DE-COMMISSIONING, DISMANTLING & DISPOSAL

This product contains refrigerant under pressure, rotating parts, and electrical connections which may be a danger & cause injur
All work must only be carried out by competent persons using suitable protective clothing and safety precautions.

Read the Manual

Risk of Electric Shock

Unit is Remotely controlled
& may start without warning

1. Isolate all sources of electrical supply to the unit including any control system supplies switched by the unit. Ensure that all points of electrical and gas isolation are secured in the OFF position. The supply cables and gas pipe work may then be disconnected and removed. For points of connection refer to unit installation instructions.
2. Remove all refrigerant from each system of the unit into a suitable container using a refrigerant reclaim or recovery unit. This refrigerant may then be reused, if appropriate, or returned to the manufacturer for disposal. Under NO circumstances should refrigerant be vented to atmosphereWhere appropriate, drain the refrigerant oil from each system into a suitable container and dispose of according to local laws and regulations governing disposal of oily wastes.
3. Packaged units can generally be removed in one piece after disconnection as above. Any fixing down bolts should be removed and then unit lifted from position using the points provided and equipment of adequate lifting capacity. Reference MUST be made to the unit installation instructions for unit weight and correct methods of lifting. Note that any residual or spilt refrigerant oil should be mopped up and disposed of as described above.
4. After removal from position the unit parts may be disposed of according to local laws and regulations.
5.Meaning of crossed Out wheeled dustbin: Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well being. When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.

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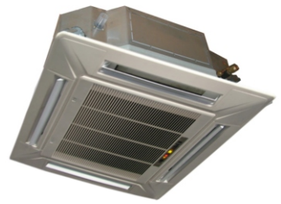
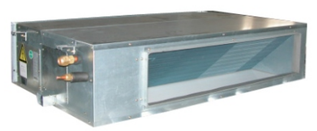
Installation
Operation
Instruction Manual

Air Conditioner Unit

- Installation should only be carried out by qualified technicians.
- For your convenience, please read this manual carefully and carry out all instructions in full.
- Please keep this manual in good condition for your reference.



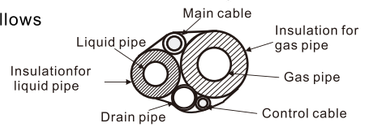


⚠ Caution

1.The definition of power cord is the power supply cable from the isolating switch attached to the dedicated power supply to the indoor unit or outdoor unit. Interconnecting cable for the indoor and outdoor unit is the power supply cable that connects indoor unit and outdoor unit.
2. Above-mentioned definitions are the specifications of power supply, power cord and interconnecting cable of indoor unit and outdoor unit of all different types of air-conditioners.
3. To avoid voltage drops, when the cross sectional area of a power cable core reaches the minimum size, and the power cord is lengthened, you should choose another bigger power cable size.
4. The power cord connected to the indoor unit is 227 IEC53 type cable. The power cord connected to outdoor unit and the Interconnecting cable between indoor unit and outdoor unit are both H05RN-F (neoprene) stranded wire. If you use single-strand two ply wire, please select wire with larger cross-section area by one size and a special electric jacket should be used.

After all connections have been made and checked, the pipe work has been leak tested and charged and the drain pipe work tested then the pipes and cables should be bound together as follows

1. Locate the drain pipe at the bottom along with the control cable
2. Place the insulated refrigerant pipes on top
3. Place the mains cable on top of these
4. Bind carefully with tape
5. Ensure the drain pipe is not damaged



Caution: Do not squash the drain pipe during binding operation!

Commissioning

1. Turn on the Power Supply and select cooling operation as shown in the remote controller section of this manual.
2. After the 3 minute compressor protection delay, check the indoor unit louver is operating correctly and both the indoor and outdoor units are operating correctly without abnormal noise. Check that cold air is produced after a short time.
3. Select heating operation on the controller and wait for 5 minutes. Check that the indoor fan starts correctly and that hot air is produced after a short time.
4. Select Fan operation on the controller. Check that the fan operates correctly in all fan speeds.
5. Test the other functions on your controller as shown in the controller section of this manual.
6. Select Cooling operation, and check the drain pump operates correctly.
7. After confirming the unit operates correctly, turn the unit off and disconnect the power supply.
8.If the ODU has no electricity after turning on the power supply for the first time, please check whether the connection line(power wire and communication wire) is corrected .If the connection line has no problem ,it will be the fault of the PCB board. You should contact the service agent or a similar qualified person to repair.

Introduction

This Manual is available for following models:

Mapping Table

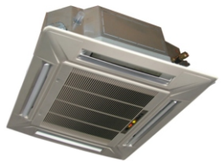
Refrigerant leakage contributes to climate change. Refrigerant with lower global warming potential (GWP) would contribute less to global warming than a refrigerant with higher GWP, if leaked to the atmosphere. This appliance contains a refrigerant fluid with a GWP equal to [2088]. This means that if 1 kg of this refrigerant fluid would be leaked to the atmosphere, the impact on global warming would be [2088] times higher than 1 kg of CO 2 , over a period of 100 years. Never try to interfere with the refrigerant circuit yourself or disassemble the product yourself and always ask a professional.

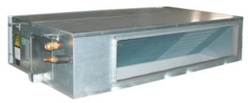
⚠ Caution

1.If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
2.This appliance can be used by children aged from 8 years and above and persons withreduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Component name

Indoor unit

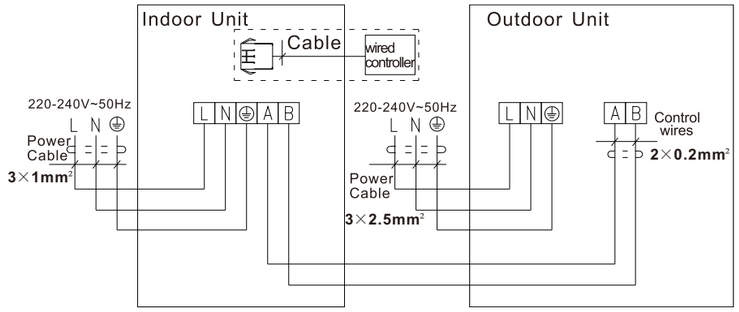




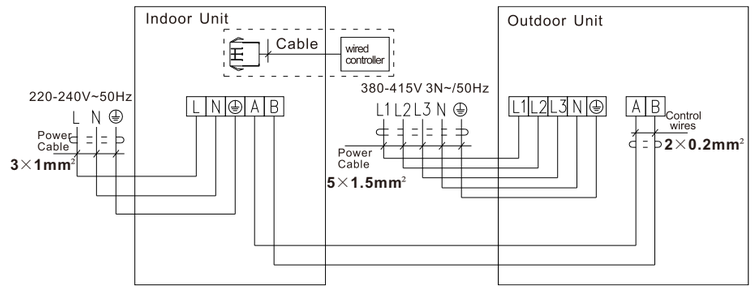
Outdoor unit

★Wiring diagram of indoor and outdoor unit

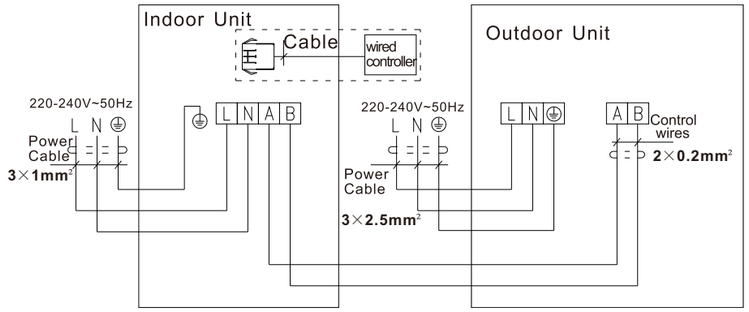
-Middle Static Pressure Duted Air Conditioner Unit 18000~36000BTU
-Ceiling&Floor Air Conditioner Unit 18000~36000BTU
-Built In Ceiling Cassette Split Air Conditioner Unit 18000BTU



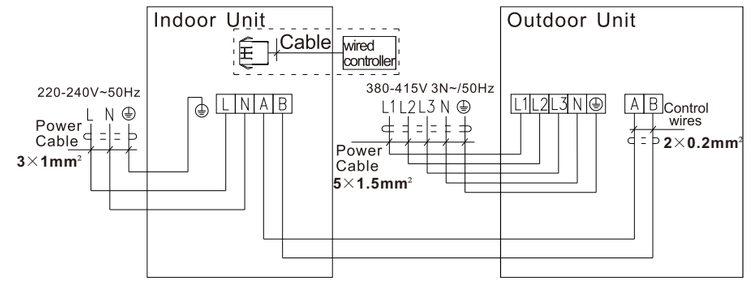
-Middle Static Pressure Duted Air Conditioner Unit 48000~60000BTU
-Ceiling&Floor Air Conditioner Unit 48000~60000BTU



-Built In Ceiling Cassette Split Air Conditioner Unit 24000~36000BTU



-Built In Ceiling Cassette Split Air Conditioner Unit 48000~60000BTU



3. When you feel that refrigerant flowing out is getting cold, tighten the outdoor high pressure valve and connecting pipe of the liquid pipe and maintain the state for more than 10s.
4. Close the valve of the refrigerant tank, and by using soap and water, check for leaks at all of the connections.
5. After confirming that there is no leak, remove the service hose.

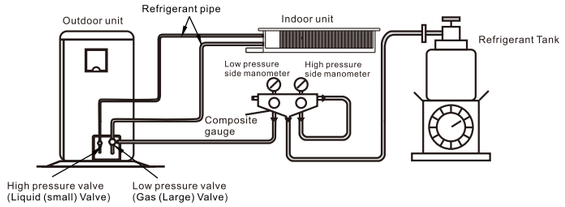
After Evacuating or Gas Purging operation is completed, re-install the service valve nut on the low pressure valve of the outdoor unit, unscrew the spindles of high-pressure valve and low-pressure valve of the outdoor unit, and this will supply refrigerant to the pipe work and indoor unit.

Important： Depending upon the legislation in your country Gas Purging may be illegal and therefore you should follow the Evacuation process if you are in any doubt. In particular this is the case in the European Union.

★Adjust the refrigerant quantity

When pipe length exceeds 5m, please add refrigerant according to the table below:

Refrigerant pipe	Refrigerant pipe specification		Additional fill of refrigerant
	Gas pipe	Liquid pipe	
Tubing between indoor unit and outdoor unit	φ9.52×0.75mm	φ6.35×0.75mm	0.02kg/m
	φ12.7×1mm	φ6.35×0.75mm	0.02kg/m
	φ15.88×1mm	φ9.52×0.75mm	0.05kg/m
	φ19.05×1mm	φ9.52×0.75mm	0.07kg/m



Electrical connections

⚠ Warning

All electrical works must be carried out & checked by a qualified electrician and must adhere to the IET regulations, local and national legislation and industry best practice .
The system must have its own independent power supply. An all pole isolating disconnect switch with at least 3mm contact separation must be installed. The power cord and connecting cable should be either as supplied with the unit or otherwise as specified in this manual. Do not attempt any electrical works yourself.
If you connect the null line wrong of three phase units ,it will make a serious damage .

An Earth Leakage Protector, Power Switch and Circuit Breaker or Fuse must be installed in the dedicated power supply or there is the risk of electric shock.
N must connect neutral line! R/S/T or L1/L2/L3 must connect live line, otherwise might damage the machine.

The control -fuse specification of three -phase ODU and IDU are F5AL250V.
For Single-phase ODU, control fuse is F5AL250V ,and IDU is F3.15A250V.

The grounding must be reliable. If grounding is not correct, it may lead to electric shock.

All power cables should be properly secured with cable ties so that external forces cannot disconnect the wired from the terminals. Improper connections or insecure fastening can cause electric shocks or fire.

⚠ Caution

Do NOT connect the earth cable to gas or water pipes, telephone lines, lightning rods or the earth cables of other products

Once the indoor and outdoor unit have been switched on, do not cut off power supply in 1 minute, (the system automatically set) otherwise abnormal operation will be caused.

- Please connect the power cord and interconnecting cable according to the wiring diagram.
- Connect the wire firmly to the terminal block using crimps and secure in order to prevent external forces pulling on the wire causing risk of fire or electric shock.
- After the electrical connection is completed, all wires should be prevented from touching other parts such as tubing, compressor etc.

Operation instructions

Following the instructions below will allow you to get the best from your air conditioner

Proper use method

● During cooling, avoid direct sunshine
Please close the curtains

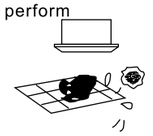
● Do not obstruct air flow
Do not place objects near the air inlet or outlet of either the indoor or outdoor unit.
If the air flow is obstructed then the air conditioner will be unable to perform correctly.

● Try not to cool excessively
Suggestion of setting temperature:
Cooling: 26～28℃
Heating: 18～22℃
Dehumidify: 20～24℃

● Do not use other heating equipment when unit run cooling function
Using heating equipment will affect the cooling effect.

● Keep the windows or doors shut
Open windows or doors will increase the amount of heating or cooling required and may prevent the unit being able to perform correctly

● Clean the air filter regularly
Dirty filters will prevent the unit from being able to perform correctly and may cause expensive damage.
Clean regularly by washing or with a vacuum cleaner. Replace if necessary.
We recommend filter cleaning once a month or more frequently if required.

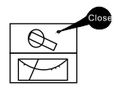


⚠ Caution

●Before Cleaning the air filter stop the unit on the controller and turn off at the power supply.

●Do not clean the air conditioner with water or you risk both electric shock and short circuit.

●When cleaning the air filter ensure you pay attention to health and safety.



★Cleaning the Air Filter

In order to ensure the best performance from your air conditioner clean the air filter regularly
We recommend cleaning once a month or more frequently if required.

1. The filter can be cleaned using a vacuum cleaner or with soap and water.
2. Take off the air filter
   ① First, take off the bolt casing on the air inlet grille, then take off the blots using the screwdriver, and take off the filter net.
   ② Set the filter net back to the air inlet grille, fix its bolt and the casing.

⚠ Caution

- When the filter is very dirty it can be washed in detergent and hot water (below 45°C).
- Ensure the filter is fully dry before reinstallation to avoid risk of electric shock or short circuiting.
- Do not dry the filter using direct sunlight.

Maintenance and service

★At the beginning of each Season you should check

1. There are no physical obstructions at the air inlet or outlet of either indoor or outdoor unit.
   These will prevent the unit from operating correctly and may cause expensive damage to your unit
2. The electrical cables are in good condition, particularly the earth cable.
   Damage must be immediately rectified by a trained person
3. Are the drains blocked? If the drain is blocked then the unit will be prevented from operating and an expensive water leak may occur.

★Check at the end of service season

Operate for 2~3 hours under the ventilation condition;
remove the moisture of the indoor unit.

▼

Close power after the unit stops.

Note: when the unit is not in use for a long time, please cut-off power supply.
If the unit is stopped by the remote controller, it will still consume some power.

★Other check

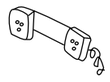
1. After several seasons you should have the dealer or service centre clean the indoor and outdoor unit thoroughly. This will ensure the unit continues to work correctly.
2. It is possible that contaminant build up inside the unit may cause drain blockage, bad smells, water leaks and shortage of airflow, cooling or heating performance. If these occur you should have the dealer or service centre clean the system and investigate.
3. Do not attempt to clean the inside of either the indoor or outdoor unit yourself. This is a hazard to health and may cause system failure.

Fault diagnosis

⚠ Caution

If you experience abnormal operation such as the smell of burning, water leaks, loud noises etc.turn off the power supply and contact the dealer or service centre.If you leave the unit running then major damage may occur.

Do not attempt to service or repair the unit yourself.
Errors by untrained personnel can cause short circuits, gas leakage and fire as well as being a serious danger to health and safety.
Please have all service work done by your dealer or a trained service centre,



★When there is the following phenomenon, please contact the dealer or the customer service center.

- ● Unusual Sound During Operation
- ● Water Leakage at the indoor unit
- ● The unit wont respond to the controller
- ● Burning smells or smoke
- ● Failure of the electrical circuit or tripping the fuse
- ● Cables are abnormally hot

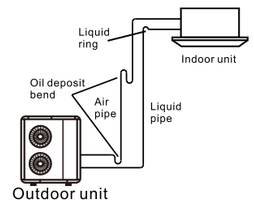
➤

● Stop the unit and cut off power supply

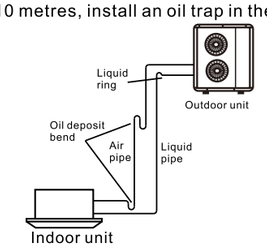
■Connection of the Connecting Pipe

Precautions to prevent compressor oil starvation

1. Horizontal pipes should incline toward the outdoor unit using a 20:1 slope
2. If there is a height difference between the indoor and outdoor unit, oil traps should be installed in the interconnecting gas (large) pipe:
   When the vertical pipe height difference is less than 5 meters, an oil trap should be installed at the bottom of the gas (large) pipe;
   When the vertical pipe height difference is more than 5 meters, then for every 5 meters an oil trap must be installed at the bottom of the gas (large) pipe, and a short loop (liquid ring) should be installed at the exit of the indoor unit liquid (small) pipe;
   When the connecting gas pipe vertical height difference is less than 5 meters but the constant rise distance is too long, an oil trap should be installed in the gas (large) pipe every 10 meters.
3. When the outdoor and indoor units are at the same elevation, the oil deposit bend and liquid ring do not need to be installed, if the horizontal connecting pipe length is less than 10 meters.
   When the horizontal connecting pipe length is more than 10 metres, install an oil trap in the gas (large) pipe every 10 metres



When the installation position of indoor unit is higher than that of the outdoor unit.

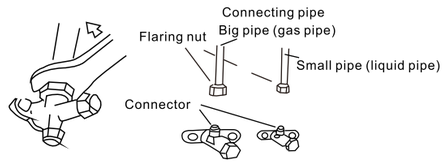


When the installation position of indoor unit is lower than that of the outdoor unit.

Note: This chart is for explanation purposes. An actual installation will differ from this according to the site conditions.
When making an oil trap the radius of the bend should be between 1.5 and 2 times the pipe diameter.

■Connection of tubing and indoor unit

Remove the copper nut from indoor unit and insert it over the unflared tube before making the flare, align the flaring side of the connecting pipe with the connector of indoor unit, lightly coat the flare and nut with refrigerant oil, screw the copper nut onto the connector of indoor unit and tighten it (tightening torque is shown in the table above).



★Evacuating or Purging the pipe work

Before releasing the refrigerant in the outdoor unit into the pipe work and indoor unit it is necessary to ensure that there are no foreign objects, water or non-condensing gas in the refrigeration system. For that purpose, it is necessary to evacuate or purge the system:

■Evacuation

When evacuating, ensure that all the connecting pipes between indoor unit and outdoor unit have been tightened.

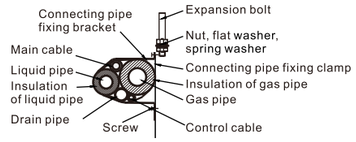
1. Unscrew the nut of the service port from the low pressure valve of the outdoor unit, and connect a service hose connected to a composite pressure gauge to this service port.
2. Connect the vacuum pump to the composite pressure gauge via another service hose, turn on the pressure gauge and vacuum pump to evacuate the indoor unit and pipes, so that after vacuuming, the absolute pressure is not greater than 50Pa.
3. Switch off the valve of the composite pressure gauge, stop the vacuum pump and ensure the pressure does not increase after 20 minutes.

■Gas Purging

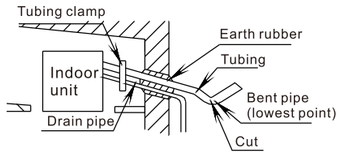
During purging, the connection between outdoor high pressure valve and liquid pipe should be loosened.

1. Unscrew the nut of the service port from the low pressure valve of outdoor unit, and connect it with a service hose that has a schraeder depressor. The other end of the rubber hose is connected to the refrigerant tank.
2. Open the valve of the refrigerant tank, so that the refrigerant will flush the connecting pipe of indoor unit and outdoor unit at high speed, in order to discharge the air in the pipe. You can feel that refrigerant flows out at the outlet of connecting liquid pipe.

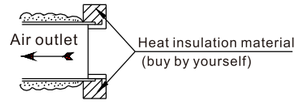
2. Areas with very high humidity levels This air conditioner has been fully tested in various humidity conditions, however if it runs for long periods of time in a high humidity environment then the following precautions should be carried out.
The indoor unit should be externally insulated using10-20mm thickness glass fibre The normal pipe insulation is around 8mm.
This should be replaced with up to 30mm thickness insulation.



3. Sealing the Wall:
To prevent rainwater or other foreign bodies from entering the room and air-conditioner after installing the tubing and drain pipe,
the gap between wall hole and tubing, drain pipe and electric wire should be sealed with mastic, sealant rubber or putty, or poor performance or leakage will result.
If the outdoor unit is higher than indoor unit, tubing should be bent to ensure that the lowest point of the tubing is lower than the wall hole to prevent rainwater entering the room or air-conditioner along the piping system.



Make a cut in the heat insulation materials of bent pipe (for drainage)



★Connection of refrigerant pipe

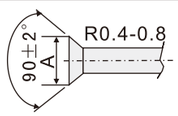
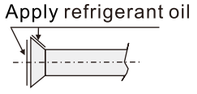
The standard refrigerant pipe length is 5m. If the distance between the indoor and outdoor unit is longer than this then the pipe needs to be extended.
Please refer to the following table for the limitations of each unit as far as maximum distance and height.
Do not exceed these limits or compressor failure may result.
Keep the pipe separation length and number of bends to the lowest possible and always follow the shortest path for the pipe installation.
As the pipe length and number of bends increases the performance of the unit decreases and energy use increases.

Specification / Model	Connecting pipe dim.(ϕmm)		Max. Connecting pipe& length			Max. Fall (m)	Max. Bending number
	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Max. Length (m)		
18000BTU	6.35	12.7	7.94	15.88	25	10	5
24000BTU	9.52	15.88	9.52	19.05	30	15	8
30000BTU	9.52	15.88	9.52	19.05	30	15	8
36000BTU	9.52	15.88	9.52	19.05	50	15	8
48000BTU	9.52	19.05	12.7	22.2	50	20	10
60000BTU	9.52	19.05	12.7	22.2	50	20	10

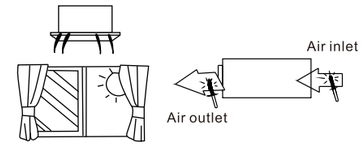
Only refrigeration quality, deoxidised, seamless, phosphor copper tube suitable for R410a should be used as a refrigerant pipe.

Requirements for connecting pipe between indoor unit and outdoor unit

1. Machining dimension of flared pipe section is as shown in following table;
2. When flaring nut is connected, some refrigerant oil should be applied on the flared pipe section (both inside wall and outside wall), and screw the nut by 3~4 thread pitches before finally tightening it;
3. Tightening torque is shown in the following table;
4. Carry out leakage test after completion of the installation.

Tubing specification	Tightening torque	Machining dimension of flared pipe section	Shape of flared mouth	Apply refrigerant oil
ϕ6.35mm	15-19N.m	8.3-8.7mm		
ϕ9.52mm	35-40N.m	12.0-12.4mm		
ϕ12.7mm	50-60N.m	15.4-15.8mm		
ϕ15.88mm	62-76N.m	18.6-19.0mm		
ϕ19.05mm	98-120N.m	22.9-23.3mm		

In case one of the following conditions happens, please check the unit as shown below. If the problems persist, please contact the dealer or the customer service center.

Fault	Check
The unit does not operate	● Has the Earth Leakage device tripped? ● Has the circuit breaker or fuse tripped ● fuse tripped ● Is the electrical Voltage normal (between 90 & 110%) 
The cooling or heating performance is poor	● Is the air filter dirty (if the filter has been installed)? ● Are the air inlet and outlet blocked? ● Are the door and window closed? When the unit has been running for 15 minutes, measure the temperature of the air inlet and outlet. If the two temperature differ 8℃ or above during cooling and differ 14℃ or above during heating, it is normal. In different environments these figures may vary. Please consult your installer for advice. 
The indoor fan does not appear to operate	● During heating or under certain other circumstances the indoor fan may slow down or stop as part of the systems normal operation. 
Indoor Unit produces water vapour	● This can occur when the cold air from the unit meets the warm air in the room 
The indoor unit makes strange sounds	● When the air conditioner stops, or changes between cooling and heating modes a gurgling or whooshing sound is normally made ● The indoor unit will expand or contract due to the temperature change and may produce creaking or groaning sounds ● A gurgling sound is made by the flow of refrigerant through the pipes 
The air conditioner seems to produce unpleasant smells	● The air conditioner cannot produce smells by itself but odours or bacteria taken in from the room may accumulate inside the unit and produce unpleasant odours. ● Try cleaning the air filter. If the problem persists the unit must be cleaned by a professional so please contact your dealer or service centre.
During heating the indoor fan only operates after the unit starts heating and the operation light on the wired controller (optional) flashes	● In order to prevent cold drafts in the room the indoor fan only runs when the air is hot during heating mode. When there is a requirement for heating and the unit starts to heat then the fan will start, after a short time. ● The unit has a memory function and, in case of a power failure, will restart after power is restored in the same mode and with the same settings as before the power failure.