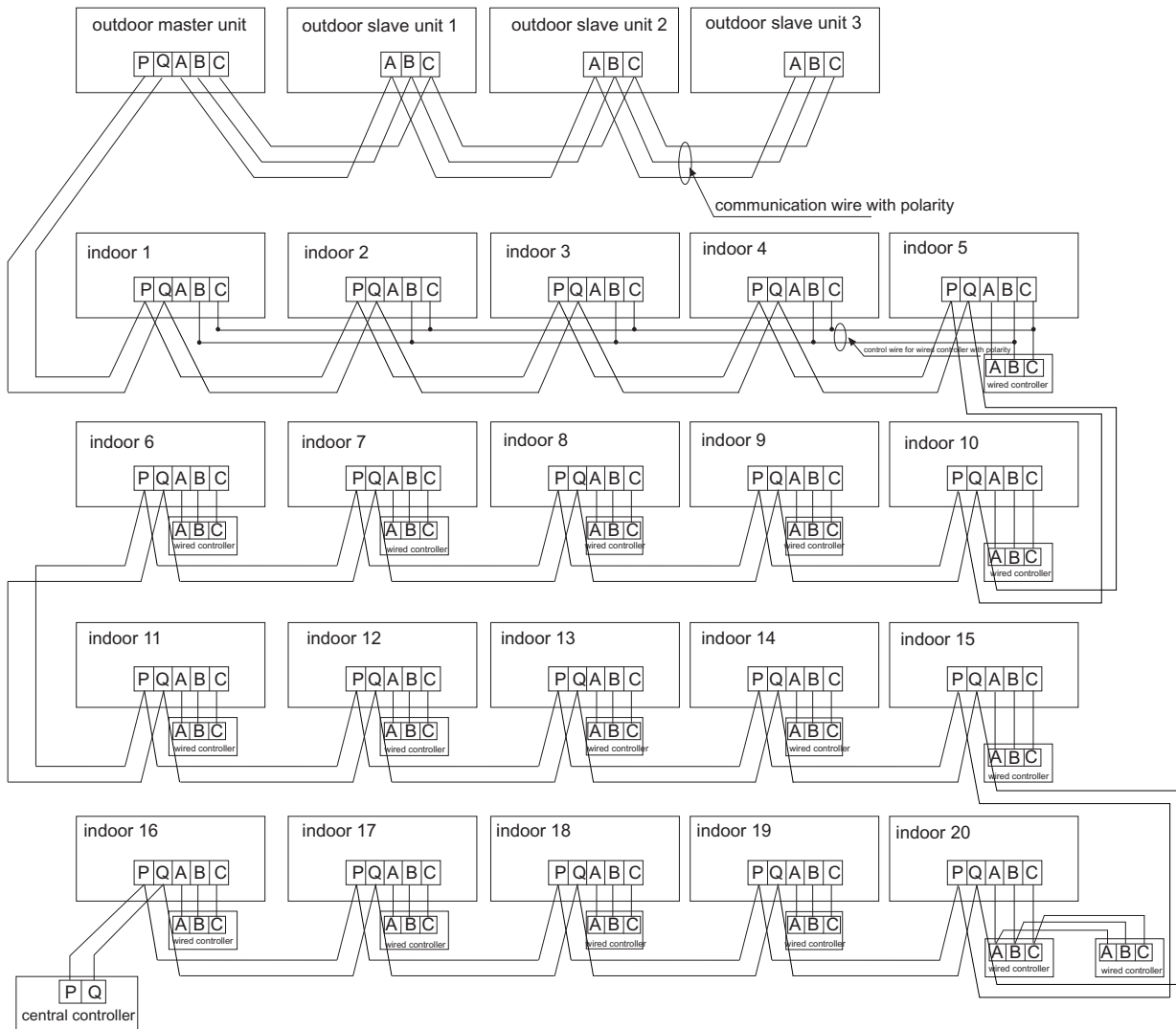




## (2) Communication wiring figure



Outdoor units are in parallel through 3 polar wires. The master unit, central controller and all indoor units are in parallel through 2 non-polar wires.

Three wiring methods between wired controller and indoor unit:

A. 1 to multi (group control): one wired controller controls 2~16 indoors, as shown in above figure, indoor 1~indoor 5: indoor 5 is wired control master unit, the others are wired control slave units. Wired controller and the master indoor (directly connected to wired controller) is connected by 3 polar wires; the slave indoors and the master indoors are connected by 2 polar wires; SW01 of the wired control master unit is at 0 position, and SW01 of all wired control slave units is at 1, 2, 3, etc in order (refer to dip switch setting on Page 26).

B. 1 to 1 (one wired controller controls one indoor): as shown in above figure, indoor 6~ indoor 19, indoor and wired controller are connected by 3 polar wires.



C. 2 to 1 (two wired controller controls one indoor): as shown in above figure, indoor 20. Any of wired controllers can be set as master wired controller, and the other is slave wired controller. They are connected by 3 polar wires.

When indoor is controlled by remote controller, refer to the "wired control master unit/wired control slave unit/remote control unit table".A, B, C on signal terminal block need not wires and not connect the wired controller.

2. Specs for power cable and communication wire

(1) Outdoor power source and power cable

model \ item		power source	power cable section (mm <sup>2</sup> )	wire length (m)	circuit breaker(A)	earthing wire	
						section(mm <sup>2</sup> )	screw
individual power	master unit	3N~, 380V, 50Hz	10	45	40	3.5	M5
	slave unit		10	60	40		

- a. Power cable must be fixed firmly.
- b. Each outdoor must be earthed well.
- c. When power cable exceeds the range, thicken it appropriately.
- d. Shielded layer of communication wires of indoors and outdoors must be connected together and be earthed at single point on outdoor communication wire side.

(2) Indoor power source, communication wire between indoor and outdoor, among indoors

indoor total current (A) \ item	power cable section (mm <sup>2</sup> )	wire length (m)	rated current of overcurrent breaker(A)	rated current of residual current circuit breaker(A) leakage current (mA) response time(s)	communication wire section	
					outdoor/indoor (mm <sup>2</sup> )	indoor/indoor (mm <sup>2</sup> )
<10	2	20	20	20A, 30mA, below 0.1s	2-core * (0.75-2.0mm <sup>2</sup> ) shielded wire	
* 10 and <15	3.5	25	30	30A, 30mA, below 0.1s		
* 15 and <22	5.5	30	40	40A, 30mA, below 0.1s		
* 22 and <27	10	40	50	50A, 30mA, below 0.1s		

- a. Power cable and communication wire must be fixed firmly.
- b. Each indoor must be earthed well.
- c. When power cable exceeds the range, thicken it appropriately.
- d. Shielded layer of communication wires of indoors and outdoors must be connected together and be earthed at single point on outdoor communication wire side.
- e. Communication wire total length cannot exceed 1000m.



(3) Communication wire for wired controller

wire length(m)	wire spec	wire length(m)	wire spec
*100	0.3mm <sup>2</sup> * (3-core) shielded wire	*300 and <400	1.25mm <sup>2</sup> * (3-core) shielded wire
*100 and <200	0.5mm <sup>2</sup> * (3-core) shielded wire	*400 and <600	2mm <sup>2</sup> * (3-core) shielded wire
*200 and <300	0.75mm <sup>2</sup> * (3-core) shielded wire		

- a. Shielded layer of communication wire must be earthed at one end.
- b. The total length cannot exceed 600m.

(4) Control type and the switchover

- a) Indoor unit can be controlled by wired controller or remote controller.
- b) When installation, the installer must set the unit due to the control type and wiring type.

Switchover between wired control master/slave unit /remote control unit, set when installation:

control type socket /dip switch	wired control master unit	wired control slave unit	remote control
CN23	short connected	disconnected	disconnected
CN30	short connected	short connected	disconnected
CN21	blank	blank	to remote receiver
SW08-[6]	ON	ON	OFF
signal terminal block	A,B,C to wired controller	B,C to wired controller	A,B,C not to wired controller



# Debugging

4.1 Trial operation and the performance

4.2 Control function

4.3 Management system H-CACS



## 4.1 Trial operation and the performance

### 3-minute delay function

If starting up the unit after being powered off, the compressor will run about 3 minutes later against being damaged.

### Cooling/heating operation

Indoor units can be controlled individually, but cannot run in cool and heat mode at the same time. If the cool mode and the heat mode are existing simultaneously, the unit set latter will be standby, and the unit set earlier will run normally. If the A/C manager sets the unit at cooling or heating mode fixedly, the unit can not run at the other modes.

### Defrosting in heating mode

In heating mode, outdoor defrosting will affect the heating efficiency. The unit will defrost for about 2~10 minutes automatically, at this time, the condensate will flow from outdoor, also in defrosting, the vapour will appear at outdoor, which is normal. Indoor motor will run at low speed or stop, and outdoor motor will stop.

### The unit operation condition

To use the unit properly, please operate the unit under the allowed condition range.

If operating beyond the range, the protection device will act.

The relative humidity should be lower than 80%. If the unit runs at the humidity over 80% for a long period, the dew on the unit will drop down and the vapour will be blowed from air outlet.

### Protection device (such as high pressure switch)

High pressure switch is the device which can stop the unit automatically when the unit runs abnormally.

When the high pressure switch acts, the cooling/heating mode will stop but the running LED on wired controller will be light still. The wired controller will display failure code.

When the following cases occur, the protection device will act:

In cooling mode, air outlet and air inlet of outdoor are clogged.

In heating mode, indoor filter is stucked with duct; indoor air outlet is clogged.

When protection device acts, please cut off the power source and re-start up after eliminating the trouble.



**When power is failure**

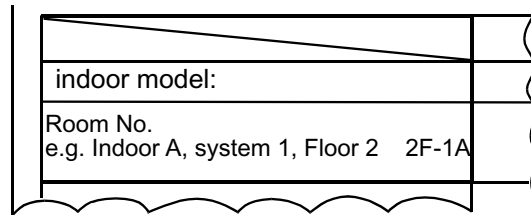
When power is failure in running, all the operations will stop. After being electrified again, if with re-satrt up function, the unit can resume to the state before power off automatically; if without re-satrt up function, the unti needs to be switched on again. When abnormal occurs in running because of the thunder, the lightning, the interference of car or radio, etc, please cut off the power source, after eliminating the failure, press "ON/OFF" button to start up the unit.

**Heating capacity**

The heating mode adopts the heat pump type that absorbs outdoor heat energy and releases into indoor. So if outdoor temperature goes down, the heating capacity will decrease.

**1. System marks**

On the condition that multi MRV II systems are installed, in order to confirm the relationship between outdoor and indoor, please make marks on outdoor electric control box cover to indicate the connected indoor unit. As the below figure:



**2. Trial operation**

**Before trial operation:**

Before being electrified, measure the resistor between power terminal block (live wire and neutral wire) and the earthed point with a multimeter, and check if it is over 1MΩ . If not, the unit can not operate. To protect compressor, electrify the outdoor unit for at least 12 hours before the unit runs.If the crankcase heater is not electrified for 6 hours, the compressor will not work.

Confirm the compressor bottom getting hot.

Except for the condition that there is only one master unit connected (no slave unit), under the other conditions, open fully the outdoor operating valves (gas side, liquid side, oil equalization pipe). If operating the unit without opening the valves, compressor failure will occur.

Confirm all indoor units being electrified. If not, water leakage will occur.

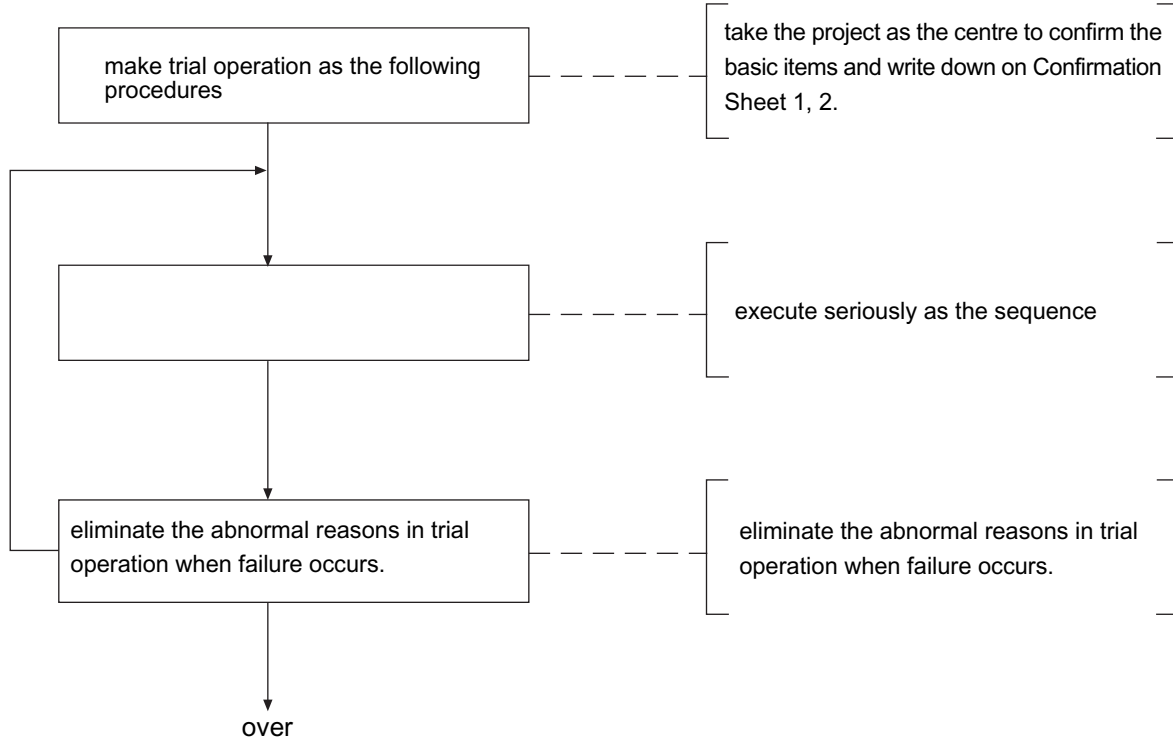
Measure the system pressure with pressure gauge, at the same time, operate the unit.

**Trial operation**

In trial operation, refer to the information of performance section. When the unit can not start up at the room temperature, make trial operation for outdoor.



### 1. Trial operation procedure



Please must record the confirmed result on the Confirmation Sheet 1 and 2, which is the important documentary for the later service or maintenance.



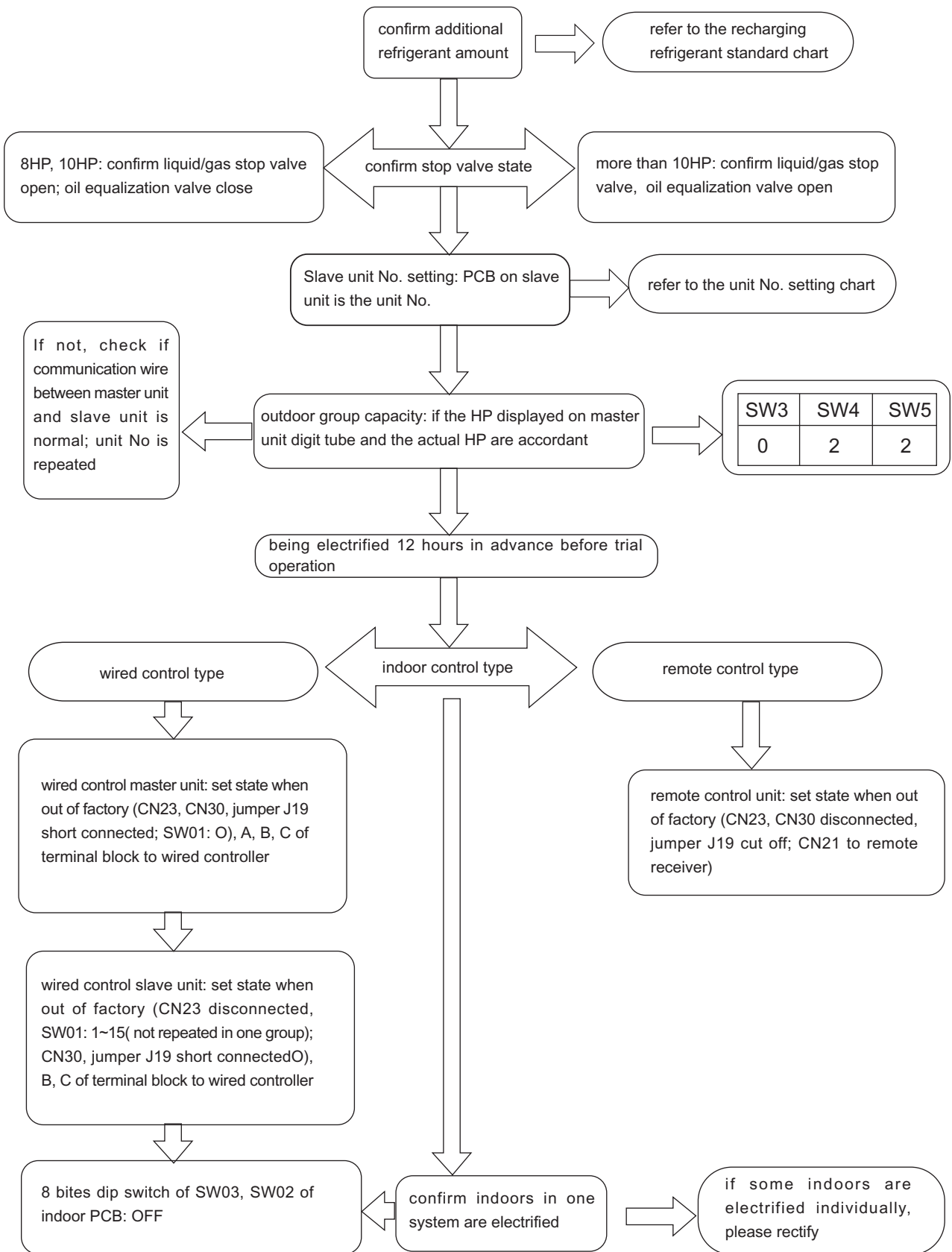
2. Confirmation before trial operation

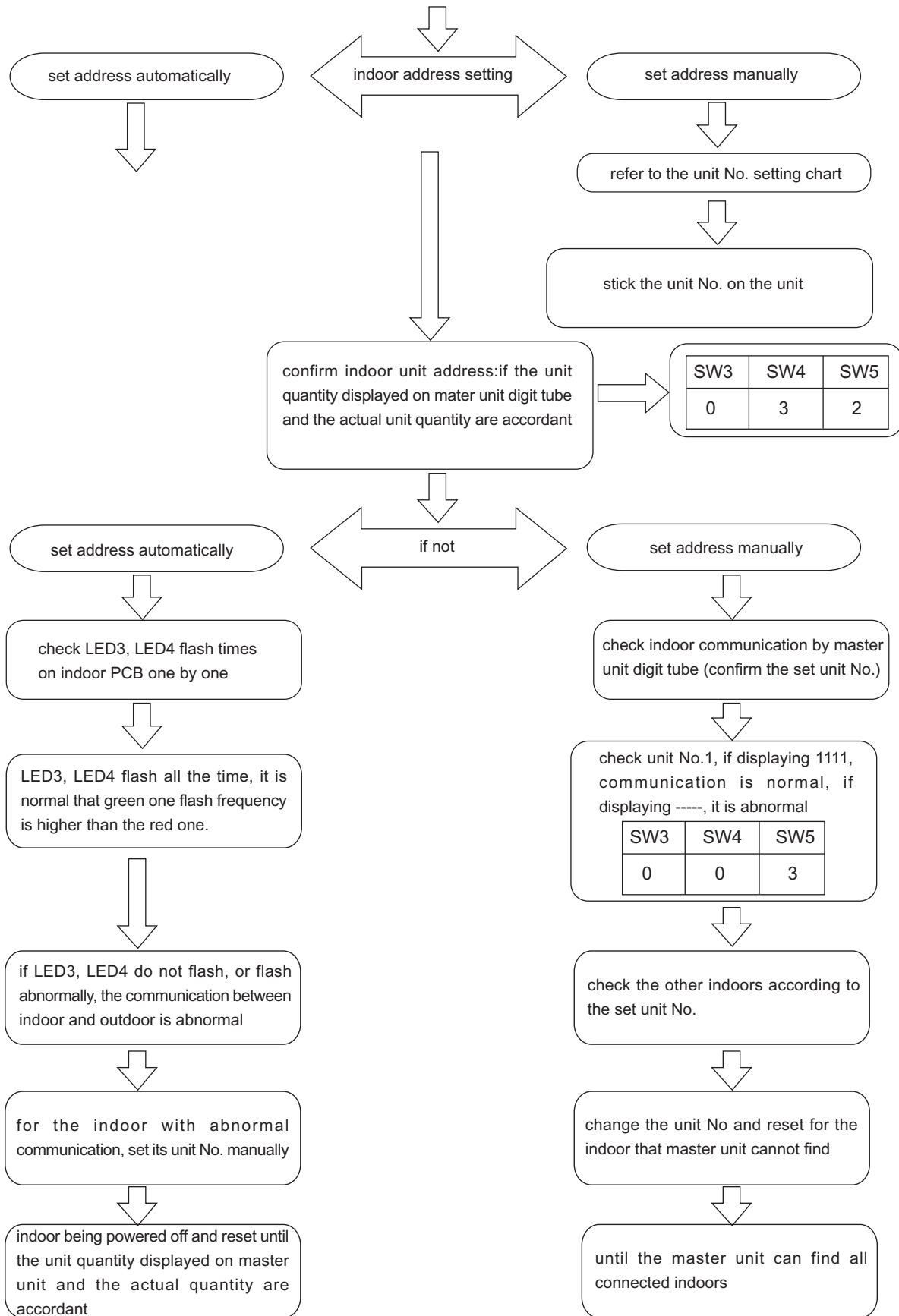
Before trial operation, please confirm the project normal and record in the "Confirmation Sheet 1".

Confirmation Sheet 1

Rated current of residual current circuit breaker	outdoor <input type="text"/> A; outdoor group <input type="text"/> A
Power cable diameter	outdoor <input type="text"/> mm <sup>2</sup> ; outdoor group <input type="text"/> mm <sup>2</sup>
Connection wire specs (indoor/outdoor communication wire: P,Q, shielded)	<input type="text"/> mm <sup>2</sup>
If indoor units power cable uses one power switch	<input type="checkbox"/> Yes <input type="checkbox"/> No
If being earthed well	
If the insulation is good (resistor:10M* )	more than <input type="text"/> M*
If the voltage is normal (within 380V*10%)	<input type="text"/> V
If the refrigerant pipe diameter is correct	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the manifold pipes are correct	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the condensate drainage is fluent	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the heat insulation is in good condition (pipe connection section, manifold pipe)	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the air from indoor and outdoor is in short circuit	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the system is evacuated and charge the additional refrigerant	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the valves are open fully	<input type="checkbox"/> Yes <input type="checkbox"/> No

Please confirm the refrigerant charging amount.







### Confirmation Sheet 2

According to the liquid pipe diameter, pipe length and the charged refrigerant, record the pipe length of different liquid pipe, and count the additional refrigerant amount. The charged refrigerant is only used for outdoor, and won't enter the piping.

#### Cautions for trial operation:

Check if outdoor stop valves are open fully, when there is only master unit, please confirm if the oil pipe stop valve is close. The slave unit address is set by the slave unit dip switch.

In the following cases, indoor and outdoor can set address automatically:

- (1) Newly installed unit is electrified for the first time;
- (2) After changing indoor PCB, the unit is electrified for the first time;
- (3) After rectifying the wrong wiring, the unit is electrified for the first time;

When being electrified, please connect the outdoor power source firstly.

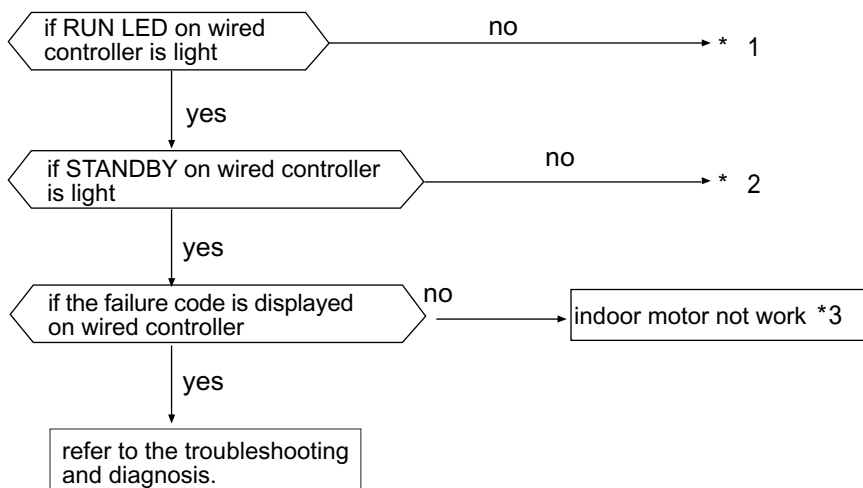
When setting unit address automatically, the unit can not make cooling/heating operation.

Check the wrong wiring only after being electrified, once the indoor address is set, you cannot set the address automatically again.

### 3. Trial operation

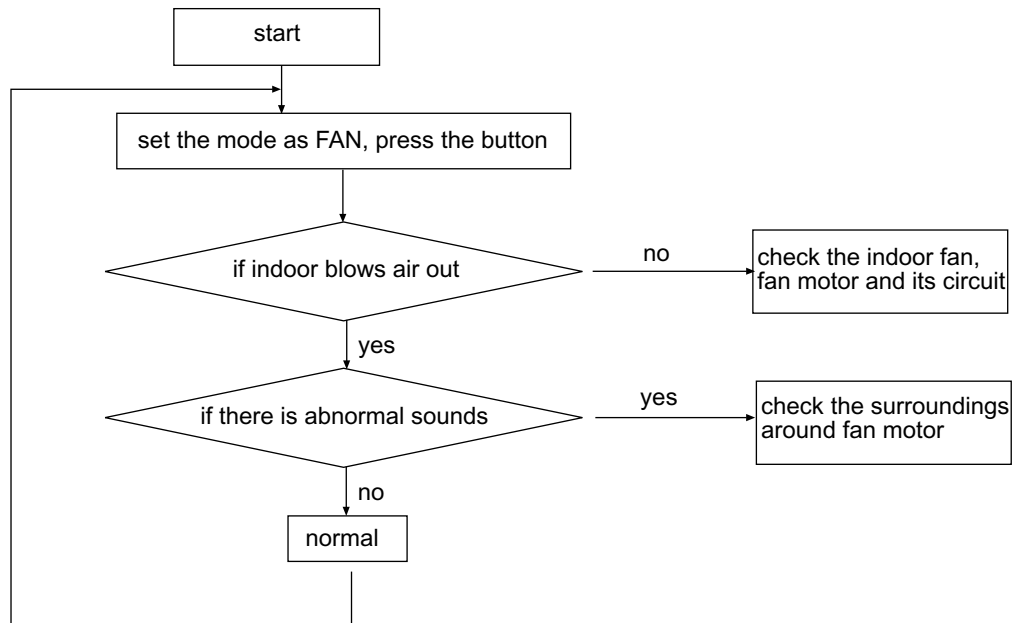
Generally, confirm all the indoors one by one. Please set the other indoors at STOP state.

#### (1) Main power supply and preliminary confirmation



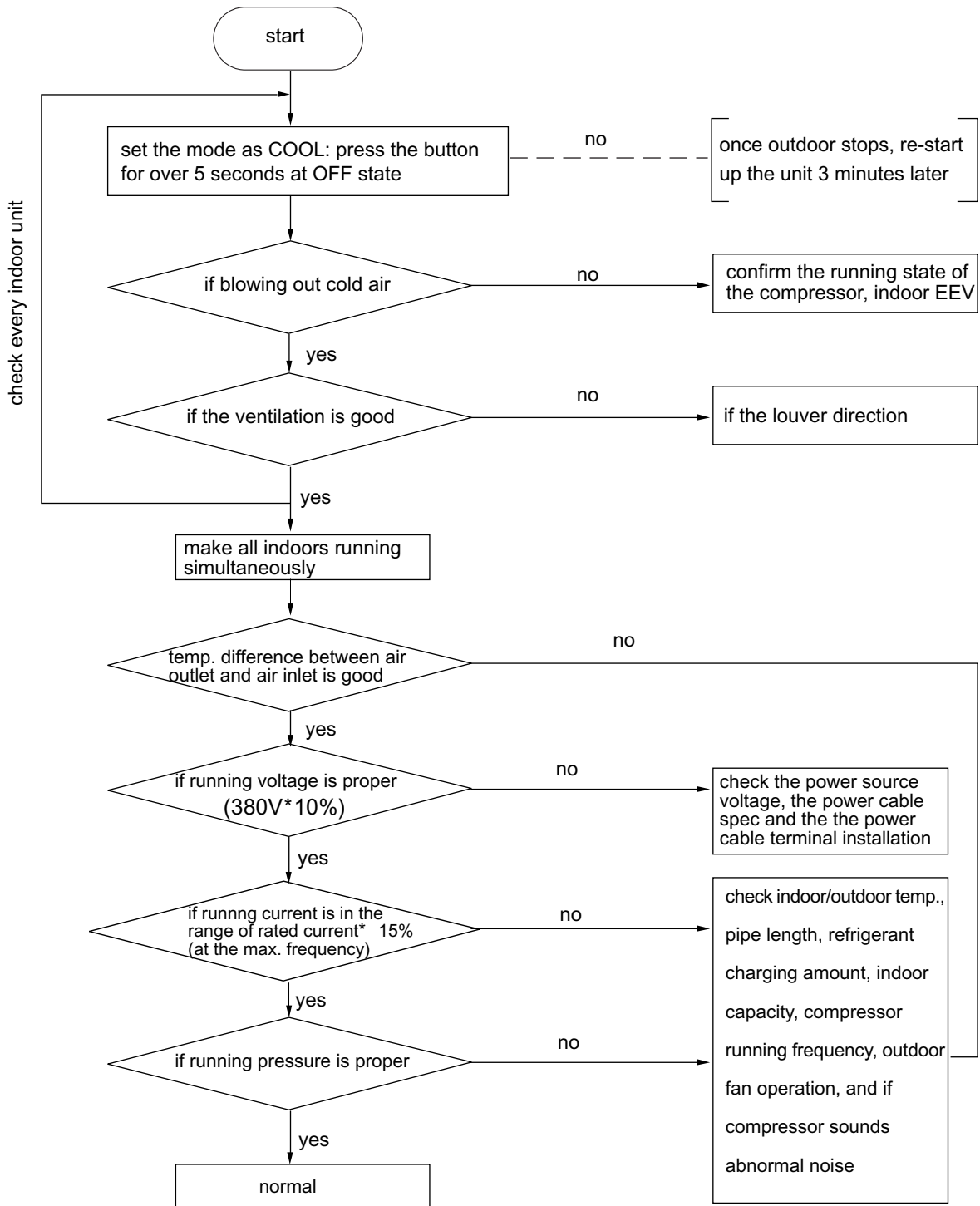


(2) Motor operation confirmation



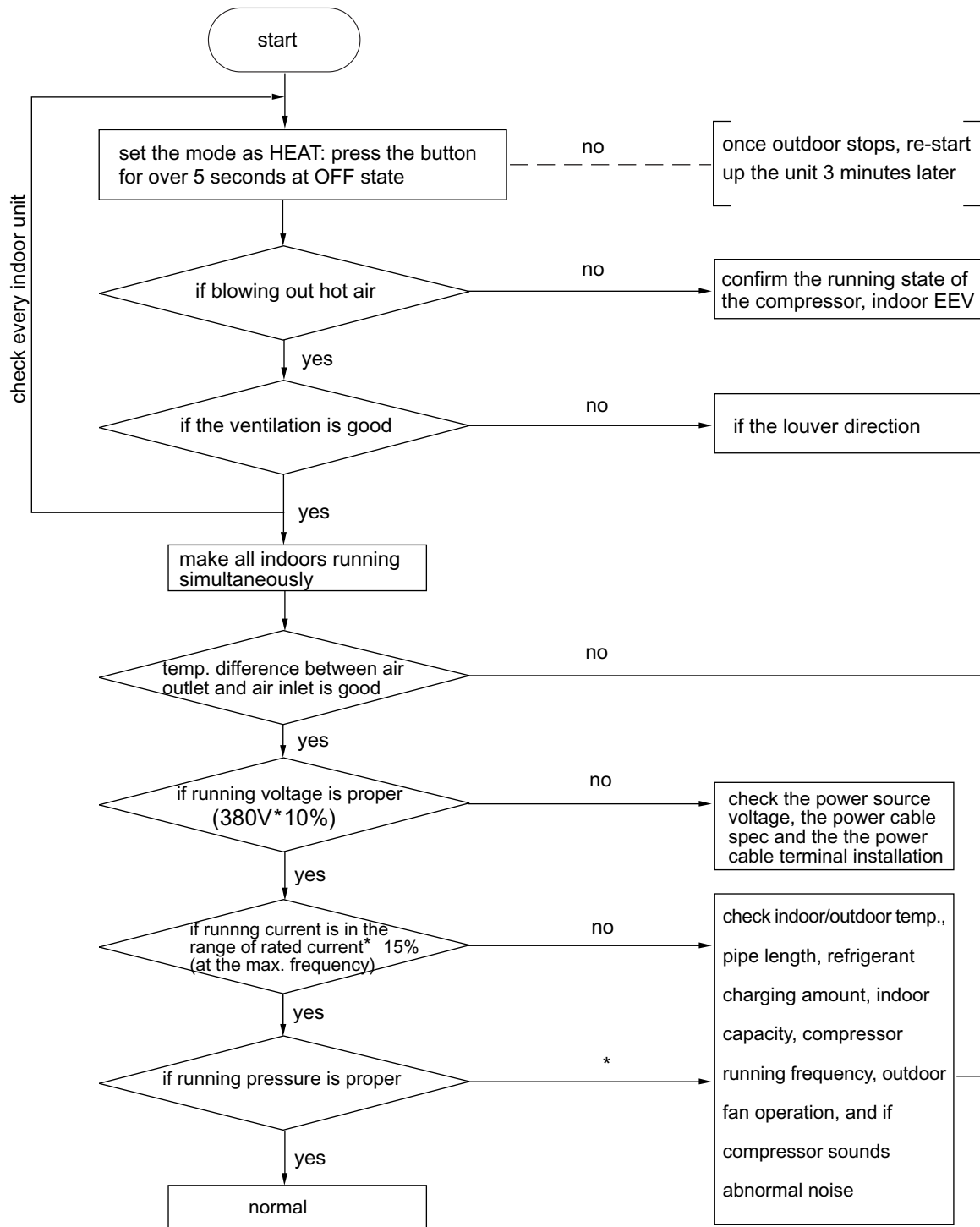


### (3) Cooling operation confirmation



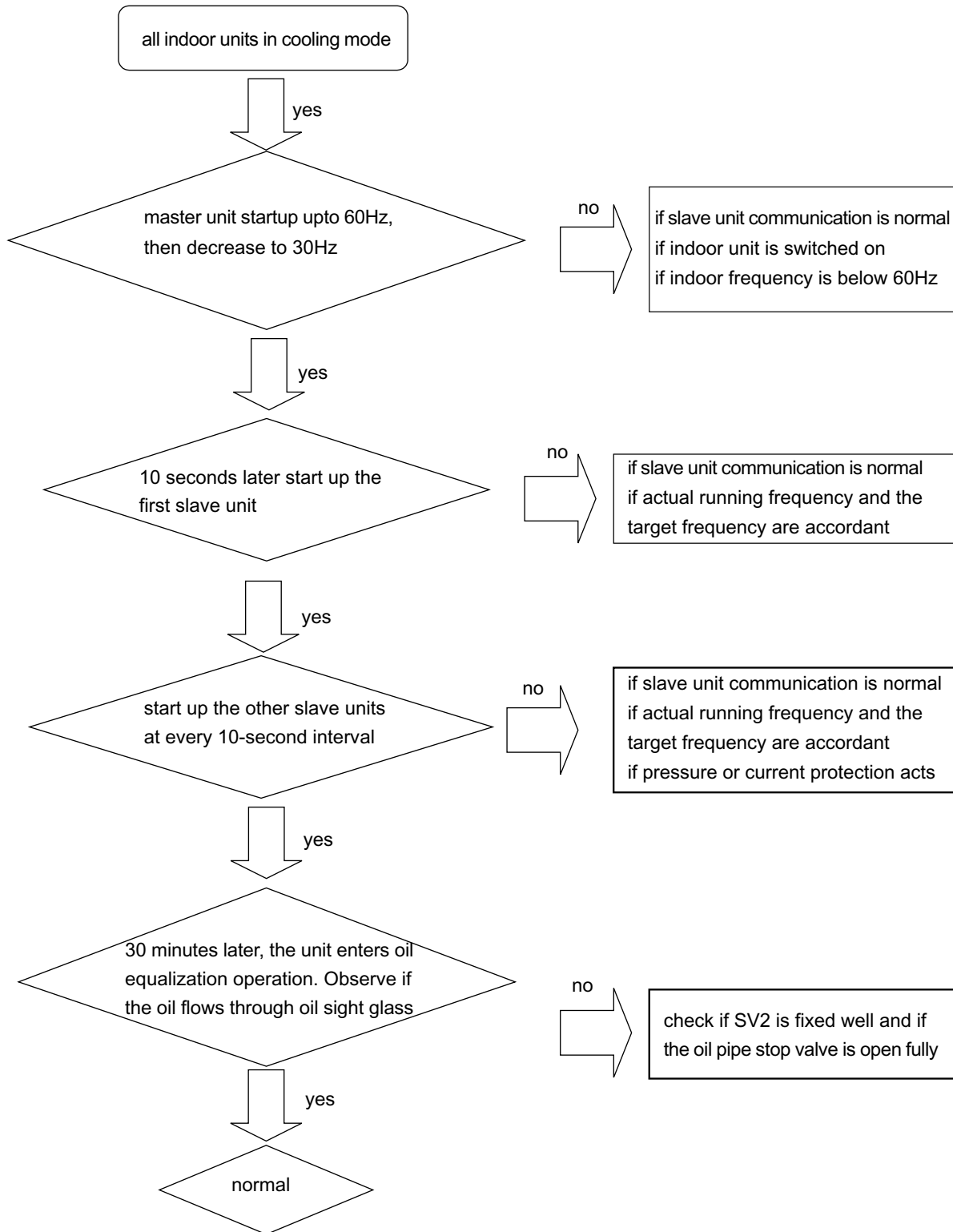


(4) Heating operation confirmation



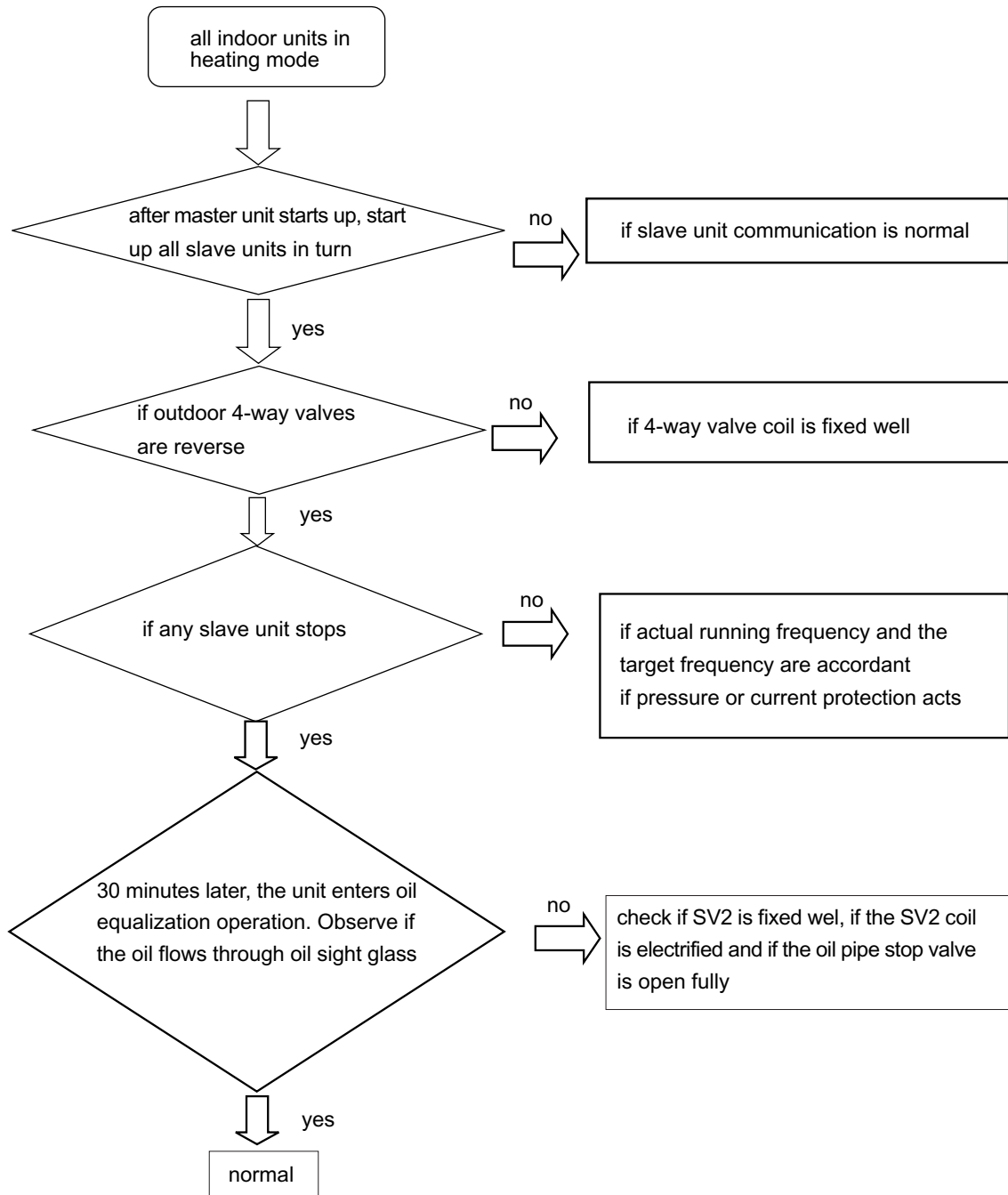


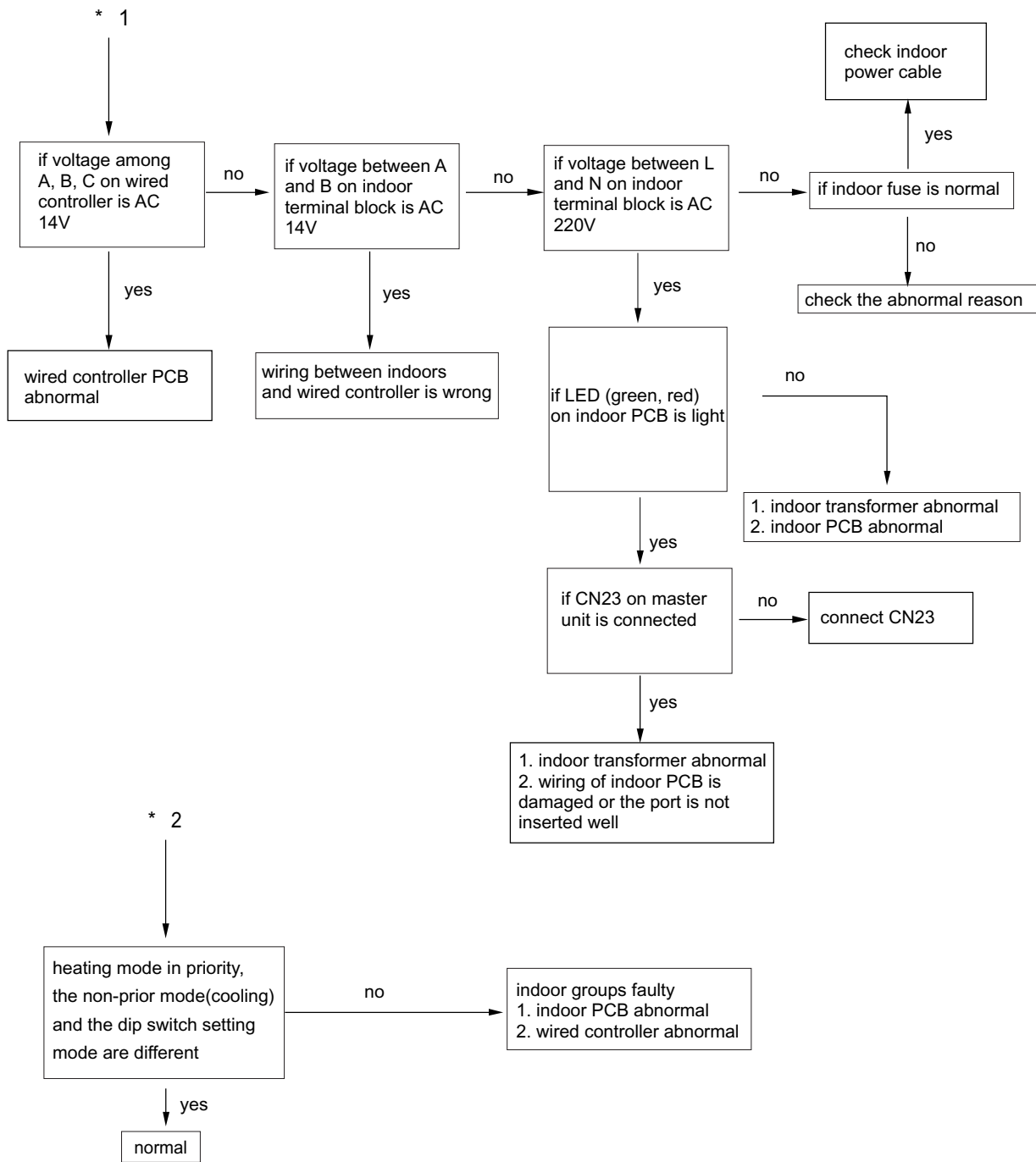
(5) Outdoor confirmation (cooling)

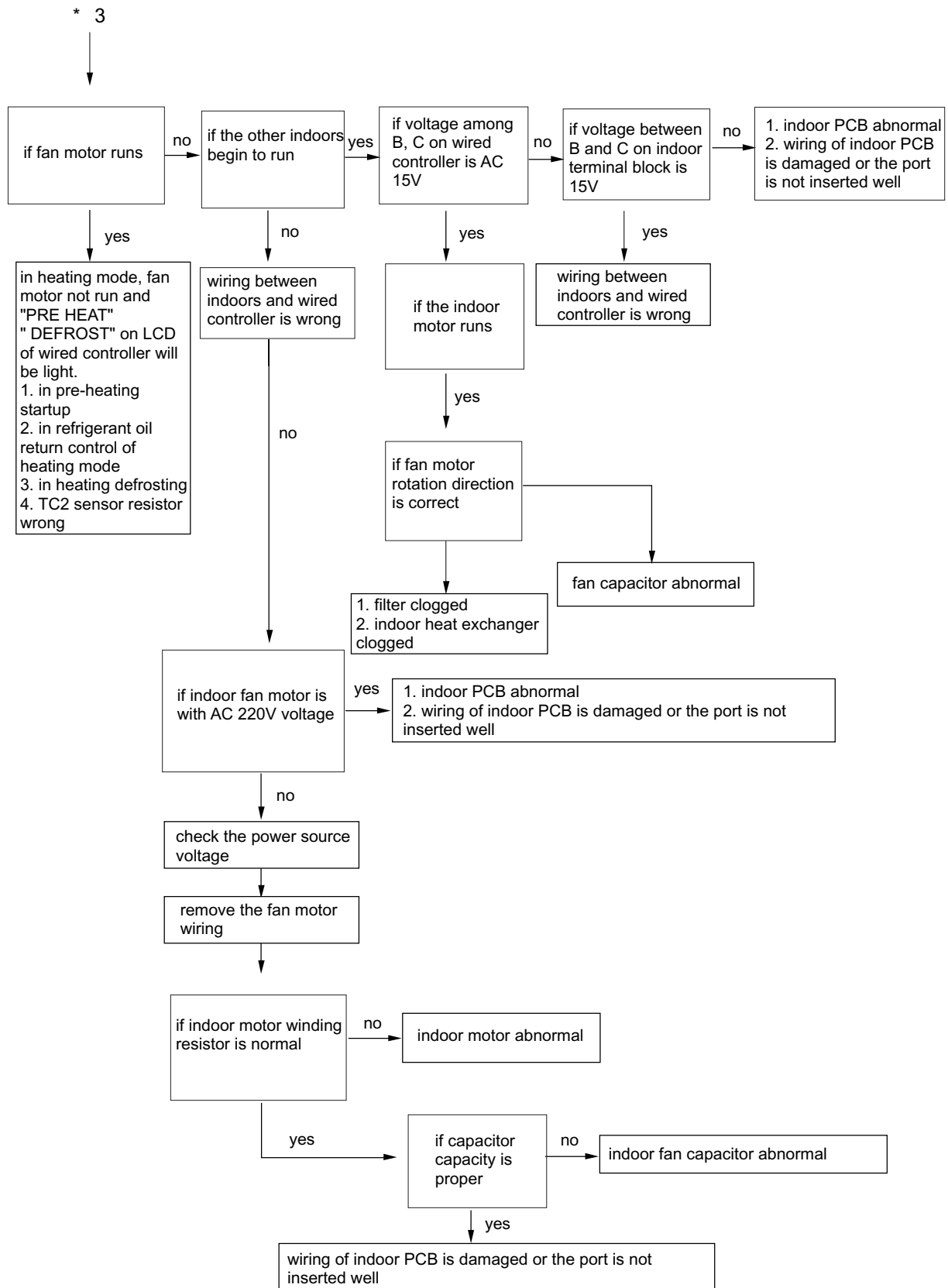




(6) Outdoor confirmation (heating)









Note 1: Temp. difference between air inlet and air outlet Standard

A. In cooling mode, after running for at least 30 minutes, it is normal that the temp. difference between air inlet and air outlet is over 10\*, (at max. frequency)

B. In heating mode, after running for at least 30 minutes, it is normal that the temp. difference between air inlet and air outlet is over 18\*, (at max. frequency).

Note 2: Running current standard

It is normal that the running current is in the range of rated current \*15\*(at max. frequency) . The current will be different for the below condition:

if more than the rated current: high indoor/outdoor temp. ; outdoor bad ventilation (cooling mode), indoor bad ventilation (heating mode).

if lower than rated current: low indoor/outdoor temp.; refrigerant leakage (lack of refrigerant).

Note 3: Running pressure standard

cooling (at max. frequency)	high pressure 1.6~2.0MPa	indoor 18~32*
	low pressure 0.35~0.55MPa	outdoor 25~35*
heating (at max. frequency)	high pressure 1.5~2.1MPa	indoor 15~25*
	low pressure 0.3~0.45MPa	outdoor 5~10*

The above value is measured after running for 15 minutes (ambient temp. is DB\*)

High/low pressure changing trend due to the running condition:

Cooling/heating:

indoor temp. goes up---high/low pressure goes up

indoor temp. goes down---high/low pressure goes down

outdoor temp. goes up---high/low pressure goes up

outdoor temp. goes down---high/low pressure goes down

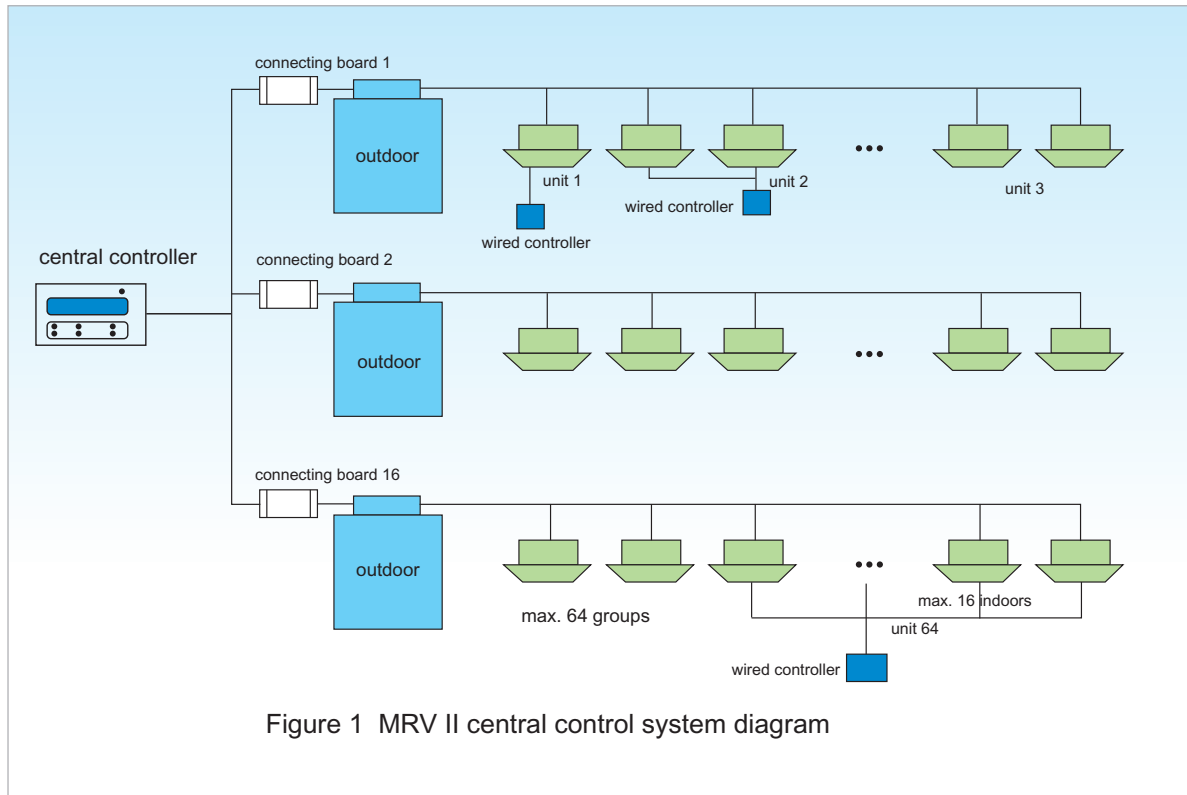


## 4.2 Control function

### 1. Features and functions of central controller

1) Central controller can realize monitor and control for the MRV II system. Can be used for single MRV II system and also for multi MRV II systems; can control max. 64 groups and every group can connect max 16 sets of indoor.

2) Central controller control diagram is as below:



#### \* Main functions of central controller

- (1) Can monitor the running mode, fan speed, set temp., swing and ventilation, etc of the max. 64 groups of indoor. And display indoor filter icon.
- (2) Can realize the setting of mode, fan speed, temp. of single unit/group/total of indoors.
- (3) Can realize the setting of indoor mode and ventilation.
- (4) Can set the three modes: priority for entering later, central control and lock.
- (5) Can monitor indoor failure and save it to be checked.
- (6) Can connect the external signal input. When receiving the external signal such as the fire alarm to control simultaneously.
- (7) Receive external timer signal to control TIMER ON/OFF for the unit.



(8) Can set the central control unit as a group, and the max. 64 units of indoor can be set a group. After setting unit, the indoor in one group can be controlled the same operation (when out of factory, one unit is regarded as one group).

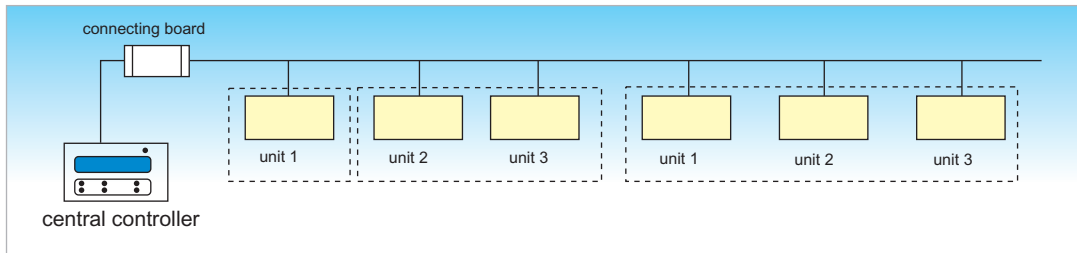


Figure 2 Central unit and group diagram

## 2. Display and button introduction of central controller

\* LCD and buttons on central controller, shown as figure 3:

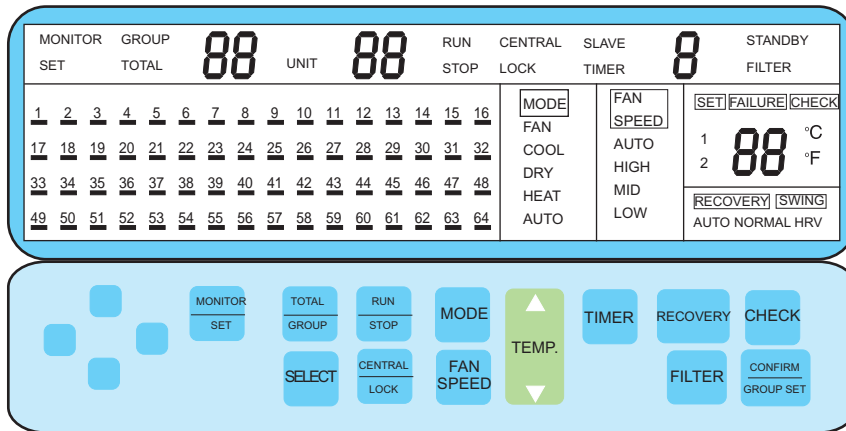


Figure 3: LCD and buttons on central controller

### 2.1 LCD icons introduction

LCD of central controller displays indoor state and setting mode of different units.

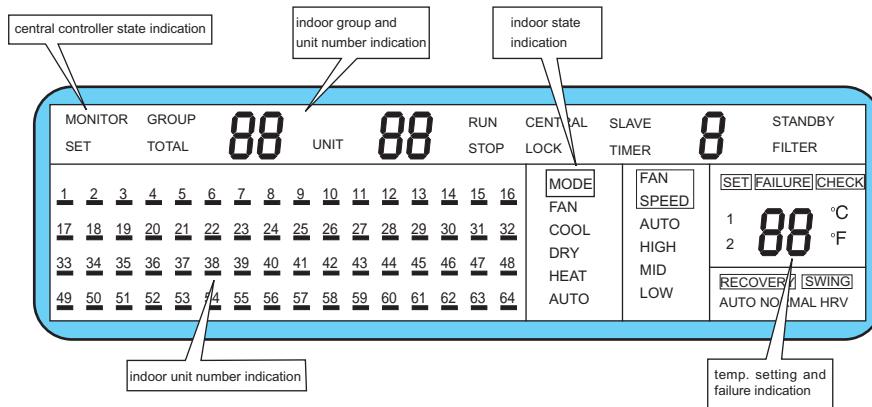


Figure 4: LCD diagram of central controller



- a. The state indication icon shows the central controller in "MONITOR" or "LOCK" state.
- b. Indoor group and unit number indication shows the current indoor group No. and unit No.
- c. Indoor state indication shows the current indoor running state, mode, fan speed, set temp., ventilation and if needing filter cleaning.
- d. Indoor unit No. indication shows all indoor unit No. connected to the bus wire. If the indoor does not run, it only displays unit No.; if the indoor is running, it will display the No. with underline.
- e. Set temp. and failure indication will show the current set temperature and when the current indoor occurs failure, LCD will display FAILURE icon and the failure code.

\* After the central controller is electrified, all icons on LCD will display for 3 seconds, as shown in Figure 4. Then if the controller is the master central controller, LCD will display "CENTRAL", and "88" on "GROUP" "UNIT" position will flash at 1Hz frequency, the sequence is 888\* 888\*88\*8, which shows the central controller is searching indoor, when indoor unit is found, LCD will display the indoor state and display "MONITOR" icon; if no indoor unit is found, the "88" will flash all the time at 1Hz; when more than 2 indoor units are found, it will display the min. unit No., and the unit No. indication will display all found indoor unit No. Indoor state indication and set temp. indication will display the running state and set temp. of the indoor with min. No.

\* Set temp. indication and the corresponding indoor unit set temp. of the unit No. indication will display failure code, when failure occurs.

\* The icons on the set area will not display after being electrified, only in setting state, or pressing "GROUP" button, it will display and only display the indoor running state of the selected area. If within 15 seconds, no input or press again "MONITOR/SET" button, "GROUP" icon will disappear automatically and resume to the original totally monitor state.

## 2.2 Button functions

The button distribution is shown in Figure 5.

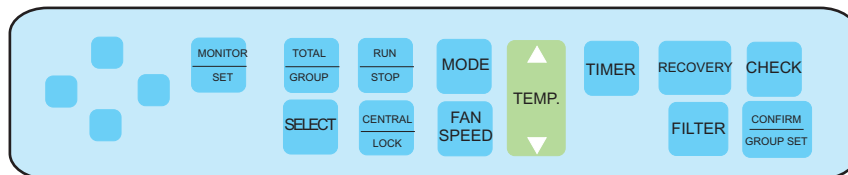


Figure 5: Button distribution diagram

### (1) MONITOR/SET button

- a. Used for the monitor state and the set mode changeover;
- b. After being electrified (or pressing RESET button), the central controller will regard the monitor state as the default. LCD will display "MONITOR" icon, and "SET" will disappear;
- c. In monitor state, the valid buttons are MONITOR/SET, UNIT, TOTAL, CHECK and FILTER;
- d. In monitor state, press MONITOR/SET button, the central controller turns to the set state, "MONITOR" disappears, "SET" will be on and flash at 1Hz to enter SET state; then if within 15 seconds, press no buttons or press again SET, the controller will be back to MONITOR state;
- e. In set state, all the buttons are valid.



(2) GROUP SET/CONFIRM button

a. In monitor state, press the button to select the indoor group; and in set state, confirm the group selection.

(3) TOTAL/GROUP button

a. Press GROUPSET/CONFIRM button to select the control range;

b. Press it every time, the display sequence on LCD is



c. In monitor state, press it, and the LCD will display "GROUP" or "TOTAL".

(4) SELECT button

a. Used to put the indoor unit No. into the group or take the unit No. out of the group.

b. In monitor state, the button is invalid.

(5) Group button

a. Used to select the group No. to be displayed or to be set, and display on LCD; every time press it, the number will change from 1 to 64;

b. In monitor state, LCD will display the indoor running state in this group.

(6) Unit button

a. Used to select the unit No. to be displayed or to be set, and display on LCD; every time press it, the unit will change from 1 to the unit No. connected to the outdoor (max. No. is 64).

(7) RUN button

a. Used to start up the unit

b. In set state, press it, the "STOP" icon will disappear, "RUN" will be light (if the unit is ON before pressing the button, the unit is still ON after pressing it), and in the indoor unit number indication area, the corresponding indoor number will be light with underline; in set state, you can set RUN for different indoors.

c. In monitor state, press "TOTAL" button firstly, when icons "TOTAL", "RUN" and "STOP" are all light, press "RUN" button, icon "STOP" will be OFF, "RUN" stops flashing, and the controller will send startup signal to all indoors, "TOTAL" will flash at 1Hz for 3 seconds, then be OFF.

(8) STOP button

a. Used to stop the unit

b. In set state, press it, the "RUN" icon will disappear, "STOP" will be light (if the unit stops, after pressing it, the unit still stops), and the corresponding indoor number underline will be off; in set state, you can set STOP for different indoors.

c. In monitor state, press "TOTAL" button firstly, when icons "TOTAL", "RUN" and "STOP" are all light, press "RUN" button, icon "RUN" will be OFF, "STOP" stops flashing, and the controller will send stop signal to all indoors, "TOTAL" will flash at 1Hz for 3 seconds, then be OFF.

(9) CENTRAL/LOCK button

a. Used to select indoor central control mode;

b. Every time press it, indoor mode will be repeated as the sequence: priority for the entering latter ---central --- lock, and the LCD display sequence is no display --- central --- lock.

(10) TIMER button

a. Used to set the timing function;

b. In set state, press it, TIMER icon on LCD will be light, which shows the corresponding indoor unit in unit No. indication area has been set TIMER mode; press again, TIMER icon will be off, which shows TIMER has been cancelled.



(11) MODE button

a. Used to select indoor operation mode; every time press it, the mode will change in the sequence:

FAN ; æCOOL ; æDRY ; æAUTO

b. In monitor state, the button is invalid.

(12) FAN SPEED button

a. Used to select indoor fan speed;

b. every time press it, the mode will change in the sequence:

AUTO ; æHIGH ; æMID ; æLOW

b. In monitor state, the button is invalid.

(13) TEMP button

a. Used to set the set temperature; every time press it, the temp. will increase or decrease 1 degree; if you keep pressing it, the temp. will change quickly until the max. or the min. temp.

b. In monitor state, the button is invalid.

(14) FILTER button

a. Used to remove the filter icon;

b. When LCD displays FILTER, press the button, then FILTER icon will disappear.

(15) RECOVERY button

a. Used to set indoor RECOVERY function. Every time press it, the recovery icon will change as

AUTO ; æNORMAL ; æHRV;

b. In monitor state, the button is invalid.

(16) CHECK button

a. Press it, the controller will enter the failure history to display the current indoor failure code and the latest occurred failure code;

b. If pressing it when displaying the failure history, it will quit and be back to the monitor state;

c. Press the button for over 10 seconds, all the failure history will be cleared;

d. When no failure history, the set temp. area will display "--".

Note: CHECK 1 is the current failure; CHECK 2 is the latest failure.

(17) RESET button

Used to reset the controller; it is inside the controller.

### 3. Group setting and cancel

#### 3.1 Group setting

1) The central controller can set multiple units as one group, and the indoor in one group can be controlled ON/OFF simultaneously.

2) In monitor state, press "CONFIRM/GROUP SET", LCD will display "SET", "GROUP", group No. "1" and unit No. in group "1".

3) Press group button to select the group No., "▲" increases, "▼" decreases, the number will change among 1~64.

1 ; æ2 ; æ3 ; æ4 · · ; æ63 ; æ64







- 4) Press unit button to select the unit to be set as one group, the corresponding unit on LCD will flash at 2Hz.
- 5) Press "SELECT" button to confirm the unit, the unit No. on LCD stops flashing and becomes ON.
- 6) Repeat procedure 4 and 5 to set the other units into the group.

After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

Note: One indoor unit can be set in multiple groups. For the indoor without connected, when selecting indoor unit, the No. will be ignored and not display on LCD.

### 3.2 Cancel group



- 1) In monitor state, press "CONFIRM/GROUP SET" to change to the set state, LCD displays "SET", "GROUP" icons.
- 2) Press group button " " and " " to select the group to be cancelled, LCD will display group No. and the units in the group.
- 3) Press unit button " " and " " to select the unit to be cancelled, LCD will display indoor No.
- 4) Press SELECT for about 3 seconds, the unit No. underline will disappear.
- 5) Repeat procedure 3 and 4 to cancelled the other unit No. in the group.
- 6) Press "CONFIRM/GROUP SET" and the indoor unit No. without underline disappears.

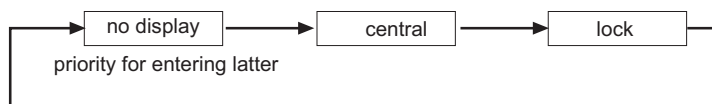
After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

## 4. Control mode setting

The central controller can set the following modes for the indoor unit connected to the bus wire: mode, fan speed, set temp., recovery, etc. and set the control mode (priority for entering latter, central and lock). Also it can set the single/group/total mode for indoor unit.

### 4.1 Single indoor unit setting

- 1) Press "MONITOR/SET" button, the controller turns into set state, "SET" icon on the LCD will display at 1Hz.
- 2) Indoor unit number selection: press unit  and  to select the unit to be set.
- 3) Indoor operation mode selection: press "CENTRAL/LOCK" button to select indoor central control mode, every time press it, LCD will display:





Priority for entering latter: the set demand input latter is valid between central controller and indoor individual controller.

Central: in central mode, indoor unit only can receive the ON/OFF demand from the individual controller.

Lock: indoor unit does not receive any demand from individual controller.

4) Set: press MODE, FAN SPEED, TEMP., RECOVERY button to set indoor operation state, the detailed info refers to 2.2.

5) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".

6) Press "CONFIRM/GROUP SET" to confirm the set.

After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

If you only set ON/OFF for indoor unit, the procedure 3 and 4 are not necessary. The system regards the mode, fan speed, set temp. as the same before being switched off; if being electrified after being powered off, the default modes are: MODE: AUTO; FAN SPEED: AUTO; set temp.: 24degree.

#### 4.2 Total indoor units in group setting

Central controller can operate the indoor in group. The procedure is as follows:

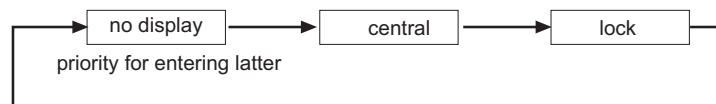
1) Press "MONITOR/SET" button, the controller turns into set state, and SET will flash on LCD at 1Hz.

2) Total/group/unit selection: press "TOTAL/GROUP", then "GROUP" will display on LCD. Every time press it, the changing sequence is:



3) Set group No.: Press group and to select the group No. LCD will display the min. indoor unit No. on the mode and fan speed area.

4) Indoor operation mode selection: press "CENTRAL/LOCK" button to select the indoor central control mode. Every time press it, the following will display on LCD:



5) Setting: press MODE, FAN SPEED, TEMP., RECOVERY, etc to set indoor operation mode.

6) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".

7) Press "CONFIRM/GROUP SET" to confirm the set.

After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

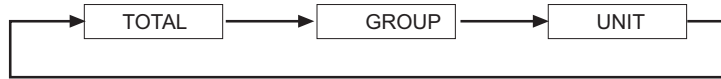
If you only set ON/OFF for indoor unit, the procedure 3 and 4 are not necessary. The system regards the mode, fan speed, set temp. as the same before being switched off; if being electrified after being powered off, the default modes are: MODE: AUTO; FAN SPEED: AUTO; set temp.: 24degree.



### 4.3 Setting for indoor in a single unit of a group

The procedure is as follows:

- 1) Press "MONITOR/SET" button, the controller turns into set state, and SET will flash on LCD at 1Hz.
- 2) Total/group/unit selection: press "TOTAL/GROUP", then "GROUP" will display on LCD. Every time press it, the changing sequence is:



- 3) Set group No.: Press group and to select the group No. LCD will display the min. indoor unit No. on the mode and fan speed area.
- 4) Set unit No.: press unit and to select the indoor unit No. to be set, the indoor number to be set will flash on LCD.
- 5) Indoor operation mode selection: press "CENTRAL/LOCK" button to select the indoor central control mode. Every time press it, the following will display on LCD:



- 6) Setting: press MODE, FAN SPEED, TEMP., RECOVERY, etc to set indoor operation mode.
- 7) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".
- 8) Press "CONFIRM/GROUP SET" to confirm the set.

After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

If you only set ON/OFF for indoor unit, the procedure 3 and 4 are not necessary. The system regards the mode, fan speed, set temp. as the same before being switched off; if being electrified after being powered off, the default modes are: MODE: AUTO; FAN SPEED: AUTO; set temp.: 24degree.

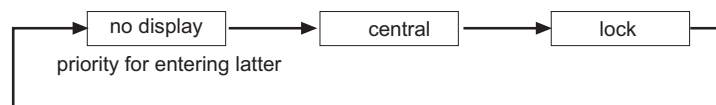
### 4.4 Total indoor setting

The procedure is as follows:

- 1) Press "MONITOR/SET" button, the controller turns into set state, and SET will flash on LCD at 1Hz.
- 2) Total/group/unit selection: press "TOTAL/GROUP", then "GROUP" will display on LCD. Every time press it, the changing sequence is:



- 3) Indoor operation mode selection: press "CENTRAL/LOCK" button to select the indoor central control mode. Every time press it, the following will display on LCD:





- 4) Setting: press MODE, FAN SPEED, TEMP., RECOVERY, etc to set indoor operation mode.
- 5) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".
- 6) Press "CONFIRM/GROUP SET" to confirm the set.

After pressing "MONITOR/SET", the setting is finished, and the controller will turn into monitor state; or if no any pressing within 15 seconds, the controller will turn into monitor state automatically.

If you only set ON/OFF for indoor unit, the procedure 3 and 4 are not necessary. The system regards the mode, fan speed, set temp. as the same before being switched off; if being electrified after being powered off, the default modes are: MODE: AUTO; FAN SPEED: AUTO; set temp.: 24degree.



## 5. Total ON/Total OFF operation

Central controller can operate ON/OFF simultaneously for the indoors connected to the bus wire. The indoors will operate as the default modes, and need not set the indoor mode, fan speed, etc.

### 5.1 Total indoors ON/OFF setting

- 1) Check if the central controller is in monitor state. If it is in set monitor, press "MONITOR/SET" to ensure that LCD displays MONITOR icon.
- 2) Total/group/unit selection: press "TOTAL/GROUP", LCD will display "TOTAL" icon, meanwhile, SET icon flashes.
- 3) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".
- 4) Press "CONFIRM/GROUP SET" to confirm the set.

### 5.2 ON/OFF setting for total indoors in one group



- 1) Check if the central controller is in monitor state. If it is in set monitor, press "MONITOR/SET" to ensure that LCD displays MONITOR icon.
- 2) Total/group/unit selection: press "TOTAL/GROUP", LCD will display "TOTAL" icon, meanwhile, SET icon flashes.
- 3) Select group No.: press group  and  to select the group to be set.
- 4) RUN/STOP set: in OFF state, press "RUN/STOP" button, LCD displays "RUN"; in ON state, press "RUN/STOP" button, LCD displays "STOP".
- 5) Press "CONFIRM/GROUP SET" to confirm the set.

If you want to set the indoors of the other groups the same operation, repeat procedure 3 and 4.

## 6. Filter indication

### 6.1 Filter icon and reset operation

On central controller, filter icon shows the filter state of corresponding indoor unit. When the filter needs to be cleaned, the icon will occur.

- 1) Check if central controller is in monitor state, if not, press "MONITOR/SET" to turn into monitor state.
- 2) Select the unit No.: press unit  and  to check indoor state.
- 3) Check FILTER icon: if FILTER icon of the current indoor is light, it shows this indoor filter needs to be cleaned.
- 4) Clean the indoor filter.
- 5) After cleaning, press FILTER button to reset, and FILTER icon on LCD will be off.



## 7. Failure diagnosis function

When indoor failure occurs, the central controller will display the corresponding failure code. When checking failure, if the faulty indoor unit is the current displayed one, the controller will display the corresponding failure code; if the faulty indoor unit is not the current displayed one, the faulty unit No. will flash. When checking the indoor, the failure code will display on LCD.

Press CHECK button for 0.5 seconds to find the failure history. The failure code refers to the maintenance section.

## 8. Safety cautions for central controller

- 1) Must avoid water splash on the central controller or the controller is installed on the higher position, otherwise, the controller will be damaged.
- 2) Must avoid being installed in the place with much dirt, or it will cause the controller in short circuit or electric shock, which will damage the controller.
- 3) Avoid the sunshine shows onto the controller directly, also do not be close to the flammable or the explosive objects.
- 4) The central controller must be away from the TV and radio. Keep a distance more than 1m. Or the controller will occur wrong operation.
- 5) Don't press the button with wet hand, or the controller will be damaged.
- 6) Central controller must be installed or maintained by the authorized distributor or installer.
- 7) When in maintenance, please cut off the power.

## 9. Exterior dimensions for central controller

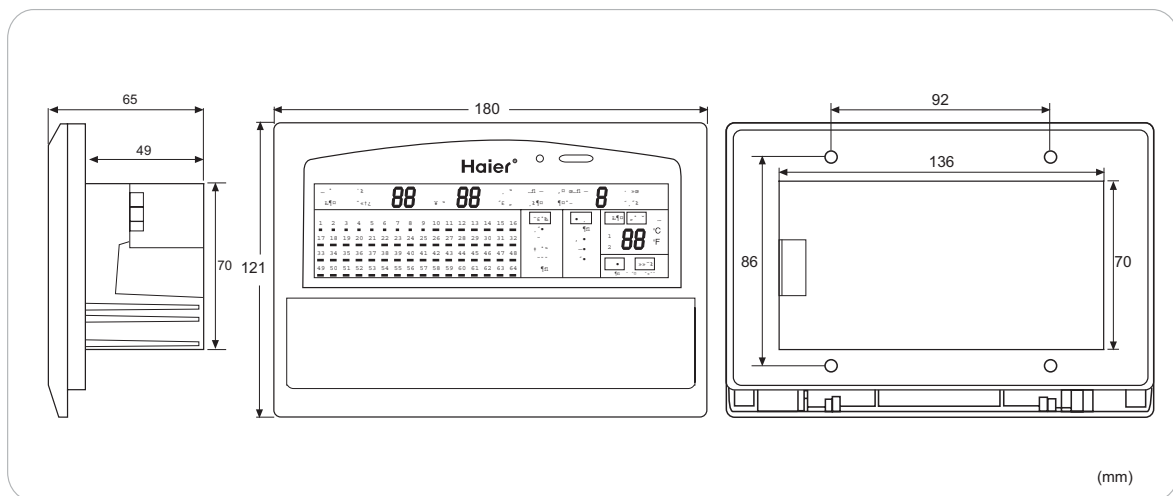


Figure 6: Exterior dimension



## 10. Installation instruction of central controller

10.1 Wiring diagram is as follows:

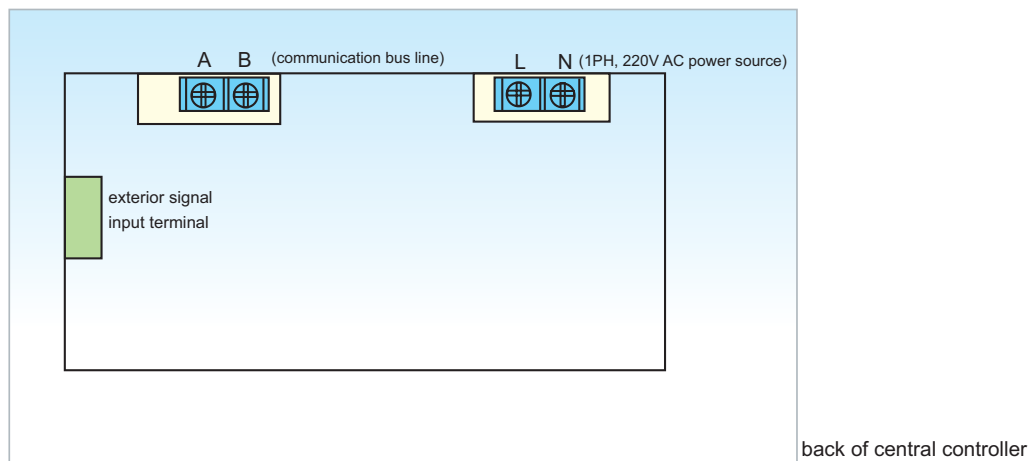
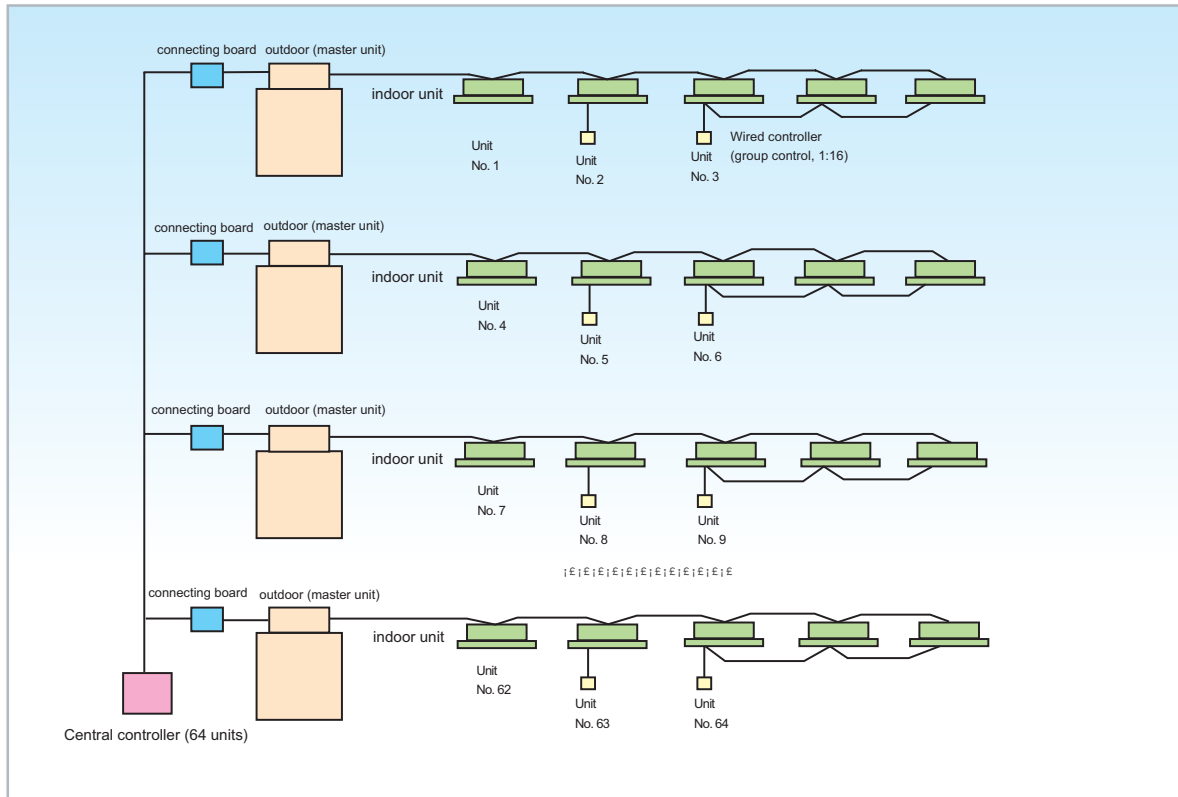


Figure 7: Central controller (1:64) wiring diagram --- bus line type

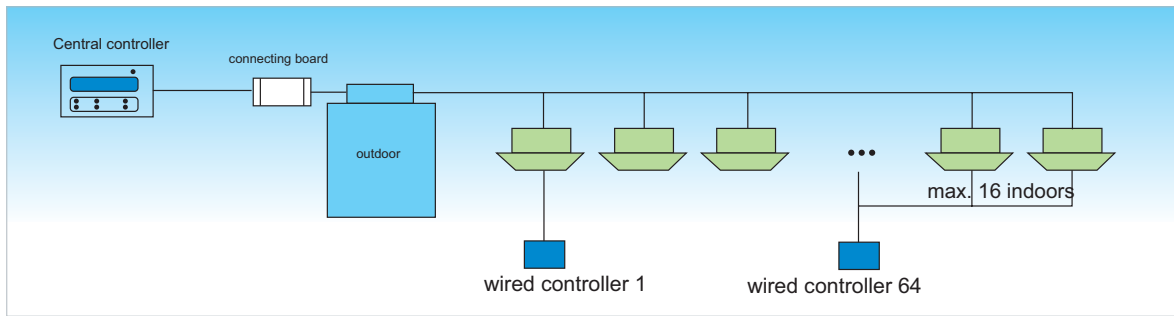


Figure 8: Central controller (1:64) wiring diagram --- daisy chain type

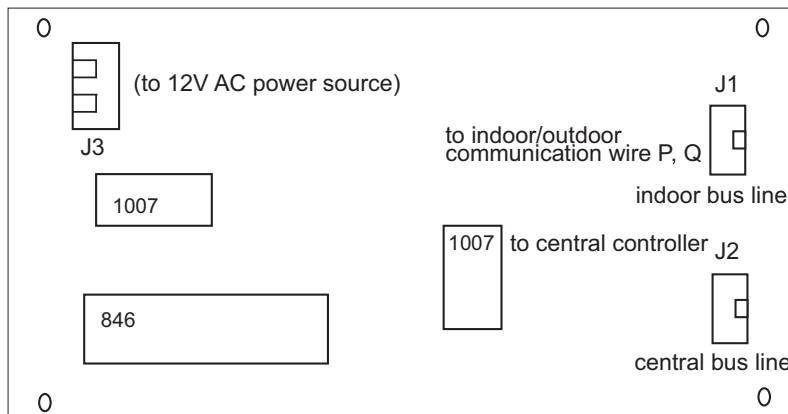
### 10.2 Communication wire specs

The wire between connecting board to the central controller is the dual-core STP (shielded twisted pair). The detailed specs are as below:

wire length(m)	Specs
<100	0.3mm <sup>2</sup> * 2-core STP
∩ 100 and <200	0.5mm <sup>2</sup> * 2-core STP
∩ 200 and <300	0.75mm <sup>2</sup> * 2-core STP
∩ 300 and <400	1.25mm <sup>2</sup> * 2-core STP
∩ 400 and <600	2mm <sup>2</sup> * 2-core STP

∩ ∅ Shielded layer of communication wire must be earthed on one end.

### 11. Connecting board wiring method

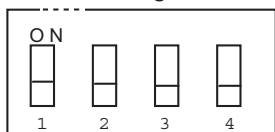


1. J1, indoor bus line port. To indoor bus line, that is to indoor/outdoor communication wire P, Q, non-polarity.
2. J2, central bus line port. To B-A, B-B of central controller, non-polarity.
3. J3, to 12VAC power source. Can connect to communication wire A, B of master unit and slave unit, also can connect A, B of communication wire of master unit and inverter board. Non-polarity.

Note: Indoor bus line is indoor/outdoor communication wire; central bus line is the wire from J2 on connecting board to central controller.



1. Dip switch setting of central controller: shown in the below figure (ON:0, OFF: 1)



Dip switch setting meaning:

The first bit: central bus line selection, 0: indoor bus line; 1: central bus line

The second bit: master/slave central controller selection, 0: master central controller; 1: slave central controller

The third, fourth bit: control range, 00: 1~64, 01: 65~128, 10: 129~192, 11: 193~256. Every central controller only can control 64 units, and every unit can include max. 16 indoors, but the central controller only displays the master indoor state.

position	1	2	3	4
0: ON	indoor bus line	master controller	00: 1~64 01: 65~128	
1: OFF	central bus line	slave controller	10: 129~192 11: 193~256	

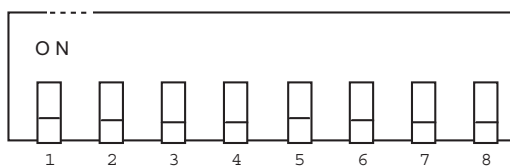
For example:

Select central bus line, master central controller, control range is 00, so the dip switch is 1 0 0 0.

Select indoor bus line, master central controller, control range is 00, so the dip switch is 0 0 0 0.

2. Dip switch setting of connecting board

The dip switch is as below figure (ON:1, OFF: 0):



position								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
£>	£>	0	0	0	0	0	0	connecting board address =1
£>	£>	0	0	0	0	0	1	connecting board address =2
-----								
£>	£>	0	1	1	1	1	0	connecting board address =63
£>	£>	0	1	1	1	1	1	connecting board address =64
£>	0							central bus line: 3600baud
£>	1							central bus line: 2400baud
0								auto set address
1								manual set address



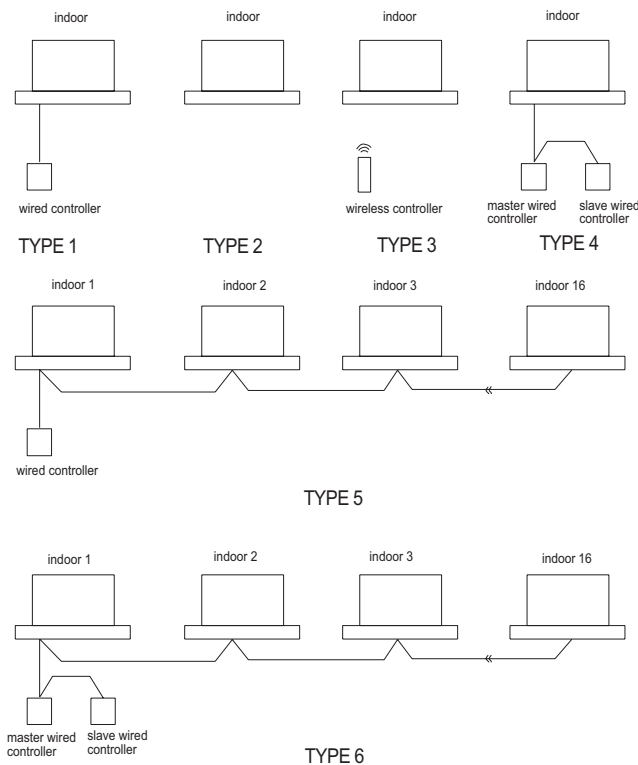
## 12. Cautions for central controller

### 12.1 Application range:

Central controller (1:64) can be used for MRV II. It can control the indoors in single refrigerant system, also can control the indoors in multi refrigerant system (connecting board for the master outdoor unit is necessary). Every central controller can control 64 units of indoors, and every unit can connect max. 16 indoors. But the indoors connected to single refrigerant system can not exceed 40 sets.

Note:

- 1) Single refrigerant system: composed of one outdoor master unit, outdoor slave units, and indoor units.
- 2) Wired controller can control 1~16 sets of indoors, and there are 6 types of connection. When being controlled by the wired controller or central controller, all indoors in one unit will be set at the same state.



### 12.2 Communication wire and power cable connection

Every inverter master unit must connect a connecting board to transform the protocol.

- 1) CN01 on connecting board (port of indoor communication bus line) connects to P, Q on terminal block.
- 2) CN02 on connecting board (port of central control communication bus line) connects to X, Y on terminal block.
- 3) CN03 on connecting board (port of AC220V power source) connects to A, B on terminal block.

Communication wire and central controller power cable specs:

item	specs
communication wire	2-core shielded wire, 0.75mm <sup>2</sup>
power cable	2-core RVV wire, 0.5mm <sup>2</sup>



Communication wire and power cable connection:

- 1) After connecting the connecting board and outdoor master unit. Connect the communication terminal X, Y among master units, and between master unit and central controller. Non-polarity. The communication wires adopts the daisy chain type wiring (shortly, one unit by one unit), The total length can be up to 500m.
- 2) Power cable wiring: Connect AC 220V power source nearby.

### 12.3 Relative setting when being central controlled

1) Indoor central control address setting method:

Central control address dip switch: SW02 (8-bit), the setting is below: (only the master indoor in a unit needs to be set the address)

SW02								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
—	0	0	0	0	0	0	0	central control address=1
—	0	0	0	0	0	0	1	central control address=2
-----								-----
—	1	1	1	1	1	1	0	central control address=127
—	1	1	1	1	1	1	1	central control address=128
0								set central control address by wired controller
1								Forbidden to set address by wired controller

When the first bit of SW02 is ON, indoor central control address will be set by wired controller, and the address will be saved in EEPROM of wired controller (it won't miss even though indoor and wired controller are electrified again). So the first bit of SW02 must be OFF.

2) When the wired control type unit does not connect the wired controller, the central control setting method is as follows:

In this case, you must set the PCB as remote wireless control type, and cancel the communication with wired controller, the detailed method is as follows:

Set the jumper J19 on indoor PCB:

J19	function
connected	wired control
disconnected	remote control

CN30 on indoor PCB:

CN30	function
connected	wired control
disconnected	remote control

Note: if making central control for more than one indoor, please must connect the wired controller.

### 12.4 Setting method in group control

1) Address setting method for indoor in one group

When making group control with wired controller, the indoor unit connected to the wired controller is the master unit. Use the rotary switch SW01 to set the indoor unit address, for master unit, SW01 is at 0, while the rotary switch SW01 of the slave unit will be at the other digits except 0, and can not repeat.



2) Wiring method of serial communication wires between wired controller and indoors

Connect A, B, C on the wiring block of the serial communication wire between wired controller and indoor master unit; Only connect B, C on the wiring block of the serial communication wire between indoor slave unit and indoor master unit, and among indoor slave units.

3) Pull out the jumper of CN23 on the indoor slave unit PCB.



## 4.3 Management system H-CACS

### 1. General information

This management system suits for MRV II series air conditioner.

#### 1.1 Gateway(Model:iGU01)

Function:Communication BUS for indoor &Outdoor ,adopt the running status parameters,transmit the control signal .And convert the comminucation protocal from Homebus to LONKWORKS .Each system need one set ,that is the gateway quantity equals to Inverter outdoor unit quantity and every gateway can connect max. 40 sets of indoor in one system.

#### 1.2 Network server(Model:iSERVER)

Function:Convert the communication protocol from Lonwokrs to TCP/IP.

Each Network server can connect 256 management ports(Each indoor unit ,outdoor unit is regarded as one management port) in theory ,But in fact ,the system can not be more than 200 management ports, and each management system can connect 4 sets network server maximum by HUB.

1.3 Network side software:Each software can control 20000 sets parameter ports

1.4 PC, HBU, internet wire, electric box, pulse ammeter are common devices, which will not be supplied by Haier and be purchased by the distributor or the buyer.

Herein,

PC is the engineer computer or the server with the current standard configuration.

HUB is required with the enough ports.

Pulse ammeter is required with high precision.

For example:

10 sets of indoor (20HP), 20 sets of indoor (30HP), 30 sets of indoor (40HP), MRV II outdoor. To realize monitor, control and count function.

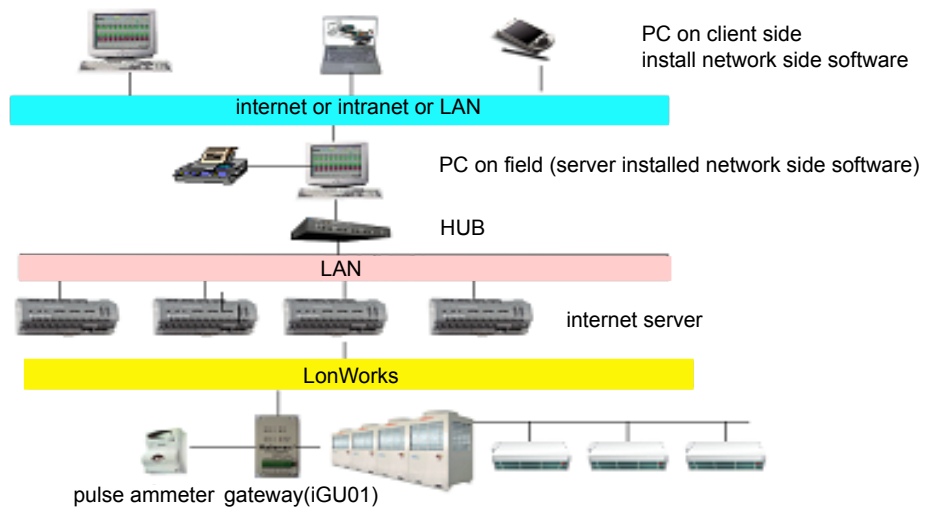
The required devices are as follows:

3 gateways; 3 pieces of communication wire, one internet server, one set of network side software, internet wire, one set of PC.

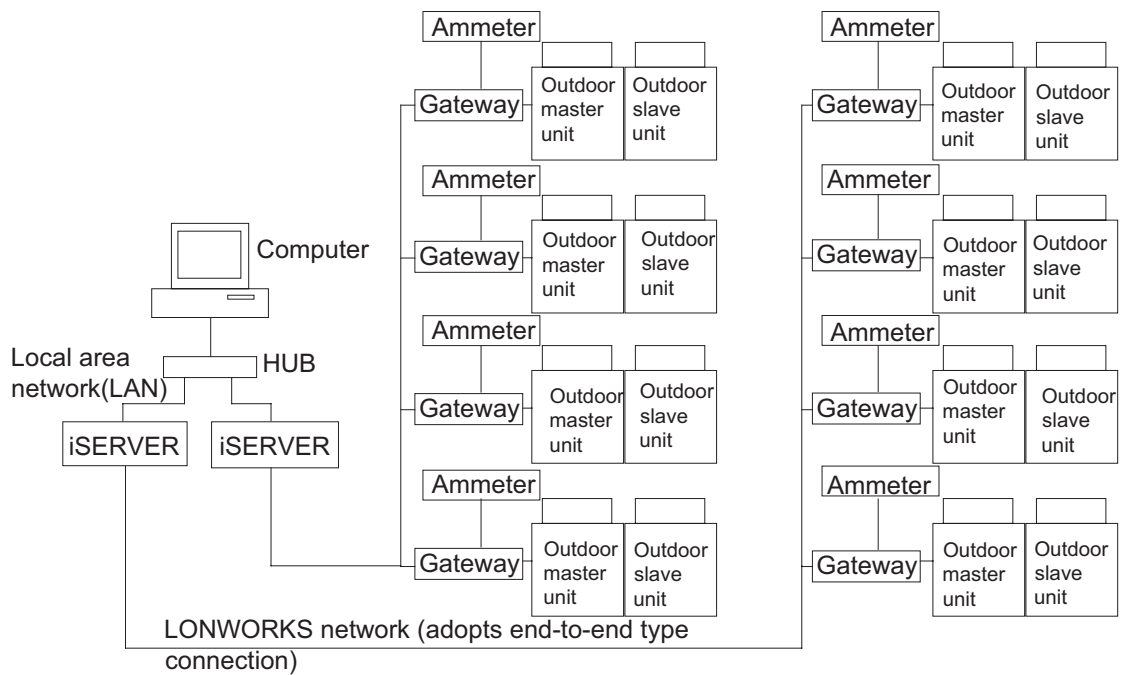


## 2. Installation instruction

### 2.1 Structure figure

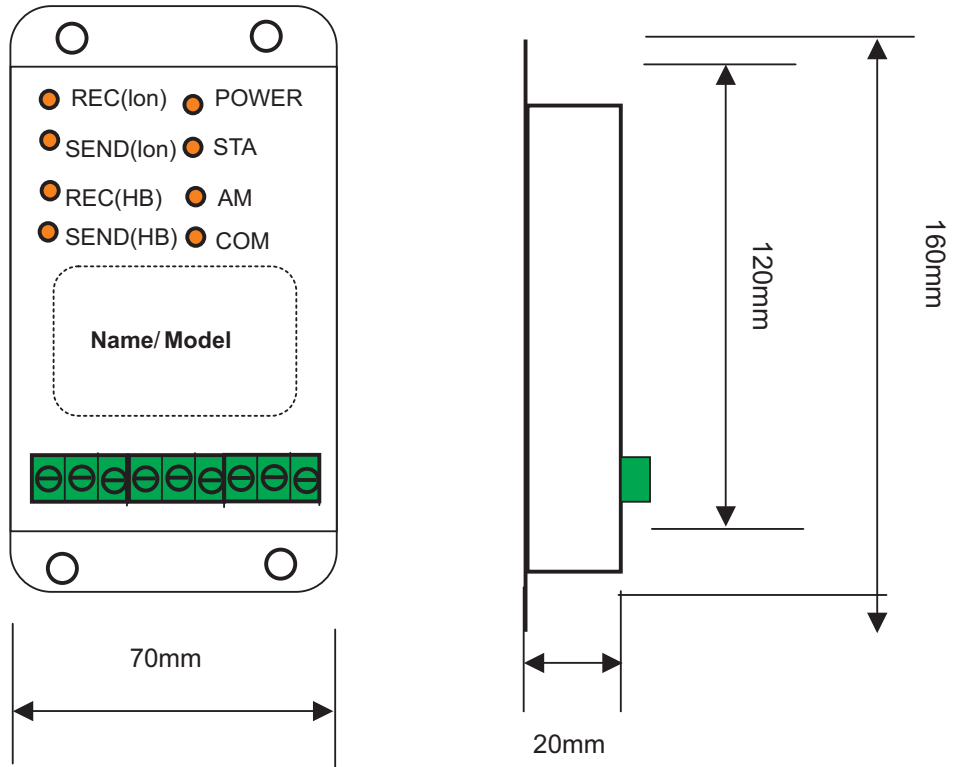


### 2.2 System diagram:





2. 3 Gateway exterior appearance & installation method



A. LED ( irradiance diode ) & communication terminal functions :

LED:

REC(Lon): The receiving indication of control bus line

SEND(Lon): The sending indication of control bus line

REC(HB): the receiving indication of communication between indoor unit and outdoor unit

SEND(HB): the sending indication of communication between indoor unit and outdoor unit

Power: the gateway power indication

STA: the gateway state indication, normal state: OFF

AM: flashes simultaneity with the pulse signal lamp when using counting function

COM: flashes once per 30s when normal

Connection port of gateway:

Power	Power	L	L	H	Earth	Count	Earth	H	H
		O	O	B	wire		wire	B	B
		N	N	S				M	M

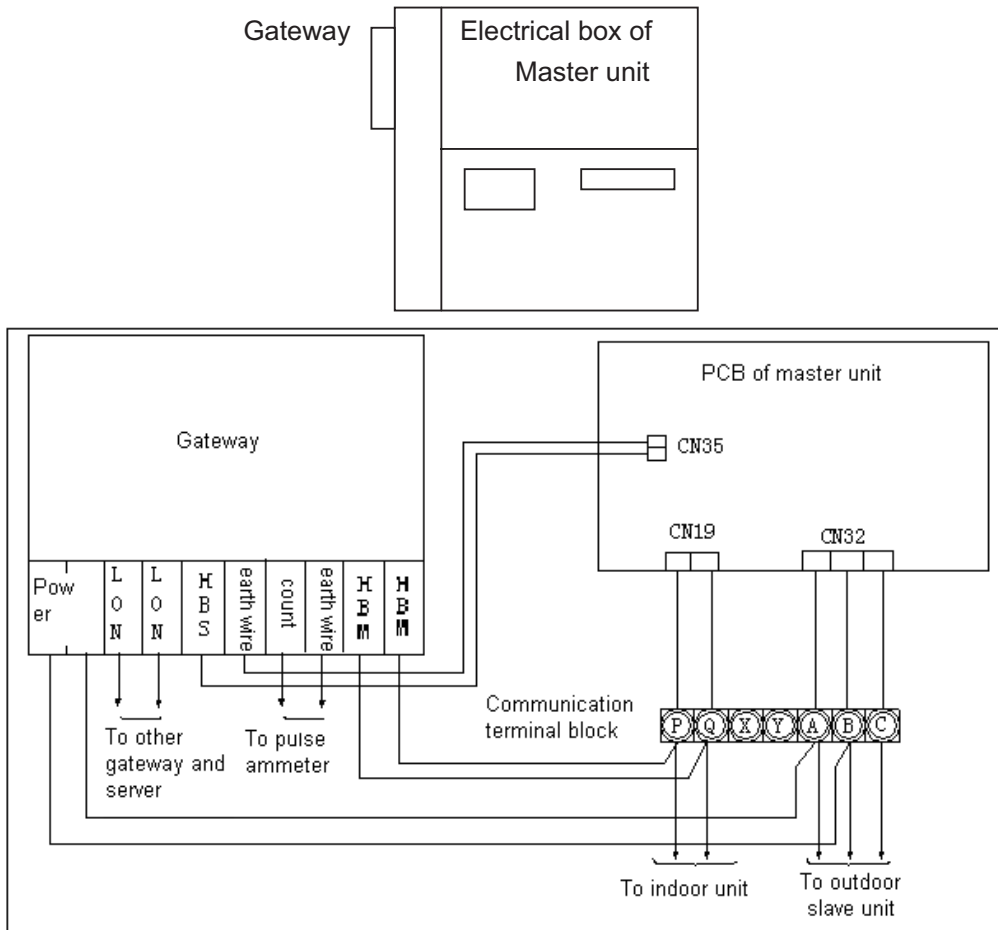
B.Installation place of gateway

Install the gateway near the master unit, because the gateway gets HOMEBUS data and slave data from outdoor inverter master unit(KMR-280W/BP), you could install the unit as follows:

Install the gateway on the cover of the electrical box right side of Master unit, drilling a hole on the site. Adopt the flat head tapping screw to fix the gateway, to prevent the wires punctured by the wires in the electric box.



### C. Wiring connection of gateway:



#### Remarks:

- 1) Power: The power of gateway is AC12V and could be gotten from port A and B on the communication terminal block of outdoor master unit and slave unit. There can be any error when connecting, or the gateway will be burnt off.
  - 2) LON/LON(LONWORKS communication) connector: connect with the gateway of other master unit and LONWORKS communication connector of internet server, no polarity requirement.
  - 3) HBS/earth wire(serial signal of master unit) wiring: connect with the output port of serial signal CN35 of the master unit PCB, get the parameter of slave unit from serial signal, could not detect slave unit data when in reverse connection. Polarity is required. When using communication wire 0010450044, black wire is connected to the HBS terminal of gateway, and white wire is connected to the earth wire on the right of HBS.
  - 4) Count/ earth wire(pulse signal) wiring: connect pulse ammeter to get the power consumption recorded in the ammeter. Polarity is required. Connect the earth wire terminal of pulse output of ammeter to the earth wire terminal on the right of count terminal of gateway, and the other terminal of pulse output of ammeter connects to the count terminal of gateway.
- HBM/HBM (HOMEBUS communication) port: connect ports P&Q of the communication terminal block of outdoor master unit and indoor unit, no polarity requirement..



Spec of cable:

- 1) Power: Two-core RVV, the section area is  $0.5\text{mm}^2$ , there is no polarity requirement when connection.
- 2) LON(LONWORKS communication) port: Two-core STP, the section area is  $1.5\text{mm}^2$ , there is no polarity requirement when connection.
- 3) HBS(master unit serial signal): get state signal of slave units.
- 4) Count (pulse signal): use two-core RVVP shielded wire, the section area is  $1.0\text{mm}^2$ , there is polarity requirement when connection.
- 5) HBM (HOMEBUS communication): use two-core RVVP shielded wire, the section area is  $1.0\text{mm}^2$ , there is no polarity requirement when connection.

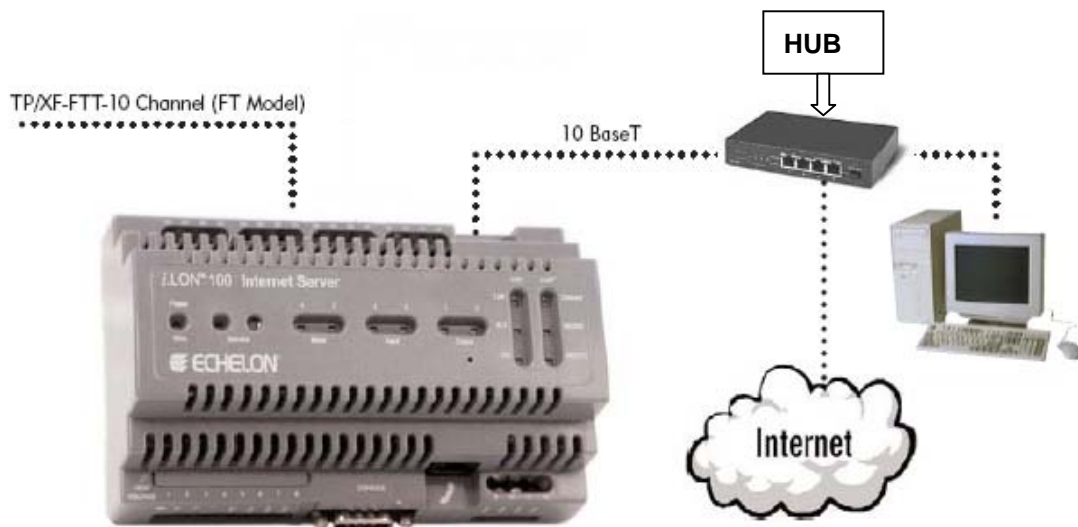
#### 2.4 Connection among gateways, between gateway and server

The gateways are interconnected with two-core STP (the section is  $1.5\text{mm}^2$ ) to make LONWORKS control network. The spec of signal wire is as above. The wiring of signal wires adopts bus type (identical with the communication wires connection between indoor and outdoor).

If it is very far from gateway to server, the wires must be shielded and be heat insulated well; and the shielded layer must be connected to the earth wire terminal of the server.

#### 2.5 Exterior appearance & installation method of internet server

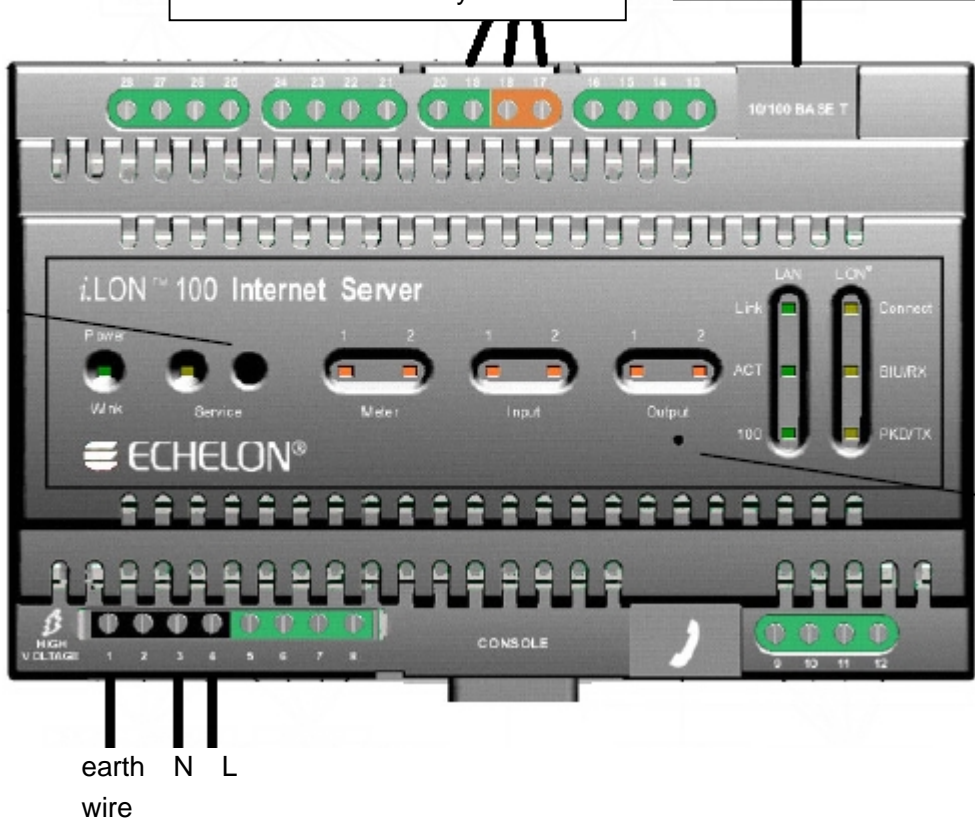
##### A. External appearance and definition of port





To server bus line 17, 18 connect with server bus line (LON); 19 connect with shield layer.

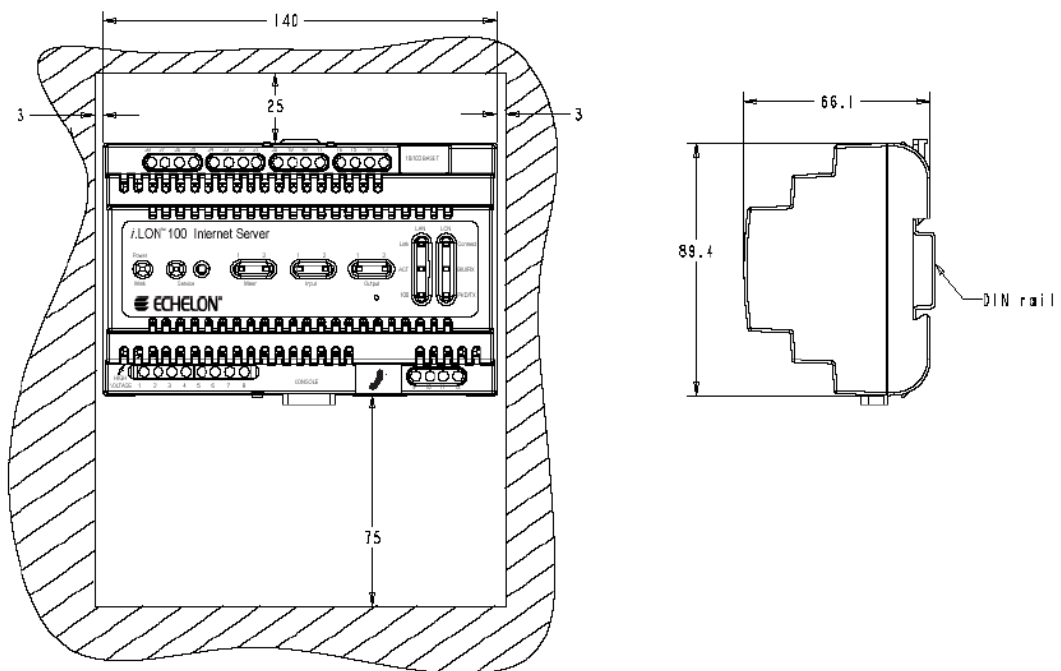
Connect with computer



The other communication ports are no used.

A: External dimension and installation space requirement:

Because the internet server is a precise electronic device, it should be installed in the control room to connect computers conveniently.





B. connection method:

1) Power: The internet server adopts AC220 power, connect the power wiring terminals on the server due to the corresponding marks. (1: earth wire; 3: connect with N; 4: connect with L).

LON A/LON B (LONWORKS communication) port: communicate the LONWORKS after connecting all the gateways.

(17: connect with shielded layer; 18: connect with LON; 19: connect with LON)

2) LAN port: connect to Ethernet network card, when there are many internet servers in the system, you should connect to the HUB firstly and then to computer.

Spec of cable:

1) Power: use three-core RVV, the section area is  $0.5\text{mm}^2$ .

2) LON (LONWORKS communication) port: Two-core STP, the section area is  $1.5\text{mm}^2$ , there is no polarity requirement when connection.

LAN: Ethernet internet wire, 10 Base/T cable, Cat5 wire.

3. Cautions in installation

3.1 Set the communication address between indoor and outdoor unit and central address of indoor unit by hand, and set the same address for them. Make a table to record the room of indoor unit, the address of indoor unit, and the corresponding outdoor unit.

As the below table:

Name of room	Floor of room	Outdoor unit system	Indoor unit No.
Signal distribution office	--	S1-36N	1
West of training room	--	S1-90E	2
East of training room	--	S1-90E	3
Maintenance&technic team	--	S1-90E	4
Shift workshop section	--	S1-45N	5
Checking team	--	S1-90E	6
Periodic Maintenance team	--	S1-90E	7
Clearing team	--	S1-90E	8
Shift team	--	S1-90E	9
Debugging workshop	--	S1-90E	10
Running room	--	S1-90E	11



3.2 If you need the count function, the PC should be engineering computer or server to ensure the computer can run for a long time, also, please do not used the integrated internet card.

3.3 When the count function is available, all the outdoor power supply must pass the ammeter. 10HP and 20HP system, the slave outdoor can connect power from the terminal block of master outdoor unit; 30HP, and 40HP system, it is necessary to add a large capacity terminal block (no less than 100A).

3.4 Indoor power consumption is comparatively lower and will be counted respectively. Indoor unit can use the same power supply with the other indoor side electric application. The power consumption will be counted by the ammeter on the power supply circuit and not pass the H-CACS system.

Note: No matter if indoor units are running, make all indoors being electrified.

3.3 To get the steady signal, the internet wire and the power cable will be laid respectively. And the distance between them can not be less than 20cm. If they are through the shielded pipe, the distance can not be less than 10cm.

3.4 Indoor/outdoor communication wires and power cable must be laid respectively. And the distance between them can not be less than 20cm. If they are through the shielded pipe, the distance can not be less than 10cm.

3.5 Wired controller communication wires and power cable must be laid respectively. And the distance between them can not be less than 20cm. If they are through the shielded pipe, the distance can not be less than 10cm.

3.6 When wiring, ensure all the communication wire and power cable are laid respectively, and be earthed on one end of communication wire, also P, Q terminals can not touch the electric box.

The wiring among outdoors must be end by end and all the shielded layers of communication wire must be together, then connect the shielded layer to the earthed terminal of the server.

3.7 Pulse ammeter is the engineering device and should be purchased in advance. If the ammeters are installed centrally, the distance between ammeter and gateway should not be over 180m, and pulse output wire and power cable should be laid respectively, the distance between them can not be over 20cm. If the ammeter is installed in the master unit, recommend to use the electronic type.

3.8 All ammeters need to be measured and calibrated before being installed.

#### 4. About the ammeter

If you want to realize the individual counting function, every gateway should be equipped with a 3-phase, 4-line ammeter. The ammeter will not be supplied by Haier, and be purchased locally. The request is as follow:

A. The ammeter can be used for 50Hz 3-phase AC electricity. The characteristic should comply with the regulation of the national criteria GB/T15283-94 or GB/T15282-94 and JB/T7655-95.

B. The amplitude of the pulse signal is DC 5V, the min. breadth of every pulse is 80ms.

C. The pulse signal of the ammeter is either passive or active one.

The present ammeter comprises mechanical type and electronic type, and the latter is requested. The parameters such as the rated current depends on the total consumption power after being combined.



5. Dip switch setting

"1" shows dip switch is ON or jumper is short connected; "0" shows dip switch is OFF or jumper is disconnected. In the following table, state in  is set when out of factory.

5.1 Indoor PCB

A. Indoor address setting when in group control by wired controller: SW01.

The installer will set the SW01 when installation.

When 1 to 1, 2 to 1 and in remote control type, SW01 is 0.

SW01 of master unit	SW01 of slave unit
<input type="checkbox"/>	1-15 (not repeated)

B. Indoor address setting when in central control by central controller: SW02

The installer will set the SW01 when installation.

SW02								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	central control address=1
<input type="checkbox"/>	0	0	0	0	0	0	1	central control address=2
-----								-----
<input type="checkbox"/>	1	1	1	1	1	1	0	central control address=127
<input type="checkbox"/>	1	1	1	1	1	1	1	central control address=128
<input type="checkbox"/>								set central control address by wired controller
1								Forbidden to set address by wired controller



Indoor central control address table:

Indoor central control address table								
SW02								
1	2	3	4	5	6	7	8	address
0	0	0	0	0	0	0	0	1
	0	0	0	0	0	0	1	2
	0	0	0	0	0	1	0	3
	0	0	0	0	0	1	1	4
	0	0	0	0	1	0	0	5
	0	0	0	0	1	0	1	6
	0	0	0	0	1	1	0	7
	0	0	0	0	1	1	1	8
	0	0	0	1	0	0	0	9
	0	0	0	1	0	0	1	10
	0	0	0	1	0	1	0	11
	0	0	0	1	0	1	1	12
	0	0	0	1	1	0	0	13
	0	0	0	1	1	0	1	14
	0	0	0	1	1	1	0	15
	0	0	0	1	1	1	1	16
	0	0	1	0	0	0	0	17
	0	0	1	0	0	0	1	18
	0	0	1	0	0	1	0	19
	0	0	1	0	0	1	1	20
	0	0	1	0	1	0	0	21
	0	0	1	0	1	0	1	22
	0	0	1	0	1	1	0	23
	0	0	1	0	1	1	1	24
	0	0	1	1	0	0	0	25
	0	0	1	1	0	0	1	26
	0	0	1	1	0	1	0	27
	0	0	1	1	0	1	1	28
	0	0	1	1	1	0	0	29
	0	0	1	1	1	0	1	30
	0	0	1	1	1	1	0	31
	0	0	1	1	1	1	1	32
	0	1	0	0	0	0	0	33
	0	1	0	0	0	0	1	34
	0	1	0	0	0	1	0	35
	0	1	0	0	0	1	1	36
	0	1	0	0	1	0	0	37
	0	1	0	0	1	0	1	38
	0	1	0	0	1	1	0	39
	0	1	0	0	1	1	1	40
	0	1	0	1	0	0	0	41
	0	1	0	1	0	0	1	42
	0	1	0	1	0	1	0	43
	0	1	0	1	0	1	1	44
	0	1	0	1	1	0	0	45
	0	1	0	1	1	0	1	46
	0	1	0	1	1	1	0	47
	0	1	0	1	1	1	1	48
	0	1	1	0	0	0	0	49
	0	1	1	0	0	0	1	50
	0	1	1	0	0	1	0	51
	0	1	1	0	0	1	1	52
	0	1	1	0	1	0	0	53
	0	1	1	0	1	0	1	54
	0	1	1	0	1	1	0	55
	0	1	1	0	1	1	1	56
	0	1	1	1	0	0	0	57
	0	1	1	1	0	0	1	58
	0	1	1	1	0	1	0	59
	0	1	1	1	0	1	1	60
	0	1	1	1	1	0	0	61
	0	1	1	1	1	0	1	62
	0	1	1	1	1	1	0	63
	0	1	1	1	1	1	1	64

Indoor central control address table								
SW02								
1	2	3	4	5	6	7	8	address
0	1	0	0	0	0	0	0	65
	1	0	0	0	0	0	1	66
	1	0	0	0	0	1	0	67
	1	0	0	0	0	1	1	68
	1	0	0	0	1	0	0	69
	1	0	0	0	1	0	1	70
	1	0	0	0	1	1	0	71
	1	0	0	0	1	1	1	72
	1	0	0	1	0	0	0	73
	1	0	0	1	0	0	1	74
	1	0	0	1	0	1	0	75
	1	0	0	1	0	1	1	76
	1	0	0	1	1	0	0	77
	1	0	0	1	1	0	1	78
	1	0	0	1	1	1	0	79
	1	0	0	1	1	1	1	80
	1	0	1	0	0	0	0	81
	1	0	1	0	0	0	1	82
	1	0	1	0	0	1	0	83
	1	0	1	0	0	1	1	84
	1	0	1	0	1	0	0	85
	1	0	1	0	1	0	1	86
	1	0	1	0	1	1	0	87
	1	0	1	0	1	1	1	88
	1	0	1	1	0	0	0	89
	1	0	1	1	0	0	1	90
	1	0	1	1	0	1	0	91
	1	0	1	1	0	1	1	92
	1	0	1	1	1	0	0	93
	1	0	1	1	1	0	1	94
	1	0	1	1	1	1	0	95
	1	0	1	1	1	1	1	96
	1	1	0	0	0	0	0	97
	1	1	0	0	0	0	1	98
	1	1	0	0	0	1	0	99
	1	1	0	0	0	1	1	100
	1	1	0	0	1	0	0	101
	1	1	0	0	1	0	1	102
	1	1	0	0	1	1	0	103
	1	1	0	0	1	1	1	104
	1	1	0	1	0	0	0	105
	1	1	0	1	0	0	1	106
	1	1	0	1	0	1	0	107
	1	1	0	1	0	1	1	108
	1	1	0	1	1	0	0	109
	1	1	0	1	1	0	1	110
	1	1	0	1	1	1	0	111
	1	1	0	1	1	1	1	112
	1	1	1	0	0	0	0	113
	1	1	1	0	0	0	1	114
	1	1	1	0	0	1	0	115
	1	1	1	0	0	1	1	116
	1	1	1	0	1	0	0	117
	1	1	1	0	1	0	1	118
	1	1	1	0	1	1	0	119
	1	1	1	0	1	1	1	120
	1	1	1	1	0	0	0	121
	1	1	1	1	0	0	1	122
	1	1	1	1	0	1	0	123
	1	1	1	1	0	1	1	124
	1	1	1	1	1	0	0	125
	1	1	1	1	1	0	1	126
	1	1	1	1	1	1	0	127
	1	1	1	1	1	1	1	128



C. Communication address setting between indoor and outdoor: SW03

The installer will set the SW03 when installation.

SW03								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
£>	£>	0	0	0	0	0	0	indoor communication address=1
£>	£>	0	0	0	0	0	1	indoor communication address=2
----								----
£>	£>	1	1	1	1	1	0	indoor communication address=63
£>	£>	1	1	1	1	1	1	indoor communication address=64
£>	0							set central control address by wired controller
£>	1							Forbidden to set address by wired controller
0								set address automatically
1								set address by hand

Communication address between indoor and outdoor table (by hand):

unit No. setting by hand									
SW03									indoor address
1	2	3	4	5	6	7	8		
1	1	0	0	0	0	0	0	1	
		0	0	0	0	0	1	2	
		0	0	0	0	1	0	3	
		0	0	0	0	1	1	4	
		0	0	0	1	0	0	5	
		0	0	0	1	0	1	6	
		0	0	0	1	1	0	7	
		0	0	0	1	1	1	8	
		0	0	1	0	0	0	9	
		0	0	1	0	0	1	10	
		0	0	1	0	1	0	11	
		0	0	1	0	1	1	12	
		0	0	1	1	0	0	13	
		0	0	1	1	0	1	14	
		0	0	1	1	1	0	15	
		0	0	1	1	1	1	16	
		0	1	0	0	0	0	17	
		0	1	0	0	0	1	18	
		0	1	0	0	1	0	19	
		0	1	0	0	1	1	20	
		0	1	0	1	0	0	21	
		0	1	0	1	0	1	22	
		0	1	0	1	1	0	23	
		0	1	0	1	1	1	24	
		0	1	1	0	0	0	25	
		0	1	1	0	0	1	26	
		0	1	1	0	1	0	27	
		0	1	1	0	1	1	28	
		0	1	1	1	0	0	29	
		0	1	1	1	0	1	30	
		0	1	1	1	1	0	31	
		0	1	1	1	1	1	32	

SW03									indoor address
1	2	3	4	5	6	7	8		
1	1	1	0	0	0	0	0	33	
		1	0	0	0	0	1	34	
		1	0	0	0	1	0	35	
		1	0	0	0	1	1	36	
		1	0	0	1	0	0	37	
		1	0	0	1	0	1	38	
		1	0	0	1	1	0	39	
		1	0	0	1	1	1	40	
		1	0	1	0	0	0	41	
		1	0	1	0	0	1	42	
		1	0	1	0	1	0	43	
		1	0	1	0	1	1	44	
		1	0	1	1	0	0	45	
		1	0	1	1	0	1	46	
		1	0	1	1	1	0	47	
		1	0	1	1	1	1	48	
		1	1	0	0	0	0	49	
		1	1	0	0	0	1	50	
		1	1	0	0	1	0	51	
		1	1	0	0	1	1	52	
		1	1	0	1	0	0	53	
		1	1	0	1	0	1	54	
		1	1	0	1	1	0	55	
		1	1	0	1	1	1	56	
		1	1	1	0	0	0	57	
		1	1	1	0	0	1	58	
		1	1	1	0	1	0	59	
		1	1	1	0	1	1	60	
		1	1	1	1	0	0	61	
		1	1	1	1	0	1	62	
		1	1	1	1	1	0	63	
		1	1	1	1	1	1	64	

There are 2 methods to set communication address between indoor and outdoor:

Address setting automatically: set SW03-[8] at 0 when out of factory.

Address setting by hand: set SW03-[8] at 1, then set SW03-[1]-[6] according to the requirement.

Either setting method is OK, but at the same time, only one of them is valid.



D. Indoor control type setting:

Refer to the indoor wiring diagram.

E. Indoor capacity setting: SW05

When out of factory, SW05 has been set and can not be changed at random.

SW05				capacity definition
[1]	[2]	[3]	[4]	
0	0	0	0	indoor capacity=0.6HP
0	0	0	1	indoor capacity=0.8HP
0	0	1	0	indoor capacity=1.0HP
0	0	1	1	indoor capacity=1.25HP
0	1	0	0	indoor capacity=1.5HP
0	1	0	1	indoor capacity=1.7HP
0	1	1	0	indoor capacity=2.0HP
0	1	1	1	indoor capacity=2.5HP
1	0	0	0	indoor capacity=3.0HP
1	0	0	1	indoor capacity=3.2HP
1	0	1	0	indoor capacity=4.0HP
1	0	1	1	indoor capacity=5.0HP

F. Inlet air temp. TA correction value: (SW06-7,SW06-8)

When out of factory, SW05 has been set and can not be changed at random.

SW06-8	SW06-7	function
0	0	TA correction value=6 ;
0	1	TA correction value=4 ;
1	0	TA correction value=2 ;
1	1	TA correction value=0 ;

Temp. sensor selection:SW06-6

SW06-6	function
0	indoor ambient temp. and heating set temp. correction value be controlled simultaneously
1	indoor ambient temp. and heating set temp. correction value be controlled individually

Note: "indoor ambient temp. and heating set temp. correction value be controlled simultaneously" is that when in group control (wired controller: 1 to x), the indoor ambient temp. and heating set temp. correction value of slave unit are as the same as that of the master unit; "indoor ambient temp. and heating set temp. correction value be controlled individually" is that the two values of slave unit and master unit are controlled by the individual indoor unit.



G. Model selection:SW06-5

SW06-5	function
1	heat pump type
0	cooling only type

H. Model selection:SW06-4 (pre-set)

I. TA correction value in AUTO mode and Tdif: SW06-2, SW06-3

When out of factory, SW05 has been set and can not be changed at random.

SW06-2	function
1	Tdif = 3 i
0	Tdif = 2 i
SW06-3	function
1	TA correction value is available in AUTO mode
0	TA correction value is unavailable in AUTO mode

Note: Mode changeover condition: when  $TA_{E...set temp.} - Tdif$ , running mode is HEAT; when  $TA_i set temp. + TA correction value + Tdif$ , running mode is COOL.

J. Air volume: SW06-1

When out of factory, SW05 has been set and can not be changed at random.

SW06-1	function
1	normal operation
0	air volume is fixed ( for duct unit)

K. Operation mode changeover of wired controller: SW07-7, SW07-8

SW07-7	SW07-8	function
0	0	[AUTO][HEAT][DRY][COOL][FAN]
0	1	[ELECTRIC HEAT][HEAT][DRY][COOL][FAN]
1	0	[DRY][COOL][FAN]
1	1	[HEAT][DRY][COOL][FAN]

L. Filter cleaning time selection:SW07-6

SW07-6	function
1	2500 hrs
0	120 hrs



M. Heat exchanger capacity correction factor: (SW07-5, SW07-4, SW07-3)

SW07-5	SW07-4	SW07-3	correction factor
0	0	0	1.0
0	0	1	1.0
0	1	0	0.91
0	1	1	0.95
1	0	0	0.86
1	0	0	0.90
1	1	0	0.95
1	1		1.0(standard)

N. SW07-2(pre-set)

O. SW07-1(pre-set)

P. Swing angle adjustment:SW08-8

SW08-8	function
1	swing angle adjustable
0	swing angle fixed

Q. Open direction selection: SW08-7

SW08-7	function
1	PMV open direction: A-B-C-D
0	PMV open direction: D-C-B-A

R. Wired control/remote control selection: SW08-6

SW08-6	function
1	wired control type
0	remote control type

S. SW08-5 (pre-set)

T. Fan motor selection: SW08-4

SW08-4	function
1	AC 3-speed fan motor
0	AC stepless adjustable fan motor

U.Valve adjustment: SW08-3

SW08-3	function
1	In heating, the thermostat OFF, adjusted due to the outdoor high pressure saturated temp.
0	In heating, the thermostat OFF, adjusted due to the coil temp. Tc2 and ambient temp.



V. In heating, fan speed selection:SW08-2

SW08-2	function
1	normal operation
0	run at mid. speed when in heating high speed

W. SW08-1

SW08-1	function
1	fan off
0	run at low speed at refrigerant return and oil return

X. EEV open angle setting manually (CN27, CN29)

When being electrified, short connect CN27, EEV will open fully for 2 minutes; short connect CN29, EEV will open fully for 2 minutes.

After shorting connect CN27, then being electrified, the unit will enter compulsory cooling, indoor fan motor will run at high speed; water pump, swing motor and air filter will work; after shorting connecting CN29, then being electrified, indoor fan motor will run at high speed; electric heater, swing motor and air filter will work.

Note: In compulsory operation, the communication among indoor, outdoor, wired controller is shielded.

Y. Indoor trial operation setting (CN31)

	function
0	normal
1	fan motor, water pump operation

Z. Time shorting input (CN28)

	function
0	normal
1	1. short connected after being electrified, enter time shorting function 2. short connected when being electrified and reset, enter auto-check function