



Central Control ZJ7011 Usage and Installation Manual

GREE ELECTRIC APPLIANCES INC. OF ZHUHAI

Please read this manual carefully before installation and usage

Thank you for choosing this Central Control ZJ7011. Please read this Usage and Installation Manual carefully and keep it for correct use of this product.

1. Introduction of Central Control ZJ7011	
2. Usage and Operation Introduction of Central Control ZJ7011	(1) Display and Button Interface of the Central Control
	(2) Operation State Checking for Indoor Unit
	(3) Control Mode
	(4) System Time and Timer Setting
	(5) System Setting
	(6) Model of Central Control and Material Code
3. Install of Central Control ZJ7011	(1) Select of Installation Position and Notice
	(2) Installation of Central Control ZJ7011
Appendix	

1. Introduction of Central Control ZJ7011

Main characteristics of central control:

A set of central control can control 64 communication modules and can connect to as much as 1024 indoor units. It can conduct individual control with any separated area or unified control. It can monitor or control On/Off, Mode, Temperature setting and Timer On/Off of indoor unit etc.

It can realize the central, single or select control to all indoor units.

It can organize several indoor units into groups as you desired and conduct unified control—Group select control.

Error contents are shown by codes. Corresponding communication module numbers of the indoor units with error contents would blink for rapid inspection and repair (There is sound warning for a few errors).

Timer function. Every indoor unit can set Timer On/Off time by central, single or select control. Both Timer On time and Timer Off time can be set at the same time, and it is available to set the timer to which day among the 7 days from Sunday to Saturday works.

Clock function displays in year, month, day, hour, minute and week, and the clock can be manually adjusted.

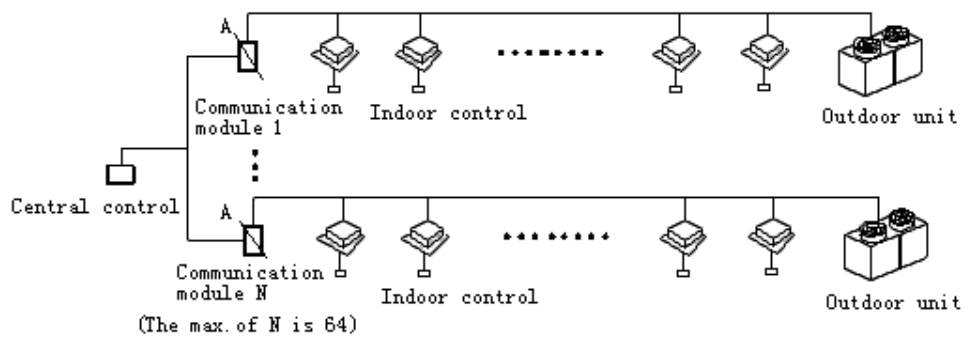
Indoor and outdoor units online auto detect, display and working state indication.

Self-inspection function is remained.

Central control and several communication modules formed communication net, the length of communication wire of the net can be as long as 1km (without using communication repeaters).

The main functions of central control of multi variable units include: Central Control—centralized whole on and whole off control to indoor units; Select Control—selects several indoor units as you wish and control them at the same time; Single Control—control to single indoor unit; Timer On and Timer Off indoor units; group setting to any indoor units and system time setting etc.

The following is a brief sketch of communication net of multi variable units:



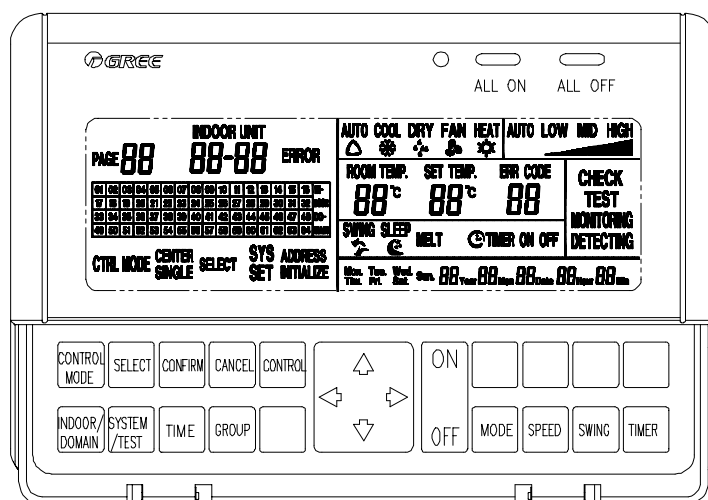
As shown in figure, the "A" are parting lines for communication net. Left side of the "A" is the communication net between central control and communication module while the right side is that between multi variable outdoor unit and indoor units. The 2 nets are individual nets.

Before normal use of central control, do conduct addresses setting and adjusting to communication system by installation personnel. Only after that can the central control offered to be used by user.

2. Usage and Operation Instruction of Central Control ZJ7011

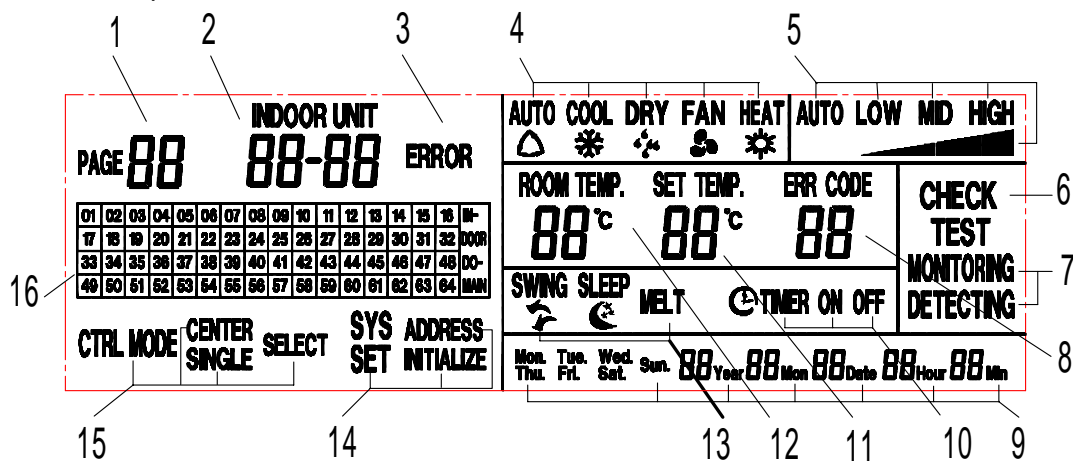
(1) The display and button interfaces of multi variable central control are as following:

Display part



(Fig.1)

Sketch for LCD part:



(Fig.2)

1	Pagination/displays present domain	Under select control mode, group no. that is present controlling is displayed; Under addresses setting state, present Soft Add is displayed.
2	Present unit no.	Displays the soft address of communication module that the present checking or controlling indoor unit is belonged as well as the address of indoor unit; Format: Soft add—Indoor unit add
3	Error	Displays when there is error at any indoor or outdoor unit.
4	Operation mode	Displays every operation state mode of indoor unit

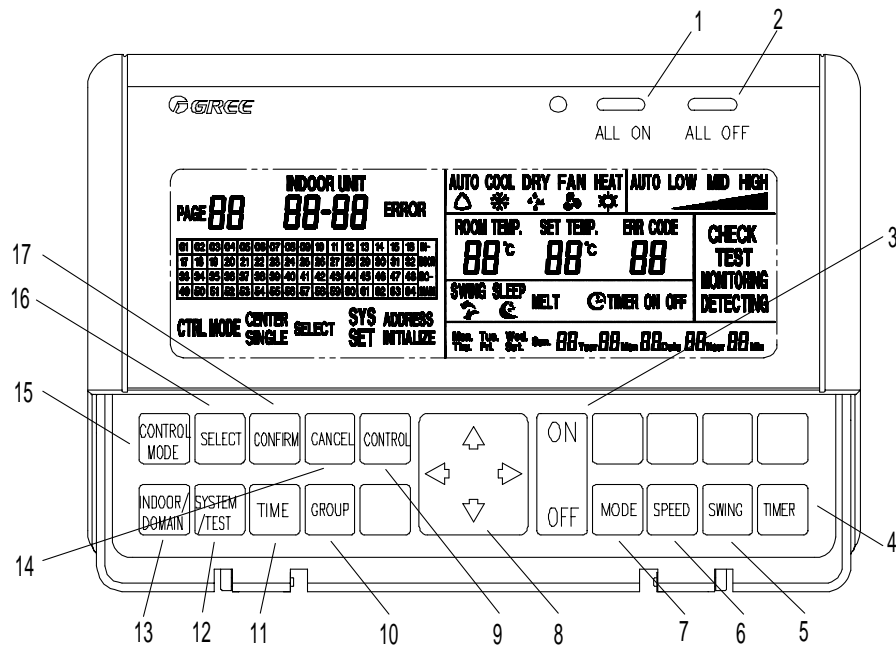
5	Speed display	Displays High, Medium, Low and Auto speed of indoor unit
6	Check	Under group control mode, it is displayed when checking grouping information; Under address setting mode, it is displayed when checking hard address.
7	Operation monitoring and controlling /monitoring	When central control works in normal, operation monitoring displays; when control signal is transmitted, operation monitoring and controlling is displayed.
8	Error code	Displays when abnormal occur on operation state of present indoor unit.
9	System time	Displays present time, format is Y, M, D, H, M and week.
10	Timer setting	Timer On/Off on when Timer On/Off is set to present indoor unit
11	Pre-set temperature	Displays value of pre-set temperature
12	Ambient temperature	Displays value of ambient temperature of present indoor unit
13	Swing and Defrost	Displays operation of swing at indoor unit and defrost at outdoor unit
14	System setting	Setting operation mode of central control. It should be completed by installation personnel, but not for users.
15	Control mode	Displays 3 control modes of Central, Single and Select controls
16	Displays of soft address	When Indoor on, addresses of present online indoor unit is displayed; When domain on, soft address of present online communication module is displayed; Specific location of controlled indoor unit can only be ascertained when soft address fits Project Installation List .

Instruction of display interface:

System Setting: Including Address Setting and other functions, and it is set when installation personnel are adjusting units. It is not recommended that users operate it. The usage of this function requires password.

Address Setting: Since characters from **01** to **64** are fixed as the **addresses of controlling communication modules displayed by central control** (hereinafter called **soft addresses**), and the **addresses of communication modules themselves** (hereinafter called **hard addresses**) are value from 0~254, thus there is address matching problem between central control and controlled communication module. In order to solve this problem, **address mapping setting is required to be conducted before project adjusting!**

Button control part



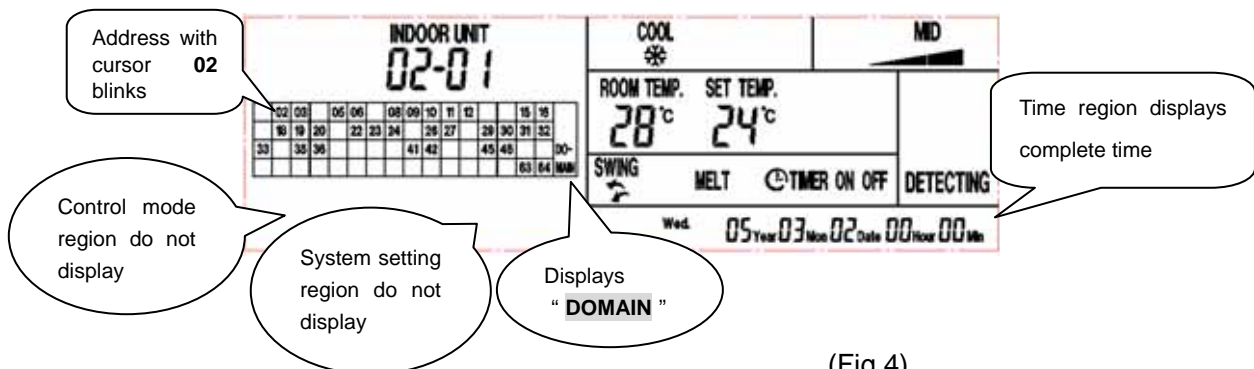
(Fig.3)

1	ALL ON	This central control has Sequence On function, that enable conduction to sequence control to communication modular in interval of 2 seconds, communication modular controls Sequence On of indoor units (to lower impact to power network).
2	ALL OFF	This central control has Sequence Off function, that enable conduction of sequence control to communication modular in interval of 2 seconds, communication module controls Sequence Off of indoor units (to lower impact to power network).
3	ON/OFF (2)	For controlling units' on and off.
4	TIMER	Set and check the time of Timer On and Timer Off of indoor unit and date mode.
5	SWING	Set if indoor unit swings
6	SPEED	Set fan speeds of High, Medium, Low or Auto for indoor unit
7	MODE	Set modes of Cool, Dry, Fan or Heat for indoor unit
8	LEFT/RIGHT UP/DOWN	It works as direction and adjusting under every operation function. Such as: When checking, it can move to the required indoor unit or communication modular by using this button; when adjusting time, press LEFT (/RIGHT) to shift "Y/M/D" etc. and press UP (/DOWN) to adjust value
9	CONTROL	Under control mode, press this button after setting state of indoor unit, control to indoor unit would be conducted by corresponding control mode.
10	GROUP	Press button under checking state to begin information check and set of grouped indoor unit, grouped information is for select control.
11	TIME	Set system time
12	SYSTEM/TEST	Begin setting of central control run mode, it is not recommended to be used by users.
13	INDOOR/DOMAIN	Shift display domain and indoor wired air condition control. DOMAIN

		corresponding to display on line communication modular, INDOOR corresponding to display on line indoor control.
14	CANCEL	Press this button during process of setting function to exit the already made function setting operation. Such as, if central control mode were selected, press CANCEL at this time would back to control mode selecting state.
15	CONTROL MODE	Begin control setting mode, and Central Control, Select Control and Single Control can be selected. Central Control: Control all indoor units under domain by present set state. Single Control: Control present indoor unit by present set state. Select Control: Control selected indoor unit by present set state, it also called grouped control
16	SELECT	Select required control or setting object; repress the button to the object is to cancel.
17	CONFIRM	Confirm the operated operation is effective

(2) Operation state checking of indoor unit

After electrified and initialized, central control enters checking state of operation circumstance of indoor unit by default and “**DETECTING**” and online communication modules are displayed. At this time, characters of **Control Mode** and **System Setting** would not be displayed; **System Time** region displays complete system time and address of communication module that cursor is there blinks. Present Unit displays the address of the first online communication module automatically. If there is no online communication module then **00-00** is displayed and the address of the first online indoor unit under this module would be displayed at the same time. If there were no online indoor unit, then **XX-00** would be displayed. The displayed contents are as shown in fig.4:

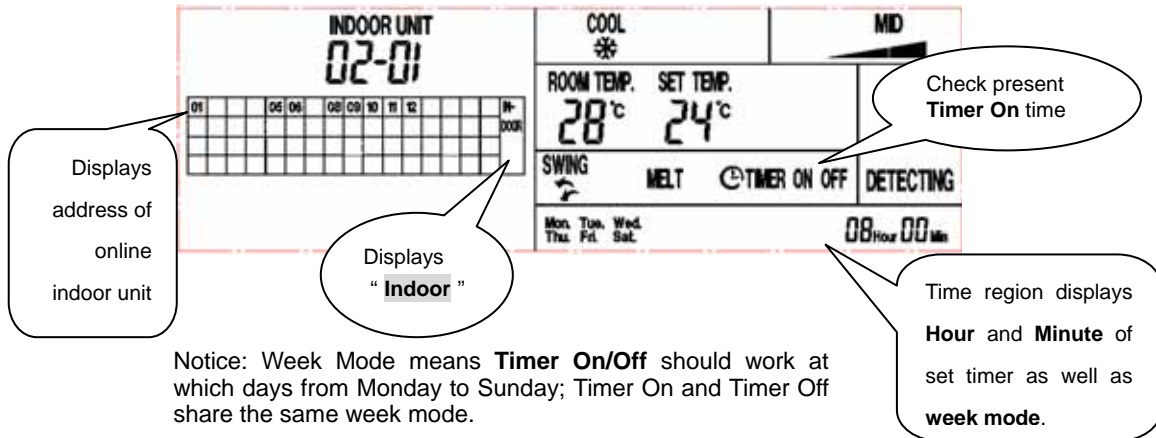


(Fig.4)

- Press **Left, Right, Up** and **Down** to shift cursor location, characters in **domain** where cursor is there would blink, number in **domain** of Present Unit would also be changed, operation state of indoor unit would be freshen continuously.

At this time, press **INDOOR/DOMAIN** button can check the operation state of online indoor unit in present domain; press **Timer** can check Timer On and Timer Off time, as well as week mode; if “--Hour--Min” is displayed, it means Timer On/Off was

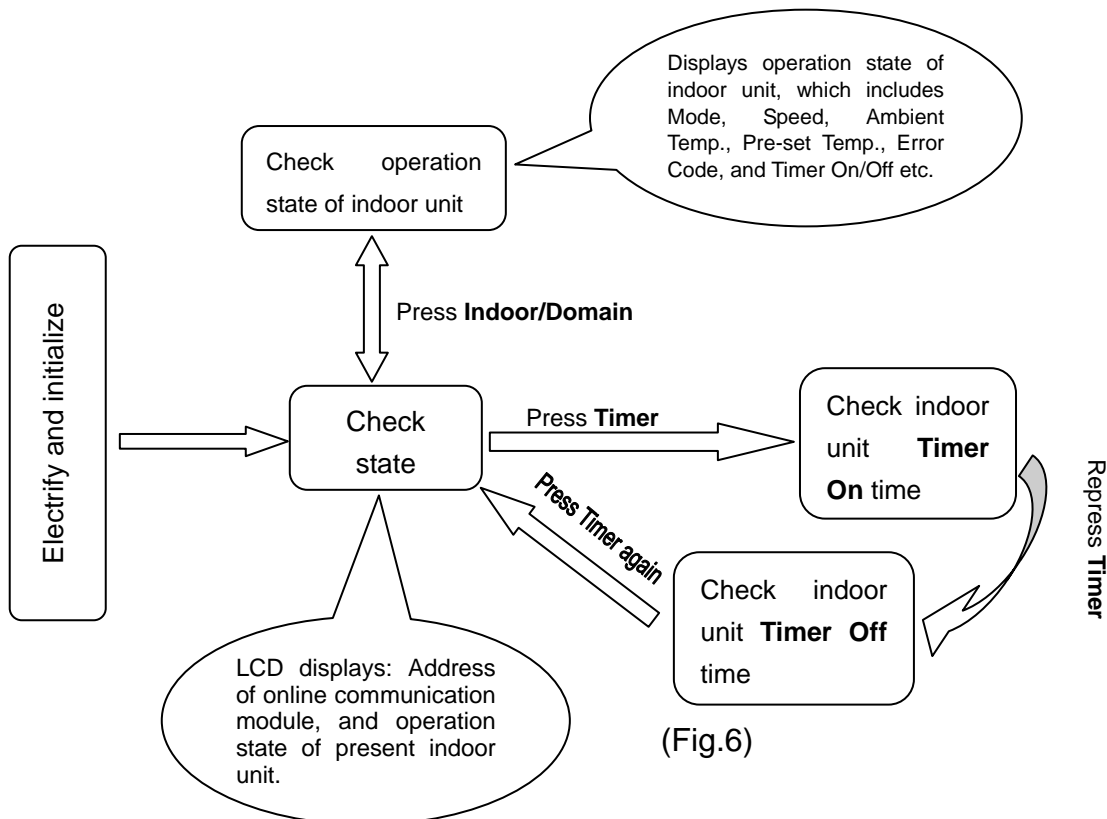
not set at the present indoor unit. Displayed content is as shown in fig.5:



(Fig.5)

- Press **Left** and **Right** to shift addresses of indoor units, characters where cursor was there blink, number of **Unit** at "Present Unit" would also changed, operation state of indoor unit would also be freshen.
- Press **Timer** to check **Timer On** time, repress to check **Timer Off** time, week mode would always be displayed; press it again to exit Timer check.

Operation flow for state checking is as following:



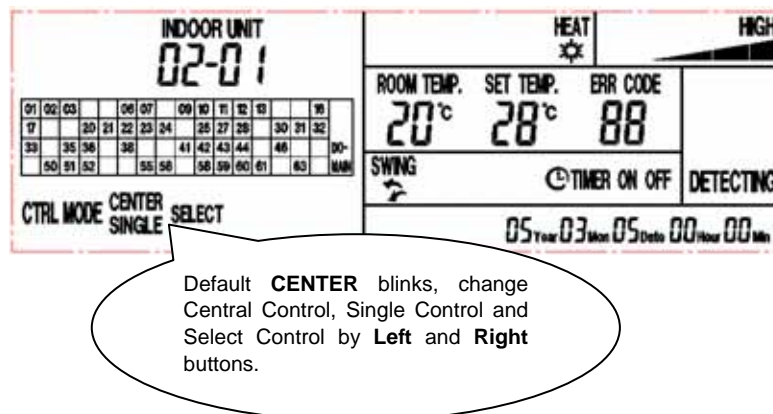
(Fig.6)

(3) Control mode:

Central control offers 3 control modes, **Central Control**, **Single Control** and **Select Control**. **Central Control** conducts the unified operation mode control to all indoor units by the present displayed setting state; **Single Control** conducts single operation mode control to appointed present indoor unit by present displayed setting state; **Select Control** includes 2 select modes: one is to select several indoor units temporarily as control object; the other is to read the pre-set indoor unit group list and treat the appointed indoor unit by the list as control object; base on these 2 select modes, unified operation mode control would be conducted to select several indoor units.

Following are the operation instructions to control modes:

Press **Control Mode** button under checking state to enter control mode selection. User could change control mode by **Left** and **Right** button, then press **Select** to select control mode. Display sketch is shown in fig.7:



(Fig.7)

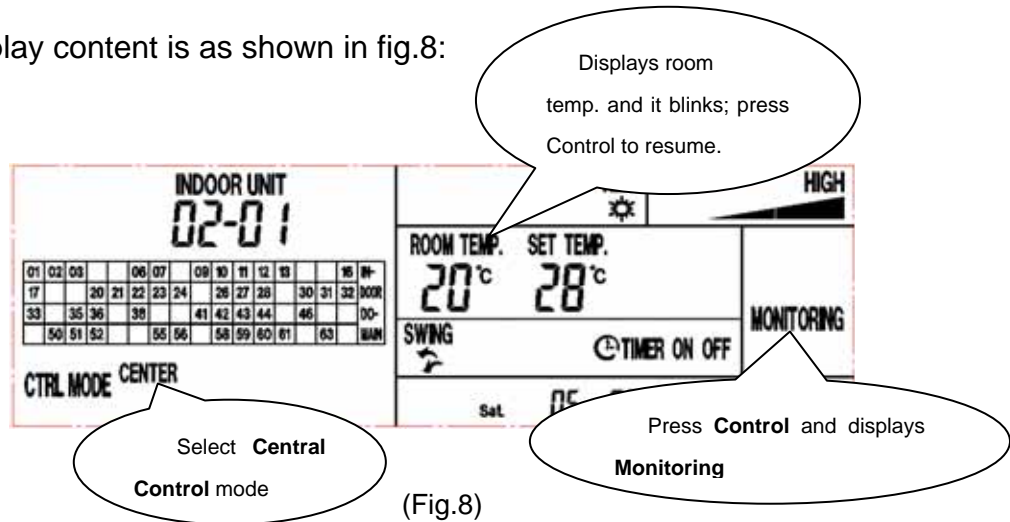
1 . Central control:

Base on fig.7, press **Select** when characters of **CENTER** blink, then central control mode is begun; characters of ambient temperature on displayer begin to blink, which means user could set operation state of indoor unit.

At this time, central control can only be finished after following operation processes:

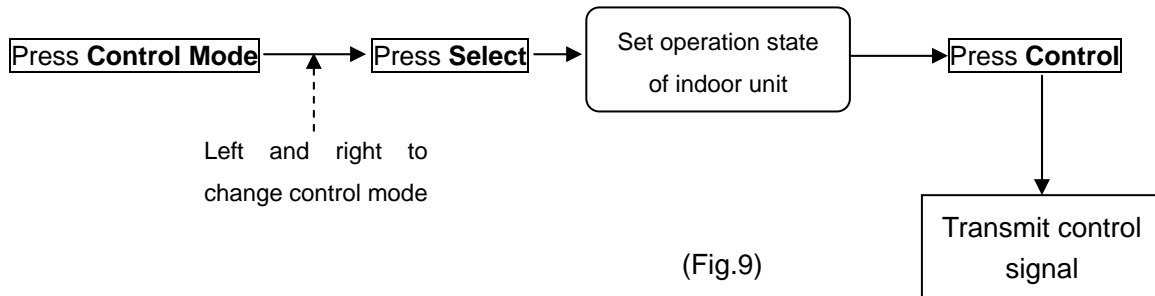
- A. Press **On** and **Off** to set on or off state of indoor unit; press **Up** or **Down** to adjust **Pre-set Temperature**, press **Mode** to set operation mode of indoor unit (note 1), press **Timer** can set timer on and timer off time separately (note 2).
- B. Press **Control** to transmit control signal, displayer would advise characters of **Monitoring** and finish central control operation. After monitoring signal is conducted, central control back to check state automatically (note 3).

Display content is as shown in fig.8:



(Fig.8)

Simple flow of central control is as following:



(Fig.9)

- ◆ **Note 1:** Mode and speed etc can only be set when set indoor unit is at on state. If indoor unit is required to off but timer on is required, set the mode when unit is on then shift it to off state.
- ◆ **Note 2:** Set method of timer on and timer off can be found in *Set of Timer Time* in 3. *System time and Set of Timer Time*.
- ◆ **Note 3:** Since it requires time for central control to transmit control signal to indoor units, when there are lots of online indoor units, the finish time for central control would be longer. During the process of transmitting signal, LCD displays “Monitoring”, and **Control** button is not available; when control action is finished, LCD displays “Detecting” and button resumes normal.
- ◆ **Note 4:** Press **Cancel** during operation process to back to control mode selection, repress **Cancel** to back to check state.

2. Single control:

Base on fig.7, press **Select** when characters of **Single** blink, then single control mode is entered.

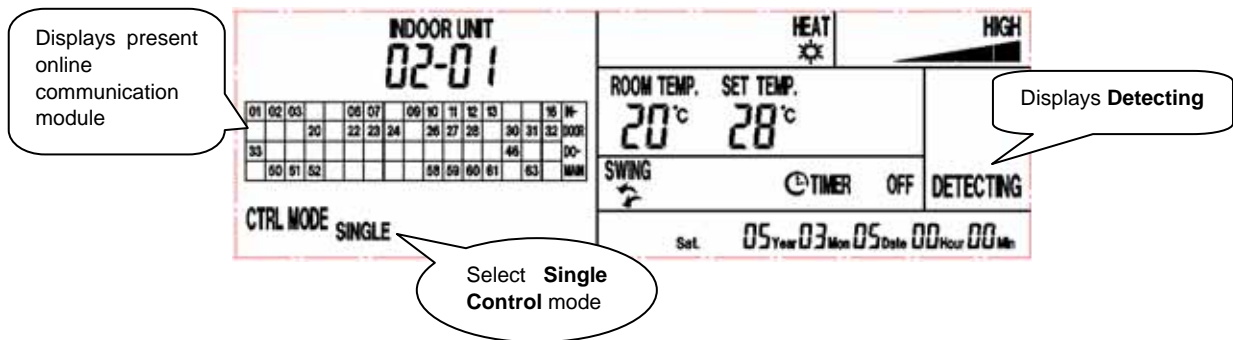
At this time, single control can only be completed after following processes:

- A. Press **Left**, **Right**, **Up**, and **Down** to change communication module. Press **Indoor/Domain** or **Select** button at the communication module that required to be control to enter display of online indoor unit (as shown in fig.10);

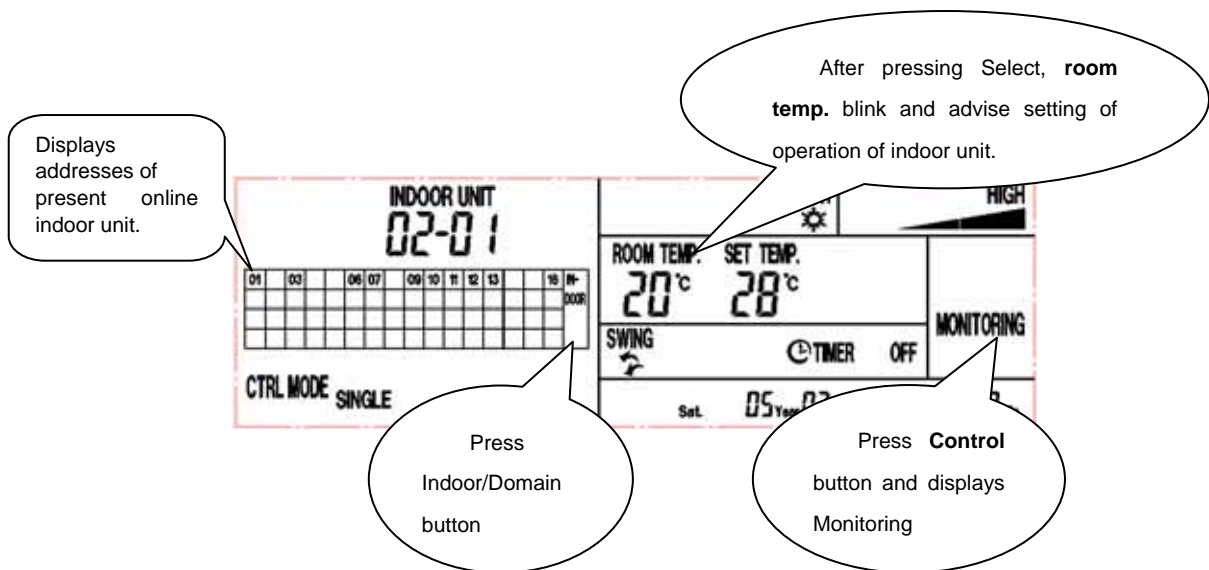
- B. Press **Left** or **Right** can change addresses of indoor units. Press **Select** at indoor unit that requires control to ascertain controlled indoor unit (as shown in fig.11);
- C. Set operation state of indoor unit;
- D. Press **Control** to transmit control signal.

◆ **Notice:** Press **Cancel** during operation process to back to control mode selection, repress **Cancel** to back to check state.

Display content is as shown in fig.10:

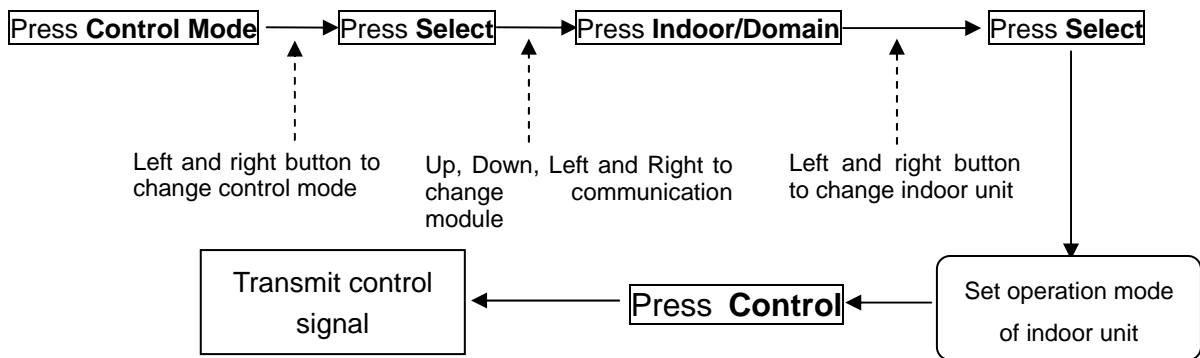


(Fig.10)



(Fig. 11)

Operation flow of single control is as following:



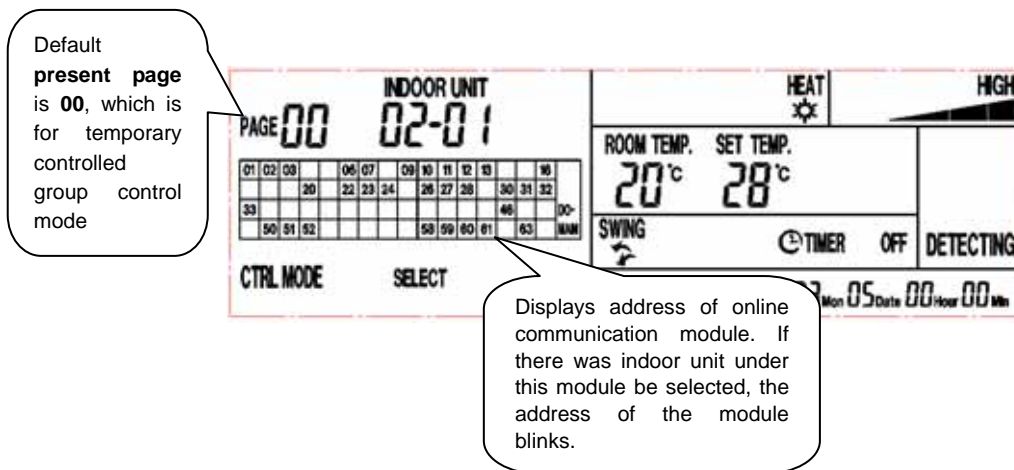
(Fig.12)

3. Select Control:

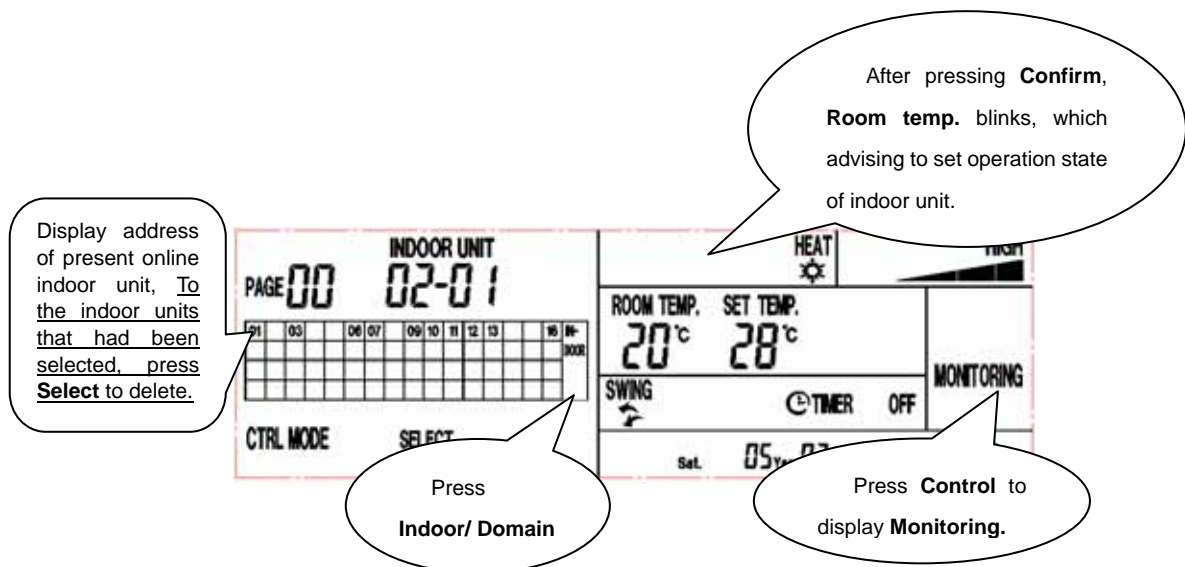
Select control can be divided into 2 modes of **Temporary Controlled Group** and **Pre-set Controlled Group** according to the ascertain method of controlling object. **Temporary Controlled Group control mode** is taking the temporary selected several indoor units as temporary controlled object, the group relation between indoor units would be dismissed automatically after the transmit of control signal; **Pre-set Controlled Group control mode** is to read the pre-set group list of indoor units then take the specified indoor units in the list as control object.

Base on fig.7, press **Select** when characters **Select** blink, then select control mode is entered. At this time, press **Up** or **Down** to shift **present page**. When **present page** is **00**, it is for **temporary controlled group control mode**; others for **pre-set controlled group control mode**. Following are the operation instructions for the 2 modes:

➤ Display sketch for **temporary controlled group control mode** is as fig.13:



(Fig.13)



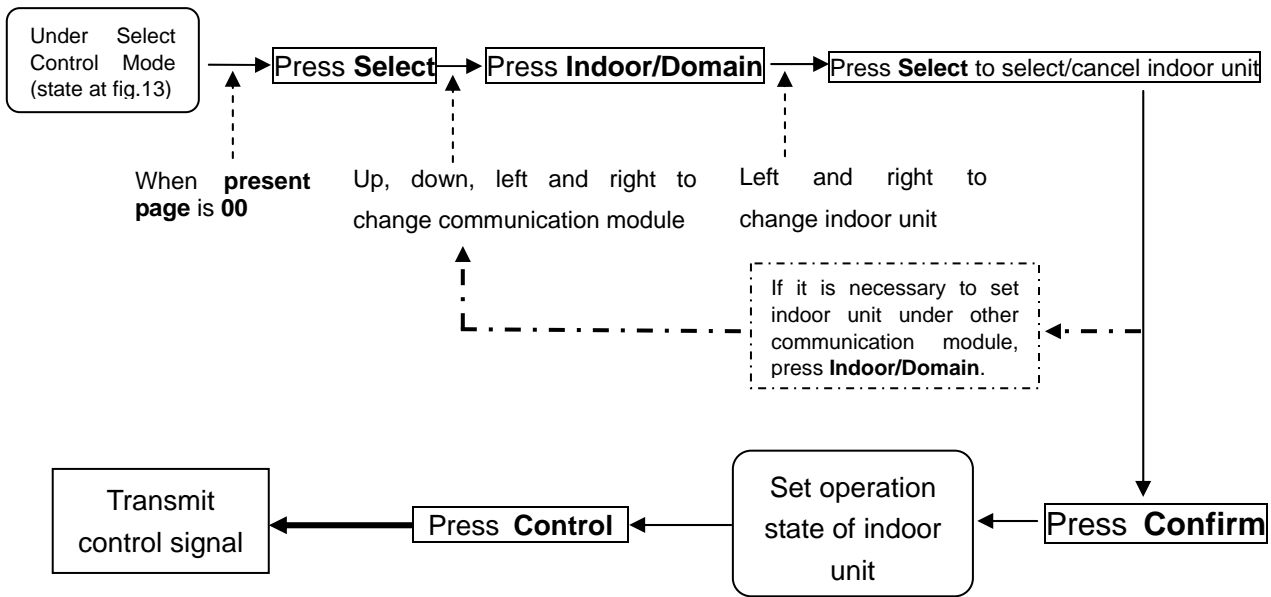
(Fig.14)

Base on fig.13, select control can only be finished after following operation processes:

- A . When **present page** is **00**, press **Select** to enter **temporary controlled group control mode**;
- B . Press **Left, Right, Up, and Down** can shift communication module. Press **Indoor/Domain** or **Select** at the required control communication module to display online indoor units;
- C . Press **Left** and **Right** can shift addresses of indoor units. Press **Select** at indoor unit that required control to select controlled indoor unit; to the selected indoor unit, repress **Select** to cancel selection (as shown in fig.14);
- D . If it is necessary to select indoor unit under other communication module, press **Indoor/Domain** or **Confirm** to change to online communication module display state, and then repeat processes B and C;
- E . When selection of indoor unit finished, press **Confirm**; **Room Temp.** that is displayed at that time begins to blink, advising operation state of indoor unit can be set;
- F . Set operation state of indoor unit;
- G . Press **Control** to transmit control signal.

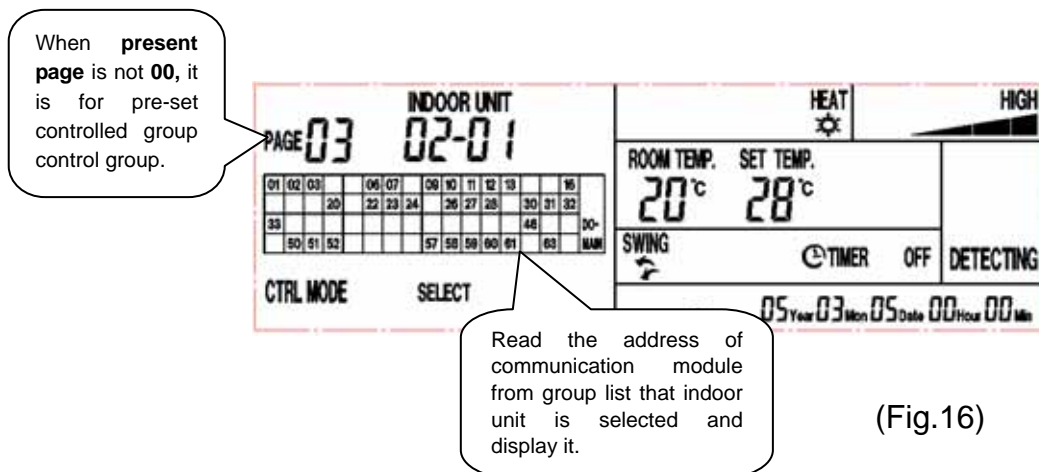
◆ **Note:** Press **Cancel** during operation process to back to last operation.

Operation flow of temporary controlled group control mode is as following:



(Fig.15)

➤ Display of **pre-set controlled group control mode** is as shown in fig.16:



(Fig.16)

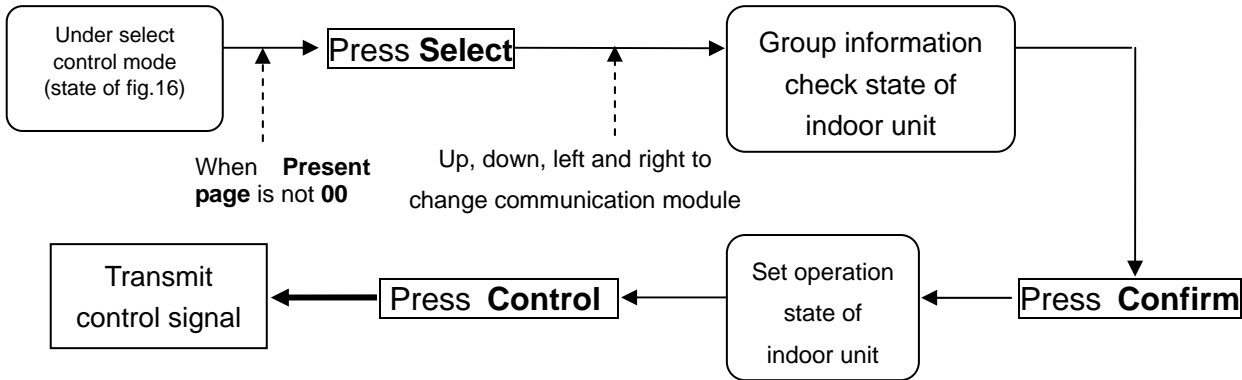
Base on fig.16, select control can only be finished after following operation processes:

- A . When **present page** is not **00**, press **Select** to enter **pre-set controlled group control mode**, wait central control to read the information from group list;
- B . Press **Left, Right, Up** and **Down** to change communication module, press **Indoor/Domain** or **select** at communication module that is needed to be check to display selected indoor unit; press **Left** and **Right** to change address of indoor unit. **[Process B is for checking group information of indoor units]**
- C . Press **Confirm** and the displaying Room Temp. begins to blink, which means operation state of indoor unit can be set;
- E . Set operation state of indoor unit;

F . Press **Control** to transmit control signal.

◆ **Note:** Press **Cancel** in operation process to back to last operation

Operation flow of pre-set controlled group control mode is as follow:

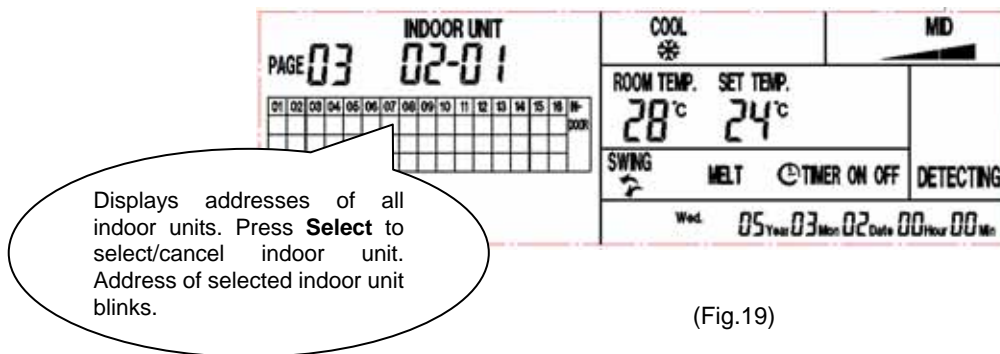
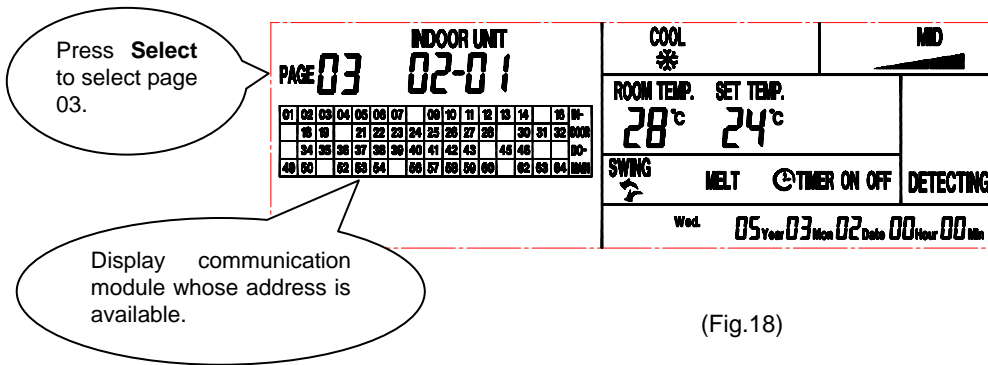


(Fig.17)

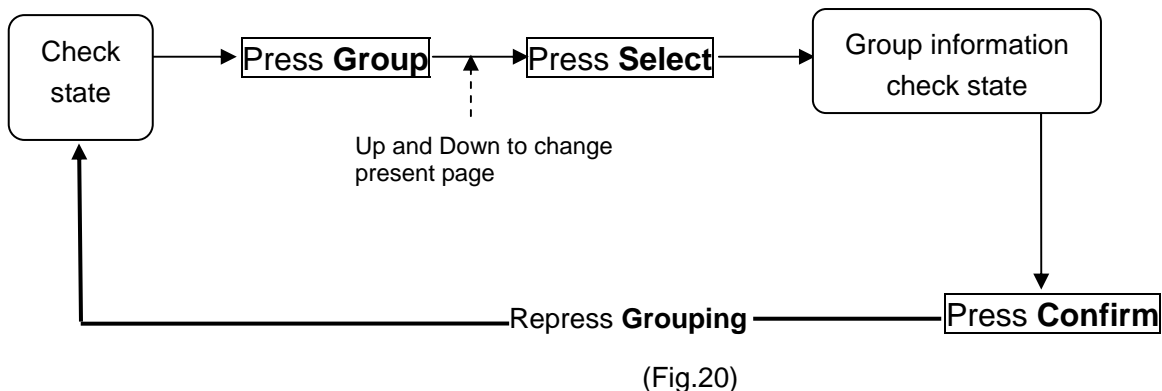
➤ **Operation processes about group setting of indoor unit:**

- A . Under check state, press **Group** to enter setting state of grouping indoor unit;
- B . Press **Up** and **Down** to adjust present page, press **Select** on page that is going to be set to enter select state of communication module (as shown in fig.18);
- C . Press **Up**, **Down**, **Left** and **Right** to change communication module, select indoor unit at communication module, press **Indoor/Domain** or **Select** to enter indoor unit selection state (fig.19);
- D . Press **Left** or **Right** to change address of indoor unit; press **Select** to select/cancel indoor unit (fig.19);
- E . After selecting indoor unit by repeating processes C and D, press **Confirm** to ascertain the selection of indoor unit grouping;
- F . Repeat processes B, C, D and E to complete the setting of grouping information at other pages;
- G . Re-press **Group** to exit grouping state of indoor unit.

Display sketch of group setting of indoor unit is as follow:



Operation flow of group setting of indoor unit is as following:



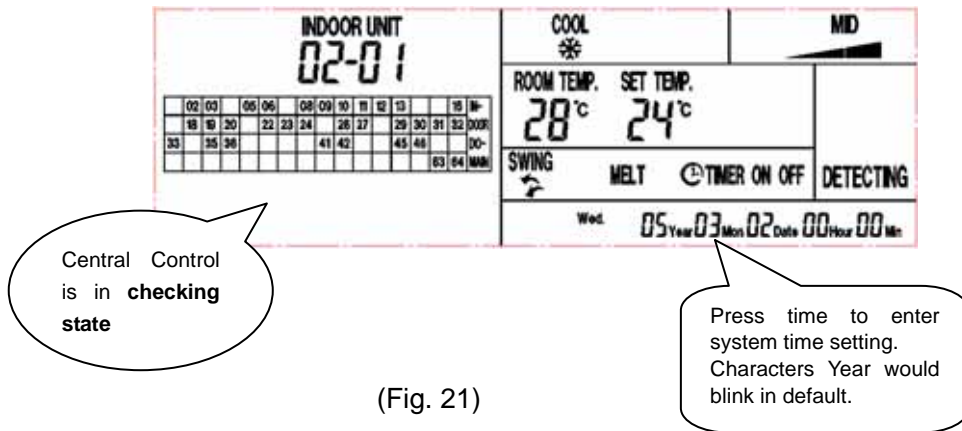
(4). System time and Timer Setting

1. System Time Setting: Central control contains clock function that enable user to set system time according to necessity. Operation processes are as following:

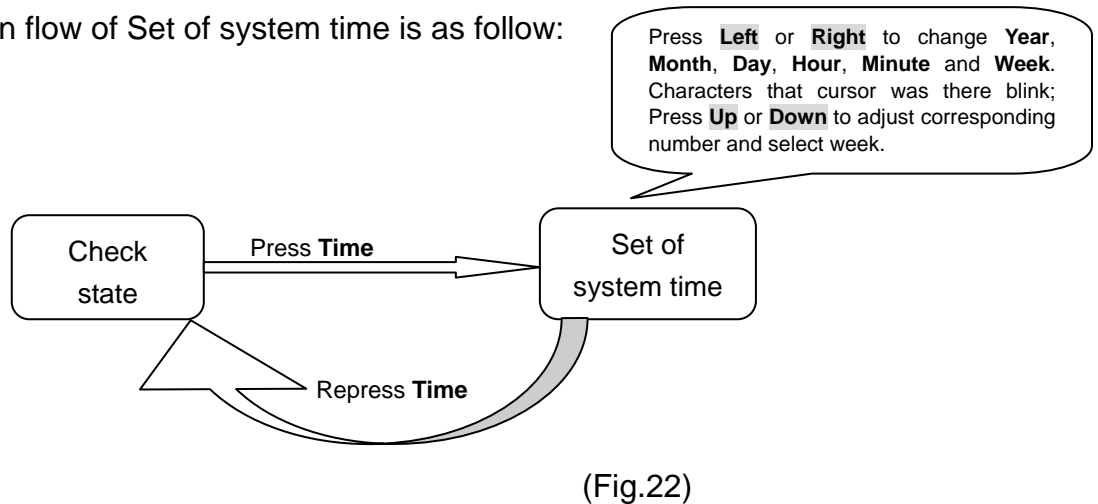
- A . Under check state, press **Time** to enter system time setting state, and the displayed **Year** blinks;
- B . Press **Left** or **Right** to change **Year, Month, Day, Hour, Minute** and **Week** in circle and the characters where cursor is there blink; press **Up** and **Down** to adjust corresponding value and change selected week.
- C . After time had been adjusted, press **Time** to exit time setting state, and time setting finished.

◆ **Note:** When cursor is at **week**, press **Up** and **Down** to select week.

Displayed content is as shown in fig.21:



Operation flow of Set of system time is as follow:



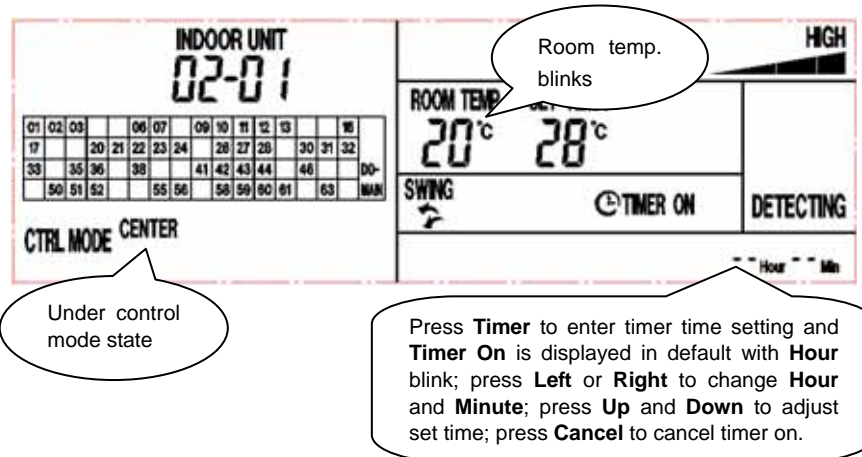
2. Timer setting: When under operation mode setting state of indoor unit, press **Timer** to begin setting of timer on and timer off of indoor unit. Operation processes are as following:

- A . Enter timer setting state, characters of **Timer On** is displayed in default, and characters of **Hour** blink; press **Left** or **Right** to change Hour and Minute; if timer time is not necessary to be set, press **Cancel** to cancel timer on (fig.23);
- B . Repress **Timer** to display **Timer Off**, and characters of **Hour** blink; the operation is the same as that of **Timer On** (Process A) (fig.24);
- C . Repress **Timer** and **Monday** will be displayed and blink in default, press **Left** or **Right** to change from Monday to Sunday; press **Select** to select corresponding day characters with cursor; if it is necessary to cancel the

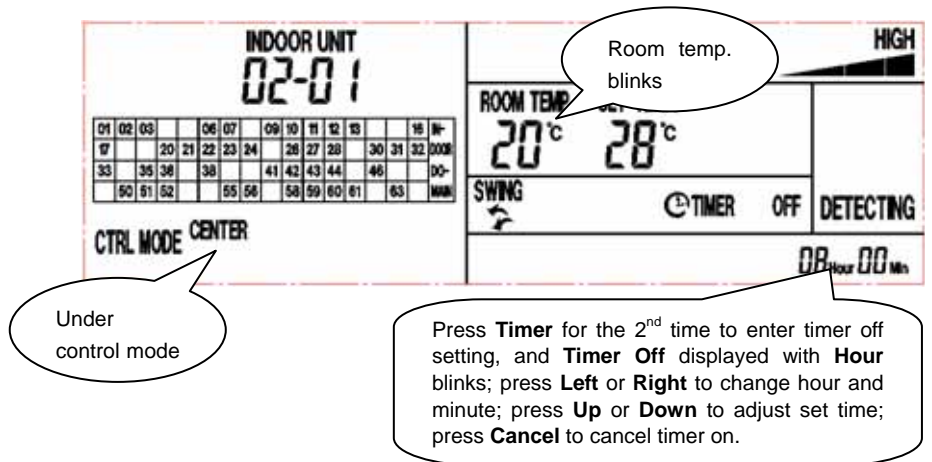
selected day, repress **Select** at the selected day (fig.25);

- D . Repress **Timer** to exit timer setting, and time display region resumes to display system time. If the set timer time is available, **Timer** and either **On** or **Off** will be displayed.

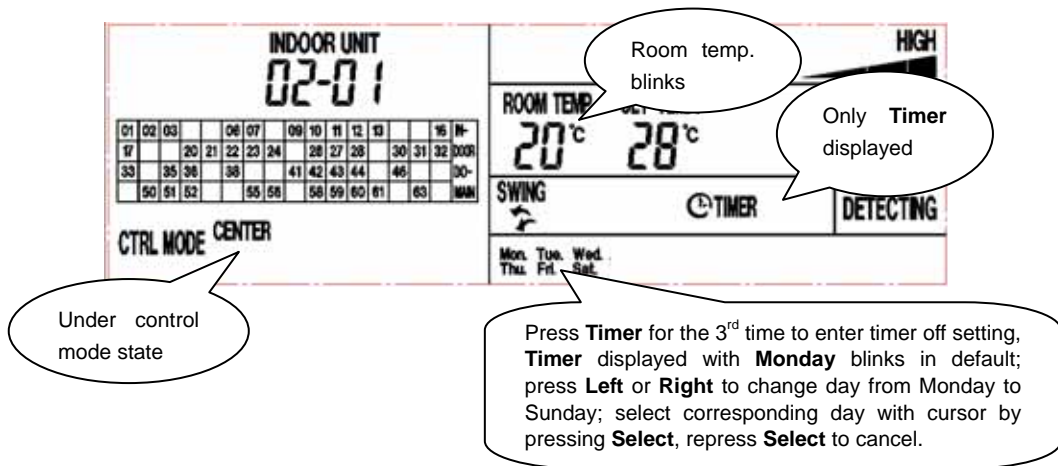
Display content is as shown in fig.19-22;



(Fig.23)

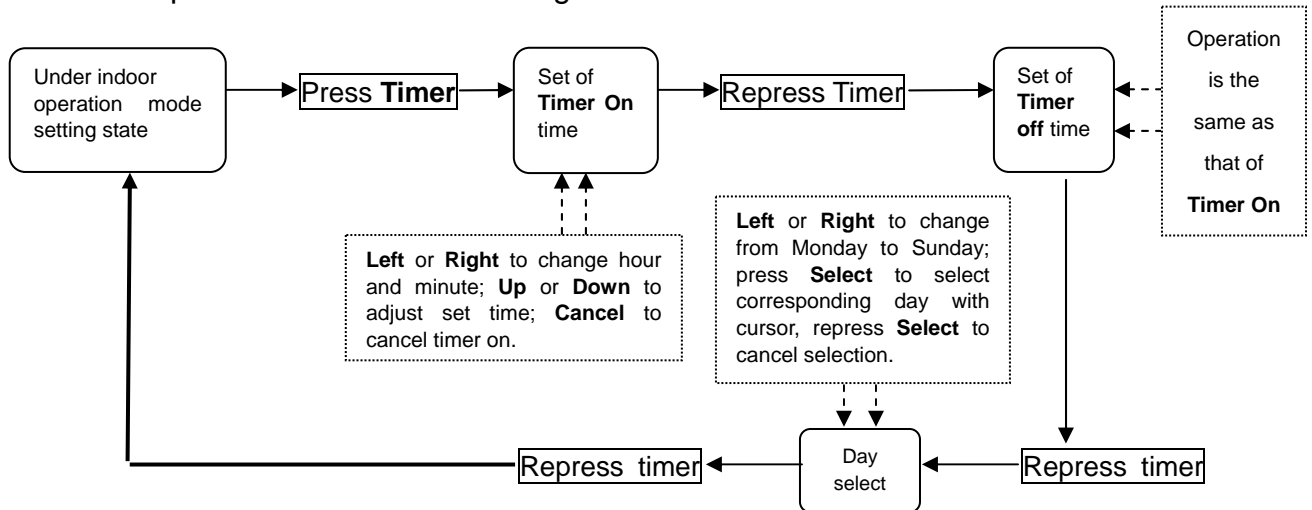


(Fig.24)



(Fig.25)

Operation flow of timer setting is as follow:

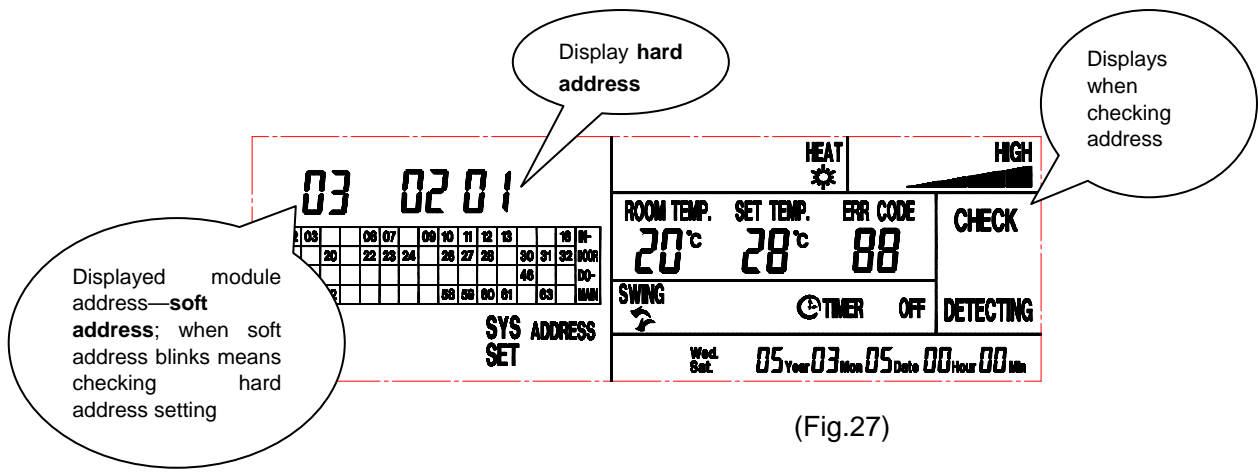


(Fig.26)

(5). **System setting:** (This function should be finished by project testing personnel, it is not recommended to be used by user)

Address mapping setting:

Press **System/Test** under checking state to enter system setting state. Select address setting after entering password, then address setting state is entered. As shown in fig.27:



(Fig.27)

Operation processes of address mapping setting are as following:

- A . Press **Left** or **Right** to change **soft addresses** or **hard addresses**. When **soft address** blinks means checking setting value of **hard address**; press **Up** or **Down** to change address value of soft address to check hard address value correspondingly;
- B . When **hard address** blinks, it means setting of hard address value is available; press **Up** or **Down** to change to adjust hard address value; after adjusting, press **Confirm** to make set value efficacy; press **Cancel** to make set value inefficacy and the displayed number at that time is “—”.

◆ **Note:** When conducting test for the first time, it is required to make soft address from 01 to 64, to the hard addresses that corresponding to the soft address without control mission, press **Cancel** to make it inefficacy. Then the working efficiency of central control can rise.

After setting address mapping setting, project installing and testing personnel are required to fill **Address Mapping List**. This list is for checking the corresponding addresses of communication modules (hard addresses) of soft addresses, as well as the install location of communication module. Format of **Address Mapping List** is as following:

Central Control Address Mapping List [Displays address (soft address) Communication module address (hard address)]:

Display add. (soft address)	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Communication modules add. (hard address)																
Floor position																
Display add.(soft address)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Communication modules add. (hard address)																
Floor position																
Display add.(soft address)	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Communication modules add. (hard address)																
Floor position																
Display add.(soft address)	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Communication modules add. (hard address)																
Floor position																

When Address Mapping List is finished, another Project Installation Corresponding List should also be filled. This list can check the detail position of each indoor unit, their belonged communication module and corresponding display address. The format of Project Installation Corresponding List is as following:

Project Installation Corresponding List:

Display No. of indoor unit	Display liquid crystal domain (soft address)	Addresses of Communication module (hard add.)	Floor with indoor unit	Display No. of indoor unit	Display liquid crystal domain (soft address)	Addresses of Communication module (hard add.)	Floor with indoor unit
	08	03	Floor 1		A	B	Floor C
1	Floor 01	Rm. 01	No. 01	1	Floor C	Rm. XX	No. 01
2	Floor 01	Rm. 01	No. 02	2	Floor C	Rm. XX	No.02
3	Floor 01	Rm. 01	No. 03	3	Floor C	Rm. XX	No. 03
4	Floor 01	Rm. 01	No. 04	4	Floor C	Rm. XX	No. 04
5	Floor 01	Rm. 01	No. 05	5	Floor C	Rm. XX	No. 05
6	Floor 01	Rm. 01	No. 06	6	Floor C	Rm. XX	No. 06
7	Floor 01	Rm. 01	No. 07	7	Floor C	Rm. XX	No. 07
8	Floor 01	Rm. 01	No. 08	8	Floor C	Rm. XX	No. 08
9	Floor 01	Rm. 01	No. 09	9	Floor C	Rm. XX	No. 09
10	Floor 01	Rm. 01	No. 10	10	Floor C	Rm. XX	No. 10
11	Floor 01	Rm. 01	No. 11	11	Floor C	Rm. XX	No. 11
12	Floor 01	Rm. 01	No. 12	12	Floor C	Rm. XX	No. 12
13	Floor 01	Rm. 01	No.13	13	Floor C	Rm. XX	No. 13
14	Floor 01	Rm. 01	No. 14	14	Floor C	Rm. XX	No. 14
15	Floor 01	Rm. 01	No. 15	15	Floor C	Rm. XX	No. 15
16	Floor 01	Rm. 01	No. 16	16	Floor C	Rm. XX	No. 16
(I)				(II)			

Instruction:

Indoor unit number (1~16): The characters central control displayed, showing online indoor unit; is number between 1~16.

Domain (A): Characters central control displayed, showing online communication module; is the number between 1~64.

Communication module address (B): Set **hardware address** before outgoing of the products and conduct corresponding **Address Mapping Setting** to 1~64 domains of

central control; they are numbers between 0~255. Advice: If the project required quantity of communication module is less than 64, it is better to select communication modules whose addresses are 1~64 and set mapping addresses correspondingly. It is convenient for testing.

Floor with indoor unit (C): The floors that indoor units are installed, for ascertaining the detail position of corresponding number of indoor unit that is displayed by central control at present; the displaying format is: **Floor XX Rm. XX No. XX.**

(6). Model and material code of central control:

Model: Control (central) ZJ7011

Code: 30207004

3. Installation of central control ZJ7011

(1). Select of installation position and notice

- 1、 Central control ZJ7011 must be installed in indoor;
- 2、 Prevent solarizing and drenching the control, prevent installing it in room where there is high humidity;
- 3、 Place where there is no great power electrical source, electric appliances, transmitting station, and prevent interference source;
- 4、 Don't install unit to place where there is corrosive gas, serious dust, salt mist, oil and smoke and place where is extremely damp;
- 5、 It is better to install them in control cabinet in which heat dispensing should be well.

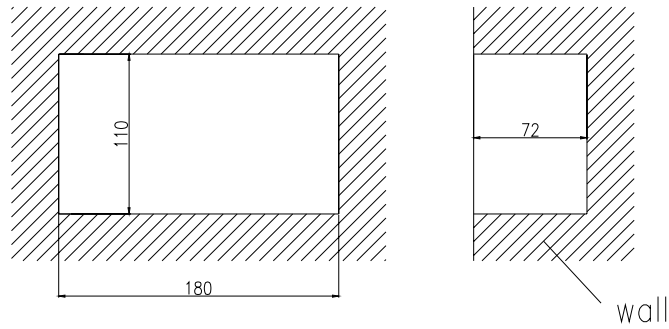
(2). Installation of central control ZJ7011

After selecting installation location, installation can be conducted. The processes are as following:

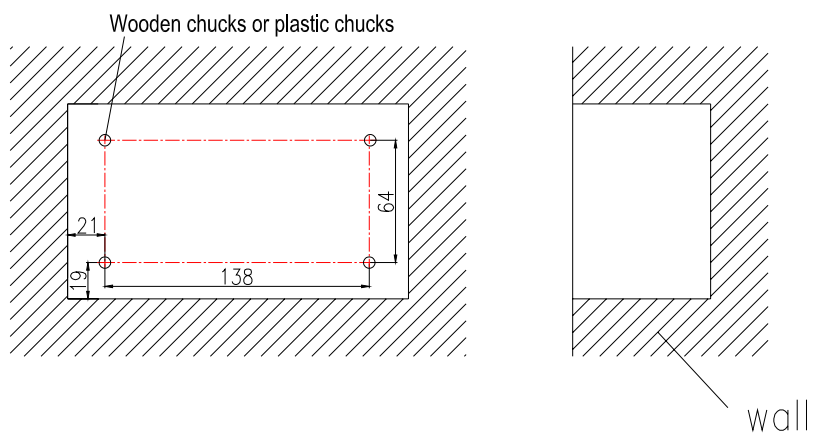
1. Ascertain installation hole

When installing central control on wall:

- (1). Drill a hole whose length x width x depth are 180mm x 106mm x 72mm on wall.



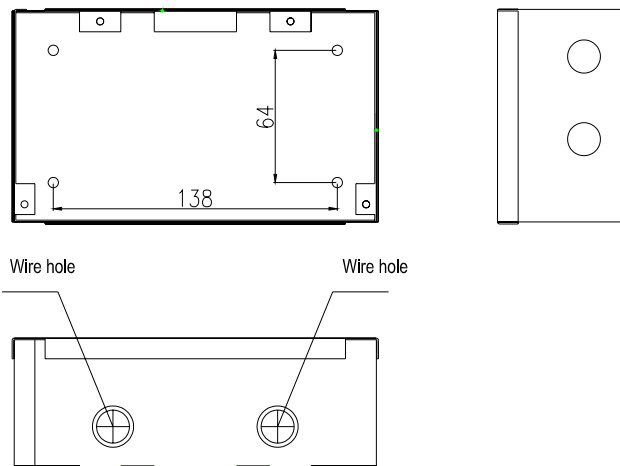
(2). Nail 4 wooden chucks or plastic chucks at positions shown in following figures.



When central control is installed in control cabinet: Drill 4 holes at wall surface inside the control chest by dimension shown in following figure.



2. Install electric box cover on wall or inside the control cabinet.



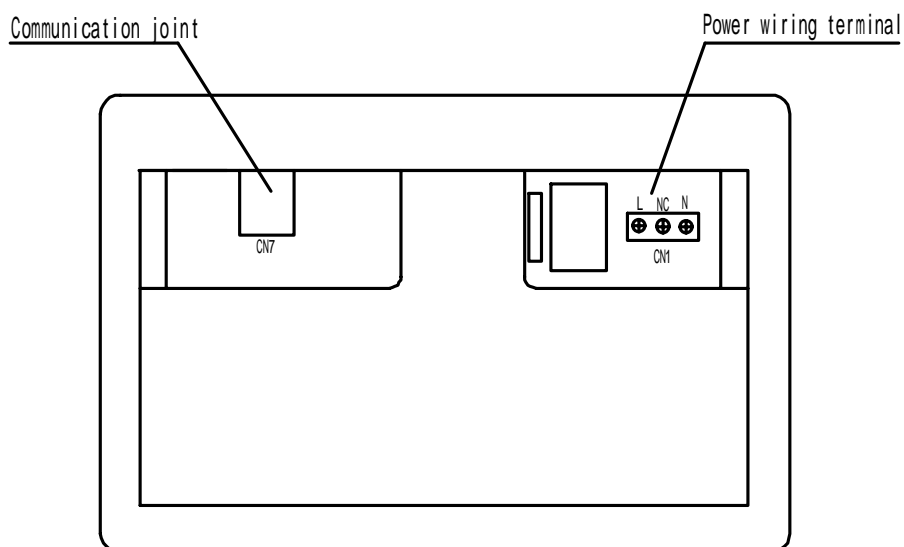
3. Connect power cord and communication cord

Make communication cord through the wire hole of electric box cover, insert the pin on main board of control as shown in below figure. Make power cord through another wire hole on electric box cover, and connect with the power wiring terminal of controller main board as shown in the following figure. Wire hole can be set at upper side, left side or right side according to actual installation circumstance.

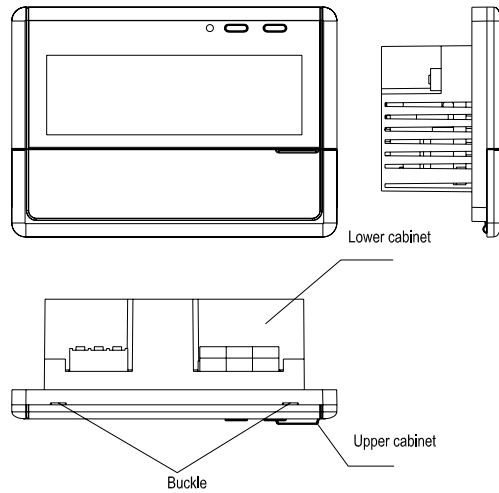
The range of line width of power wiring terminal : 1.5 ~ 2.2mm。

Rated voltage of power wiring terminal: 220 - 240 VAC

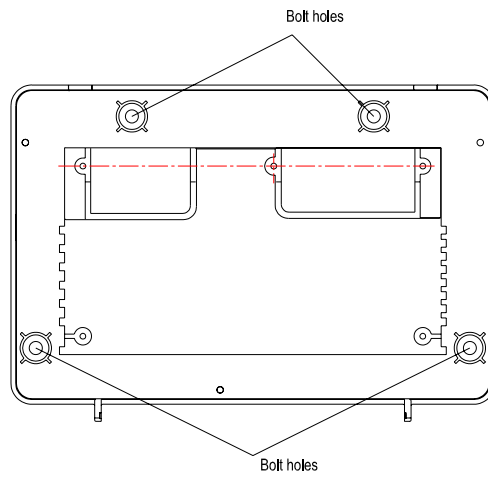
Power frequency: 50/60HZ



4. Disassemble central control into 2 parts at buckle that shown in below figure—upper cabinet and lower cabinet.



5. Connect electric box cover with lower cabinet by bolts at hole, as shown in following figure.



6. Re-buckle the upper cabinet. Till now, central control had been installed well and can begin the testing stage.

Appendix:

Error code list for multi variable unit:

Error code	Error
E1	Compressor high pressure protection
E2	Indoor anti-freeze protection
E3	Compressor low pressure protection
E4	Compressor exhaust temperature protection
E5	Compressor overload protection
E6	Communication error
E7	Mode conflict
F0	Error on indoor ambient temperature sensor
F1	Error on indoor scroll entrance temperature sensor
F2	Error on indoor scroll middle temperature sensor
F3	Error on indoor scroll exit temperature sensor
F4	Error on outdoor ambient temperature sensor
F5	Error on outdoor scroll entrance temperature sensor
F6	Error on outdoor scroll middle temperature sensor
F7	Error on outdoor scroll exit temperature sensor
F8	Error on exhaust temperature sensor 1 (rated-frequency)
F9	Error on exhaust temperature sensor 2 (digital)
FA	Error on oil temperature sensor 1 (rated-frequency)
Fb	Error on oil temperature sensor 2 (digital)
FC	Error on high pressure sensor
Fd	Error on low pressure sensor
Eb	Water filled protection (cassette type unit)
EH	Auxiliary heater protection