MUNDOCLIMA®

Cassette FCU DC

Installation and owner's manual and information requirements

MUCS-W9

www.mundoclima.com

CL04433 to CL04435
English

CONTENTS

IMPORT NT

Thank you for selectiong super quality air conditioner. To ensure satisfactory operation for many ears to come, this manual should be read carefully before the installation and before using the air conditioner. After reading, store it a safe place. Please refer to the manual for questions on use or in the event that any irregularities occur.
This Air Conditioner should be used for hosehold or commercial use.
This unit must be installed by a professional.

W RNING

The power supply must be SINGLE-PHASE (one phase (L) and one neutral (N)) with his grounded power (GND)) or THREE-PHASE (three phase (L1, L2, L3) and one neutral (N) with his grounded power (GND)) and his manual switch. Any breach of these specifications involve a breach of the warranty conditions provided by the manufacturer.

NOT

In line with the company's policy of continual product improvement, the aesthetic and dimensional characteristics, technical data and accessories of this appliance may be changed without notice.

TT NTION

Read this manual carefully before installind or operating you new chiller unit. Make sure to save this manual for future reference.

INSTALLATION MANUAL - CONTENTS

1. PRECAUTIONS

- **Be sure to be in conformity with the local, national and international laws and regulations.**
- **Read "PRECAUTIONS" carefully before installation.**
- **The following precautions include important safty items. Observe them and never forget.**
- **Keep this manual with the owner's manual in a handy place for future reference.**
- **Before out from factory, FAN COIL UNIT (AIR UNITS) has passed Fan Coil Overpressure Resistant Test, Statically and Dynamically Balanced Adjustment, Noise Test, Air (cool) Volume Test, Electric Property Test, Outline Quality Detection.**

The safty precautions listed here are divided into two categories. In either case, important safty information is listed which must be read carefully.

WARNING

Failure to observe a warning may result in death.

CAUTION

Failure to observe a caution may result in injury or damage to the equipment.

After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained. Also, inform customers that they should store this installation manual along with the owner's manual for future reference.

WARNING

Be sure only trained and qualified service personnel to install, repair or service the equipment.
Improper installation, repair, and maintenance may result in electric shocks, short-circuit, leaks, fire or other damage to the equipment.

Install according to this installation instructions strictly.
If installation is defective, it will cause water leakage, electric shocks, fire.

for installation.
otherwise, it will cause the set to fall, water leakage, electrical shock fire.

Install at a strong and firm location which is able to withstand the set' s weight.
If the strength is not enough or installation is not properly done, the set will drop to cause injury.

The appliance must be installed 2.3m above floor.

The appliance shall not be installed in the laundry.

Before obtaining access to terminals, all supply circuits must be disconnected.

The appliance must be positioned so that the plug is accessible.

The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.

For electrical work, follow the local national wiring standard, regulation and this installation instructions. An independent circuit and single outlet must be used.
If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock fire.

Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal.
If connection or fixing is not perfect, it will cause heat-up or fire at the connection.

Wiring routing must be properly arranged so that control board cover is fixed properly.
If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.

If the supply cord is damaged, it must be replaced by the manufacture or its sevice agent or similarly qualifued person in order to avoid a hazard.

An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

This appliance can be children aged from 8 yeas and above and persons with reduced physical,sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruct.

Do not modify the length of the power supply cord or use of extension cord, and do not share the single outlet with other electrical appliances.
Otherwise, it will cause fire or electrical shock.

If the water leaks during installation, ventilate the area immediately.

After completing the installation work, check that the water does not leak.

The cool water in the unit is not lower than 3℃, hot water is not higher than 70℃. Water in the unit must clean, air quality must meet to the standard of PH=6.5~7.5.

CAUTION

Ground the air conditioner.
Do not connect the ground wire to gas or water pipes, lightning rod or a telephone ground wire.Incomplete grounding may result in electric shocks.

Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks.

Connect the outdoor unit wires , then connect the indoor unit wires.
You are not allow to connect the air conditioner with the power source until w(including
iring and piping the air conditioner is done.

While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.
Improper drain piping may result in water leakage and property damage.

Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise.
Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

The appliance is not intended for use by young children or infirm persons without supervision.

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

Don't install the air conditioner in the following locations:

- There is petrolatum existing.
- There is salty air surrounding (near the coast).
- There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- The Volt vibrates violently (in the factories).
- In buses or cabinets.
- In kitchen where it is full of oil gas.
- There is strong electromagnetic wave existing.
- There are inflammable materials or gas.
- There is acid or alkaline liquid evaporating.
- The appliance shall not be installed in the laundry.
- Avoid installing it in a narrow sapce which has a high requirement to noise.
- Other special conditions.

2. INSTALLATION INFORMATION

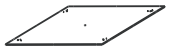
- **To install properly, please read this "installation manual" at first.**
- **The air conditioner must be installed by qualified persons.**
- **When installing the indoor unit or its tubing, please follow this manual as strictly as possible.**
- **If the air conditioner is installed on a metal part of the building, it must be electrically insulated according to the relevant standards to electrical appliances.**
- **When all the installation work is finished, please turn on the power only after a thorough check.**
- **Regret for no further announcement if there is any change of this manual caused by product improvement.**

INSTALLATION ORDER

- Select the location;
- Install the FCU;
- Install the water pipe;
- Connect the drain pipe;
- Wiring;
- Test operation.

3. ATTACHED FITTINGS

Please check whether the following fittings are of full scope. If there are some spare fittings, please restore them carefully.

	NAME	SHAPE	Four-way Cassette	Four-way Cassette (compact)
INSTALLATION FITTINGS	1. Installation paper board		1	1
	2. Bolt M6		4	—
	3.Nut		8	8
	4.Washer		8	8
Tubing & Fittings	1. Sponge Ⅰ (250*250*8)		1	1
	2. Sponge Ⅱ (60*100*5)		1	1
	3. Soundproof / insulation sheath		2	2
Drainpipe Fittings	4. Out-let pipe		1	1
	5. Out-let pipe sheath		1	—
	6. Out-let pipe clasp		1	1
	7. Tightening band		5	5
Others	8. Installation manual	This manual	1	1
	9. Remote controller manual		1	1
	10. Owner's manual		1	1

4. INSPECTING AND HANDLING THE UNIT

At delivery, the package should be checked and any damage should be reported immediately to the carrier claims agent.

When handling the unit, take into account the following:

1 Fragile, handle the unit with care.

2 Choose on before hand the path along which the unit is to be brought in.

3 Move this unit as originally package as possible.

4 When lifting the unit , always use protectors to prevent belt damage and pay attention to the position of the unit's centre of gravity.

5. INDOOR UNIT INSTALLATION

5.1 Installation place

(refer to fig.5-1,fig.5-2,fig.5-3 and table 5-1 for specification.)

The indoor unit should be installed in a location that meets the following reauirements:

- Avoid installing it in a narrow sapce which has a high requirement to noise.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.
- Don't install it in a place whose air contains much salt. If this can't be avoided, choose a anticorrosive model.

CAUTION

Installing the equipment in any of the following places may lead to faults of the equipment (if that is inevitable, consult the supplier):

A. The site contains mineral oils such as cutting lubricant.
B. Seaside where the air contains much salt.
C. Hotpring area where corrosive gases exist, e.g., sulfide gas.
D. Factories where the supply voltage fluctuates seriously.
E. Inside a car or cabin.
F. Place like kitchen where oil permeates.
G. Place where strong electromagnetic waves exist.
H. Place where flammable gases or materials exist.
I. Place where acid or alkali gases evaporate.
J. Other special environments.

5.2 Installation procedures for fresh air intake duct connection

■ **Preparing the connection hole**
- Cut off the knockout hole on the side plate with a nipper.
- Cut the inner insulation of the hole portion with a cutter. *(refer to fig.5-4)*

■ **Placing the insulation**
- Put the insulation tightly around the hole of the unit as shown.
  The ends of the side plate and the inner insulation must be completely adhered without leaving any clearance along the circumference of the hole.
  Make sure the inner surface of insulation tightly contacts the inner insulation edge and the side plate. *(refer to fig.5-5)*

5.3 Install the main body

■ **The existing ceiling (to be horizontal)**

1 Cut a quadrangular hole of 880x880mm in the ceiling according to the shape of the installation paper board.
- The center of the hole should be at the same position of that of the air conditioner body.
- Determine the lengths and outlets of the connecting pipe, drainpipe and cables.
- To balance the ceiling and to avoid vibration, please enforce the ceiling when necessary.

2 Select the position of installation hooks according to the hook holes on the installation board.
- Drill four holes of ϕ12mm, 50~55mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).
- Face the concave side of the installation hooks toward the expansible hooks. Determine the length of the installation hooks from the height of ceiling, then cut off the unnecessary part.
- If the ceiling is extremely high, please determine the length of the installation hook according to facts.

3 Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body.
- If the drainpipe is awry, leakage will be caused by the malfunction of the water-level switch.
- Adjust the position to ensure the gaps between the body and the four sides of ceiling are even. The body's lower part should sink into the ceiling for 10~12 mm *(refer to fig.5-6)*
- In general, L is half of the screw length of the installation hook.*(refer to fig.5-6)*
- Locate the air conditioner firmly by wrenching the nuts after having adjusted the body's position well.*(refer to fig.5-7)*

■ **New built houses and ceilings**

1 In the case of new built house, the hook can be embedded in advance (refer to 2 mentioned above). But it should be strong enough to bear the indoor unit and will not become loose because of concrete shrinking.

2 After installing the body, please fasten the installation paper board onto the air conditioner with bolts(M6X12) to determine in advance the sizes and positions of the hole opening on ceiling.*(refer to fig.5-8)*
- Please first guarantee the flatness and horizontal of ceiling when installing it.
- Refer to 1 mentioned above for others.

3 Refer to 3 above for installation.

4 Remove the installation paper board.

CAUTION

After installing the body, the four bolts(M6x12)must be fastened to the air conditioner onto ensure the body is grounded well.

FIGURES

Fig.5-1

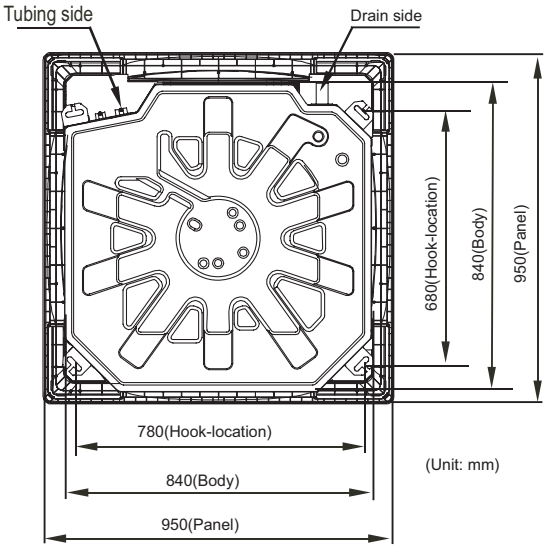


Fig.5-2

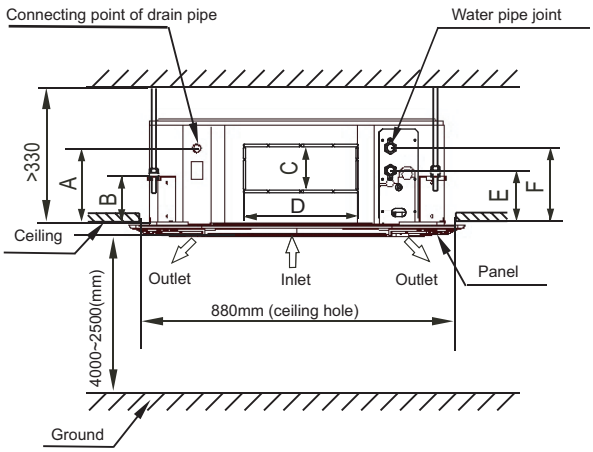


Table 5-1

Size (mm) / Model	A	B	C	D	E	F
MUCS-20-W9	180	140	85	350	145	195
MUCS-24/36-W9	180	140	155	350	155	205

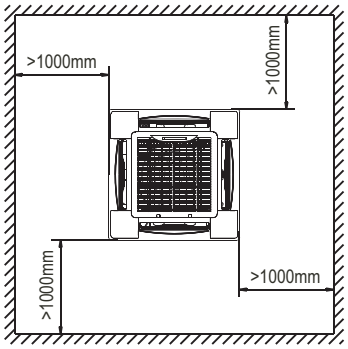


Fig.5-3

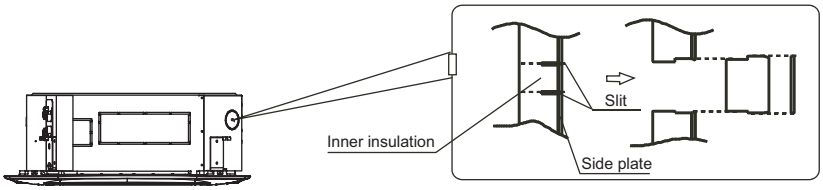


Fig.5-4

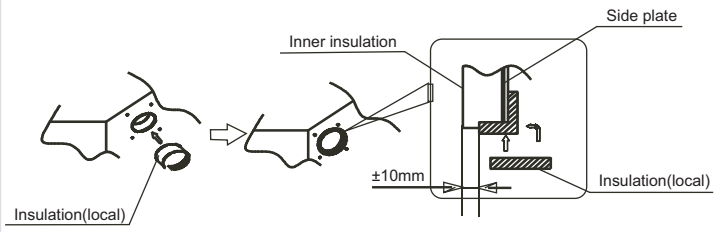


Fig.5-5

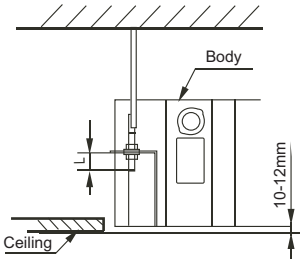


Fig.5-6

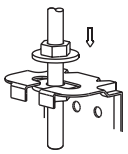


Fig.5-7

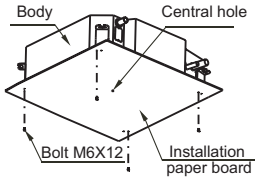


Fig.5-8

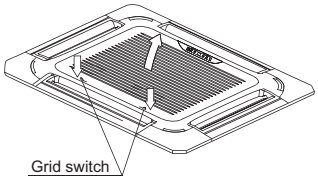


Fig.5-9

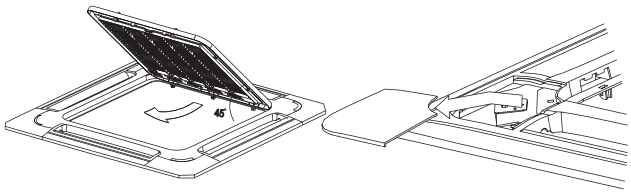


Fig.5-10

Fig.5-11

NOTE

All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased(depend on model).The actual shape shall prevail.

5.4 Install The Panel

CAUTION

Never put the panel face down on floor or against the wall, or on bulgy objects.

Never crash or strike it.

1 Remove the air-in grill.

- Slide two grill switches toward the middle at the same time, and then pull them up. *(Refer to fig.5-9)*
- Draw the grill up to an angle of about 45°, and remove it. *(Refer to fig.5-10)*

2 Remove the installation covers at the four corners

- Wrench off the bolts, loose the rope of the installation covers, and remove them. *(Refer to fig.5-11)*

3 Install the panel

- Align the swing motor on the panel to the tubing joints of the body properly.
- Fix hooks of the panel at swing motor and its opposite sides to the hooks of corresponding water receiver. Then hang the other two panel hooks onto corresponding hangers of the body.

CAUTION

Do not coil the wiring of the swing motor into the seal sponge.

- Adjust the four panel hook screws to keep the panel horizontal, and screw them up to the ceiling evenly.
- Regulate the panel in the direction of the arrow slightly to fit the panel's center to the center of the ceiling's opening. Guarantee that hooks of four corners are fixed well.
- Keep fastening the screws under the panel hooks, until the thickness of the sponge between the body and the panel's outlet has been reduced to about 4~6mm. The edge of the panel should contact with the ceiling well.
  - If the gap between the panel and ceiling still exists after fastening the screws, the height of the indoor unit should be modified again.
  - You can modify the height of the indoor unit through the openings on the panel's four corners, if the lift of the indoor unit and the drainpipe is not influenced .

4 Hang the air-in grill to the panel, then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

5 Relocate the air-in grill in the procedure of reversed order.

6 Relocate the installation cover.

- Fasten the rope of installation cover on the bolt of the installation cover.
- Press the installation cover into the panel slightly.

6. CONNECT THE DRAIN PIPE

6.1 Install the drain pipe of indoor unit

1) The drainpipe can use PVC pipe (external diameter about 37～39mm, inner diameter is 32mm).

2) Joint drainpipe connector to the end side of water pumping pipe, and fix drainpipe together with water outflow pipe and thermal insulation tube by clasp of water outflow pipe (attached).

CAUTION

Don't use forcing strength to crack the water-pumping pipe.

3) Water-pumping pipe and drainpipe from main body must be wrapped by insulation tube evenly, and bound by tighten band for obstructing air getting in and coagulation.

4) Prevent from water backflow into unit inside during shutdown, the drain pipe shall place down side and drain water to outdoor (drain side), the gradient of the drain pipe should be higher than (1/100), without salient and water remain.(*Refer to Fig.6-1 a*)

5) When connecting drainpipe, don't drag the pipe that would pull the main unit. For this, please arrange bearing points every 0.8 to 1.0 meter to avoid pipe be bended (See *Fig.6-1 b*).

6) When connect a lengthen drainpipe, apply protective tube to wrap its indoor parts for ensuring the lengthen part connected tightly.

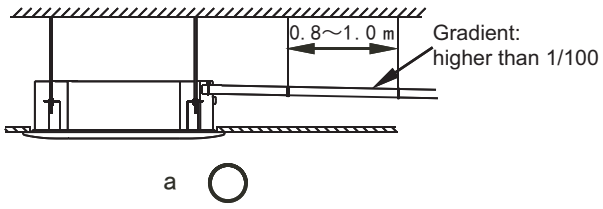
7) In case the drainpipe outlet is higher than pumping connective pipe of the main body, the drainpipe must be arranged upwards vertically by using connective assembly of the water outlet for vertical bending, and the height of the drainpipe shall set to the defrosting pan surface no more than 1000mm, otherwise, too much backflow while shutdown would leads to overflow (*Refer to Fig.6-2*).

8) Base on the actual requirement to bend piping, and use connective assembly of water outlet in terminal box for pipe layout.

CAUTION

The joints in drain system must be sealed to avoid water leakage.

9) The height from floor to the end of drainpipe or the bottom of drain slot must more than 50 mm. Don't immerse the end of drainpipe or the bottom of drain slot into water. When drain condensate liquid to raceway, please bend the drainpipe to a U-sharped hydroseal for avoiding stench transmitted by drainpipe to indoor.



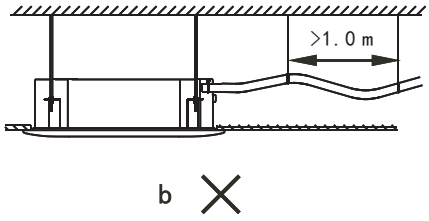


Fig.6-1

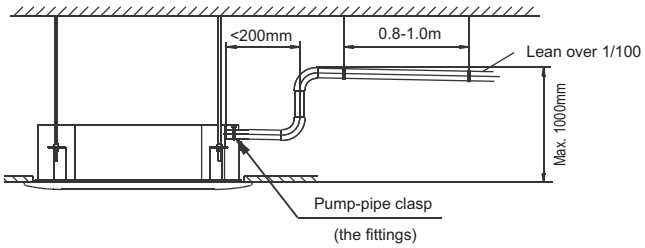


Fig.6-2

6.2 Drainage test

- Check whether the drainpipe is unhindered
- New built house should have this test done before paving the ceiling.

  1、Remove the test cover, and stow water of about 2000ml to the water receiver through the stow tube. (Refer to Chart 19)

  2、Turn on the power, and operate the air conditioner under the "COOLING" mode. Listen to the sound of the drain pump. Check whether the water is discharged well (a lag of 1min is allowed before discharging, according to the length of the drain pipe), and check whether water leaksfrom the joints.

  CAUTIONS: If there is any malfunction, please resolve it immediately.

  3、Stop the air conditioner for there minutes, check if everything is ok. If the drain hose is located unreasonable, water overflow will cause the Alarm indicator lamp flashing (For both cooling and heating type or cooling only type), even the water leak out from the water receiver.

  4、Check the drain pump whether drain water immediately when alarm sound for the high water lever. If the water lever can't come down below to the limited water lever, the air conditioner will stop. Restart it until turn off the power and drain off all the water.

  5、Turn off the power, drain the water away.

- The drain plug is used to empty the water-receiver for maintenance of the air conditioner. Please stuff it imposition at all times during operation to avoid leakage.

7. WATER PIPE INSTALLATION

7.1 Material and Size of the Piping

Table 7-1

Pipe Material	Copper Pipe	
Connections	3/4”	3/4”
	3/4”	3/4”

7.2 Connection of the Water Pipe

Connection of the water pipe should be done by professionals.
Double-span should be used when connecting pipes of Indoor Unit.

NOTE

Please refer to installation instructions for the water piping conection of the air conditioner that with throttle device inside.

8. WIRING

CAUTION

The air conditioner should use separate power supply with rated voltage.

The external power supply to the air conditioner should have ground wiring, which is linked to the ground wiring of the indoor and outdoor unit.

The wiring work should be done by qualified persons according to circuit drawing.

an all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device(RCD)with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.

The appliance shall be installed in accordance with national wiring regulations.

Be sure to locate the power wiring and the signal wring well to avoid cross-disturbance.

Do not turn on the power until you have checked carefully after wiring.

8.1 Connect the cable

- Dissemble the bolts from the cover.
- Connect the connective cables to the terminals as identified with their respective mached numbers on the terminal block.
- Re-install the cover or the protection board.

The power supply specifications are as following, see table 8-1. If the capacity of wire is too small, it may result in overheating on the wire and cause the machine burned out.

Table 8-1

MODEL		20 / 24 / 36
POWER	PHASE	1-phase
	FREQUENCY AND VOLT	220-240V~ 50Hz
CIRCUIT BREAKER/FUSE(A)		15/15
INDOOR UNIT POWER WIRING(mm^2)	BELOW 20M	Twisted pairwire 2.5mm^2
	BELOW 50M	Twisted pairwire 6mm^2
GROUND WIRING(mm^2)		2.5

The power cord type designation is H05RN-F or above.

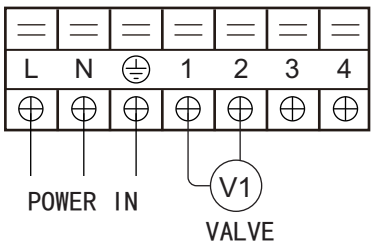
CAUTION

The reserved function is indicated in broken line table, users can select it when necessary.

An all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device (RCD) with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.

8.2 Terminal Board Diagram

Please refer to the indoor unit wiring diagram for the wiring.



NOTE

The air-conditioners can connect with Central Control Monitor (CCM). Before operation, please wiring correctly and set system address and network address of indoor units.

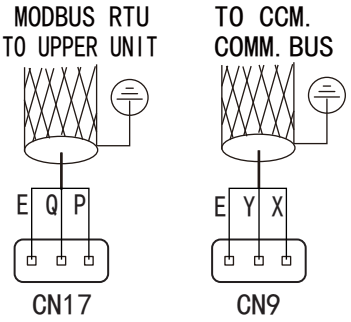


Fig.8-1

Please adopt the shielded twisted-pair wire, and connect the shielded layer to E

Note: for more signals, like 0-10V input, you can see the Wiring diagram in page 20.

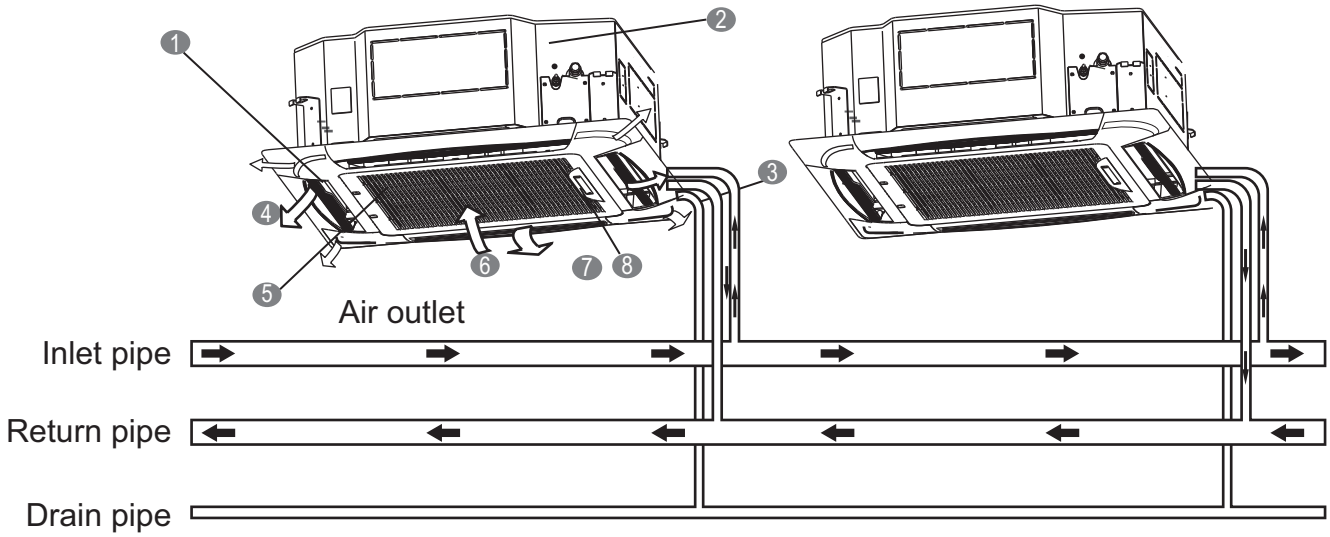
8.3 Network address set

Every unit in network has only one network address to distinguish each other. Address code of each unit in LAN is set bu code LAN is set by code switch on the PCB and the set range is 0-63.

Table 8-2

Toggle switch set		Network address code
SW1	ENC1	
		00~15
		16~31
		32~47
		48-63

OWNER'S MANUAL - CONTENTS



1. Air flow louver (at air outlet)
2. Drain pump (drain water from FCU)
3. Drain pipe
4. Air outlet
5. Air filter (inside air-in grill)
6. Air inlet
7. Air-in grill
8. Display panel

NOTE

All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased(depend on model).The actual shape shall prevail.

1. IMPORTANT SAFETY INFORMATION

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

The safety precautions listed are divided into two categories. In either case, important safety information is listed which must be read.

WARNING

Failure to observe a warning may result in death. The appliance shall be installed in accordance with national wiring regulations.

CAUTION

Failure to observe a caution may result in injury or damage to the equipment.

WARNING

Ask your dealer for installation of the air conditioner.
Incomplete installation performed by yourself may result in a water leakage, electric shock, and fire.

Ask your dealer for improvement, repair, and maintenance.
Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.

In order to avoid electric shock, fire or injury, or if you detect any abnormality such as smell of fire, turn off the power supply and call your dealer for instructions.

Never let the indoor unit or the remote controller get wet.
It may cause an electric shock or a fire.

Never press the button of the remote controller with a hard, pointed object.
The remote controller may be damaged.

Never replace a fuse with that of wrong rated current or other wires when a fuse blows out.
Use of wire or copper wire may cause the unit to break down or cause a fire.

It is not good for your health to expose your body to the air flow for a long time.

Do not insert fingers, rods or other objects into the air inlet or outlet.
When the fan is rotating at high speed, it will cause injury.

Never use a flammable spray such as hair spray, lacquer or paint near the unit.
It may cause a fire.

Never touch the air outlet or the horizontal blades while the swing flap is in operation.
Fingers may become caught or the unit may break down.

Never put any objects into the air inlet or outlet.
Objects touching the fan at high speed can be dangerous.

Never inspect or service the unit by yourself.
Ask a qualified service person to perform this work.

Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact you local government for information regarding the connection systems available.

To prevent water leak, contact your dealer.
When the system is installed and runs in a small room, it is required to keep the concentration of the water, if by any chance coming out, below the limit. the cool capacity would be lower.

Turn off any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
Do not use the air conditioner until a service person confirms that the portion where the refrigerant leaks is repaired.

CAUTION

Do not use the air conditioner for other purposes.
In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.

Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
Otherwise, an electric shock and injury may result.

In order to avoid electric shock or fire, make sure that an earth leak detector is installed.

Be sure the air conditioner is grounded.
In order to avoid electric shock, make sure that the unit is grounded and that the earth wire is not connected to gas or water pipe, lightning conductor or telephone earth wire.

In order to avoid injury, do not remove the fan guard of the outdoor unit.

Do not operate the air conditioner with a wet hand.
An electric shock may happen.

Do not touch the heat exchanger fins.
These fins are sharp and could result in cutting injuries.

Do not place items which might be damaged by moisture under the indoor unit.
Condensation may form if the humidity is above 80%, the drain outlet is blocked or the filter is polluted.

After a long use, check the unit stand and fitting for damage.
If damaged, the unit may fall and result in injury.

To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.

Arrange the drain hose to ensure smooth drainage.
Incomplete drainage may cause wetting of the building, furniture etc.

Never touch the internal parts of the controller.
Do not remove the front panel. Some parts inside are dangerous to touch, and a machine trouble may happen.

Never expose little children, plants or animals directly to the air flow.
Adverse influence to little children, animals and plants may result.

Do not allow a child to mount on the outdoor unit or avoid placing any object on it.
Falling or tumbling may result in injury.

Do not operate the air conditioner when using a room fumigation - type insecticide.
Failure to observe could cause the chemicals to become deposited in the unit, which could endanger the health of those who are hypersensitive to chemicals.

Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit.
It may cause incomplete combuston or deformation of the unit due to the heat.

Do not install the air conditioner at any place where flammable gas may leak out.
If the gas leaks out and stays around the air conditioner, a fire may break out.

The appliance is not intended for use by young children or infirm persons without supervision.

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

DISPOSAL：Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

- Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
- Contact you local government for information regarding the collection systems available.

2. PARTS NAMES

The air conditioner consists of the indoor unit, the connecting pipe and the remote controller.

- **Function indicators on indoor unit display panel**

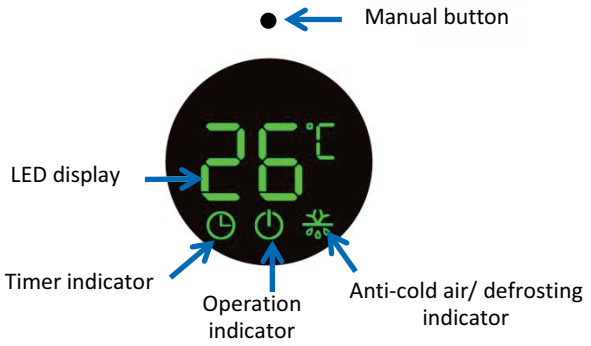


Fig.2-1

3. OPERATION RANGE

Use the system in the following temperature for safe and effective operation.

Table 3-1

Temperature / Mode	Outdoor temperature	Room temperature	water inlet temperature
Cooling operation	0°C～43°C	17°C～32°C	3°C～20°C
Heating operating	-15°C～24°C	0°C～30°C	30°C～70°C

NOTE

1. If air conditioner is used outside the above conditions, it may cause the unit to function abnormally.
2. The phenomenon is normal that the surface of air conditioning may condense water when the relative larger humidity in room, please close the door and window.
3. Optimum performance will be achieved within these operating temperature range.
4. In heating mode,the temperature of the inlet water must be under 75℃.
5. Water system operating pressure: Max: 1.6MPa, Min: 0.15MPa.

4. HINTS FOR ECONOMICAL OPERATION

The following should be noticed to ensure an economical operation. (Refer to corresponding chapterfor details)

- Adjust the air flow direction properly to avoid winding toward your body.
- Adjust the room temperature properly to get a comfortable situation and to avoid supercooling and superheat.
- In cooling, close the curtains to avoid direct sunlight.
- To keep cool or warm air in the room, never open doors or windows more often than necessary.
- Set the timer for the desired operating time.
- Never put obstructions near the air outlet or the air inlet. Or it will cause lower efficiency, even a sudden stop.
- Adjust the air flow direction properly to avoid winding toward your body.
- Adjust the room temperature properly to get a comfortable situation and to avoid supercooling and superheat.
- In cooling, close the curtains to avoid direct sunlight.
- To keep cool or warm air in the room, never open doors or windows more often than necessary.
- A clogged air filter will reduce cooling or heating efficiency, please clean it once two weeks.

5. ADJUSTING AIR FLOW DIRECTION

While the unit is in operation, you can adjust the air flow louver to change the flow direction and naturalize the room temperature evenly. Thus you can enjoy it more comfortably.

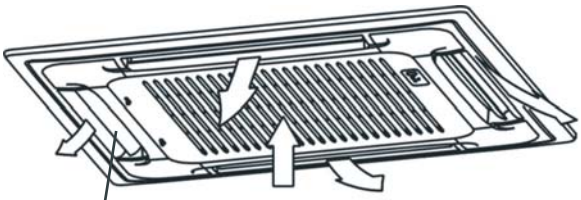


Fig.5-1

- **Set the air flow direction.**
  Press the SWING button to adjust the louver to the desired position and press this button again to maintain the louver at this position.
- **Adjust the air flow direction automatically.**
  Press the SWING button, the louver will swing automatically.
  While this function is set, the swing fan of indoor unit runs; otherwise, the swing fan doesn't run. The swing scale of every side is 30°. When the air conditioner isn't in operation (including when TIMER ON is set), the SWING button will be invalid.

6. MAINTENANCE

CAUTION

Before you clean the air conditioner, be sure the power supply is off.

Check if the wiring is not broken off or disconnected.

Use a dry cloth to wipe the indoor unit and remote controller.

A wet cloth may be used to clean the indoor unit if it is very dirty.

Never use a damp cloth on the remote controller.

Do not use a chemically-treted duster for wiping or leave such material on the unit for long.
it may damage or fade the surface of the unit.

Do not use benzine, thinner, polishing powder, or similar solvents for cleaning.
These may cause the plastic surface to crack or deform.

Maintenance after a long stop period

(eg. at the beginning of the season)

Check and remove everything that might be blocking inlet and outlet vents of indoor units and outdoor units.

Clean air filters and casings of indoor units.
Refer to "Cleaning the air filter" for details on how to proceed and make sure to install cleaned air filters back in the same position.

Turn on the power at least 12 hours before operating the unit in order to ensure smoother operation. As soon as he power is turned on, the remote controller displays appear.

Maintenance before a long stop period

(eg. at the end of the season)

Let the indoor units run in fan only operation for about half a day in order to dry the interior of the units.

Clean air filters and casings of indoor units. Refer to " Cleaning the air filter" for details on how to proceed and make sure to install cleaned air filters back in the same position.

Cleaning the air filter

The air filter can prevent the dust or other particulate from going inside. In case of blockage of the filter, the working efficiency of the air conditioner may greatly decrease .
Therefore, the filter must be cleaned once two weeks during long time usage.

If the air conditioner is installed in a dust place, clean the air filter frequent.

If the accumulated dust is too heavy to be cleaned, please replace the filter with a new one(replaceable air filter is an optional fitting).

The filter cleaning should be performed by a suitable service provider.

1 **Open the air-in grill**

Push the grill switches towards the middle simultaneously as indicated in *Fig.6-1*. Then pull down the air-in grill.

The control box cables ,which are originally connected with the main body electrical terminators must be pulled off before doing as indicated above.

2 **Take out the air-in grill (together with the air filter shown in *Fig.6-2*).**

Pull the air-in grill down at 45° and lift it up to take out the grill.

3 **Dismantle the air filter.**

4 **Clean the air filter**

Vacuum cleaner or pure water may be used to clean the air filter.If the dust accumulation is too heavy , please use soft brush and mild detergent to clean it and dry out in cool place

- *The air-in side should face up when using vacuum cleaner. (See Fig. 6-3)*
- *The air-in side should face down when using water. (See Fig. 6-4)*

Caution : Do not dry out the air filter under direct sunshine or with fire.

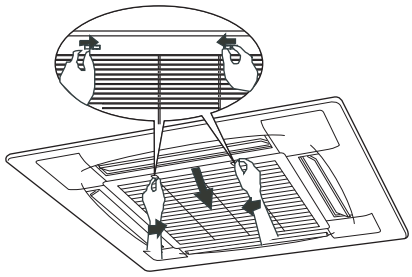


Fig.6-1

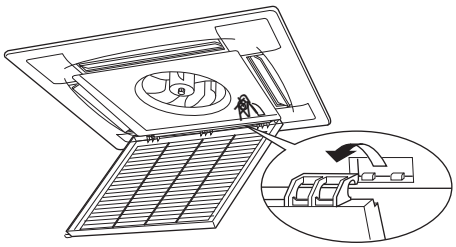


Fig.6-2

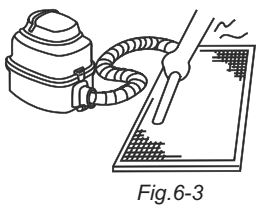


Fig.6-3

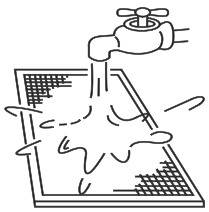


Fig.6-4

CAUTION

Do not dry out the air filter under direct sunshine or with fire.

5. Re-install the air filter.

6. Install and close the air-in grill in the reverse orders of step 1 and 2 and connect the control box cables to the corre sponding terminators of the main body.

7. FOLLOWING SYMPTOMS ARE NOT AIR CONDITIONER TROUBLES

Symptom 1: The system does not operate

- The air conditioner does not start immediately after the ON/OFF button on the romote controller is pressed.
  If the operation lamp lights, the system is in normal condition.To prevent overloading of the compressor motor, the air conditioner starts 3 minutes after it is turned ON.
- If the operation lamp and the "PRE-DEF indicator(cooling and heating type) or fan only indicator(cooling only type)" light, it means you choose the heating model, When just starting, if the compressor has not started, the indoor unit appears "anti cold wind" protection because of its overlow outlet temperature.

Symptom 2: Change into the fan mode during cooling mode

- In order to prevent the indoor evaporator frosting, the system will change into fan mode automatically, restore to the cooling mode after soon.
- When the room temperature drops to the set temperature, the compressor goes off and the indoor unit changes to fan mode; when the temperature rises up, the compressor starts again. It is same in the heating mode.

Symptom 3: White mist comes out of a unit

- When humidity is high during cooling operation If the interior of an indoor unit is extremely contaminated,the temperature distribution inside a room becomes uneven. It is necessary to clean the interior of the indoor unit.Ask your dealer for details on cleaning the unit.This operation requires a qualified service person.
- When the system is changed over to heating operation after defrost operation Moisture generated by defrost becomes steam and is exhausted.

Symptom 4: Noise of air conditioners cooling

- A continuous low "shah" sound is heard when the system is in cooling operation or at a stop.
  When the drain pump (optional accessories) is in operation,this noise is heard.
- A "pishi-pishi" squeaking sound is heard when the system stops after heating operation.
  Expansion and contraction of plastic parts caused by temperature change make this noise.
- When the tone of operating noise changes.
  This noise is caused by the change of frequency.

Symptom 5: Dust comes out of the unit

- When the unit is used for the first time in a long time.
  This is because dust has gotten into the unit.

Symptom 6: The units can give off odours

- The unit can absorb the smell of rooms, furniture, cigarettes, etc., and then emit it again.

8. TROUBLESHOOTING

8.1. Troubles and causes of air conditioner

If one of the following malfunctions occur, stop operation, shut off the power, and contact with your dealer.

- The operation lamp is flashing rapidly (twice every second) This lamp is still flashing rapidly after turn off the power and turn on again.
- Remote controller receives malfunction or the button does not work well.
- A safety device such as a fuse, a breaker frequently actuates.
- Water leaks from indoor unit.
- Other malfunctions.

Table 8-1

Symptoms	Causes	Solution
Unit does not start	• Power failure. • Power switch is off. • Fuse of power switch may have burned. • Batteries of remote controller exhausted or other problem of controller.	• Wait for the comeback of power. • Switch on the power. • Replace the fuse. • Replace the batteries or check the controller.
Air flowing normally but completely can't cooling	• Temperature is not set correctly.	• Set the temperature properly.
Low cooling effect	• Indoor unit heat exchanger is dirty. • The air filter is dirty. • Inlet of indoor units is blocked. • Doors and windows are open • Sunlight directly shine. • Too much heat resource. • Outdoor temp. is too high.	• Clean the heat exchanger. • Clean the air filter. • Eliminate all dirties and make air smooth. • Close doors and windows. • Make curtains in order to shelter from sunshine. • Reduce heat source. • AC cooling capacity reduces (normal).
Low heating effect	• Outdoor temperature is lower than 7°C . • Doors and windows not completely closed.	• Use heating device. • Close doors and windows.

Table 8-2

NO.	Malfunction	running lamp	timer lamp	defrosting lamp	alarm lamp	Error code
1	Room temperature sensor checking channel is abnormal	×	☆	×	×	E2
2	Evaporator sensor checking channel is abnormal	☆	×	×	×	E3
3	EEPROM malfunction	☆	☆	×	×	E7
4	Water-level switch malfunction	×	×	×	☆	EE
5	Fan Failure	☆	×	☆	×	E8
6	Not set models	×	×	☆	☆	PH

（× Extinguish, ☆ Flash at 5Hz）

8.2. Troubles and causes of remote controller

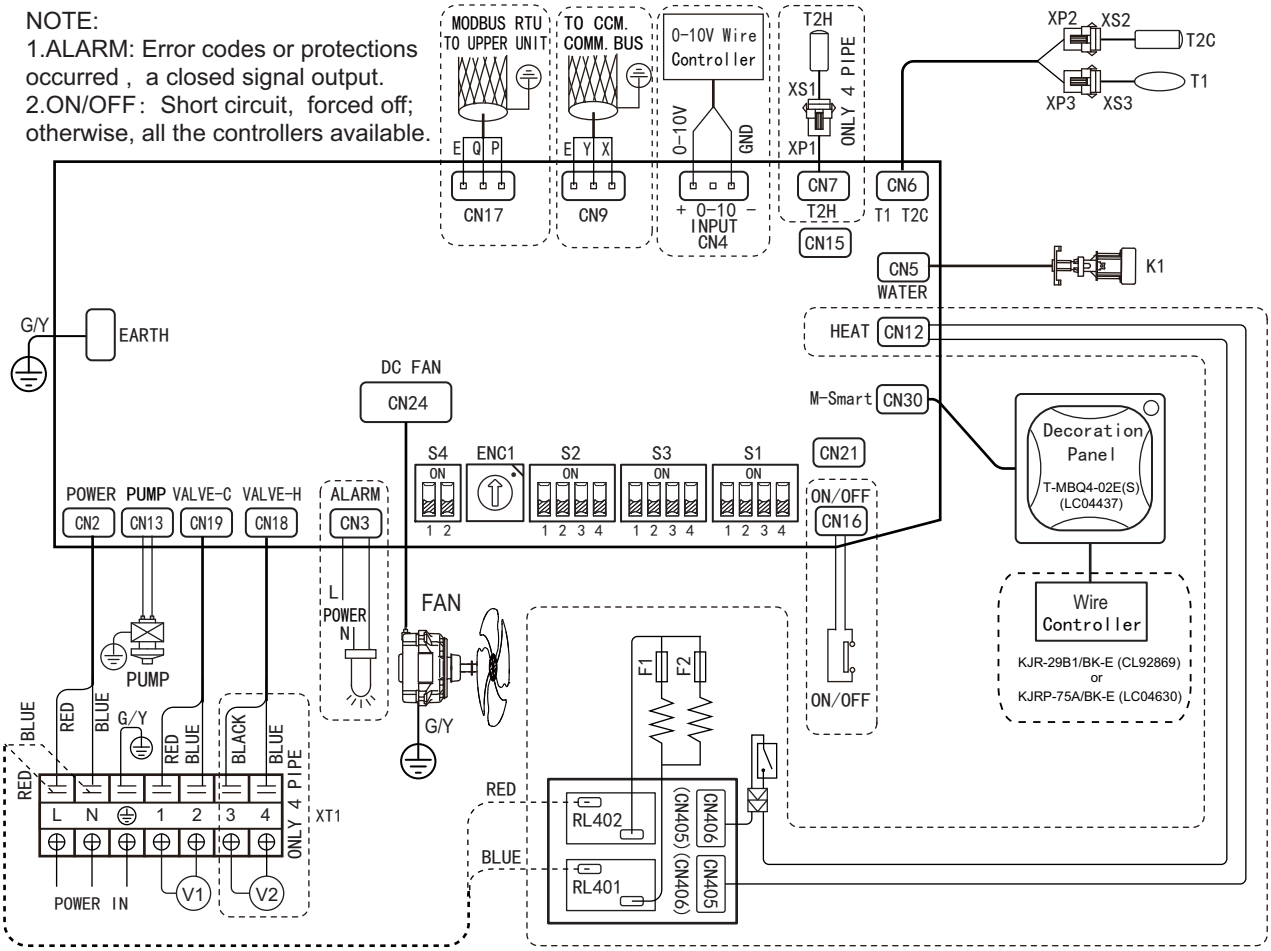
Before asking for serving or repairing , check the following points.

Table 8-3

Symptoms	Causes	Solution
The fan speed can not be changed.	● Check whether the MODE indicated on the display is "AUTO"	When the automatic mode is selected, the air conditioner will automatically change the fan speed.
	● Protection against hot wind in cooling mode. ● Protection against cold wind in heating mode.	Reduce the temperature of inlet in cooling mode rise the temperature of inlet in heating mode.
The remote controller signal is not transmitted even when the ON/OFF button is pushed.	● Check whether the batteries in the remote controller are exhausted.	The power supply is off.
The TEMP. indicator does not come on.	● Check whether the MODE indicated on the display is FAN ONLY	The temperature cannot be set during FAN mode.
The indication on the display disappears after a lapse of time.	● Check whether the timer operation has come to an end when the TIMER OFF is indicated on the display.	The air conditioner operation will stop up to the set time
The TIMER ON indicator goes off after a lapse of certain time.	● Check whether the timer operation is started when the TIMER ON is indicated on the display.	Up to the set time, the air conditioner will automatically start and the appropriate indicator will go off.
No receiving tone sounds from the indoor unit even when the ON/OFF button is pressed.	● Check whether the signal transmitter of the remote controller is properly directed to the infrared signal receiver of the indoor unit when the ON/OFF button is pressed.	Directly transmit the signal transmitter of the remote controller to the infrared signal receiver of the indoor unit, and then repeatly push the ON/OFF button twice.

ANNEXED I: WIRING DIAGRAM

NOTE:
1.ALARM: Error codes or protections occurred , a closed signal output.
2.ON/OFF: Short circuit, forced off; otherwise, all the controllers available.



CODE	PART NAME	CODE	PART NAME
CN1-30	P.C BOARD SOCKETS	T1	ROOM TEMPERATURE
K1	WATER LEVEL SWITCH	T2C/T2H	PIPE TEMPERATURE
DC FAN	INDOOR DC FAN MOTOR	XP1-7	CONNECTORS
M	SWING MOTOR	XS1-7	CONNECTORS
PUMP	PUMP MOTOR	XT1	7-WAY TERMINAL

Optional use

S1	S1-1	ON 1 2 3 4	2 pipe (default)
		ON 1 2 3 4	4 pipe
	S1-2	ON 1 2 3 4	Without enforcement to turn wind (default)
		ON 1 2 3 4	With enforcement to turn wind
	S1-3	ON 1 2 3 4	Normal anti-cold wind (default)
		ON 1 2 3 4	High temperature anti-cold wind
	S1-4	ON 1 2 3 4	Turn on E-heater and heating valve (default)
		ON 1 2 3 4	Turn on E-heater, turn off heating valve

S2	S2-1/2	ON 1 2 3 4	Temp.compensation value is 0 under cool mode (default)
		ON 1 2 3 4	Temp.compensation value is 1 under cool mode
		ON 1 2 3 4	emp.compensation value is 2 under cool mode
		ON 1 2 3 4	Temp.compensation value is 3 under cool mode
	S2-3/4	ON 1 2 3 4	Temp.compensation value is 3 under heat mode (default)
		ON 1 2 3 4	Temp.compensation value is 1 under heat mode
		ON 1 2 3 4	Temp.compensation value is 6 under heat mode
		ON 1 2 3 4	Temp.compensation value is 8 under heat mode

S3	ON 1 2 3 4	Reserved
	ON 1 2 3 4	MUCS-20-W9
	ON 1 2 3 4	Reserved
	ON 1 2 3 4	Reserved
	ON 1 2 3 4	MUCS-24-W9
	ON 1 2 3 4	MUCS-36-W9

	SWITCH FOR ADDRESS SETTING		
ENC 2 & SW1	'0-F'of the ENC2 and 'ON/OFF'of the SW1,the different position represents a different address.Is be combined 64 adress(0-63)	ON 1 2	Address 0-15
		ON 1 2	Address 16-31
		ON 1 2	Address 32-47
		ON 1 2	Address 48-63

Table Fan speed control via a 0-10V input signal (optional)

Voltage (V)	Fan speed
0 < voltage < 3	shutdown
3 < voltage < 5	LOW
5 < voltage < 7	MEDIUM
7 < voltage < 10	HIGH

Table Fan speed control via wired contoller KJRP-75A/BK-E (LC04630) (optional)

Setting in KJRP-75A/BK-E	Fan speed
1 to 3 fan speed	LOW
4 to 6 fan speed	MEDIUM
7 fan speed	HIGH

ANNEXED II: MODBUS (RTU) MAPPING TABLE

Table 1: Address mapping table of register in fan coil

The following addresses can be used: 03H。04H(read), 06H (write in a single register), 10H(write in multiple holding register)			
Data content	Register address	Remark	
Running mode setting	1601 (PLC：41602)	0x00: Shutdown mode 0x01: air supply mode 0x02: Cooling mode 0x03: Heating mode 0x04: Dehumidification mode 0x05: automatic mode When setting other parameters, returning to abnormal data function code. If write this register alone, the defaulted setting is middle fan speed.	
Set temperature setting Ts	1602 (PLC：41603)	Must be set within the normal temperature range. If the temperature setting range is exceeded, the exception code 03 will be returned. Temperature setting range is 17-30 °C Ts cannot be set in the air supply and dehumidification modes. Query Ts is 0	
Fan speed setting	1603 (PLC：41604)	0x02：Low speed 0x03：Middle speed 0x04：High speed 0x05：Auto speed When setting other parameters, returning to abnormal data function code.	
Timer ON time	1604 (PLC：41605)	Number 0~96 means: 0h timing to 24h timing	
Timer OFF time	1605 (PLC：41606)	Number 0~96 means: 0h timing to 24h timing	
Indoor temperature T1	1606 (PLC：41607)	0~240 means -20~100°C Calculation method: (temperature +5) * 2 + 30 This register can only be read and cannot be written	
Cold water coil temperature T2-C	1607 (PLC：41608)		
Hot water coil temperature T2-H	1608 (PLC：41609)		
Lock flag	1612 (PLC：41613)	Bit0	Remote control lock 1: Yes. 0: No
		Bit1 Bit2	00: Lock off or no lock 01: Lock the cooling. 10: Lock the heating.
		In addition to the above three. The other bits of this byte are all 0s.	
Pump status	1613 (PLC：41614)	Bit0 drain pump 1: On. 0: off	
		Except for the 2 bits above, other bits in this byte are 0. This byte is read only.	

Fancoil failure status	1614 (PLC：41615)	Bit14	EE water level detection failure	
		Bit8	E8 fan speed detection is out of control	
		Bit7	E7 EEPROM error	
		Bit4	E4 T2B sensor failure	
		Bit3	E3 T2A sensor failure	
		Bit2	E2 T1 sensor failure	
		Except for the 2 bits above, other bits in this byte are 0. This byte is read only.		
Protection status	1615 (PLC：41616)	Bit1	P1 protection against cold or defrosting	
		Except for the 1 bit above, other bits in this byte are 0. This byte is read only.		
Baud rate	1640 (PLC：41641)	The following baud rate support is available: 4800 9600 19200 38400		After changing these three parameters. The next time you communicate. Need to correspond to the modified serial port configuration. Otherwise the communication will not be successful. After powering up again. Revert to the default settings: 9600BPS /NO CHECK/ONE STOP
Check digit information	1641 (PLC：41642)	No parity: 0x02 Odd parity: 0x01 Even parity: 0x00		
Stop bit information	1642 (PLC：41643)	One stop bit: 0 Two stop bits: 1		

ANNEXED III: INFORMATION REQUIREMENTS ((EU) 2016/2281)

COMMISSION REGULATION (EU) 2016/2281

Contact details: SALVADOR ESCODA SA, NAPOLES 292 P1, 08013 BARCELONA (SPAIN), +34 93 446 27 80

Information requirements for fan coils units:

Model	**MUCS-20-W9**		
Item	Symbol	Value	Unit
Cooling capacity (sensible)	$P_{rated,c}$	5,18*	kW
Cooling capacity (latent)	$P_{rated,c}$	0,94*	kW
Heating capacity	$P_{rated,h}$	6,27**	kW
Total electric power input	P_{elec}	0,049	kW
Sound power level (per speed setting, if applicable)	L_{WA}	56/52/46	dB

Model	**MUCS-24-W9**		
Item	Symbol	Value	Unit
Cooling capacity (sensible)	$P_{rated,c}$	6,68*	kW
Cooling capacity (latent)	$P_{rated,c}$	1,19*	kW
Heating capacity	$P_{rated,h}$	9,16**	kW
Total electric power input	P_{elec}	0,085	kW
Sound power level (per speed setting, if applicable)	L_{WA}	60/56/53	dB

Model	**MUCS-36-W9**		
Item	Symbol	Value	Unit
Cooling capacity (sensible)	$P_{rated,c}$	9,04*	kW
Cooling capacity (latent)	$P_{rated,c}$	2,15*	kW
Heating capacity	$P_{rated,h}$	10,07**	kW
Total electric power input	P_{elec}	0,126	kW
Sound power level (per speed setting, if applicable)	L_{WA}	61/55/51	dB

* cooling capacity for parameters: entering air temperature 27ºC DB / 19ºC WB, entering/leaving water temperature 7/12ºC, high fan speed.

** heating capacity for parameters: entering air temperature 20ºC DB, entering/leaving water temperature 45/40ºC, high fan speed.

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