

# FAN COIL UNIT (WALL MOUNTED TYPE)



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TRUST AIR CONDITIONING EQUIPMENT CO.  
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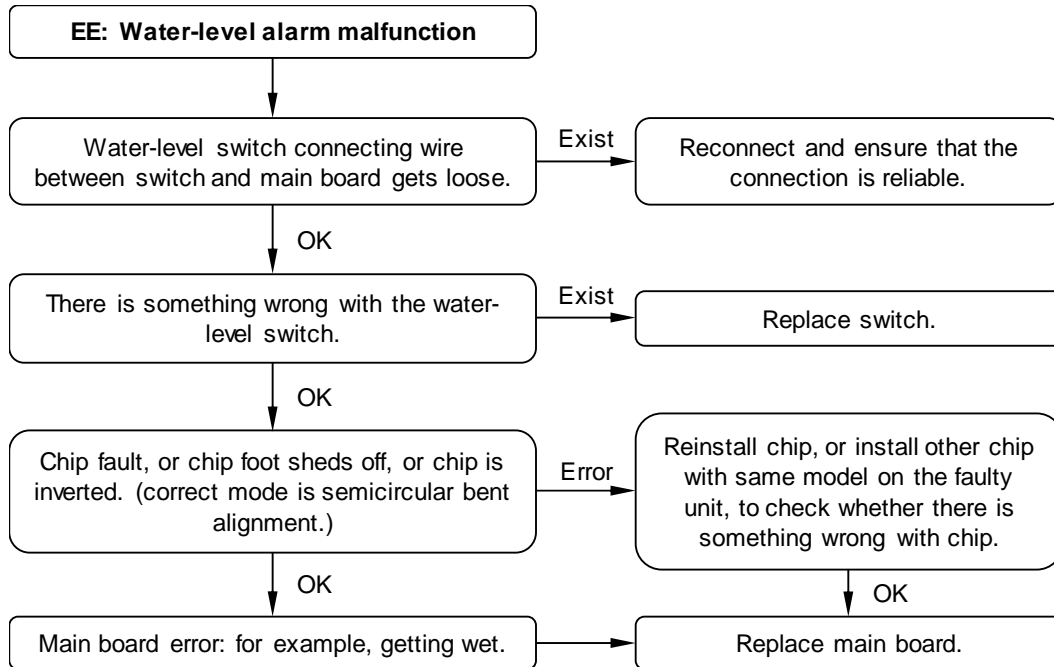
**توجه:**

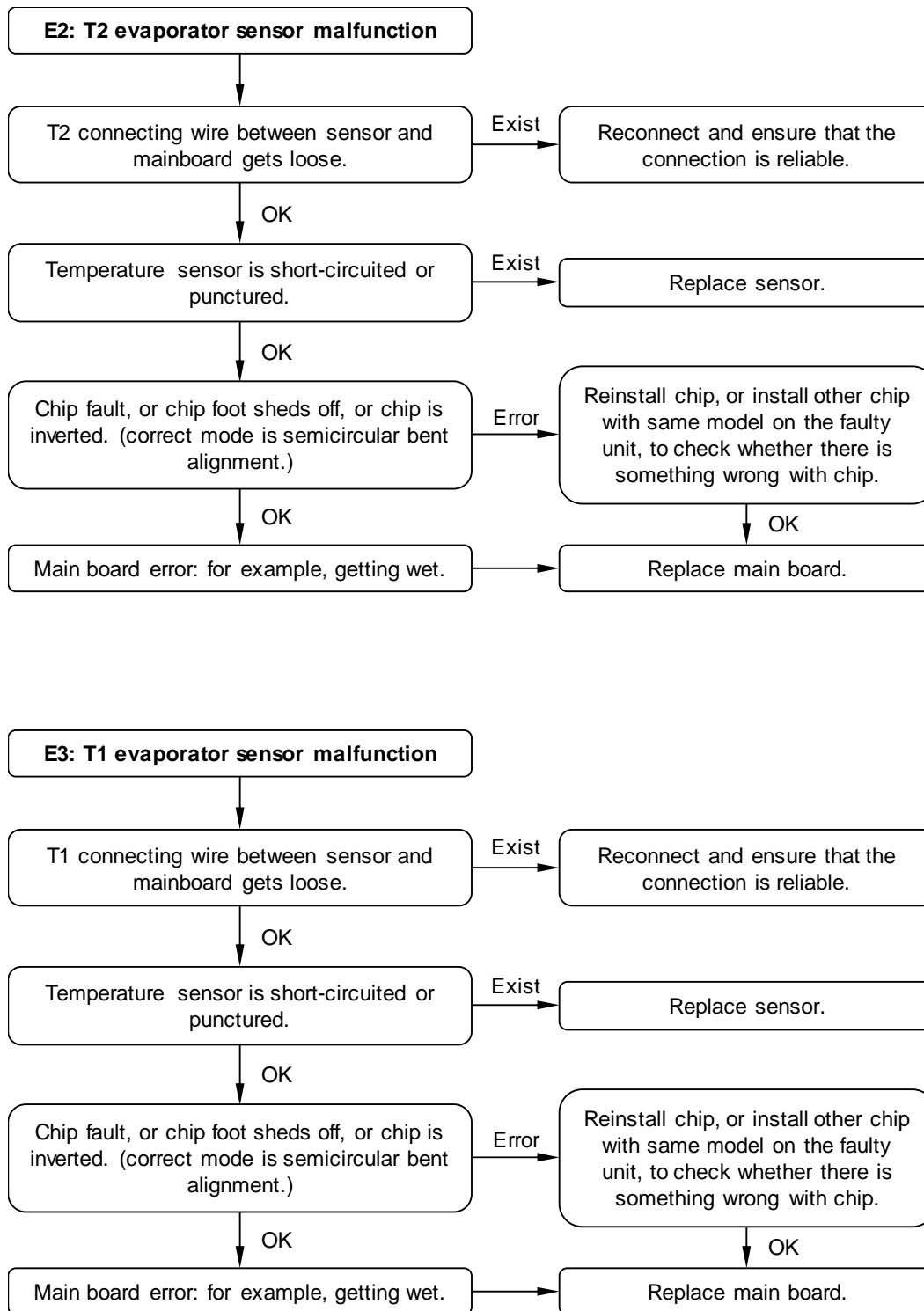
**شرکت تراست حق تغییر مشخصات دستگاه ها را در جهت بهبود و ارتقای کیفیت برای خود محفوظ می دارد.**

2016

## 1. Trouble-shooting

Malfunction code	Malfunction
EE	DC motor malfunction
E3	T2 evaporator sensor malfunction
E2	T1 evaporator sensor malfunction
E8	Water-level alarm malfunction
E7	EEPROM communication error





### 1.1 Troubles and causes of air conditioner

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

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

Symptoms	Causes	Solution
Unit does not start	<ul style="list-style-type: none"> <li>• Power failure;</li> <li>• Power switch is off;</li> <li>• Fuse of power switch may have burned;</li> <li>• Batteries of remote controller exhausted or other problem of controller.</li> </ul>	<ul style="list-style-type: none"> <li>• Wait for the comeback of power;</li> <li>• Switch on the power;</li> <li>• Replace the fuse;</li> <li>• Replace the batteries or check the controller.</li> </ul>
Air flowing normally but completely can't cooling	<ul style="list-style-type: none"> <li>• Temperature is not set correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• Set the temperature properly.</li> </ul>
Low cooling effect	<ul style="list-style-type: none"> <li>• Indoor unit heat exchanger is dirty;</li> <li>• The air filter is dirty;</li> <li>• Inlet of indoor unit is blocked;</li> <li>• Doors and windows are open;</li> <li>• Sunlight shine directly;</li> <li>• Too many heat resources;</li> <li>• Outdoor temperature is too high.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the heat exchanger;</li> <li>• Clean the air filter;</li> <li>• Eliminate all dirties and make air smooth;</li> <li>• Close doors and windows;</li> <li>• Make curtains in order to shelter from sunshine;</li> <li>• Reduce heat resource;</li> <li>• AC cooling capacity reduces (normal).</li> </ul>
Low heating effect	<ul style="list-style-type: none"> <li>• Outdoor temperature is lower than 7°C;</li> <li>• Doors and windows are not completely closed.</li> </ul>	<ul style="list-style-type: none"> <li>• Use heating device;</li> <li>• Close doors and windows.</li> </ul>

### 1.2 Troubles and causes of remote controller

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

Symptoms	Causes	Solution
The fan speed can not be changed.	<ul style="list-style-type: none"> <li>• Check whether the MODE indicated on the display is "AUTO".</li> </ul>	When the automatic mode is selected, the air conditioner will automatically change the fan speed.
	<ul style="list-style-type: none"> <li>• Protection against hot wind in cooling mode.</li> <li>• Protection against cold wind in heating mode.</li> </ul>	Reduce the temperature of inlet in cooling mode rise the temperature of inlet in heating mode.
The remote controller signal is not transmitted even when the ON/OFF button is pushed.	<ul style="list-style-type: none"> <li>• Check whether the batteries in the remote controller are exhausted.</li> </ul>	The power supply is off.
The TEMP. indicator does not come on.	<ul style="list-style-type: none"> <li>• Check whether the MODE indicated on the display is "FAN ONLY".</li> </ul>	The temperature cannot be set during FAN mode.
The indication on the display disappears after a lapse of time.	<ul style="list-style-type: none"> <li>• Check whether the timer operation has come to an end when the "TIMER OFF" is indicated on the display.</li> </ul>	The air conditioner operation will stop up to the set time.
The TIMER ON indicator goes off after a lapse of certain time.	<ul style="list-style-type: none"> <li>• Check whether the timer operation is started when the "TIME ON" is indicated on the display.</li> </ul>	Up to the set time, the air conditioner will automatically start and the appropriate indicator will go off.

<p>No receiving tone sounds from the indoor unit even when the ON/OFF button is pressed.</p>	<ul style="list-style-type: none"> <li>• Check whether the signal transmitter of the remote controller is properly directed to the infrared signal receiver of the indoor unit when the ON/OFF button is pressed.</li> </ul>	<p>Directly transmit the signal transmitter of the remote controller to the infrared signal receiver of the indoor unit, and then repeatedly push the ON/OFF button twice.</p>
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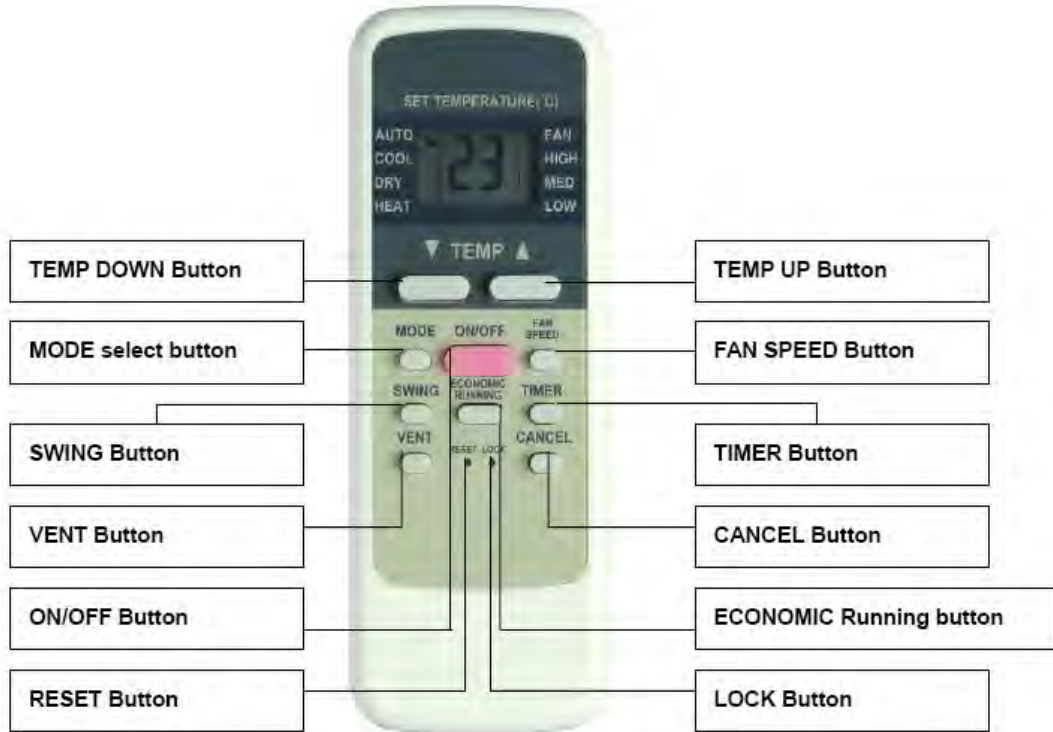
## 2. Controller

### 2.1 Wireless remote controller R51/E

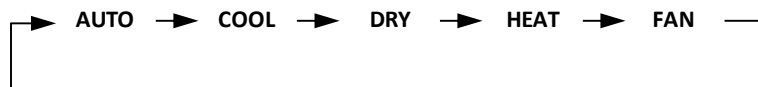
#### ■ Remote Controller Specifications

Model	R51/E
Rated Voltage	3.0V
Lowest Voltage of CPU Emitting Signal	2.0V
Reaching Distance	8m (when using 3.0 voltage, it can get 11m)
Environment Temperature Range	-5°C~60°C

■ Introduction of Function Buttons on the Remote Controller

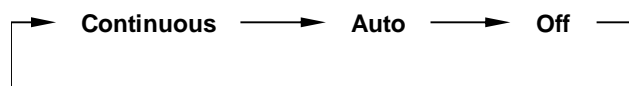


1. **TEMP DOWN Button:** Push the TEMP DOWN button to decrease the indoor temperature setting or to adjust the timer in a counter-clockwise direction.
2. **MODLE SELECT Button:** Each time you push the button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, HEAT and FAN as the following figure indicates:



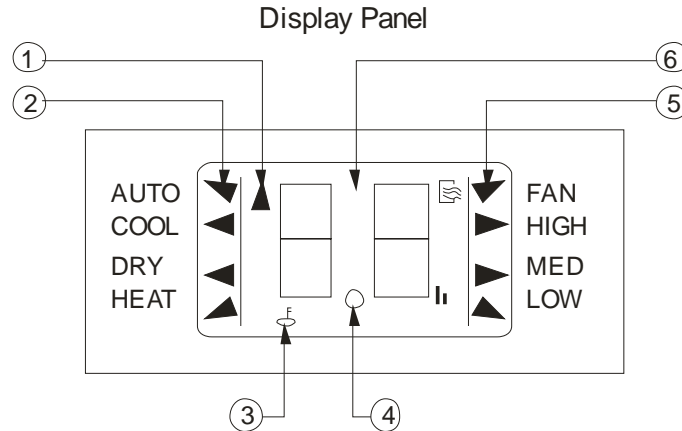
**Note:** HEAT only for Heat Pump.

3. **SWING Button:** Push this switch button to change the louver angle.
4. **RESET Button:** When the RESET button is pushed, all of the current settings are cancelled and the control will return to the initial settings.
5. **ECONOMIC RUNNING Button:** Push this button to go into the Energy-Saving operation mode.
6. **LOCK Button:** Push this button to lock in all the current settings. To release settings, push again.
7. **CANCEL Button:** Push this button to cancel the TIMER settings.
8. **TIMER Button:** This button is used to preset the time ON (start to operate) and the time OFF (turn off the operation)
9. **ON/OFF Button:** Push this button to start the unit operation. Push the button again to stop the unit operation.
10. **FAN SPEED Button:** This button is used for setting fan speed in the sequence that goes from AUTO, LOW, MED to HIGH, and then back to Auto.
11. **TEMP UP Button:** Push this button to increase the indoor temperature setting or to adjust the timer in a counter-clockwise direction.
12. **VENT Button:** Push this button to set the ventilating mode. The ventilating mode will operate in the following sequence:



**Note:** Ventilation Function is available for the Fresh Star Series.

## ■ Introduction of Indicators



1. **TRANSMISSION Indicator:** This indicator lights when remote controller transmits signals to indoor unit.
2. **MODE Display:** Shows the current operation mode - AUTO, COOL, DRY or HEAT. HEAT only available for heat pump model.
3. **HEAT PUMP ONLY- LOCK display** is displayed by pushing the LOCK button. Push the LOCK button again to clear display.
4. **TIMER Display:** This display area shows the settings of TIMER. That is, if only the starting time of operation is set, it will display the TIMER ON. If only the turning off time of operation is set, it will display the TIMER OFF. If both operations are set, it will show TIMER ON OFF which indicates you have chosen to set both the starting time and off time.
5. **FAN Display:** When the FAN button is pushed, this signal indicator lights.
6. **Digital Display Area:** This area will show the temperature, and if in the TIMER mode, it will show the ON and OFF settings of the TIMER.

**Note:** All items are shown in the Fig for the purpose of clear presentation, But during the actual operation only the relative functional items are shown on the display panel.

## ■ Operational Guidelines

### Operating the Remote Controller

- **Install / Replace Batteries:** The Remote Controller uses two alkaline dry batteries(R03/Ir03×2).
  1. To install batteries, slide back the cover of the battery compartment and install the batteries according to the directions (+and -) shown on the Remote Controller.
  2. To replace the old batteries , use the same method as mentioned above.

### Note:

1. When replacing batteries, do not use old batteries or a different type battery. This may cause the remote controller to malfunction.
2. If you do not use the remote controller for several weeks remove the batteries. Otherwise battery leakage may damage the remote controller.
3. The average battery life under normal use is about 6 months.
4. Replace the batteries when there is no answering beep from the indoor unit or if the Transmission Indicator light fails to appear.

### Automatic Operation

- When the Air Conditioner is ready for use, switch on the power and the OPERATION indicator lamp on the display panel of the indoor unit starts flashing.
  1. Use the MODE select button to select AUTO.
  2. Push the TEMP button to set the desired room temperature. The most comfortable temperature settings are between 21°C to 28°C.



3. Push the ON/OFF button to start the air conditioner. The OPERATION lamp on the display panel of the indoor unit lights. The operating mode of AUTO FAN SPEED is automatically set and there are no indicators shown on the display panel of the remote controller.
4. Push the ON/OFF button again to stop the unit.

**Notes:**

1. In the AUTO mode, the air conditioner can logically choose the mode of COOL, FAN, HEAT and DRY by sensing the difference between the actual ambient room temperature and the set temperature on the remote controller..
2. If the AUTO mode is not comfortable for you , the desired mode can be selected manually.

**COOL, HEAT, and FAN ONLY Operation**

- If the AUTO mode is not comfortable, you may manually override the settings by using COOL, DRY, HEAT(HEAT PUMP units only), or FAN ONLY modes.
- Push the TEMP button to set the desired room temperature. When in COOLING mode, the most comfortable settings are 21°C or above. When in HEATING mode, the most comfortable settings are 28°C or below.
- Push the FAN SPEED to select the FAN mode of AUTO, HIGH, MED or LOW.
- Push the ON/OFF button. The operation lamp lights and the air conditioner starts to run according to your settings.
- Push the ON/OFF button again to stop.

**Note:**

The FAN ONLY mode cannot be used to control the temperature. While in this mode, only steps 1, 3 and 4 may be performed.

**Dry Operation**

1. Push the MODE button to select DRY.
2. Push the TEMP button to set the desired temperature from 21°C to 28°C.
3. Push the ON/OFF button. The operation lamp lights and the air conditioner starts to run in the DRY mode. 4. Push the ON/OFF button again to stop the unit.

**Note:**

Due to the difference of the set temperature of the unit and the actual indoor temperature, the Air Conditioner when in DRY mode will automatically operate many times without running the COOL and FAN mode.

**Time Operation**

PUSH TIMER button to set the on and off times of the unit.

**1. To set the STARTING time.**

- 1) Please push the CANCEL button to cancel any former settings.
- 2) Push the TIMER button. The remote controller will show the TIMER and the signal "h" is shown on the display panel. The control is now ready to reset the TIMER ON to start the operation.
- 3) Push the TEMP button (▼ or ▲) to set desired unit START time .
- 4) After setting the TIMER there will be a one-half second delay before the remote controller transmits the signal to the Air Conditioner. Then, after approximately another 2 seconds, the set temperature will re-appear on the digital display.

**2. To set the STOPPING time.**

- 1) Please press the CANCEL button to cancel any former settings.
- 2) Push the TIMER button and the remote controller will show the last set time for the START operation and the signal "h" will be shown on the display panel. You are now ready to re-adjust the TIMER OFF to stop the operation.
- 3) Push the TEMP button to cancel the TIMER ON setting. The digital area will show "00".
- 4) Push the TIMER button and the remote controller will show the last set time for the STOP operation and the signal "h" will be shown on the display panel. You are now ready to reset the time of the STOP operation.
- 5) Push the TEMP button (▼ or ▲) to set the time you want to stop the operation.

- 6) After setting the TIMER there will be a one-half second delay before the remote controller transmits the signals to the Air Conditioner. Then after approximately another 2 seconds, the set temperature will re-appear on the digital display.

### 3. Set the STARTING & STOPPING time

- 1) Please press the CANCEL button to cancel any former settings.
- 2) Push the TIMER button and the remote controller will show the last setting time for START operation and the signal "h" will be shown on the display panel. You are now ready to readjust the TIMER ON to start the operation.
- 3) Push the TEMP button (▼ or ▲) to set the time you want to start the operation.
- 4) Push the TIMER button and the remote controller will show the last set time for STOP operation and the signal "h" will be shown on the display panel. You are now ready to reset the time of the STOP operation.
- 5) Push the TEMP button (▼ or ▲) to set the time you want to stop the operation.
- 6) After setting the TIMER there will be a one-half second delay before the remote controller transmits the signal to the Air Conditioner. Then, after approximately another 2 seconds, the set temperature will re-appear on the digital display.

#### Notes:

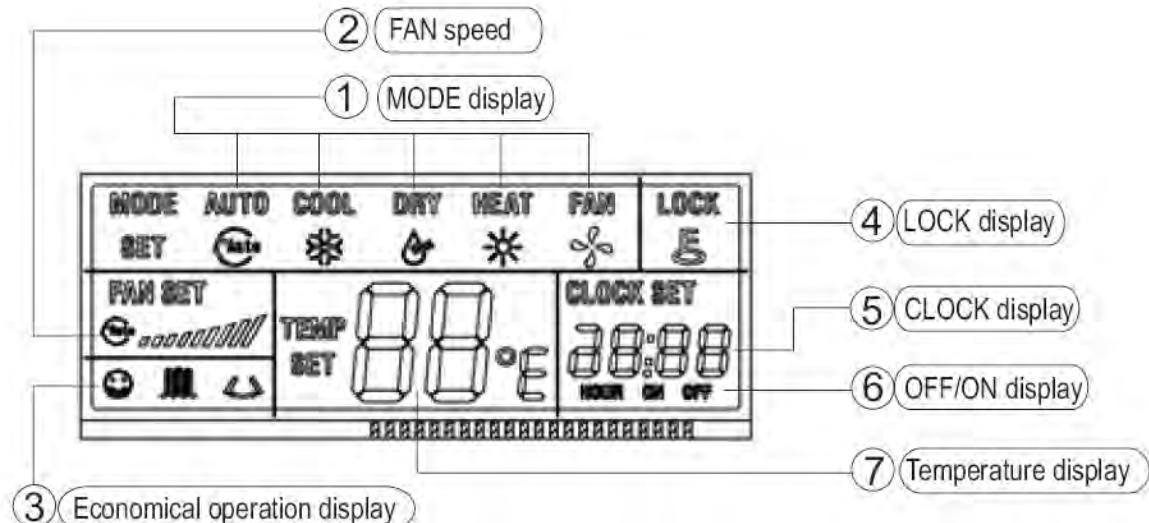
1. Please reset the TIMER after cancelling the former time settings.
2. The setting time is relative time. That is the time set is based on the delay of the current time.

## 2.2 Optional Controller

### 2.2.1 Wired Controller KJR-10B

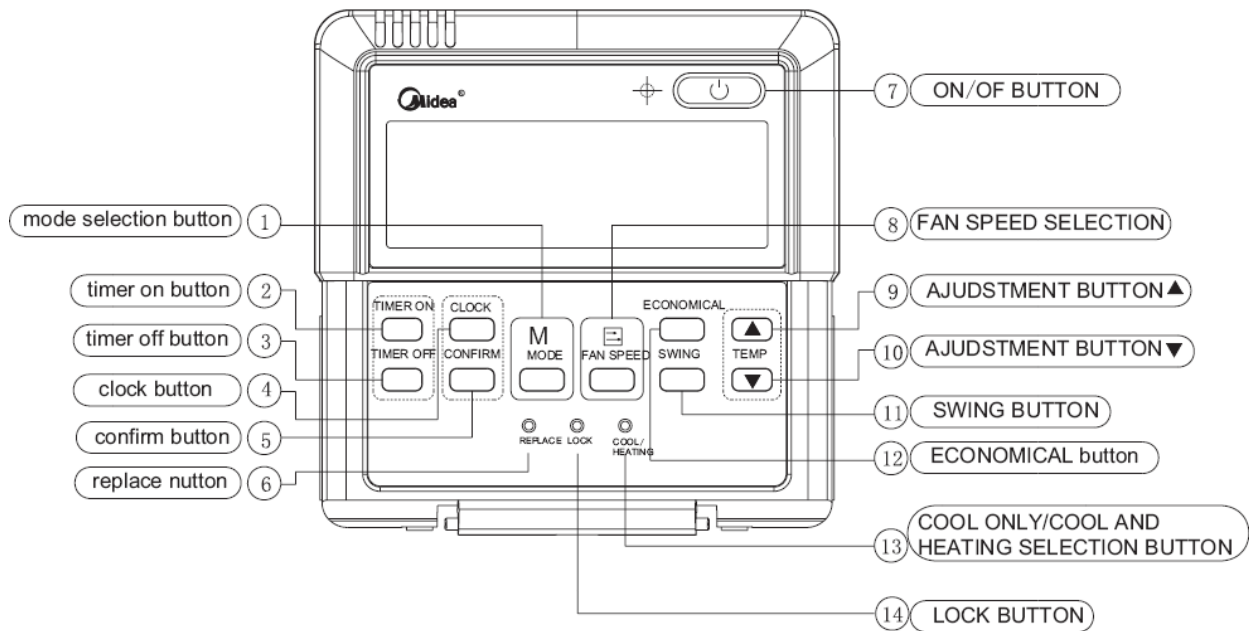


#### ■ Name and Function of LCD display on the controller



1. Mode select button (MODE)  
Press MODE button to select "COOL", "DRY", "HEAT", or "FAN ONLY" mode. (HEAT is invalid for COOL ONLY wire controller.)
2. Fan speed button (FAN SPEED)  
Press FAN SPEED to select fan speed from "AUTO", "LOW", "MED", and "HIGH". NOTE: some air conditioners have no MED fan speed, and then the MED is regarded as HIGH.
3. Economical operation displays  
Press ECONOMICAL to display economical operation, if press ECONOMICAL again then the display disappears
4. Lock display  
Press LOCK to display the icon of LOCK. Press the button again then the icon of LOCK disappears. In the mode of LOCK, all the buttons are invalid except for LOCK button.
5. CLOCK display  
Usually display the clock set currently. Press the button CLOCK for 4 seconds, the HOUR part will flash, press button ▲ and ▼ to adjust HOUR. Presses the button CLOCK again, the minute part flash, press button ▲ or ▼ to adjust MINUTE. After clock set or clock operation, it must press CONFIRM to complete the set.
6. TIMER ON/OFF display  
Display ON at the state of TIMER ON adjustment or after only set the TIMER ON; Display OFF at the state of TIMER OFF adjustment or after only set the TIMER OFF; Display ON/OFF if simultaneously set the mode of TIMER ON and TIMER OFF.
7. Temperature display area  
Usually display the set temperature. Press the buttons of and to set temperature, at the mode of FAN, there is no figure display in the area.

■ **Name and Functions of buttons on the controller**



### 1. Mode selection button

It is used to select mode, push the button one time, then the operation modes will change in turn as follows:

**AUTO → COOLING → DEHUMIDIFY → HEATING → FAN**

**Note:** no heating mode if wire controller is set as the cool only.

### 2. Timer on button

Push the button to set TIMER ON, each time you push the button the time moves forward by 0.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER ON, then adjust the time of TIMER ON as 0.0.

### 3. Timer off button

Push the button to set TIMER OFF, each time you push the button the time moves forward by 0.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER OFF, then adjust the time of TIMER OFF as 0.0.

### 4. CLOCK button

Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When push the button for 4 seconds, the hour part on the clock display flashes every 0.5 seconds, then push button and to adjust hour; push the button CLOCK again, the minute part flashes every 0.5 seconds, then push and button to adjust minute. When set clock or alter clock setting, must push the confirm button to complete the setting.

### 5. Ok button

The button is used at the state of CLOCK adjustment. After select the time, push the button to confirm then exit, the current clock will display.

### 6. Reset button (hidden)

Use a small stick with a diameter of 1mm to push the RESET button to cancel the current settings and get into the condition of resetting.

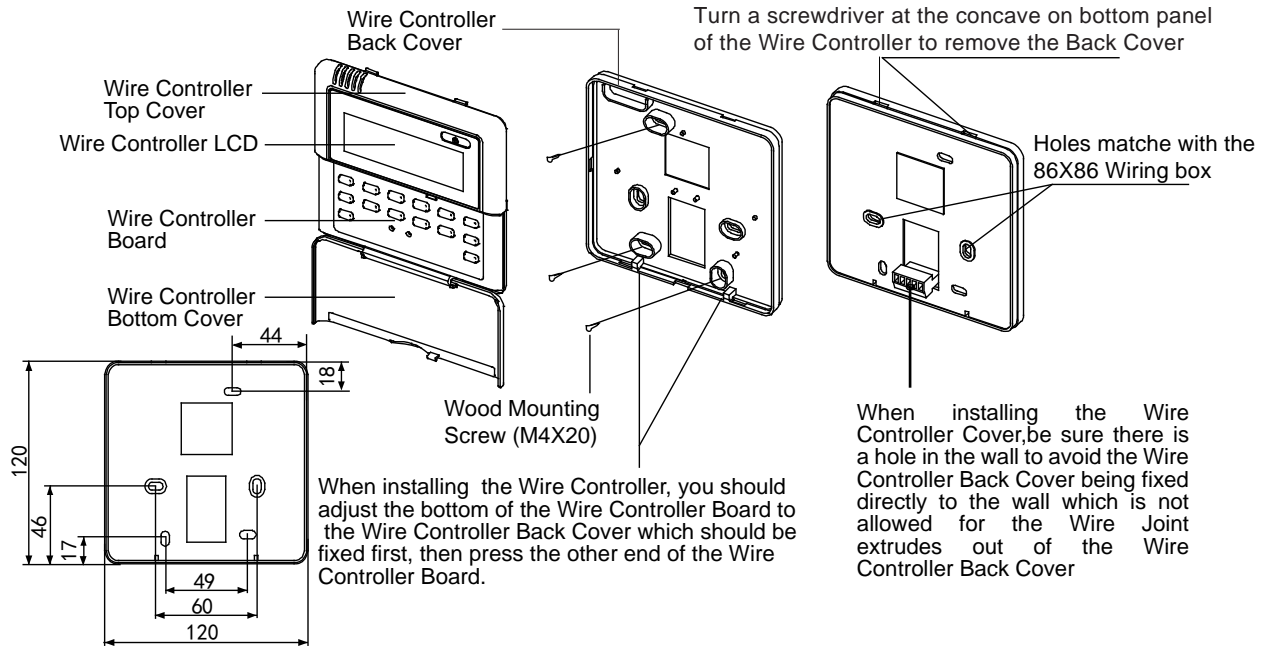
### 7. ON/OFF button

Push the button at the condition of OFF, the OPERATION lamp lights, and the wire controller enters into ON operation, simultaneously sends the information of operation mode set currently, temperature, fan speed, timer etc. Push the button at the condition of ON, the OPERATION lamp extinguishes simultaneously sends the OFF. If having set TIMER ON or TIMER OFF, the wire controller will cancel these settings before entering into OFF, close the concern indicator, and then send the OFF information.

### 8. Fan speed selection button (FAN SPEED)

Select any one fan speed from "AUTO", "LOW", "MED", and "HIGH". Each time push the button, the fan speed





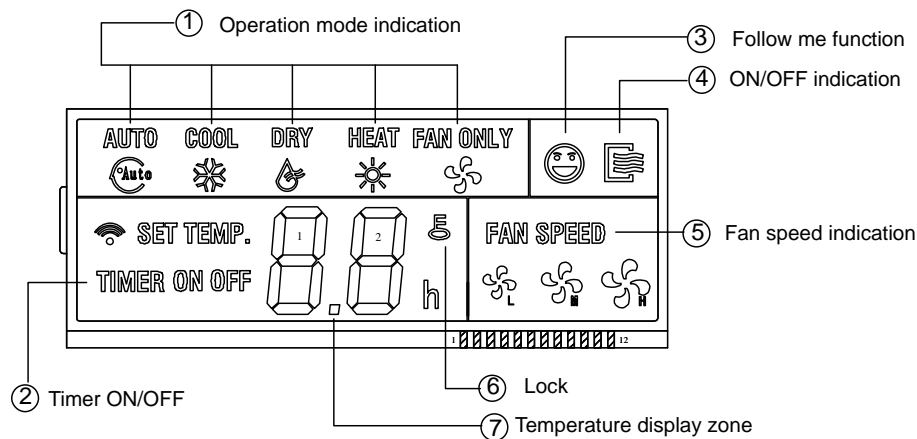
**Notes:**

- Never turn screws too tightly, or else the cover would be dented or the Liquid Crystal breaks.
- Please leave enough long cable for maintenance of the Wire Controller Board.

## 2.2.2 Wired Controller: KJR-12B



### ■ Name and Function of LCD display on the controller



#### 1. Operation mode indication

When press "MODE" button, the following mode can be selected in circle.

**Auto → Cool → Dry → Heat → Fan only → Auto**

For cooling only model, heat mode is skipped.

#### 2. Timer

When adjust setting on time or only on time is set, the "ON" is lighted.

When adjust setting off time or only off time is set, the "OFF" is lighted. If on and off timer are both set, the "ON" and "OFF" are both lighted.

#### 3. Follow me function

There is a temperature sensor inside the wire controller, after setting temperature, it will compare the two temperatures, and the space of wire controller will be the same as setting temperature. It is available under cooling, heating, auto mode.

#### 4. ON/OFF indication

When it is on, the icon display, otherwise it is extinguished.

#### 5. Fan speed indication

There are four fan modes: low, middle, high, and auto. For some models, no middle fan then the middle fan is seen as high speed.

#### 6. Lock

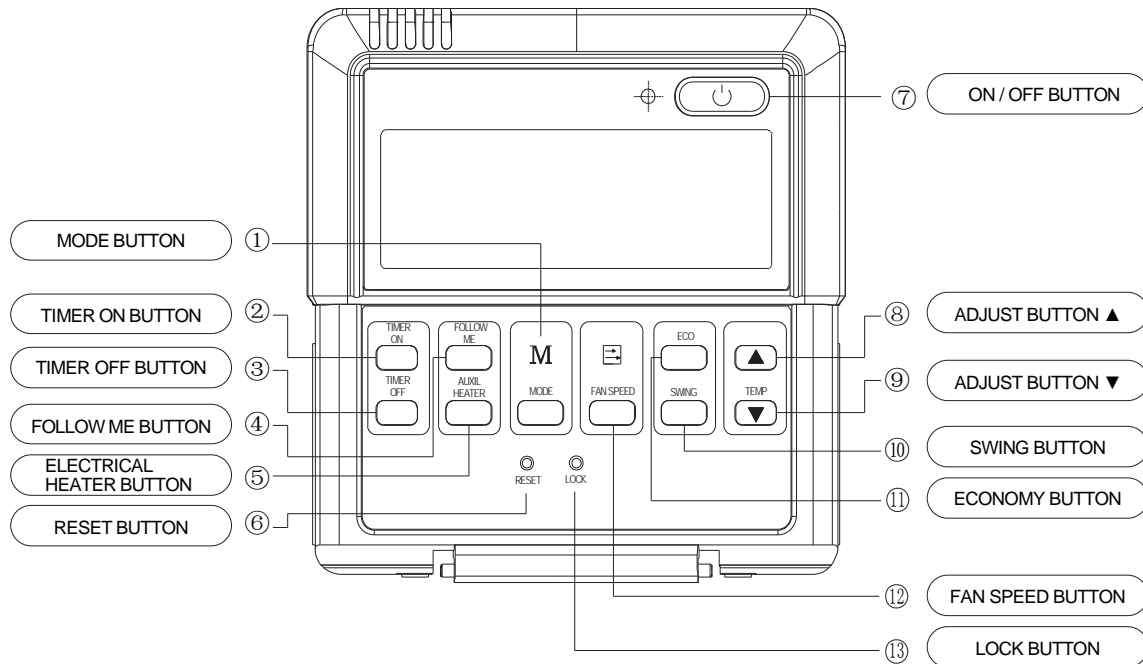
When the "LOCK" button is pressed, the icon appear and other buttons is unable, press again, the icon disappear.

#### 7. Temperature display zone

Generally it displays setting temperature, it can be adjusted by press temperature button ▲ and ▼. But no

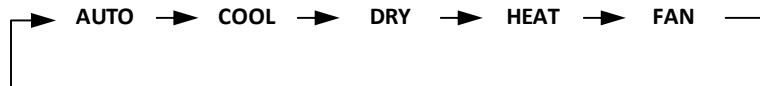
display in fan mode.

■ **Name and functions of buttons on the controller**



**1. Mode button**

When press this button, the operation mode change as the following sequence:



**Note:** For the cooling only model, the heating mode is skipped.

**2. Timer on button**

Press this button, timer on function is active. Then every press, the time increase 0.5h, after 10h, 1h increase after each press. If cancel this function, just set it to "0.0".

**3. Timer off button**

Press this button, timer off function is active. Then every press, the time increase 0.5h, after 10h, 1h increase after each press. If cancel this function, just set it to "0.0".

**4. Follow me button**

When under cool, heat and auto mode, and press this button, follow me function is active. Press again, this function is ineffective.

**5. Electrical heater button**

If press this button in heat mode, electrical heater function become ineffective.

**6. Reset button(hidden)**

Use a 1mm stick to press in the little hole, then the current setting is canceled. The wire controller enters into original state.

**7. ON/OFF button**

When in off state, press this button, the indicator is on, the wire controller enter into on state, and send setting information to indoor PCB. When in on state, press this button, the indicator is off, and send instruction. If timer on or timer off has been set, it cancel this setting then send instruction to stop the machine.

**8. Adjust button ▲**

Set indoor temperature up. If press and hold on, it will increase at 1°C (2°F) per 0.5 second.

**9. Adjust button ▼**

Set indoor temperature down. If press and hold on, it will decrease at 1°C (2°F) per 0.5 second.



**10. Swing button**

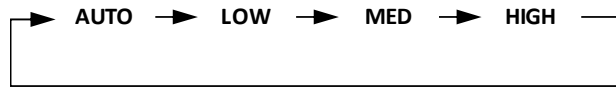
First press “start swing”; second press “stop swing”. (Match to some model with swing function).

**11. Economy operation button**

Press this button, the indoor unit operates in economy mode, press again, exit this mode (it may be ineffective for some models)

**12. Fan speed button**

Press this button consecutively; the fan speed will circle as follow

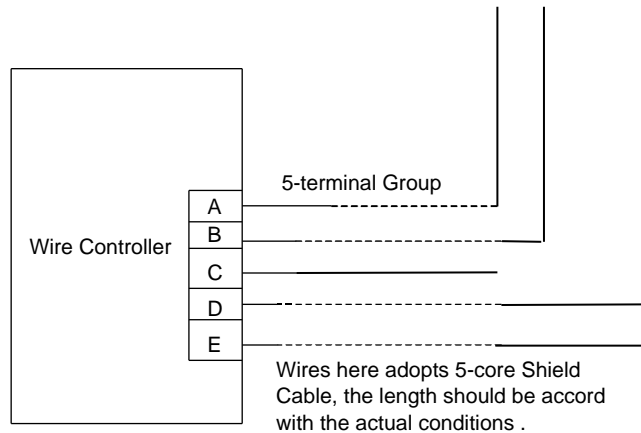


**13. Lock button(hidden)**

When you push the LOCK button, all current settings are locked in and the wire controller does not accept any operation except that of the LOCK button. Use the lock mode when you want to prevent setting from being changed accidentally or play fully. Push the LOCK button again when you want to cancel the LOCK mode.

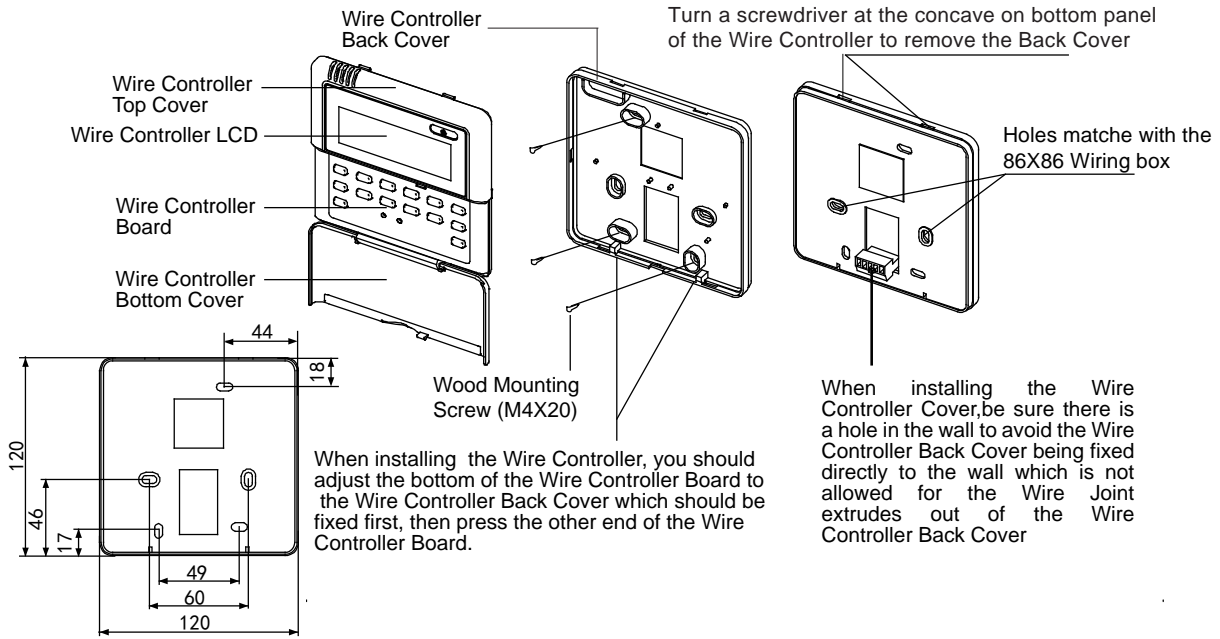
■ **Installation**

Wiring Principle Sketch:



Installation description:

When it is necessary to use this controller, it needs to add a small 5-terminal group and fasten an infrared emitter near to the receiver in the switch board. Connecting the anode and cathode to A, B of the Terminal Group, also connect +5V, GND, RUN of the switch board separately to the C, D, E of the 5-terminal Group.

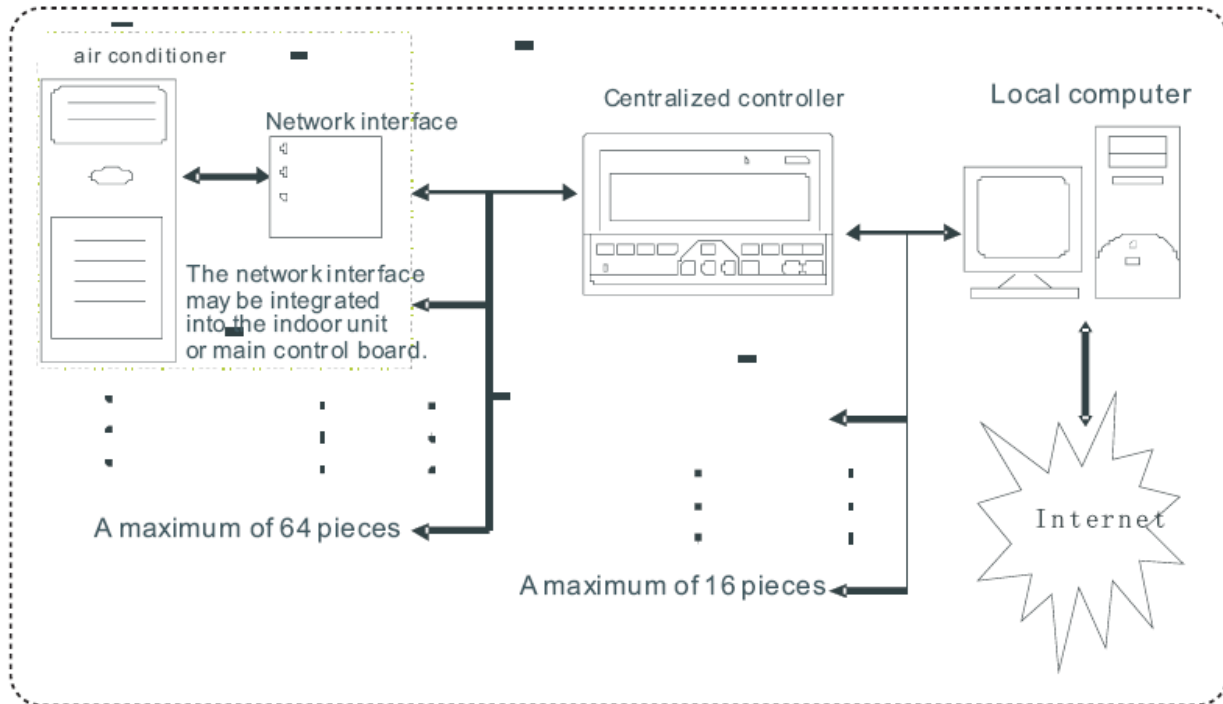


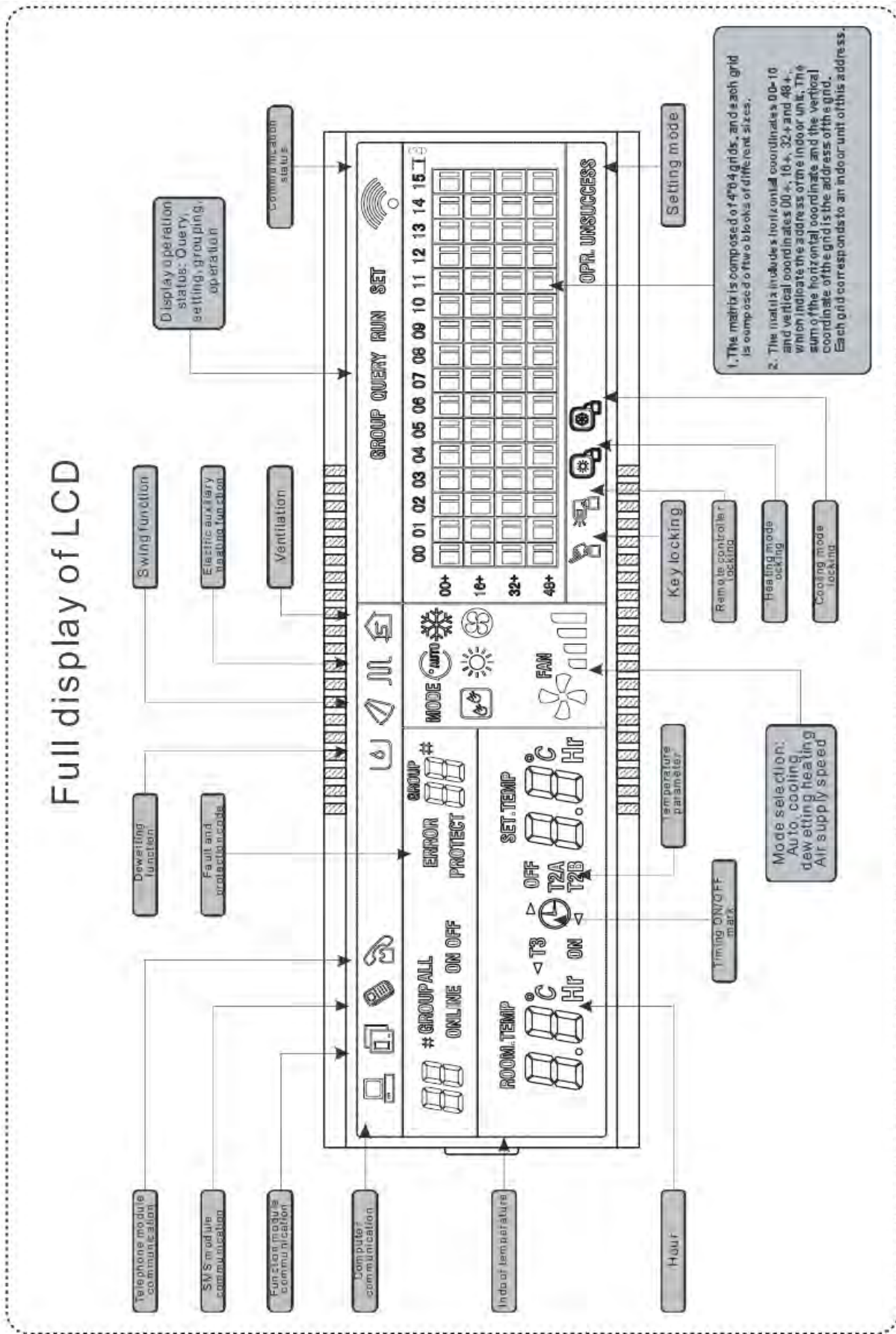
**Caution:**

The connecting wire should be a little longer as to take away the switch board easily for maintenance  
 The connecting wire should be a little longer as to take away the controller easily for maintenance.

**2.2.3 Central Controller: MD-CCM03**







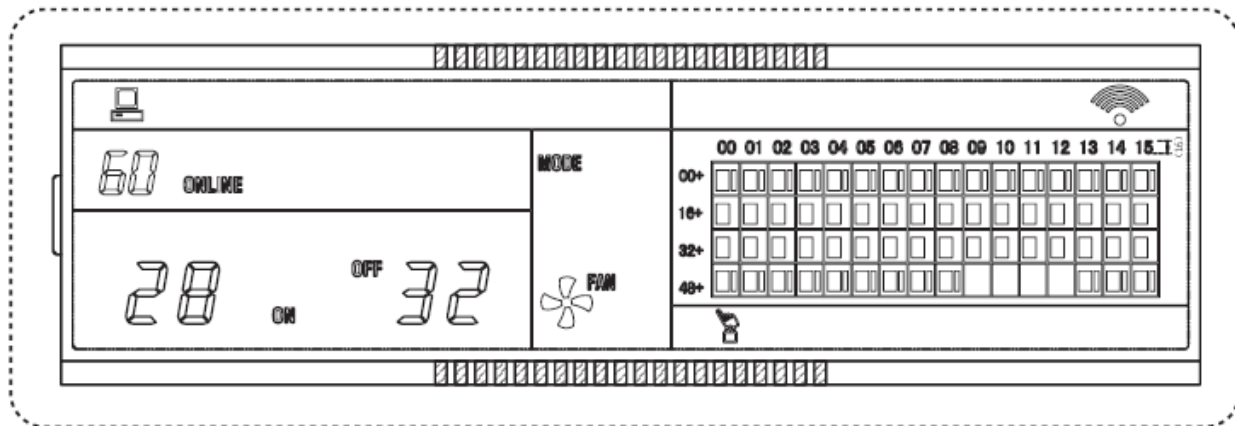
■ Liquid crystal matrix display description



1. The liquid crystal matrix is composed of 4×64 grids, and each grid is composed of two blocks of different sizes (as shown in the above figure).
2. The matrix includes horizontal coordinates 00-15 on the upper side and vertical coordinates 00+, 16+, 32+ and 48+ on the left side, which indicate the address of the indoor unit. The sum of the horizontal coordinate and the vertical coordinate of the grid is the address of the grid. Each grid corresponds to an indoor unit of this address.
3. One grid is composed of two blocks of different sizes. The status

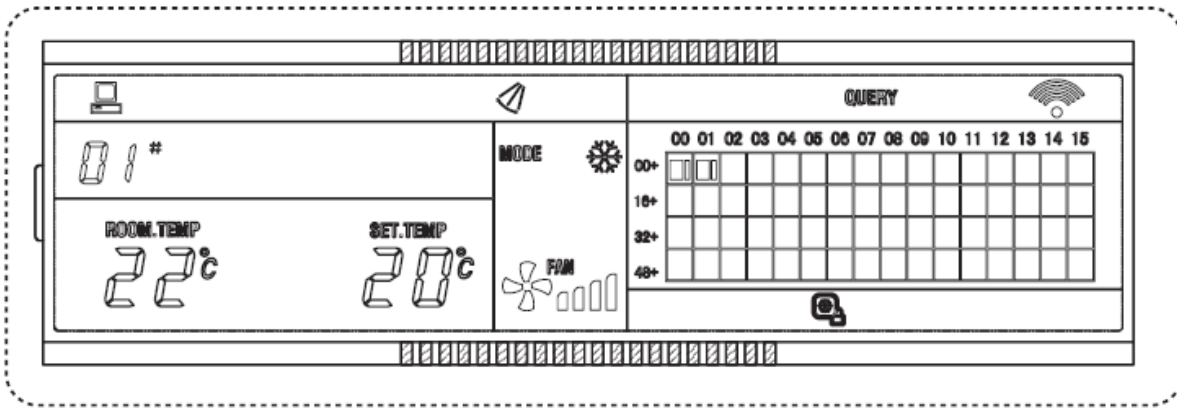
Indication table is as follows:

Object	Status			
	Constantly on	Slow blink		Fast blink
Big black block	In-service	Selected		Out of service
Small black block	Power on		Fault of indoor unit	Power off



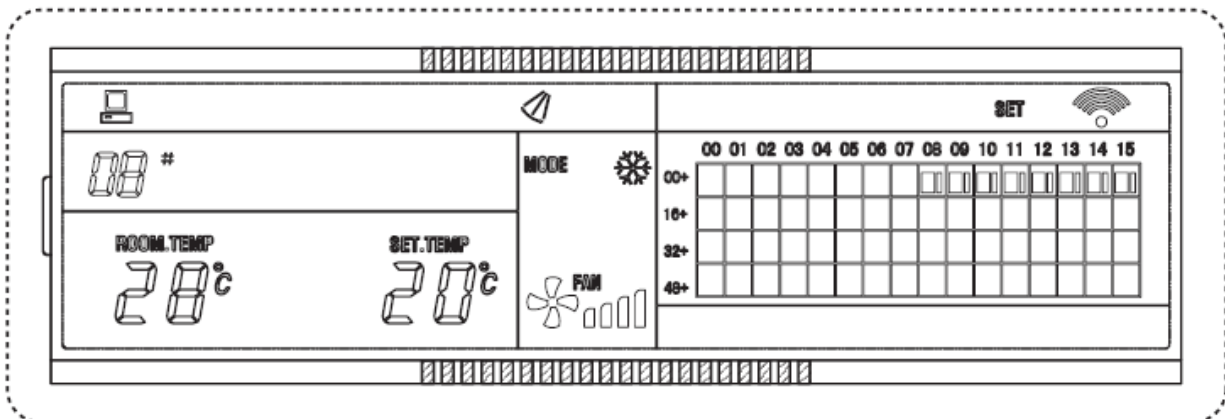
■ **LCD display description**

1. Description of the standby page
  - 1) The LCD displays the standby page, 60 air conditioners are in service, of which 28 are powered on and 32 off.
  - 2) In the matrix, the big dots of (00, 16+) and (15, 32+) are luminous, and the small dots are not luminous. It indicates the 32 air conditioners with the addresses from 16 to 47 are powered off.
  - 3) In the matrix, the big and small dots of (09, 48+) and (12, 48+) are not luminous. It indicates the four air conditioners with the addresses from 57 to 60 are outside the network.
  - 4) All other big and small dots in the matrix are luminous. It indicates all other air conditioners are in the network and powered on.
  - 5) The address of the air conditioner is sum of the coordinates. For example, the address of (09, 48+) is 09+48=57.
  - 6) The centralized controller keypad is locked, and the centralized controller communicates with the computer normally.



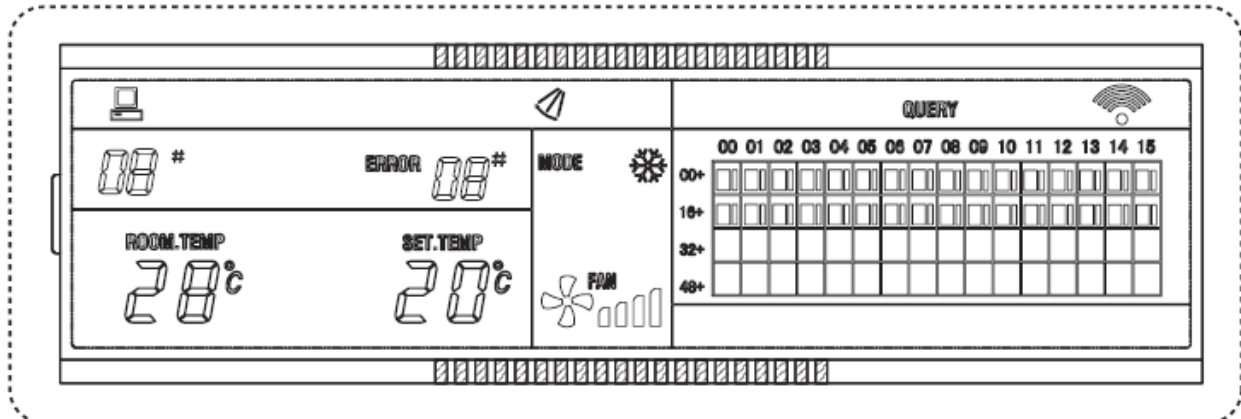
2. Description of the query page

- 1) The LCD displays the query page, and the air conditioner with the address of 08 is being queried. Mode of the air conditioner with the address 01 is: Cooling, strong air, swing on, indoor temperature 22°C, set temperature 20°C, cooling mode “lock”.
- 2) In the matrix, only the big and small black dots at (00, 00+) and (01, 00+) are luminous. It indicates the in-service and power-on status of the air conditioners with the addresses of 00 and 01.
- 3) The centralized controller communicates with the computer normally.



3. Description of the setting page

- 1) The LCD displays the setting page, and queries the air conditioner with the address of 08. The mode of the air conditioner with the address 08 is: Cooling, strong air, swing on, indoor temperature 28°C, set temperature 22°C, cooling.
- 2) In the matrix, only the big black dots from (08, 00+) to (16, 00+) are luminous. It indicates the air conditioners with the addresses from 08 to 16 are in service.
- 3) The centralized controller communicates with the computer normally.



4. Fault page display description

- 1) Query the air conditioner with the address of 08 in the query page. The air conditioner with the address of 08 is faulty, and the fault code is 08. The big black dot below (08, 0+) blinks.
- 2) In the matrix, only the big and small black dots from (00, 00+) to (16, 15+) illuminate. It indicates the in-service status of the air conditioners with the addresses of 00 and 01.

3) The centralized controller communicates with the computer normally.