are open on both liquid and gas side.
	All Controllers installed and all control wiring is installed and properly connected at each terminal block.
	All Controllers installed and all control wiring is installed and properly connected at each terminal block.
	Refrigerant lines are completely insulated including flare nut connections at Indoor Units.
	All ductwork is connected and air filters installed.
	Air inlet/outlet Check that the air inlet and outlet of the unit is not obstructed by paper sheets, cardboard, or any other material.
	Field wiring Be sure that the field wiring has been carried out according to the instructions described in the manual and according to the applicable legislation.
	Earth wiring Be sure that the earth wires have been connected properly and that the earth terminals are tightened.
	Insulation test of the main power circuit Using a megatester for 500 V, check that the insulation resistance of 2 MΩ or more is attained by applying a voltage of 500 V DC between power terminals and earth. NEVER use the megatester for the communication wiring.
	Fuses, circuit breakers, or protection devices Check that the fuses, circuit breakers, or the locally installed protection devices are of the specified size and type. Do not bypass a fuse and a protection device.
	Internal wiring Visually check the electrical component box and the inside of the unit for loose connections or damaged electrical components.

Pass/Fail	Check list
	<p>Components damage Check for damaged components and extruded piping inside the unit. Consistency Check between Refrigeration Pipelines and Communication Lines Check and confirm that the refrigerant piping and communication lines connected to the indoor and outdoor units are belong to the same refrigeration system.</p>
	<p>Oil leak Check if there is oil leaking from the compressor and piping. If there is an oil leak, try to repair the leak. If the repair is not successful, please call the local agent.</p>
	<p>Refrigerant leak Check for refrigerant leaks inside the unit. If there is a refrigerant leak, try to repair the leak. If the repair is not successful, please call the local agent. Do not come into contact with the refrigerant leaking from the refrigerant piping connections. It may cause frostbite.</p>
	<p>Flammable refrigerant If there is a refrigerant leak, keep ventilation to avoid the risk of refrigerant stagnating. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.</p>
	<p>Line Voltage is checked and verified to be within specified range for all system components.</p>
	<p>Power the outdoor units 12 hours before operation in order to have power running to the crankcase heater and to protect the compressor.</p>

15.02. Indoor Unit

- The wired/remote controller switch is operating normally.
- The display of the wired/remote controller is normal, the function keys work normally, the room temperature adjustment is normal, and the air flow and direction adjustment are normal.
- The LED indicator is on.
- Water discharge is normal.
- Check the Indoor Units one by one for normal operation, and the cooling and heating functions are normal without vibration or abnormal sound.

15.03. Outdoor Unit

- There are no vibrations or strange sounds during operation.
- The fan, noise and condensation do not affect the neighbors.
- There is no refrigerant leakage.

NOTE

Refer to the “Symptoms That Are Not Faults” in the Owners Manual.

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