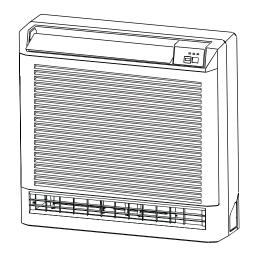
### **R410A MULTI SPLIT SERIES ROOM AIR CONDITIONER**

# INDOOR UNIT INSTALLATION MANUAL



AF092XCERA AF122XCERA

No.0010578129 A

- Please read this manual carefully before using this air conditioner.
- Please keep this manual safely for future use.

# **■** Contents

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### Disposal of the old air conditioner

Before disposing an old air conditioner that goes out of use, please make sure it's inoperative and safe. Unplug the air conditioner in order to avoid the risk of child entrapment.

It must be noticed that air conditioner system contains refrigerants, which require specialized waste disposal. The valuable materials contained in an air conditioner can be recycled. Contact your local waste disposal center for proper disposal of an old air conditioner and contact your local authority or your dealer if you have any question. Please ensure that the pipework of your air conditioner does not get damaged prior to being picked up by the relevant waste disposal center, and contribute to environmental awareness by insisting on an appropriate, anti-pollution method of disposal.

# Disposal of the packaging of your new air conditioner

All the packaging materials employed in the package of your new air conditioner may be disposed without any danger to the environment.

The cardboard box may be broken or cut into smaller pieces and given to a waste paper disposal service. The wrapping bag made of polyethylene and the polyethylene foampads contain no fluorochloric hydrocarbon.

All these valuable materials may be taken to a waste collecting center and used again after adequate recycling.

Consult your local authorities for the name and address of the waste materials collecting centers and waste paper disposal services nearest to your house.

### Safety Instructions and Warnings

Before starting the air conditioner, read the information given in the User's Guide carefully. The User's Guide contains very important observations relating to the assembly, operation and maintenance of the air conditioner.

The manufacturer does not accept responsibility for any damages that may arise due to non-observation of the following instruction.

- Damaged air conditioners are not to be put into operation. In case of doubt, consult your supplier.
- Use of the air conditioner is to be carried out in strict compliance with the relative instructions set forth in the User's Guide.
- Installation shall be done by professional people, don't install unit by yourself.
- For the purpose of the safety,the air conditioner must be properly grounded in accordance with specifications.
- Always remember to unplug the air conditioner before openning inlet grill. Never unplug your air conditioner by pulling on the power cord. Always grip plug firmly and pull straight out from the outlet.
- All electrical repairs must be carried out by qualified electricians. Inadequate repairs may result in a major source of danger for the user of the air conditioner.
- Do not damage any parts of the airconditioner that carry refrigerant by piercing or performating the air conditioner's tubes with sharp or pointed items, crushing or twisting any tubes, or scraping the coatings off the surfaces. If the refrigerant spurts out and gets into eyes, it may result in serious eye injuries.

- Do not obstruct or cover the ventilation grille of the air conditioner. Do not put fingers or any other things into the inlet/outlet and swing louver.
- Do not allow children to play with the air conditioner. In no case should children be allowed to sit on the outdoor unit.

### Specifications

• The refrigerating circuit is leak-proof.

# The machine is adaptive in following situation

1. Applicable ambient temperature range:

		Rated	Maximum	Minimum	
la de en		DB ℃	27	32	18
Cooling	Indoor	WB °C	19	23	14
Cooming	outdoor	DB ℃	35	43	10
	odidooi	WB °C	24	26	6
ladaar		DB ℃	20	27	15
Heating	Indoor	WB °C	14.5		
	outdoor	DB ℃	7	24	-15
	5 3 3 3 5 6	WB °C	6	18	

- 2. If the power supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person.
- 3. If the fuse of indoor unit on PC board is broken, please change it with the type of T3.15A/250VAC.
- 4. The wiring method should be in line with the local wiring standard.
- 5. The power cable and connecting cable are selfprovided.

The requirement of the communication cable:

Model	power cable	Communication cable (sheilded wire)
AF072XCERA	H05RN-F 3G (1-2.5)mm <sup>2</sup>	H05RN-F 2X(0.75-1.5)mm <sup>2</sup>
AF122XCERA	H05RN-F 3G (1-2.5)mm <sup>2</sup>	H05RN-F 2X(0.75-1.5)mm <sup>2</sup>

- 6. The waste battery should be disposed properly.
- 7. The appliance is not intended for use by young children or infirm persons without supervision.
- 8. Young children should be supervised to ensure that they do not play with the applience.
- A breaker should be used in the circuits, which should be all-pole cut off and the distance between its two contacts should be not at least 3mm.
- 10.The power plug and connecting cable must have acquired the local attestation.

# **Safety Instruction**

- Please read the following Safety Instructions carefully prior to use.
- The instructions are classified into two levels, WARNING and CAUTION according to the seriousness of possible risks and damages as follows. Compliance to the instructions are strictly required for safety use.

# Installation

### **⚠ WARNING**

Please call Sales/Service Shop for the Installation.

Do not attempt to install the air conditioner by yourself because improper works may cause electric shock, fire, water leakage.

Installation in an inadequate place may cause accidents. Do not install in the following place.

<b>▲</b> CAUTION			
Connect the earth cable.	Do not install in the place where there is any possibility of inflammable gas leakage around the unit.	exposed to vapor or oil steam.	Check proper installation of the drainage securely
STRICT ENFORCEMENT	PROHIBITION	PROHIBITION	STRICT ENFORCEMENT
Use fuse with specified capacity. Replacement with steel or copper wires are absolutely prohibited.		Grounding wire shou to that of gas pipel lighting arrester or te	ine, water pipeline,
FUSE FUSE			
COPPERWIRE STEEL WIRE			

# **Use of Air Conditioner**

### ⚠ WARNING

When abnormality such as burnt-small found, immediately stop the operation button and contact sales shop.







Use an exclusive power source with a circuit breaker.



Connect power supply cord to the outlet completely.



**ENFORCEMENT** 

After installed, the unit shall be tested for electric leakage.



**ENFORCEMENT** 

Do not use power supply cord extended or connected in halfway.

Do not insert objects into the air



inlet or outlet.

by yourself.

**PROHIBITION** 

Do not use power supply cord in a bundle.

Do not start or stop the operation by disconnecting the power supply





Take care not to damage the power supply cord.



Do not channel the air flow directly at people, especially at infants or the aged.



**PROHIBITION** 

Do not try to repair or reconstruct









### 

Do not use for the purpose of storage of food, art work, precise equipment, breeding, or cultivation.





Take fresh air occasionally especially when gas appliance is running at the same time.





Do not operate the switch with wet





Do not install the unit near a fireplace or other heating apparatus.



**PROHIBITION** 

Check good condition of the installation stand.





Do not pour water onto the unit for cleaning.





Do not place animals or plants in the direct path of the air flow.



Do not place any objects on or climb on the unit.



**PROHIBITION** 

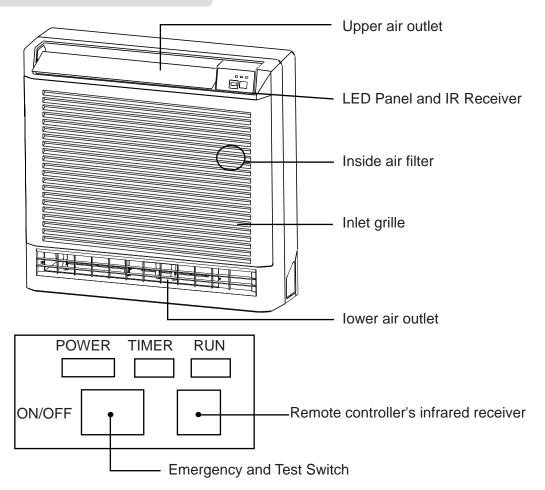
Do not place flower vase or water containers on the top of the unit.



**PROHIBITION** 

# ■ Parts and Functions

# **Indoor unit**



### "POWER" lamp (Green)

It lights up when the indoor Unit is started.

### "TIMER" lamp (Yellow)

It lights up when "TIMER" function is acticated for programmed start/stop.

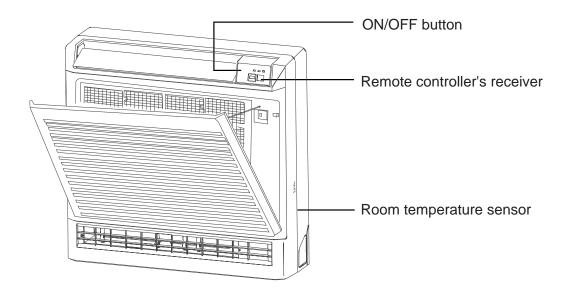
### "RUN" lamp (Red)

It lights up when the compressor (Outdoor Unit) is operating.

### **△** WARNING

Befor opening the frontal grille, stop the air conditioner and disconnect the appliance. Never touch the metal pates inside the unit in order to avoid injuries.

# **■** Parts and Functions



#### Remote controller's infrared receiver

It allows the reception of signals sent by the remote controller. If the signal is received, the unit emits a "bip" confirmation sound.

#### ON/OFF button

When the remote controller is not available, press this button to start the unit. The fan speed will be set to "AUTO". Press the button again to stop the unit.

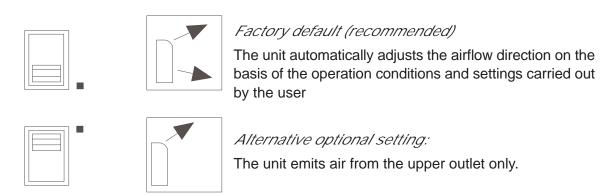
#### Air outlet selector

It allows to select the airflow direction:

upwards and downwards at the same time:

In fan mode, press SLEEP button 6 times continuously, indoor buzzer sounds 2 times. upwards only:

In fan mode, press SLEEP button 6 times continuously, indoor buzzer sounds 1 times.



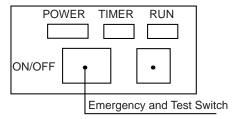
# ■ Operation hints

### **EMERGENCY OPERATION**

Carry out this operation only when the remote controller is defective or lost.

#### **Unit start**

When the emergency operation switch is pressed, a sound you can hear, which means the start of this operation.



Follow the requirements below.

Room temperature	Designated temperature	Timer mode	Air flow speed	Operation mode
≽24°C	24°C	None	AUTO	COOL
<24℃	24°C	None	AUTO	HEAT

Unit stop ( to cancel emergency operation )

Press the emergency switch and hear a sound, the unit stops.

Power failure resume (please set and apply as necessary)

With setting of power failure resume, if sudden power failure occurs, the unit will resume original operation when power is supplied again.

### Setting method:

with ON of remote controller (except TIMER and FAN),repeatedly press SLEEP button 10 times in 5 seconds,after 4 Beep from the buzzer,the unit comes into power failure resume mode.

To cancel:

press SLEEP button continuously 10 times in 5 seconds, the buzzer sounds Beep twice and power failure resume function is canceled.

Note:

When sudden power failure happens during unit operation in power failure resume mode, if the air conditioner is not desired for use in a long period, please shut off the power supply in case that the unit automatically resume operation when power is re-supplied, or press ON/OFFto turn off the unit when power resumes.

### **■** Maintenance

### Cleaning of the unit

Turn off the power switch	Do not touch with wet hand	Do not clean with hot water or solvent
OFF		

#### Take off the air inlet grill

First switch off the power supply,take off the screw cap,loosen the screw with cross screwdriver .

#### Clean the filter

Use water or vacuum cleaner to remove dust. If it is too dirt, clean with detergent or neutral soap water.

Rinsing with fresh water, dry the filter and re-assemble.



#### Caution:

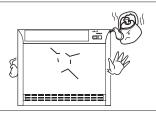
efficiency.

Do not wash filter in hot water above 40°C, which will damage the filter.

Do carefully wipe the filter.



Clean with warm cloth or neutral detergent, then wipe away moisture with dry cloth. Do not use too hot water(above 40°C), which will cause discoloration or deformation. Do not use pesticide or other chemical detergents.

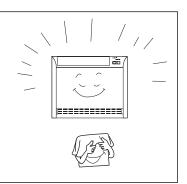


### Maintenance at the end of application season

On a fine day, unit shall be started and operate in FAN mode for about half a day until the inside of the unit becomes thoroughly dry.

Turn off the unit operation switch and power on/off. Otherwise, there will be some electricity consumption even the unit is in stop status.

Clean the filter and indoor, cover the units well.



### Maintenance before beginning of application season

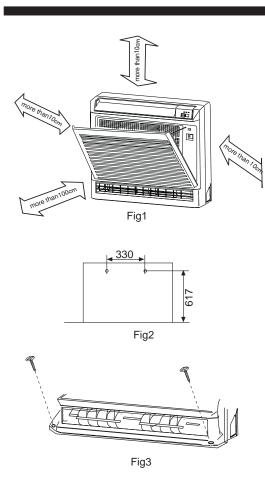
Check there are no obstacles in the air inlet and outlet to avoid impairing of working

Please do attach the air filter to ensure the electrostatic filters not soiled. Otherwise, dirt will come into and damage the unit or bring failures.

# **■** Trouble shooting

Before asking for service, check the following first.

	Phenomenon	Cause or check points	
	The system does not restart immediately.	<ul> <li>When unit is stopped, it won't restart immediately until 3 minutes have elasped to protect the system.</li> <li>When the electric plug is pulled out and reinserted, the protection circuit will work for 3 minutes to protect the air conditioner.</li> </ul>	
Normal Performance inspection	Noise is heard:	<ul> <li>During unit operation or at stop, a swishing or gurgling noise may be heard. At first 2-3 minutes after unit start, this noise is more noticeable. (This noise is generated by refrigerant flowing in the system.)</li> <li>During unit operation, a cracking noise may be heard. This noise is generated by the casing expanding or shrinking because of temperature changes.</li> <li>Should there be a big noise from air flow in unit operation, air filter may be too dirty.</li> </ul>	
	Smells are generated.	This is because the system circulates smellsfrom the interior air such as the smell of furniture, cigarettes.	
	Mist or steam are blown out.	During COOL or DRY operation, indoor unit may blow out mist. This is due to the sudden cooling of indoor air.	
Multiple check	Does not work at all.	<ul><li>Is power plug inserted?</li><li>Is there a power failure?</li><li>Is fuse blown out?</li></ul>	
	Poor cooling	<ul> <li>Is the air filter dirty? Normally it should be cleaned every 15 days.</li> <li>Are there any obstacles before inlet and outlet?</li> <li>Is temperature set correctly?</li> <li>Are there some doors or windows left open?</li> <li>Is there any direct sunlight through the window during the cooling operation? (Use curtain)</li> <li>Are there too much heat sources or too many people in the room during cooling operation?</li> </ul>	



#### Tool necessary

- 1. Screw driver
- 2. Hacksaw
- 3. 70mm dia.hole core drill
- 4. Spanner(dia. 17,27mm)
- 5. Spanner(14,17,27mm)
- 6. Pipe cutter
- 7. Flaring tool
- 8. Knife
- 9. Nipper
- 10. Gas leakage detector or soap water
- 11. Measuring tape
- 12. Reamer
- 13. Refrigerant oil

#### Installation of indoor unit

selection of installation place

- Place where it is easy to route drainage pipe and outdoor piping.
- Place ,away from heat source and with less direct sunlight.
- Place where cool and warm air could be delivered evently to every corner of the room.
- Place near power supply socket.Leave enough space around the unit.
- Place ,robust not causing vibration,where the body can be supported sufficiently.
- To prevent interference, place it at least 1m away from other electric machines, such as TV set, radio.

Installing

- According to the dimension of the figure 2 shown, nail two cement steel nails on the wall,Keep 2~3mm out.then hang the back of the unit on them.
- There must be no gap between the indoor unit and wall.
- Remove the front panel, then use two expansible screws to fix the unit on the floor. As figure 3 shown.
- Once refrigerant piping and drain piping connections are complete, fill the gap of the throught hole with putty.
- Attach the front panel and front grille in their orginal positions once all connections are complete.

### Fixing of the unit

#### 1. Position of the wall hole

Wall hole should be decided according to installation

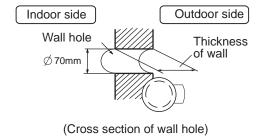
place and piping direction. (refer to installation drawings).

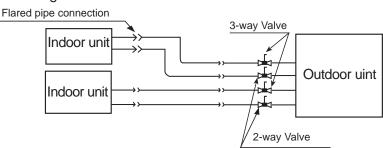
#### 2. Making a wall hole

Drill a hole of 120X70mm dia. with a little slope

### towards outside. 3. Piping connection

#### (1)Schematic diagram for unit connection





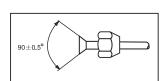
### (2)Connection pipe dimensions:

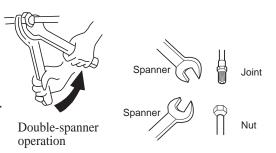
Pipe Value		Torque
Liquid	6.35mm	11.8 N⋅m
Gas	9.52mm	40 N·m

Apply and tighten the nut.

### (3) Cautions for pipe connection

- Pipes free from twists, deformation, water, dust. Dedicated tools for each R407C and R410A should be used and stored separately.
- Optimized radii of bends
- Insulation to be applied on all gaseous pipes
- Flared section free from cracks





Threads on the pipes may be damaged when tightening if the pipes are not well aligned.

### (4) Pipe connection process

Apply refrigeration oil on the end of the pipe to be connected and on the flared section. Align the pipes to be connected and tighten the nut. (See the figure) Ensure that no foreign articles enter into the pipes.

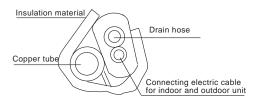
### Piping connection of the indoor unit

1. Arrangement of piping and drainage pipe

After opening inlet grill, you will see a control box.

Remove the cover before working.

Cut away, with a hammer or a saw, the lid for piping according to piping direction.



According to the piping method, connect the piping on indoor unit with union of connection pipe.

Arrange the piping as per the wall hole and bind drain hose connecting electric cable and piping together with polyethylene tape.

Insert the bound piping connecting electric cable and drain hoes through wall hole to connect with outdoor unit.

#### 2. Arrangement drain hose

Drain hose shall be placed in under place.

There should be a slope when arrange drain hose. Avoid up and down waves in drain hose.

If humidity is high, drain pipe(especially in room and indoor unit) must be covered with installation material.

### **Electric wiring:**

Process of wire connections

1. Loop terminal

After removing the screw, fix the wire ring on the screw, reinsert the screw into the block terminal and then tighten the screw.

2. Straight terminal

After loosening the screw, inset the wire end into the block terminal and then tighten the screw. Slightly pull the wire to see if it is tightly fixed.

3. Wire capping

After completion of connection, capping clips must be applied on the external sleeve of the wires.

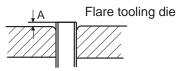
#### **Others**

#### 1. Power supply requirements:

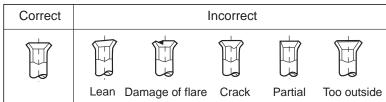
- Voltage: single-phase1PH,220-230V~,50Hz
- Dedicated electrical cable should be installed by a qualified technician in accordance with the state regulation for electrical engineering.
- The power source must be grounded.
- A circuit breaker must be installed
- Electrical cables should be connected by "Y" method. Damaged or wornelectrical cable must be replaced by authorized after sales agents.
- The power plug should be connected as follows: L for live line, N for neutral line and
   for grounding.
- Connection parameters: H05RN-F 3G(1.0-1.5)mm<sup>2</sup>
- Signal parameters: H05RN-F 2x(0.75-1.5)mm<sup>2</sup> (Shieded wire)
- The signal wire must be shielded wire.
- Cables for power supply, connection and signals are prepared by the owner.

#### 2. Piping cutting and flaring

Be sure to carry out deburring after cutting with a pipe cutter. Insert flaring tool to make a flare.



	Pipe diameter $\phi$	Size A (mm)
Liquid pipe	6.35mm(1/4")	0.8 ~1.5
Gas pipe	9.52mm(3/8")	1.0 ~1.5



Installation inspection and test run:

Items to be checked during test run. Please made a " $\sqrt{\phantom{a}}$  " in "  $\square$  "

☐ Are there any gas leakage?

	How is insu	lation at pipin	g connection	carried out
--	-------------	-----------------	--------------	-------------

Are electric wires of indoor and outdoor unit firmly inserted into terminal block?

☐ Is electric wiring of indoor and outdoor securely fixed?

☐ Is drainage securely carried out?

☐ Is earth line(grounding) securely connected?

☐ Is power supply voltage abided by the code?

☐ Is there any noise?

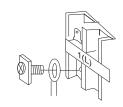
☐ Is control display normal?

☐ Is cooling operation normal?

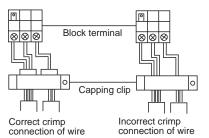
☐ Is room temp. regulator normal?

#### Wiring of indoor unit

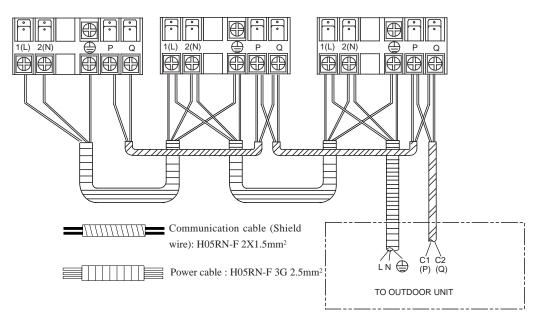
- Remove air intake screen and take out the front wires.
- Connect the wires as specified in the above methods and diagrams for indoor unit and wire connections.
- Properly apply capping clips on the wires.
- Replace the air intake screen.
- Do not link the connecting and signal wire with the same cable, a snug space must be maintained between connecting and signal wires.
- Shield of the signal wire should be spot grounded.



Wiring diagram of loop terminals



### Wiring connection:



### **△** WARNING

Incorrect address setting will cause abnormal to the system.

Communication cable must be use sheilded type.

Incorrect address setting will cause abnormal to the system.and then put it down perpendicularly.

Signal connecting cable must be sheilded type.

The distance between the signal wires and the power cabes should be at least 50mm.

#### Indoor unit communication addresses setting

#### CAUTION! FAIL TO DO THIS, THE UNIT WILL NOT WORK.

- 1. There are two methods to set the communication address
- A. Use the remote controller(default status in first installation).
- B. Use dip switches on the indoor unit PCB.
- 2. Address setting procedure when using the remote controller.
- A. Set the addresses only after the successful installation of the refrigerant pipes and connecting cables, and open all the stop valves;
- B. Please confirm that the indoor units and the outdoor unit in the same system use the same power source;
- C. Power on the units, but put all the indoor units in the status of STANDBY;
- D. Please note that the address must be set as following:

Indoor unit that connect to valve A, the address must be 1;

Indoor unit that connect to valve B, the address must be 2;

Indoor unit that connect to valve C, the address must be 3;

Indoor unit that connect to valve D, the address must be 4;

E. Example: set unit A to address 1.

Continuously press the emergency switch for about 15 seconds, the buzzer will sound 4 times(PI PI PI PI) and then leave go of the switch. At this time, the indoor unit has entered the address setting procedure. But the LED board is blank.

- F. Use the controller to turn on the indoor unit. At this time, the controller should be changed from OFF to ON, and then the TIMER LED flshes once. That is to say, the address setting is enabled.
- G. Press the button "SLEEP" on the controller, the times you press it stands for the address you want to set, detailed as following:

Press button "SLEEP" once, the address is "1", and the TIMER LED flashes once;

Press button "SLEEP" twice, the address is "2", and the TIMER LED flashes twice;

Press button "SLEEP" three times, the address is "3", and the TIMER LED flashes three times;

Press button "SLEEP" four times, the address is "4", and the TIMER LED flashes four times;

H. Use the remote controller to turn off the unit, At this time, the controller should be changed from ON to OFF, and the unit will exit the address setting procedure, the address will be memorized.

The LED board will always display the address of this indoor unit until the system be powered off.

- I. If you want to change the address, please repeat the above steps from E to G.
- J. After setting all the addresses, please power off the system and then power on again. Otherwise the system will not start to work.
- K. Once the addresses are successfully set, please do not change it any more to avoid confusion.
- 3. Address setting procedure when using the DIP switches SW01 and SW02.
- A. The DIP switches SW01 and SW02 are on the indoor unit PCB.
- B. Before carrying out the address setting work, the system must be powered off.
- C. Take off the front panal and the filters, then take off the flaps and also the front cover, disconnect the swing motor connectors from the PCB and then take out the lower part of the PCB.
- D. Change the position of DIP 1 of SW01 from OFF to ON, if fail to do this, the addresses set by SW02 will not work.
- E. Use SW02 to set the addresses as following (DO NOT CHANGE OTHER DIP SWITCHES):

SW01	SW02	INDOOR UNIT ADDRESS
1 2 3 4 5 6 7 8 ON OFF	1 2 3 4 5 6 7 8 ON OFF	1
	1 2 3 4 5 6 7 8 ON OFF	2
	1 2 3 4 5 6 7 8 ON OFF	3
	1 2 3 4 5 6 7 8 ON OFF	4

#### How to check the addresses?

When finish all the above works, please power off and power on again to the whole system but set all the indoor units in STANDBY. Then continously press the emergency switch until you hear the buzzer sound 5 times(Pi Pi Pi Pi Pi), and then the LCD display board will show the address of this indoor unit.

Press any key on the remote controller, it will exit the address checking precedure.

TROUBLE SHOOTING	FAILURE CODE (TIMER LED OF INDOOR RECEIVER BOARD FLASHES TIMES)	POSSIBLE REASONS
Faulty temperature sensor Tai	ONCE *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor Tc1	TWICE *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor Tc2	3 TIMES *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor Tm	4 TIMES*	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty EEPROM on indoor unit PCB	5 TIMES	Faulty indoor unit PCB
Abnormal communication between indoor and outdoor unit	6 TIMES *	Wrong connection, or the wires be disconnected, or wrong address setting of indoor units, or faulty PCB, or faulty power supply
Indoor unit address repeated	9 TIMES	Wrong setting of indoor unit address
Faulty indoor unit fan motor	11 TIMES	Fan is blocked, or the terminal is disconnected from the PCB, or faulty indoor unit PCB
Faulty driver of indoor unit fan motor	12 TIMES	Faulty indoor unit PCB
Malfunction on outdoor unit	20 TIMES	Check the outdoor unit failure code

#### NOTE!

- 1. Please contact the installers or distributors when trouble happens to repair it.
- 2. Turn the power off and power on again, if the failure code recurs, please inform the franchiser.
- 3. Failrue codes maked with  $\times$  are resumable.

### HAIER GROUP

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